

**WaterSMART Drought Resiliency  
Project Grant Proposal**

*Lake Cachuma Emergency Pumping Facility  
Secured Pipeline Project*

Funding Opportunity Announcement No. BOR-DO-19-F003



**Applicant:**

Cachuma Operation and Maintenance Board

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## TECHNICAL PROPOSAL AND EVALUATION CRITERIA

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### EXECUTIVE SUMMARY

Date:	March 27, 2019
Applicant Name:	Cachuma Operation and Maintenance Board (COMB)
SAM Registration:	DUNS: 099455933 / CAGE Code: 5CP93
Location:	Lake Cachuma, Santa Barbara County, California
Project Financing:	Applicant Share: \$775,270 Reclamation Share: \$750,000 Total Project Costs: \$1,525,270
Project Timeline:	The planning/design/engineering/environmental phase has already begun, and is anticipated to be completed June 30, 2020. The construction/implementation phase will begin during the onset of the next drought or when lake level allows for construction (scheduled April 2021), and will end six months from the construction start date (scheduled October 2021).
Located on a Federal Facility:	The Lake Cachuma Emergency Pumping Facility Secured Pipeline Project Site is located at Lake Cachuma, a Reclamation Project, on Reclamation Land.

This application is to request funding for the Cachuma Operation and Maintenance Board (COMB) to develop and construct the Lake Cachuma Emergency Pumping Facility (EPF) – Secured Pipeline Project. The proposed EPF Secured Pipeline Project is a highly critical operational infrastructure project, which will provide a lifeline delivery of Cachuma Project water and imported State Water Project (SWP) water to 200,000 residents on the South Coast of Santa Barbara County during times of drought. The Cachuma Project was originally designed as a gravity flow system, however, when the lake level recedes below the lowest gates on the Intake Tower, Cachuma Project water and SWP water is unable to be transported to the South Coast. Under these conditions, water must be pumped from deeper parts of the lake to the Intake Tower. Without the ongoing operation of an emergency pump and pipeline, water service would be interrupted, causing a widespread immediate threat to public health and safety within Goleta, Santa Barbara, Montecito, Summerland and Carpinteria. In this way, the proposed project is aligned with the goal of the Drought Resiliency Grant Proposal to support a proactive approach to drought by providing financial assistance to projects that will build long-term resilience to drought. If selected, the funds procured will be used to improve drought resilience by designing and constructing a secured pipeline to provide access to an additional 20,500 acre-feet of water for delivery to the South Coast of Santa Barbara County.

## BACKGROUND DATA

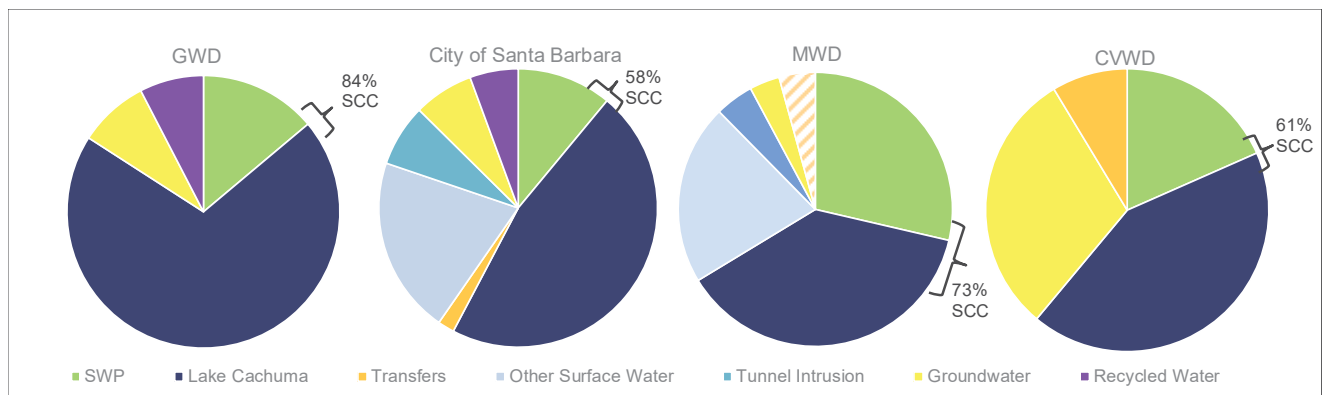
Lake Cachuma serves as the primary water supply for 200,000 residents in southern Santa Barbara County. The water is purveyed by five water districts; Goleta Water District (GWD), City of Santa Barbara, Montecito Water District (MWD), Carpinteria Valley Water District (CVWD) and Santa Ynez River Conservation District ID#1 (through exchange). Those five water districts comprise Cachuma Project Member Units. Cachuma Operation and Maintenance Board (COMB) is responsible for conveying the four South Coast Member Units water entitlements ( GWD, City of Santa Barbara, MWD, CVWD), including State Water deliveries through Cachuma Project facilities. COMB is the proponent for this project due to their water delivery responsibilities. Water is delivered to the South Coast communities through the Intake Tower (mid-reservoir), Tecolote Tunnel (6.4 miles), and South Coast Conduit (27 miles). This is a critical lifeline system that must maintain flow 24 hours a day, 7 days a week (24/7).

Lake Cachuma was recently impacted by seven consecutive years of record drought, reaching a low of 7.2% reservoir capacity in 2016. Early this year a sequence of storms brought moderate rainfall to the watershed, raising water storage to the current level of 77.5% reservoir capacity (March 25, 2019). As the reservoir continues to recover, COMB is planning for the next drought. Without sufficient rainfall occurring during the next two winters, the ability to gravity feed the Intake Tower could be precluded as early as fall 2021. This could occur as the lake level drops below the inlet gates located on the Intake Tower. Previous dry periods and diminishing lake levels have required an Emergency Pumping Facility (EPF) to be installed at Lake Cachuma on three occasions: in 1957 to 1958, 1990 to 1991 and 2014 to 2017. The previous installations in 1990 to 1991 and 2014 to 2017 were temporary facilities with a floating pipeline and a floating pump station to convey water to the Intake Tower. This grant application is for a more permanent solution, the Lake Cachuma Emergency Pumping Facility – Secured Pipeline Project.

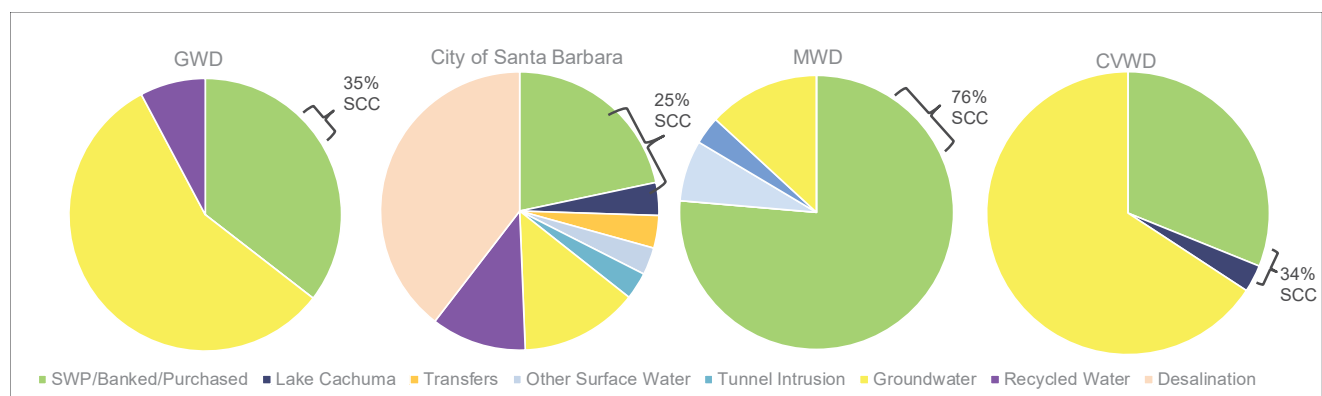
**Water Supply:** Cachuma Project water and SWP water are essential water portfolio constituents for South Coast Member Agencies. Under normal conditions, Cachuma Project water plus SWP water constitutes 70% of the supplies to the South Coast. During drought conditions when the Cachuma Project allocation is reduced or unavailable, South Coast communities switch to groundwater and/or banked/purchased water, with banked/purchased water being delivered by the Central Coast Water Authority (CCWA) through the State Water Project (SWP). While dependency on Lake Cachuma is necessarily reduced during a prolonged drought, water being delivered from Northern California still requires transport through Lake Cachuma, and so it remains an integral part of the South Coast delivery system. Figure 1 below shows the South Coast Member Agencies water supply sources under normal conditions and Figure 2 shows their projected sources of water supply at the end of a multi-year dry period (also summarized in Table 1 below).

**Table 1.** Member Agencies Projected Water Demands for a Normal Year and Multi-Year Dry Period based on 2015 Urban Water Management Plans and Water Supply Management Plans.

Water Agency	Cachuma Project Yield	SWP Table A Amounts	Projected Water Demands from South Coast Conduit Normal Year (2015)	Projected Water Demands from South Coast Conduit Multi-Year Dry Period (2015)
<b>North Portal Intake Tower - Tecolote Tunnel - South Coast Conduit Dependent Deliveries (AF)</b>				
GWD	9,321	4,700	11,753	4,500
City of SB	8,277	4,000	8,992	2,015
MWD	2,651	3,000	4,666	3,714
CVWD	2,813	2,000	2,820	2,820
<b>Subtotal</b>	<b>23,063</b>	<b>13,700</b>	<b>28,231</b>	<b>13,049</b>
<b>CCWA Deliveries/Exchanges (AF)</b>				
SYWCD #1	2,651	2,000	N/A	N/A
<b>Total</b>	<b>25,714</b>	<b>15,700</b>	<b>N/A</b>	<b>N/A</b>



**Figure 1.** Member Agencies Sources of Supply and Dependence on South Coast Conduit (SCC) in Normal Years based on 2015 Urban Water Management Plans.



**Figure 2.** Member Agencies Sources of Supply and Dependence on South Coast Conduit (SCC) in Multi-Year Dry Periods based on 2015 Urban Water Management Plans and Water Supply Management Plans.

U.S. Bureau of Reclamation Relationship: The Cachuma Project was authorized in 1948, began in 1950, and was completed in 1956 by the U.S. Bureau of Reclamation. Urban growth has occurred since the project was completed which replaced large acreages of irrigated and non-arable lands. COMB is a California Joint Powers Agency formed in 1956 pursuant to an agreement with the Bureau of Reclamation. The agreement transferred to the Cachuma Member Units the responsibility to operate, repair, and maintain all Cachuma Project facilities except Bradbury Dam, which the Bureau of Reclamation continues to operate. COMB coordinates closely with the Bureau of Reclamation and Member Units' staff to ensure that water supplies meet daily demands.

## PROJECT LOCATION

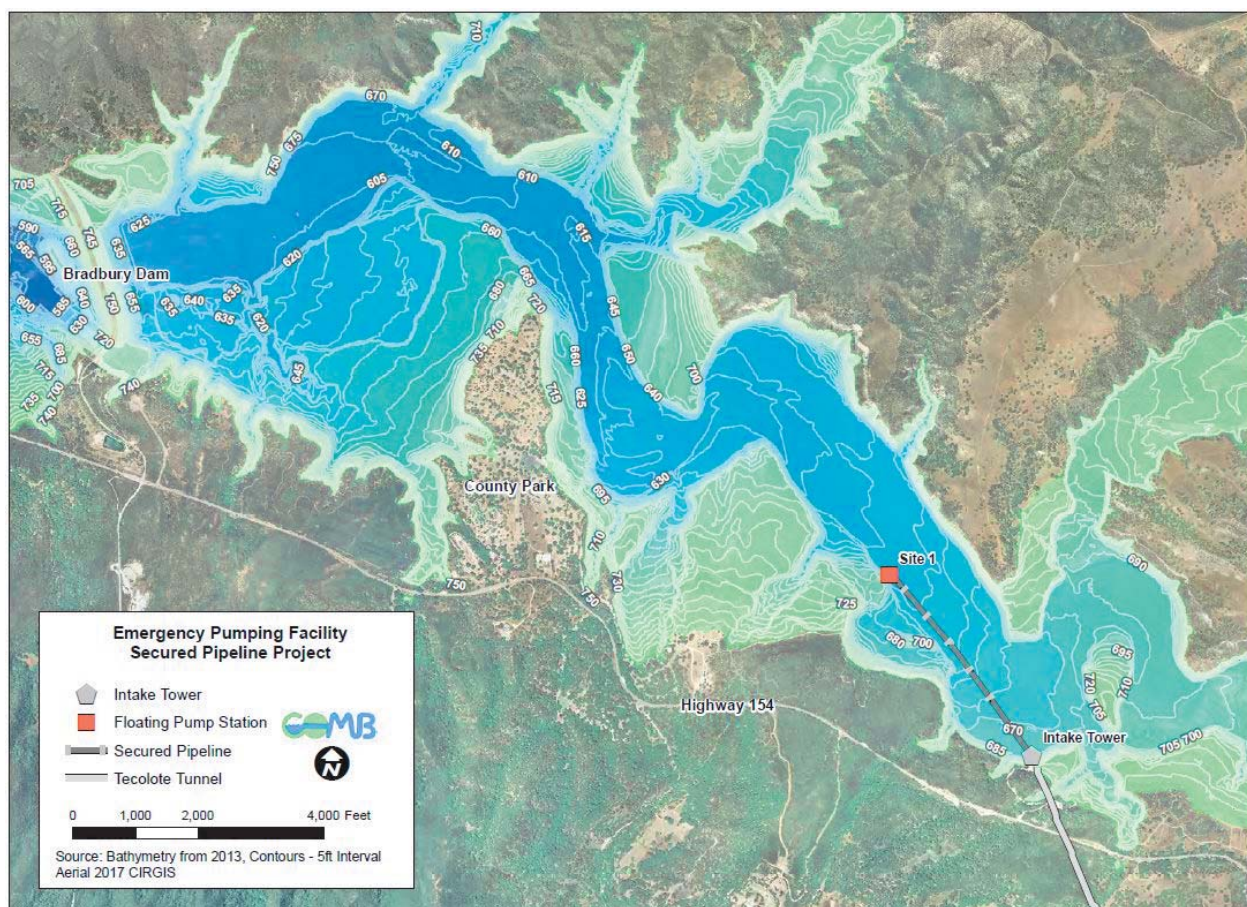
Lake Cachuma is located in Santa Barbara County approximately 15 miles northwest of the City of Santa Barbara. The Lake Cachuma Emergency Pumping Facility – Secured Pipeline Project is located at Lake Cachuma at latitude 34°34'N and longitude -119°55'W. Lake Cachuma serves as the primary water supply for 200,000 residents in southern Santa Barbara County including Goleta, Santa Barbara, Montecito, and Carpinteria.



**Figure 3.** The location of Lake Cachuma, the Lake Cachuma Emergency Pumping Facility – Secured Pipeline Project, and the Cachuma Project Member Units consisting of Santa Ynez River Conservation District ID#1, Goleta Water District, City of Santa Barbara, Montecito Water District, and Carpinteria Valley Water District.

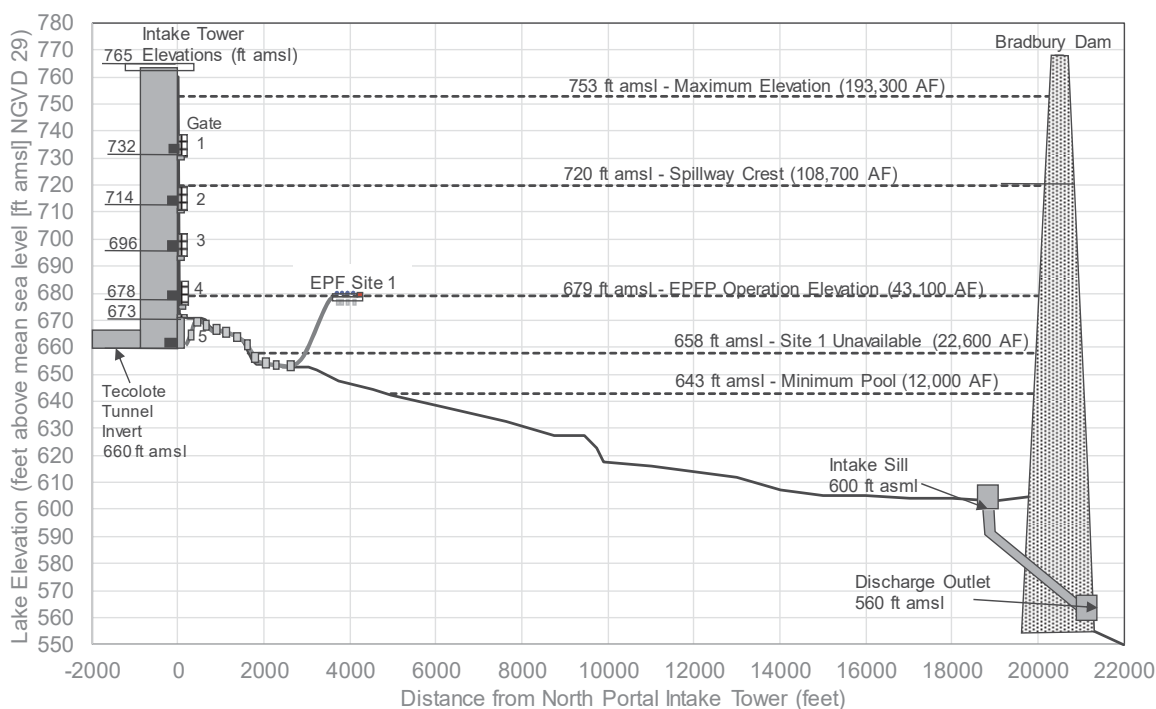


**Technical Project Description:** The EPF deployed from 2014 to 2017 included a temporary floating pump station and floating pipeline which allowed continued deliveries to the South Coast. The proposed project is to secure the pipeline component to the bottom of Lake Cachuma from Gate 5 of the Intake Tower to Site 1 (Figure 4). The pipeline would consist of new 36” HDPE pipe anchored with concrete collars to secure it to the lake bottom. The goals of the project are to (1) reduce the elevation triggers for installing the EPF; (2) eliminate the need to install and remove temporary anchor piles and floating pipeline; (3) eliminate the need to store the pipeline near the shore of the lake; (4) reduce the costs for each subsequent use of the EPF; and (5) reduce the deployment period from over a year to 120 days. This would let the decision to deploy the facility to be made in April once the lake conditions are known, allowing the pumping facility to be operational by August. With the secured pipeline installed, the remaining assembly would include only the floating pump station. The possibility of installing a permanent land-based pump station is being investigated. The secured pipeline may also include a gravity intake which may improve water quality delivered from the lake during normal conditions.



**Figure 4.** Emergency Pumping Facility Secured Pipeline Project proposed alignment from the North Portal Intake Tower to Site 1.

Operation of the pumping barge at Site 1 using the secured pipeline will allow access to allocated water supplies in Lake Cachuma which would otherwise not be available. In addition, the pipeline allows the ability to access imported State Water and supplemental water supplies delivered to Lake Cachuma on behalf of CCWA, the conveyor of State Water to the region. Environmental impacts from the secured pipeline are expected to be minimal since the pipe and ballast collars will be placed on the surface of the lake bottom.



**Figure 5.** Lake Cachuma Profile with Secured Pipeline Project

The secured pipeline will include the following construction components:

*Intake Tower Connection:* The Secured Pipeline will be connected to the existing steel box on Gate 5 of the Intake Tower. Localized dredging will be required to expose the connection and reduce the slope of the bottom-mounted pipeline. The local area around the tower was dredged in 2014; however, subsequent storms have resulted in additional sedimentation around the tower.

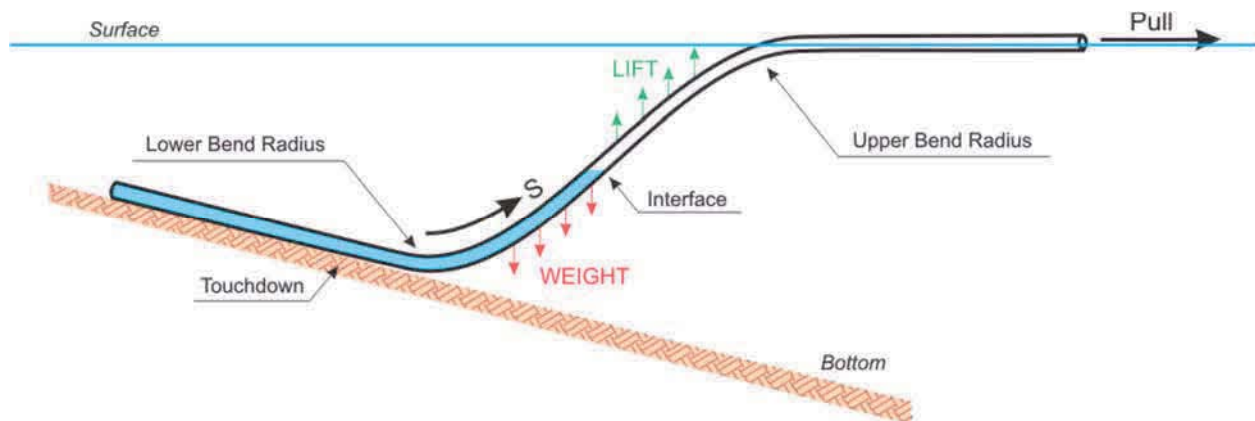
*Pipeline Type and Ballasting:* The pipeline will consist of new 36” HDPE pipe anchored to the bottom of Lake Cachuma with concrete collars. The length of pipe would span the distance from the Tecolote Tunnel Intake Tower to the Site 1 location (approximately 3,700 linear feet). The pipeline would be fused and anchored in a stepwise process as it is assembled on shore. The pipeline would be floated into position and then carefully filled with water to sink it to the bottom of the lake (Figure 6). In the future, the pipeline could be removed in a similar fashion by pumping it with air.



*Gravity Intake:* The secured pipeline may include a gravity intake which would consist of an intake box with a fish screen and would allow water to be drawn from a deeper portion of the lake than what the Intake Tower is able to access (due to sedimentation of the lowest gate at the tower). This would allow greater flexibility for water quality operations as water could be drawn from a deeper part of the lake when drought conditions do not exist.

*Pump Station Connection:* The secured pipeline would require a flexible connection at the end which would allow connection to a floating pump station, or a secured land-based pump station.

Contracted design reports provided to COMB recommend that COMB purchase and install new pipeline with pressure surge mitigation measures such as controlled venting vacuum relief valves at the pump station and an inflow check valve along the pipeline. A preliminary weight design and deployment strategy has also been determined, as well as air entrainment and mitigation measures. COMB plans to pursue final design for a bottom-mounted pipeline to Site 1.



**Figure 6.** Approximate pipeline shape in the water column during controlled submergence.

## PERFORMANCE MEASURES

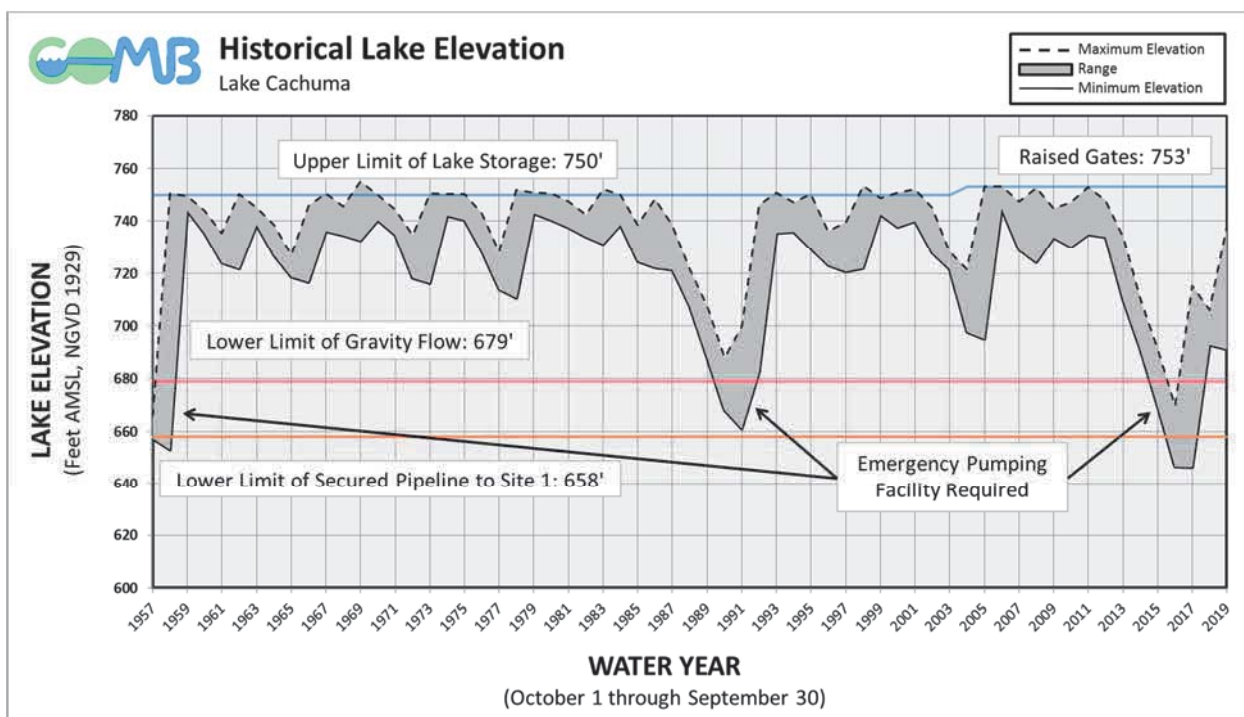
**Creating Additional Water Supply and Cost of Alternative Water Sources:** If the lake level at Lake Cachuma drops below 679 feet above mean sea level (ft amsl), the lower limit of gravity flow has been reached and lake water becomes unavailable for delivery to the South Coast without installing emergency facilities (Figure 5). The Lake Cachuma Emergency Pumping Facility – Secured Pipeline Project will provide access to lake water down to 658 ft amsl, providing access to an additional 20,500 acre-feet of lake water. During a drought, the amount of water utilized between 679 and 658 ft amsl will be known, and used as a performance measure of project success. Because Cachuma Project water is a low cost source of water, the additional savings due to project installation will be estimated. Additionally, the amount of water imported when the lake is below 679 ft amsl will be known, and used as a performance measure.

**Avoiding Installation/Removal/Storage of Temporary Facilities (Time and Cost Savings):** The goals of the project are to (1) reduce the elevation triggers for installing the EPF; (2) eliminate the need

to install and remove temporary anchor piles and floating pipeline; (3) eliminate the need to store the pipeline near the shore of the lake; (4) reduce the costs for each subsequent use of the EPF; and (5) reduce the deployment period from over a year to 120 days. Performance measures under this category include the time and cost savings that the Secured Pipeline Project will create by reducing the need to intermittently install, remove, and store temporary components over time and for the lifetime of the Secured Pipeline Project.

**Table 2.** Major milestones including estimated start/end dates and a brief description

Lake Cachuma Emergency Pumping Facility – Secured Pipeline Project Milestones		
Milestone	Estimated Dates	Brief Description
Land Purchase/ Easement	Complete	The Lake Cachuma Emergency Pumping Facility Secured Pipeline Project Site is located at Lake Cachuma, a Reclamation Project, on Reclamation Land.
Potential Non-Federal Cost Share	2019	COMB applied for funding through the Integrated Regional Water Management (IRWM) Implementation Grant Program. Grants are awarded 2019.
Environmental Compliance	1/1/2017 – 6/30/2020	Reclamation prepared the environmental documentation for the previous Emergency Pumping Facility implementation in 2014 (Appendix A: Drought Contingency Plan). This document would be updated for the Secured Pipeline Project. The Secured Pipeline Project would likely be considered environmentally superior because it would improve public safety and recreation, eliminate visual impacts, and eliminate repeated deployment, storage, demobilization impacts.
Permitting	1/1/2017 – 6/30/2020	COMB has previously obtained RWQCB-401, USACE-404, CDFW-1600 permits for the previous Emergency Pumping Facility implementation in 2014. COMB plans on obtaining these permits plus any additional required permits for the Secured Pipeline Project.
Final Design	1/1/2017 – 6/30/2020	COMB hired a contractor to perform a Secured Pipeline Project Preliminary Engineering Report in 2017. Additionally, COMB hired a specialized submerged pipeline design contractor to provide a pipe suitability analysis, weight design and deployment analysis, and a pump station connection and ROM opinion of probable construction cost. COMB plans to pursue final design for a bottom-mounted pipeline to Site 1.
Construction	TBD (next drought or when appropriate lake level reached) – six months from start date	The Secured Pipeline Project will have construction components including an Intake Tower connection, pipeline type and ballasting, gravity intake, and floating pump station connection as described above in the technical project description.



**Figure 7.** Historical lake elevation at Lake Cachuma from 1957 to 2019 (updated March 25, 2019), which highlights the Secured Pipeline project benefit occurring between the lower limit of gravity flow and the lower limit of secured pipeline to Site 1, where additional water is made accessible.

## EVALUATION CRITERIA

### Evaluation Criterion A – Project Benefits

*How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?*

On October 14, 2016, Lake Cachuma reached its lowest elevation since Bradbury Dam was constructed. The lake elevation was 646.41 ft amsl and lake storage was 14,000 acre-feet (AF), or 7.2% of the total capacity. The most recent drought from 2011 to 2017 resulted in severely reduced contract allocations (0%) and mandatory extraordinary conservation measures. During that time there was limited stored water to meet demands on the South Coast, causing Cachuma Operation and Maintenance Board (COMB) to undertake numerous drought response actions including the deployment of an Emergency Pumping Facility (EPF). While there was some reprieve from drought conditions due to large storm events in February 2017, the region is still operating on a drought response footing. After additional rainfall in early 2019, the lake elevation is at 737.7 ft amsl and lake storage is at 149,600 acre-feet, or 77.5% of the total capacity (March 25, 2019). Without additional rainfall, the need for an emergency pumping facility could be required as early as fall 2021. The Secured Pipeline Project prepares for future

drought conditions by allowing water conveyance to about 200,000 residents living in Goleta, Santa Barbara, Montecito, and Carpinteria during periodic drought as described above, even when the lake level drops below the gravity feed limit of the Intake Tower. The project anticipated useful life is estimated at 50 to 100 years (based on useful life of HDPE pipe), providing long-term resilience against drought.

A secured pipeline component will also greatly reduce the deployment time, improving drought response time. The current design requires anchor piles to secure the floating pipeline to the floating pump station. These anchor piles need to be installed when the lake elevation is at 695 ft amsl with a top elevation of 700 ft amsl. This design has several key limitations. Pumping was not required in the 2014-2017 drought until the lake reached 679 feet. The 25,000 acre-feet in storage between 695 ft amsl and 679 ft amsl can last over a year in drought conditions (as it did from May 2014 to August 2015). The installed pipeline, anchor piles, and pumping station is required to stay on idle at least a year under the current design, when a wet winter with high inflows could require the removal of the whole system without it being utilized. In addition, in February 2017 the lake rose 23 feet in one day and made the removal of the anchor piles extremely difficult and potentially dangerous, requiring around the clock contractor work in storm conditions on the lake. Due to the potential for drought conditions, the key components of the Emergency Pumping Facility were placed into storage. The floating pipeline was allowed to settle on a former river terrace for storage. This temporary storage site was determined to be an environmentally sensitive area in 2018 and no longer will be available for use as storage in the future. In contrast, the Emergency Pumping Facility with a secured pipeline could be deployed much faster, allowing the decision to deploy the facility to be made in April once the lake conditions are known, and to have the pumping facility operational in August. There would be no safety issues associated with the removal of anchor piles from the lake as the elevation rises and there would be no storage impacts to environmental sensitive areas and recreational impacts to boaters.

*Will the project make additional water supplies available?*

Yes, the project will make additional water supplies available. The ability to access supplies in Lake Cachuma is critical to the agencies on the South Coast of Santa Barbara. The agencies forecasted demands from/through Lake Cachuma at the end of a multi-year dry period are GWD (35%), City of Santa Barbara (25%), MWD (76%), and CVWD (34%). These estimates are based on their 2015 Urban Water Management Plans. Interruptions in deliveries would impact water service for potentially 200,000 customers.

The Lake Cachuma EPFP Secured Pipeline Project will allow 20,500 acre-feet of operational storage to be made available (between 679 and 658 ft amsl) and allow Member Units to continue to be supplied water from other sources purchased through CCWA during the drought. The



additional water supply could be used when it is most needed, at the end of a persistent drought when the lake level has significantly receded, delaying water shortages by multiple years when the continued use of imported water is also considered. Without the EPFP, additional supplies procured by the agencies through supplemental water purchases/transfers/exchanges/banking via the SWP would not be available.

*Will the project improve the management of water supplies? For example, will the project increase efficiency, increase operational flexibility, or facilitate water marketing (e.g., improve the ability to deliver water during drought or access other sources of supply)?*

Yes, the project will greatly improve the management of water supplies through increasing efficiency and operational flexibility.

With a warming climate, more intense and prolonged droughts, high water demands, potential increased downstream releases for fish habitat, the need for the EPF is likely to increase significantly in the future. It is a difficult and expensive decision to deploy the EPF, especially when the possibility of winter storms and subsequent lake level rise could render the investment wasted. Installing a dedicated conveyance system would allow the decision to be made based on a clear drought trigger for lake elevations and the system would be utilized later that year. The deployment time and cost to deploy the EPF would be significantly reduced and the chance of wasting financial resources would be eliminated.

With an additional gravity intake at the Site 1 location, operations for water quality could also be improved. As the lake conditions recede diversions are made from shallower and shallower waters which potentially have higher algal and total organic carbon concentrations which impact water treatment operations. The alternate intake could be used strategically to access water with improved water quality when applicable.

Also, as previously discussed, continued importation of SWP water and other purchased water can be added and extracted from the lake at lower elevations, improving operational flexibility during times of persistent drought.

The project would provide limited benefits to fish and wildlife, although it is worth noting that a submerged pipeline and concrete collars would provide some bottom complexity that would likely be utilized by fish.

#### **Evaluation Criterion B—Drought Planning and Preparedness**

*Attach a copy of the applicable drought plan, or sections of the plan, as an appendix to your application. These pages will not be included in the total page count for the application.*

Appendix A contains two drought planning documents, the Cachuma Drought Contingency Plan (which includes the original plan and the addition of the pumping barge relocation) and the Santa Barbara County of Emergency Management Action Working Group for the Drought Task Force Proposal to the Governor’s Drought Task Force.

*Explain how the applicable plan addresses drought. Proposals that reference plans clearly intended to prepare for and address drought will receive more points under this criterion.*

The Drought Contingency Plan for Lake Cachuma builds on the foundation of the Cachuma Project Member Units considerable planning efforts over the last several years during the historic drought from 2012 to 2016. The Drought Contingency Plan was implemented from 2014 to 2017. The plan successfully provided continued water deliveries to the South Coast during that period. However, it came at a high overall cost of \$8.6 million dollars from 2014 to 2017.

The Santa Barbara County of Emergency Management Action Working Group for the Drought Task Force Proposal to the Governor’s Drought Task Force is also included. At a meeting in December 2016, the Governor’s Drought Task Force met with elected officials and local water agencies and directed the California Office of Emergency Services to work together with Santa Barbara County to address the infrastructure needs and contingency planning necessary to maintain public health and safety during the immediate drought, and to identify regional projects which would provide long-term mitigation against future droughts. A key regional project identified was the Emergency Pumping Facility to maintain water deliveries to the South Coast.

*Describe how your proposed drought resiliency project is supported by an existing drought plan.*

Within the Cachuma Drought Contingency Plan, the stated purpose and need for action is that an emergency pumping system is needed in order to provide continual flows to the Intake Tower once water levels fall below the inlet gates and gravity feed can no longer be maintained. The Proposal to the Governor’s Drought Task Force was developed in collaboration with Santa Barbara County and the local water agencies and includes support for an Emergency Pumping System. The Emergency Pumping System is referenced as a priority project within the Drought Action Working Group. A temporary EPF has already been designed and permitted. The secured pipeline component of the EPF put forth in this application is similar to the temporary EPF referenced in Drought Task Force proposal, except that the conveyance pipeline would be bottom-mounted using concrete collars. Within the Drought Task Force proposal, the regional benefit is for an EPF is stated that it provides a regional benefit by ensuring continued, reliable conveyance of Cachuma Project water, State Project water and supplemental purchased water to purveyors on the South Coast of Santa Barbara County and that the continued operation and maintenance of the project is critical to prevent catastrophic failure or loss of water conveyance to residents on the South Coast of Santa Barbara County. None of the agencies have storage capacity large enough to store more than a week’s supply of water, and some can only store several days’ worth, so even a short disruption could result in an interruption to maintaining delivery of potable water for public health and safety.

## Evaluation Criterion C—Severity of Actual or Potential Drought Impacts

*Describe the severity of the impacts that will be addressed by the project:*

Lake Cachuma has experienced three record events in the last several years. The drought of record occurred in 2012 to 2016 with brief pause in 2017 and still continues. The combined seven years from 2012 to 2018 are the driest seven years on record. The fire of record (at the time), the Thomas Fire, for the State of California occurred in 2017 burning 281,893 acres including much of the Lake Cachuma watershed. The record debris flow event for the area occurred in the water service areas of Montecito and Carpinteria which depend on Lake Cachuma, with 0.54 inches occurring in a 5 minute period on land denuded by the Thomas fire, resulting in the loss of 128 structures and 21 fatalities. In addition, the drought, fires, and floods have severely impacted the habitat of the endangered Southern steelhead in the region. A recent study of climate change impacts (Swain et al. 2018, Increasing precipitation volatility in the twenty-first-century) found extreme dry years could be 2.4 times more frequent and extreme wet years would be 2.5 times more frequent. The drought, fire, and flood extremes experienced in the Lake Cachuma watershed in the last decade are likely to continue and potentially worsen due to the effects of climate change.

Persistent drought has necessitated the deployment of the EPF three times in the past, from 1957 to 1958, 1990 to 1991 and 2014 to 2017. The EPF Secured Pipeline Project would help protect the South Coast against for drought by providing a more permanent solution. If no action is taken on the Emergency Pumping System, water supplies will be interrupted to 200,000 customers during a key drought period. While the South Coast water agencies have some alternate sources of water from groundwater, surface water, and desalination, there are not currently additional water sources available that could meet the demands of the South Coast agencies if Lake Cachuma water and SWP is not available. MWD in particular requires over 75% of their water supply via the SWP through Lake Cachuma during a drought period. Without the installation of the emergency pumping system there would be severe water shortages with major public health and safety implications for over 200,000 people.

Algae, high total organic carbon (TOC), trihalomethanes (THMs) and other water quality constituents threaten the community drinking water supply. The EPF Secured Pipeline could provide an additional intake option with potentially cleaner, deeper water. Declining lake water quality at Lake Cachuma is a growing concern to member agencies because increasing levels of organic matter are making it harder to maintain consistent chlorine residual in the system and meet the drinking water standard for THMs. While COMB's south coast member agencies are pursuing treatment solutions for their respective systems, there is a shared interest in reducing organic concentrations coming into the treatment plants. In the case of Lake Cachuma, both water scarcity and water quality have been affected by sustained periods of drought and resulting wildfires. The Secured Pipeline Project would provide the potential to draw water from a different portion of the lake which may assist in mitigating water quality impacts from increasing catastrophic fires that occur during extended dry period conditions.

The Zaca Fire (2007), White Fire (2013), Rey Fire (2016), Whittier Fire (2017), and Thomas Fire (2017) have impacted the watershed, water quality and water storage in the Lake Cachuma. Between the five fires listed approximately 180,000 acres of the watershed (two-thirds) have

burned. These recent fires have denuded extensive amounts of vegetation which will produce abundant amounts of sediment and debris during stormflows, much of which will end up in Lake Cachuma, threatening the water supply. The bottom intake gate has been completely covered by sediment and is currently not available for use. The EPF Secured Pipeline Project also involves excavating a lane for the bottom-mounted pipeline for connection to the bottom intake gate (Gate 5).

Additionally, there are important economic considerations. If the Emergency Pumping System is re-installed with temporary piles and pipeline, the reinstallation of the system would cost approximately \$1.6 million dollars and could be wasted if a wet winter occurs following installation. Having a permanent securing system for the pipeline will greatly reduce the cost and deployment time for potential future droughts of the Emergency Pumping System and eliminate the potential for a large amount of money to be wasted on temporary infrastructure that would not be utilized. Secondly, Cachuma Project water is by far the least expensive source of water available to the South Coast. When lake water is unavailable, water districts shift to groundwater, desalinization, and imported water which are much more expensive. This cost to bear is partially shared by customers, including local businesses, through drought taxes and similar increased cost models.

A few other important considerations include 1) operational safety: there are operational risks involved in the removal of temporary pipeline and piles that would be avoided with a secured pipeline and 2) tensions over how water is allocated between different interests including COMB member units and fish-related releases could be somewhat alleviated by access to an additional supply.

#### **Evaluation Criterion D—Project Implementation**

Water Year 2018-2019 has been wetter than normal for the Lake Cachuma watershed. The lake is now slightly above 75 percent capacity which should provide approximately 2.5 years of water supplies (until the Summer of 2021) under normal gravity operations. COMB has undertaken a preliminary engineering evaluation in 2017 and a feasibility study in 2019. The feasibility study included a suitability analysis, weight design and deployment analysis, and a pump station connection and ROM opinion of probable construction cost. COMB will pursue final design for a bottom-mounted pipeline to Site 1. COMB is also in discussion with the Bureau of Reclamation for the environmental compliance documentation. Reclamation provided the NEPA evaluation for the temporary emergency pumping system. Much of the documentation could be utilized to prepare the environmental evaluation for the Secured Pipeline Project. COMB has previously obtained RWQCB-401, USACE-404, CDFW-1600 permits for the previous Emergency Pumping Facility implementation in 2014. COMB plans on obtaining these permits plus any additional required permits for the Secured Pipeline Project.

The project milestones are outlined in Table 2. The next steps in 2019-2020 will be to finalize the engineering designs, complete the environmental compliance documentation, and obtain the permits. Then the project would be ready for bid and deployment in 2021 when the emergency pumping facility may need to be utilized again. Once the secured pipeline component of the project is deployed it would be utilized in future drought periods and for water quality purposes.



In the future, a land-based mobile pump station may be added to the project to replace the floating pump barge and make the project more cost effective and efficient.

#### Evaluation Criterion E—Nexus to Reclamation

*How is the proposed project connected to a Reclamation project or activity?*

The Secured Pipeline Project would be an improvement to the Cachuma Project which was constructed by Reclamation in the 1950s. The project would be implemented by Cachuma Operation and Maintenance Board which is responsible for the operation and maintenance of the Intake Tower and Tecolote Tunnel, which is owned by Reclamation. The project design would be reviewed by Reclamation engineering and environmental staff for approval.

*Does the applicant receive Reclamation project water?*

Yes, COMB receives and delivers Reclamation project water from the Cachuma Project. This project would allow more efficient deliveries of Reclamation project water during drought.

*Is the project on Reclamation project lands or involving Reclamation facilities?*

The project area involves the Intake Tower and Tecolote Tunnel which are Reclamation-owned facilities on federal land.

*Is the project in the same basin as a Reclamation project or activity?*

Yes, the project occurs in the Cachuma Project area within the Santa Ynez River basin.

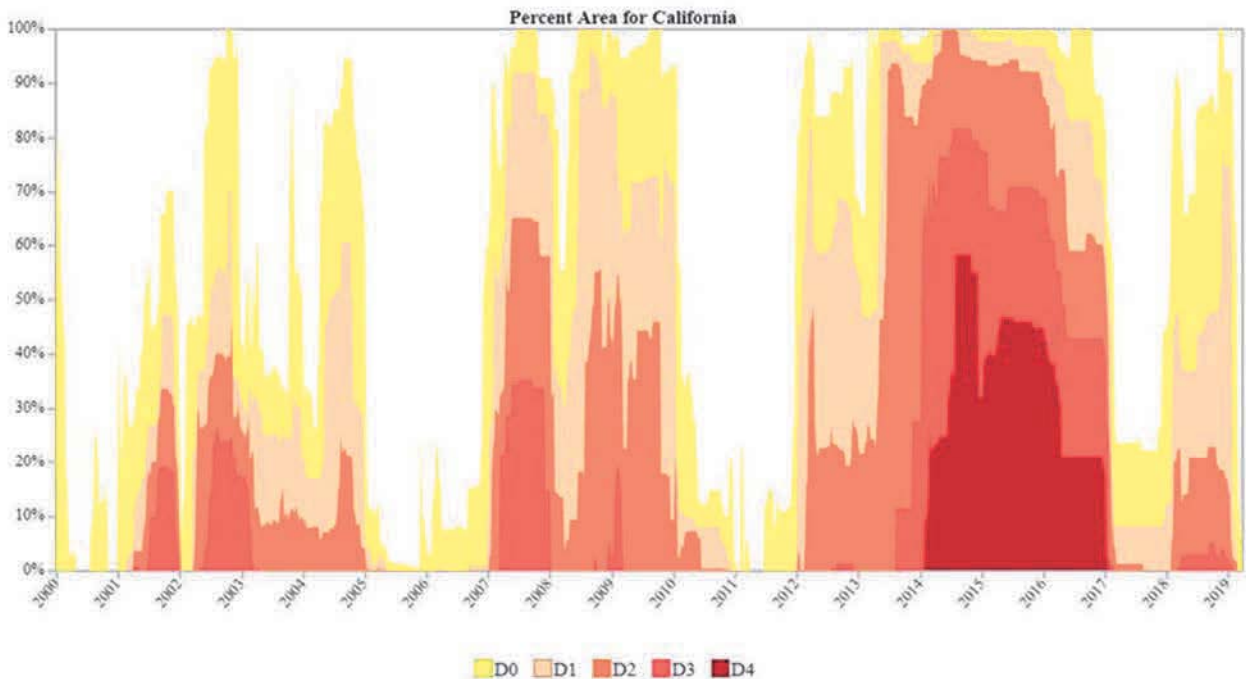
*Will the project help Reclamation meet trust responsibilities to any tribe(s)?*

The temporary project has the potential to impact cultural resources associated with the Chumash tribe. The Secured Pipeline Project would be a bottom-mounted pipeline with concrete collars that would rest on 5 to 10 feet of reservoir sediment which has settled on the former active river channel of the Santa Ynez River. This project would help reduce potential impacts to environmental sensitive locations associated with the Chumash tribe on the former river terraces in the shallower portions of the lake.

#### Evaluation Criterion F—Department of Interior Priorities

The EPF Secured Pipeline Project is well aligned with Department of Interior (DOI) priority 1.d, which is to review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity. The EPF Secured Pipeline Project will increase the operational capacity of DOI (Reclamation) owned Lake Cachuma by 20,500 acre-feet in years of persistent drought. Newly available water will then be able to be transported through Intake Tower, Tecolote Tunnel, and South Coast Conduit for delivery to the South Coast.

The proposed project also helps support DOI priority 1.a, which is to utilize science to identify best practices to manage land and water resources and adapt to changes in the environment. California has experienced worsening periods of drought (Figure 8), which will likely get worse with climate change. Lake Cachuma was recently impacted by seven consecutive years of record drought, reaching a low of 7.2% reservoir capacity in 2016. The proposed project is a necessary reaction to mounting scientific evidence of future drought conditions in the region.



**Figure 8.** Intensity of drought across California where D0 is abnormally dry, D1 is moderate drought, D2 is severe drought, D3 is extreme drought, and D4 is exceptional drought. Taken from the U.S. Drought Monitor website (<https://www.drought.gov/drought/states/california>).

## PROJECT BUDGET

### FUNDING PLAN

*How you will make your contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments)?*

The non-Federal share of project costs will be budgeted under the Operating Budget adopted by COMB. The Final Operating Budgets are approved by the Board of Directors each year and will provide Reclamation sufficient evidence and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement. A portion of the project costs may also be covered using California State grant funding through Proposition 1 via the Integrated Regional Water Management Plan process.

*Describe any donations or in-kind costs incurred before the anticipated Project start date that you seek to include as project costs. For each cost, identify:*

There will be no donations or in-kind costs incurred before the anticipated Project start date.

*Describe any funding requested or received from other Federal partners.*

No other sources of Federal funding have been requested.

*Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.*

The IRWMP Proposition 1 grant funding request has not been approved. If that funding is denied it would increase the cost-share that would be included as part of COMB's operating budget for infrastructure improvement projects. Since it is not currently committed it is not included in Table 3 below.

**Table 3. Summary of Non-Federal and Federal Funding Sources**

<b>FUNDING SOURCES</b>	<b>AMOUNT</b>
Non Federal Entities	
1. Cachuma Operation and Maintenance Board	\$775,270
Other Federal Entities	
1. None	\$0
<b>REQUESTED RECLAMATION FUNDING</b>	<b>\$750,000</b>

### BUDGET PROPOSAL

The estimated project budget is provided in Table 4. The costs are based on Makai Ocean Engineering 2019 opinion of probable construction costs for the project. The cost-share budget proposal is provided in Table 5. The unit cost breakdown for each component is provided in the following Tables 6 to 9.

**Table 4. Project Budget**

BUDGET ITEM DESCRIPTION*	TOTAL COST
Pipeline	\$983,960
Excavation, Pressure Test, Deployment	\$86,207
Barge Modifications	\$72,832
Pipeline Anchors	\$76,718
Design, Environmental, Permitting Costs	\$225,000
<b>Total</b>	<b>\$1,525,270</b>

**Table 5. Budget Proposal**

Share	Description	Cost
Applicant Share	51% of Design, Environmental, and Construction Costs	\$775,270
Reclamation Share	49% of Design, Environmental, and Construction Costs	\$750,000
<b>Total Project Costs</b>		<b>\$1,525,270</b>

**BUDGET NARRATIVE**

All costs for grant funding match are based on the feasibility study developed by Makai Ocean Engineering. The following budget narrative provides the description of the work to be performed under the various categories.

*Project Schedule*

Cost of labor is estimated based on the following construction schedule: Pipe fusion takes 17 days based on the assumption that two fusion joints can be made per day and per machine. Two machines will be used and 68 pipe sticks of 55' length need to be fused. Pipe fusion also limits the speed at which pipe weights can be attached. Pressure testing the pipeline takes 1 day and can be done right before deployment. Excavation around the intake tower takes 5 days and can start at day 12, see Table 6:

**Table 6. Project Construction Schedule**

Task	Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Pipe Fusion																							
Attach Pipe Weights																							
Excavate intake tower connection																							
Move excavator																							
Align Pipe																							
Pressure test																							
Deployment																							
Post Deployment work																							



### Pipeline Costs

Pipeline costs are for 3,691 feet of 36" Outer Diameter (OD) Standard Dimension Ration (DR) 17 High Density Polyethylene (HDPE) Pipe. Pipeline costs include fusion labor for two fusing machines and installing flanges at the connection points.

**Table 7. Pipeline Costs**

HDPE Pipeline incl. Fusion		Unit Cost	Unit	Amount	Unit	Cost
<b>Material</b>						
Pipeline						
OD 36 DR 17 HDPE Pipe Purchase	139	\$/ft		3,691	ft	513,049 \$
36" DR 17 Flange Adapter	1,250	\$		4	ea	5,000 \$
36" Blind Flange	4,374	\$		2	ea	8,747 \$
36" Ductile Iron Backing Ring	720	\$		4	ea	2,880 \$
Set of 32 Bolts, Nuts and Washers for Flange connection	438	\$		3	ea	1,313 \$
Subtotal						530,989 \$
Tax	8.75	%				46,462 \$
Shipping to Lake Cachuma				included in prices quoted		
<b>Material Subtotal</b>						<b>577,451 \$</b>
<b>Equipment</b>						
2 Fusion Machines Day Rate	800	\$	2 ea	17	days	27,200 \$
35 kW Generator	250	\$	2 ea	17	days	8,500 \$
Telehandler/ Forklift Day Rate	500	\$	1 ea	17	days	8,500 \$
Excavator/ Backhoe Day Rate	971	\$	1 ea	17	days	16,507 \$
Small Trailable Workboat	1500	\$	1 ea	17	days	25,500 \$
<b>Equipment Subtotal</b>						<b>86,207 \$</b>
<b>Labor</b>						
Fusion Tech Day Rate	800	\$	2 ea	17	days	27,200 \$
Fusion Tech Per Diem	200	\$	2 ea	17	days	6,800 \$
Superintendent Day Rate	1200	\$	1 ea	17	days	20,400 \$
Operator Day Rate	800	\$	2 ea	17	days	27,200 \$
Laborer Day Rate	600	\$	2 ea	17	days	20,400 \$
<b>Labor Subtotal</b>						<b>102,000 \$</b>
<b>Fixed Cost</b>						
Mob/ Demob Equipment	20000	\$		1	ea	35,000 \$
Mob/ Demob People	6000	\$		1	ea	12,000 \$
Fuel, Consumables	5000	\$		1	ea	10,000 \$
Misc. Materials	2500	\$		1	ea	5,000 \$
Insurance	10000	\$		1	ea	25,000 \$
Profit	20000	\$		1	ea	50,000 \$
<b>Fixed Cost Subtotal</b>						<b>137,000 \$</b>
<b>Contractor Subtotal Cost</b>						<b>325,207 \$</b>
Contingency	25	%				81,302 \$
<b>Contractor Total Cost</b>						<b>406,509 \$</b>
<b>HDPE pipe total cost</b>						<b>983,960 \$</b>

### Excavation, Deployment, and Installation Costs

The equipment needed to for the excavation around the intake tower is a large enough barge (EM 1149 barge built from Flexifloats is used as reference), an excavator that can reach to the ground of the excavation site (Caterpillar CAT 345D with 18m linkage and a 1000 mm bucket) and containers to collect and remove the dredged spoils. It is assumed that the container can be placed on shore and no crane is necessary to move it between the barge and a truck that brings it to a dump site.

When the excavation is done, the excavator can be moved to Site 1 and will be used to align and tension the pipeline during deployment. The deployment pumps can be located on the barge which remains at the intake tower site. Alignment of the pipeline before deployment can be done with a winch on the barge and a workboat.

Divers will be used to inspect the excavation, make the flange connection between the permanent pipeline and the intake tower, install the additional anchors at Site1 and establish the flange connection between the permanent pipe and the connection pipe at Site 1.

**Table 8. Excavation, Deployment, and Installation Costs**

Excavation, Deployment and Installation Cost						
	Unit Cost	Unit		Amount	Unit	Cost
<b>Equipment</b>						
<b>Excavation</b>						
Excavator Base price	170.07	\$/hour				
15% overhead	25.5105	\$/hour				
25% contractor markup	42.5175	\$/hour				
sum	238.098	\$/hour				
per day	1904.784	\$/day	1 ea	5 days		9,524 \$
Barge						
EM1149 Barge 115'*40'*7'	1404.96	\$/day	1 ea	5 days		7,025 \$
Container						
22*8*6=1056 cft	1,000	\$	2 ea	6 days		12,000 \$
<b>Deployment</b>						
Pump base price	18.44	\$/day				
15% overhead	2.766	\$/hour				
25% contractor markup	4.61	\$/hour				
sum	25.816	\$/hour				
per day	206.528	\$/day	2 ea	3 days		1,239 \$
Hoses	included in pump price					
Rigging Gear						500 \$
<b>Equipment Subtotal</b>						<b>30,288 \$</b>
<b>Labor</b>						
Operator	601.84	\$/day	1 ea	7 days		4,213 \$
Laborer	426.48	\$/day	2 ea	7 days		5,971 \$
Diver	729.51	\$/day	1 ea	2 days		1,459 \$
Stand-by diver	373.27	\$/day	1 ea	2 days		747 \$
Tender	365.28	\$/day	1 ea	2 days		731 \$
<b>Labor Subtotal</b>						<b>13,120 \$</b>
<b>Fixed Cost</b>						
Mob/ Demob Equipment	30000	\$	1 ea			30,000
Mob/ Demob People	5000	\$	1 ea			5,000
Fuel, Consumables	5000	\$	1 ea			5,000
Misc. Materials	5000	\$	1 ea			5,000
Insurance	15000	\$	1 ea			15,000
Profit	30000	\$	1 ea			30,000
<b>Fixed Cost Subtotal</b>						<b>90,000</b>
<b>Excavation + Deployment Subtotal</b>						<b>133,408 \$</b>
25% Contingency						33,352 \$
<b>Excavation + Deployment Total</b>						<b>166,760 \$</b>

### *Pump Station Barge Modification*

Necessary Pump Station Barge modifications include the installation of additional valves, the connection pipe clamp and adding one Flexifloat element. Installation of check valves and upgrading the existing air release valves to be surge resistant follows the recommendations in Memo 2. The pipe clamp design is described in the previous chapter of this memo and the additional Flexifloat End Rake will be installed at the existing float centerline at the pipe connection end. This float will add 10' length to the existing float, making it possible to access and install the pipeline clamp and the flow meter clamp.

**Table 9: Pump Station Barge Modification**

Pump Station Barge Modification		Unit Cost	Unit	Amount	Unit	Cost
<b>Material</b>						
	Valves					
	APCO 6000 Check Valve	7,861 \$		2 ea		15,723 \$
	DeZurik 1600 Surge Check Valve	2,240 \$		1 ea		2,240 \$
	Subtotal					17,963 \$
	Tax	8.75 %				1,572 \$
	Shipping	1,000 \$		1 ea		1,000 \$
	Subtotal Valves					20,534 \$
	Pipe Clamp and support					
	8"x1.5" A36 steel strap	505 \$		1 ea		505 \$
	W6x12 structural beam, 10ft	162 \$		1 ea		162 \$
	Fabrication at Supplier	426 \$/day		1 day		426 \$
	Subtotal Clamp					931 \$
	Barge extension					
	FlexiFloat S-50 End Rake					20,000 \$
	Shipping					6,900 \$
	Subtotal Barge extension					26,900 \$
	<b>Material Subtotal</b>					<b>48,366 \$</b>
	<b>Equipment</b>					
	Tools	100 \$/day	1 ea	3 days		300 \$
	<b>Equipment Subtotal</b>					<b>300 \$</b>
	<b>Labor/ Installation</b>					
	Superintendent Day Rate	1200 \$	1 ea	3 days		3,600 \$
	Operator Day Rate	800 \$	1 ea	3 days		2,400 \$
	Laborer Day Rate	600 \$	2 ea	3 days		3,600 \$
	<b>Labor Subtotal</b>					<b>9,600 \$</b>
	<b>Subtotal</b>					<b>58,266 \$</b>
	Contingency	25 %				14,566 \$
	<b>Barge Mod Total</b>					<b>72,832 \$</b>

### *Pre-cast Pipeline Anchors*

The precast pipeline anchors are described in detail in Memo 2 and the additional anchoring is described in Chapter 4 of this Memo. 67 precast anchors will be attached to the permanent pipeline and three anchors will be attached to the bottom section of the connection pipeline. The four Helix Screw anchors can be installed prior to deployment or directly after from a workboat.

**Table 10: Pipeline Anchoring Costs**

Pipeline Anchoring		Unit Cost	Unit	Amount	Unit	Cost
<b>Precast anchors</b>						
	Precast concrete	28.3168	\$/cft	11.29774	cft	320 \$
	1" Threaded Rod	50.32	\$	4	ea	201 \$
	Nut	3.68	\$	8	ea	29 \$
	Washer	1	\$	16	ea	16 \$
	Backing Plate 3"x3"x0.5"	10	\$	8	ea	80 \$
	Subtotal					647 \$
	Tax	8.75	%			57 \$
	Individual Anchor Cost					703 \$
	Precast Anchors Material	703	\$	70	ea	49,225 \$
	Shipping					10,000 \$
	<b>Precast Anchors Subtotal</b>					<b>59,225 \$</b>
<b>Add'l. Anchoring</b>						
	Helix anchors	900	\$	4	ea	3,600 \$
	Weight connection plate	20		4	ea	80 \$
	Chain	10	\$/ft	10	ft	100 \$
	Shackle Crosby G209	17		4	ea	70 \$
	Turnbuckle Crosby HG226	55		2	ea	110 \$
	Shipping	300		1	ea	300 \$
	<b>Add'l. Anchors Subtotal</b>					<b>4,259 \$</b>
	<b>Anchors Subtotal</b>					<b>63,484 \$</b>
	Contingency	25	%			15,871 \$
	<b>Anchors Total</b>					<b>79,356 \$</b>

### *Engineering Design, Environmental Compliance, and Permitting Costs*

The engineering design services will include developing the final designs for the project, providing bid services for the project bid, and providing engineering services during construction. The budget proposal assumes design costs of \$150,000 based on Makai Ocean Engineering cost estimate.

Reclamation will provide the environmental compliance review for the project. Based on discussion with Reclamation staff, this will likely require the completion of a streamlined environmental assessment. A compliance cost of \$25,000 is assumed for Reclamation staff review based on previous discussions with Reclamation regarding potential level of effort for environmental projects. This project will require State Historic Preservation Office (SHPO) and Section 106 consultation. Environmental compliance costs may require CEQA review. If CEQA review is required it may need to be contracted to an environmental consulting firm. The costs assume \$50,000 for environmental consulting assistance with CEQA review and with the permits required.



## ENVIRONMENTAL AND CULTURAL RESOURCE COMPLIANCE

*Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

Yes. The area around the Intake Tower has been impacted by over ten feet of sedimentation since Bradbury Dam was constructed. The secured pipeline will be connected to the bottom Gate of the Intake Tower. This will require the dredging of approximately 10 feet of sediment in a channel extending from the intake tower and result in the removal of approximately 12,000 cubic feet of sediment. There may be temporary impacts to water quality due to turbidity. The sediment could potentially be removed with hydraulic dredging versus utilizing mechanical methods with a bucket. This may reduce the turbidity impacts. The water supply deliveries may also be temporarily discontinued to avoid impacts on delivered water quality.

*Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?*

Southern steelhead (*O. mykiss*) are federally listed as endangered and occur downstream of Lake Cachuma in Hilton Creek and the Lower Santa Ynez River. All the project work would occur upstream of Bradbury Dam and not impact southern steelhead.

*Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.*

Lake Cachuma is surface water that would potentially fall under CWA jurisdiction as “Waters of the United States”. The project would involve dredging in potential waters of the U.S. and would require permits from the U.S. Army Corps of Engineers. Based on previous dredging efforts, the impacts of localized dredging are minor and temporary, with the lake turbidity quickly improving as disturb sediments settle out from suspension.

*When was the water delivery system constructed?*

The construction of Bradbury Dam began in 1951 and was completed in 1953.

*Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

The project involves modifications to the Intake Tower at the North Portal of the Tecolote Tunnel. The project would extend the intake approximately 3,700 feet into deeper waters of the

lake to improve lake conveyance in times of drought. Gate 5 of the intake tower was previously modified with a steel box as part of the Emergency Pumping Facility project in 2014 to 2017.

*Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

There are no National Register of Historic Places listed in the database and interactive National Park Service map for Lake Cachuma. The project is not likely to have impacts to cultural resources with the bottom mounted pipe resting on the recently deposited (<70 years) lake sediments. Dredging would occur only in areas affected by lake sedimentation. The project is needed in part to reduce potential impacts to cultural resources due to the deployment and storage of the temporary pipeline. These activities are typically accomplished from the old river terraces which have known cultural resource sites.

*Are there any known archeological sites in the proposed project area?*

Lake Cachuma contains a wide and varied collection of archaeological resources. The Resource Management Plan lists approximately 40 prehistoric sites and two linear historic sites. However, these will not be impacted by the pipeline as it will rest on previously deposited lake sediments on top of active river alluvial deposits from the former river channel.

*Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

No. The pipeline will be at the bottom of the lake and not limit access to the sites.

*Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

The installation of the pipeline will abide by Lake Cachuma Boat Launch protocols which include a 30 day vessel quarantine on all trailered vessels entering Cachuma Lake to avoid the spread of quagga mussels.

## REQUIRED PERMITS OR APPROVALS

The project will require approval of Reclamation as the project would be installed within a Reclamation facility (Lake Cachuma) and on Reclamation property. Reclamation may also require additional review prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR Section 429, and that the development will not impact or impair project operations or efficiency. Table 11 provides the required permits and approvals needed for the project.

**Table 11.** List of required permits.

No.	Type of	Permitting Agency	Date Acquired or Anticipated
1.	RWQCB-401	Central Coast Regional Water Quality Control Board	A permit was acquired in 2014 (Cert#3414WQ02) for the Emergency Pumping Facility. The permit would need to be modified to include the pipeline anchored on the bottom pipeline.
2.	USACE-404	U. S. Army Corps of Engineers	A permit was acquired in 2014 (SPL-2014-00278-CLH) for the Emergency Pumping Facility. The permit would need to be modified to include the pipeline anchored on the bottom.
3.	CDFW-1600	California Department of Fish and Wildlife	A permit was acquired in 2014 (Not# 1600-2014-0080-R5) for the Emergency Pumping Facility. The permit would need to be modified to include the pipeline anchored on the bottom.
4.	Section 106/SHPO Consultation	California State Historic Preservation Office	Reclamation performed the Section 106 and SHPO consultation in 2014. This would need to be updated to evaluate a bottom-mounted pipeline.

## OFFICIAL RESOLUTIONS

## **RESOLUTION NO. 684**

### **RESOLUTION OF THE GOVERNING BOARD OF THE CACHUMA OPERATION & MAINTENANCE BOARD APPROVING APPLICATION TO THE U.S. BUREAU OF RECLAMATION WATERSMART DROUGHT RESPONSE PROGRAM: DROUGHT RESILIENCY PROJECTS FUNDING OPPORTUNITY**

**WHEREAS**, the Cachuma Operation & Maintenance Board (“COMB”) is a joint powers authority and public entity, organized and existing in the County of Santa Barbara in accordance with Government Code Section 6500 et seq., and operating pursuant to the 1996 Amended and Restated Agreement for the Establishment of a Board of Control to Operate and Maintain the Cachuma Project - Cachuma Operation And Maintenance Board, dated May 23, 1996 (“Amended and Restated Agreement”), as amended by an Amendment to the Amended and Restated Agreement made effective September 16, 2003 (collectively the “Joint Powers Agreement”); and

**WHEREAS**, the Member Agencies of COMB consist of the City of Santa Barbara, the Goleta Water District, the Montecito Water District, and the Carpinteria Valley Water District; and

**WHEREAS**, COMB operates and maintains Cachuma Project facilities pursuant to a Transfer of Operation and Maintenance Contract with the United States Bureau of Reclamation (“Reclamation”); and

**WHEREAS**, Reclamation recently released a grant-funding opportunity under the WaterSMART Drought Response Program for drought-related resiliency projects and implementation; and

**WHEREAS**, commitments outlined within the WaterSMART Drought Response Grant Funding Program require a fifty-percent (50%) cost share of total costs for the recipient; and

**WHEREAS**, the project description included in the grant application defines the scope and necessity to install a secured conveyance pipeline in Lake Cachuma for improved reliability, sustainability and drought resiliency (“Project”); and

**WHEREAS**, on March 14, 2019, the Project was reviewed and considered by COMB’s Operations Committee with a recommendation to forward to the COMB Governing Board for approval; and

**WHEREAS**, grant funding awarded under the WaterSMART Drought Response Grant Funding Program would be presented to the Board for final approval prior to implementation.



**NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BOARD OF COMB AS FOLLOWS:**

1. The Governing Board finds and determines that the facts set forth in the above recitals and in the documents referenced herein are true and correct.
2. The Governing Board supports the Project; namely, the concept of installing a secured conveyance pipeline in Lake Cachuma for improved reliability and drought resiliency.
3. The Governing Board approves an application for Project funding under Reclamation's WaterSMART Drought Response Program: Drought Resiliency Projects for Fiscal Year 2019.
4. The Governing Board further authorizes COMB's officers and staff, including the General Manager, to continue to do all things necessary and appropriate, including, but not limited to, execution and delivery of necessary documents, the procurement of engineering designs, and any other actions to implement the Project upon the Board's approval of expenditures.
5. This Resolution shall take effect immediately.

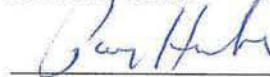
**PASSED, APPROVED AND ADOPTED** by the Governing Board of the Cachuma Operation and Maintenance Board, this 25<sup>th</sup> day of March 2019, by the following roll call vote:

**Ayes:**

**Nays:**

**Abstain:**

**APPROVED:**



\_\_\_\_\_  
President of the Governing Board

**ATTEST:**



\_\_\_\_\_  
Secretary of the Governing Board

## APPENDIX A: EXISTING DROUGHT CONTINGENCY PLANS

Cachuma 2014 Drought Contingency Plan (2014).

Cachuma Drought Contingency Plan Pumping Barge Relocation (2016).

Santa Barbara County Operational Area Proposal to the Governor's Drought Task Force (2017)

# RECLAMATION

## *Managing Water in the West*

### Categorical Exclusion Checklist

## Cachuma 2014 Drought Contingency Plan

**CEC-14-012**

Prepared by:

  
Rain L. Emerson  
Natural Resources Specialist  
South-Central California Area Office

Date: 06/13/2014

Concurred by:

See Attachment A  
Archaeologist  
Mid-Pacific Regional Office

Date: See Attachment A

Concurred by:

See Attachment B  
Native American Affairs Specialist  
Mid-Pacific Regional Office

Date: See Attachment B

Concurred by:

*For*   
Lisa Carlson  
Biology Technician  
South-Central California Area Office

Date: 06/13/2014

Approved by:

*For*   
Michael Jackson  
Area Manager  
South-Central California Area Office

Date: 06/13/14





## Background

The Bureau of Reclamation (Reclamation) constructed the Cachuma Project between 1950 and 1956. The Project stores floodwaters of the nearby Santa Ynez River, a highly variable Southern California stream, for the historically water deficient communities of the South Coast area. Primary facilities of the Cachuma Project include: Bradbury Dam, which formed Lake Cachuma; Tecolote Tunnel, which delivers water from Lake Cachuma to the South Coast; and the South Coast Conduit, which connects to the Tecolote Tunnel and distributes water across the South Coast.

Santa Barbara County Water Agency (Agency) has a long-term contract with Reclamation for up to 25,714 acre-feet (AF) per year of Cachuma Project water, as well as any surplus water available in Lake Cachuma. Pursuant to this contract, the Agency provides water to the following Member Units: Carpinteria Valley Water District, the City of Santa Barbara, Goleta Water District, Montecito Water District, and the Santa Ynez River Water Conservation District Improvement District No. 1. These five water districts comprise the Member Units of the Cachuma Operation and Maintenance Board (COMB) which operates and maintains the Cachuma Project pursuant to an operating agreement (Contract No. 14-06-200-5222R) with Reclamation.

Lake Cachuma is currently at less than 37.6 percent capacity (as of April 25, 2014) due to three consecutive years of drought. The ability to gravity feed the Intake Tower will be lost as the lake level falls below the inlet gates to the Intake Tower. COMB has estimated that this would occur by September 2014. As such, COMB has requested permission from Reclamation to install an emergency pumping system in order to continue flows into the Intake Tower once water levels fall below the inlet gates. A similar facility was temporarily installed and operated during the 1990 and 1991 drought.

## Purpose and Need for Action

An emergency pumping system is needed in order to provide continual flows to the Intake Tower once water levels fall below the inlet gates and gravity feed can no longer be maintained.

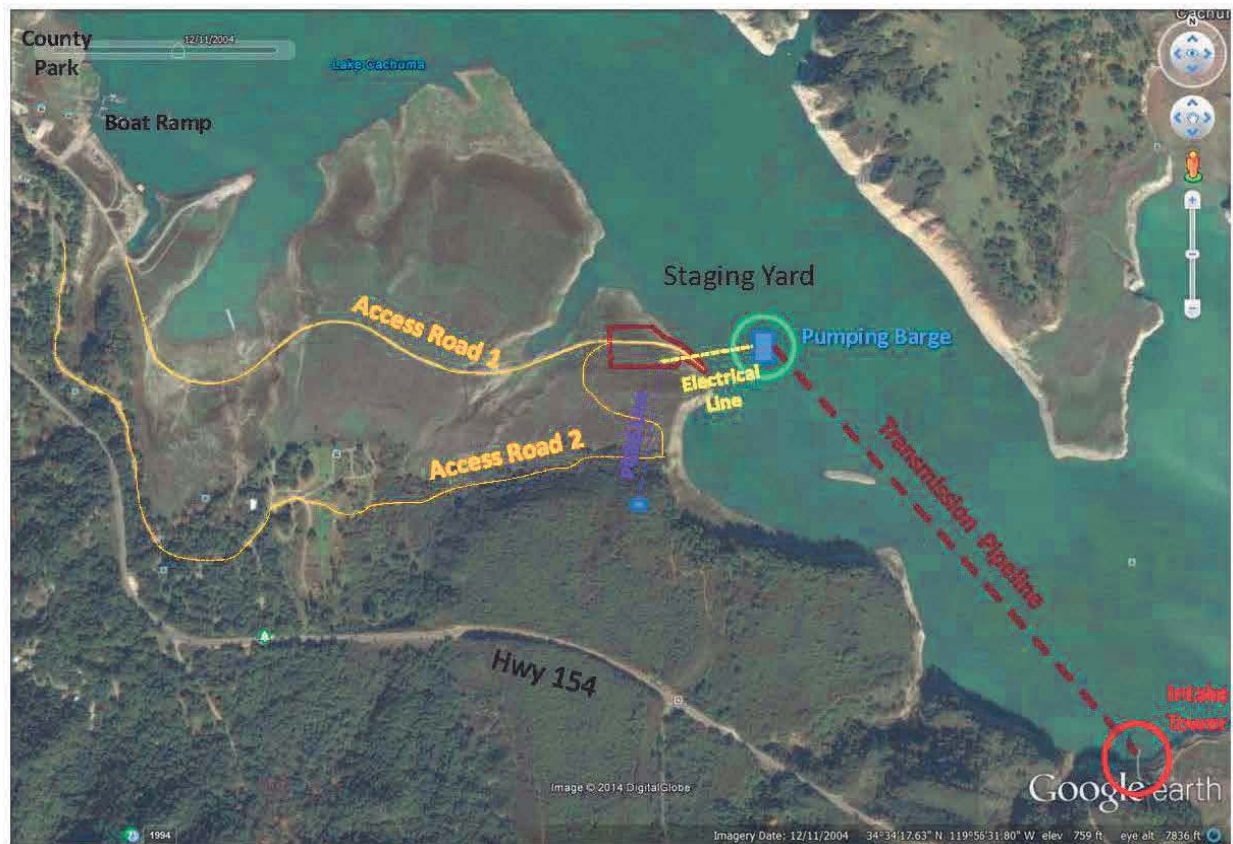
## Proposed Action

COMB, pursuant to its operating agreement with Reclamation, proposes to install and operate an emergency pumping system at Lake Cachuma. Specific project activities would include the following: (1) clearing an existing access road and preparing a staging area (Staging Yard), (2) maintenance activities on the Intake Tower gates, (3) installation of a pumping station and power supply, (4) installation of a water transmission pipeline, and (5) pump operation. Specific details for each activity are included below. Design for the project is being finalized with construction anticipated to begin in mid-May. Some fixtures would remain in case of future drought conditions.



## Access Road and Staging Yard

The project area would be accessed through the Cachuma Lake Recreation Area as shown in Figure 1. All equipment would be transported through the Recreation Area, past the boat ramp and along a pre-existing asphalt road (Access Road 1) to the staging area (Staging Yard) all of which is currently on dry lake bed. This road would be the primary access road for the project. A second access point (Access Road 2) is a well maintained asphalt and dirt road located just south of Access Road 1 that was used during the 1990-91 drought project. This road would only be used if needed. Both roads would require minor grading in isolated locations with a bulldozer similar to what was done during the 1990-91 drought project. Some placement of gravel may be needed in spots in order to allow safe access to the lake.



**Figure 1 Overview of Project Details with Access Roads**

The Staging Yard (Figure 2) would be less than an acre and would be cleared of any grass by mowing, then fenced to contain PG&E infrastructure, a backup diesel generator, a container for tools and spare parts, and a night watchman's trailer. There are no trees or shrubs on the access roads or within the Staging Yard that would be removed or substantially trimmed. Access to the water would be from Access Road 1 where it currently submerges under water. Some minor grading may be needed in this area along with placement of a small amount of gravel, just sufficient enough to provide safe equipment access to the lake.

Some construction materials may be launched from the County boat ramp (work barge, skiffs, possibly part of the transmission pipeline) depending on the lake level upon initiation of the project (Figure 1). Construction and maintenance of the Staging Yard would include Stormwater

Best Management Practices (BMPs) for the protection of spills and elimination of erosion throughout the duration of the project.



Figure 2 Proposed Location for Staging Yard and Pumping Barge

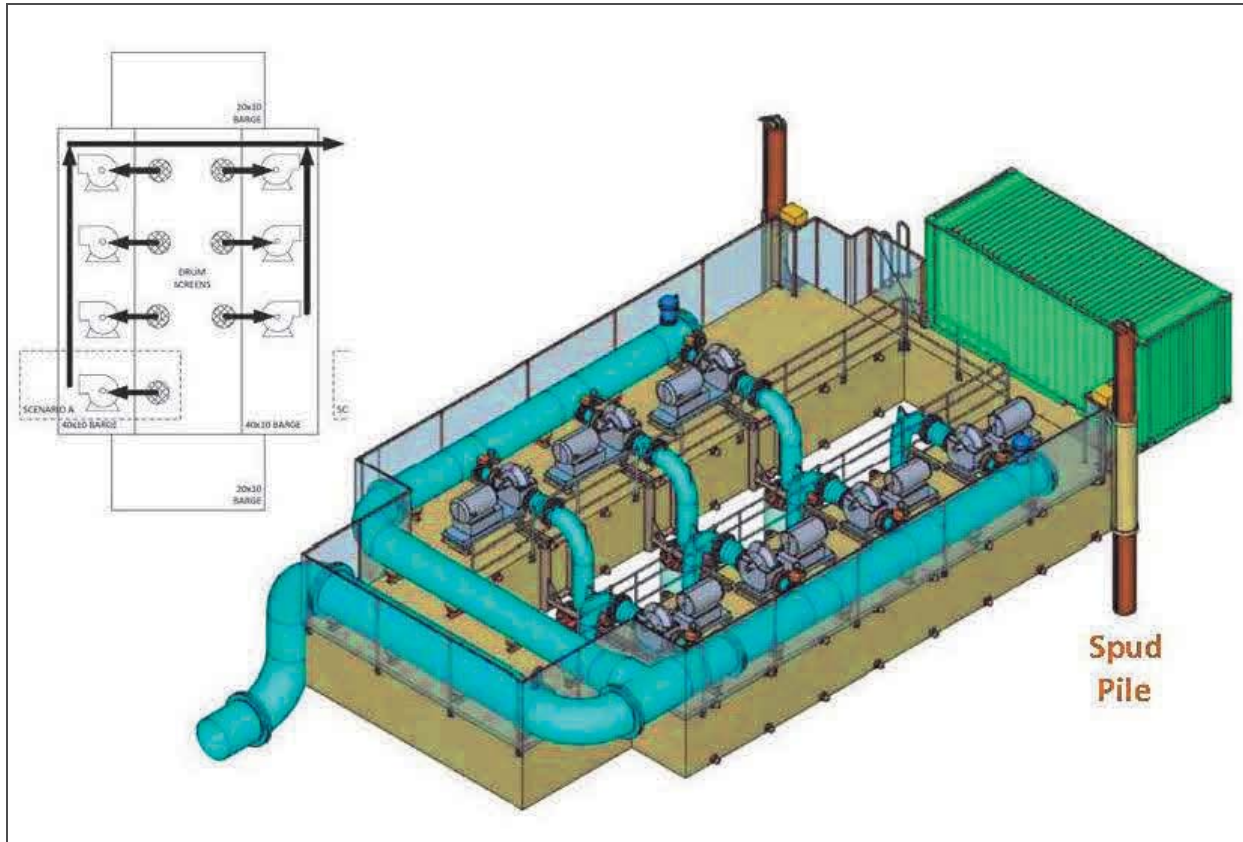
## Intake Tower Maintenance Activities

Aging gate assemblies, including stems and guides, used to operate the five gates to the Intake Tower would be replaced as they are severely corroded and in disrepair. In addition, the Intake Tower attachment box that was used for the emergency pumping system between the 1990-91 drought would be replaced with a new Tower Intake Box configured for a 36-inch diameter pipe connector.

Approximately 500 cubic yards of sediment would be removed from the lowest gate (Gate 5) on the Intake Tower, which has been covered with sediment since the 1990-91 drought. Sediment removal is estimated to take approximately two days and would require installing a 40-foot by 60-foot floating work barge from FlexiFloat barge sections. A crane would be walked onto the barge and would side-cast sediment with a clam-shell bucket. No water delivery into the Intake Tower would occur during this time to prevent water turbidity entering the system. COMB would coordinate with the Member Agencies to minimize water supply impacts.

## Pumping Station and Power Supply

The work barge and crane would excavate approximately 150 cubic yards beneath the area where the pumping barge would be located (see Figure 1) in order to capture water as the lake level drops. The pumping barge would then be assembled using a Flexifloat and QuadraFloat system fixed with seven electrical pumps as shown in Figure 2.



**Figure 2 Pump System Schematic**

The pumping barge would be held in place with 20 inch diameter steel pipes (Spud Piles) that go into the substrate. The steel pipes would be loosely collared to the pumping barge in order to allow up and down movement of the barge. The intake for each pump would be fixed with a drum fish screen with propeller driven automated mechanical cleaning brushes both inside and outside that conform to National Marine Fisheries Service fish screen criteria for impoundments and reservoirs.

As shown in Figure 1, PG&E would pull an overhead power line into the Staging Yard. COMB, or its designate, would then secure an electrical line out to the pumping barge either floated or on the bottom of the lake bed to power the pumping and transmission pipeline operation. A backup diesel generator with spill containment would be installed at the Staging Yard in case of interruption of PG&E grid-power to ensure continual water delivery.



## Transmission Pipeline

Once work has been completed at the Intake Tower and pumping station, the work barge would be reconfigured into a small maintenance barge outfitted with a smaller crane. The smaller crane would be used to set 35 one-foot diameter steel anchor piles between the Intake Tower and the pumping barge to anchor a floating 3,600 foot transmission line (see Figure 1). The piles would be driven approximately 15 feet into the lake bottom substrate with an impact hammer. The anchor piles would be removed upon project completion. The transmission line would consist of fused 36-inch diameter high density polyethylene (HDPE) pipe segments that connect the new Intake Box at Gate 5 on the Intake Tower to the pumping barge discharge pipe. The transmission line would float on the water surface with approximately 90 percent of it submerged. The maintenance barge would be left in the water for the duration of the project to assist in maintenance or contingency tasks that may arise, including but not limited to pump replacement, anchor pile replacement, clam-shell excavating, pipe repair, etc.

## Pump Operation

The emergency pumping system would operate continuously in order to provide 45 million gallons per day to the Intake Tower. In the event of a prolonged drought, the pumping barge may need to be moved approximately 5,000 feet further to the west (towards Bradbury Dam) in order to connect to the deeper parts of the lake (see Figure 3).



Figure 3 Potential Second Pumping Barge Location

If a second location is needed, the pumping barge would be moved and a new Staging Yard established within the developed areas of the Recreation Area. Additional HDPE pipe would be fused and attached to the floating transmission line. Power would be established from nearby Recreation Area facilities. This location would be used until water diversions must cease.

## Environmental Permits

Prior to start of the project, COMB would provide Reclamation all appropriate permits for working within a waterway including:

- California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement
- U.S. Army Corps of Engineers Clean Water Act (CWA) Section 404
- California Regional Water Quality Control Board CWA Section 401

## Environmental Commitments

COMB, or its designate, would implement the following environmental commitments to avoid any environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified will be fully implemented.

**Table 1 Environmental Commitments**

Resource	Protection Measure
Biological Resources	To avoid potential impacts to nesting migratory birds, a qualified biologist shall survey the access roads, staging area(s), and any other areas that will be subjected to vegetation clearing/trimming or grading, plus a 20-foot buffer around these areas, for ground-nesting migratory birds such as Killdeer. If any trees or shrubs need to be trimmed, they shall also be surveyed for nesting migratory birds prior to trimming. If an active nest is found during the survey(s), no ground-disturbing activities, trimming or removal of vegetation shall occur within 300 feet of the nest until the young have fledged or until the nest is no longer active.
	All equipment will be maintained in accordance with the manufacturer's directions so there will be no leaks of fluids such as gasoline, oils, or solvents.
Various	The generator and all fuel repositories would be placed in containment vessels and follow established best management practices (BMPs) for spill containment.
	Construction and maintenance of the Staging Yard would include Stormwater BMPs for the prevention of spills and elimination of erosion throughout the duration of the project.
	All float sections and skiffs would be inspected for Quagga and Zebra mussels prior to mobilization to Lake Cachuma.

## Exclusion Category

516 DM 14.5 C (3): *Minor construction activities associated with authorized projects which correct unsatisfactory environmental conditions or which merely augment or supplement, or are enclosed within existing facilities.*



## Evaluation of Criteria for Categorical Exclusion

- |   |   |                                       |                                 |
|---|---|---------------------------------------|---------------------------------|
| 1. This action would have a significant effect on the quality of the human environment (40 CFR 1502.3).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 2. This action would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA Section 102(2)(E) and 43 CFR 46.215(c)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 3. This action would have significant impacts on public health or safety (43 CFR 46.215(a)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 4. This action would have significant impacts on such natural resources and unique geographical characteristics as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); flood plains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (43 CFR 46.215 (b)). | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 5. This action would have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks (43 CFR 46.215(d)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 6. This action would establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects (43 CFR 46.215 (e)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 7. This action would have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects (43 CFR 46.215 (f)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 8. This action would have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01) (43 CFR 46.215 (g)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |

- |  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| 9. This action would have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species (43 CFR 46.215 (h)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 10. This action would violate a Federal, tribal, State, or local law or requirement imposed for protection of the environment (43 CFR 46.215 (i)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 11. This action would affect ITAs (512 DM 2, Policy Memorandum dated December 15, 1993).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 12. This action would have a disproportionately high and adverse effect on low income or minority populations (EO 12898) (43 CFR 46.215 (j)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 13. This action would limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007, 43 CFR 46.215 (k), and 512 DM 3)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 14. This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act, EO 13112, and 43 CFR 46.215 (l)). | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |

## **Attachment A**

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### Reclamation's Cultural Resources Determination

**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

1725 23<sup>rd</sup> Street, Suite 100  
SACRAMENTO, CA 95816-7100  
(916) 445-7000 Fax: (916) 445-7053  
calshpo@parks.ca.gov  
www.ohp.parks.ca.gov



June 13, 2014

Reply in Reference To: BUR\_2014\_0612\_001

Anastasia T. Leigh, Regional Environmental Officer  
Bureau of Reclamation  
Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95825-1898

RE: Emergency Pumping System Project, Lake Cachuma, Santa Barbara County, California  
(14-SCAO-180)

Dear Ms. Leigh:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), Bureau of Reclamation (Reclamation) is seeking my comments regarding the delineation of the Area of Potential Effects (APE), adequacy of identification efforts, and a *Finding of No Adverse Effect to Historic Properties* for the project.

The Cachuma Operations and Maintenance Board proposes to install emergency pumping facilities to maintain water intake into the Cachuma Water Project distribution system as part of the Emergency Drought Contingency Plan. The project will occur on Reclamation land. A pump on a floating platform (Pumping Barge) is proposed that would pump water into a pipeline laid across the bottom of the lake that would connect to Gate 5 of the Intake Tower of the Tecolote Tunnel Complex. This will entail:

1. Anchoring of the Pump Barge to the lake bed with twenty-inch "spud piles;"
  2. Modifications to Gate 5 of the Intake Tower;
  3. Removal of silt buildup near Gate 5 and the previously submerged paved access road;
  4. Grading/vegetation removal on lake bed for the staging area;
  5. Modification of the fish rack and connection box to accommodate the new, larger pipeline;
  6. Replacement of the stems and guides of the five gates on the Intake Tower;
  7. Installation of a below-water pipeline on the lake bed with 35 one foot diameter anchor piles;
  8. Installation of a power transmission line with two new and one replacement power pole;
- Project access will be on existing asphalt roads and the dry lake bed;

Reclamation has determined the Area of Potential Effects (APE) will lie in four discontinuous areas: Access road (15-foot corridor) and staging area, including the location of one utility pole; Thirty six-inch water pipeline (15-foot corridor) connected from a pumping barge to an intake gauge (20-foot buffer); and two Pacific Gas and Electric utility poles, each with a 20-foot buffer.

The vertical APE varies across the project area. Sediments covering the main access road vary in depth; removal would not exceed five feet. Installation of power poles will be approximately seven feet deep. Vegetation removal and vehicle traffic may disturb three to six inches of ground surface.

In addition to your letter received June 12, 2014, you have submitted the *Emergency Pumping System Project at Lake Cachuma Cultural Resources Inventory; Lake Cachuma Water Project, Santa Barbara County, CA (14-SCAO-180)* (Carper, June 2014), as evidence of your efforts to identify and evaluate historic properties in the project APE:

Archival research included a records search at the Central Coast Information Center on May 13, 2014 of the APE and a one mile radius. One previously identified historic property was located within the APE: the Tecolote Tunnel Complex, which includes the Intake Tower. The historic property was determined eligible to the National Register of Historic Places (NRHP) by consensus in 2010, under Criterion C for its significance at the state level in engineering and for its method of construction. The Intake Tower was identified as a portion of the Tecolote Tunnel Complex and character defining features include the truss bridge, five-sided concrete tower, tower deck, five fish racks, and the metal crane hoist.

A portion of previously recorded San Marcos Road (CA-SBR-2685H) was also determined to lie within the APE. This portion appears to be a section of the original pre-1950 Highway 150 (now 154) that ran along the inundated portion of Santa Ynez River. The road was originally recorded in 1994 and divided into three features: the 1869-1880s stagecoach route (Feature 1); the 1880s-1930s second stagecoach road (Feature 2); and the modern highway (Feature 3). The early portions of the road (Feature 1 and 2) are located beneath the lake. Feature 3 was previously evaluated and recommended as ineligible to the NRHP due to lack of sufficient integrity. There is no evidence of a consensus determination for this finding.

Reclamation identified the Santa Ynez Band of Chumash Mission Indians as having interests in the project area. Freddie Romero, tribal resources representative, expressed concerns about potential impacts to prehistoric sites in the vicinity of the project. During field review with Mr. Romero no cultural resources of concern to the tribe were identified. The tribe has requested that monitors be present for ground disturbing activities due to the sensitivity of the area and the potential for buried deposits; arrangements for monitoring have been made.

A pedestrian surface survey was conducted on June 3, 2014. Because the original ground surface is covered by lake sediments (up to ten feet) extra attention was paid to cut-banks and other surface disturbances. Site records were updated for the San Marcos Road which included a portion of the intact highway (Feature 3a) that deviated from that previously documented and a board formed concrete bridge along the road.

Reclamation has identified one historic property, the Tecolote Tunnel Complex, which includes the Intake Tower, located within the APE. Also within the APE, Reclamation has identified a previously unknown portion of the San Marcos Road (CA-SBR-2685H) and associated bridge. Due to these new discoveries, Reclamation has assumed the San Marcos Road eligible for purposes of this project only. Pursuant to 36 CFR §800.4(d)(1) Reclamation has determined a *Finding of No Adverse Effect to Historic Properties* by the proposed project. The project modifications required for the Intake Tower include replacement of the original stems and guides



for the gates and replacement of the Intake Tower Box assemblage installed in Gate 5 in 1991. These activities will not affect the character defining features referred to above and will not affect its eligibility to the NRHP. The work proposed along San Marcos Road entails removal of silt in order to use the road for access. These activities will not alter the integrity of the road and therefore are not adverse effects.

Based on your identification and analysis efforts, I concur there will be no adverse effect to the Tecolote Tunnel Complex. I agree the San Marcos Road (CA-SBR-2685H) should be assumed eligible to the NRHP for purposes of this project and concur there will be no adverse effects from the project. I concur with Reclamation's *Finding of No Adverse Effect to Historic Properties* for the project. Identification efforts are sufficient and I also have no objections to the delineation of the APE, as depicted in the supporting documentation.

Thank you for considering effects to historic properties in your project planning. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns regarding archaeological resources, please contact Associate State Archaeologist, Kim Tanksley at (916) 445-7035 or by email at [kim.tanksley@parks.ca.gov](mailto:kim.tanksley@parks.ca.gov). Any questions concerning the built environment should be directed to State Historian, Amanda Blosser at (916)445-7048 or by email at [amanda.blosser@parks.ca.gov](mailto:amanda.blosser@parks.ca.gov).

Sincerely,

A handwritten signature in black ink, reading "Carol Roland-Nawi, Ph.D." The signature is written in a cursive, flowing style.

Carol Roland-Nawi, PhD  
State Historic Preservation Officer

**CULTURAL RESOURCE COMPLIANCE**  
**Mid-Pacific Region**  
**Division of Environmental Affairs**  
**Cultural Resources Branch**

**MP-153 Tracking Number:** 14-SCAO-180

**Project Name:** Cachuma Drought Plan Emergency Pumping System Project at Lake Cachuma, Santa Barbara County, California

**NEPA Document:** CEC 111213

**Project Manager/NEPA Contact:** Rain Emerson

**MP 153 Cultural Resources Reviewer:** Mark Carper

**Date:** 6/13/2014

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This proposed undertaking by Reclamation is the approval for Cachuma Operations and Maintenance Board (COMB) to install emergency pumping facilities to maintain water intake into the Cachuma Project distribution system. . This proposed project would occur on Reclamation lands. Federal approval of the project constitutes an undertaking pursuant to Section 301(7) of the NHPA (16 U.S.C. 470), as amended, which requires compliance with Section 106 of the NHPA. Reclamation conducted consultations under 36 CFR Part 800, the implementing regulations for Section 106 of the NHPA.

The proposed project entails the placement of a pump on a floating platform (pumping barge) to pump water into a pipeline that would connect to Gate 5 of the Intake Tower.

Reclamation's identification efforts included archival research through the Central Coast Information Center (June 2014) and a pedestrian cultural resource survey (June 2014). Two historic resources were identified within the area of potential effects (APE). These are the San Marcos Road (pre-1951 segment) and the Intake Tower to the Tecolote Tunnel Complex. The Intake Tower is eligible for listing in the NRHP and given the scale and scope of the project Reclamation determined that the road segment be considered eligible for the NRHP for its association with early transportation along the Santa Ynez River. Reclamation further determined that the proposed project would have no adverse effect to either historic property.

Reclamation identified the Santa Ynez Band of Chumash Mission Indians as having interests in the project area and consulted pursuant to 36 CFR § 800.4(a)(4). Mr. Freddie Romero, tribal cultural resources representative, contacted Reclamation with concerns regarding potential impacts to prehistoric sites along the lake and in the vicinity of proposed activities. Reclamation archaeologists met with Mr. Romero at the project location and he accompanied them during the survey. Further, the Tribe contracted with COMB to provide monitoring services for the project.

**CULTURAL RESOURCE COMPLIANCE**  
**Mid-Pacific Region**  
**Division of Environmental Affairs**  
**Cultural Resources Branch**

Reclamation initiated consultation with the California State Preservation Office (SHPO) by letter on June 11, 2014. SHPO responded by letter on June 16, 2014 concurring with Reclamation's determination of no historic properties affected by the undertaking.

Reclamation has concluded the NHPA Section 106 process for this undertaking. This memo serves as concurrence with item #8 on CEC 14-012 that the proposed action will have no significant impacts on historic properties. If project activities change or circumstances are altered after the date of this memo, additional NHPA Section 106 consultations or other cultural resources compliance review may be required.

## **Attachment B**

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### Reclamation's Indian Trust Assets Determination



Emerson, Rain &lt;remerson@usbr.gov&gt;

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**Re: Project description for review (CEC-14-012)**

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**RIVERA, PATRICIA** <privera@usbr.gov>

Mon, May 12, 2014 at 12:30 PM

To: Rain Emerson &lt;remerson@usbr.gov&gt;

Rain,

I reviewed the proposed action to approve the Cachuma Operation and Maintenance Board's (COMB), proposal to install and operate an emergency pumping system at Lake Cachuma. Specific project activities would include the following: (1) clearing an existing access road and preparing a staging area, (2) maintenance activities on the Intake Tower gates, (3) installation of a pumping station and power supply, (4) installation of a water transmission pipeline, and (5) pump operation. Design for the project is being finalized with construction anticipated to begin in mid-May.

The proposed action does not have a potential to impact Indian Trust Assets. The nearest Indian Trust Asset is a Public Domain Allotment, approximately 6 miles Southwest of the project location.

Patricia Rivera  
Native American Affairs Program Manager  
US Bureau of Reclamation  
Mid-Pacific Region  
2800 Sacramento, California 95825  
(916) 978-5194

# RECLAMATION

## *Managing Water in the West*

### Categorical Exclusion Checklist

## Cachuma Drought Contingency Plan Pumping Barge Relocation

CEC-16-005

Prepared by:



Date: 04/04/2016

Rain L. Emerson

Supervisory Natural Resources Specialist

South-Central California Area Office

ITA Designee concurred with Item 11. Their determination has been placed within the project file.

Concurred by:

See Attachment A

Date: See Attachment A

Mark Carper

Archaeologist

Mid-Pacific Regional Office

Regional Archeologist concurred with Item 8. Their determination has been placed within the project file.

Concurred by:



Date: 04/06/2016

Lisa Carlson

Wildlife Biologist

South-Central California Area Office

Approved by:



Date: 4/6/2016

Michael P. Jackson

Area Manager

South-Central California Area Office







## Background

On June 6, 2014, the Bureau of Reclamation (Reclamation) completed a Categorical Exclusion Checklist (CEC) for the proposed installation and operation by the Cachuma Maintenance Operation Board (COMB) of an emergency pumping system within Lake Cachuma to address ongoing drought conditions (CEC-14-012<sup>1</sup>). Upon completion of the CEC, COMB installed the emergency pumping system within Lake Cachuma which included: (1) clearing an existing access road and preparing a staging area (Staging Yard), (2) maintenance activities on the Intake Tower gates, (3) installation of a pumping station and power supply, (4) installation of a water transmission pipeline, and (5) pump operation. Lake levels have continued to decline since operation began such that the pumping barge needs to be relocated in order to continue to draw water. COMB has proposed relocating the pumping barge as shown in Figure 1.

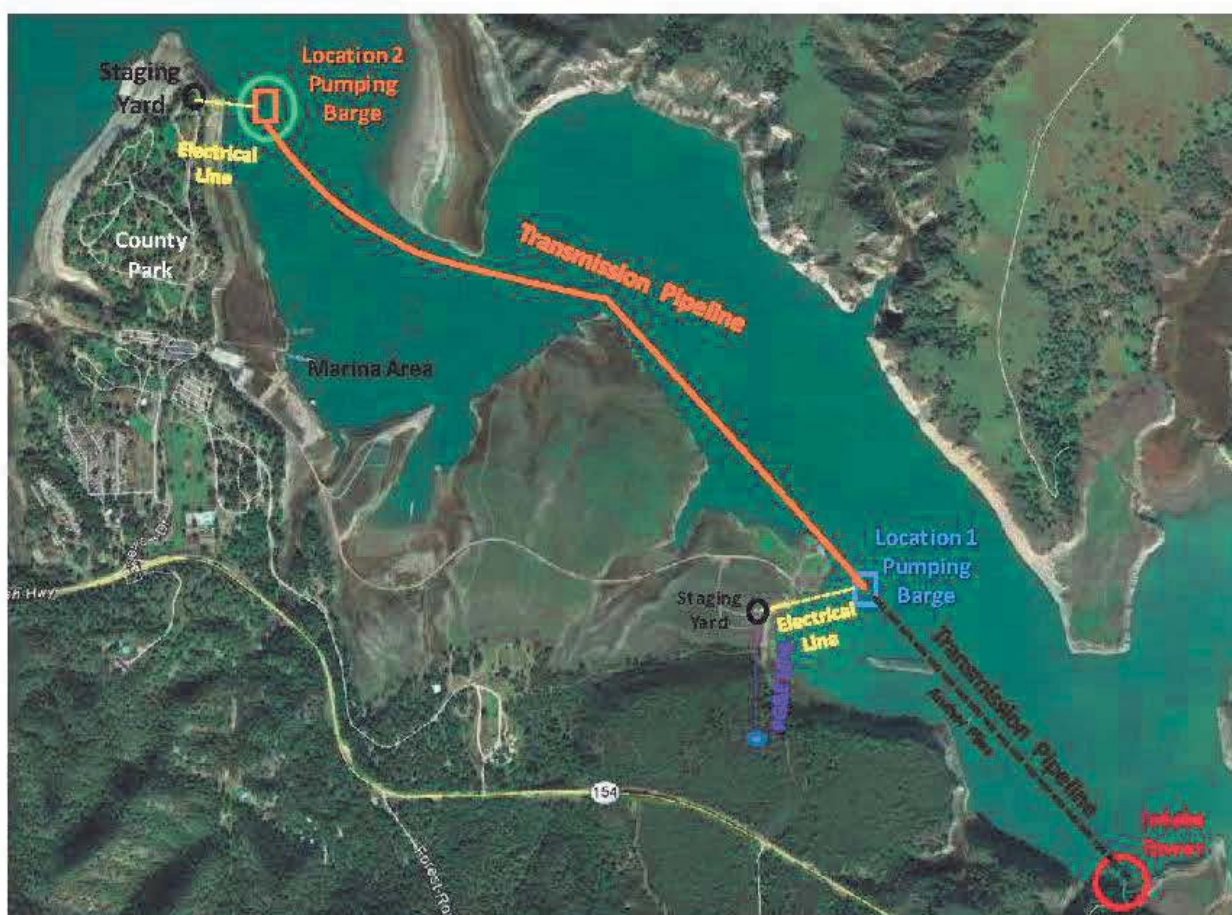


Figure 1 Proposed Relocation of the Cachuma Pumping Barge

<sup>1</sup> Bureau of Reclamation. *Cachuma 2014 Drought Contingency Plan* (CEC-14-012). Available: [http://www.usbr.gov/mp/nepa/nepa\\_projdetails.cfm?Project\\_ID=20567](http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=20567).

## Nature of the Action

COMB, pursuant to its operating agreement with Reclamation (Contract No. 14-06-200-5222R), proposes to relocate the current pumping barge approximately 7,000 feet northwest of its current location (see Figure 1). Operation of the pumping barge at this location will be consistent with all requirements for operation of the Cachuma Project, including but not limited to, Water Rights requirements, the 1995 Cachuma Project Contract Renewal Environmental Impact Report/Environmental Impact Statement, and requirements associated with the National Marine Fisheries Service Cachuma Project biological opinion<sup>2</sup> (NMFS 2000). Specifically, barge pumping of (1) Water Right 89-18 accounts, (2) Minimum Pool (12,000 acre-feet), and/or (3) any fish account water shall be prohibited.

Operations of the pumping barge at Location 2 will allow continued access by the Member Units to their allocated contract supply carryover balance. In addition, the project will allow the continued transfer of State Water Project (SWP) water supplies and supplemental water without the need for additional pipeline installation by the Central Coast Water Authority (CCWA) whom conveys the SWP supplies to the region. Any additional infrastructure, beyond that addressed in this document, will require additional environmental review.

Specific construction activities associated with the pump barge relocation shown in Figure 2 are described below.

### Staging Yard

The existing Staging Yard at Location 1 (Figure 3) would be dismantled (except the small concrete pad from the transformer for potential future use) and relocated to Location 2. The new Staging Yard would be installed next to the existing water extraction and treatment plant for the County Park. The same components from the current Staging Yard (PG&E power drop pole, on-ground electrical lines to the pumping barge, diesel generator for backup power supply, equipment storage container and a contractor management trailer) would be dismantled and transported to and used at this site. The PG&E line will be trenched from the drop pole to within the Staging Yard where the transformer will be placed. PG&E will install a new transformer at Location 2 and retrieve the current transformer at Location 1 to assure a seamless transition from one location to the other. The footprint would be approximately 4,000 square feet and would be surrounded by a chain link fence for security. Construction and maintenance of the Staging Yard will include Stormwater Best Management Practices (BMPs) for the protection of spills and elimination of erosion throughout the duration of the project. The Staging Yard will have contractor personnel onsite 24/7 for operations and safeguarding the facility against public access and potential tampering or theft.

### Floating Pipeline

Approximately 7,500 feet of 36-inch diameter high density polyethylene (HDPE) transmission pipeline would be fused and then floated out into the lake at the lowest lake level County Park boat ramp. The boat ramp area used during the first phase of this project for Location 1 will be used for staging only due to the length and steep slope to the lake at the current lake level. The

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<sup>2</sup> National Marine Fisheries Service. 2000. *U.S. Bureau of Reclamation Operation and Maintenance of the Cachuma Project on the Santa Ynez River in Santa Barbara County, California*. September 8.

transmission pipeline will be fused at this site and then fed into the lake off of the peninsula just to the north. Anchor piles would be driven into the lake substrate approximately 15 feet with the same method utilized for Location 1 from a barge with a percussion hammer. Anchor piles for the floating pipeline would be installed (approximately one every 100 feet) up to the marine area of the County Park at which point the pipeline would be sunk to the bottom and held in place with some form of concrete deadman anchors to facilitate boat egress in that area. The piles will be loaded onto the construction barge at the lowest level boat ramps using a crane.

### **Pumping Barge**

The Pumping Barge for Location 2 will be positioned on the east side of the end of the peninsula that contains the Lake Cachuma County Park (Figures 2). The exact location of the barge will be limited by the current length of the electrical lines from the Staging Yard to the pumping barge (approximately 900 feet) and the County requirement to leave sufficient navigable space for boat passage between the land and barge. The Pumping Barge will be held in place using spud piles in the same fashion as is currently in use.

### **Electrical Lines**

The current on-ground/submerged electrical lines (conductor cables) will be moved from Location 1 to Location 2 and laid on the ground from the Staging Yard down a steep embankment to the Pumping Barge on the lake (approximately 600 feet). The current electrical lines are of sufficient length (approximately 900 feet) and still in excellent condition to be utilized at Location 2. This area of the Park is currently and historically closed to the public and is on the other side of the water intake line for the County Park's water treatment plant which provides additional protection against public access. PG&E has verified their ability to serve a 600 horsepower load (approximately 900 kW) at the proposed location.

The electrical lines will be protected by fencing, sandbags near the water's edge, and signage. There will be contractor personnel on site 24/7 to guard the facility. Beyond the embankment, the cables will lie on the lake bottom until they reach the barge, where buoy protection will be provided. The electrical lines are specially designed for submarine applications with thick insulation and are not easily damaged. If they short out underwater, the breaker will trip, but electrical current will simply go to ground (the lake).

Relocation of the pumping barge and associated infrastructure is estimated to take approximately 3 months to complete. COMB is estimating beginning work in April or May of 2016.





Figure 2 Project Details for Location 2

### Environmental Permits

Prior to start of the project, COMB would provide Reclamation all appropriate permits for working within a waterway including, but not limited to:

- California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement
- U.S. Army Corps of Engineers Clean Water Act (CWA) Section 404
- California Regional Water Quality Control Board CWA Section 401



Figure 3 Current Staging Yard Components

### Environmental Commitments

COMB, or its designate, would implement the following environmental commitments to avoid any environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified will be fully implemented.

**Table 1 Environmental Commitments**

Resource	Protection Measure
Water Resources	Operation of the pumping barge will be consistent with all requirements for operation of the Cachuma Project. Specifically, barge pumping of (1) Water Right 89-18 accounts, (2) Minimum Pool (12,000 acre-feet), and/or (3) any fish account water shall be prohibited.
Biological Resources	Operation of the emergency pumping barge shall be consistent with the 2000 biological opinion on operation of the Cachuma Project (NMFS 2000).
	To avoid potential impacts to nesting migratory birds, a qualified biologist shall survey the access roads, staging area(s), and any other areas that will be subjected to vegetation clearing/trimming or grading, plus a 20-foot buffer around these areas, for ground-nesting migratory birds such as Killdeer. If any trees or shrubs need to be trimmed, they shall also be surveyed for nesting migratory birds prior to trimming. If an active nest is found during the survey(s), no ground-disturbing activities, trimming or removal of vegetation shall occur within 300 feet of the nest until the young have fledged or until the nest is no longer active.
	All equipment will be maintained in accordance with the manufacturer's directions so there will be no leaks of fluids such as gasoline, oils, or solvents.



Resource	Protection Measure
Various	The generator and all fuel repositories would be placed in containment vessels and follow established BMPs for spill containment.
	Construction and maintenance of the Staging Yard would include Stormwater BMPs for the prevention of spills and elimination of erosion throughout the duration of the project.
	All float sections and skiffs would be inspected for Quagga and Zebra mussels prior to mobilization to Lake Cachuma.

## Exclusion Category

516 DM 14.5 C (3): *Minor construction activities associated with authorized projects which correct unsatisfactory environmental conditions or which merely augment or supplement, or are enclosed within existing facilities.*

## Evaluation of Criteria for Categorical Exclusion

- |   |   |                                       |                                 |
|---|---|---------------------------------------|---------------------------------|
| 1. This action would have a significant effect on the quality of the human environment (40 CFR 1502.3).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 2. This action would have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA Section 102(2)(E) and 43 CFR 46.215(c)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 3. This action would have significant impacts on public health or safety (43 CFR 46.215(a)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 4. This action would have significant impacts on such natural resources and unique geographical characteristics as historic or cultural resources; parks, recreation, and refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (EO 11990); flood plains (EO 11988); national monuments; migratory birds; and other ecologically significant or critical areas (43 CFR 46.215 (b)). | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 5. This action would have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks (43 CFR 46.215(d)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 6. This action would establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects (43 CFR 46.215 (e)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |

- |  |   |                                       |                                 |
|--|---|---------------------------------------|---------------------------------|
| 7. This action would have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects (43 CFR 46.215 (f)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 8. This action would have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01) (43 CFR 46.215 (g)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 9. This action would have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species (43 CFR 46.215 (h)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 10. This action would violate a Federal, tribal, State, or local law or requirement imposed for protection of the environment (43 CFR 46.215 (i)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 11. This action would affect ITAs (512 DM 2, Policy Memorandum dated December 15, 1993).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 12. This action would have a disproportionately high and adverse effect on low income or minority populations (EO 12898) (43 CFR 46.215 (j)).  | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 13. This action would limit access to, and ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (EO 13007, 43 CFR 46.215 (k), and 512 DM 3)).   | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |
| 14. This action would contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act, EO 13112, and 43 CFR 46.215 (l)). | No<br><input checked="" type="checkbox"/> | Uncertain<br><input type="checkbox"/> | Yes<br><input type="checkbox"/> |

### NEPA Action: Categorical Exclusion

The Proposed Action is covered by the exclusion category and no extraordinary circumstances exist. The Action is excluded from further documentation in an EA or EIS.

## **Attachment A**

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### Reclamation's Cultural Resources Determination

**CULTURAL RESOURCES COMPLIANCE**  
**Division of Environmental Affairs**  
**Cultural Resources Branch (MP-153)**

**MP-153 Tracking Number:** 16-SCAO-062

**Project Name:** Cachuma Drought Contingency Plan Pumping Barge Relocation, Santa Barbara County

**NEPA Contact:** Rain Emmerson, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: Scott Williams, Archaeologist   
on behalf of Mark Carper, Archaeologist

**Date:** April 4, 2016

---

Reclamation proposes to approve the inclusion of the Cachuma Drought Contingency Plan Pumping Barge Relocation COMB) to relocate an existing pumping barge with an already installed emergency pumping system within Reclamation owned Lake Cachuma. This action constitutes an undertaking with the potential to cause effects to historic properties, assuming such properties are present, requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) as amended.

Based on historic properties identification efforts conducted by Lloyed (2007) and supplemental information provided by Reclamation (Fogerty and Noble 2016), which included an in-house background research, Reclamation consulted with, and received concurrence from, the State Historic Preservation Officer (SHPO) on a finding of no historic properties affected pursuant to 36 CFR §800.4(d)(1) on April 04, 2016. Consultation correspondence between Reclamation and the SHPO has been provided with this cultural resources compliance document for inclusion in the administrative record for this action.

This document serves as notification that Section 106 compliance has been completed for this undertaking. Please note that if project activities subsequently change, additional NHPA Section 106 review, including further consultation with the SHPO, may be required.

**Attachments:**

Letter: Reclamation to SHPO dated March 14, 2016  
Letter: SHPO to Reclamation dated April 04, 2016



# United States Department of the Interior

BUREAU OF RECLAMATION  
Mid-Pacific Regional Office  
2800 Cottage Way  
Sacramento, CA 95825-1898

IN REPLY REFER TO:

MP-153  
ENV-3.00

MAR 14 2016

CERTIFIED – RETURN RECEIPT REQUESTED

Ms. Julianne Polanco  
State Historic Preservation Officer  
Office of Historic Preservation  
1725 23<sup>rd</sup> Street, Suite 100  
Sacramento, CA 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Consultation for the  
Cachuma Drought Contingency Plan Pumping Barge Relocation, Santa Barbara  
County, California (Project #16-SCAO-062)

Dear Ms. Polanco:

The Bureau of Reclamation is initiating consultation under Title 54 USC § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800, for the proposed authorization of the Cachuma Operations and Maintenance Board (COMB) to relocate an existing pumping barge with an already installed emergency pumping system within Reclamation owned Lake Cachuma (Figure 1, enclosed). Reclamation determined that authorization of the proposed relocation constitutes an undertaking as defined in 36 CFR § 800.16(y) and involves the type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a). We are entering into consultation with you on this undertaking and notifying you of our finding of no historic properties affected. This is a California Drought-related project and Reclamation is, therefore, requesting an expedited review.

In 2014, COMB installed an emergency pumping system within Lake Cachuma to address ongoing drought conditions and receding reservoir levels. Installation of the emergency pumping system included: (1) clearing an existing access road and preparing a staging area (Staging Yard), (2) maintenance activities on the Intake Tower gates, (3) installation of a pumping station and power supply, (4) installation of a water transmission pipeline, and (5) pump operation. Part of the access to the staging area was along a section of the normally inundated historic San Marcos Road. Reclamation consulted with you for this undertaking, and received concurrence for a determination of no adverse effect to historic properties, on June 13, 2014 (Reference# BUR\_2014\_0612\_001). However, lake levels have continued to recede since operation began such that the pumping barge needs to be relocated in order to continue to draw water. COMB proposes to move the pumping barge further west towards deeper waters near Tequepis Point (refer to the enclosed project description for additional details and figures). The



staging yard will need to be moved as well and COMB is proposing a location near Tequepis Point adjacent to the existing water extraction and treatment plant. In addition, a power drop pole will need to be installed in the staging yard to provide power to the barge pump from the existing power grid. The staging yard will then include a back-up power generator, equipment storage container, and a contractor management trailer. A chain-link fence will be installed around the yard (an area of approximately 200 square feet). The power line will run above-ground from the staging yard, down the bank, into the water to the barge.

Reclamation has determined the area of potential effects (APE) for this undertaking includes the new staging yard, the new PG&E pole, and the power conduit which will run down the bank slope into the water to power the barge (Figures 2 and 2a, enclosed). The other project components such as the floating pumping barge and the power conduit will be within the lake. The vertical APE will be approximately 2-3 inches deep for placement of the staging yard conduit placement and 6 feet deep for the power pole. The legal description for the APE is Section 28, T. 6 N., R. 29 W., Mount Diablo Baseline and Meridian, as depicted on the Lake Cachuma, CA 7.5' U.S. Geological Survey topographic quadrangle.

In an effort to identify historic properties within the APE, Reclamation referred to the record search conducted in 2014 for the previous pump installation project. Reclamation also reviewed an inventory report (Lloyd 2007) prepared for a nearby water system upgrade project. This previous project encapsulated the entire peninsula within which the current project is situated. The Lloyd (2007) report is included on the enclosed CD for your reference. In addition, in February 2016, Mr. John Fogerty and Ms. Michelle Noble, Reclamation Archaeologists, conducted a survey of the currently proposed project APE (Field Report enclosed). No resources were identified during the survey. The proposed project area has been graded and graveled in the past, apparently as a result of the construction of the nearby water treatment facility. The area is used periodically for parking by facility personnel. While numerous sites are in the general area, none have been documented on the northern portion of the peninsula known as Tequepis Point, where the current project is proposed.

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Santa Ynez Band of Chumash Mission Indians as an Indian tribe who might attach religious and cultural significance to historic properties within the APE. Reclamation initially contacted Mr. Freddie Romero, Cultural Resources Coordinator for the Santa Ynez Band Elders Council, by telephone to inform him of the proposed project. In addition, Reclamation sent a letter to the tribe on February 18, 2016, inviting their participation in the Section 106 process, and requesting their assistance in the identification of sites of religious and cultural significance or historic properties that may be affected by the proposed undertaking pursuant to 36 CFR § 800.4(a)(4). Mr. Romero initially expressed concerns for the project, but his concerns were abated after a site visit with COMB Senior Resources Scientist, Mr. Timothy Robinson. Because of the depth of disturbance for the proposed power pole Mr. Romero requested, and COMB agreed, that a Tribal Monitor be on site during the excavation of the power pole hole. A final phone call was received by Mr. Romero on March 1, 2016, to inform Reclamation that by including the tribal monitor for the pole installation, the Santa Ynez Band had no further concerns for the proposed project. Should unanticipated historic properties be discovered, Reclamation will follow the procedures identified in 36 CFR § 800.13(b).



No historic properties were identified in the APE through the efforts described above and, pursuant to 36 CFR § 800.4(d)(1), Reclamation finds no historic properties affected for the undertaking. We invite your comments on the delineation of the APE and the appropriateness of the historic properties identification efforts for the undertaking. We are also notifying you of our finding of no historic properties affected. If you have any questions or concerns regarding this project, please contact Mr. Mark Carper, Archaeologist, at 916-978-5552 or mcarper@usbr.gov.

Sincerely,



Anastasia T. Leigh

Regional Environmental Officer

Enclosures – 6

References:

Lloyd, J.B.

2007 Cultural Resources Survey for the Lake Cachuma Water System Upgrade, Santa Barbara County, California. Prepared by Applied Earthworks, Inc. for Santa Barbara County Parks, on file with the Bureau of Reclamation, Sacramento, CA.  
Project No. 10-SCAO-080.

**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

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April 04, 2016

Reply in Reference To: BUR\_2016\_0321\_001

Anastasia T. Leigh  
Regional Environmental Officer  
United States Department of the Interior  
Bureau of Reclamation, Mid-Pacific Regional Office  
2800 Cottage Way, Sacramento, CA 95825-1898

**Re:** National Historic Preservation Act (NHPA) Section 106 Consultation for the Cachuma Drought Contingency Plan Pumping Barge Relocation, Santa Barbara County, California (Project #16-SCAO-062)

Dear Ms. Leigh:

On March 21, 2016 the Office of Historic Preservation received your letter requesting to initiate consultation for the above-referenced undertaking. The Bureau of Reclamation (Reclamation) is consulting pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations found at 36CFR Part 800 (as amended). Along with the consultation letter, the following documents were provided:

- Cultural Resources Survey for the Lake Cachuma Water System Upgrade Project, Santa Barbara County, CA (J.B. Lloyd, Applied Earth Works, November 2007). [CD copy]
- Reclamation MP-153 Cultural Resources Post Field Summary Record (M. Carper, March 2016)
- DRAFT- Emergency Pumping System Project at Lake Cachuma-Project Description Augmentation for Pumping Barge Location 2 (Cachuma Operation and Maintenance Board, February, 2015)
- Figure 1- Project Location Map and Figures 2 and 2a - Area of Potential Effects Maps

The currently proposed project is a relocation of an initial 2014 emergency pumping barge system installed by the Cachuma Operations and Maintenance Board (COMB) to address ongoing drought conditions and receding reservoir levels. Scope of work included clearing silt from an existing road; creating a staging area and Yard 1; conducting maintenance on the Intake Tower gates; adding a pump station with power; installing a water transmission pipeline and the pump operation. A determination of no adverse effect to historic properties was provided on June 13, 2014 (BUR\_2014\_0612\_001). As part of that review two National Register of Historic Places (NRHP) eligible properties were identified: the Tecolote Tunnel Complex with Intake Tower (Criterion C-engineering and construction); and a previously unrecorded section of the historic San Marcos Road with an associated concrete bridge--the road and bridge were treated as eligible for purposes of the initial project only.

The new scope of work includes moving and relocating the pumping barge; adding about 7000 feet of circa 36-inch HDPE transmission pipeline to connect two locations; installing anchor piles about every 100 feet up to the marina area of the Cachuma County Park then sinking the remaining line and holding it down with deadman anchors to allow for boat egress; creating a new, fenced staging Yard 2 and moving Yard 1 components including back-up generator, equipment storage container and contractor trailer to the new Yard 2 which is next to an existing water extraction and treatment plant situated on the north-east end of Tequepis Point.

A new PG&E power drop pole with an above ground power line supply to the barge will be placed in the new Yard 2 locale.

Reclamation has determined that the area of potential effects (APE) for this undertaking includes a new staging yard, a new PG&E pole location, and power conduit which will run down a bank slope into the water then to the barge adjacent to the staging yard. The vertical APE varies, with a depth of about 2-3 inches deep for placement of staging Yard 2 conduit and six feet deep for the power pole installation. The legal description was noted on Figure 1.

Reclamation's efforts to identify historic properties included referencing the previous installation record search (2014) and a cultural resources survey which covered all of Tequepis Point and subsumes this proposed project's APE and surroundings (see: Figure 1-2, J.B.Lloyd, Nov. 2007, p. 3). The report includes a pedestrian survey result and analysis and evaluation of resources. Further, on February 18, 2016 Reclamation archaeologists surveyed the area of the APE.

Overall, the project area has been thoroughly surveyed with 17 archaeological sites recorded within one mile of, or at, Tequepis Point. Three are located about a half mile from the proposed work area, but well to the south and east of the boundary of the APE. While the broader survey area is considered moderately to highly sensitive for the presence of archaeological resources, several pedestrian surveys of the north tip of Tequepis Point have not found any resources and the APE's western area is in a previously disturbed setting and its eastern margin is near the lake drawdown zone and erosion and scour from wave action is apparent. As no resources are known to exist and the prospect of intact sub-surface deposits appears to be minimal, it is concluded that there is a low probability of impacting any unknown buried historic properties.

Pursuant to regulations at 36 CFR §800.3(f)(2) and §800.4(a)(4), Reclamation identified the Santa-Ynez Band of Chumash Mission Indians as an Indian tribe who might attach religious and cultural significance to historic properties in the APE and invited them to consult. Mr. Freddie Romero, Cultural Resources Coordinator, expressed concerns and COMB agreed that a Tribal Monitor be on site during the excavation of the power pole hole. On March 1, 2016 Mr. Romero informed Reclamation that the Tribal Monitor's presence addressed concerns. Reclamation will follow 36 CFR § 800.13(b) procedures to manage any unanticipated discoveries, if necessary.

Reclamation is requesting review and comment on the delineation of the APE, efforts to identify historic properties, and is seeking concurrence with the effect finding for this undertaking.

Following staff review of the documentation, I have the following comments:

- Pursuant to 36 CFR 800.4(a)(1), I have no objections to the APE as defined
- Pursuant to 36 CFR 800.4(b), I find that Reclamation has made a reasonable and good faith effort to identify historic properties within the area of potential effects.
- Reclamation has determined that the proposed undertaking would result in no historic properties affected. Pursuant to 36 CFR 800.4(d)(1), **I do not object.**

Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800 (as amended). Should you require further information, please contact Jeanette Schulz at [Jeanette.Schulz@parks.ca.gov](mailto:Jeanette.Schulz@parks.ca.gov) or (916) 445-7031.

Respectfully,



Julianne Polanco  
State Historic Preservation Officer

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# SANTA BARBARA COUNTY OPERATIONAL AREA

## PROPOSAL TO THE GOVERNOR'S DROUGHT TASK FORCE

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February 8, 2017

This document was prepared at the request of the Governor's Drought Task Force in response to the ongoing drought emergency in Santa Barbara County.

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## PURPOSE

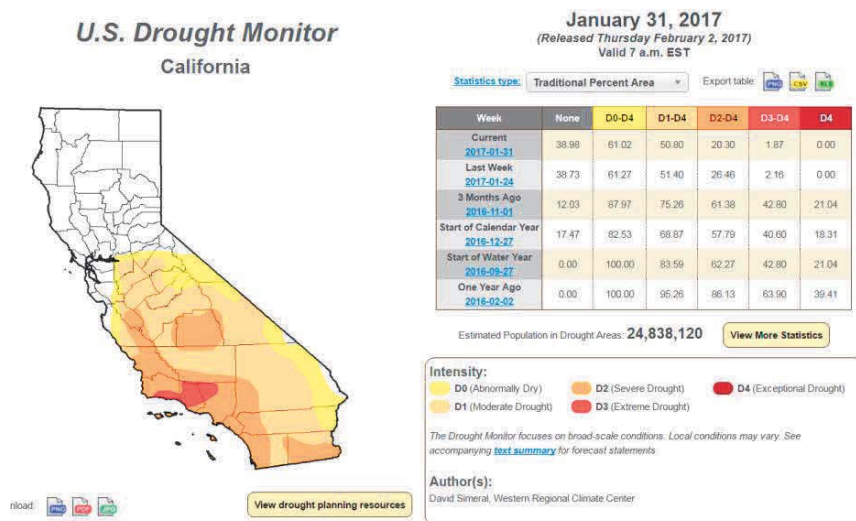
On January 17, 2014, Governor Brown proclaimed a drought emergency. He subsequently convened an interagency Drought Task Force to provide a coordinated assessment of the State's dry conditions and provide recommendations on current and future state actions. The response to this statewide disaster has required and will continue to depend on the combined efforts of all state agencies and the state's model mutual aid system. On December 12, 2016, the Governor's Drought Task Force convened a meeting in Santa Barbara County at the Emergency Operations Center, in order to bring together regional stakeholders with the objective of identifying and developing a list of regional priority projects that address both the immediate drought emergency and long-term water supply sustainability.

The Santa Barbara County Office of Emergency Management (OEM) as the Operational Area Coordinator was asked to facilitate the process of developing the priority project list with the intent of securing support from each of the region's water agencies. OEM convened an Action Working Group that met regularly to achieve the objectives of the Drought Task Force.

Following the development of the projects by the Action Working Group, XX water agencies and the County of Santa Barbara Board of Supervisors have resolved to support the effort and provide the Governor's Drought Task Force with this project list.

## BACKGROUND

Beginning in Water Year 2017, many parts of California have begun to emerge from a record-breaking drought, yet Santa Barbara County remains one of only two counties still experiencing extreme drought (see Image A).



Locally Lake Cachuma, which normally provides 80 percent of the drinking water to 250,000 people residing in the County's South Coast, as well as 80,000 residents downstream of the dam who rely on water rights held in the lake for drinking and agriculture needs, is at less than 15 percent of capacity and groundwater basins throughout the County are showing signs of stress. The

severe drought conditions that persist in Santa Barbara County continue to threaten the region's ability to maintain public health and safety for residents as we enter a sixth year of extreme drought. Communities throughout the County have become reliant on the State Water Project (SWP), as well as local groundwater supplies.

Although water agencies across Santa Barbara County have done much to diversify and secure their water supply sources over the past 30 years, this drought has made clear the need to further develop drought

resilient local water sources. Further, while simultaneously enhancing and securing existing supply sources and infrastructure, many communities in the County have implemented strict conservation goals and measures to withstand the drought. While communities continue to conserve, with some achieving conservation levels as high as 45 percent, and others also achieving the State's per capita goals of 55 gallons per person per day (GPDC); conservation is only one part of a holistic approach to withstanding this drought and future droughts.

It has also become increasingly apparent that the strain on the rate payers has been significant during this drought due to water agencies' decreased revenues combined with the need for emergency drought-related projects and water purchases. Due to all of the aforementioned factors, the region's water agencies have come together to develop a diverse set of projects that provide new water supplies for agencies across the County, increase water supply reliability, and take prudent steps to secure infrastructure critical to our ability to continue to safely deliver potable water during the current emergency.

Attached is the list of projects that has been developed and supported by local water agencies. These projects are grouped into two categories: Additional Water Supplies and Protection of Existing Resources.

#### ADDITIONAL WATER SUPPLIES

Santa Barbara County water agencies have identified the following three regional projects that will help to secure additional water for the region. These projects will provide drought relief and future drought mitigation.

1. Reacquisition of suspended Santa Barbara County Table A Water
2. Recommissioning of the Charles E. Meyer Desalination Plant in Santa Barbara
3. A comprehensive reuse program for Goleta and Carpinteria Valley Water Districts

The acquisition of suspended Table A Water will provide 12,214 AF of water to Santa Barbara County water agencies. The recommissioning and expansion of the desalination plant has the potential to provide up to an additional 10,000 AF of water annually. The comprehensive water reuse program, which includes projects designed for the service areas for Goleta and Carpinteria Water Districts, have the combined potential to add up to 6,100 AF of additional water annually.

It is important to note that desalination and water reuse projects are less impacted by drought and provide local sustainable supplies. Reacquisition of Table A Water, initially allocated to Santa Barbara County, will provide increased reliability as a drought buffer to Santa Barbara County when SWP allocations are less than 100%.

#### PROTECTION OF EXISTING RESOURCES

Santa Barbara County water agencies have identified the following regional projects that will protect the existing water supply in the region. All of these projects aim to ensure that existing supplies are clean, safe, and reliable for delivery to residents.

1. Removal of Hexavalent Chromium from groundwater to regain local supply reliability
2. Maintain the temporary emergency pumping system at Lake Cachuma
3. Construct an interagency intertie to facilitate emergency health and safety-related water transfers throughout the South Coast

While these projects do not provide additional water supplies, they either ensure that the delivery of current supplies will continue uninterrupted, or provide treatment to satisfy health and safety concerns for the delivery of potable water. Failure to proceed with these projects will either require additional new water sources from elsewhere, place additional strain on already scarce shared resources, or result in an inability to supply water to residents and critical facilities.

## CONCLUSION

Santa Barbara County has a long history of facing cyclical droughts of varying severity and will continue to confront worsening drought emergencies exacerbated by climate change. The intent of the Action Working Group and the following proposed projects is to provide water resiliency, climate change adaptation, and a proactive, long-term approach to future drought mitigation. A water outage/shortage is a real concern that could take place in the near-term. A failure of the Temporary Emergency Pumping System, a State Water Project mechanical failure or an operational delay in the startup or a failure at the Desal facility could all create a water crisis. Therefore, in addition to developing this list of priority projects, the Action Working Group has collaborated on a Water Outage/Shortage Contingency Plan and a tabletop exercise simulating a water outage/shortage scenario is scheduled to take place by March 2017. These tabletop exercises will provide input for further contingency planning focused on maintaining water service across communities impacted by the drought over the next 6-24 months.

# SUMMARY LIST OF PRIORITY PROJECTS

Project	Type	Acre Feet Increase	Estimated Cost	Completion Time	Regional Benefit	Regional Support
Reacquisition of Suspended Table "A" Water	Additional Water Supply	Up to 12,214 AF	\$36 million	12-18 months	All	All
Recommissioning and Expansion of Regional Desalination Facility	Additional Water Supply	Up to 10,000 AF/Y	\$110 million approx. (\$50 million expansion)	12-18 months	All	Most
Water Reuse - Goleta	Additional Water Supply	2,000-5,000 AF/Y	\$1 mil. pilot. \$100-150 mil. final	5-10 years	All	All
Water Reuse - Carpinteria	Additional Water Supply	1,100 AF/Y	\$20 million	3 years	All	All
Treatment Facilities for the Removal of Hexavalent Chromium from Groundwater	Protection of Existing Resources	Restores 2,400 AF/Y	\$14 million	3 years	Most	All
Temporary Emergency Pumping System at Lake Cachuma	Protection of Existing Resources	N/A	\$2 million+ (costs vary, option to purchase or lease)	Immediate	South Coast	All
Interagency Intertie Project between Goleta and Santa Barbara	Protection of Existing Resources	N/A	\$5 million	12 months	South Coast	South Coast

## Reacquisition of Suspended Table "A" Water

### **PROJECT DESCRIPTION:**

To address water supply reliability in Santa Barbara County, the Central Coast Water Authority (CCWA) is proposing to acquire 12,214 acre-feet (AF) of State Water Project (SWP) Table "A" water from the State of California Department of Water Resources (DWR). This project will provide for an overall increase in water supply and will serve as a critical drought buffer.

### **REGIONAL BENEFIT:**

CCWA member water purveyors that have agreed to participate in the purchase of this water, at this date, represent the South Coast, the Santa Ynez Valley and the Santa Maria Valley. In addition, terms of an agreement approved between CCWA and the Santa Barbara County Flood Control and Water Conservation District (County) specify that the use of this water be offered to other CCWA participants throughout the County when available.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

This water provides additional high quality water for replenishment of the Santa Maria Groundwater basin; serves to supply additional water to areas in the Santa Ynez Valley in dire need due to Hexavalent Chromium in the groundwater supply; supplements water supplies to the South Coast; and increases deliveries of water to Lake Cachuma for subsequent delivery to the South Coast.

### **FUNDING CHALLENGES & POTENTIAL SOLUTIONS:**

To reacquire this suspended Table "A" water all-back payments will be due both to DWR (approximately \$30 million) and the County (approximately \$6 million). It is estimated that the purveyors that are acquiring this additional Table "A" water will need to raise rates up to an additional ten percent to sustain the financing. Forgiveness of a portion of the back payments or repayment of the back payments from another source, such as grant funding, would reduce the burden on local rate payers.

### **DISCUSSION:**

As a result of past contractual arrangements and litigation, the County is in the unique position of having the first right of refusal to acquire the last remaining quantity of SWP Table "A" Water available in California. In 1961, the County contracted with DWR for approximately 57,000 AF of SWP water. When the management of the water was transferred from the County to the County water purveyors in the early 1980's, the purveyors desired to acquire only approximately 45,000 AF. Payment for the difference in water (12,214 AF) that the County originally contracted for and the amount the purveyors desired was suspended. To reacquire this suspended Table "A" water all-back payments will be due both to DWR (approximately \$30 million) and the County (approximately \$6 million).

Due to environmental and operational constraints in the Sacramento Delta, the percentage of water available for allocation to the SWP contractors has steadily declined over the last ten years. This has resulted in the actual amount of water delivered to SWP contractors being significantly reduced. Acquiring this 12,214 AF will substantially restore the dependability of the SWP water supply to near

levels originally anticipated when the purveyors anticipated their needs in 1981. This project will not increase the size of the conveyances or the flow capacity of the system to deliver water in excess of the original design of 45,000 AF per year. The reacquisition of the Suspended Table "A" water will allow the system to more consistently carry up to the full-capacity of the existing system.

CCWA represents the County water purveyors which deliver SWP water. The County is the contracting party with DWR. CCWA and the County have negotiated the deal points of a term sheet to proceed in discussions with DWR to acquire this water. These discussions will begin in late January of 2017. Transfer of the water will require an amendment of the contract between DWR and the County. DWR has determined an EIR will be required for this project. It is estimated that the time required to satisfy this requirement will be eighteen months.

Funding the back payments (approximately \$36 million) will require financing by the purveyors that opt to receive this water. It is estimated that the purveyors that are acquiring this additional table "A" water will need to raise their rates up to an additional ten percent to sustain the financing.

Acquisition of this water will require an amendment to the State Water Contract between the County and DWR. This amendment will require the approval of the Board of Directors of the County Flood Control and Water Conservation District (Board). While some members of the community are opposed to the SWP and actively participated in the recent discussions regarding this acquisition at the Board meetings, the Board ultimately directed staff to proceed with negotiating the terms of acquisition with both DWR and CCWA.

CCWA member water purveyors that have agreed to participate in the purchase of this water represent the south coast, the Santa Ynez Valley and the Santa Maria Valley. Terms negotiated between the County and CCWA specify a commitment and pricing structure to facilitate water transfers between purveyors in the County. Interagency transfers within the County are not subject to provisions requiring the payback of water at a future date. Interagency transfers of water with water purveyors outside the County are subject to provisions requiring payback of water at a future date. For example, some South Coast purveyors have a payback requirement (water debt) that meets or exceeds the purveyor's yearly allocation of SWP water. Water acquired from other purveyors within the County could be used to meet that water debt without an obligation from the borrowing purveyor to return the water in the future. As such, additional Table "A" water available to water purveyors within the County is a valuable asset that can provide the maximum flexibility for meeting water supply needs for all the CCWA member water purveyors.

### **IMPACTS:**

Fiscal – Agencies that acquire this water will need to incur a rate increase of between five and ten percent to pay the back debt on this water (approximately \$36 million total).

Operational – No operational impacts anticipated.

Legal – Challenges to both the contract amendment between the County and DWR and the environmental document may occur.

Labor – No impact to Labor is anticipated.



Sociopolitical – Historically, some opposition exists to the SWP.

Policy – Not aware of any policy conflicts that this acquisition incurs.

Health and Safety – High quality water helps sustain basin recharge, offsets issues associated with high Hexavalent Chromium in the Santa Ynez Valley, and provides additional water to Lake Cachuma and subsequently to the South Coast. This project will provide for an overall increase in water supply (drought buffer).

Environmental – An environmental document is required.

Permitting Status – No construction is required.

**ACTIONS NEEDED:**

The County and DWR will need to engage in the most efficient and effective process to transfer this water to the County, due to the critical nature of securing this water supply as a drought buffer. The Board will need to approve a contract amendment with DWR to transfer this water to the County and funding options, including low cost financing and grants along with additional sources, need to be considered to reduce the impact on local rate payers.

## Recommissioning and Expansion of Charles E. Meyer Desalination Plant

### **PROJECT DESCRIPTION:**

The regional Charles E. Meyer Desalination Plant (Desal Plant) was originally put into service in 1991 to provide a much needed source of drinking water for Santa Barbara County. The Desal Plant was constructed and permitted to a capacity of 10,000 AFY to serve as a regional facility for Santa Barbara's South Coast water agencies. The Desal Plant was deactivated in 1992, after heavy rainfalls filled local surface water reservoirs. The regional partners withdrew their interests from the Desal Plant in 1995, and the Desal Plant was put into long term storage in 1997.

The current Desal Plant project consists of reactivating the Desal Plant to a capacity of 3,125 AFY, with water deliveries to the City of Santa Barbara being anticipated by April 2017. Design is underway for a transmission pipeline that will primarily serve the City of Santa Barbara, but also provides future opportunities to convey water to other South Coast water agencies. This transmission pipeline would make the Desal Plant a regional facility, allowing it to diversify the region's water supply mix and provide reliable drinking water supplies to Santa Barbara, Montecito, and Carpinteria. The current Desal Plant reactivation project is designed with the ability for the Desal Plant's capacity to be incrementally increased, depending on regional water demands. The Desal Plant size and approximate cost options are:

- \$70M for the current project, with water production of 3125 AFY.
- \$10M for construction of a transmission pipeline sized to convey 10,000 AFY (sized for future Desal Plant expansion).
- \$30M to increase the Desal Plant's capacity to 7,500 AFY.
- \$40M to increase the Desal Plant's capacity to 10,000 AFY.

### **REGIONAL BENEFIT:**

The Desal Plant could potentially be expanded to serve as a regional water supply facility, indirectly benefiting the South Coast communities, serving Santa Barbara, Montecito, and Carpinteria.

Regionalizing the Desal Plant could be accomplished through approval of water supply agreements and exchanges with South Coast water agencies, communities receiving State Water, and communities receiving water from the Santa Ynez River.

The Desal Plant is permitted, and construction is underway for a facility that will produce 3,125 AFY. The Desal Plant is designed for expansion to 7,500 and 10,000 AFY. Expansion would enable the Desal Plant to be converted into a regional water facility, where it would diversify the South Coast's water supplies and provide reliable drinking water supplies to Santa Barbara, Montecito, and Carpinteria.

In support of these regional opportunities and community benefits, the City of Santa Barbara is currently designing a transmission pipeline to connect the Desal Plant to the City's water distribution system and the South Coast Conduit, which is owned by the U.S. Bureau of Reclamation and conveys water to other

South Coast water agencies. The transmission pipeline is being sized to convey up to 10,000 AFY of desalinated water. The transmission pipeline has the potential to be jointly used for a future direct potable reuse project, serving as infrastructure for both desalinated and potable reuse water supplies.

The Desal Plant supports key objectives from the Santa Barbara County 2013 Integrated Regional Water Management Plan by augmenting water supplies, protecting groundwater supplies, and improving emergency preparedness for the South Coast. The South Coast's surface water supplies are conveyed through tunnels that are miles long and subject to catastrophic failures following an earthquake. In contrast, the Desal Plant is being constructed to current seismic codes, and will have a more secure conveyance system than the South Coast's surface supplies, especially after a large earthquake. The Desal Plant has the unique opportunity to serve as a regional water supply facility, providing safe and reliable drinking water supplies to the nearly 250,000 people living on the South Coast.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

While the near-term trigger for reactivating the Desal Plant is the current drought situation, there are also long-term risks to the reliability of the region's current water supplies to consider. These reliability concerns include a reduced yield from existing surface water supplies due to sedimentation in reservoirs, forthcoming environmental requirements for the Cachuma Project, and potential risks due to climate change. The region's water supplies are also at risk in the event that surface water supplies are interrupted due to conveyance failure through the tunnels. For example, a seismic event could interrupt flow to Tecolote Tunnel, which conveys State Water and Cachuma Project water to over 250,000 people, resulting in an outage of a lifeline water source and a catastrophic water supply emergency.

The Desal Plant could potentially supply critical drinking water to the South Coast region, should a catastrophic interruption in water supplies occur. To be prepared for an emergency situation and be able to provide regional drinking water supply, the City of Santa Barbara is pursuing the construction of a transmission line that would connect the Desal Plant with the City's water distribution system and the South Coast Conduit, which is a U.S. Bureau of Reclamation facility.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

The capital cost for the regional Desal facilities is as follows:

- \$70M for the current project, with water production of 3125 AFY.
- \$10M for construction of a transmission pipeline sized to convey 10,000 AFY (sized for future Desal Plant expansion).
- \$30M to increase the Desal Facility's capacity to 7,500 AFY.
- \$40M to increase the Desal Facility's capacity to 10,000 AFY.

The City of Santa Barbara is actively seeking opportunities for grant funding to offset the cost of the initial reactivation project (3125 AFY), the transmission pipeline to bring water to the South Coast Conduit, and future expansion of the desalination facility (up to 10,000 AFY). However, the largest opportunity for assistance, Proposition 1 (DWR Desalination Grant Program), has yet to be made available, and the grant guidelines have yet to be released. When Proposition 1 was passed in November

2014, the City of Santa Barbara was encouraged that almost \$100 Million was authorized for desalination projects. Now more than two years later, there appears to be no progress to disperse these funds, despite the urgency with which voters approved Proposition 1.

The City is urging the State to make the eligibility criteria for Proposition 1 funds based on project commencement dates that occurred after approval of Proposition 1 by voters, as opposed to projects that will begin after grant guidelines are released. Given the urgent need to address drought impacts and provide emergency water supply, the City could not wait for grant guidelines to be released before moving forward with the initial Desal Plant project. As a result, the City of Santa Barbara is seeking assistance for the financial burdens caused by the drought, and is asking the State to make eligibility for funding based on projects that commenced after Proposition 1 was approved by voters.

### **DISCUSSION:**

The City of Santa Barbara, like many agencies in Santa Barbara County, is currently experiencing multi-year drought conditions. The City's adopted 2011 Water Shortage Contingency Plan outlines the stages of drought and actions to achieve planned demand reductions. The City first declared drought in February 2014, and is currently in a Stage 3 Drought condition which is the most critical stage. The current Stage 3 Drought water use regulations require a 40% reduction from normal demands.

The City's drought planning is based on its adopted 2011 Long Term Water Supply Plan (LTWSP), which uses the 1947-52 period as the design drought. While the current drought is drier and more severe than the previous drought of record, the City has adaptively managed its supplies based on the policies in the LTWSP. During times of drought when surface water supplies are diminished, the City relies on extraordinary conservation, increased groundwater pumping, State Water, and desalination as drought supplies.

The original Charles E. Meyer Desalination Plant was completed in March 1991 and put into long-term standby mode in 1997 at the end of the last significant multi-year drought. The Desal Plant is included in the LTWSP as a recognized drought water supply to ensure the community continues to have sufficient uninterrupted drinking water supplies during critical drought periods.

In response to extreme and prolonged drought, Santa Barbara City Council awarded a Design Build Operate contract on July 21, 2015 to IDE Americas, Inc. to reactivate the Desal Plant to provide up to 3,125 AFY of drinking water. Onsite construction for the Desal Plant reactivation project started in September 2015, and desalinated water deliveries to the City's water distribution system are expected by April 2017.

The City's permits allow the Desal Plant to be operated as a regional facility, and produce up to a capacity of 10,000 AFY. In support of regional opportunities, the City of Santa Barbara is pursuing the construction of a transmission line that would connect the Desal Plant with the South Coast Conduit, which serves other neighboring water agencies. Reactivation of the Desal Plant will allow the facility to serve as a regional water supply. The City is also considering possible expansion of the Desal Plant, in order to serve regional water supply needs, especially in the event of a South Coast-wide disaster.

### **IMPACTS**

Fiscal – The estimated capital cost for the regional Desal facilities is as follows:

- \$70M for initial Desal Plant reactivation project (3,125 AFY capacity)
- \$10M for the conveyance project (sized for future Desal Plant expansion)
- \$30M for Desal Plant expansion to 7,500 AFY. Costs to be refined in Spring 2017
- \$40M for Desal Plant expansion to 10,000 AFY. Costs to be refined as needed

The annual operating costs for a 3,125 AFY Desal Plant are \$4.1M in full production and \$1.5M in standby mode. The annual operating costs for an expanded facility will be determined in Spring 2017.

Environmental and Permitting Status – All required permits have been received for the Desal Plant project. The documentation of environmental assessments and determinations are found in the Final Environmental Impact Report and State Revolving Fund loan application (Project Number 4210010-005C).

Sociopolitical – All Santa Barbara water rate payers have been impacted by increased water rates resulting from the drought, and approximately 25 percent of the Santa Barbara community is of low and moderate income (American Community Survey).

Operational – N/A.

Legal – Water Supply or Exchange agreements would need to be negotiated with interested regional participants.

Labor – N/A.

Policy – Addressed above.

Health and safety – Addressed above.

**ACTIONS NEEDED:**

The City of Santa Barbara and its regional partners are seeking assistance for the financial burdens caused by the drought, and are requesting that the State make eligibility for funding based on projects that commenced after the Proposition 1 Desalination Grant Fund Program was approved by voters.



## Comprehensive Water Reuse - Goleta

### **PROJECT DESCRIPTION:**

This project would develop additional drought proof water supplies by treating recycled water to a potable standard. The proposed Direct Potable Reuse (DPR)/Indirect Potable Reuse (IPR) recycled water project would provide between 2,000-5,000 acre feet of new water supply that would further diversify the District's water supply portfolio, and support management of the groundwater basin. Phase 1 of the project, a Recycled Water Feasibility Study, is already underway. Under Phase 2, a proposed pilot project would test and demonstrate the use of new technologies to increase the amount of available potable drinking water. Results of the pilot project would inform the design of a final project under Phase 3.

### **REGIONAL BENEFIT:**

Prolonged drought conditions and unseasonably warm, dry weather have resulted in increased customer demand while preventing the replenishment of shared water supplies in the region. As drought conditions persist, Lake Cachuma has been reduced to a conveyance facility, with a zero allocation for two years in a row. This has forced water suppliers to rely on alternative sources of supply and demand reduction programs to meet customer demand during drought. Water supply on the South Coast is further challenged by delivery capacity and reliability issues, and forthcoming environmental requirements for the Cachuma Project.

A project to expand the use of recycled water by the District would develop alternative sources of local supply that are reliable and unaffected by drought, and reduce the District's need to rely on Lake Cachuma and State Water to meet customer demand. Expanding and ensuring the continued delivery and use of recycled water benefits the entire Santa Barbara County region as it reduces reliance on imported water, and increases supply reliability. The IPD/DPR project envisioned by the District could ultimately result in the production and utilization of an additional 2,000 – 5,000 AF per year of drought-proof long-term water supplies.

The project involves a partnership with Goleta Sanitary District (GSD), and provides a multi-agency benefit by reducing ocean discharge. This project will also support key objectives from the Santa Barbara County 2013 Integrated Regional Water Management Plan; augmenting water supplies; protecting groundwater supplies; and improving emergency preparedness.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

Recycled water plays a critical role in drought planning since it remains available even during periods of drought. Every drop of recycled water used conserves potable water supplies for drinking, health and safety.

Increasing treatment of recycled water to potable standards also increases the amount of reliable local supply available to the District during emergencies. Currently, the region's water supplies are at risk in the event that surface water supplies are interrupted due to conveyance failure through the tunnel system. For example, a seismic event could interrupt flow to the Tecolote Tunnel, which conveys State Water and Cachuma Project water to over 250,000 people on the South Coast, and could result in an interruption of service to customers. None of the agencies have storage capacity large enough to store more than a

week's supply of water. The District's would depend on reservoir storage capacity, which is limited to only a few days of drinking water supply, and the groundwater basin. The proposed IPR/DPR project would increase the amount of water available should a catastrophic interruption in water supplies occur.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

As part of the District's efforts to develop additional water supplies, on November 10, 2015 the Board of Directors authorized the acquisition of State grant funding and directed staff to complete a Recycled Water Feasibility Study (RWFS). The RWFS is underway and is anticipated to be completed in April. The study evaluates how the District could expand the use of recycled water within its service area.

- The District is seeking \$500,000 in grants for an estimated \$1 million pilot project at GSD, with a District match of up to \$500,000.
- The cost estimates for the final project range from \$100,000,000 up to \$150,000,000.

This project is eligible for Federal and State grants, including Proposition 1 funding, and Integrated Regional Water Management Plan.

### **DISCUSSION:**

Since 1995, the District has served recycled water for irrigation and restroom facilities through a partnership with the GSD. The District serves approximately 1,000 acre feet per year (AFY) to 30 customers in the Goleta Valley, representing 7% of District supplies. Recycled water is not currently treated to potable standards and must be delivered through a completely separate system of purple pipe. Due to regulations limiting the use of recycled water as currently treated, and constraints in the existing recycled water distribution system, the District is only able to utilize a portion of total capacity of the existing recycled water treatment plant. Given the cost and difficulty of moving recycled water through a separate system, the industry has increasingly focused on how improvements to recycled water treatment technologies can bring recycled water to potable water standards.

The proposed recycled water project is a three-phase project that includes development of a RWFS (underway), a pilot project, and construction of a full-scale project. The proposed pilot project would test and demonstrate the use of new technologies to increase the amount of available potable drinking water, and inform the design of a final project.

IPR uses highly treated recycled water to replenish groundwater basins, while DPR treats the water to a drinkable standard and uses existing potable water infrastructure for distribution to customers. There is increasing interest in IPR and DPR across the State, though only IPR is currently on track to be permitted within the short term in CA. Treating recycled water to even higher standards so its use can be expanded and prioritized to the highest purpose is a common feature of the next generation of recycled water projects.

Orange County is currently producing approximately 100 MGD via IPR for agricultural and industrial customers and to buffer its aquifer against saltwater intrusion. The City of San Diego is currently designing a 30 MGD reuse project that will mix purified water with surface water supplies in reservoirs. DPR is not currently allowed by regulations, but it is the subject of ongoing research and consideration by

regulators. In 2016, the State published its report on the feasibility of DPR, but final regulations are not anticipated before 2020.

### **IMPACTS:**

Fiscal – Cost estimates are being produced as part of the RWFS, but a final project would likely require significant funding in the form of grants, matching funds, and loans.

Operational – Depending on the project selected, there may be issues with blending and corrosion that would need to be addressed.

Legal – Depending on the project selected, and the regulations and permitting requirements, there may be legal considerations.

Labor – A final project would require additional expertise to operate and maintain.

Sociopolitical –The State is currently developing regulations and permitting requirements.

Policy – A final project would need to be evaluated against the potential of other alternative water supply projects such as stormwater capture.

Environmental – Environmental review would depend on the proposed project.

Interagency – The project builds on an established interagency partnership between GWD and GSD. This project would also help GSD comply with State mandates to be zero discharge.

### **ACTIONS NEEDED:**

The District and its regional partners are seeking assistance for the financial burdens caused by the extended drought on the region, and requests that the State give funding preference to Santa Barbara County projects that are addressing drought related water supply reliability issues. Funding is needed for the pilot study, and subsequent final project to provide additional drought proof water supplies and further diversify the region's supply portfolio.

## Comprehensive Water Reuse - Carpinteria

### **PROJECT DESCRIPTION:**

This project develops additional drought proof water supplies by treating secondary sewer effluent to a potable standard. This project provides a new source of water supply, and diversifies the water portfolio for the Carpinteria Valley Water District (CVWD). The Recycled Water Indirect Potable Reuse (IPR) project will treat approximately 1100 acre feet per year (AFY) at the Carpinteria Sanitary District (CSD) treatment plant using full advanced water treatment. The finished purified water will then be stored in the Carpinteria Groundwater Basin for potable use later. In conjunction with other reuse projects currently proposed along the South Coast of Santa Barbara County this project will add a drought proof sustainable water supply to the region.

### **REGIONAL BENEFIT:**

Water supply for the South Coast of Santa Barbara County is under stress due to the historic drought, limitations on State Water Project related to delivery capacity and reliability, and forthcoming environmental requirements for the Cachuma Project. This water supply stress has become a driver for Carpinteria Valley Water District to begin developing an IPR Project to provide a new sustainable water supply to the region.

While the Carpinteria IPR project is not proposed to serve other agencies outside the Carpinteria Valley directly, it will improve regional water supply reliability and create opportunities for exchange, among agencies on the South Coast, communities receiving State Water, and communities receiving water from the Santa Ynez River.

The IPR Project will also support key objectives from the Santa Barbara County 2013 Integrated Regional Water Management Plan; augmenting water supplies; protecting groundwater supplies; and improving emergency preparedness; and protecting ocean water quality.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

While the near term drivers for the project are the current drought and the likely reduction of existing water supplies in the near future, there are also long term risks to the reliability of the region's current water supply. Currently, the region's water supplies are at risk in the event that surface water supplies are interrupted due to conveyance failure through the existing conveyance system. This conveyance facility is a weak link in the water supply system and failure of the pipeline or tunnel could cause large scale water outages to Carpinteria Valley Water District customers and the South Coast. The IPR project provides a local supply that does not rely on the conveyance facilities. For example, in the event of a catastrophic interruption, the IPR project and local groundwater supplies could provide a reliable local source capable of meeting minimum health and safety needs.

Additionally, when regulations allow, the IPR project could be converted to a Direct Potable Reuse project that would provide even more water supply flexibility in such an event. This project also supports mutual aid to Montecito Water District because CVWD has the ability to deliver its local water supply to Montecito Water District both through existing interties and the South Coast Conduit.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

The capital cost for the Carpinteria Indirect Potable Reuse Project facilities is as follows:

- \$4.0 Million Planning, Design, CEQA and Permitting
- \$17.1 Million for Facilities Construction
- Total Project Cost \$21.1 Million

The CVWD who is the lead agency for the Carpinteria Valley IPR project is in the process of developing a grant application for funding through the Recycled Water Funding Program funded by Proposition 1. It is our understanding the grant funding under this program is under great demand and that we are unlikely to acquire a grant from this funding source at this time. However, Carpinteria Valley Water continues to look for grant funding opportunities to help fund the project. CVWD is also looking to utilize State Revolving Fund low interest loans to fund the capital portion of the project. Since Carpinteria's water rates are some of the highest in the County, many residents of Carpinteria have expressed concern about the impact on water rates of the project. The challenge is to balance the cost of this new water supply with the reliability of the overall water supply. There are several opportunities that CVWD is looking into that may offset the expense of the IPR project while improving the water supply reliability.

### **DISCUSSION:**

Santa Barbara County is currently suffering through the most intense drought on record for this area. The result of this drought is that Lake Cachuma, a major water supply for the Santa Barbara South Coast, has become depleted and project members have received no water allocation for two years. This is compounded by the fact that State Water project deliveries have been limited to an average of 41% of total allotment over the drought thus far. In Carpinteria the water district has heavily depended on the local groundwater basin to make up for the lack of other water supplies. Like Cachuma, the groundwater basin has also suffered depletion from increased extraction and minimal recharge over the past five years. The basin water level is nearing a fifty year low and showing signs of overdraft and the threat of seawater intrusion. Even with rain finally falling locally this year it is likely that the Cachuma Project safe yield will be reduced for the foreseeable future due to forthcoming environmental requirements for the Cachuma Project. This will apply pressure on an already depleted groundwater basin in Carpinteria.

In 2014, at the height of the drought, CVWD decided to begin studying the potential for both a regional recycled water project and a local recycled water project. After determining the need for an additional reliable water supply, CVWD, Carpinteria Sanitary District and the City of Carpinteria commissioned a facility level study to determine what the best option for developing a project would be. With the assistance of The State Water Resources Control Board Recycled Water Planning Grant Program, the Carpinteria Recycled Water Facilities Plan (RWFP) was completed in May of 2015. The study concluded that an indirect potable reuse project was the most beneficial to the water users in Carpinteria Valley. CVWD is currently completing a funding analysis, public outreach and technical analysis for the project.



The RWFP was developed to support decision making regarding building a Recycled Water Project in Carpinteria in order to mitigate water supply shortages. The Plan identified various uses for recycled water in Carpinteria Valley. Both non potable reuse (NPR) and indirect potable reuse were considered in the Plan. The RWFP found that the preferred project would be a treatment plant with Full Advanced Water Treatment (AWT) for use as an indirect potable water supply stored in the Carpinteria Groundwater Basin.

CVWD and CSD have contemplated cooperatively developing a Recycled Water Project as described in "Alternative 3C" of the RWFP. The Recycled water treatment would occur at the CSD Treatment Plant using AWT, including microfiltration, reverse osmosis and advanced oxidation process. It is estimated that the proposed project would yield about 1100 acre feet per year of water for reuse. It is assumed that the required additional treatment equipment for AWT would be located on the existing CSD treatment plant property. The finished water would be pumped into a proposed transmission pipeline connected to two groundwater injection wells located about one and a quarter miles away. The injected water would remain in the groundwater basin between two and six months at a minimum. The Water District would recover the water after this period through its existing groundwater production facilities for use as potable water.

Required new facilities include an advanced water treatment plant, pumping station, one and a quarter miles of transmission main and two injection wells with flushing tanks. The Project analysis is currently in the final stages of a funding plan, outreach plan and technical analysis. In June of 2017 the Boards of Carpinteria Valley Water District and Carpinteria Sanitary District will decide if they would like to move forward with the project. If they conclude the project is needed, then it is projected that the entire project including construction and startup will be completed by January of 2020.

### **IMPACTS:**

Fiscal – CVWD believes that the IPR project will have impacts on water rates for a period of 10 years; however, CVWD is evaluating ways to minimize any rate impacts including utilization of grant funding, public private partnerships, interagency partnerships and debt restructuring.

Operational – Operational impacts for both CVWD and CSD are minimal.

Legal – Potential legal complexity exist with respect to using the Carpinteria Groundwater Basin for storage of purified recycled water. The District is working to develop a steering group of local groundwater stakeholders to assist it with this issue.

Labor – The project will require 2 to 3 FTEs to operate and maintain the project. This is figured into the unit price of water.

Sociopolitical – There are no known negative sociopolitical impacts that would result from this project. This project will provide a more secure water supply for the industry and agriculture potentially resulting job stability and economic growth in the area.

Policy – The project is supported by policies from the State level to the local level. No known conflicts in policy with this project exist.

Environmental – Environmental impacts have not been analyzed yet, however CVWD believes that any environmental impacts will be mitigatable. CEQA analysis will begin in June of 2017.

Interagency – CVWD is working with the Carpinteria Sanitary District and the City of Carpinteria to develop the project to maximize the benefits to each agency. CVWD is interested in working with other local water agencies to expand the water supply benefits of the project.

**ACTIONS NEEDED:**

The Carpinteria Valley Water District and its regional partners are seeking assistance for the financial burdens caused by the extended drought on the region, and requests that the State give funding preference under any available funding programs to Santa Barbara County Reuse Projects that are addressing drought related water supply reliability issues.

## Treatment Facilities for the Removal of Hexavalent Chromium from Groundwater

### **PROJECT DESCRIPTION:**

The proposed Treatment Facilities Project would treat naturally occurring Hexavalent Chromium (Cr6) and will restore 2,400 AF/Year (average year production) local potable water supply in the Santa Ynez Upland Groundwater Basin through use of a new water treatment facility, blending facilities and well modification.

### **REGIONAL BENEFIT:**

The Santa Ynez River Water Conservation District Improvement District No. 1 (District) supplies water to three mutual water companies, Cachuma Lake County Park and the City of Solvang in addition to its own customers. Additionally, restoration of local supplies will lessen demand on shared resources with other water agencies in the County by reducing dependency on State Water and Cachuma water.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

The Division of Drinking Water (of the State Water Resources Control Board (SWRCB)) adopted a maximum contaminant level (MCL) for Cr6 in drinking water of 10 parts per billion, effective July 1, 2014. As a result, the District lost the use of half of its Upland well water availability that served as the backbone of the District's water supply system. Simultaneously, the ongoing drought that has plagued California for the last five years also took much or all of the District's water availability from its three remaining surface water sources, i.e., Lake Cachuma, Santa Ynez River alluvial wells, and the State Water Project. Over half of the Upland well supplies must be treated or blended to meet the new drinking water standards before these sources can again be utilized. Without full use, the District is in danger of not meeting peak day demands, water pressure or fire flow requirements under all conditions.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

All feasible methods of Hexavalent Chromium reduction are very expensive. Depending upon the Best Available Technology (BAT) chosen and the level of reliability desired, costs range from about \$14 million to over \$25 million. These considerable costs, made necessary due to drought and Hexavalent Chromium regulation, will be a huge burden to District customers.

The District continues to search for all Federal, State, and local grant and loan programs. A great amount of effort was expended pursuing Proposition 1 grants including making sure that naturally occurring Hexavalent Chromium was included in the original language as well as in the Water Code, attending and commenting on all workshops and draft guidance documents, setting up meetings with senior SWRCB staff and garnering lobbying assistance through the Association of California Water Agencies. All of this proved unfruitful, however, because the SWRCB stated that unless a contaminant could be removed from a groundwater basin (instead of treating it out of the pumped water) it could not be considered to be a groundwater project worthy of funding assistance. The SWRCB also stated that all districts looking for drinking water quality assistance must be a Disadvantaged Community to qualify for any grant assistance. Only loans from the State Revolving Fund would be considered otherwise.

The District continues to pursue IRWM assistance, loans through the USDA, loans through the State Revolving Fund as well as revenue bonds. Without some sort of grant assistance, however, the costs for a fully reliable system appear to be out of reach.

### **DISCUSSION:**

The District and its consultant work group began studying and proposing solutions to the Cr6 problem in late 2013. Work included multiple rounds of water quality sampling and well profiling to characterize the average concentration of Cr6 from each of the District Upland wells; comparison of available treatment technologies for removal of Cr6 and conceptual design of treatment facilities; comprehensive hydraulic analyses addressing potential water blending between multiple wells and distribution of water among and between the existing District water zones; conceptual engineering design of a dedicated distribution system for irrigation water, separate from the domestic water distribution system; and quantification of water supplies from all sources available to the District, with consideration for augmenting those supplies not containing Cr6.

Water quality sampling and well profiling efforts concluded that naturally occurring Cr6 concentrations vary between the District Upland wells. Four (4) of the ten (10) total District Upland wells demonstrated Cr6 concentrations consistently above the 10 ppb Cr6 limit. Several other wells demonstrated Cr6 concentrations hovering just below the 10 ppb Cr6 limit. Well profiling conducted for several of the Upland wells identified geologic zones with high Cr6 concentrations, which contributed to the overall Cr6 concentration in produced water exceeding the 10 ppb Cr6 limit. By preventing water from entering the well casing from the higher Cr6 zones, water below the Cr6 MCL can be produced. This technique is achieved by installing packers, which are commonly used in the oil industry.

Another approach for wells with total Cr6 concentrations very close to the Cr6 MCL is to blend this well's water with another well that is producing water containing very low Cr6 concentrations. The water blended from the two well sources would then have Cr6 concentrations well within the MCL. All of the techniques identified above are included in the Hexavalent Chromium Treatment Facilities Project.

### **IMPACTS:**

Fiscal - Depending upon the BAT chosen and the level of reliability desired, costs range from about \$14 million to over \$25 million. Excessive cost increases necessary due to drought and Cr6 mitigation, however, remains a huge burden to District customers. Operations and maintenance requirements are currently estimated at \$500,000 to \$800,000 per year in addition to the capital debt.

Operational – N/A

Legal – To date, legal work has been minimal.

Labor – N/A

Sociopolitical - The lack of public acceptance that the MCL legislation will benefit them and that they are at any real risk has been a common theme in public workshops and meetings.

Policy - N/A

Health and safety – Addressed above.

Environmental – N/A

Permitting status – Environmental and preliminary design are complete. Detailed design is ongoing.

**ACTIONS NEEDED:**

The District intends to treat and blend its affected water sources to reestablish water source reliability but the cost will be financially damaging to its customers without State/Federal grant assistance. Therefore, the District and its regional partners are seeking assistance for the financial burdens caused by the drought and new water quality regulations, and request that the State provide any and all assistance to make this project eligible for grant funding through Proposition 1 (including reinterpreting the guidance documents to come into conformance with the enabling legislation and the water code, so naturally occurring arsenic is included) and/or other grant programs.



## Lake Cachuma Temporary Emergency Pumping Facility System

### **PROJECT DESCRIPTION:**

This project maintains operation of the Temporary Emergency Pumping System (TEPS) at Lake Cachuma during the drought by providing for maintenance, relocation, and possible purchase of components of the system. This project is a highly critical operational infrastructure project, which provides lifeline delivery of Cachuma Project water and State Project water to 250,000 residents on the South Coast of Santa Barbara County. Without the ongoing operation of the EPS, water service to all major population centers on the South Coast would be interrupted, causing a widespread immediate threat to public health and safety.

### **REGIONAL BENEFIT:**

The Cachuma Project was constructed in the late 1950's and has been the primary source of surface water supply for certain water agencies in central and south Santa Barbara County. When the lake was built, an intake gate was designed to deliver water to the South Coast through a gravity feed system. The severe drought has reduced Lake Cachuma storage to as low as 7% of its total capacity. For more than two years, water levels have been below the intake facility. Unable to flow by gravity into the intake tower, water has instead been pumped by the TEPS up to the lowest intake gate to continue water deliveries. Continued maintenance, and movement of the pump barge as lake levels rise and fall are critical to keeping the EPS operational. This project provides a regional benefit by ensuring continued, reliable conveyance of Cachuma Project water, State Project water and supplemental purchased water to purveyors on the South Coast of Santa Barbara County including Goleta Water District, the City of Santa Barbara, Montecito Water District and Carpinteria Valley Water District.

### **PUBLIC HEALTH AND SAFETY:**

The continued operation and maintenance of the TTEPS is critical to prevent catastrophic failure or loss of water conveyance to 250,000 residents on the South Coast of Santa Barbara County. None of the agencies have storage capacity large enough to store more than a week's supply of water, and some can only store several days' worth, so even a short disruption could result in an interruption to maintaining delivery of potable water for public health and safety.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

The TEPS was built at a cost of \$4.1 million and ongoing annual operations and maintenance costs are \$1.5 million. These costs were shared across four South Coast agencies, and grant funding was provided by the State in the amount of \$3.1 million, but the ongoing costs and additional expenses associated with continued drought conditions have been a challenge for local agencies. While all the agencies that benefit from the TEPS have raised their rates, depending on the length of time the TEPS needs to remain in place, the level of maintenance required to keep it online, and how often it needs to be relocated as lake levels fluctuate, additional funding is required to ensure its continued operation.

Grant funding may be available through USBR WaterSMART Grant/Drought Resiliency Program or Santa Barbara County IRWMP. Limitations exist regarding potential eligibility, maximum funding amounts, competition for funding/awards and timing issues, especially since expenses such as mobilization for moving the barge are a nontraditional grant fit. Debt financing may be available through the California Drinking Water State Revolving Fund or through other local financial institutions. However, challenges exist on debt financing including qualification and timing process. Capital and Operating budgets from participating Member Agencies are exhausted due to unanticipated costs resulting from drought emergency financial implications and decreased water sales revenue.

## **DISCUSSION:**

Cachuma Lake is owned and operated by the U.S. Bureau of Reclamation (Reclamation). Reclamation has permits from the State Water Resources Control Board (SWRCB) for the continuing operation and maintenance of the Cachuma Project diverting water from the Santa Ynez River.

Due to the ongoing drought and the critical need for a reliable and uninterrupted water supply, the pipeline project was implemented in 2014. Drought conditions continue in Santa Barbara County with water levels in Lake Cachuma receding such that originally designed gravity flow is no longer available to provide continued, reliable delivery of Cachuma Project water, State Water and supplemental purchased water to over 250,000 residents on the South Coast of Santa Barbara County.

The Temporary Emergency Pumping Facility Project – consisting of a pumping barge with seven variable speed pumps, a floating 10,100 foot conveyance pipeline, approximately 100 installed anchor pilings, a tower appendage connection, and electrical supply and cabling – was constructed and installed in 2014 and in 2016. Sustained operations of the barge facility at the first location began in August 2015 and the barge facility was moved to deeper waters in the lake in late June of 2016.

As lake levels fluctuate with winter storms, it may be necessary to move the barge facility to prevent damage and interruption from flood debris. If lake levels rise above 670' elevation, the barge facility must be relocated back to the original site for operation or it is at risk to be torn loose from its moorings. The TEPS is likely to remain in service for at minimum several months, assuming enough inflow occurs this winter to bring the lake back to gravity feed conditions. However, given the severe drought conditions, it is possible the TEPS will need to operate intermittently for several more years, requiring significant funding to keep the system operational as lake levels rise and fall during continued drought conditions.

## **IMPACTS:**

Fiscal – The ongoing costs of maintaining the temporary facility has placed additional financial burdens on previously strained district budgets. The temporary EPS is operated under a lease-operate contract. As the drought continues and conditions require ongoing operations it may be more economical to purchase the TEPS equipment and/or begin operating the facility by agency staff.

- Annual O & M costs - \$1,500,000
- Estimated relocation costs – \$500,000
- Estimated facility and pipeline acquisition costs - \$1,500,000

Operational – The EPS provides water conveyance for a community of over 250,000 residents. Without continued operation of this project, the community would face a catastrophic failure and South Coast water purveyors would be unable to obtain Cachuma water, state water and supplemental water to meet regional demands.

Sociopolitical – The project has been operating since 2015 with a collaboration of stakeholders who support a temporary EPS project. This temporary facility is intended to serve through the duration of the current drought and is not a permanent project.

Environmental – All required permits have been received and are current for the regional project.

**ACTIONS NEEDED:**

Funding for financial relief is requested for maintenance, potential relocation, and possible acquisition of components critical to ensuring the continued operation of the temporary EPS as the life-line infrastructure water conveyance facility from Lake Cachuma to the South Coast of Santa Barbara County.

## Interagency Intertie Project between Goleta and Santa Barbara

### **PROJECT DISCRIPTION:**

This project will provide an emergency water supply by providing a larger intertie between Santa Barbara and Goleta, while also benefiting Montecito and Carpinteria. By constructing a high capacity intertie between Santa Barbara and Goleta to facilitate the delivery of water between systems on the South Coast, the overall reliability of the region's water supplies will be improved.

### **REGIONAL BENEFIT:**

The Intertie Pump Project between Goleta and Santa Barbara (Intertie) involves construction of a new, larger connection (interconnect) between the water distribution systems of the Goleta Water District (GWD) and the City of Santa Barbara. The project would allow neighboring agencies to provide mutual assistance to one another in the event of an emergency such as a transmission line failure, earthquake, wildfire, or for a planned system shut down for repairs or maintenance. Since Santa Barbara is also connected to Montecito and Carpinteria, the regional benefit would extend to the entire South Coast.

### **HOW IT ADDRESSES HEALTH AND SAFETY:**

While the project does not provide for additional water supplies, it does increase reliability. Currently, the Goleta Water District and the City of Santa Barbara are limited in their ability to supply or transfer water from one system to another in the event of an emergency or major water treatment plant problem. The Interconnect project increases regional water supply reliability by providing for the ability to exchange large volumes of water between the two systems.

The interconnect would allow both agencies to convey between 3 to 4 million gallons of treated water per day (gpd) to one another in the event of an emergency (i.e., wildfire, drought, earthquake), during shutdowns of GWD or SB water system facilities, and during periods of high demand when supplemental supplies may be needed. The project would also help to mitigate downstream peaking impacts along the South Coast Conduit, as well as maximize the use of the limited regional storage facilities. The proposed booster pumping station will include data collection capabilities and will allow for the monitoring of the transfer of water from one agency to the other.

### **FUNDING, CHALLENGES & POTENTIAL SOLUTIONS:**

This project has been included in the Integrated Regional Water Management Plan of Santa Barbara County. The total cost of the project is \$5 million, and the project is eligible for grants under Proposition 1 and IRWMP. This project may also qualify for emergency preparedness grants.

### **DISCUSSION:**

The alternative to the project would be to use the existing smaller interties in the system located at Willowbrook, St. Vincent's, and Modoc. These interties allow for up to 800,000 gpd to be moved between the systems. However, the Modoc intertie cannot be operated while the Goleta Water District wells are running, which given current drought conditions is continuous.

## **IMPACTS**

Fiscal – Competes with other immediate concerns for drought related projects, especially those related to developing new water supplies, water quality, and large-scale conveyance and regional water system reliability.

Operational – Water quality and distribution issues related to blending of different water sources would need to be examined and proactively addressed.

Legal – N/A

Labor – N/A

Sociopolitical – N/A

Policy – In advance of a project, operational protocols and various agreements regarding exchanges and mutual aid will need to be established.

Health and safety – Beyond the water quality issues noted above, the needs of the dialysis center on the City of Santa Barbara side would also need to be reviewed and addressed.

Environmental – The CEQA process has not been initiated, but significant opposition is not anticipated.

Interagency – A project would require funding and approval by the City of Santa Barbara and Goleta Water District. As the two agencies are the two treatment points on delivery of water to the South Coast, benefits could also extend to other South Coast agencies.

## **ACTIONS NEEDED:**

Funding in the form of grants or matching funds are needed to move the project forward.