

Lopez Water Project Contract Changes Project Description

**Prepared by
The San Luis Obispo County Flood Control
and Water Conservation District**

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Project Purpose

The San Luis Obispo County Flood Control and Water Conservation District (District) established Zone 3 (Zone 3) on July 26, 1965 for the purpose of financing, construction and maintenance of the Lopez Dam and facilities (Lopez Project) to provide potable water to the lands within the Zone 3 boundaries (refer to Figure 1). The District entered into water supply contracts with the Zone 3 Contractors (Contractors), which include Cities of Arroyo Grande, Grover Beach and Pismo Beach, the Oceano Community Services District and the County Service Area 12 (Avila Beach) to fund a portion of the Lopez Project and to establish entitlements for Lopez Water.

The District's current water supply contracts with the Contractors provide an annual entitlement of water from the reservoir (entitlement) and the option to purchase surplus water, which consists of unused annual entitlements and unreleased downstream releases from the previous water year. Contractors have one year to use the surplus water, any unused surplus water then reverts back to being water available to the District for annual entitlements and downstream releases in the subsequent year. This contractual structure creates a "use it or lose it" scenario and does not provide any incentive for the Contractors to limit their use of Lopez Water and preserve local water supplies.

The District, on behalf of the Contractors, is proposing to restate and amend its existing water supply contracts to allow the Contractors to store their unused annual water entitlement in Lopez Reservoir for future use. The purpose of the proposed changes is to provide the District and the five Contractors greater flexibility to better manage their water supply portfolios, which in addition to Lopez reservoir water, may include groundwater or allocations from the State Water Project (SWP), and improve water supply resiliency for the region.

Background

Safe Yield

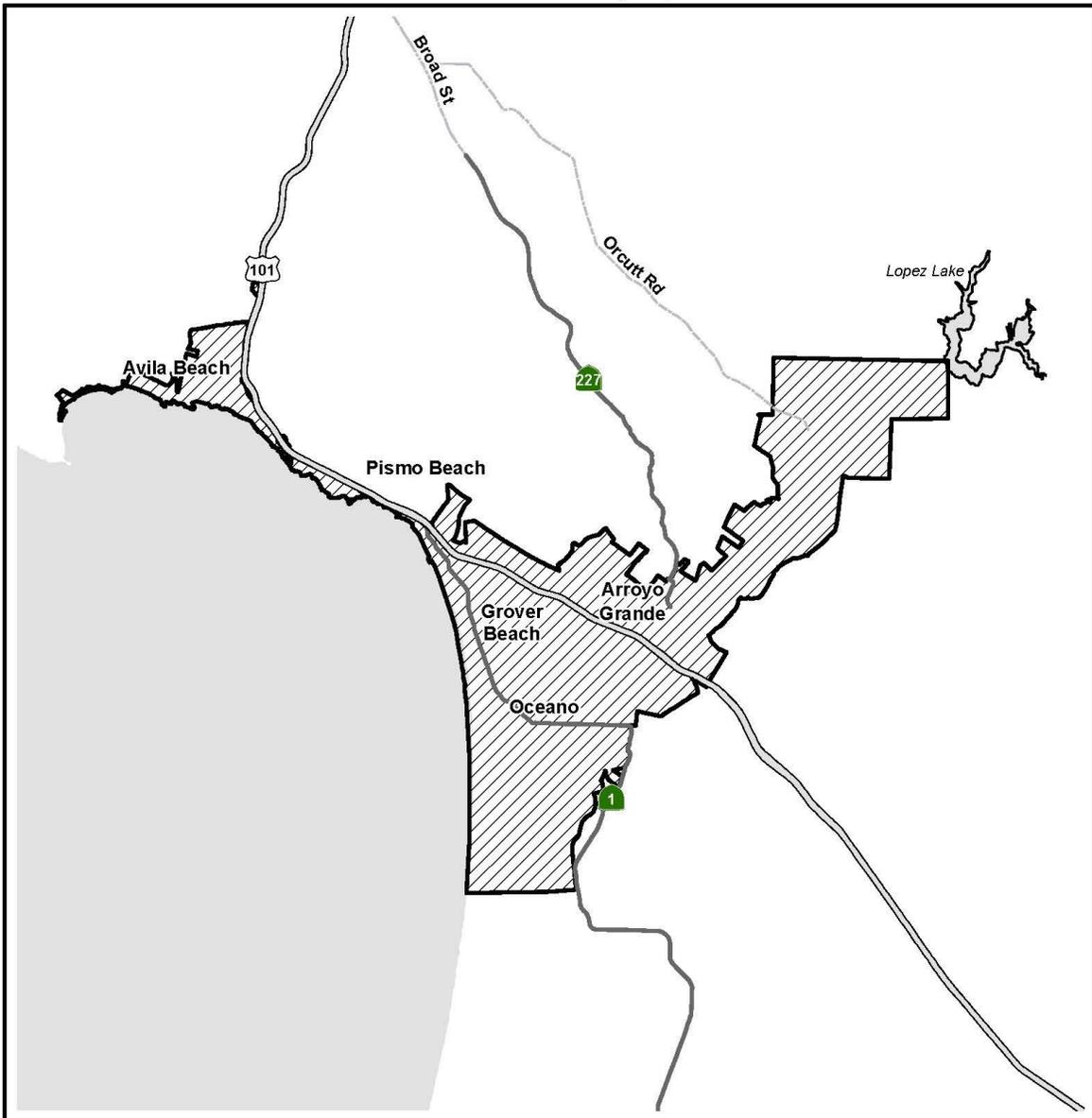
The safe yield of the reservoir is the maximum quantity of water that can be consistently extracted from the reservoir on an annual basis without the reservoir reaching minimum pool or other limiting constraint during the worst drought period on record. The safe yield identified in the existing Lopez Reservoir Water Supply Contracts is 8,730 acre feet per year (AFY). This safe yield has been reaffirmed in multiple reservoir operations studies in recent years, including the Lopez Spillway Raise Project (Stetson 2013) and the ECORP HCP Modeling Analysis.

The safe yield is divided between the municipal diversions and downstream releases, with 4,530 AFY designated for Contractor entitlements, and 4,200 AFY designated for release downstream.

Existing Contractor Entitlements

The District's water supply contracts identify each Contractor's entitlement to Lopez Project water and is summarized in Table 1, along with each Contractor's entitlement percentage.

Attachment 1 Vicinity Map



VICINITY MAP
**FLOOD CONTROL AND WATER
CONSERVATION DISTRICT ZONE 3**
South County, CA

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF PUBLIC WORKS

1:150,000
0 1 2
Miles

Map by: BJclose

Date: 8/16/2018

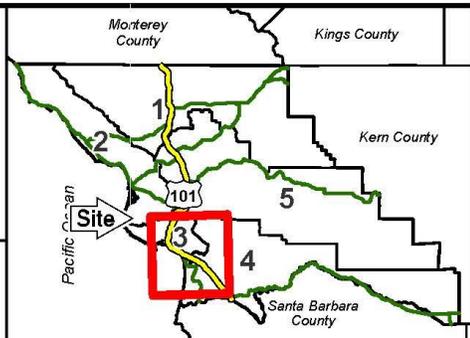


Table 1. Lopez Reservoir Contractor Entitlements and Entitlement Percentages

| Contractor | Entitlement (AFY) | Entitlement Percentage (Approximate) |
|------------------------------------|--------------------------|---|
| CSA-12 (Avila Beach) | 245 | 5% |
| City of Arroyo Grande | 2290 | 51% |
| City of Grover Beach | 800 | 18% |
| City of Pismo Beach | 892 | 20% |
| Oceano Community Services District | 303 | 7% |
| Total | 4,530 | 100% |

The water year for the Lopez Project begins on April 1 and ends on March 31 of every year. Shortly after the end of the water year the District notifies the Contractors of how much water entitlement and surplus water is available for each agency for the upcoming water year. The Contractors request a portion or all of their entitlement and surplus water and the water is diverted throughout the year from the reservoir to the Lopez terminal reservoir, where it is treated and transmitted via the Lopez Pipeline to the Contractors. Since 2007, entitlement deliveries to the Contractors have averaged approximately 4,480 AFY. The time period from 2007 to present was selected as the period of reference because it represents current operations under the 2007 Interim Downstream Release Schedule (IDRS), further described below, and is most representative of the current operating parameters for the reservoir.

Surplus Water

In addition to the entitlements, the Contractors have access to surplus water under the current contracts. The amount of surplus water available to the Contractors is calculated at the end of the Lopez water year and includes unused entitlements and unreleased downstream releases. Each Contractor's allocation of surplus water is proportional to each agencies' entitlement percentage. Surplus water must be taken in the subsequent water year but can only be taken after the Contractor takes delivery of all its entitlement water for that year. Any unused surplus water at the end of the water year becomes water available to the District for annual entitlements and downstream releases in the subsequent water year.

Downstream Releases

Downstream releases are also tracked on the Lopez water year and the parameters for managing downstream releases are included in IDRS (additional information provided below). Up to 4,200 AFY of the safe yield is designated for downstream release. Downstream releases are released from the reservoir at the outlet of the dam directly into Arroyo Grande Creek. The downstream releases are used to maintain habitat for environmental resources, provide water for downstream agricultural uses, and to recharge the groundwater basin. The downstream releases vary throughout the year depending on hydrologic conditions and downstream environmental and agricultural demands. On average, since 2007 downstream releases have averaged approximately 3,640 AFY.

Permits, Authorizations, Guiding Documents

The Lopez Dam received a permit to operate on May 31, 1961. The permit provides for appropriation of water from Arroyo Grande Creek and the diversion of 50,000 AFY from October 1 to July 1, for beneficial use. The District is in the process of obtaining a updated Water Rights Permit, which requires the completion of a Habitat Conservation Plan (HCP). See additional information below regarding the HCP.

Interim Downstream Release Schedule

The IDRS provides a plan for managing downstream releases from Lopez Dam until such time as the HCP can be completed and adopted. The goal of the IDRS is to allow the District to maintain a downstream release schedule that provides water for downstream environmental and agricultural uses and maintains water for municipal diversions. The IDRS outlines a release method, schedule, and monitoring protocol. The Zone 3 Board of Supervisors adopted the IDRS in April 2007, and the District has been implementing it since that time. Under the IDRS, downstream releases range between 3 and 6 cubic feet per second, depending on hydrologic conditions and downstream demands. Downstream releases have averaged approximately 5 cubic feet per second since 2007.

Low Reservoir Response Plan

The IDRS includes a Low Reservoir Response Plan (LRRP). The LRRP describes a set of actions that the District would implement when the amount of water in storage within the Lopez Reservoir drops below 20,000 Acre-Feet (AF) and the District's Board of Supervisors has declared an emergency related to Zone 3. The purpose of the LRRP is to limit municipal and downstream releases from Lopez Reservoir during periods of low reservoir storage to preserve water within the reservoir, above the minimum pool level, for a minimum of 3 to 4 years under continuing drought conditions.

The primary actions resulting from implementation of the LRRP include:

- Reductions in entitlement water deliveries
- Reductions in downstream releases, and
- No new allocations of surplus water from unreleased downstream releases; and
- Extension of time that agencies can take delivery of unused Entitlement water; throughout the duration that the Drought Emergency is in effect, subject to evaporation losses

The LRRP was implemented from December 2014 through March 2018 in response to the drought. The proposed contract changes would not modify the LRRP.

Habitat Conservation Plan

The Habitat Conservation Plan (HCP) is being prepared to protect and enhance habitat conditions within Arroyo Grande Creek for south-central California coast steelhead (steelhead) and California red-legged frogs (CRLF) pursuant to the requirements of the Federal Endangered Species Act. The HCP will address the operation of Lopez Dam and habitat restoration activities downstream of the dam.. It is expected that the HCP would be effective for approximately 20 years once approved by all parties. The HCP would comply with the Federal Endangered Species Act, provide incidental take authorization for steelhead and CRLF resulting from District operations and maintenance activities affecting Arroyo Grande Creek, and provide enhanced habitat conditions and protection for both species.

It is anticipated that the HCP will be implemented via an adaptive management strategy that establishes downstream release patterns that would allow the District to provide the Zone 3 Contractor entitlements,

water for downstream agricultural uses and maximize beneficial effects to steelhead and CRLF – including improved attraction and passage flows for steelhead, for example. Surveys of the creek habitat suitability under different downstream release scenarios are scheduled for the winter of 20/21. This survey effort will subsequently support recommendations in the HCP.

Proposed Contract Changes

The proposed restating and amending of the contract would modify the current contracts between the District and Contractors such that the Contractor's would be allowed to "store" any portion of their annual requested entitlement or requested surplus water in the reservoir until such time as it was delivered for use. For example, a Contractor that only needed 20% of their annual entitlement in Year 1, would request delivery of that amount, but could also choose to store the other 80% of their entitlement and retain it in the reservoir for future use. Stored water held by any agency would be subject to loss if the reservoir filled and spilled. Stored Water would also be subject to evaporation losses as well.

It is also proposed to allow storage of "other water" such as water from the State Water Project (SWP). This would only be available to those Contractors who have a contract for SWP Water as well as Lopez Project Water, but would not include storing actual water from the SWP Water in Lopez Reservoir. Stored SWP Water would be achieved through in-lieu exchange of SWP water and requested deliveries of Lopez Water by other Contractors. Stored SWP Water would be subject to evaporation and spill losses.

The contract changes also include language that clearly indicates that existing annual entitlements and downstream releases are subject to change in the future due to state or federal mandates that may result from the HCP and operating permit renewal.

Anticipated Outcomes

The Contractor's generally have multiple sources of water (water portfolio), including the Lopez Project, groundwater, and State Water Project (SWP). The cost and availability of these sources varies from year to year. Allowing Contractors to store their Lopez and State Water supplies for future use provides them with additional flexibility to manage their water portfolio as efficiently as possible. More specific anticipated outcomes are described below.

To determine how the proposed contract changes would potentially impact the operations of the reservoir, the District evaluated multiple reservoir operations scenarios, with and without the proposed contract changes, using the existing OASIS Reservoir Operations Model. The Baseline Scenario simulates the operation of the reservoir under current operating parameters (i.e. IDRS, no storage provisions) over the entire hydrologic period that the reservoir has been in operation. This was done because operational parameters prior to adoption of the IDRS in 2007 were much different than current and anticipated future operations. The Storage Scenario simulates the operation of the reservoir under the proposed contract changes. The assumptions for each of the modeling scenarios are outlined in the Table 2 below.

Table 2. Zone 3 Contract Change Modeling Scenarios

| Scenario | Scenario Parameters | | | | | |
|----------|---------------------|-----------------------|--------------------|--|--|-----------------------------|
| | Hydrology | Downstream Releases | Municipal Demands | Supply Priority ¹ | Storage Rights | Low Reservoir Response Plan |
| Baseline | 1969 - 2018 | IDRS Release Schedule | 2018, 2035 Demands | No Storage (Lopez, SWP, Groundwater) | No | Not Included |
| Storage | 1969 - 2018 | IDRS Release Schedule | 2018, 2035 Demands | With Storage (SWP, Lopez, Groundwater) | Unreleased Downstream Releases and Unused Entitlements | Not Included |

¹No Storage – Based on a tiered priority strategy intended to optimize use of NCMA Agencies’ water supply portfolios.

1. Priority 1 – Lopez Water.
2. Priority 2 – State Water. SWP Water based on available SWP supply and delivery capacity. Available supply calculated using subcontractor Table A Allocation and Drought Buffer and estimated Annual Table Allocation from Calsim 3 Table A Allocation Estimates. Available Capacity accounts for SWP and Lopez pipeline capacity limitations.
3. Priority 3 – Groundwater. Natural Yield groundwater supplies (i.e. 25% of NCMA Allocations).

With Storage – Based on a tiered priority strategy intended to optimize use of NCMA Agencies’ water supply portfolios.

1. Priority 1 – State Water. SWP Water based on available SWP supply and delivery capacity. Available supply calculated using subcontractor Table A Allocation and Drought Buffer and estimated Annual Table Allocation from Calsim 3 Table A Allocation Estimates. Available Capacity accounts for SWP and Lopez pipeline capacity limitations. Priority 1 switches to Lopez Water once 3 years of Lopez Water is available in storage for an individual agency.
2. Priority 2 – Lopez Water.
3. Priority 3 – Groundwater. Natural Yield groundwater supplies (i.e. 25% of NCMA Allocations).

The modelling scenario results indicate that the proposed contract amendments would generally result in the following:

- More water would be stored in Lopez Reservoir due to the incentives provided by the proposed contract changes to reduce use of Lopez Water, see Figure 1 for comparison of water storage under current contracts (Baseline 2018) and proposed contract changes (Storage 2018)
- Downstream releases would not be impacted as modeling indicates that there would be sufficient un-stored water in the reservoir to meet downstream release requirements. Additionally, if there was not sufficient water available for downstream releases the proposed contract provisions allow for water to be taken from Contractors’ storage to meeting downstream release requirements
- Volume of water lost to spills would increase slightly (approximately 21,000 AF over a 50-year period) due to the additional water in storage

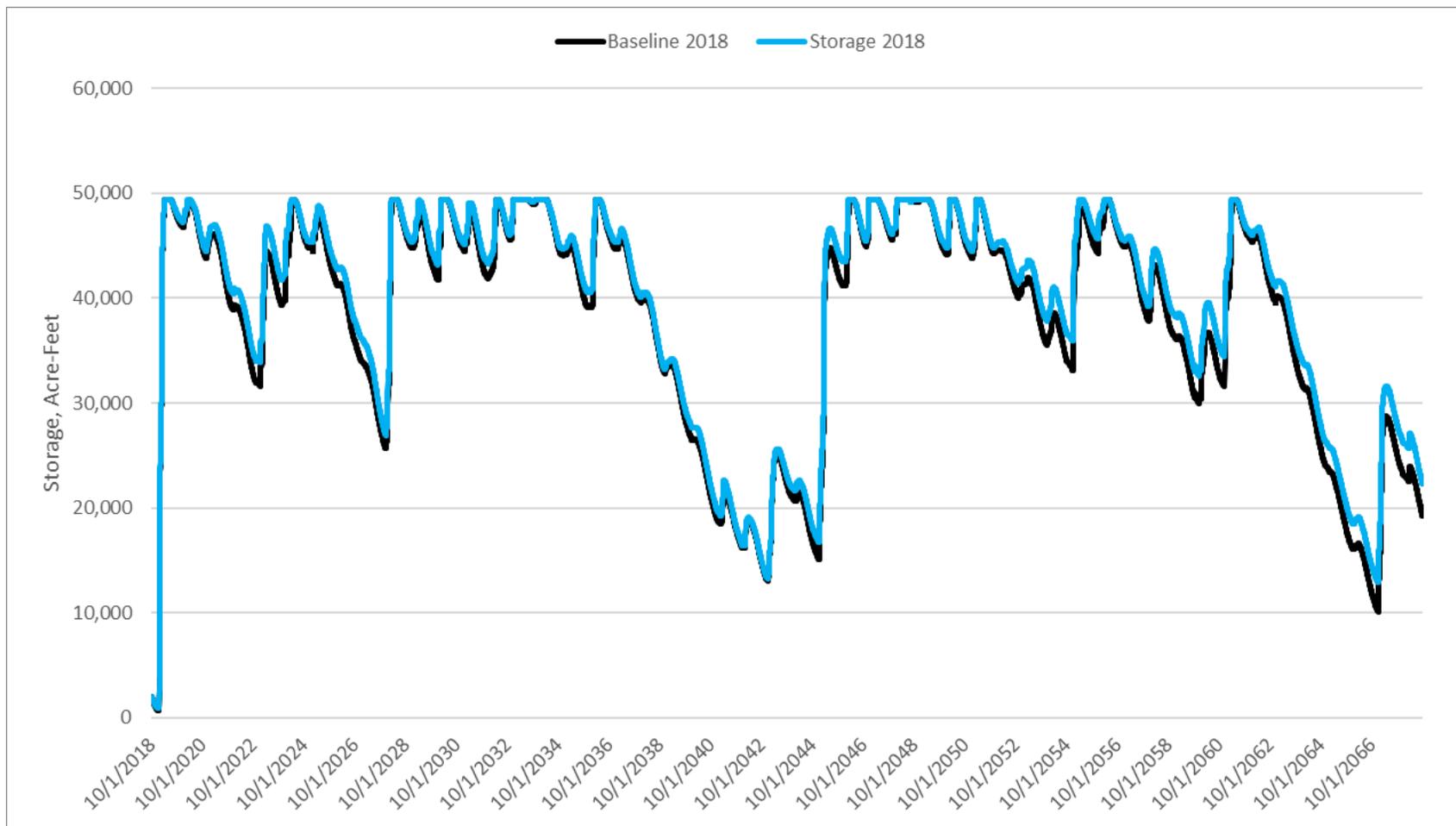


Figure 1. Zone 3 Contract Change Modeling Scenarios Result