



**MONTEREY PENINSULA
WATER MANAGEMENT DISTRICT**

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To: PUC Workshop Participants
From: Darby Fuerst, MPWMD General Manager *DWF*
Subject: Preliminary Water Supply Analysis of Reservoir Dredging Alternatives
Date: September 29, 1997

To evaluate the effect of reservoir dredging on water supplied by the California-American Water Company (Cal-Am), four simulations were run using the District's computer model of the Monterey Peninsula Water Resources System. This model, CVSIM, was designed as a planning tool to simulate the performance of the water resources system under varying physical, structural, and management conditions. CVSIM incorporates both Cal-Am and non Cal-Am uses and both surface and ground water responses. The four dredging simulations include:

- (1) **Maintain San Clemente and Los Padres Reservoir at Existing Capacities:** San Clemente Reservoir at 200 acre-feet (AF) and Los Padres Reservoir at 2,179 AF of total storage;
- (2) **Dredge San Clemente Reservoir to Original Capacity:** San Clemente Reservoir at 1,425 AF and Los Padres Reservoir at 2,179 AF of total storage;
- (3) **Dredge Los Padres Reservoir to Original Capacity:** San Clemente Reservoir at 200 AF and Los Padres Reservoir at 3,033 AF of total storage; and
- (4) **Dredge Both San Clemente and Los Padres Reservoirs to Original Capacities:** San Clemente Reservoir at 1,425 AF and Los Padres Reservoir at 3,033 AF of total storage.

All the simulations were run at the current Cal-Am annual production limit set by the District, i.e., 17,641 AF, and included a management plan involving increasing levels of water rationing during extended dry periods. The simulations were run to determine the effect of the proposed reservoir dredging alternatives on water supply reliability and utilized a 91-year period of record, i.e., Water Years 1902-1992. In the simulations, water supply reliability is measured by the frequency and severity of water rationing. The effect of reservoir dredging on water supply reliability is shown in the table below.

The table shows that dredging has a minor effect on the number of months of mandatory 20% water rationing. This period of mandatory water rationing occurs during the simulated 1977-1978 period. In contrast, the number of months of voluntary 10% water rationing are significantly reduced by the dredging proposals. By dredging each reservoir individually, the number of

months of voluntary 10% rationing is reduced by 58 months and by dredging both reservoirs together, the number of months of voluntary rationing is reduced by 75 months.

EFFECT OF RESERVOIR DREDGING ON WATER SUPPLY RELIABILITY			
Number	Simulation	Months of Voluntary 10% Rationing	Months of Mandatory 20% Rationing
1	Existing Reservoir Capacities	99	12
2	Dredge San Clemente Reservoir	41	11
3	Dredge Los Padres Reservoir	41	11
4	Dredge San Clemente and Los Padres Reservoirs	24	10

With respect to yield, by increasing reservoir storage capacity, Cal-Am would be able to legally store and divert more water each year. Specifically, by dredging Los Padres Reservoir to its original capacity, Cal-Am's licensed right could be increased from the 2,179 AF to 3,033 AF annually, an increase of 854 AF. Similarly, by dredging San Clemente Reservoir to its original capacity, Cal-Am may be able to apply for rights to divert water to storage during the high flow winter period -- when it is presently available for appropriation -- for release and rediversion during the low flow period¹. This represents a potential increase in legal diversions at San Clemente Reservoir of approximately 1,425 AF annually. If both San Clemente and Los Padres Reservoirs were dredged to their original capacities, the potential increase in legal diversions to storage would total 2,279 AF per year. These changes would need to be reviewed and approved by the State Water Resources Control Board (SWRCB).

Please note that this analysis does not address environmental, economic or regulatory concerns. If there are any questions regarding the preliminary analysis, please let me know.

¹ It is the District's understanding that Cal-Am has a pre-1914 appropriative right for 1,137 acre-feet per year of direct diversion at the San Clemente Reservoir site.