



Memorandum

DATE: October 22, 2015

MEMO TO: MROSD Board of Directors

FROM: Assistant General Managers and Department Managers

THROUGH: Stephen E. Abbors, General Manager

SUBJECT: District Strategic Response to the Drought

This memorandum describes the impacts to District operations and actions the District has taken to respond to the ongoing drought in the western United States, which began in 2011 (the last year with rainfall totals at or above average). To understand the scale of the drought, the table below presents a summary of the recorded annual precipitation for San Francisco, which has an average annual rainfall of 23.66 inches:

Water Year (Oct – Sept)	Rainfall Total (Inches)	Percent Above (Below) Average
2015	18.19	-23%
2014	12.54	-47%
2013	16.61	-30%
2012	15.64	-34%
2011	28.87	+22%

The drastic reduction in rainfall (represented by a 33% annual average rainfall shortage over the 4 years of the drought) directly affects District lands, facilities and operations that predominantly rely on local streams and groundwater for domestic and agricultural water supply.

Statewide, the drought has been dramatically worsened by increased mean temperatures and reduced snowpack in the Sierra Nevada, which serves as a water storage “reservoir” providing 30% of California’s water. Although local water agencies use this as a component of the water supply for their customers, very few District facilities use water from these agencies.

The impact of the ongoing drought has affected many aspects of the District’s activities, as can be seen in the list below:

Measures to Protect Wildlife

- Continuing to complete pond improvement projects to ensure stockponds are capable of providing water to wildlife and for stockwater uses.

- Hydrologic modeling has been completed for some ponds to determine livestock use levels that can be supported without impacting pond water levels and duration of ponding, protecting breeding by California red-legged frog and other wildlife use.

Grazing and Rangeland Management

- District grazing tenants have reduced stocking rates by 25% to 50%.
- Grazing season and duration has been reduced by up to 50%, year-round grazing has been transitioned to seasonal grazing when water and vegetation growth can support cattle grazing, and some properties have had little or no grazing.
- Greater focus and attention has been given to water infrastructure, which has been repaired to fix leaks. Additional supply (springs or wells), storage (tanks) and additional troughs have been added to better distribute cattle across rangeland.

Wildland Fire Management

- Defensible space around District structures and facilities has been improved and completed earlier in the fire season.

Illegal Water Diversions

- The District has removed illegal water diversions at the Hendrys Creek property at Sierra Azul OSP.
- The District, Santa Clara County Sheriff and California Fish and Wildlife removed an illegal water diversion from Saratoga Gap OSP.
- The District reached settlement agreement with several private property owners eliminating water diversions from the Alma Water system at Bear Creek Redwoods OSP.

Bear Creek Redwoods Water Study

- A comprehensive assessment of water resources has been completed for the Bear Creek Redwoods Preserve Plan to determine compatible water supply sources for planned uses at the Preserve.
- The existing Holmes well has been tested and evaluated as a viable groundwater source for potable water for the Bear Creek Stables' operations and future visitor-serving amenities at the former Alma College site. The District is proceeding with the development of plans for refurbishing the well and a water distribution system to supply water to the stables. Because the District recently learned of an adjacent private well, there may be as yet undetermined limits on what can be obtained from the Holmes well.
- District staff is coordinating with Santa Clara Valley Water District staff to utilize their engineering expertise related to water distribution.
- The District is evaluating the existing Aldercroft Creek diversion and water rights for continued use of the creek.

Fog Harvesting

- The District's Innovation Team is collaborating with the United States Geological Survey to research and pilot the use of fog water harvesting technology to supplement water supplies for District facilities. Three experimental square-meter fog collectors will be installed at each of three sites on District lands for a total of nine small fog collectors to determine the water yield at different sites and using different fabrics.

Roads and Trails Improvements

- Drainage and erosion control improvements on District roads and trails have been accelerated in anticipation of potentially stronger and longer duration winter storms associated with projected El Nino winter conditions.

District Water Supply Improvements

- Water supply tanks and water lines for several District residences (private and employee) have been improved due to impacts from lower groundwater levels that have caused water well pumps to go dry. In some instances, pumps can be lowered within the well to address this situation. In other instances, water has been trucked in to fill the tank.

Water Rights

- Over the past two years, District staff has begun to identify water rights deficiencies and has identified a scope of work and level of expertise necessary to appropriately manage water rights issues and at mid-year will be bringing forward, for Board consideration, a recommended permanent position to staff that function going forward.

Public Information – Views Quarterly Newsletter

- Summer 2015 – GM Message – Supporting Our Life Support System
- Spring 2014 – Wildlife Strategies in a Drought