AGENDA NO. ___

CENTRAL BASIN MUNICIPAL WATER DISTRICT

OCTOBER 6, 2004 - Water Resources
Morse, Cole
OCTOBER 25, 2004 - Board Meeting
Prepared by: Jennifer B./Fernando P.
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Approved by: Richard Nagel

INFORMATION CALENDAR

WATER SUPPLY OUTLOOK

SUMMARY:

As the drought continues in the Western United States, including the Colorado River region, water agencies are bracing for water supply shortages, ramping up conservation efforts, and evaluating alternative water supplies. While scientists cannot predict how long the current drought conditions will remain, impacts have already been severe.

The water year beginning October 1, 2003 was officially designated as a "below-normal year" in California by state water officials. While the year started off well, record warmth in March led to an early snowmelt at twice the normal rate. Following close thereafter, spring was extremely dry and didn't provide additional rainfall. The Delta levee break in June added additional complications to the water supply outlook as 150,000 acre-feet of water from upstream reservoirs were released to prevent saltwater intrusion into the Delta and maintain water quality. Combined with population growth, slowness to impose water restrictions, and stalled water storage/supply projects, the entire Western United States is feeling the pinch as water supplies shrink under the pressure of the drought. Particularly hard hit has been the Colorado River Basin.

The National Resources Conservation Service, United States Department of Agriculture in Colorado, summarized the condition of the water supply the last few years for the Colorado River Basin:

Water Year	Accumulation of Snow Water Equivalent	Date Maximum Snowpack for the Water Year Reached*	Percent of the Average Snowpack	Date of Complete Meltout of Snow Water Equivalent**
2000	Below average	April 5	93%	June 11
2001	Below average	April 14	87%	June 16
2002	Below average	March 28	64%	June 1
2003	Near average	April 26	103%	June 20
2004	Below average	March 17	70%	June 18

* The maximum snowpack is typically reached on April 14 each year
** The meltout of snow water equivalent usually occurs on July 21 of each year

Runoff in the Colorado River Basin in the last five years has averaged about half that of the Dust Bowl years – scientists say that this may be the worst drought in 500 years on the river. Upstream water use has in part led to decreased annual flow volumes, but the drought is persistently present. The Colorado Division of Water Resources posts Surface Water Supply Indexes (SWSI) that are used as an indicator of mountain-based water supply conditions in the major river basins of Colorado. The Colorado River Basin received a SWSI of -2.9 in August 2004, which is in between a moderate drought and severe drought. This number is 0.7 points worse than August of 2003.

With these conditions, even the storage reservoirs along the Colorado River Basin have been impacted. All of the reservoirs on the Colorado River are collectively 50% full right now, compared to 58% last year. Impacts to Lakes Powell and Mead have been most notable.

Lake Powell

Lake Powell is currently 38% full, 127 feet below its full capacity of 27,000,000 acre-feet, exposing land that hasn't been seen in decades, and requiring multiple extensions to boat launching ramps. Inflows into Lake Powell have been significantly reduced due to the drought:

Year	Percent of Average Lake Powell Inflow
2000	61%
2001	59%
2002	25%
2003	51%
2004	52%

Evaporation at Lake Powell is typically 2.5-3% per year; estimated to be:

1996 – 676,400 acre-feet
1997 – 677,000 acre-feet
1998 – 698,400 acre-feet
1999 – 695,700 acre-feet
2000 – 672,200 acre-feet
Average – 683,900 acre-feet

Power generation is also effected by the dropping levels in Lake Powell. Glen Canyon Dam is operating at 60% of full generation capacity. If the lake falls another 85 feet, the generators will be forced to shutdown completely. The Navajo Generating Station is considering a $20 million plan to drill more tunnels into Lake Powell to keep that plant operating. The seven states around the Colorado River are also considering a deal to reduce the amount of water flowing down to Lake Mead in an effort to save Lake Powell and power generation at Glen Canyon Dam.

Lake Mead

Lake Mead is currently 54% full, well below the capacity of 28,537,000 acre-feet. Boat launch extensions have also been required. Every 20-foot drop in the lake's elevation costs the National Park Service up to $6 million for maintenance and infrastructure for the Lake Mead National Recreation Area. Overall, Lake Mead has dropped more than 87 feet from its near-capacity levels in 1998 and is expected to drop another 23 feet by summer 2006. Annual evaporation rates of 5-6% don't help the dropping lake levels either. Hoover Dam's potential output is down 14%.

As mentioned earlier, these drought conditions are affecting the entire Western United States, not just the Colorado River Basin. Recent studies by scientists on snowflakes have concluded that air pollution is reducing mountain snowfall in the Western United States. Not only do

clouds containing microscopic pollution particles from human activities produce less snow than pollution-free clouds, the snow contained less water. It will take years to fully understand the relationship, but the impact is already clear to scientists. These scientists are not claiming that the prolonged drought in the Western United States is due to air pollution, but they suspect the air pollution is making it worse.

Finally, tree-ring reconstructions have illustrated that some past droughts on the Colorado River and Western United States have lasted for several decades, while others have only lasted for a few years. Therefore, no one can estimate the end of the current drought, but it is evident that drought is a recurring condition in the Western United States. Perhaps this current drought will be a wake-up-call to better utilize water supplies and to find new ones.

FISCAL IMPACTS:

None.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was be reviewed by the Water Resources Committee on October 6, 2004 and agendized to the October 25, 2004 Board meeting as information for discussion.

RECOMMENDED MOTION:

This item is for information only.

EXHIBITS:

None.

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