MEMORANDUM

TO: **City of Santa Fe Public Utilities Committee**
City of Santa Fe Water Conservation Committee
Buckman Direct Diversion Board

RC

FROM: **Rick Carpenter, Water Resources and Conservation Manager**

VIA: **Nick Schiavo, Acting Public Utilities Department and Water Division Director** NSA

DATE: **October 25, 2013**

SUBJECT: Update on Drought, Monsoon, and Water Resource Management

---

CURRENT UPDATE – GENERAL WATER RESOURCE MANGEMENT

As the Committee/Board is aware, our region is still suffering through a severe drought. Our region has gone through two consecutive years of record drought and heat. It is now apparent that we are wrapping up a third consecutive year of severe drought and heat which will present significant challenges to all water purveyors, utilities, and irrigators going forward into next year. Even though much of the State and our region have received moderate monsoonal rains overall in July and August, and with much of the state receiving record high monsoonal rains in September, most of the state of New Mexico remains in "severe to extreme" drought conditions. New Mexico appears to be the epicenter of the western U.S. drought. Weather prediction models indicate that, at least through January of this year, the latest model runs are suggesting that drought conditions in the southwest (especially Arizona and New Mexico) should be neutral to below average precipitation (snow) and above average temperatures, therefore, overall drought conditions will likely still persist at least through the beginning of next year.

This current drought is extreme, but what sets it apart from previous extreme droughts is that, absent significant winter snow the rest of this year, the region will enter into next spring and summer without very much carry-over water in regional reservoirs – they are at low levels (except for the local McClure reservoir in Santa Fe). This condition could make next year much more challenging than the current year has been. However, the City of Santa Fe has invested in a robust and diverse portfolio of four distinct water supply sources that allows for flexibility in meeting demand: Buckman well field, City well field, Canyon Road Water Treatment Plant on the Upper Santa Fe River, and the Buckman Direct Diversion on the Rio Grande.

Earlier this year, BoR/USACoE models indicated the probability of critically low flows in the Rio Grande at Otowi Gage, and they were correct - the last few months have seen flows as low as about 350 cubic feet per second (CFS). In a "normal" year flow ought to be around 1,000 cfs or more. However, during the prolonged rains of September 10th – 17th, the record-breaking rains produced flows exceeding 8,000 cfs at times at Otowi Gage. Flows over the last two or three weeks have been in the range of 1,000 cfs (+/-).

Since CRWTP and BRWTP have been unable to produce very much water lately, City and Buckman wells are providing most of the water supply to meet demands.

LOCAL CONDITIONS

Source of Supply Utilization Summary

August 2013

City Wells	57.85mg	177.55af
Buckman Wells	195.43mg	599.76af
CRWTP	23.02mg	70.67af
BRWTP	18.77mg	57.60af
Other Wells(Osage, MRC, etc)	*7.84mg*	*24.06af*

Upper Santa Fe River/CRWTP

	Reservoir Level	Santa Fe Snow Gage	Reservoir Inflow
October 23, 2013	60.3%	0.0 inches	18.40 MGD
5-Year Average This Date (2008 – 2012)	54.4%	0.0 inches	1.56 MGD

Heading into September, water resource managers for the City were expecting the Canyon Road Water Treatment Plant to experience significant supply shortfalls later this year and into next year – due in part to severely reduced inflows resulting from the drought, but also due to the planned construction projects inside of the reservoir footprints. However, as of October 23th, and due to the recent heavy rains, storage in McClure reservoir is up from 29.0% to 81.1% (or about 2,400 acre-feet), with total combined storage (Nichols and McClure) at 60.3% and increasing daily. Flows into Nichols are being by-passed due to construction on the new intake faciliy. Inflows are expected to continue for the near future and so McClure has been releasing a small about of water (4 – 5 cfs) in order to avoid spilling water over the spillway and also to facility the Fishing Derby on the Santa Fe River in town, which took place in mid-October.

Buckman Regional Water Treatment Plant

The last few months have seen flows as low as about 350 cubic feet per second (CFS). In a "normal" year flow at this time of the year ought to be around 1,000 cfs or more. However, during the prolonged rains of September 10th – 17th, the record-breaking rains produced flows exceeding 8,000 cfs at times at Otowi Gage. Turbidity and suspended sediment has also been very high, especially following intense monsoonal rain storms (as high as 7,020 ntu). For this

reason, the BDD Project has been more-or-less shut down during the months of July, August, and most of September, but was able to produce in the range of 3 – 4 mgd through most of October due to reduced turbidity and flows at approximately 1,000 cfs in the river.

Rio Grande Basin

Surface flows in the Rio Grande and its tributaries have been well below normal, storage levels in regional reservoirs are very low currently (but rising due to recent storms), and the federal BoR recently stated that if there is no "meaningful moisture" received this winter/spring then this would mark the lowest water levels ever in New Mexico reservoirs prior to entering into a new irrigation season. The recent rains have helped river flows (at least temporarily) and regional reservoirs are receiving needed inflow, but normal to above normal snow pack is still needed this coming winter or reservoir levels will still be critically low heading into next irrigation season. Recent weather forecast models seem to be suggesting that snow pack this coming winter may be disappointing.

San Juan Basin

The streamflow forecast for the San Juan River Basin is 75 percent of the 30 year avg. (1981-2010) for 2013. San Juan-Chama contractors have received full allocation of San Juan-Chama Project water this year (up from a previous forecast of only 80%). However, most of this water has already been used by the larger purveyors and irrigators in the middle Rio Grande, and so they are no longer calling for/releasing their water. The water that is currently in the Rio Grande at Otowi Gage is therefore not so much imported San Juan-Chama water as it is environmental flows and native Rio Grande water. However, when water quality conditions permit, the BDD Project is still able to call for and receive its allocation of San Juan-Chama water.

It should be stressed that, conditions could significantly worsen for San Juan Chama Project deliveries next year if the drought persists (i.e., low snow pack this coming winter in the San Juan Basin), due to a lack of carry-over storage in Heron Reservoir and other reservoirs in the system. If conditions do not change, after deliveries are made out of Heron Reservoir this year, that reservoir will be heading into the next water –year at very low levels. Deliveries to SJCP contractors could be significantly curtailed as a result.