Governor's Water Augmentation, Innovation and Conservation Council Desalination Committee
October 10, 2019 Meeting Summary

Time: 10:00am – 11:30 am
Location: Arizona Department of Water Resources

I. Welcome and Introductions

The following Committee members, and GWAICC members or their designees, were present: Philip Richards, Chuck Cullom, Wade Noble, Patrick Adams (for Warren Tenney), Susan Craig (for Sarah Porter), Pam Muse (for Lisa Atkins), Jay Tomkus (for Maria Dadgar), Bruce Hallin, Terri Sue Rossi, Tim Thomure, Glenn Hamer, Jamie Kelley, and John Kmiec. Attending from the Arizona Department of Water Resources (ADWR) were Kelly Brown, Carol Ward, Bret Esslin, Zack Richards and Cyndi Ruehl.

II. The Kay Bailey Hutchison Desalination Plant

Scott Reinhart, Water Resources Manager for El Paso Water Utilities, spoke to the committee about the Kay Bailey Hutchison (KBH) Desalination Plant owned by the utility. For the past 12 years, the plant has been desalinating brackish groundwater at a total dissolved solids (TDS) level as high as 3000 parts per million (ppm) and producing 27 million gallons of treated water per day (MGD). Three MGD of brine concentrate is injected with no pressure into cavernous limestone through wells that are 4,000 feet deep and are located 22 miles from the plant. The construction of the plant, including the source wells, pipelines, and injection well facilities, cost $93 million.

The new Enviro Water Minerals (EWM) Full Recovery Desalination facility will receive 1 MGD of brine concentrate and 1 MGD of brackish groundwater from the neighboring KBH desalting plant and will then remove or recover mineral products to be sold on the market. Some of the recovered products may include gypsum and hydrochloric acid.

Committee members noted that one of the most significant hurdles to the utilization of brackish groundwater is brine disposal. They expressed interest in identifying locations in Arizona that have geologic formations suitable for non-pressurized deep-well injection brine disposal. ADWR staff will discuss how this might be accomplished with the committee chair, and an update will be provided to the committee at the next meeting.

III. Yuma Desalting Plant: What Does it Cost Arizona?

Chuck Cullom, Colorado River Programs Manager for Central Arizona Project (CAP), described how CAP staff evaluated the cost to Arizona of not running the Yuma Desalting Plant.

Staff evaluated two scenarios. For both, they began with the results of the August 24-month Study from the Bureau of Reclamation, which projected that the level of Lake Mead would reach 1089.4 feet by January 1, 2020. At this level, the operating condition under the Drought Contingency Plan (DCP) would be Tier 0, which requires Arizona to contribute 192,000 acre-feet to Lake Mead. If the projection had been at an elevation of 1090 feet, six-tenths of a foot higher, Lake Mead would have been in normal operating range, and the 192,000 acre-feet would have been available to Central Arizona water users. Six-tenths of a foot in Lake Mead is equivalent to approximately 48,000 acre-feet of water.

Scenario 1: The Yuma Desalting Plant (YDP) is designed to conserve 80,000 acre-feet a year. At full operating capacity, the YDP would have conserved enough water in 2019 to raise the elevation of Lake Mead to about 1090.4 feet. At an estimated replacement cost of $247 an acre-foot, the cost

for that amount of water is estimated at $47.4 million.

Scenario 2: If the YDP had operated at one-third capacity, and had the 242 Well Field near the southern boundary of Arizona delivered 25,000 acre-feet of water in lieu of releases from Lake Mead since 2018, the level of Lake Mead would have increased to about 1090.7 feet by the end of 2019, in normal operating conditions. Again, the lack of action could be characterized as costing Arizona $47.4 million.

The total loss to water users in the United States and Mexico of not operating the YDP is approximately 241,000 acre-feet of Colorado River water, according to the CAP analysis.

Reclamation has estimated that YDP operating costs may be between $600-$700 per acre-foot.

CAP staff will provide a memo to the committee documenting the analysis and costs.

The committee considered recommending that the Council take a position advocating the YDP's operation but chose to hold the idea for further discussion at a future meeting.

IV. Topics of Discussion for the West Salt River Valley Subcommittee

The committee decided that the task of the proposed subcommittee will be expanded to identify regulatory and legislative hurdles to desalination projects statewide, rather than the West Salt River Valley specifically. The name of the subcommittee will be changed to reflect that. There was discussion of what issues the subcommittee might identify. Committee members noted that adjudication is a concern, but it is being addressed in other forums and, so, the subcommittee will not include that in its list of issues. It is envisioned the subcommittee will require only a meeting or two to identify the issues and refer them back to the committee for discussion.

V. Next Steps & Next Meeting Date

The subcommittee will meet October 18, 2019 to discuss regulatory concerns associated with brackish water desalination.

The next Desalination Committee meeting will be January 16th, 10:00-11:30 a.m. at ADWR.