Advisory

TO: Mayor / Council
CC: Brian Biesemeyer, Executive Director, Scottsdale Water / Interim City Manager
FROM: Environmental Quality Advisory Board (EQAB)
DATE: April 20, 2016
RE: Scottsdale Drought Management

In light of recent events in the Colorado River Basin, EQAB offers the following Advisory regarding regional water supply issues and their potential impacts on Scottsdale.

SUMMARY OF RECENT EVENTS: During summer 2015, the Bureau of Reclamation (BOR) reported that Lake Mead's water level had fallen below First Stage Drought Declaration level (1075') in June and July, and Arizona began to plan for a First Stage Drought Declaration. However, in August, the key month used by BOR to project Drought Declarations for the upcoming two years, Lake Mead rose to 1077 feet, just two feet above Drought Declaration level. Based on the 2015 August 24-Month Study's projection for Lake Mead elevation as of January 1, 2016 (1082'), Maricopa, Pinal and Pima counties averted a 20% reduction in Colorado River water allocation for 2016-2017. The drought declaration was averted for a number of reasons, including: 1) short and medium term regional efforts to retain more water in Lake Mead; 2) a renewed emphasis by the seven states using power from Hoover Dam to keep Lake Mead above drought declaration levels; 3) voluntary water storage in Lake Mead by Mexico and the Basin states; and 4) significant rainfall and runoff into reservoirs in the key recharge areas of Wyoming and Colorado, with a subsequent release of extra water from Lake Powell down to Lake Mead. Although Drought Declaration was averted in August 2015, it is critical to recognize that the basic problems in the Lower Colorado River Basin have not been solved. Regional forecasts now suggest that the Drought Declaration may occur in August 2017 for 2018; probabilities of any level, tier 1 and tier 2 shortages are 59%, 49% and 10%, respectively.[1]

POTENTIAL IMPACTS TO SCOTTSDALE: The region and Scottsdale now have at least another year to prepare. Under the current system, a First Stage Drought Declaration will not impact municipal water supplies; the first impacts will be felt by agriculture, which will receive only about 50% of their normal annual water supply from the Colorado River. However, this could change. One of the fundamental problems with the current system is that single entities bear the full brunt of water shortages.[2] In response, some are calling for a more equitable system of sharing in shortage. If changes are made, cities like Scottsdale could be impacted, even under a First Stage Drought Declaration.

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[1] Source: US Bureau of Reclamation – January 2016 CRSS. Any level and tier 1 probabilities are 7% higher than the August 2015 CRSS model run.

[2] Single entities are, for example, Arizona instead of all seven basin states, CAP customers instead of the whole state, and agriculture instead of agriculture, municipal, industrial and Native American tribes.

RECOMMENDATIONS FOR A CHANGING WATER SUPPLY FUTURE:

EQAB recommends that through Drought Management Plan revisions, water policy adjustments, or other means, Scottsdale a) take advantage of efficiencies and cost savings offered by new opportunities and b) preserve our water reserves by shifting the emphasis from supply-side to demand-side strategies.

1) Embrace opportunities to make our water supply more efficient, resilient and sustainable

   We are in the midst of a particularly fluid and dynamic time in Colorado River Basin water management. One development is an emphasis on retaining water in Lake Mead to forestall drought declarations. Scottsdale is already participating in one such effort. Under an Extraordinary Conservation Intentionally Created Surplus project, the City will leave 1,750 acre-feet (AF) in Lake Mead in exchange for CAP "credits" stored behind Roosevelt Dam. Scottsdale will take from an alternative source the 1,750 AF of water that would ordinarily have come from the Colorado River.

   As another example, in the near future, it may become possible to store water in Lake Mead. Scottsdale should explore the possible economic and efficiency benefits of doing so. Storing water in Lake Mead might be a more cost effective approach to short and long term water storage than the current, expensive process of treating and then injecting CAP water into the aquifer. Lake Mead storage might also provide a more secure access to that water in the future. Moreover, only 95% of the CAP water recharged to the aquifer can be withdrawn,[3] whereas 100% of the water stored in Lake Mead could be available to Scottsdale.

   Retaining water in Lake Mead comes with a caveat: It's a short-term fix that buys the region time to implement real, sustainable solutions. It must not be used or allowed to lull us into complacency.

   Many other "outside-the-box" scenarios are being considered and implemented throughout the Lower Colorado River Basin. To take advantage of novel opportunities, we must be receptive and nimble.

2) Preserve Scottsdale's reserves through demand-side management

   Scottsdale has an outstanding history of "saving" water by recharging reclaimed water and our unused CAP allocation. In times of supply shortage, the City is able to augment supply by making water withdrawals from this "savings account." The savings account figures prominently in the supply-side management strategies of Scottsdale's Drought Management Plan. In response to Stage 1 and 2 water shortages, the City can reduce its recharge operations and redirect available CAP supply to meet customer demand. In response to Stage 3 and 4 water shortages, the City can withdraw groundwater supplies from its "savings account."

   The Drought Management Plan emphasizes supply-side management strategies. Water use restrictions will not be imposed until Stage 2 (Moderate Water Shortage). Recent scientific studies indicate that the current drought may continue for a number of years. In the event of a prolonged drought, it will become increasingly important to stretch Scottsdale's reserves ("savings account") to last as long as possible. To that end, EQAB recommends a greater emphasis on demand-side management strategies, including conservation, throughout

[3] Scottsdale is able to withdraw 100% of reclaimed water recharged to the aquifer.

drought stages 1 to 4. This recommendation can be illustrated with two examples from the Demand-Side Management Option Menu (Drought Management Plan, Table 1). "Conduct indoor water audits" of municipal facilities is listed as a Stage 3 strategy; this demand-side strategy could be implemented in Stage 1, if not earlier. Similarly, "washing of municipal fleet vehicles" is limited in Stage 2 and prohibited in Stage 3. Greater reliance on demand-side strategies would elevate the limitation and prohibition to Stage 1 and 2, respectively.

In sum, EQAB recommends a shift in the management strategy balance. On the supply side, we encourage preservation of the "savings account," and even continued "deposits," during early drought stages. Likewise, on the demand side, we encourage a more proactive approach to conservation. This strategy realignment will be far more effective in the long term and ultimately less impactful on our lifestyle. Sensible budgeting (demand-side) is more prudent and sustainable than raiding the piggy bank (supply-side).

In the Lower Colorado River Basin, demand exceeds supply, an imbalance known as the "structural deficit." Closing the structural deficit is one of our region's greatest challenges. We have limited control over supply. Thus, to close the deficit, we must reduce demand through increasing efficiency, curtailing waste, and other conservation measures.

EQAB stands ready to assist the Mayor/Council and Scottsdale Water as Scottsdale plans for our resilient water future.

Approved by a vote of 4 – 0 at the EQAB monthly meeting on April 20, 2016.

Alisa McMahon, Chairperson

April 20, 2016
Date