City of Phoenix

City Council Report

Agenda Date: 2/20/2019, **Item No.** 75

Intergovernmental Agreements with Pinal County Irrigation Districts; with Arizona Water Banking Authority; and Between Various Entities and Central Arizona Water Conservation District (Ordinance S-45412)

Request the City Manager, or his designee, to enter into one or more Intergovernmental Agreements with Pinal County irrigation districts to store Colorado River water; an Intergovernmental Agreement with the Arizona Water Banking Authority to exchange long-term water storage credits; and between various entities and the Central Water Conservation District for water deliveries. There is no cost to the City for these agreements. Further request authorization for the City Treasurer to accept all funds related to these items.

Summary

On Jan. 31, 2019, Governor Ducey signed a concurrent resolution of the Legislature giving authorization to the Director of the Arizona Department of Water Resources to enter into the Lower Basin Drought Contingency Plan (DCP) negotiated among Arizona, California, and Nevada. An explanation of the DCP and its potential impacts to Phoenix is included (**Attachment A**). The State is the required party in Arizona for the DCP agreement, so Phoenix's approval of the interstate agreement is not necessary. However, staff recommends that Phoenix enter into three agreements that are part of DCP implementation in Arizona.

The concurrent resolution gives the Director of the Arizona Department of Water Resources the authority to forbear ordering a portion of Arizona's entitlement to Colorado River water, so by entering into the DCP, the State agrees to divert less water from the Colorado River. Because most of the Colorado River water delivered through the Central Arizona Project (CAP) canal is lower in priority than water used on the main-stem of the Colorado River, this will result in significant reductions to CAP water deliveries.

Operation of the CAP Priority System

In addition to the existing priority system on the main-stem of the Colorado River, a separate priority system for Colorado River water exists for users of the CAP. Various cities, Indian communities, mining companies, and private water companies in Maricopa, Pima, and Pinal County, including Phoenix, hold federal contracts in

perpetuity for the three highest priority classes of water. In priority from highest to lowest, these are Wellton-Mohawk water, Municipal & Industrial and Indian water as co-equal priority, and Non-Indian Agricultural water. These federal contracts guarantee that delivery of water in the CAP occurs in accordance with the established priority system. All other water delivered through the CAP is in a category called Excess water. Excess water is the water not used by long-term federal contract holders in any given year. Long-term contracts for Excess water are not available, but rather are entered into with the Central Arizona Water Conservation District (CAWCD) on a year-by-year basis. Because the volume and availability of Excess water is based on the orders of higher priority water users in Central Arizona, there is no guarantee that Excess water will be available in any given year. Moreover, this water is subject to the first reductions in deliveries under shortage conditions on the Colorado River. *In any given year, Excess water is only available after the water orders of those holding contracts for Wellton-Mohawk, Municipal & Industrial, Indian, and Non-Indian Agricultural water are fulfilled.*

For users in Central Arizona, the cost of Colorado River water consists of: (a) a capital charge to repay the federal government for the canal infrastructure; (b) operation, maintenance and replacement (OM&R) costs for the canal works; and (c) the energy costs associated with pumping the Colorado River water uphill from the Colorado River into Central Arizona. At the time of the 2004 Arizona Water Settlement Act, agricultural districts in Maricopa, Pima, and Pinal counties were struggling to maintain their long-term contracts to Non-Indian Agricultural water because they could not afford the full cost of Colorado River water. To solve this problem, the agricultural districts relinquished their higher priority Non-Indian Agricultural contracts to cities and tribes (including Phoenix) in exchange for a right-of-first-refusal to Excess water at a substantially subsidized cost. Agricultural districts do not have a right to Excess water, but rather only a right-of-first-refusal whenever Excess water is available. CAP agricultural districts do not pay capital charges or OM&R, but only pay the energy costs for Excess water when it is available. According to the agreement between the agricultural districts and the CAWCD, this right of first-refusal for Excess water expires in 2030. As a result of this agreement, to date, the agricultural districts have received subsidies through reduced-cost deliveries of Excess water and other concessions valued at nearly $400,000,000. The CAWCD has taxing authority on real property in Maricopa, Pima, and Pinal Counties and uses the taxes raised to pay for the subsidies provided to the agricultural districts.

Impact of DCP Water Reductions in Central Arizona

Under the terms of the DCP, less Colorado River water will be available in Central Arizona and the likely impact is that Excess water will not be available at all because it is lowest in priority and first to be cut. Because the agricultural districts in Central

Arizona depend on Excess water, one impact of DCP is the likely elimination of any deliveries of Colorado River water to the agricultural districts. This was an unacceptable result to the Governor's office and the Board of Directors of CAWCD, so they determined that the loss of water to agricultural districts must be mitigated as a prerequisite to passage of the DCP in the Arizona Legislature. Because no water can flow to Excess water users such as agricultural districts unless the higher-priority water orders are filled, and under DCP there wouldn't be enough water to meet these water orders and have water left over for Excess water users, the CAWCD Board voted to withdraw a large volume of water that CAWCD had previously stored in Lake Mead known as Intentionally Created Surplus (ICS) water out of Lake Mead and into Central Arizona for delivery to agricultural districts in Pinal County. ICS water must also be delivered in accordance with the priority system when it is brought down out of Lake Mead. However, even with the ICS water, there would have been insufficient water to meet the deliveries of the higher priority users and provide the agricultural districts with an acceptable volume of water. To bridge this gap, the Gila River Indian Community offered to accept payment in lieu of its higher priority water deliveries to help make water available to fill higher priority orders. In addition, several cities (including Phoenix) agreed to deliver some of their CAP water for storage in Pinal County agricultural districts. Taken together, these actions will meet the demands of higher priority contracts and permit an agreed-upon amount of water to reach the lower priority agricultural districts during shortage conditions.

With the addition of ICS water to mitigate the agricultural districts, essentially, the CAWCD voted to take water out of Lake Mead for the benefit of agricultural districts in Pinal County to help ensure passage of the DCP, which is focused on keeping water in Lake Mead to stave off catastrophic shortages in Lake Mead. Other stakeholders, including the cities and the Gila River Indian Community, did not feel it appropriate to drain water out of Lake Mead to the benefit of agricultural districts in Pinal County, and therefore insisted on "offset" provisions that will ensure more water ends up in Lake Mead rather than less. To accomplish this, the Gila River Indian Community and the Colorado River Indian Tribes will be compensated for leaving additional water in Lake Mead, some in the form of ICS and some in the form of system conservation. These provisions ensure that the in the spirit of the DCP, keeping more water in Lake Mead to mitigate the chance of catastrophic shortage is upheld in the Arizona implementation of the agreement, and sets a valuable precedent for the on-going success of system conservation programs. Funding for the various components of DCP implementation in Arizona will come from the State General Fund, CAWCD tax levy, and increased CAP water rates. Phoenix is not providing direct funding to any entity, but will pay increased CAP OM&R charges as a result of DCP implementation. Revenue generated from CAP OM&R charges can only be used for project purposes on expenditures that fit within the definition of OM&R expenses as stipulated between the CAWCD and the Bureau of Reclamation.

Three Phoenix DCP Implementation Agreements

1. *NIA Mitigation Agreement* - In order to effectuate the mitigation referenced above, it is proposed that Phoenix enter into an agreement among holders of Non-Indian Agricultural (NIA) water contracts and the CAWCD. This agreement will run concurrent with the interstate DCP through 2026. The terms of the agreement will ensure that the CAWCD does not deliver more water to agricultural districts in Pinal County than has been agreed, and that the CAWCD delivers some ICS water to the benefit of NIA water contract holders over the term of the DCP. In addition, the agreement will ensure that the CAWCD does not make certain types of water available as Excess water during the course of the DCP agreement, and will allow some NIA water users, such as the Gila River Indian Community, to accept in lieu payments to forbear its water order so there is sufficient water to mitigate other NIA water contract holders. The agreement is structured to uphold the existing priority system for water deliveries and to ensure that the cities' existing contracts for Colorado River water control in the event of any conflict.

2. *Storage Agreements with one or more Pinal County irrigation districts* - Understanding that passage of the DCP authorizing legislation in Arizona depended on mitigating impacts to agriculture in Pinal County, cities, including the City of Phoenix, also pledged to participate in mitigation for Pinal County agricultural districts. Specifically, the City of Phoenix will enter into one or more intergovernmental agreements providing that if a Tier 1 or Tier 2(a) shortage occurs during 2020, 2021, or 2022, the City will deliver up to 15,000 acre-feet of Colorado River water per year to Pinal County irrigation districts. In return, the irrigation districts will reimburse Phoenix the energy component of its CAP water rate for the water delivered. The Colorado River water delivered to the district displaces the district's use of groundwater, and a long-term storage credit for Colorado River water is created in the Pinal Active Management Area (AMA) in Phoenix's name. The water Phoenix will use for this storage agreement is water Phoenix would have otherwise stored in an underground storage facility in the Phoenix metropolitan area.

3. *Exchange Agreement with Arizona Water Banking Authority* - While Phoenix will earn credits from the water it sends to the Pinal County irrigation districts in the Pinal Active Management Area, Phoenix would be unable to use the water associated with those credits within the City. In order to preserve the value of the credits, Phoenix will then exchange the long-term storage credits created in the Pinal County Active Management Area for a like amount of long-term storage credits in the Phoenix Active Management Area, where those credits can eventually be pumped out of Phoenix's wells. This exchange will take place with the Arizona Water Banking Authority, which

holds millions of acre-feet of long-term storage credits in Maricopa, Pima, and Pinal counties. To effectuate the exchange, Phoenix must enter into an intergovernmental agreement with the Arizona Water Banking Authority for the exchange of long-term storage credits on a one-for-one basis.

The intergovernmental agreements with the Pinal County irrigation districts binds Phoenix to deliver water to the district only to the extent that Phoenix receives a long-term storage credit for the delivery. That is, if state law is amended such that Phoenix would no longer receive a long-term storage credit for deliveries to the district that can subsequently be exchanged with the Arizona Water Banking Authority for a credit in the Phoenix Active Management Area, Phoenix's obligation to deliver water ceases. The exchange agreement with the Arizona Water Banking Authority includes no conditions on the exchange. That is, Phoenix will receive a long-term storage credit in the Phoenix Active Management Area for every long-term storage credit Phoenix creates through delivery of Colorado River water to the Pinal County irrigation districts. In terms of the legal availability of long-term storage credits, Phoenix is in the same position through this exchange than if Phoenix had stored the water in local aquifers. However, from a physical availability perspective, less Colorado River water will be stored in Phoenix-area aquifers.

The proposed DCP implementation in Arizona is a compromise reached after years of difficult discussions among many different entities that depend on Colorado River water in Central Arizona. If DCP is implemented, Arizona will enter into shortages on the Colorado River sooner, and in larger amounts than under the status quo. Over the course of the agreement, Phoenix can reasonably expect to receive less of its NIA water than it would under the status quo, although actual outcomes will depend greatly on weather and snowpack in the Rocky Mountains. Importantly for Phoenix, the existing priority system for Colorado River deliveries in Central Arizona is upheld, the terms of its federal contracts for Colorado River water are not altered, more water ends up in Lake Mead, and system conservation is deployed in a meaningful way. This last point is worth emphasizing because the long-term ability for Phoenix to receive is Colorado River allocation consistently and in reasonable amounts hinges on the success of system conservation.

Staff recommends approval of these three agreements. The agreements do not require the expenditure of additional City funds over the amount the City would normally spend to purchase and store Colorado River water.

Contract Term

The Intergovernmental Agreements (IGA) with the Pinal County irrigation districts will be effective upon execution and through Dec. 31, 2022. The IGA with the Arizona

Water Banking Authority will be effective upon execution and through Dec. 31, 2026. The IGA between various entities and the Central Arizona Water Conservation District will be effective upon execution and through Dec. 31, 2026.

Financial Impact
There is no cost to the City for these agreements.

Responsible Department
This item is submitted by Deputy City Manager Karen Peters and the Water Services Department.

APPENDIX A
DESCRIPTION OF INTERSTATE DROUGHT CONTINGENCY PLAN

For several years, the Lower Basin States of Arizona, California, and Nevada, and the Republic of Mexico have been engaged in discussions about how to prevent shortages in the Colorado River Lake Mead reservoir that could cause great economic disruption throughout the Southwest. The result of these discussions is a proposed interstate agreement referred to as the Lower Basin Drought Contingency Plan (DCP), which would be in place through the year 2026 when the Interim Guidelines expire. (The Upper Basin States of Wyoming, Colorado, Utah and New Mexico have proposed a similar Upper Basin Drought Contingency Plan based on concerns about the sustainability of the Lake Powell reservoir.) The DCP would commit Arizona, Nevada, and California to forego water deliveries under certain conditions to help boost Lake Mead elevation levels. In addition, the DCP would include the expanded use of temporary storage mechanisms that incentivize water users to store conserved water in Lake Mead to forestall even deeper shortages.

Shortages on the Colorado River are declared and managed through a Record of Decision issued by the Secretary of the Interior in 2007 commonly referred to as the Interim Guidelines. Per the Interim Guidelines, shortage is declared when Lake Mead content is projected to be at or below elevation 1,075 feet. Increasingly larger shortages are declared when Lake Mead is projected to be below elevations 1,050', and 1,025'. There are no set guidelines for circumstances in which the elevation of Lake Mead continues to fall below 1,025'. The lowest water outlet at Hoover Dam is at 895' in elevation. Below this level, water cannot be released and the system reaches a "dead pool" state. Under the current Interim Guidelines, Arizona's 2.8 million acre-foot Colorado River allocation is cut by 320,000 acre-feet, 400,000 acre-feet, and 480,000 acre-feet at Lake Mead elevations 1,075', 1,050', and 1,025' respectively. Nearly all of these cuts fall on water users in Maricopa, Pinal, and Pima counties.

While the first level of shortage in Lake Mead is very likely in 2020, the DCP agreement may reduce the risk of more catastrophic shortages that could cause the loss of all of the Colorado River water available to Central Arizona. However, reducing the risk will come at a cost to all parties. There are three main elements of the DCP.

1. Colorado River System Conservation

System conservation occurs when conserved water is left permanently in the Colorado River above Hoover Dam to stabilize water levels in Lake Mead and forestall shortages. Because the Colorado River is over-allocated and stakeholders of the basin must collectively find a way to use less water, it is in Phoenix's long-term strategic interests to help develop, implement, and fund system conservation programs.

The DCP entails Arizona contributing approximately 150,000 acre-feet of system conservation water. The Colorado River Indian Tribes will use less water to help achieve these savings, and will be compensated for this activity. Support for this

system conservation program is an important component of a longer-term strategy to protect the Colorado River system.

2. Temporary Storage of Water in Lake Mead with Subsequent Delivery

California, Arizona, and Nevada are allowed to temporarily store water in Lake Mead through a mechanism called "Intentionally Created Surplus" (ICS). Through this program states can store intentionally unused Colorado River water in Lake Mead (as ICS credits) for future delivery, providing at least a temporary benefit to Lake Mead elevations. Under the Interim Guidelines, ICS cannot be taken back out of Lake Mead at elevations below 1075'. However, through the DCP states would be allowed to take delivery of previously-stored ICS water down to elevation 1045', and under certain conditions all the way down to elevation 1025.' This ability to take ICS out of Lake Mead below elevation 1075' is particularly valuable to California, which can use its ICS "bank account" for increased operational flexibility. While the creation of ICS benefits Lake Mead elevations because water is temporarily stored in the lake, the subsequent removal of this water for delivery harms Lake Mead elevations. Nonetheless, if used strategically and carefully, ICS can potentially provide some benefit to the resiliency of the river on a temporary basis.

As part of the DCP implementation in Arizona, the Central Arizona Water Conservation District will deliver its currently-held store of ICS to irrigation districts in Pinal County and to certain holders of Non-Indian Agricultural water contracts. Because the removal of this water harms elevations in Lake Mead, the Gila River Indian Community will be compensated to forbear its water use to leave water in Lake Mead in the form of ICS.

3. Temporary Storage of Water in Lake Mead with Conditional Subsequent Delivery

Under the DCP, Arizona would commit to reductions in its Colorado River deliveries that are larger than what is currently required under the Interim Guidelines. Specifically, Arizona would agree to voluntarily forbear an additional 192,000 acre-feet at elevations 1090', 1075', and 1050', and would agree to voluntarily forbear an additional 240,000 acre-feet at elevations 1,045' and 1,025'.

Nevada would agree to voluntarily forbear an additional 8,000 acre-feet at elevations 1090', 1075', and 1050', and would agree to voluntarily forbear an additional 10,000 acre-feet at elevations 1045' and 1025'. California would agree to voluntarily forbear 200,000 acre-feet at elevation 1045', 250,000 acre-feet at elevation 1040', 300,000 acre-feet at 1035', and 350,000 acre-feet at elevations below 1030'.

All of the water voluntarily forborne can be subsequently delivered if and when Lake Mead elevations ever recover to 1110'. In addition, the states can "debit" existing ICS accounts rather than voluntarily forbearing water, and thereby continue to physically take their full allocations off of the river in a given year. For example, the Metropolitan Water District of Southern California (MWD) could pay farmers in Imperial Irrigation District to fallow agricultural lands and use less acre-feet of water off of the Colorado River. Those ICS credits would then exist in Lake Mead in MWD's name, and Lake Mead elevations would improve because of the water left in the lake. Should Lake Mead elevations subsequently fall to elevation 1045', the elevation at which California

will agree to voluntarily forbear 200,000 acre-feet of water, California could "debit" MWD's ICS account in the same volume, and continue to physically take its full 4.4 million acre-foot allocation off of the river in that year. Lake Mead elevations would then decrease. The degree to which California can "debit" its ICS account rather than physically forbear water would be limited to 1.5 million acre-feet through 2026.

Similar to ICS, the voluntary forbearance water benefits Lake Mead elevations because water is temporarily stored in the lake, yet the subsequent removal of this water for delivery harms Lake Mead elevations. However, there are additional limits on the removal of this water from Lake Mead when compared to ICS that may provide some permanent benefit to Lake Mead elevations. For example, ICS accounts can only be debited to the degree that water has indeed been stored in an ICS account. If there is no water in an ICS account, the relevant state must physically forbear the agreed-upon amount of water. In addition, voluntary forbearance water must be physically forborne below Lake Mead elevations of 1025'; no debiting of ICS accounts could occur below this elevation.

While the States may wish to "voluntarily" forbear water as part of the DCP, no state has authority to force the holder of a federal contract for Colorado River water (i.e. the City of Phoenix) to relinquish its water. Therefore, should the DCP come to fruition, the voluntary forbearance will be enforced by the Secretary of the Interior, who functions as the watermaster of the Colorado River and has broad authority to determine how much Colorado River water is apportioned to each state each year.

If the DCP comes to fruition, The Secretary of the Interior will release less Colorado River water to the State of Arizona when the trigger elevations of 1090', 1075', 1050', 1045', and 1025' are reached, such that the amount of water available to Arizona matches the DCP agreement. With the current elevation at Lake Mead hovering around 1085' and a 1075' shortage expected in 2020, execution of the DCP would mean almost immediate reductions in Colorado River deliveries. The cuts to Arizona would then occur in priority, and fall nearly entirely upon Central Arizona. Within Central Arizona, the cuts would fall first on the Arizona Water Banking Authority and the Central Arizona Groundwater Replenishment District, next upon the farmers in Maricopa, Pinal, and Pima Counties, next upon cities and Indian communities that have contracts for Non-Indian Agricultural priority water, and last upon Indian and Municipal priority water users, including cities, mines, and Indian communities.

The climate is very uncertain and the levels of shortage or amount of voluntary forbearance water that would be given up through 2026 as a result of the DCP is extremely difficult to predict or quantify. As previously noted, although Lake Mead currently hovers around 1085' in elevation, it is expected to decline below 1075' later this year. Thus, if the DCP comes to fruition between 192,000 and 320,000 acre-feet at a minimum will be forborne in 2020. In addition, modeling by the Central Arizona Water Conservation District indicates that the DCP will entail an adverse impact on the availability of Non-Indian Agricultural priority water in Central Arizona above and beyond the adverse impacts that would be expected under the current Interim Guidelines. Contractors for Non-Indian Agricultural priority water include the cities of Chandler, Gilbert, Glendale, Mesa, Phoenix, Scottsdale, and Tempe, as well as the Gila River Indian Community and the Tohono O'odham Nation. When the White Mountain Apache

Tribe water rights settlement is finalized over the next couple of years, the tribe will also become a contract holder of Non-Indian Agricultural water and will lease it to various cities. Phoenix holds 37,280 acre-feet per year of Non-Indian Agricultural priority water under contract; the Gila River Indian Community holds 102,000 acre-feet per year, and the Tohono O'odham nation holds 28,200. Together, these entities hold 92% of the Non-Indian Agricultural priority water under contract. While Phoenix, the Gila River Indian Community, and the Tohono O'odham Nation can expect adverse impacts to the availability of this water under the DCP, those impacts cannot be quantified with any reasonable certainty. The Arizona implementation agreements referenced in the City Council report will mitigate some, but not all of these impacts, but only through 2025.

The tradeoff for these adverse impacts is a potential reduction in the probability of deeper shortages that might impact the availability of Municipal and Indian priority water in Central Arizona. This tradeoff is a perfect example of why the resiliency of the Colorado River is a wicked problem. The DCP may bring about a reduction in the probability that deep cuts to Municipal and Indian priority water in Central Arizona will occur, but ironically the water that may be most adversely impacted by the DCP is the water that Phoenix is currently storing in Tucson aquifers for purposes of shoring up its resiliency in the face of Colorado River shortages.

On the whole, however, the DCP moves Arizona in an important strategic direction. The system conservation and ICS that results from the DCP will be created through innovative voluntary transactions rather than traditional command-and-control directives. That is, those that value the resiliency of the Colorado River will pay directly for it, and an important precedent for the use of such transactions will be established. It is through voluntary and collaborative transactions that the stakeholders of the basin will best be able to find and implement the efficiencies, innovations, advances, and improvements through which resiliency of the Colorado River can be realized.