

# SUSTAINABILITY POLICIES STAKEHOLDERS PROCESS

## Location of Replenishment/Recharge and Hydrologic Impact of Pumping Summary and Recommendations

Draft

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### Introduction

On May 9, 2007, the Board of Directors of the Arizona Municipal Water Users Association (**AMWUA**)<sup>1</sup> adopted Policies Concerning Sustainable Water Supplies<sup>2</sup> addressing, among other things, the relationship between the location of replenishment by the Central Arizona Groundwater Replenishment District (**CAGRD**) and groundwater pumping by members of CAGRD; and the impacts of groundwater pumping by CAGRD members on the water supplies available to other water users. The AMWUA Board directed its staff to convene a Sustainability Policies Stakeholders Process to discuss these policies and related issues. This document summarizes the discussions of the Stakeholders related to replenishment and impact of pumping and includes the Stakeholders' recommendations for statutory and administrative changes related to these issues. It has been reviewed and confirmed by the Stakeholders.

### Background

As part of the Stakeholders Process, representatives of CAGRD, the Arizona Department of Water Resources (**ADWR**), AMWUA, the City of Tucson and the development community drafted a White Paper on CAGRD Enrollment<sup>3</sup> that describes CAGRD's enrollment process, CAGRD's Plan of Operation, and ADWR oversight of the Plan in relationship to enrollment. The White Paper discusses in detail the origin and purpose of CAGRD and how CAGRD operates.

In summary, the owner of real property or a municipal water provider may enroll in CAGRD to meet the consistency with the management goal requirement of ADWR's assured water supply rules (**AWS Rules**). Membership in CAGRD allows the landowner or water provider to use more groundwater than would otherwise be allowed under the AWS Rules (**excess groundwater**), and pay CAGRD to replenish the excess groundwater. CAGRD must replenish the excess groundwater in the same Active Management Area (**AMA**) in which it is pumped.

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<sup>1</sup> AMWUA is a voluntary, non-profit corporation established by municipalities in the urban area of Maricopa County, Arizona for the development of an urban water policy. The members of AMWUA are the cities of Avondale, Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale, and Tempe and the Town of Gilbert. The mayors of these municipalities serve as the Board of Directors of AMWUA.

<sup>2</sup> See Appendix A.

<sup>3</sup> The Stakeholders have also reviewed and confirmed the White Paper on CAGRD Enrollment dated June 30, 2008.

The Stakeholders' concerns regarding pumping of excess groundwater by CAGR members and the subsequent replenishment of water by CAGR fall into the following three major categories:

1. Whether existing laws and ADWR rules and practices adequately protect water that has been stored underground by others for future use.
2. Whether there should be a closer connection between the location of withdrawal of excess groundwater and replenishment by CAGR.
3. Whether pumping of excess groundwater to serve CAGR members should be subject to the same restrictions that govern wells used to recover stored water.

### Protection of Stored Water

Many municipal water providers have expended significant resources to store water underground to be used in the future when shortages of surface water occur. They worry that pumping of excess groundwater by CAGR members will impact the availability of this stored water for future uses. They have also questioned whether current laws and ADWR rules and practices adequately protect stored water from the impacts of proposed groundwater pumping for applications for designations, certificates and analyses of assured water supply (**AWS applications**), and by those seeking permits to drill new wells.

The Stakeholders invited ADWR to discuss current laws and ADWR rules and practices. AMWUA and ADWR then prepared an outline<sup>4</sup> (**Groundwater Modeling Outline**) that details how ADWR uses groundwater modeling to:

- Determine whether to approve new assured water supply applications;
- Protect stored water and groundwater relied upon for existing designations of assured water supply (**DAWS**), certificates of assured water supply (**CAWS**) and analyses of assured water supply (**Analyses**) from being impacted by new assured water supply determinations; and
- Determine whether a proposed new well will impact surrounding land and other water users.

The practices detailed in the Groundwater Modeling Outline have assuaged concerns about potential threats caused by new AWS applications to stored water and to groundwater relied upon by existing DAWS, CAWS and Analyses. However, the Stakeholders also recognized that current laws do not protect stored water or existing DAWS, CAWS and Analyses from the impacts of groundwater withdrawals that are not regulated by the AWS Rules. These withdrawals include agricultural pumping, pumping pursuant to Type 1 and Type 2 Grandfathered Rights that is not for AWS purposes, pumping pursuant to Groundwater Withdrawal Permits (such as industrial use permits) and exempt well pumping. While the Stakeholders are concerned about the large-scale

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<sup>4</sup> See Appendix B.

impacts of these withdrawals, they concluded that these issues would need to be addressed in another more expansive forum.

### Location of Withdrawals of Excess Groundwater and Replenishment

As noted above, CAGRDR is required by law to replenish the excess groundwater used by its members in the same AMA in which it is pumped. However, CAGRDR is not required to replenish water in the area that is hydrologically impacted by the withdrawals of excess groundwater. Many Stakeholders are concerned that this lack of connection between the location of withdrawals and the location of replenishment will exacerbate land-subsidence, water quality issues, and growth on non-sustainable water supplies. The Stakeholders recognize, however, that requiring CAGRDR to replenish in the area that is hydrologically impacted by the withdrawal of excess groundwater is problematic. Many CAGRDR member lands are located a great distance from the Central Arizona Project (CAP) facilities that CAGRDR relies upon to deliver water to replenishment locations. Thus, requiring replenishment to occur close to the location of the withdrawals of excess groundwater would be extremely costly in some cases. Moreover, because CAGRDR is required by law to establish uniform replenishment assessment rates on an AMA-wide basis, all CAGRDR members in the AMA would have to pay for the development and operation of the more costly facilities. Additionally, replenishment in many of the locations where excess groundwater is withdrawn may not be hydrologically feasible or desirable. For example, some excess groundwater is pumped in areas with high or rising groundwater tables and requiring replenishment in such areas may actually cause rather than solve problems. Some Stakeholders have also noted that those who have stored water underground are allowed to recover (pump) this water from outside the area of impact of the stored water.

Finally, ADWR is currently conducting an assessment of the AMAs to determine the areas where groundwater withdrawals are creating long-term problems and plans to propose changes to address these issues in the future. ADWR believes it is premature to address the location of replenishment until this assessment is completed. CAWCD's Board of Directors has adopted a strategic plan that calls for working with ADWR to identify problem areas and how it can help address the problems.

### Expanding Recovery Well Limitations to Wells Used to Pump Excess Groundwater

A person seeking to recover stored water from a new or existing well must apply for a recovery well permit from ADWR.<sup>5</sup> If the proposed recovery well is located outside of the area of impact of the stored water<sup>6</sup>, the recovery well permit may not be issued unless the Director of ADWR determines that recovery at the proposed location is consistent with the management plan and the achievement of the management goal for the AMA. In the Third Management Plans, ADWR has determined that recovery outside the area of impact is consistent with the management plan and achievement of the management goal

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<sup>5</sup> A.R.S. § 45-834.01.

<sup>6</sup> ADWR assumes that the area of impact is a one-mile radius from where the water is stored unless the applicant demonstrates a larger area of impact.

if the proposed recovery well is located in an area experiencing an average annual rate of decline that is less than four feet per year.<sup>7</sup>

Municipal service area wells are not subject to this four-foot decline limitation. Because the wells used to pump excess groundwater are municipal service area wells (not recovery wells), there is no four-foot decline limitation on pumping excess groundwater even though replenishment may occur many miles away from the point of withdrawal. Many Stakeholders believe this creates an inequitable situation for those recovering stored water outside the area of impact of the stored water. Several municipal water providers have multiple wells that are used to both withdraw groundwater and recover stored water. If the recovery well is located in an area experiencing a four-foot decline, all water pumped by the provider from that well would be considered groundwater. Moreover, the four-foot drawdown determination may be made by ADWR on an annual basis, which can create significant financial and operational uncertainty for the municipal provider from year to year.

ADWR has stated that it will review the four-foot decline limitation on recovery wells in the development of the Fourth Management Plans and may propose to eliminate or expand this requirement.

## **Recommendations**

1. Many Stakeholders are concerned about the fact that CAGR D is not required to replenish in closer proximity to the area where excess groundwater is withdrawn, but recognize that there are many obstacles to requiring a closer connection to withdrawals and replenishment. However, the Stakeholders agree that there are situations in which it may be possible for CAGR D to deliver water directly to a municipal provider instead of replenishing that water. In these situations the municipal provider would use the water delivered directly instead of pumping excess groundwater, thereby mitigating concerns about land subsidence, water quality deterioration and growth on non-renewable groundwater water supplies. Accordingly, subject to later agreement on criteria that must be met before direct delivery may occur, the Stakeholders recommend that state law be amended to authorize CAGR D to deliver water directly to a municipal provider in lieu of replenishing that water. Criteria for direct delivery may include the following:
  - a. The Central Arizona Water Conservation District (**CAWCD**) must approve such direct delivery. Among other things, CAWCD would be required to:
    - (1) Review its requirements for transportation of CAP water, its contracts, subcontracts, letter agreements, excess water contracts, and other contractual obligations, and its member service area and member land requirements and determine that it can meet those

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<sup>7</sup> See, for example, Phoenix AMA Third Management Plan, p. 8-36.

obligations and that capacity remains in the CAP project to make such direct delivery.

- (2) Determine that such direct delivery will not increase annual replenishment assessment rates or costs to CAP contract and subcontract holders, or its member service areas and member lands, except as provided under sub-paragraph b below.
  - b. Such direct delivery must be at the expense of the municipal provider.
  - c. The municipal provider must demonstrate that sufficient groundwater of adequate quality is physically available for the use for which direct delivery is sought because direct delivery of specific amounts of water for long-term uses cannot be guaranteed.
2. For the reasons discussed in the Background section above, the Stakeholders recommend that ADWR eliminate the four-foot decline limitation on recovery wells.

*New proposed recommendation not previously discussed by the Stakeholders:*

3. *The Stakeholders recommend that:*
  - a. *ADWR should complete its groundwater assessment as soon as possible and identify those areas in each AMA that are at risk for land subsidence, water quality deterioration and other problems due to groundwater mining.*
  - b. *ADWR, CAGR and Stakeholders should work together to identify areas where replenishment should be targeted in an effort to address the problems identified in the assessment.*
  - c. *State law should be modified to give CAGR authority to collect additional assessments/taxes from members that withdraw excess groundwater in these target areas.*