DRAFT

TUCSON AMA SAFE-YIELD TASK FORCE
ISSUE OUTLINE
6/7/00

ISSUE: RECOVERY OF RECHARGE CREDITS

The recharge and recovery program allows the storage of water in one location and the recovery of credits anywhere within the AMA that meets the recovery criteria. Recovery of stored water does not have to be hydrologically connected in time or place to recharge. Therefore, critical water management problems, such as water level declines, subsidence potential and riparian habitat losses, may be exacerbated. In addition, long term storage credits are being accrued without a clear plan for recovery.

BACKGROUND

The recharge and recovery program was designed to be flexible, to encourage storage and use of renewable supplies. It allows entities that have a legal right to renewable supplies, but lack physical access, to pump groundwater that legally maintains the character of the stored renewable supply. The resulting "paper water" system has created a situation where most of the recharge in the AMA happens in an area down-gradient from most of the pumping and up-gradient of the AMA's northern boundary. Although most of the long-term storage credits that have been earned from recharge to date have not yet been recovered, recovery of the credits is likely to be primarily outside the area of impact of recharge. Because of the concentration of recharge facilities in the northwestern part of the AMA, the best areas for recovery of storage credits are likely to be from within the area of impact of the projects. This is especially true of credits earned at Groundwater Savings Facilities (GSFs) because the existing agricultural production wells can be used as municipal recovery wells. CAWCD will need to develop a policy and pricing strategy for wheeling the recovered water in the CAP canal into the service areas of the storers if this opportunity is to be realized. Agreements between the water storers and the agricultural operators or CAWCD would also be needed to do this.

A related issue is the decline rate criteria for permitting recovery wells. The Second and Third Management Plans limit recovery wells to areas "experiencing a long term average annual rate of decline that is less than four feet per year." While this has prevented two recovery permit applicants from recovering from a few of their wells, this criterion may not sufficiently limit the amount of allowable water level decline. Sustained declines of up to four feet per year may allow for significant damage in areas with critical water management problems. In addition, providers are allowed to specify which wells are being used as recovery wells in a given year, and wells that exceed the drawdown criteria are likely to continue to be used to pump groundwater from the provider's AWS "allowable groundwater" account, or groundwater that is replenished by the CAGRD.

The water level decline rate is established based on average rates of decline, to avoid short-term fluctuations. The time frame for which the average is calculated may vary based on data

availability and hydrologic characteristics of the area. Recovery well siting criteria can be changed after recovery permits are issued, especially by adoption of new management plans. There is a need for regulatory certainty so that investments made in infrastructure to utilize or store renewable supplies are not reduced in value by subsequent changes in recovery permit criteria.

Because recovery plans have not been developed by most water storers, it is uncertain how they plan to recover the credits. It is also unclear whether the water that has been stored will be available for recovery because there is no legal mechanism to protect the stored water. This is especially an issue with the credits that are anticipated to be generated by the Arizona Water Banking Authority because there is such a large volume of water proposed for storage and it is uncertain how the credits will be recovered.

SOLUTIONS CONSIDERED

The following ideas have been considered. Additional ideas may be added to this list.

- Encourage all recovery to be from within the area of impact of recharge unless the recharge is done in a particular subarea ("critical area") or if there are other water management objectives that will be met.
- Restrict recovery in particular subareas ("critical areas").
- Change the recovery criteria decline rate to make it more stringent than the current "less than four feet per year" and apply the same restraints to groundwater withdrawals that will be replenished by the CAGRD.
- Require applicants for water storage permits and/or recharge facility permits to submit a recovery plan explaining how and when the credits will be recovered; recovery plan must be revised periodically to keep up to date; may contain contingencies.
- Require the AWBA/CAWCD to prepare a recovery plan for drought protection credits prior to storage.
- Include in facility permits a condition that stipulates where recovery may (or must) occur.
- Increase the cut to the aquifer at GSFs to more than the current five percent unless there is a demonstrated plan to recover the stored water within the area of impact.

PRELIMINARY RECOMMENDATIONS

- Using incentives such as reduced cut to the aquifer, encourage all recovery to be from within the area of impact of recharge unless the recharge is done in a particular subarea ("critical area") or if there are other water management objectives that will be met.
- Change the recovery criteria decline rate to make it more stringent than the current "less than four feet per year" and apply the same restraints to groundwater withdrawals that will be replenished by the CAGRD. Ensure equity is considered for those who have made major investments in infrastructure.
- Require the AWBA/CAWCD to prepare a recovery plan for drought protection credits prior to storage.
- Increase the cut to the aquifer at GSFs to more than the current five percent unless there is a demonstrated plan to recover the stored water within the area of impact.

- To encourage regulatory certainty, establish a minimum time frame after issuance of a recovery permit (e.g. five years or more) before the decline rate can be used to limit recovery from that well.

OBSERVATIONS

Any change to the ability of water storers to recover water outside the area of impact will seriously impair entities located far from the CAP canal and could negatively affect the volume of CAP water that is recharged. Likewise, changing the recovery criteria decline rate may be a disincentive for water storage and, as is discussed in the CAGRD issue outline, designated providers may stop recharging their own water and rely exclusively on the CAGRD for replenishment. Facilities that are designed and constructed with certain recovery criteria in place may become uneconomic if the criteria for recovery change. Finally, requiring recovery plans to be submitted may not produce accurate information since many water storers do not have concrete long term plans for recovery or water production.