February 24, 2022

Natalie Mast, AMA Director – Management Plans  
Arizona Department of Water Resources  
1110 W Washington St., Suite 310  
Phoenix, Arizona 85007

Re: Draft 5th Management Plan for the Phoenix AMA

Ms. Mast & Management Plans Team,

The Arizona Municipal Water Users Association (AMWUA) appreciates the opportunity to provide these comments on the Draft 5th Management Plan (5MP) for the Phoenix Active Management Area (AMA). The ten AMWUA member cities provide water service to over 3.7 million people and are committed to furthering the water management objectives of the Phoenix AMA. AMWUA has attended and represented our members at every single 5MP Municipal Subgroup meeting since July 28, 2020, and we have participated extensively in ADWR’s stakeholder process over the last two years to develop the 5MP. We recognize the tremendous amount of effort that went into this stakeholder outreach and the development of the Plans.

AMWUA commends the Department for completing drafts of the 5MP for each of the five AMAs. The Management Plans are a critical water resource planning tool that serve to document the current progress towards reaching safe-yield and should chart the out a course for achieving water sustainability within an AMA. The 5MP is particularly important as it is the last statutorily authorized Management Plan, and its regulatory requirements may be in effect indefinitely.

ADWR’s extensive efforts to conduct stakeholder outreach and collaboration on the Municipal Conservation Programs is evident: both the Non-Per Capita Conservation Program and the Total Gallons Per Capita per Day Programs have been significantly improved from their predecessors in the 3rd and 4th Management Plans. AMWUA, our member cities, and the Department put in long hours over the last two years to improve these Programs, and we sincerely appreciate ADWR’s partnership in this process.

AMWUA also supports the Department’s development of safe-yield metrics and communication strategies that clearly diagnose the state of ongoing, long-term overdraft occurring with the AMA. Groundwater mining continues to be serious issue in the Phoenix AMA that needs to be addressed. While the 5MP acknowledges that the Phoenix AMA is a long way from meeting its Management Goal, we had hoped for the 5MP to put forth a clear strategy to close that gap and move the AMA closer to safe-yield. We will continue to work with ADWR to
this end, and we encourage the Department to elaborate further in the 5MP on what might be done to reduce overdraft in the Phoenix AMA.

Finally, AMWUA wishes to express serious concerns with ADWR’s proposed modifications and implementation of the “Storage and Recovery Siting Criteria” located in Section 3-801(B)(1)(a). The implementation of this policy as proposed by ADWR will have harmful consequences to underground storage facilities (USF) across the entire AMA, restricting recovery of renewable water supplies and disincentivizing one of Arizona’s most successful water management tools – underground storage. AMWUA, our members, and other stakeholders have repeatedly raised a number of concerns with the Department about this proposal.

The Siting Criteria implementation proposal should not be characterized as a simple “technical fix” or “update to existing language.” The Department is currently proposing to implement an outdated policy that has lain dormant in the Management Plans since 1999 and is not needed to address any identified water management problem in the Phoenix AMA. We urge the Department to remove the regulatory language related to “shallow water” conditions from the 5MP, and we have included in our comments a more detailed analysis of the problems associated with this language.

Overall, AMWUA expresses its appreciation to ADWR for its completion of the 5MPs, and we recognize the extraordinary progress ADWR has made in catching up with the Management Plans framework that was derailed over ten years ago. The extensive stakeholder outreach that was put in to developing the Municipal Conservation Programs has proven successful, and we hope that this approach continues as the 5MPs are finalized, particularly with respect to the proposed Storage and Recovery Siting Criteria.

Attached you will find our comments on the Siting Criteria, the 5MP Chapters, and the AMA Management Goals Report. Please do not hesitate to contact me or my staff if you have any questions.

Sincerely,

Warren Tenney
Executive Director
AMWUA submits the following comments on ADWR’s proposal to implement in the 5th Management Plan (5MP) regulatory language related to Storage and Recovery Siting Criteria that originated in the 3rd Management Plan and have not been enforced since 1999.

The Department’s proposed implementation of these criteria will limit recovery to the area of impact (AOI) for underground storage facilities (USF) that are permitted or renewed after 2025, where the USF’s Maximum AOI overlaps an area of “shallow depth to water.”¹

We appreciate the Department’s intentions to implement existing regulatory language. Nevertheless, we have serious concerns with this proposal and feel it should not be codified in the indefinite regulatory requirements of the 5th Management Plan. Since the policy was proposed on June 28, 2021, stakeholders have been asking for an evaluation of what recharge facilities would potentially be impacted. No such review or analysis has been completed by the Department. Stakeholders have consistently raised concerns with this policy proposal, including at the July 14, 2021 Recharge Program Subgroup meeting [1], within the subsequent stakeholder questionnaire [2], and after “Version 2” of the proposal was published on November 2, 2021 [3].²

AMWUA understands ADWR’s premise that recharging in areas experiencing shallow water conditions can be less optimal than recharging elsewhere. However, we believe the methodology for implementing this policy as proposed in the 5MP will have negative consequences that outweigh any potential water management benefits. Recharge and recovery will continue to be important water management tools in the Phoenix AMA, even after 2025, and the proposed Siting Criteria enact restrictions that are infeasible and counterproductive.

**Siting Criteria Recovery Restrictions**

Restricting recovery to the AOI will penalize water providers who recover near a USF in a hydrologically responsible manner, even if that recovery happens to fall just outside of the regulatory construct that is the AOI. Important regional recharge efforts such as the Granite Reef and Northern Agua Fria Underground Storage Projects will be undermined by the recovery restrictions, as the land area that qualifies as AOI is inaccessible to many who store there.

Future storage and recovery at smaller, local USFs will also be impacted by this policy. There are many constraints including geology, land ownership, well spacing rules and other regulations

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https://new.azwater.gov/sites/default/files/media/5MPRechargeProposalv3.pdf

² AMWUA, Arizona Water Company, Gilbert, Goodyear, Phoenix, and SRP all submitted comments raising concerns about this proposed implementation of the siting criteria in areas experiencing shallow water conditions.
that prevent water providers from drilling wells within the tight constraints of the AOI – especially the 1-mile safe harbor.

These recovery restrictions may ultimately lead to negative groundwater management outcomes by disincentivizing future underground storage, pushing renewable supplies to groundwater savings facilities instead of actual recharge, or forcing water providers to pump pursuant to groundwater allowances if their credits are threatened by this proposal.

**Use of the Maximum AOI to Trigger Restrictions**

While the AOI for purposes of recovery is a very small area that limits permissible recovery, the Maximum AOI for purposes of USF permitting is extremely far-reaching and expansive. The Department’s current methodology of calculating the Maximum AOI produces modeled projections of a 1-foot groundwater level rise that can extend outward in excess of 10 miles for many USFs. This methodology of calculating the Maximum AOI leads to modeling outcomes that pose difficulties in permitting any new USF, regardless of the new Siting Criteria proposed here.

Recharge facilities throughout the Phoenix AMA will be subjected to the recovery restrictions associated with this policy if ADWR utilizes the Maximum AOI when determining if a USF is contributing to shallow water levels. As a result, there is high likelihood of USFs unnecessarily triggering this 5MP policy despite being located substantially far away from an area where water levels are 50 feet or less below the land surface.

Implementation of the Siting Criteria as proposed in the 5MP combines the most restrictive recovery requirements (the AOI), with the most expansive metric (Maximum AOI) for determining which USFs will be subjected to such restrictions. While we understand the appeal of using existing regulatory constructs for this new policy, the Maximum AOI is not a good proxy for determining contributions to shallow water and it will significantly increase the number of USFs that would be subject to the recovery restrictions.

**Proposed Definition of “shallow depth to water”**

The Department’s proposed definition of “shallow depth to water” in the 5MP is 50 feet or less below the land surface. This definition was sourced from a Pima Association of Governments Report published in 2000, which itself relies upon data in ADWR’s *Arizona Riparian Protection Program Legislative Report* published in 1994.³

The Pima Association of Governments Report chose to use a 50-foot depth standard for their study

“based on research identifying the water needs of various types of riparian vegetation . . . in order to ensure identification of areas that might be capable of supporting mesquite bosques.”

We strongly question the applicability and suitability of this standard for achieving the current water management objectives of the Phoenix AMA and do not believe it should be inserted into the 5MP. Groundwater level depths related to specific vegetative needs is an inappropriate metric to use for the regulation of underground storage and recovery.

This proposed definition is overly far-reaching and will impose a universal “shallow water” determination on broad swaths of land in the Phoenix AMA, including regions near the Salt River channel, other riparian areas, environmental features such as wetlands, and existing recharge facilities. ADWR’s existing depth-to-water projections sourced from Groundwater Site Inventory (GWSI) data show many locations that would meet this 50-foot depth threshold in the Phoenix AMA.

The 50-foot depth definition not only conflicts with existing USF permits that authorize recharge activities to raise groundwater levels to as close to 15 feet below the land surface, but it is also duplicative and unnecessary considering existing regulatory requirements to demonstrate hydrologic feasibility and that the underground storage will not lead to unreasonable harm. ADWR’s existing USF permitting requirements are conservative and site specific.

It is concerning that this rigid definition may also lead to restriction of recovery in areas where water near the land surface is not causing an issue. The original siting criteria language in the 3rd and 4th Management Plans has been modified for the 5MP as follows: “so long as areas in which water is stored are not experiencing problems associated with shallow depth to water conditions.” ADWR’s deletion of this language implies that this policy and its restrictions will be applied in all areas where water levels are 50 feet or less below the land surface, regardless of whether or not there is a water management problem to be solved.

The Siting Criteria Do Not Further the Water Management Objectives of the 5MP

AMWUA remains committed to working with ADWR to pursue water policy objectives in the Phoenix AMA, including improvements to the Recharge Program. We appreciate the Department’s intentions to make updates to the recharge-related policies; however, we are

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5 ADWR Phoenix AMA depth to water projections, 2018. For example, see subbasin maps in the Phoenix and Tucson AMAs prepared for the September 9, 2021 Post-2025 AMAs Committee Meeting. https://new.azwater.gov/gwaicc/committee/meeting/post-2025-amas-committee-meeting-3
concerned that ADWR is proposing to implement this new policy in the absence of substantive analysis or resolution of the issues raised by stakeholders. Implementation of these Siting Criteria as proposed will cause more harm than benefit, and we urge the Department to remove this language from the Phoenix AMA SMP.
CHAPTER 1: HYDROLOGY

Table 1-1 Phoenix AMA Rates of Annual Net Natural Recharge (AF/Year)
It appears that the Net Natural Recharge value is calculated by taking the sum of Mountain Front Recharge, Stream Recharge, and GW Inflow and subtracting the sum of Riparian Evapotranspiration and GW Outflow.

If this is the intent of the table, there may be an issue with double counting, as the GW Inflow value is the sum of Mountain Front Recharge and Stream Recharge; and therefore, leads to each of these values being counted twice in the final calculation of Net Natural Recharge.

CHAPTER 2: SUPPLY & DEMAND

AMWUA appreciates the Department’s efforts to increase data availability and transparency, and we support the development of the numerous Dashboards to this affect. With respect to Safe-yield, the Overdraft Data Dashboard serves as a good communications tool in gauging the AMA’s progress.

We believe that Chapter 2, and the 5MP as a whole, would be strengthened if the data Dashboards were supplemented with data analysis from the Department. As the owner and compiler of this data, ADWR is well-suited to interpret and tell the story of why the Phoenix AMA has not reached safe-yield, and to share not only the Dashboards, but insights and analysis from the data they contain.

For example, the Overdraft Data Dashboard shows the current state of overdraft for each Management Period. It appears that the 4th Management Period (2010 – Present) is actually the worst period of overdraft since 1985 in each final year of long-term analysis. Why is this? Is groundwater pumping increasing? What does this mean for the Phoenix AMA?

ADWR’s analysis of these dashboards would help clarify the drivers of our current state of overdraft as well as address certain inconsistencies. For example, the Overdraft Data Dashboard: Annual Overdraft Chart (1 of 6) shows that Industrial groundwater demand in the Phoenix AMA was just over 94,000 AF in 2019. However, the Industrial Dashboard - Demand by Supply Source (2 of 4) shows that over 210,000 AF of groundwater was pumped by the Industrial Sector in 2019.

The Dashboards provide a lot of information, but it would be helpful if ADWR could pull out key insights to help make sense of the AMAs current overdraft situation.

Finally, the source data behind the dashboards remains inaccessible – it cannot be exported and is not provided as a downloadable spreadsheet. Having ready access to the source data is
important for both transparency and for allowing others to research and assess water information. We ask that ADWR regularly upload this information for stakeholder review.

CHAPTER 3: UNDERGROUND WATER STORAGE, SAVINGS, AND REPLENISHMENT

3.2.3 Recharge Facility, Storage, and Recovery Data
There is a substantial amount of data referenced in this section that is subsequently followed by a link to the “Recharge Dashboard.” It would be helpful if a chart/graph/map, where appropriate, from the Dashboard could be posted adjacent to the statistics and analysis in the 5MP. At the time of writing these comments (February 18, 2022), the Recharge Dashboard has not been posted. Additionally, the 5MP may exist in perpetuity, but it is unlikely that the Dashboard will retain its current form or location on ADWR’s website forever and therefore it would be helpful to memorialize the information.

Table 3-1 Phoenix AMA AWBA Credits Accrued & Location Through 2019
Subheadings for the three columns appear to be missing.

3-801 Storage and Recovery Siting Criteria Section B(1)(a)
Please see AMWUA’s comments requesting that the provisions related to “shallow depth to water” be removed from the 5MP in the absence of further analysis.

3-801 Storage and Recovery Siting Criteria Section B(2)(a)
For entities that are not designated water providers, the recovery criteria related to 100-year depth-to-static water level may play a bigger role into the future as physical availability of groundwater diminishes. Chapter 3 would benefit from discussion of this criteria – has it proven to be an obstacle in the Phoenix AMA or other AMAs to date? Does ADWR anticipate it will be an issue for future recovery well permits?

CHAPTER 4: AGRICULTURAL

4.2.1.3 Adjustment of Highest Water Duties
ADWR states in Chapter 4 that the highest 25% of water duties may be reduced by up to 5%. Can the Department elaborate on if ADWR plans to make this reduction? Does ADWR retain this discretion throughout the 5MP? What does the process for this reduction look like?

CHAPTER 5: MUNICIPAL

5.3.1 Non-Per Capita Conservation Program (NPCCP)
AMWUA commends ADWR for its extensive outreach and collaboration with stakeholders in the Phoenix AMA to improve the NPCCP. The NPCCP requirements, Tier structures, point
values, and substance of each BMP have been thoroughly updated – and as a result, this Program will continue to further water use efficiency for municipal water providers in the AMAs. Staff at AMWUA, our member cities, and the Department put in long hours over the last two years to work on the NPCCP and we sincerely appreciate ADWR’s partnership in this process.

5.3.1.1 Regulated Parties – Eligibility and Provider Profile Requirements
Please clarify the following statement and outline the timeline and requirements for a Designated Provider who wishes to participate in the NPCCP:

“Large municipal providers with a DAWS that elect to be regulated under the NPCCP shall submit a Provider Profile to the Director at the time the provider submits written notice to the Director that the provider elects to be regulated under the NPCCP.”

5.3.2 Total Gallons Per Capita Per Day (GPCD) Conservation Program
AMWUA also extends its appreciation to ADWR for the effort that has been made to improve the Total GPCD Program. The Total GPCD Program as formulated in the 5MP is a marked improvement over its predecessors in the 3rd and 4th Management Plans.

5.3.2.2 Total GPCD Program Development ¶ 2
It would be extremely helpful to elaborate more on the establishment of the “Minimum” and “Maximum” GPCD requirements and why these bounds were set. As we interpret it, the “Minimum” is the most stringent GPCD target that could be set annually, the “Maximum” is the least stringent. The narrative of this section is a suitable location to expand more upon this concept which is new to water providers regulated under the Total GPCD Program. It would be helpful to perhaps give an example of a situation where the annual requirement would trigger use of the “Minimum” or “Maximum.”

5.4 Lost and Unaccounted-for Water
Should this section reference a water provider’s groundwater distribution system?

CHAPTER 6: INDUSTRIAL

6.2 Industrial Conservation Programs Description
AMWUA is concerned with the following:

“The conservation requirements for sand and gravel facilities, large-scale power plants, large-scale cooling facilities, dairy operations, cattle feedlot operations, metal mining facilities, new large landscape users, and new large industrial users is unchanged from the 4MP.”
The conservation requirements for these facilities did not change in the 4MP either, and have been effectively static since 1999. This is more concerning as these industries collectively extract nearly 100,000 AF of mined groundwater each year in the Phoenix AMA and demands from this sector are expected to grow.

At the least, this chapter should do more to emphasize that conservation requirements for these industries have not changed and discuss potential opportunities to revisit these sectors to mitigate increases in mined groundwater. It would also be helpful to include a table in Chapter 6 with the number of each facility/entity in these subsectors.

6-503-1 Application Rates for Turf-Related Facilities – Section B
AMWUA appreciates ADWR’s inclusion of the provision allowing parks to receive an application rate of 4.75 acre-feet per acre. This application rate recognizes the water needs of the parks that are highly trafficked and used within communities throughout the Valley. We would appreciate clarification that this process to apply for the 4.75 AF/ac allotment is different than the formal variance application requirements outlined in A.R.S. § 45-574(A).

CHAPTER 8: WATER STRATEGY

Chapter 8 acknowledges the AMA has not reached safe-yield and identifies the challenges that are keeping the AMA from meeting its management goal. AMWUA agrees with statements in this chapter that bigger and bolder measures will be required. We continue to be concerned that the 5MP is insufficient to bring the AMA significantly closer to safe-yield.

8.4.1 Water Scarcity and Supply Constraints
AMWUA suggests that the Table of five-year probability of Lake Mead levels be updated to the most current one before the 5MP is finalized in order to have most recent information memorialized in the 5MP.

5MP SAFE-YIELD TECHNICAL SUBGROUP REPORT:
OVERDRAFT, SAFE-YIELD, AND THE MANAGEMENT GOALS OF ARIZONA’S AMAS

Overall, the Management Goal Report is a helpful guide towards explaining ADWR’s process for calculating the progress towards safe-yield. We also support the implementation of the Overdraft Data Dashboards to better communicate the status in each AMA. The Dashboards and Report give a straightforward and frank assessment that the Phoenix AMA is not in a state of Safe-yield and is not projected to reach Safe-yield at its current trajectory. This clear acknowledgement is crucial to continue conversations in the Phoenix AMA that will move us closer to our Management Goal and continue to safeguard our groundwater resources.

6 https://new.azwater.gov/sites/default/files/media/ManagementGoalsReport2022_0.pdf
Table 6: Metrics included in the Overdraft Data Dashboard

With respect to the “Long-term Overdraft Status” metric: Yes (v) indicates overdraft, and No (x) indicates a balance or net recharge in the most recent year of the calculation. We find this to be somewhat counterintuitive, as the other metrics use a (v) for positive (good) situations, and an (x) for negative (bad/overdraft) situations.

For example, the “Annual” metric uses (v) to indicate a positive outcome that there are more years without overdraft than with. Similarly, the “Directionality” metric uses a (v) to indicate decreasing overdraft. We suggest that ADWR consider swapping the symbols used for the “Long-term Overdraft Status” metric for consistency.

Furthermore, Figure 3 shows an (x) for the “Long-term Overdraft Status” metric, indicating “a balance or net recharge in the most recent year” however the “Single Year” metric shows that the Phoenix AMA experienced 193,000 AF of net overdraft. These data points conflict.

Additionally, this Table should be labeled Table 7.

Agricultural Incidental Recharge

We continue to have reservations about ADWR’s use of a blanket incidental recharge figure for the agricultural sector when computing the Safe-yield water budget calculation. We recognize that this methodology is administratively easier for the Department, and therefore ask that more commitment and planning is put forward to updating these numbers periodically. By the time the 5MP is in effect, the data used in these current assumptions will be 10 years old.