

**Citizens Water Advocacy Group (CWAG)
Comments on Draft Fourth Management Plan
For the Prescott Active Management Area
September 5, 2013**

The Citizens Water Advocacy Group is an all-volunteer nonprofit organization dedicated to a sustainable water future in the upper Verde River Watershed including the attainment of safe yield and protection of the upper Verde River. We appreciate the opportunity to comment on the draft of the Fourth Management Plan, dated July 31, 2013.

The draft Fourth Management Plan (4MP) has some important advances compared to the Third Management Plan. These advances may help in the effort to achieve safe yield; however, as noted in the draft 4MP, there are significant limitations on ADWR's regulatory authority that do not enable the agency to set forth programs and requirements to achieve safe yield. The comments below will address the programs within the agency's purview, but will also suggest actions beyond the current regulatory process.

A Plan to Reach Safe Yield

As alluded to in the Summary, Section 12.4, CWAG has long advocated for an AMA-wide plan to achieve safe yield that would involve all significant providers and the county. We are encouraged by the references to "cooperative regional water resource management" in the "Limitations of Management Plan Authority" section, page 1-5 and the "Groundwater Overdraft" section, page 8-3. However, we request language in the 4MP specifying that the cooperative management take the form of an action-specific plan to achieve safe yield that can be evaluated by ADWR and the public. As we have noted in our previous comments, ADWR could assist in the timing and structure of the discussions and provide technical assistance in the formation of a plan. Achieving safe yield by 2025 will not simply happen; it will require the concerted effort of all providers.

Education of the Public

As we have previously suggested, the 4MP should commit ADWR to a program to educate the public regarding the need for the Prescott Active Management Area to reach safe yield. Although Section 8.3.2 of the draft 4MP describes the consequences of groundwater overdraft, this will be read by very few people. ADWR should undertake an outreach program to explain in a rational and non-emotional way the problems that could occur if safe yield is not reached. For example, currently, some private wells in the shallow parts of the aquifer are going dry (Former ADWR

Director Rita P. Pearson noted a specific case in her January 12, 1999 Declaration) and we are losing riparian habitat. In the longer term, providers' wells will go dry and ground subsidence may be a problem as it is in other parts of the state.

We also encourage the publication of annual water budgets to the greatest extent possible. Water budgets are valuable in making people aware of our consistent and increasing overdraft.

Adaptive Management Strategy

We have previously noted the short amount of time remaining to achieve the goal of safe yield by 2025. We suggested that under the 4MP, ADWR should monitor and report the overdraft annually, using this data to drive an adaptive management strategy. The 4MP should include internal time goals for progress in reducing the overdraft and triggers for enhanced regulatory requirements and more aggressive enforcement if the timeframes are not met.

More Aggressive Enforcement

In our prior comments, we noted the poor results of the 3MP in moving the PrAMA towards Safe Yield and called for a more aggressive approach in the 4MP. Concerning enforcement and compliance with conservation requirements, we appreciate in the draft 4MP the reference to providers being given "more limited" flexibility and the inclusion of enforcement provisions that can designate recharge water as non-recoverable and the extinguishment of recharge credits. These two provisions are commendable and preferable to monetary penalties because when exercised, they directly benefit the aquifer.

More broadly, where sufficient progress toward safe yield has not been achieved, cuts to the aquifer for recharged effluent should be considered, and ADWR should seek authority as needed. We note that the citizens of Prescott voted to change Prescott's charter to require 100% cut to the aquifer for all effluent generated from large annexed subdivisions. It seems reasonable and fair to increase effluent cuts to the aquifer for all communities if progress towards safe yield beyond conservation efforts is not made.

Aggressive Conservation Requirements

Conservation is the only regulatory tool with enforcement provisions. As such the 4MP properly provides a range of conservation Best Management Practices (BMPs) differing widely in their likely effectiveness. Of the approximately 50 BMPs, the PrAMA large providers need only select five (5). The draft 4MP provides no justification that five BMPs represent a sufficient effort and

commitment to conservation. We believe that the 4MP could require a greater conservation effort and, therefore, suggest that the number of required BMPs be significantly increased for all providers. We also recommend reporting of GPCD for all providers in the Non Per Capita Conservation Program.

In its safe yield scenarios, the 4MP appropriately suggests additional conservation requirements for new construction. The 4MP should strongly encourage or require this conservation approach.

Natural Recharge and Discharge

The draft 4MP uses statistically generated yearly projections for net natural recharge for planning and to show what overdraft conditions the PrAMA might experience. Safe yield, however, is defined as a long-term average, presumably because the aquifer has enough capacity to function as a reservoir with small changes in water levels without undue harm to well owners and the environment.

Achieving safe yield now and on a long-term basis will require major infrastructure projects that take many years to plan and construct, and we are not aware of the need and availability of short-term management strategies. Thus we fail to see the value of this artificial presentation in the 4MP, which we find unnecessarily complex and difficult to evaluate.

For planning purposes, the water providers and the communities need to understand and quantify the groundwater withdrawal limit necessary to achieve safe yield. We recommend that the 4MP include the long-term natural recharge value of 9,900 AFY that was recently generated from the updated model and the natural outflow as the decreasing historical trend line with a recent value of about 5,000 AFY. For safe yield planning purposes, reductions in the net natural recharge due to droughts or climate change are relatively small compared to the amount of water needed to eliminate the current and anticipated overdraft.

Discrepancy in Offsets to Groundwater Pumping

Table 3-2, on page 3-9, defines “Offsets to GW Pumping” as including incidental and net natural recharge. Table 2-2, on page 2-8 includes “Net Recharge,” which consists of net natural and incidental recharge. The values in the two tables differ significantly but they are similarly defined. As we discussed recently with ADWR staff, the tables are in error and will be corrected in the final 4MP. Figure 3-5, Historical Overdraft is also in error.

Current and Projected Overdraft

In the 2011 PrAMA assessment report, Table 8-1, ADWR projected the overdraft in 2025 for three demand scenarios, none of which included augmentation. The overdraft ranged from about 20,000 to 24,000 AFY. We believe that a similar presentation should be included in the 4MP to highlight the amount of additional water that would be needed if safe yield activities aren't undertaken. We note that the revisions to the net natural recharge developed by ADWR since the Assessment report increase the value from 4,000 to 4,900 AFY and therefore would reduce the projected overdraft to about 19,000 to 23,000 AFY.

Safe Yield Scenarios

The safe yield scenarios as presented in the draft are difficult for the reader to understand, irrespective of the aforementioned statistically generated projections of net natural recharge. If these scenarios are maintained in the 4MP, detailed explanation of the basis for the water budget components and calculations are needed and can be included in an appendix.

If you reduce demand enough, bring in enough water, and limit growth enough, anyone can show how safe yield can be achieved. What matters, however, is the acceptability of the conservation measures, the feasibility of the augmentation projects and the community acting cooperatively. The 4MP can describe projects, but it can't evaluate their local and AMA-wide acceptability and their feasibility.

The inclusion of scenarios that achieve safe yield even temporarily can mislead the public. Simply note the comments of the Town Manager of Prescott Valley when the draft 4MP was made available at the last GUAC meeting where he thanked the ADWR for showing that we can meet safe yield by 2025. The communities, however, have not shown how the PrAMA can achieve safe yield by any date.

Rather than attempt to assemble demand and supply actions into safe yield scenarios, the 4MP could list and describe in sufficient detail the various potential conservation demand reductions and augmentation projects that should be considered. This would leave it to the water providers to describe and assemble activities that they wish to consider or pursue. We need a water providers' scenario much more than we need ADWR's.

City of Prescott Surface Water Rights

The draft 4MP mentions City of Prescott surface water rights for Banning Creek, the Hassayampa River and Del Rio Springs and indicates that the three rights would allow them

3,200 AFY. It would be helpful if the 4MP would describe these rights individually including their effects on natural recharge and discharge and the water rights of others. It also would be useful to explain why pumping subsurface water at Del Rio Springs is different from pumping groundwater at other locations both technically and legally when calculating PrAMA water budgets and safe yield, The 4MP should also discuss what happens to this surface water as an augmentation source when Del Rio Springs goes dry by about 2025 as ADWR has projected.

Estimating Population Growth

The 4MP attempts to balance future supply and demand by estimating population growth for PrAMA entities. These estimates use highly speculative and often inaccurate techniques.

Alternatively, PrAMA population growth can be viewed in two components:

1. Growth that can use PrAMA groundwater, consisting mainly of un-built grandfathered lots and exempt wells, and
2. Growth from new subdivisions, which cannot use groundwater and must use alternative water.

The first component will take us further from safe yield while the second component does not. Therefore, it is the first component that should be evaluated in the 4MP, as further described below.

In addition to providing remedies for the current overdraft, the PrAMA providers must develop remedies for the additional overdraft that would result from the growth that can use groundwater. By focusing on this smaller growth component, the 4MP can more accurately estimate how much water will be needed for safe yield. Projections of growth of exempt wells can consider historical rates tempered by information on land availability and other growth considerations. Growth from un-built grandfathered lots can be estimated by evaluations of municipal records and suitability of lots for home construction.

If growth in new subdivisions is to occur, it would require alternative water. We suggest that the municipalities may be interested in this growth and may seek water to meet its demand. It doesn't appear necessary for the 4MP to attempt to project this demand or speculate on how much water the municipalities wish to direct to new subdivisions. The 4MP's interest should be in describing water needed for safe yield and not for new subdivisions.

By determining the projected overdraft resulting from the growth of exempt wells and grandfathered lots, the safe yield scenarios in 4MP can determine, for example, explicitly how

much recharged effluent or Big Chino water or any other water is necessary to achieve safe yield and what water might be available as alternative water for subdivision growth.

Big Chino Groundwater

The ADWR safe yield scenarios include the importation of about 12,000 AFY of groundwater from the Big Chino aquifer. ADWR experts have concluded that groundwater withdrawals in the Big Chino will reduce flow in the Verde River (see references below). The importing communities have stated their intention to maintain base flows, not harm the river and mitigate any harmful effects. The above facts call for the 4MP to recognize and address the expected harm to the river and the need for and stated intention of the communities to undertake mitigating actions. The 4MP could note, for example, that mitigation techniques such as the recharge of PrAMA effluent in the Big Chino, as once contemplated by the Town of Chino Valley, would greatly reduce the effective or net amount of imported groundwater.

To say nothing about mitigation misleads the public into thinking there is no issue, whereas the harm to the river and mitigation techniques are critical issues for the huge importation projects you are suggesting as possible solutions.

We infer the ADWR expert conclusion on the effects of pumping in the Big Chino on the Verde River from the explicit testimony of Chief Hydrologist Frank Corkhill during the hearing for the City of Prescott AWS permit in 2009 and from the ADWR report “Verde River Watershed Study,” 2000. The water budget in that report makes clear that reduction in Verde River flow is the only balancing term for increased groundwater withdrawals.

Location of Storage and Recovery Facilities

The 4MP advocates recovery of stored water within the area of impact of the stored water. We appreciate the desire to avoid locating recovery in areas experiencing significant declines; however, the 4MP needs to recognize the risk of recovering water that has treated wastewater contaminants. Notwithstanding compliance with an Aquifer Protection Permit, PrAMA recharged effluent is not suitable for drinking. The attenuation and dilution of contaminants, particularly in the unsaturated zone, is an important factor in maintaining safe drinking water. The location of recovery wells should strike a balance between public safety and the need to avoid or ameliorate steep declines in the water table.

Rainwater Harvesting

In the water budgets section, page 11-15, rainwater harvesting is mentioned as being used for AWS purposes, and it is stated that there is no mechanism in statute to obtain AWS credits for this water. However, credits aren't needed if harvested rainwater is used to benefit the aquifer and eliminate the overdraft, which is the goal of the statute.

The 4MP should enhance and implement the augmentation programs described in the 3MP. The definition of augmentation should be expanded to include rainwater harvesting, both on a personal and landscape scale. ADWR should work to resolve legal barriers to landscape-scale rainwater harvesting and should increase funding for the Augmentation and Conservation fund in order to support and incentivize use of harvested rainwater. ADWR should incentivize and coordinate the formation of a Replenishment District within the AMA.

Augmentation Authorities

In section 8-2, it states that ADWR will use the authorities available and potentially pursue additional authorities to facilitate and encourage the development, efficient use, and recharge of renewable water supplies for the AMA. It would be helpful if the 4MP provided an indication of the specific or types of authorities it might pursue. An understanding of possible new authorities would be helpful in planning for safe yield.

Conclusion

The draft Fourth Management Plan is a significant advance over previous plans. The draft plan, however, recognizes that ADWR does not have sufficient authority to develop programs to achieve safe yield. Although the draft 4MP encourages cooperative efforts by the water providers, it should be understood that the PrAMA communities in the 14 years since the declaration have not developed a plan to achieve safe yield. We believe ADWR can better increase awareness in the broader public of the need to achieve safe yield and can use its moral authority to bring about locally-generated AMA-wide solutions.

We appreciate the department's willingness to accept comments. If you have any questions, or if CWAG can be of assistance, please feel free to contact us.