

DRAFT 4TH MANAGEMENT PLAN – PINAL ACTIVE MANAGEMENT AREA
COMMENTS – DAVID SNIDER

General Comments

Decennial Management Plans, compiled and promulgated by the Arizona Department of Water Resources (ADWR) are intended to “serve as tools to assist the Department in achieving the management goal of each Active Management Area (AMA).” [ADWR, 4MP (Draft), p. 1-1] However, inasmuch as adherence to provisions of the Management Plan is embedded in various statutory and Department regulations and programs, the Management Plan is, in fact, a document that serves as guide to members of the Pinal water community and those who wish to do business within the Pinal Active Management Area (PAMA). Therefore, it behooves the Department to ensure that the document is understandable, accurate, and useable. To quote ADWR Natalie Mast, Active Management Areas Planning Manager (remarks made during various 5MP subgroup meetings): “Management plans should be simple, easy to explain, and defensible.”

The 4MP appears to focus primarily on the regulatory programs that pertain to water providers and consumers: their challenges, short-comings, and how the 4MP’s regulatory programs will either change or remain unchanged. However, inasmuch as the 4MP is supposed to “assist the Department in achieving the management goal” there doesn’t appear to be a major effort to state what the Department will be doing to mitigate any of the issues that confront PAMA. What IS the Department going to do about the 8.1 MAF of unmet demand that came about partially as a result of the lack of Department oversight to the AWS/DAWS/CAWS process and overallocation of groundwater? What programs or steps will the Department take in addressing the need of PAMA (and, indeed, other AMAs) for additional supplies of renewable water? I recognize that Chapter 11 (Water Management Strategy) enumerates several things that the Department will focus on during the tenure of the 4MP; however, an outline of really big and creative programs and initiatives is missing.

This draft of the Department’s proposed Fourth Management Plan (4MP) is a stylistically awkward document that suffers from too many sections grafted from documents and publications previously promulgated by the Department such as the 3MP for the PAMA, the 4MP for the Phoenix AMA, etc. The 4MP is also clearly

the product of a number of different authors whose input was not afforded any review – other for accuracy of regulations and/or data-driven statements – by anyone exercising editorial control. Duplication of program descriptions, definitions, provisions of various regulations could be excised without harm to the document, thereby decreasing the length of the document. During the review period that proceeds promulgation, the 4MP would greatly benefit from single editor’s review of diction and content. Attention should also be paid to various descriptors of water – for example, the nouns remedial, reused, recharged, and/or recovered water are sometimes used interchangeably when they actually connote terms of art when referring to legally specific kinds of water supplies. I have attempted to point those occurrences out in my specific comments below.

ARS 45-562(B) states: “ The management goal of the Pinal active management area is to allow development of non-irrigation uses as provided in this chapter and to preserve existing agricultural economies in the active management area for as long as feasible, consistent with the necessity to preserve future water supplies for non-irrigation uses.” I noticed that in a number of places within the 4MP, PAMA’s management goal is paraphrased and/or stated in such a manner as to either eliminate or reorder the management goal vis-à-vis the clause “... allow development of non-irrigation uses as provided in this chapter....” In my opinion the PAMA management goal is misunderstood enough that the 4MP should avoid contributing to that confusion by always completely using the ARS version of PAMA’s goal.

The 4MP document also needs to focus more on groundwater uses and demands as opposed to outlining the total spectrum of the PAMA water budget. There are multiple tables and figures that should support the 4MP focus on groundwater issues, but since they include other supplies (or in the case of tribal demands, supplies, and/or uses – there’s no separation between what is relevant to PAMA as opposed to the Phoenix AMA), the data and discussion becomes confusing. Again, I attempted to so note in my content specific comments below.

Finally, contained within the 4MP (Chapter 11, Section 11.3) are statements that are, quite frankly, disturbing. As stated above, ARS 45-262(B) sets forth the PAMA management goal; however, it appears that the Department is now openly advocating for a new PAMA management goal – that of safe-yield. This is an enormously controversial issue within the larger Pinal water community and if the Department is committed to proposing a new management goal, a far more public

process involving PAMA stakeholders must ensue before the Department proceeds with any legislative action to amend ARS 45-262(B).

Comments on Specific Content

Chapter One - Introduction

Chapter in general. Understanding that this Chapter is to be introductory in nature, nonetheless the statements of policy and intent for the 4MP outlined in Chapter 11 should be included in Chapter 1. The Chapter 11 language sets forth the Department's intentions vis-à-vis conservation and regulatory programs with regard to groundwater and other water resources as it prepares to move from the 3MP through the 4MP, and into the 5MP and beyond. By including those pieces of content in Chapter 1, the Pinal AMA water community will be able to proceed with a clearer understanding of the nuances of the rest of the 4MP document.

Section 1.2. Assured Water Supply Program (AWS) is certainly a major component of the 3MP and the 4MP and is central to the sustainability and longevity of the PAMA municipal and industrial sectors. However, the 4MP document does not adequately explore the provisions and challenges to the program. Furthermore, inasmuch as it is referenced in subsequent chapters (Chapter 5, Section 5.2.3 for example), this deficiency should be remedied.

Chapter Two – Hydrology

Section 2.6.2. Obviously, this chapter's content is linked to Chapter 8 (Water Storage & Recovery). Therefore, a larger and more intense discussion of just how the Department's hydrologic modeling in this Section would greatly improve the connectivity with Chapter 8's data and interpretations thereof.

Chapter 3 – Water Demand & Supply

Throughout the 4MP document, there is a tendency to combine all demand and supplies together before attempting to address each use. The 4MP needs to focus on groundwater use and work with surface water providers to better understand how those deliveries work. To that point, Tables 3-1A and 3-1B have Municipal, Exempt Wells, and Industrial use in one table. I found these and other tables in

this Chapter to be confusing inasmuch as the Total Demand data doesn't separate out demand for groundwater as opposed to demand on other supplies.

[N.B. In virtually every discussion and/or document I've seen from the Department as discussions focus on the 5MP and Post-20205 issues, exempt well demand is treated as an insignificant impact and due to a lack of precise data (no metering), viewed as a *de minimus* factor in AMA-level demand calculations. If that's truly the case, then excluding that demand from the tables will enhance understanding of the data.]

Chapter 4 – Agricultural Sector

Section 4.3.2. This section describes the Historic Cropping Program. there are NO participants in this program – therefore, why is it included in the 4MP?

Section 4.3.3. This section describes the Best Management Practices (BMP) program. This entire section would benefit from a table showing:

- a) How many irrigable acres there are in the PAMA (1985 – present)
- b) How many irrigable acres are enrolled in the Base Program (1985 – present)
- c) How many irrigable acres are enrolled in the BMP Program (1985 – present).

One of the major elements of Chapter 4 is a contention that agricultural participants in the BMP Program are using “more water” than enrollees in the Base Allocation program. However, the data shared in this Chapter don't necessarily bear that out. Table 4-1 indicates that the groundwater allotment has declined by 600,000 AF and groundwater use declined by nearly 200,000 AF over time – I do not see a failure to conserve based on that data.

Section 4.4. There is a new requirement that “irrigation districts and private water companies distributing 20 percent or more of their total water deliveries for irrigation use ... are required to reduce their irrigation distribution system ... by lining all of their canals...” This requirement may be unduly onerous for some providers as there is no timeframe set forth for compliance and no penalty described in the even of non-compliance.

Section 4.5. Remedial is misspelled in the Section heading.

Section 4.3.2. Historic Cropping Program is detailed here and referred to elsewhere in this 4MP document. However, there are no PAMA participants – this is extraneous verbiage.

Chapter 5 – Municipal Sector

Table 5-1. Why was there no Recovered Reclaimed Water in the PAMA between 2010 and 2014? Why wasn't there any Recovered CAP in the PAMA in years 2005, 2010-11 and 2013-14?

Section 5.2.2. This part of the 4MP assumes that all municipal providers own, operate, and/or control treated effluent or reclaimed water supplies in their jurisdiction. That is not accurate.

Section 5.2.2 and Table 5-1. The document refers to the *Demand and Supply Assessment, Pinal Active Management Area* (Assessment) (ADWR, 2011) and states that the “projected municipal demand in the PAMA will be 113,000 - 119,000 AF by 2025.” There is a huge discrepancy between the projected demand in 2025 and what's shown as the municipal demand in Table 5-1 in the year 2017. That demand figure is 31,338 AF. Is the Department expecting a municipal demand increase of more than 81,000 AF in the PAMA in the next five years?

Section 5.2.3. See comments offered previously on Section 1.2.

Section 5.3.1.2. The second paragraph is redundant and unnecessary.

Section 5.3.1.3. Please remove the word “additional” from the descriptions of the NPCCP's BMP tiers in order to clarify the point system's description.

Section 5.3.4. The date in the first sentence needs to be revised to read “January 1, 2023” (from January 1, 2000) in order to be consistent with Section 5-601 Definitions.

Section 5.3.1.11. Clarification is needed on the end result of this process. What happens after the Director reports those changes to the Governor and Legislative Leadership?

Section 5.3.5. Clarification is required here. What would happen if two DWIDS were to combine into one provider entity?

Section 5.3.8.2. Please see my comments and concerns as noted in Section 4.4.

Section 5.3.8.1. This section appears to require municipal providers to exercise some of the regulatory authority vested in the Department over the activities of their customers. I believe that if this is the case, municipal providers are being placed in positions of jeopardy and legal liability.

Section 5-605. Please add a definition for “water use patterns.”

Chapter 6 – Industrial Sector

Chapter in general. Clarification is requested. In a number of places, the 4MP refers to municipal providers and assumes that those providers are cities and towns. That is an inaccurate characterization. This inaccurate assumption is particularly prevalent in this Chapter when the 4MP discusses the regulation of conservation programs by ordinance adoption – a legislative authority given cities and towns but not privately owned water providers. In this Chapter, DWIDs and privately owned water companies are expected to build conservation programs, monitor progress, and report on items that are outside the purview of a DWID and/or a privately owned water provider. [N.B. See also my comments for Section 5.8.3.1. on apparent delegation of regulatory authority/responsibility to providers.]

Section 6.1.2 – 6.2.8, and Section 6.3 – 6.6.5.2. Missing from these delineations of the various industrial user groups and their conservation programs is an evaluation of their performance within the relevant conservation programs mandated by the Department. That data is critical in understanding any proposed changes for this sector in the 4MP.

Section 6.1.2.6. Clarification is requested: are cooling facilities attached to such entities as a school district with multiple facilities and cooling towers (i.e. CGESD#4, Banner Casa Grande Hospital, industrial plant operations such as Frito Lay, Abbott-Ross Laboratories, etc.) fall under these provisions? Each facility would probably be under the stated limit of 1,000 tons of capacity but in the corporate aggregate, exceed that limit.

Table 6-1. This table is split between pages 6-6 and 6-7. It is, therefore, awkward to read and interpret. The Table should either be entirely on one page or at a minimum, the column headers should be carried over onto the bottom portion of the Table.

Table 6-2. The TOTALS column is the first column on the left and is confusing. All other tables in the 4MP, if they have a totals column, place that data on the far right of the Table. Please reconfigure Table 6-2 to conform.

Section 6.3.1. The ADWR Low Water Use/Drought Tolerant Plant List is cited throughout this and other parts of Chapter 6 and the 4MP document. However, that list only enumerates the kinds of plants recommended by the Department –

there's no data on their respective water demand or what's recommended for maintenance.

Section 6.5 – 6.5.2. Clarification is requested: it's my understanding that ADEQ has regulations governing the use of reclaimed water in these types of facilities. I believe that treated effluent from a wastewater plant can be used for these purposes but industrial reclaimed water is ineligible.

Section 6.6, *et.seq.* Clarification is requested. Reporting on behalf of individual rights holders is especially cumbersome as communities continue to grow and the provider has no way to enforce conservation compliance beyond a tiered water use rate. Additionally, as water accounting has become more complex with the addition of so many programs, it is clear that the data set is suffering. If an industrial provider is on a municipal system (privately owned system or municipally owned system), does that water get double counted as demand for planning?

Chapter 7 – Water Quality

Section 7.2. Clarification is requested. Throughout this Chapter, the terms remediated groundwater, reclaimed groundwater, recovered groundwater, etc. are frequently used interchangeably. Please standardize the term so as to eliminate confusion.

Section 7.3. This section should be eliminated from the 4MP document. To quote from the last sentence in Section 7.1 (Introduction): “There are no Water Quality Assurance Revolving Fund (WQARF) sites, or US EPA National Priorities List (NPL) sites in the PAMA.” At best, these statutory provisions could be given a hyperlink to the relevant ARS citations.

Chapter 8 – Underground Water Storage, Savings & Replenishment

Chapter in general. This Chapter would be the right place for statements about the Central Arizona Groundwater Replenishment District (CAGRD): its role, responsibilities, current and future deployment in PAMA, etc. That void should be filled here.

Section 8.1. Clarification is requested. There continues to be a mixture of terms – reclaimed water and effluent. Despite the footnote, the use of the phrase “CAP water and effluent” would better serve the public consumer of the 4MP document.

In the first sentence of paragraph 2 of this Section – there is a reference to “reclaimed water in lieu of groundwater.” There is no such supply that I’m aware of. Furthermore, in this same paragraph, the document provides a definition of “augmentation” and “recharge.” The definition given to augmentation says “increasing the availability and use of renewable water supplies such as CAP water and reclaimed water in lieu of groundwater.” The paragraph goes on to define recharge to mean “the storage of excess water (non-groundwater) supplies for future use...” “Excess water” is not a non-groundwater supply. “Excess Water” is a term used primarily to describe a class of CAP water. It should not be used to describe non-groundwater supplies generally.

Section 8.1 – second paragraph. Clarification is requested. If underground water storage and direct use of renewable water supplies are interchangeable in terms of Department preference here, then the same should apply to the Assured Water Supply program as well.

Section 8.3.1.1. clarification is requested. The text in this section does not distinguish between tribal supplies in PAMA and other AMAs. Despite a footnote on Page 8-10 to Table 8-3, the language in this Section makes it appear as though PAMA is overflowing with CAP water supplies. This is absolutely not true – in fact, the lack of renewable supplies (specifically CAP supplies) is a critical issue for PAMA. Secondly, in the second paragraph of this Section (second sentence), the document says: “In-lieu CAP use has supplemented direct CAP use in this sector.” I believe an accurate rendering would be “in addition to the direct use of CAP water, a large volume of Excess CAP water has been delivered to irrigation districts through groundwater savings facilities.”

Table 8-3. Non-Indian ag water supplies are not included, but should be. Furthermore, only supplies that are available for use in PAMA should be shown in this Table. This issue goes beyond direct use to assured water supply issues and recovery of Water Bank credits. Furthermore, this Section needs to explicate the reality of much of the stored water in PAMA: banked water for Nevada, Indian firming purposes, on-river firming, etc. are stored credits not available for PAMA. [N.B. The Arizona Water Banking Authority should conduct an analysis of Indian firming to determine what share of the NIA priority firming (and cost) should accrue to the Phoenix AMA vs. PAMA.]

Section 8.3.2. This section needs more work. Throughout the 4MP, providers are both chided for not doing enough to maximize and/or increase supplies of

reclaimed water and exhorted to not only increase those supplies but to deploy them in ways that augment and/or offset groundwater supplies. This section devotes only three sentences to that issue.

Section 8.4. The three bullet points shown on the top of Page 8-13 constitute a major statement of the Department's plan for PAMA in the 4MP period. They should be iterated in virtually every Chapter.

Section 8.5. Restatement is requested. This section appears to portray recharged water supplies as an entirely new and separate water supply for the purposes of augmentation. that's not an accurate portrayal.

[N.B. Perhaps the 4MP document I downloaded from the ADWR website is flawed but there seems to be an error in the numbering system – and possibly some missing content. My document goes from Section 8.5 (Page 8-13) to Section 8.6.1 (Page 8-14). Furthermore, the content of Section 8.5 does not bridge the subject matter of 8.5 and 8.6.1.]

Section 8.6.1. The Arizona Water Banking Authority should be its own section – as opposed to a subsection of whatever Section 8.6 is supposed to be.

This Section should also discuss Municipal & Industrial firming, how many credits have been stored toward those activities, and what the probability of using those credits is.

Sections 8.6.2 & 8.6.3. These two sections appear to be subsections of the Arizona Water Banking Authority program but they are not. They should be relocated to a more appropriate and relevant part of the document.

Table 8-5. Clarification is requested. It appears as though the AWBA credits accrued and attributed to the GRIC does not differentiate between those located in PAMA and/or the Phoenix AMA. It is also unclear as to whether or not the tabular data includes credits to be used for Indian firming ... see comments for Table 8-3.

Chapter 9 – Water Management Assistance

Section 9.4.2. The list of projects funded by WMAP in the past, include several projects that aren't relevant to PAMA or are unknown to any PAMA GUAC member. For example: AMWUA Water Awareness Month Interactive Website, H2O Landscaping Education & Assistance Program, Western Pinal County School Program, Storage of CAP Water, Subsidence-Related Enhancement to MODFLOW. Input and recommendations from the PAMA GUAC are apparently

required but until this calendar year, I cannot recall any WMAP grant applications coming before this GUAC.

Section 9.5.1. The eight (8) needs itemized in this Section should also be included in Chapter 11 (Water Management Strategy).

Section 9.5.2. This Section should be deleted. Although bullet point #1 is accurate, the remaining two points are not helpful and only serve to castigate municipalities (primary generators of effluent & reclaimed water). According to the Department's own data, municipal demand is less than 5 percent of the PAMA water budget. It is unclear just how the Department expects a significant increase in effluent and reclaimed water in this context. To the best of my knowledge, virtually all of the effluent and/or reclaimed water generated from municipal sources is currently (and projected to continue) deployed to offset the use of groundwater for the purposes of turf management, industrial cooling, agricultural activities, etc.

Section 9.6.6. These criteria should always accompany WMAP grant applications for the edification of GUAC members and applicants. It is not necessarily the case at present.

Chapter 10 – Implementation

Section 10.7.1. The last sentence in Paragraph two should be deleted. As stated earlier (comment for Section 4.3.2), there are no PAMA participants in the Historic Cropping Program and the probability of any applicants in this program is virtually non-existent.

Chapter 11 – Water Management Strategy

Section 11.1. Delete the use of the phrase “in-lieu CAP uses”. See my comment to Section 8.3.1.1.

Section 11.2. This section appears to presage a restatement and reinterpretation of the PAMA Management Goal. To wit: “In the 3MP, ADWR refers to the PAMA Goal as ‘planned depletion.’ In the 4MP ADWR has moved away from that concept because it does not represent the best water management approach for the water users in the PAMA, nor the continued economic viability of the PAMA.”

I believe that the 4MP document is not the appropriate vehicle for such a major shift in the articulation of the PAMA Management Goal and that this re-statement

of that Goal deserves a more thorough and public discussion by PAMA stakeholders and the PAMA GUAC.

Section 11.2.1. Long term planning should feed the Assured Water Supply program, not the other way around. The Arizona political landscape is always in flux, therefore long-term data collection gathering and projections should not be abandoned in favor of one particular program. These conversations on planning and regulation should be more properly addressed in a group setting as opposed to promulgated in a document such as the 4MP.

Section 11.2.3. Exempt wells: if conservation and data collection are some of the driving forces for the 4MP, then serious consideration of changes in statutory reporting for exempt wells in the PAMA (and the State of Arizona) need to begin in earnest. Groundwater Allowance & Assured Water Supply (AWS) Program: references here and elsewhere in the 4MP document to the PAMA Model Run, recommend an entire chapter for just that topic. Particularly in light of its impact on the PAMA AWS program. The AWS program needs to take on a more proactive role in finding ways to address the problems of the program itself. In my opinion this means that augmentation needs to be elevated in the Department's planning and perceived role during both the 4MP and the 5MP – particularly as regards PAMA which is a bellwether for all AMAs.

Section 11.2.4. This section essentially calls for the abandonment of underground storage and recovery in PAMA and drops the problem solely upon the PAMA providers, users, and residents. That is an abrogation of the Department's responsibilities and obligations – the Department must be a part of the solution inasmuch as it's part of the problem. This Section must be rewritten to reflect that and consider policies that encourage the use of CAP water inside the groundwater basins where those entitlements were assigned.

Section 11.2.5. This is a weak section and needs rewriting – there needs to be more language describing just how the Department can support and incentivize more efficient and beneficial uses of effluent. There needs to be data shown that depicts how much effluent is produced in the PAMA – its current uses – what limitations exist on the deployment of effluent – and to what degree will effluent reuse facilitate reaching the management goal.

Section 11.2.6. Clarification is requested. This section reads more like a goal for the Department than PAMA inasmuch as it apparently calls on the Department to regulate all of the State's water supplies and activities as opposed to groundwater

supplies and withdrawals in PAMA. It also apparently reinforces the Department's abandonment of augmentation as a strategy in favor of focusing exclusively and only on conservation.

Section 11.2.7. Clarification and restatement is requested. This section also appears to be aimed more at the Department than the providers and stakeholders of PAMA. I firmly support the concept that consideration of water resources ought to be an integral part of land use planning – and the AWS program is intended to do just that. However, at present the State plays a passive role in this process and ought to be more proactive even at this late date.

Section 11.2.3. This section is the meat of the 4MP. [N.B. I understand why the organizer(s) of this document end with this Section. However, as stated elsewhere Arizona's and PAMA's water communities are asking "what's the target ... what's the goal?" as we collectively gear up to consider the 4th and 5th Management Plans and then look ahead to the Post-2025 discussion. I strongly urge the Department to consider a synopsis of this section for inclusion in the introductory chapter.]

First sentence of the Chapter's second paragraph (Page 11-7): "As a part of the 4MP, ADWR will periodically publish an analysis of each AMA's progress" Since this document is the 4MP for PAMA, it should read: "an analysis of the PAMA's progress" **The third sentence in that same paragraph absolutely needs clarification!** "This publication is intended to serve as a communication tool ... **in working toward safe-yield** and also will serve to improve the transparency of the data and methodology that **ADWR uses to assess safe-yield.**" [emphasis mine] See my earlier comment to Section 11.2.

Agricultural Sector. Clarification is requested. Apparently, augmentation has been ruled out for this sector as I don't see any mention of the Department seeking to aid agriculture in finding additional renewable supplies. If the Department finds that urban growth should (but didn't) occur on retired agricultural lands, why were CAWS issued for those developments if it was inconsistent with the PAMA Management Goal and the Code?

Industrial Sector. Redrafting of this is suggested. The initial language here is pessimistic and defeatist – appearing to say that "there's nothing anyone can do to make any kind of difference in groundwater pumpage." Aside from calling for more research, there is no consideration of augmentation or any other potential for other renewable water supplies.

Turf Program. A very passive series of statements. Turf has been a consumer of effluent for years. The Department should be incentivizing programs and efforts to enlarge those uses for turf facilities with support for research and innovation. Those efforts could also translate into ideas for the Industrial Sector.

Municipal Sector. There are several challenges hinted at in this subsection: use of CAP supplies, movement of renewable supplies to users, and additional conservation measures. However, there is a lack of discussion about what the Department will do to help address these problems. For example, the design and construction of regional treatment plants, a review and elimination of overly restrictive regulations that hinder access to renewable and/or alternative supplies (*i.e.* WaterBUD, etc.), discussions with the Arizona Corporation Commission and the State Legislature to facilitate the design and implementation of conservation measures by both cities and privately owned water providers. Furthermore, the Department's consistent insistence on municipal providers (privately owned and/or municipally operated) to use more CAP supplies as part of their portfolios is counter-intuitive inasmuch as nearly 100% of Arizona's CAP supplies are already contractually obligated.

Augmentation Solutions. Redrafting of this subsection is suggested. Aside from the last point that mentions a study to determine the cost effectiveness of brackish and/or poor quality water, there is nothing very proactive or promising in this restatement of old concepts. I see nothing about a major initiative of the Department to seriously explore options for new, different renewable supplies for PAMA – despite the insistence throughout this 4MP document that such a solution is highly desirable.

Section 11.4. Redrafting of this section is recommended. The language implies that conservation programs (increasingly restrictive) and the Assured Water Supply program are the only two tools that the Department has to deploy. That does not bode well for PAMA and eventually for Arizona's other AMAs.

Section 11.5. Redrafting is recommended. The impression this section gives is water management in the PAMA is discouraging and depressing. There is only increasing regulation on end-users to address over-drafting of groundwater supplies. There's no clarion call for a future course of action or any way to avoid a truly dystopian future. The picture is a state department that is attempting to deal with insurmountable challenges, very limited resources (of all kinds), and no real out.