

1 necessary. Pursuant to A.R.S. § 45-571(B), the Director has made the necessary
2 modifications and is filing in the Department an order adopting the plan as modified
3 simultaneously with this Summary and Findings. After reviewing the comments and evidence
4 submitted during the hearing record period, the Director makes the following written
5 summary and findings with respect to matters considered during the hearing record period.
6

7 **II. Summary of Hearing and Findings**

8 Seven people presented oral comments at the public hearing. The Director also
9 received seven written comments during the hearing record period.

10 A summary of the comments received during the hearing record period and the
11 Director's responses to the comments are presented below. The summary does not address
12 comments which did not raise issues pertaining to the plan and does not answer questions
13 posed within written comments or at the public hearing. Furthermore, the Director is unable
14 to respond to any comments that are unclear or ambiguous.

15 The following subsections are grouped by chapter. Comments directed at more than
16 one chapter are responded to in the "general" category.
17

18 **A. General**

19 *1. Safe Yield*

20 Comment: A few commenters suggested that the Fourth Management Plan include
21 steps for reaching safe-yield and "triggers" for increased regulation and more aggressive
22 enforcement or penalties if these safe-yield goals are not met.

23 Response: The scope of the Department's regulatory authority is defined by statute.
24 Currently, no statute allows for the imposition of penalties or sanctions should any Active
25 Management Area ("AMA") fail to reach the management goal of safe-yield by 2025.

1 Similarly, the Department lacks the authority to impose increased conservation requirements
2 on water users in the AMA if safe-yield goals are not met.

3 Comment: A commenter stated that the Department should publicly announce
4 whether the PRAMA is “on track” to achieving safe-yield by 2025 and how close the
5 PRAMA is to achieving that goal.

6 Response: As the Department states in Chapter 1 of the Fourth Management Plan, the
7 PRAMA is currently in overdraft and there is insufficient management plan authority,
8 infrastructure, or financing in place to ensure that safe-yield will be achieved by 2025. As
9 stated in Chapter 1, importation of water supplies from outside the PRAMA or other water
10 management techniques to augment the AMA water supplies are critical to the PRAMA
11 achieving its safe-yield goal. Possible solutions to reaching safe-yield are offered in Chapter
12 12.

13 *2. Limits on future development*

14 Comment: Several commenters stated that there should be a moratorium on future
15 development within the PRAMA. A number of other commenters likewise suggested that
16 new growth should be restricted until adequate water is available. One commenter noted
17 specifically that building permits should be allowed only when the groundwater levels have
18 risen. That commenter also suggested placing restrictions on both new wells and municipal
19 water supplies to new development.

20 Response: These comments do not relate to any of the programs or statements in the
21 Fourth Management Plan, and are therefore outside the scope of this proceeding. However,
22 the Director notes that the Department has no authority to declare moratoriums on
23 development or place restrictions on new wells. In the PRAMA, in order for new
24 developments to be approved by the local platting authority, developers must show that
25 sufficient water supplies are physically, legally, and continuously available to serve the new

1 development for at least 100 years and that the water supplies are consistent with the AMA's
2 management goal and management plan. For plats approved after August 21, 1998,
3 developers must demonstrate that the majority of the new development's water demand will
4 be met with renewable water supplies.

5 *3. Reclaimed Water Use*

6 Comment: One commenter noted that now is an appropriate time to begin a long-term
7 phase-in requirement that large-scale water providers treat effluent to meet drinking water
8 quality standards.

9 Response: Reclaimed water will continue to be an important source of water moving
10 forward into the Fourth Management Plan. However, Arizona Department of Environmental
11 Quality Rule R18-9-704(G)(2) prohibits direct reuse of reclaimed water for human
12 consumption. In addition, the Department lacks statutory authority to require the use of
13 reclaimed water for any purpose. The Department recognizes the importance of reclaimed
14 water use, and continues to support the direct use of reclaimed for water for non-potable
15 purposes and the recharge and recovery of reclaimed water in the PRAMA.

16 *4. Big Chino Basin Groundwater*

17 Comment: A few commenters stated that the Department should include mitigation
18 strategies for groundwater importation from the Big Chino sub-basin and potential
19 consequences of no mitigation.

20 Response: Developing mitigation strategies related to the City of Prescott's
21 importation of Big Chino groundwater is outside the scope of the Fourth Management Plan.
22 However, the Director notes that the City of Prescott and the Town of Prescott Valley
23 continue to work with the Salt River Project to develop monitoring and modeling programs
24 designed to determine the potential impacts of Big Chino groundwater importation on the
25

1 Verde River. It is expected that those parties will also work together to develop programs to
2 mitigate any negative impacts.

3 Comment: One commenter also noted that the Fourth Management Plan includes the
4 Big Chino pipeline project even though the pipeline has not yet been built. He further
5 commented that cost estimates for the Big Chino project range from 300 to 400 million
6 dollars. He stated that this number renders the project cost prohibitive.

7 Response: The Fourth Management Plan discusses the use of groundwater imported
8 from the Big Chino sub-basin as a potential future water supply. Specifically, the scenarios
9 included in Chapter 11 all assume that Big Chino sub-basin groundwater is imported into the
10 PRAMA beginning in the year 2020. The Department has modified the language related to
11 the costs of the Big Chino importation project in Chapter 11, page 11-20 to read:

12 In 2011, the City of Prescott estimated the costs of the Big Chino
13 importation project to be approximately \$170 million. An estimated \$36
14 million was spent as of the year 2011 on the Big Chino importation project
15 for land acquisition, engineering and design, hydrologic studies, and other
16 costs. To construct the pipeline and bring water into the PRAMA, an
17 additional \$133 million is estimated to be needed.

16 5. *Conservation*

17 Comment: Several people commented generally on the need for increased
18 conservation measures in the fourth management period.

19 Response: The Director believes that the conservation measures in the Fourth
20 Management Plan are reasonable and are consistent with the statutory guidelines.

21 Comment: One commenter noted that increased vegetation throughout the PRAMA is
22 a currently under-utilized method of conserving groundwater. The commenter further
23 suggested increased vegetation throughout PRAMA and more trees planted in proximity to
24 recharge facilities.

1 Response: The Department does not agree that increased vegetation throughout the
2 PRAMA will aid in water conservation. Due to evapotranspiration, vegetation in close
3 proximity to artificial recharge sites actually reduces the volume of stored water.

4
5 **B. Chapter 1, Introduction**

6 Comment: One commenter stated that the Fourth Management Plan should specify
7 that cooperative regional management efforts take the form of an action-specific plan to
8 achieve safe-yield that can be evaluated by the Department and the public. The commenter
9 went on to state that the Department could assist in the timing and structure of the discussions
10 and provide technical assistance.

11 Response: Such activities are outside of the scope of the Department’s regulatory
12 authority.

13 **C. Chapter 3, Water Demands and Supply**

14 Comment: One commenter said that the Fourth Management Plan should contain a
15 list of possible sources of water that could be imported into the PRAMA.

16 Response: Chapter 8 of the Fourth Management Plan discusses possible sources of
17 water that could be imported into the PRAMA.

18 Comment: One commenter asked the Department to provide a detailed analysis of
19 potential additional water sources and any potential consequences to surface water supply
20 should the Del Rio Springs flows cease. The commenter also asked for projected growth to be
21 separated into two categories: (1) un-subdivided lot splits and non-Assured Water Supply
22 subdivisions, and (2) new subdivision growth that meets the Assured Water Supply criteria.
23 The commenter would like the Department to use these categories to determine which
24

1 projected new development will potentially utilize mined groundwater as their main water
2 supply.

3 Response: The Department will work with stakeholders during the fourth
4 management period to more fully explore both of these suggestions.

5 Comment: One comment stated that the table in Chapter 3 entitled “Offsets to
6 Groundwater Pumping” contains numbers that differ significantly with the “Net Recharge”
7 figure in chapter 2. This particular commenter also noted inaccuracies in the “Historical
8 Overdraft” figure located in chapter 3.

9 Response: The Department has addressed these comments, and the changes are
10 reflected in the adopted Fourth Management Plan.

11 **D. Chapter 5, Municipal Conservation Program**

12
13 Comment: One commenter suggested increasing the number of Best Management
14 Practices (“BMPs”) required under the Non-Per Capita Conservation Program (“NPCCP”).
15 Additionally, the commenter stated that BMPs should be clearly defined with explicit criteria
16 so that compliance can be more easily determined. The commenter also stated that the
17 Department should require municipal providers in the NPCCP to report the GPCD data.
18 Lastly, the Commenter stated that stronger conservation requirements should apply to new
19 residential, commercial, and industrial construction.

20 Response: BMPs are developed through the Department’s BMP advisory committee.
21 Some of the BMPs have been modified since the Third Management Plan to provide
22 additional criteria for the Department to determine compliance. The Department believes that
23 the number of BMPs required by the Fourth Management Plan is satisfactory to promote
24 conservation under the NPCCP equivalent to what is assumed in the Total Gallons Per Capita
25 Per Day Program. The Department believes that the Fourth Management Plan requires

1 sufficient reporting from municipal providers in the NPCCP. Finally, the Department does
2 not believe it would be appropriate to apply additional conservation requirements in the
3 Fourth Management Plan on newly constructed residential, commercial, or industrial
4 developments.

5 Comment: One commenter noted that, nationwide, the average daily water use per
6 person is between 3,000 and 3,500 gallons per month, or approximately 115 GPCD. He
7 commented that this number should be reduced by half in the PRAMA by engaging in more
8 aggressive conservation measures.

9 Response: EPA "WaterSense" plumbing fixtures and appliances can result in an
10 interior residential GPCD rate of 40 GPCD. The remainder of the residential GPCD rate is for
11 exterior uses. The Department is not authorized to prohibit exterior water uses in the Fourth
12 Management Plan. Instead, the Department is authorized to require *reasonable* reductions in
13 per capita water use by those municipal providers regulated under the GPCD program. The
14 Department encourages water conservation and also encourages municipal water providers in
15 the GPCD program to make informed decisions as to what conservation measures are
16 necessary to meet or exceed their mandated conservation requirement.

17 Comment: One commenter pointed out that the City of Prescott applies more than the
18 minimum number of BMPs in its water conservation program.

19 Response: The Department encourages municipal providers in the NPCCP to adopt
20 greater than the minimum required number of BMPs, but only the minimum number is
21 required.

22 Comment: One commenter suggested that helping individuals understand how their
23 level of water consumption compares to their neighbors would give consumers some
24 perspective on whether their household water use level is contributing to achieving the goal of
25 safe-yield by 2025. He noted that this information could be conveyed through a chart on

1 monthly water bills. He suggested that the chart include three things: (1) household water
2 usage in gallons per capita per day (“GPCD”), (2) average household water usage throughout
3 the PRAMA in GPCD, and (3) the household GPCD necessary for the PRAMA to achieve
4 safe-yield by 2025.

5 Response: This comment does not relate to any specific provision of the Fourth
6 Management Plan. However, the Director notes that, the Department has no authority to
7 mandate that the above described information be included in a water bill. The Department
8 will consider developing tools to help water users calculate their GPCD.

9 10 **E. Chapter 7, Water Quality**

11 Comment: One commenter expressed water quality concerns related to recovery of
12 stored reclaimed water within the area of impact.

13 Response: As the Department explained in Chapter 7, section 7.4.4.3,

14
15 The underground water storage program is administered by ADWR. Permits must
16 be obtained from ADWR prior to undertaking recharge activities. ADWR
17 coordinates closely with ADEQ to ensure that underground water storage does not
18 adversely impact existing aquifer water quality and does not cause movement of
19 existing groundwater contamination. If reclaimed water is stored underground, the
20 applicant must obtain an APP from ADEQ, in addition to the underground storage
21 permits required from ADWR. APPs specify monitoring requirements to assure
22 that recharge waters are not negatively impacting the native groundwater.

23 **F. Chapter 8, Augmentation and Recharge**

24 Comment: One commenter suggested the Fourth Management Plan should require
25 ADWR to educate the public regarding the need for the PRAMA to reach safe-yield and the
consequences of the PRAMA not reaching safe-yield. The commenter notes that Chapter 8,
section 8.3.2 describes the consequences of groundwater overdraft but that few people will

1 read this section. Additionally, the commenter encouraged the Department to publish annual
2 water budgets to the greatest extent possible because they are valuable in increasing overdraft
3 awareness.

4 Response: A safe-yield education program as described by the commenter is outside
5 the scope of the Department’s regulatory authority related to the Fourth Management Plan.
6 The Department will continue to post updates to the Historical Assessment template and
7 summary budget, including PRAMA overdraft information, on its website each year.

8 Comment: Several people commented on the need for additional augmentation
9 measures going forward into the Fourth Management Plan in order to reach and maintain safe-
10 yield.

11 Response: The Department agrees with this statement. The Fourth Management Plan
12 recognizes the need for additional augmentation measures to achieve safe-yield by 2025.

13 Comment: One commenter stated that the Department should include rainwater
14 harvesting in its definition of “augmentation.”

15 Response: The Department recognizes rainwater harvesting as a potential
16 conservation strategy that may be implemented at the residential level. Larger scale capture
17 of rainwater or storm water carries concerns from some water right holders that inhibiting
18 flows that otherwise would have entered the surface water system may reduce their water
19 availability. Issues regarding potential effect on downstream water right remain to be
20 resolved.

21 Comment: One commenter stated that it would be helpful if Chapter 8, section 8.2
22 provided an indication of the specific authorities the Department intends to pursue to facilitate
23 and encourage the development, efficient use, and recharge of renewable water supplies for
24 the AMA.

25

1 Response: Although the specific mechanisms and authorities have not been fully
2 identified, the Department will continue to participate with local stakeholders to explore
3 opportunities for development and use of renewable water supplies.

4
5 **G. Chapter 9, Water Management Assistance**

6 Comment: One commenter stated that use of the Water Management Assistance
7 monies should lead to more useful outcomes in the PRAMA. One commenter stated that the
8 Water Management Assistance Fund should support rainwater harvesting.

9 Response: The Department also would like to see benefits to the PRAMA from the
10 PRAMA Water Management Assistance Fund. This funding is more limited in the PRAMA
11 than the more populated AMAs due to the relatively smaller volume of groundwater
12 withdrawn and the corresponding smaller amount of groundwater withdrawal fees collected.
13 The Department describes the process for identifying priority projects in Chapter 9, Section
14 9.6.1. Those interested in participating in this process should contact the Department's
15 Statewide Active Management Area Director.

16
17 **H. Chapter 11, Water Budgets**

18 Comment: One commenter recommended that the Department include in the Fourth
19 Management Plan the long-term natural recharge value of 9,900 acre feet per year recently
20 generated from the updated model and the natural outflow as the decreasing historical trend
21 line.

22 Response: The Department incorporated the 1985 – 2012 long-term average net
23 natural recharge into the scenarios in Chapter 11. As noted in Chapter 11, page 11-2,

24
25 Use of a long-term average for net natural recharge masks the annual variability of net
 natural recharge. Although safe-yield is a goal to be achieved based on a long-term

1 average, it is important for PRAMA water users to understand that there may be many
2 years of overdraft, which may result in localized water level declines, and the need to
3 shift pumping to different locations. Further, there may be an occasional year of surplus,
4 which, if captured and stored underground, could help mitigate years of shortage.
5 Understanding the variability in the natural supply conditions that the PRAMA
6 experiences will inform water management decisions and water management program
7 development in the PRAMA.

8 As discussed and described in Chapter 3 of this plan, since the publication of the
9 Assessment, Arizona Department of Water Resources (ADWR) Hydrology staff have
10 further refined and adjusted the PRAMA hydrologic model. The natural recharge
11 components were updated for the 4MP based on the current version of the PRAMA
12 model (Nelson, 2013) from those used in the Assessment.

13 Comment: One commenter stated that the Fourth Management Plan should strongly
14 encourage or require additional conservation requirements for new construction.

15 Response: New residential construction in the PRAMA is typically more water
16 efficient than older development due to the increased efficiency of available plumbing
17 fixtures. For that reason, the Department does not believe it is necessary to require additional
18 conservation requirements for new residential construction. The Department encourages
19 municipal providers to adopt programs to limit exterior landscape water use for new
20 developments.

21 Comment: One commenter stated that the “safe-yield scenarios” in the Fourth
22 Management Plan are difficult to understand and need a more detailed explanation of the basis
23 for the water budget components and calculations. The commenter also stated that the
24 scenarios that achieve safe yield can mislead the public. The commenter suggests that the
25 Fourth Management Plan list and describe the various potential conservation demand
reductions and augmentation projects that should be considered.

Response: The Department made a policy choice in the Fourth Management Plan to
focus only on scenarios and methods that would lead to safe-yield. Appendix 11-A in Chapter
11 of the Fourth Management Plan describes all assumptions made in the projected scenarios.
The Department will work with stakeholders during the fourth management period to explore

1 listing and describing the various potential conservation demand reductions and augmentation
2 projects that should be considered.

3
4 **I. Chapter 12, Water Management Strategy**

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6 Comment: Several commenters advocated using rainwater harvesting as a means of
7 augmenting the water supply within the PRAMA. One commenter specifically suggested
8 improving water availability within the PRAMA and for downstream Verde River users by
9 placing captured rainfall in ephemeral stream beds and allowing it to naturally recharge. This
10 commenter also expressed concern that the committee authorized by HB 2363 to study
11 rainwater harvesting never officially convened.

12 Response: Chapter 12, section 12.3.7 of the Fourth management Plan states that
13 before rainwater harvesting can be pursued as a water management strategy in the PRAMA,
14 rainwater harvesting feasibility, costs, and potential legal ramifications need to be explored.
15 Also as noted in Chapter 11, section 11.6, the work of the committee authorized by HB 2363
16 will be important in determining whether or not these projects can result in significant water
17 supply enhancement.

18 Comment: One commenter suggested that the Department seek the authority to apply
19 a “cut to the aquifer” for stored effluent in the PRAMA.

20 Response: As noted in Chapter 12, section 12.2.4, this concept requires further
21 examination. However, applying a “cut to the aquifer” for the storage of effluent would
22 require a legislative change.

23 Comment: One commenter representing the City of Prescott stated that the City
24 currently recharges its effluent and recovers within the area of impact of storage, and that the
25 City has pending applications on file with the Department to increase the volume of water that

1 may be recovered within the area of impact of storage. The commenter also stated that adding
2 new wells to pump where the water table is highest is cost prohibitive for the City. The
3 commenter noted that both of the City's wastewater treatment plants are being expanded or
4 upgraded, and that all new development will be connected to the City's wastewater treatment
5 system. The Commenter stated that it is challenging for the City to run sewer lines to existing
6 developments currently on septic systems.

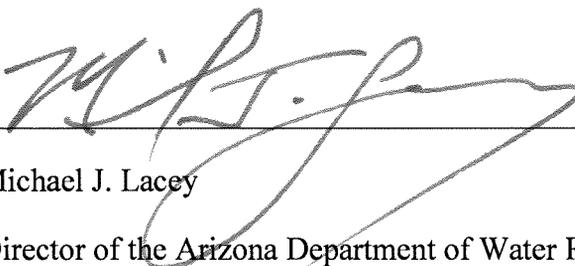
7 The commenter stated that the City purchased Watson and Willow lakes as a water
8 supply, but also for recreational purposes. The commenter mentioned that the water line
9 which runs from Goldwater Lake to the City is broken and overlain by a subdivision, so
10 utilizing it is currently not economically feasible at this time.

11 Response: The Department commends the City for its continuing water management
12 efforts.

13 **III. Conclusion**

14
15 The Director has determined it is appropriate to adopt the proposed plan, with
16 modifications, as the Fourth Management Plan as described in the Order of Adoption issued
17 simultaneously with this Summary of Hearing and Findings.
18

19
20 Dated this 28th day of July, 2014

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22 
23 _____
24 Michael J. Lacey
25 Director of the Arizona Department of Water Resources