

Management Plans Activities & 4MP Recommendations



Pinal AMA Groundwater Users Advisory Council
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Contents

- I. Management Plans Overview and Status
- II. ADWR's Recommendations for the Remaining 4th Management Plans
- III. Management Plans Work Group



I. Management Plans Overview & Status



Groundwater Management Act (1980)

Created Arizona Department of Water Resources

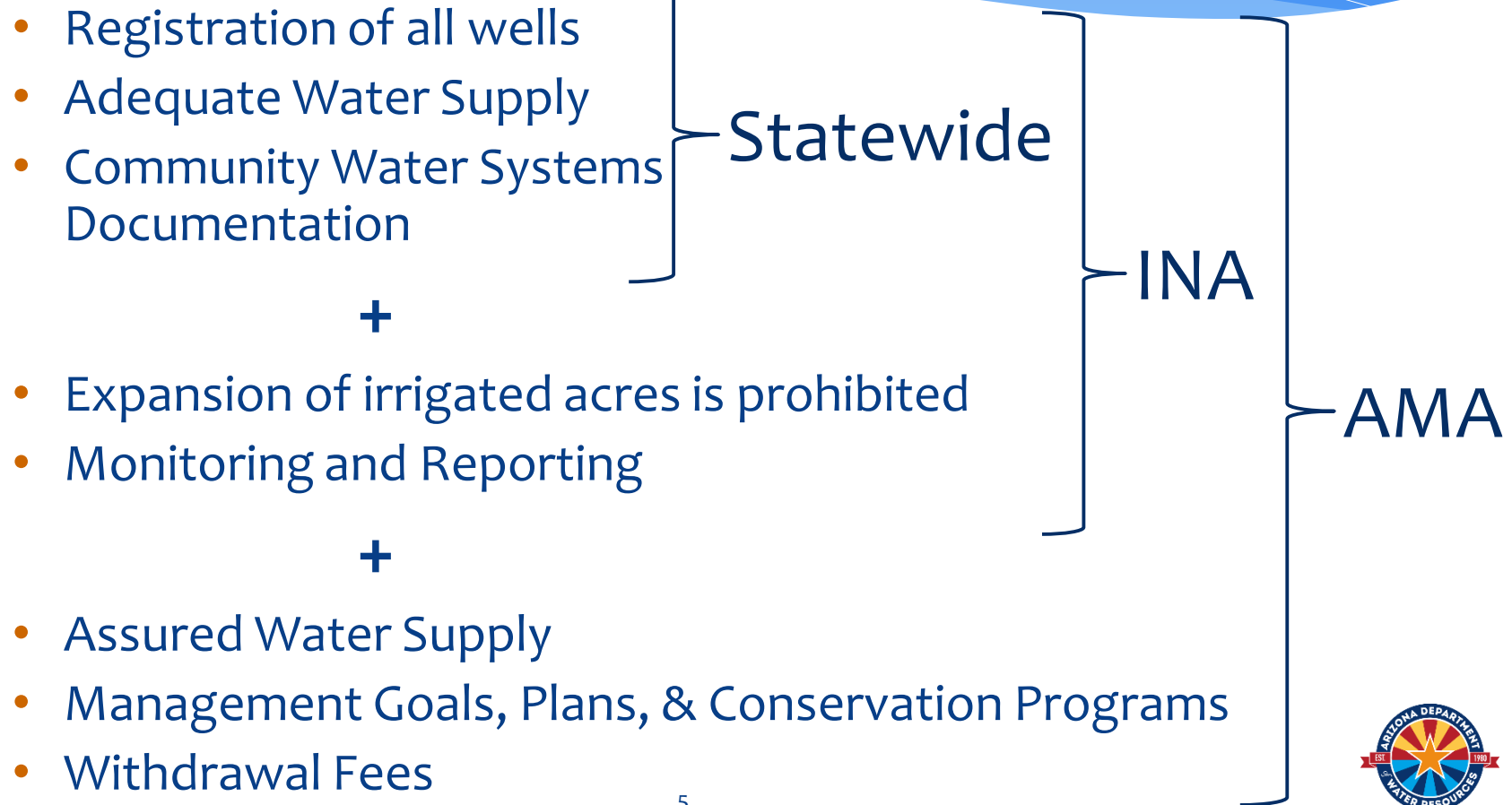
Goals of the Act

- Control severe groundwater depletion
- Provide the means for allocating Arizona's limited groundwater resources
- Improve Arizona's groundwater supplies through conservation and development of additional water supplies

Former Arizona Governor and Interior Secretary Bruce Babbitt signing the GMA



Regulatory Structure



Management Goals (A.R.S. § 45-562)

Safe-yield:

“A groundwater management goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area.”

(A.R.S. § 45-561(12))

Prescott, Phoenix, and Tucson AMAs:

Safe-yield by the year 2025

Pinal AMA:

To allow development of non-irrigation uses and to preserve existing agricultural economies in the AMA for as long as feasible, consistent with the necessity to preserve future water supplies for non-irrigation uses.

Santa Cruz AMA:

To maintain a safe-yield condition in the AMA and to prevent local water tables from experiencing long term declines



Management Plans

A.R.S. § 45-563 (A)

“The director shall develop a management plan for each initial active management area for each of five management periods... and shall adopt the plans only after public hearings... The plans shall include a continuing mandatory conservation program... designed to achieve reductions in withdrawals of groundwater.”



Statutory Requirements - Summary

A.R.S. § 45-564 et seq.	1MP	2MP	3MP	4MP	5MP
Calculate Water Duty	💧	💧	💧	💧	💧
Municipal GPCD Reduction	💧	💧	💧	💧	💧
Municipal Lost & Unaccounted for Water	💧	💧	💧	💧	💧
General Industrial Conservation	💧	💧	💧	💧	💧
Conservation for Untreated Providers		💧	💧	💧	💧
Conservation for Small Providers		💧	💧	💧	💧
Municipal Non-Per Capita Conservation		💧	💧	💧	💧
Incentives for Augmentation/Recharge		💧	💧	💧	💧
Assessment of Water Quality		💧	💧	💧	💧
Program for Conservation Assistance		💧	💧	💧	💧
Historical Natural Recharge		💧	💧	💧	💧
May Reduce Highest 25% of Water Duties			💧	💧	💧
Agricultural Historic Cropping Program			💧	💧	💧
Agricultural BMP Program			💧	💧	💧
Option for Alternative Agricultural Programs			💧	💧	💧
May Establish Cropped Acreage Program			💧	💧	💧
May Include Program for GFR Purchase & Retirement			💧	💧	💧
Recommendations to AWBA/for well locations			💧	💧	💧



Structure and Components of Management Plans

Structure

- * 3MP & 4MP Regulatory Chapters
 - * Chapter 4: Agricultural
 - * Chapter 5: Municipal
 - * Chapter 6: Industrial
 - * Chapter 8: Storage & Recovery
- * Supporting Information
 - * Hydrology
 - * Quality
 - * Water Budgets and Projections
 - * Water Management Assistance Program

Components

- * Regulatory language (*italicized, at the end of relevant chapters*)
 - * Legal language including the details for conservation requirements
- * Non-regulatory language
 - * Background and History
 - * Historical Data
 - * Projections
 - * Analysis
 - * Water Management Strategy
 - * Future Considerations



Conservation Programs

A.R.S. § 45-563(A): “... The plans shall include a continuing mandatory conservation program for all persons withdrawing, distributing or receiving groundwater designed to achieve reductions in withdrawals of groundwater.”

- * Programs for Three Sectors:
 - * Agricultural (Chapter 4)
 - * Base Program
 - * Historic Cropping Program
 - * Best Management Practices Program (BMP)
 - * Municipal (Chapter 5)
 - * GPCD Program
 - * Non-Per Capita Program (NPCCP)
 - * Industrial (Chapter 6)
 - * General Requirements
 - * Specific Subsector Programs

- * Conservation Programs include:
 - * Regulatory requirements related to water use
 - * Reporting requirements
 - * Conservation targets
 - * Flexibility provisions
 - * Compliance provisions



Management Plans Status

- * The 4th Management Period is 2010-2020.
 - * Prescott and Tucson AMAs have adopted 4th Management Plans (4MPs).
- * The 3rd Management Plans (3MPs) remain effective for Phoenix, Pinal, and Santa Cruz AMAs .
 - * ADWR is working to complete the 4MPs for these AMAs.



Tentative 4MP Adoption Timing

- * Target: Complete the remaining 4MPs in 2 years.
 - * Phoenix: Summer 2020
 - * Pinal: Winter 2020
 - * Santa Cruz: Fall 2021
- * Work to draft the 5MPs will begin immediately after the last 4MP is adopted.
 - * The 5th Management Period is 2020-2025.



II. ADWR's Recommendations for the Remaining 4th Management Plans



New Provisions in the 4MP

- * Reporting

- * Agricultural

- * Crop type
 - * Active irrigated acres
 - * % of canals lined

- * Industrial

- * Turfed Acres
 - * Water Surface Acres
 - * Low Water Use Plant Acres

- * Audit

- * Selected audits of records and practices related to conservation requirements

- * Conservation Progress Report

- * Effectiveness of all conservation programs
 - * Progress toward goals in all AMAs



Conservation Progress Report

As a part of the 4MP, ADWR will periodically publish an analysis of each AMA's progress toward its goal.

- * Expand scope of report required under A.R.S. § 45-563.01 to include analysis of:
 - * Effectiveness of Conservation Programs in all 3 sectors
 - * Progress toward the goal in each of the 5 AMAs
- * Transparency
 - * Communicating success or need for improvement
 - * Tracking and ensuring progress of each AMA toward its goal
 - * Sharing underlying data and methodology





Conservation Program Changes

Program	Provision	3MP	Adopted 4MPs	Remaining 4MPs
Ag – Districts	Line canals or 10% or less L&U	“10% or more of water deliveries for irrigation use”	“any water for irrigation use”	“any water for irrigation use”
Ag – Base	High Water Duty Adjustment	No change	No change	Top 25% of water duties reduced by up to 10%
Ag – BMP	Points target	10 points	10 points	12 points
Ag – BMP	Points restructuring	Points accrued from 4 Categories	No change	Point values modified in Categories 1 & 2
Muni – GPCD	GPCD target	Recalculated with each Management Plan		
Muni - NPCCP	BMP or Points target	Tier 1 = 1 BMP Tier 2 = 5 BMPs Tier 3 = 10 BMPs	No change	Tier 1 = 2 points Tier 2 = 8 points Tier 3 = 15 points
Muni – NPCCP	Points restructuring	All items count as 1 BMP	No change	Certain BMPs count as multiple points
Industrial – Turf	Application Rate (AF/acre)	Calculated based on 75% Irrigation Efficiency	No change	Calculated based on 80% Irrigation Efficiency
Industrial – Turf	Acres of turf	Certain golf courses limited to 5 acres of turf per hole	No change	Limitation applies to additional turf-related facilities

Agricultural Base Program Water Duties

A.R.S. § 45-567(A)(1)

“... In setting the irrigation water duty or intermediate water duties for the fourth management period, the director may adjust the highest twenty-five per cent of the final irrigation water duties established within an area of similar farming conditions pursuant to section 45-566 by reducing each water duty in an amount up to ten per cent, except that, in making the adjustment, no water duty may be reduced to an amount less than the greater of the following:

- (a) The highest water duty within the lowest seventy-five per cent of the water duties computed within the area of similar farming conditions for the fourth management period*
- (b) A water duty computed for the farm unit under this paragraph using an irrigation efficiency of eighty per cent.”*



Agricultural Base Program Water Duties

AMA	Number of rights adjusted (% total in the Base Program)	Maximum change in allotment (% total)
Phoenix	219 (11%)	-6,216 AF (-1.0%)
Pinal	123 (11%)	-3,092 AF (-0.5%)
Santa Cruz	1 (-26%)	-5 AF (negligible)

Allotment = Water Duty x Water Duty Acres

Water Duty = Irrigation Requirement / Irrigation Efficiency

Irrigation Requirement = Consumptive Use + Other Needs + Leaching Allowance



Agricultural BMP Program

A.R.S. § 45-567.02(G)

“The director shall include... a best management practices program... in lieu of complying with an irrigation water duty and a maximum annual groundwater allotment. The program shall be designed to achieve conservation that is at least equivalent to that required under [the Base Program].”



Agricultural BMP Program

	AF/Irrigation Acre			% Total Irrigation Acres	% of Total Ag Water Use
	Base	BMP	% difference	BMP	BMP
Phoenix AMA	4.7	5.1	10%	20%	22%
Pinal AMA	3.1	4.0	29%	35%	42%
Total All AMAs	3.7	4.3	15%	27%	30%

Agricultural BMP Program

Provision	3MP & Adopted 4MPs	Remaining 4MPs
Points target and structure	10 total points ✓ At least 1 point/category ✓ At least 2 points in Category 2 ✓ No more than 3 points/category	12 total points ✓ At least 1 point/category ✓ At least 2 points in Category 2 ✓ No more than 4 points/category
Points values	No changes	Changes made in Categories 1 & 2 (See Appendix 4B)



Municipal NPCCP

Provision	3MP & Adopted 4MPs	Remaining 4MPs
Points target	Tier 1: 1 BMP/point Tier 2: 5 BMPs/points Tier 3: 10 BMPs/points	Tier 1: 2 point Tier 2: 8 points Tier 3: 15 points
Points values	Each practice is treated as equal	Certain practices may be worth multiple points (See Appendix 5C)



Industrial Turf Program

Turf Application Rate (AF/ac)

	3MP	New	Effective
Prescott	4.9	4.6	5MP
Phoenix	4.9	4.6	4MP
Pinal	4.8	4.5	4MP
Tucson	4.6	4.3	5MP
Santa Cruz	4.6	4.3	4MP

Limit on Turfed Acreage

3MPs & Adopted 4MPs	Remaining 4MPs
Applies to Regulation Post-1985 golf courses	Applies to new or expanding parks, schools, HOAs, and other turf-related facilities*

**Applies to any turf-related facility that is not a cemetery.*



III. Management Plans Work Group



Management Plans Work Group

- * Work Group
 - * The MPWG is an ADWR-led stakeholder forum for the development of the Fifth Management Plans
 - * Goals:
 - * Assess existing conservation programs
 - * Update existing management strategies
 - * Develop new management strategies

- * First meeting: July 9, 2019
 - * Included detailed discussion of 4MP Recommendations
 - * Focus on development of 5MP



Management Plans Work Group

Next Meetings:

- * Management Plans Work Group
 - * August 20 at 1pm
 - * ADWR, 3175
 - * Data discussion
- * Subgroups
 - All at 1pm in ADWR Middle Verde Conference Room
 - * Agricultural: 9/5
 - * Municipal: 9/4
 - * Industrial: 9/10
 - * Safe-Yield Technical: 9/24

All meeting information is available at new.azwater.gov/5MP



GWAICC – Post-2025 Group

- * Created at June 13 meeting
- * ADWR staff are working toward scheduling meetings

Progress and overlap will be communicated to both groups.

Questions?

managementplans@azwater.gov

Management Plans Work Group:
new.azwater.gov/5MP

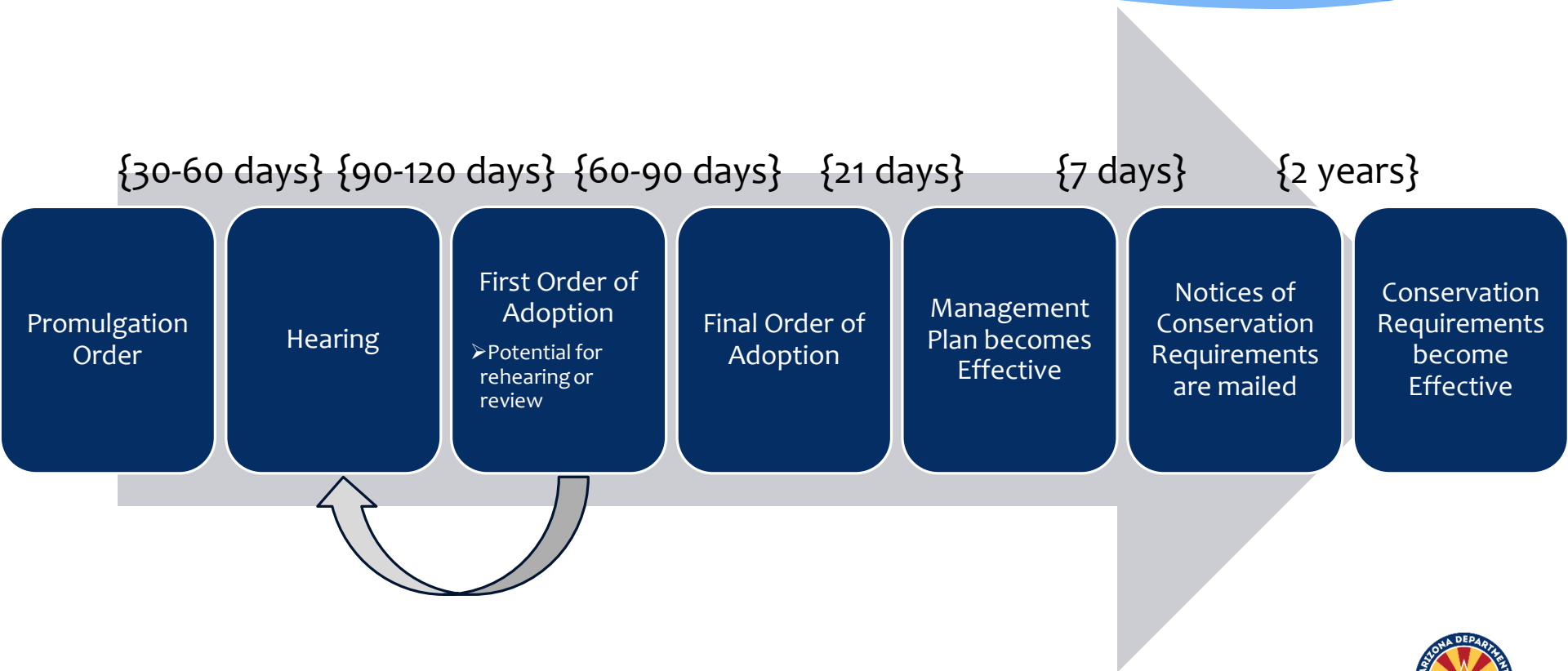
Full Text of Management Plans:
new.azwater.gov/ama/management-plans



Backups



Management Plan Promulgation



Definitions

- * **Water Duty (WD)*:** Amount of water in acre-feet per acre that is reasonable to apply to irrigated land in a farm unit during the accounting period
 - * $\text{Water Duty} = \text{Irrigation Requirement} / \text{Assigned Irrigation Efficiency}$
- * **Water Duty Acres (WDAc)**:** The highest number of acres in the farm which were legally irrigated during any one year from 1975-1979.
- * **Irrigation Acre*:** an acre of land to which an irrigation grandfathered right is appurtenant.
- * **Allotment:** the maximum amount of groundwater which may be used for the farm unit.
 - * $\text{Allotment} = \text{Water Duty} * \text{Water Duty Acres}$

*Definition from A.R.S. § 45-402.

**Definition from from A.R.S. § 45-465.



Audit Provision

“ADWR may elect to conduct audits of reports, records, and/or practices pursuant to the conservation requirements... A Report of Audit must be sent to the audited person or entity pursuant to A.R.S. §§45-633(D), 880.01(D), 1061(D), and/or A.A.C. R12-15-1102(E).”

