

# 5<sup>th</sup> Management Plans Work Group Agricultural Subgroup Meeting

May 18, 2020



# Agenda

- I. Welcome
- II. 5MP Statutory Framework and Key Issues
  - I. Statutory Requirements
  - II. Conservation
- III. Analyses of Base and BMP Programs
- IV. Path Forward and Closing Remarks

# 5MP Statutory Framework and Key Issues

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goal which attempts to achieve and thereafter maintain a long-term balance between the annual amount of groundwater withdrawn in an active management area and the annual amount of natural and artificial recharge in the active management area.”*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

# 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			💧	💧	💧



# Key Issues

- \* Continued Progress toward Management Goals
- \* Definitions and Strategies
- \* Timeline and Transition into Drier Future

# Conservation in the Context of the 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.”*

# 5MP Goal and Timeline

***5MP Goal: Finding conservation and efficiency in all sectors that is both practical and makes incremental progress toward reducing withdrawals of groundwater***

- \* 5MP needs to contain flexibility and make progress to take us into the future
- \* Statutes do not yet define what comes after the 5MP
  - \* We anticipate there will be some continued water management structure, but the details of that and the timing are yet to be defined.
  - \* The 5MP Conservation Requirements will remain in place until subsequent requirements become effective.



# Overview of BMP Conservation Program Data and Analyses

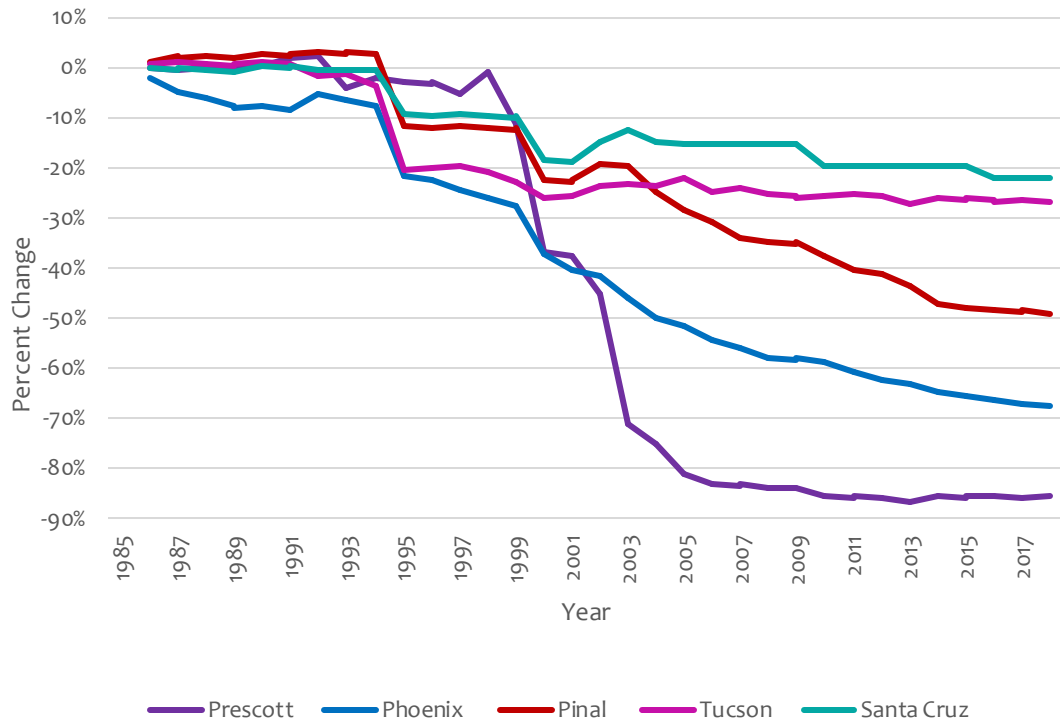
# Agricultural Conservation Programs

- \* **Base Program**
  - \* **Historic Cropping Program**
  - \* **Best Management Practices Program (BMP)**
- \* Conservation Programs include:
    - \* Regulatory requirements related to water use
    - \* Reporting requirements
    - \* Conservation targets
    - \* Flexibility provisions
    - \* Compliance provisions

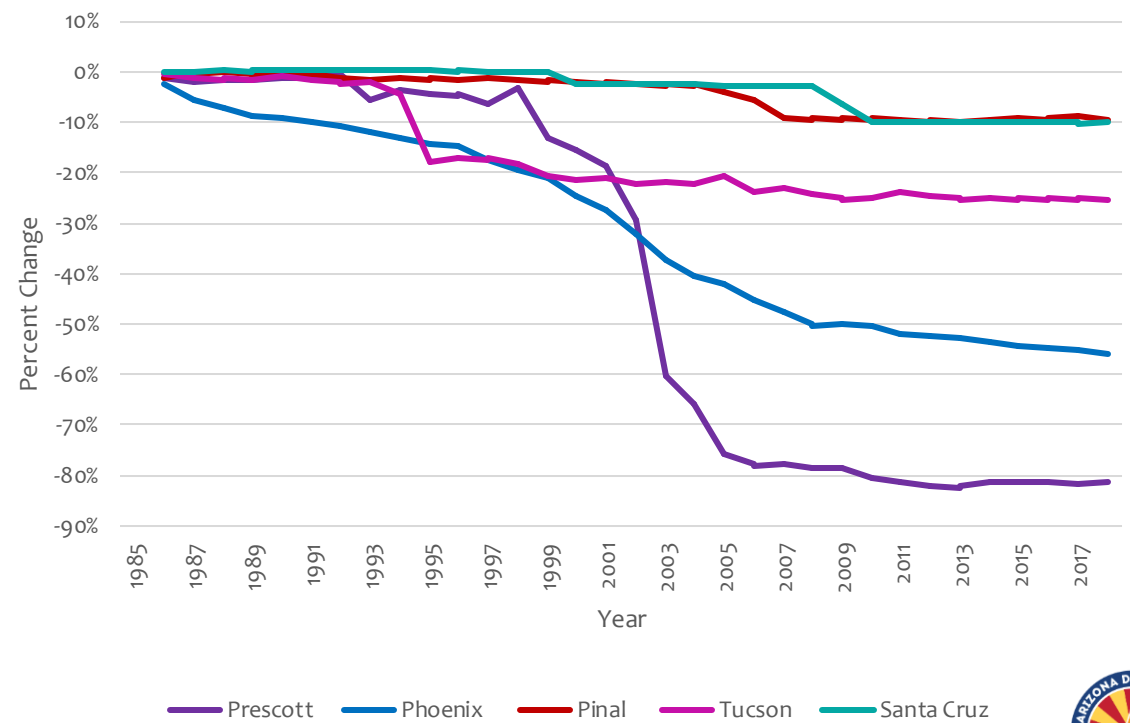
*A.R.S. § 45-563(A): “... The plans shall include a continuing mandatory conservation program for all persons withdrawing, distributing or receiving groundwater designed to achieve reductions in withdrawals of groundwater.”*

# Change in Allotments and Irrigation Acres

Percent Change in Allotment Over Time



Percent Change in Irrigation Acres Over Time



# Agricultural BMP Program

## A.R.S. § 45-568.02(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].”*

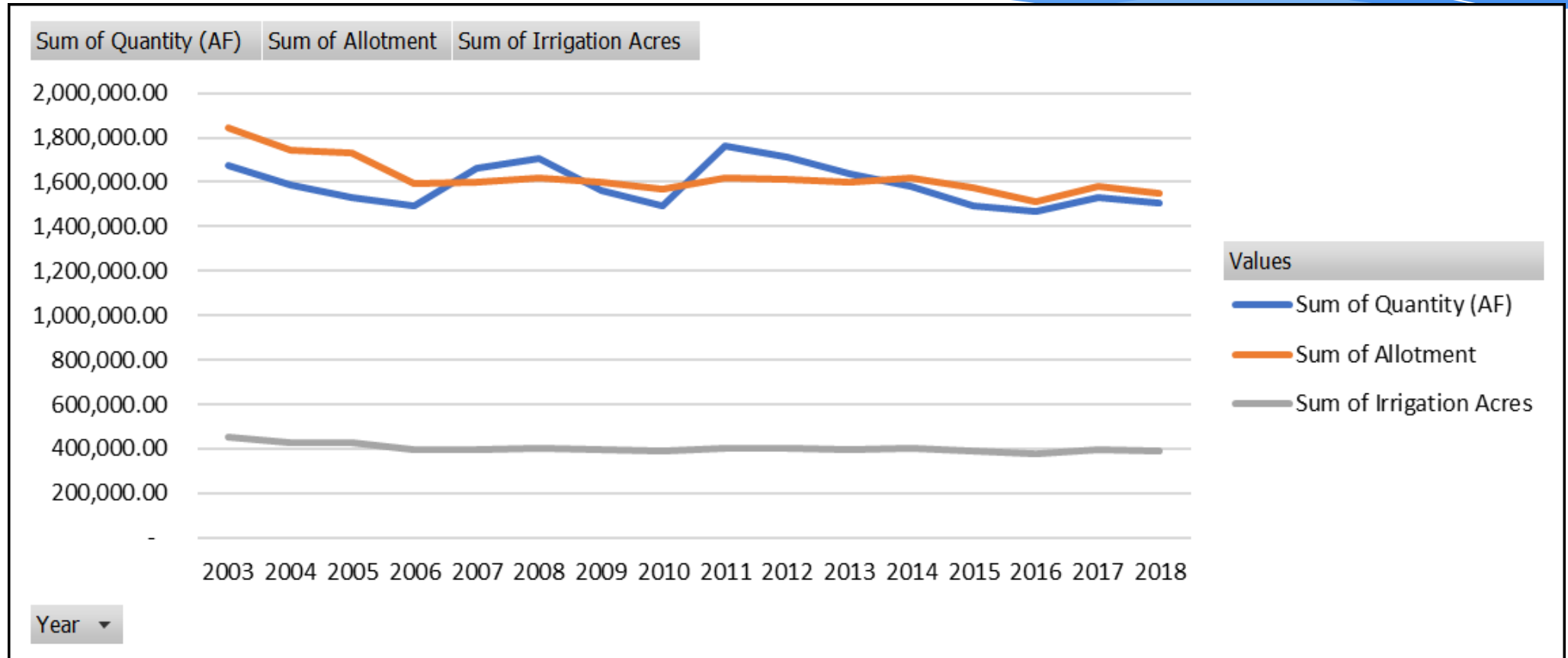
AMA	Number of IGRs Enrolled in the BMP Program	Irrigation Acres Enrolled in the BMP Program
Pinal	312	83,481
Phoenix	172	26,700
Total	484	110,181



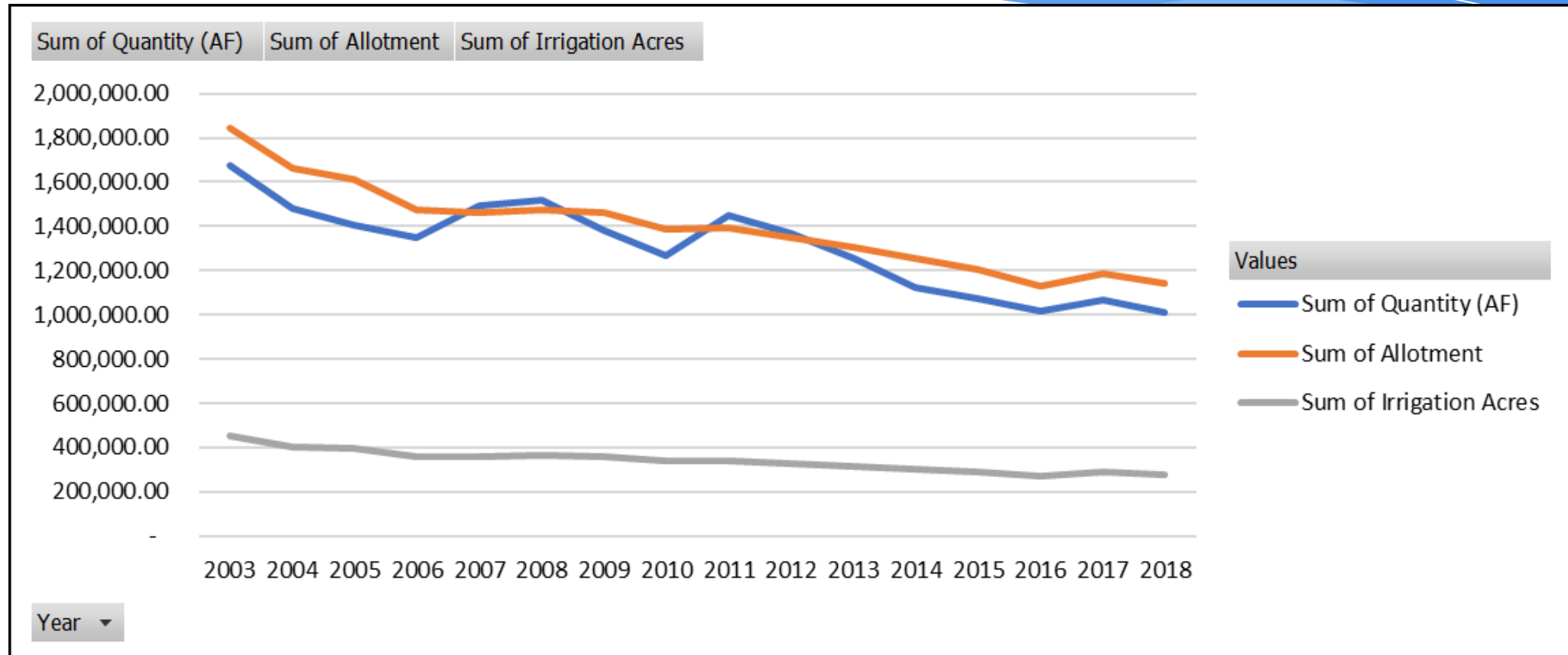
# Agricultural BMP Program

Average All Years (2008-2018)	AF/Irrigation Acre		
	Base	BMP	% difference
Pinal AMA	4.7	5.6	18%
Phoenix AMA	3.6	4.6	36%
Total All AMAs	3.9	4.5	17%

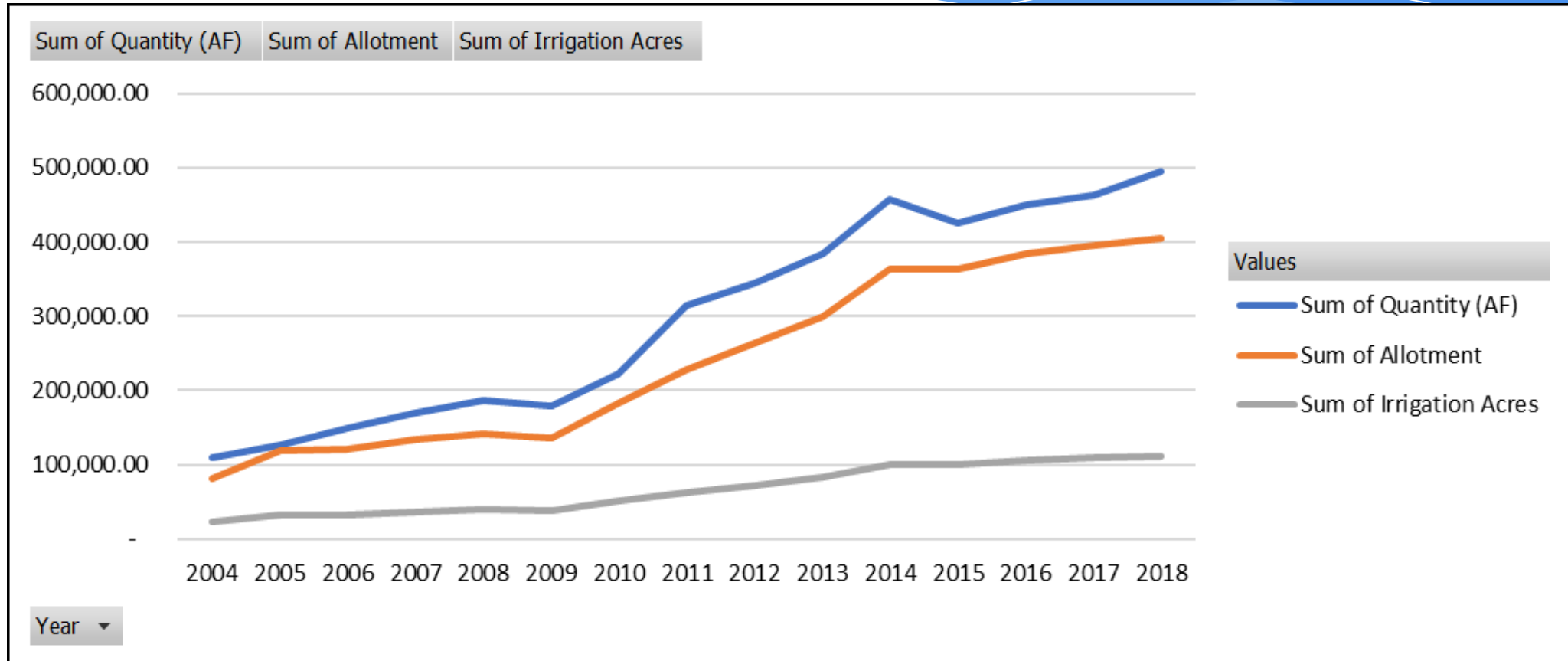
# Base Program & BMP Program Combined Water Use and Allotments



# Base Program Water Use and Allotments

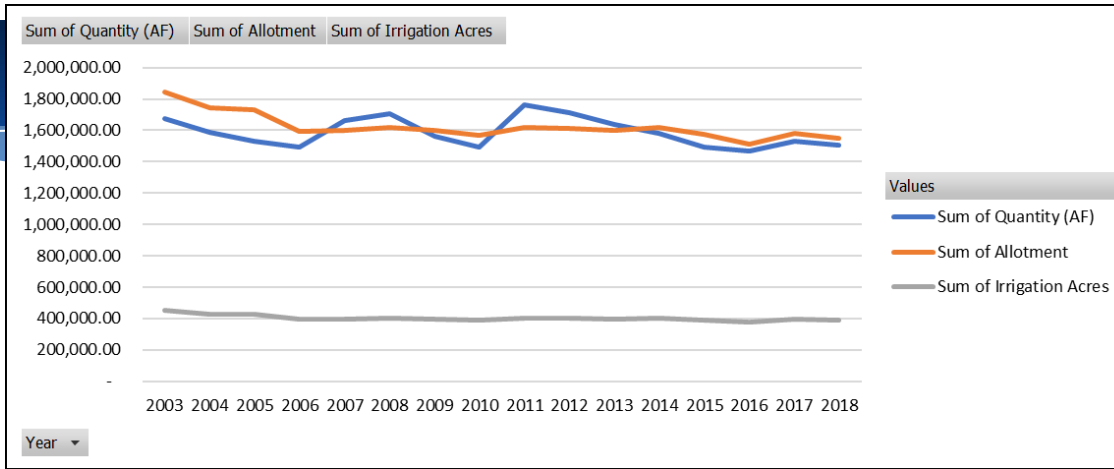


# BMP Program Water Use and Allotments

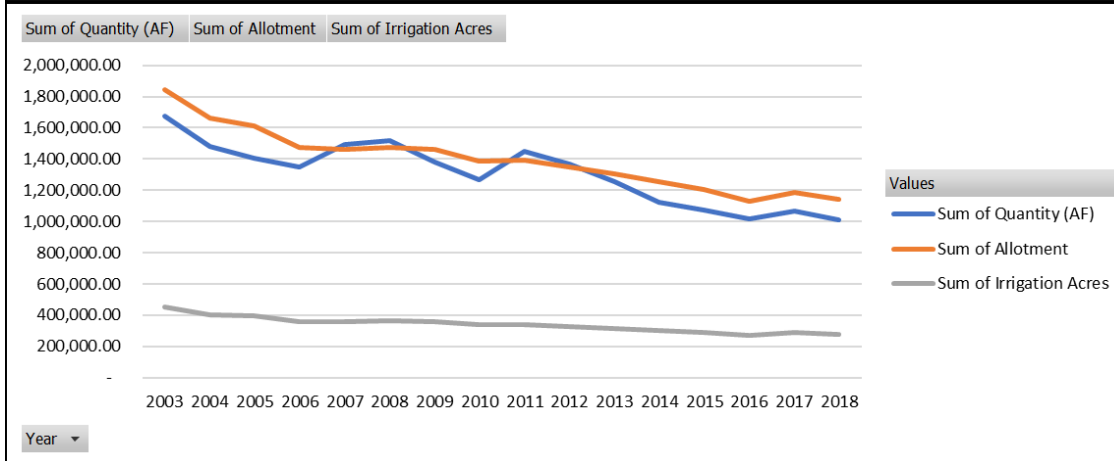




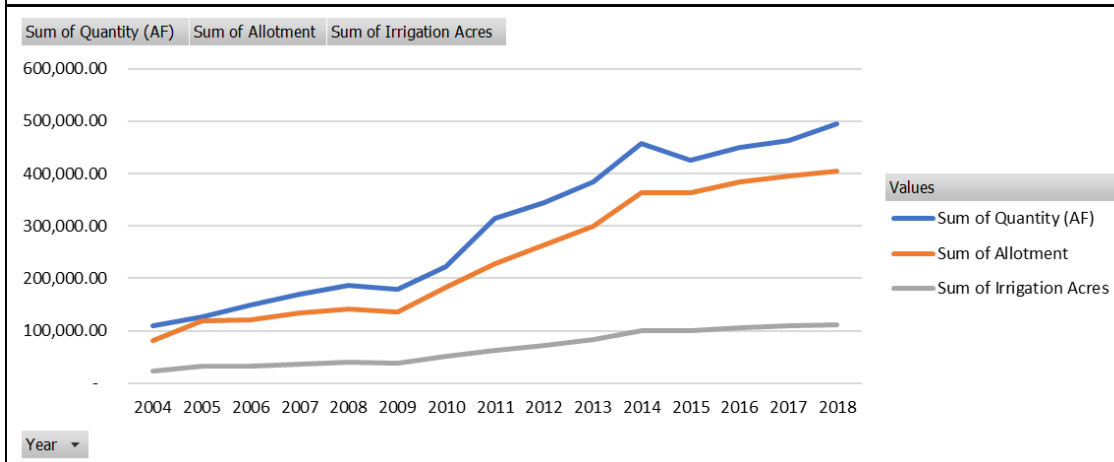
## Base Program & BMP Program Combined Water Use and Allotments



## Base Program Water Use and Allotments



## BMP Program Water Use and Allotments



# CropScape - Fallowed Acres

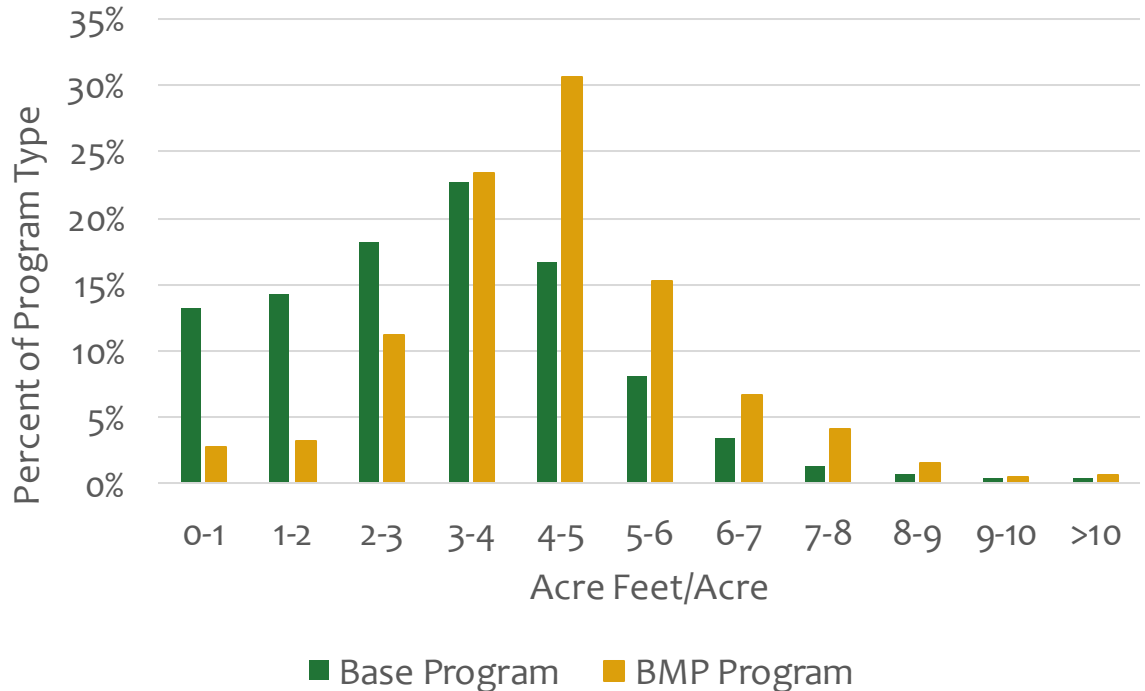
- \* CropScape displays United States Department of Agriculture (USDA) Cropland Data Layer (CDL)
- \* Available here: <https://nassgeodata.gmu.edu/CropScape/>
- \* Cropland Data Layer (CDL)
  - \* Reported annually for the continental United States since 2008
  - \* Remote sensing data of crop cover
  - \* Includes fallow/idle acres

# Agricultural BMP Program Actively Irrigated Acres

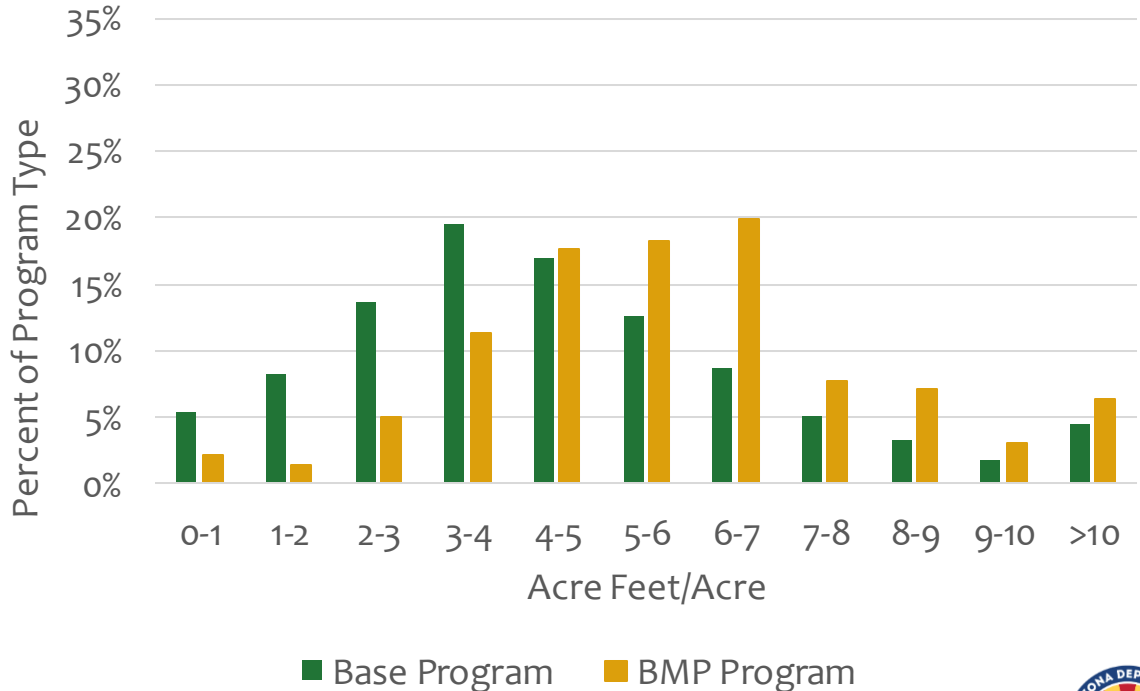
Average All Years (2008-2018)	AF/Actively Irrigated Acre		
	Base	BMP	% difference
Pinal AMA	4.1	4.6	13%
Phoenix AMA	5.2	5.6	8%
Total All AMAs	4.5	4.9	9%

# Acre Feet Per Irrigation Acre

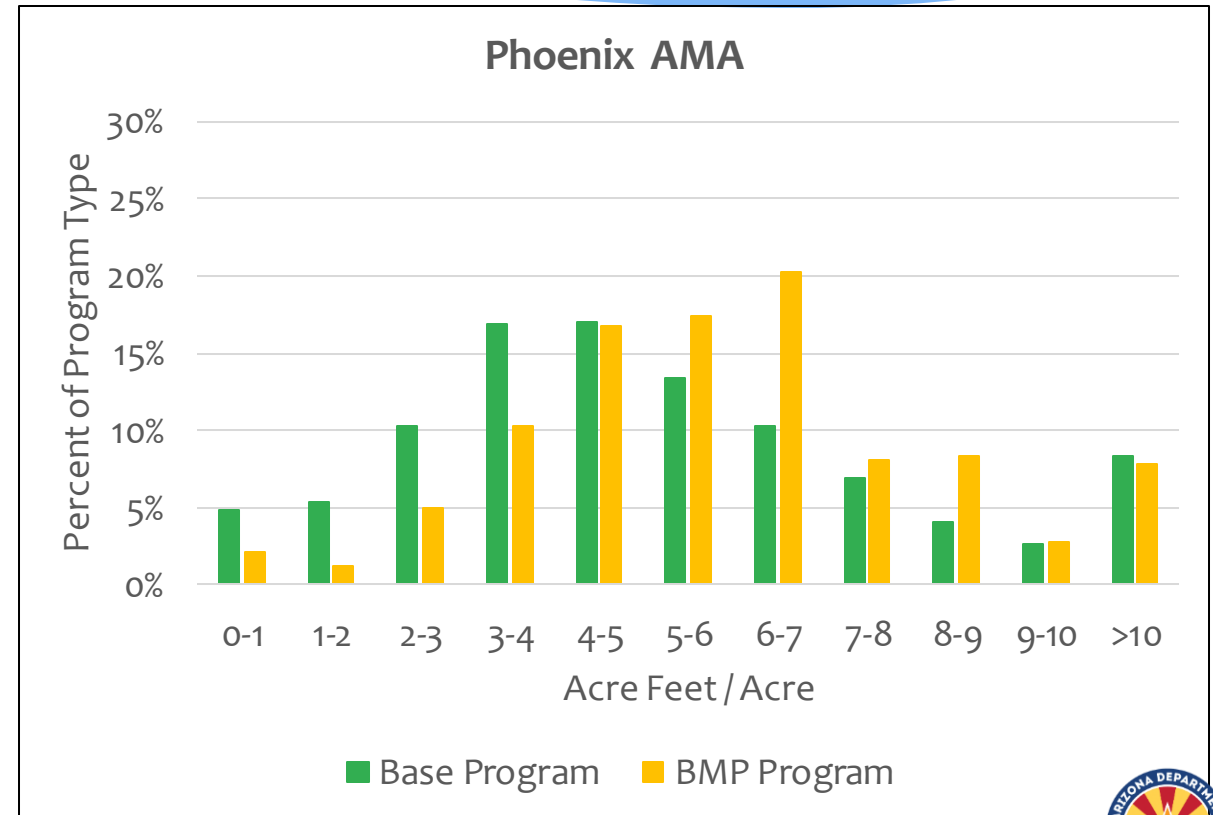
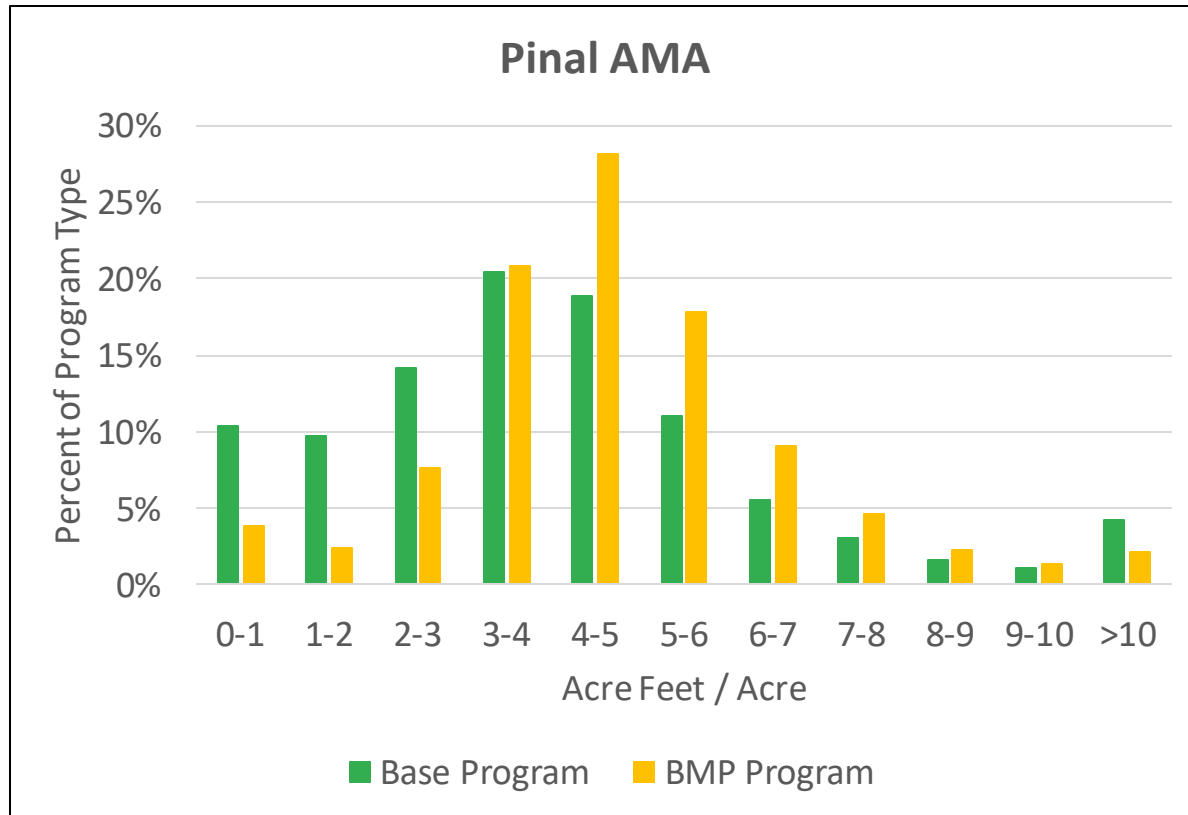
Pinal AMA



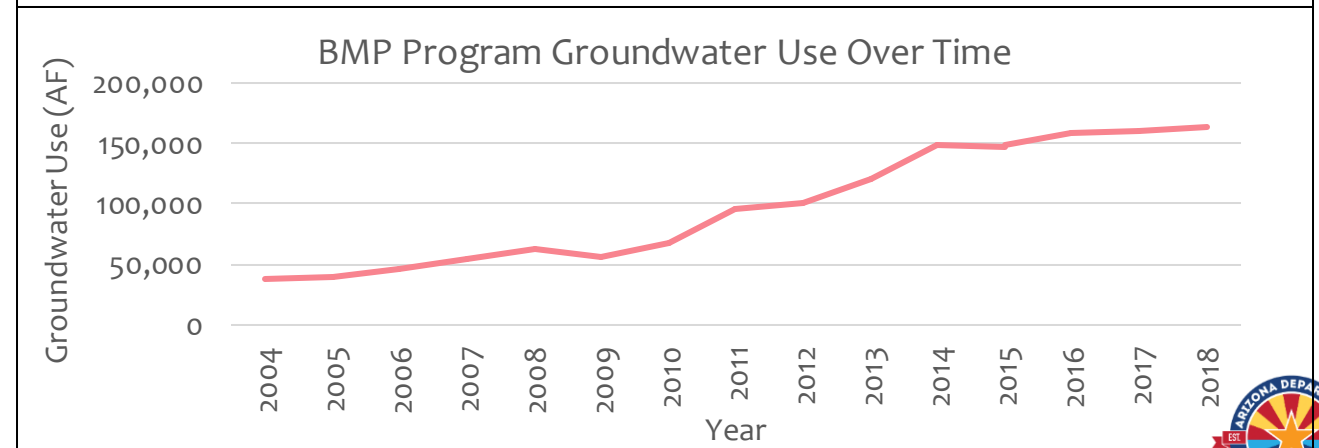
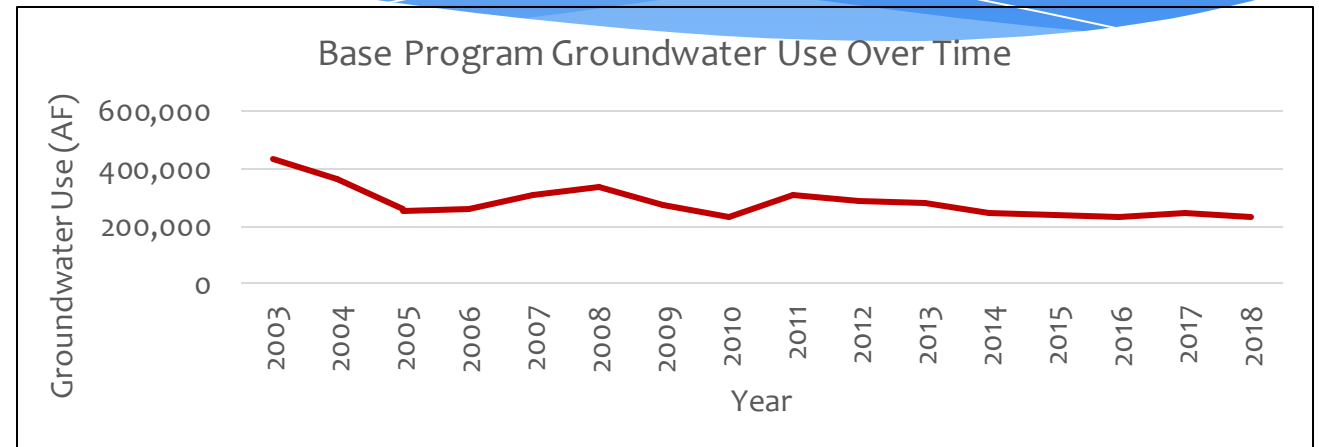
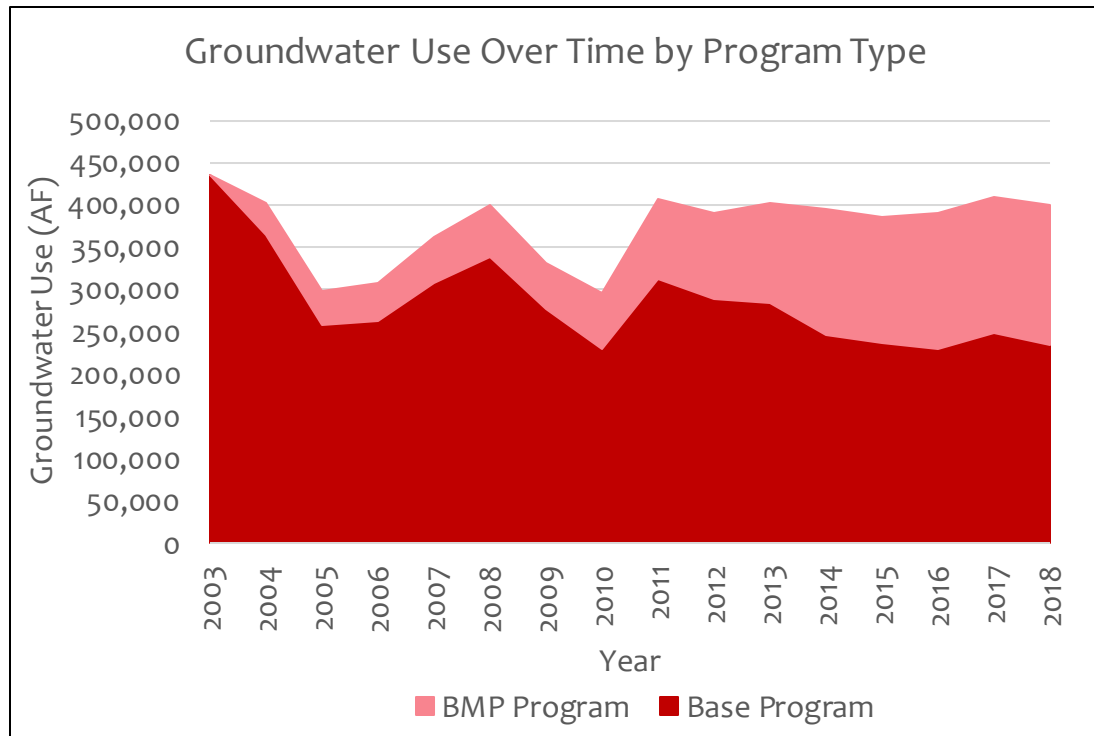
Phoenix AMA



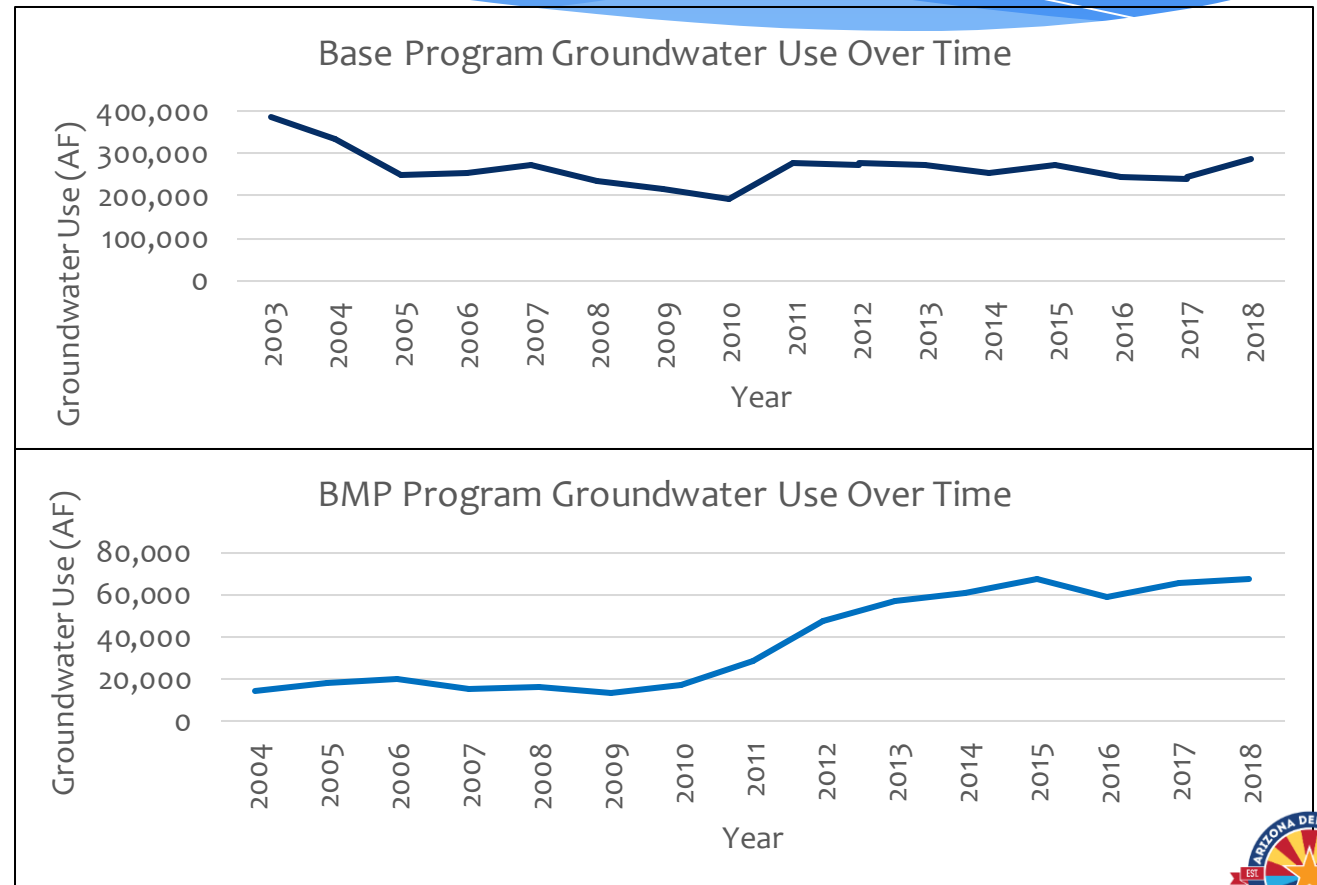
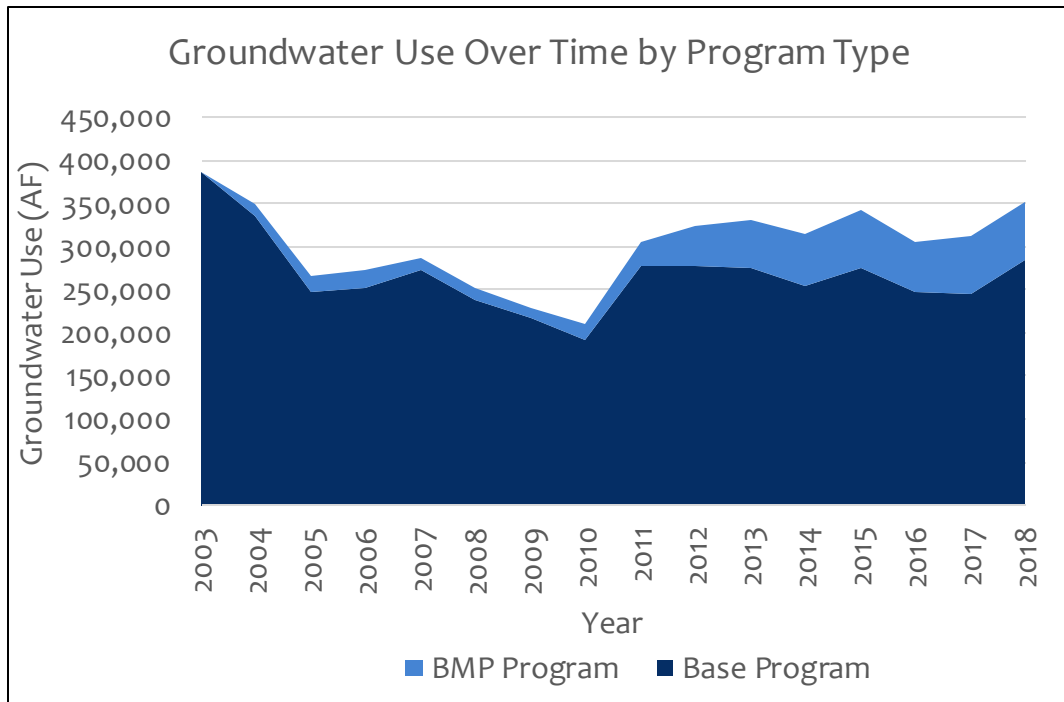
# Acre Feet Per Actively Irrigated Acre



# Groundwater Use By Program Type: Pinal AMA



# Groundwater Use by Program Type: Phoenix AMA



# ADWR Analysis

**The Agricultural BMP Program is not currently achieving conservation at least equivalent to that required under the Base Program.**

## **A.R.S. § 45-568.02(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].”*

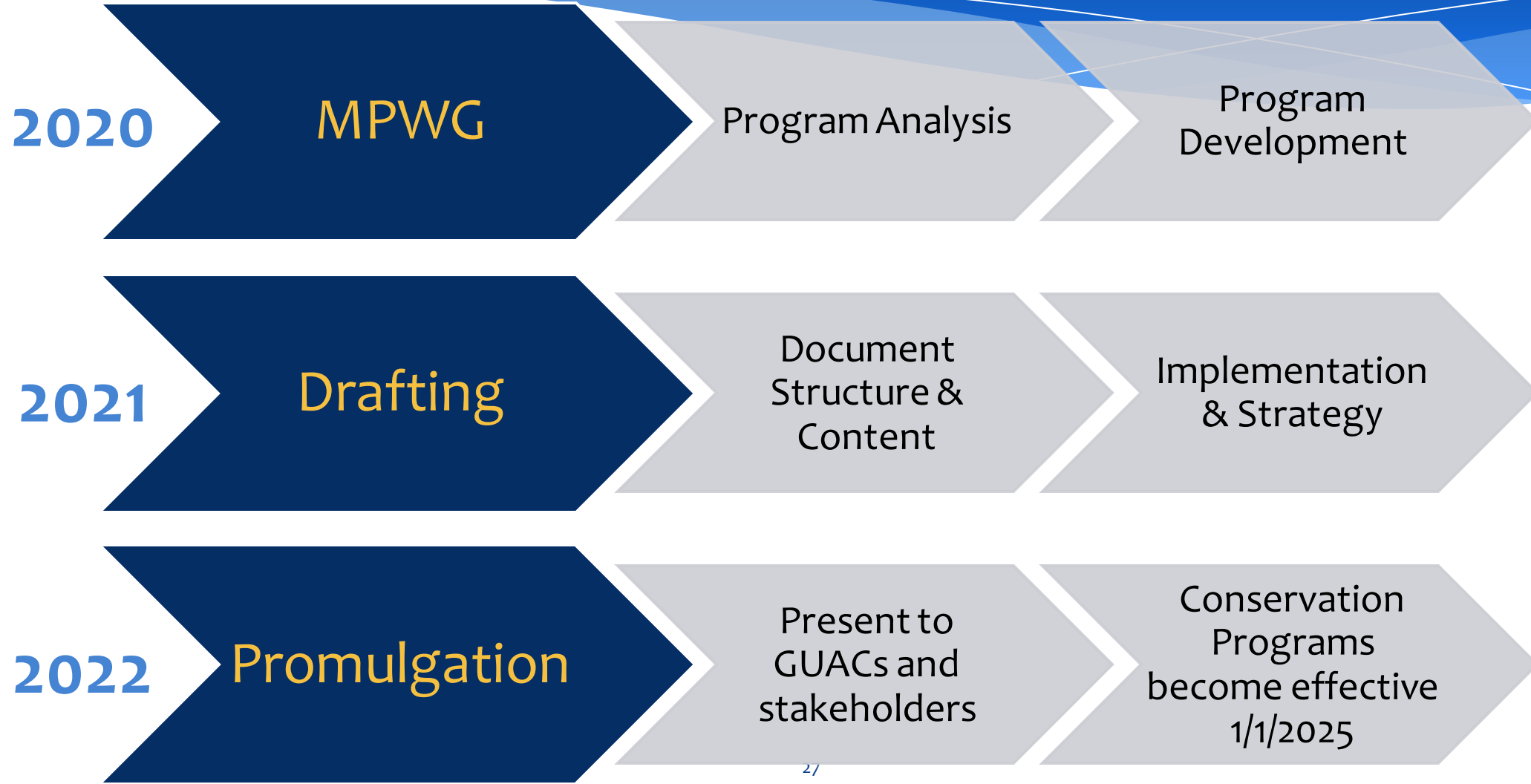




# Path Forward & Closing Remarks



# Estimated 5MP Timeline



# MANAGEMENT PLANS WORK GROUP

## **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.”*

## **ADWR-led stakeholder forum for the development of the 5th Management Plans**

### **Goals:**

- \* Assess existing conservation programs
- \* Update existing management strategies
- \* Develop new management strategies

# Agricultural Subgroup

## Update from Past Meetings:

- \* Discussion of water use data and conservation in the Base and BMP Programs
- \* Discussed new concepts for 5MP Agricultural Conservation

## Next Steps for Future Meetings:

- \* Further discuss and develop 5MP Programs
  - \* Changes to BMP Program
  - \* Integrated Farm Program
- \* Discuss options for AMA-specific customization

## Next Meeting:



7/20: 5MP Conservation Programs

# MPWG Subgroups

{ All meeting info is available at [new.azwater.gov/5MP](http://new.azwater.gov/5MP) }

Work Group

MPWG

📅 8/11/2020

Subgroup

Ag

📅 7/20/2020

Muni

📅 6/4/2020

Industrial

📅 TBD

Safe-Yield  
Technical

📅 7/7/2020

Breakout

Turf

📅 6/22/2020

# Questions?

[managementplans@azwater.gov](mailto:managementplans@azwater.gov)

Management Plans Work Group:  
[new.azwater.gov/5MP](http://new.azwater.gov/5MP)

Full Text of Management Plans:  
[new.azwater.gov/ama/management-plans](http://new.azwater.gov/ama/management-plans)

