



YOUR WATER. YOUR FUTURE.

MARCUS SHAPIRO

Colorado River Basin Data and Modeling

Second Roundtable – May 28, 2020

Water Delivery Reports

- Scheduled & delivered water volumes in database
- Reports distributed to internal & external stakeholders
- What's available on CAP website for external stakeholders?
 - Report by Contract Type
 - Report by Recharge Facility
- ADWR uses data to validate year end reporting



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CAP Water Deliveries

YEAR-TO-DATE DELIVERY REPORT BY CONTRACT TYPE

- CY 2020
- CY 2019
- CY 2018

YEAR-TO-DATE DELIVERY REPORT BY RECHARGE FACILITY

- CY 2020
- CY 2019
- CY 2018

LEGACY DELIVERY REPORTS 1999-2018

- CY 2018
- CY 2017
- CY 2016
- CY 2015
- CY 2014
- CY 2013
- CY 2012
- CY 2011

How to Read a Delivery Report

- Delivery by Contract Type
- Delivery by Recharge Facility

CAP Water Delivery Reports can provide answers to several important questions

1. Can I see how much water is scheduled for delivery from the system?
2. Can I see how much water has been delivered from the system?
3. Can I see how much water was stored and where?
4. What is the difference between Water User and Partner?
5. Can I get more information?

ALL THINGS ACRONYM

[Click to see glossary](#)

Water Delivery Report History – The Story of Reports

CAP has always measured the deliveries that it makes along the canal system from the first delivery in May 1985. The delivery reports serve as the vehicle for corroborating that the water user's billed volume was also delivered as requested. Over the years as more water users came online, more information was added about the various locations of deliveries, cost per acre foot for various programs, and recharge. The format of reports has evolved by the request of CAP contract holders, but they were always meant for each water

2020 Year to Date Deliveries by Contract Type

Deliveries by Contract Type

Summary	Deliveries												Total		
Contract Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Delivered	Scheduled	Remaining
Excess - Ag Pool	2,068	5,829	11,643	0	0	0	0	0	0	0	0	0	19,540	249,375	229,835
Federal Off-Res	15,999	18,603	26,000	0	0	0	0	0	0	0	0	0	60,602	332,068	271,466
Federal On-Res	2,242	5,955	7,504	0	0	0	0	0	0	0	0	0	15,701	157,939	142,238
M&I Subcontract	32,475	38,944	42,848	0	0	0	0	0	0	0	0	0	114,267	620,618	506,351
Excess - Other Excess	23	67	18	0	0	0	0	0	0	0	0	0	108	625	517
Total	52,807	69,398	88,013	0	210,218	1,360,625	1,150,407								

Federal Off-Res			Deliveries												Total		
Water User	Partner	Agreement	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Delivered	Scheduled	Remaining
Freeport	GRIC	Lease	0	0	0	0	0	0	0	0	0	0	0	0	0	10,000	10,000
Freeport-Morenci	GRIC	Lease	0	1,247	1,990	0	0	0	0	0	0	0	0	0	3,237	12,000	8,763
	SCAT	Exchange	0	494	0	0	0	0	0	0	0	0	0	0	494	14,000	13,506
Gilbert	Gilbert	A-RWCD	1,157	380	0	0	0	0	0	0	0	0	0	0	1,537	1,537	0
		A-Wellton-Mohawk	0	1,051	1,504	0	0	0	0	0	0	0	0	0	2,555	6,424	3,869
	SCAT	Lease	0	600	184	0	0	0	0	0	0	0	0	0	784	18,993	18,209
	SRPMIC	Lease	0	0	0	0	0	0	0	0	0	0	0	0	4,088	4,088	
Glendale	Glendale	A-RWCD	682	0	0	0	0	0	0	0	0	0	0	0	682	682	0
		A-Wellton-Mohawk	618	1,743	489	0	0	0	0	0	0	0	0	0	2,850	2,850	0
	SRPMIC	Lease	0	0	1,318	0	0	0	0	0	0	0	0	0	1,318	1,814	496
Goodyear	GRIC	Lease	0	0	2,995	0	0	0	0	0	0	0	0	2,995	7,000	4,005	
GRIC	GRIC	Contract	5,006	2,656	5,961	0	0	0	0	0	0	0	0	0	13,623	71,143	57,520



2020 Year to Date Deliveries by Recharge Facility

AMA	Recharge Facility	Water User	GSF Deliveries												Total			
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Delivered	Scheduled	Remaining	
Phoenix	MWD	AZWC, White Tank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	718	718
		Chaparral City WC	0	0	140	0	0	0	0	0	0	0	0	0	0	140	3,600	3,460
		Del Webb/Pulte	0	0	357	0	0	0	0	0	0	0	0	0	0	357	357	0
		EPCOR, PV	0	0	79	0	0	0	0	0	0	0	0	0	0	79	2,128	2,049
		EPCOR, SC	0	0	155	0	0	0	0	0	0	0	0	0	0	155	4,189	4,034
		EPCOR, SCW	0	0	88	0	0	0	0	0	0	0	0	0	0	88	2,372	2,284
		Glendale	0	0	0	0	0	0	0	0	0	0	0	0	0	0	532	532
		Surprise	0	0	143	0	0	0	0	0	0	0	0	0	0	143	7,059	6,916
		Total	0	0	962	0	962	20,955	19,993									
Phoenix	NMIDD	CAGR	0	0	0	0	0	0	0	0	0	0	0	0	0	8,000	8,000	
		Chandler	0	0	0	0	0	0	0	0	0	0	0	0	0	5,000	5,000	
		Eloy	200	200	200	0	0	0	0	0	0	0	0	0	600	2,120	1,520	
		Gilbert	0	0	0	0	0	0	0	0	0	0	0	0	0	7,000	7,000	
		GRIC	80	503	1,013	0	0	0	0	0	0	0	0	0	1,596	8,000	6,404	
		Phoenix	0	0	865	0	0	0	0	0	0	0	0	0	865	5,865	5,000	
		Surprise	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Data Collection and Sharing in the Active Management Areas



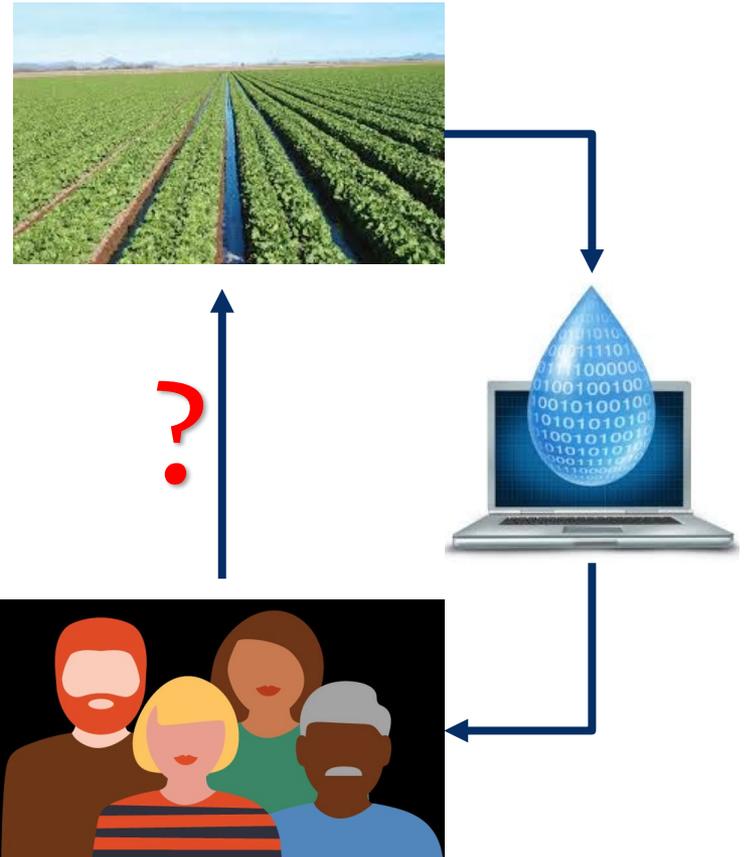
Kyle Miller
Planning & Data Manager

Overview

- * AMA Data

- * Data Sharing Strategies

- * Next Steps



AMA Data



Groundwater Management Act (1980)

Created Arizona Department of Water Resources

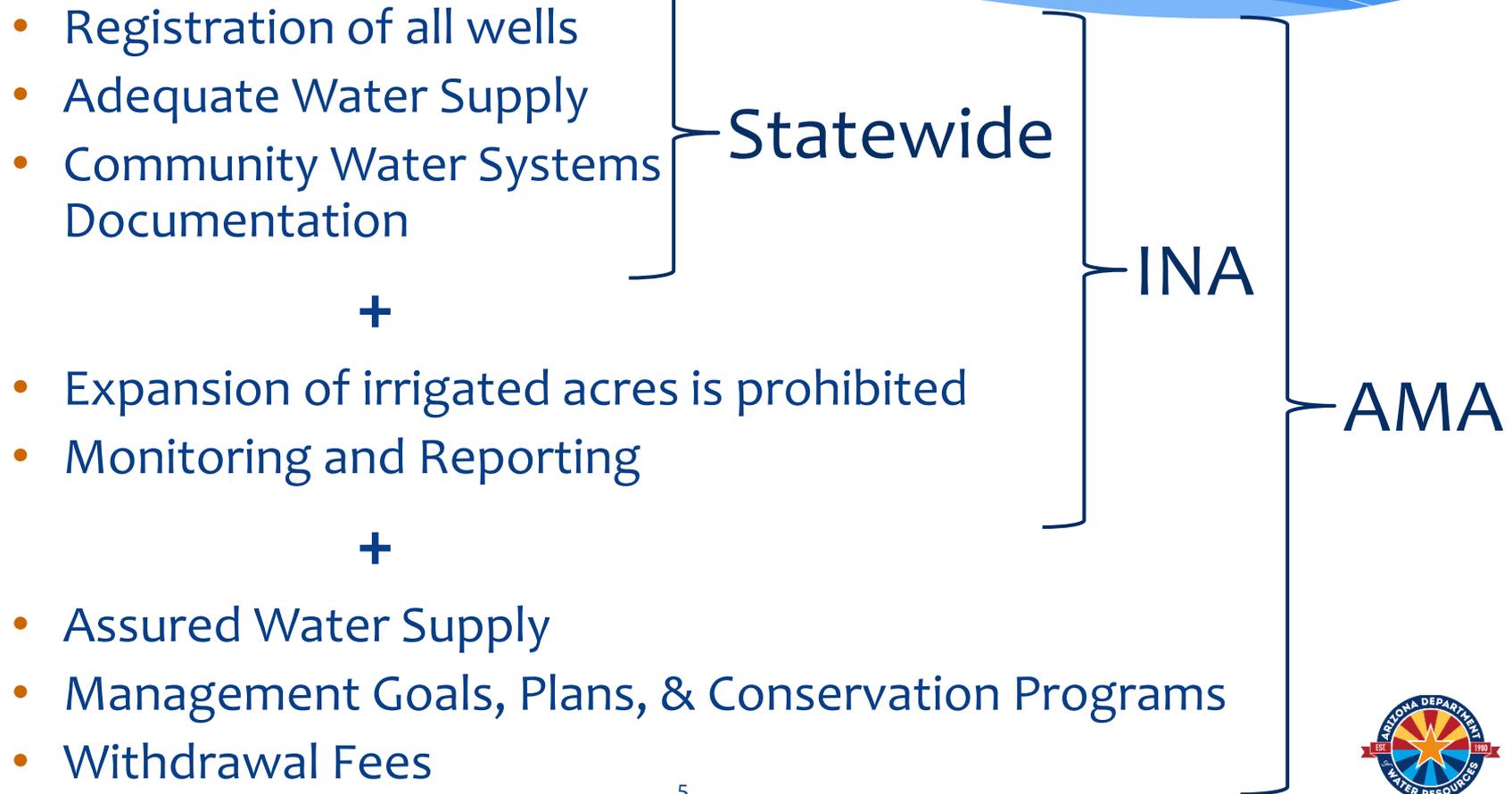
Goals of the Act

- 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

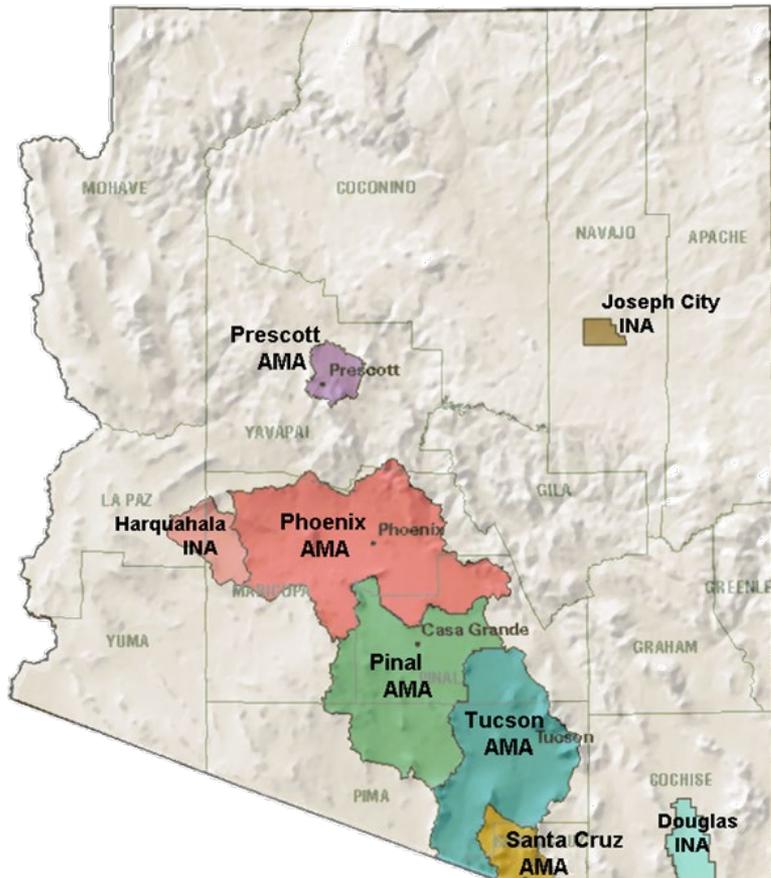
Former Arizona Governor and Interior Secretary Bruce Babbitt signing the GMA



Regulatory Structure



Active Management Areas (AMA) & Irrigation Non-Expansion Areas (INA)



Five AMAs

- Prescott AMA
- Phoenix AMA
- Pinal AMA
- Tucson AMA
- Santa Cruz AMA

Three INAs

- Joseph City INA
- Harquahala INA
- Douglas INA

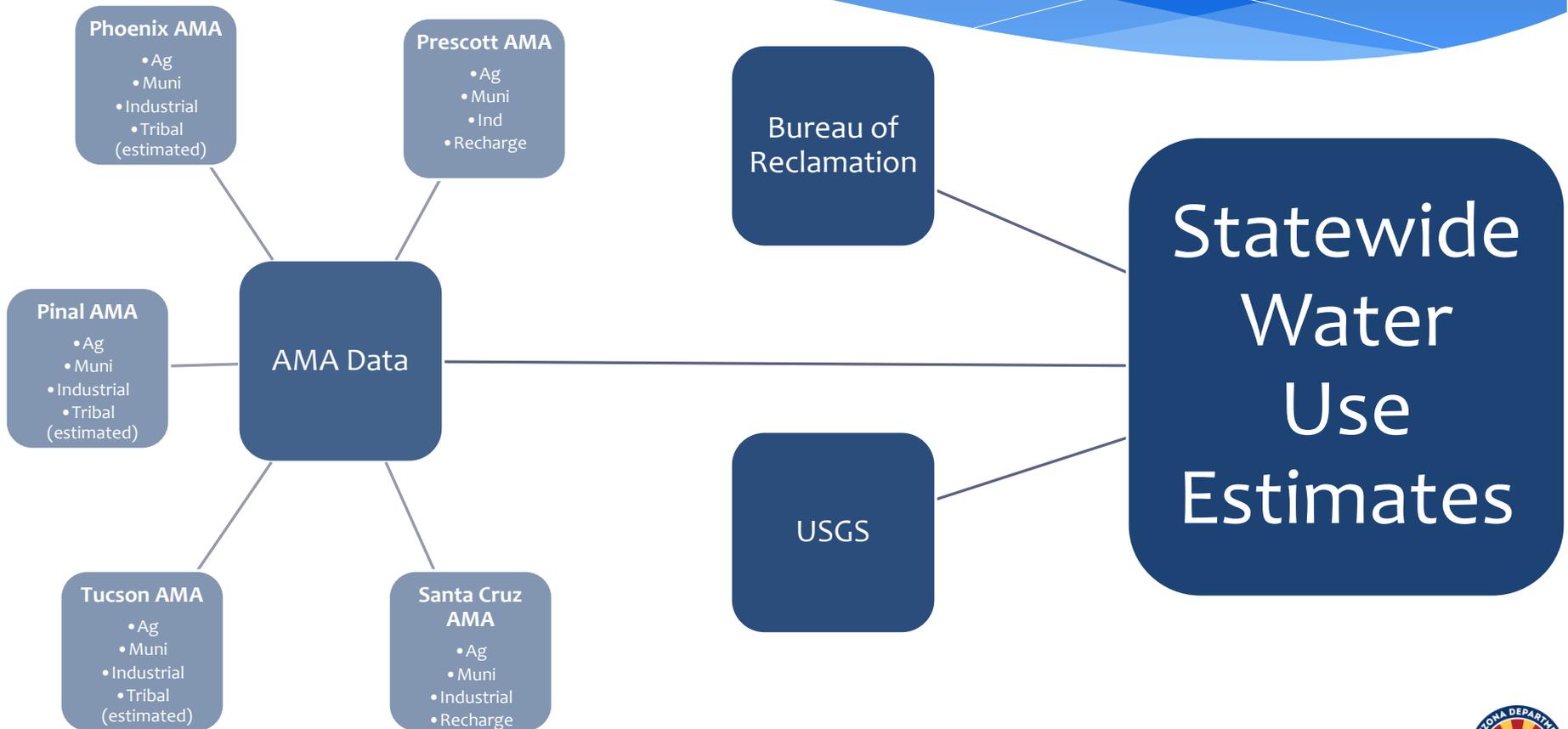


AMA Annual Reports

- * Non-exempt wells (>35 gpm) inside AMAs and INAs must meter well pumpage.
- * Users subject to reporting requirements must submit Annual Water Withdrawal and Use Reports –
 - Due March 31st each year
- * Volume of groundwater pumped by well
- * Report movement of water
 - * Types and Volumes of Water Delivered/Received
 - * Types and Volumes of Water Stored/Recovered
 - * Generation/Discharge of Effluent
- * May report types of end use
- * Additional information related to conservation requirements or any other information the director deems necessary



ADWR Data Compilation



Compiled AMA data is available at new.azwater.gov/ama/ama-data
Statewide Water Use information is available at www.arizonawaterfacts.com



Other Data

- * ADWR Estimates
 - * Tribal water use inside the AMAs
 - * Exempt well water use inside the AMAs
- * CAGR D Replenishment
- * Bureau of Reclamation
 - * Colorado River Diversions and Consumptive Use
 - * Contributions to Lake Mead
- * USGS
 - * Water Use Estimates outside the AMAs
- * US Census
- * US Bureau of Economic Analysis
- * ADWR Well Level Monitoring

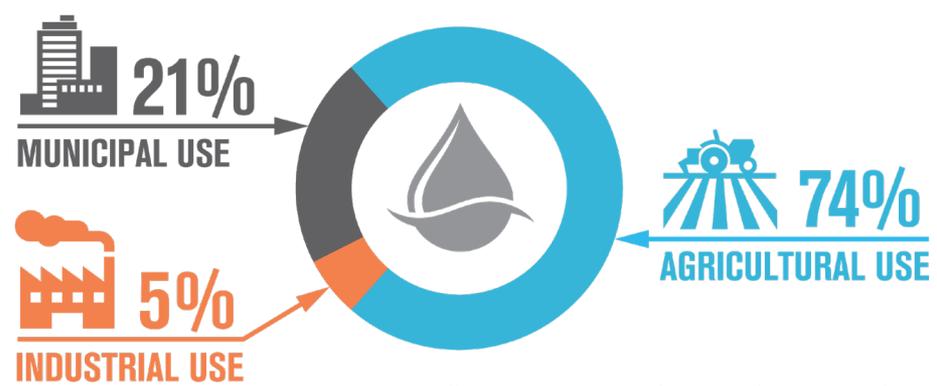
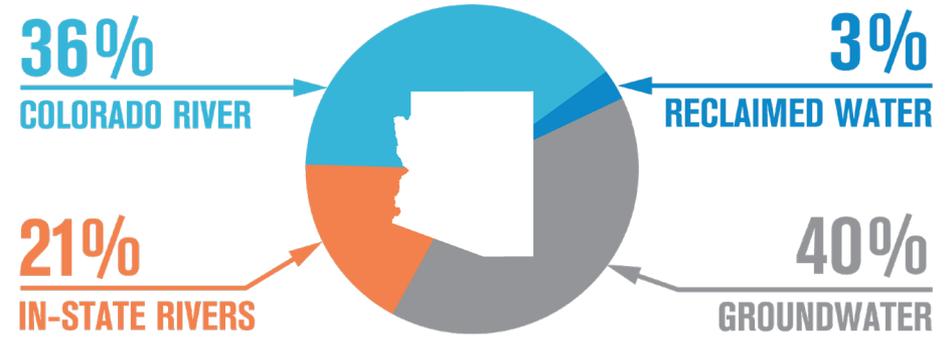
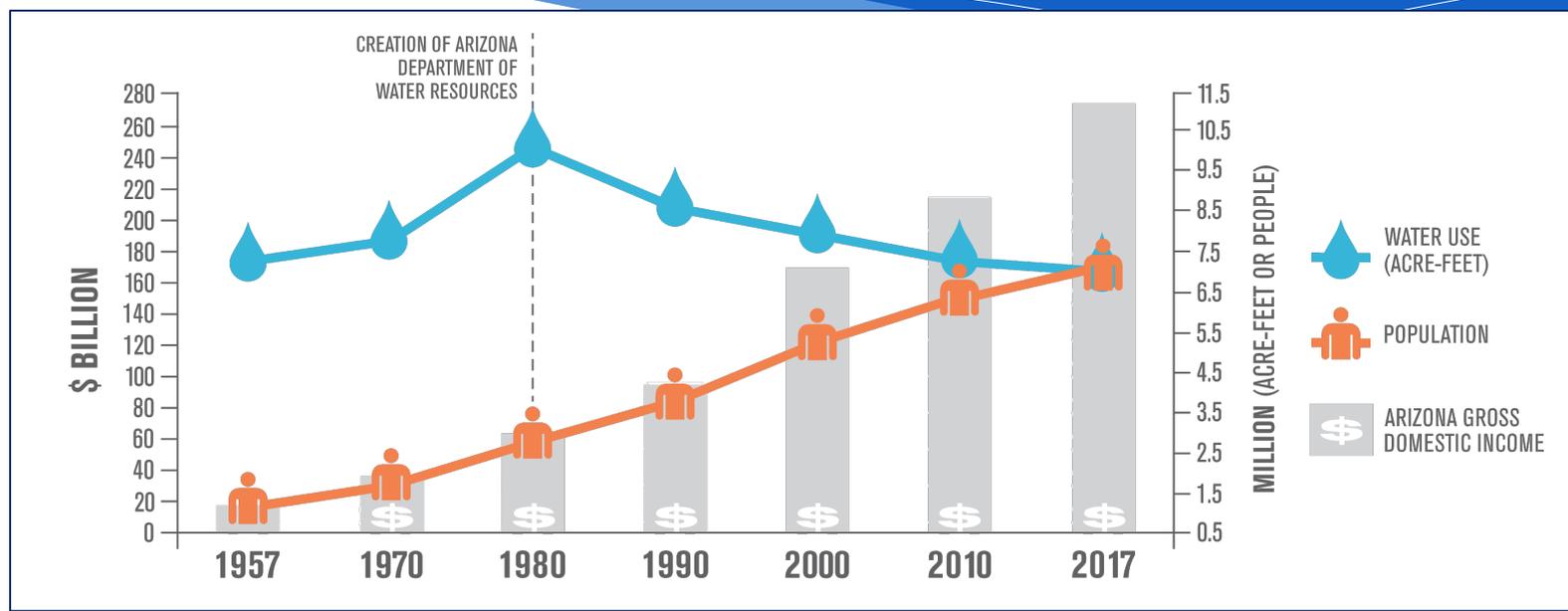


Data Sharing Strategies



Statewide Water Use Estimates

(2017)



Live Queries

Water Resources

water supplies for current and future generations."



Query of Pumpage by Each Well by AMA and Year Parameters:

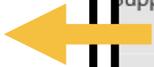
ama

Select All

yr

2005

Execute



PROGRAMS

ONLINE SERVICES

ADWR Live Queries and Reports

ADWR Live Queries and Reports

Supply

Recharge Long-Term Storage Credit

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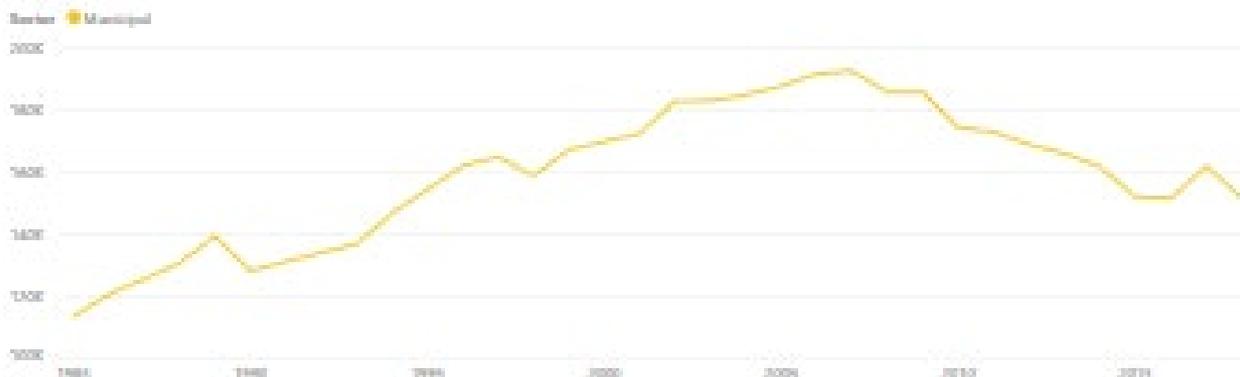
<https://new.azwater.gov/>

YEAR	Owner or BMP Operator	Right Number	Right Type	Sub-basin	Well Id	CADASTRAL	AF Pumped
2005	EAST LAWN CEMETERIES	58-109112.0001	TYPE 2 NON-IRRIGATION GFR	UPPER SANTA CRUZ	085579	D-15-14 06ABA	35.28
2005	CPC SOUTHWEST MATERIALS INC	59-512014.0001	MINERAL EXTRACTION	UPPER SANTA CRUZ	085685	D-15-16 19AAA	249.86
2005	PIMA COUNTY PARKS & RECREATION	58-100379.0004	TYPE 2 NON-IRRIGATION GFR	AVRA VALLEY	085744	D-12-13 19ADA	39.49
2005	CITY OF TUCSON/TUCSON WATER	56-000001.0000	LARGE MUNICIPAL PROVIDER	UPPER SANTA CRUZ	086158	D-12-12 21ADB	612.6
2005	ARIZONA DEPT. OF CORRECTIONS - TUCSON	56-000362.0000	LARGE MUNICIPAL PROVIDER	UPPER SANTA CRUZ	086902	D-16-14 01DAD	157.52
2005	ORO VALLEY COUNTRY CLUB, INC.	58-101530.0000	TYPE 2 NON-IRRIGATION GFR	UPPER SANTA CRUZ	087589	D-12-13 13BCA	431
2005	VAIL WATER COMPANY	74-583016.0001	RECOVERY WELL PERMITS		087816	D-16-16 10BCB	526
2005	DEL LAGO GOLF COURSE	74-591933.0000	RECOVERY WELL PERMITS		087816	D-16-16 10BCB	175
2005	VAIL WATER COMPANY	56-000060.0000	LARGE MUNICIPAL PROVIDER	UPPER SANTA CRUZ	087817	D-16-16 10DCB	329
2005	PIMA COUNTY PARKS & RECREATION	58-100381.0006	TYPE 2 NON-IRRIGATION GFR	UPPER SANTA CRUZ	200410	D-13-16 20CDC	14.34
2005	CITY OF TUCSON/TUCSON WATER	56-000001.0000	LARGE MUNICIPAL PROVIDER	UPPER SANTA CRUZ	201059	D-11-11 31CCB	3.4
2005	TOWN OF ORO VALLEY WATER UTILITY	56-000368.0000	LARGE MUNICIPAL PROVIDER	UPPER SANTA CRUZ	201425	D-12-14 05BAC	426.74
2005	PHELPS DODGE SIERRITA	58-113558.0004	TYPE 2 MINERAL EXTRACT GFR	UPPER SANTA CRUZ	201732	D-18-13 28CBC	1135

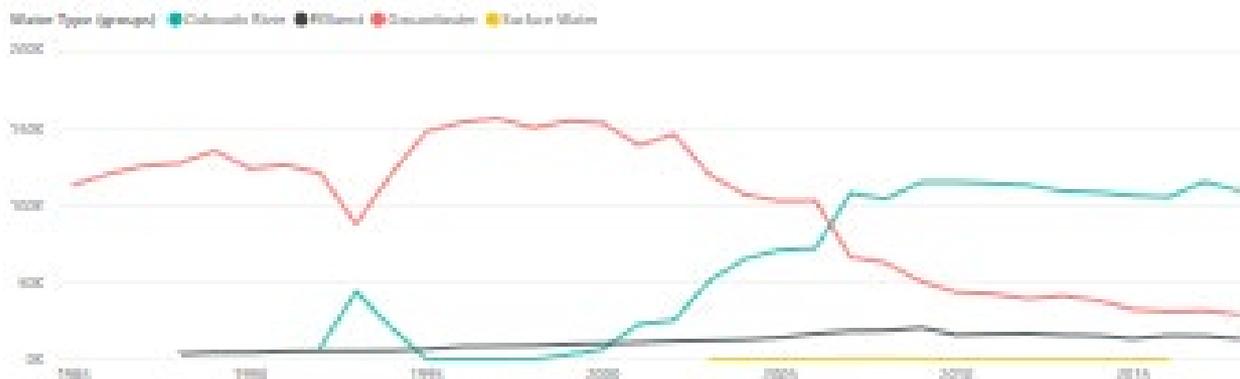
Data Dashboards

Water Use in the Active Management Areas

Water Demand (AF) by Sector

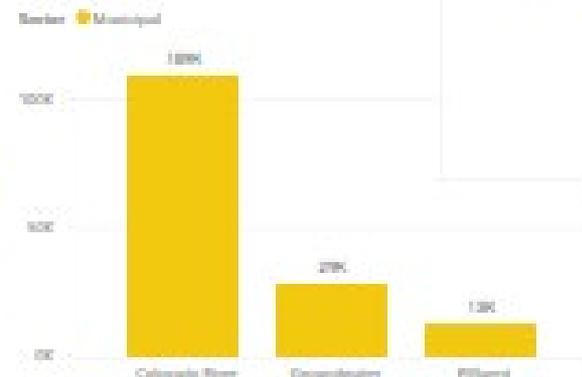


Water Supply (AF) by Source



Year: 2018
 AMA: TAMM
 Sector: Municipal

Single Year Breakdown of Water Demanded by Type



Single Year Breakdown of Water Supply by Sector



Drought in Arizona (2000-2020)

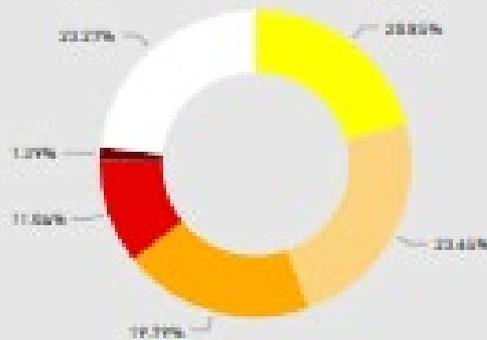
Drought Level

All

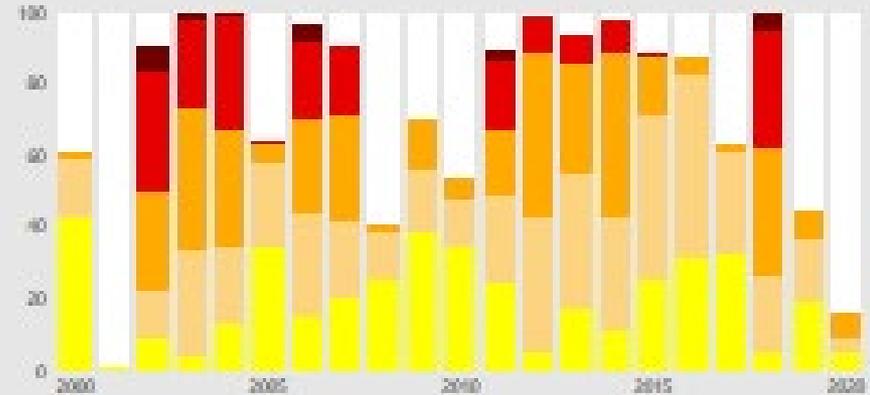
Drought Level Definitions: **D0** = No Drought, **D1** = Abnormally Dry, **D2** = Moderate Drought, **D3** = Severe Drought, **D3** = Extreme Drought, **D4** = Exceptional Drought



Occurrence of Each Drought Level



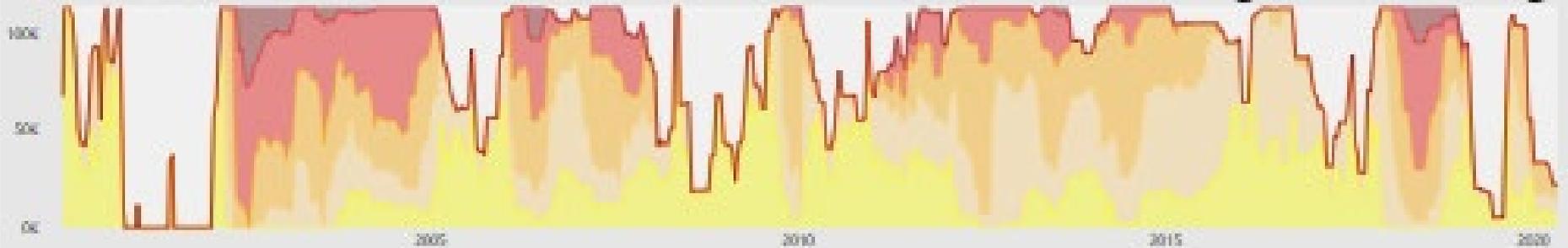
Average Yearly Drought Levels (%)



Year

Weekly Drought Levels (sq. mi.)

1/4/2000 4/26/2020



Public Meetings

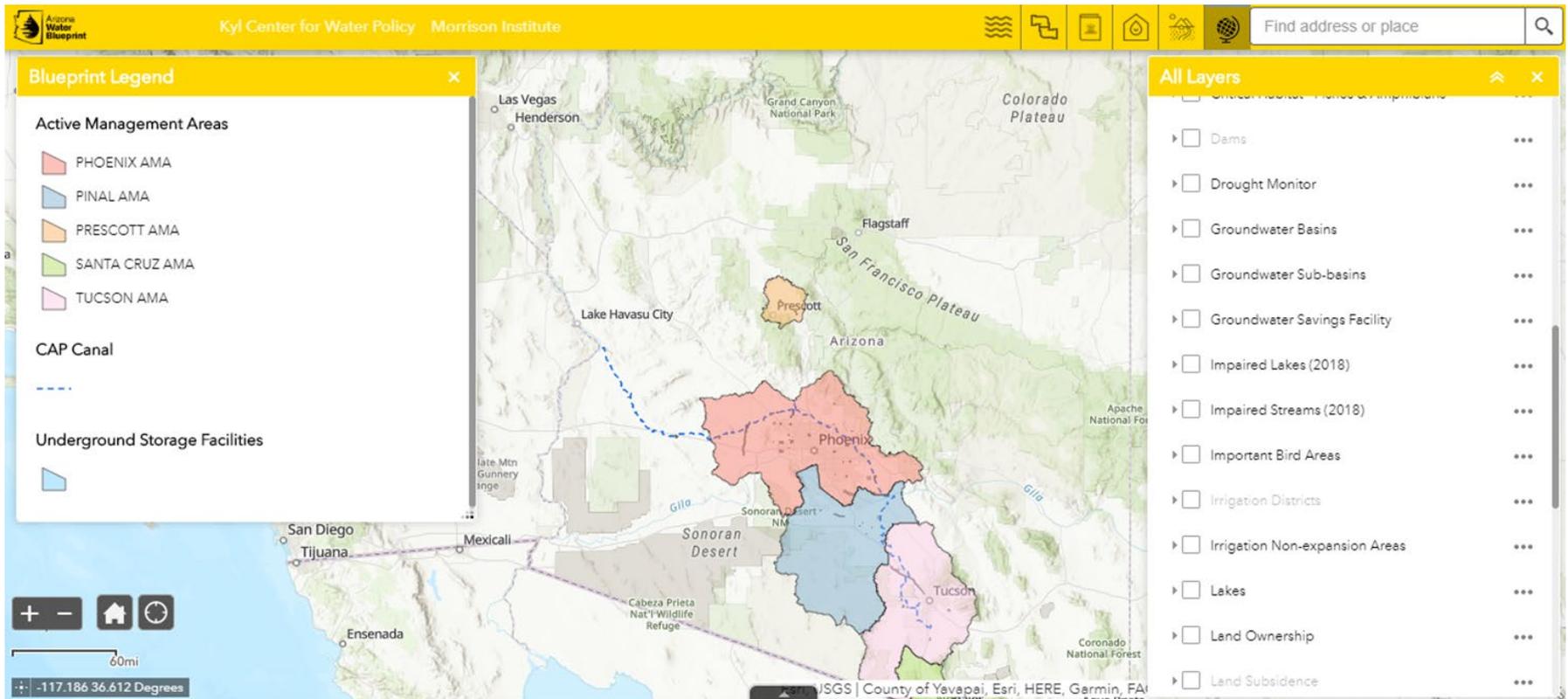
5th Management Plans Work Group

Governor's Water Augmentation,
Innovation and Conservation Council
(GWAICC)

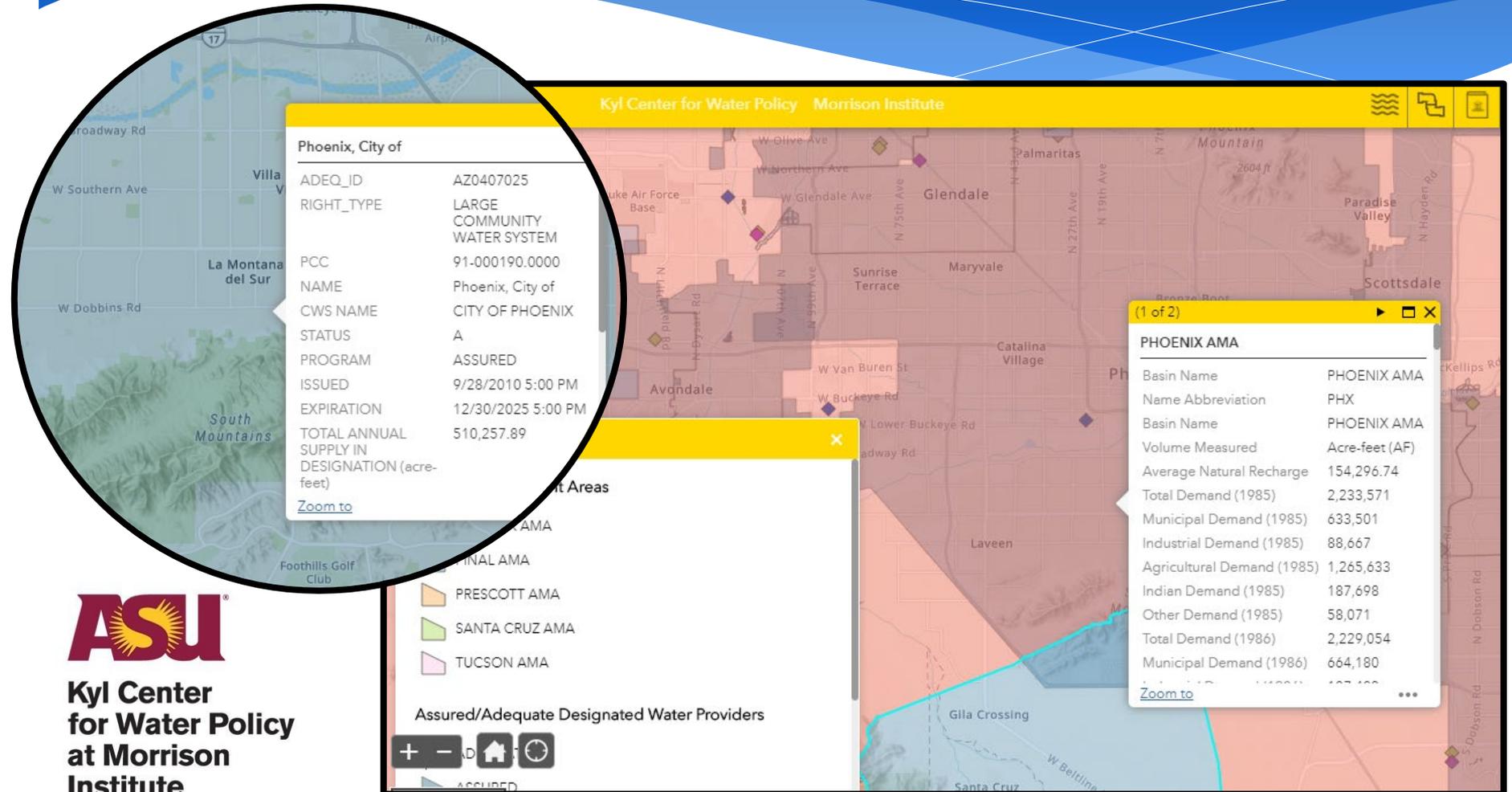


Data Consultation

Arizona Water Blueprint



Arizona Water Blueprint



**Kyl Center
for Water Policy
at Morrison
Institute**

Data Consultation

CENTER FOR THE FUTURE OF ARIZONA

WHO WE ARE THE ARIZONA WE WANT CIVIC HEALTH EDUCATION & WORKFORCE NEWS & VIEWS CONTACT DONATE

The Arizona We Want Progress Meters

The Arizona We Want Progress Meters measure our progress in building a bright future for our state

Efficiency of Water Infrastructure



AMOUNT OF WATER LOSS

Arizona Department of Water Resources. Regulatory standard is 10% for large and 15% loss for small systems (<250 acre-feet). This L&U is aggregated on an AMA scale and is calculated to balance variation between supply and demand. It includes some metered connections and is calculated differently than the regulatory L&U for each provider. (2018)

Per Capita Water Use



AVERAGE AMA RESIDENTIAL GPCD

Arizona Department of Water Resources. Water use per sector, divided by population in geography (GPCD). (2018)

Next Steps

- * Improve Data Quality
 - * Online Annual Reporting
 - * New Reporting Requirements
 - * Active acres
 - * Turfed acreage
 - * Compliance
 - * Learning from you

Questions?

Kyle Miller

kmiller@azwater.gov

AMA Data:

<https://new.azwater.gov/ama/ama-data>

