



## **Town of Marana - Water Resources Management (Part I)**

# **Designation of Assured Water Supplies (DAWS) and Demands**

**Council Study Session  
August 24, 2021**

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Marana Water Director**

# Outline

- **Arizona Assured Water Supply Program**
- **Sources of Marana Water Supply**
- **Marana's Water Demands**
- **Impact of Colorado River Water Shortage**
- **18-Year Ground Water Level Change**
- **2020 Marana Water Portfolio**
- **Next Steps**



# Arizona Assured Water Supply (AWS) Program

- Authorized under the AWS Statutes (A.R.S. 45-576, Etc.) and Rules (A.A.C. R12-15-701 Thru 730) to Address Limited Groundwater Supplies
- Developers/Designated Water Providers Must Demonstrate the Financial Resources, Physical, Legal, and Continuous Access to Water of Sufficient Quality for 100 Years
- Must be Consistent with State's Management Plan and Goal for the Active Management Area (AMA)
- Administered by Arizona Dept. Of Water Resources (ADWR): Before Recording Plats or Selling Parcels within an AMA, Developers must Demonstrate Assured Water Supply
- The Arizona Dept. of Real Estate will Not Issue a Public Report, Which Allows Any Developer to Sell Lots, without a Demonstration of AWS. (A.A.C. 12-15)

# Marana Water Supply - Sources



**Central Arizona  
Project (CAP)**



**Reclaimed  
Water/Treated  
Effluent**



**Replenished  
Ground Water**

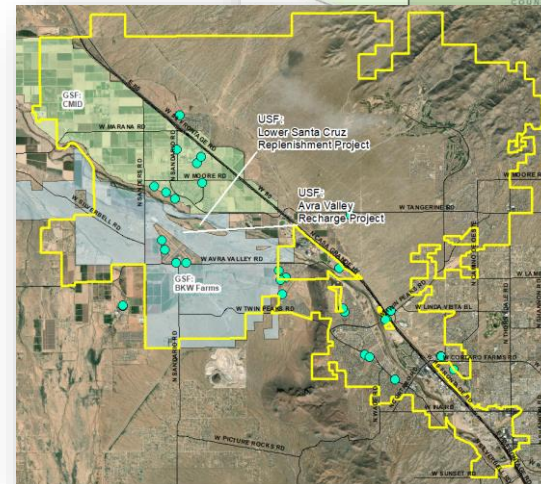


**Long-term Storage  
Credit**

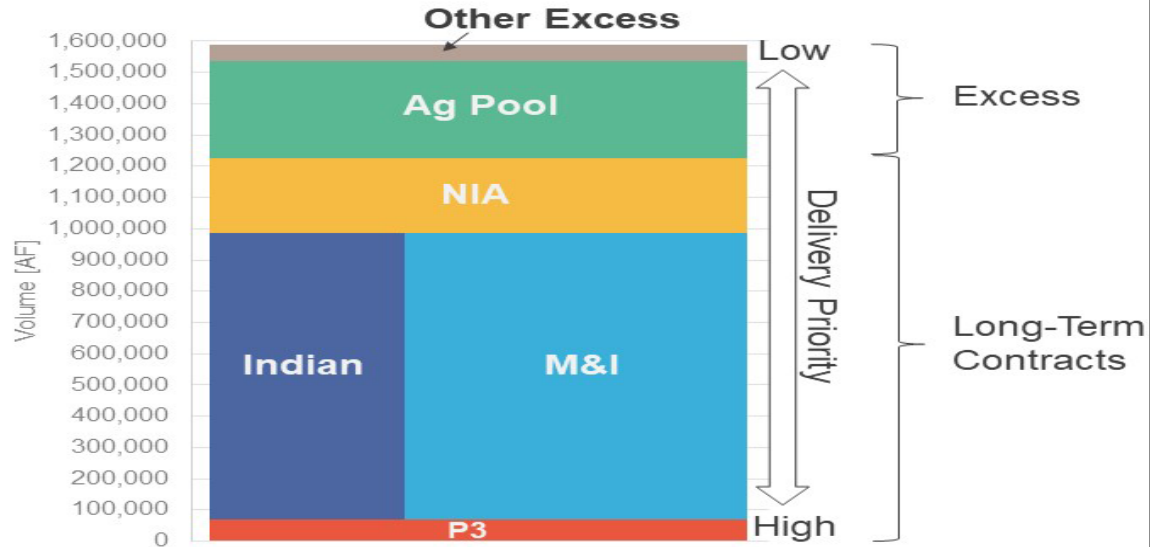
# Central Arizona Project (CAP) Water - M&I

Source	Year	Volume (AFY)
CMID Assignment and Transfer	1999	47
FWID Assignment and Transfer	2009	1,481
Avra Water Co-op Assignment and Transfer	2016	808
<b>Total</b>		<b>2,336</b>

CAP water is imported for storage at GSF or USF, with water recovery through Marana's recovery wells.



# CAP Water Delivery Priority



*\*Based on 2021 Orders Prior to DCP contribution, System Conservation and ICS Creation (includes NIA reallocation water)*

# Reclaimed Water - Marana WRF

- Plant Acquisition from Pima County in 2012
- New Water Reclamation Facility –1.5 MGD (1,681 AFY) in Operation 2018
- Recharge Project Completed 2018



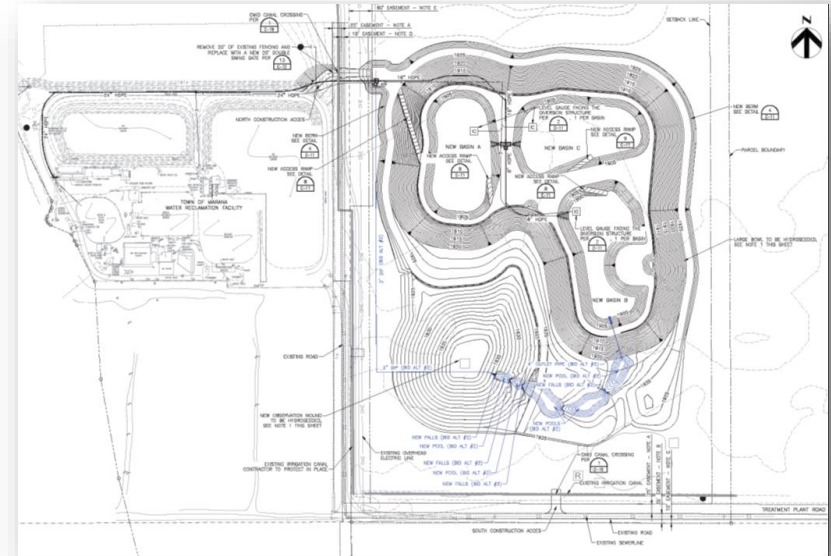
# Replenished Groundwater

- Central Arizona Groundwater Replenishment District (CAGRDR)
  - Groundwater Pumped in AMAs Must be Replenished
  - CAGRDR Commits to Replenishing Any Excess Groundwater Pumped by Their Members for a Predetermined Rate.
  - CAGRDR Water Can be Used to Meet Existing and Future Demands
  - 1<sup>st</sup> Permanent Contract – December 12, 1995
- Allowable Groundwater
  - Extinguishment Credits from Retired Farmlands
  - Incidental Recharge = 4% of Water Used in the Previous Year



# Long Term Storage Credit (LTSC)

- Any Excess Water can be Recharged to Build up Long-term Storage Credit
- 16,861.36 AF Balance at the Time of 2018 Designation
- 14,827.28 AF Balance at the Beginning of 2020
- LTSC Can be Created from CAP Water or Effluent

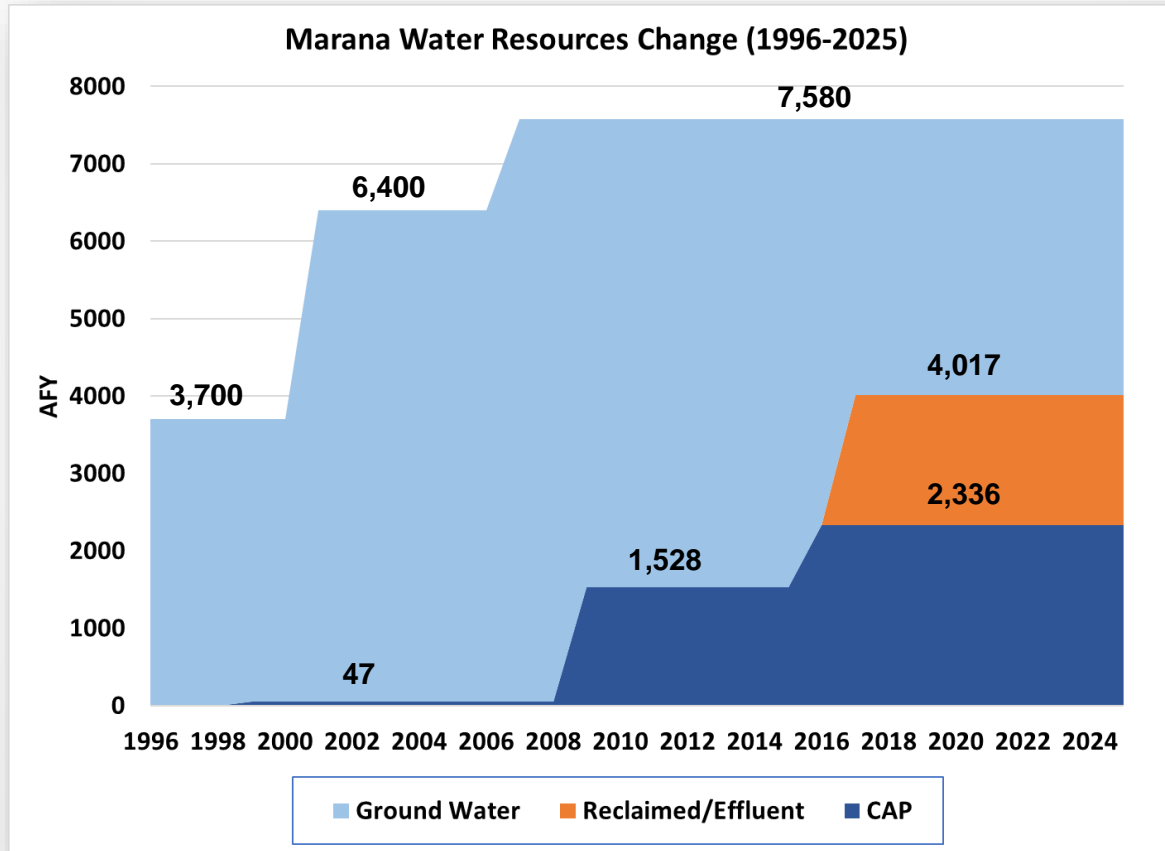


# NIA Priority CAP Water - 515 AFY

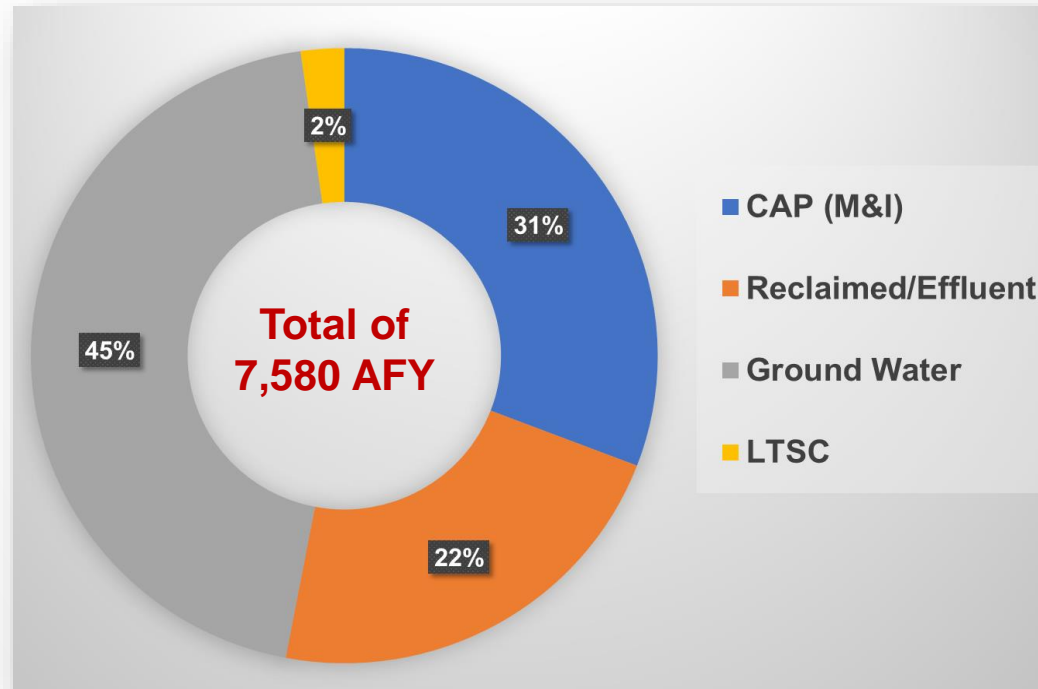
- NIA Reallocation Process Started in 2012:
  - 2014 ADWR Made Recommendation to the United States
  - 2019 Federal Finding of No Significant Impact was Submitted
  - 2021 Marana Subcontract Approved by Town of Marana Council
- Next Steps For NIA
  - Finalize the Contract with CAP and U.S. Dept. of Interior
  - Make Payments Per Payment Plan (5 Year)
  - Pursue as an Addition to TOM's Water Designation (ADWR)



# History of Marana Water Designation

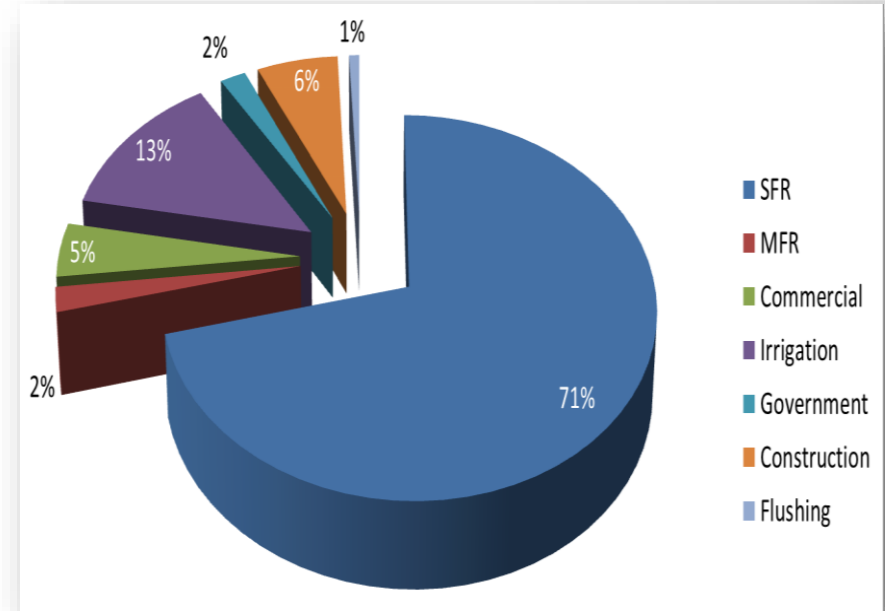


# Percentage of Each Water Source



# Current Water Demand

- 9,132 Active Connections as of Dec. 2020
- Water Produced vs. Delivered in 2020
  - 2,788 AF Produced
  - 2,671 AF Delivered
  - Avg. of 4.2% Lost/Unaccounted

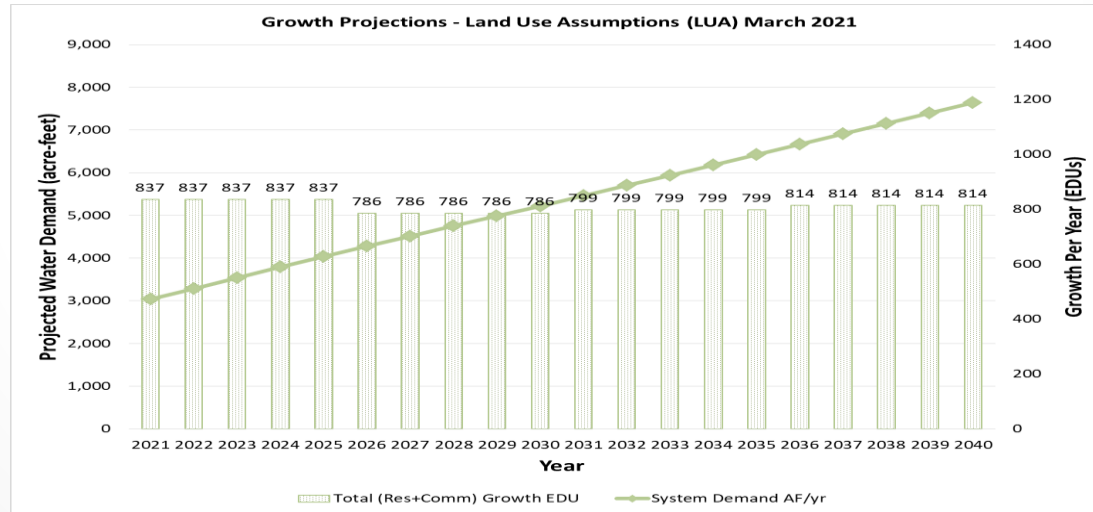


# Committed Water Demand

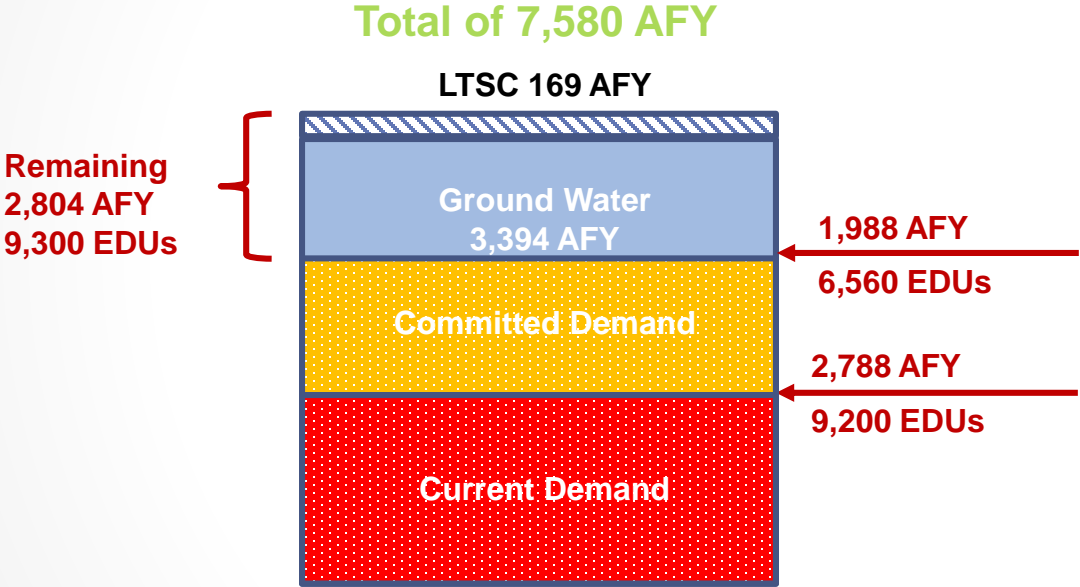
- **“Committed Demand”** - The 100-year water demand at build-out of all recorded lots that are not yet served water within the service area of a designation applicant or a designated provider.
- **“Committed”** = “Platted and Vacant”
- **2020 Committed Water Demand** was 1,988 AFY

# Projected Water Demand

“**Projected Demand**” - The 100-year water demand at build-out, not including committed or current demand, of customers reasonably projected to be added and plats reasonably projected to be approved within the designated provider’s service area and reasonably anticipated expansions of the designated provider’s service area.



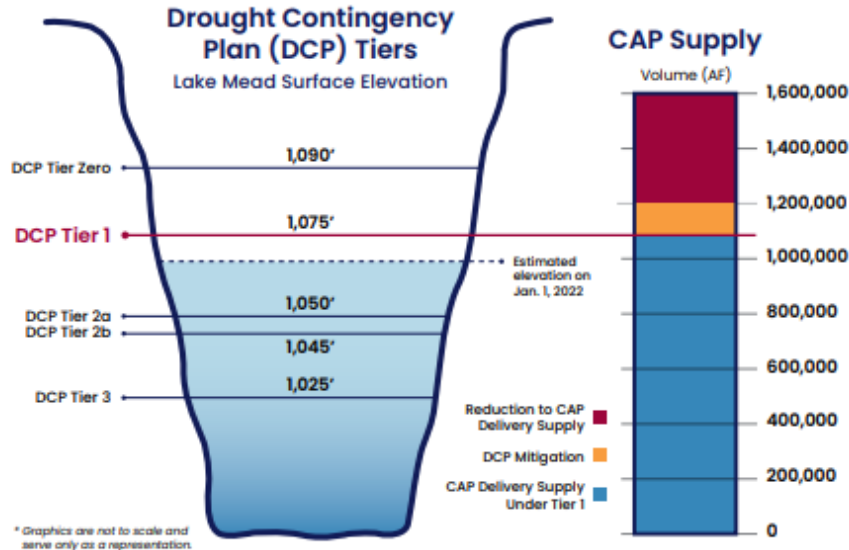
# Designation of Assured Water Supply vs. Demands





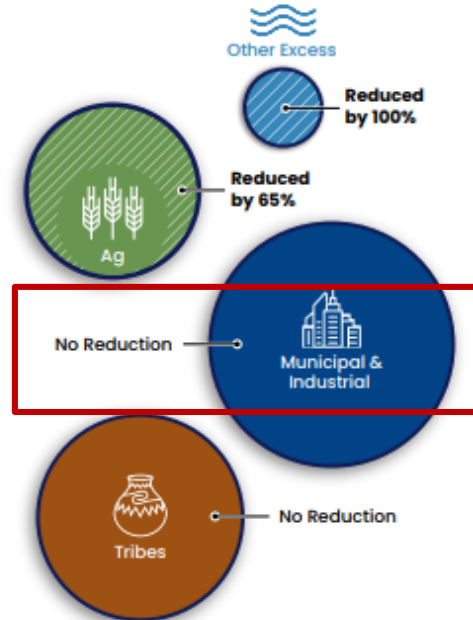
# Impact of Colorado River Water Shortage

## Tier 1 Shortage: CAP Reductions

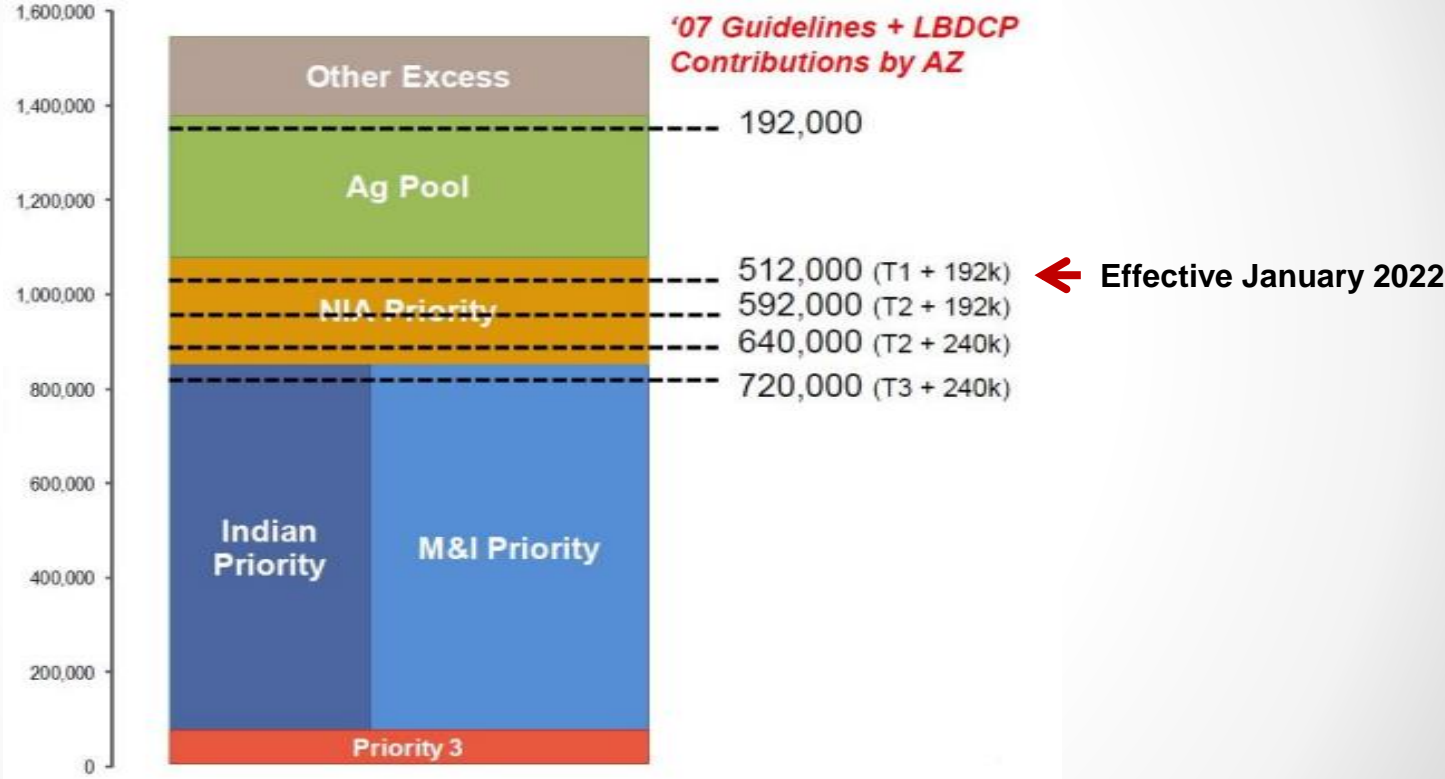


To learn more, please visit: [www.cap-az.com/colorado-river-shortage](http://www.cap-az.com/colorado-river-shortage)

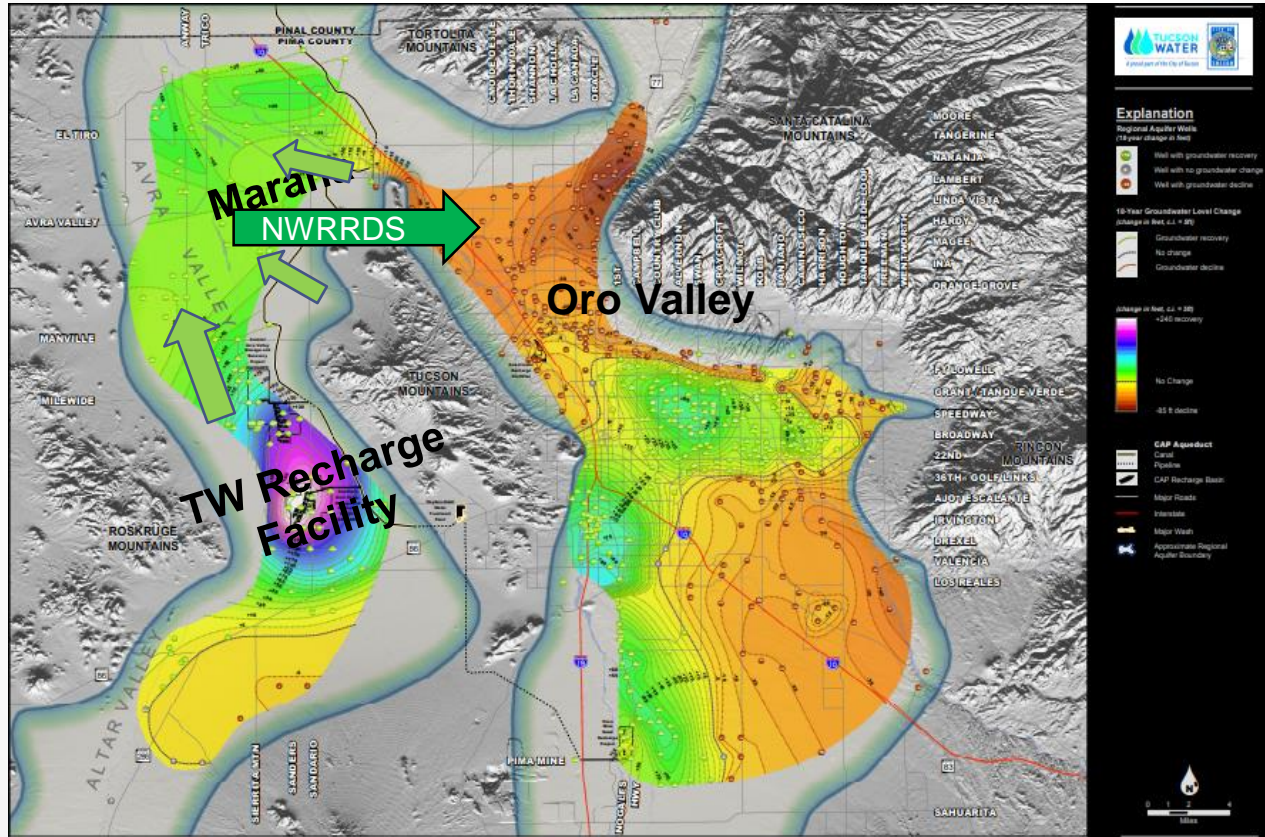
## 2022 Reduction to CAP Users After DCP Mitigation



# CAP Water Cut under Different Tiers

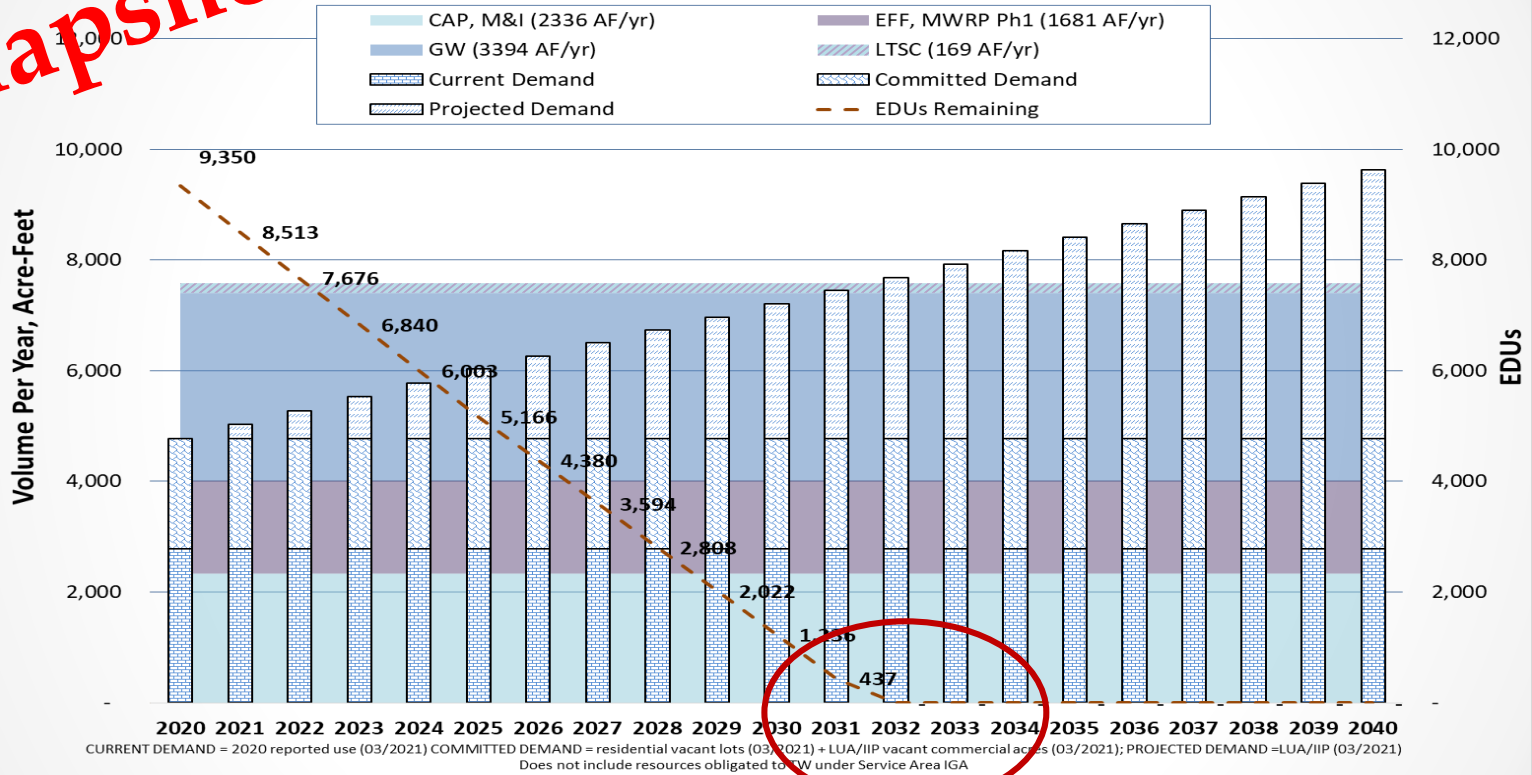


# 18-year Ground Water Level Change (2000-2018)



**Snapshot!**

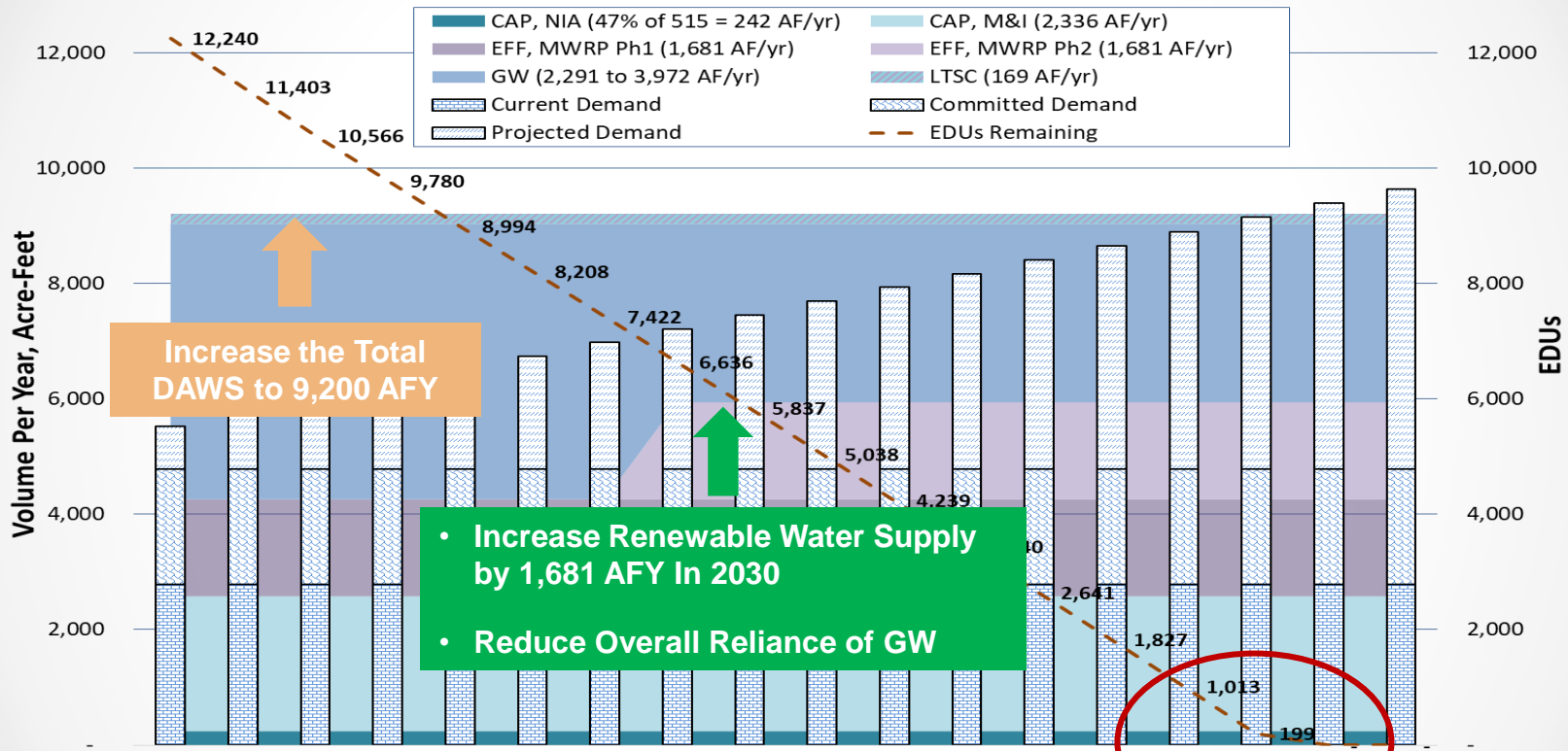
**Current Status: 2020 Designation of Assured Water Supply (7,580 AF/yr)**



# Next Steps

- **Proceed with Integrated Water Resources Planning**
  - Assess System Equity and Sustainability
  - Identify and Evaluate System-wide/Regional Solutions
  - Conduct Groundwater Modeling
  - Update MW's Drought Preparedness Plan
  - Roll Out Community-wide Conservation Programs – ADWR Grant
  - Advise Future Impact Fee Analysis
- **Modify Assured Water Supply Designation – Extending the Planning Period to 15-20 Years**
- **Finalize NIA Subcontract and Payment Agreement**
- **Explore and Apply for Grant and Funding Opportunities**
- **Build the 2<sup>nd</sup> Phase of Water Reclamation Facility by 2030**

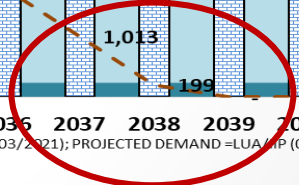
**\*\*Proposed Modification\*\*** Designation of Assured Water Supply (9,200 AF/yr)



CURRENT DEMAND = 2020 reported use (03/2021) COMMITTED DEMAND = residential vacant lots (03/2021) + LUA/IIP vacant commercial acres (03/2021); PROJECTED DEMAND = LUA/IIP (03/2021)  
 Does not include resources obligated to TW under Service Area IGA

Increase the Total DAWs to 9,200 AFY

- Increase Renewable Water Supply by 1,681 AFY In 2030
- Reduce Overall Reliance of GW



# Community Engagement - Coming Soon

- **Dedicated Webpage**
- **Outreach**
  - Social Media
  - Newsroom
  - Media Releases
  - Billing Inserts
  - Posters
  - Video
- **Citizen Feedback**
  - Online
  - Social Media
  - Public Meetings

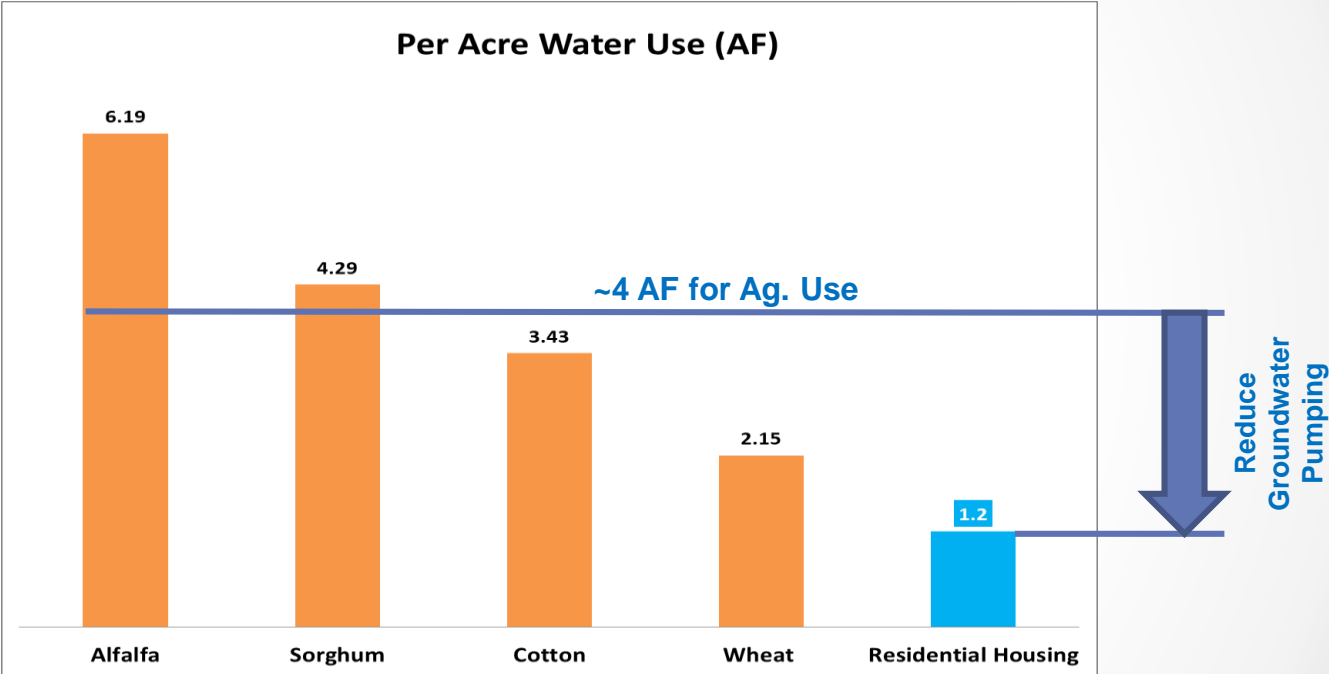




# Questions



# Water Consumption for Agriculture vs. Municipal



General Agricultural Use

## SUMMARY OF CURRENT CAGR WATER SUPPLY PORTFOLIO

TABLE 3.1

SUPPLY CLASS	VOLUME (AF)	AVAILABILITY	DESCRIPTION
CAP M&I	8,311	Annually	Permanent entitlement* potential reduction under Tier 3 shortage
CAP Indian (GRIC)	15,000	Annually from 2020 to 2044	25 year exchange; potential reduction under Tier 3 shortage
CAP NIA (GRIC)	18,185	Annually from 2020 to 2044	25 year lease, subject to shortage reduction
Effluent (Liberty)	2,400	Annually, began 2017	100 year lease
CAP NIA (WMAT)	2,500	Annually from 2024	100 year lease, awaiting final authorization; subject to shortage
CAP NIA	18,185	Annually from 2024	Permanent, awaiting final authorization; subject to shortage
<b>TOTAL:</b>	<b>43,896</b>	<b>(currently available) / 64,581 (including future supplies awaiting final authorization)</b>	
Long-term Storage Credits (current)	427,000	As needed	Currently in CAGR Subaccount** (as of end of 2018); equivalent to 4,270 AF/yr for 100 years
Long-term Storage Credits (future)	390,000	2019-2114	To be acquired under existing purchase agreements; equivalent to 3,900 AF/yr for 100 years
<b>TOTAL (with current and future credits; annualized)</b>	<b>52,066</b>	<b>(currently available) / 72,751 (including future supplies awaiting final authorization)</b>	

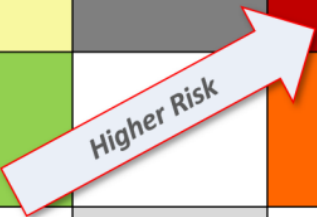
\* The entitlement volume is expected to be reduced due to an expected future transfer to the City of Peoria after their acquisition of New River Utility Company. New River Utility Co. had previously assigned their CAP M&I water to CAWCD for CAGR use.

\*\* Excludes 375,000 LTSCs acquired from GRWS which will be exchanged for GRIC CAP Indian Priority water.

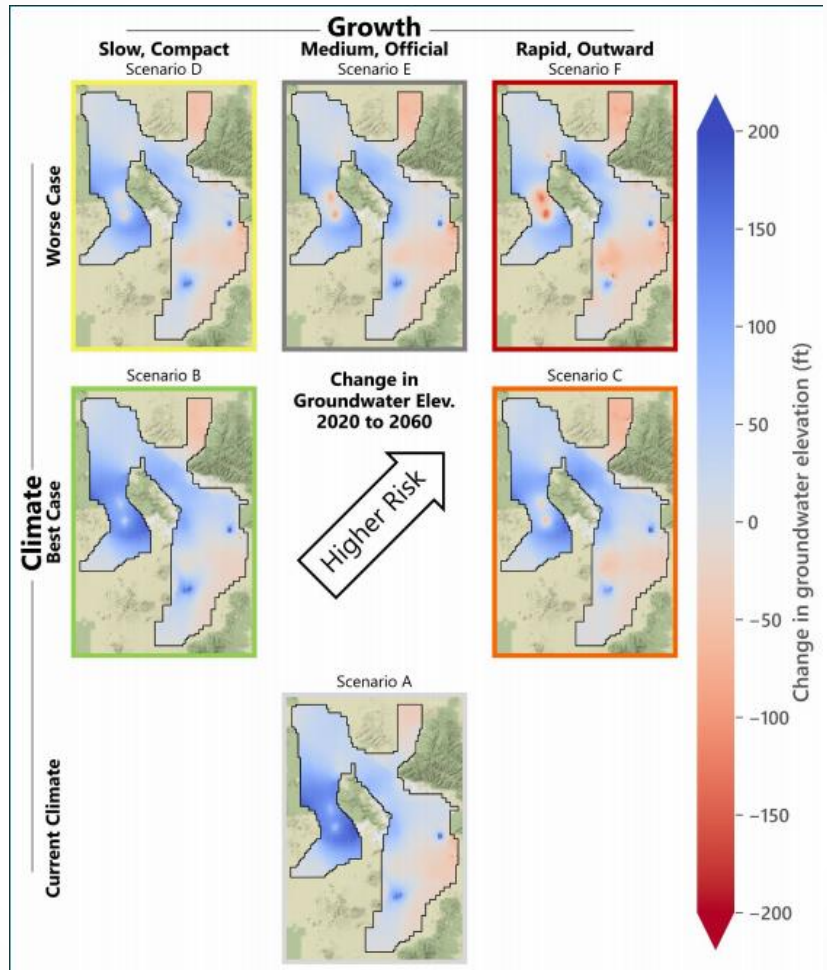
# Supply-Demand Basin Study Scenarios

- A. Official Projections: Medium, mixed-density growth and Current climate
- B. Slow, compact growth and Best Case climate
- C. Rapid, outward growth and Best Case climate
- D. Slow, compact growth and Worse Case climate
- E. Official Projections and Worse Case climate
- F. Rapid, outward growth and Worse Case climate

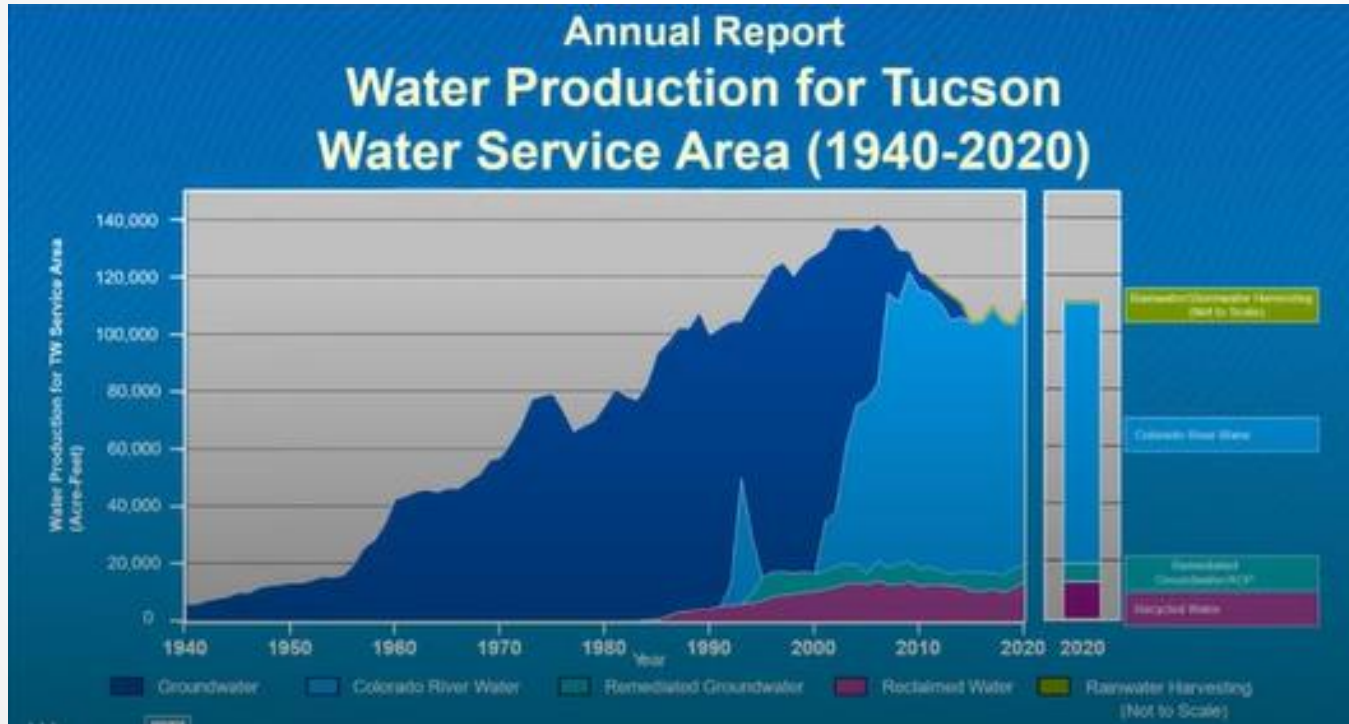
		Demand Growth		
		Slow, Compact	Medium, Official	Rapid, Outward
Climate	Worse Case	D	E	F
	Best Case	B		C
	Current Climate		A	



Higher Risk



# Tucson Water – Water Portfolio

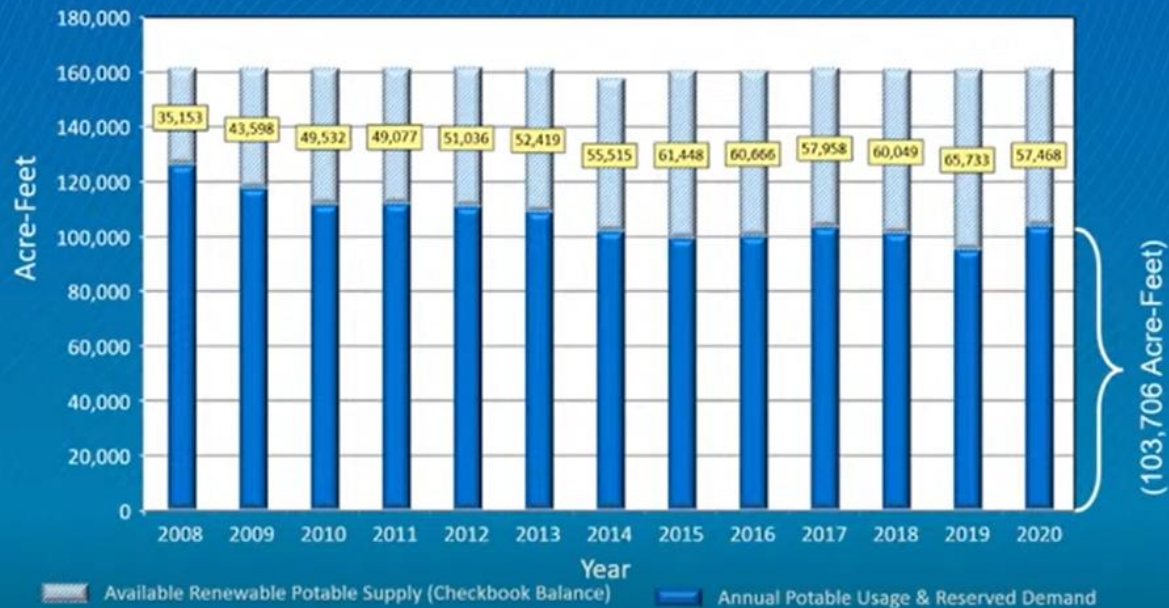


# 2020 Potable Water Checkbook

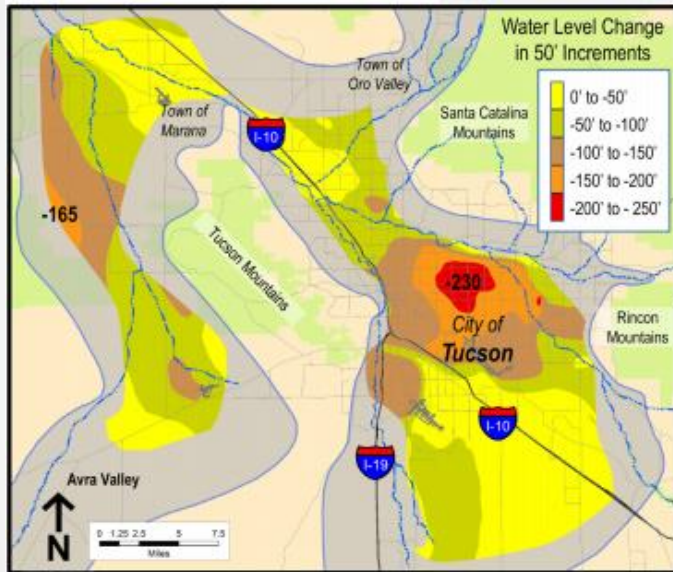
Check Number/Code	Date	Transaction Description	(-) Payment/Debit A/F	(+) Deposit/Credit A/F	Balance A/F
		Starting Balance			0
Deposit	1/1/2020	Annual CAP Allocation		144,191	144,191
Deposit	1/1/2020	Annual CAGR Allocation		12,500	156,691
Deposit	1/1/2020	Incidental Recharge (4% of Total Production)		4,484	161,175
ATM	12/31/2020	Annual Potable Usage (TW Service Area)	98,279		62,896
ATM	12/31/2020	2020 Reserved Demand (Approved Water Service Requests Not Yet Served)	5,428		57,468

2020 Potable Water Checkbook Balance

## Potable Water Checkbook CY 2020



# Before



WATER LEVEL DECLINES, 1940-1998

# Now

