

# *Colorado River Drought Contingency Proposal & Governor's Water Augmentation Council*

## *Southern Arizona Water Forum*



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*October 27, 2016*

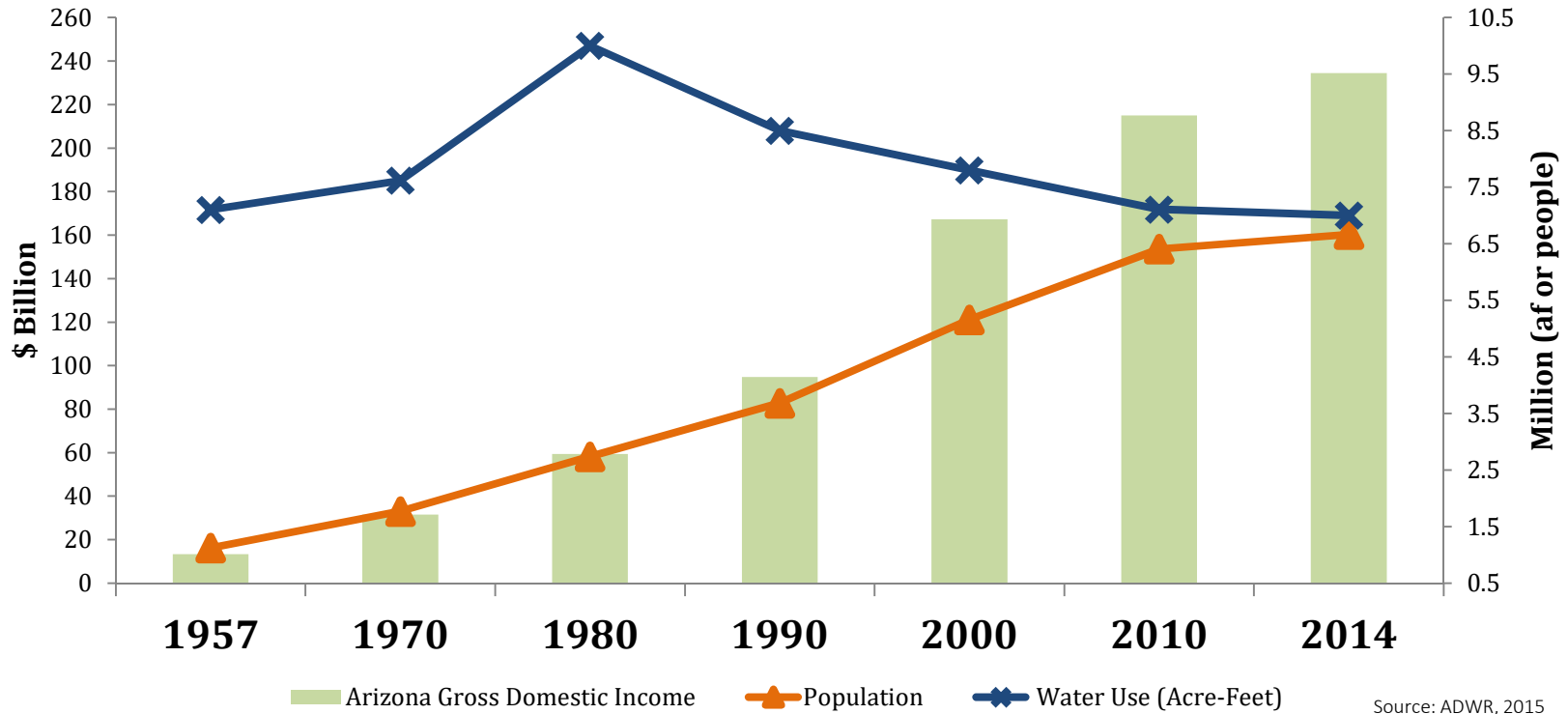
# Actions that Have Contributed to Arizona's Water Management Success

- Salt River Project
- Yuma Irrigation Districts
- Colorado River Compact
- Central Arizona Project
- 1980 Groundwater Management Act
- Assured and Adequate Water Supply Program
- Underground Storage and Recovery Program & Arizona Water Banking Authority
  - Approx. 9 MAF of water stored for future use
- **Mandatory Water Conservation Requirements**
  - Within the five Active Management Areas
  - <10% water lost or unaccounted for water
  - Best Management Practices
- **Drought Preparedness Plan Requirements**



# Arizona's Water Management Success

## Arizona Water Use, Population, and Economic Growth (1957 - 2014)



Timeframe	Total Water Use (in million acre-feet)	Population (in millions)	Gross Domestic Income (in billions)
1957	7.1maf	1.1	\$13.4
2014	7 maf	6.7	\$234.5
Change from 1957-2014	-1%	493%	1,652%

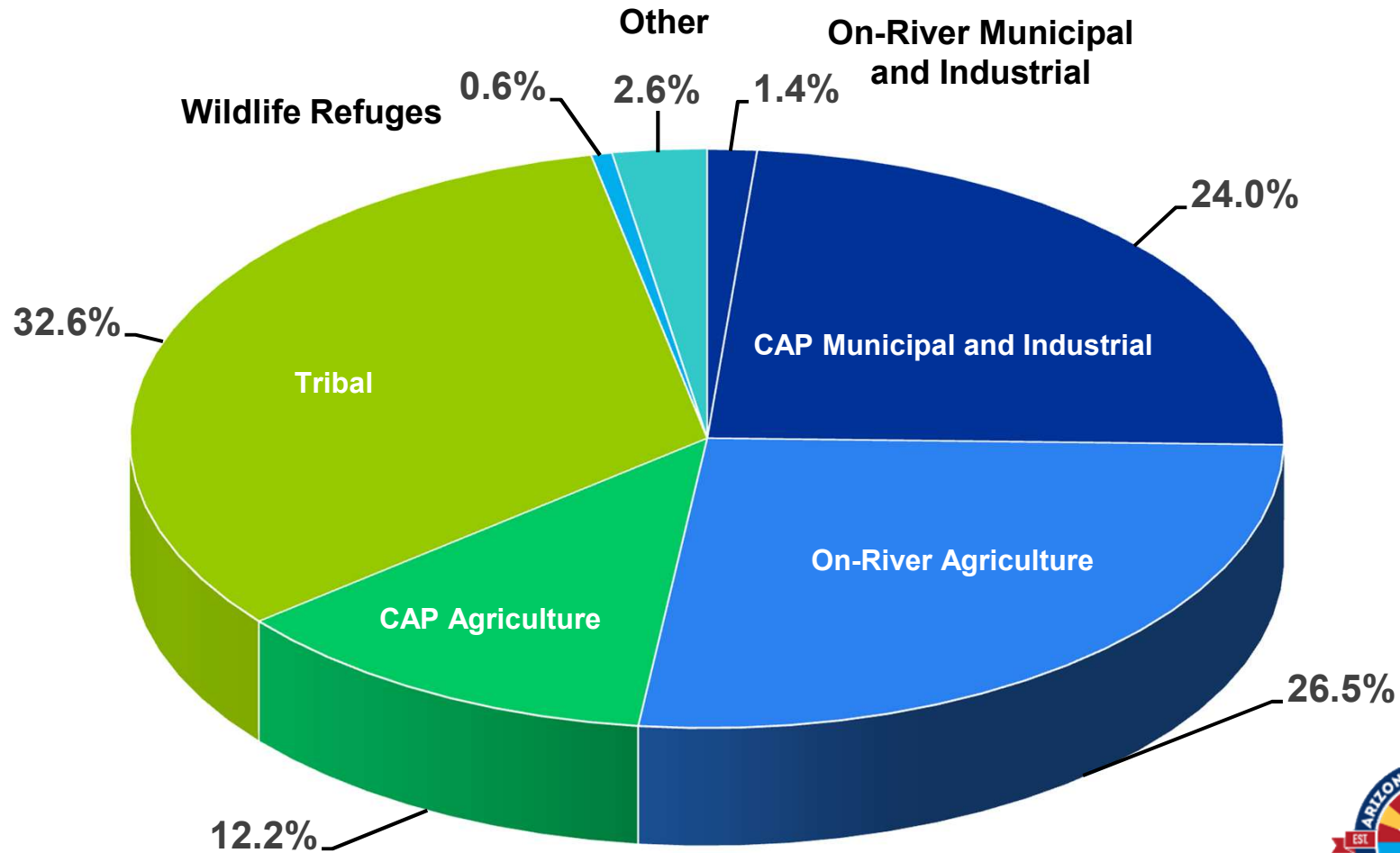


# Arizona's Water Supply Annual Water Budget 2014

Water Source	Million Acre-Feet (MAF)		% of Total
<b>SURFACE WATER</b>			
<b>Colorado River</b>		<b>2.8</b>	<b>40 %</b>
<i>CAP</i>	<i>1.6</i>		<i>23%</i>
<i>On-River</i>	<i>1.2</i>		<i>17%</i>
<b>In-State Rivers</b>		<b>1.2</b>	<b>17%</b>
<i>Salt-Verde</i>	<i>.7</i>		
<b>GROUNDWATER</b>		<b>2.8</b>	<b>40%</b>
<b>RECLAIMED WATER</b>		<b>0.2</b>	<b>3%</b>
<b>Total</b>		<b>7 MAF</b>	



# Arizona's Colorado River Use

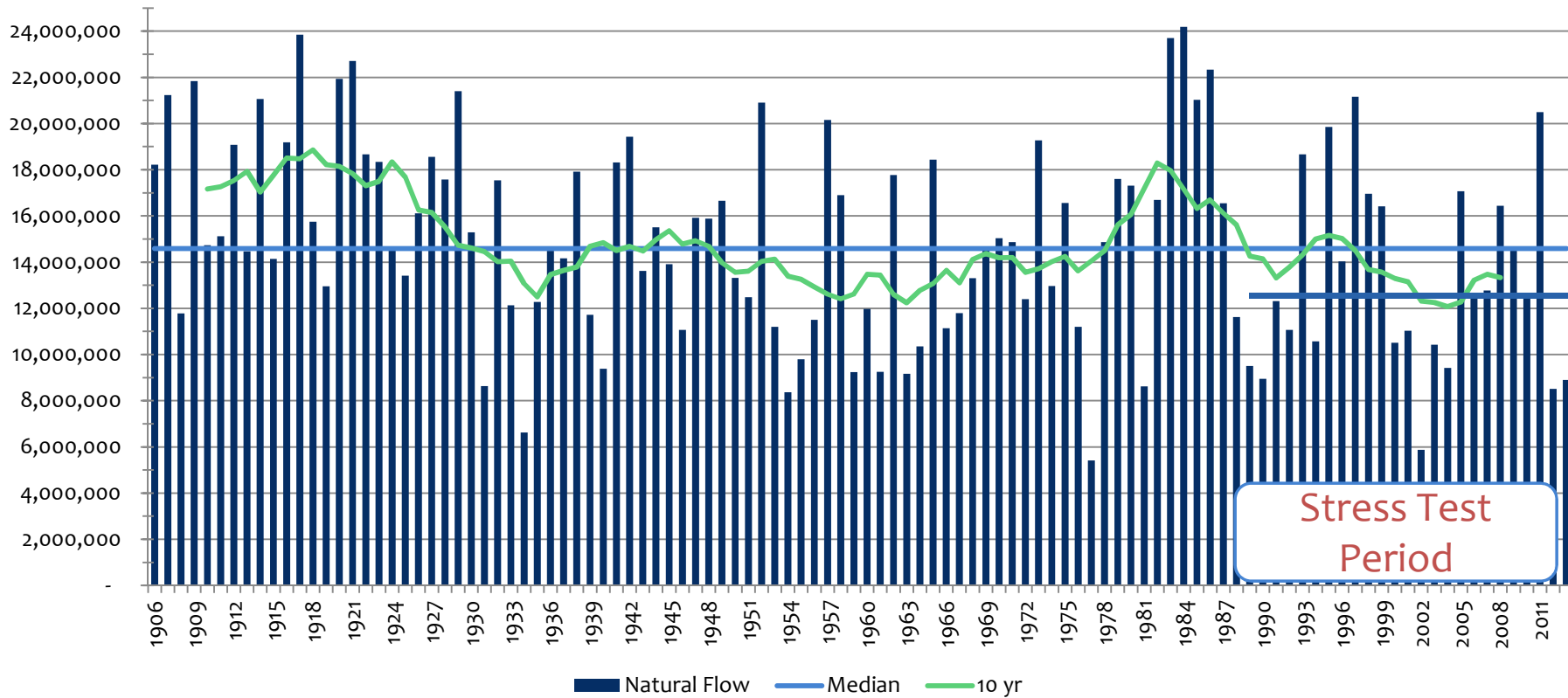


Sources: 2015 Reclamation Water Accounting Report and Central Arizona Project Water Delivery Report



# Observed Hydrology & “Stress Test”

## Natural Flow at Lee Ferry (1906 - 2013)



# Protection Volume Analysis

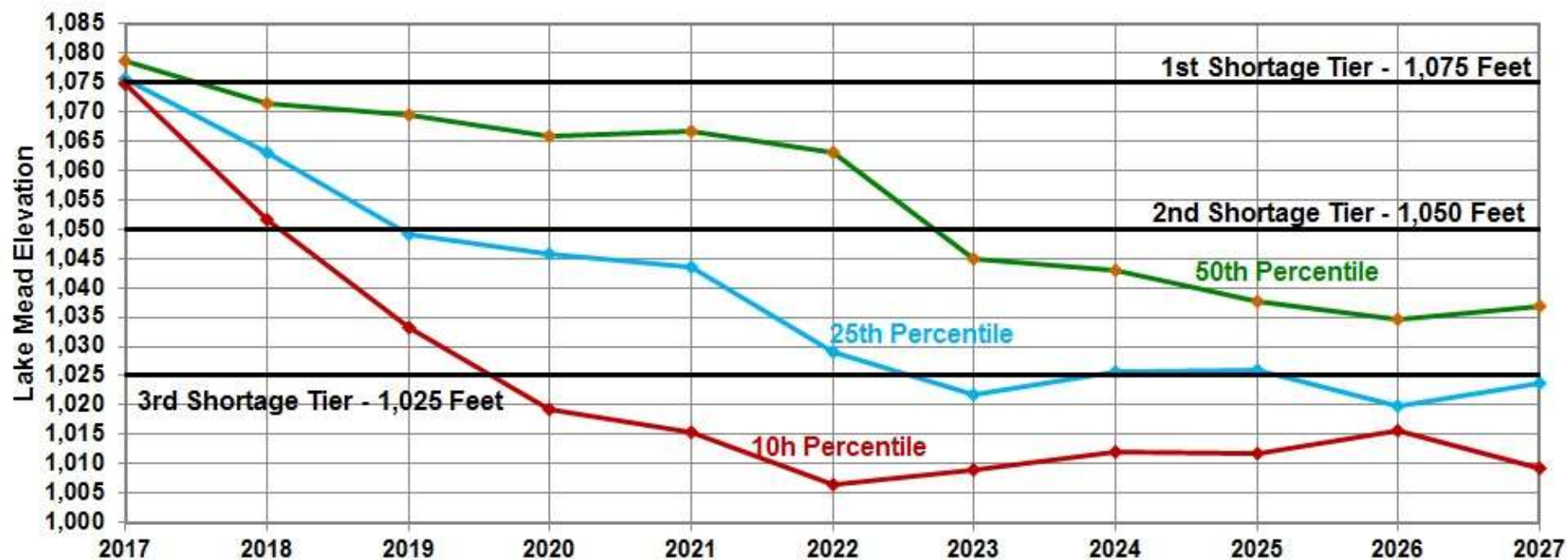
Volumes needed to *absolutely protect* Lake Mead's elevations 1,025 ft and 1,000 ft through 2026

	Lake Mead Elevation: 1,025 ft.			Lake Mead Elevation: 1,000 ft.		
	Maximum in any year (MAF)	First Year that Maximum Occurs	Average through 2026 (MAF)	Maximum in any year (MAF)	First Year that Maximum Occurs	Average through 2026 (MAF)
<b>Hydrology</b>						
Observed	3.0	2023	0.97	1.5	2023	0.56
Climate Change	6.0	2021	2.8	4.5	2021	2.4
Combined	6.0	2021	2.3	4.5	2021	2.2



# Lake Mead – Selected Percentile Elevations

## Stress Test Hydrology – “No Action”





# Lower Basin Drought Contingency Plan

## *Current Concepts*

- The Upper Basin States and Lower Basin States have each undertaken actions to guard against potential adverse consequences associated with critically dry conditions.
- The goal of the ongoing discussions is to develop additional tools for the Lower Basin States to utilize through at least December 31, 2025, to address potentially critical elevation declines in Lake Mead.
- Any new agreement would further the implementation of the 2007 Interim Guidelines.



# Elements of Lower Basin Drought Contingency Plan – *Current Concepts*

- Avoid and protect against the potential for the elevation of Lake Mead to decline to elevations below 1,020 feet Reductions of water use beyond the level of reductions required by the 2007 Interim Guidelines
  - Includes a commitment by the U.S. to work to create or conserve Colorado River system water
- Recovery of additional reduction volumes would be allowed under certain conditions
- Incentivize ICS creation/storage
  - Agree that ICS may be withdrawn at lower Lake Mead elevations, similar to ICMA arrangements under Minute 319
  - Modification of the evaporative losses currently applied to ICS

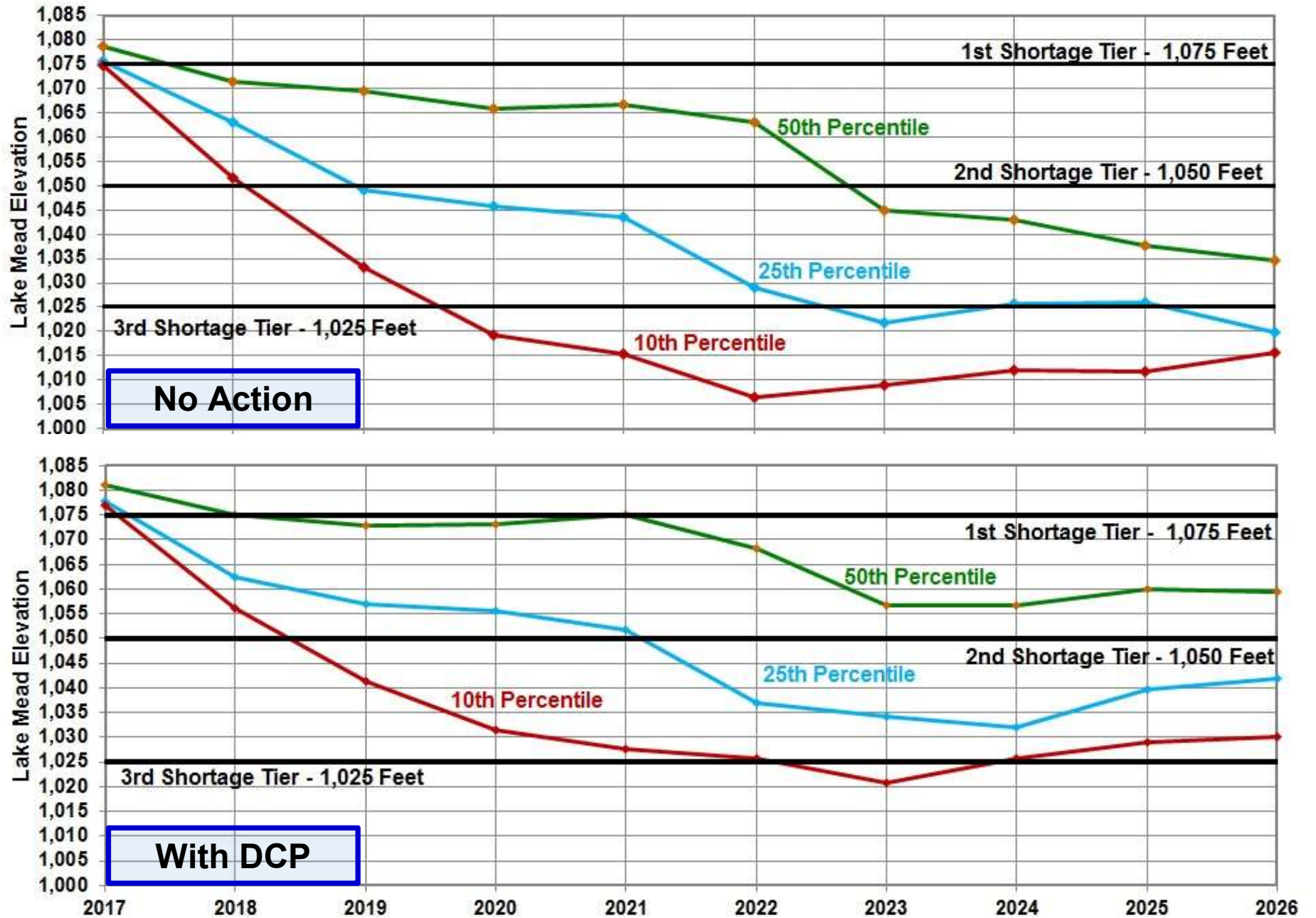


# LBDCP Water Use Reductions

Lake Mead Elevation	AZ [2007]	AZ [Plan]	AZ TOTAL	NV [2007]	NV [Plan]	NV TOTAL	CA [2007]	CA [Plan]	CA TOTAL	BOR	TOTAL
1090-1075	0	192K	192K	0	8K	8K	0	0	0	100k	300k
1075-1050	320K	192K	512K	13K	8K	21K	0	0	0	100k	633k
1050-1045	400K	192K	592K	17K	8K	25K	0	0	0	100k	717k
1045-1040	400K	240K	640K	17K	10K	27K	0	200K	200K	100k	967k
1040-1035	400K	240K	640K	17K	10K	27K	0	250K	250K	100k	1,017k
1035-1030	400K	240K	640K	17K	10K	27K	0	300K	300K	100k	1,067k
1030-1025	400K	240K	640K	17K	10K	27K	0	350K	350K	100k	1,117k
<1025	480K	240K	720K	20K	10K	30K	0	350K	350K	100k	1,200k



## Lake Mead – Selected Percentile Elevations Stress Test Hydrology – “No Action” and With DCP



# Lower Colorado River Basin Drought Contingency Discussions Next Steps

- Discussion regarding the voluntary reductions in Arizona and development of Arizona consensus
- Communication & messaging (ongoing)
- Finalize DCP among Lower Basins States (Arizona, California & Nevada) & Reclamation
  - Include board actions
  - Fall time frame
- Arizona Legislature
- Federal legislation



# Up-to-Date Arizona Information Sources

- **ADWR's website: [azwater.gov](http://azwater.gov)**
- **CAP's website: [cap-az.com](http://cap-az.com)**
- **Central Arizona Water Conservation Board Meetings**
- **Arizona Water Banking Authority Commission Meetings**
- **Groundwater Users Advisory Council Meetings**

Please send follow up questions to:

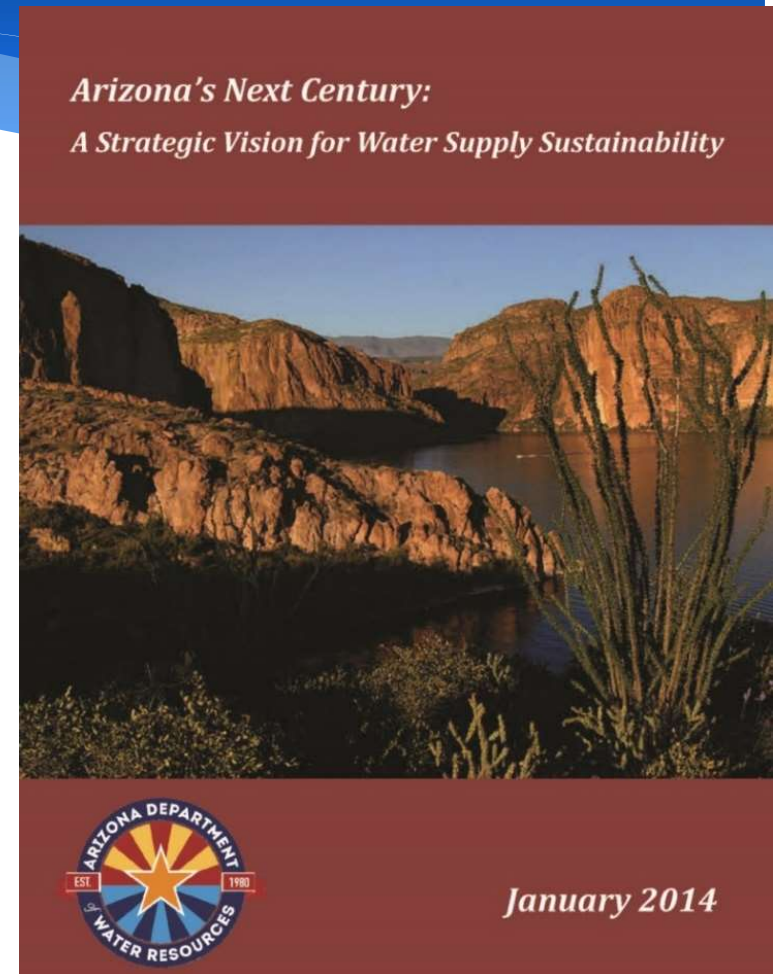
[mamoreno@azwater.gov](mailto:mamoreno@azwater.gov)

[info@cap-az.com](mailto:info@cap-az.com)



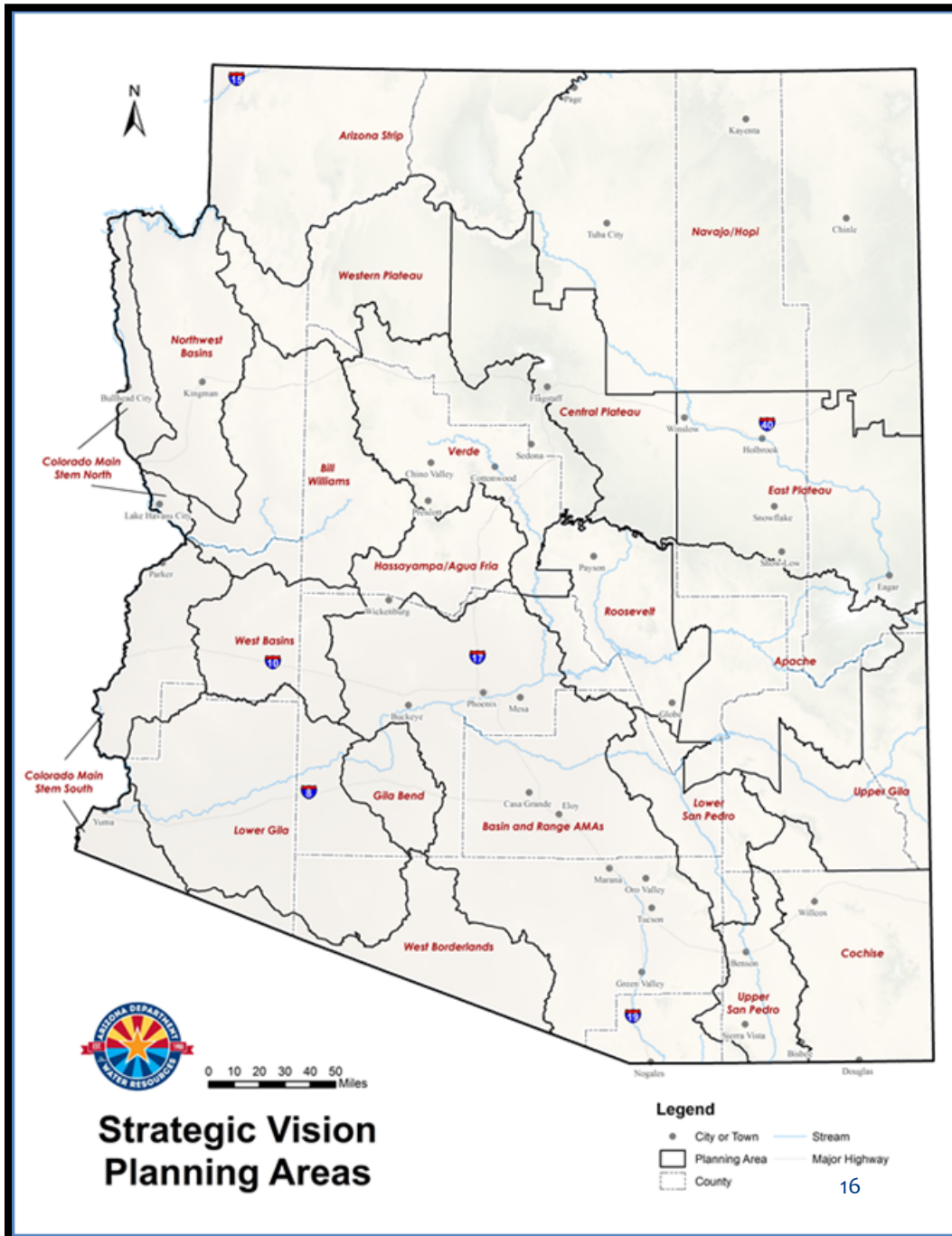
# Arizona's Strategic Vision for Water Supply Sustainability

- **Purpose:** To identify strategies to help address Arizona's future water needs and provide a stable economy for the future
  - Used existing information
  - Identified local options first
  - Identified priority strategies
- Published in January 2014



# Arizona's Strategic Vision Planning Areas

- 22 Planning Areas
- Solution Oriented Regions
- Regional Strategies
  - Identification & Analysis of "Planning Areas"
- Statewide Priorities
  - Common Strategies Across the State







# GOVERNOR'S ARIZONA WATER INITIATIVE

CAREFUL PLANNING. SOUND DECISION-MAKING. BOLD LEADERSHIP.

*Purpose: To help ensure the certainty and vitality of Arizona's water supply long into the future.*

- Announcement made on October 5, 2015
- Continues the work published in Arizona's Strategic Vision
- Implemented December 16, 2015 through Executive Order 2015-13



# Governor's Water Initiative

## First Track – Planning Area Process

### First track:

- Prioritize and evaluate all of the 22 Planning Areas identified in the Strategic Vision
- ADWR will work closely with 22 Planning Areas individually to refine water supply and demand issues and identify strategies to meet future water demands
- Goal is to develop stakeholder driven set of solutions for future water demand and supply imbalances
- Goal is to complete the process within a Planning Area within 1 year



# Governor's Water Initiative

## Second Track:

### Governor's Water Augmentation Council

#### Second track:

- Goal is to investigate long-term augmentation strategies, explore additional water conservation opportunities and identify infrastructure needs.
  - Members appointed by the Governor to represent water resource experts, industry leaders, NGOs, local government, watershed groups
  - ADWR Director serves as chairman
  - Council will report back to the Governor with policy direction or statutory changes
  - ADWR provides staffing and technical assistance
  - Annual progress report will be due July 1<sup>st</sup>



# Governor's Water Augmentation Council – 2016 Annual Report

- Included recommendations in 3 categories:
  - **General tenets:** Council to provide guidance to the Director of ADWR, continued implementation of water conservation, identify augmentation opportunities to resolve water conflict
  - **ADWR actions:** continue to lead AZ water conservation efforts, assess the need for additional conservation through Planning Area process, explore reduction of Lost & Unaccounted for outside of Active Management Areas
  - **Topics of focus:** development of communications plan, augmentation through reuse of reclaimed and poor quality water, funding, potential for augmentation through natural and constructed recharge, and large scale augmentation opportunities



# Sub-Committees

## **Desalination:** Bob Lotts, Chairman

- Goal: Investigate desalination opportunities to augment the State's water supplies.

## **Finance:** Rick Lavis, Chairman

- Goal: Funding and financing strategies for water supply augmentation and infrastructure needs for the State.



# Governor's Water Augmentation Council Members

<b>Bas Aja</b>	<b>Grady Gammage Jr.</b>	<b>Hunter Moore</b>
<b>Lisa Atkins</b>	<b>Maureen George</b>	<b>Wade Noble</b>
<b>David Brown</b>	<b>Pat Graham</b>	<b>Virginia O'Connell</b>
<b>Thomas Buschatzke</b>	<b>Glenn Hamer</b>	<b>Sarah Porter</b>
<b>Misael Cabrera</b>	<b>Spencer Kamps</b>	<b>Dave Roberts</b>
<b>Chris Camacho</b>	<b>Rod Keeling</b>	<b>Mark Smith</b>
<b>Ted Cooke</b>	<b>John Kmiec</b>	<b>Craig Sullivan</b>
<b>Maria Dadgar</b>	<b>Rick Lavis</b>	<b>Warren Tenney</b>
<b>Ron Doba</b>	<b>Cheryl Lombard</b>	<b>Phillip Townsend</b>
<b>Sandy Fabritz</b>	<b>Bob Lotts</b>	<b>Chris Udall</b>



# Questions?

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**PROTECTING**  
**ARIZONA'S WATER SUPPLIES**  
*for* **ITS NEXT CENTURY**