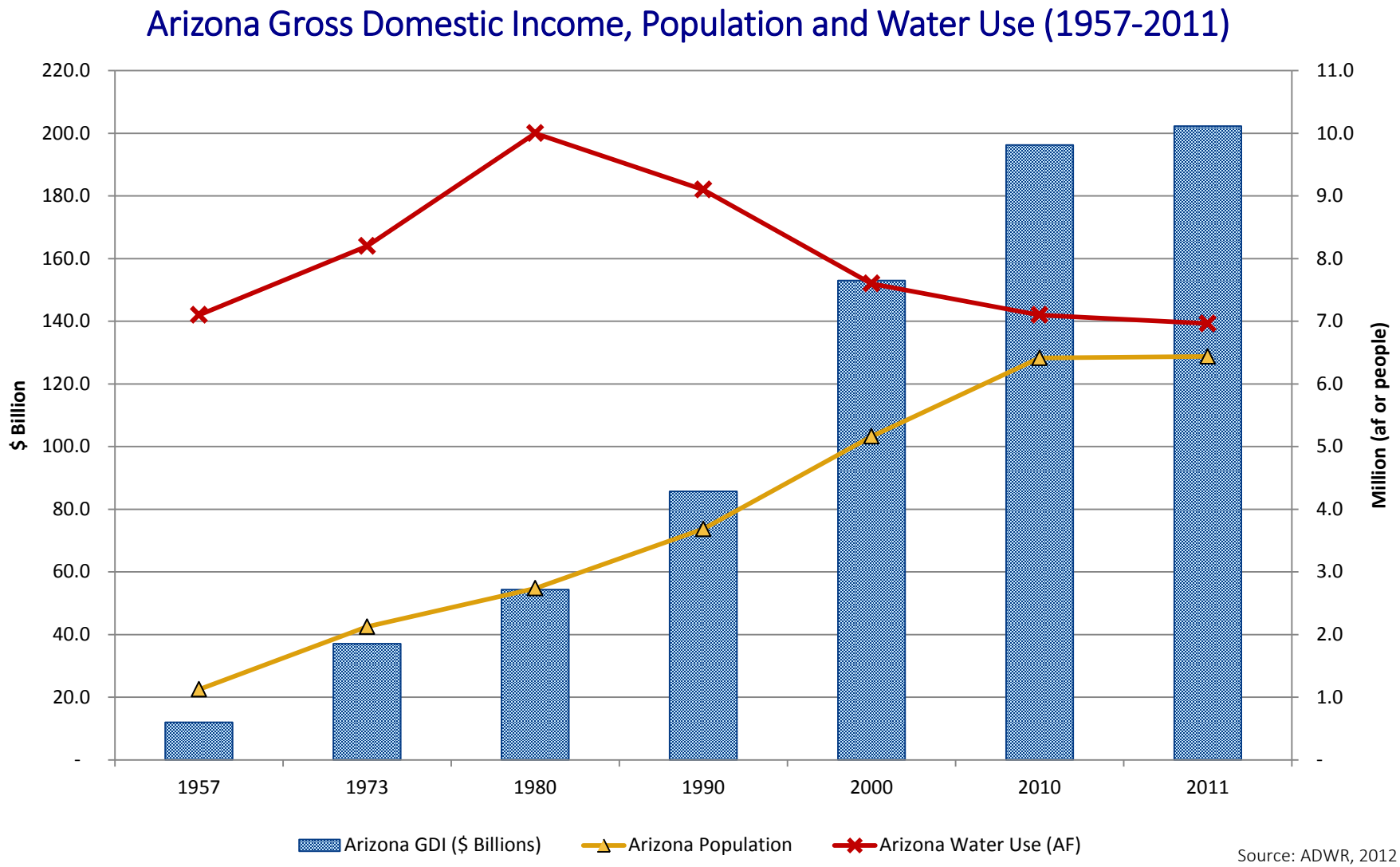
ARIZONA'S NEXT CENTURY

Strategic Vision for Water Supply Sustainability

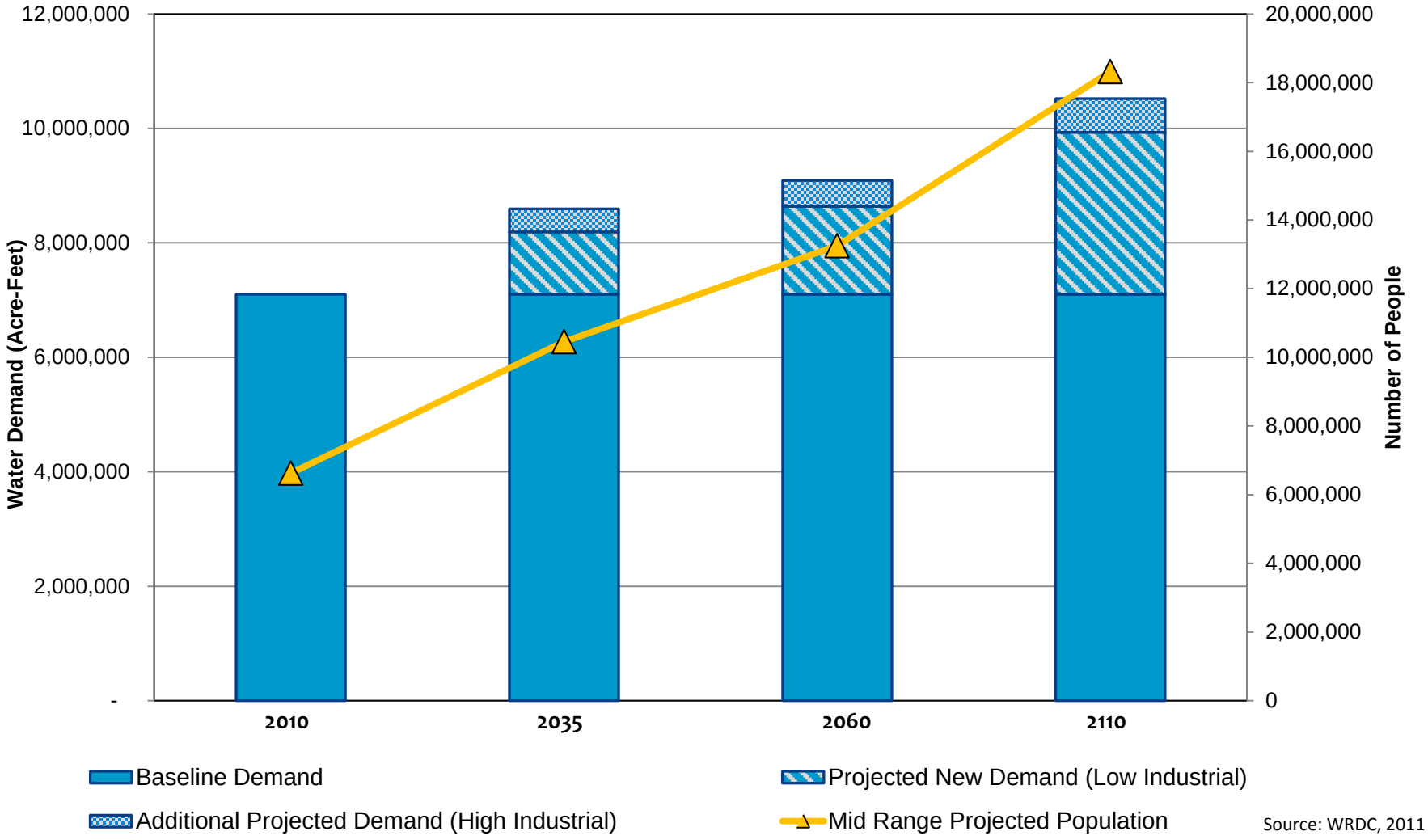
Protecting Arizona's Water Supplies
for
Its Next Century

What We Have Accomplished



Source: ADWR, 2012

What We Have To Address



Source: WRDC, 2011

What We Are Doing

Arizona Strategic Vision for Water Supply Sustainability

Purpose:

To identify viable strategies to guide Arizona in addressing future water needs, providing a stable economy for our future – for <u>all</u> water users.

- Use existing information (CRBS, WRDC, Az. Water Atlas, Water Level Monitoring, AMA Assessments…)
- Identify Local Options First
- Identify Priority Strategies

Arizona Strategic Vision
Building on Historic Accomplishments

* **Salt River Project**
* **Colorado River Compact & Law of the River**
* **Central Arizona Project**
* **Resolution of Tribal Water Rights Claims**
* **1980 Groundwater Management Act**
  - *National leader in water conservation and water reuse programs within the five Active Management Areas*
* **Assured and Adequate Water Supply Program**
* **Recharge and Recovery and Arizona Water Banking Authority**
  - *8.5 million acre-feet in storage for future use*

Arizona Strategic Vision
Identifying Opportunities and Challenges

Water Supply Opportunities

* Non-Indian Agricultural (NIA) Priority CAP water;
* Reclaimed water/water reuse;
* Groundwater in storage (potable, poor quality & brackish supplies);
* Water supplies developed from revised watershed management practices;
* Water supplies developed through weather modification;
* Water supplies developed from large-scale or macro rainwater harvesting/stormwater capture; and
* Importation or exchange of new water supplies developed outside of Arizona (e.g., ocean desalination)

Arizona Strategic Vision

Identifying Opportunities and Challenges

Challenges

- **Complex Physical Water Supply Availability**
- **Land Ownership**
  - **69% of Lands in Arizona Federally Owned & Managed**
    - **Access to Water Supplies and Transmission of Future Water Supplies**
    - **Federal Reserve Rights**
    - **NEPA/ESA/CWA Compliance**
- **General Stream Adjudication**
- **Outstanding Tribal Water Rights Claims**
- **Complex Water Rights System**

Arizona Strategic Vision

Identification & Analysis of Supply/Demand Imbalances

Water Resources Development Commission (WRDC)

- **Established by the Legislature in 2010.**
- **Tasked with assessing Arizona's water demand and the supplies available to meet demand for the next 25, 50 and 100 years (2035, 2060 and 2110).**
  - Does Arizona need to develop additional water supplies for the future?
  - If so, where will the water come from?
  - What will it take to get water to end users statewide?
  - Where will the funds come from to pay for the water and the infrastructure?

Arizona Strategic Vision

Identification & Analysis of Supply/Demand Imbalances (*cont.*)

WRDC Conclusion

* **Total statewide demand will range from a low of 8.1 MAF in 2035 to a high of 10.6 MAF in 2110 *(current demands 6.9 MAF)***

* **Estimated a total statewide difference between supply and demand varies between 900,000 AF and 3.2 MAF**

WRDC concluded that without proactive and localized water management strategies future water supply and demand imbalances may exist throughout the state, and, therefore, there is a need to acquire additional water supplies and develop infrastructure to access new and existing unused water supplies

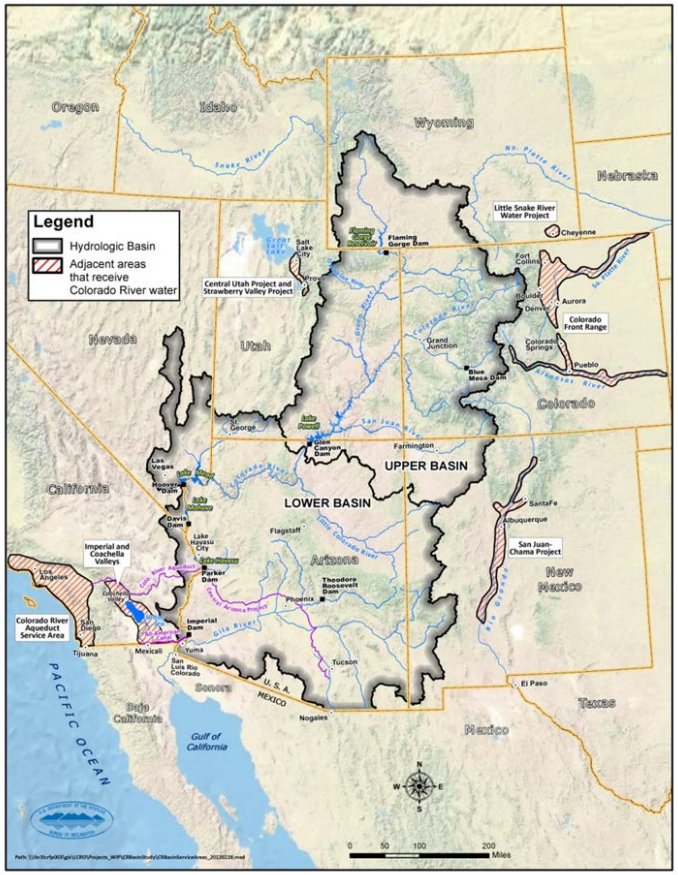
NOTE: WRDC demands unconstrained by AWS Rules or available supplies

Arizona Strategic Vision

Identification & Analysis of Supply/Demand Imbalances (*cont.*)

Colorado River Basin Water Supply & Demand Study (Basin Study)

- Assess current and future imbalances in water supply and demand for the period 2010 to 2060.
- Assess the system reliability and risks to all Basin Resources (water supply, hydropower, water quality, fish and wildlife, flood control, recreation).
- Develop and evaluate opportunities/strategies for resolving imbalances.



Study Participants

- United States Bureau of Reclamation
- Seven Colorado River Basin States: Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming
- Tribal Interests
- Other Interested Groups (NGOs, Public Interest)
- Public Input at selected phases of the Study

Arizona Strategic Vision

Identification & Analysis of Supply/Demand Imbalances (*cont.*)

Basin Study Conclusion

* **Basin Study 2060 Colorado River Basin-Wide Average Imbalance 3.2 MAF**

* **Basin Study 2060 Arizona Imbalance is Approximately 242,900 to 1,269,700 acre-feet**

Arizona Strategic Vision
Identification of Possible Strategies

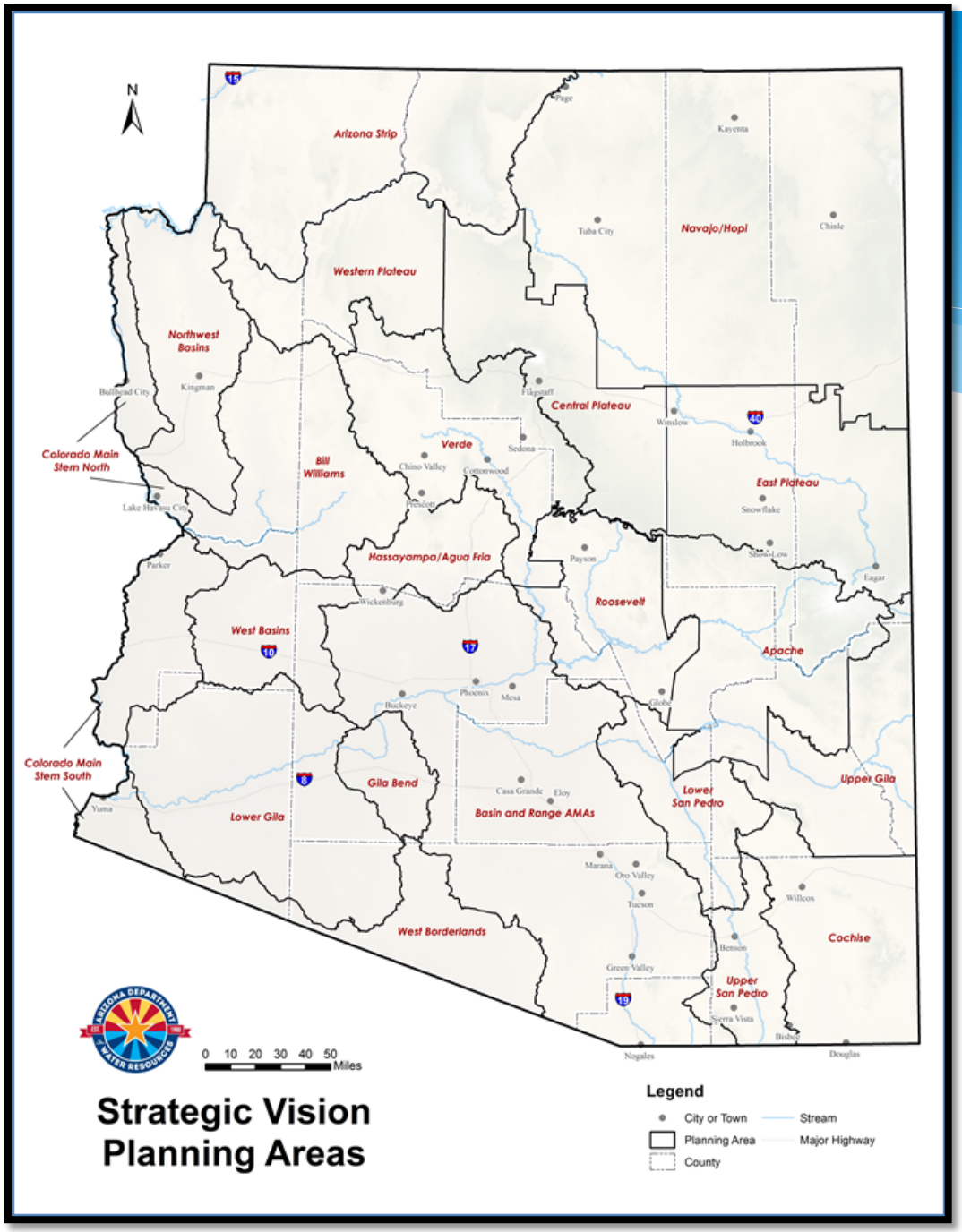
* **Regional Strategies**
  - **Identification & Analysis of "Planning Areas"**

* **Statewide Priorities**
  - **Common Strategies Across the State**

* **Action Plan**
  - **What's Next??**

Arizona Strategic Vision

Regional Strategies

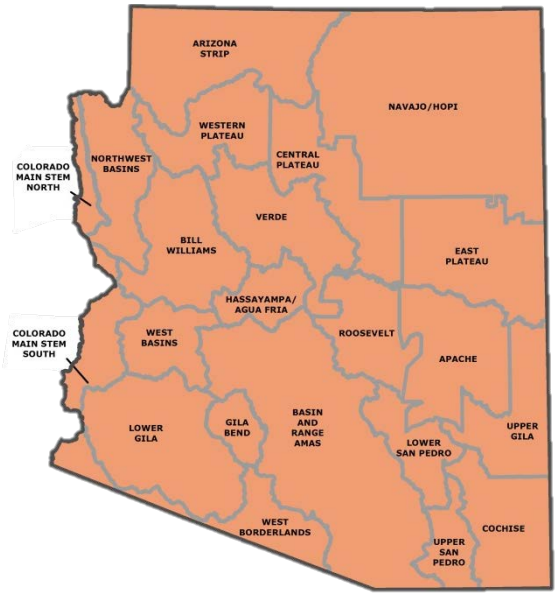


* Identification of 22 Planning Areas
* Designed around Possible Solutions/Strategies

Arizona Strategic Vision

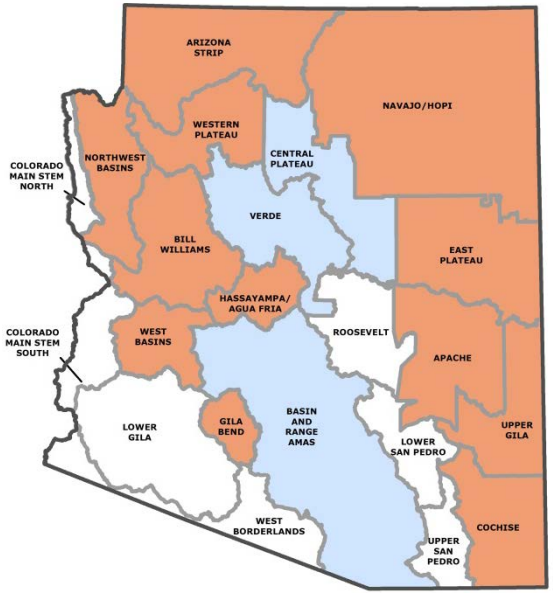
Regional Strategies

Continued Commitment to Water Conservation



Expanded Monitoring & Reporting of Water Use

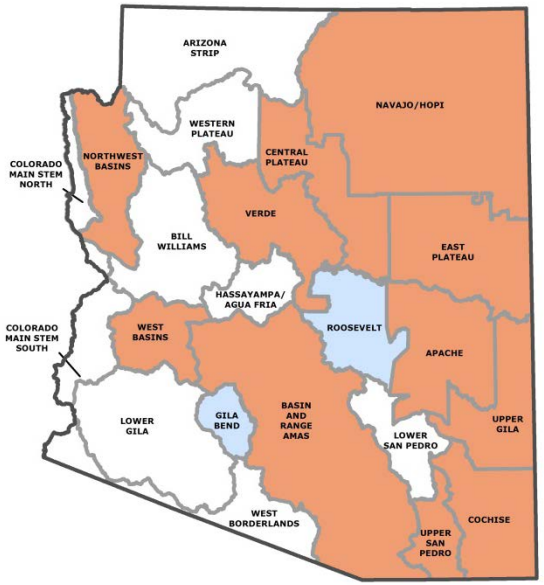
Local Water Supply Study Groundwater System Analysis/Modeling



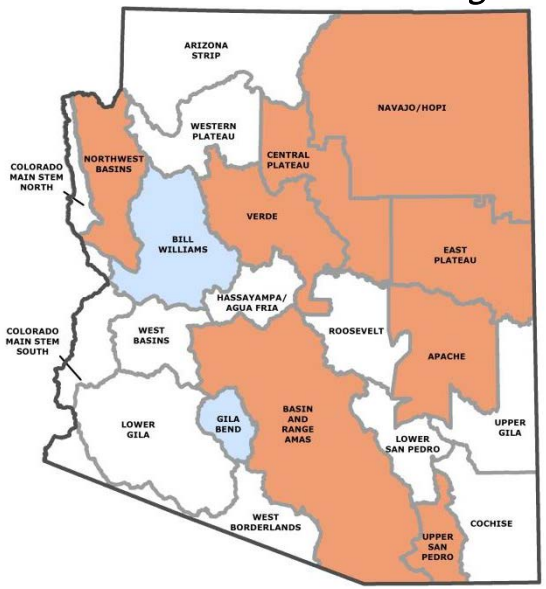
Arizona Strategic Vision

Regional Strategies (*cont.*)

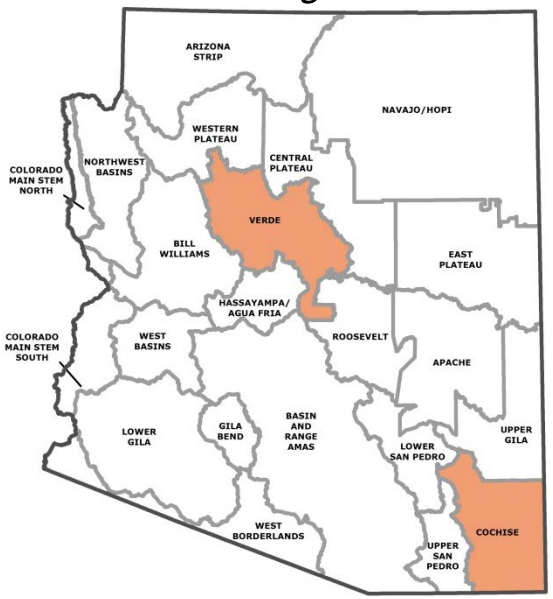
Increased Direct & Indirect Use of Reclaimed Water



Increased Access to Locally Available Potable & Brackish Groundwater and Enhanced Recharge



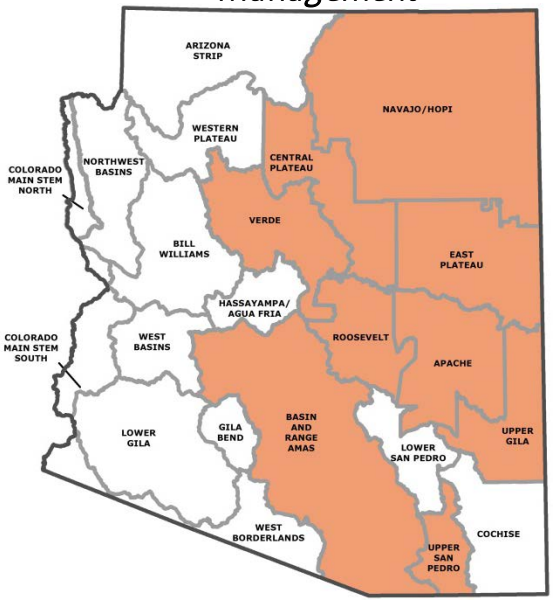
Local Water Management



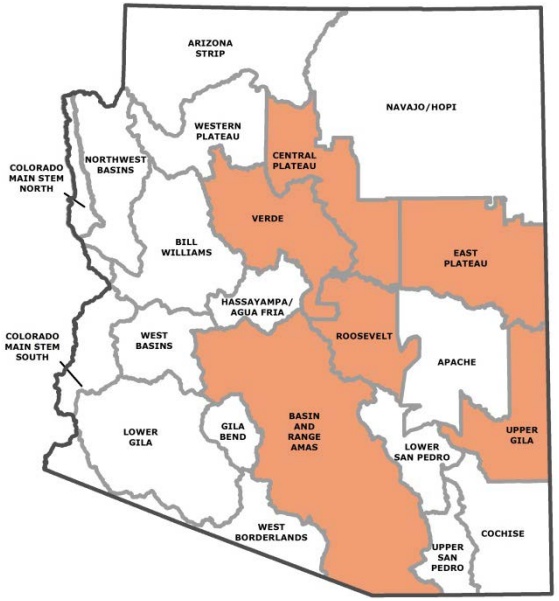
Arizona Strategic Vision

Regional Strategies (*cont.*)

Forest & Watershed Management



Weather Modification

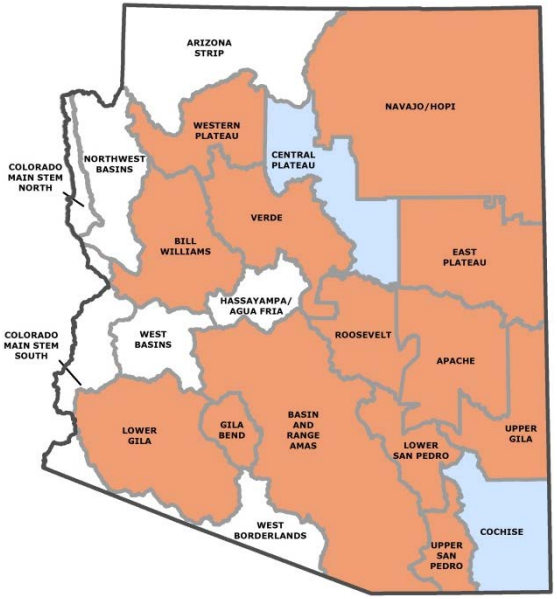


Arizona Strategic Vision

Regional Strategies (*cont.*)

Firming of Low Priority Colorado River Supplies

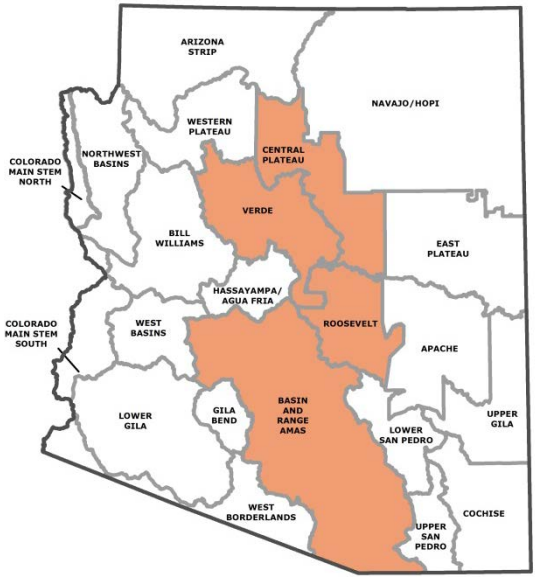
Resolution of Federal & Non-Federal Water Rights Claims



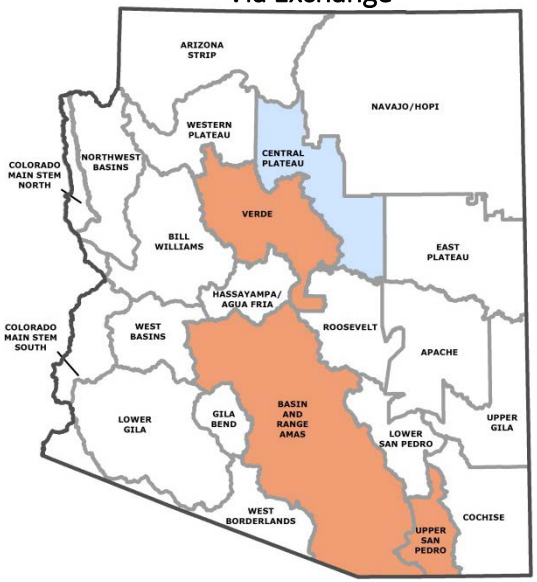
Arizona Strategic Vision

Regional Strategies (*cont.*)

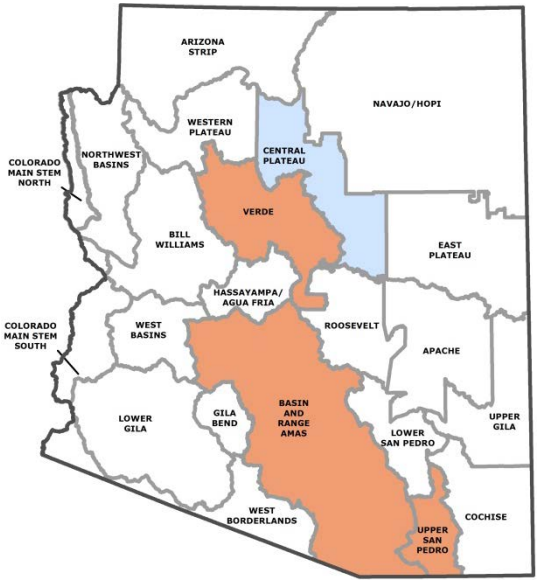
Importation of In-State Surface Water or Groundwater



Importation of Desalinated Water Via Exchange



Importation of Desalinated Water Direct Use



Arizona Strategic Vision

Strategic Priorities For Moving Arizona Forward

* ***Resolution of Federal and Non-Federal Water Rights Claims***
  - General Stream Adjudication
  - Indian Water Rights Settlements
* ***Continued Commitment to Water Conservation & Reuse of Reclaimed Water*** – Including Direct Potable Reuse
* ***Comprehensive Statewide Data Collection & Analysis*** (Modeling Local Conditions)
* ***Identify the Role of In-State Water Transfers***
* ***Supply Importation - Desalination***
* ***Funding***
  - Business leaders, Community and State leaders
  - Rural Infrastructure

Arizona Strategic Vision
Ten Year Action Plan

* **Legislate Strategic Vision update every 10 years** (Year 1)
* **Begin Discussions on Ocean Desalination** (Year 1)
  - Exchange Options (California & Mexico)
  - Direct Delivery Options (Mexico)
* **Resolve ADOT Right-of-Way Issues for Utilities** (Year 1)
* **Establish Adjudication Study Committee** (Year 1)
* **Begin Discussions on Water Development Financing** (Year 2)
  - Immediate Needs for Water Resources Development Revolving Fund for rural Arizona
  - Long-Term Needs for Large-Scale water importation projects
* **Remove statutory limitation (*A.R.S. § 45-801.01(22)*) on the ability to receive long-term storage credits for recharging reclaimed water beyond 2024** (Year 2)

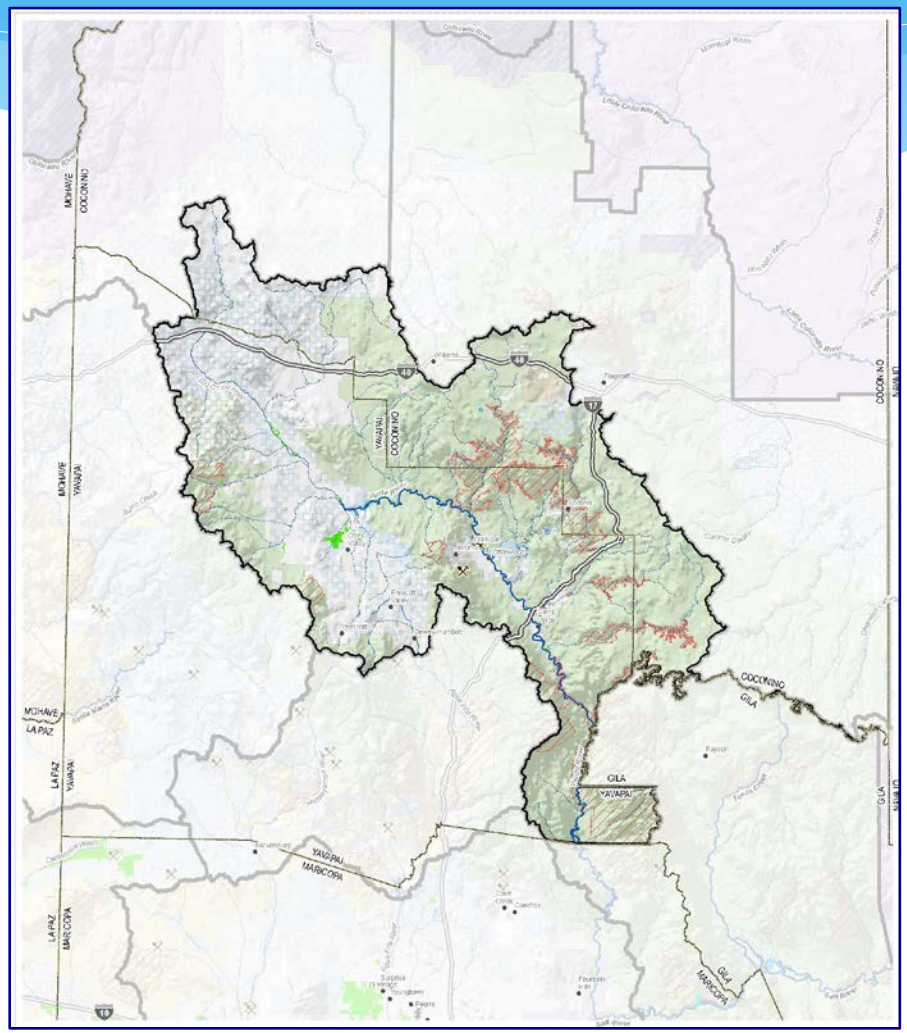
Arizona Strategic Vision
Ten Year Action Plan (*cont.*)

* **Review Legal and Institutional Barriers to Direct Potable Reuse of Reclaimed Water** – develop and implement plan for resolution (Year 3)
* **Review and implementation of Adjudication Study Committee Findings** (Year 3)
* **Develop and Begin Implementation of Direct Potable Reuse of Reclaimed Water Public Perception Campaign** (Year 4)
* **Begin discussions with New Mexico on an Interstate Cooperative Program for Watershed Management/Weather Modification in the Upper Gila Watershed** (Year 4)
* **Resolve Remaining Indian Settlements** (Year 1 - 10)
* **Resolve General stream Adjudication** (Year 5 - 10)

Verde
Planning Area

Sector	2010	2035	2060
Agriculture	25,362	23,844	23,844
Dairy	0	0	0
Feedlot	0	0	0
Municipal	33,886	54,265	65,909
Other Industrial	567	567	567
Mining	0		
High		4,000	4,000
Low		1,000	1,000
Power Plants	0		
High		22	28
Low		16	19
Rock Production	1,070		
High		4,019	4,883
Low		1,674	2,035
Turf	3,366		
High		4,013	4,217
Low		3,509	4,223
Total (High)	**64,251**	**90,730**	**103,448**
Total (Low)	**64,251**	**84,876**	**97,597**

Projected Water Demands



Land Ownership Map

Characteristics Affecting Projected Water Demands and Supply Availability Verde Planning Area

- General Stream Adjudication
- Unresolved Indian Water Rights Claims
- Prescott AMA
- Downstream Water Demands
- Wildfire
- Protected Species and Habitat

Strategies for Meeting Future Water Demands Verde Planning Area

- Resolution of Indian and Non-Indian Water Rights Claims
- Watershed/Forest Management
- Weather Modification
- Reclaimed Water Reuse
- Enhanced Stormwater Recharge
- Water Management
- Importation

Conclusion

* State of Arizona is not facing an immediate water crisis
  * Some local areas require more immediate action
* Growing statewide imbalance between water supplies and demand projected in the next 25 years
* Lack of an immediate problem increases the potential for inaction, running the risk of procrastinating and not motivating ourselves to plan and invest in our future
* Arizona's future success is tethered to how well we continue to manage our water resources and develop new water supplies and infrastructure
* Arizona needs a continuing Strategic Vision for Water Supply Sustainability to guide its economic stability through the next century

Questions?

Michael Lacey, Interim Director

E-mail: mjlacey@azwater.gov

Phone: 602.771.8426