

ARIZONA'S NEXT CENTURY

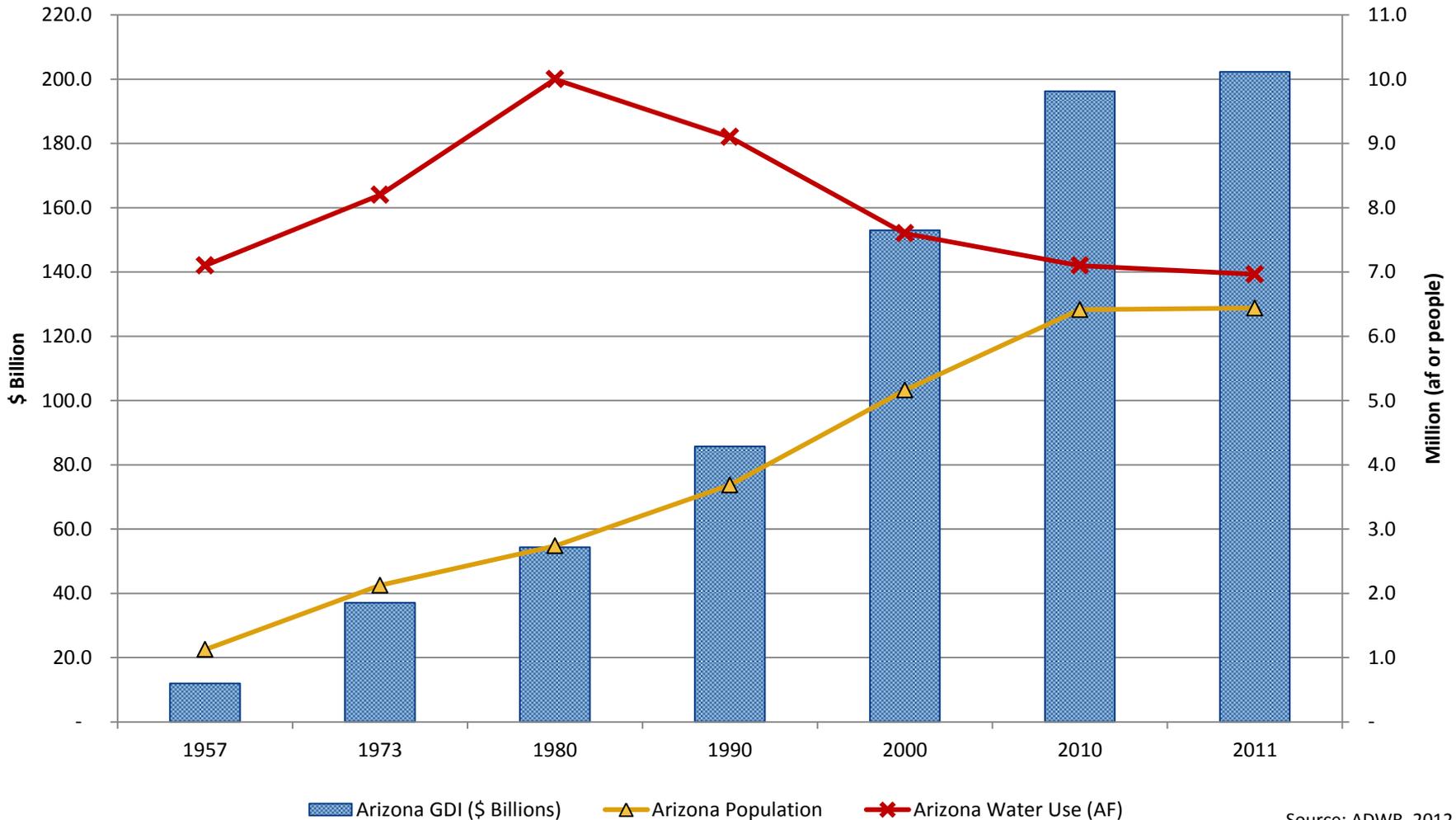
Strategic Vision for Water Supply Sustainability



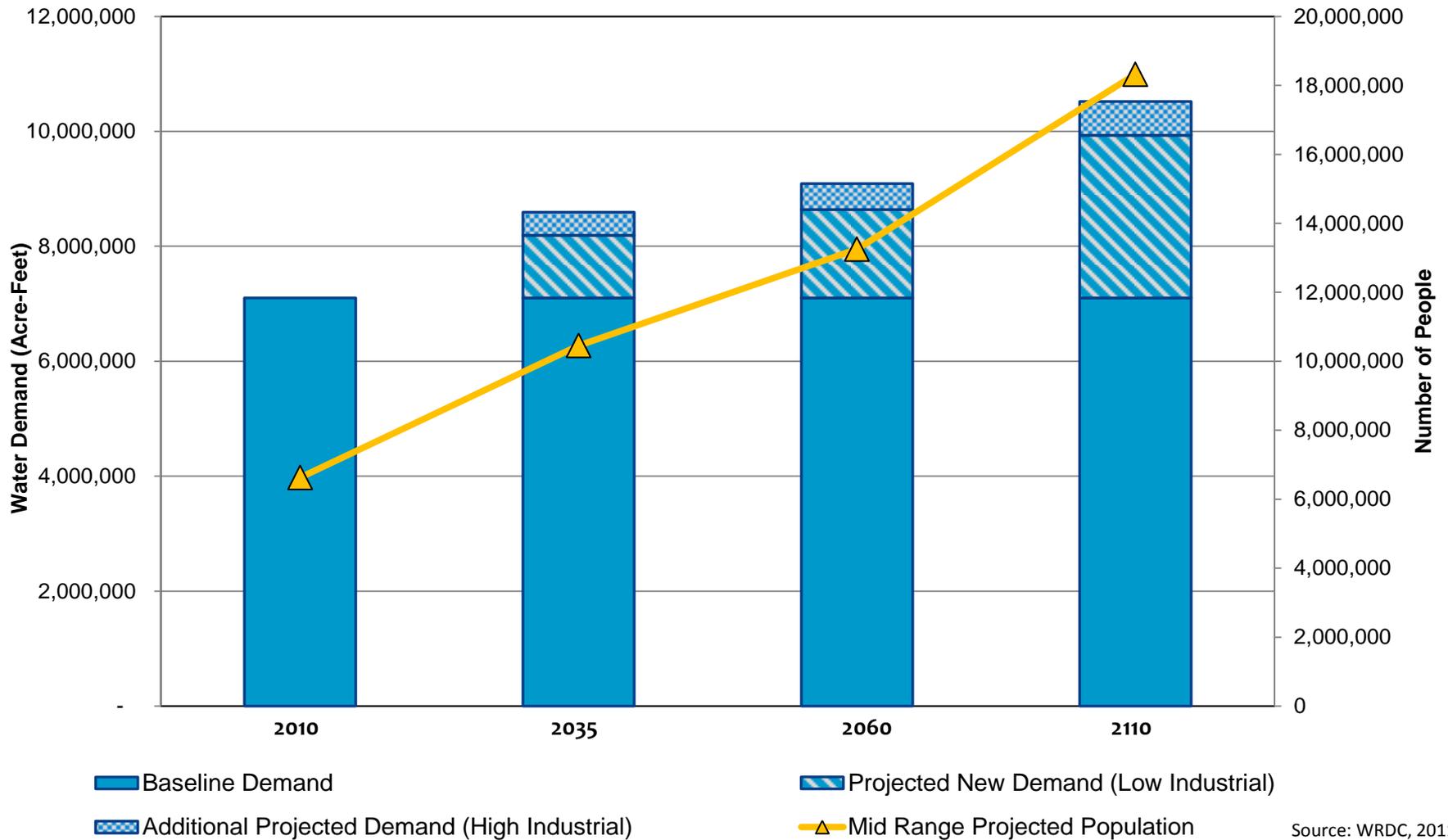
Protecting Arizona's Water Supplies
for
Its Next Century

What We Have Accomplished

Arizona Gross Domestic Income, Population and Water Use (1957-2011)



What We Have To Address



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 all 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



Strategic Vision Planning Areas

Legend

- City or Town
- Stream
- Planning Area
- Major Highway
- - - County

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

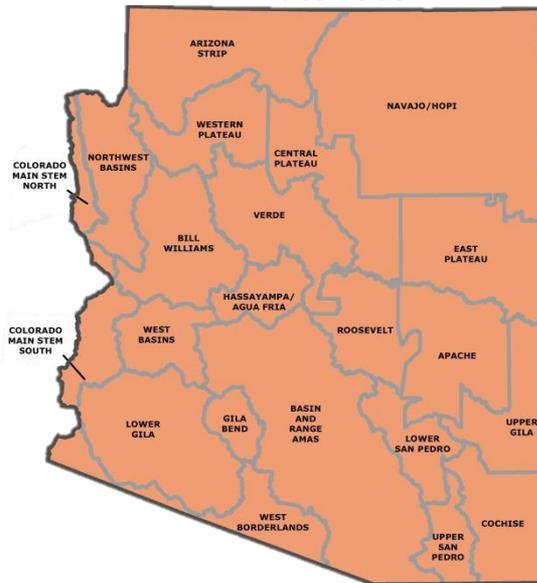
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Regional Strategies

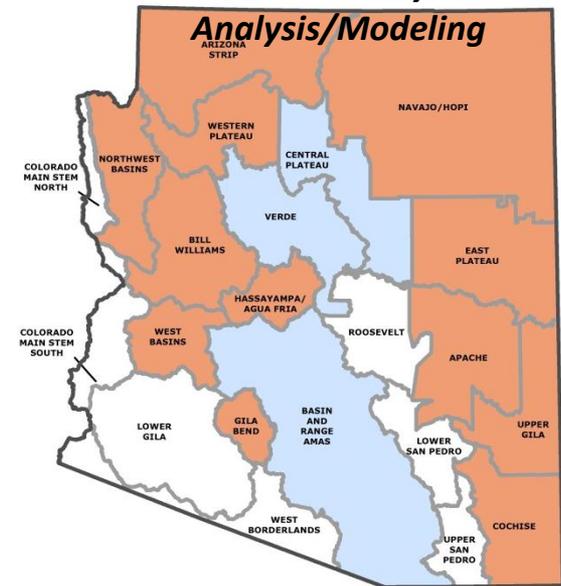
Continued Commitment to Water Conservation



Expanded Monitoring & Reporting of Water Use



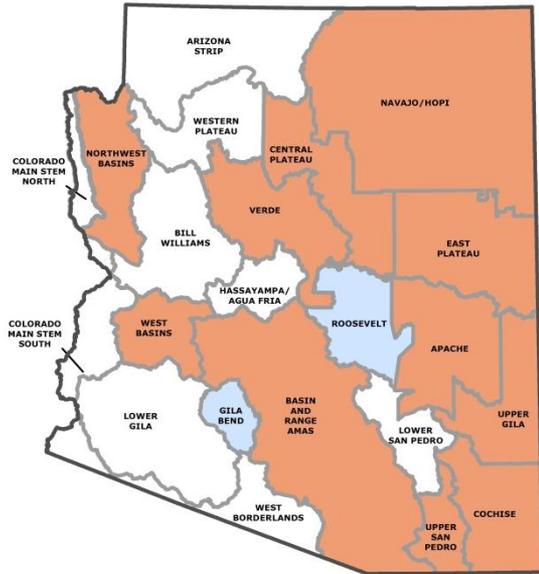
Local Water Supply Study Groundwater System Analysis/Modeling



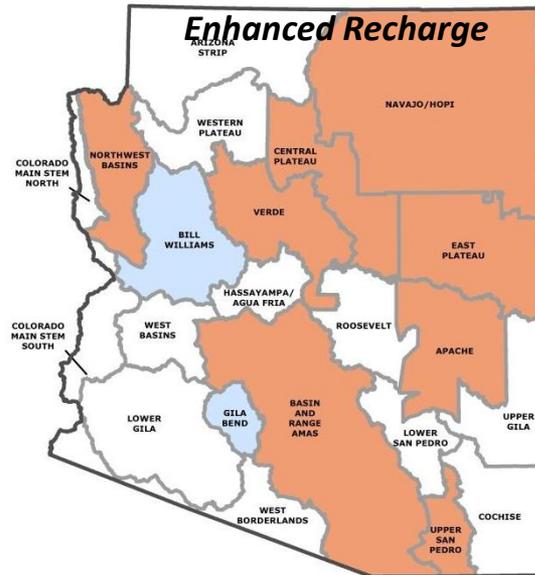
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Regional Strategies (cont.)

Increased Direct & Indirect Use of Reclaimed Water



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



Local Water Management



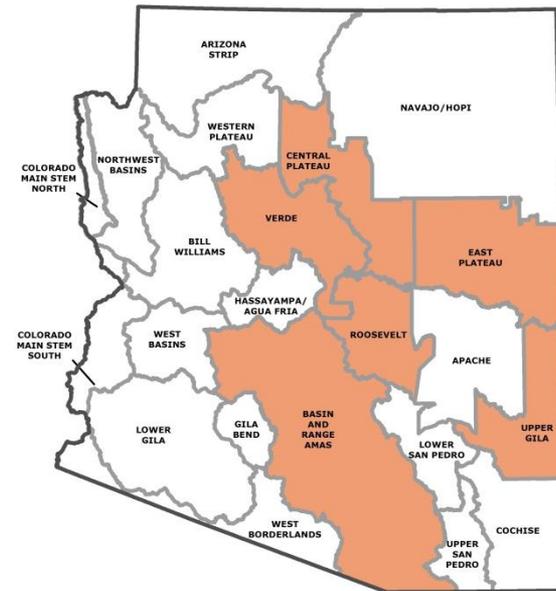
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Regional Strategies *(cont.)*

Forest & Watershed Management



Weather Modification



Arizona Strategic Vision

Regional Strategies (*cont.*)

Firming of Low Priority Colorado



Resolution of Federal & Non-Federal Water Rights Claims



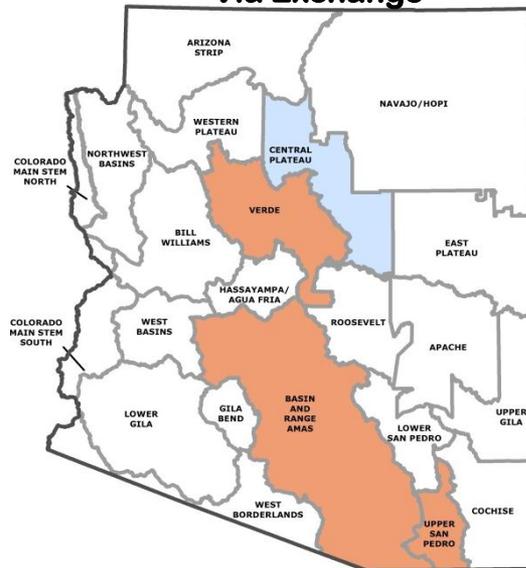
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Regional Strategies (*cont.*)

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 and implementation of Adjudication Study Committee Findings** (Year 3)
- * **Review Legal and Institutional Barriers to Direct Potable Reuse of Reclaimed Water** – develop and implement plan for resolution (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)

Characteristics Affecting Projected Water Demands and Supply Availability Basin & Range AMAs Planning Area

- * General Stream Adjudication
- * Unresolved Indian Water Rights Claims
- * Water Management
- * Underground Storage and Recovery

Strategies for Meeting Future Water Demands Basin & Range AMAs Planning Area

- * Resolution of Indian and Non-Indian Water Rights Claims
- * Continuation of Water Conversation Programs
- * Watershed/Forest Management
- * Weather Modification
- * Reclaimed Water Reuse
- * Brackish Groundwater
- * Firming of Low Priority Water Supplies
- * 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?

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