Water Management & Drought Preparedness in Arizona

DROUGHT SUMMIT
December 9, 2016

Einav Henenson
Drought Program Coordinator
Arizona Department of Water Resources
Overview:

ARIZONA WATER MANAGEMENT
1. 1980 Groundwater Management Act
2. Arizona Water Banking Authority
3. Water Management Success
4. Looking Forward: Governor’s Arizona Water Initiative

ARIZONA DROUGHT PREPAREDNESS
1. Drought History
2. 2004 Drought Preparedness Plan
3. Community Water Systems
4. Drought Working Groups
5. Drought Preparedness Annual Report
Managing Arizona’s Water Resources
1980 Groundwater Management Act

- Established the Arizona Department of Water Resources (ADWR)
- Developed goals to control severe groundwater depletion
- Established Active Management Areas (AMAs) & Irrigation Non-Expansion Areas (INAs)
- Established regulations for water users within AMAs and INAs
  - No expansion of agriculture
  - Limits on groundwater pumpage
  - Annual water use reporting requirements
  - Conservation requirements
Arizona Water Banking Authority

- Established 1996
- Stores unused Colorado River water, to be used in times of shortage
- Bank stored 3.4 Million acre-feet 1,100 Billion gallons
- Total stored statewide: 9 Million acre-feet or 3,000 Billion gallons
Arizona’s Water Management Success


<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Total Water Use (in million acre-feet)</th>
<th>Population (in millions)</th>
<th>Gross Domestic Income (in billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957</td>
<td>7.1 maf</td>
<td>1.1</td>
<td>$13.4</td>
</tr>
<tr>
<td>2015</td>
<td>6.9 maf</td>
<td>6.8</td>
<td>$243.1</td>
</tr>
<tr>
<td>Change from 1957-2015</td>
<td>-3%</td>
<td>504%</td>
<td>1,716%</td>
</tr>
</tbody>
</table>

Source: ADWR, 2015
Looking Forward: Governor’s Arizona Water Initiative

Governor’s Water Augmentation Council

Comprised of water resources and other industry experts, the Council’s goals are:

- Investigate water augmentation strategies
- Explore additional water conservation opportunities
- Identify infrastructure needs
- Provide policy direction to the Governor

Planning Area Process

Work with local stakeholders in Arizona’s 22 planning areas to:

- Refine challenges causing supply-demand imbalances
- Identify strategies to address challenges
- Stakeholder-driven solutions
Arizona’s Drought Preparedness
Drought History

3 Severe Droughts in the 20th Century!

1900s Drought

1950s Drought

Current Drought (from mid-late 1990s)

Several miles east of Phoenix, formerly cultivated land has returned to desert. A lateral, visible in the foreground, lies useless because of a lack of water. Droughts, floods, and erratic river flows would plague Salt River Valley farmers until a dam was built to tame the river and some formal organization formed to promote equitable water management, 1902. (Reclamation photograph)
2004 Arizona Drought Preparedness Plan

In March 2003 former Governor Napolitano issued an Executive Order to create the Governor’s Drought Task Force to address drought impacts to Arizonans.

Drought Taskforce goals:
• Establish a flexible framework to refine AZ’s drought monitoring process
• Improve understanding of drought impacts
• Identify mechanisms for limiting future vulnerability

Drought Preparedness Plan results:
• Water Use Reports & Drought Plan Requirements for all State’s water providers
• Working committees
  • Monitoring Technical Committee
  • Interagency Coordinating Group
  • Local Drought Impact Groups
Drought Planning for Community Water Systems

Community Water System (CWS) = Any drinking water provider that serves water to at least 15 connections or 25 year-round residents (from RV Parks to large cities).

Requirements:

• Annual Water Use Report

• 5-year System Water Plan
  o Water Supply Plan
  o Drought Preparedness Plan
  o Conservation Plan

• Apply to all CWSs
  ~200 large & ~600 small systems

• Help CWSs reduce vulnerability to drought and be prepared to respond to drought & water shortage

• Regulations established by the state legislature in 2005
Monitoring Technical Committee (MTC)

- Gathers and evaluates drought, climate & weather data
- Distributes information to land managers, policy-makers & public
- Comprised of climate experts (State Climatologist, NWS, NOAA, NRCS, SRP, ADEM, USGS, ADWR, County Officials, State Universities, and others)

U.S. Drought Monitor

September 13, 2016
(November 10, 2016)
Weekly U.S. Drought Monitor

August 2016

Although the monsoon rainfall has been quite heavy in some locations, such as parts of southeastern Arizona, it has been quite sparse in southwestern Arizona. Overall, there has been only minimal changes to the drought status across the state during August.

The rainfall has been sporadic and localized, so many areas have not experienced large accumulations for the summer. The most recent storms from Hurricane Newton brought significant rainfall to the southeastern counties and will likely result in some drought improvement in the coming weeks. The Mogollon Rim and eastern Coconino County have also had a relatively wet summer and may show some improvement once the impacts are analyzed.

Summary produced by the State Drought Monitoring Technical Committee — September 8, 2016
Interagency Coordinating Group (ICG)

An advising body to the Governor on drought, Comprised of state & federal agencies & non-governmental organizations

- Provides biannual updates on water supply & availability
- Advises the Governor of:
  - Drought status
  - Drought impacts
  - Necessary preparedness and response actions
- Identifies pre-drought mitigation options
- Identifies needs for additional resources
- Reviews the Drought Preparedness Annual Report
Local Drought Impact Groups (LDIGs)

County based local drought groups, provide drought monitoring info to the MTC, provide drought response and mitigation options at the local level.

- Identify local drought-related impacts
- Define and assess drought:
  - Severity
  - Societal impacts
  - Loss and costs
- Identify response options & needs
- Identify and facilitate efforts to mitigate impacts

Local drought preparedness & reduced drought vulnerabilities
Arizona Drought Preparedness Annual Report

Drought Status Summary

Climate & Precipitation Data

Water Supply Status
Thank you!

Einav Henenson
ehenenson@azwater.gov
(602) 771-8607