Historic and Future Colorado River Water Supply

Historical Supply and Use

- Water Supply (10-year Running Average)
- Water Use (10-year Running Average)

Projected Future Supply and Demand

- Projected Demand
- Projected Water Supply (10-year Running Average)

Preliminary Results
Is Arizona’s water future secure?

3,000 + miles of perennial rivers

At-risk basins in 2035

Results from Arizona’s Water Resources Development Commission, 2011
Flexibility and Innovation for Water Management Solutions
Colorado River Basin

Verde
Conservation of Ag Water: Environmental Water Transactions

1. Fallowing Agreements
2. Crop conversion agreements
3. Irrigation infrastructure
4. Forbearance agreements
Fallow Agreements

WORKING WITH THE LAWS WE HAVE

1. Full season fallowing
   - takes land out of production for full year
2. Summer fallowing
   - Water in the river in summer when most needed
   - Land in production a portion of year (pasture or crop)
Crop Conversion Agreements

1. Subsidize conversion
   - low water use, low water crops
2. Develop market interventions
   - Malt house
   - Partnerships with growers from other regions
Irrigation Infrastructure

THE RIGHT EQUIPMENT TO DO THE JOB

1. Conveyance Infrastructure
   - piping, lining, controls, monitoring, check structures

2. On Farm Efficiency
   - Allows crop conversions
   - Decreases water demand
Forbearance Agreements

PAY FOR PERFORMANCE

1. Ditch flow targets
   - Encourages sharing of shortages within users
   - Buffers from climate variability

2. River Flow Targets
   - Increased risk for ditch
   - Encourages sharing of shortages
Colorado River Basin

San Pedro
Groundwater Recharge

THE COCHISE CONSERVATION AND RECHA NETWORK

-Wet-dry mapping informs where placement of aquifer recharge facilities could help the river the most
-The six recharge projects are shown relative to where flows have fragmented, based on the past 18 years

Wet/dry results from the San Pedro Riparian National Conservation Area. The heavy river line shows reaches which were wet in June 2014. Bars on right side represent wet reaches for each year, 1999-2014. Labels on the far right identify the 10 analysis segments, each covering 5 miles (8.1 km). The four properties shown in green on map were recently acquired for groundwater protection or recharge projects.
The Cochise Conservation and Recharge Network
Simulated Change in Baseflow from 2003

*** PRELIMINARY RESULTS-MODEL UPDATES NOT INCLUDED***

WITHOUT PROPOSED RECHARGE PROJECTS
Simulated Change in Baseflow from 2003

*** PRELIMINARY RESULTS-MODEL UPDATES NOT INCLUDED***

WITH RECHARGE PROJECTS
Urbanization (and impervious surfaces) prevents the infiltration of rainfall into the ground. Water is largely lost to evaporation and/or increases flood peaks. Can be a useful source of water for recharge.
The Cochise Conservation and Recharge Network

RUNOFF INCREASED FROM 2% OF TOTAL RAINFALL TO 37% OF RAINFALL WITH URBANIZATION AT THIS SIERRA VISTA SUBDIVISION
The Cochise Conservation and Recharge Network

GROUNDWATER RECHARGE: SHEET FLOW

- Sheet flooding can be hazardous in some areas, usually as a result of soils

- Constructed channels can capture sheetflow and recharge it into aquifers

Palominas Flood Control and Recharge Project
The Cochise Conservation and Recharge Network

GROUNDWATER RECHARGE: TREATED EFFLUENT

- 50 acres of treatment wetlands
- 30 acres of recharge basins
- Capacity to treat 4 million gallons per day
- Recharges over 2,700 acre-feet per year
- Less variability than stormwater for recharge
Las Arenitas Wastewater Treatment Plant
Thank you

Questions?