WESTCAS

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CAP Board Member

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CAP
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YOUR WATER. YOUR FUTURE.

Central Arizona Project

Authorized by Colorado River Basin Project Act

Cost more than $4 billion

336-mile aqueduct from Lake Havasu to Tucson

14 pumping plants lift water nearly 3000 feet

8 siphons, 3 tunnels

1 dam & reservoir

Delivers 1.5+ MAF of AZ 2.8 MAF allocation/year

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CAP Service Area

- 3 counties (Maricopa, Pinal, Pima
- 5 million people (80% of Arizona's population)
- 350,000 acres of irrigated ag
- 11 Native American tribes
- 2014 CAP Deliveries - 1.525 MAF
  - 35% Tribes
  - 33% Municipal & Industrial
  - 26% Non-Indian Agriculture
  - 6% Recharge

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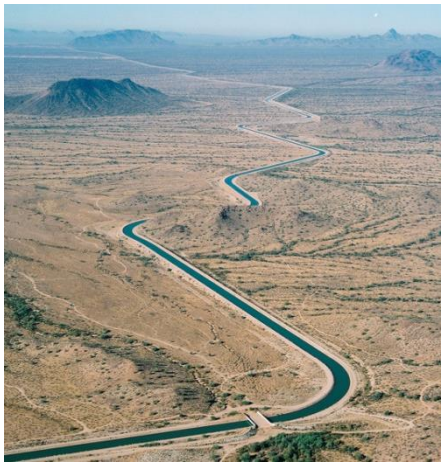
CAP Mission

- Operate and maintain the CAP system
- Deliver the remainder of Arizona's Colorado River apportionment
- Repay reimbursable costs to U.S.
  - Approx. $1.65 billion, plus interest
- Develop and operate recharge projects
- Operate the Central Arizona Groundwater Replenishment District



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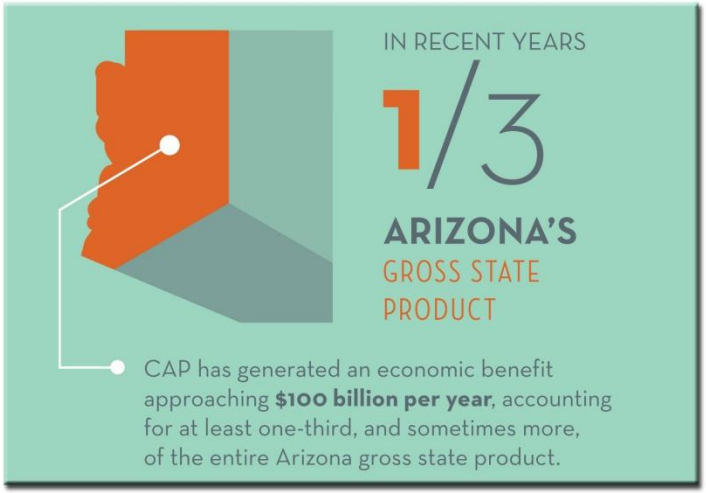
CAP Economic Study

- ***What is the value of CAP to the state of Arizona?***
- ASU study asked the question: What if CAP was never built and no CAP water was delivered?
- Two periods considered
  - Construction (1973-1993)
  - Water delivery (1986-2010)
- In 2010, CAP generated **$128 billion** (49.5%) of Arizona's gross state product
- In 2010, CAP generated over 1.6 million job-years



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CAP's Critical Energy Challenge

CAP uses about 2.8 million megawatt hours of electrical energy each year

To deliver about 1.6 million acre-feet of water for municipal, agricultural and industrial uses

CAP is the single, largest end user of power in Arizona

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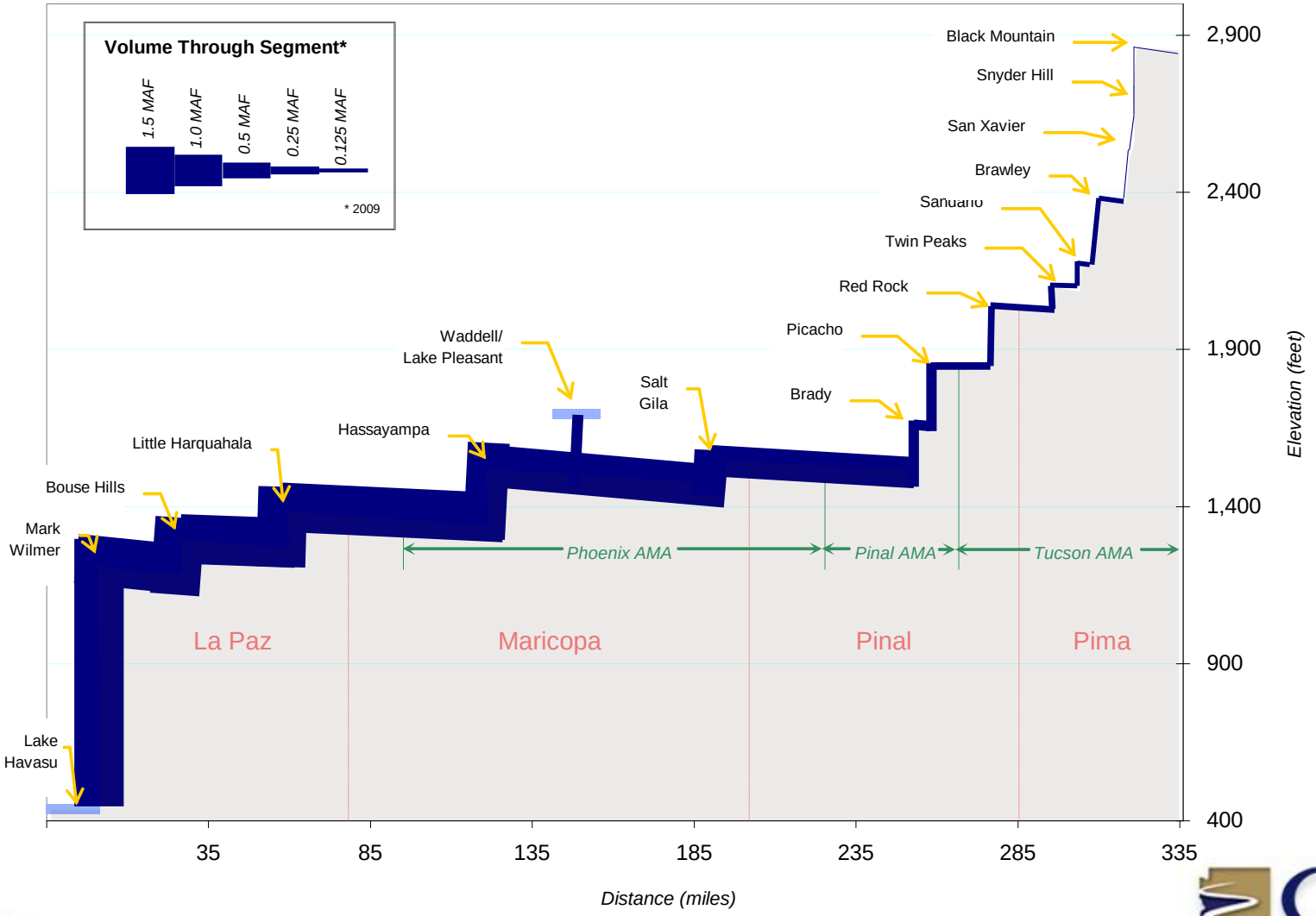
CAP Elevation Profile



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CAP Generation Resources

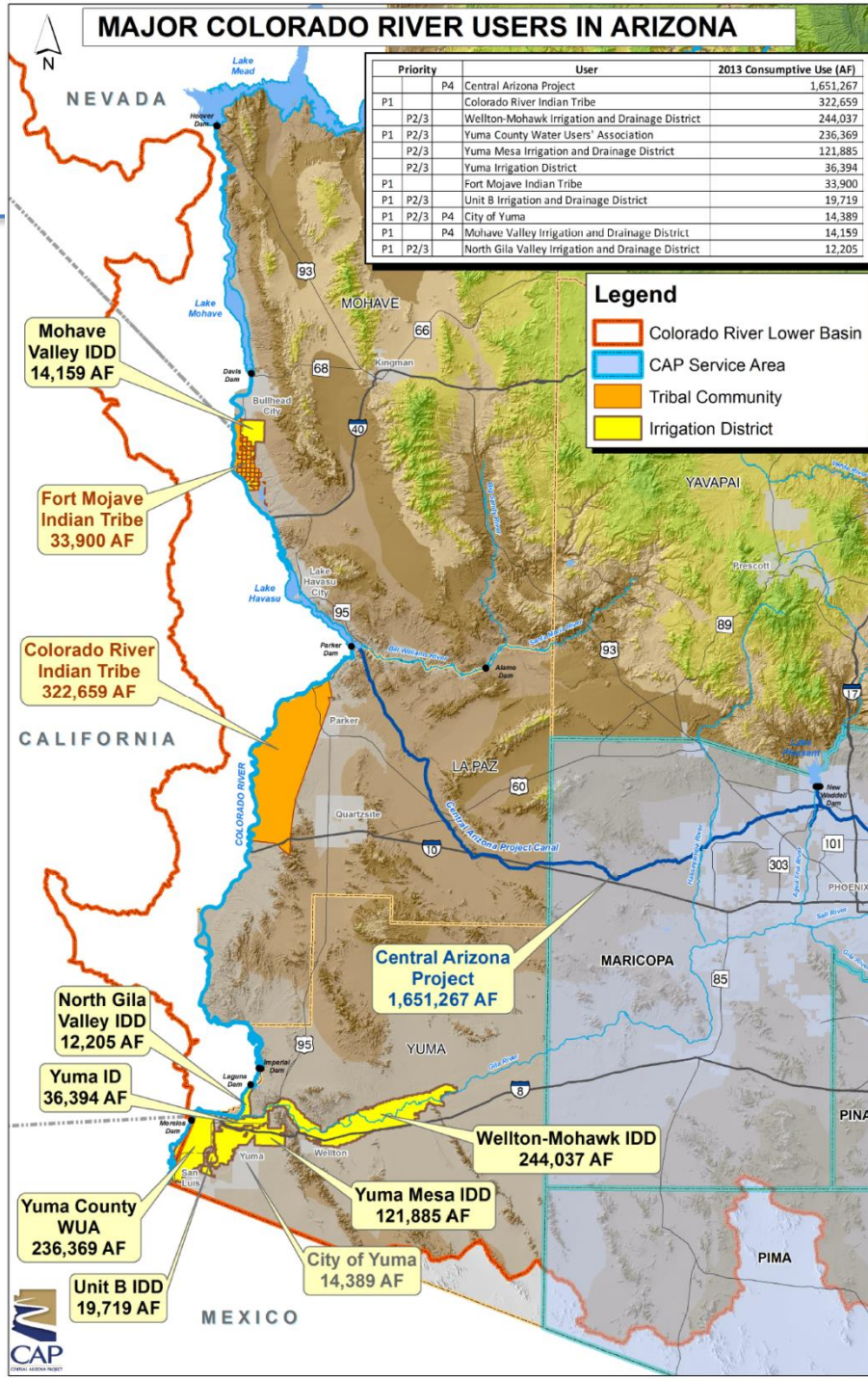
>90% of CAP's Energy Comes From the Navajo Generating Station

CAP (through BOR) 24.3% interest in NGS

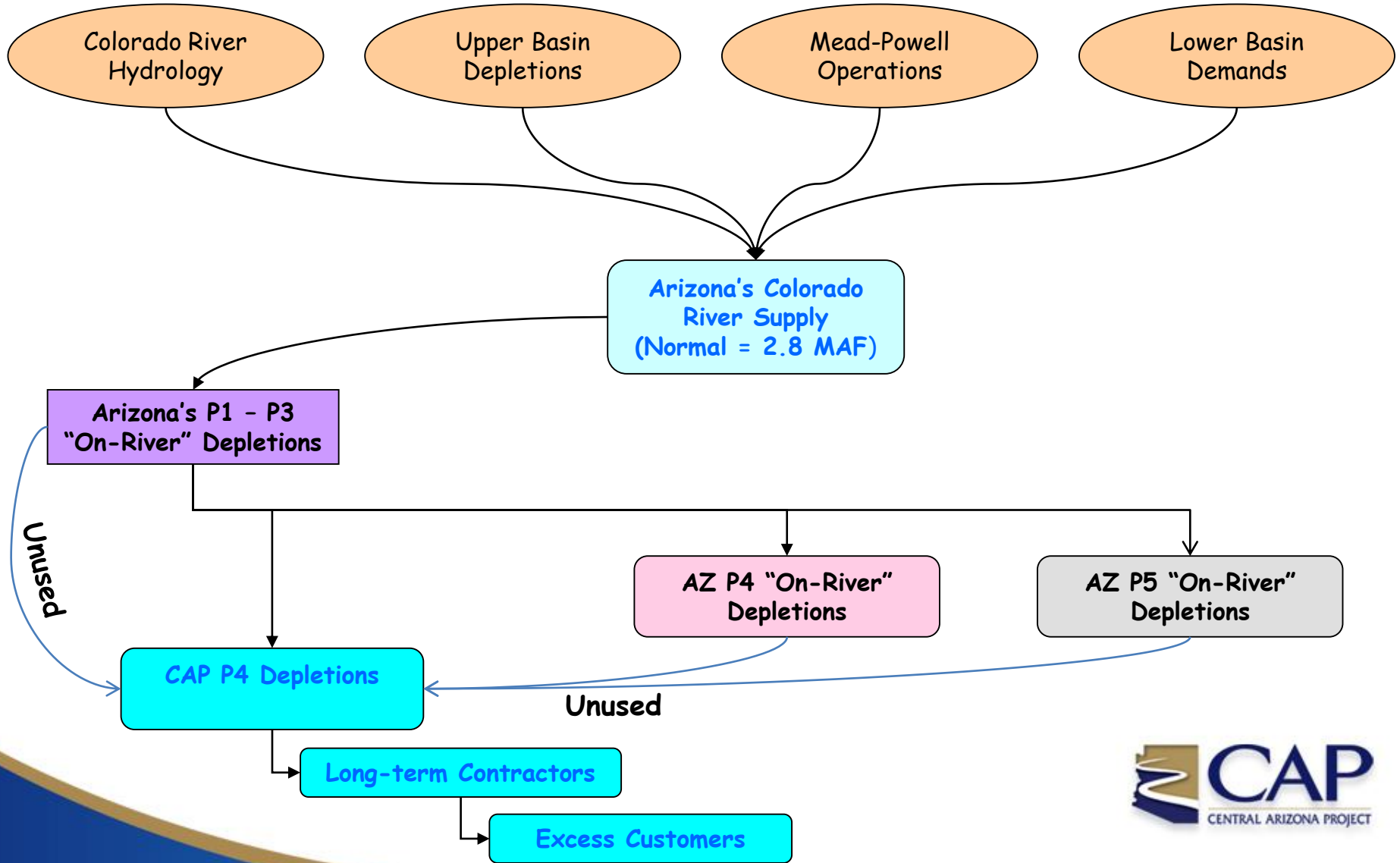
Arizona's Colorado River Use Summary

- Requires Delivery Contract
  - Sec V. Boulder Canyon Project Act
  - PPR or Decreed Right
- Consumptive Use:

  Diversions – Return Flows
- Arizona = 2.8 MAF
- Arizona Priorities:
  - P1 (e.g. CRIT & YCWUA)
  - P2/P3 (e.g. WMIDD & YMIDD)
  - P4 (e.g. CAP & MVIDD)
  - P5/P6 Excess & Surplus (e.g. CVIDD)
- CAP Unquantified Contract:
  - 1.415 MAF **PLUS** access to **unused** Arizona supply



Lower Colorado River Supply to: Arizona & CAP



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Current Status of Shortage

- Current Bureau of Reclamation 24-month study forecasts
  - 0% of shortage in 2016,
  - 18% in 2017
  - 52% in 2018
- This is a considerable improvement vs. May
- It is a “nail-biter” - all of the parameters that influence the determination of shortage remain close to critical levels

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Current Status of Shortage

- 15 years of drought in the Colorado River Basin
- Lake Powell and Lake Mead reservoirs have done their job but are currently at 40-45% combined capacity
- “Normal” releases or more to Lake Mead from Lake Powell every year during the drought
- Structural Deficit exists – annual releases from Lake Mead exceed annual inflows by about 1.2 MAF
- The basic problem is that evaporation and transportation losses were not taken into account

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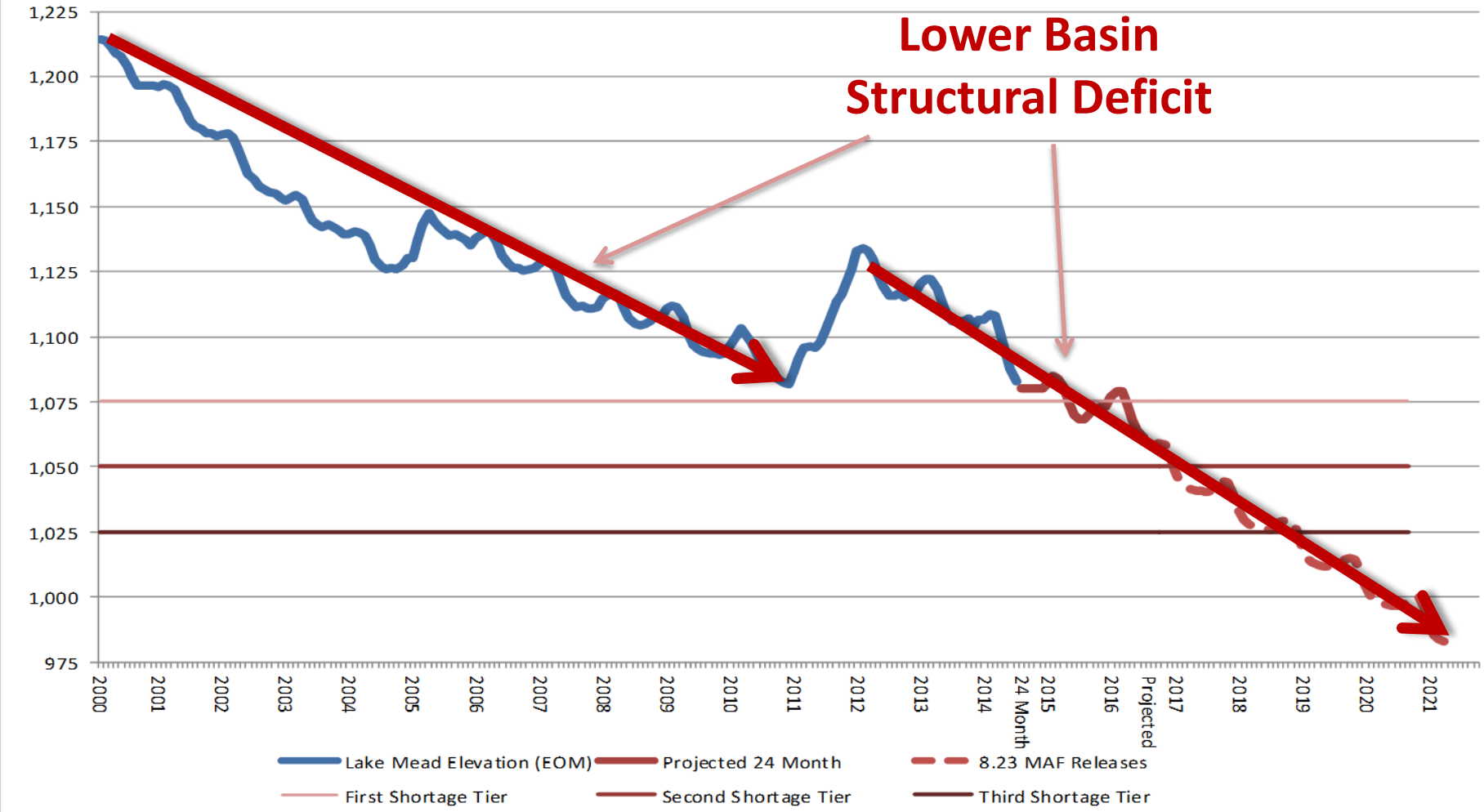
Water Budget at Lake Mead

- Inflow = 9.0 maf
  (release from Powell + side inflows)
- Outflow = - 9.6 maf
  (AZ, CA, NV, and Mexico delivery
  + downstream regulation and gains/losses)
- Mead evaporation losses = - 0.6 maf
- Balance = - 1.2 maf

Given basic apportionments in the Lower Basin, the allotment to Mexico, and an 8.23 maf release from Lake Powell, Lake Mead storage declines about 12 feet each year

Lake Mead Elevation



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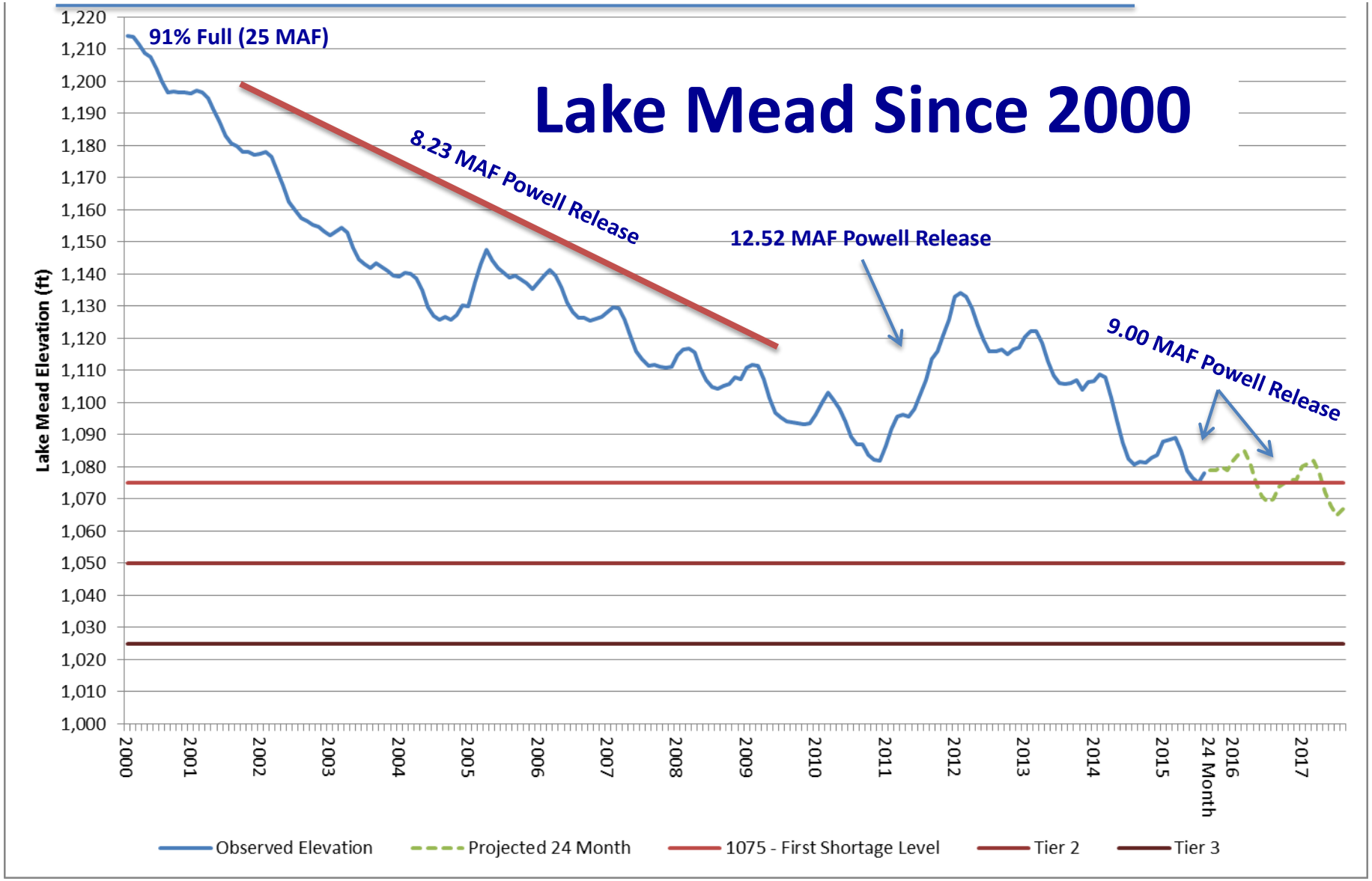
Potential Shortage & Structural Deficit



Shortage Under 2007 Guidelines

- Arizona and Nevada share Lower Basin shortages under the 2007 Guidelines
- Mexico voluntarily agreed in Minute 319 to accept reductions in its deliveries at the same elevations

Lake Mead Elevation	Arizona Reduction	Nevada Reduction	Mexico Reduction
1075’	320,000 AF	13,000 AF	50,000 AF
1050’	400,000 AF	17,000 AF	70,000 AF
1025’	480,000 AF	20,000 AF	125,000 AF

- No reductions to California under 2007 Guidelines

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Impact of Structural Deficit

- Results in a decline of 12+ feet in Lake Mead every year when releases from Powell are “normal” (8.23 MAF)
- Results in a decline of 4 feet in Lake Mead every year when releases from Powell are “balancing” (9.0 MAF)
- Undermines effectiveness of the 2007 Guidelines
- Drives Lower Basin to shortage
- CAP forced to bear obligations of others
  - Evaporation and other system losses
  - Lower Basin’s half of Mexican Treaty obligation

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What Will Happen to Arizona?

- The first two tiers of shortage will reduce CAP deliveries to Recharge and Non-Indian Ag customers
- Because of reduced deliveries, the price of CAP water will go up for everyone else
- Impending shortage in Arizona is serious, but is not a crisis due to decades of work to prepare
- Ongoing efforts address both the short-term threat of shortage and the long-term threat of structural deficit
- More work is needed

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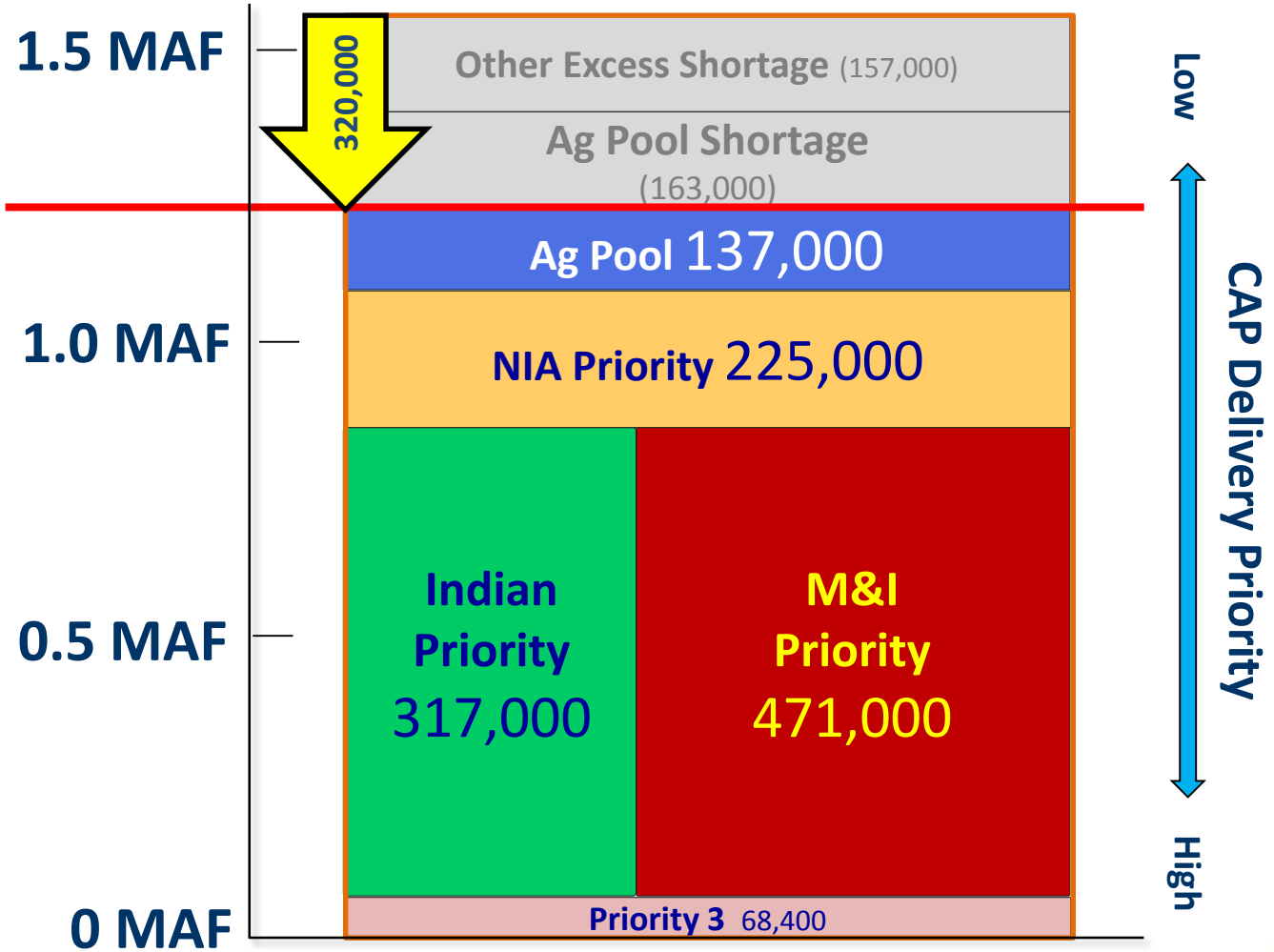
2017 Level 1 Shortage



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So - What Are We Doing?

- Arizona Water Banking Authority has stored 3.4 MAF underground to firm M&I and Indian supplies and others have stored nearly 6 MAF
- CAP (AZ) has entered into a Memorandum of Understanding with MWD (CA), SNWA (NV) and Reclamation to leave 720 KAF in Lake Mead through 2017 (shortage mitigation)
  - CAP share is 345 KAF
- Pilot System Conservation Program among these parties and Denver Water to identify and fund efforts to create “system water” (also begins to address structural deficit)
- Many other actions in addition to these recent programs

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	Lower Basin Pilot Drought Response Actions MOU	Pilot System Conservation Agreement
Goal	**RESERVOIR PROTECTION** - Store or conserve **740 kaf** in Lake Mead	Create **SYSTEM WATER** in Lake Mead / Lake Powell **(est. 75 kaf)**
Parties	BOR, ADWR, CAP, SNWA, CRCN, MWD, CRBC	BOR, CAP, MWD, SNWA, Denver Water
Term	2014 – 2017	2015 – 2016, or until funds expended
Scope	**Lower Basin** Colorado River contractors (AZ, CA, NV) and entitlement holders	**Basin-wide**: contractors and entitlements holders
Commitments	Res. Protection Total = **740 kaf** **CAP = 345 kaf,** MWD = 300 kaf, SNWA = 45 kaf, BOR = 50 kaf ADWR, CRCN, CRBC = 0	**Total = $11M** BOR = $3M, **CAP = $2M**, MWD = $2M, SNWA = $2M, Denver Water = $2M
CAP Commitments	Create 345 kaf through conservation/storage in Lake Mead by EOY '17 - **ICS Programs**: Ag Pool, and Local Supply Replacement - **System Water**: YMIDD, AZ Unused (Art. II.B.6), Turnback	Contribute **funding ($2M)** **- All System water**
CAWCD Board Activities	Dec. '14 Board Approval of Agreement – including CAP Reservoir Protection Plan components, Oct. '14 Board Approval of Ag Pool program (~$5M reserves), Nov. '14 briefing on ICS program including Local Supply Replacement	April '14 Board Approval of Agreement authorizing $2M contribution and to implement necessary agreements
Additional CAP Actions	Develop Local Supply Replacement ICS project for '16,	Participate with funders in review/approval of conservation projects. Arizona Colorado River conservation projects must obtain CAP forbearance to be approved/funded. CAP has veto authority for any projects in Arizona.

“Bending the Curve”

- Requires significantly reducing or eliminating the structural deficit in the Lower Basin
- Benefits accrue to both Upper and Lower Basins
- Ultimately, there are only three ways to slow the decline of Upper and Lower Basin reservoirs:
  - Reduce system losses
  - Reduce demand
  - Augment supply

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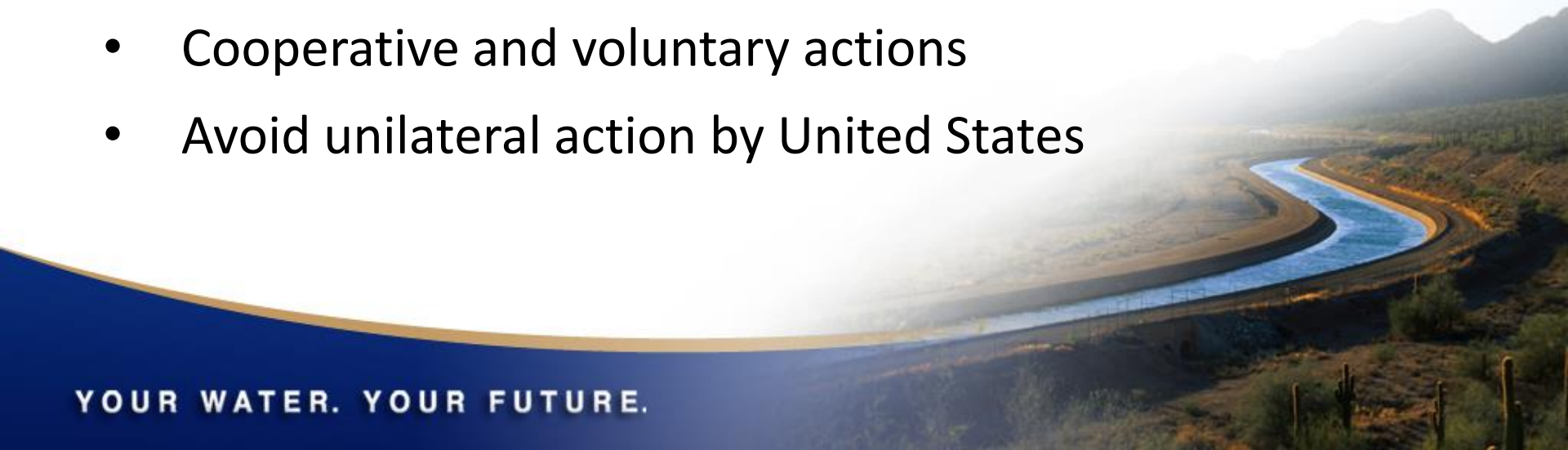
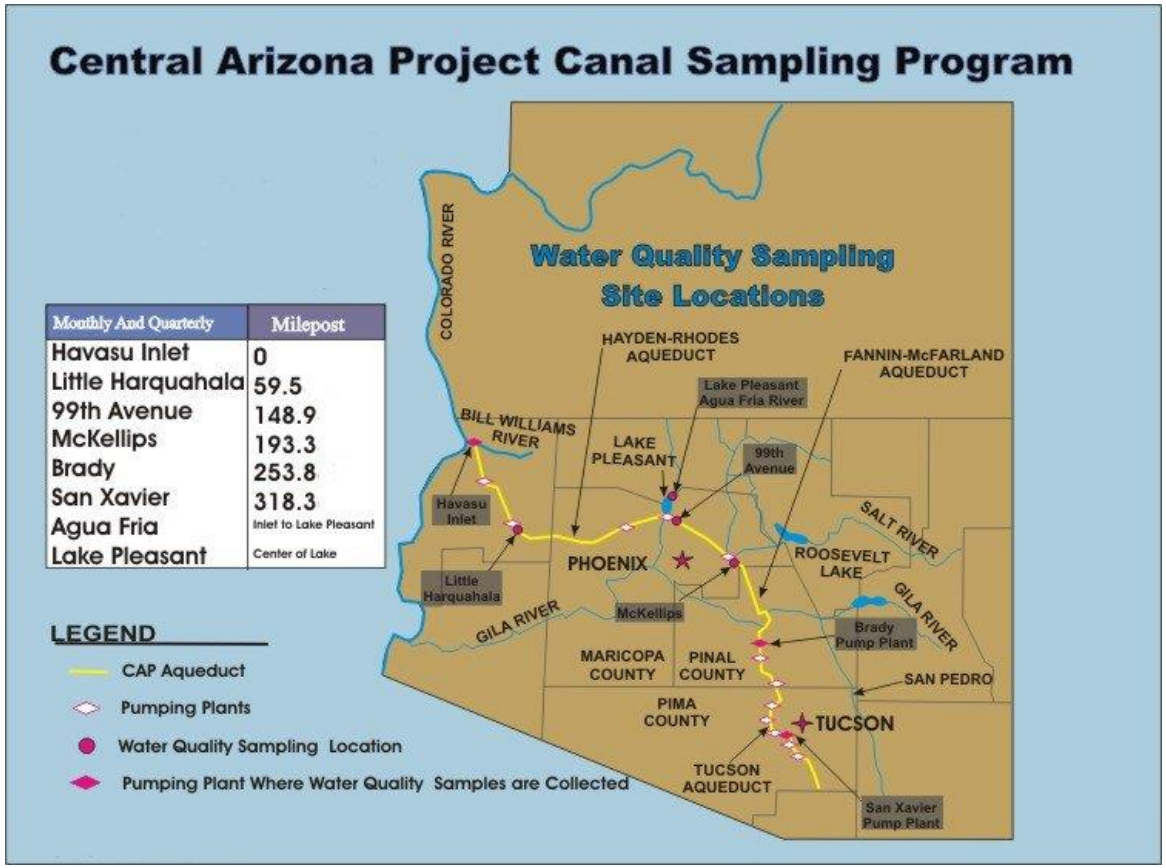
Ongoing Efforts and Objectives

- 5-year pilot programs (2015-2019)
- Build on and protect 2007 Guidelines
- Restore risk to levels in 2007 Guidelines
- Begin addressing structural deficit and prepare for 2020 re-consultation on Guidelines
- Remain within the “Law of the River”
- Cooperative and voluntary actions
- Avoid unilateral action by United States



Water Quality

CAP has an extensive monitoring program



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Water Quality

CAP water is generally well below the Primary Maximum Contaminant Levels (MCLs) established by the Safe Drinking Water Act

Example Water Quality Measurements

Constituent	Measured*	MCL
Arsenic	2.3 – 4.4	10
Benzene	ND – 1.4	5
Chromium	ND – 6.1	100
Copper	ND – 4.0	1300
Nitrate	ND – 0.30	10
Uranium	ND – 4.1	30

* From *2013 Annual Water Quality Report*

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Water Quality

- Primary MCLs are presumptive standard
- Measurement is at point of introduction
  - CAP aqueduct cannot be used for dilution
- Water quality impact analysis required
- Contracts will include monitoring and enforcement provisions

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Questions?