



Non-Indian Agricultural Priority Central Arizona Project Water Reallocation

Arizona Department of Water Resources
Central Arizona Water Conservation District
US Bureau of Reclamation

October 2, 2012

Agenda

- Availability of NIA Priority Water
- Structure of NIA Reallocation Process
- Selection Criteria
- Pricing Components
- Review of Allocation Recommendation
- Next Steps and Timeline
- Public Comments

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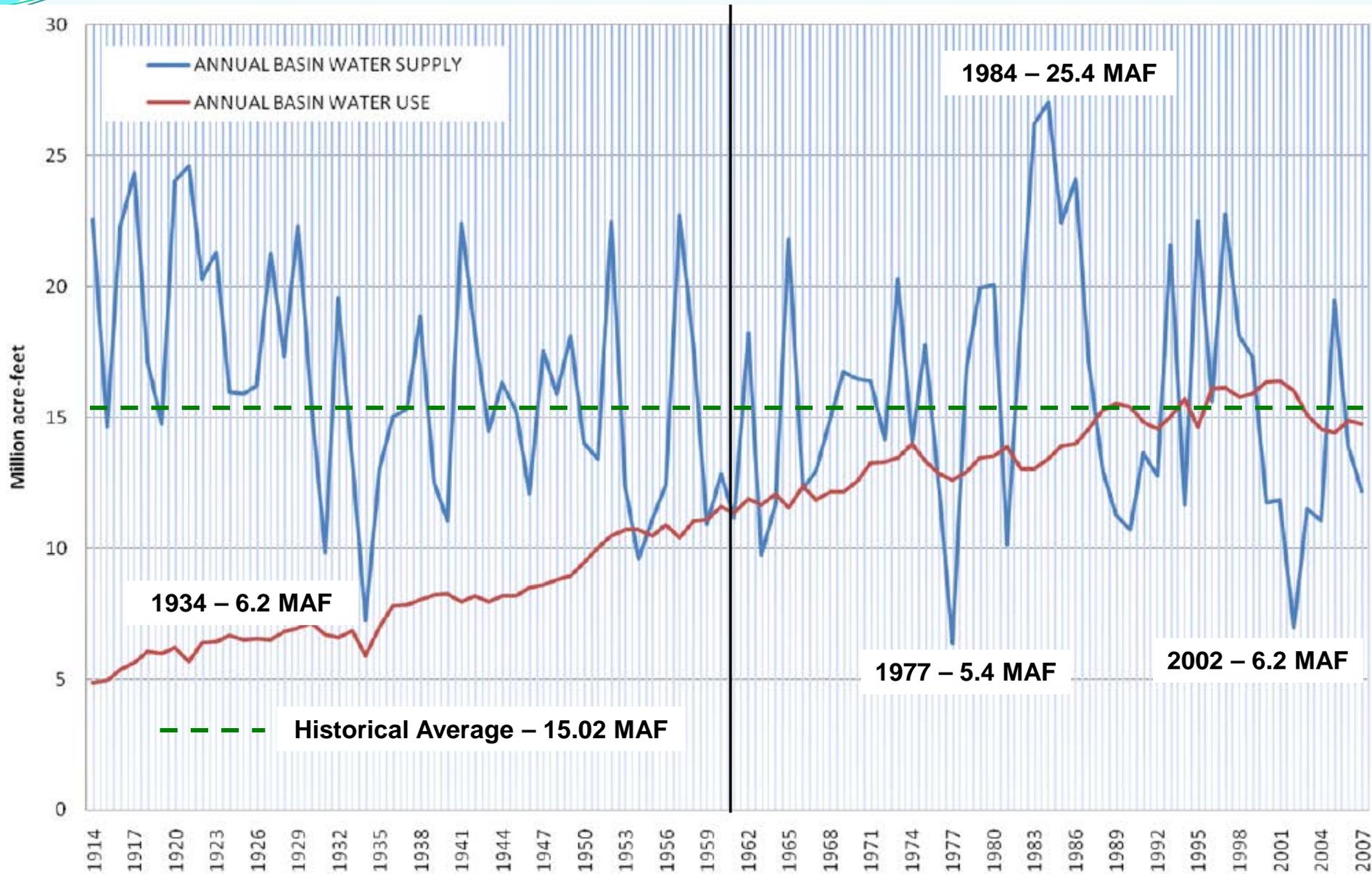
NIA Reallocation Water Supply Availability Discussion Topics

- **Water Supply Perspectives**
 - **Factors That Affect Arizona's Colorado River Supply**
 - **Factors That Affect Central Arizona Project's Supply**
- **What Happens If A Shortage is Declared**
- **Analysis of NIA Supply**

Factors That Affect Arizona's Colorado River Supply

- **Hydrologic Conditions**
- Upper Basin Water Demand Build-Up
- Operation of the Yuma Desalter
- Shortages to Mexico

Historical Colorado River Water Supply and Use



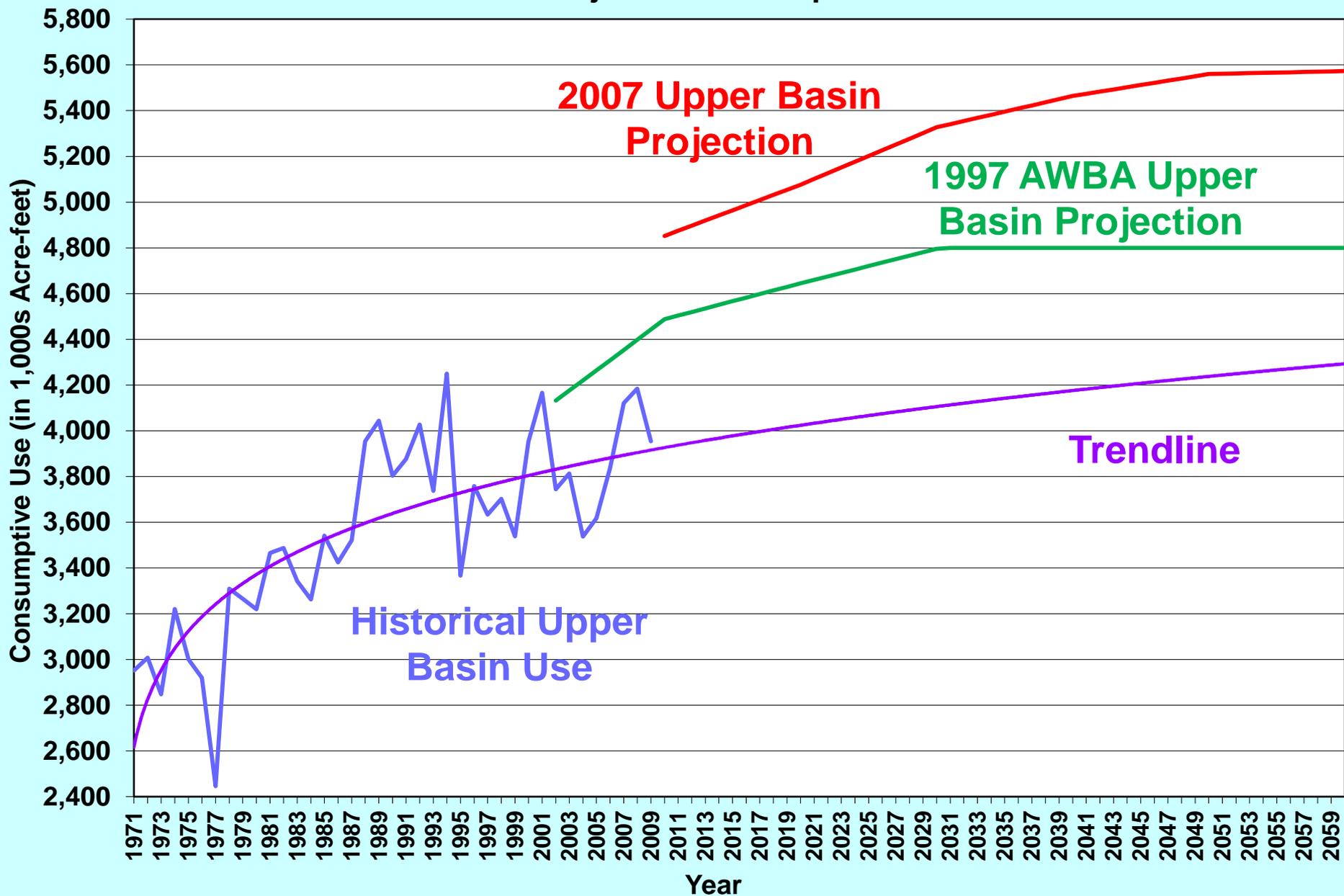
Factors That Affect Arizona's Colorado River Supply

- Hydrologic Conditions
- **Upper Basin Water Demand Build-Up**
- Operation of the Yuma Desalter
- Shortages to Mexico

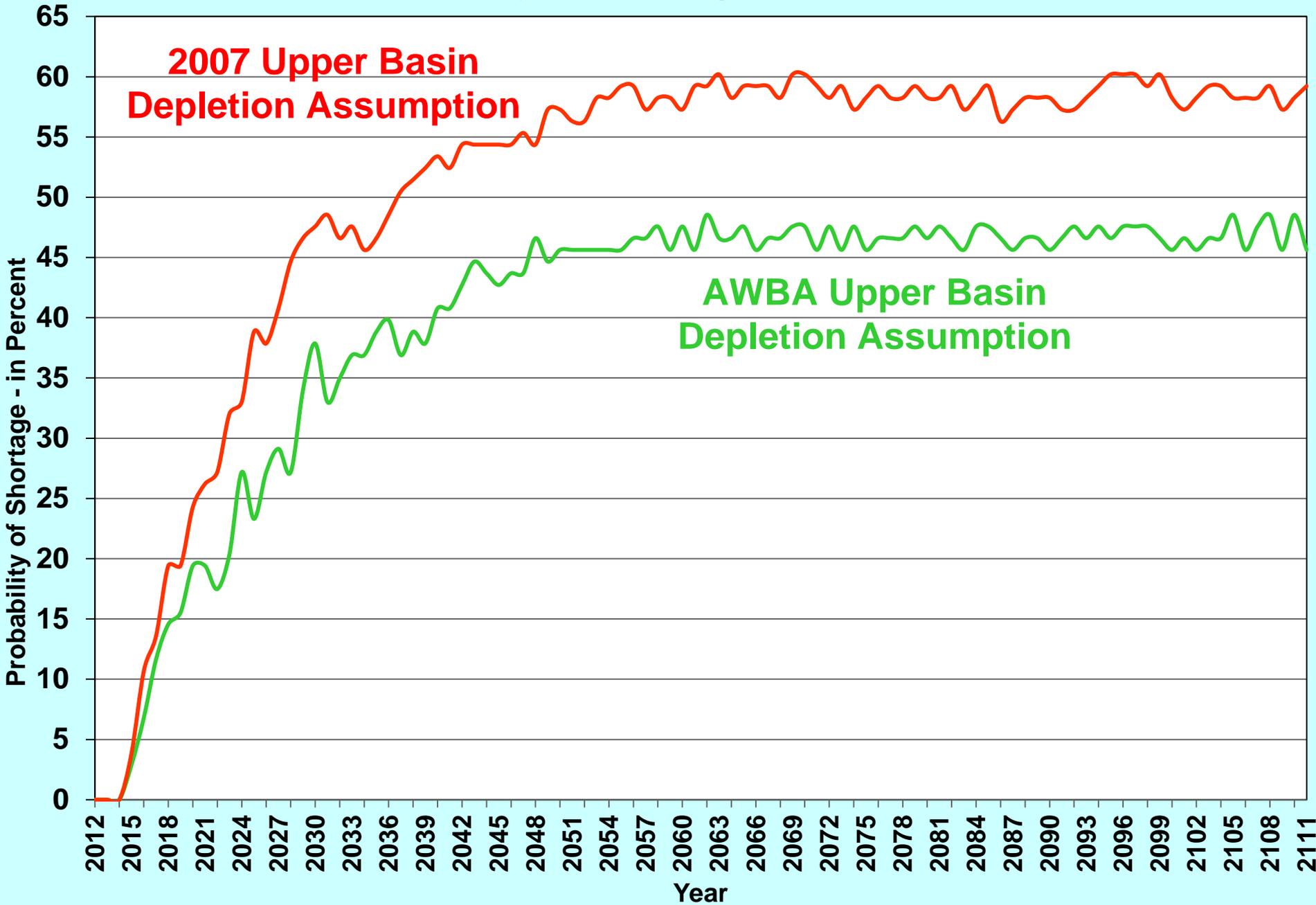
Upper Colorado River Basin Water Use Projections

- **Two Upper Colorado River Basin projections:**
 - **1997 Arizona Water Banking Authority (AWBA) Projection**
 - **4.8 million acre-feet (MAF) by 2060**
 - **2007 Upper Colorado River Commission Projection**
 - **5.6 MAF by 2060**

Comparison of Upper Colorado River Basin Historical and Projected Consumptive Use



Probability of Shortages to Arizona



Factors That Affect Arizona's Colorado River Supply

- Hydrologic Conditions
- Upper Basin Water Demand Build-Up
- **Operation of the Yuma Desalter**
 - **Not operating the Yuma Desalter reduces storage in Lake Mead (109,000 AF Wellton-Mohawk IDD drainage water bypassed)**
- Shortages to Mexico

Factors That Affect Arizona's Colorado River Supply

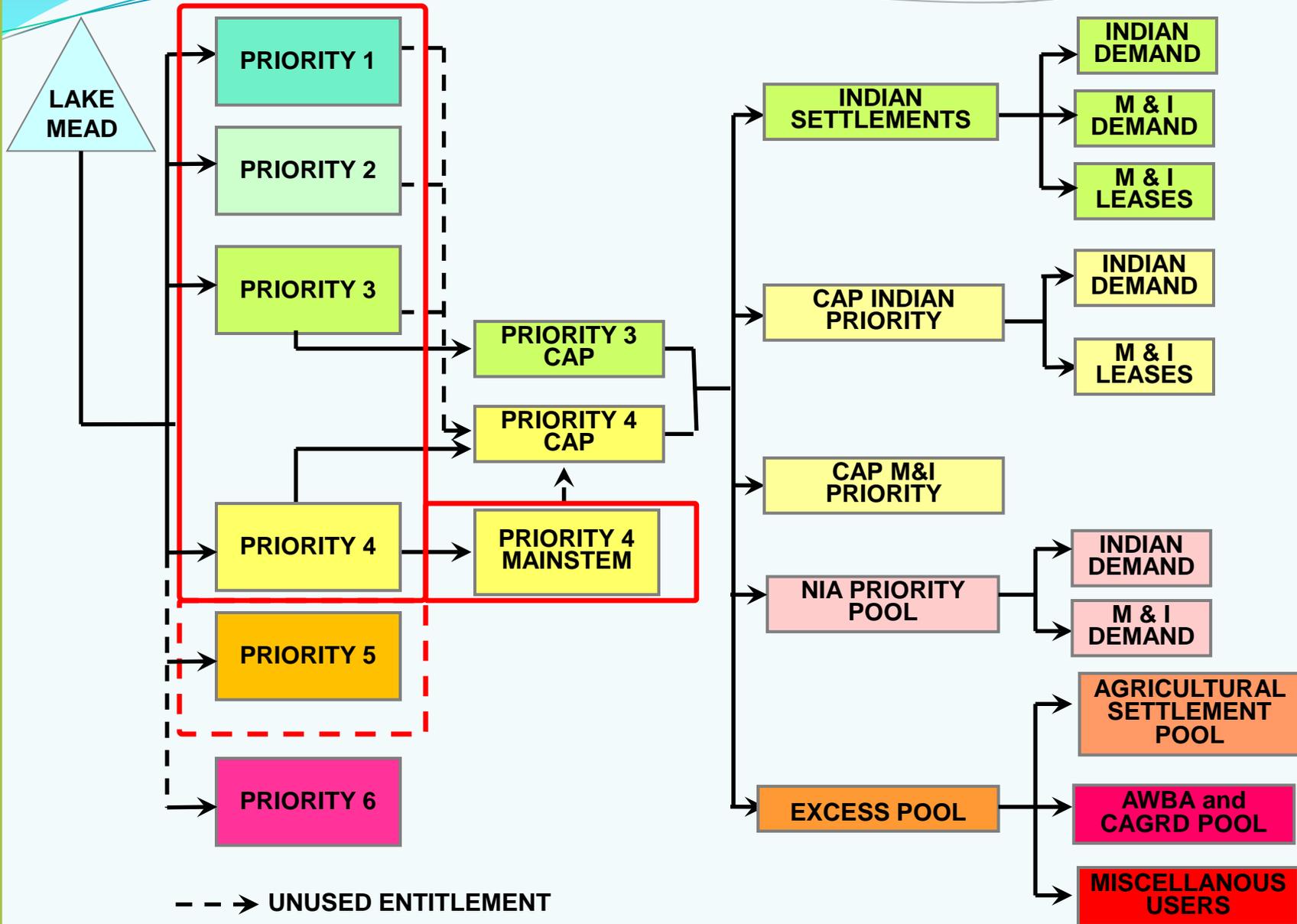
- Hydrologic Conditions
- Upper Basin Water Demand Build-Up
- Operation of the Yuma Desalter
- **Shortages to Mexico**
 - **If Mexico does not share in shortages, it can cause Lake Mead to stay in shortage conditions for longer durations**

Factors That Affect Central Arizona Project's Supply

- Hydrologic Conditions
- Upper Basin Water Demand Build-Up
- Operation of the Yuma Desalter
- Shortages to Mexico
- **Arizona mainstem consumptive uses can impact supplies available to the Central Arizona Project (CAP)**

SCHMATIC OF DELIVERY

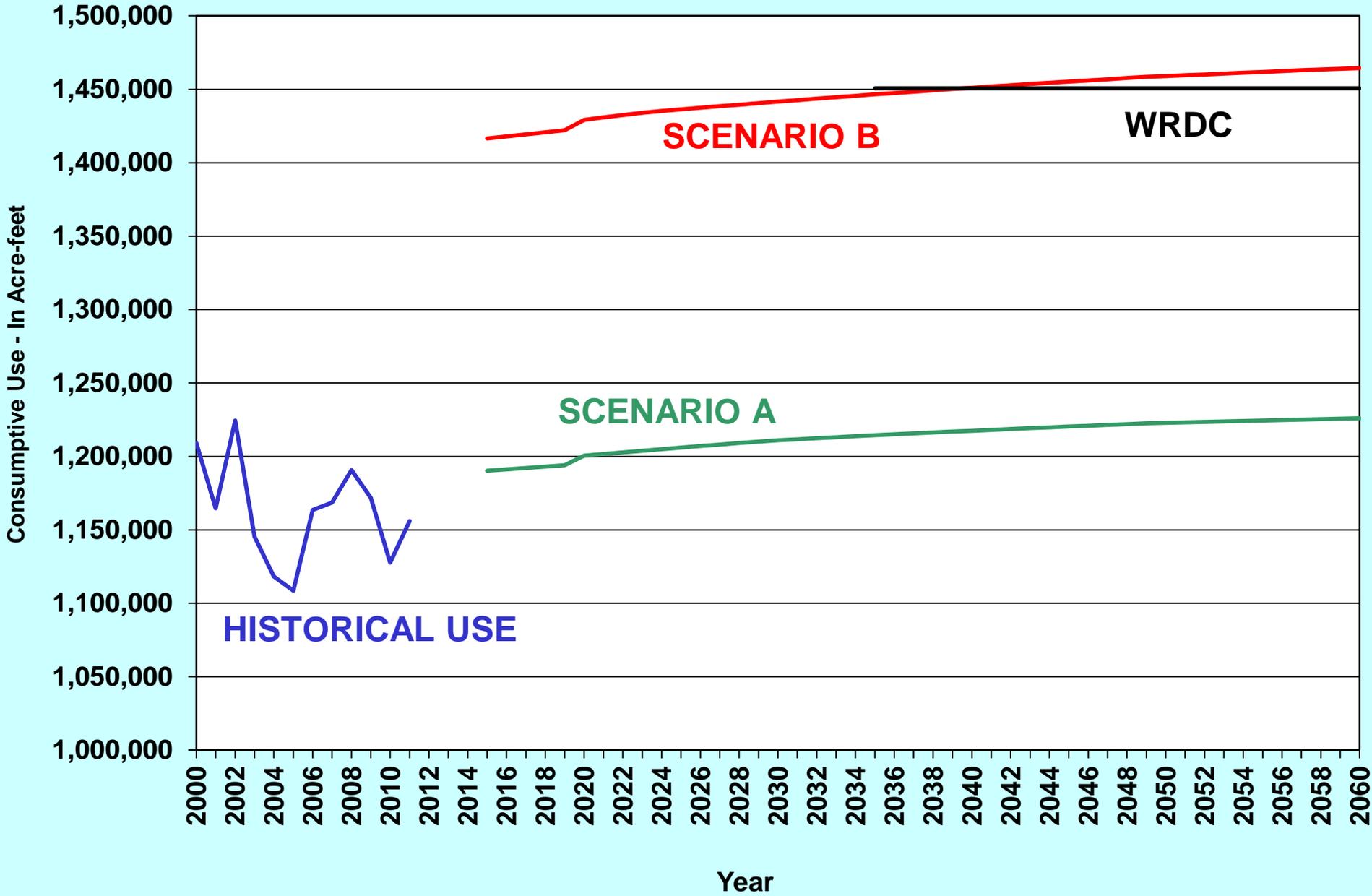
ARIZONA'S COLORADO RIVER ALLOCATION OF 2.8 MILLION ACRE-FEET (MAF)



Mainstem Water Use Projection Assumptions

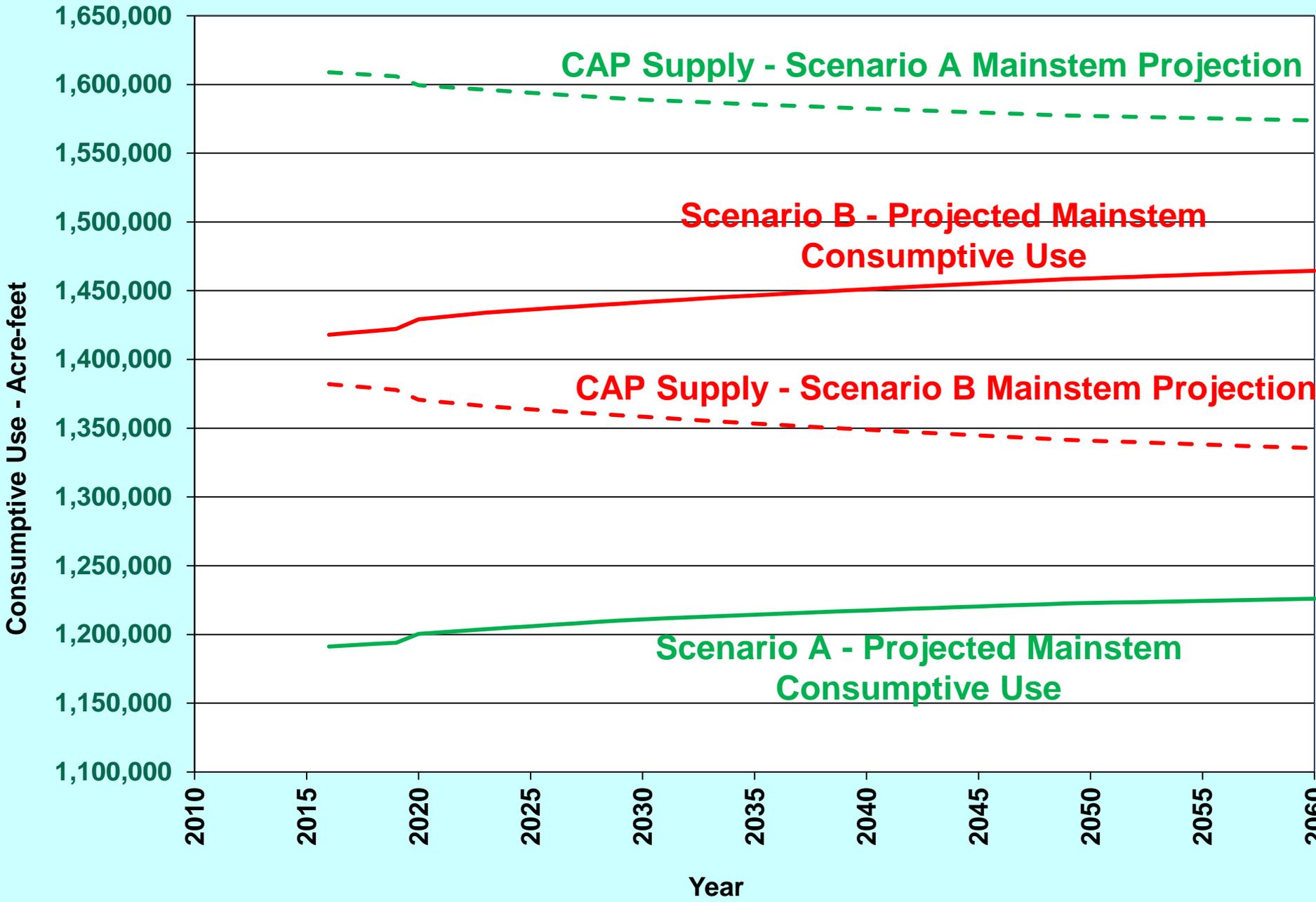
- **Scenario A: Mainstem uses grow at a modest rate**
- **Scenario B: Mainstem uses completely utilize their entitlements**

Arizona Colorado River Mainstem Consumptive Use Projections For the NIA Reallocation

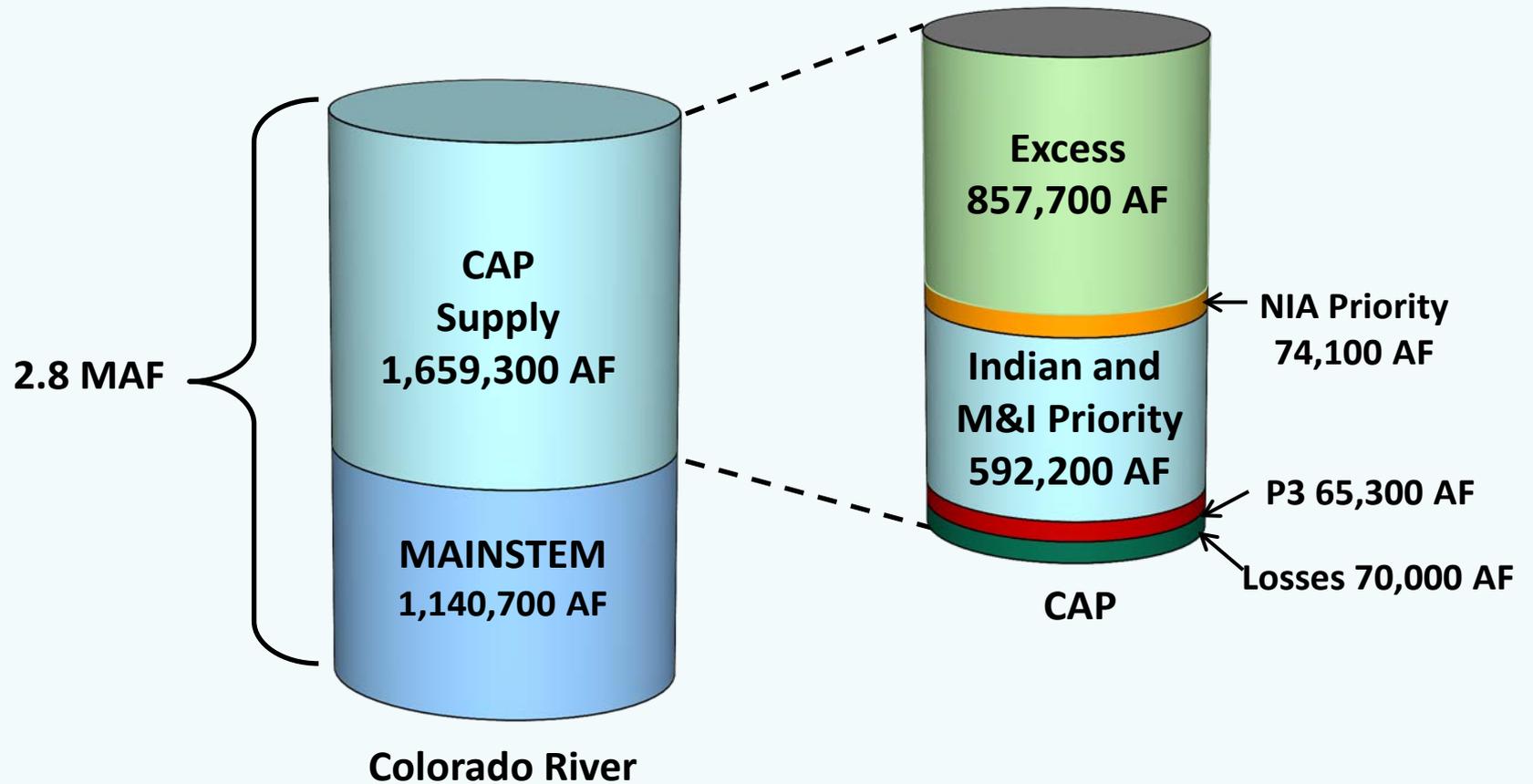


2012 NIA Allocation

Projection of Mainstem Uses and Central Arizona Project Supply

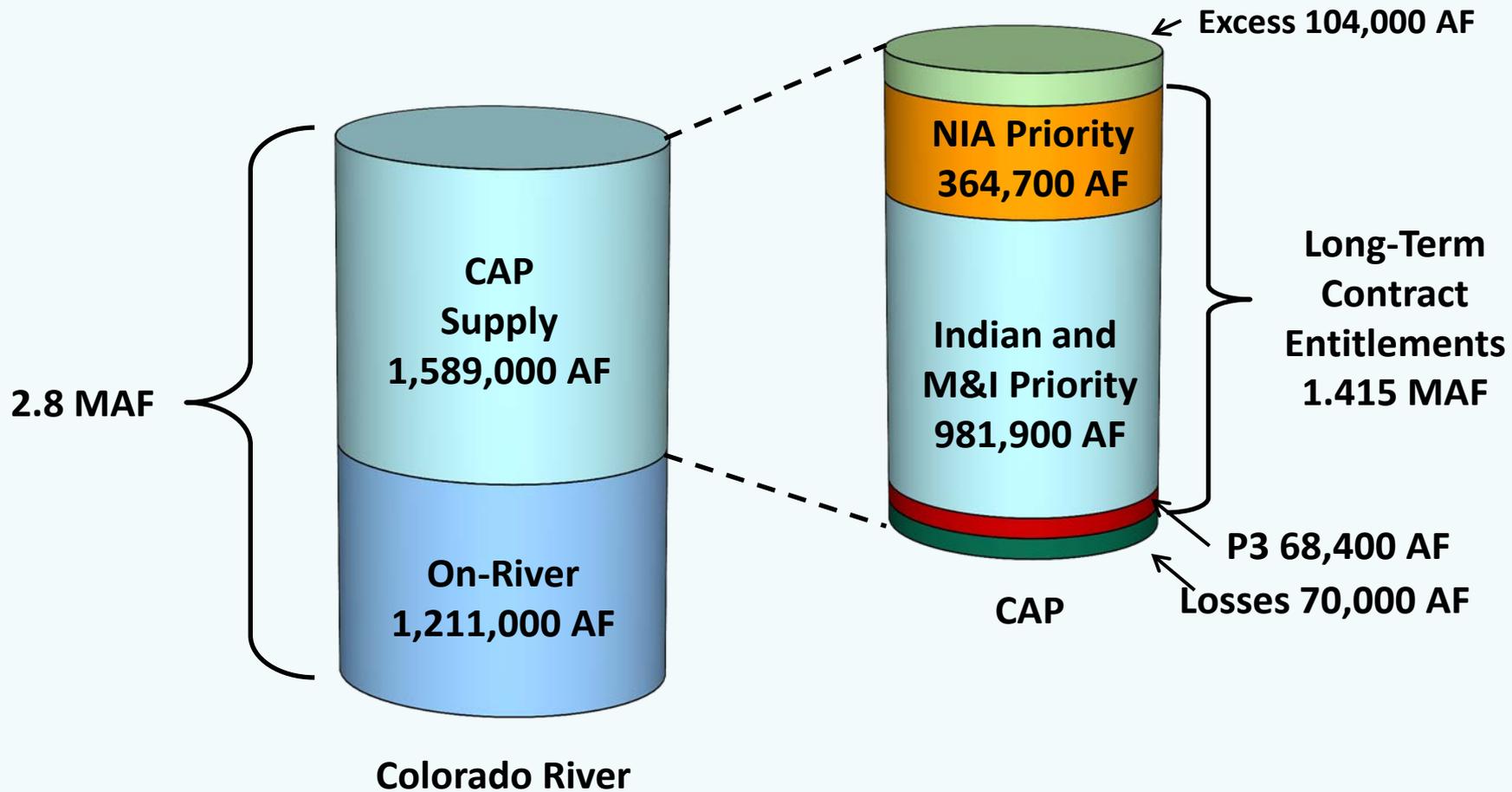


Mainstem Water Use Projections*

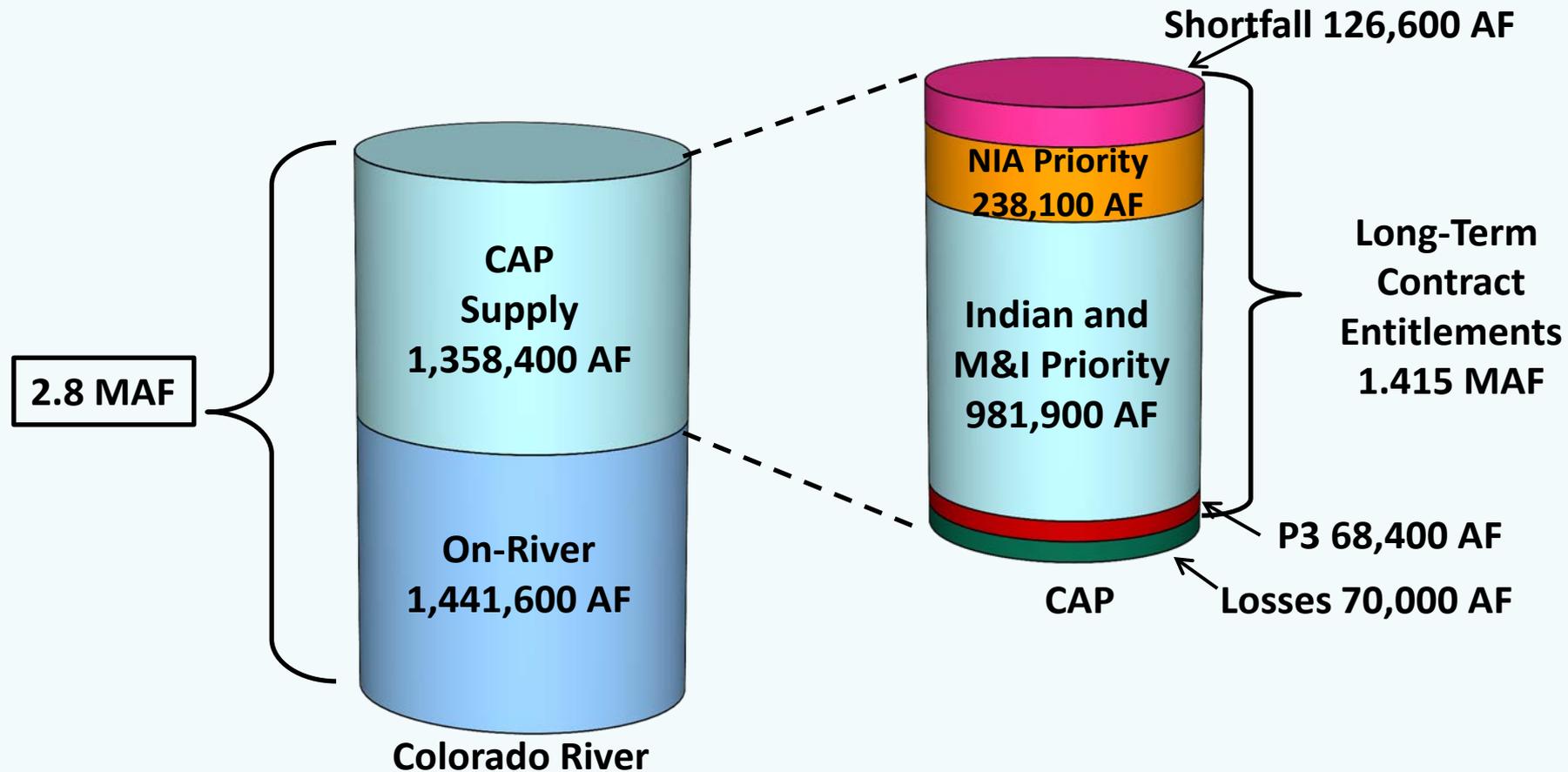


*Based on 2010 data, with some simplification to show diversions = deliveries

Mainstem Water Use Projections: Scenario A (2030)



Mainstem Water Use Projections: Scenario B (2030)

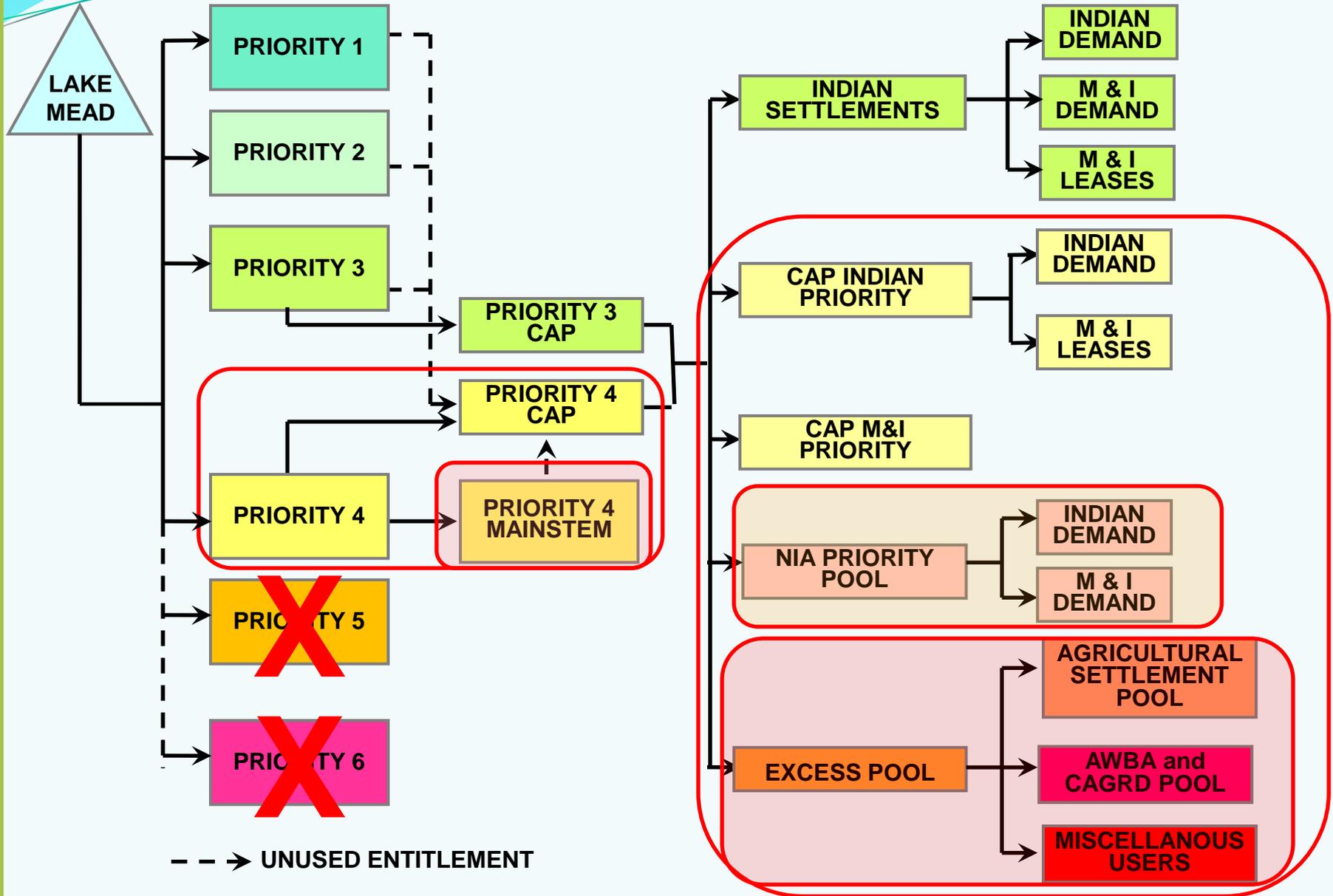


What Happens If There Is a Lower Basin Shortage?

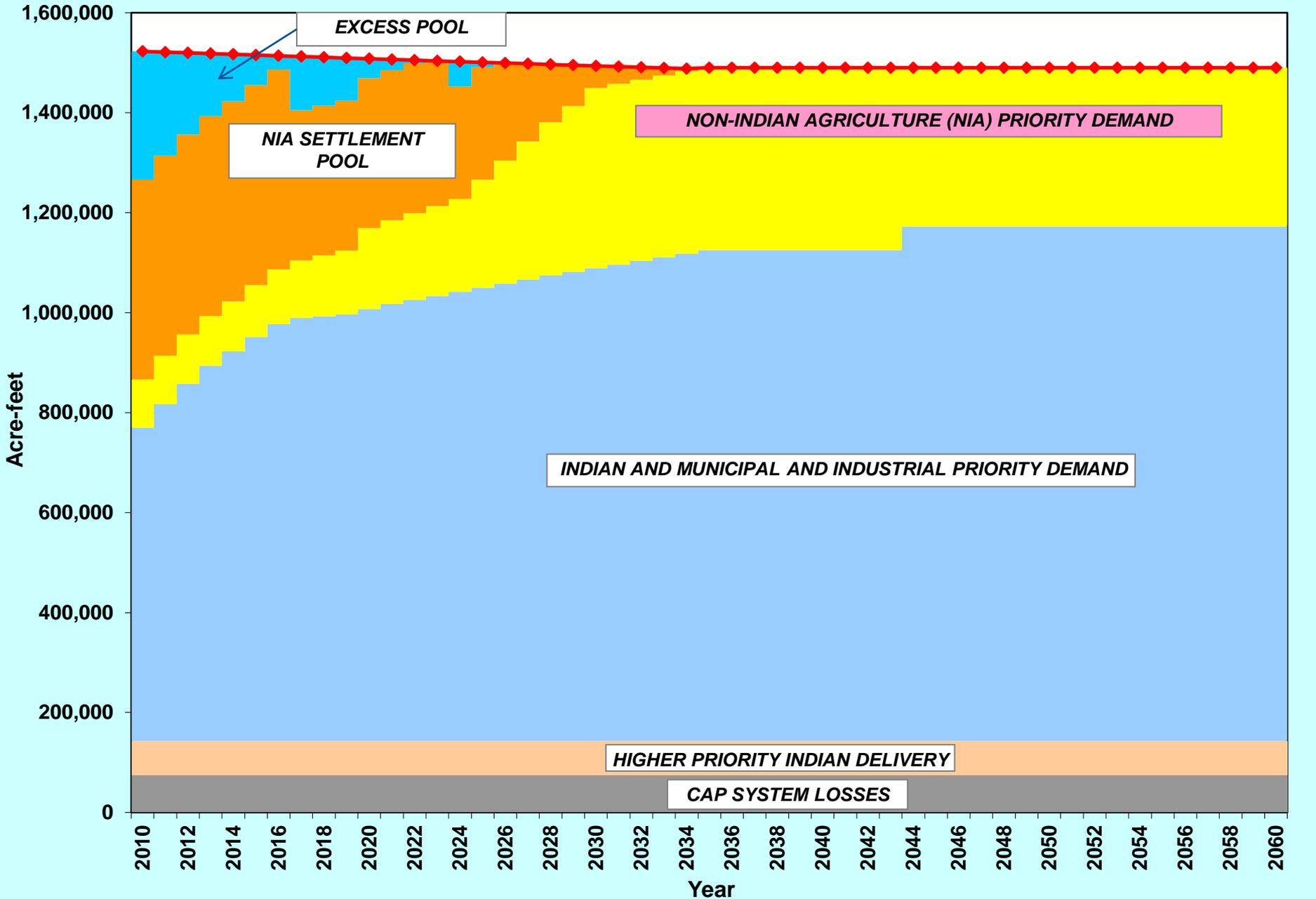
- **Mainstem Priorities 5 and 6 contractors' supplies are reduced to zero**
- **Mainstem Priority 4 contractors' supplies are reduced**
- **CAP reductions occur in the following order:**
 - **Other Excess (Miscellaneous Users)**
 - **AWBA, CAGRD Reserve, Other Recharge**
 - **Agricultural Settlement Pool**
 - **NIA long-term contracts (Indian and non-Indian)**
 - **M&I and Indian long-term contracts**

SCHMATIC OF DELIVERY

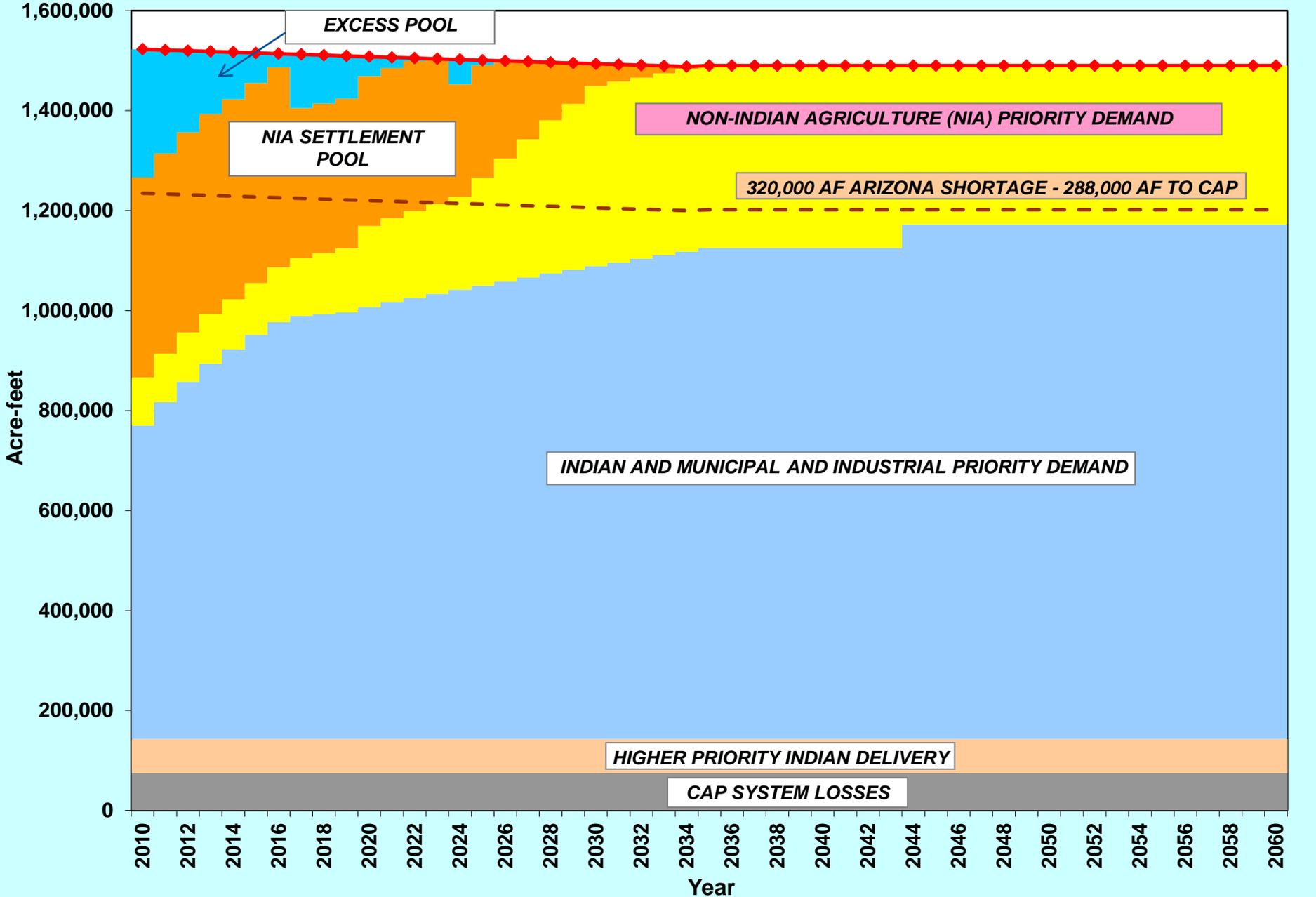
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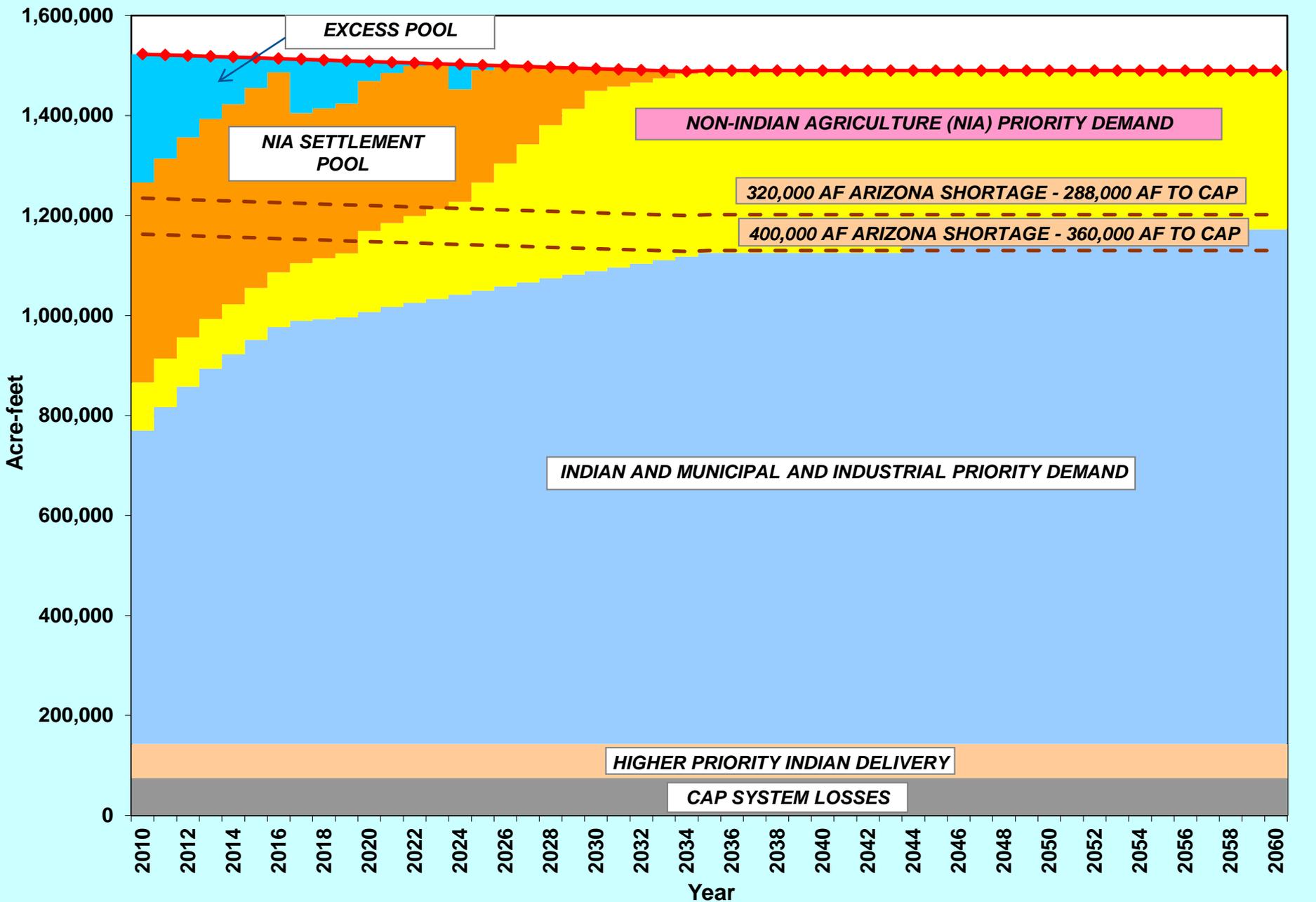
Projected Central Arizona Project Supplies and Subcontract Deliveries 2010 - 2060



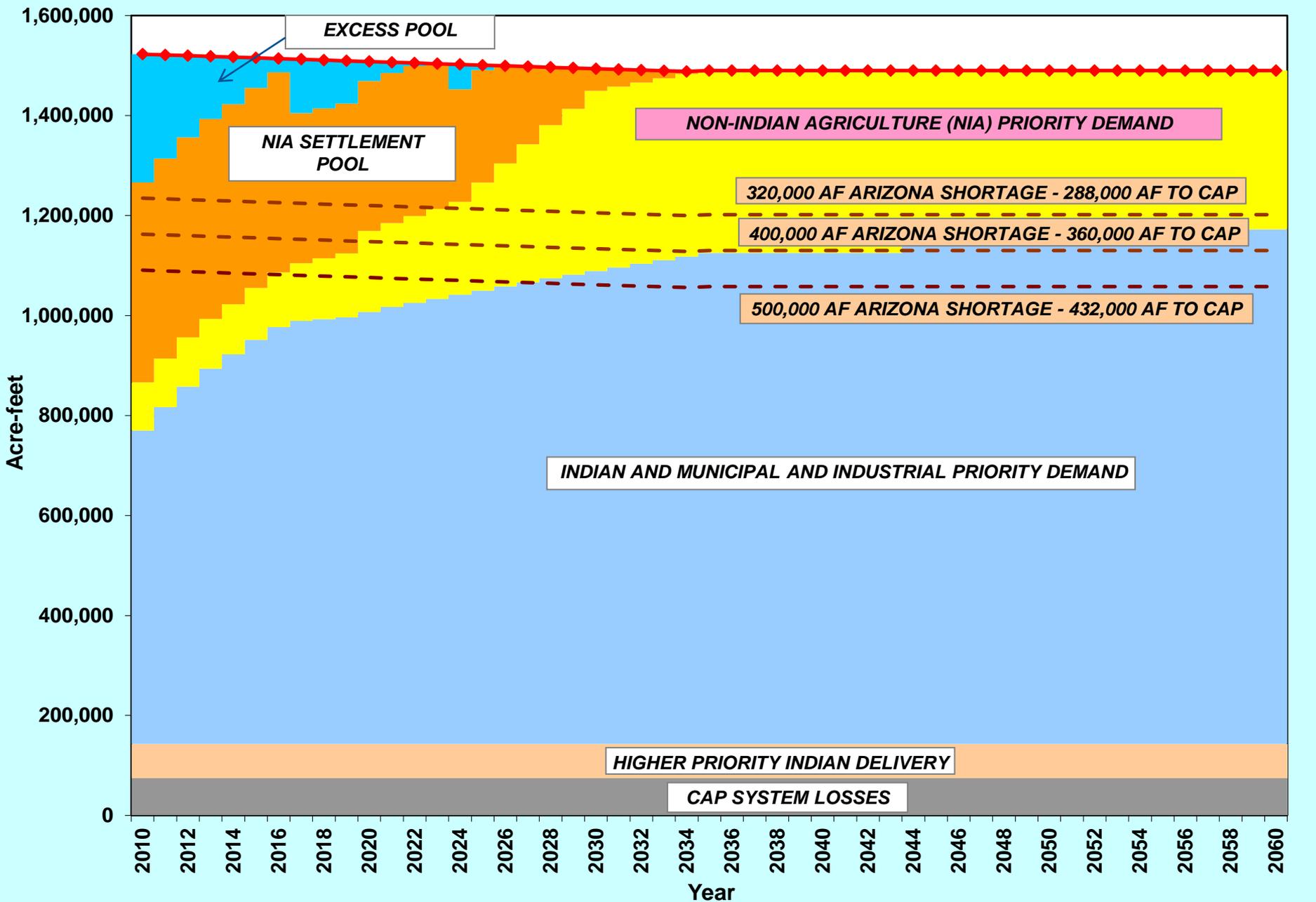
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Projected Central Arizona Project Supplies and Subcontract Deliveries 2010 - 2060



Projected Central Arizona Project Supplies and Subcontract Deliveries 2010 - 2060





NIA Reallocation Water Supply Availability

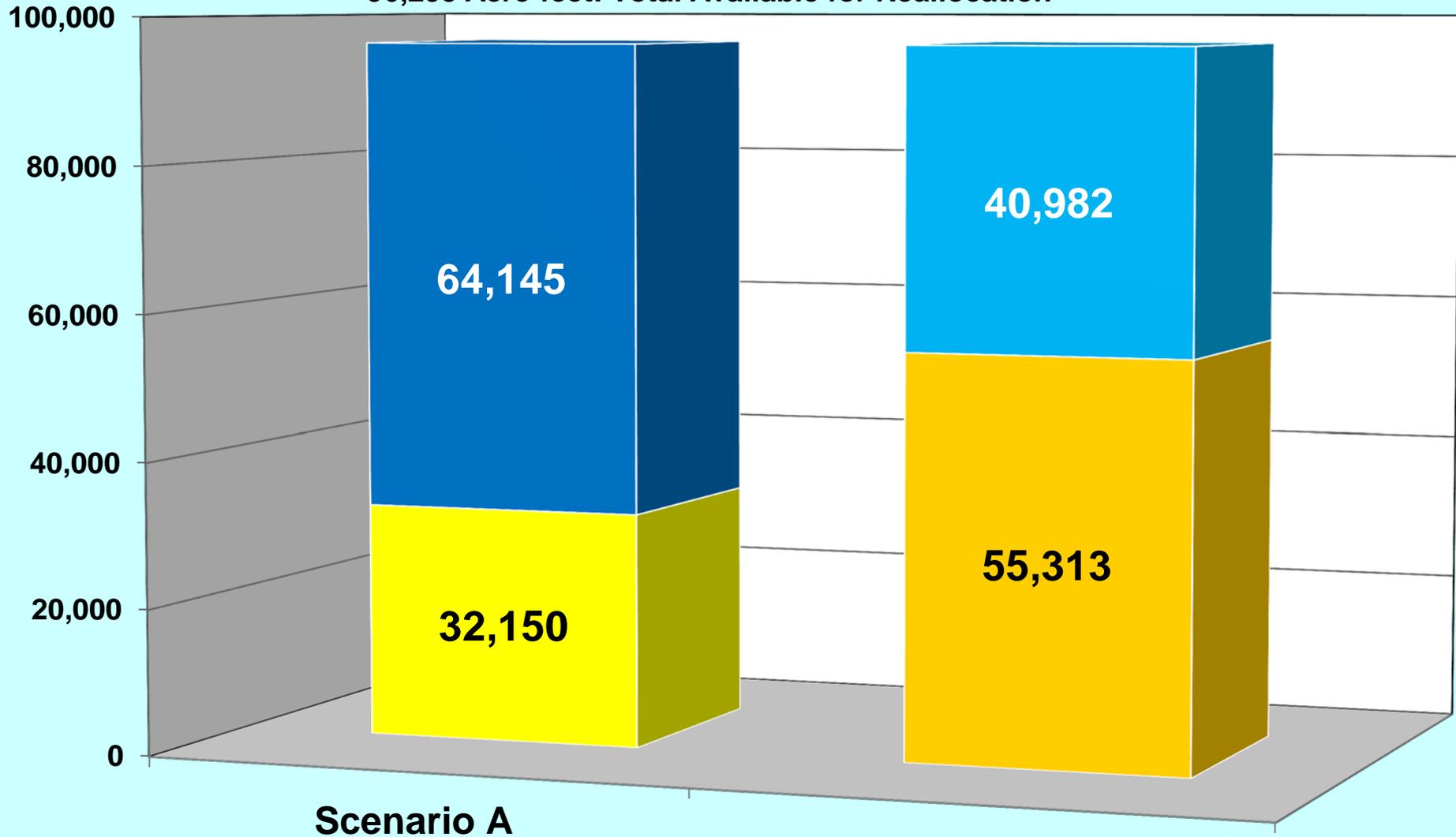
Analysis of NIA Priority Water Supply

NIA Supply Analysis Assumptions

Basin Hydrology -----	<i>Observed Record (1906–2008)</i>
Upper Basin Demands (Depletions) ---	<i>4.8 MAF</i>
Operation of YDP -----	<i>No</i>
Mexico Shortage Sharing -----	<i>No</i>
Reservoir and Shortage Operations ---	<i>2007 Interim Guidelines</i>
Mainstem Use Projections -----	<i>Two Scenarios :</i> <i>Moderate Growth</i> <i>Full Use of Entitlements</i>

2012 NIA Reallocation - Supply Availability 2012 to 2111

96,295 Acre-feet: Total Available for Reallocation



Scenario A

Scenario B

 Scenario A: Average Annual Shortage

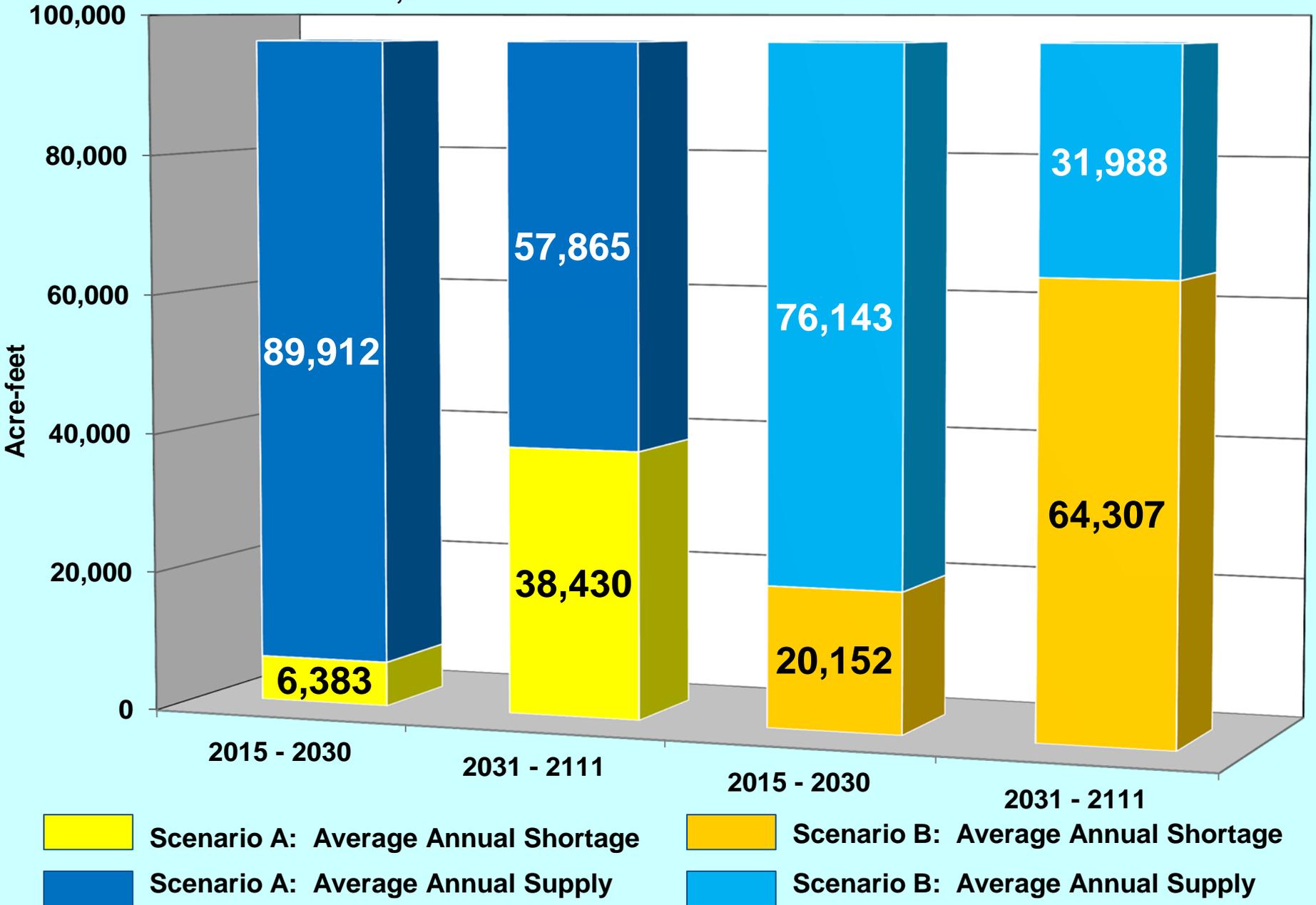
 Scenario B: Average Annual Shortage

 Scenario A: Average Annual Supply

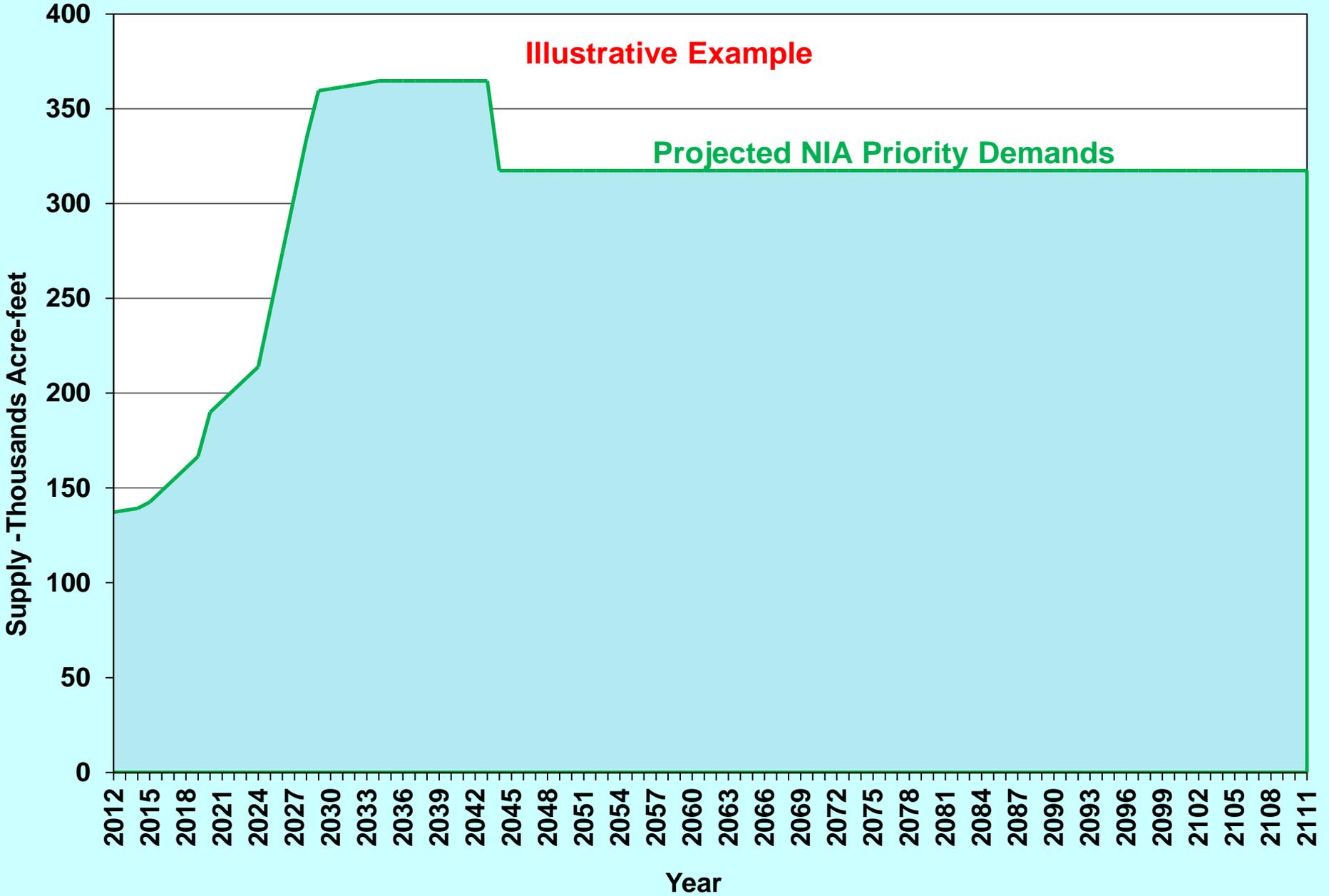
 Scenario B: Average Annual Supply

2012 NIA Reallocation - Supply Availability

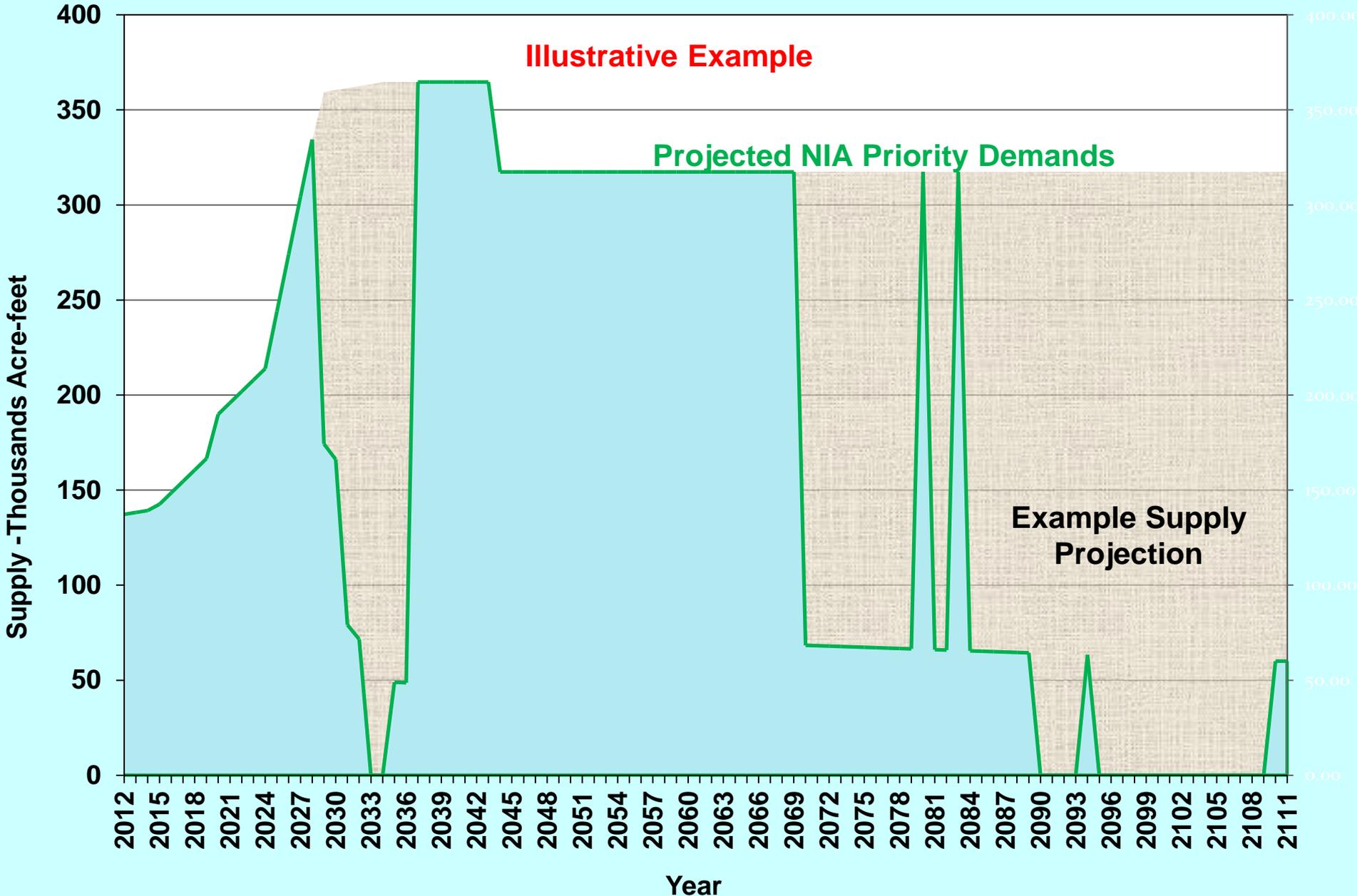
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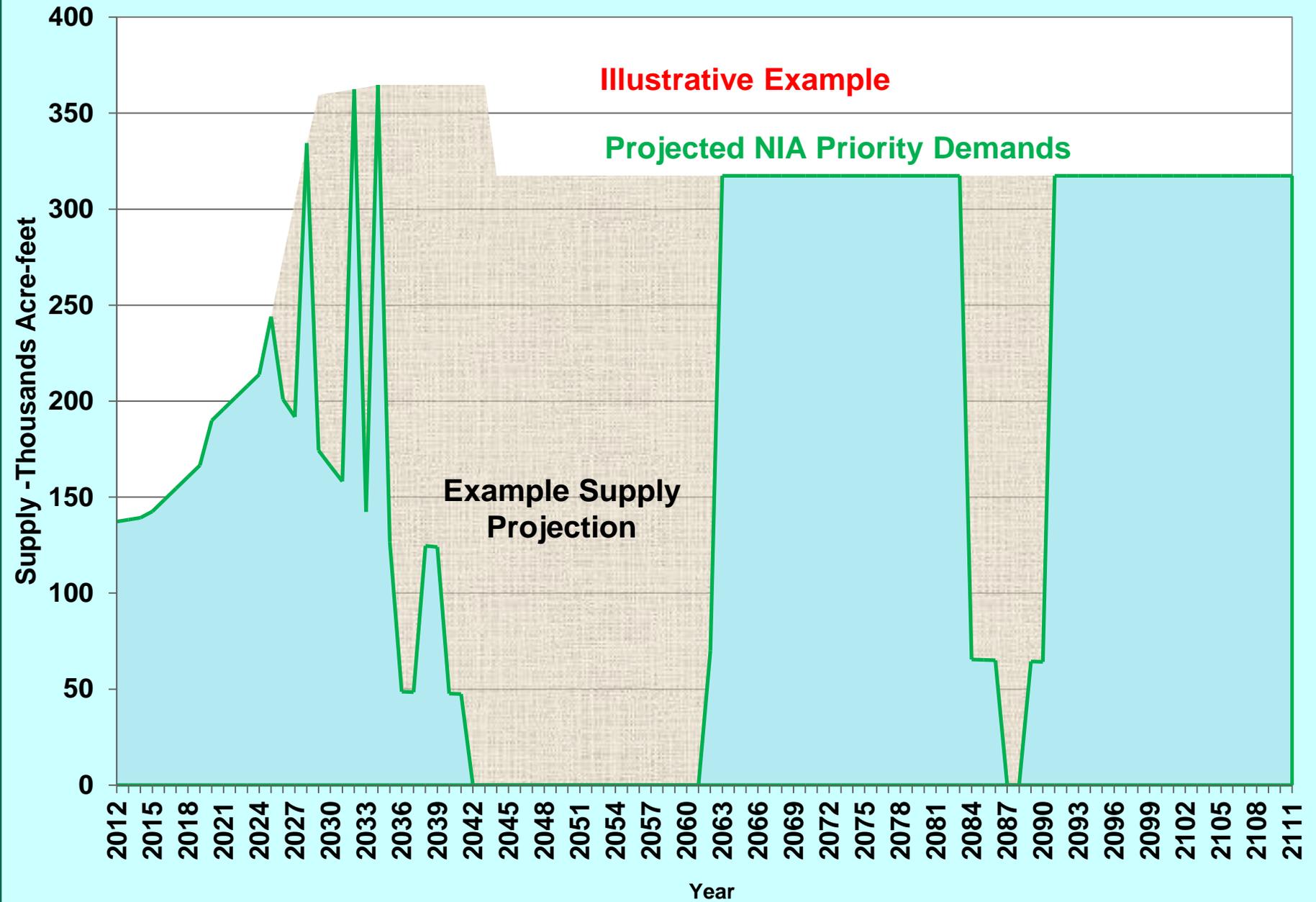
2012 NIA Reallocation Water Supply Analysis



2012 NIA Reallocation Water Supply Analysis



2012 NIA Reallocation Water Supply Analysis





NIA Reallocation Water Supply Availability

Questions ???

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- **Structure of NIA Reallocation Process**
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Reallocation Process - Overview

- Allocate 96,295 af in periodic intervals
 - Timing coincides with necessary actions as identified in the AZWS Agreement
- Created 'pools' to allow different water users to compete more fairly within their own category
- Process describes the volumes of water that will be made available and the periodic timing of these allocations

CAP Service Area/ Outside CAP Service Area

Evaluated projected near-term demands for these two areas to apply the same ratio of demand to the reallocation amount

Percentage of Projected Unmet Demands in Each Area

	WRDC Study	CO River Basin Study
CAP Service Area	94%	61%
Outside CAP Service Area	6%	39%

Selected division at 82% CAP / 18% Outside CAP

CAP Service Area
78,962 af

Outside CAP Service Area
17,333 af

Reallocation of 96,295 af NIA Priority Water

Periodic Interval Start Dates	CAP Service Area 78,962 af Total		Outside CAP Service Area 17,333 af Total
2012			
2021			
2021 – Phase 2 (if necessary)			
2030			

Reallocation of 96,295 af NIA Priority Water

Periodic Interval Start Dates	CAP Service Area 78,962 af Total		Outside CAP Service Area 17,333 af Total
	CAIDD & MSIDD per AZ Water Settlement	Remaining CAP Service Area	
2012	75,782 af Total for 2012 Interval		
2021	3,180 af		
2021 – Phase 2 (if necessary)			
2030			

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	<ul style="list-style-type: none"> • 5,910 af – CAIDD • 5,910 af – MSIDD 		
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2021 – Phase 2 (if necessary)			
2030			

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2021	3,180 af + unallocated from 2012 offered to CAIDD or MSIDD		
2021 – Phase 2 (if necessary)			
2030			

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2030	Unallocated 15,000 af offered to Pinal Co. Water Aug. Authority		

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2021	3,180 af + unallocated from 2012 offered to CAIDD or MSIDD		
2021 – Phase 2 (if necessary)			
2030	Unallocated 15,000 af offered to Pinal Co. Water Aug. Authority		

CAP Service Area Industrial and Municipal Use Pools

- Evaluated projected demands for industrial uses as percentage of the total M&I demands
 - ADWR AMA Assessment Reports – 12.5%
 - Water Resources Development Commission – 20.4%
- Applied an approximate average percentage (15%) to the available amount for reallocation (78,962 af) for the Industrial Pool (12,000 af)

Reallocation of 96,295 af NIA Priority Water

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2021 – Phase 2 (if necessary)		Any remaining unallocated amounts offered to M&I users in either area	
2030	Unallocated 15,000 af offered to Pinal Co. Water Aug. Authority		

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2012 Interval of Reallocation - CAP Service Area

Periodic Interval Start Dates	CAP Service Area 78,962 af Total	
	CAIDD & MSIDD per AZ Water Settlement	Remaining CAP Service Area
2012	75,782 af Total for 2012 Interval	
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Reallocation Goals

- Reduce groundwater overdraft
- Provide additional source of water to areas with limited availability of groundwater
- Meet current and future water demands
- Meet near-term demands for existing municipal providers and industrial water users of groundwater or Excess CAP water

Selection Criteria

Applies to All Applicants

- Qualified Applicants
 - Existing municipal water providers located inside the CAP Service Area
 - Does not include irrigation districts that serve non-irrigation uses
 - Industrial users located inside the CAP service area
 - CAGR, including member service areas and water providers that serve member lands

Selection Criteria Applies to All Applicants

- Ability to pay for this water
- Direct use or storage and recovery
- Water management plan
 - Utilize this water supply by 2020
 - Discuss infrastructure required to use this supply
 - Provide plan to manage shortage impacts
 - If an alternate water supply will be used, discuss source and infrastructure needed

Selection Criteria

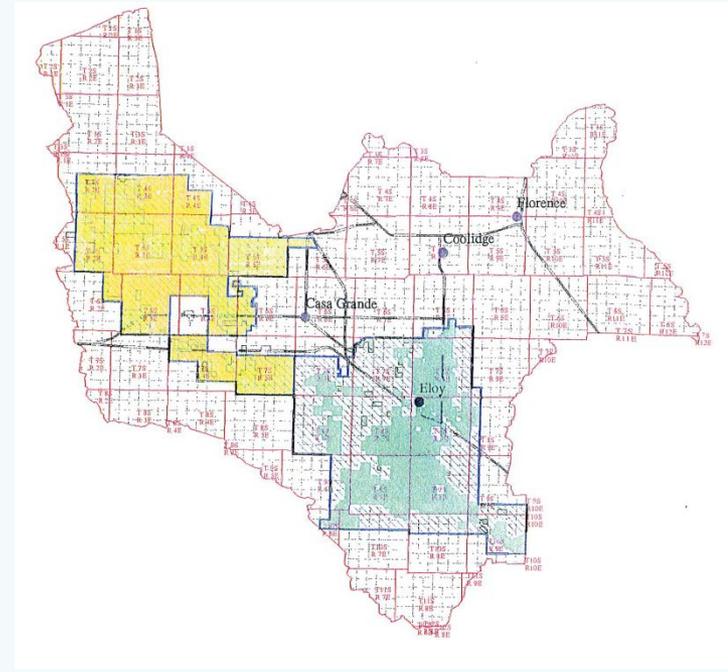
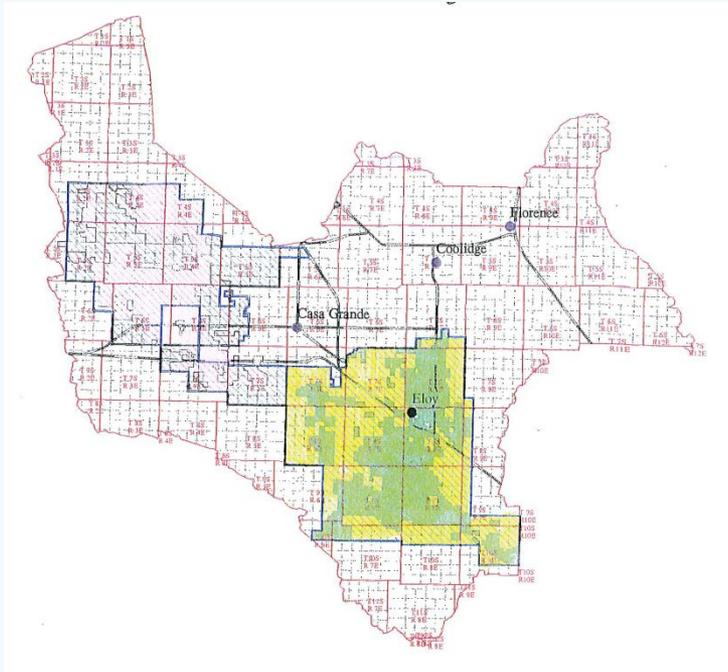
Applies to All Applicants

- Reallocation recommendations based on 2020 Demand and Supply Imbalance
- Demand and Supply Imbalance = Projected Demand for 2020 – Projected Renewable Water Supplies for 2020
- If sum of all Requested Volumes for each pool of water exceeds the available amount, water will be allocated through a pro rata distribution

Selection Criteria CAIDD and MSIDD Areas Only

CAIDD Area Map
Exhibit 9.3.4.3

MSIDD Area Map
Exhibit 9.3.4.4



Selection Criteria

CAIDD and MSIDD Areas Only – 5,910 af Each Area

- Municipal providers in the areas identified will be evaluated on the criteria described
- CAGR D is not eligible for these volumes
- Municipal providers in these areas are not limited to the volumes specified

Selection Criteria

Industrial Users Only – 12,000 af

- Qualified applicants will have an existing water demand
- Requested Volume will be used within the CAP Service Area
- Demand and Supply Imbalance for 2020 must be greater than 400 af
- Applicants will be evaluated on the criteria described

Selection Criteria

Municipal Users – 51,962 af

- Applicants can include public and private water providers and the CAGR
- Applicants evaluated on the criteria described
- Providers with designations later than 2021 will be required to relinquish Groundwater Allowance Credits
 - Annual NIA Priority reallocation * 100 years * 0.67 average availability component

Selection Criteria

Municipal Users – 51,962 af

- CAGR D Demand and Supply Imbalance will be based on its projected 2020 replenishment obligation
- CAGR D Demand and Supply Imbalance could be reduced if member service areas or providers serving member lands receives part of the reallocation

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YOUR WATER. YOUR FUTURE.

Non-Indian Ag Reallocation

CAP Pricing
October 2, 2012

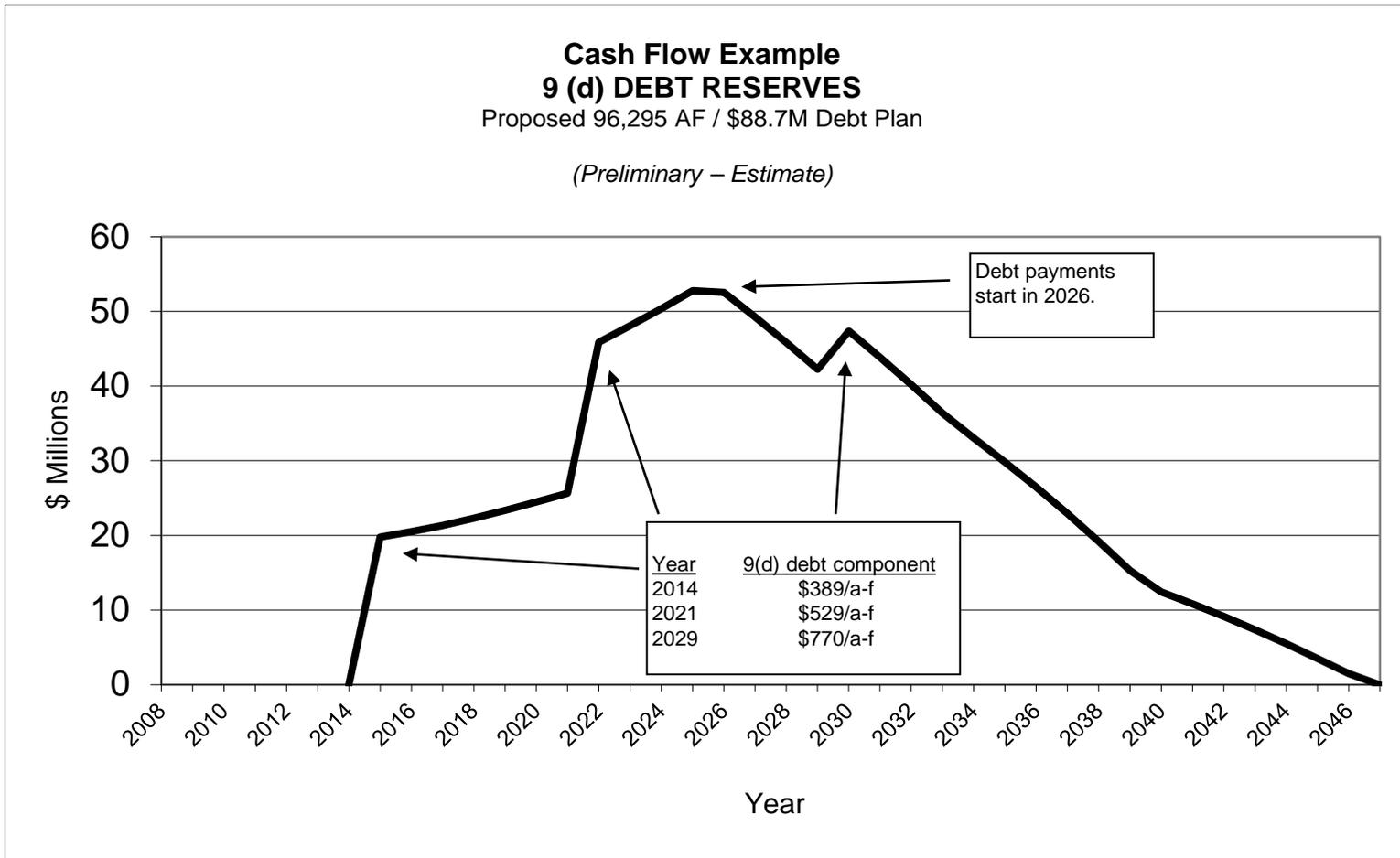
NIA Pricing Components

9(d) Debt

- Method of Calculation
 - Sinking fund
 - Up-front component, plus interest, will finance future CAP payments to the United States
 - Price components for multiple reallocations “levelized” to account for timing and interest
- Justification
 - Maintains neutral net cost impact on CAP
- Preliminary amount (12-31-2014 reallocation)
 - \$389/acre-foot

9(d) Debt Price Component

Cash Flow Example
9 (d) DEBT RESERVES
 Proposed 96,295 AF / \$88.7M Debt Plan
 (Preliminary – Estimate)



NIA Pricing Components

Back Capital Charges

- Method of Calculation
 - Historical CAP Capital Charges plus interest
- Justification
 - Contributes towards repayment of cost of construction of CAP infrastructure
 - Long-term NIA water needs canal capacity same as M&I
 - Reallocated NIA water assumed identical to M&I for repayment purposes
- Preliminary amount (12-31-2014 reallocation)
 - \$899/acre-foot

Back Capital Charges

Back Capital Charges Calculation

(Preliminary - Estimate)

Assumes Allocation Effective December 31, 2014

<u>Year</u>	<u>Annual</u> \$/a-f	<u>Accum.</u> <u>Interest</u> \$/a-f	<u>Total</u> \$/a-f	<u>Annual</u> <u>Interest</u> % p.a.	<u>Year</u>	<u>Annual</u> \$/a-f	<u>Accum.</u> <u>Interest</u> \$/a-f	<u>Total</u> \$/a-f	<u>Annual</u> <u>Interest</u> % p.a.
1993	\$ 5.00	\$ 6.39	\$ 11.39	3.79%	2005	\$ 28.00	\$ 8.57	\$ 36.57	3.45%
1994	\$ 10.50	\$ 12.90	\$ 23.40	6.25%	2006	\$ 24.00	\$ 6.24	\$ 30.24	4.69%
1995	\$ 21.00	\$ 23.17	\$ 44.17	6.30%	2007	\$ 21.00	\$ 4.27	\$ 25.27	5.12%
1996	\$ 30.00	\$ 29.42	\$ 59.42	5.76%	2008	\$ 21.00	\$ 3.12	\$ 24.12	3.41%
1997	\$ 39.00	\$ 34.00	\$ 73.00	5.90%	2009	\$ 18.00	\$ 2.04	\$ 20.04	1.92%
1998	\$ 48.00	\$ 36.82	\$ 84.82	6.12%	2010	\$ 15.00	\$ 1.39	\$ 16.39	1.31%
1999	\$ 48.00	\$ 31.97	\$ 79.97	5.86%	2011	\$ 15.00	\$ 1.17	\$ 16.17	1.63%
2000	\$ 48.00	\$ 27.45	\$ 75.45	6.43%	2012	\$ 15.00	\$ 0.90	\$ 15.90	1.91% ^{4/}
2001	\$ 43.00	\$ 20.68	\$ 63.68	5.12%	2013	\$ 15.00 ^{1/}	\$ 0.60	\$ 15.60	2.02% ^{4/}
2002	\$ 43.00	\$ 17.77	\$ 60.77	3.20%	2014	\$ 16.00 ^{2/}	\$ 0.30	\$ 16.30	2.30% ^{4/}
2003	\$ 40.00	\$ 14.85	\$ 54.85	2.39%	2015	\$ 8.50 ^{3/}	\$ 0.02	\$ 8.52	
2004	\$ 32.00	\$ 10.83	\$ 42.83	2.24%				\$ 898.89	

^{1/} Firm Rate

^{2/} Provisional Rate

^{3/} Advisory Rate

^{4/} Estimate

NIA Pricing Components

Property Tax Equivalency

- Only applicable to allocations outside CAP Service Area
- Method of Calculation
 - 3-year rolling average property tax per acre-foot formula described in statute (A.R.S. 48-3715.B.)
- Justification
 - Statutory requirement
- Preliminary estimate (12-31-2014 reallocation)
 - Approximately \$1,500/acre-foot
- No allocations outside of CAP Service Area are anticipated for the initial (2014) NIA reallocation

NIA Pricing Components

Supply Availability Charge

- Method of Calculation
 - Estimated
- Justification
 - Provides one source of funding, likely insufficient by itself, to help insure the “permanent” availability of CAP’s long-term contract delivery of 1.415 million acre-feet under “normal” water supply conditions
 - If all other Arizona contractors take full delivery of their Colorado River entitlements, CAP will have less than 1.415 million acre-feet available for delivery in a “normal” year
- Preliminary amount (12-31-2014 reallocation)
 - \$1,000/acre-foot

NIA Pricing Components (\$/acre-foot)

One time (acquisition) charges

Preliminary estimates for 12-31-2014 NIA reallocation

	<u>Inside CAP Service Area</u>
9(d) Debt Component	\$ 389
Back Capital Charges	899
Tax Equivalency	--
Supply Availability	<u>1,000</u>
	\$ 2,288

Price components are preliminary estimates, subject to change

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RECLAMATION

Managing Water in the West

Non-Indian Agricultural Priority Central Arizona Project Water Reallocation

October 2, 2012



U.S. Department of the Interior
Bureau of Reclamation

Approval Process

- Publication of proposed reallocation in the *Federal Register*
- Review of public comments received on the proposed reallocation
- Compliance with the National Environmental Policy Act for Secretary's final decision on the reallocation
- Publication of the Secretary of the Interior's final reallocation decision

Contracting Process

- CAP water subcontracts are 3-party contracts: CAWCD, Subcontractor, and Reclamation
- Initial NEPA compliance for Secretarial decision on the reallocation allows Reclamation to sign the subcontracts
- Article 4.3(f) enables Reclamation to sign the subcontract in advance of final environmental clearances

Subcontract Article 4.3(f)

“Notwithstanding any other provision of this subcontract, Project Water shall not be delivered to the Subcontractor unless and until the Subcontractor has obtained final environmental clearance from the United States for the system or systems through which Project Water is to be conveyed after delivery to the Subcontractor at the Subcontractor’s Project turnout(s). Such system(s) shall include all pipelines, canals, distribution systems, treatment, storage, and other facilities through or in which Project Water is conveyed, stored, or treated after delivery....”

“Final Environmental Clearances”

- Subcontractor submits plans for taking and using CAP water.
- Reclamation evaluates impacts from land-disturbing activities and documents in a NEPA document, as appropriate; cost of clearances paid by Subcontractor.
- Construction activities may proceed/water may be delivered.

RECLAMATION

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Next Steps

Activity	Proposed Schedule
Written and verbal comments due to Department regarding proposed policy and pricing	Friday, October 19, 2012
CAWCD staff to brief their Board	Thursday, November 1, 2012
Responses to comments available on Department website	Wednesday, November 21, 2012

Next Steps

Activity	Proposed Schedule
Final Reallocation Policy and application information available on Department website	Monday, December 17, 2012
Application for Reallocation deadline	Monday, February 18, 2013
Department to submit recommendation to the Secretary	January 2, 2014

Department Contact Information

- Department website – www.azwater.gov
- Comment Call-In Line (message only) – 602-771-8433
- Questions directed to Michelle Moreno

602-771-8530

mamoreno@azwater.gov

- Submit comments to Deanna Ikeya, CRM

dkikeya@azwater.gov

602-771-8531

or Arizona Department of Water Resources
3550 North Central Ave., 2nd Floor
Phoenix, AZ 85012