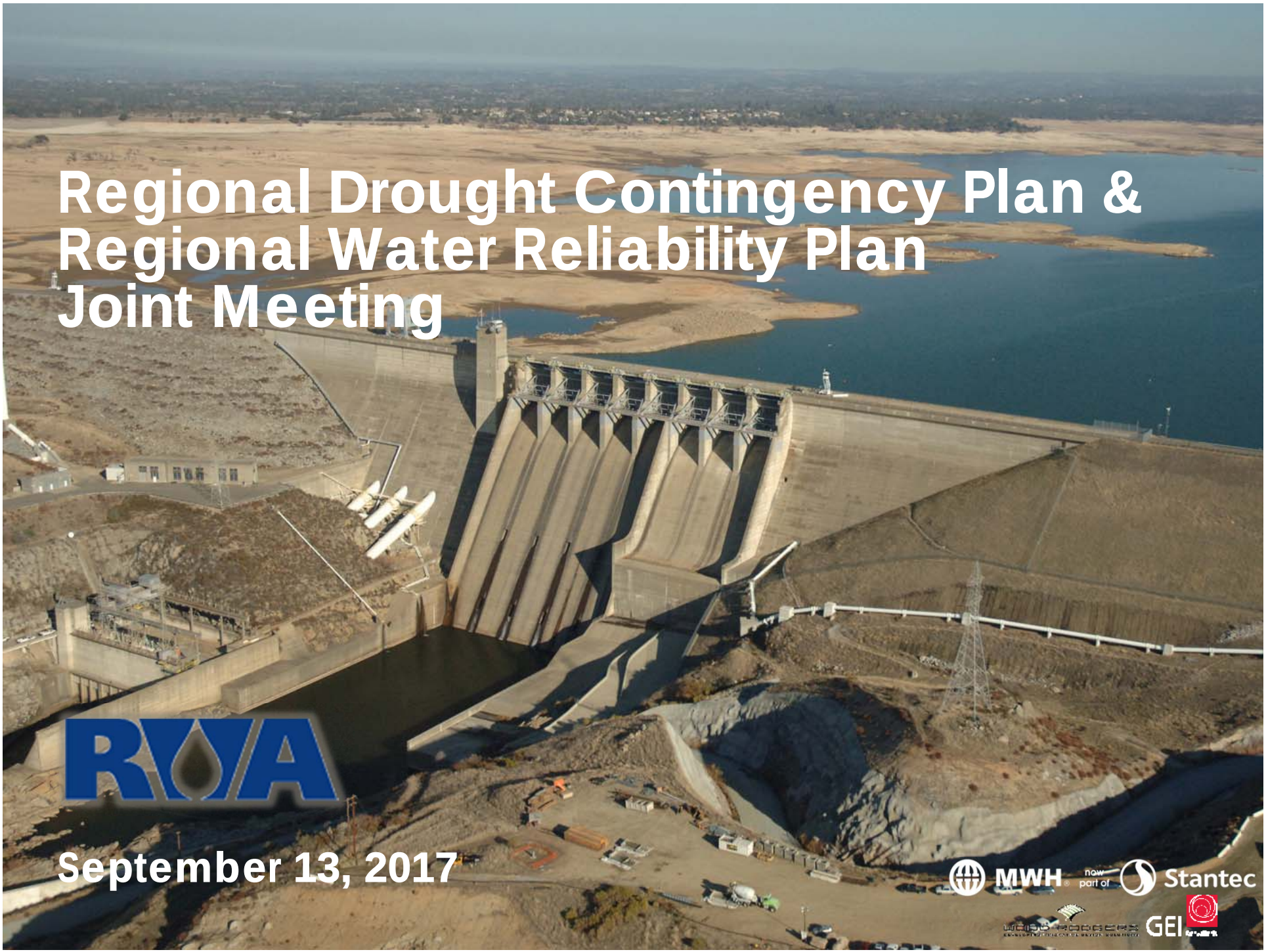

Regional Drought Contingency Plan & Regional Water Reliability Plan Joint Meeting

RWA

September 13, 2017

MWH now part of Stantec

Wood Rodgers GEI

Today's Agenda

1 **Program Overview and Status**

2 **Regional Drought Contingency Plan**

3 **Regional Water Reliability Plan**

4 **Key Dates**

1. Program Overview and Status

Overview

- 2013 RWA Strategic Plan called for development of a Regional Water Reliability Plan (RWRP)
- Intent to have "basic levels of service" as defined by each water agency
- Approach to reliability planning is to identify:
  - Near/long-term vulnerabilities of each agency
  - Near/long-term mitigation measures to help overcome vulnerabilities
- RWRP start delayed due to drought and lack of funding
- In 2015, Reclamation released Regional Drought Contingency Plan (RDCP)grants
- Since RDCP and RWRP had common elements, this grant served as catalyst to launch work

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RDCP vs. RWRP

Topic	RDCP	RWRP
Geographic Area	17 Agencies in North American Basin	23 Agencies
Scope Focus		
Vulnerabilities & Mitigation Actions	Drought-specific	Reliability-specific (focusing on factors limiting conjunctive use)
Conjunctive Use Analysis	n/a	Conjunctive use opportunities & Potential

Status of Scopes and Budgets

RDCP & RWRP Tasks	Status		Consultants		
	RDCP	RWRP	Budget	Expended	Remaining
Task 1 – Vulnerability Assessment	✓	◈	$134,700	$131,700	$3,000
Task 2 – Mitigation Actions & Response Actions	✓	◈	$141,600	$132,600	$9,000
Task 3 – Conjunctive Use Program Operational Analysis	✓	◈	$182,900	$23,900	$159,000
Task 4 – Implementation Road Map (operational & administrative framework, update process, framework for larger conjunctive use opportunities & regional groundwater bank)	✓	◈	$74,400	$16,200	$58,200
Task 5 – Documentation and Reporting (RDCP & RWRP)	◈		$72,800	$16,200	$56,600
Task 6 – Prepare Proposition 1 IRWM Planning Grant Application		✓	$25,000	$13,300	$11,700
Task 7 – CVP Partner Engagement			$25,000	—	$25,000
Task 8 – Administrative Activities (RDCP DPTF, C&O Plan, drought monitoring; RDCP & RWRP work plans; RDCP & RWRP project management)	◈	✓	$52,700	$32,700	$20,000
		TOTALS	$ 709,100	$ 366,600	$ 342,500

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2. Regional Drought Contingency Plan

RDCP Comments

- Comments received from:
  - Placer County WA
  - City of Sacramento
  - City of Roseville
  - City of Folsom
  - San Juan WD
  - Sacramento County WA
  - El Dorado County WA
  - Mike Finnegan
  - Tom Gohring, Water Forum
- Review comments from Reclamation

Summary of Major Changes

1. Modified **Drought Indicators & Indices**
2. Added references to **groundwater considerations**
3. Added **Economic Vulnerabilities** section
4. Added new metric - **Local Priorities for Short-Term Implementation**
5. Attached **Partner's detailed shortage plans**

Revised RDCP Triggers

Indicator/Index	Timing of Reporting	Threshold Value
Folsom Reservoir Storage	October 1 December 1	<300,000 acre-feet <200,000 acre-feet
Central Sierra Nevada Snowpack	February 1 March 1 April 1 May 1	<50% of average for February 1 <50% of average for March 1 <50% of average for April 1 <50% of average for May 1
Unimpaired Inflow into Folsom Reservoir	February 15 March 15 April 15 May 15	<950,000 acre-feet or <400,000 acre-feet <950,000 acre-feet or <400,000 acre-feet <950,000 acre-feet or <400,000 acre-feet <950,000 acre-feet or <400,000 acre-feet
Federal/State Drought Declaration	-	Executive Order Declared

Key:
RDCP = Regional Drought Contingency Plan

Document Status Update

- Revised draft sent to Reclamation on August 25th
- Reclamation comments received September 12th
- Addressing Reclamation's comments & producing final RDCP (update anticipated at October meeting)

3. Regional Water Reliability Plan

Steps to Reliability?

Water Reliability Plan (2 yrs)

High level look at opportunities created by near and long-term improvements with initial look at potential partners

Analytical Tools Development (2 yrs)

Update regional modeling tool to conduct technical analysis to further define opportunities and evaluate impacts

Regional Water Bank (3 yrs)

Complete environmental analysis, establish governance, develop legal agreements, and engage with partners

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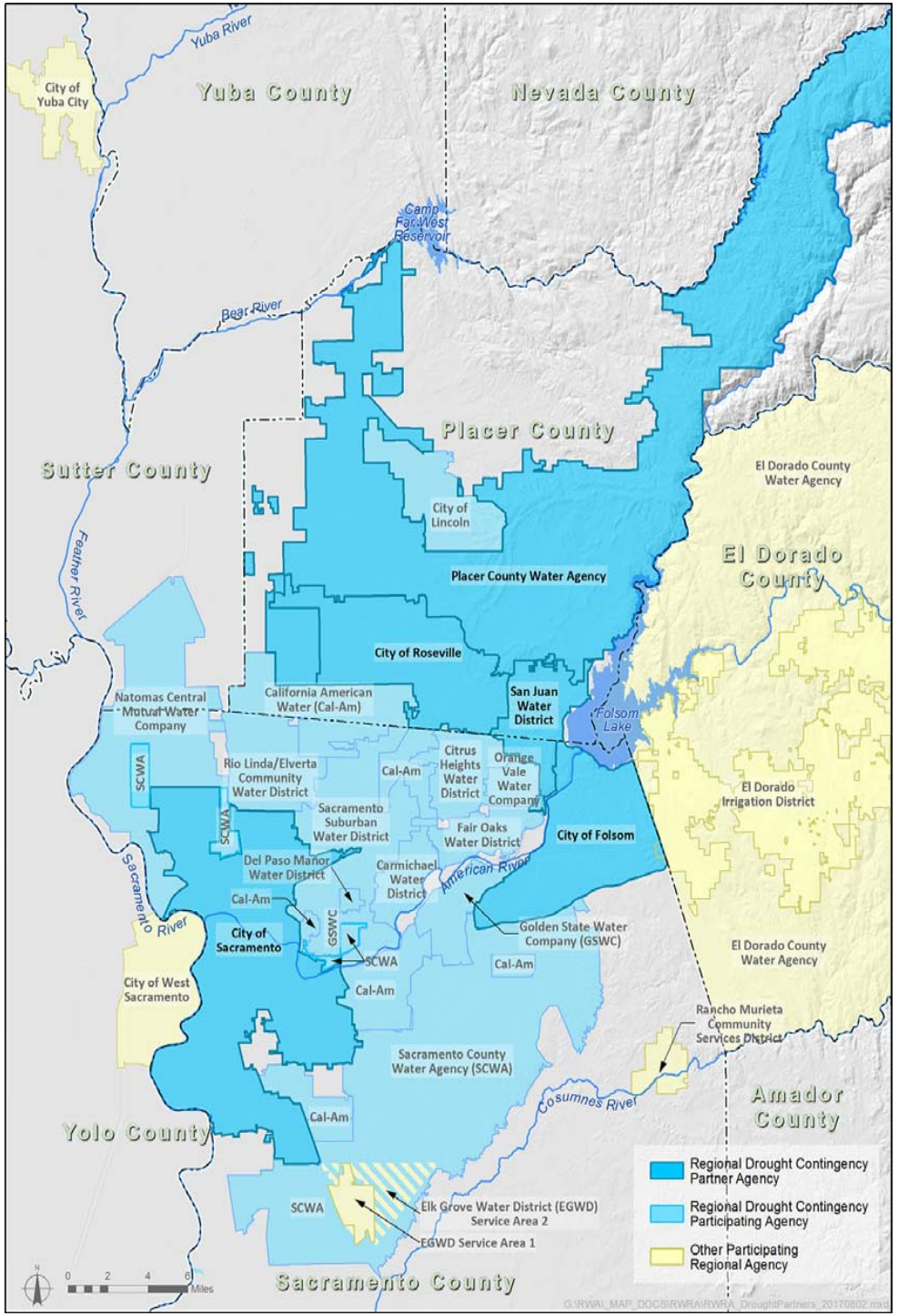

RWRP Agencies

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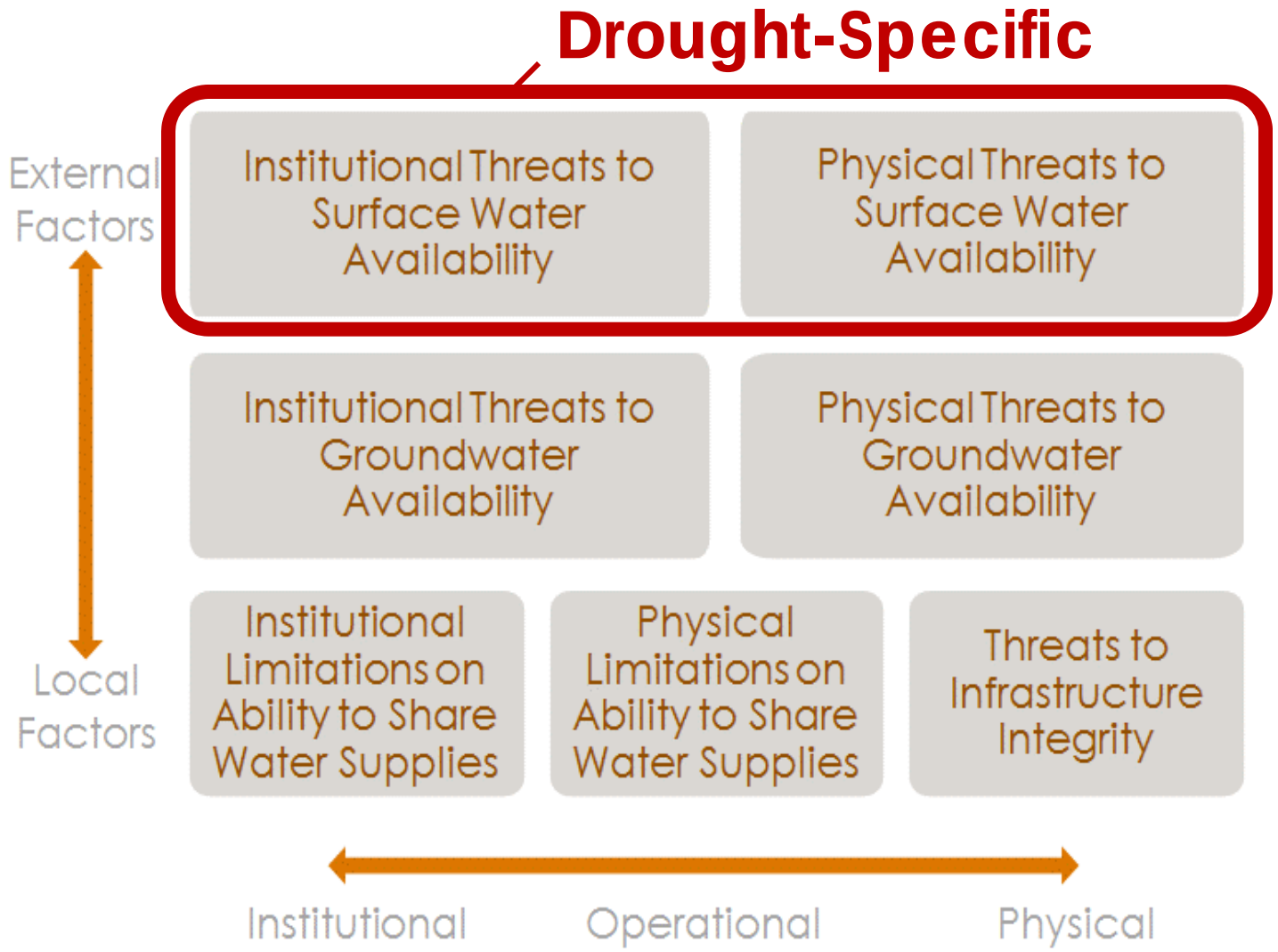
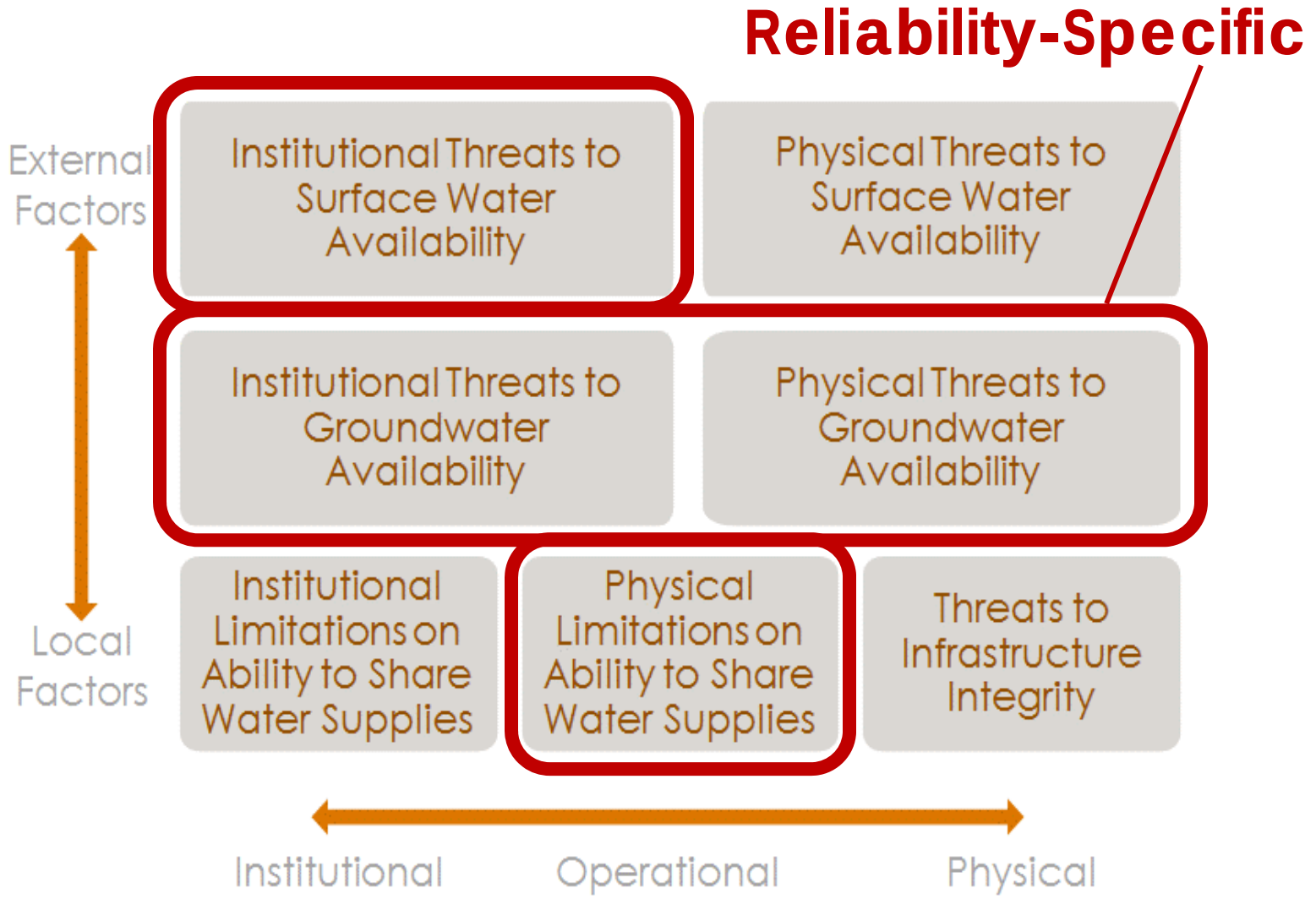
Key Water Sector Vulnerabilities

Key Water Sector Vulnerabilities



Key Water Sector Vulnerabilities



Reliability-Specific Vulnerabilities

= Low
= Moderate
= High

Vulnerability Theme	Vulnerability Examples	Effect on Wet Year In-Lieu / Recharge	Effect on Dry Year Recovery
Institutional threats to surface water availability	• CVP/Folsom Reservoir Operations • Evolving State and Federal Regulations • Agency Specific Water Rights/Contract Limitations	■ ■ ■	■ ■ ■
Physical threats to surface water availability	• Climate Change/Hydrologic Variability • Inability to Divert during Low Storage/Flow Conditions • Source Contamination	■ ■ ■	■ ■ ■
Institutional threats to groundwater availability	• New Drinking Water Standards • New State Water Quality Regulations • Future constraints related to SGMA	■ ■ ■	■ ■ ■
Physical threats to groundwater availability	• Groundwater Contamination • Groundwater Production Capacity Limitations • Groundwater Injection Limitations	■ ■ ■	■ ■ ■
Institutional limitations on sharing supplies	• Existing POU/Service Area Limitations • Disparity in Cost of Water • Diverse Agency Goals & Interests	■ ■ ■	■ ■ ■
Physical limitations on sharing supplies	• Inconsistent Fluoridation Practices • Limited Intertie Capacities • Incompatible Pressure Zones • Inconsistent water quality • Lack of metering on interties	■ ■ ■ ■ ■	■ ■ ■ ■ ■
Threats to infrastructure integrity	• Aging Infrastructure • Lack of redundancy for critical facilities • Geologic Hazards • Flooding Hazards	■ ■ ■ ■	■ ■ ■ ■
Other Challenges	• Reliance on single supply source • Unrealized recycled water potential • Limited capacity to serve growth • Lack of Real-time Data Sharing	■ ■ ■ ■	■ ■ ■ ■

Reliability-Specific Vulnerabilities

■ = Low
■ = Moderate
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Vulnerability Theme	Vulnerability Examples	Effect on Wet Year In-Lieu / Recharge	Effect on Dry Year Recovery
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	• Inability to Divert during Low Storage/Flow Conditions	■	■
	• Source Contamination	■	■
Institutional threats to groundwater availability	• New Drinking Water Standards	■	■
	• New State Water Quality Regulations	■	■
	• Future constraints related to SGMA	■	■
Physical threats to groundwater availability	• Groundwater Contamination	■	■
	• Groundwater Production Capacity Limitations	■	■
	• Groundwater Injection Limitations	■	■
Institutional limitations on sharing supplies	• Existing POU/Service Area Limitations	■	■
	• Disparity in Cost of Water	■	■
	• Diverse Agency Goals & Interests	■	■
Physical limitations on sharing supplies	• Inconsistent Fluoridation Practices	■	■
	• Limited Intertie Capacities	■	■
	• Incompatible Pressure Zones	■	■
	• Inconsistent water quality	■	■
	• Lack of metering on interties	■	■
Threats to infrastructure integrity	• Aging Infrastructure	■	■
	• Lack of redundancy for critical facilities	■	■
	• Geologic Hazards	■	■
	• Flooding Hazards	■	■
Other Challenges	• Reliance on single supply source	■	■
	• Unrealized recycled water potential	■	■
	• Limited capacity to serve growth	■	■
	• Lack of Real-time Data Sharing	■	■

Reliability-Specific Water Supply Vulnerabilities

1. Groundwater Production Limitations
2. Groundwater Injection Limitations
3. Limited Intertie Capacities
4. Inconsistent Fluoridation Practices
5. Water Quality Concerns
6. Existing POU/Service Area Limitations
7. Disparity in Cost of Water

Vulnerabilities Identified by Agency

Agency	Groundwater Production Capacity Limitations	Groundwater Injection Limitations	Existing POU/Service Area Limitations	Disparity in Cost of Water	Inconsistent Fluoridation Practices	Limited Intertie Capacities	Water Quality Concerns
California American Water				1			3
Carmichael Water District						2	2
Citrus Heights Water District							1
City of Folsom						4	
City of Lincoln		1					
City of Roseville		1					
City of Sacramento	1		3	1			
City of West Sacramento						1	
City of Yuba		1	1			1	
Del Paso Manor Water District					1		1
El Dorado County Water Agency			3				
El Dorado Irrigation District							
Elk Grove Water District	2						
Fair Oaks Water District	1						
Golden State Water Company				1		1	1
Orange Vale Water Company			1				
Placer County Water Agency			1				
Rancho Murieta Community Services District							
Rio Linda/Elverta Community Water District							1
Sacramento County Water Agency							
Sacramento Regional Sanitation District							
Sacramento Suburban Water District	1			1	1		
San Juan Water District	1						

Next Steps

- Agencies Provide Feedback on Regional Reliability Vulnerabilities Handout by Wednesday 9/20
- Discuss Mitigation Action Screening & Evaluation at October RWRP Meeting

Conjunctive Use Analysis Approach

Conjunctive Use Analysis

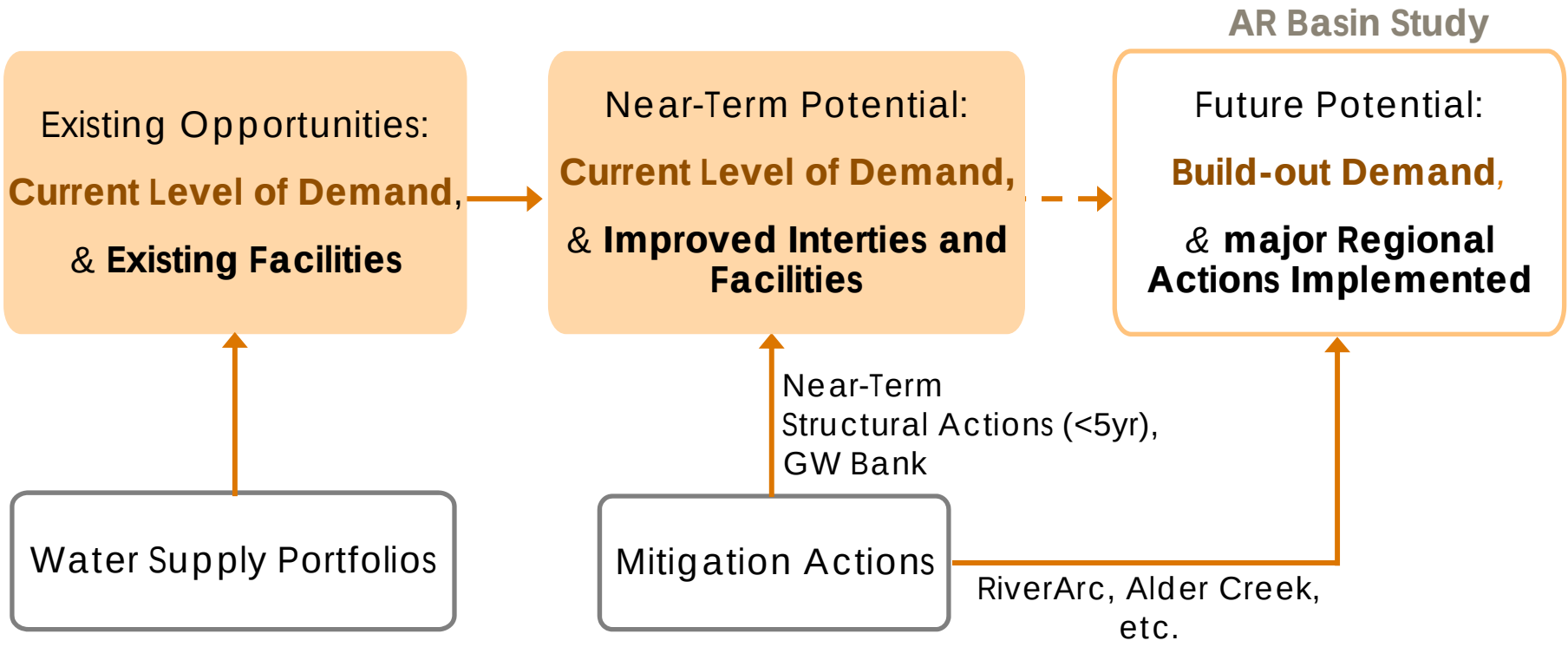
Purpose:

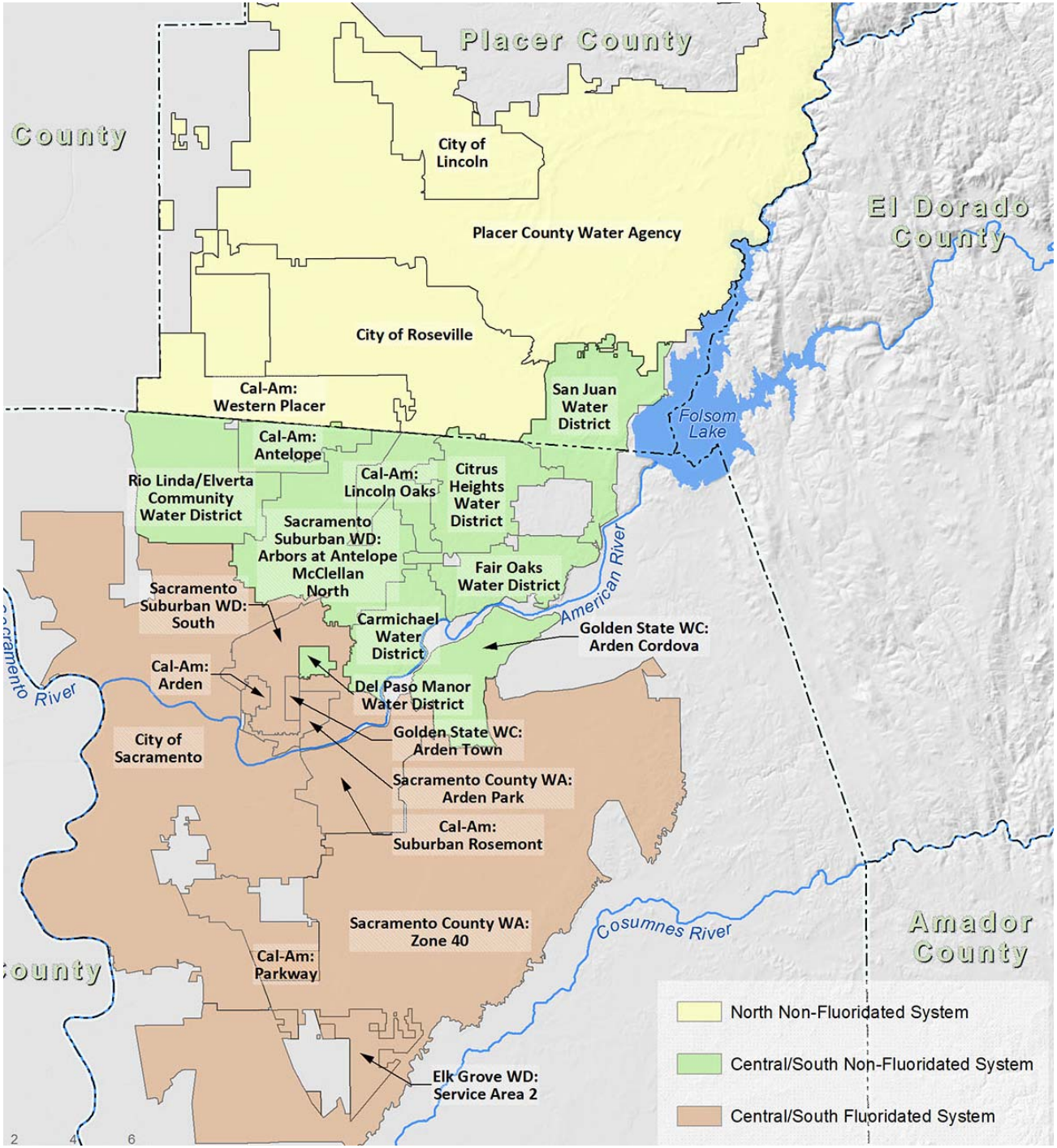
Quantify conjunctive use existing opportunities & future potential

Scope:

- Focus on current level of demands
- Consider existing physical limitations
- Consider mitigation actions (near-term structural actions)

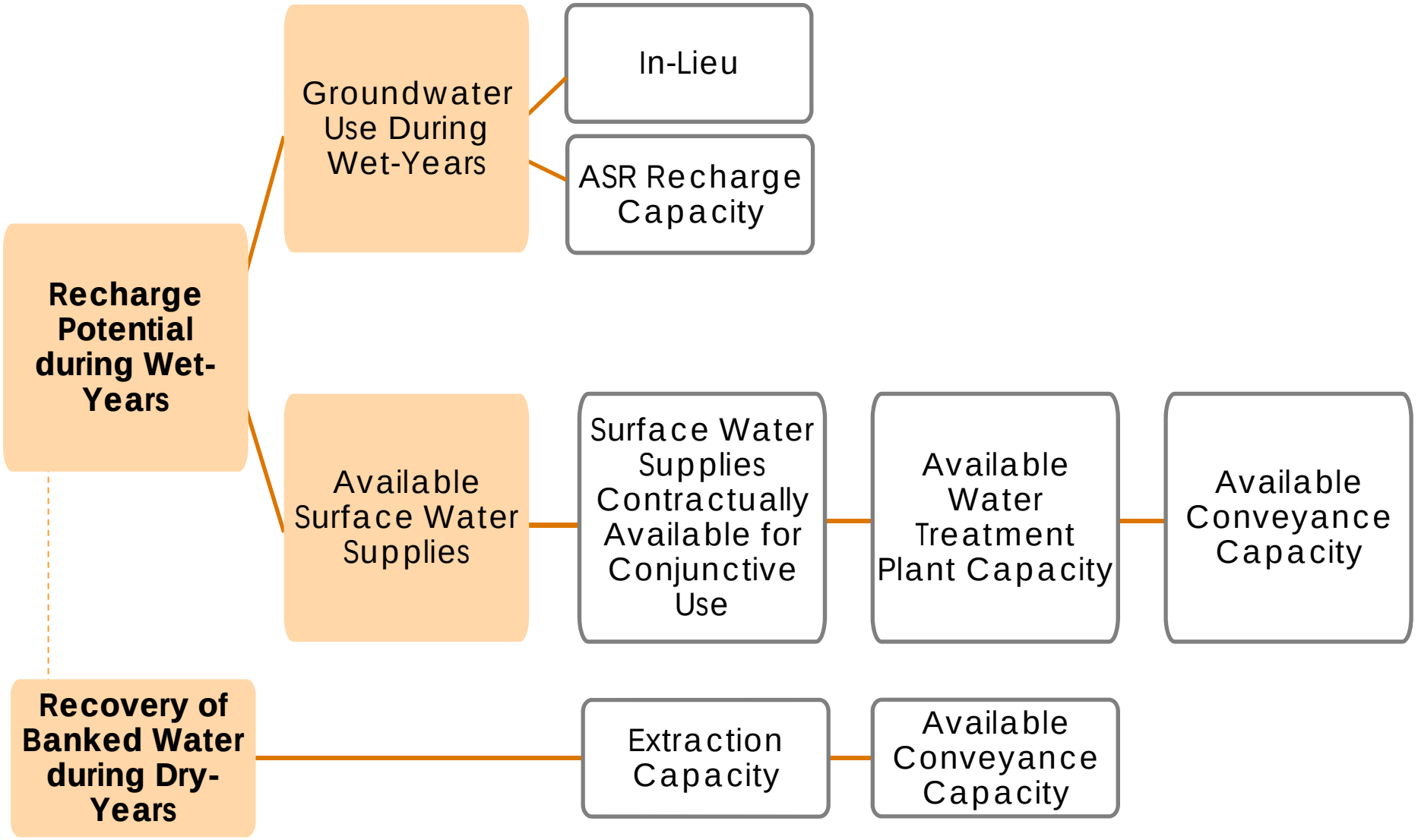
Conjunctive Use Analysis Approach



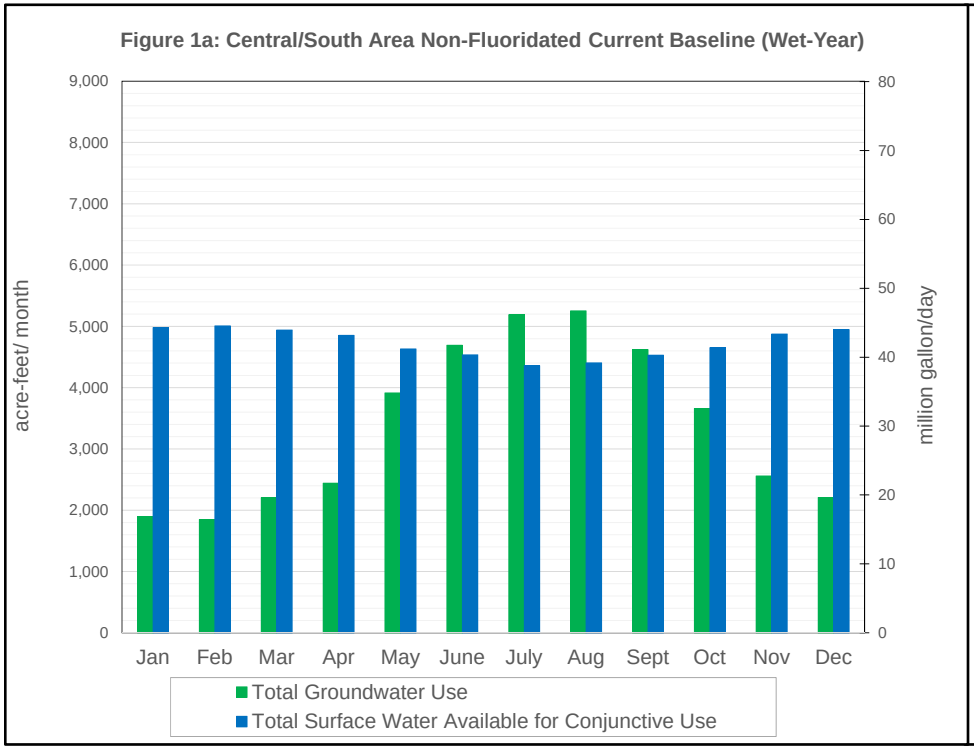


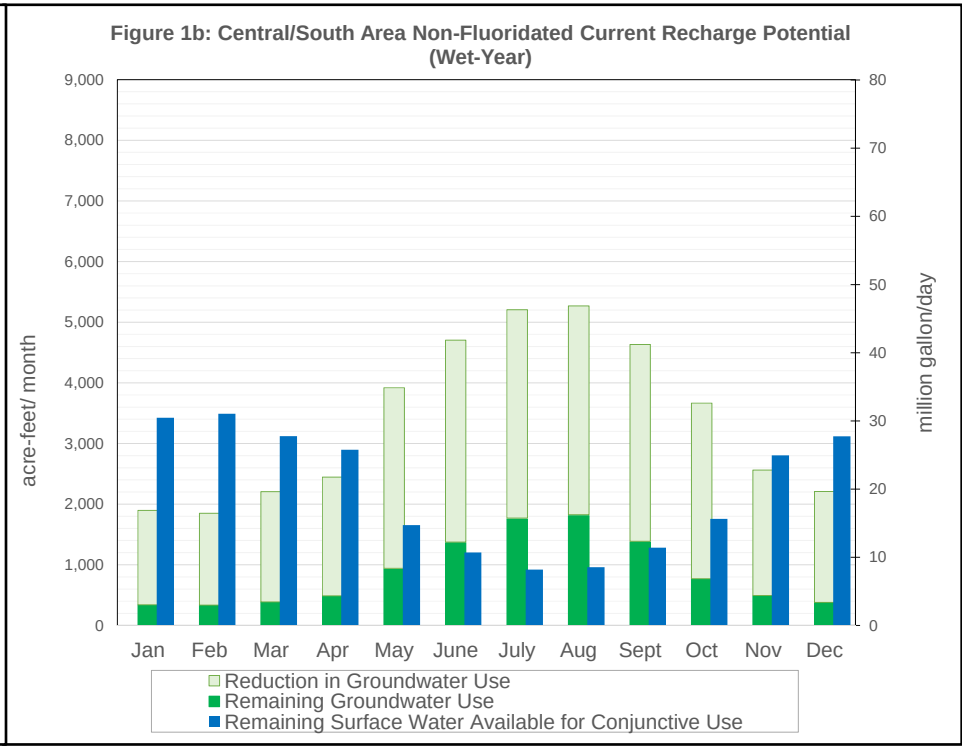
Analysis Areas

Analysis Constraints



Preliminary Results: Central/South Area Non-Fluoridated





Preliminary Results: Central/South Area Fluoridated

Figure 2a: Central/South Area Fluoridated Current Baseline (Wet-Year)

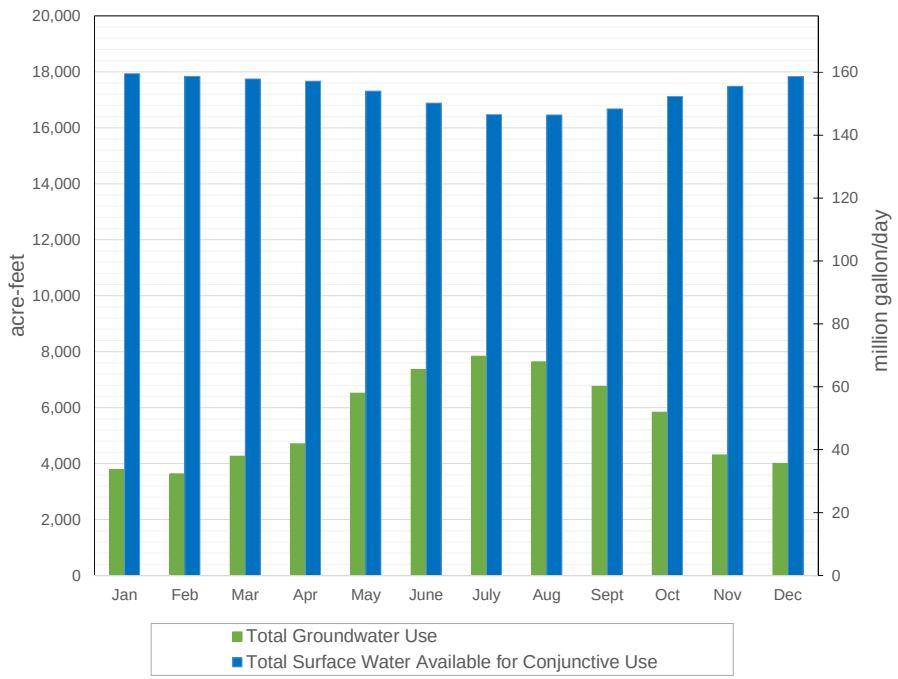
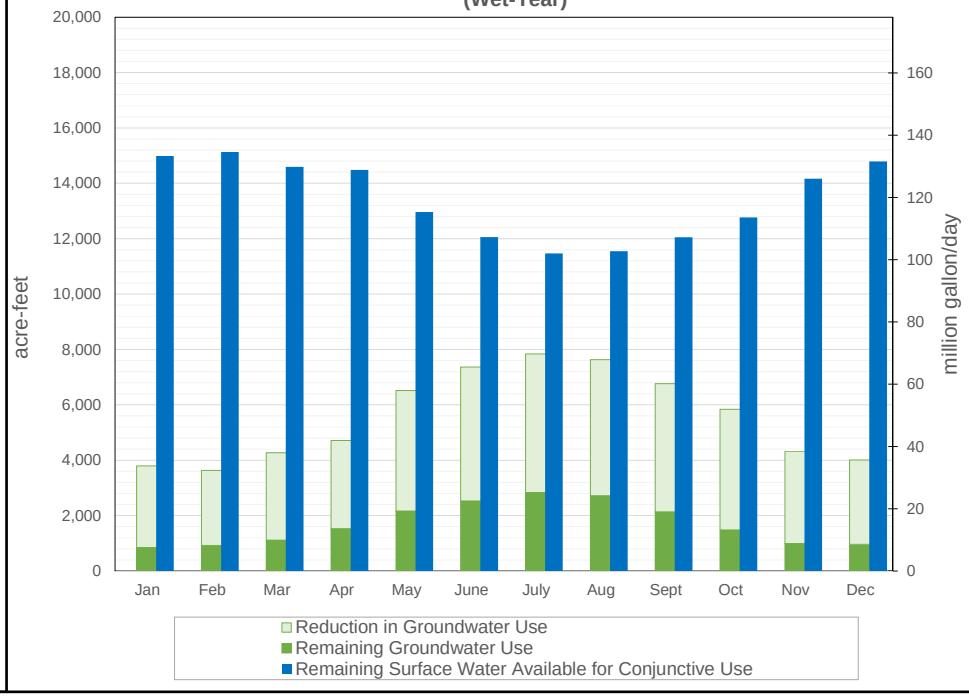
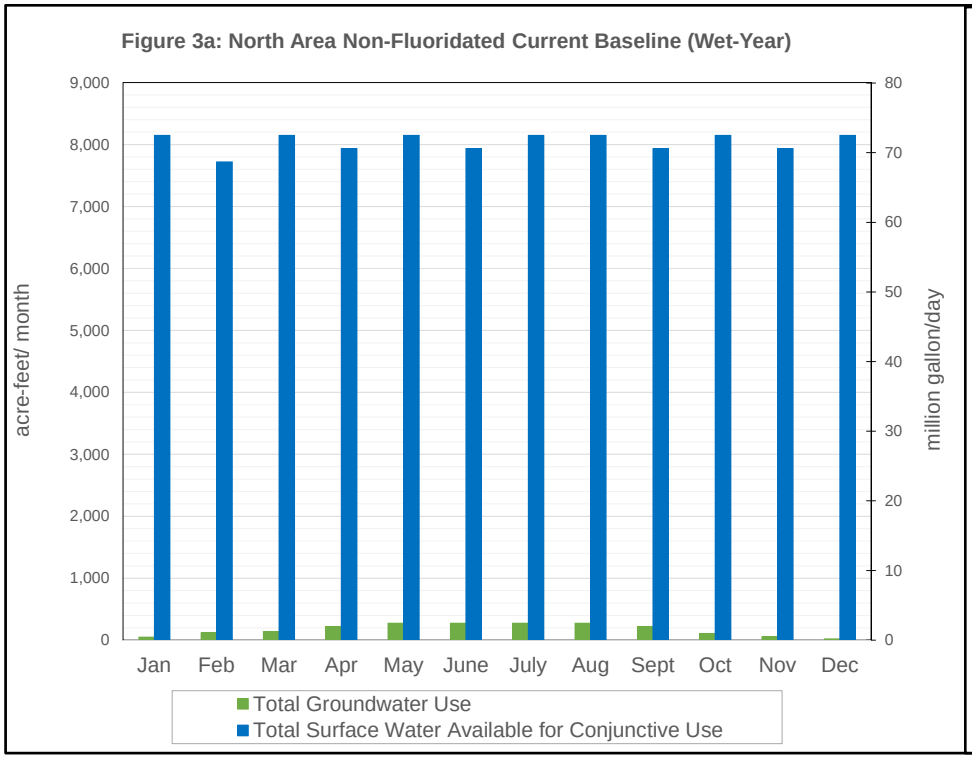
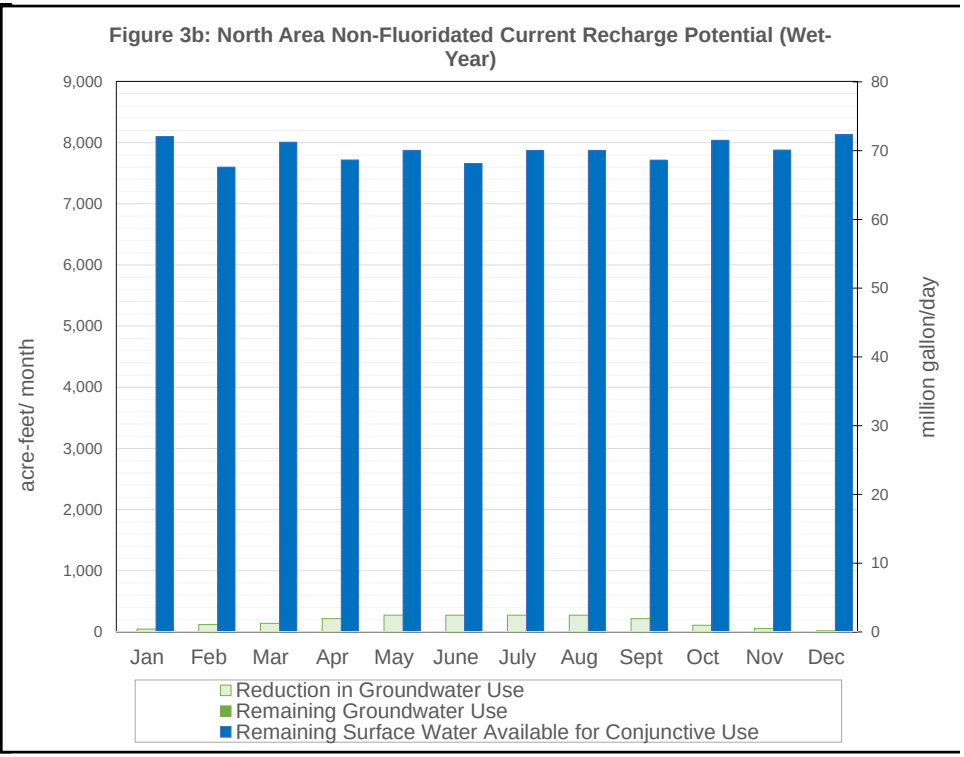


Figure 2b: Central/South Area Fluoridated Current Recharge Potential (Wet-Year)

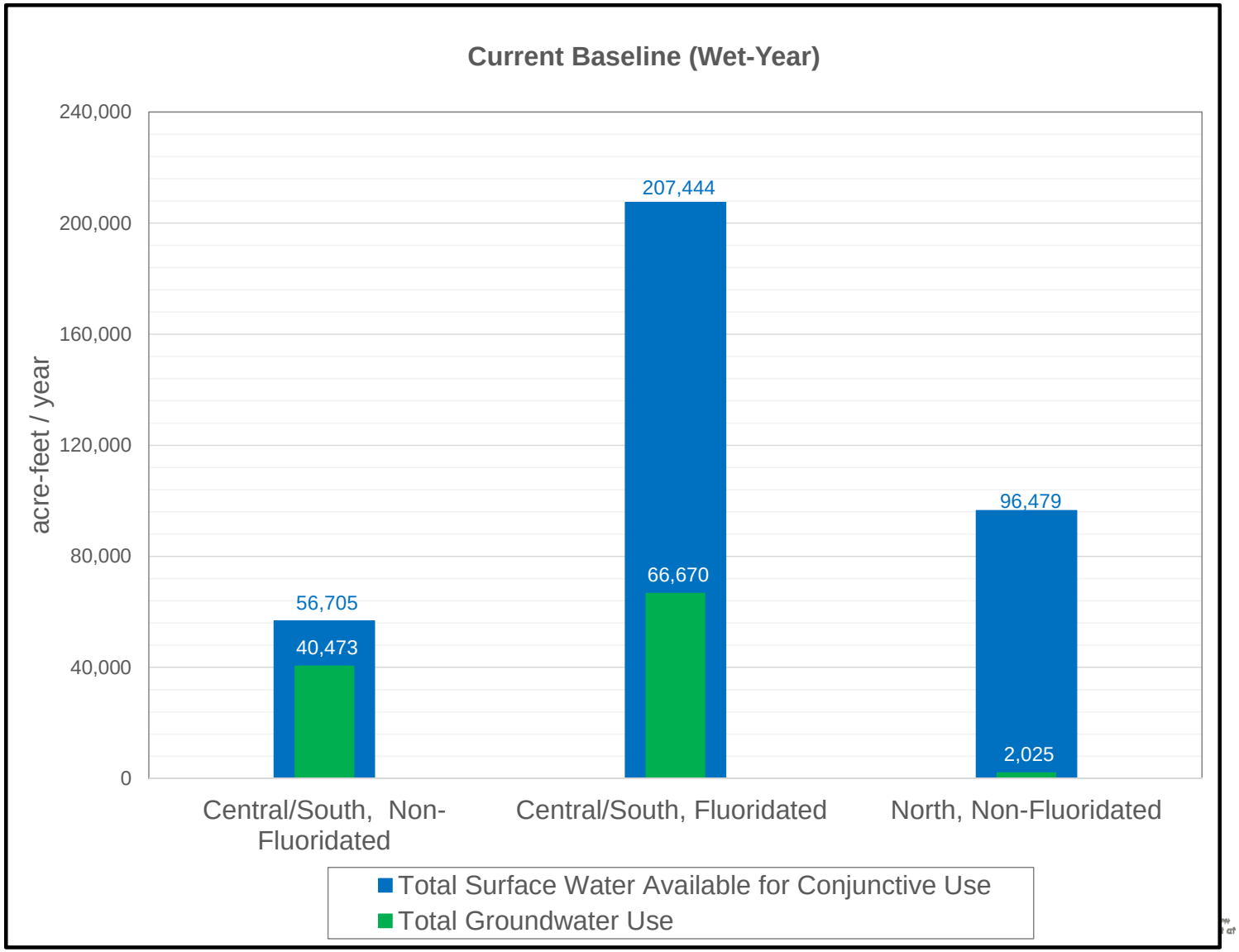


Preliminary Results: North Area Non-Fluoridated

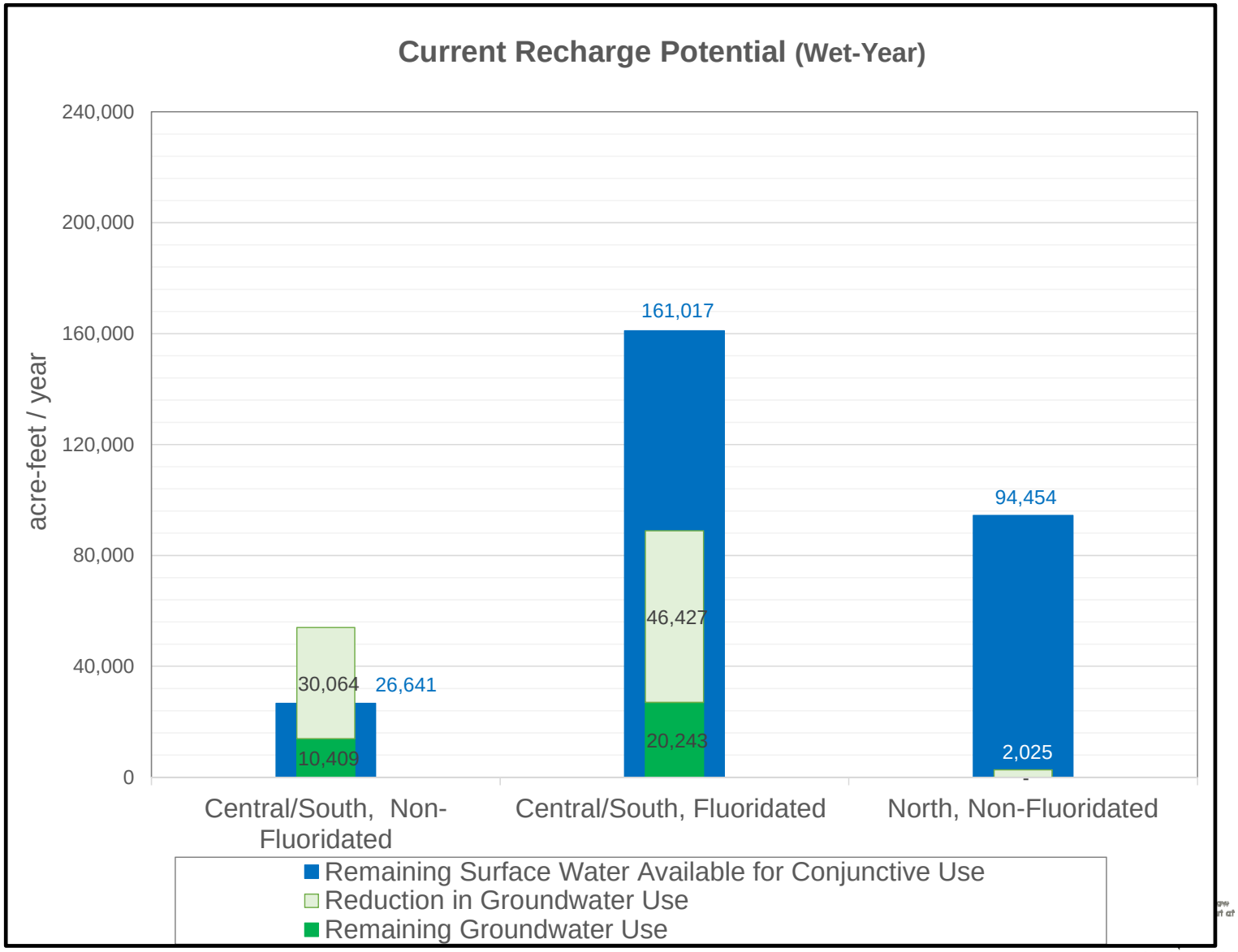




Preliminary Results Summary



Preliminary Results Summary



Preliminary Results Summary

Area	Limitations on Recharge (Wet-Year)
North Non-Fluoridated	• Limited existing M&I groundwater use
Central/South Non-Fluoridated	• Interties limitations • Need to maintain some groundwater production
Central/South Fluoridated	• Interties limitations • Limited intra-district infrastructure • Uncertainty of future availability of surface water from Fairbairn WTP.

Next Steps

- Agencies Provide Feedback on Conjunctive Use Assumptions by Wednesday 9/20
- Discuss at October RWRP Meeting:
  - Revised Estimate of Current CU Opportunities
  - Groundwater Basin Storage Potential & Extraction Capacity

4. Key Dates

Key Dates

Comments Due on Vulnerabilities & Conjunctive Use	September 20
RWRP Meeting	October 11
IRWMP Meeting	October 23
Final RDCP	TBD