



**YOUR WATER. YOUR FUTURE.**

**SCIF Stakeholder Meeting #2:  
Water Quality  
January 29, 2026**

# Agenda

- Welcome
- SRP Water Quality Review and Water Quality Introduction at SCIF
  - Q&A
- CAWCD System-Wide Water Quality Model and SCIF Simulations
  - Q&A
- Closing

# Stakeholder Meeting Series

## Connecting CAP & SRP Systems: SRP-CAP Interconnect Facility (SCIF) Water Quality Analysis

1. January 14, 2026, 1-3pm: Stakeholder Briefing
  - Background on the CAP Wheeling Process and the SCIF
2. January 29, 2026, 9-11am: Stakeholder Briefing
  - Initial SCIF Water Quality Modeling Results
3. February 11, 2026, 9-11am: Stakeholder Roundtable
  - Feedback on SCIF and Water Quality Modeling
4. TBD: Stakeholder Briefing
  - SCIF Water Quality – Response and Next Steps



CAP Headquarters



Livestreamed

[questions@cap-az.com](mailto:questions@cap-az.com)

# SRP - CAP Interconnection Facility (SCIF)

Meeting #2 – SRP Water Quality Review and  
Water Quality Introduction at SCIF

Salt River Project



# Overview

- Water Supply Management
  - Salt and Verde River Systems
- SRP Water Quality Review
- Water Quality Modeling
  - “Bookend Approach”
    - SCIF Conveyance
      - ❖ Low Volume Scenario
      - ❖ High Volume Scenario

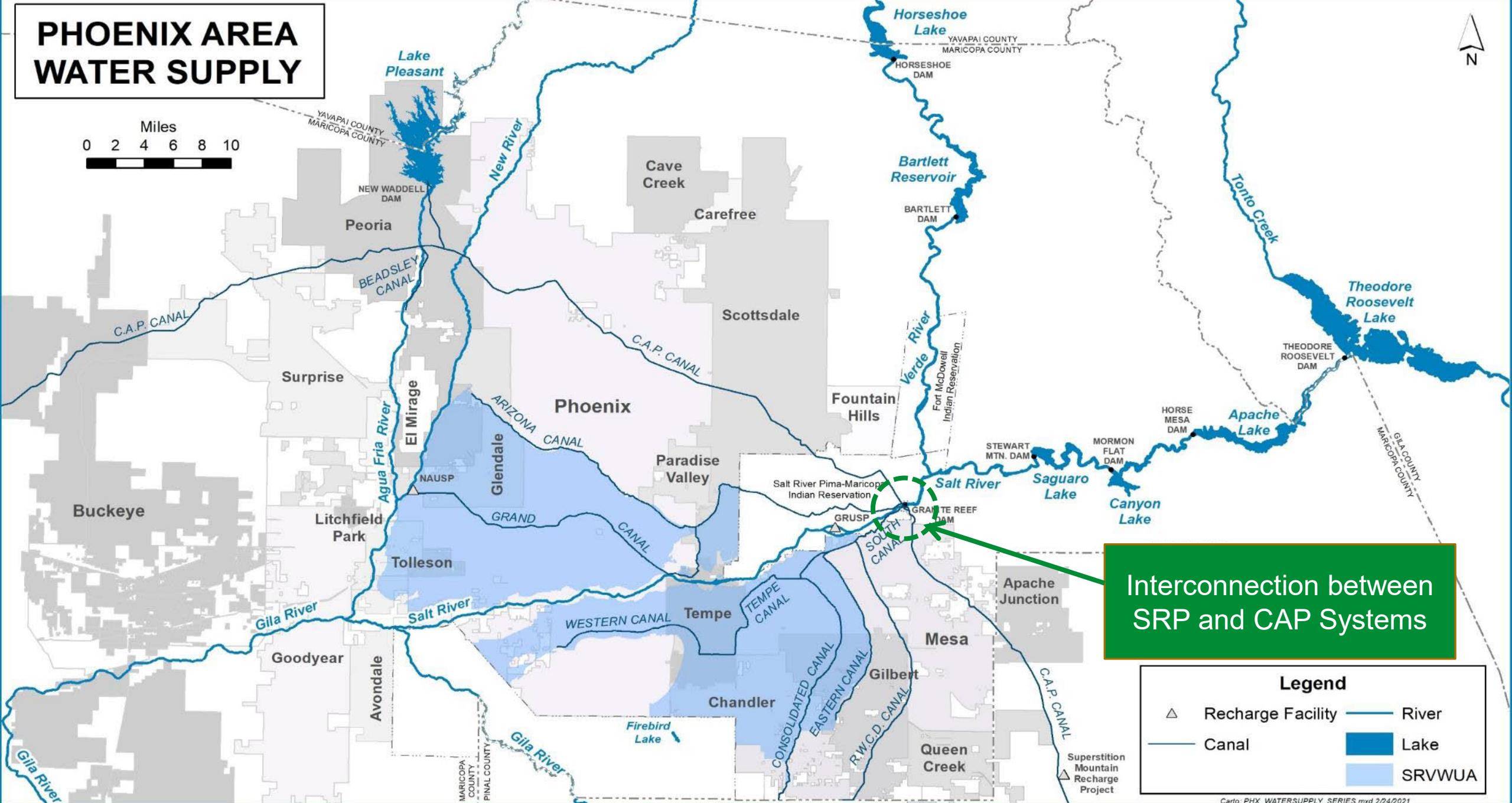


# Water Supply Management

# PHOENIX AREA WATER SUPPLY

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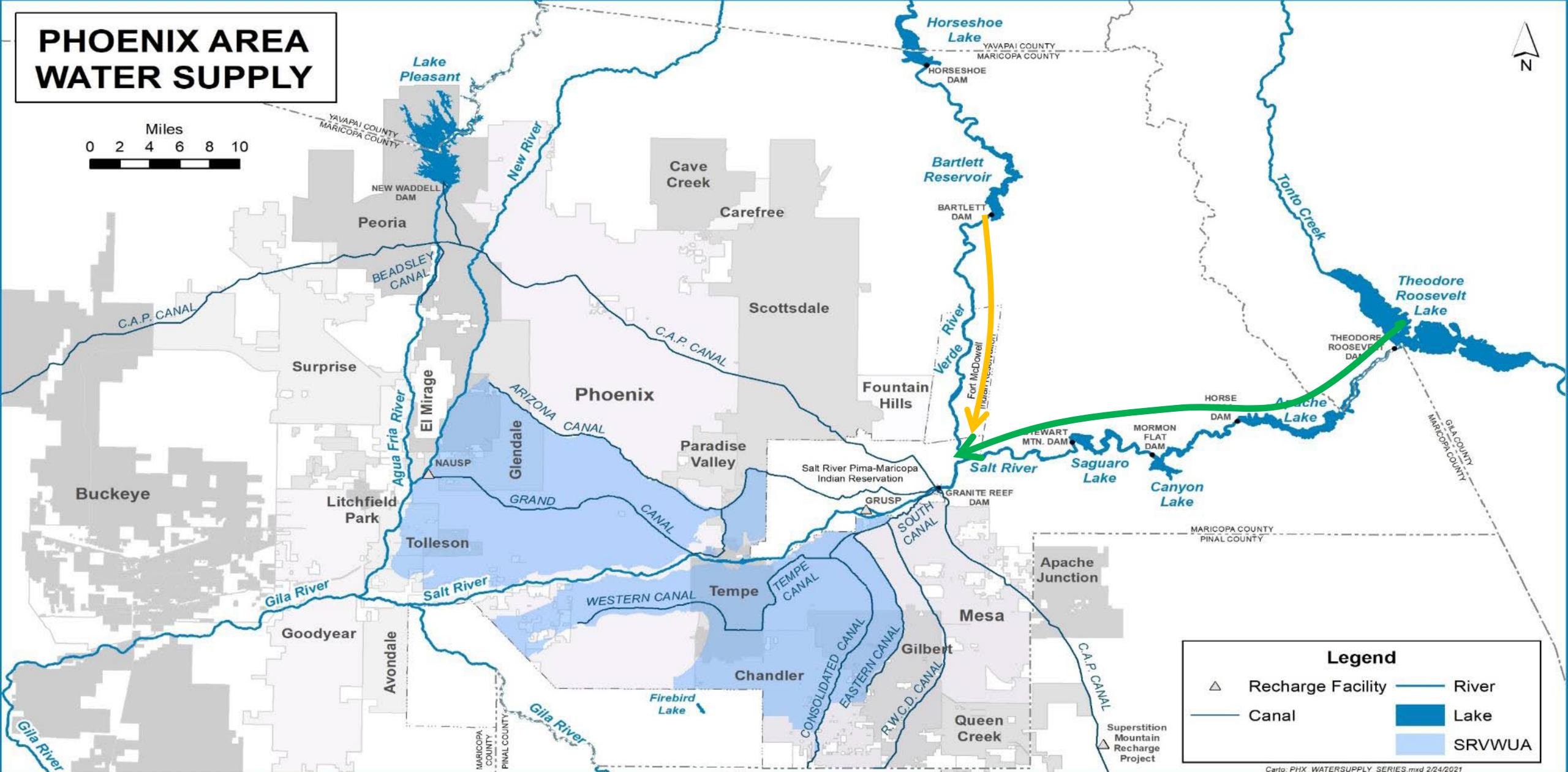


## Legend

- △ Recharge Facility
- River
- Canal
- Lake
- SRVWUA

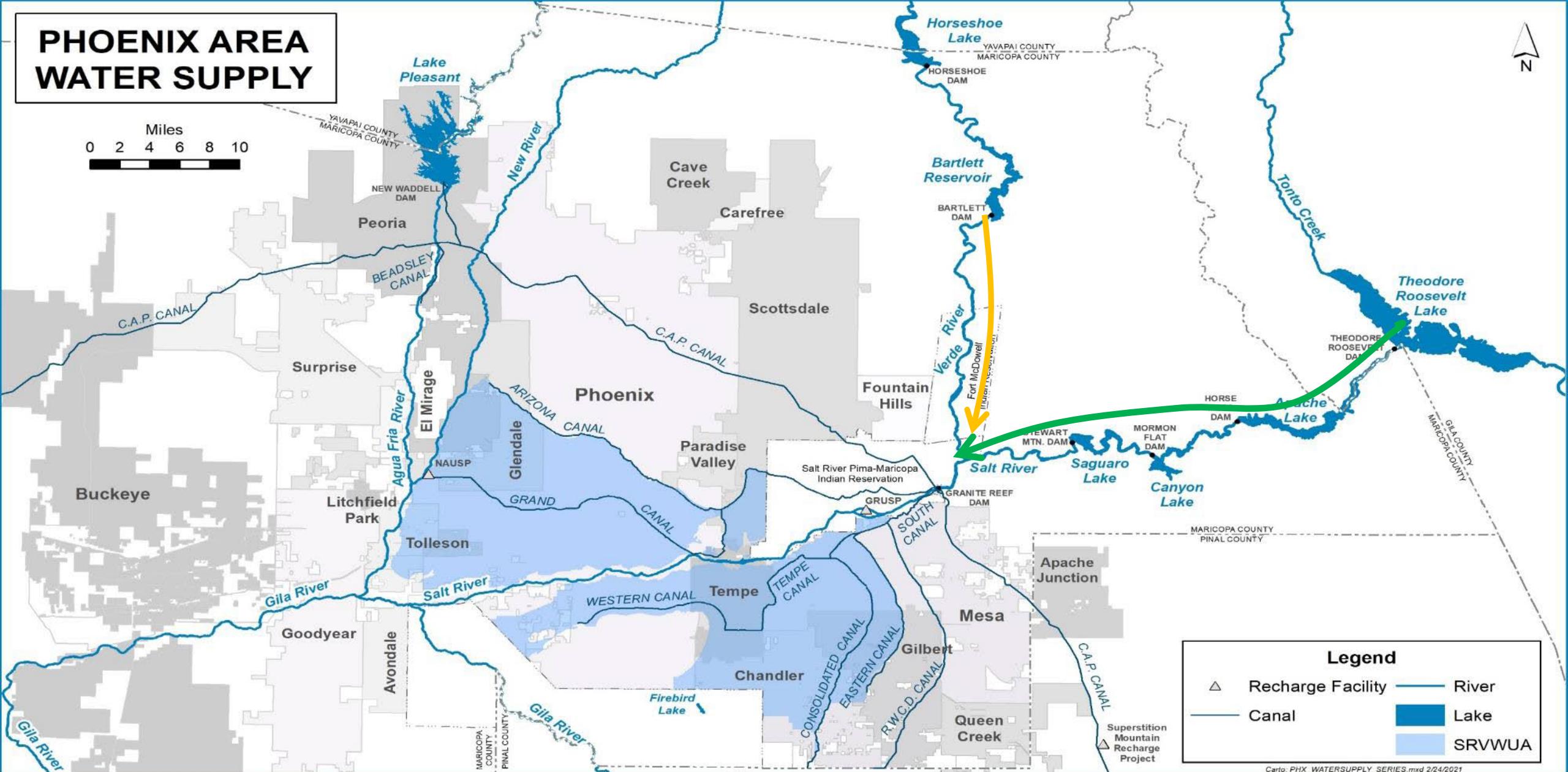
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# PHOENIX AREA WATER SUPPLY



**Salt System: Long-term operations planning April-October**

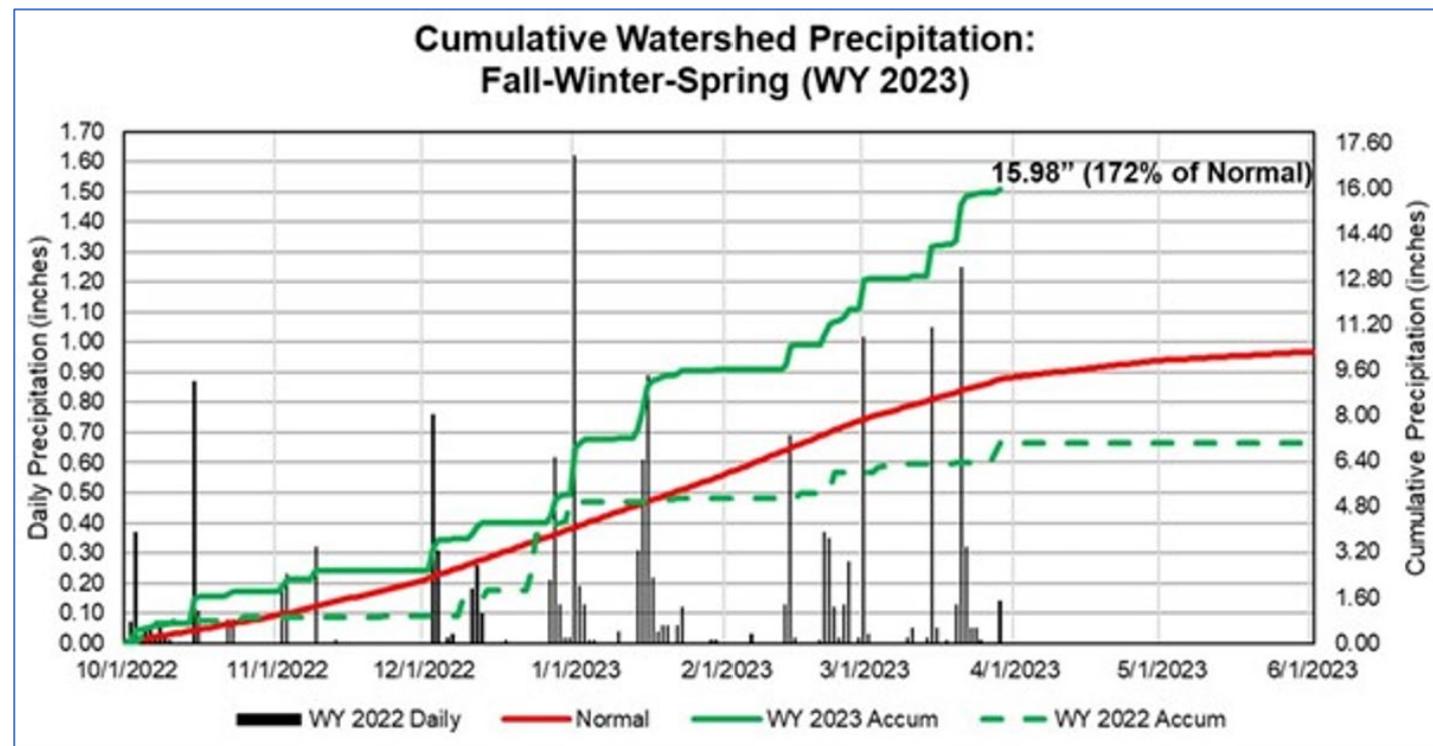
# PHOENIX AREA WATER SUPPLY



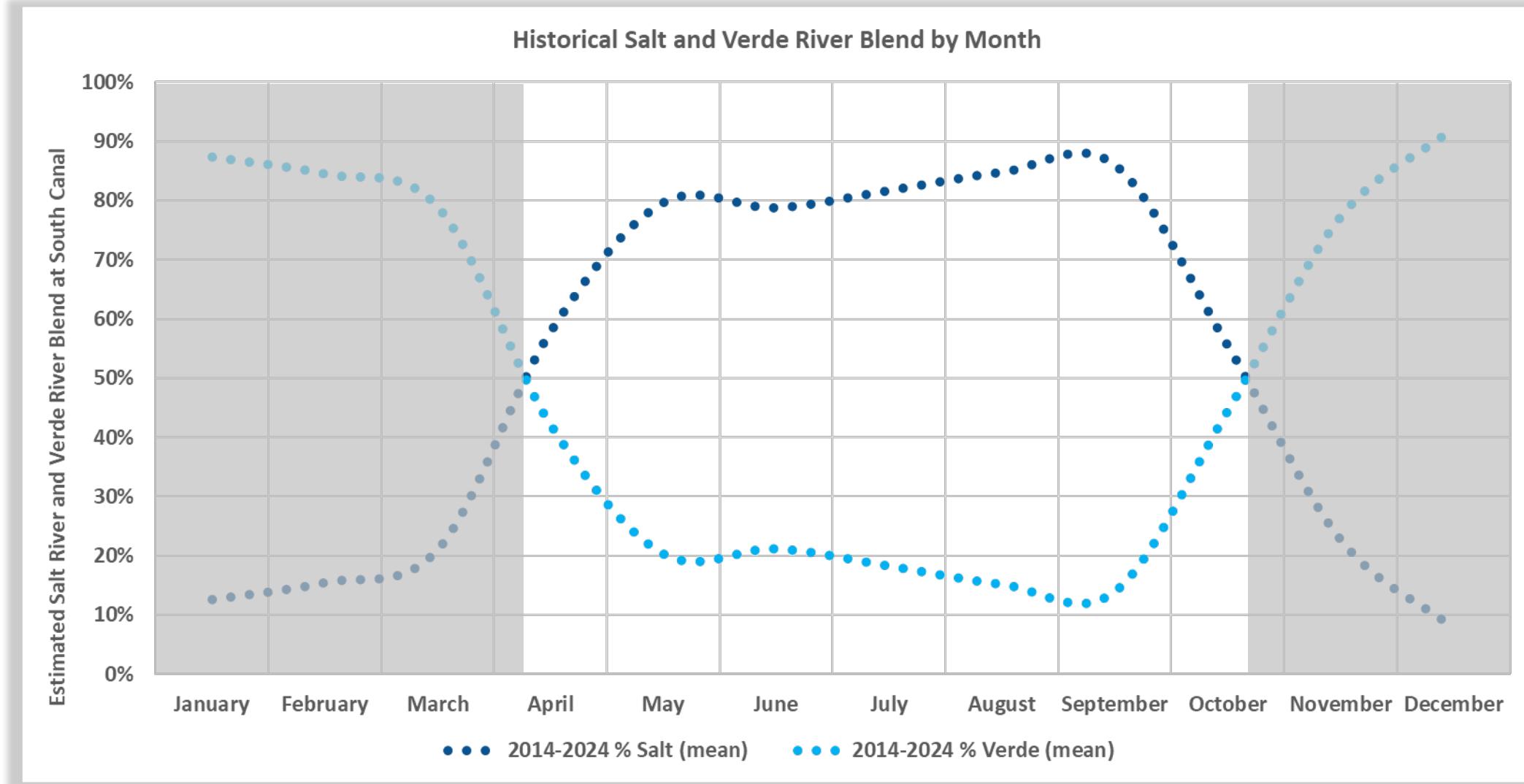
**Verde System: Long-term operations planning October-April**

# Drivers of SRP Water Supply Mix

- SRP's goal is to deliver water to shareholders efficiently, on-time, and cost-effectively.
- Reservoir releases vary annually based on hydrologic conditions, maintenance needs, and storm events.
- Reservoir releases are planned in advance, but remain subject to system variability.



# Drivers of SRP Water Supply Mix



# SRP Water Quality Review



# Introduction Standards (Table A-1)

Constituent*	Units	Reporting Limit	Introduction Standard
Dissolved Oxygen	mg/L		Narrative
pH	Units	2	6.5 - 9.5
Temperature	°F		Narrative
Alkalinity (CaCO <sub>3</sub> Units)	mg/L	20	250
Alpha, Gross	pCi/L	3	15
Aluminum, Dissolved	µg/L	50	50
Aluminum, Total	µg/L	50	200
Ammonia Nitrogen	mg/L	0.5	0.5
Antimony	µg/L	1	6
Arsenic	µg/L	2.5	10
Barium, Total	µg/L	2.5	2000
Beryllium	µg/L	1	4
Beta, Gross	pCi/L	4	50
Boron	mg/L	0.2	1
Bromide	µg/L	50	650
Cadmium	µg/L	1	5
Calcium, Total	mg/L	2	200
Chloride	mg/L	10	450
Chromium	µg/L	3	100
Cobalt, Total	µg/L	2	2
Copper, Dissolved	µg/L	10	64
Fluoride	mg/L	0.5	4
Hexavalent Chromium	µg/L	0.05	16

Constituent*	Units	Reporting Limit	Introduction Standard
Iron, Dissolved	mg/L	0.02	1
Lead	µg/L	2.5	15
Manganese, Total	µg/L	20	250
Mercury	µg/L	0.2	2
Molybdenum	µg/L	4	40
Nickel	µg/L	5	5
Nitrate	mg/L	1	10
Nitrite	mg/L	0.5	1
Perchlorate	µg/L	4	15
Phosphorus, Total-P	mg/L	0.02	0.1
Potassium, Total	mg/L	5	10
Radium 226/228	pCi/L	2	2
Selenium	µg/L	20	50
Silver, Total	µg/L	1	100
Sodium, Total	mg/L	5	350
Strontium	mg/L	0.1	2
Sulfate	mg/L	15	400
Thallium	µg/L	1	1
Total Dissolved Solids (TDS)	mg/L	30	1150
Total Organic Carbon	mg/L	1	6
Turbidity	NTU	1	9
Uranium	µg/L	1	30
Vanadium	µg/L	3	98
Zinc	µg/L	20	1000

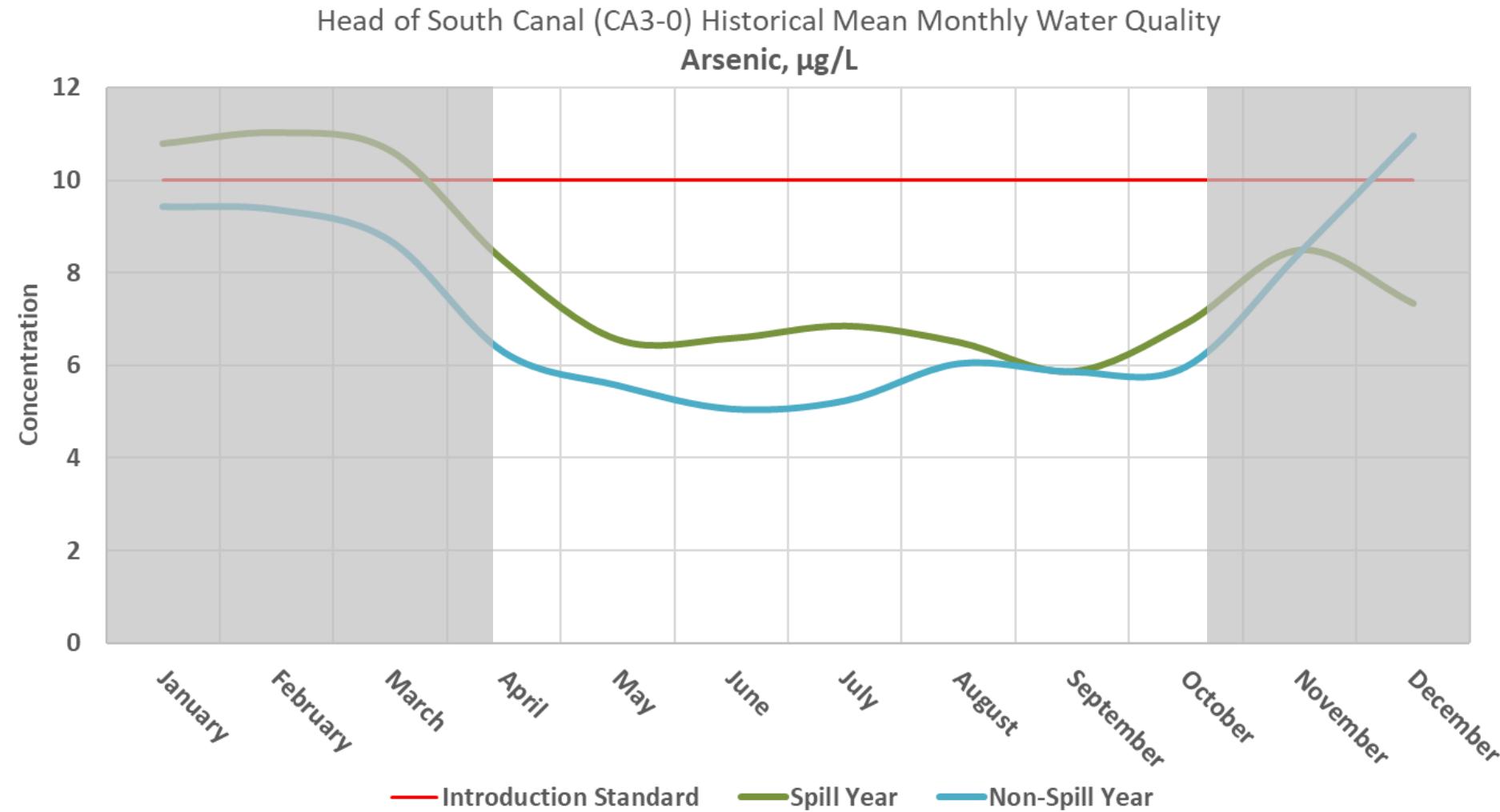
\*General Constituents and CAP Priority Constituents identified in Table A-1 of the Water Quality Guidance Document. Highlighted constituents represent CAP Introduction Standards that SRP water sources may periodically exceed.

# Introduction Standards (Table A-1)

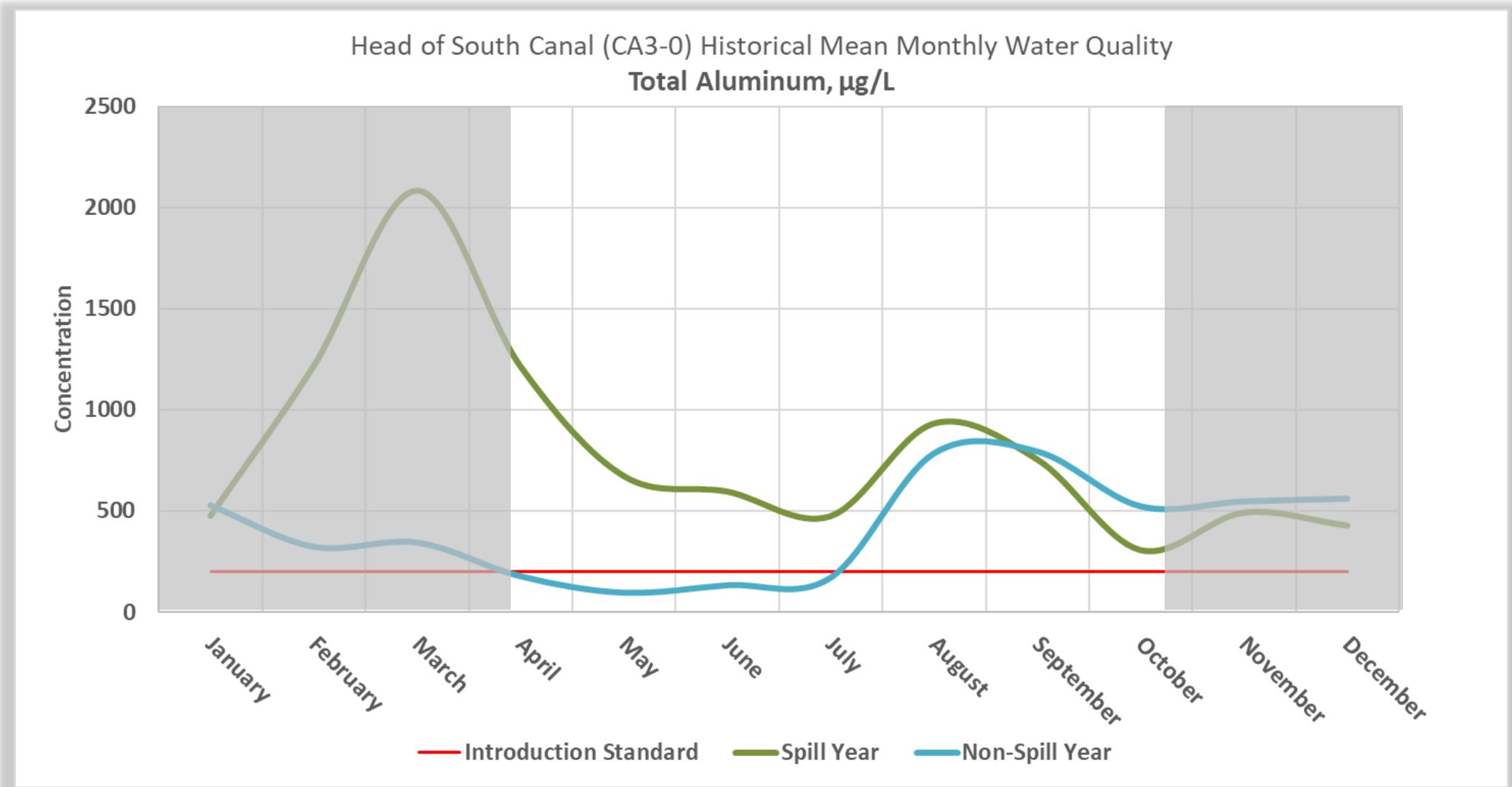
Constituent*	CAP Introduction Standard	Verde River Introduction Standard Exceedance	Salt River Introduction Standard Exceedance	Remarks
<b>Arsenic, µg/L</b>	10	Frequent	Rare	Naturally occurring in Verde River watershed
<b>Turbidity, NTU (daily average)</b>	9	Frequent	Occasional	Verde River typically high in turbidity, Salt River may experience elevated turbidity levels from localized runoff during storm events
<b>Total Aluminum, µg/L</b>	200	Frequent	Occasional	Naturally occurring in Verde River watershed; Salt River may experience elevated Total Aluminum levels from localized runoff during storm events

\*General Constituents and CAP Priority Constituents identified in Table A-1 of the Water Quality Guidance Document.

# Arsenic

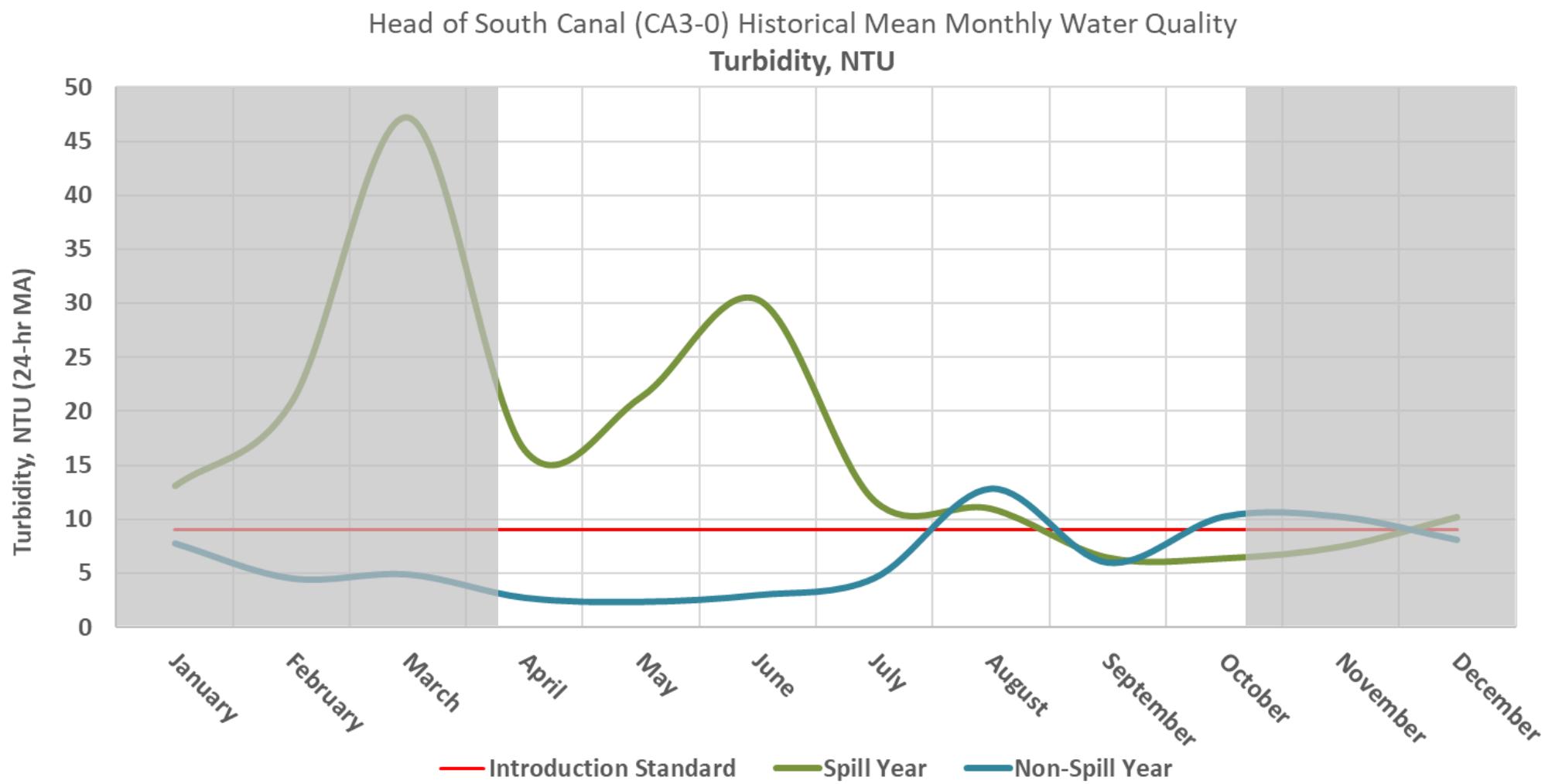


# Total Aluminum



(2014-2024)

# Turbidity



(2014-2024)

# Introduction Standards (Table A-2)

Constituent *	Units	Reporting Limit	Introduction Standard	Delivery Standard
Dieldrin	µg/L	0.1	ND	ND
Di-isopropyl ether	µg/L	3	ND	ND
Equilin	µg/L	0.004	ND	ND
Estradiol (17-beta estradiol)	µg/L	0.0004	ND	ND
Estriol	µg/L	0.0009	ND	ND
Estrone	µg/L	0.002	ND	ND
Ethynodiol (17-alpha ethynodiol)	µg/L	0.0009	ND	ND
Ethylene glycol	mg/L	5	ND	ND
Formaldehyde	µg/L	5	ND	ND
Gamma-Chlordane	µg/L	0.1	ND	ND
Hexachlorobutadiene	µg/L	0.8	ND	ND
Hexane	µg/L	2	ND	ND
Isopropylbenzene	µg/L	0.5	ND	ND
M/P-Xylenes	µg/L	1	ND	ND
Methanol	µg/L	0.5	ND	ND
Methiocarb	µg/L	1	ND	ND
Methomyl	µg/L	0.5	ND	ND
Methyl Tert-butyl ether (MTBE)	µg/L	0.5	ND	ND
Metolachlor ethanesulfonic acid (ESA)	µg/L	0.1	ND	ND
Metolachlor oxanilic acid (OA)	µg/L	0.1	ND	ND
Molinate	µg/L	0.1	ND	ND
Naphthalene	µg/L	0.5	ND	ND
N-Butylbenzene	µg/L	0.5	ND	ND
N-nitrosodiethylamine (NDEA)	ng/L	10	ND	ND
N-nitrosodimethylamine (NDMA)	ng/L	10	ND	ND
N-nitroso-di-n-propylamine (NDPA)	ng/L	10	ND	ND
N-nitrosopyrrolidine (NPYR)	ng/L	10	ND	ND
NetFOSAA	ng/L	2	ND	ND
NMeFOSAA	ng/L	2	ND	ND
N-Propylbenzene	µg/L	0.5	ND	ND
o-Chlorotoluene	µg/L	0.5	ND	ND
o-Xylene	µg/L	0.5	ND	ND
Paraquat	µg/L	2	ND	ND
p-Chlorotoluene	µg/L	0.5	ND	ND
Perfluorobutanesulfonic acid (PFBS)	ng/L	2	ND	ND
Perfluorodecanoic acid (PFDA)	ng/L	2	ND	ND
Perfluorododecanoic acid (PFDoA)	ng/L	2	ND	ND
Perfluorohexanoic acid (PFHpA)	ng/L	2	ND	ND
Perfluorohexanesulfonic acid (PFHxs)	ng/L	2	ND	ND
Perfluorohexanoic acid (PFHxA)	ng/L	2	ND	ND
Perfluorononanoic acid (PFNA)	ng/L	2	ND	ND
Perfluooctanesulfonic acid (PFOS)	ng/L	2	ND	ND
Perfluooctanoic acid (FOA)	ng/L	2	ND	ND
Perfluorotetradecanoic acid (PFTA)	ng/L	2	ND	ND
Perfluorotridecanoic acid (PFTDA)	ng/L	2	ND	ND
Perfluoroundecanoic acid (PFUnA)	ng/L	2	ND	ND
p-Isopropyltoluene	µg/L	0.5	ND	ND
sec-Butylbenzene	µg/L	0.5	ND	ND
Tert-Butylbenzene	µg/L	0.5	ND	ND
Thiobencarb	µg/L	0.2	ND	ND
Total DCPA Mono- and Di-acid Degradate	µg/L	0.5	ND	ND
Total Kjeldahl Nitrogen	mg/L	0.5	ND	ND
trans-1,3-Dichloropropene	µg/L	0.5	ND	ND
trans-Nonachlor	µg/L	0.1	ND	ND
Trichlorofluoromethane-Freon11	µg/L	1	ND	ND
<b>EPA Disinfection Byproducts</b>				
Bromochloroacetic Acid	µg/L	1	ND	ND
Bromodichloroacetic Acid	µg/L	1	ND	ND
Chlorodibromoacetic Acid	µg/L	2	ND	ND
Dibromoacetic Acid	µg/L	1	ND	ND
Dichloroacetic Acid	µg/L	1	ND	ND



- Table A-2 includes regulated and unregulated EPA constituents, disinfectant byproducts, and microbiology constituents.
- Out of a total of 118 constituents identified in Table A-2, PFBS is identified at very low levels in SRP's surface water.
- The current standard for all Table A-2 constituents is Non-Detect.

\*Excerpt of Table A-2 list of constituents which includes primary and secondary EPA regulated constituents, EPA unregulated constituents, and EPA disinfection byproducts that are recognized as constituents of concern and are prohibited from introduction into the CAP System. Highlighted constituent represents a constituent that is regularly detected in SRP's surface water.

# Introduction Standards (Table A-2)

Constituent*	CAP Introduction Standard	Verde River Introduction Standard Exceedance	Salt River Introduction Standard Exceedance	Remarks
<b>Perfluorobutanesulfonic acid (PFBS)</b>	ND	Frequent	Frequent	Consistently detected in SRP's sampling locations in Salt and Verde Rivers at concentration levels well within the EPA's Health Advisory standard

\*General Constituents and CAP Priority Constituents identified in Table A-2 of the Water Quality Guidance Document.

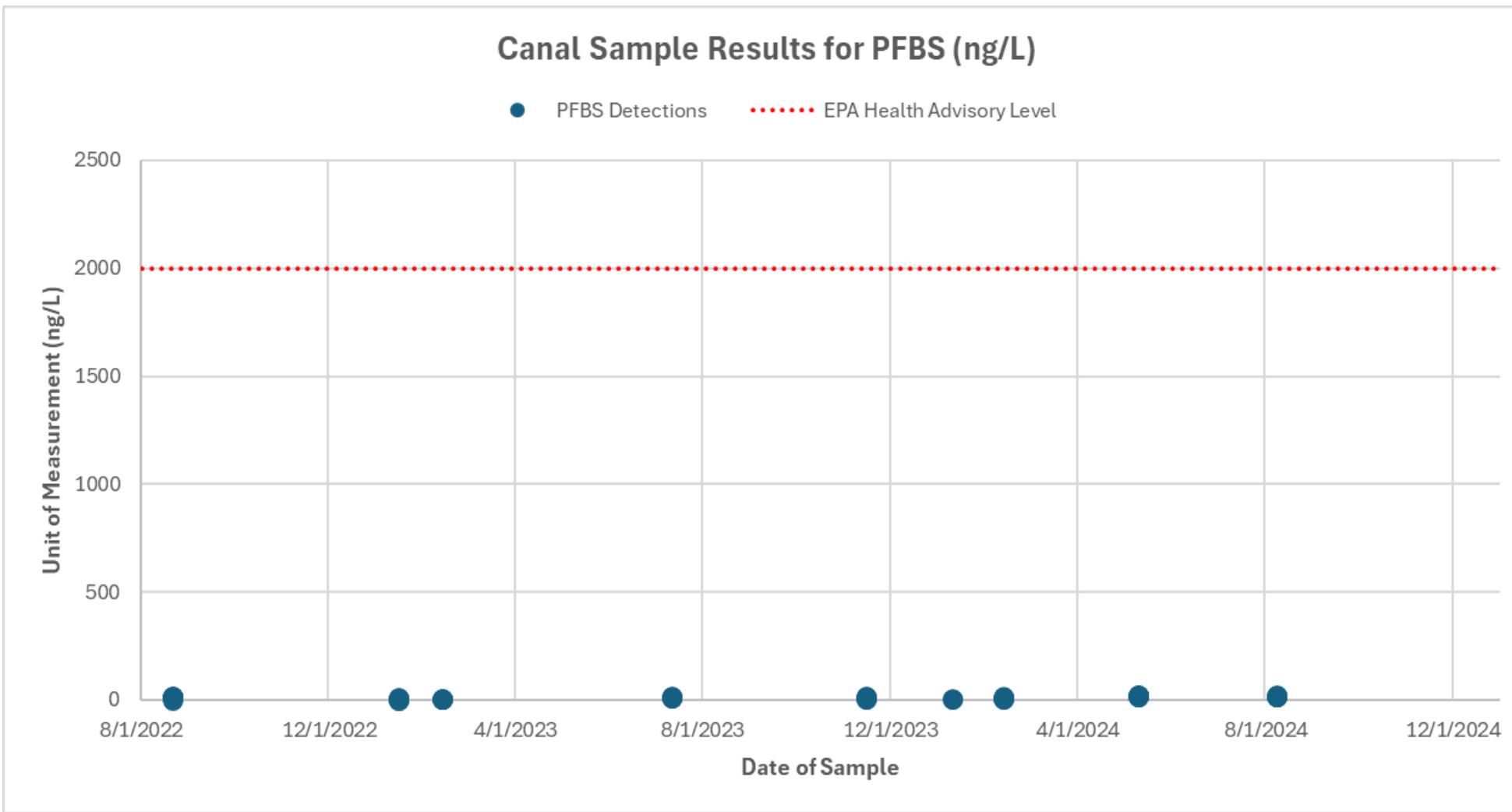
# Perfluorobutane Sulfonic Acid (PFBS)

- PFBS has been detected in SRP water supplies (Salt and Verde Rivers) at low levels
- EPA Health Advisory Level set at 2,000 parts per trillion (ppt) in June 2022
  - PFBS detections have ranged from 2.6 ppt – 26 ppt in Salt and Verde Rivers
- PFBS regulations are evolving

Chemical	Maximum Contaminant Level (MCL)
PFOA	4.0 ppt
PFOS	4.0 ppt
PFHxS	10 ppt
HFPO-DA (GenX chemicals)	10 ppt
PFNA	10 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index of 1 (unitless)

$$\text{Hazard Index (1 unitless)} = \left( \frac{[\text{HFPO-DA}_{\text{ppt}}]}{[10 \text{ ppt}]} \right) + \left( \frac{[\text{PFBS}_{\text{ppt}}]}{[2000 \text{ ppt}]} \right) + \left( \frac{[\text{PFNA}_{\text{ppt}}]}{[10 \text{ ppt}]} \right) + \left( \frac{[\text{PFHxS}_{\text{ppt}}]}{[10 \text{ ppt}]} \right)$$

## (Table A-2) - Perfluorobutane Sulfonic Acid (PFBS)

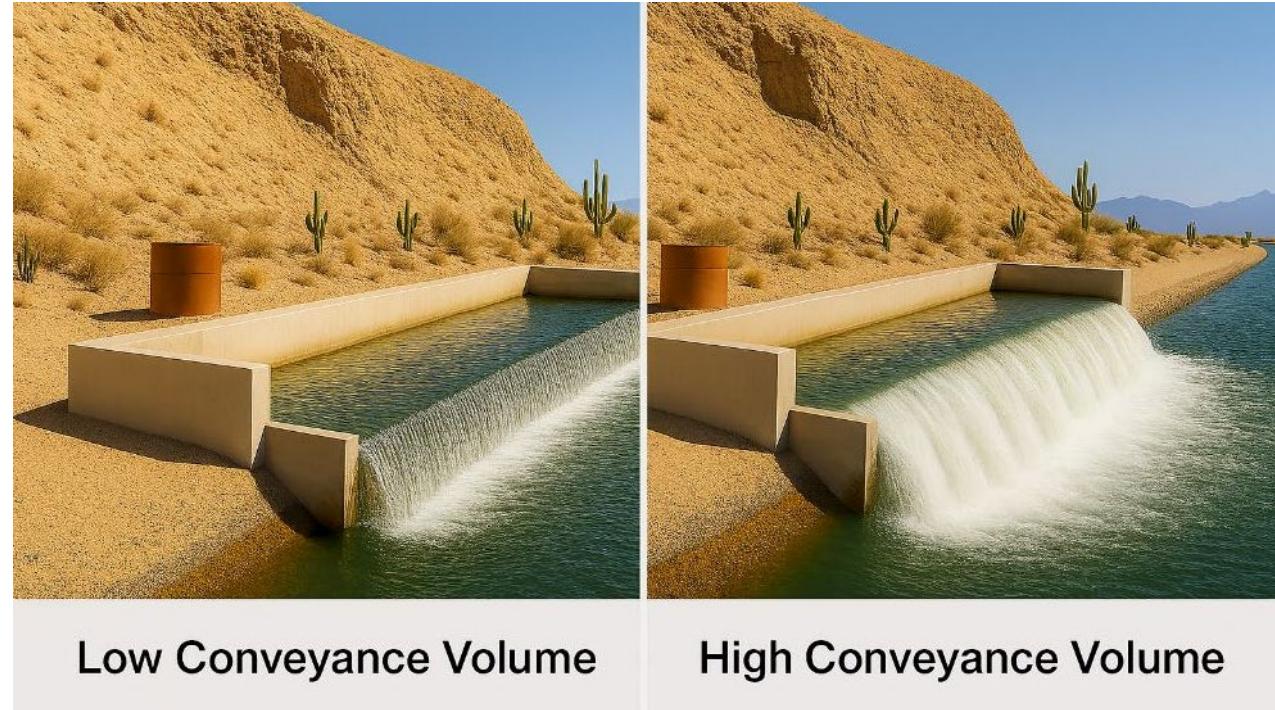


**\*CAP PFBS Introduction Standard:** Non-Detect (2 ng/L reporting limit)  
PFBS detections have ranged from **2.6 ppt – 26 ppt** in Salt and Verde Rivers

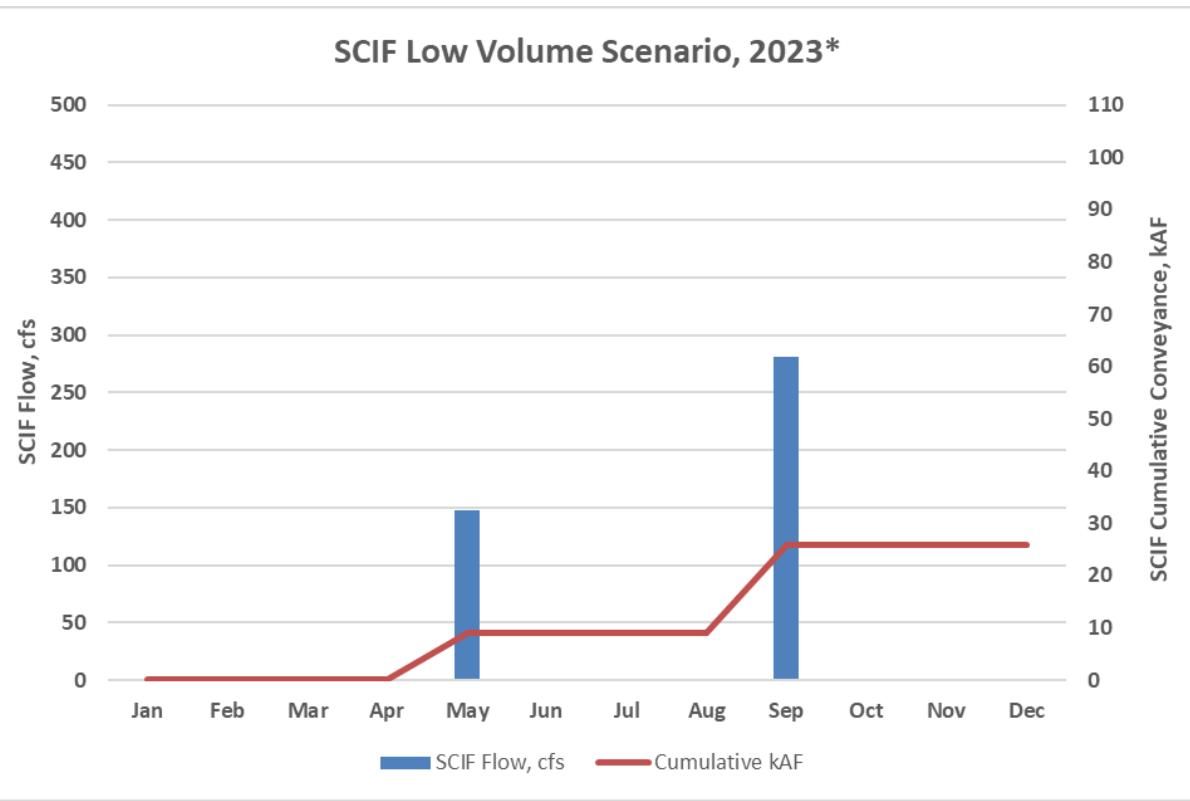
# Water Quality Modeling

# Water Quality Modeling - SCIF Conveyance Scenarios

- A “Bookend Approach” was used to select input years for CAP’s System-Wide Water Quality Model
- Two calendar years were chosen to represent high and low SCIF conveyance volumes entering the CAP system
- Designed to capture a range of scenarios at 1 million acre-feet of deliveries, comparing high and low SRP water volumes wheeled through CAP system



# Water Quality Modeling – SCIF “Low Volume” Scenario



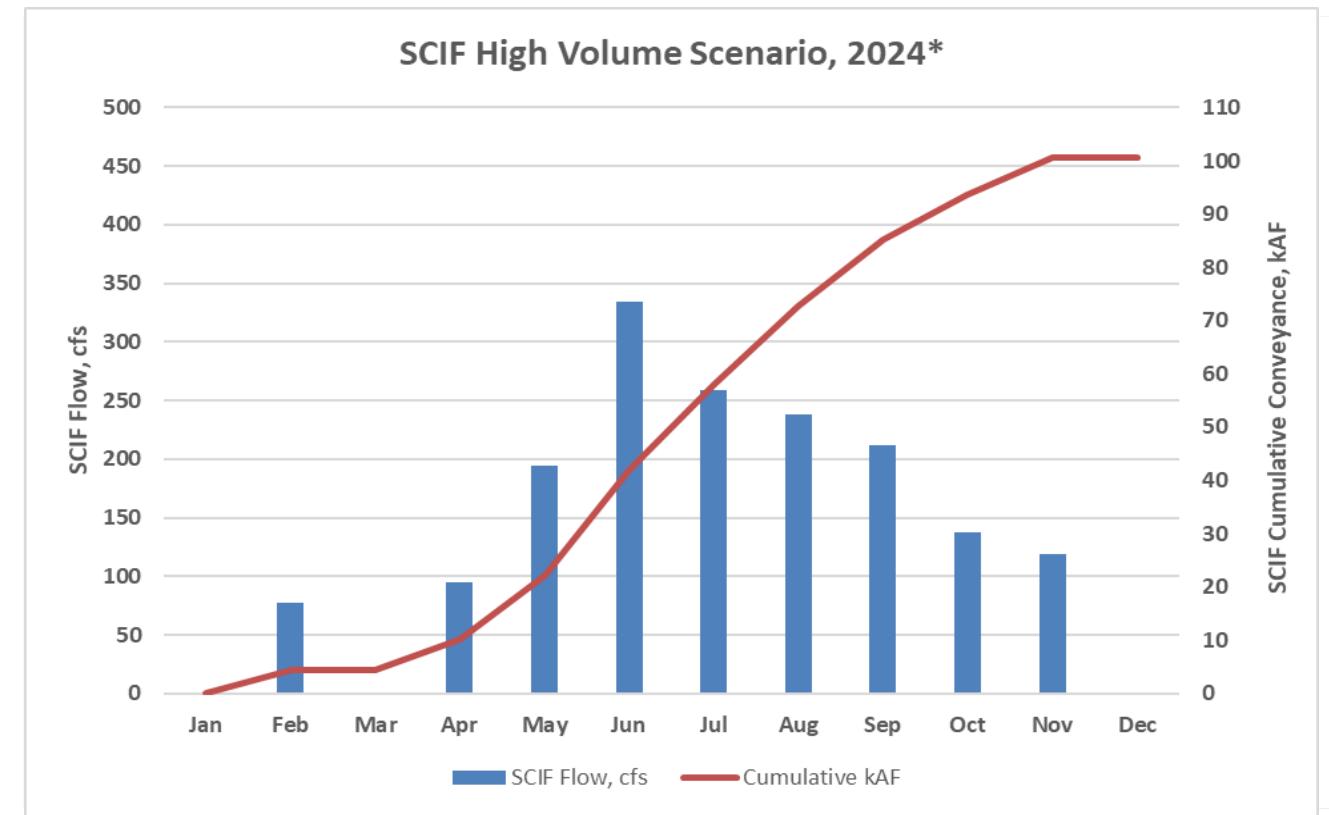
\*SCIF flows were estimated using monthly water quality sampling data from head of the South Canal and CAP Canal to meet introduction and delivery standards identified in Table A-1 during 1 million acre-feet of annual CAP deliveries.

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- 2023 represents a low volume year for introducing water via SCIF and wheeling through the CAP system due to water quality constraints.
- Despite low SCIF conveyance, runoff production in the Salt and Verde watersheds was exceptionally high.
- SCIF conveyance would have been limited by its ability to meet CAP water quality standards identified in Table A-1.
- Only a small volume of SRP surface water (26,000 acre-feet) could have been conveyed through CAP under a 1 million acre-feet delivery scenario.

# Water Quality Modeling – SCIF “High Volume” Scenario

- 2024 represents a high volume year for conveying water through SCIF where water quality can consistently meet CAP's introduction and delivery standards identified in Table A-1.
- This scenario represents a typical water year in SRP's system compared to conditions in 2023.
- In 2024, approximately 100,000 acre-feet could have been conveyed through CAP under a 1 million acre-feet delivery scenario.



\*SCIF flows were estimated using monthly water quality sampling data from head of the South Canal and CAP Canal to meet Introduction and Delivery Standards identified in Table A-1 during 1 million acre-feet of annual CAP deliveries.

The background of the image is a wide-angle, aerial photograph of a city at dusk or night. The city is densely built with numerous buildings, streets, and roads. The lights from the buildings and street lamps are visible, creating a warm glow against the darkening sky. In the distance, a range of mountains is visible under a clear sky. The overall atmosphere is one of a vibrant urban center.

**THANK YOU**



# CAP System-Wide Water Quality Model

*January 2026*

**YOUR WATER. YOUR FUTURE.**

# Overview

- Model Development
- Model Calibration
- Baseline Simulations
- SCIF Simulations
- Key Takeaways



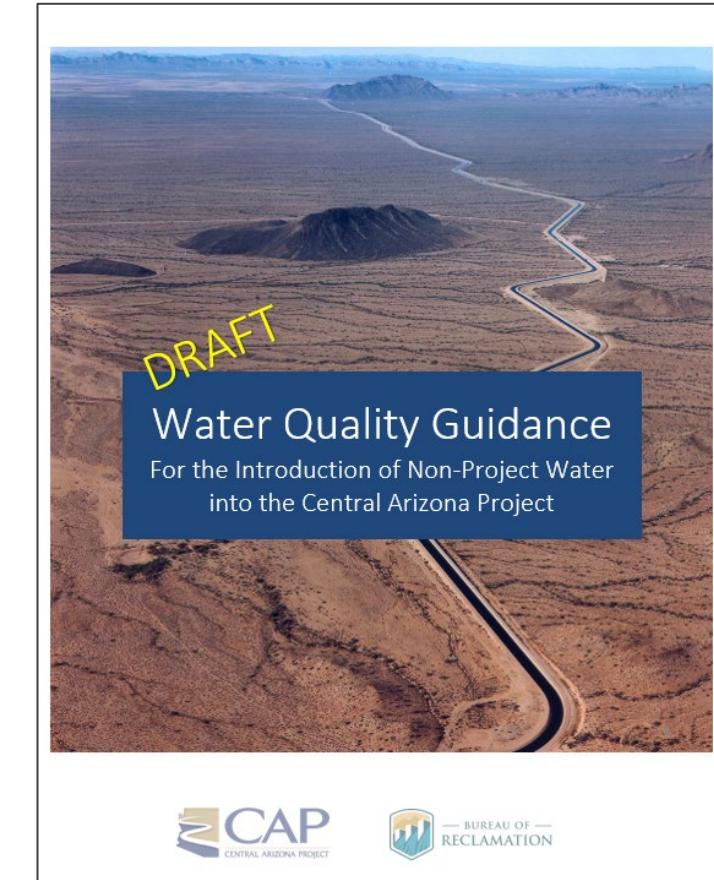
# Model Development

# Why a System-wide Model?

The 2017 SUA, which allows for wheeling of non-project water, directed Reclamation and CAWCD to establish uniform water quality standards for introduction of non-project water into the CAP System

- June 2018 - Task Force formed to fully develop numeric criteria for water quality parameters identified in consensus proposal
- October 2020 - CAP Water Transmission and RPA developed Water Quality Guidance Document
- March 2021 – Draft WQGD approved by CAP Board
- September 2025 – Changes by the United States approved by CAWCD Board

In the process of developing standards for the Guidance Document, it was determined that best approach to evaluating the impacts of blending non-project water in the CAP and comparing against the established Delivery Standards would be through a system-wide hydrodynamic and water quality model.



# System-Wide Water Quality Model

## Model Uses

- *Wheeling Project Feasibility* – Explore operational scenarios to determine the potential water quality impacts and recommend adjustments
- *Initial Analysis* - Simulate the water quality effects of introducing non-project water supplies (wheeling) into the CAP System based on a 1MAF shortage condition
  - Compare model results to CAP baseline conditions and established Delivery Standards
  - Provide results to stakeholders and Reclamation
- *NEPA Support* - Evaluate the water quality effects of wheeling under a variety of supply conditions including 1.5, 1.25, 0.75 MAF and minimal CAP supplies.
  - Model results are provided in NEPA documentation

# Model Selection: Requirements

- CAP geometry and features of canal, including Lake Pleasant
- Incorporate local attributes (meteorological, flow, and water quality data)
- Simulate various water supply conditions and wheeling introductions
- Include all CAP Table A-1 (Guidance Document) water quality constituents

CAP contracted with Black & Veatch (BV) to choose an appropriate model; then to populate and calibrate the model with CAP specific data



# Model Selection: CE-QUAL-W2

BV selected CE-QUAL-W2

- CE: Corps of Engineers; QUAL: Water Quality; W2: Width averaged 2D
- 2D Model - best suited for relatively long and narrow waterbodies
- EPA recognized water quality model
- All available versions of W2 are non-proprietary and open source; over 2100 applications in 115 countries
- Developed in 1970s and is continually updated
- CAP has an ongoing contract with the model developer, Dr. Scott Wells (Portland State University), to assist in refining and improving the model



# Model Calibration



# Model Calibration

**Calibration** – Adjusting model computational values to improve accuracy and reliability, and ultimately its ability to reproduce “reality”

- Output is compared against measured data within same time frame – “paired data”
- CAP model is calibrated over a 10-year period (2015-2024)
- Model is validated and re-calibrated each year with new data to continually improve the accuracy of the model

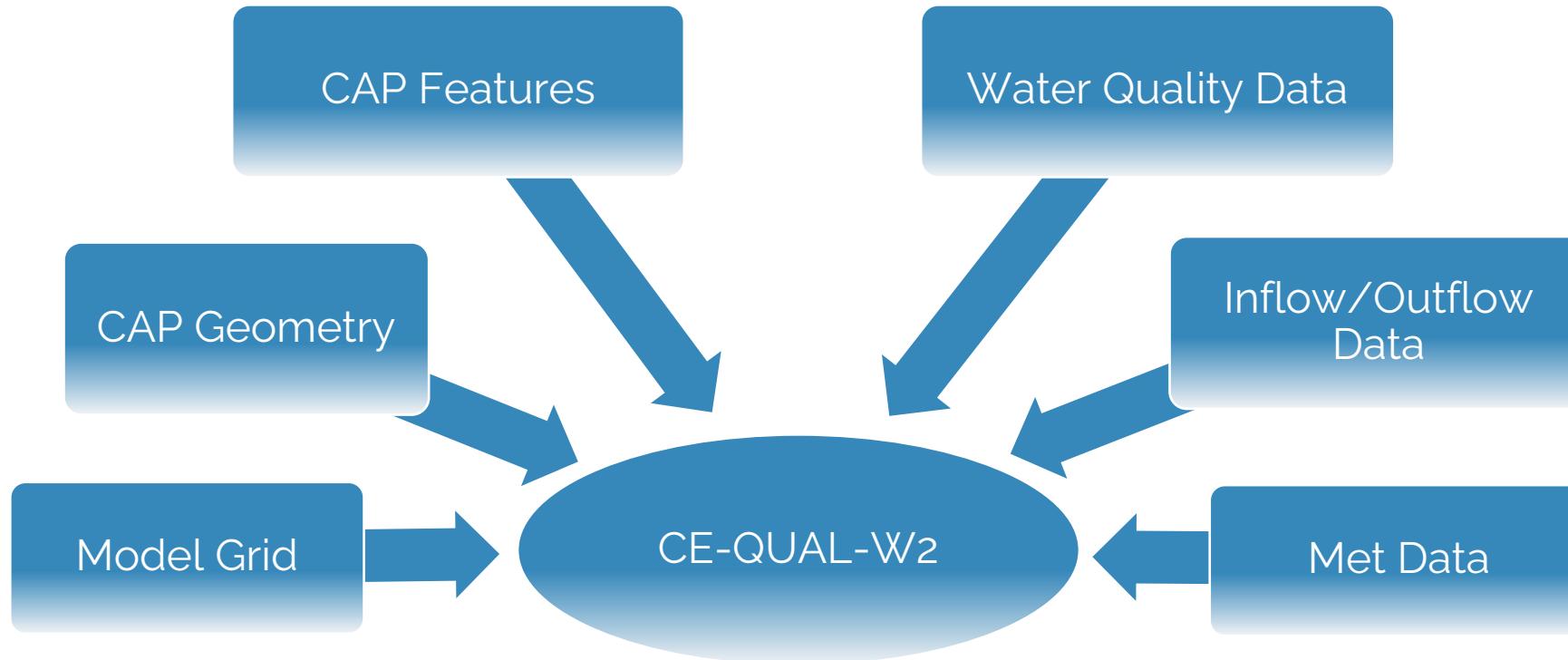


# Components of CE-QUAL-W2

- Over 930 lines (cards) of data that define how the model runs
  - Time steps
  - Heat Exchange/Evaporation
  - Friction Factors
  - Atmospheric Deposition
  - Light Extinction
  - Wind Sheltering
  - Algal and phytoplankton rates
  - Nutrient interactions
  - Sediment release rates

W2-COM.CSV FILE FORMAT	ALL					
<b>TITLE C</b> Any comment - this is written only to the SNP file	Control File version: "CAP DS3_Calibration"					
to the name of the tab	***					
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	"Cells to change based on simulation in red"					
	"Active cells in yellow, Inactive in blue"					
	"Dark blue indicates labels that are not read by model"					
	***					
<b>GRID/INPROC/CLOSE DIALOG BOX</b>	NWB	NBR	IMX	KMX	NPROC	
		8	8	131	7	
<b>IN/OUTFLOW</b>	NTR	NST	NW	NWD	NGT	
<b>CONSTITUENTS</b>	NGC	NSS	NAL	NEP	NBOO	
		36	1	1	1	
<b>MISCELLANEOUS</b>	NDAY	SELECTC	HABTAC	ENVIRPC	AERATEC	
		100 OFF	OFF	OFF	OFF	
<b>TIME CON</b> These are computed from formula in Column A-->	TMSTRT	TMEND	YEAR			
		100	3653	2015		
<b>DLT CON</b> Time step control parameters	NDLT	DLTMIN	DLTINTER			
		1	0.1 OFF			
<b>DLT DATE</b> Date of time step change in JDAY	DLTD	DLTD	DLTD	DLTD	DLTD	
		1				
<b>DLT MAX</b> Maximum time step in seconds	DLTMAX	DLTMAX	DLTMAX	DLTMAX	DLTMAX	
		60				
<b>DLT FRN</b> Fraction of maximum theoretical time step	DLTF	DLTF	DLTF	DLTF	DLTF	
		0.9				
<b>DLT LIMIT</b> VISC - Viscosity time step limitation ON or OFF	P26	P27	P28	P29	P30	
	WB1	WB2	WB3	WB4	WB5	
CELO - Wave celerity time step limitation ON or OFF	ON	ON	ON	ON	ON	
DLTADD - additional stability check to lower time step ON or OFF	ON	ON	ON	ON	ON	
<b>BRANCH GRID</b>	BR1	BR2	BR3	BR4	BR5	
US - upstream segment number of branch		2	24	46	63	
DS - downstream segment number of branch		21	43	60	74	
UHS - upstream boundary condition		0	0	0	0	
DHS - downstream boundary condition		0	0	0	0	
NLMLN # of layers		1	1	1	1	
SLOPE - actual slope		7.99E-05	8.43E-05	6.05E-05	7.85E-05	
SLOPEC - hydraulic equivalent slope (less than or equal to SLOPE)		7.99E-05	8.43E-05	6.05E-05	7.85E-05	

# Components of CE-QUAL-W2



# Model Grid

## Water Bodies and Segments

- 13 Separate Models (Water Body)
  - Defined by canal reaches (pumping plant to pumping plant)
  - Lake Pleasant
- Model Segments
  - Allows us to define exact locations for hydrologic features
    - ~1,000 m in length



# Flow Inputs

## *Calibration*

- CAP Supply = Deliveries
- Flow for each of the 13 individual models is calculated using actual delivery data during each year of the 10-year calibration period
  - Model inflow = sum of all downstream outflows
    - Ensures enough water for that model segment and all downstream segments, while preserving the total CAP supply



# Water Quality Data

## *Calibration*

### Colorado River

- Monthly historical measured water quality at Havasu intakes (MWP) for each year of the 10-year calibration period
  - Table A-1 parameters
  - Unverified statistical outliers removed
  - Missing data is replaced by interpolation or “like months”
- Daily water temperature from real-time sensors

### Lake Pleasant/Agua Fria River

- Lake Pleasant receives canal water quality, which is then affected by lake processes and inputs (Agua Fria River), and is then discharged into the canal



# Meteorological Data

## Calibration

### 6 Parameters

- Air Temperature
- Dew point
- Wind Speed
- Wind Direction
- Cloud Cover
- Solar Radiation

### 5 Canal Zones

- Data from two weather stations/zone
- Hourly data

### 2 Lake Pleasant Zones

- 15-minute data



# Model Simulations



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# Model Simulations

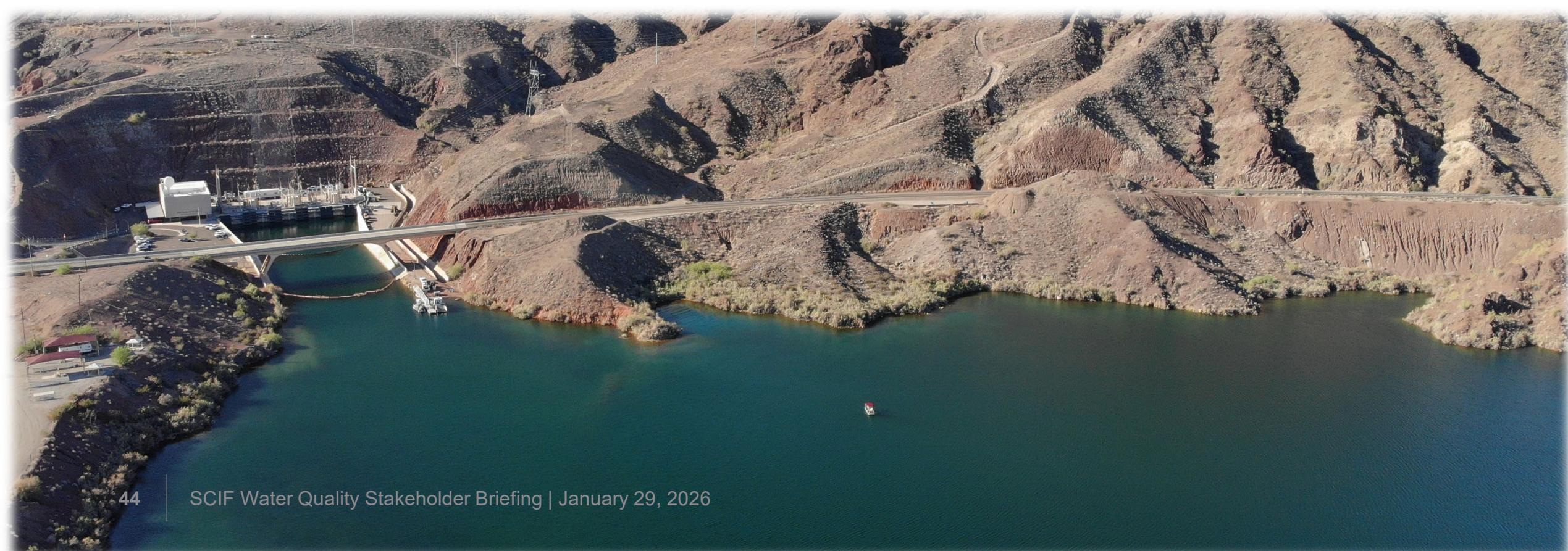
**Simulation** – Using the calibrated model to evaluate a specific operational or hydrologic condition and estimate the resulting water quality response.

- **CAP Baseline Simulations** - 10-year simulation that incorporates the annual historical meteorologic and water quality variability to estimate how we might expect water quality to respond to the specified Colorado River supply.
  - Isolates flow effects on water quality
- **Wheeling simulations** introduce additional flow and associated constituent loads to evaluate the resulting water quality response within the CAP system.



# CAP Supply Scenarios

- 1,000,000 Acre-Foot Supply (668,000 acre-feet through SGL)
- 750,000 Acre-Foot Supply (500,000 acre-feet through SGL)
- "Minimal Supply" (350,000 acre-feet through SGL)



# CAP Supply Scenario Assumptions

## ***Assumptions***

- The available CAP Supply is distributed to water users according to availability by contract priority.
- Exchange and conservation agreements are not considered.
- Spatial distribution across CAP turnouts is based on historical water user delivery locations.
- Temporal distribution is based on the use types: Water Treatment Plant, Other Direct Uses, On-Reservation Direct Use, USF, GSF, and Agricultural.
- Water users' available supplies were distributed based on priority of type of use.
- Lake Pleasant operations are adjusted to ensure adequate flow for downstream demand and maintain lake levels.
- Model inputs are mean monthly flow values

# Baseline Model Simulations

## Goal

- For a given flow (supply) scenario, the model is used to estimate spatial and temporal water quality responses throughout the CAP system

## Approach

- The model incorporates observed CAP water quality and meteorological data from the past 10 years to capture a range of environmental variability
- Flows corresponding to the specified CAP supply scenario are applied
  - Monthly flow values are repeated annually for each year of the 10-year simulation period to isolate the influence of flow while preserving historical variability in water quality and meteorology

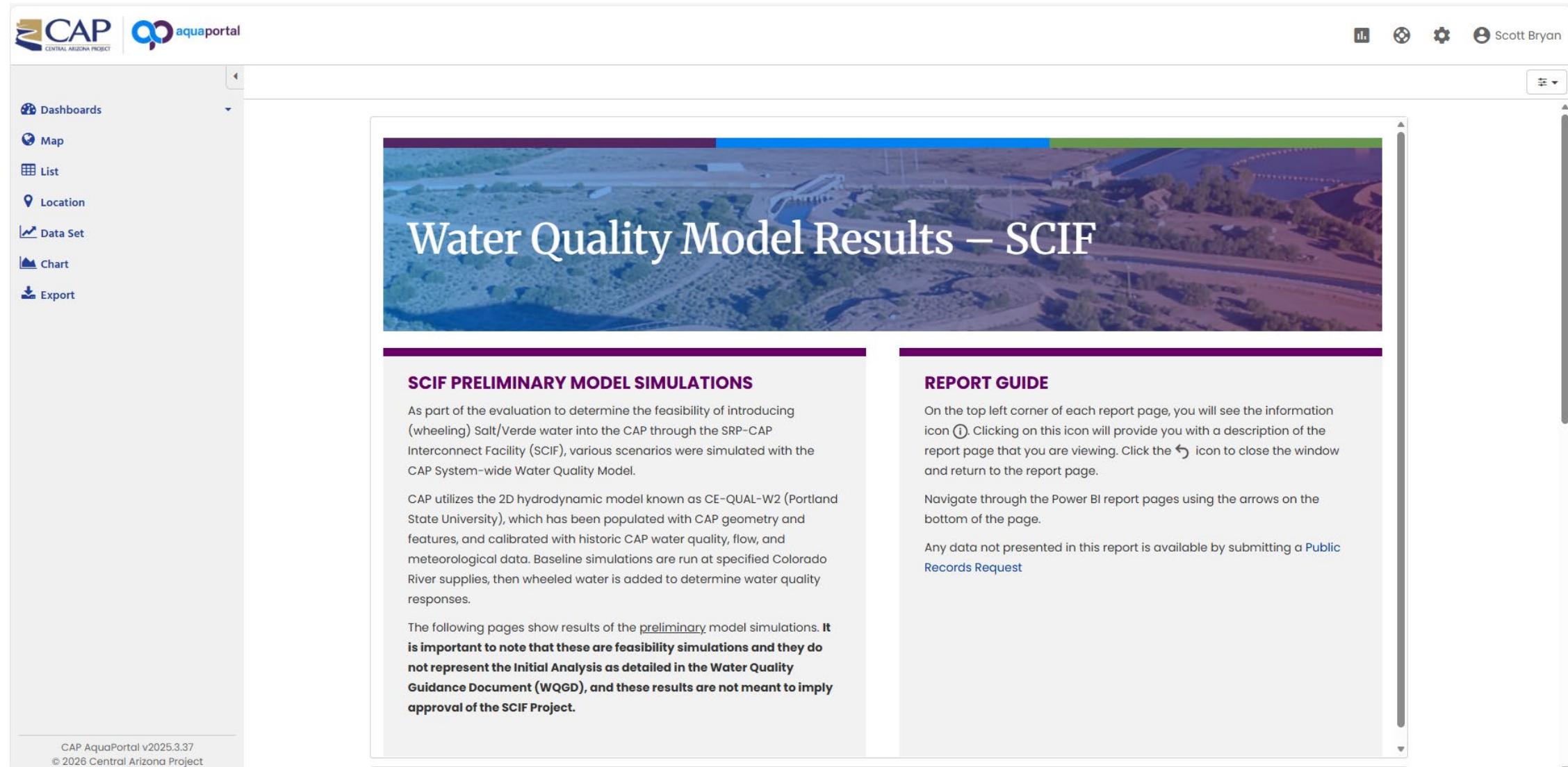
## Results

- Flow and water quality are input as monthly values, so results are evaluated on a monthly basis.
- 10 years of simulation results provides 10 values for each month, which allows us to calculate monthly medians and percentile statistics

# Baseline Model Simulation Results

[aquaportal.cap-az.com](http://aquaportal.cap-az.com)

[SCIF- Power BI](#)



The screenshot shows a Power BI report interface. At the top, there are logos for CAP (Central Arizona Project) and aquaportal. The top right corner shows a user profile for Scott Bryan. The left sidebar contains navigation links: Dashboards, Map, List, Location, Data Set, Chart, and Export. The main content area features a large image of a river system with the title "Water Quality Model Results – SCIF". Below the title, there are two sections: "SCIF PRELIMINARY MODEL SIMULATIONS" and "REPORT GUIDE". The "SCIF PRELIMINARY MODEL SIMULATIONS" section contains text about the evaluation of introducing Salt/Verde water into the CAP through the SCIF, mentioning the use of the CE-QUAL-W2 model and historical data calibration. It also states that baseline simulations are run at specified Colorado River supplies and then wheeled water is added to determine water quality responses. A note at the bottom of this section emphasizes that the results are preliminary feasibility simulations and do not represent the Initial Analysis as detailed in the Water Quality Guidance Document. The "REPORT GUIDE" section provides instructions for navigating the report using the information icon in the top left corner and the back arrow icon at the bottom of the page. It also mentions that public records requests can be submitted for any data not presented. The bottom left corner of the report page includes the CAP AquaPortal version (v2025.3.37) and copyright information (© 2026 Central Arizona Project).

**SCIF PRELIMINARY MODEL SIMULATIONS**

As part of the evaluation to determine the feasibility of introducing (wheeling) Salt/Verde water into the CAP through the SRP-CAP Interconnect Facility (SCIF), various scenarios were simulated with the CAP System-wide Water Quality Model.

CAP utilizes the 2D hydrodynamic model known as CE-QUAL-W2 (Portland State University), which has been populated with CAP geometry and features, and calibrated with historic CAP water quality, flow, and meteorological data. Baseline simulations are run at specified Colorado River supplies, then wheeled water is added to determine water quality responses.

The following pages show results of the preliminary model simulations. **It is important to note that these are feasibility simulations and they do not represent the Initial Analysis as detailed in the Water Quality Guidance Document (WQGD), and these results are not meant to imply approval of the SCIF Project.**

**REPORT GUIDE**

On the top left corner of each report page, you will see the information icon ⓘ. Clicking on this icon will provide you with a description of the report page that you are viewing. Click the ⏪ icon to close the window and return to the report page.

Navigate through the Power BI report pages using the arrows on the bottom of the page.

Any data not presented in this report is available by submitting a [Public Records Request](#)

CAP AquaPortal v2025.3.37  
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An aerial photograph of a desert landscape featuring a network of blue-tinted canals. One prominent canal runs diagonally from the bottom left towards the top right. Another canal branches off to the right, leading towards a large reservoir or lake. The surrounding terrain is a mix of dry, brown ground and patches of green vegetation. In the foreground, there are several industrial structures, including small buildings and what appears to be a construction or maintenance yard with various pieces of equipment.

# SCIF Simulations

# Feasibility ≠ Initial Analysis

- These simulations **do not** represent the Initial Analysis and the results **do not** imply approval of the SCIF project
- Data provided by SRP for the SCIF project introduces two potential inflow scenarios based on measured water quality below Granite Reef Dam
- Goal of this feasibility modeling effort is to determine if scenarios provided by SRP could meet the Delivery Standards
- Detailed operational approaches will continue to be developed with SRP, CAP, Reclamation, and Stakeholders during this phase and in the NEPA process



# Modeling Scenarios for SCIF

- It was recognized early that SCIF would not meet the Delivery Standards if modeled at full SCIF capacity (500 cfs), so operational restrictions were needed on SCIF flow introduced into the CAP
- SRP provided two scenarios that "bookend" historical water quality over the past 10 years
  - "Good" water quality year (2024) allows for a relatively high-volume introduction
  - "Fair/Poor" water quality year (2023) restricts introduction to a lower volume
- Monthly SCIF inflow is adjusted to meet Delivery Standards

# SCIF Wheeling Assumptions

- Wheeling volumes are additive to the CAP available supply for each scenario
  - SCIF Operating Scenario 1 (~100,000 acre-feet annually)
  - SCIF Operating Scenario 2 (~26,000 acre-feet annually)
- SCIF Deliveries
  - No storage; Inflow = Delivery (each month)
    - 32% of SCIF volume delivered at participant turnouts upstream of SCIF
    - 68% of SCIF volume delivered at participant turnouts downstream of SCIF
- No adjustments to Lake Pleasant operations

# SCIF Simulations

## *Scenarios*

- SCIF Operating Scenario 1 (~100,000 acre-feet annually)
- SCIF Operating Scenario 2 (~26,000 acre-feet annually)

## *Approach*

- Start with the baseline model for each individual CAP supply scenario
- Water quality and inflow/outflow from the selected SCIF scenario is added
  - Water quality and flow are replicated each simulation year, which isolates the effects of SCIF

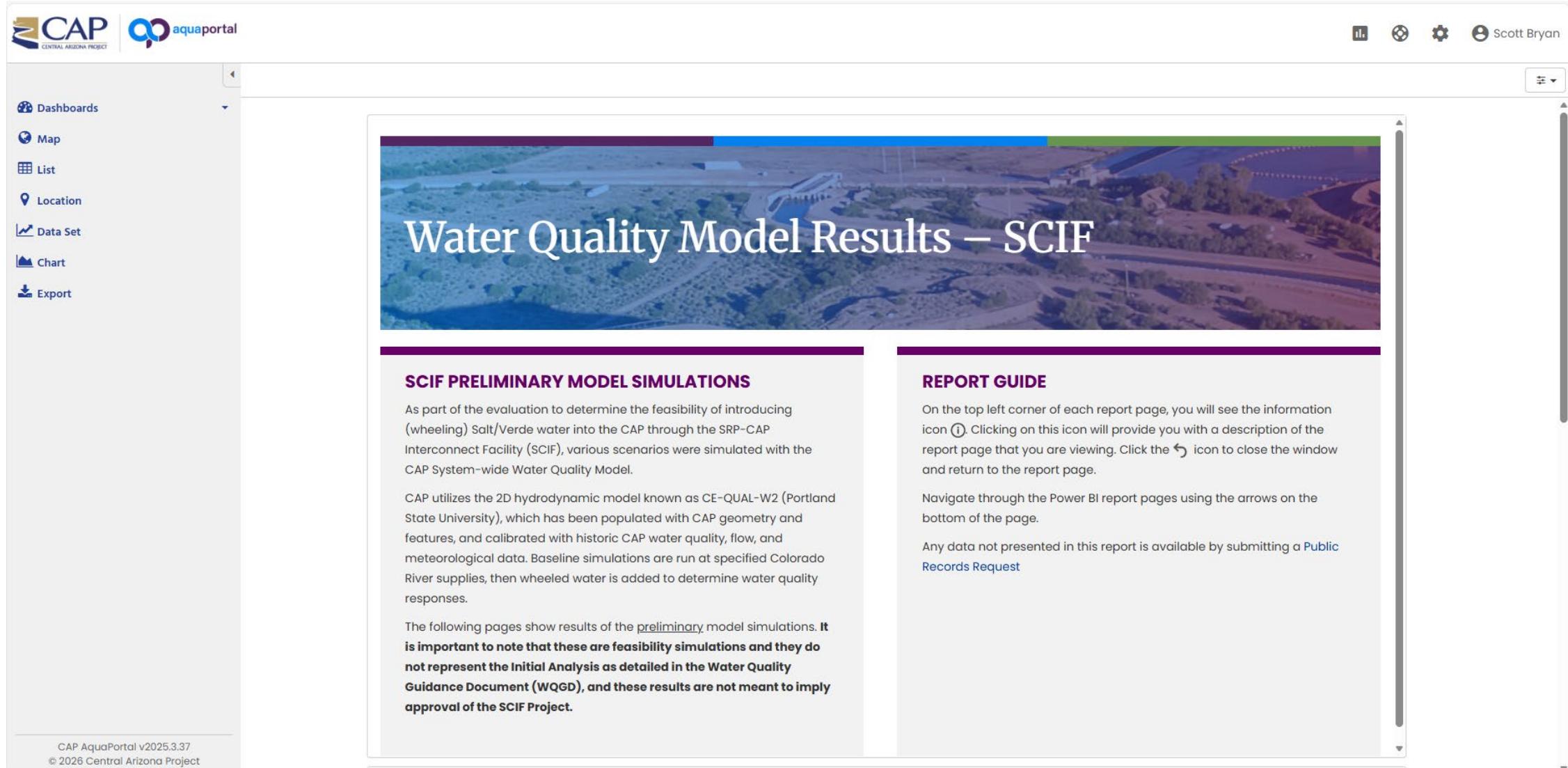
## *Results*

- 10 data points for every month from which statistics can be applied
- Compare against Delivery Standards
- Compare against CAP Baseline conditions

# SCIF Model Simulation Results

## [aquaportal.cap-az.com](http://aquaportal.cap-az.com)

[SCIF- Power BI](#)



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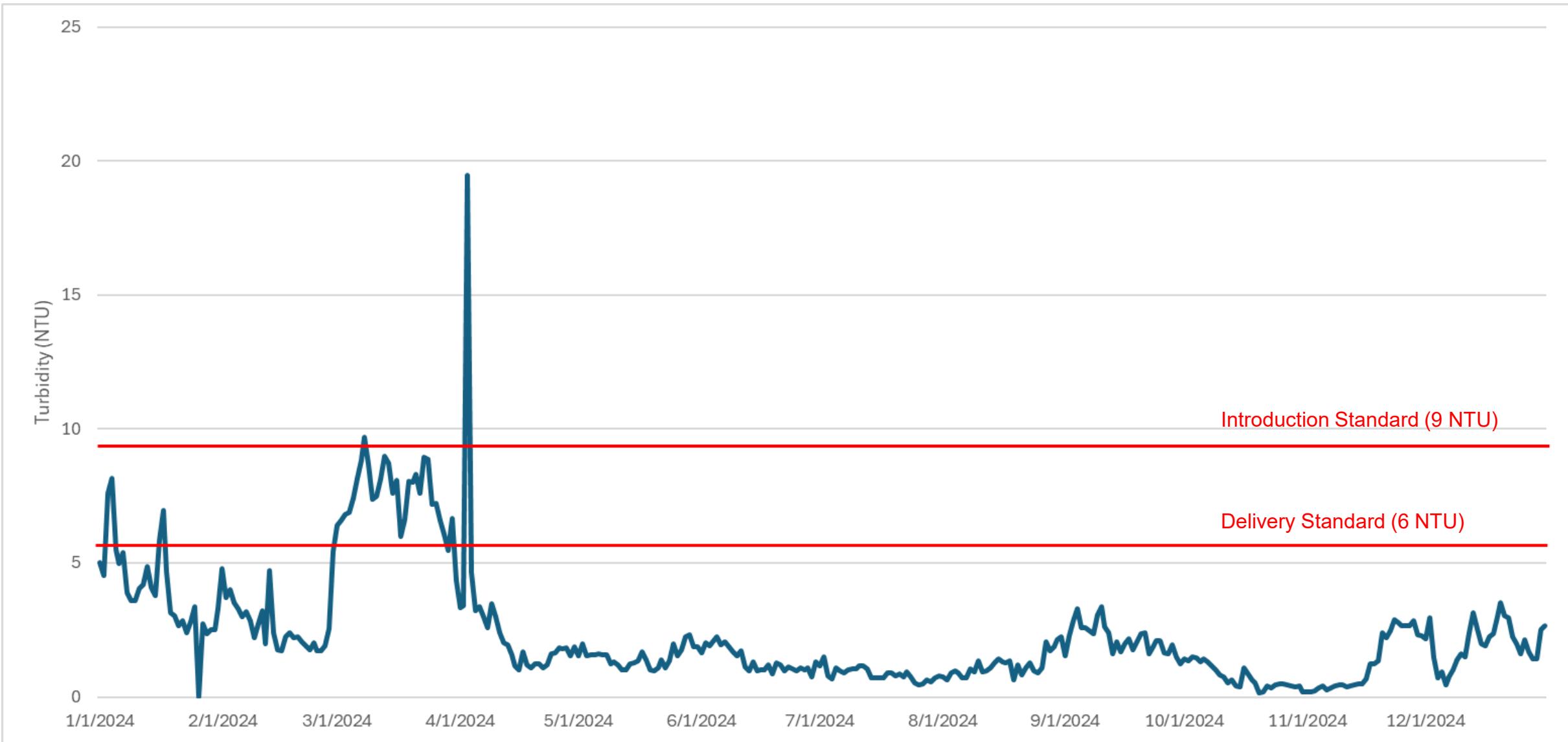
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# Turbidity

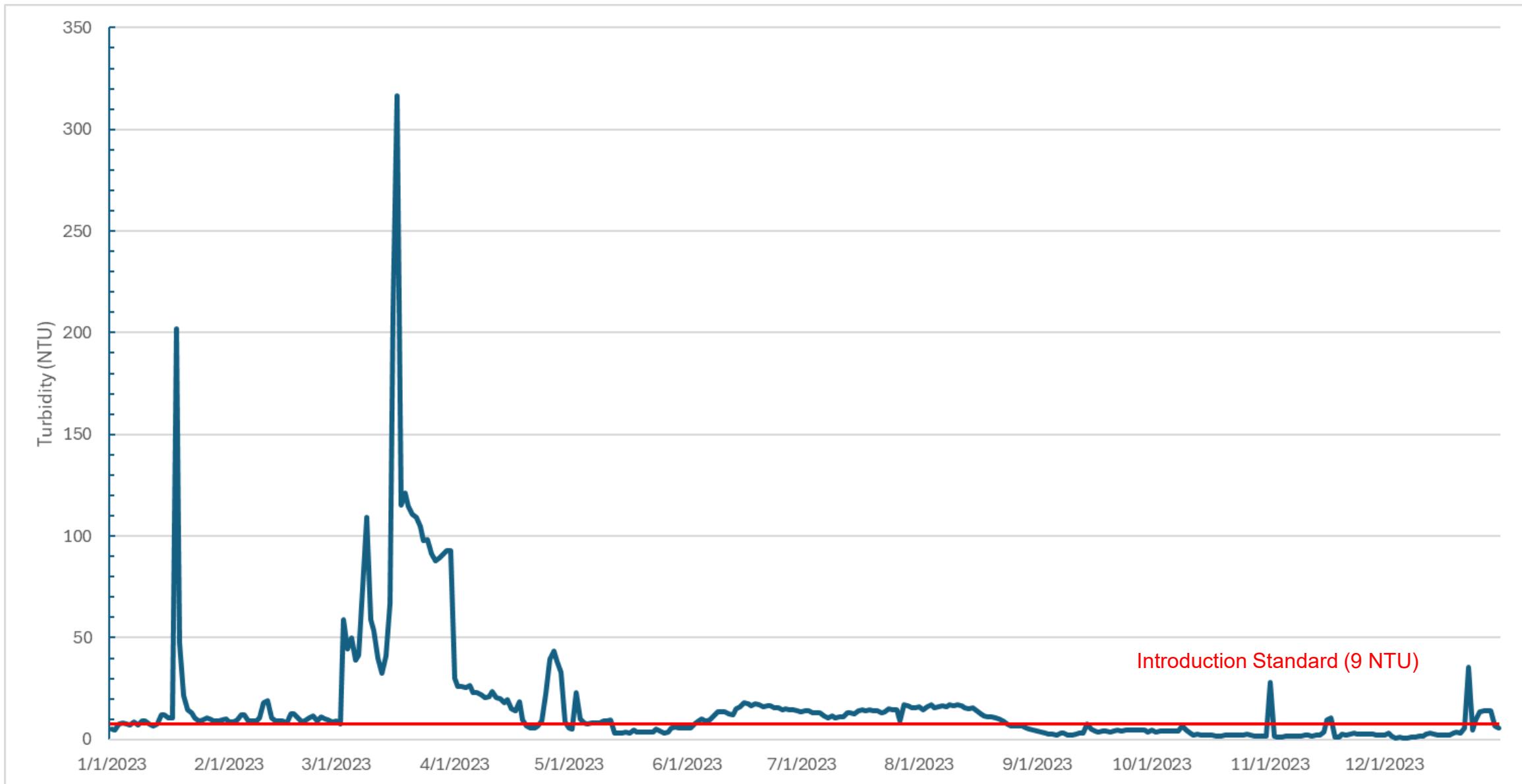
- Turbidity is not an input, it is calculated (derived constituent) in the System-Wide model
- Because turbidity is highly variable and typically event driven, it is difficult to accurately simulate
  - Currently working with Dr. Wells to better estimate turbidity
- For evaluating surface water sources, like the SCIF, turbidity will be monitored in real-time, prior to introduction, and averaged over a 24-hour period.
  - When values exceed the Introduction Standard in a 24-hour period, wheeling will not be allowed



# SCIF Unblended Turbidity - Scenario 1 (2024)



# SCIF Unblended Turbidity - Scenario 2 (2023)





# Key Takeaways:

## Meeting #1

1. The SCIF Project is complex and requires dialogue regarding the tools designed to implement wheeling projects.
2. Key logistical and operational parameters will continue to be developed throughout the NEPA and Wheeling Contract processes.
3. This series of meetings seeks to establish a common knowledge base to enable productive conversations regarding SCIF Water Quality impacts.
4. Additional forums for stakeholder input will be available throughout the development and environmental approval processes.

**YOUR WATER. YOUR FUTURE.**

# Key Takeaways:

## Meeting #2

1. The SCIF Project is complex and requires dialogue regarding the tools designed to implement wheeling projects.
2. Key logistical and operational parameters will continue to be developed throughout the NEPA and Wheeling Contract processes.
  - **SRP's proposal largely complies with Water Quality Standards through variable operations.**
  - **SCIF operations would not comply with the current Introduction Standard for PFBS.**
3. This series of meetings seeks to establish a common knowledge base to enable productive conversations regarding SCIF Water Quality impacts.
  - **Blended Water Quality Modeling results have been made available through AquaPortal.**
  - **Meeting #3 will be a discussion of potential methods to address consistency with water quality requirements.**
4. Additional forums for stakeholder input will be available throughout the development and environmental approval processes.



**YOUR WATER. YOUR FUTURE.**

The background of the slide is a wide-angle aerial photograph of a desert landscape in Arizona. A large, blue, rectangular canal of the Central Arizona Project cuts through the center of the image. The surrounding land is a mix of dry, brown vegetation and green lawns in residential neighborhoods. In the distance, a range of mountains is visible under a clear sky.

# Questions?

Virtual attendees may submit  
questions to [questions@cap-az.com](mailto:questions@cap-az.com)

YOUR WATER. YOUR FUTURE.



## Next Meeting: Roundtable

Hybrid | February 11, 2026 | 9am – 11am  
Central Arizona Project, Lake Mead Conference Room

Additional questions/comments can be sent  
to [questions@cap-az.com](mailto:questions@cap-az.com).

**YOUR WATER. YOUR FUTURE.**