Recording: This Workshop will be recorded.

WELCOME

ZOOM Participants:

- Please feel free to test your camera and microphone
- If you are dialing in by phone for audio on the Zoom platform, the number is:

  +1 (669) 900-6833 **Meeting ID**: 841 7177 4045
- For any technical problems, type into “chat window” or email csanchez@westyost.com

Board Room Participants:

- Orient yourself to the room, including Emergency Exits and Restrooms
- Say hello to the person sitting nearby ☺
- Sign in and sign up for our email listserv (optional)

cvsnmp.com

PARTICIPATION GUIDELINES

- This Workshop is interactive!
- We will keep a discussion queue
  - **Zoom:** Type questions and comments into chat window and/or raise hand
  - **In Room:** Please raise hand. At your turn please, speak into microphone
- Please remain **muted** unless speaking
- *Share – listen – learn* and use respectful communication
- We are recording this session

COACHELLA VALLEY
SALT & NUTRIENT MANAGEMENT PLAN (CV-SNMP)

COMMUNITY WORKSHOP #3

JULY 1, 2026| 10:00 – 11:30 AM

cvsnmp.com

AGENDA

- **Updates** on Progress Made on the CV-SNMP:
  - Technical Memorandums (TMs) # 1 – 4
  - TM #5 Construct Nitrate / Total Dissolved Solids (N/TDS) Forecasting Tools and Evaluate the Baseline Scenario
- **Next Steps**
- **Following Along** and Staying Involved
- Let's Talk! **Open Discussion** Session

POLL:

WHICH CATEGORY BEST FITS YOU IN THIS GROUNDWATER BASIN?

Select all that apply

- Agriculture
- Golf Industry
- Resident
- Commercial / Industrial Water User
- Private Domestic Well User
- Tribal Government / Organization
- Non-Governmental Organization
- Government Agency
- Academia
- Other Interested Party

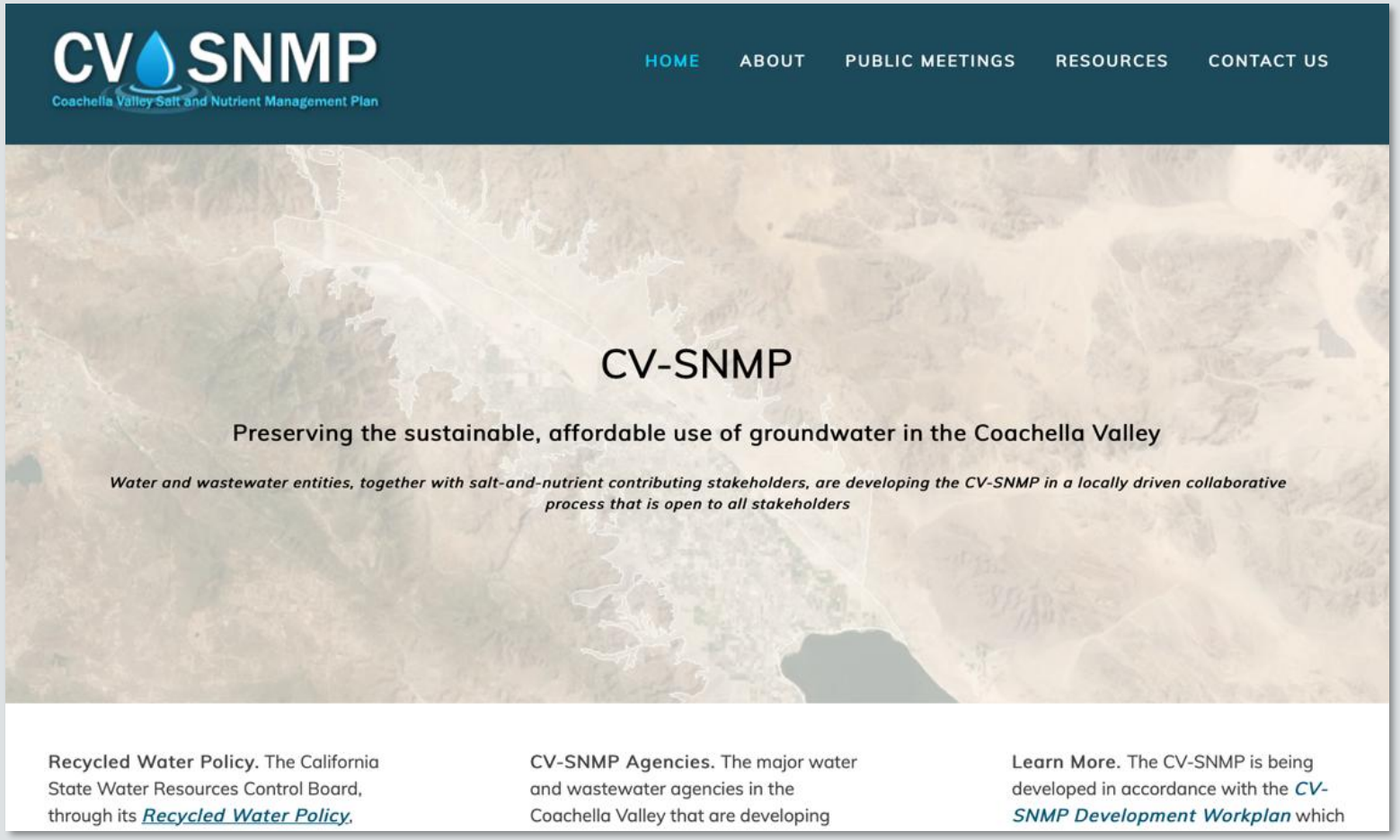
Participants can join at **slido.com** with **#1997341**

COACHELLA VALLEY
SALT & NUTRIENT MANAGEMENT PLAN
OR CV-SNMP

A high-level review of the:

- ✓ what
- ✓ why
- ✓ who
- ✓ how
- ✓ when

WWW.CVSNMP.COM



The “WHAT” | CV-SNMP

The **Coachella Valley Salt and Nutrient Management Plan (CV-SNMP)** will result in a basin-wide plan to manage salts and nutrients in compliance with the California’s **Recycled Water Policy**

The "WHY"

- Coachella Valley's economy is tied to water!
- The CV-SNMP may impact:
  - ✓ The ability to use **recycled water**
  - ✓ The ability to use **Colorado River water**
  - ✓ The operations and cost of **managing and treating** water and wastewater
  - ✓ **Water rates**

The “WHY” | Goals of the CV-SNMP

- To **manage** salt and nutrient loading in the groundwater basin **in a way that makes sense for the community**
- To preserve the **affordable use of water** in the Coachella Valley for all beneficial uses
- To **protect groundwater quality** for future generations

The “WHO”

- STEERING COMMITTEE (SC)
- TECHNICAL ADVISORY COMMITTEE (TAC)
- CONSULTANT TEAM
- REGIONAL WATER BOARD
- NATIVE AMERICAN TRIBES OF THE COACHELLA VALLEY
- PUBLIC STAKEHOLDERS

The “HOW”

- Use the October 2021 **CV-SNMP Development Workplan** as the “road map” for the technical approach and schedule to prepare an updated CV-SNMP
- Work conducted by Technical Team at West Yost, guided by project **Steering Committing (SC)** with input by the **Technical Advisory Committee (TAC)**
- Draft work products are developed with opportunities for input by Native American Tribes of the Coachella Valley, members of the public, and the Regional Water Board

Technical Scope-of-Work Components:

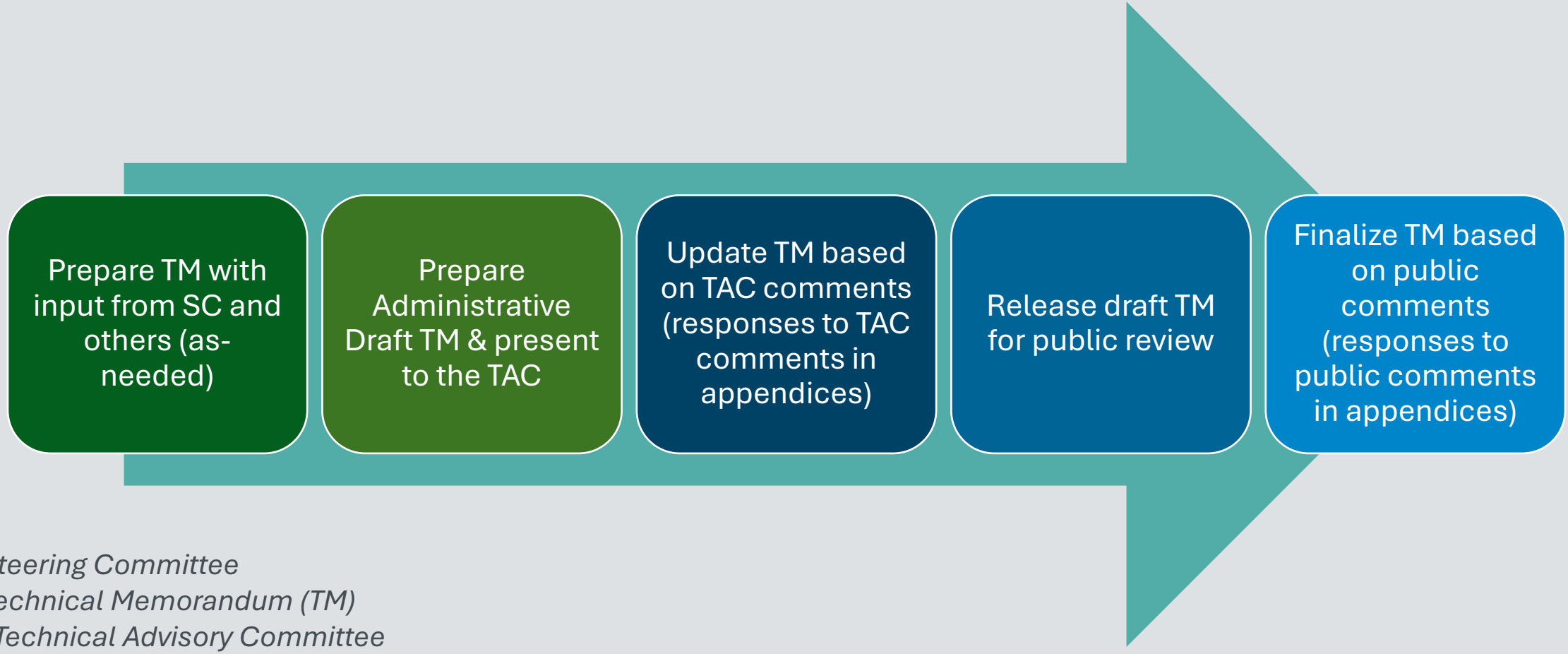
Characterize current groundwater quality and the sources of salt and nutrient loading

Identify appropriate salt and nutrient concentrations in groundwater to protect water quality and beneficial uses

Evaluate the impact of current water supply plans and salt and nutrient management scenarios

Collectively use this information to develop an updated CV-SNMP

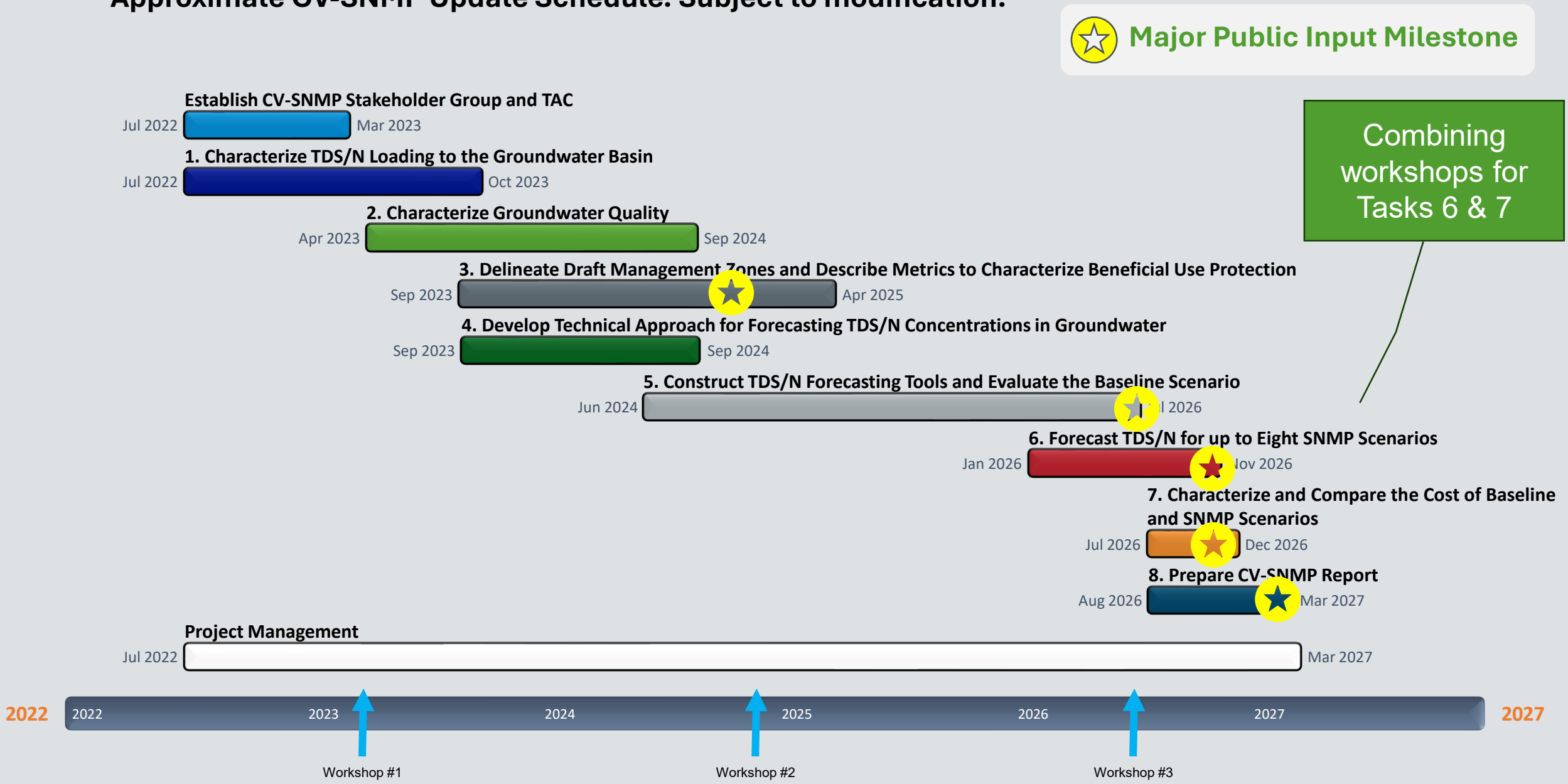
Technical Work Review Process



SC = Steering Committee
TM = Technical Memorandum (TM)
TAC = Technical Advisory Committee

The “WHEN”

*Approximate CV-SNMP Update Schedule. Subject to modification.



Technical Memoranda

TM #1: Characterize TDS/N Loading	Complete
TM #2: Characterize Current Groundwater Quality	Complete
TM #3: Draft Management Zones	In Progress: 99% Complete
TM #4: Technical Approach for Forecasting TDS/N	Complete
TM #5: Construct TDS/N Forecasting Tools	In Progress: 95% Complete
TM #6: Forecast TDS/N Concentrations	In Progress: 60% Complete
TM #7: Characterize and Compare the Cost	Not Started

Today's Focus

- **Highlights**
  - **TM #1:** Characterize TDS/N Mass Loading to the Groundwater Basin
  - **TM #2:** Characterize Current Groundwater Quality
  - **TM #3:** Delineate Draft Management Zones and Describe Methods to Characterize Beneficial Use Protection
  - **TM #4:** Develop Technical Approach for Forecasting TDS/N Concentrations in Groundwater
- **Review and Discuss**
  - **TM #5:** Construct Nitrate / Total Dissolved Solids (N/TDS) Forecasting Tools and Evaluate the Baseline Scenario

TM #1: Characterize TDS/N Loading

OBJECTIVES

Understand location, seasonal variation, and trends in recent TDS/NO3 loading

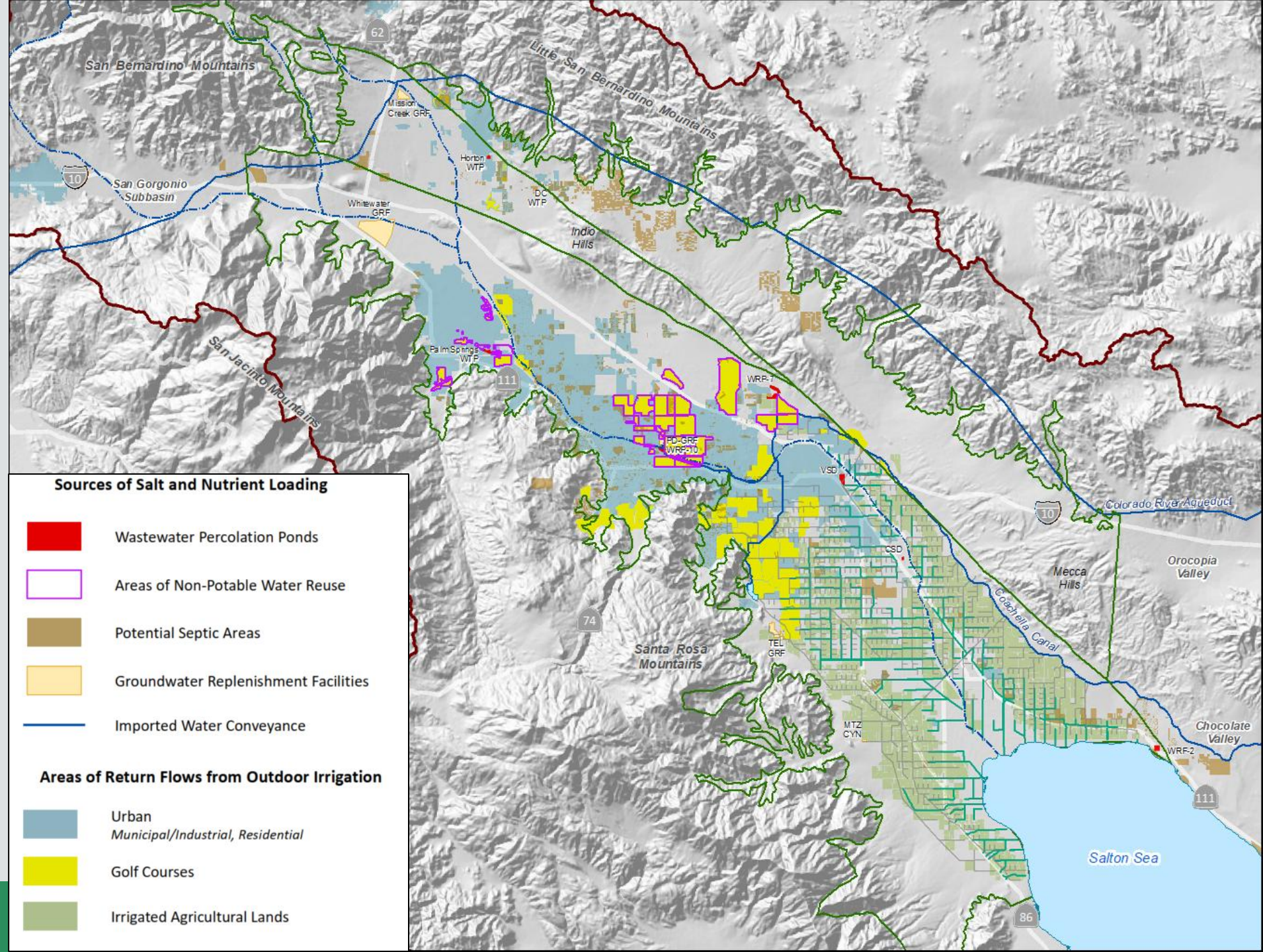
Use the results to inform delineation of groundwater management zones (TM #3)

Use the results to inform water-quality modeling tasks →

Identify loading sources; define assumptions/data to use in modeling

TM #1:
Characterize TDS/N Loading

- *Draft Release:* Oct 2023
- *Review Period:* Nov to Dec 2023
- *Comments:* From three Agencies
- ***Final Release:*** Apr 2024



TM #2: Characterize Groundwater Quality

OBJECTIVES

- Characterize historical and current TDS/N concentrations in groundwater → Spatial, vertical, temporal
- Provide key information for delineating groundwater management zones and estimating current “ambient” TDS/N concentrations (in TM #3)
- Provide initial conditions of TDS/N concentrations in groundwater for the forecast modeling of TDS/N concentrations (in TM #5)
- Assist in understanding of the fate and transport of salts and nutrients

TM #2: Characterize Groundwater Quality

OBJECTIVES

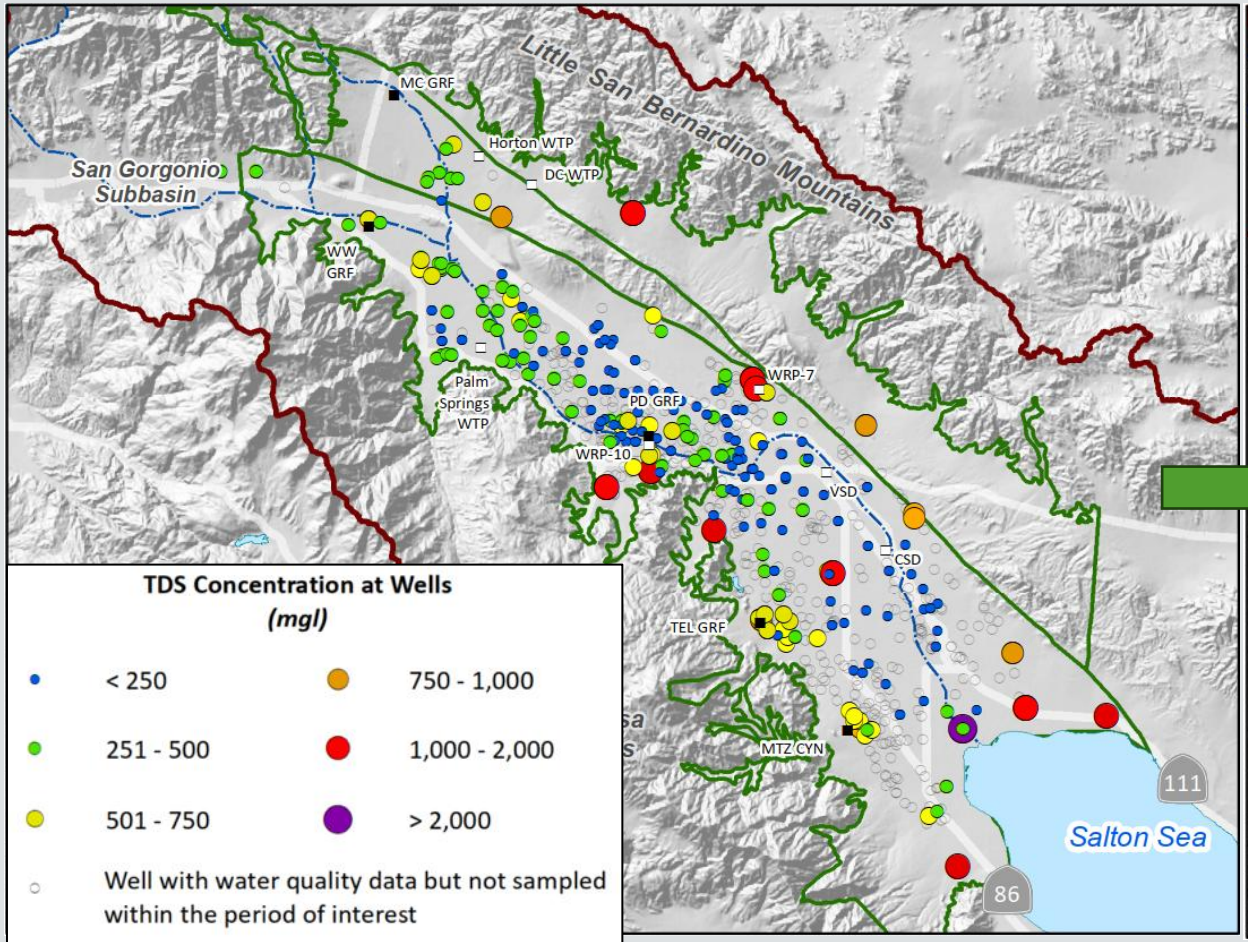
Support the recommendations for TDS objectives pursuant to CWC 13241(b), considering environmental characteristics of the Basin, including the quality of available water.

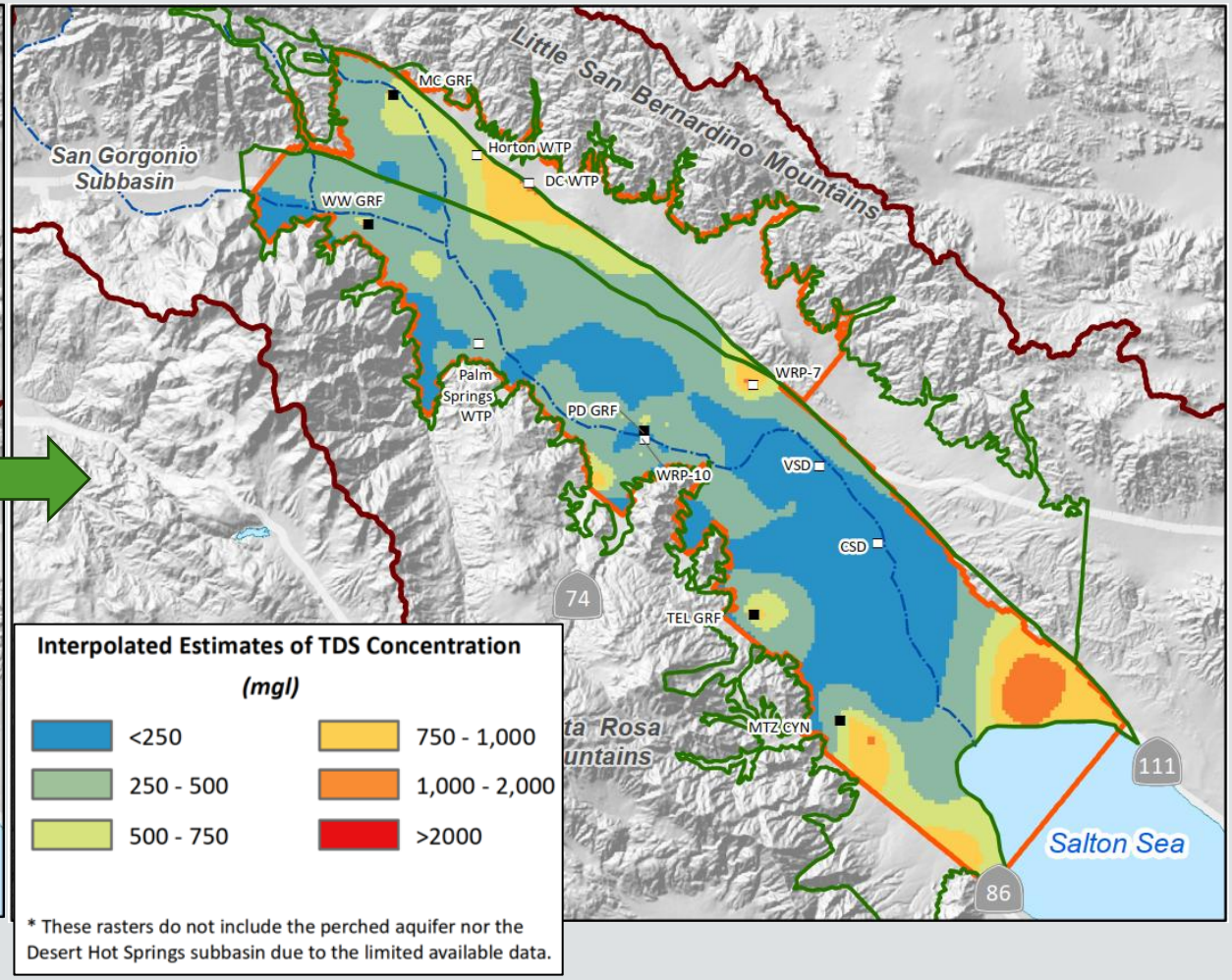
Support assessment of the Basin assimilative capacity for TDS/N loading including from existing and new imported and recycled water projects

- *Draft Release:* Oct 2024
- *Review Period:* Nov to Dec 2024
- *Comments:* From one agency
- ***Final Release**:* January 2025

TM #2: Characterize Groundwater Quality

TDS Concentration in the Deep Aquifer in 2019





TM #3: Delineate Draft Management Zones and Describe Methods to Characterize Groundwater-Use Protection

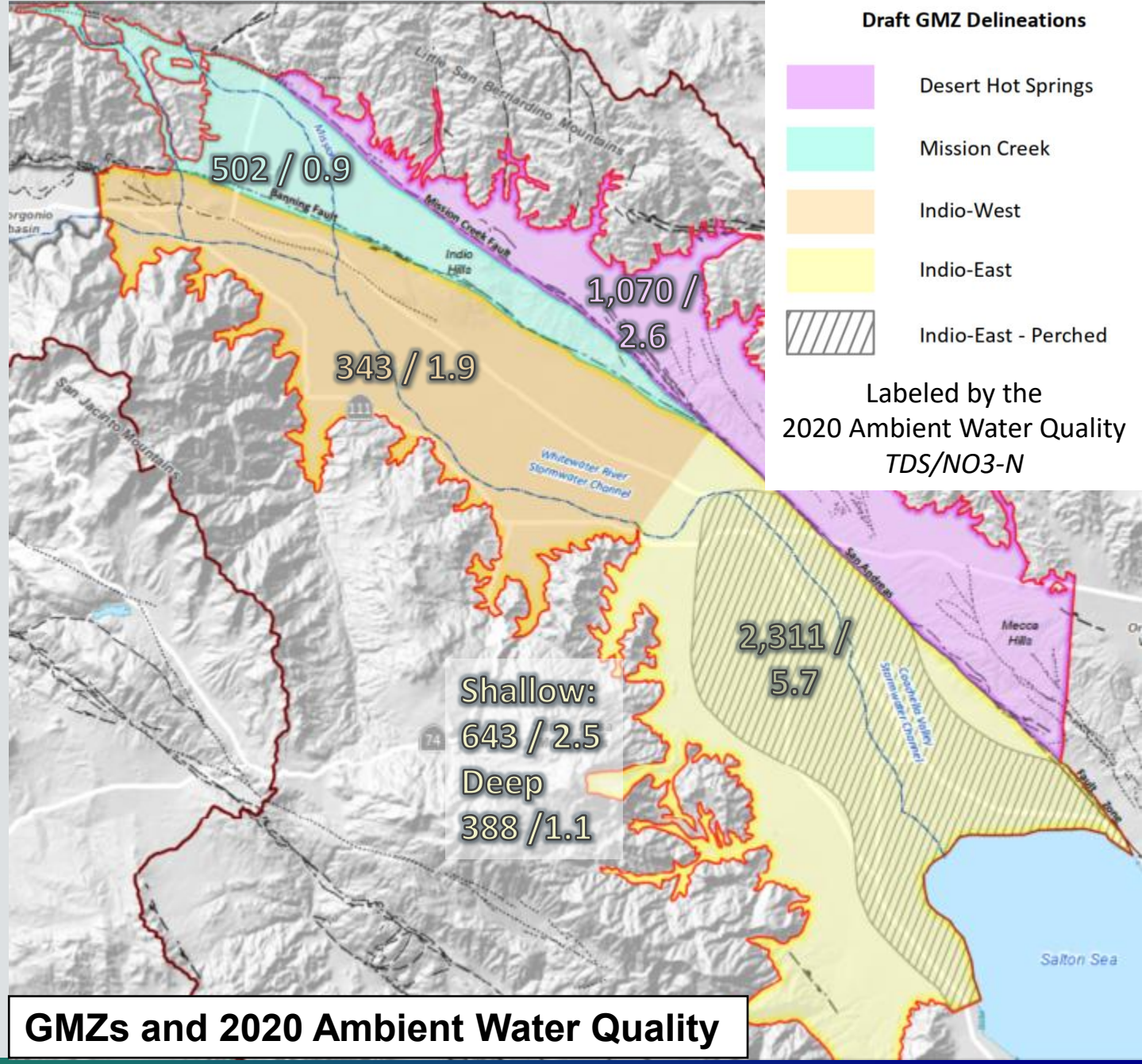
OBJECTIVES

- Delineate draft GMZs & the existing and potential uses of groundwater
- Define the groundwater-use thresholds for TDS/N concentrations
- Define the methodology to estimate “ambient” TDS/N concentrations (AWQ)
- Estimate AWQ in each GMZ and compare to groundwater-use thresholds

- *Draft Release:*
  April 2025
- *Review Period:*
  Apr to Aug 2025
- *Comments:*
  From two agencies
- ***Final Release:***
  September 2025*

TM #3: Management Zones and Groundwater Uses

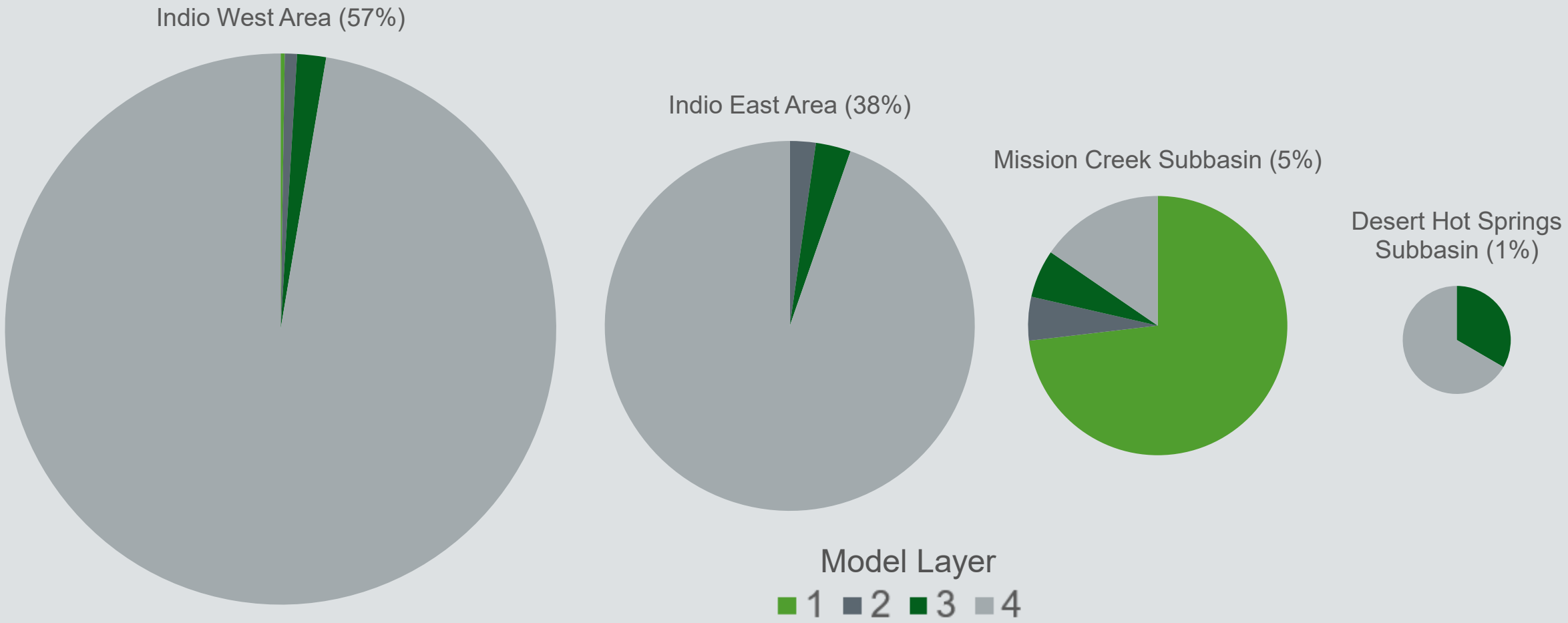
Groundwater Use	TDS Threshold (mgl)	NO3-N Threshold (mgl)
Domestic	500 to 1,000	10
Outdoor/Golf	>1,280	n/a
Industrial	>850	n/a
Agricultural	448 to 6,080	n/a



GMZs and 2020 Ambient Water Quality

TM #3: Management Zones and Groundwater Uses

Model-Estimated Groundwater Pumping by Layer



TM #4: Develop Technical Approach for Forecasting TDS/N Concentrations in Groundwater

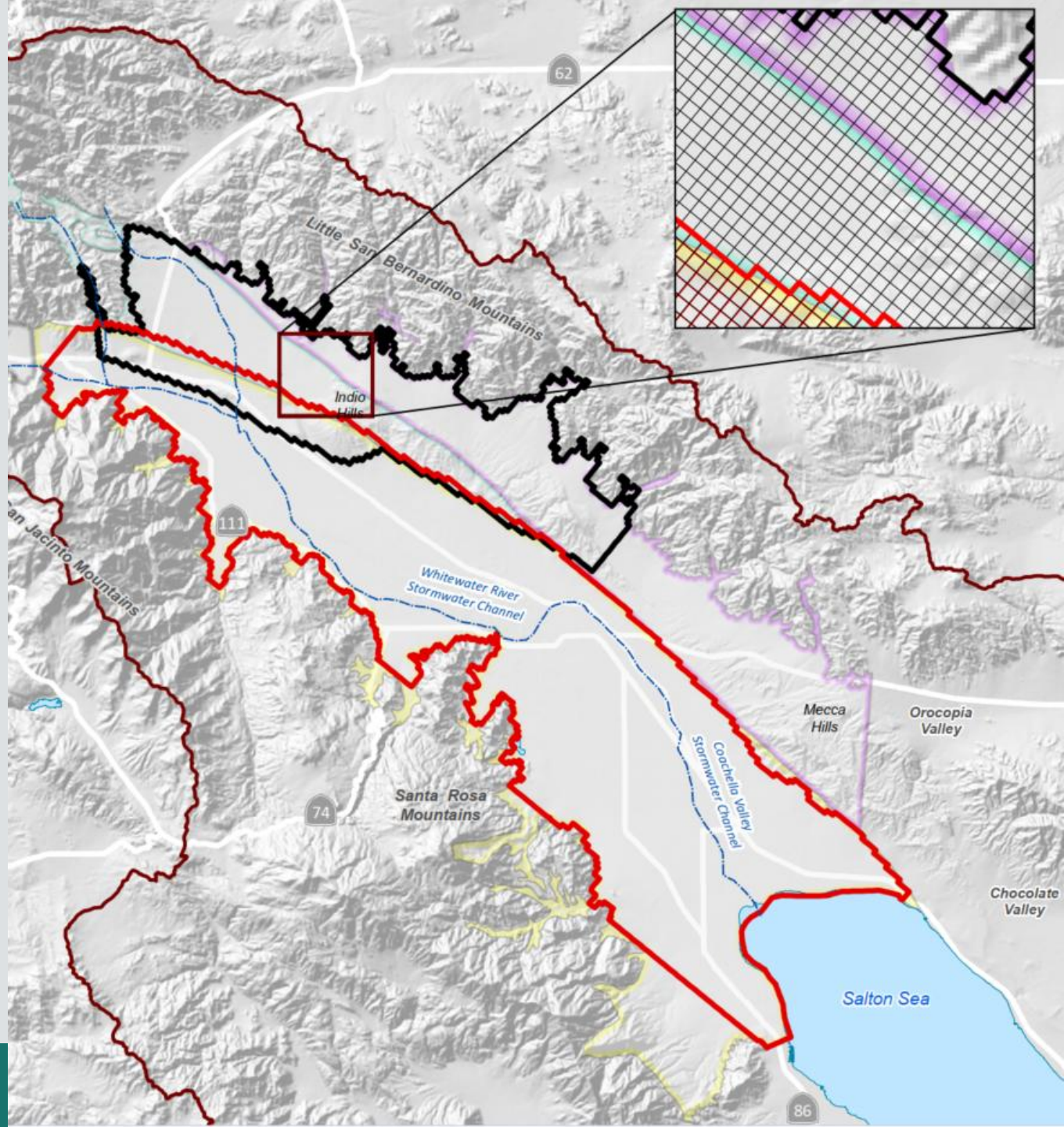
OBJECTIVES

Describe the most appropriate and efficient technical approach(es) to forecast TDS/N concentrations

Document the specific modeling approach that will include the capabilities needed produce defensible forecasts of TDS/N concentrations within the Basin (In TM #6)

- *Draft Release:*
  Oct 2024
- *Review Period:*
  Nov to Dec 2024
- *Comments:*
  From one agency
- ***Final Release:***
  January 2025

TM #4:
Develop Technical Approach for Forecasting TDS/N Concentrations in Groundwater



Questions on TMs #1, 2, 3, or 4?

TM #5: Construct TDS/N Forecasting Tools and Evaluate the Baseline Scenario

- *Draft Release:* June 2026
- *Review Period:* June – Jul 2026

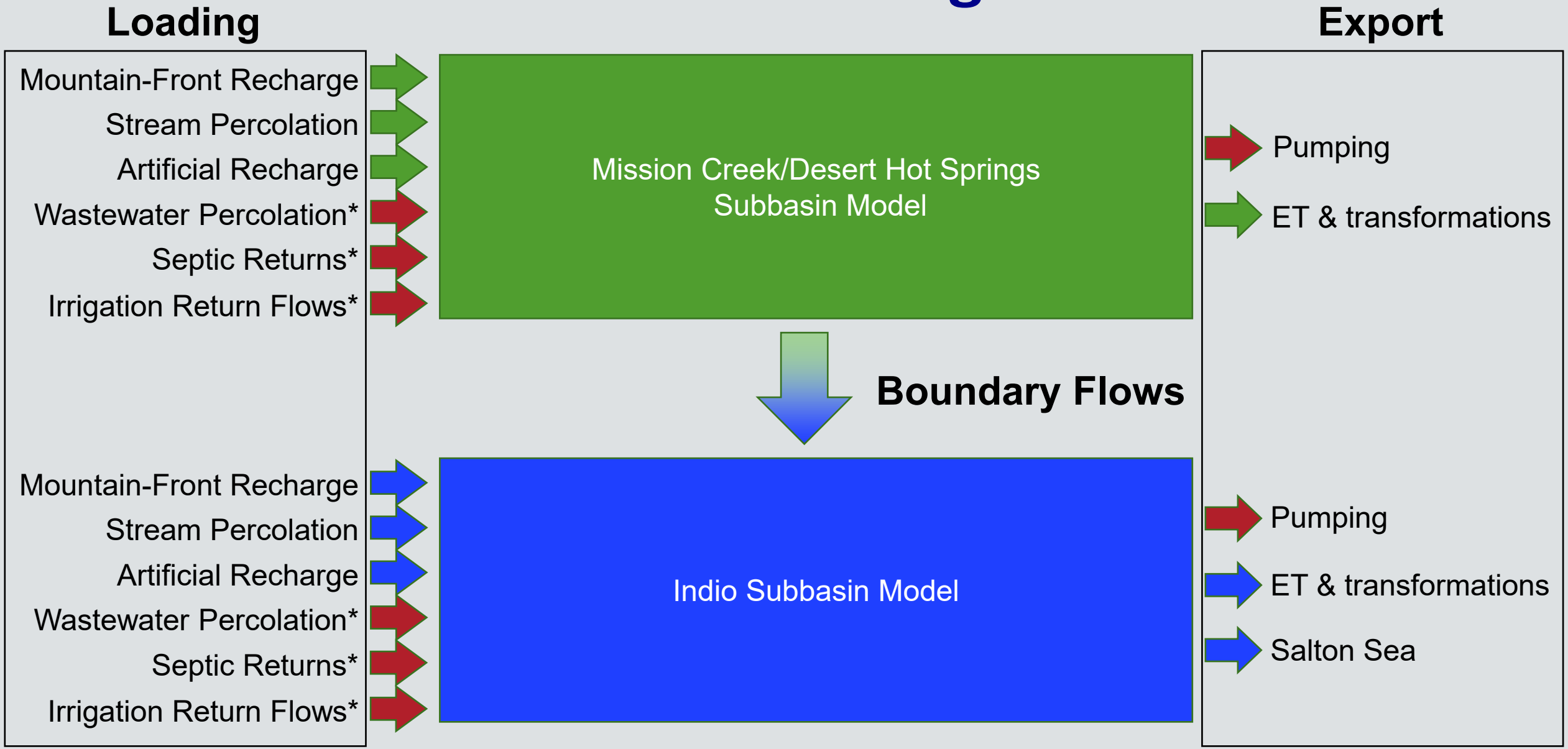
OBJECTIVES

Construct the TDS/N forecasting tools and verify their ability to reasonably simulate historical groundwater-quality conditions

Define a Baseline Scenario that represents the current water-supply plans

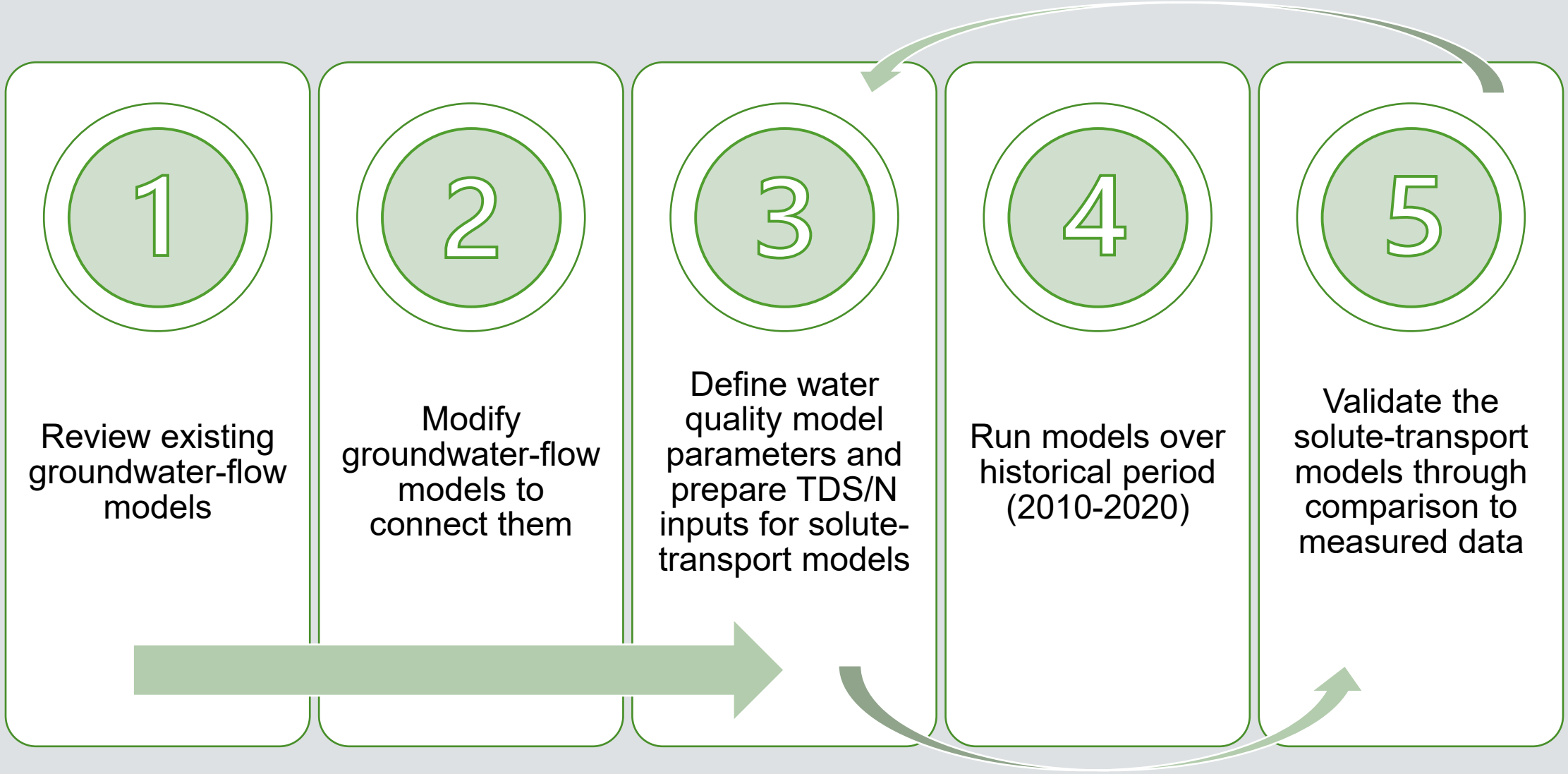
Forecast TDS/N concentrations in groundwater

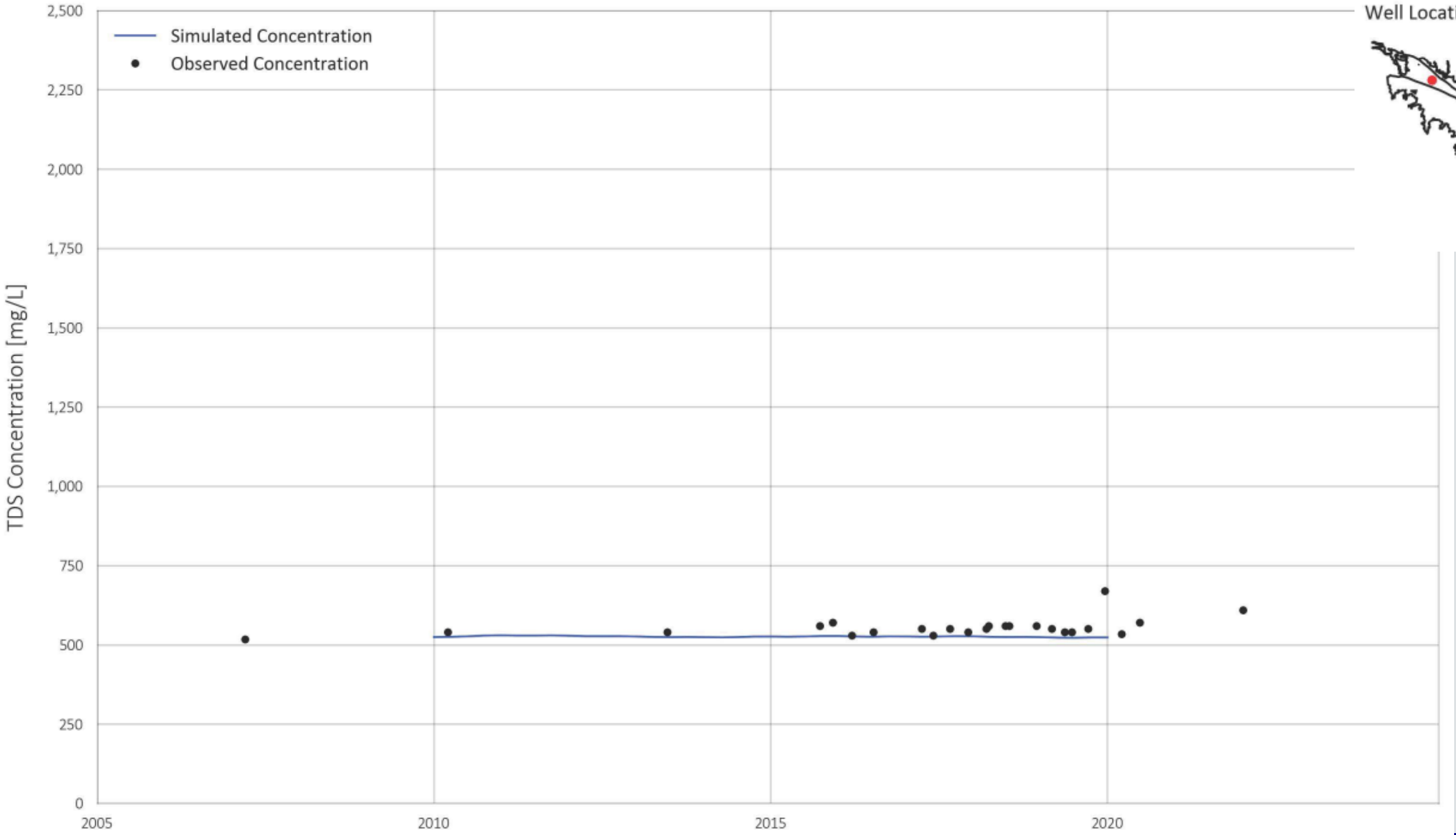
TDS/N Forecasting Tools

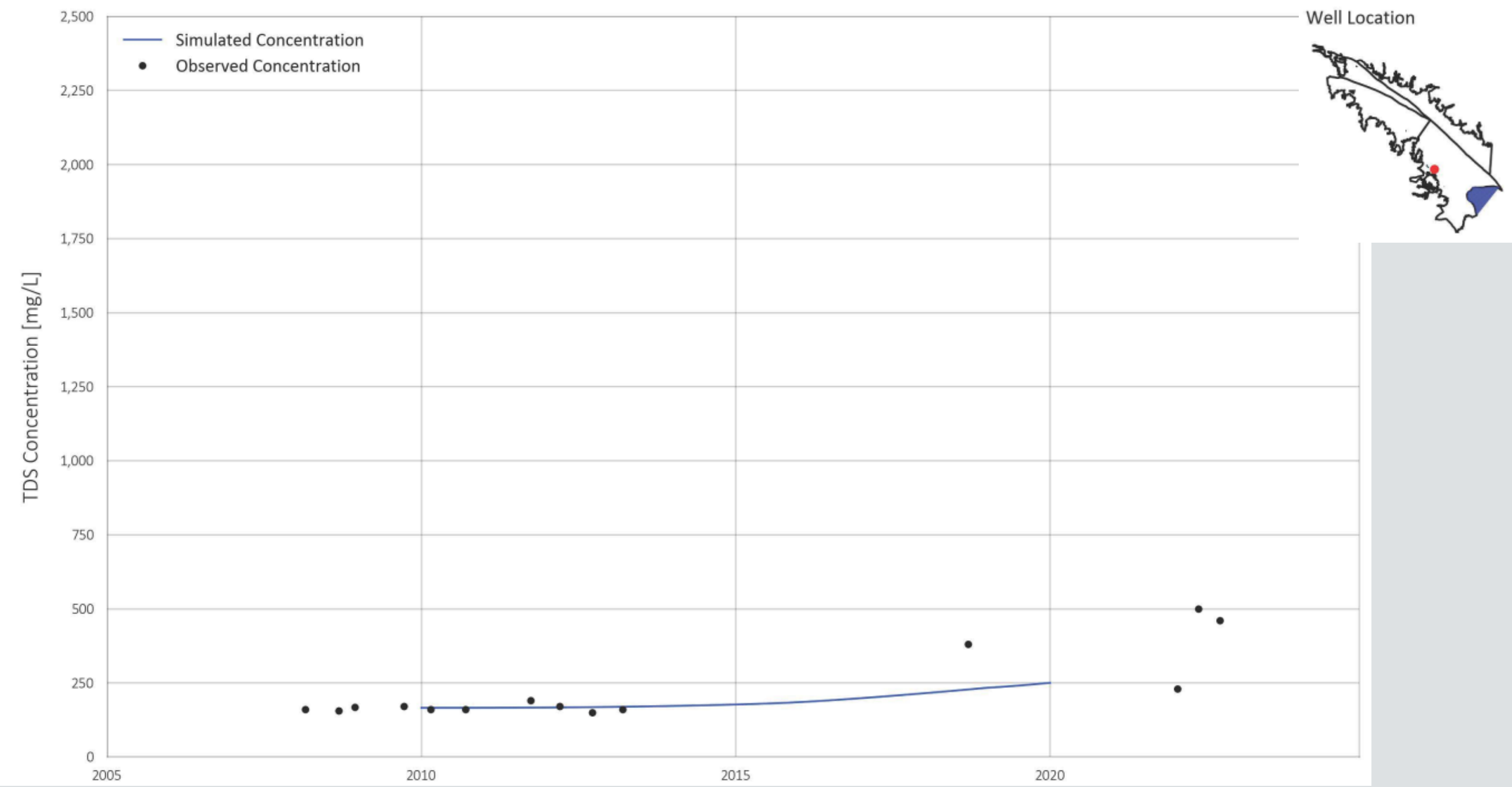


* Loading term that may be influenced by a “feedback cycle” associated with groundwater pumping

Model Validation Process




Simulated Concentration
Observed Concentration
TDS Concentration [mg/L]
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
2005
2010
2015
2020
Well Location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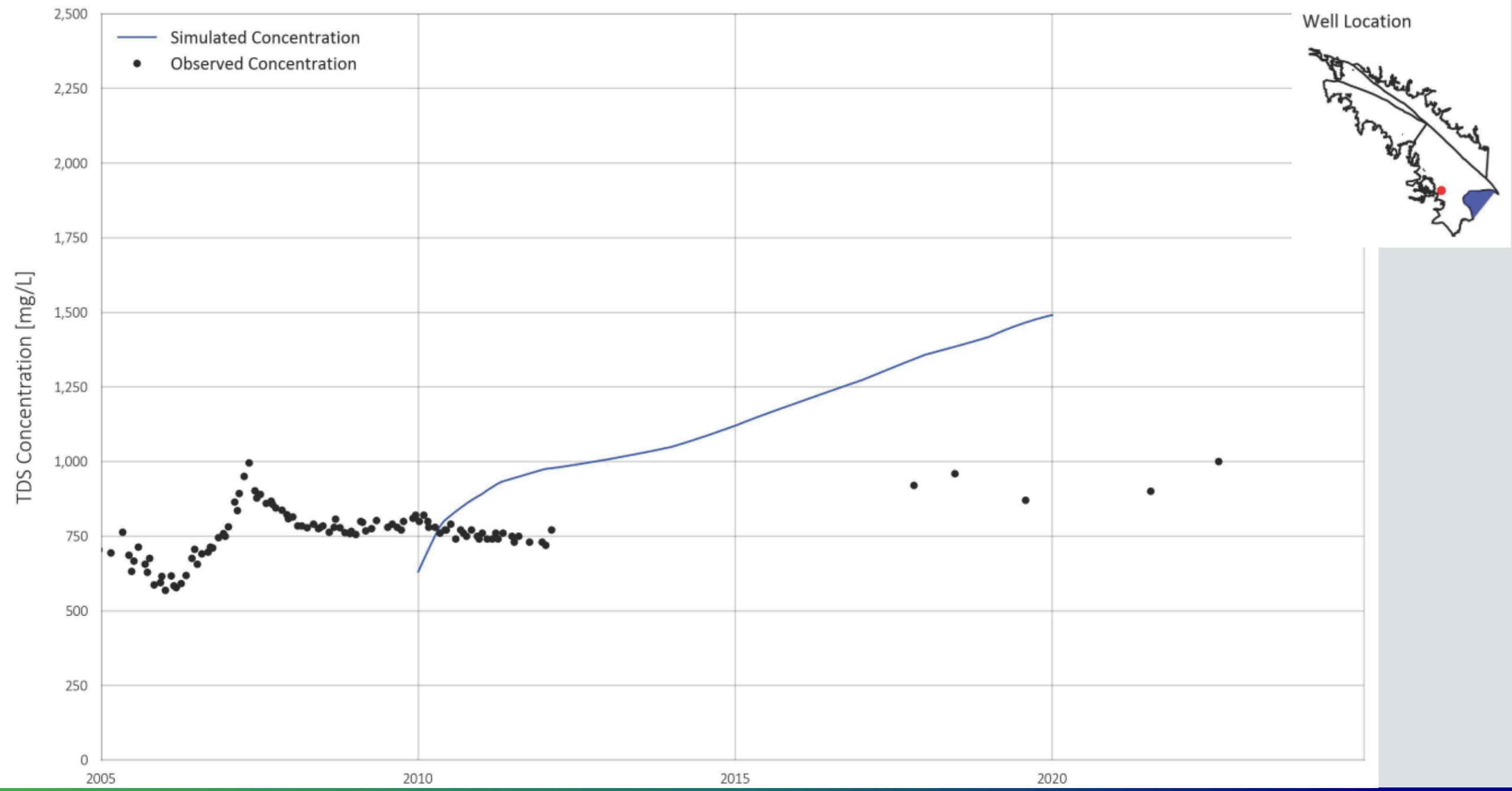
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Observed Concentration
TDS Concentration [mg/L]
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
2005
2010
2015
2020
Well Location

Model Validation Conclusions

- Simulated TDS and NO3-N concentrations across the model area **generally match the measured concentrations and trends** at most wells (when and where data exist)
  - This indicates good model performance, particularly for a first-generation TDS/N model in a large, complex groundwater basin.
  - Models main use should be to assess trends because there is model uncertainty in the specific concentration change rates and magnitudes
- The models **are appropriate for use in predictive simulations** of TDS/N concentrations in groundwater
- The models **will be improved** over time through use of monitoring data

Baseline Scenario Process

1

Select the baseline scenario for transport simulation of TDS/N from 2020 to 2070

2

Modify and re-run flow models of the selected baseline scenario

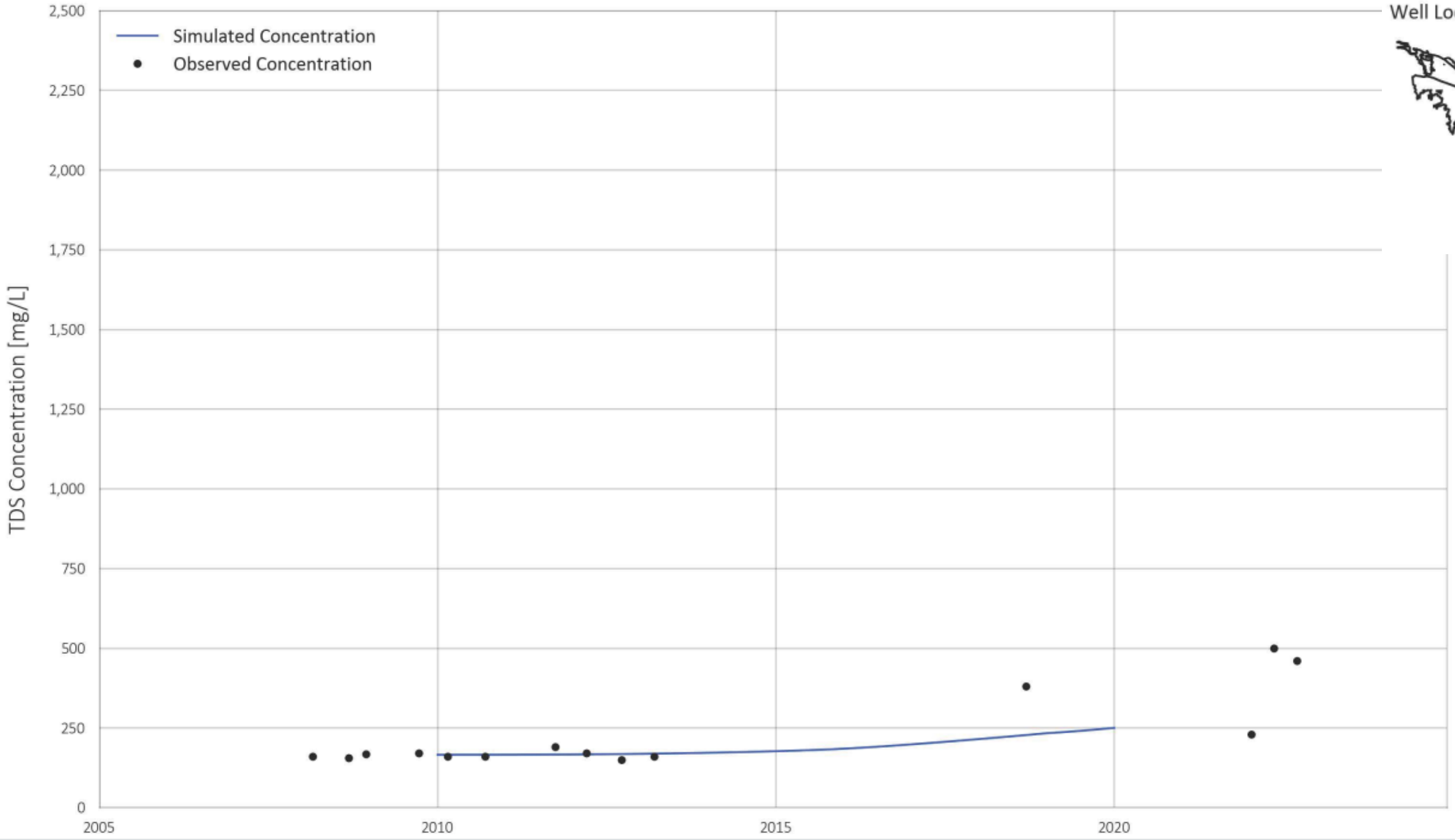
3

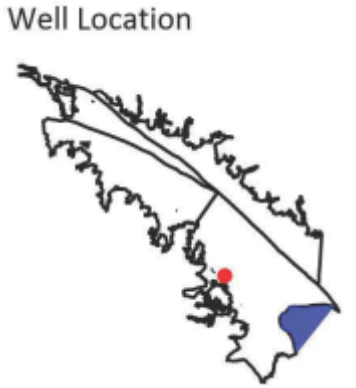
Prepare input files transport models for the selected baseline scenario using water quality model parameters established through model validation

4

Post-process the model results:

1. TDS/N concentration in layers over time
2. Ambient TDS/N by GMZs
3. Simulated TDS/N in key wells


Simulated Concentration
Observed Concentration
TDS Concentration [mg/L]
2,500
2,250
2,000
1,750
1,500
1,250
1,000
750
500
250
0
2005
2010
2015
2020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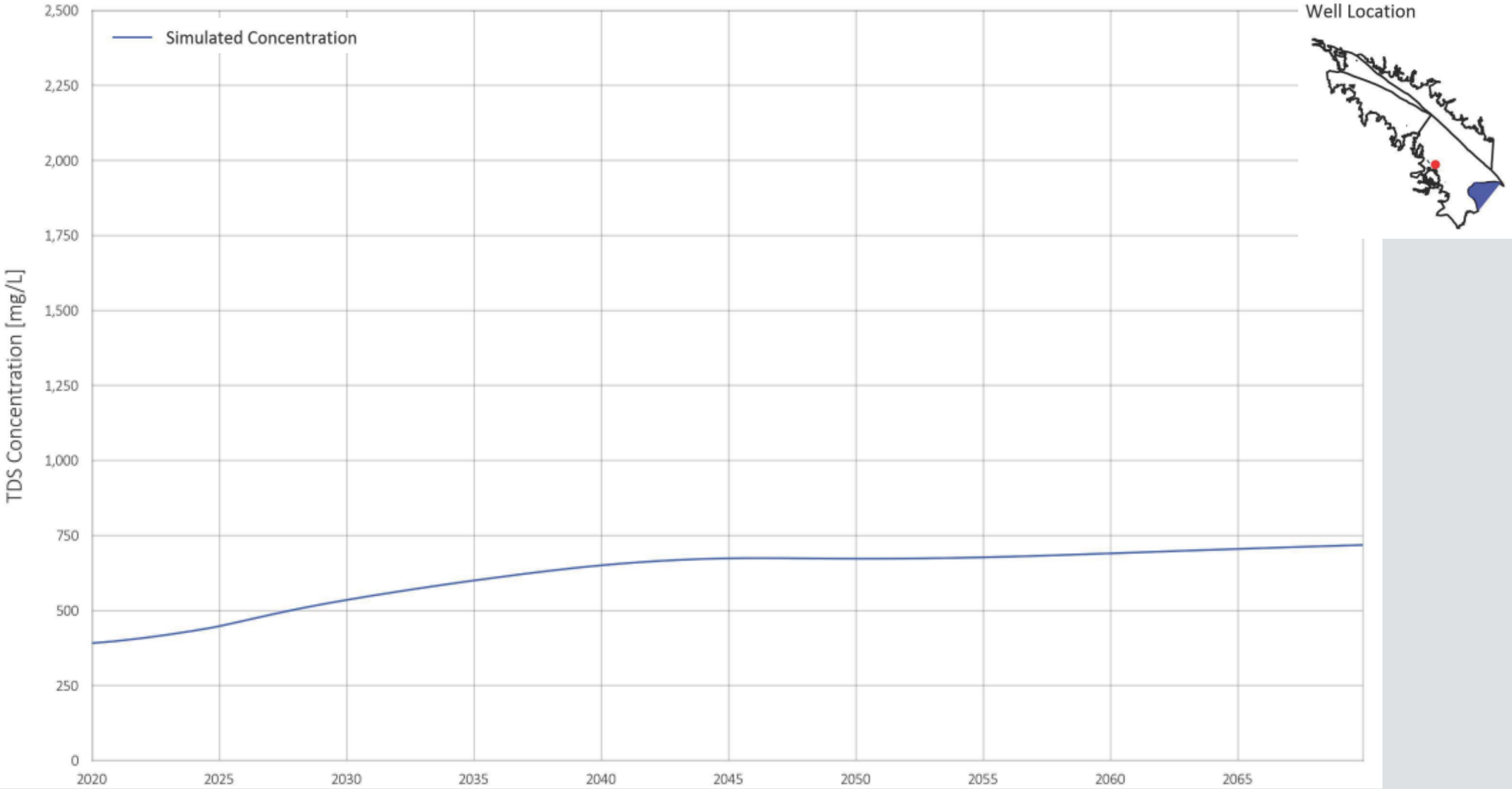
Simulated Concentration
TDS Concentration [mg/L]
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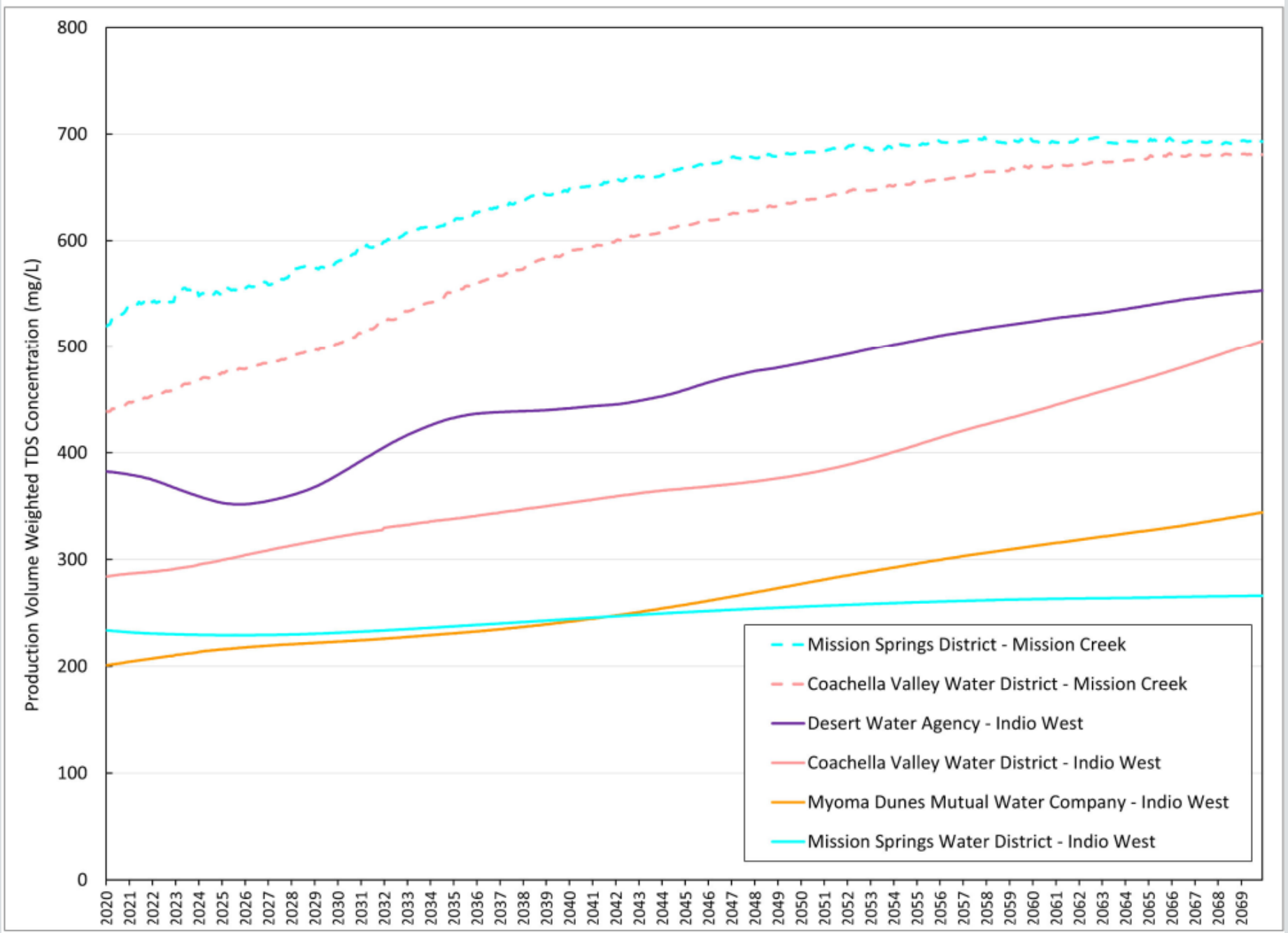
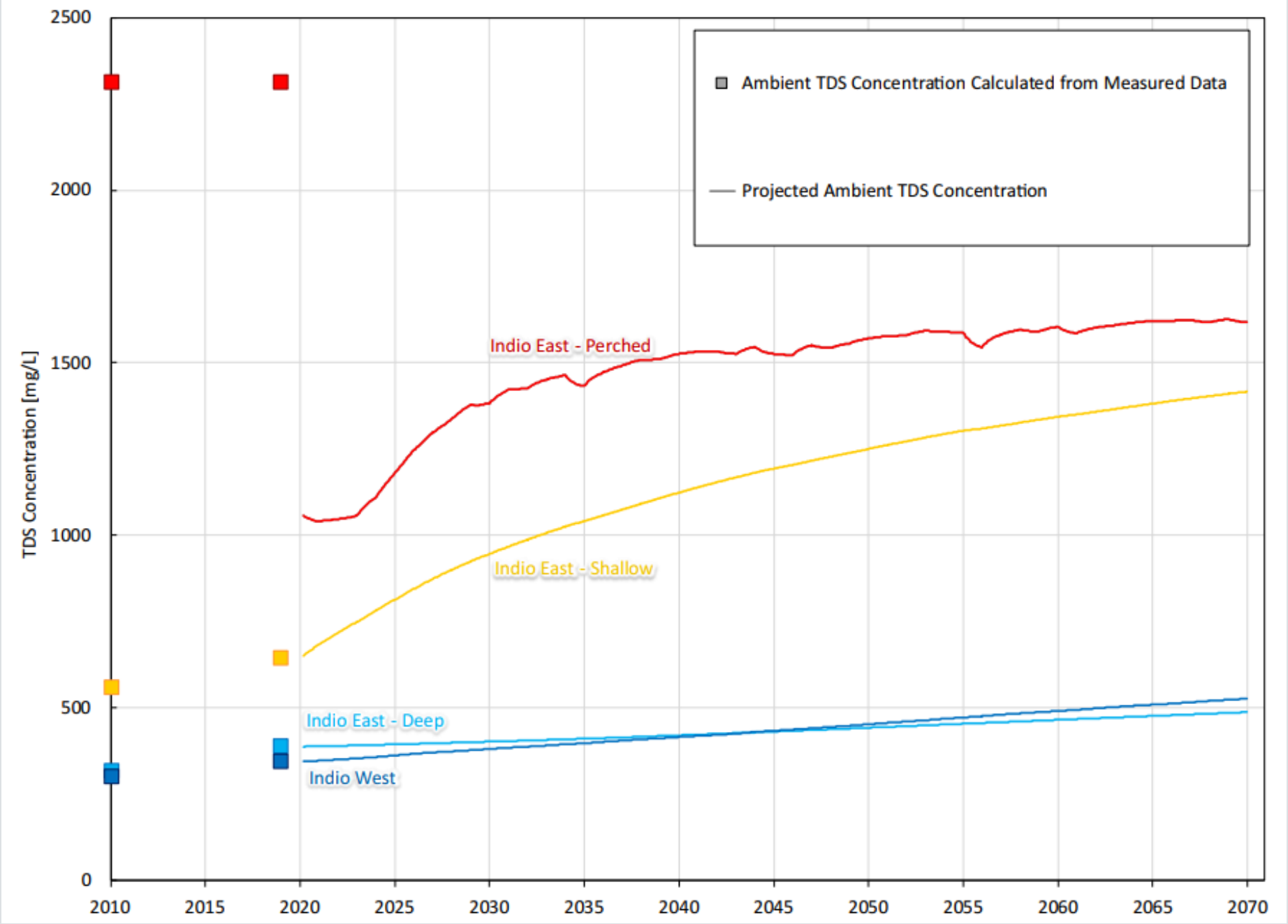
1,750
1,500
1,250
1,000
750
500
250
0
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
Well Location



Projected TDS Concentrations in Municipal Groundwater Production from the Mission Creek and Indio West GMZs


Ambient TDS Concentration Calculated from Measured Data
Projected Ambient TDS Concentration
TDS Concentration [mg/L]
2500
2000
1500
1000
500
0
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
Indio East - Perched
Indio East - Shallow
Indio East - Deep
Indio West

Baseline Scenario Conclusions

- **TDS/N concentrations are projected to chronically increase in the future**, mainly due to:
  - ✓ Mass loading of concentrated return flows from irrigation
  - ✓ Mass loading from artificial recharge of CRA water
  - ✓ The "closed" nature of the groundwater basin with minimal export of TDS/N mass

Baseline Scenario Recommendations

a) Use the Baseline Scenario to support the development of the CV-SNMP Scenarios

b) CV-SNMP Scenarios should include implementation measures to manage TDS/N loading (i.e., projects and/or programs)

c) The initial purpose of CV-SNMP Scenarios evaluations should be to evaluate the relative effectiveness of the implementation measures

d) The initial CV-SNMP Scenarios should be constructed and simulated at large scales without imposing constraints based on the perceived economic feasibility of implementation

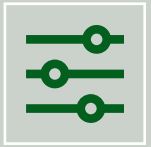
e) The initial CV-SNMP Scenarios may inform the subsequent development of more refined CV-SNMP Scenarios

CV-SNMP Scenarios

- Replace all CRA water with TDS concentrations to 250 mg/L (typical TDS concentrations of State Water Project water)
- Remove all golf course irrigation
- Remove all municipal irrigation
- Treat recycled water (desalination)
- Treat municipal groundwater (desalination)

Questions on TM #5?

Next Steps



Describe CV-SNMP implementation measures → “CV-SNMP Scenarios”

Evaluate CV-SNMP Scenarios with models

Understand/quantify the economic consequences of the Baseline Scenario and CV-SNMP Scenarios

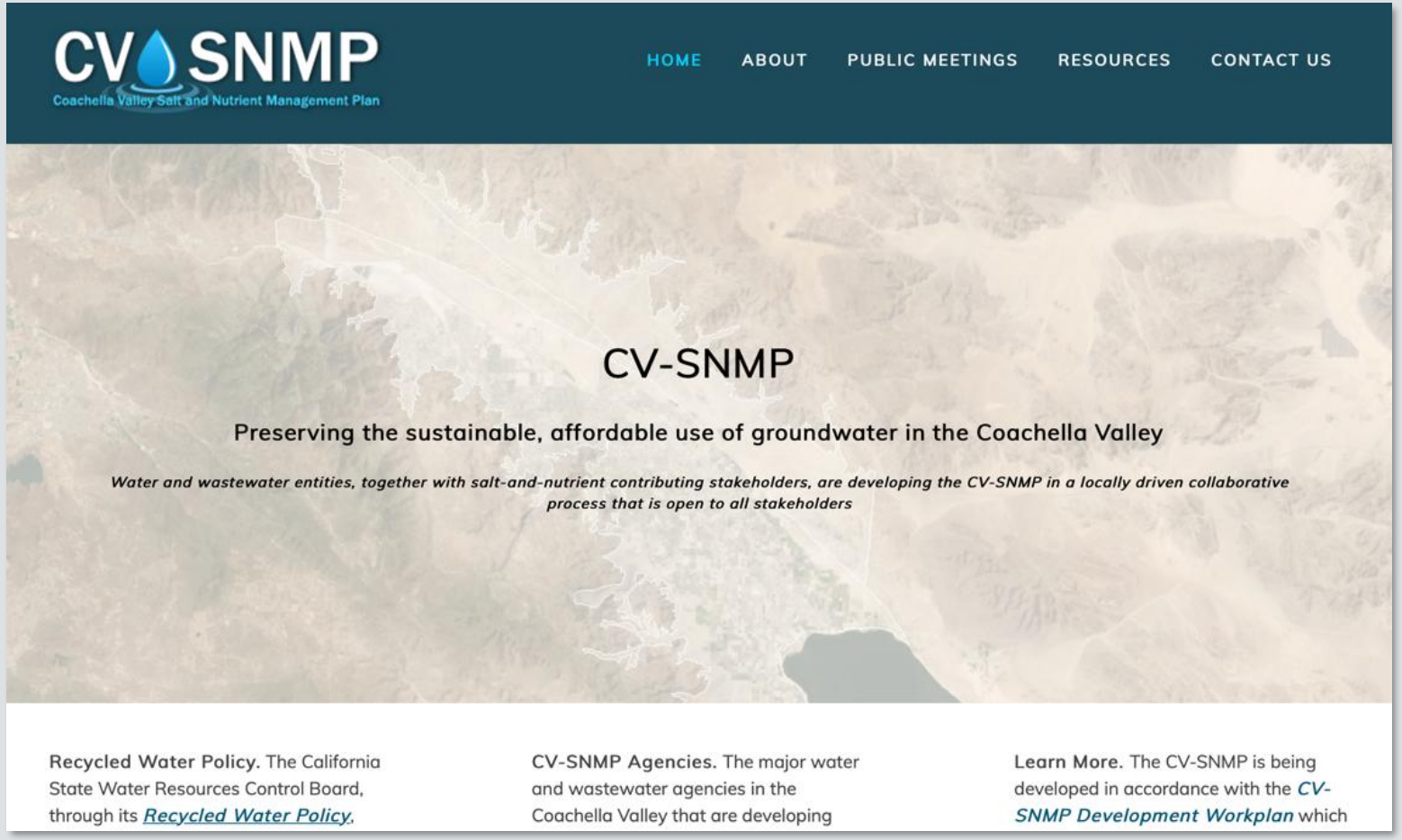
Prepare Final CV-SNMP

- Compare and rank Baseline and CV-SNMP Scenarios
- Finalize management zones and beneficial use designations
- Recommend TDS objectives based on CWC 13241
- Perform Anti-Degradation analysis
- Prepare final CV-SNMP report

What's Coming Up Next?

- **For us:** Draft & Final TM #6 (Forecast TDS/N for SNMP Scenarios) & TM #7 (Cost Analysis)
- **For you:** Share comments (at any time!) and stay informed:
  - ✓ cv-snmp@westyost.com
  - ✓ www.cvsnmp.com
  - ✓ Email listserv
  - ✓ Attend future workshops
  - ✓ Review and comment on draft TMs
  - ✓ (Later) Review and comment on the full CV-SNMP

WWW.CVSNMP.COM



Scan the QR code to visit the CV-SNMP website!

LET'S TALK!

RAISE HAND + CHAT BOX:

What questions do you have now?

What questions should we try to answer in future discussions?