

TURLOCK SUBBASIN GROUNDWATER LUNCH HOUR



SEPTEMBER 2, 2021



TURLOCK GROUNDWATER

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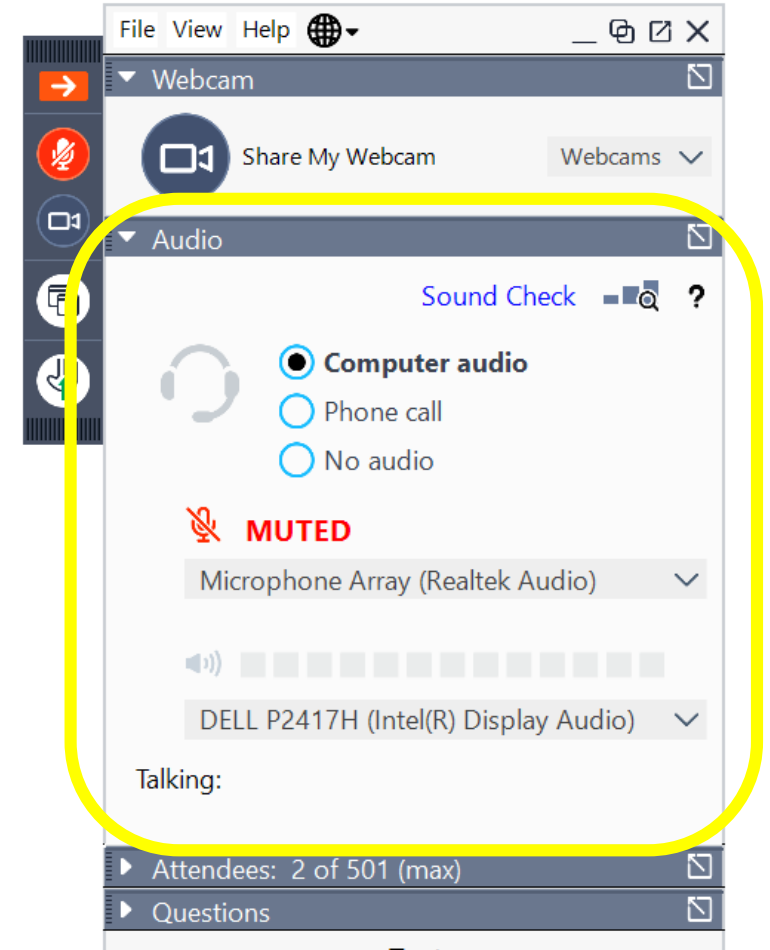
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TURLOCK GROUNDWATER

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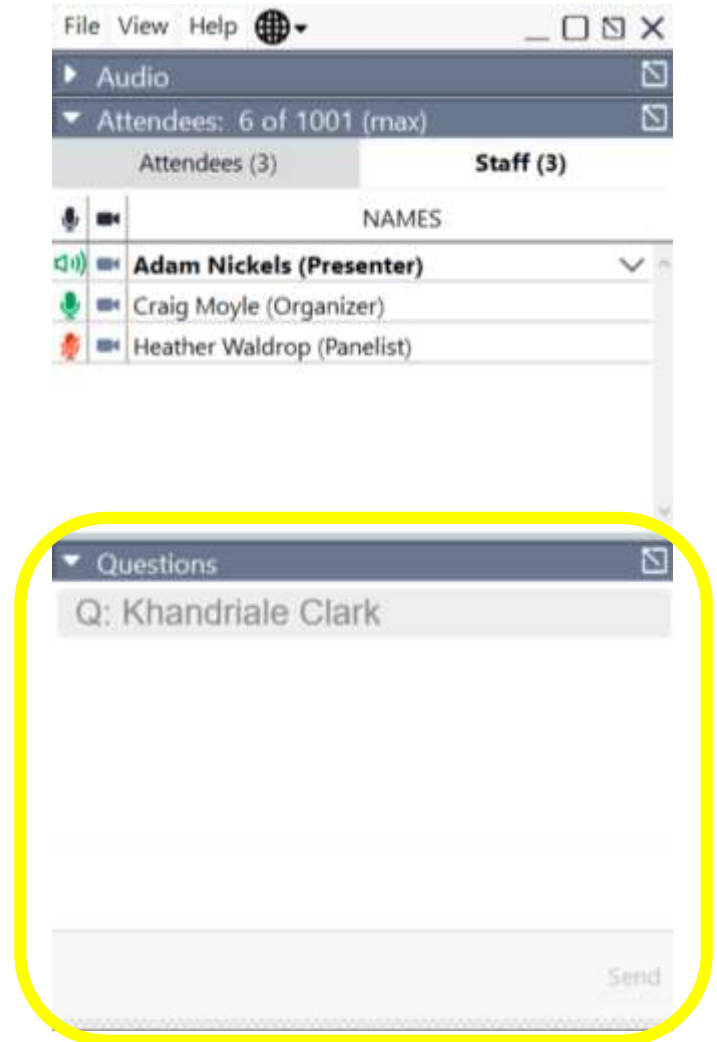
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SGMA AND THE TURLOCK SUBBASIN



The three basic steps of SGMA for local agencies in the Turlock Subbasin

Step



Form GSAs

Local agencies to form GSAs by 6/30/17 or state may intervene

Step



Develop GSPs

GSAs submit GSP(s) by 1/31/22 or state may intervene

Step



Get results

No "undesirable results", meet goals, or state may intervene



SGMA COMPLIANCE PROGRESS



WHAT'S BEING DONE

- Draft GSP Chapters
- Annual Report for 2022
- Physical needs to address
 - Monitoring wells
 - Staffing
- Meetings and more meetings
 - Preparing for in-person return
 - Outreach prior to GSP adoption

WHAT'S BEEN DONE

- Governance
 - Two GSAs formed
 - MOA between GSAs
 - Technical Advisory Committees
- Meetings and more meetings
- GSP development
- Adjacent subbasin coordination
- Outreach

DRAFT GSP CHAPTERS AVAILABLE FOR COMMENT



Visit turlockgroundwater.org/GSP today to download or comment on the draft chapters!

Chapter 1

Administrative Information

This section of the GSP generally covers the administrative information involved with the GSP, including but not limited to GSA information, implementation of the GSP and implementation costs.

Chapter 2

Plan Area

This section of the GSP generally covers the area covered by the plan, including but not limited to boundaries, land uses, water sources and usage, existing water management plans and programs, current monitoring programs and current well permitting programs.

Chapter 4

Basin Setting

This section of the GSP generally covers the GSP's Basin Setting, including but not limited to the Hydrogeologic Conceptual Model, groundwater conditions, and data gaps and uncertainties.

Chapter 5

Water Budgets

This chapter of the GSP generally covers Turlock Subbasin water budgets (historical, current and projected) and water modeling, and also analyzes climate change's potential impact upon groundwater.



HOW TO PROVIDE GSP COMMENTS



Visit turlockgroundwater.org/GSP today
to download or comment on the draft chapters!



USPS Mail



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TURLOCK GROUNDWATER



GROUNDWATER SUSTAINABILITY PLAN (GSP) REVIEW OF PRELIMINARY CHAPTERS

TID BOARD MEETING
JULY 27, 2021



PRESENTATION OUTLINE

- Which Draft GSP Chapters are available for review?
- Why release Draft Chapters separately?
- What are the contents?
- How does the public review process work?

GSP CONTENTS

1. Administrative Information

- GSA Organization and Structure

2. Plan Area

- Jurisdictional boundaries, land use, water sources and use

3. Notice and Communication

4. Basin Setting

- Hydrogeologic Conceptual Model and groundwater conditions

5. Water Budgets

6. Sustainable Management Criteria

7. Monitoring Networks

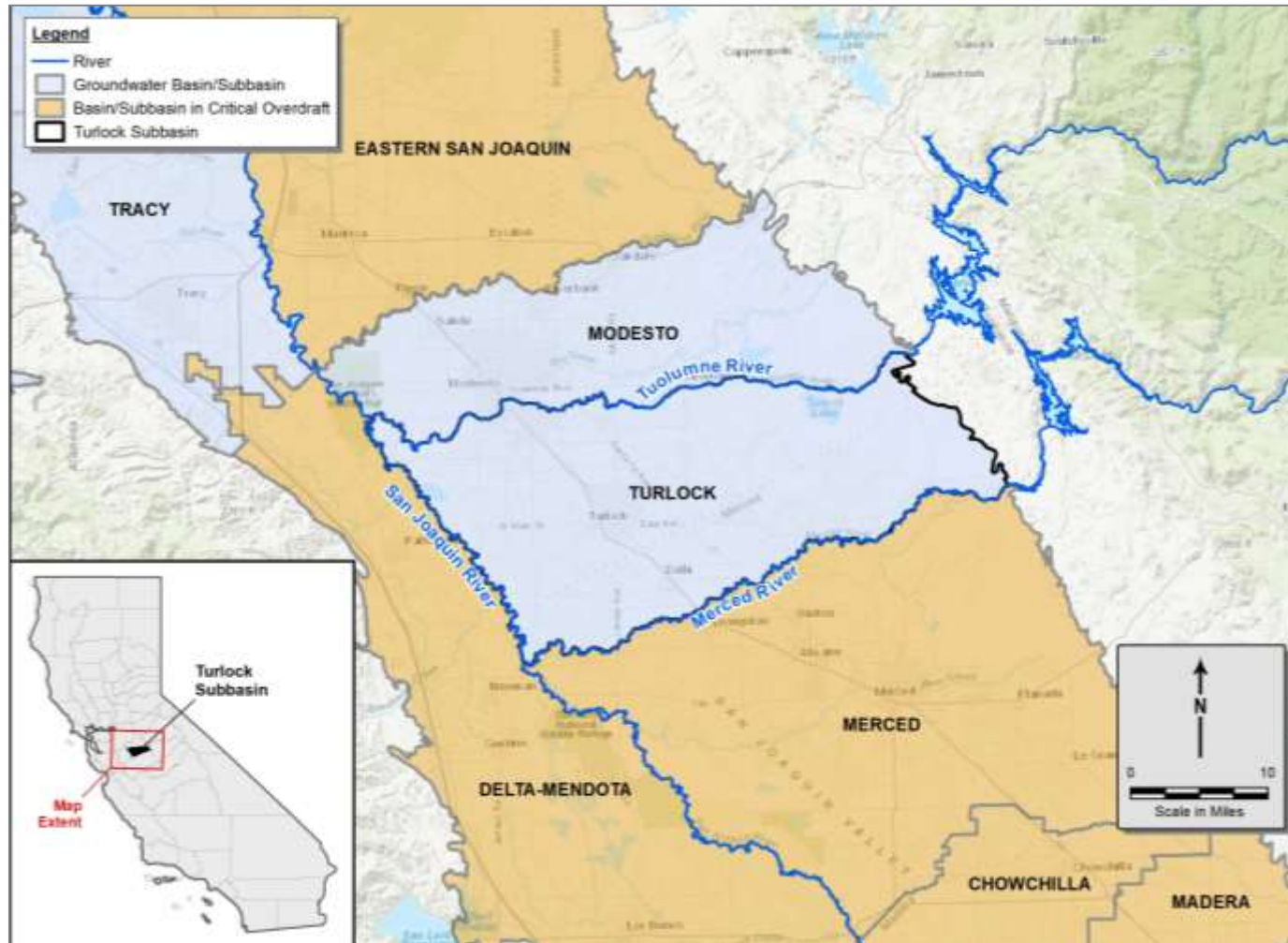
8. Projects and Management Actions

WHY RELEASE DRAFT CHAPTERS?

- Less overwhelming / more manageable review
- Early input to help shape subsequent chapters
- Chapters build on each other

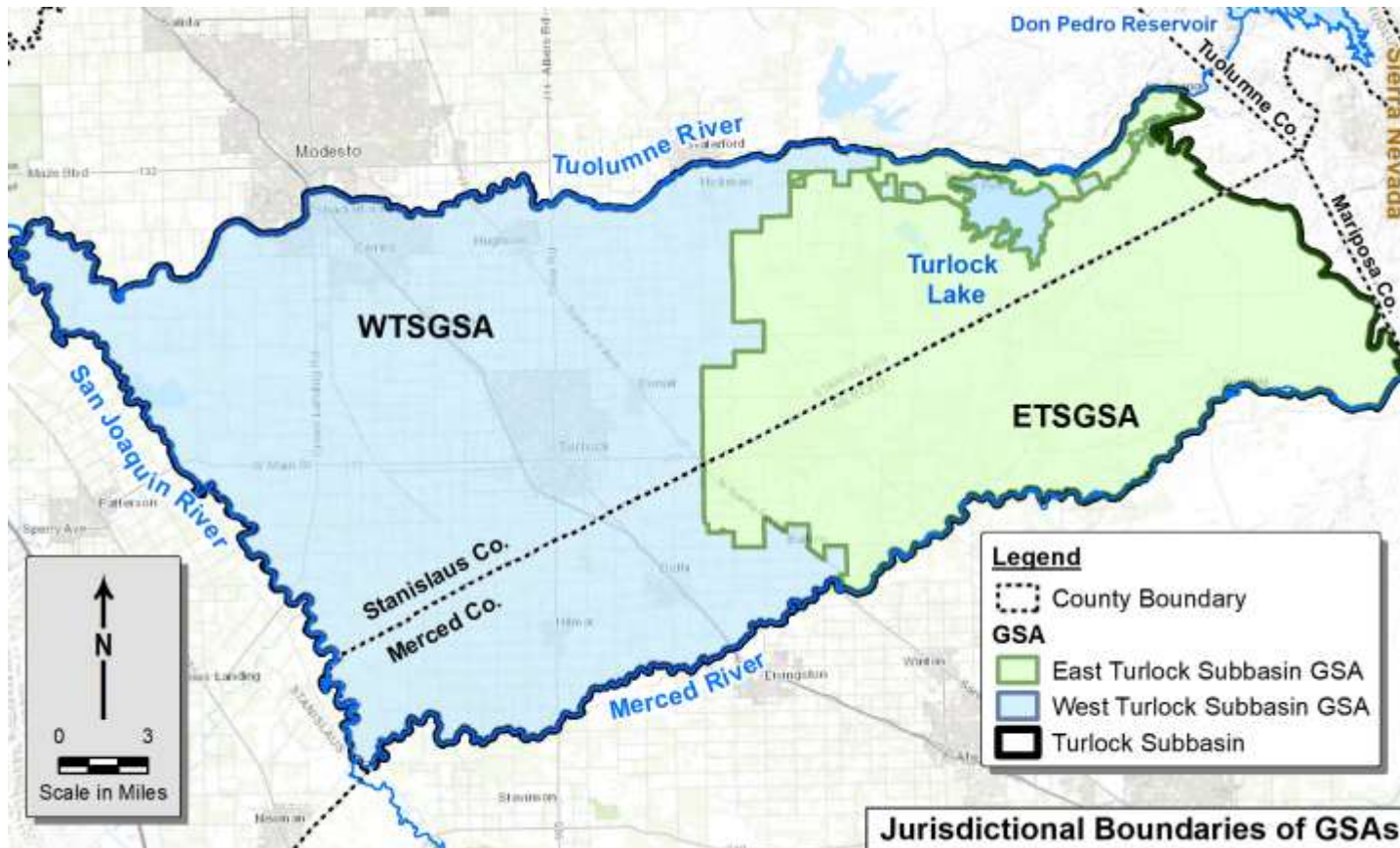


TURLOCK SUBBASIN GSP PLAN AREA



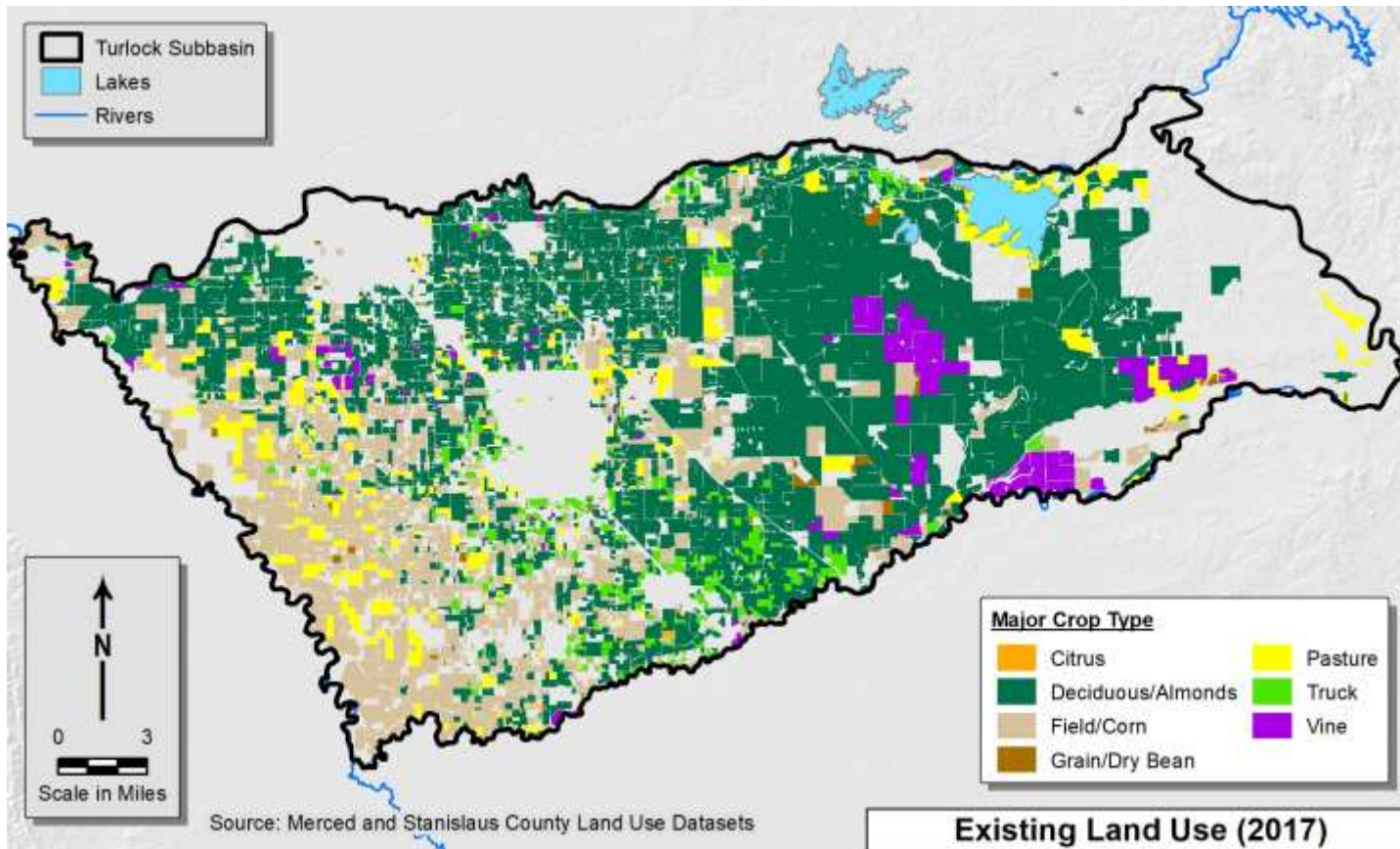
- Context for the Turlock Subbasin and adjacent subbasins
- Surrounded by critically over-drafted subbasins (2020 GSPs)
- Turlock Subbasin GSP due to DWR Jan 31, 2022

GROUNDWATER SUSTAINABILITY AGENCIES (GSAs)



- Two GSAs developing one coordinated GSP
- Turlock Subbasin 544 mi²
 - WTSGSA 327 mi² (60% of Plan Area)
 - ETSGSA 217 mi² (40% Plan Area)
- Defined by Sierra Nevada bedrock on east and three river boundaries

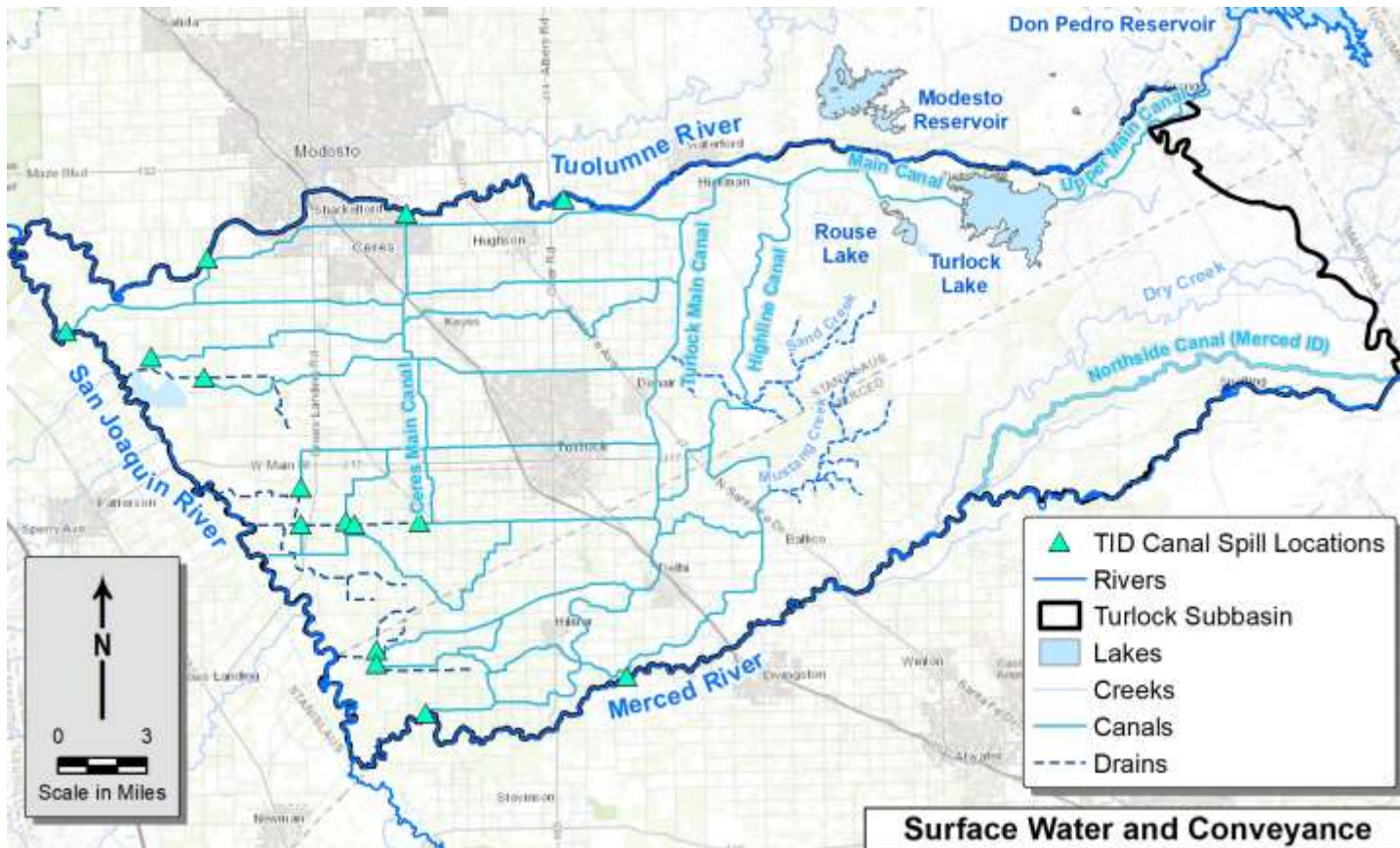
GSP PLAN AREA - LAND USE AND BENEFICIAL USES OF GROUNDWATER



- Irrigated agriculture is largest beneficial use of groundwater
- Irrigated agriculture covers approx. 70% of the Subbasin

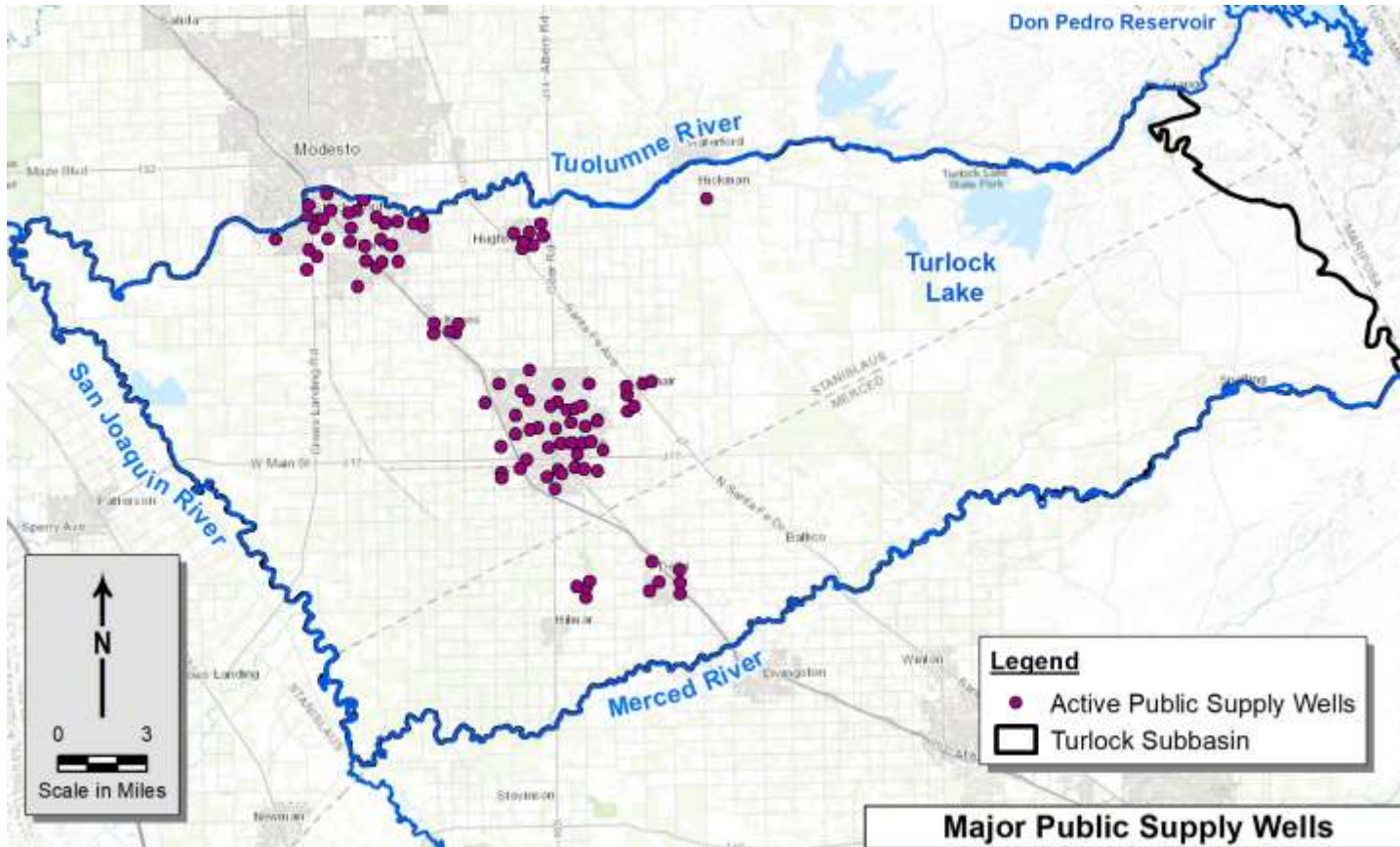
GSP PLAN AREA

SURFACE WATER AND INFRASTRUCTURE



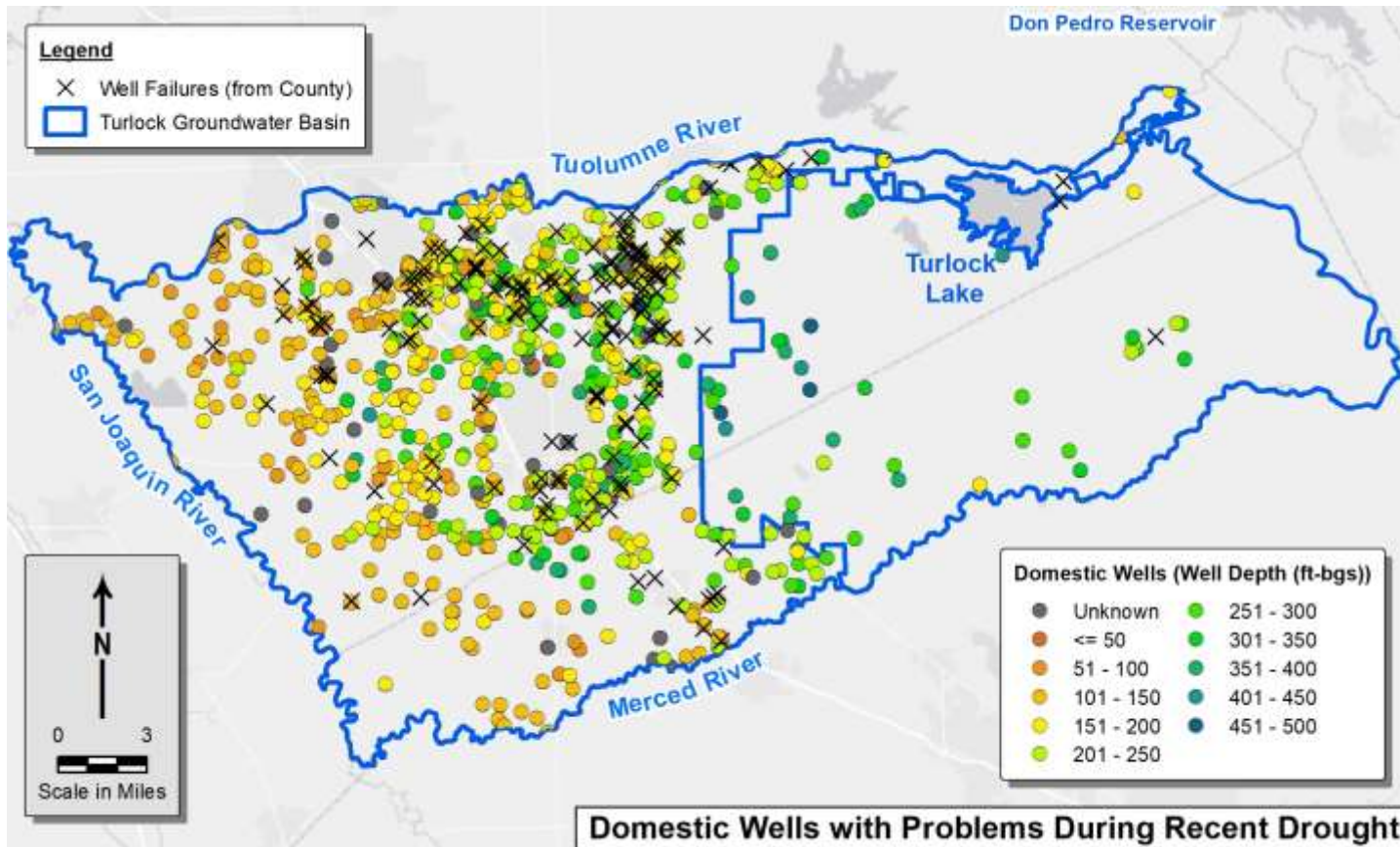
- Tuolumne River provides approx. 80% agricultural water supply in western Subbasin
- TID: 240 miles of canals downstream of La Grange Diversion Dam
- MeID: Northside Canal

GSP PLAN AREA DRINKING WATER SUPPLY



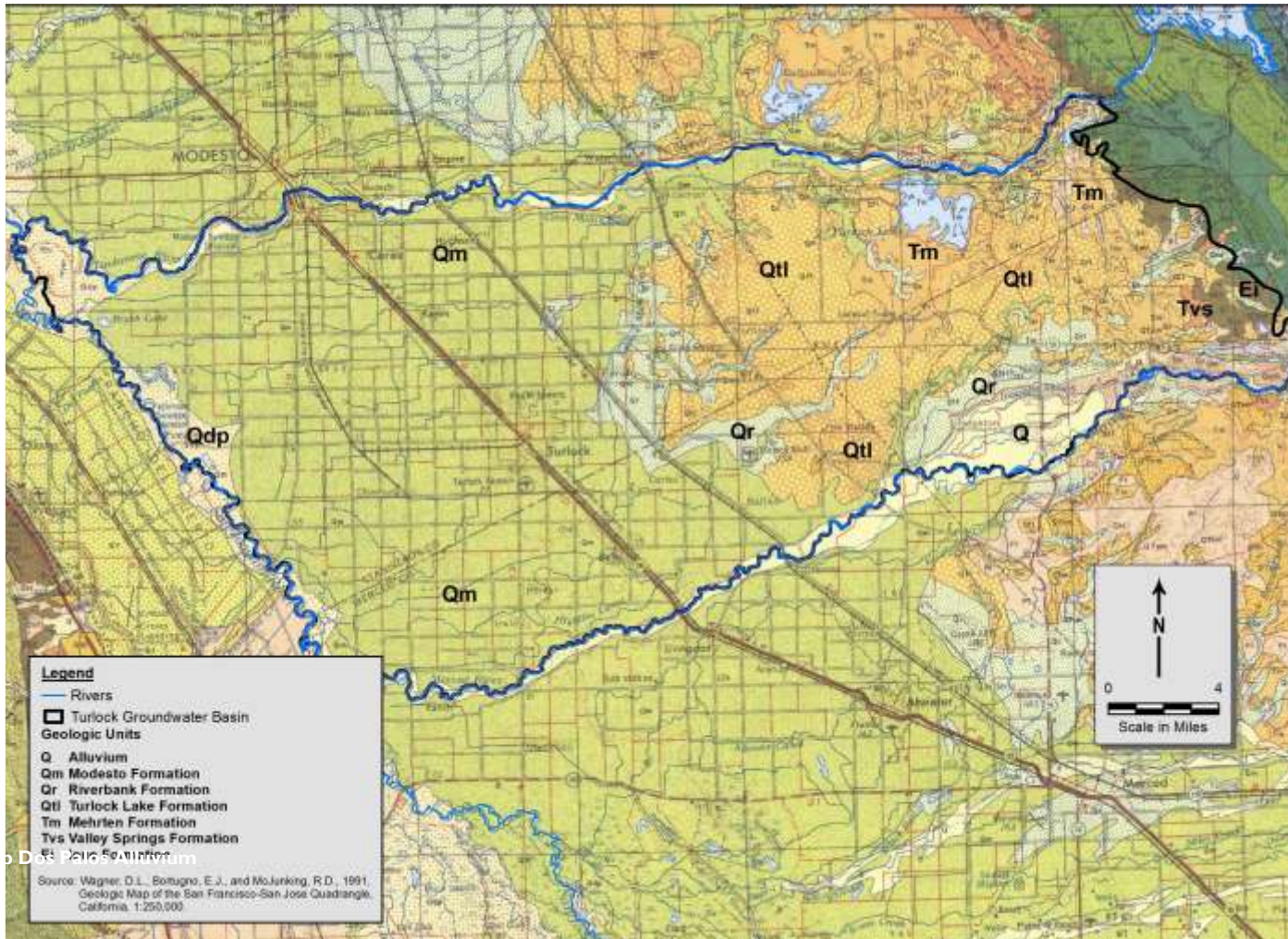
- West Turlock GSA Member Agencies provide most of public drinking water supply
- Cities and urban communities of Turlock, Ceres, Delhi, Hilmar, Denair, south Modesto, Hughson, Hickman, Keyes
- Additional small community water systems

GSP PLAN AREA (RURAL) DOMESTIC WATER SUPPLY

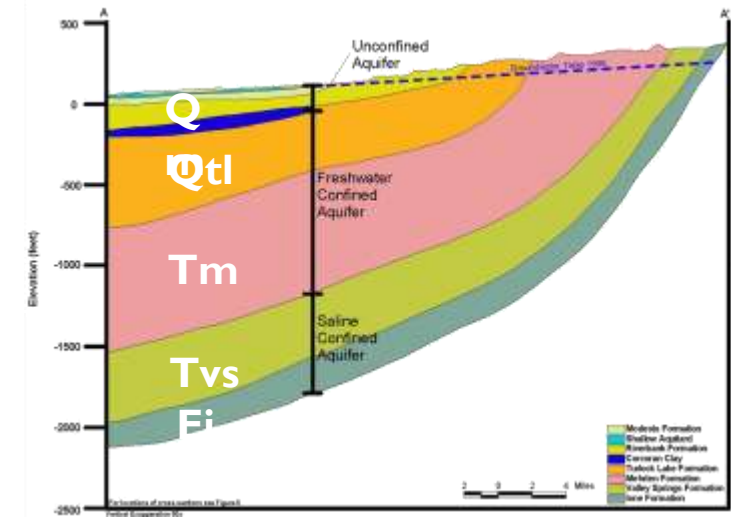


- More than 850 domestic wells drilled in the Subbasin; current status is unknown
- Records document many old and shallow wells
- About 165 wells failed in 2015 drought due to declining water levels
- About 386 new wells drilled since 2015

BASIN SETTING GEOLOGIC FRAMEWORK

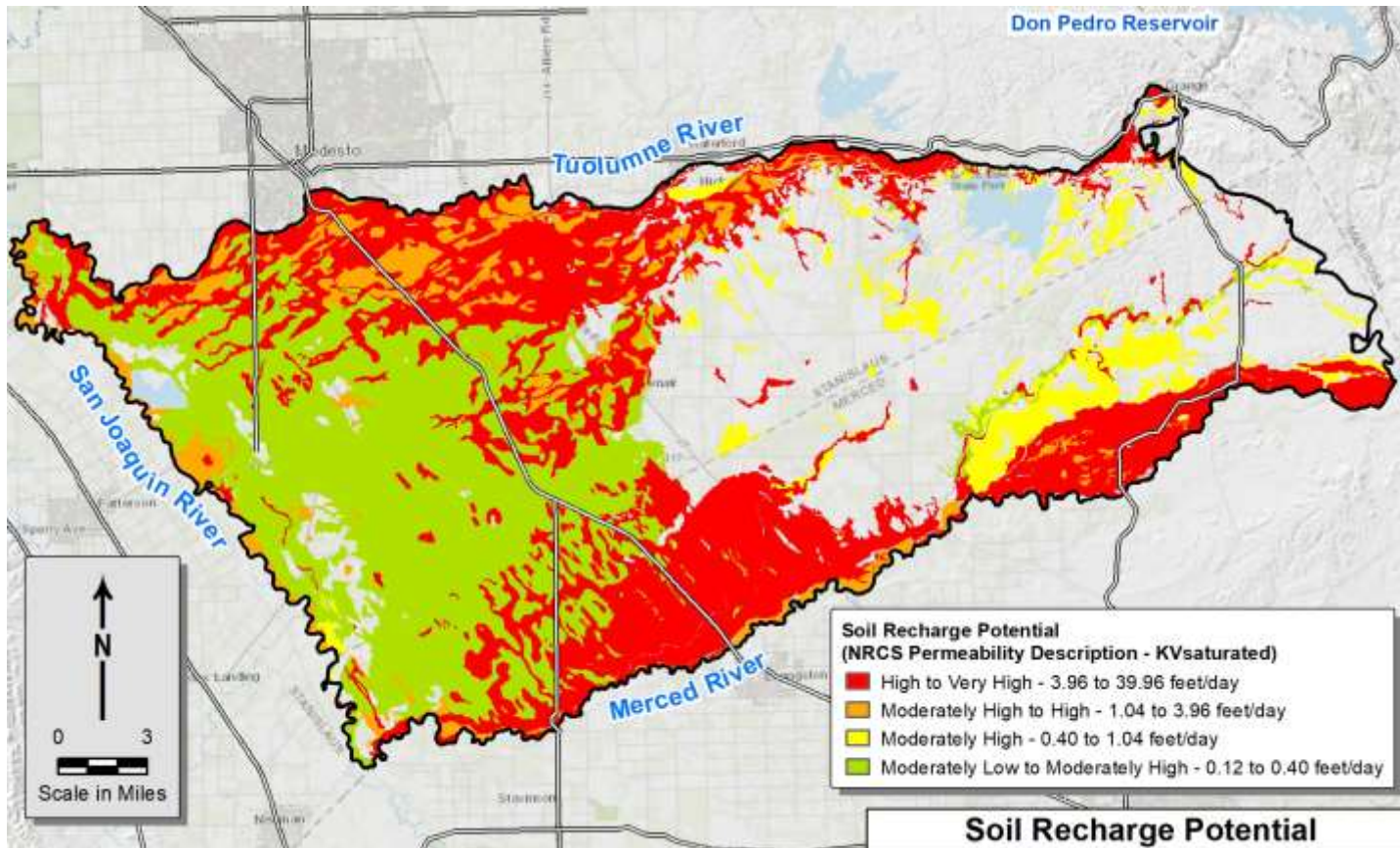


- Younger sediments in west
- Older sediments in east dip westward beneath younger units



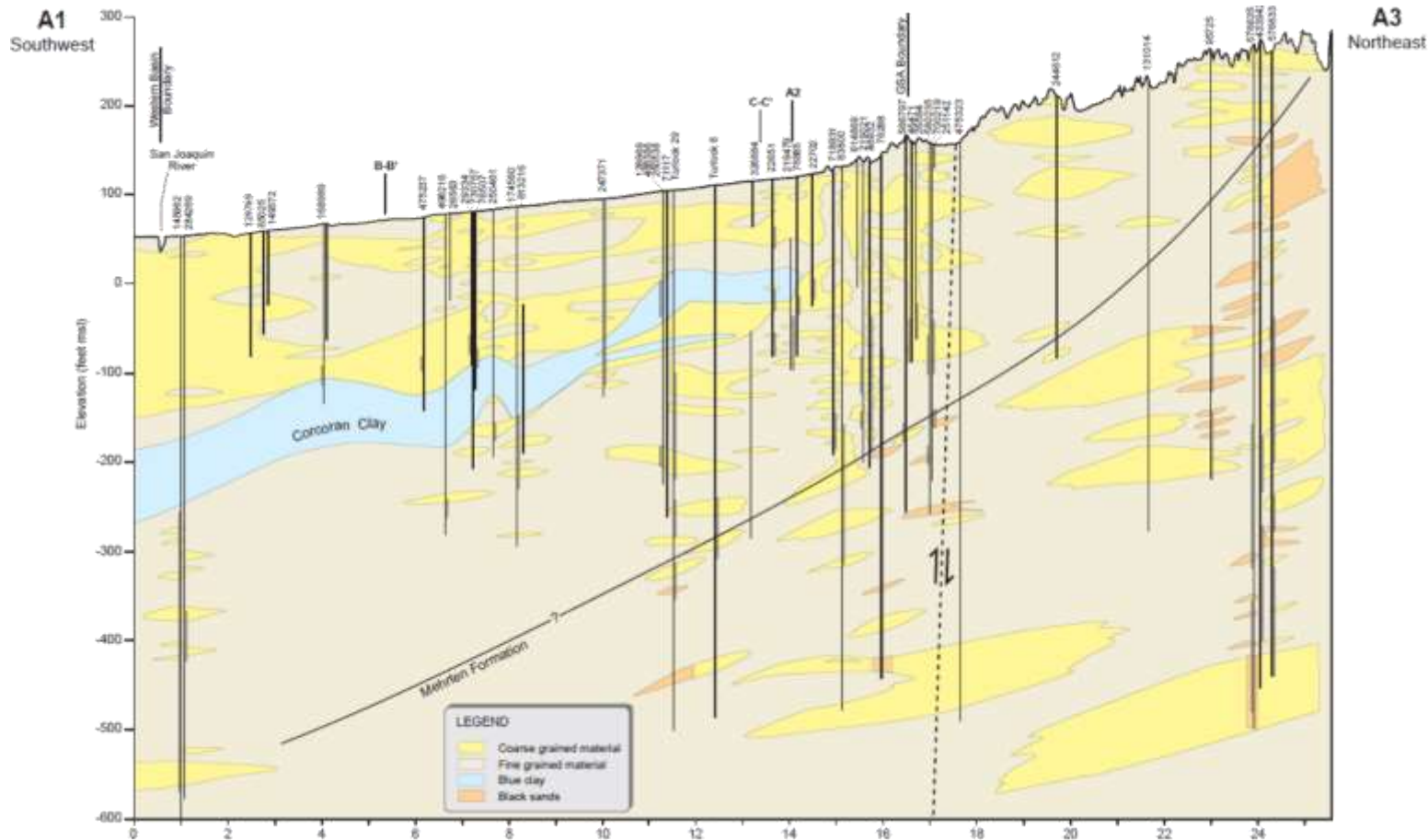
GSP BASIN SETTING

RECHARGE POTENTIAL



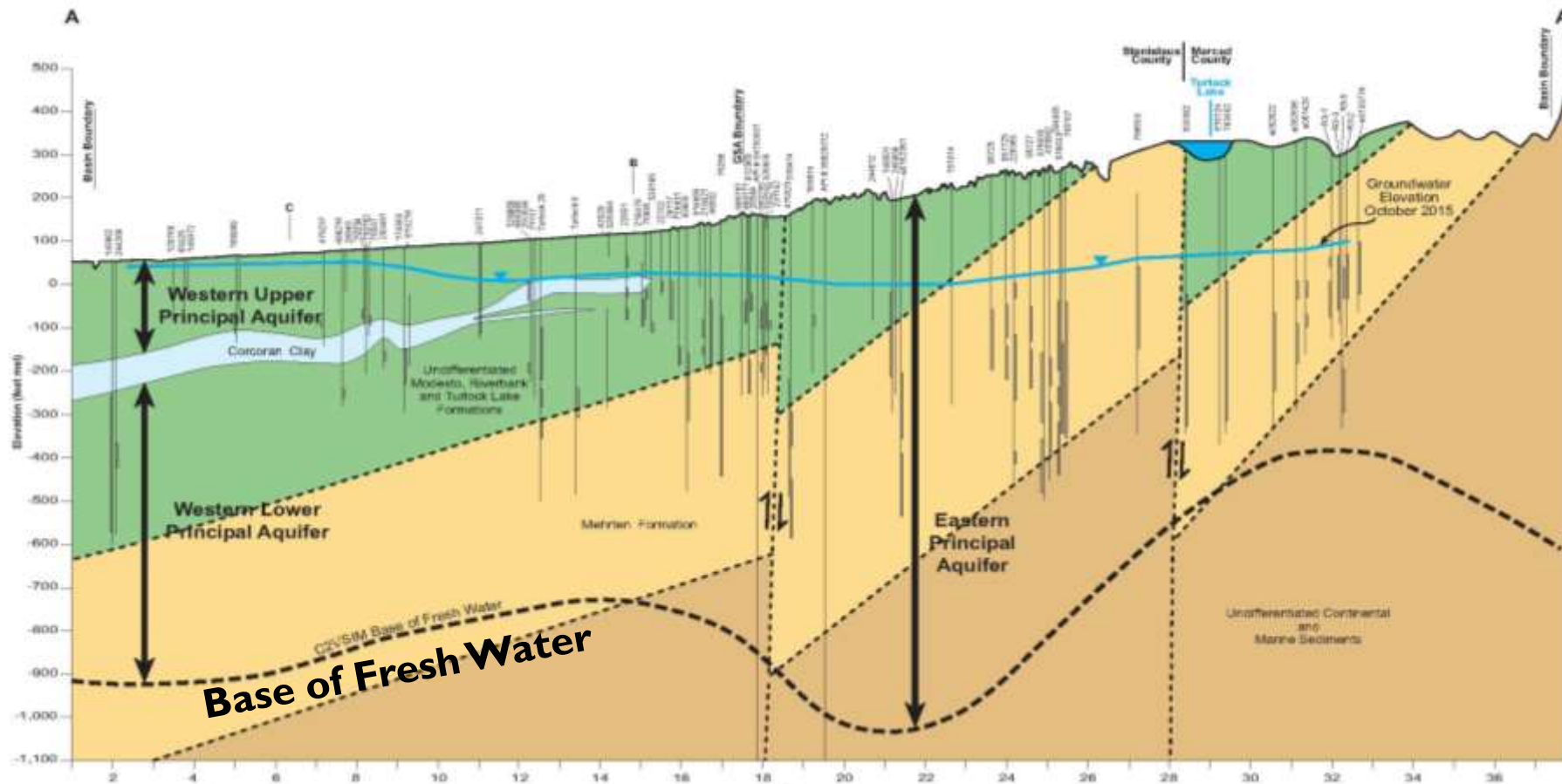
- Evaluated recharge potential
- Restrictive layers in the eastern Subbasin
- Best areas near northern and southern basin boundaries and along internal drainageways

BASIN SETTING TEXTURE CROSS SECTIONS



- Evaluated aquifer textures (sand, silt, clay) from lithologic logs
- Delineated the Corcoran Clay based on cross sections and USGS data

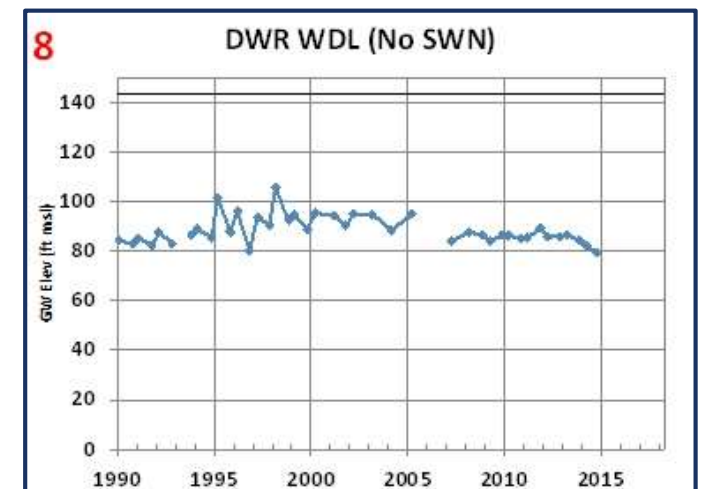
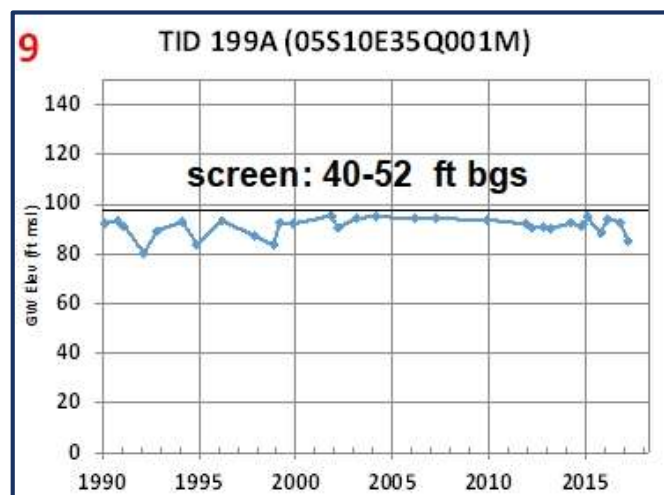
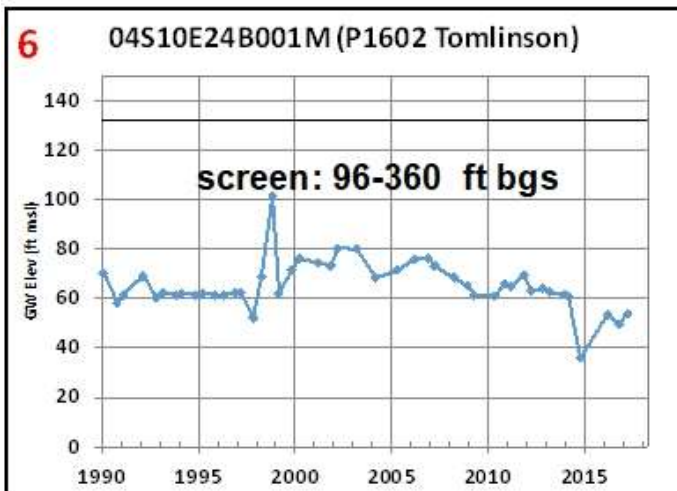
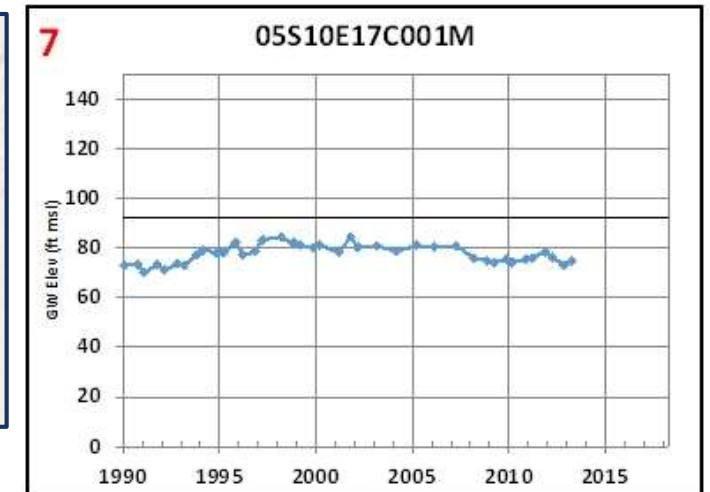
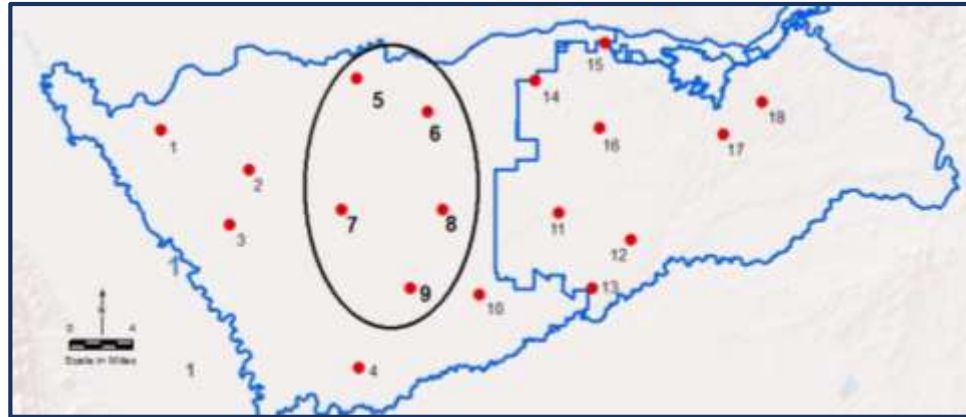
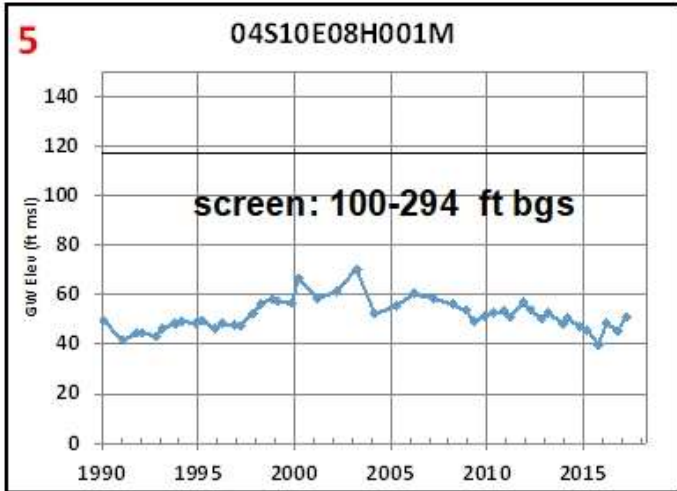
BASIN SETTING – PRINCIPAL AQUIFERS AND HYDROGEOLOGIC FRAMEWORK



- Additional regional cross sections with geologic formations and structure
- Delineated Principal Aquifers as defined by GSP regulations
- Bottom of basin – Base of fresh water

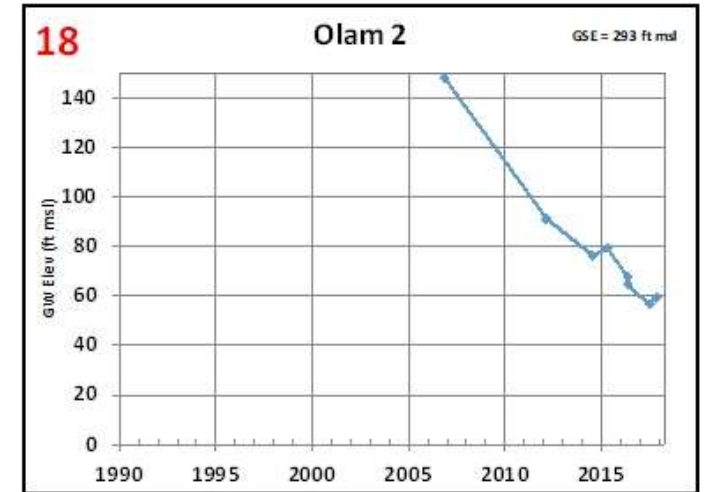
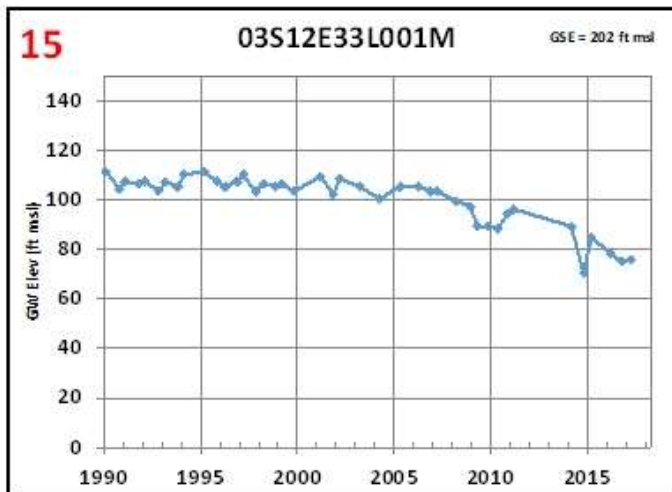
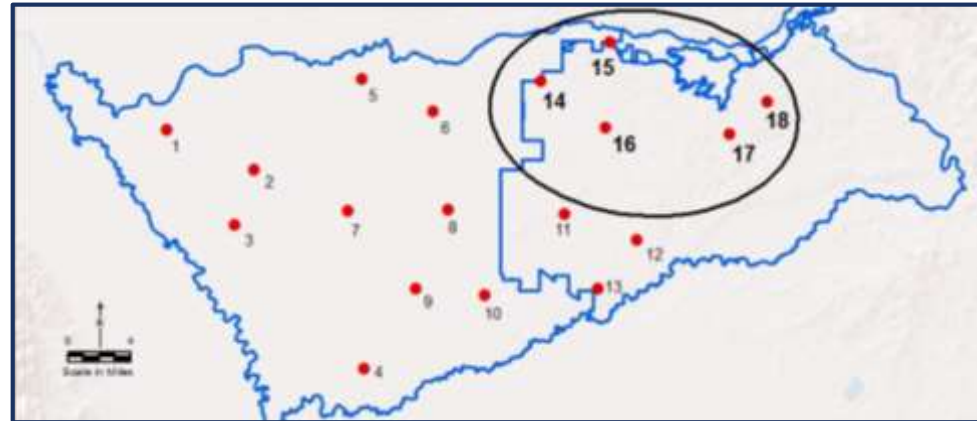
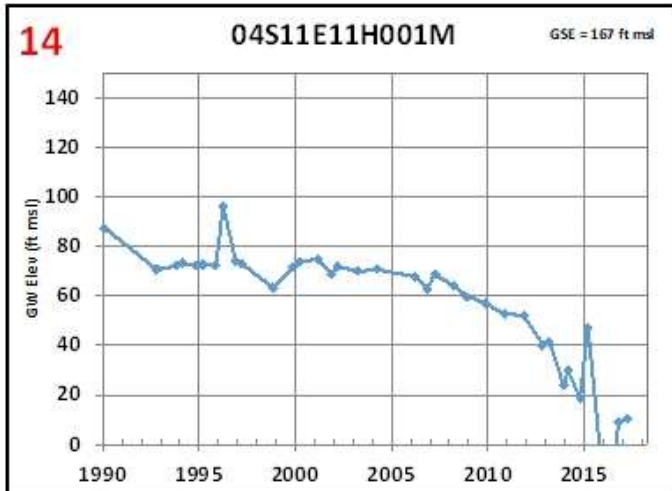
BASIN SETTING HYDROGRAPHS

WESTERN SUBBASIN WATER LEVEL TRENDS



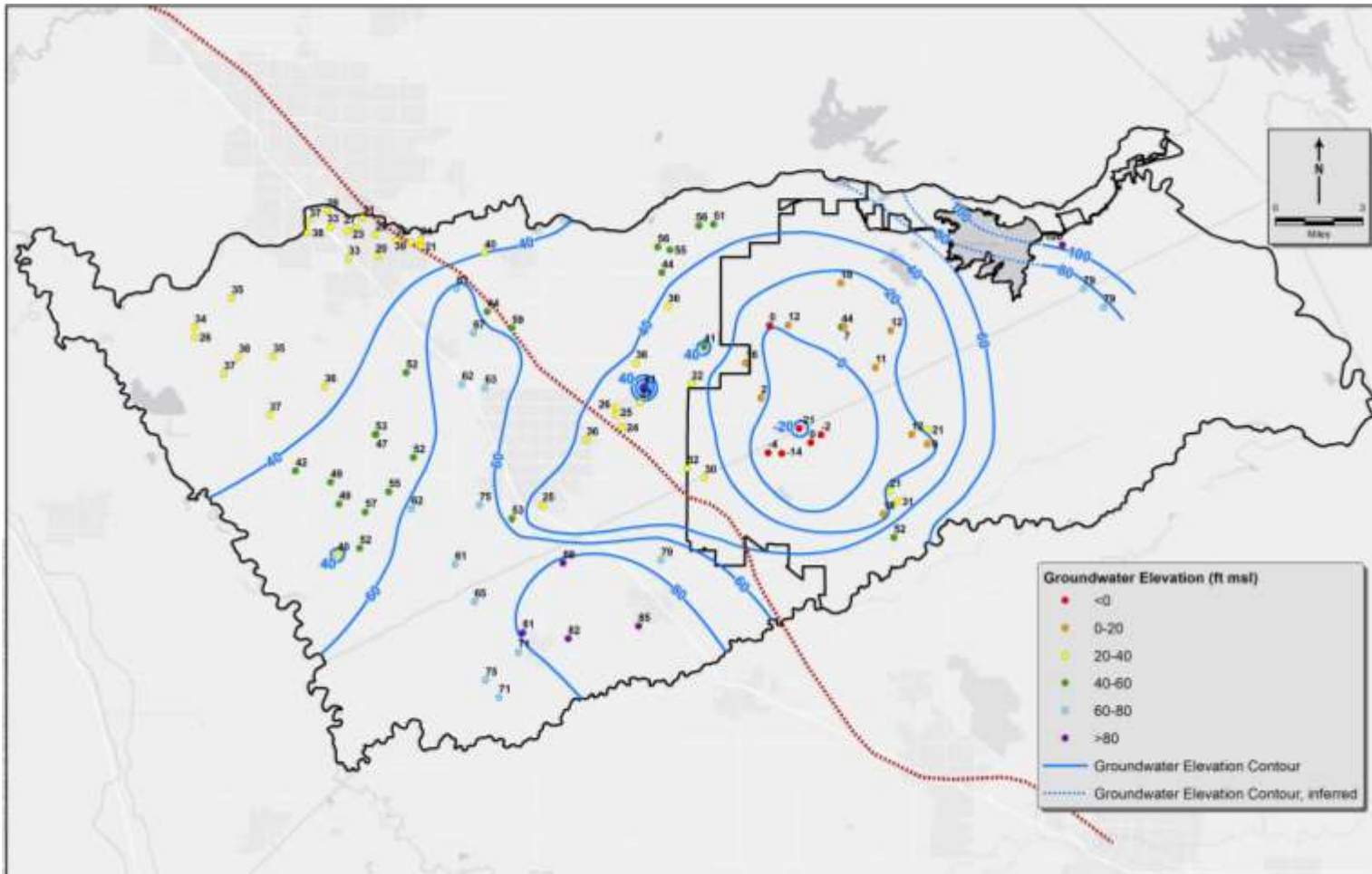
BASIN SETTING HYDROGRAPHS

EASTERN SUBBASIN WATER LEVEL TRENDS



BASIN SETTING

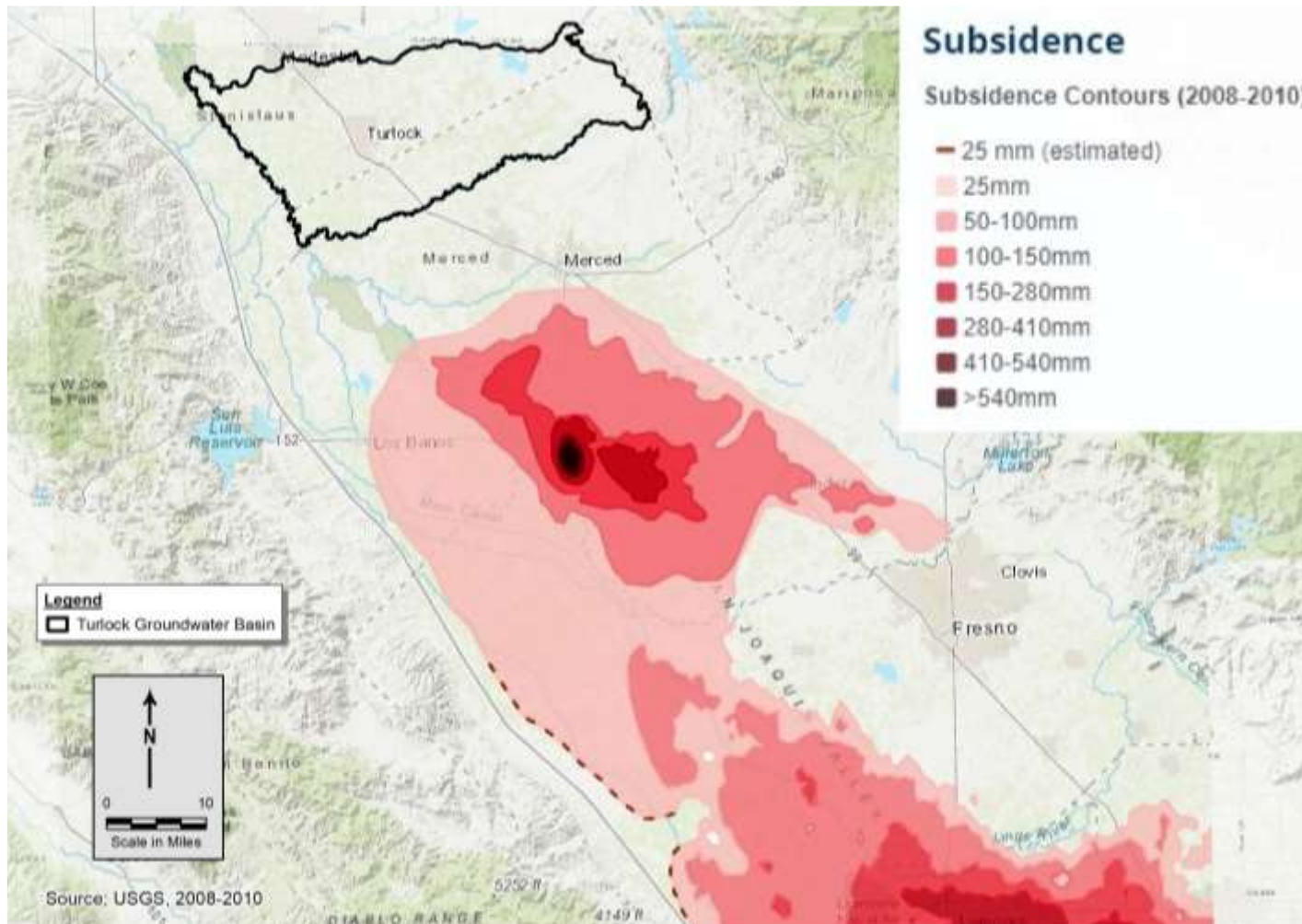
2015 GROUNDWATER CONDITIONS



- Historical overdraft and declining water levels in east-central Subbasin
- Expansion of cone of depression radially around historical pumping centers
- Historical data lacking in the eastern Subbasin

BASIN SETTING

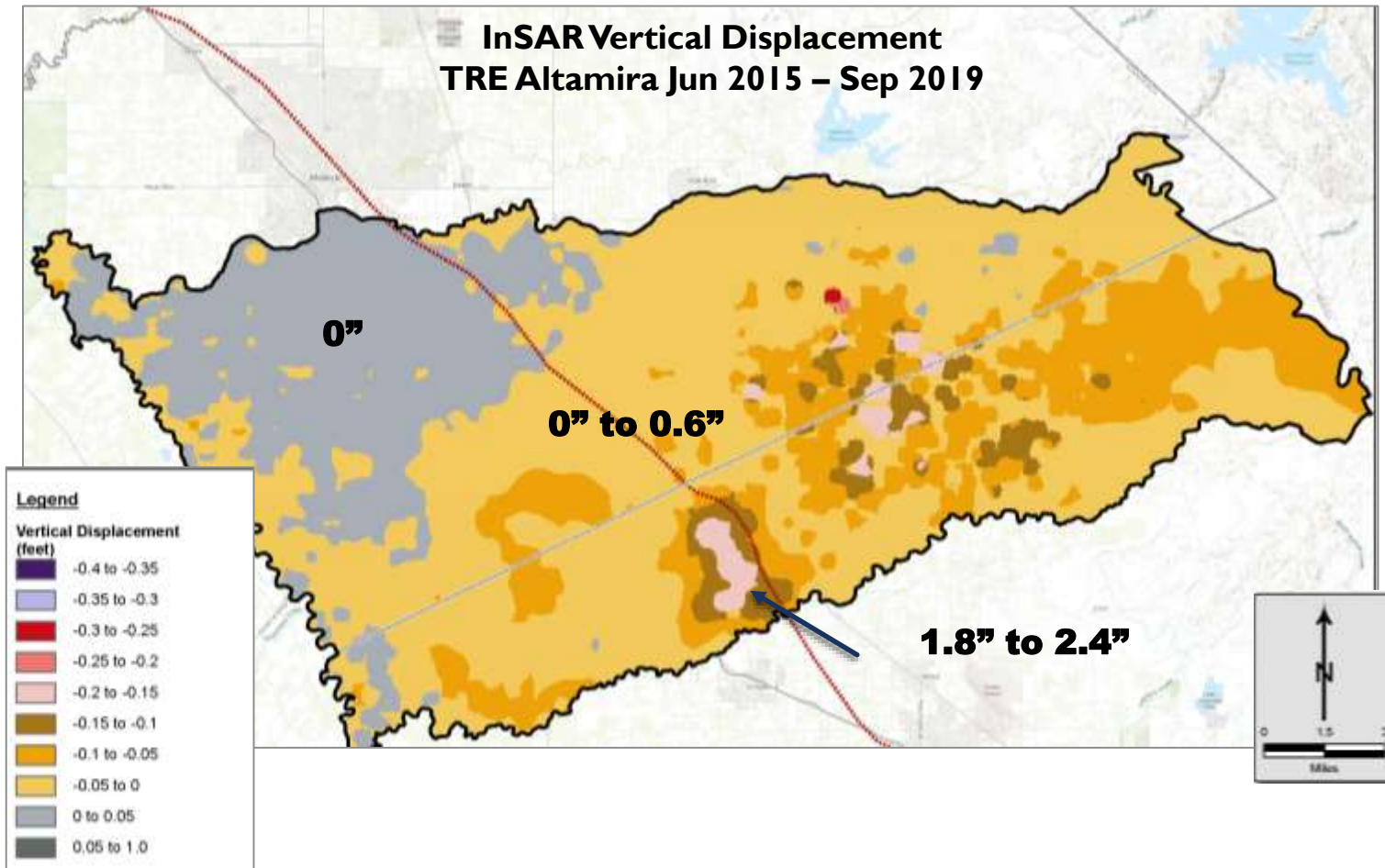
LAND SUBSIDENCE IN THE CENTRAL VALLEY



- Subsidence not documented in Turlock Subbasin, but has occurred to the south
- Largest risk for future subsidence may be the depressurization/dewatering of the Corcoran Clay


BASIN SETTING

RECENT INSAR DATA FOR LAND SUBSIDENCE



- InSAR data published by DWR in April 2021
- Requires ground-truthing, e.g. land grading?
- Useful for future screening

REVISED GSP SCHEDULE AND DRAFT CHAPTERS FOR RELEASE

| 2021 | | | | | | | | | | | | | | | | | | | | | | | | 2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|--------|--------|-------|-------|--------|--------|--------|-------|--------|--------|-------------------------------------|-------|--------|--------|------------------------------|--------|-------|--------|-----------------------------|--------|-------|--------|--|--------|-------|-------|-----------|--------|--------|---------|--------|--------|--------|----------|--------|--------|--------|----------|-------|--------|--------|---------|-------|--------|--------|--------|-------|--------|--------|--------|--------|
| FEBRUARY | | | | MARCH | | | | APRIL | | | | MAY | | | | JUNE | | | | JULY | | | | AUGUST | | | | SEPTEMBER | | | OCTOBER | | | | NOVEMBER | | | | DECEMBER | | | | JANUARY | | | | | | | | | |
| 1-Feb | 8-Feb | 15-Feb | 22-Feb | 1-Mar | 8-Mar | 15-Mar | 22-Mar | 29-Mar | 5-Apr | 12-Apr | 19-Apr | 26-Apr | 3-May | 10-May | 17-May | 24-May | 31-May | 7-Jun | 14-Jun | 21-Jun | 28-Jun | 5-Jul | 12-Jul | 19-Jul | 26-Jul | 2-Aug | 9-Aug | 16-Aug | 23-Aug | 30-Aug | 6-Sep | 13-Sep | 20-Sep | 27-Sep | 4-Oct | 11-Oct | 18-Oct | 25-Oct | 1-Nov | 8-Nov | 15-Nov | 22-Nov | 29-Nov | 6-Dec | 13-Dec | 20-Dec | 27-Dec | 3-Jan | 10-Jan | 17-Jan | 24-Jan | 31-Jan |
| GSP 3 Chapters Internal Review Process | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Water Budget Modeling | | | | | | | | | | | | GSP Chapter Internal Review Process | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sustainable Management Criteria (SMC) | | | | | | | | | | | | | | | | Initial Draft/ TAC Review | | | | Final SMC | | | | GSP Chapter Internal Review | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Monitoring Networks | | | | | | | | | | | | | | | | | | | | GSP Chapter Internal Review | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Projects and Management Actions | | | | | | | | | | | | | | | | | | | | GSP Chapter Internal Review | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | Implementation Plan | | | | GSP Chapter Internal Review | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Prepare Final Draft GSP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | Member Agency Support | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | GSA Adopt | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | Final Plan Revisions; Prepare Data Templates, References | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  Scheduled Draft Chapter Release | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBMIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- TAC review – 15 weeks on first 3 GSP chapters; release for public comment July 8 at GSA Board Meetings
- Shortened internal review process for remaining chapters; technical team incorporates TAC comments
- Bring chapters to GSA Board for review and public release
- Extra time for compilation of final chapters
- Time allotted for Member Agencies to review the GSP with local board/council

CHAPTERS AND PUBLIC COMMENT FORMS ON WEBSITE

<https://turlockgroundwater.org/gsp>

TURLOCK SUBBASIN GROUNDWATER SUSTAINABILITY PLAN

View Comments on the Draft GSP
View Draft GSP Chapters

The West Turlock Subbasin Groundwater Sustainability Agency (WSGA) and the East Turlock Subbasin GSP are working to develop and implement a single Groundwater Sustainability Plan (GSP) to comply with the Sustainable Groundwater Management Act (SGMA) of 2015 and advance long-term sustainability of the Turlock Subbasin. This page is devoted to publishing GSP drafts and providing avenues for public comments to be submitted efficiently by stakeholders.

The Turlock Subbasin GSPs are required by SGMA to develop a GSP by January 15, 2022. Throughout 2021, draft GSP Chapters will be released on this page for comments by stakeholders and the public. The Final GSP is expected to be adopted by the USGA Winter 2021. To receive a notice when a chapter is available for comment, please sign up to be notified on the [Groundwater Sustainability Plan](#) or visit this page regularly.

Turlock Subbasin GSP Comments
c/o Turlock Irrigation District
PO Box 949
Turlock, CA 95381-0949



HOW TO COMMENT ON THE DRAFT GSP VIA EMAIL OR USPS

Start with our [FAQs](#) to learn more about the GSP. You can also submit comments via email or mail. Please email us at comments@turlockgroundwater.org or mail us at the address below. Comments received via email or mail will be posted to the public comment page.

Turlock Subbasin GSP Comments
c/o Turlock Irrigation District
PO Box 949
Turlock, CA 95381-0949

HOW TO COMMENT ON THE DRAFT GSP USING THIS SITE

1. Download and review any of the Draft GSP Chapters.
2. Click on the "Comment on Draft GSP using this site" button below to access the comment form. Type in public your comments on the appropriate chapter on the web form.
3. You can also "view" your comments, so if you need to view, click on the "View" button. You can always add more comments by returning to the site and clicking on a new form.

COMMENT ON THE DRAFT GSP USING THIS SITE

- 3 ways to submit comments: mail, email, website form
- Comments on initial chapters accepted until September 1, 2021
- Subsequent draft chapter release dates, dependent on TAC review



QUESTIONS?

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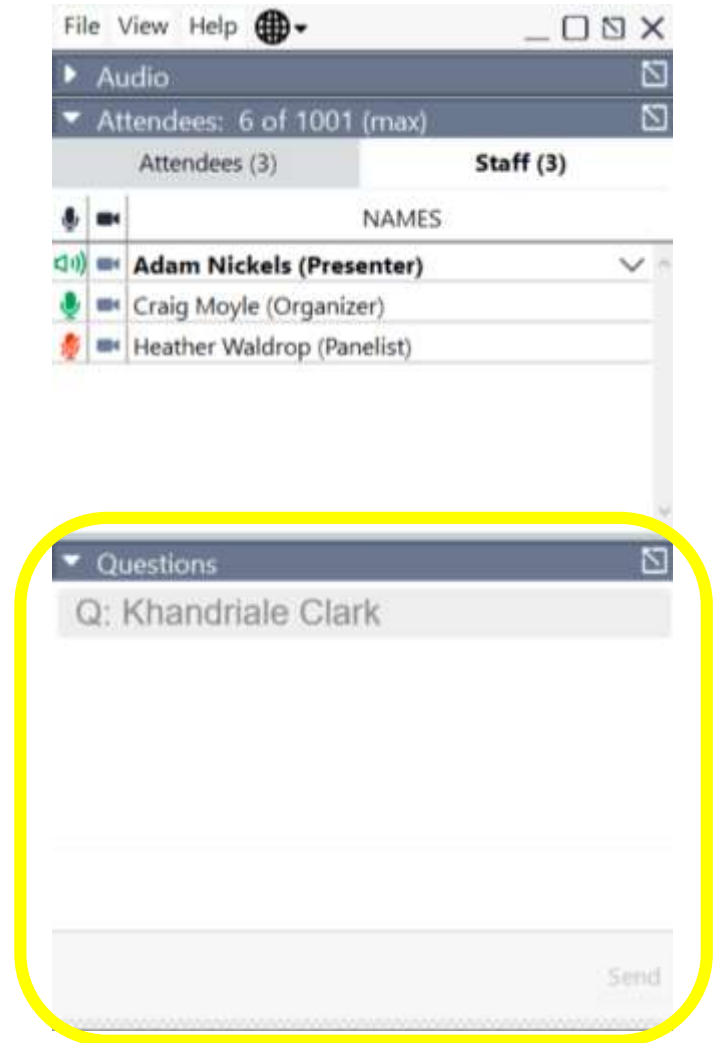
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Email us at

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Funding for this project has been provided in full or in part from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 and through an agreement with the State Department of Water Resources.

**MARK YOUR
CALENDAR**



**WE TALK WATER BUDGETS
AT NEXT LUNCH HOUR SEPT. 16**