



Stanislaus & Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency

1231 11th Street | Modesto, CA 95354
Phone: (209) 526-7564 | Fax: (209) 526-7352
Email: John.Davids@mid.org

STRGBA GSA AGENDA

March 10, 2021 (1:30 p.m. – 2:00 p.m.)

Webinar Digital Platform or Phone Meeting

<https://us02web.zoom.us/j/87846141611>

By phone: 1-669-900-9128

Webinar ID: 878 4614 1611

This meeting is being conducted via webinar for all seven member agencies, pursuant to Executive Orders signed by Governor Gavin Newsom related to the ongoing COVID-19 pandemic, including provisions regarding the Brown Act. Members of the public and member agency staff may join the meeting utilizing Zoom's webinar feature if desired, or a phone number as provided in this Agenda. Members of the public will continue to have the opportunity to provide public input via the webinar or phone features. Members of the public may also email public comments by 3:00 p.m. on the day preceding the GSA meeting to: strgba.org. If public comments are timely submitted by email, then those comments will be identified during the public input section of the Agenda or during a specific agenda item if the agenda item is identified in the email. The Brown Act does not require a member of the public to state her or his name; please indicate in your email if you would like your name stated or if you want to remain anonymous. _

PUBLIC PARTICIPATION

The public may participate in this meeting in the two ways described below.

Instructions for Participating in STRGBA GSA & Technical Advisory Meeting via Zoom Webinar or Phone

On your desktop/iPad or tablet/laptop:

1. To join the webinar, click the link published in the Agenda for the current meeting about 5 minutes before webinar begins.
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1. Call to Order/Welcome and Introductions
(Four agencies needed for a quorum)
2. Business from the Public
Who: Public
Expected Outcome: Interested persons are welcome to introduce any topic within the Agency's jurisdiction. Matters presented under this heading may be discussed but no action will be taken by the Agency at this meeting.
3. Topic: Approve 2/10/21 Meeting Minutes [[Action Item](#)]
Who: John Davids, Committee
Expected Outcome: Approval
4. Topic: Budget and Schedule Update
Who: Gordon Enas, Committee
Expected Outcome: Discussion
5. Topic: Public Outreach Update
Who: Gordon Enas/Samantha Wookey, Committee
Expected Outcome: Discussion
6. Topic: GSP Update
Who: Todd Groundwater, Committee
Expected Outcome: Discussion
7. Topic: Monitoring Well Update
Who: Todd Groundwater, Committee
Expected Outcome: Discussion
8. Next Meeting
April 14, 2021 at 1:30 p.m. via Zoom
9. Items too late for the agenda



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MEETING MINUTES

February 10, 2021 (1:30 p.m. – 2:00 p.m.)

The meeting was called to order at 1:32 p.m.

1. Welcome and Introductions

The following members of the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) attended via Zoom:

Modesto Irrigation District (MID): John Davids
City of Waterford: Mike Pitcock
City of Modesto: Miguel Alvarez
Stanislaus County: Walt Ward
City of Oakdale: Michael Renfrow
Oakdale Irrigation District: Eric Thorburn

Other Attendees:

| | |
|--|--------------------------|
| Alexis Stevens, Somach, Simmons & Dunn | Amanda Peisch-Derby, DWR |
| Stacy Henderson, Terpstra Henderson | John Bricchetto |
| Hilary Reinhard, Provost & Pritchard | David Orth |
| Gordon Enas, MID | Claudia Hidahl |
| Samantha Wookey, MID | Debbie Montalbano |
| John Mensinger, MID | Michael Roots |
| Liz Elliott, Todd Groundwater | Ron Ratto |
| Phyllis Stanin, Todd Groundwater | Emily Sheldon |
| Valerie Kincaid | Ronda Lucas |
| Kirsten Pringle, Stantec | |

2. Business from the Public

N/A

3. Approve 1/13/21 Minutes [Action item]

Ward moved, 2nd by Renfrow, to approve 1/13/21 meeting minutes. Motion carried.



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4. Near Term Public Outreach Activities

Enas stated that the STRGBA GSA applied for a contract amendment for the Facility Support Services which was subsequently approved by DWR on January 21, 2021. The contract amendment covers several public outreach activities planned for 2021. These activities include developing a GSA outreach toolkit - a package of template materials that can be used for presentations to local community organizations and industry associates, pre-recorded presentations made by GSA representatives covering a host of SGMA related topic, and holding virtual “office hours” where the public can call in and discuss groundwater topics with GSA representatives. We anticipate 3-4 office hour sessions through this next year. Davids asked “Is it too early to define or ask what the timeline is for implementation of some of these activities?” Enas stated the plan is to start as soon as we can.

Ward moved, 2nd by Pitcock to approve and authorize chairman to implement near term public outreach activities.

Wookey gave an update of the joint fact sheet with Turlock Subbasin. The fact sheet is complete and will be posting to our website, social media as well as sending to distribution list.

5. Budget and Schedule Update

No update given; budget materials provided

6. GSP Update

Stanin informed the group that the GSA is focusing on developing Sustainable Management Criteria for the Modesto Subbasin. The goal is to finalize the criteria by the end of spring. Stanin stated they are also continuing modeling analysis with respect to climate change and sustainable yield.

7. Monitoring Well Update

Elliott stated Gregory Drilling is scheduled to begin drilling monitoring wells at location 8. We have permits for eastern wells 7,8,9 and 10 and encroachment permits for 2 other wells.

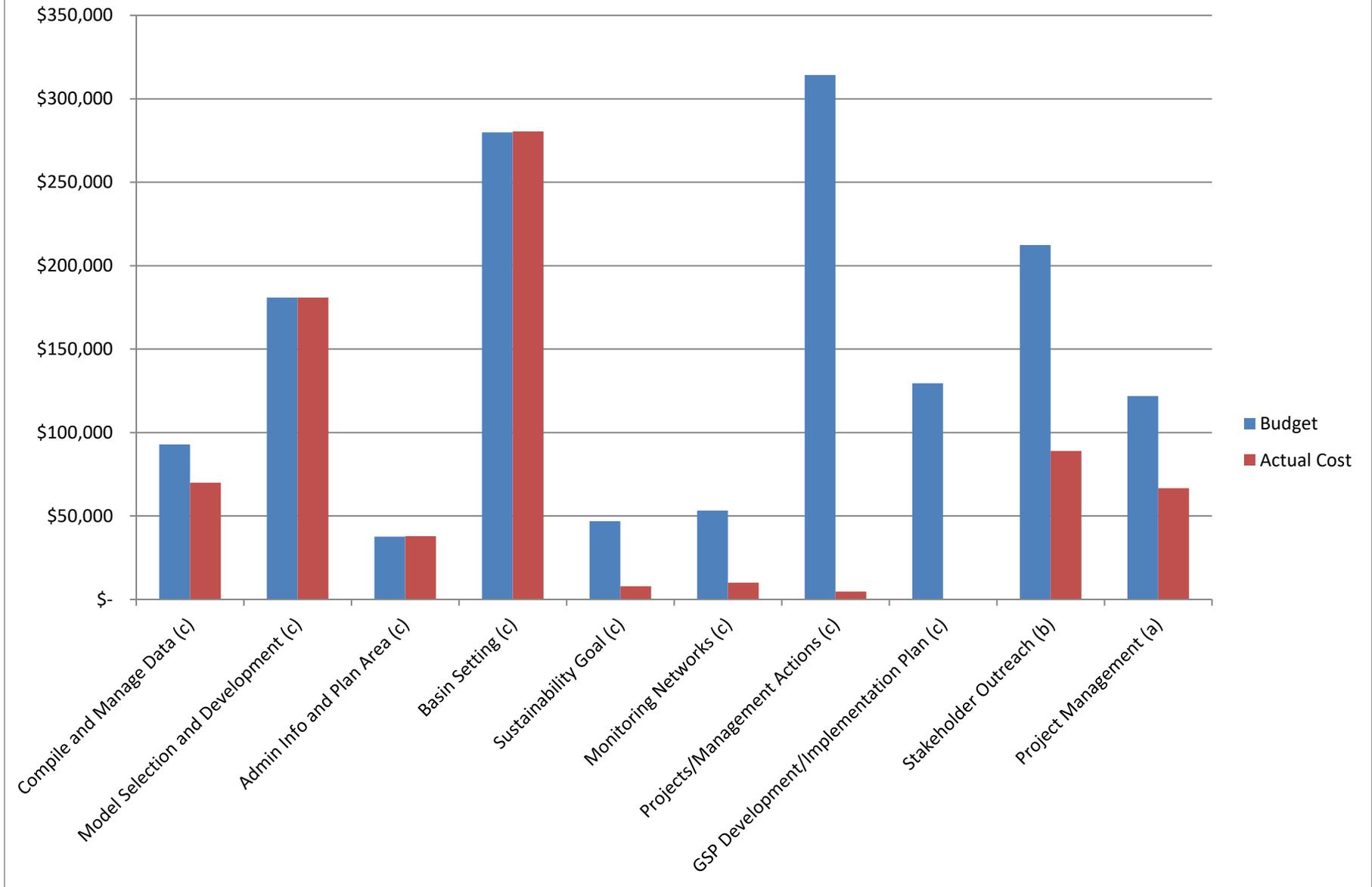
8. Next meeting

March 10, 2021 at 1:30 p.m. via Zoom webinar

9. Items too late for the agenda

N/A

Cost To Prepare GSP (September 2018 - January 2021)





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TECHNICAL ADVISORY COMMITTEE AGENDA

March 10, 2021 (2:00 p.m. – 3:00 p.m.)

Webinar Digital Platform or Phone Meeting

<https://us02web.zoom.us/j/87846141611>

By phone: 1-669-900-9128

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 - a. Wait until the last four digits of your phone number is called by the Host.



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3. Topic: Approve 2/10/21 Meeting Minutes [[Action Items](#)]
Who: John Davids, Committee
Expected Outcome: Approval

4. Topic: Sustainable Management Criteria
Who: Todd Groundwater, Committee
Expected Outcome: Discussion

5. Next Meeting
April 14, 2021 at 2 p.m. (following STRGBA GSA monthly meeting) via Zoom

6. Items too late for the agenda



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**TECHNICAL ADVISORY COMMITTEE
MEETING MINUTES**

February 10, 2021 (2:00 p.m. – 3:00 p.m.)

The meeting was called to order at 2:00 p.m.

1. Welcome and Introductions

The following members of the Stanislaus and Tuolumne Rivers Groundwater Basin Association Groundwater Sustainability Agency (STRGBA GSA) attended via Zoom:

Modesto Irrigation District (MID): John Davids
City of Waterford: Mike Pitcock
City of Modesto: Miguel Alvarez
Stanislaus County: Walt Ward
City of Oakdale: Michael Renfrow
Oakdale Irrigation District: Eric Thorburn

Other Attendees:

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| Alexis Stevens, Somach, Simmons & Dunn | Amanda Peisch-Derby, DWR |
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| Valerie Kincaid | Ronda Lucas |
| Kirsten Pringle, Stantec | |

2. Business from the Public

- Lucas asked, *do we plan on monitoring and collecting additional data on the west side where subsidence may be an issue?* Stanin responded that her presentation today will discuss a bit about the water levels in both aquifers on the west side, but land subsidence as a sustainability indicator will be discussed in more detail at the April TAC



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- meeting. Davids stated that along with the east side data needs that we've had for a long time, there is certainly additional data that needs to be gathered that would only serve to help our efforts on the west side. We can put a request in the next newsletter asking landowners to provide well data. Stanin added that there are a few westside wells that we are pulling hydrographs from but this is something that will be identified in the GSP as a data gap.
- Lucas also asked, *is it possible to get a basin map showing the areas of concern within the basin relating to groundwater dependent ecosystems?* Stanin said there is not a map yet but that is something they are working on.

3. Approve 1/13/21 Minutes [Action item]

Ward moved, 2nd by Renfrow, to approve 1/13/21 meeting minutes. Motion carried.

4. Technical Workshop #11 – Sustainable Management Criteria

Stanin gave a presentation on Sustainable Management Criteria, which is the next step in the GSP development process. Stanin continued the discussion on sustainability indicators and focused on chronic lowering of groundwater levels.

- Ward asked, *is there was enough information to determine what direction groundwater movement is occurring across the Corcoran clay layer?* Stanin responded that vertical flow almost always follows a downward gradient. However, all of well data we have are from wells that are above the Corcoran clay.
- Davids asked, *when we went through our analysis of where to locate some of the monitoring wells, just as we keep an eye towards the future, is there the need from a technical perspective to place more monitoring wells on the westside should additional monies become available?* Stanin stated yes, we will prioritize data gaps as we move forward.
- Davids also asked how the consultant team would like the public and member agencies to provide comments on adverse impacts to water supply wells? Stanin responded that the information should be sent through the GSA member agencies.
- Lucas asked, *have you modeled the white areas with the assumption that they might be getting some surface water, either through conjunctive use or from some other means to see what effect that has on water levels?* Stanin stated that was built into historical zone water budget modeling, but we will develop management actions and projects for the eastside and will use the model to help analyze the impact on these.



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- Stanin also introduced the concept of a sustainability goal for the Modesto Subbasin. The sustainability goal is similar to a mission statement but needs to be linked to a list of projects and management actions before finalizing the sustainability goal. Stanin also agreed to provide a draft goal to the GSA for consideration.

5. Next Meeting

March 10, 2021 at 1:30 p.m. via Zoom webinar

6. Items too late for the agenda

N/A



MODESTO SUBBASIN GSP SUSTAINABLE MANAGEMENT CRITERIA

TECHNICAL ADVISORY COMMITTEE (TAC) MEETING

March 10, 2021



PRESENTATION OUTLINE

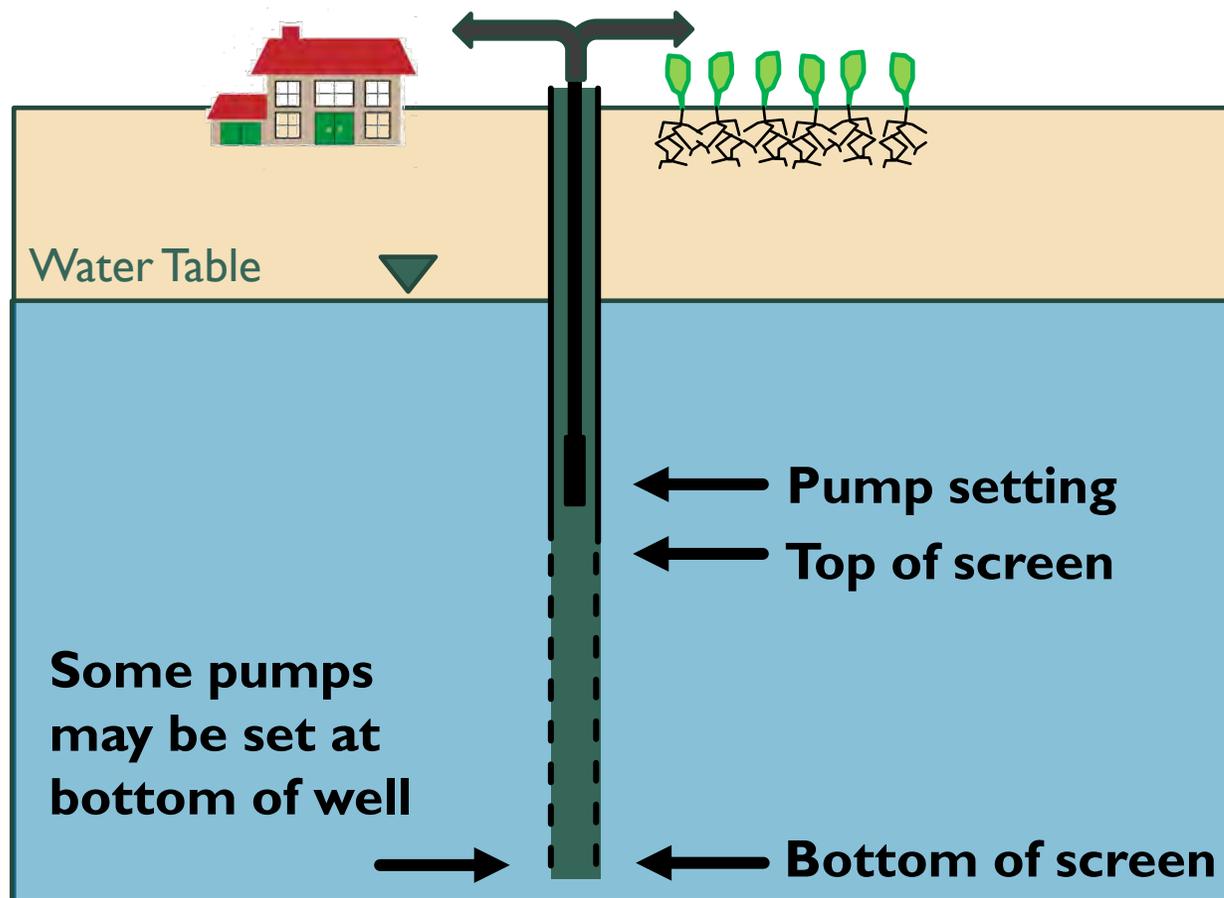
Continue Discussion of Chronic Lowering of Water Levels Sustainability Indicator



- Adverse Impacts to Wells?
- Domestic Well Vulnerability
- Selecting Minimum Thresholds



ADVERSE IMPACTS FROM DECLINING WATER LEVELS?



Draft

- During the recent drought of record, did we have:
 - Dry wells?
 - Operational issues?
 - Water quality concerns?
- *Request feedback from TAC members on known adverse impacts to wells.*



ADVERSE IMPACTS?

REQUESTED FEEDBACK FROM TAC MEMBERS

Did your agency (or its customers) experience any adverse impacts with water supply wells during recent drought (2013-2016) or in recent years?

- What type of well(s) was impacted?
- When did this impact occur?
- How old was the impacted well(s)?
- How deep is the impacted well(s)? What is the screened interval?
- What was the nature of the impact?
- Were these impacts likely caused or exacerbated by declining water levels?
- What actions were taken to manage or mitigate the impacts?
- Is the well still operational? Is it currently active?
- Can these impacts be readily managed or mitigated during a similar future drought?



ADVERSE IMPACTS? FEEDBACK FROM TAC MEMBERS

No adverse impacts to water supply wells during recent drought

- City of Oakdale
- City of Riverbank
- Modesto Irrigation District
 - MID notes that groundwater levels have partially recovered since the drought because of decreased pumping demand.





ADVERSE IMPACTS? FEEDBACK FROM TAC MEMBERS

City of Modesto



- Surface water supplies decreased, groundwater pumping increased
- No wells went dry during drought
- No significant water quality concerns, but potential for water quality problems during a longer drought



ADVERSE IMPACTS? FEEDBACK FROM TAC MEMBERS

City of Waterford

- Water levels dropped on average ~20 feet from 2005 to 2015/2016
- Well 242: pump replaced and lowered 20 feet (2015)
 - Depth = 295 ft
 - Constructed in 1945, rehab in 1985
 - Well currently operational
- Well 245: casing collapsed due to lower water levels (2015)
 - Depth of casing = 120 ft, open borehole to 205 ft
 - Constructed in 1969
 - Residents had sand in their water which damaged appliances, fixtures, sprinkler systems
 - Taken offline (previously had high production and good water quality)
- Similar problems may occur again, need new deeper wells





ADVERSE IMPACTS? FEEDBACK FROM TAC MEMBERS

Oakdale Irrigation District

- Water levels dropped on average ~20 feet from 2005 to 2020 in OID's main service area and ~53 feet along the eastern OID boundaries.
- Water levels have continued to drop since the drought (2016-present): 1.3 ft/yr in main service area and 2-4 ft/yr in eastern OID.
- In the last six months, OID has had to pull and replace/extend pumps in 4 wells (3 in the Modesto Subbasin). These wells were drilled between 1945 and 1987.
- Several landowners have had issues with water levels dropping below their pump setting and/or the bottom of their domestic well.
- Potential for domestic wells in eastern OID service areas to become dry if water levels continue to drop.





ADVERSE IMPACTS?

FEEDBACK FROM TAC MEMBERS

Stanislaus County



- The County does not own or operate groundwater facilities
- Domestic well owners reported water supply problems to the County during the recent drought (2014-2017)
- Problems reported for ~160 domestic wells in Modesto Subbasin
- Most were >50 years old and/or <100 feet deep
- County assisted well owners with storage tanks and new well installations through their Dry Well Program



ADVERSE IMPACTS?

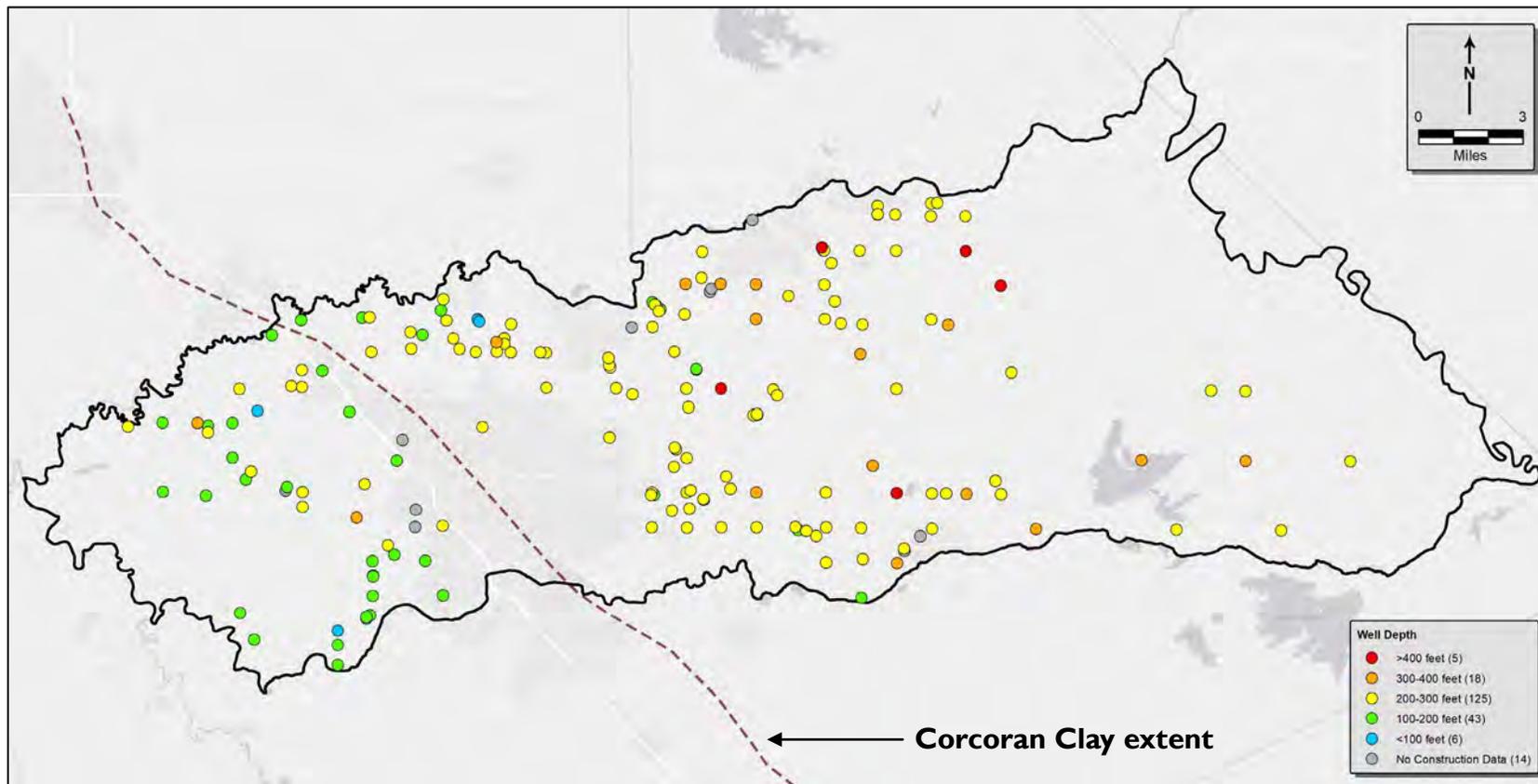
FEEDBACK FROM TAC MEMBERS

Stakeholder Survey Results

- 4 of 13 responses indicated 10 ft/year reduction in water levels in wells during recent drought
- During recent drought (12 responses):
 - I experienced water level decline below pump/well (went dry)
 - I experienced water quality changes
 - 10 did not experience operational issues or well problems



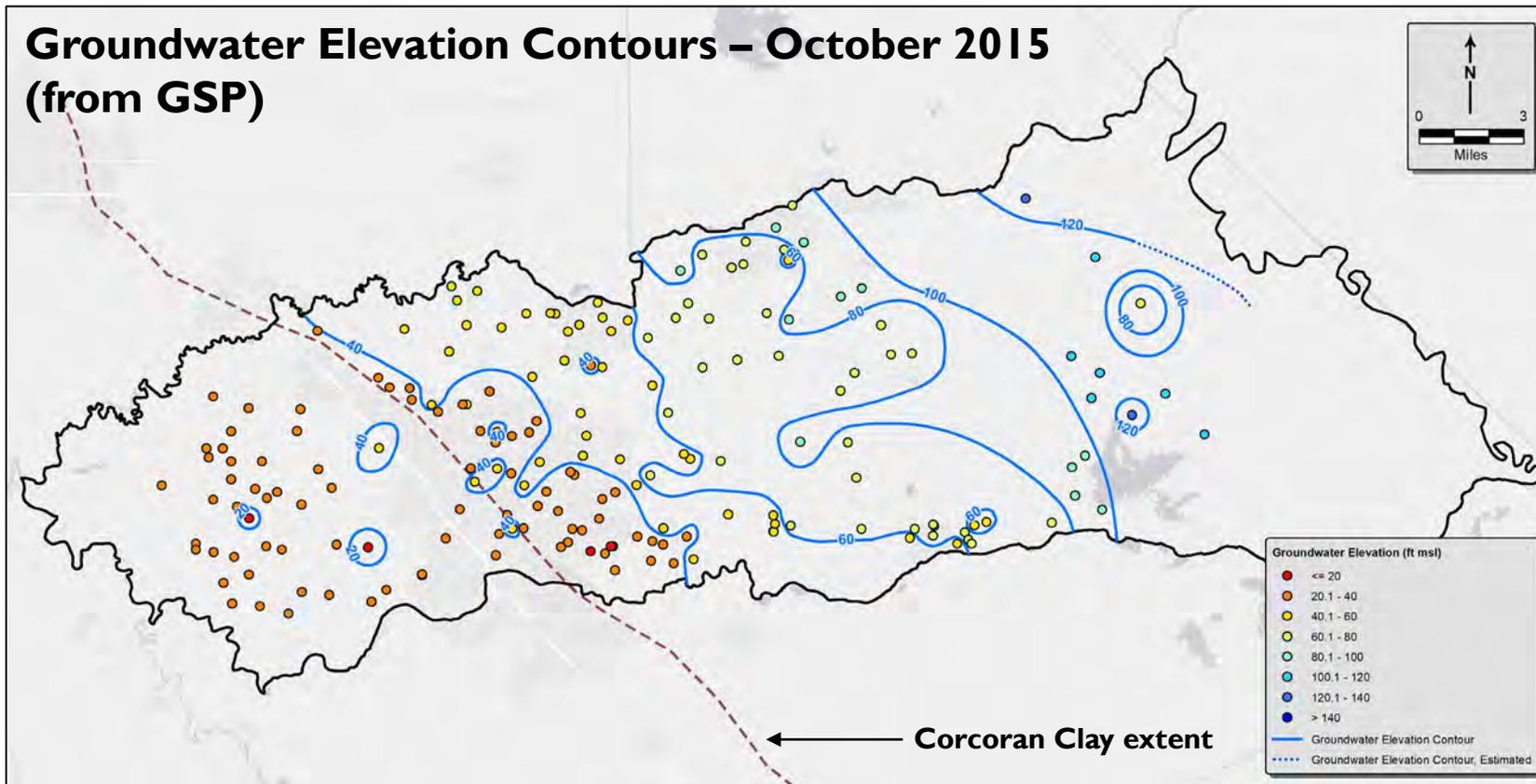
DOMESTIC WELLS CONSTRUCTED SINCE 2015



- 211 new domestic wells drilled since 2015
- Likely replacement wells for previously failed wells
- 75% of wells with known construction were drilled >200 feet deep (yellow, orange, red dots)



DOMESTIC WELL VULNERABILITY ANALYSIS

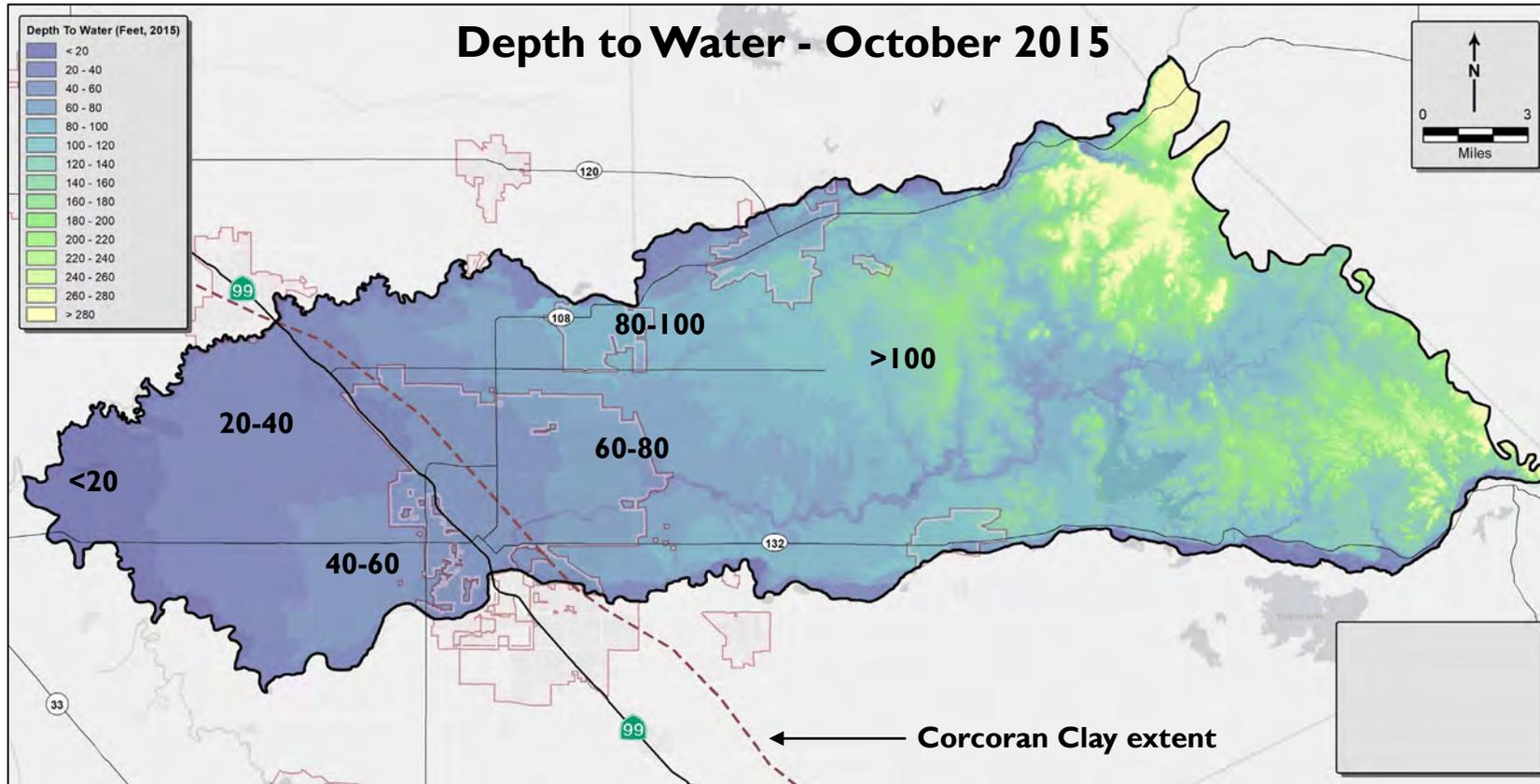


Would domestic wells be vulnerable to failure if water levels declined below historic lows?

- Developed GIS raster from the groundwater elevation contours
- Subtracted from ground surface elevation to analyze depths to water



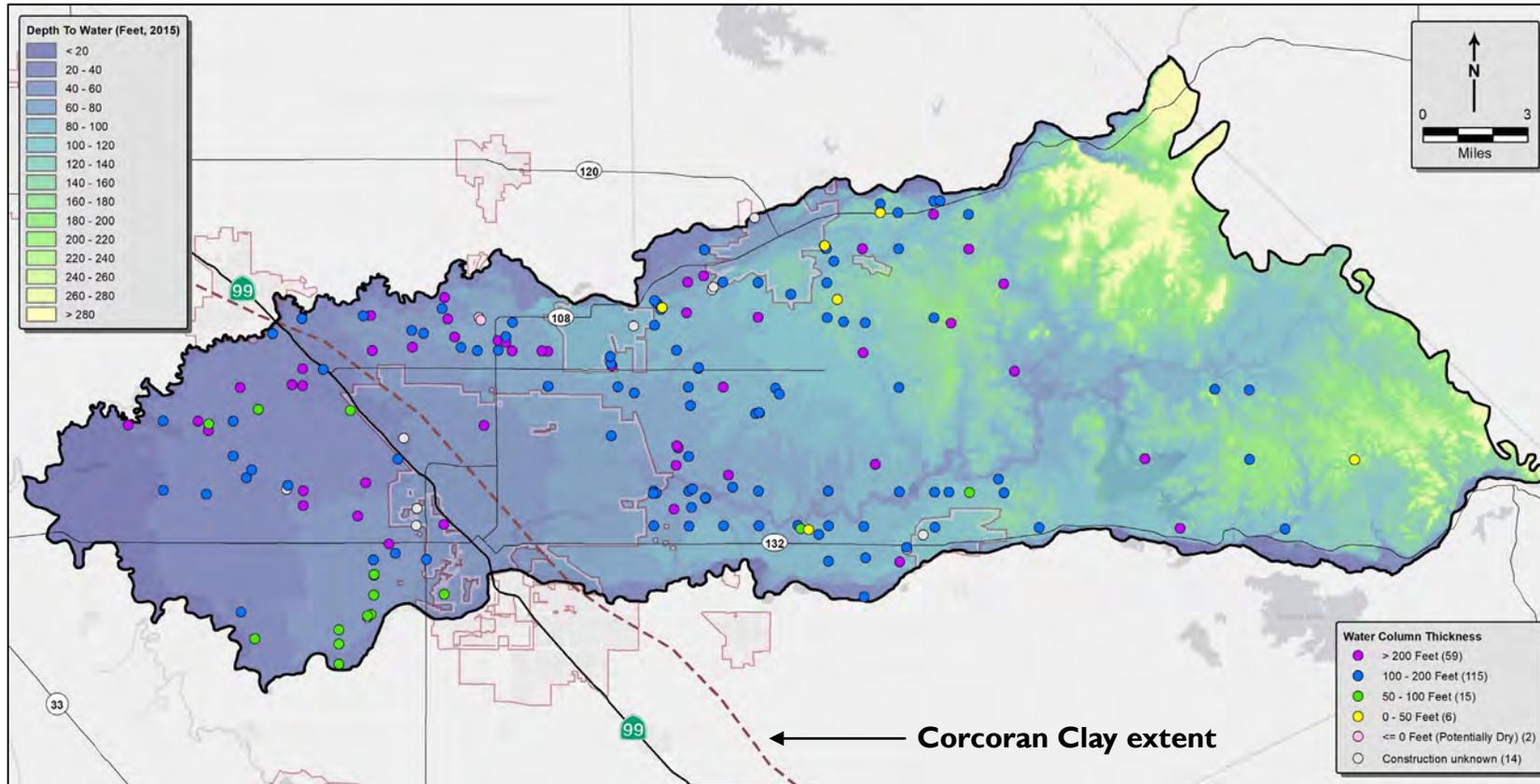
DOMESTIC WELL VULNERABILITY ANALYSIS



- Shallowest groundwater in western Subbasin and along river boundaries
- Deepest groundwater in eastern Subbasin



DOMESTIC WELL VULNERABILITY ANALYSIS

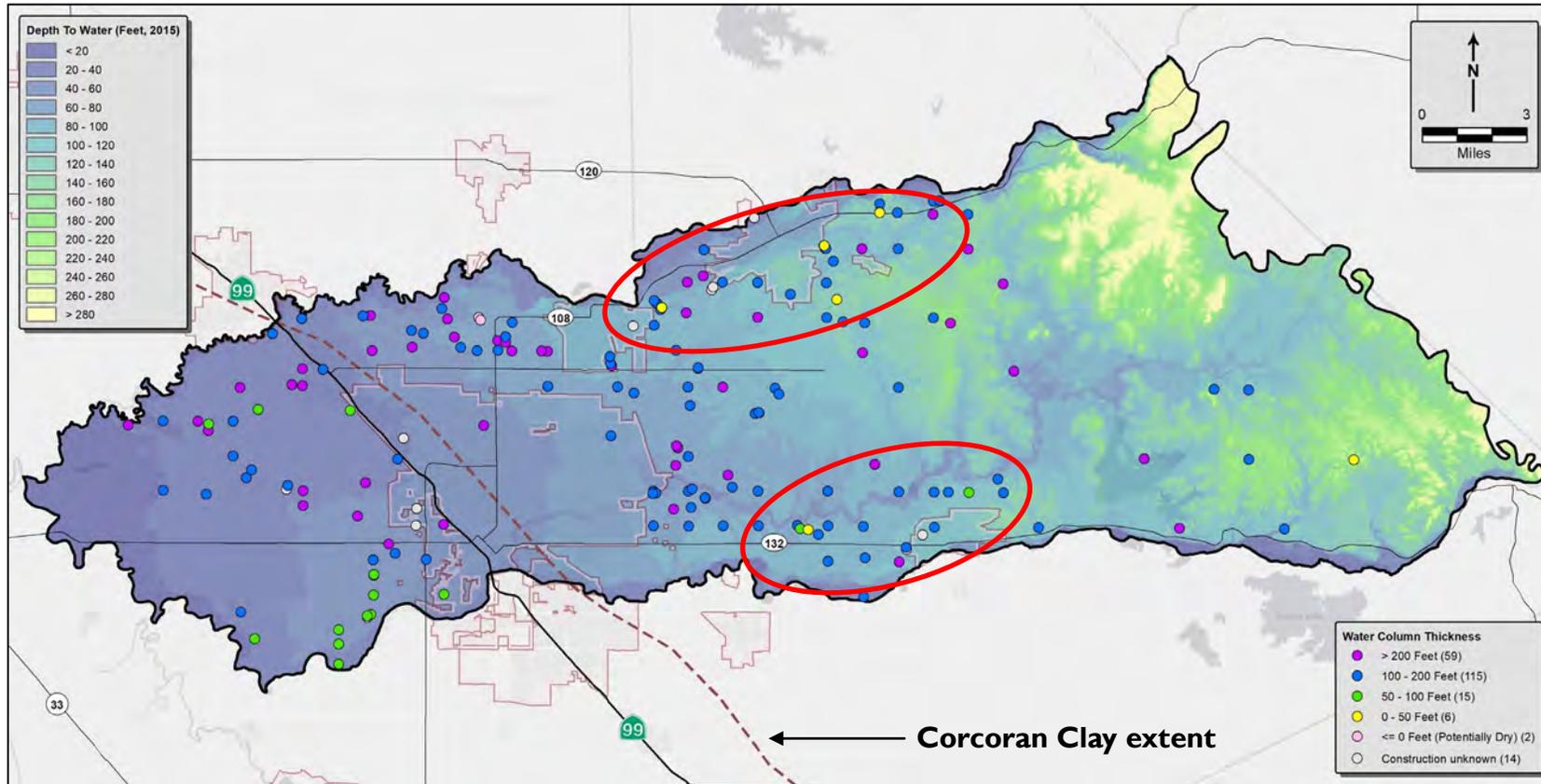


How far below the water table are the new domestic wells?

- 87% with known construction are at least 100 ft below water table (blue and purple dots)
- 4% (8 wells) with known construction are <50 ft below water table (green, yellow, pink dots)



DOMESTIC WELL VULNERABILITY ANALYSIS

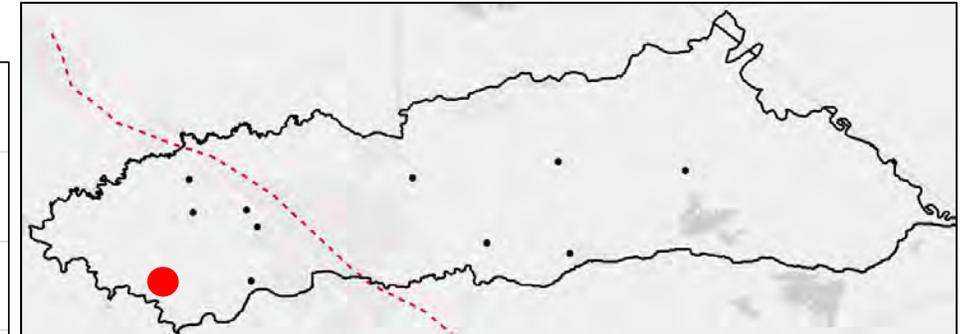
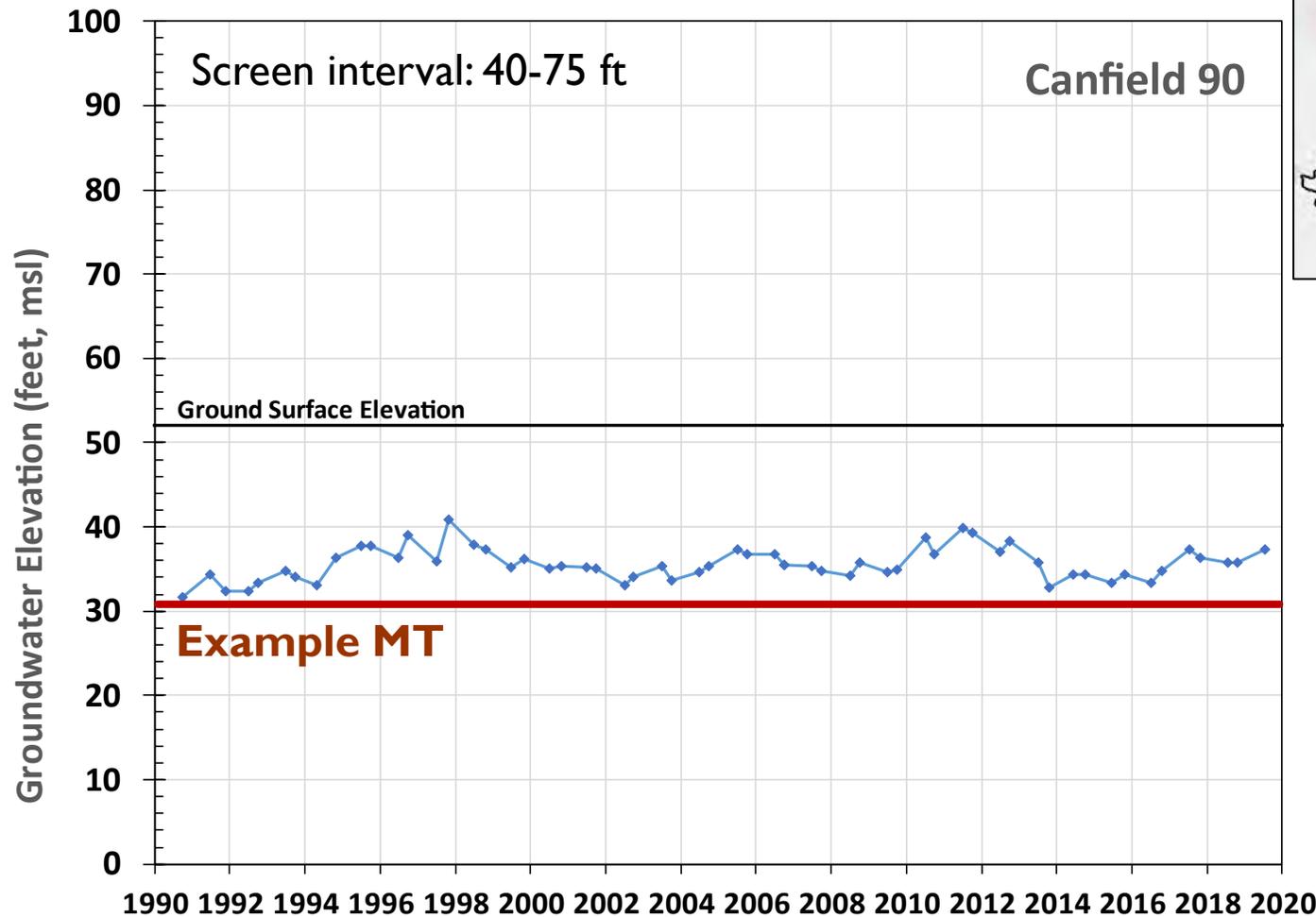


- Based on screen/well depths, most new domestic wells may be able to tolerate future water level decline up to about 50 feet
- The most vulnerable wells are in east-central Subbasin along river boundaries
- Water levels in west are unlikely to decline 50 feet

SELECTION OF REPRESENTATIVE WELLS MINIMUM THRESHOLD DESIGNATIONS

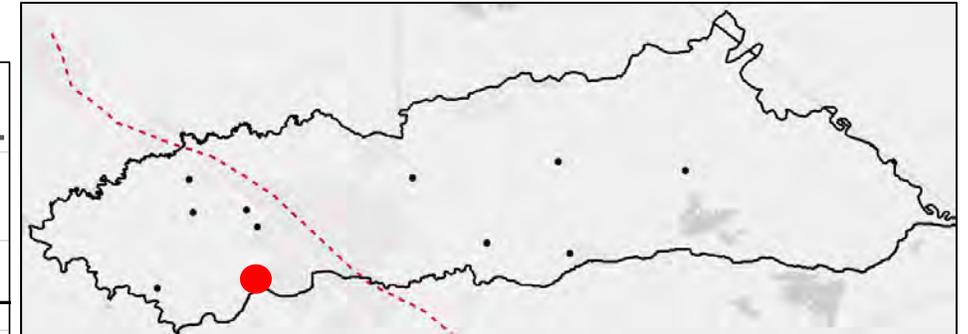
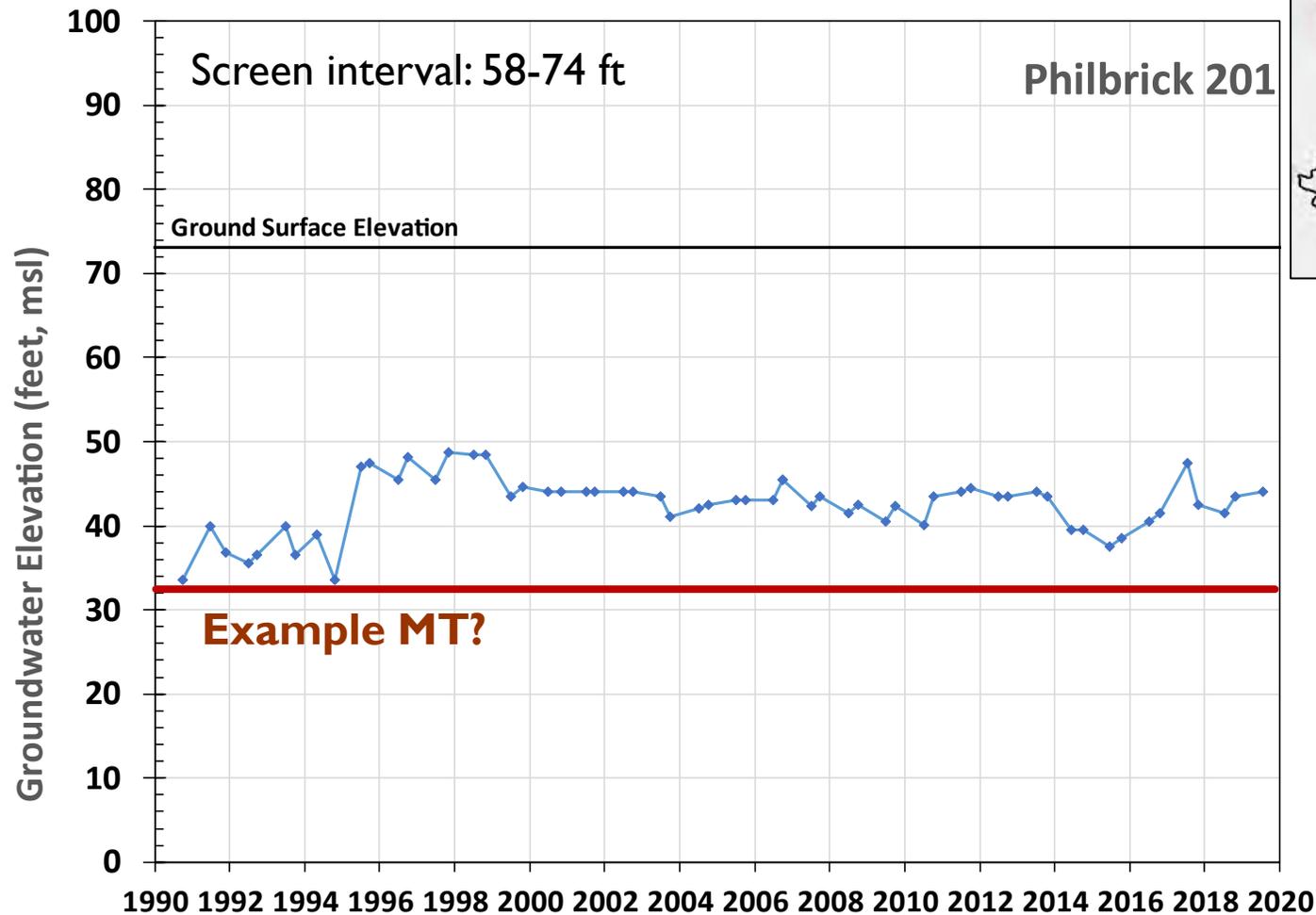
- Key Criteria for wells with MT designations
 - Access
 - Historical water level record
 - Known well construction data
 - Subbasin coverage, areas of decline
 - Dedicated monitoring well or inactive production wells (avoid active pumping wells, if possible)
- Considerations for water level records
 - Preferred - Complete Historical Study period to present (1991 – 2019)
 - Helpful – Complete record during recent drought / historical low levels (2013 – 2019)
 - At a minimum – Historical wet years (2005, 2011) and most recent drought (2014 – 2015)

CASGEM – WESTERN UPPER PRINCIPAL AQUIFER



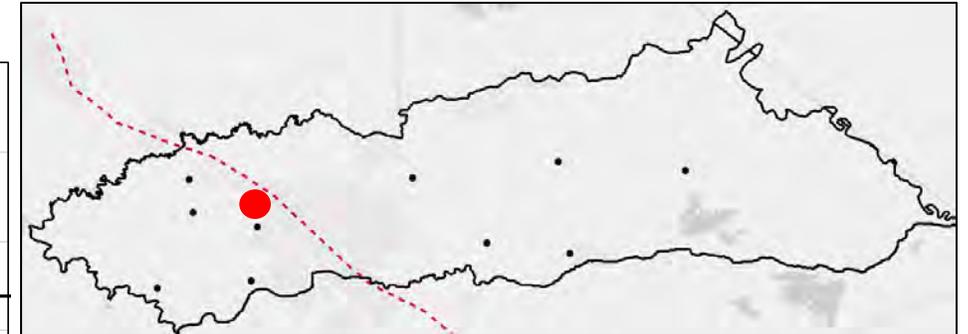
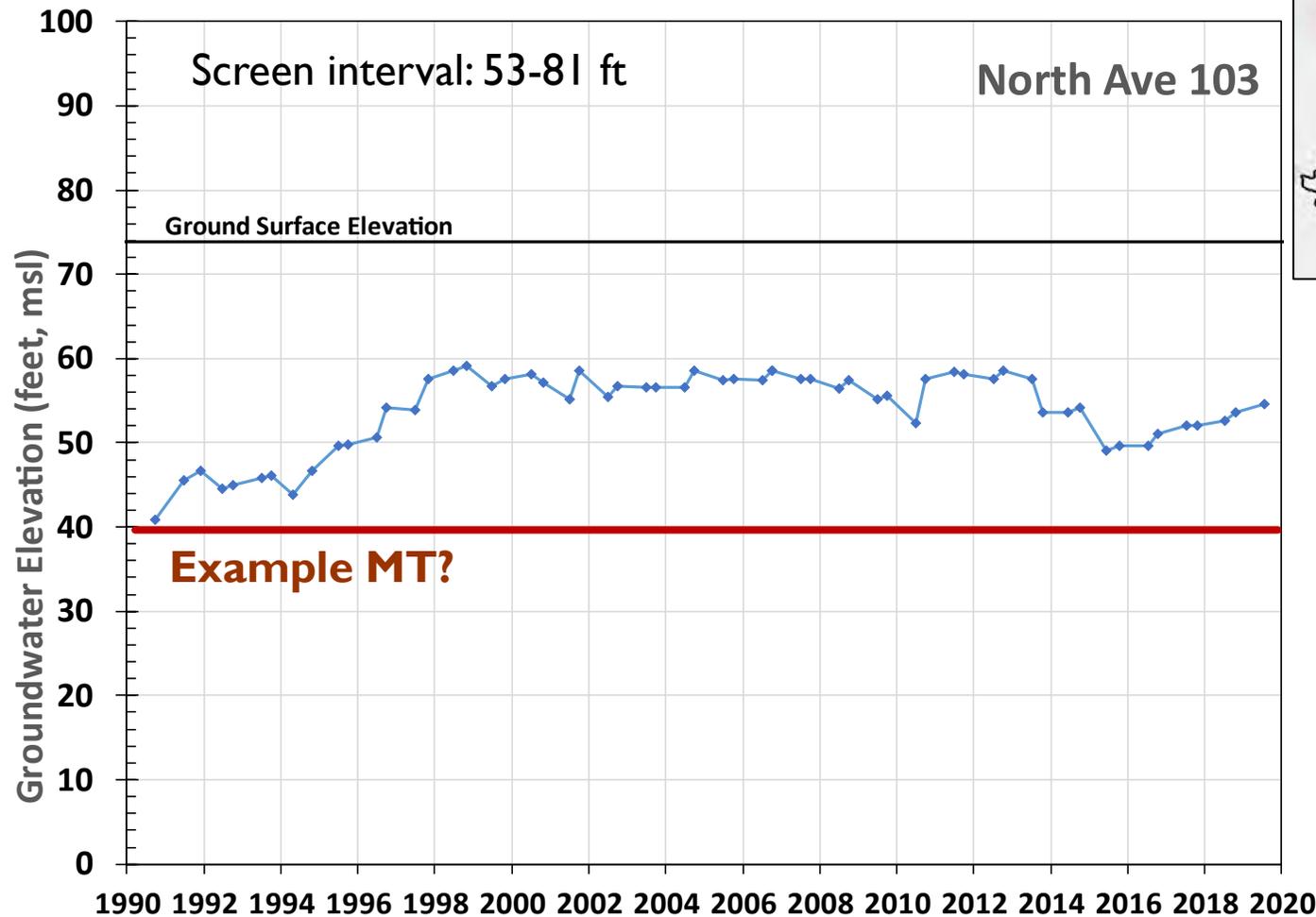
- Water levels relatively stable
- Historic low in early 1990s is similar to recent drought

CASGEM – WESTERN UPPER PRINCIPAL AQUIFER



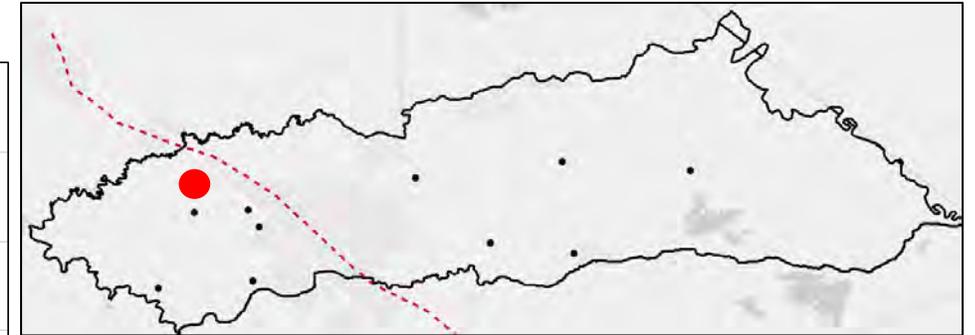
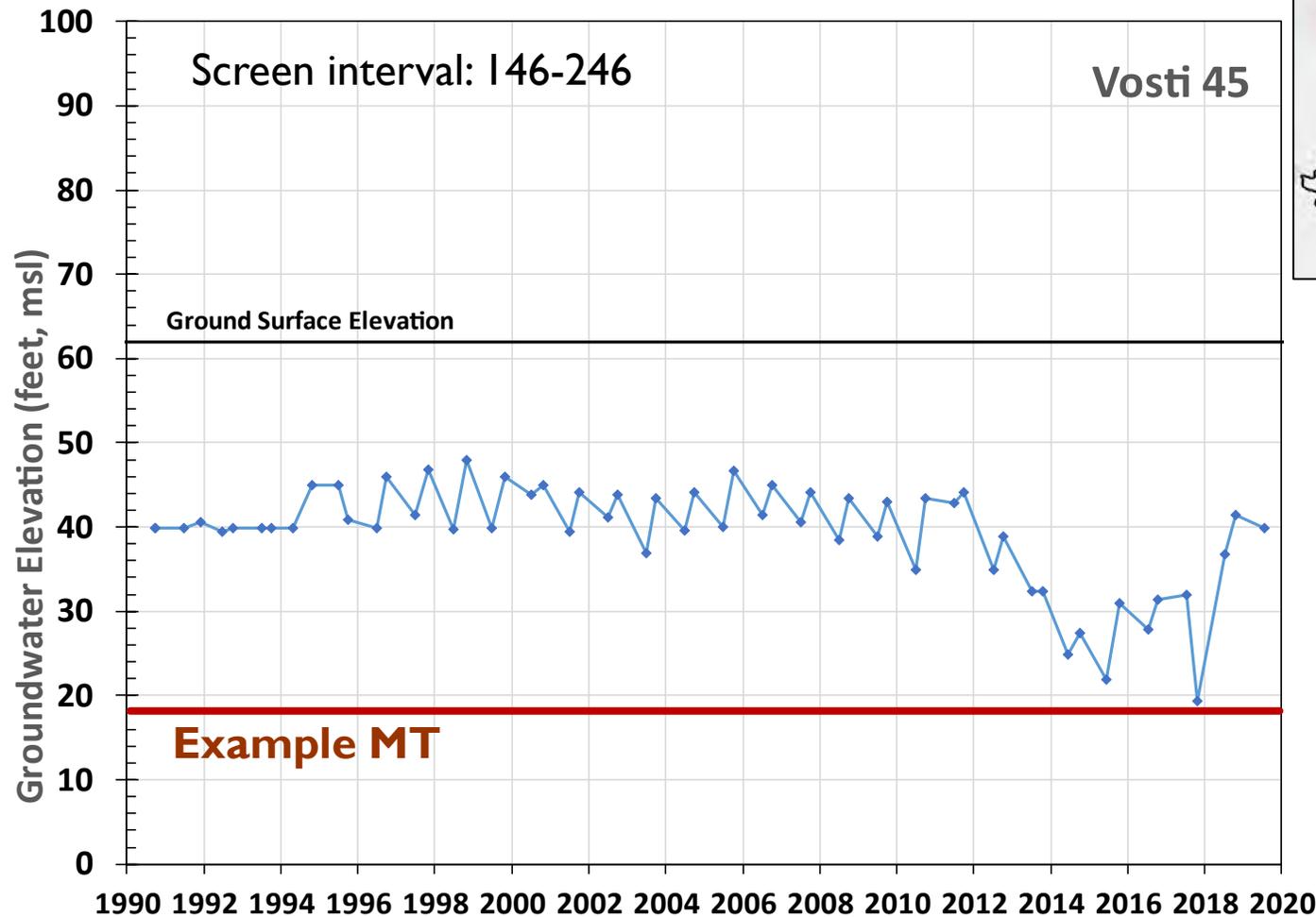
- Historic low in mid-1990s, before City of Modesto began receiving surface water
- Were there adverse impacts in mid-1990s?

CASGEM – WESTERN UPPER PRINCIPAL AQUIFER



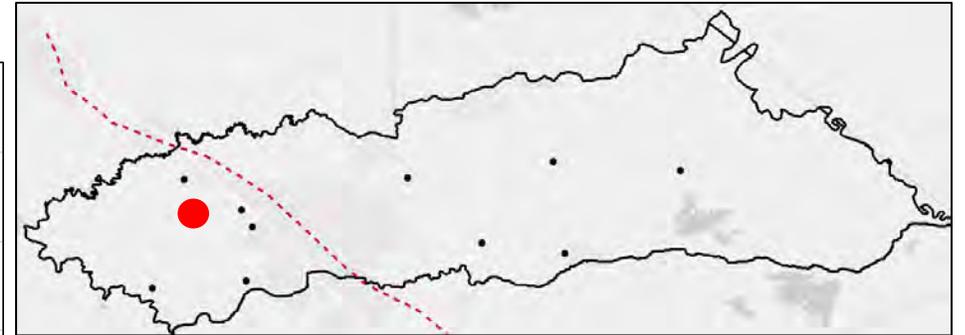
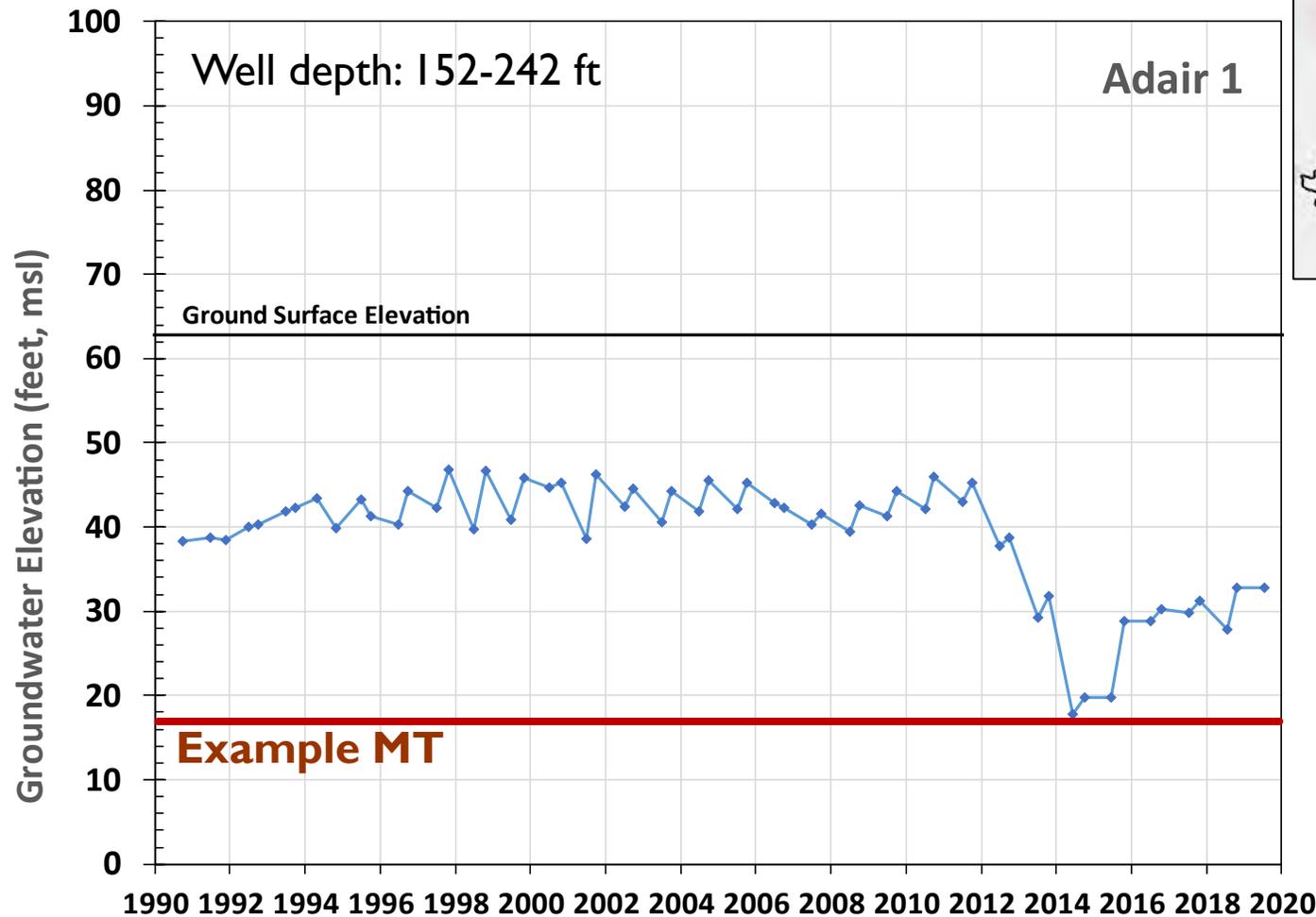
- Historic low in 1991
- Adverse impacts during recent drought?

CASGEM – WESTERN UPPER/LOWER PRINCIPAL AQUIFER



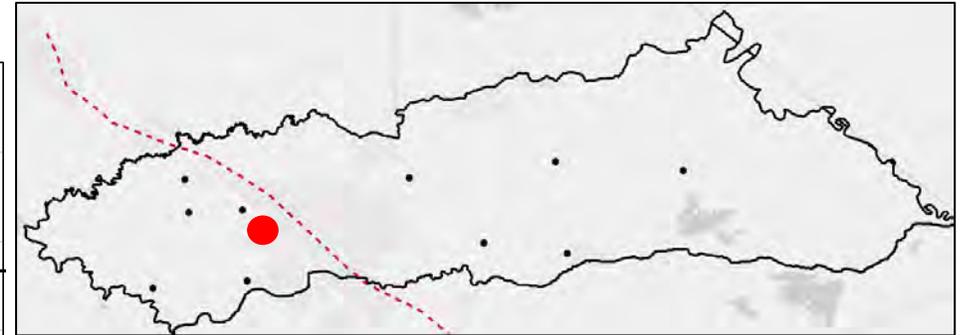
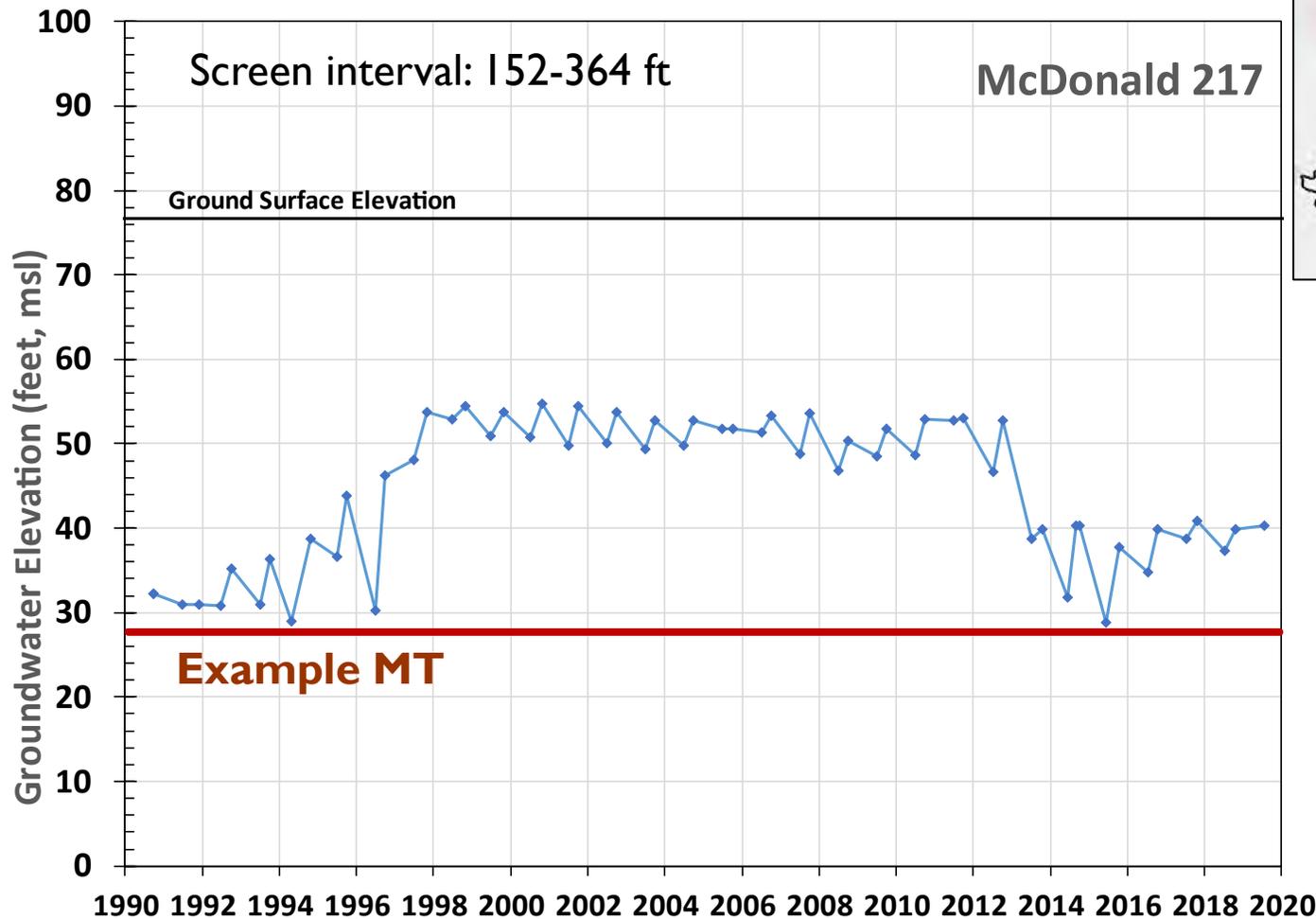
- Historic low during recent drought

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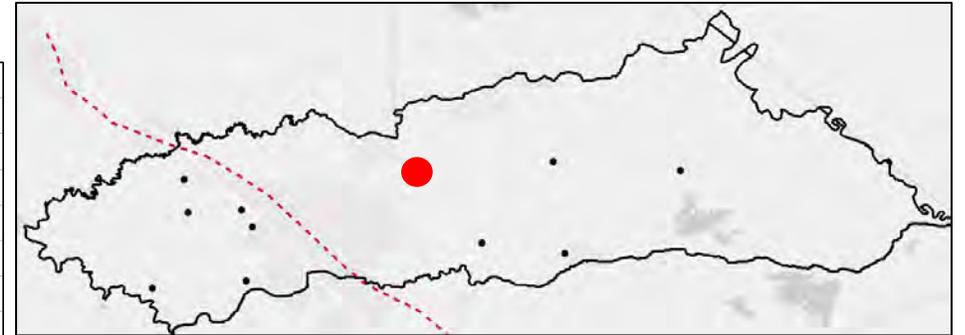
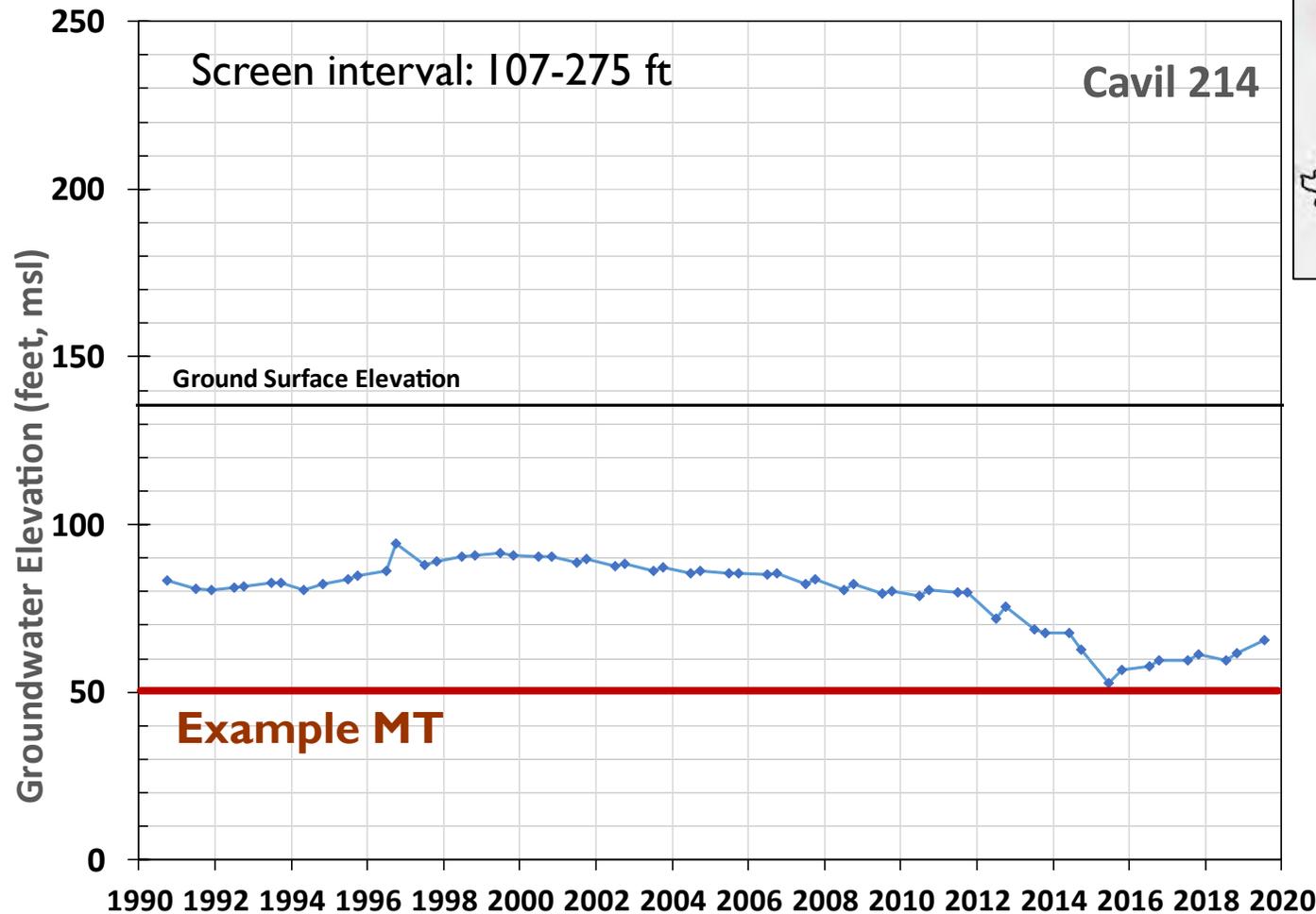
- Historic low during recent drought
- Water level pattern more indicative of lower aquifer

CASGEM – WESTERN UPPER/LOWER PRINCIPAL AQUIFER



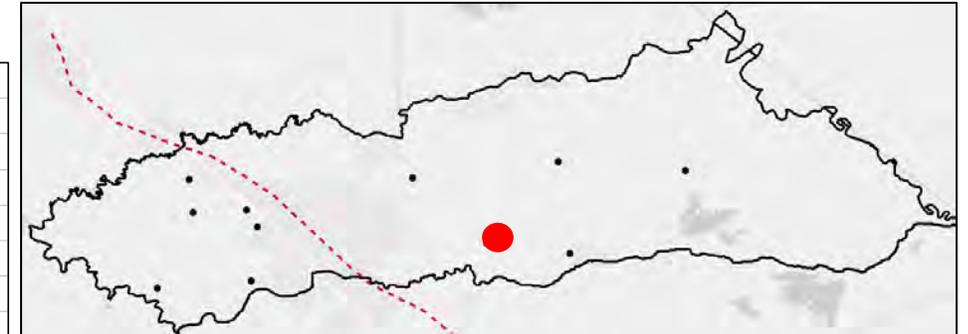
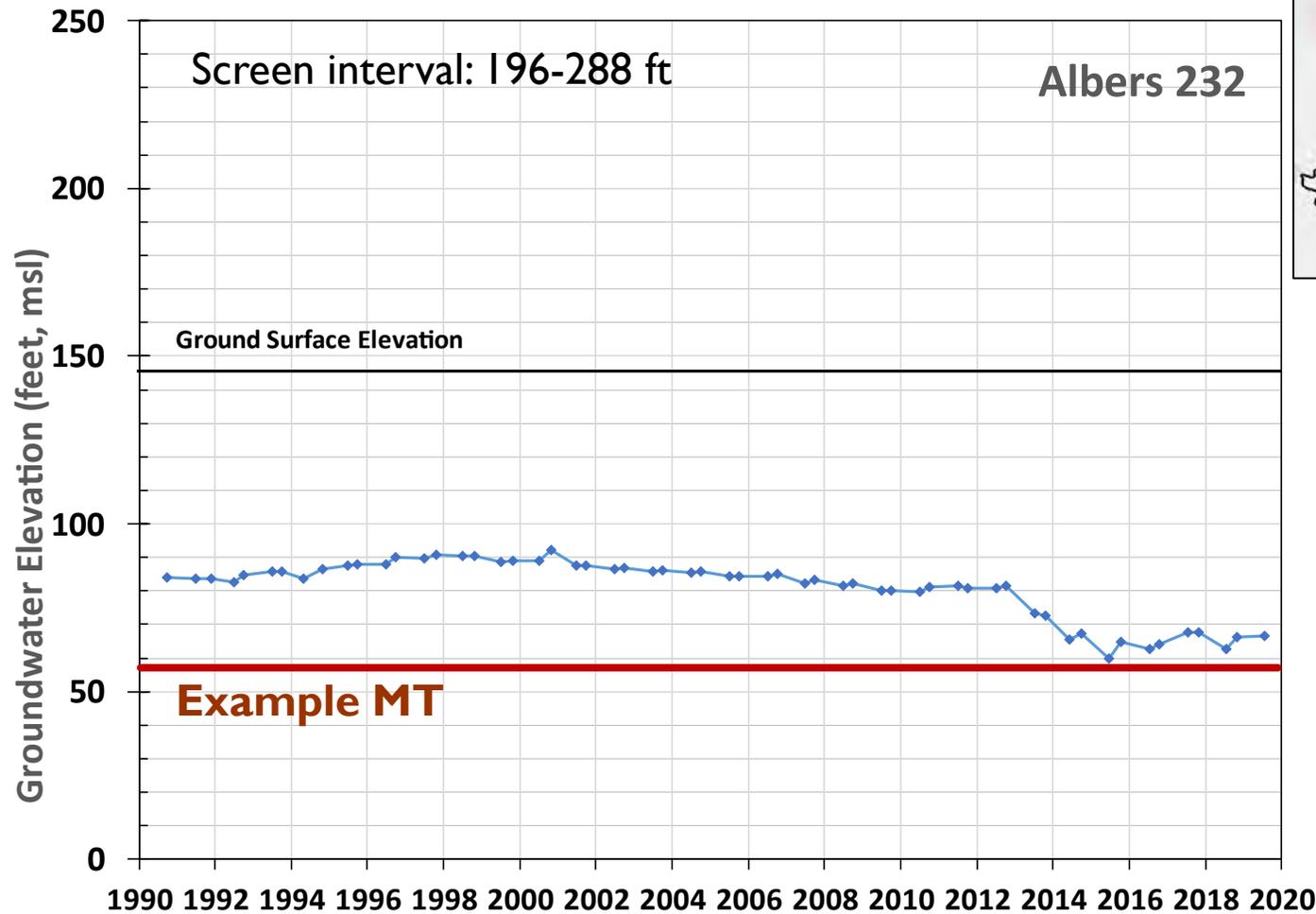
- Historic low in mid-1990s is similar to recent drought
- Likely seeing effect of City of Modesto pumping

CASGEM – EASTERN PRINCIPAL AQUIFER



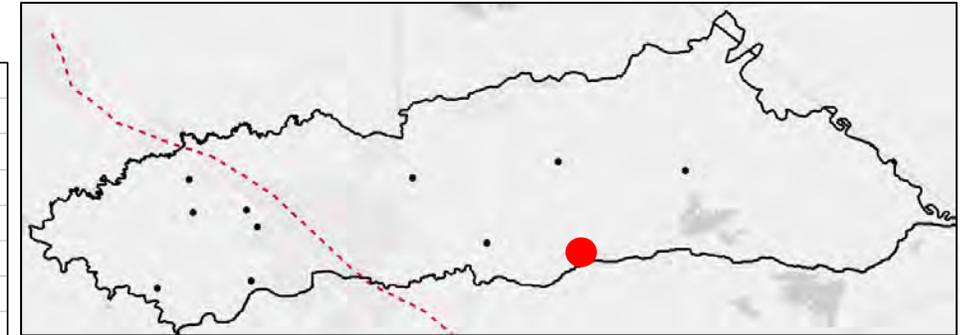
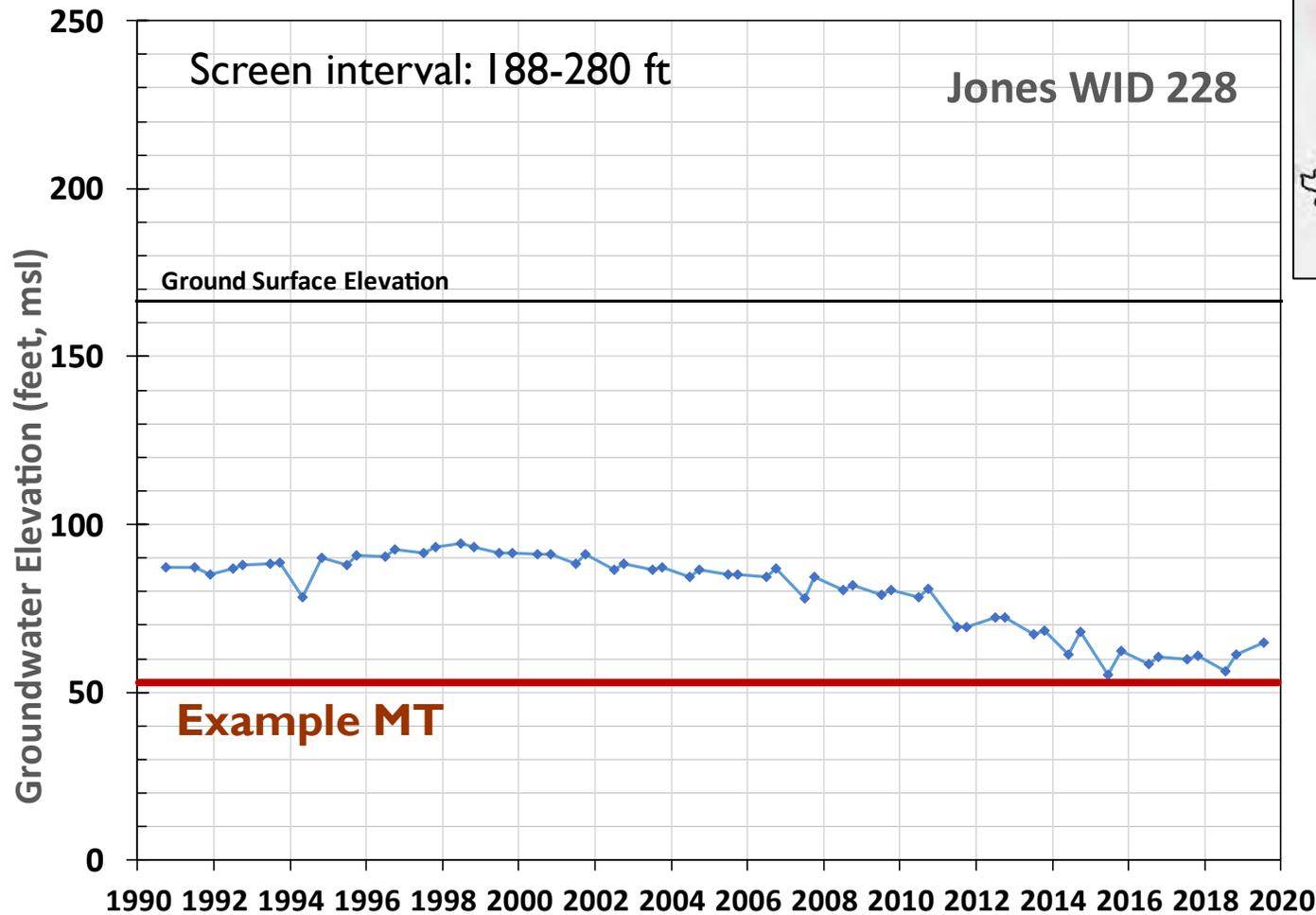
- Historic low during recent drought
- Some rebound since 2015

CASGEM – EASTERN PRINCIPAL AQUIFER



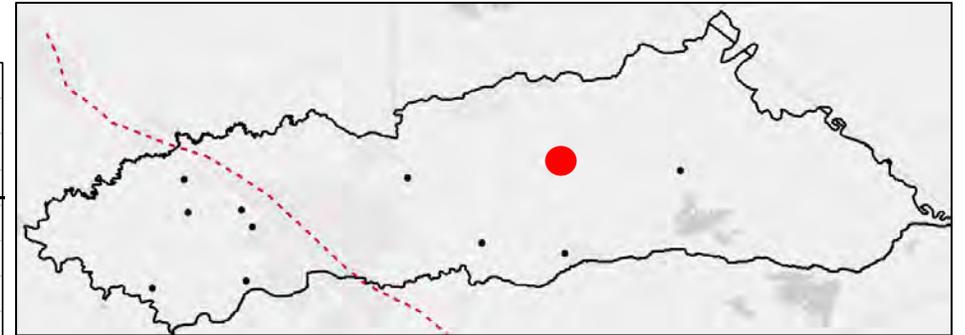
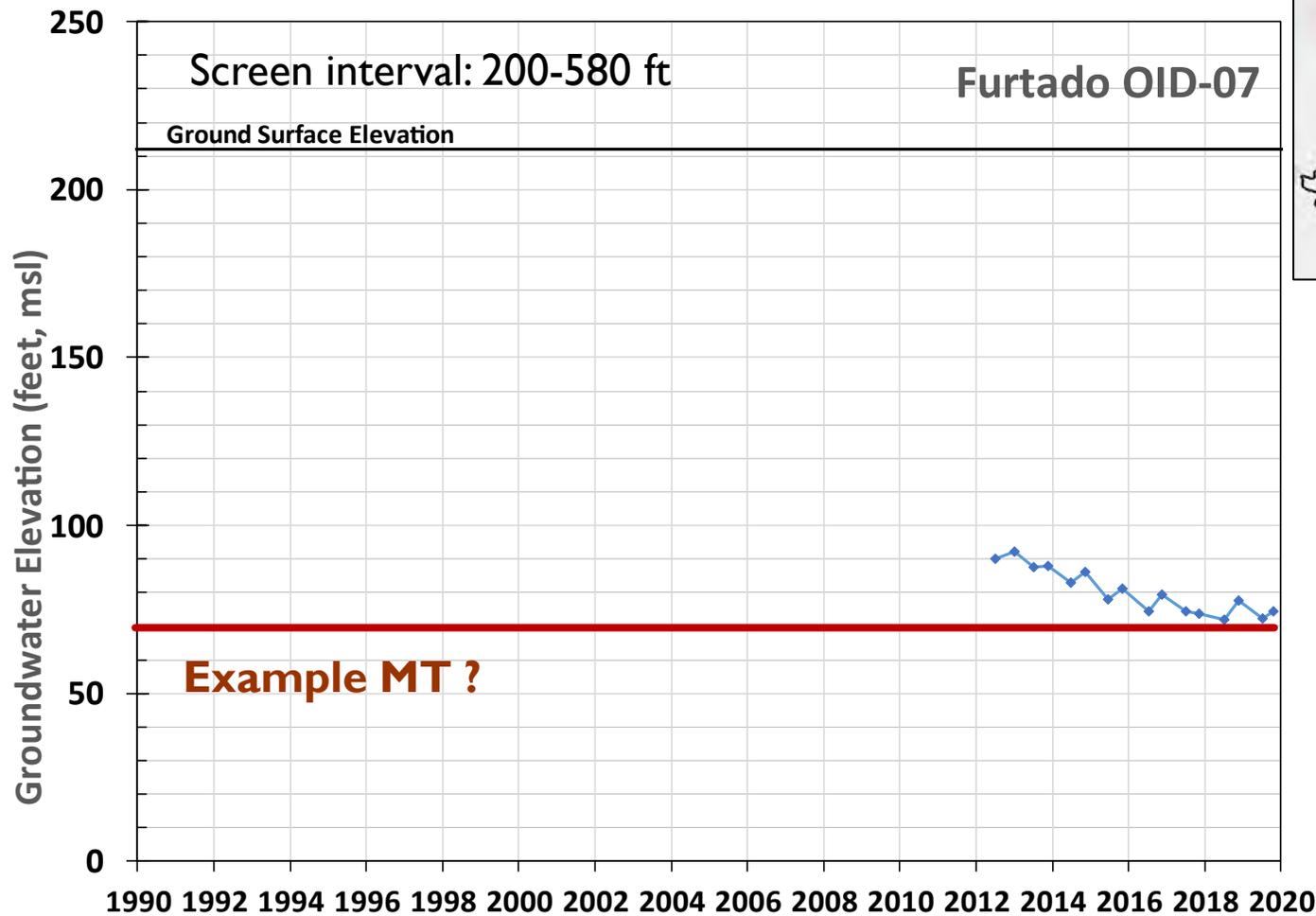
- Historic low during recent drought
- Slight rebound since 2015

CASGEM – EASTERN PRINCIPAL AQUIFER



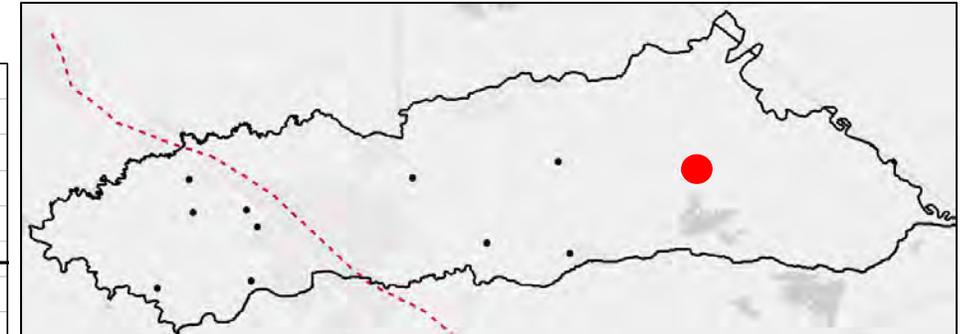
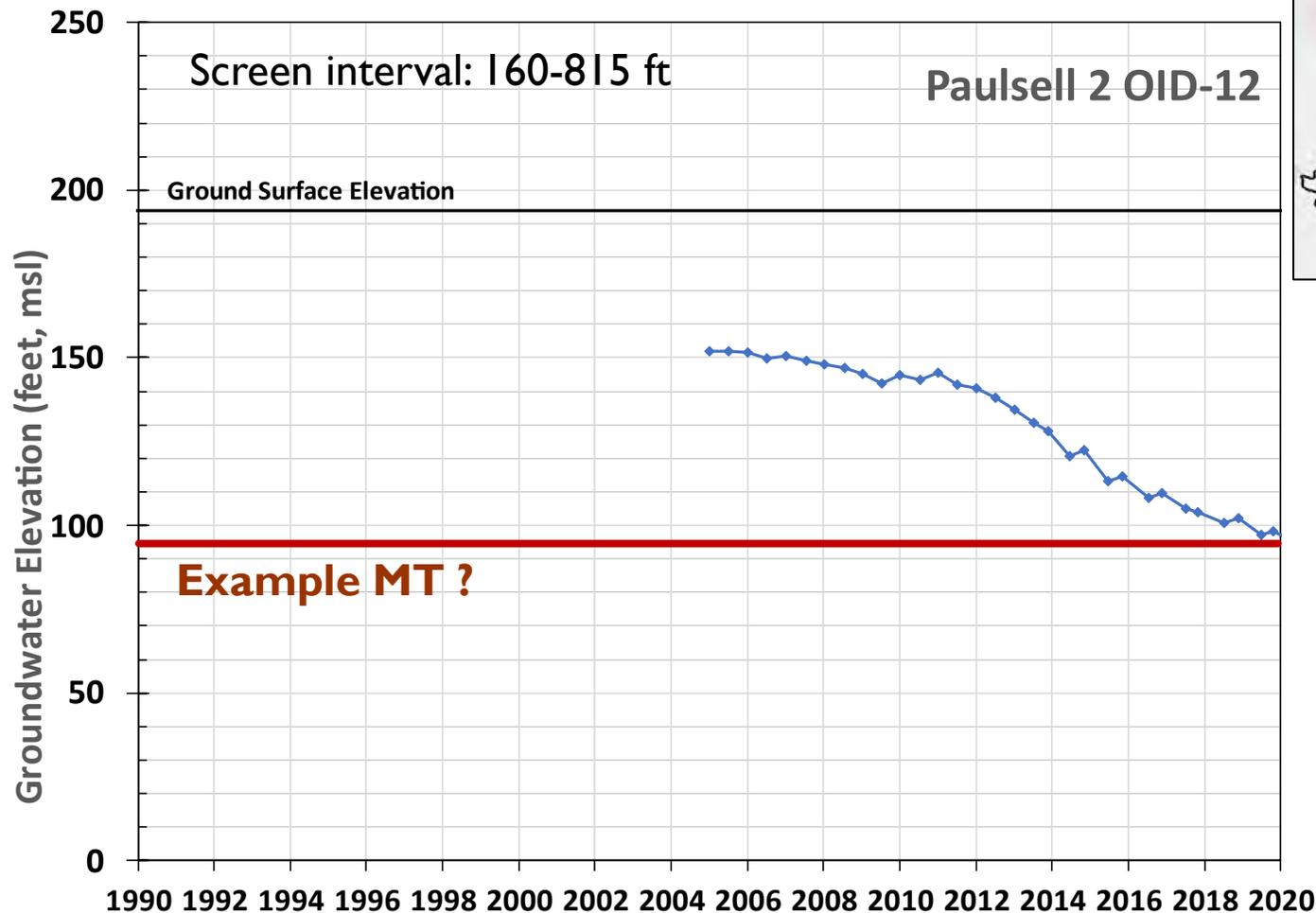
- Historic low during recent drought
- Slight rebound since 2015

CASGEM – EASTERN PRINCIPAL AQUIFER



- Lacking historical data
- Water levels since 2015 have continued to decline
- Is recent data enough to set an MT?

CASGEM – EASTERN PRINCIPAL AQUIFER



- Lacks historical data
- Decline of more than 40 feet since 2011
- How do we set an MT here?

NEXT STEPS

- Sustainable Management Criteria for other sustainability indicators, including lowering of water levels
- Ongoing model analyses:
 - Climate Change (Projected Baseline conditions with DWR climate guidance)
 - Sustainable Yield
- Identification and screening of Projects and Management Actions

QUESTIONS?

