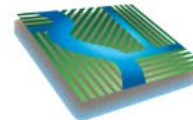




# Chowchilla Subbasin

*GSP Advisory Committee Meeting*

June 5, 2023



**DAVIDS**  
ENGINEERING, INC



**Luhdorff & Scalmanini**  
Consulting Engineers

# Agenda

- Background and Direction
- Groundwater Levels
- Subsidence
- Other GSP Revisions
- Summary of Actions to Date
- Next Steps

# Background and Direction

- Received on March 2, 2023
- Inadequate Determination
  - GWLs
  - Subsidence
  - ISW (ok for now)
- GWLs
  - Impacts of GWL MTs on subsidence
  - Modeled vs. actual data
  - Impact analysis for ag and municipal wells
  - Municipal wells and domestic well mitigation
- Subsidence
  - Residual + new = same bucket
  - SMC must be a rate
  - PMAs need to clearly note subsidence mitigation
  - Impact analysis for ag and municipal wells



# Background and Direction (Cont.....)

- March 9, 2023 Meeting with SWRCB and DWR Staff
  - All GSAs (technical and policy) participated
  - Underscored GSAs commitment to sustainability
  - Underscored GSAs commitment to achieving adequacy
  - Underscored GSAs desire to act quickly
  - GSAs want clear direction, no surprises
- March 15, 2023 GSP Advisory Committee Meeting
  - Reviewed deficiencies
  - Reviewed approach
  - Reviewed timeline
  - Reviewed DE/LSCE Scope of Work
- March 15, 2023 Technical Workshop
  - All GSAs present
  - Received clear direction from GSA technical staff

# Background and Direction (Cont....)

- Agreed path forward:
  - Technical Work
    - Approach to be taken for subsidence and GWLs will be the same approach taken for Merced.
    - No additional action will be taken at this time related to interconnected surface water.
    - Revisions need to include new SMC and old SMC for comparative purposes (same as we have done for Madera).
    - Edit Domestic Well Mitigation Program MOU to include “small water systems.” Will use the specific language in DWR letter.
    - Focus land fallowing, multi-benefit, and other PMAs around the “small water systems.” Will use specific language in the DWR letter.
    - Very clearly note that URs don’t come into play until after 2040 (in text and all tables).
    - Provide narrative about one-size doesn’t fit all, but we have reviewed the adequate determinations and for reasons A-Z, we think the Merced approach works.
  - Coordination
    - Meet with GSAs when draft revisions are complete. This will be an in-person meeting at CWD.
    - Hold local in-person meetings with SWRCB members.
    - Meet with DWR/SWRCB to review revisions following meeting with the GSAs.

# Chronic Groundwater Level Decline SMC

- Adopt Merced Subbasin Approach
  - MT based on Fall 2015 Observed GWL
  - MO based on Fall 2011 Observed GWL
  - Merced Subbasin has observed GWLs as basis for MT/MO for most RMS wells
  - Chowchilla Subbasin has limited observed GWLs as basis for RMS Well MT/MO
- RMS Wells with limited observed data
  - Use modeled Fall 2015 and 2011 with no offsets
  - Use modeled Fall 2015 and/or 2011 with observed vs. modeled offsets

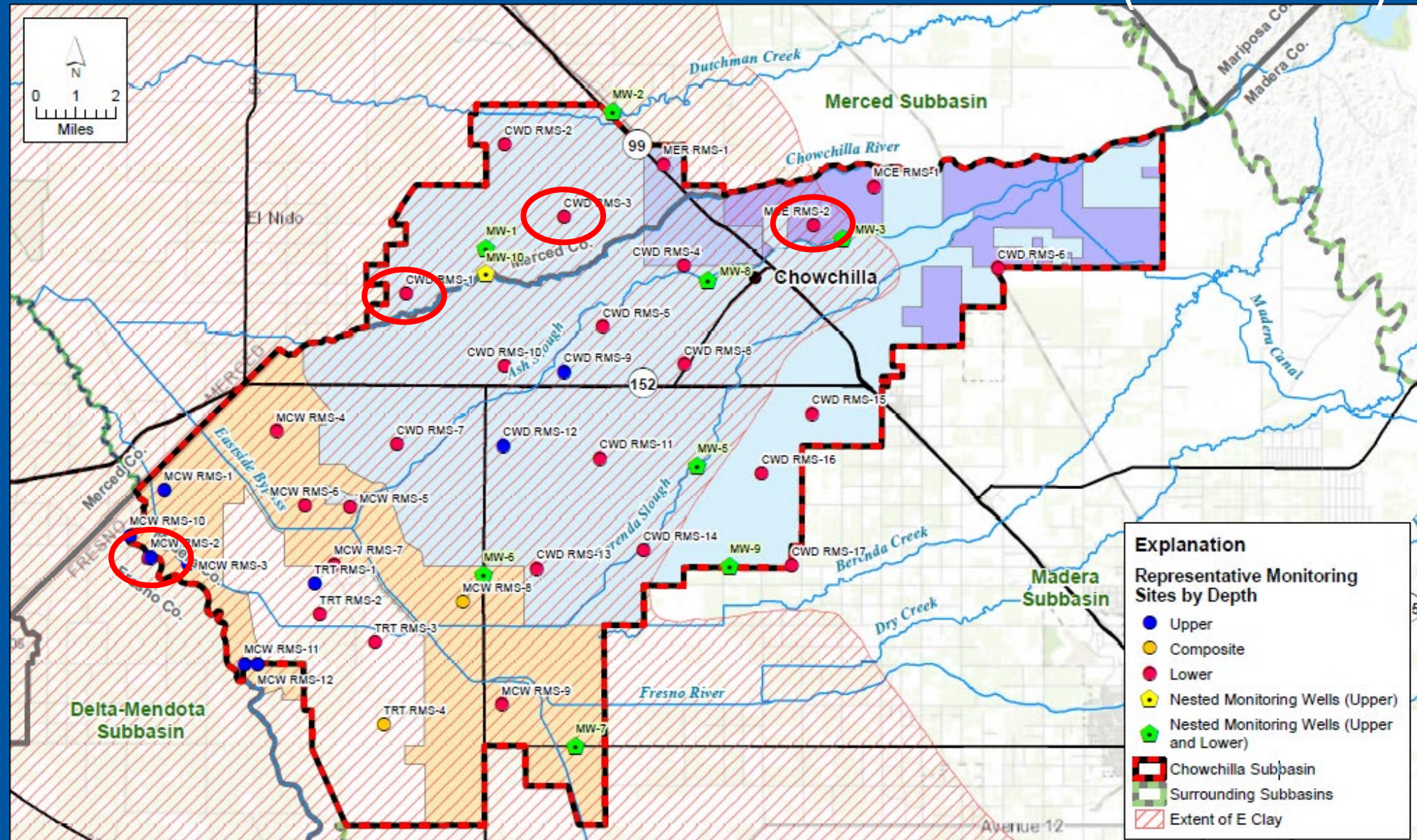
# Chronic Groundwater Level Decline SMC (Cont.....)

- IM Approach

- Calculated a range of simulated conditions to account for variability in levels between wet (at the high end of the range) and dry (at the low end of the range) periods. The interim milestones for each five-year interval were based on a percentage between the high and low values.
- 2025 IM continues historical trends while beginning to slow continued groundwater level declines.
- 2030 IM flattens out groundwater level declines and begins an upward trend in towards the MO.
- 2035 IM continues upward trend in groundwater levels towards the MO.

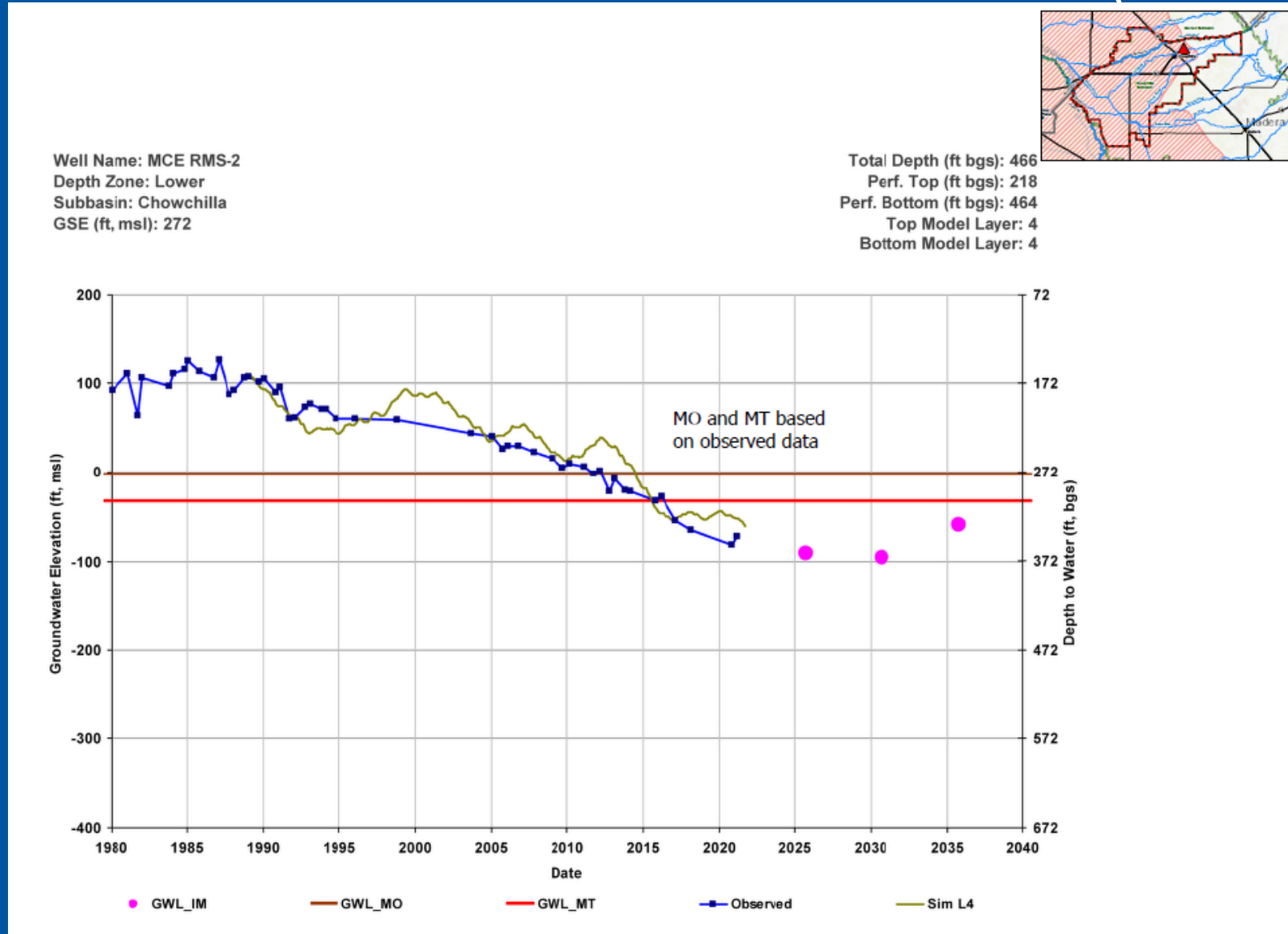


# Chronic Groundwater Level Decline SMC (Cont.....)

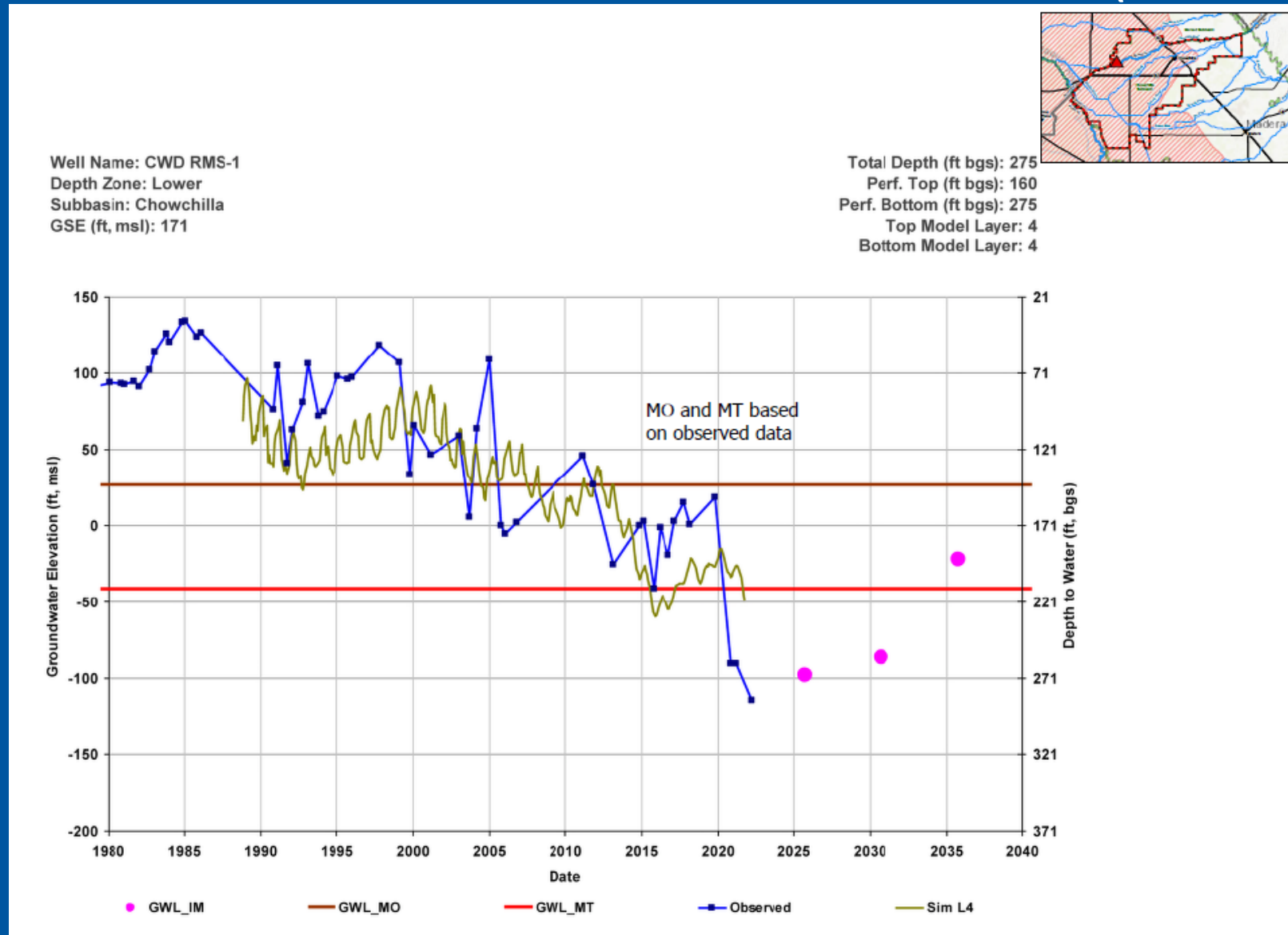




# Chronic Groundwater Level Decline SMC (Cont.....)



# Chronic Groundwater Level Decline SMC (Cont.....)

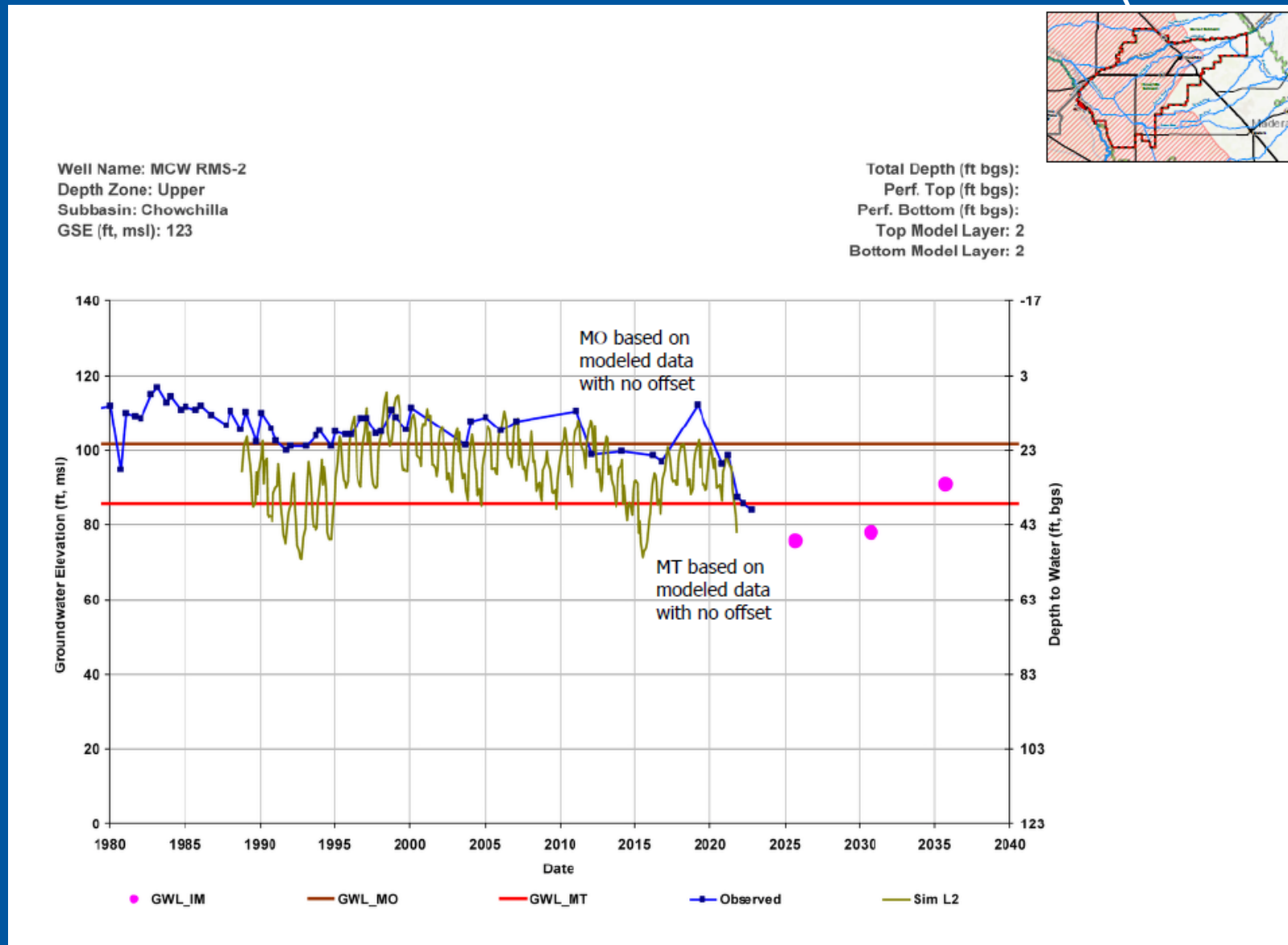


# Chronic Groundwater Level Decline SMC (Cont.....)





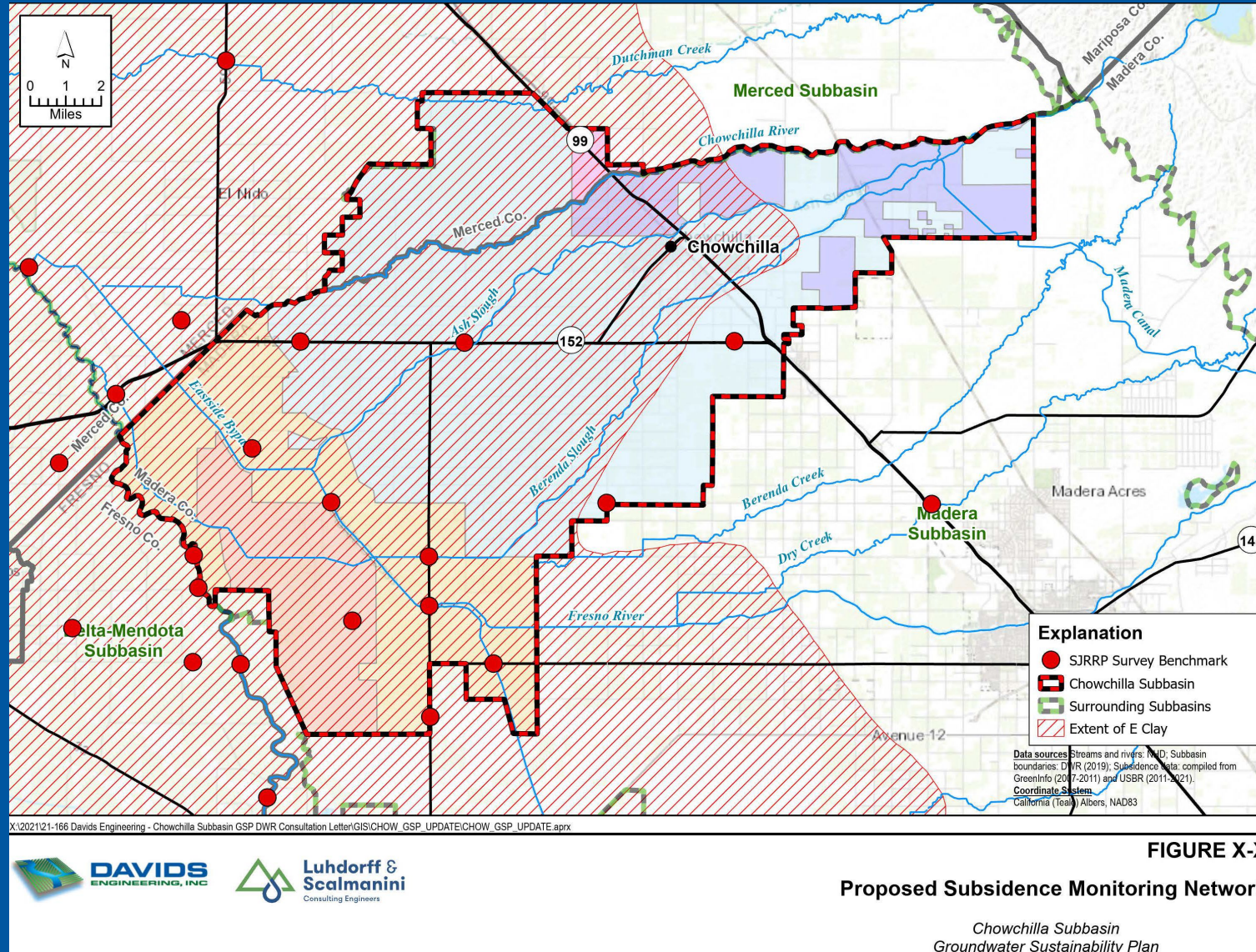
# Chronic Groundwater Level Decline SMC (Cont.....)



# Subsidence SMC

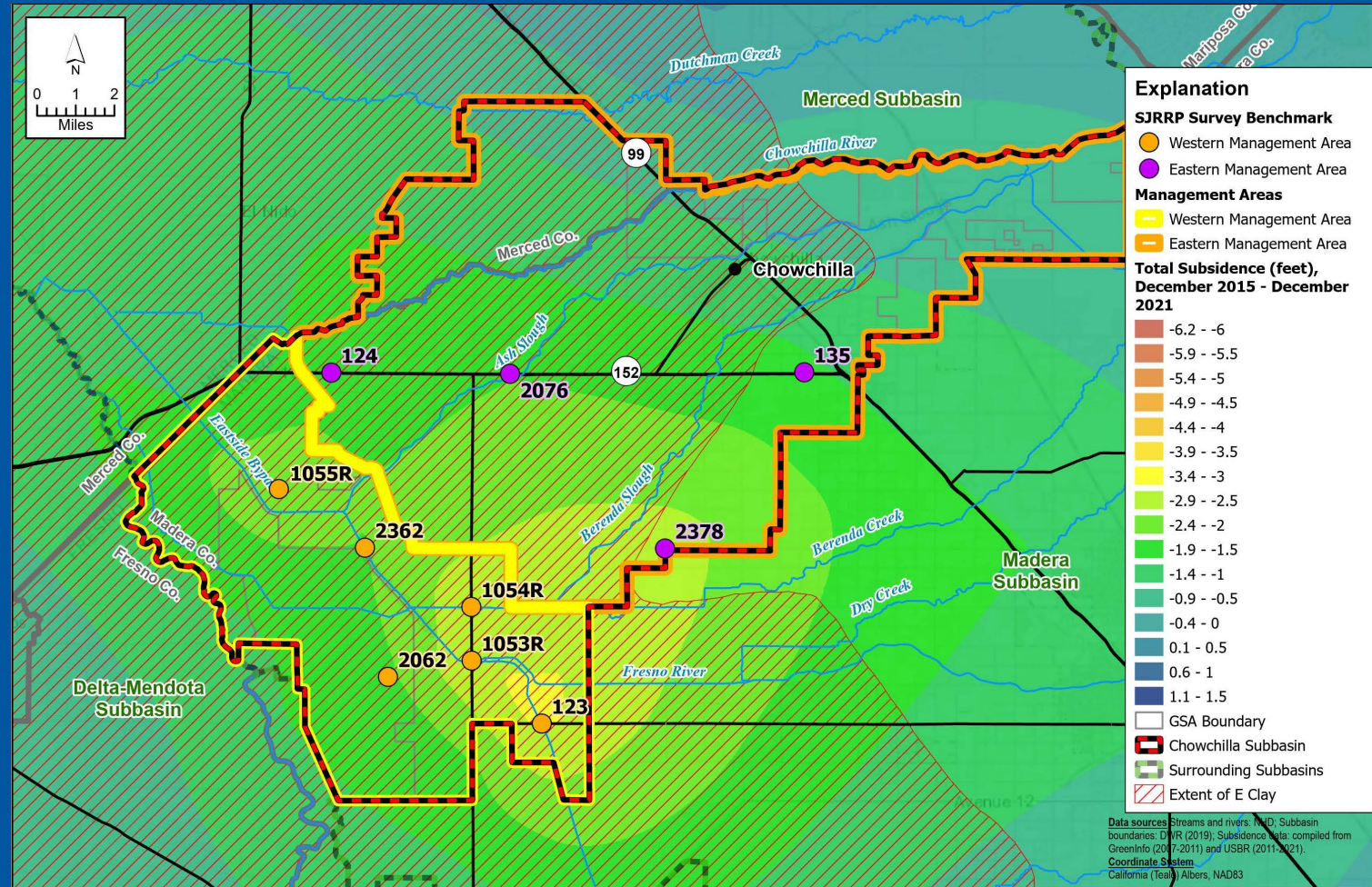
- Adopt Merced Subbasin Approach
  - MT will be Zero Subsidence (after 2040)
  - MO will be Zero Subsidence (after 2040)
  - Initial (2025) IMs based on recent rates of subsidence (not historical highest rates of subsidence as was done in Merced Subbasin)
  - Subsequent (2030 and 2035) IMs gradually decline to zero
- Basis for Measuring Subsidence
  - Use SJRRP benchmark surveys (twice per year)
  - Incorporates uncertainty in measurements (0.16 feet/year)

# Subsidence SMC (Cont.....)





# Subsidence SMC (Cont.....)



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**FIGURE X-X**  
**Proposed Subsidence Sustainability Indicator**  
**Representative Monitoring Sites**

*Chowchilla Subbasin*  
*Groundwater Sustainability Plan*

# Subsidence SMC (Cont.....)

RMS ID	Management Area	Maximum Annual Rate of Subsidence (feet)	Time Period	Data Source
123	Western Management Area (WMA)	-0.6	Dec 2017 to Dec 2018	SJRRP
1055R	Western Management Area (WMA)	-0.6	Dec 2019 to Dec 2020	SJRRP
1054R	Western Management Area (WMA)	-0.54	Dec 2017 to Dec 2018	SJRRP
1053R	Western Management Area (WMA)	-0.53	Dec 2017 to Dec 2018	SJRRP
2362	Western Management Area (WMA)	-0.32	Dec 2016 to Dec 2017	SJRRP
2062	Western Management Area (WMA)	-0.23	Dec 2016 to Dec 2017	SJRRP
2378	Eastern Management Area (EMA)	-0.5	Dec 2017 to Dec 2018	SJRRP
135	Eastern Management Area (EMA)	-0.37	Dec 2017 to Dec 2018	SJRRP
124	Eastern Management Area (EMA)	-0.31	Dec 2017 to Dec 2018; Dec 2019 to Dec 2020	SJRRP
2076	Eastern Management Area (EMA)	-0.31	Dec 2017 to Dec 2018	SJRRP

# Subsidence SMC (Cont.....)

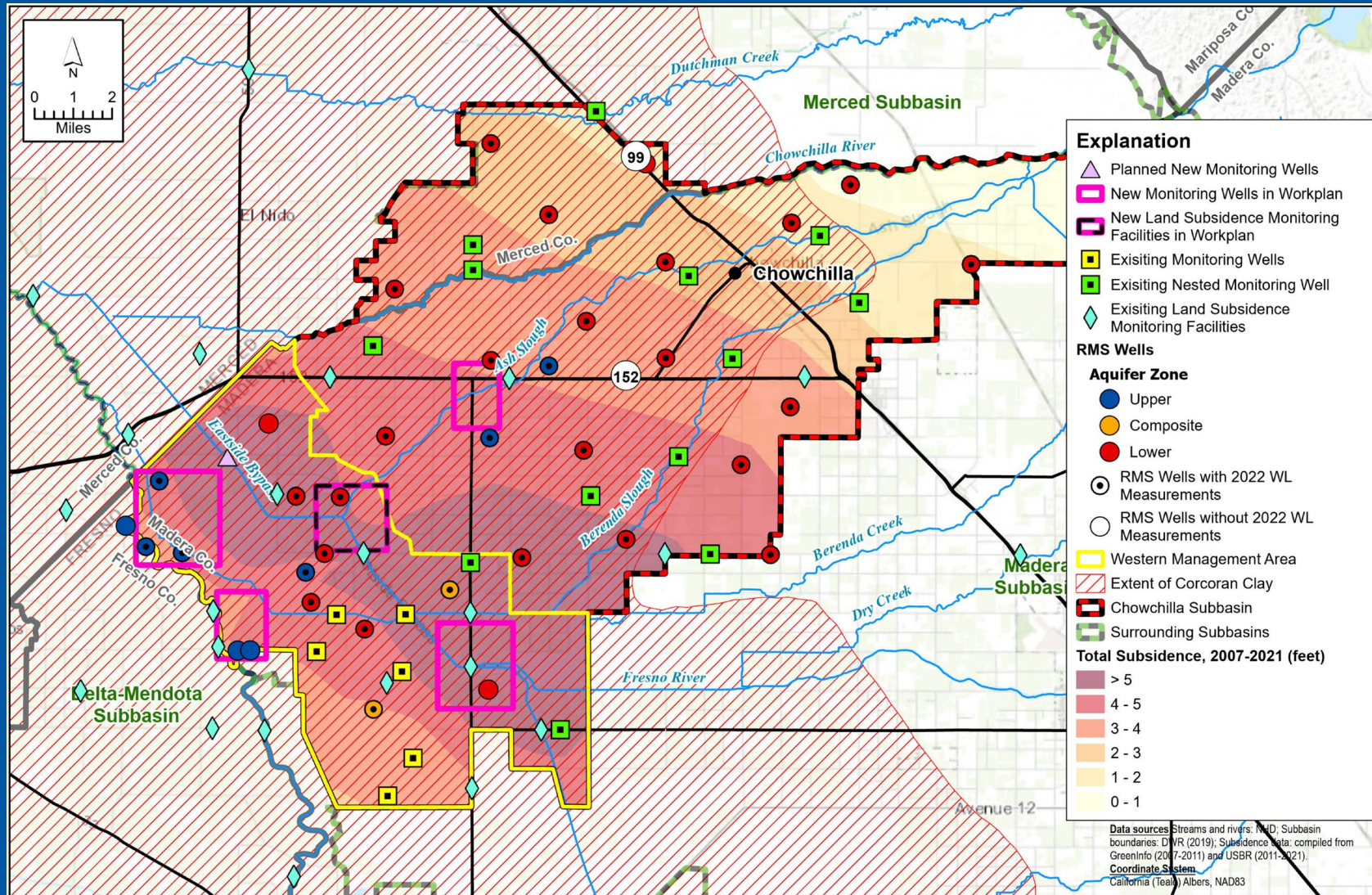
- Western Management Area IMs
  - 2025 = 0.60 ft/yr
  - 2030 = 0.40 ft/yr
  - 2035 = 0.20 ft/yr
- Eastern Management Area IMs
  - 2025 = 0.50 ft/yr
  - 2030 = 0.33 ft/yr
  - 2035 = 0.17 ft/yr



# Subsidence Workplan

- Field Work
  - Instrumentation at existing RMS wells
  - Install new monitoring wells at five locations
  - Install one continuous land subsidence monitoring facility
  - Add new benchmarks for semi-annual surveys
- Other Workplan items
  - Evaluate AEM Data (Final data package made available from DWR this week)
  - Compile/evaluate other existing data since last evaluation
  - Desktop Inventory and Field Survey of WMA production wells
  - Refinement/Application of Groundwater Model

# Subsidence Workplan



# Other GSP Revisions

- Edit Domestic Well Mitigation Program MOU to include “small water systems.” Will use the specific language in DWR letter.
- Focus land fallowing, multi-benefit, and other PMAs around the “small water systems.” Will use specific language in the DWR letter.
- Very clearly note that URs don’t come into play until after 2040 (in text and all tables).
- Provide narrative about one-size doesn’t fit all, but we have reviewed the adequate determinations and for reasons A-Z, we think the Merced approach works.



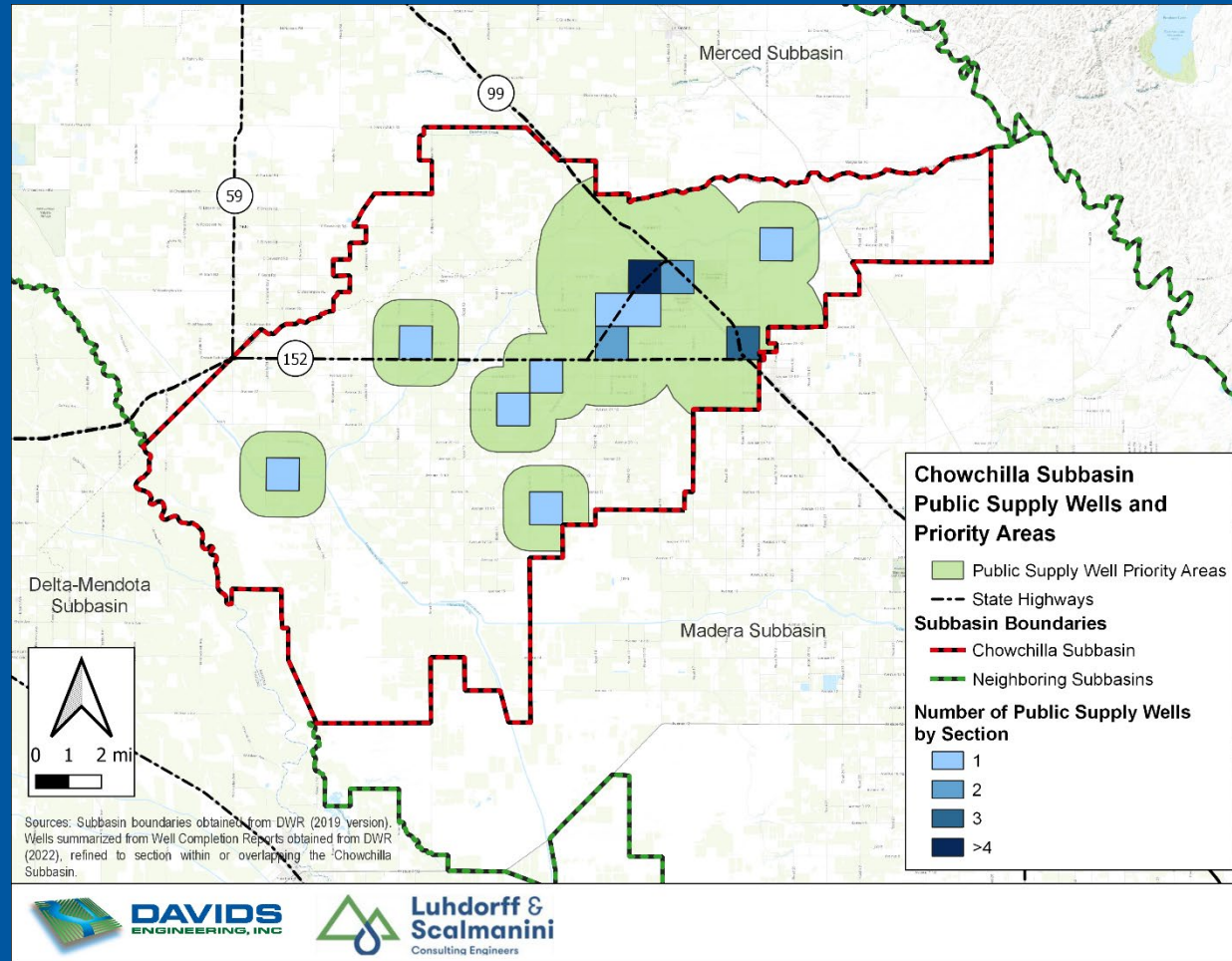
# Other GSP Revisions (Cont.....)

- Edit Domestic Well Mitigation Program MOU to include “small water systems.” Will use the specific language in DWR letter.
- Domestic Well Mitigation Program
  - First Amendment to the MOU
  - Updated Program Application to clarify that eligible wells are private domestic/shallow wells that supply drinking water users
  - Updated Program Agreement to clarify that eligible wells are private domestic/shallow wells that supply drinking water users

**WELLS ELIGIBLE FOR MITIGATION.** The Parties agree that for the purposes of the MOU, “Domestic Wells” shall include private domestic wells and shallow wells that supply drinking water users (e.g., public water systems and state small water systems) whose primary purpose is serving drinking water needs.

# Other GSP Revisions (Cont.....)

- Focus land fallowing, multi-benefit, and other PMAs around the “small water systems.” Will use specific language in the DWR letter.



# Other GSP Revisions (Cont.....)

The GSAs are committed to upholding the Human Right to Water (CWC § 106.3) and are serious in their commitment to sustainably managing groundwater in the Subbasin for all beneficial uses and users, including domestic and municipal well owners. **In their ongoing efforts to uphold these commitments, the GSAs plan, to the extent feasible, to prioritize project implementation efforts in the vicinity of public supply wells, especially Flood-MAR, on-farm recharge projects, multi-benefit projects, and voluntary land repurposing efforts that can be flexibly targeted to specific areas of need.** These priority areas (Figure 4-1) were developed with the intent of directly benefitting groundwater conditions in the immediate vicinity of public supply wells in order to mitigate any negative effects that may be experienced during GSP implementation. A larger priority area was given to areas of the Subbasin with a higher density of public supply wells to further mitigate the negative effects that may occur in those areas and maximize benefits to the greatest number of groundwater users. By replenishing groundwater supplies in these priority areas, the PMAs are also expected to benefit the groundwater supplies available to the domestic well users in the Subbasin, many of whom are also located within these same priority areas (see Figures 2-4 and 2-5).

# Other GSP Revisions (Cont.....)

- Very clearly note that URs don't come into play until after 2040 (in text and all tables).

Table ES-3. Summary of MTs, MOs and Undesirable Results.			
Sustainability Indicator	Minimum Threshold	Measurable Objective	Undesirable Result (After 2040) <sup>1</sup>
Chronic Lowering of Groundwater Levels (Eastern Management Area)	The projected lowest future groundwater level after January 2040 plus a 10-foot operational buffer with an adjustment for offset between observed and modeled groundwater elevations (if necessary)	Projected average future groundwater level from projected with projects model simulation (2040-2090)	Greater than 30 percent of wells below MT for two consecutive fall measurements

<sup>1</sup> SGMA defines sustainable groundwater management as the “management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results” [CWC §10721(v)]. The “planning and implementation horizon” is defined as “a 50-year time period over which a groundwater sustainability agency determines that plans and measures will be implemented in a basin to ensure that the basin is operated within its sustainable yield” [CWC §10721(r)]. The 50-year time period in the Chowchilla Subbasin begins after the GSP implementation period.



# Other GSP Revisions (Cont.....)

- Provide narrative about one-size doesn't fit all, but we have reviewed the adequate determinations and for reasons A-Z, we think the Merced approach works.

**"The GSAs have worked diligently during the review period to make the necessary revisions to the GSP. During the review period, the GSAs have also reviewed DWR's determinations for surrounding and neighboring subbasins and have used this information to inform their own GSP revisions. In particular, several approaches in the Chowchilla GSP revisions are modeled after the approved Merced Subbasin GSP revisions."**

# Summary of Actions to Date

- Met with SWRCB/DWR on March 9, 2023
- GSP Advisory Committee met on March 15, 2023
- GSA Technical Staff met on March 15, 2023
  - Direction provided was to pivot to an “approved” approach
  - Merced approach to GWL and Subsidence
- Consultant Team completed draft additional revisions
- Met with GSAs on April 28, 2023 to review draft additional revisions
- Draft additional revisions informally submitted to DWR/SWRCB on May 5
- Met with SWRCB Members on April 24 and May 23

# Summary of Actions to Date (Cont.....)

- SWRCB Meeting Take-aways

- SWRCB staff is **NOT** going to give us the thumbs up or thumbs down on the additional GSP revisions.
- SWRCB/DWR staff are willing to have as detailed and transparent a discussion with us as they can.
- There **IS** a pathway back to DWR **WITHOUT** and probationary hearing.
- The SWRCB can **ONLY** add deficiencies if a Subbasin moves to probationary status.
- Priorities continue to appear to be in **OTHER** Subbasins.
- SWRCB understands that we have put all of our chips on the table.
- SWRCB understands that we want to avoid a probationary hearing.
- SWRCB understands that we are ok with being the test case for how to get back to DWR jurisdiction.

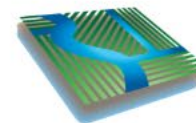
# Next Steps

- Make any necessary revisions based on GSP Advisory Committee discussion today
- Meet with SWRCB/DWR
- GSA Consideration
  - CWD – 6/14
  - TTWD – 6/8
  - Madera County – 6/13
  - Merced County – 6/13
- Will be ready for formal submission by 6/16
- GSAs to consider pros/cons of formal submission of additional revisions





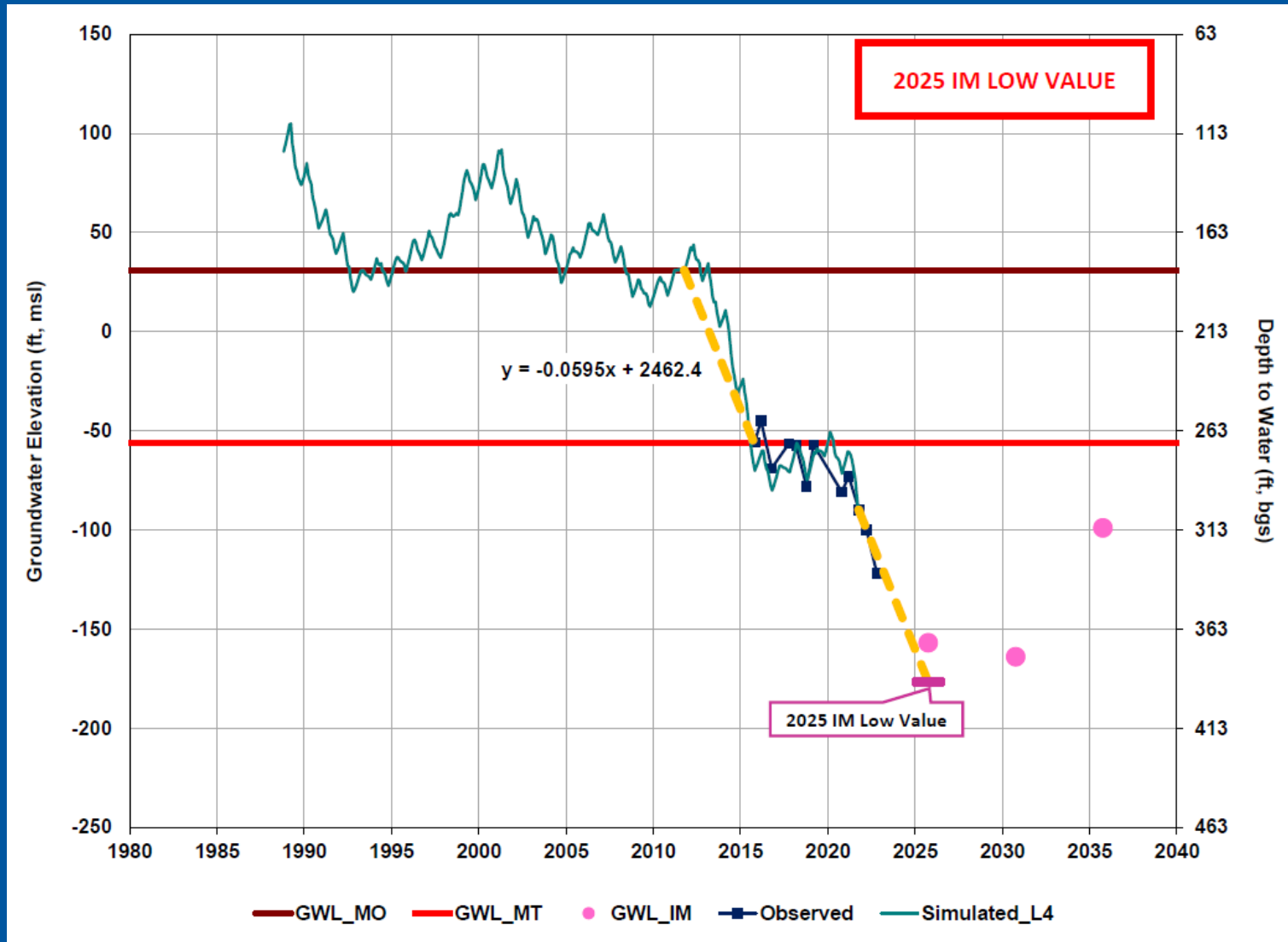
# Questions?



# Supplemental Slides

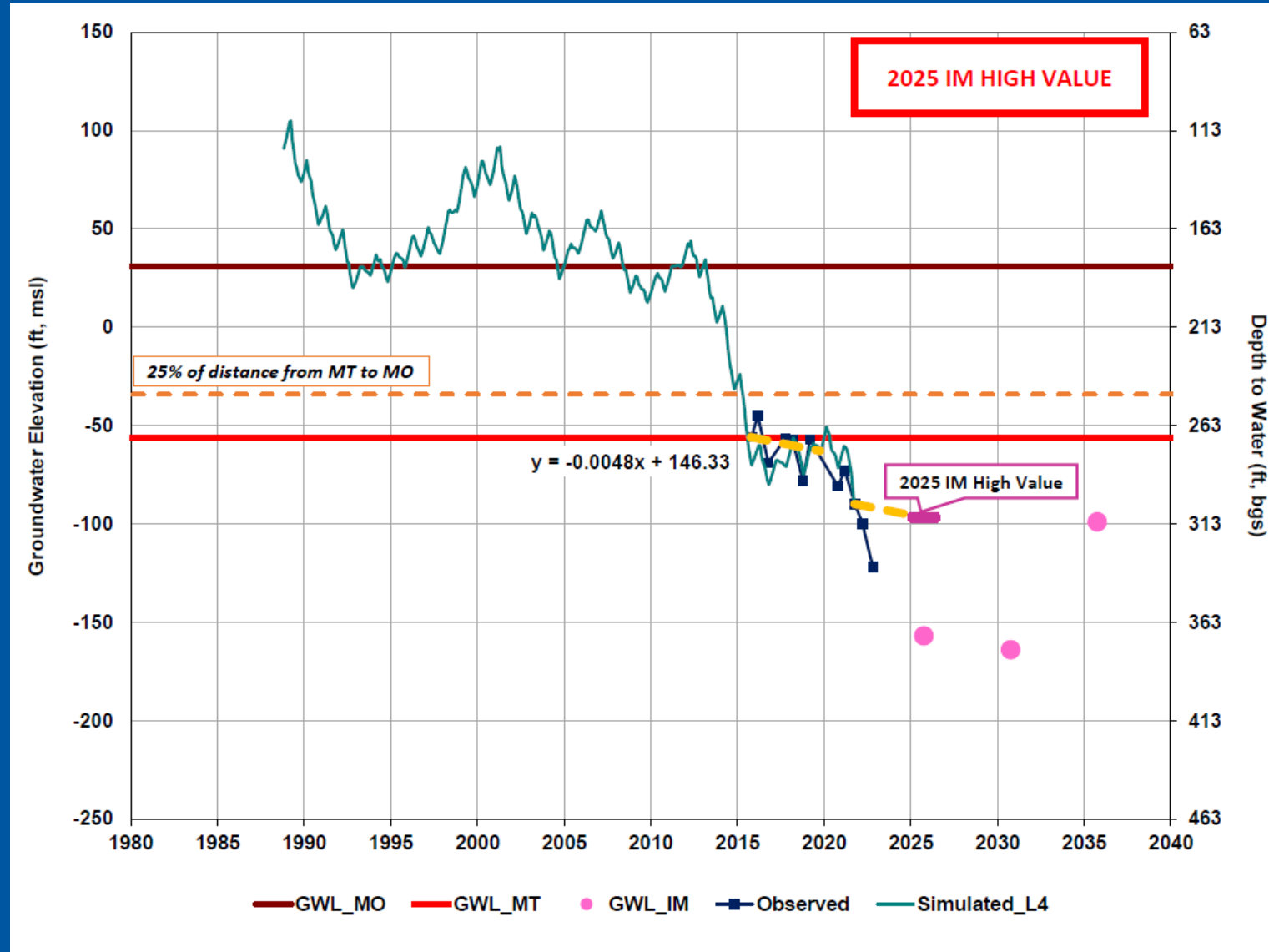
- Chronic Groundwater Level Decline IM Examples

# Chronic Groundwater Level Decline SMC

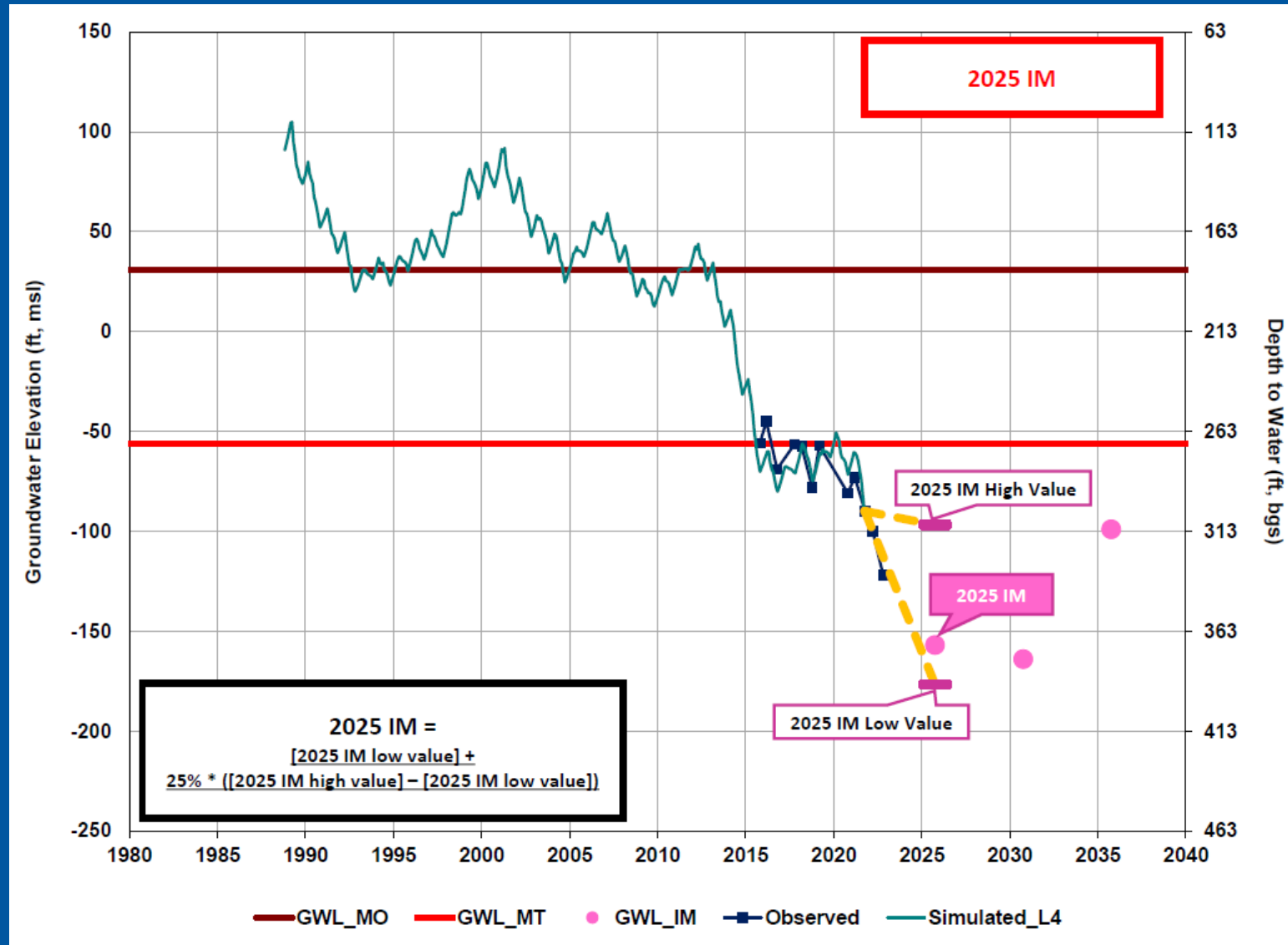




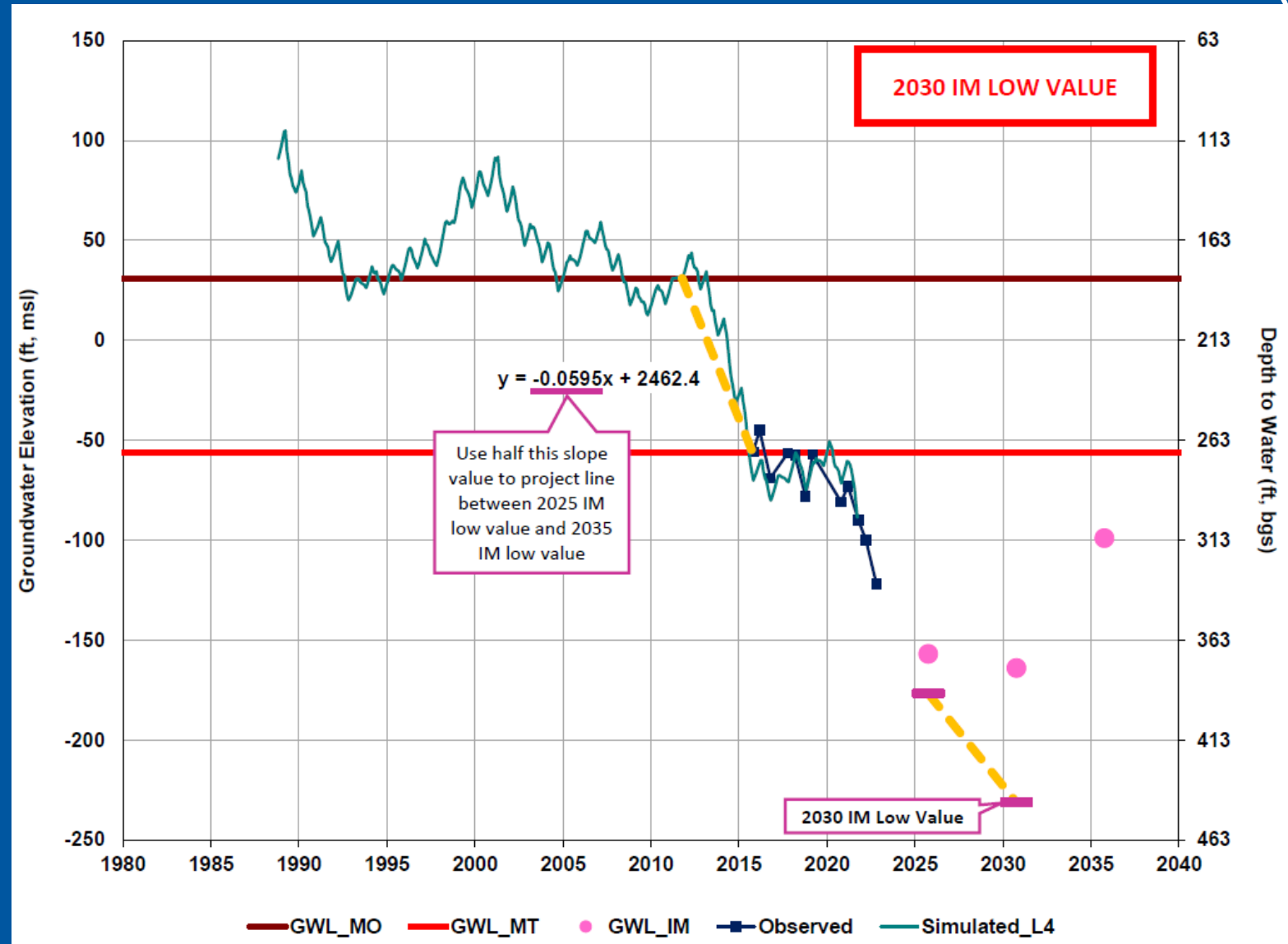
# Chronic Groundwater Level Decline SMC (Cont.....)



# Chronic Groundwater Level Decline SMC (Cont.....)

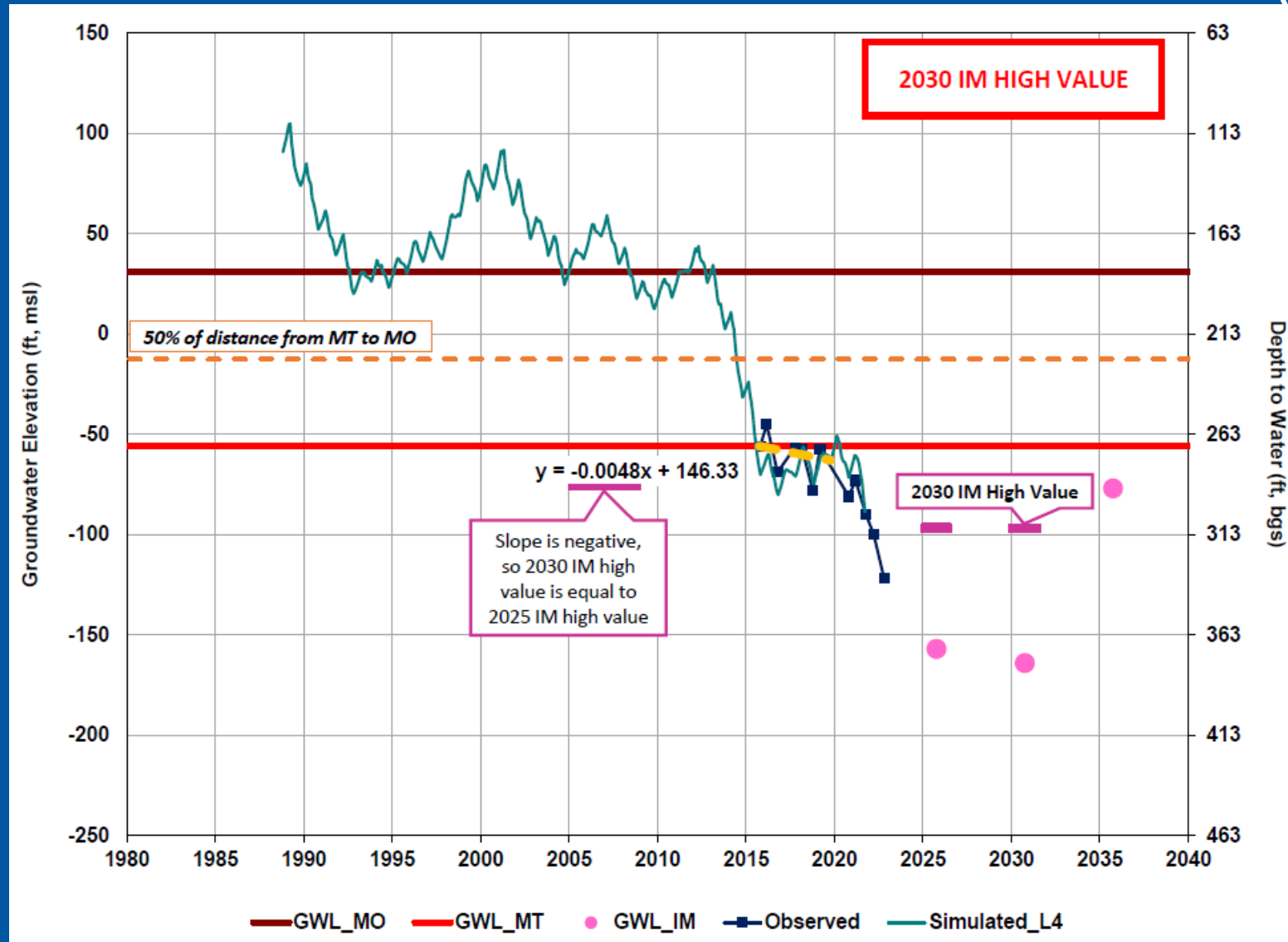


# Chronic Groundwater Level Decline SMC (Cont.....)

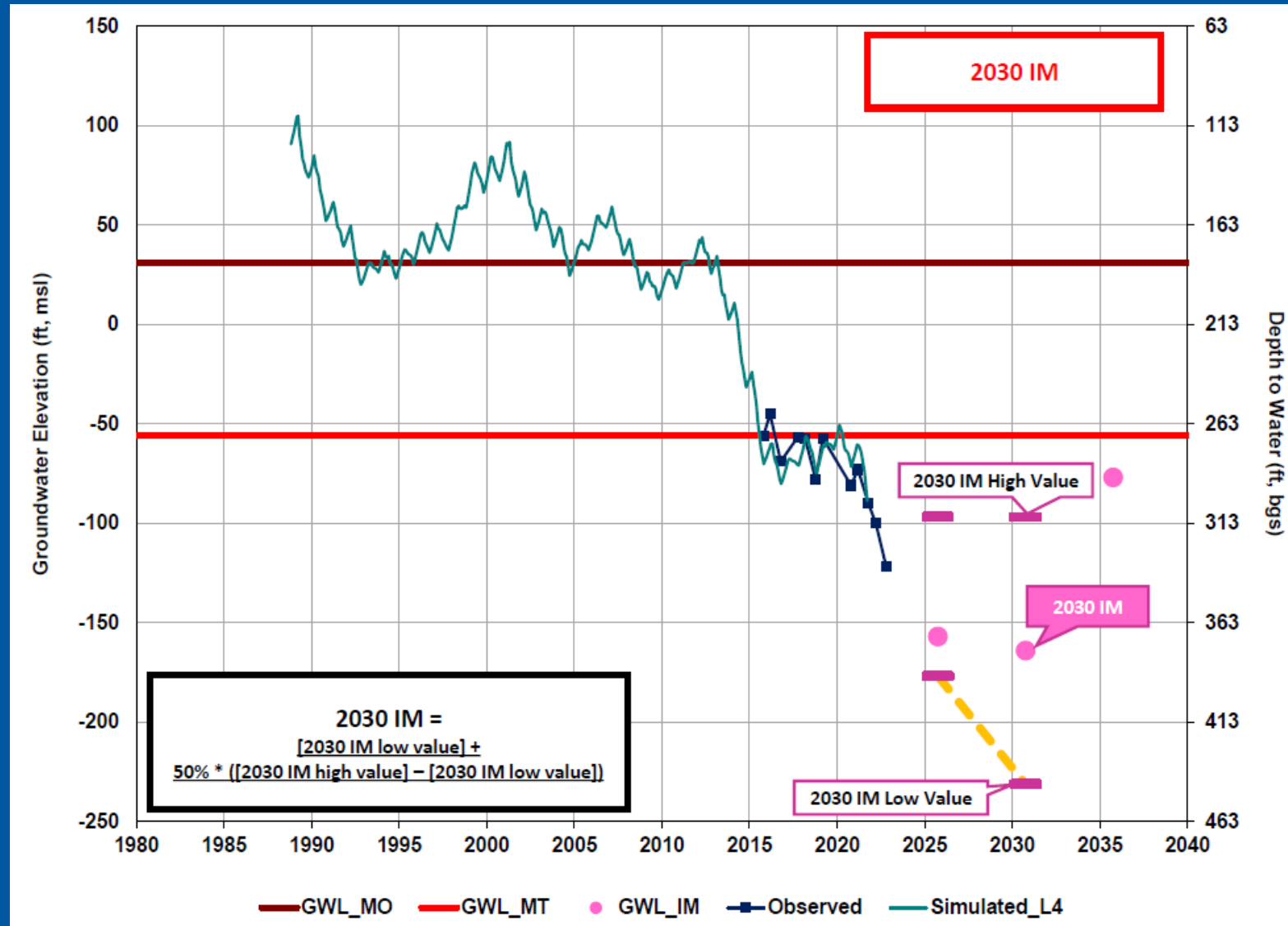




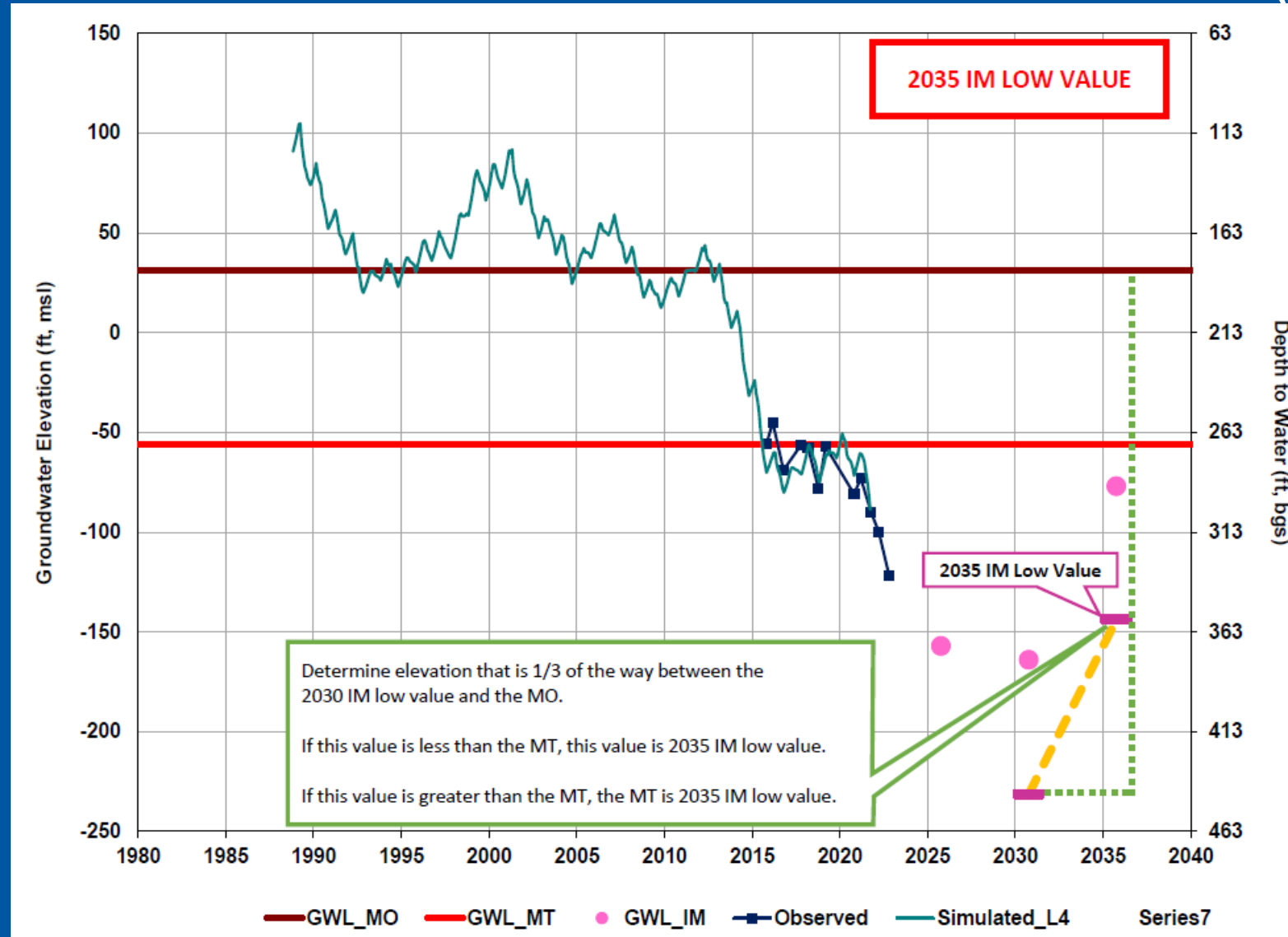
# Chronic Groundwater Level Decline SMC (Cont.....)



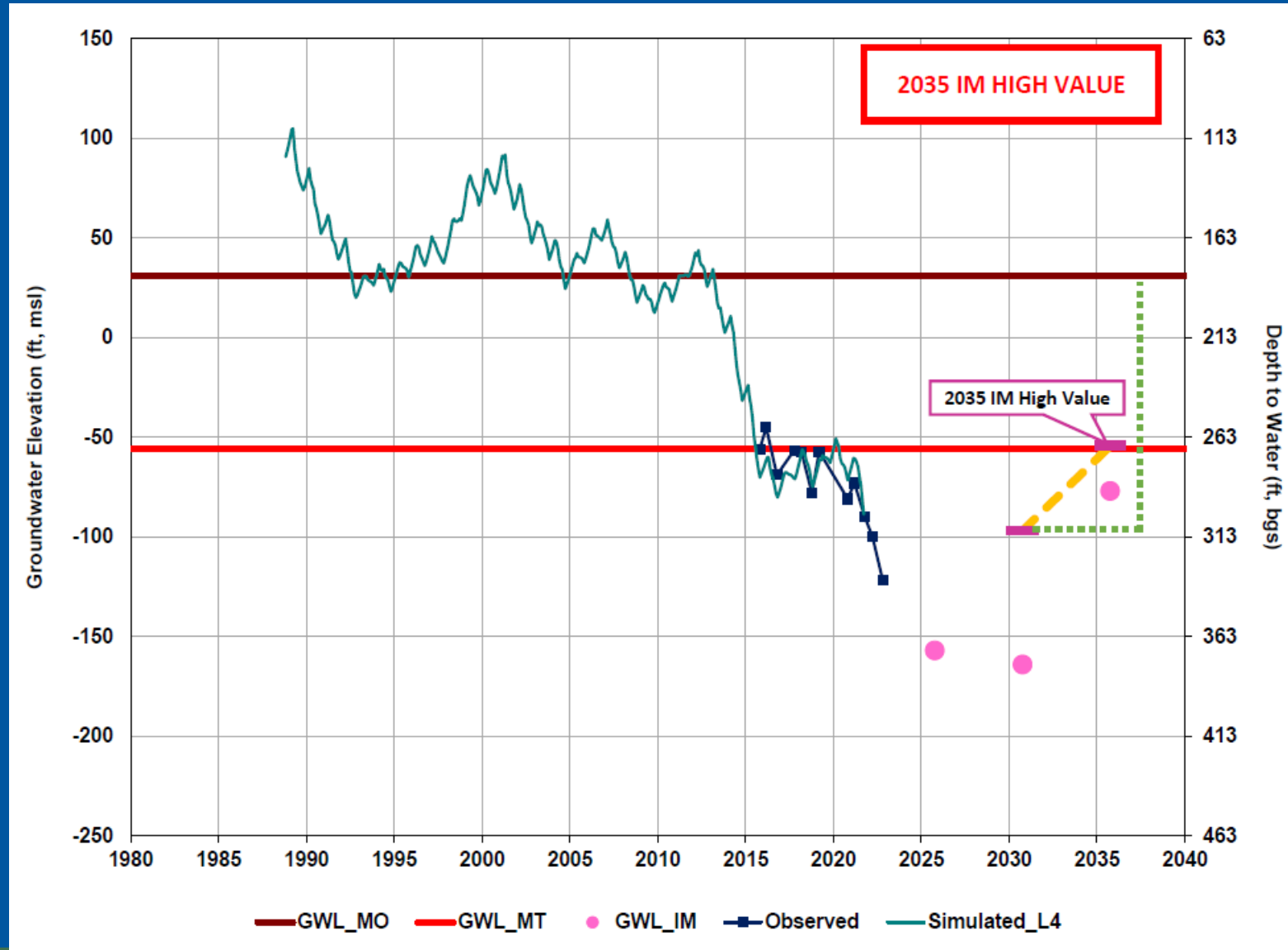
# Chronic Groundwater Level Decline SMC (Cont.....)



# Chronic Groundwater Level Decline SMC (Cont.....)



# Chronic Groundwater Level Decline SMC (Cont.....)





# Chronic Groundwater Level Decline SMC (Cont.....)

