



TEJON-CASTAC  
**WATER**  
DISTRICT



## South of Kern River Executive Committee Regular Meeting

Thursday, March 14, 2024  
9:00 a.m. to 11:00 a.m.

Meeting Information Posted:

[www.sokrgsp.com](http://www.sokrgsp.com)

<http://www.aewsd.org> \* <http://www.wrmwsd.com>

<http://www.tejoncastacwd.com> \* <https://www.arvincsd.com>

In Person: Arvin-Edison Water Storage District Headquarters  
20401 E. Bear Mountain Blvd. Arvin, CA 93203

Via Remote (**Microsoft Teams**): <https://www.microsoft.com/microsoft-teams/join-a-meeting>

**Click here to join the meeting**

Meeting Number: **289 619 843 830**

Meeting Password: **ko5K35**

Phone: **1.213.437.9052**

Phone Meeting Number (access code): **276 512 496#**

**NOTICE:** Members of the public interested in participating by teleconference may do so using the call-in information above or by following [this link](#). Please note that this teleconference option is provided as a courtesy and at the participant's own risk. The Committee cannot guarantee that there will be no loss of connectivity or other technological obstacle to full participation through teleconferencing. By participating in this way, participants confirm that they understand this risk and that the Committee is not obliged to delay any portion of the meeting due to such technological obstacles and thus that teleconference participants may be unable to participate.

1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE
4. APPROVAL OF THE AGENDA
5. APPROVAL OF FEBRUARY 20, 2024 MEETING MINUTES
6. PUBLIC COMMENT
7. REPORT ITEMS
  - a. GSP Manager Report (*Muhar*)
    - i. Basin Coordination
  - b. Technical Consultant Report (*EKI*)
    - i. Technical Working Group (TWG) Update
    - ii. Report on March 6, 2024 technical meeting with State Water Resources Control Board (SWRCB) Staff
    - iii. SGMA Monitoring Network performance and sustainable management criteria (SMC) compliance

- c. Finance Report (*Nicholas*)
- d. California Aqueduct Subsidence Program (CASP) update (*Nicholas*)
- e. Management Area updates (*Muhar, Nicholas, Martin, Barraza*)

8. ACTION ITEM(S)

- a. Discussion and potential action to recommend INTERA's Proposal for Additional Data Collection and Modeling to Support Subsidence Mitigation Cost Analysis for the Friant-Kern Canal for approval by SOKR GSA boards (*Muhar*)

9. CLOSED SESSION

- a. Potential Litigation (Government Code §54956.9(d)(2), (e)(1); 1 item).

10. ADJOURNMENT

**MINUTES OF THE MEETING OF THE  
SOUTH OF KERN RIVER EXECUTIVE COMMITTEE  
February 20, 2024**

**CALL TO ORDER**

Director Yurosek called the meeting to order at 10:01 a.m., and determined a quorum was present with attendance by:

**Executive Committee Directors**

Derek Yurosek – Arvin-Edison Water Storage District (AEWSD; Arvin GSA) (present)  
Mark Valpredo – Tejon-Castac Water District (TCWD; Tejon-Castac Water District GSA) (present)  
Michael Blaine – Wheeler Ridge-Maricopa Water Storage District (WRMWSO; Wheeler Ridge-Maricopa GSA) (present)  
Rafael Gallardo – Arvin Community Services District (ACSD) (present)

**District Staff**

Jeevan Muhar – AEWSD (present)  
Sheridan Nicholas – WRMWSO (present)  
Angelica Martin – TCWD (remote)  
Raul Barazza – ACWD (present)

**PLEDGE OF ALLEGIANCE**

**APPROVAL OF THE AGENDA**

Director Valpredo moved to approve the agenda as amended. Director Gallardo seconded. The motion passed 4-0-0.

**APPROVAL OF JANUARY 16, 2024 MEETING MINUTES**

Director Gallardo moved to approve the January 16, 2024 SOKR Executive Committee meeting minutes. Director Blaine seconded. The motion passed 4-0-0.

**PUBLIC COMMENT**

There were no public comments.

**REPORT ITEMS**

**GSP Manager Report**

**Basin Coordination**

Mr. Muhar reported on the Subbasin GSAs' efforts to coordinate on tasks related to revising the Groundwater Sustainability Plan(s) (GSPs) to respond to the deficiencies identified in the Department of Water Resources (DWR) Inadequate Determination by spring 2024. Mr. Muhar identified ongoing work efforts include water budget updates, well

inventory and mitigation, identifying infrastructure for ongoing subsidence monitoring, Friant Kern Canal mitigation considerations, ongoing coordination for future white lands coverage, and ongoing grant-funded work efforts.

Mr. Muhar also reported on communications received from State Water Resources Control Board (SWRCB) staff explaining that staff may recommend a scheduled probationary hearing be deferred if a basin submits revised GSP(s) in advance of hearing (> 3 months for 1 GSP + 1 month for each additional GSP) and staff find the revised GSP(s) make sufficient progress in addressing the DWR-identified deficiencies.

## **Technical Consultant Report**

### Technical Working Group (TWG) Update

EKI reported on the subbasin-wide technical work undertaken during the prior month to address DWR-identified GSP deficiencies. These efforts included development of a risk-based matrix approach for Land Subsidence Sustainable Management Criteria (SMCs), presentation of the proposed approach for Degraded Water Quality SMCs to SWRCB staff on January 24, 2024, finalization of the subbasin well inventory, and ongoing work related to the water budget and proposed Projects and Management Actions (P/MAs).

### Report on January 24, 2024 Technical Meeting with State Water Resources Control Board (SWRCB) Staff

EKI reported on the January 24, 2024 technical meeting with SWRCB staff where the Water Quality subcommittee presented the proposed approach to Degraded Water Quality SMCs. SWRCB staff identified the need for expanded monitoring and SMCs set for all SWRCB-identified constituents of concern. The Water Quality subcommittee developed a revised approach to address SWRCB concerns.

### GSP Revision Schedule

EKI reported on the GSP revision schedule, which has been delayed by approximately two weeks.

### SGMA Monitoring Network performance and SMCs compliance

EKI reported on January groundwater conditions within the SOKR Plan Area compared to the existing Minimum Thresholds (MTs).

## **Finance Report**

Mr. Nicholas reported on finances to date. WRMWSD received reimbursement from Buena Vista Water Storage District for the SOKR GSAs' share of costs for Subbasin-wide GSP development.

## **California Aqueduct Subsidence Program (CASP) update**

Mr. Nicolas reported that there were no updates from CASP.

## **Management Area Updates**

Mr. Muhar reported that AEWS D is in escrow for a 160-acre property to expand its existing spreading facilities. If successful, this project would convert irrigated agricultural land into groundwater recharge basins. Additionally, AEWS D has filed a lawsuit against the Eastern Tule GSA related to subsidence along the Friant-Kern Canal.

Mr. Nicholas reported no updates.

Ms. Martin reported no updates.

Mr. Barazza reported that ACS D has been in discussions with AEWS D regarding involvement in the expansion of AEWS D's spreading facilities.

## **ACTION ITEMS**

Letter of Intent to Engage Self-Help Enterprises to Assist with Subbasin Well Mitigation Program. Mr. Muhar presented the Subbasin's Letter of Intent to enter into an agreement with Self-Help Enterprises (SHE) for assistance in implementing the Subbasin's Well Mitigation Program, including outreach, delivery of emergency water supplies, and coordination of long-term solutions. The SOKR GSP committed to developing a domestic well mitigation policy, and DWR sought additional details on program eligibility and implementation in their inadequate determination letter. The proposed framework for the Well Mitigation Program contains elements from the existing Kern Water Bank, Pioneer, and Rosedale Rio-Bravo well mitigation programs and would be funded internally by the Subbasin GSAs.

Following discussion, Director Gallardo made a motion, seconded by Director Blaine, to recommend that the SOKR GSA boards join the Subbasin's Letter of Intent to negotiate an agreement with SHE for assistance in implementing the Subbasin Well Mitigation Program, subject to staff and counsel review of the final letter prior to execution. The Motion passed 4-0-0.

## **CLOSED SESSION**

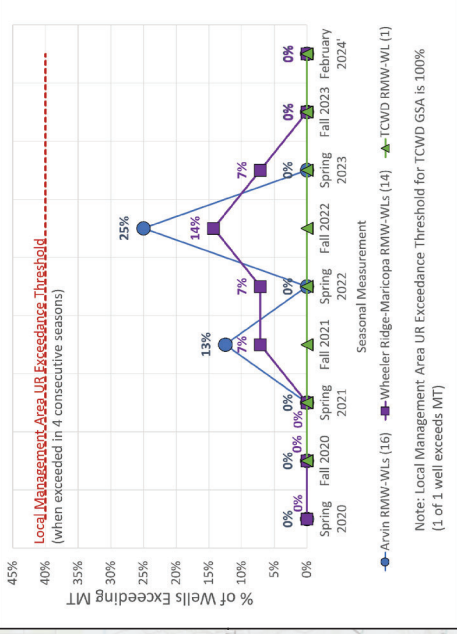
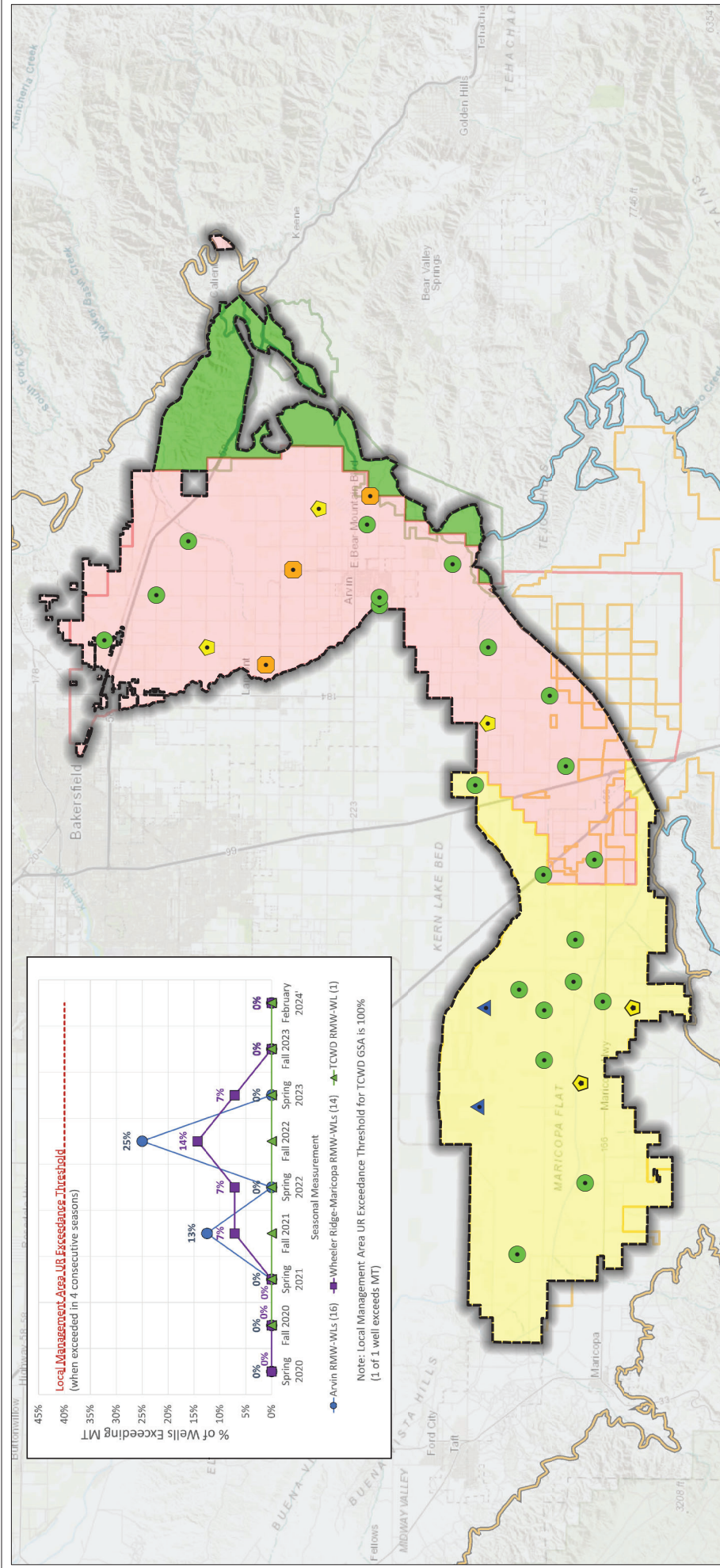
Conference with Legal Counsel pursuant to Government Code §54956.9(d)(2), (e)(1) (potential litigation; 1 item). There was no action to report out of closed session.

## **ADJOURNMENT**

Director Yurosek adjourned the South of Kern River Executive Committee meeting at 11:07 p.m.

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Mark Valpre do, South of Kern River  
Executive Committee Secretary



**Legend**

- Water Level Above MO (21 or 65%)
- Water Level Between MO and MT but closer to MO (5 or 16%)
- Water Level Between MO and MT but closer to MT (3 or 13%)
- No Measurement (2 or 6%)
- South of Kern River Plan
- Arvin GSA
- Wheeler Ridge-Maricopa GSA
- Tejon-Castac Water District GSA
- WRMWSD Service
- AEWSD Service
- TCWD Service
- Groundwater Subbasin
- Kern County (DWR 5-022.14)
- White Wolf (DWR 5-022.18)

**Representative Monitoring Well and Status as of February 2023**

**Abbreviations**

- AEWSD = Arvin-Edison Water Storage District
- DWR = California Department of Water Resources
- GSA = Groundwater Sustainability Agency
- MO = Measurable Objective
- MT = Minimum Threshold
- RMW = Representative Monitoring Well
- SGMA = Sustainable Groundwater Management Act
- SMC = Sustainable Management Criteria
- TCWD = Tejon-Castac Water District
- UR = Undesirable Result
- WRMWSD = Wheeler Ridge-Maricopa Water Storage District

**Sources**

- Basemap is ESRI's ArcGIS Online world topographic map, obtained 6 March 2024.
- GSA boundaries obtained from SGMA GSA Map Viewer portal, accessed 6 May 2022.
- DWR groundwater basins are based on the boundaries defined in California's Groundwater Bulletin 118 - 2019 Update.

**Notes**

- All locations are approximate.
- Undesirable Results are deemed to occur if groundwater levels in 40% or more RMWs are below their respective MT for four consecutive bi-annual measurements (Spring and Fall) in any management area.

**February 2024 Water Levels Relative to SMCs**

South of Kern River GSP  
Kern County, CA  
February 2024  
C20055.00

**Figure 1**

eki environment & water

INTERIM FIGURE - FOR INFORMATIONAL PURPOSES ONLY

**Legend**

**Representative Monitoring Well and Status as of February 2024**

- Water Level above MT (11 or 68%)
- Water Level between MO and MT but closer to MO (3 or 19%)
- Water Level between MO and MT but closer to MT (2 or 13%)

**Sustainability Criteria Zones**

- ACSD
- Edison
- North Canal
- South Canal
- Arvin GSA
- Arvin-Edison Water Storage District

**Groundwater Subbasin**

- Kern County (DWR 5-022.14)
- White Wolf (DWR 5-022.18)

**Abbreviations**

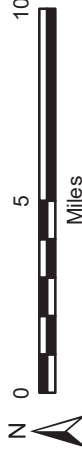
- ACSD = Arvin Community Services District
- DWR = California Department of Water Resources
- ft msl = feet above mean sea level
- GSA = Groundwater Sustainability Agency
- MO = Measurable Objective
- MT = Minimum Threshold
- RMW = Representative Monitoring Well
- SMC = Sustainable Management Criteria

**Notes**

1. All locations are approximate.
2. Groundwater elevations reported in units of ft msl.
3. All water levels collected during February 2024.
4. Arrow direction indicates water level change from previous month.

**Sources**

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 6 March 2024.



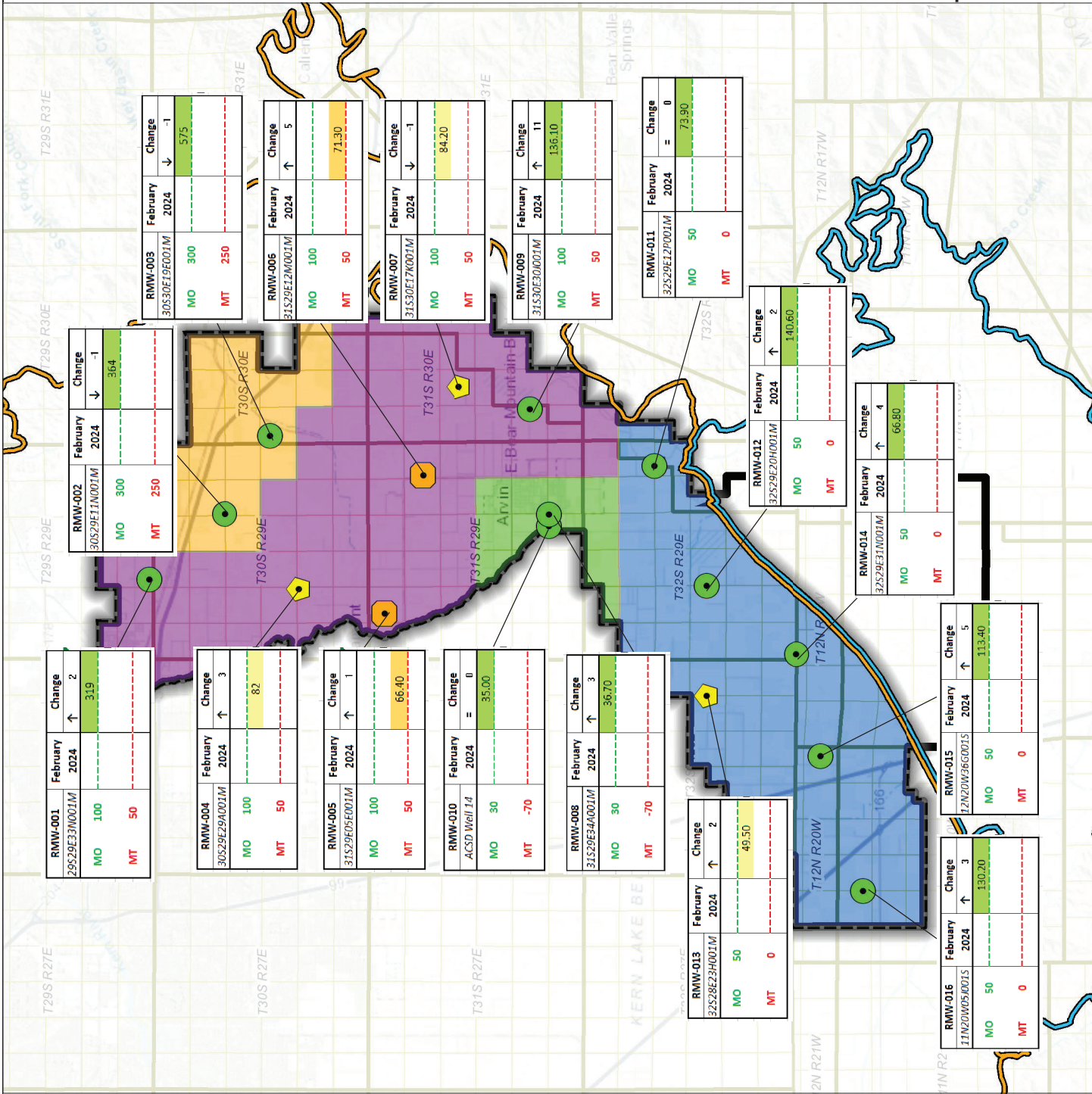
**Groundwater Levels Relative to SMCs February 2024**

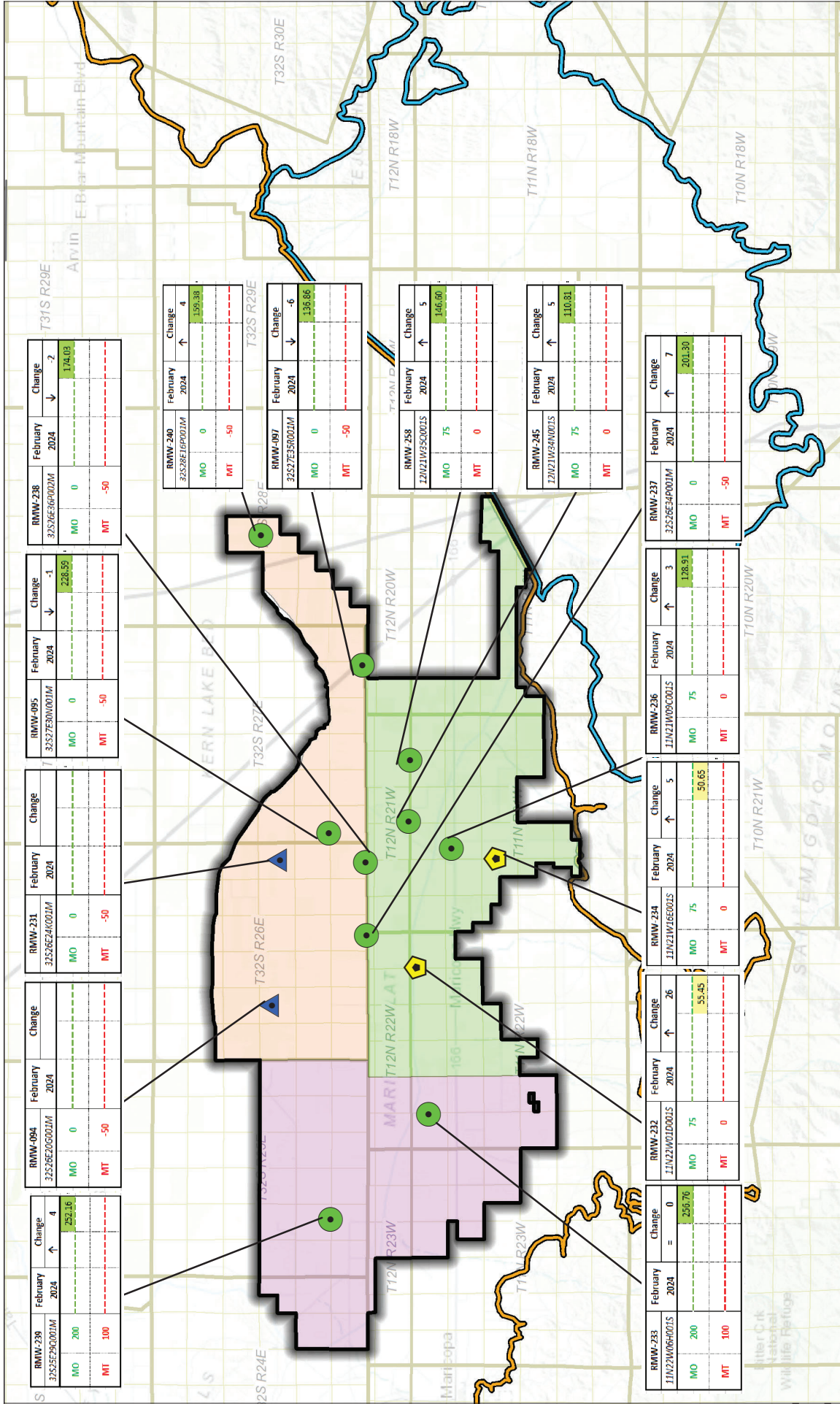
Arvin GSA  
Arvin-Edison Water Storage District  
Kern County, California  
February 2024  
B60064.10



**Figure 2**

INTERIM FIGURE - FOR INFORMATIONAL PURPOSES ONLY





**Legend**

**Groundwater Subbasin**

- Kern County (DWR 5-022.14)
- White Wolf (DWR 5-022.18)

**Sustainability Criteria Zones**

- Northeast
- Southeast
- West
- Wheeler Ridge-Maricopa GSA

**Notes**

- All locations are approximate.
- Groundwater elevations reported in units of ft msl.
- All water levels collected during February 2024.
- Arrow direction indicates water level change from previous month..

**SOURCES**

- Basemap is ESRI's ArcGIS Online world topographic map, obtained 6 March 2024.

**Representative Monitoring Well and Status as of February 2024**

- Water Level Above MO (10 or 20)
- Water Level Between MO and MT but closer to MO (2 or 14%)
- No Measurement (2 or 14%)

**Abbreviations**

DWR = California Department of Water Resources

ft msl = feet above mean sea level

GSA = Groundwater Sustainability Agency

MO = Measurable Objective

MT = Minimum Threshold

SMC = Sustainable Management Criteria

**Groundwater Levels Relative to SMCs February 2024**

Wheeler Ridge-Maricopa GSA

South of Kern River  
Kern County, California  
February 2024  
C20055.00

**Figure 3**



**Legend**

**Representative Monitoring Well and Status as of February 2024**

- Water Level above MT (11 or 69%)
- ◆ Water Level between MO and MT but closer to MO (3 or 19%)
- Water Level between MO and MT but closer to MT (2 or 13%)

**District Recovery Well**

- AEWSD Spreading Basin
- Arvin GSA
- Arvin-Edison Water Storage District
- Groundwater Subbasin**
- Kern County (DWR 5-022.14)
- White Wolf (DWR 5-022.18)

**Abbreviations**

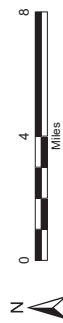
- AEWSD = Arvin-Edison Water Storage District
- DWR = California Department of Water Resources
- ft msl = feet above mean sea level
- GWE = groundwater elevation
- MO = measurable objective
- MT = minimum threshold
- RMW = Representative Monitoring Well

**Notes**

1. All locations are approximate.
2. Groundwater elevations are in feet mean sea level.
3. Undesirable Results are deemed to occur if groundwater levels in 40% or more (7 or more) RMWs are below their respective MT for 4 consecutive bi-annual measurements (Spring and Fall).
4. All RMW status based on February 2024 measurements.

**SOURCES**

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 8 March 2024.
2. Water level information obtained from AEWSD.



**DRAFT**

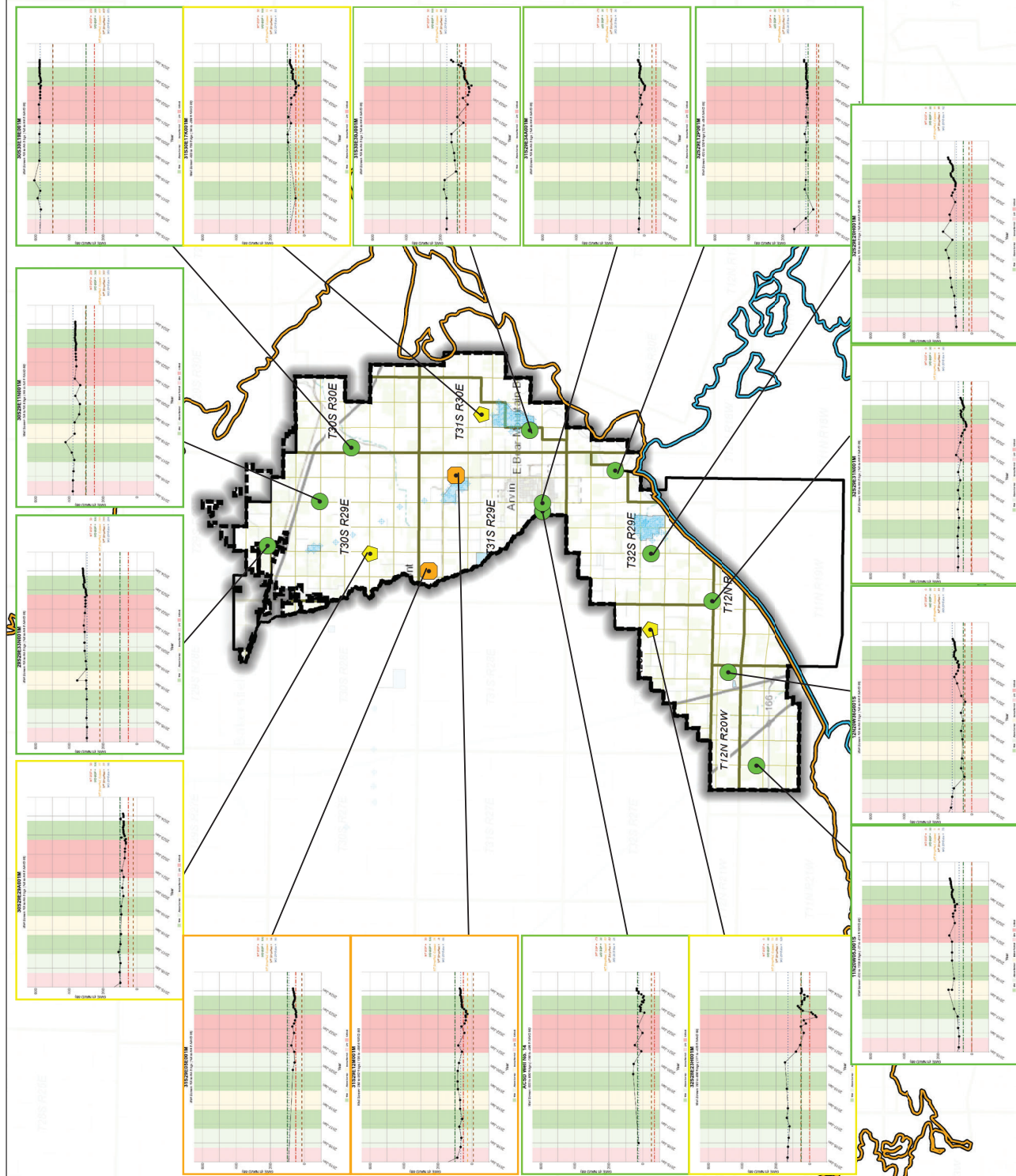
**Hydrographs in Representative Monitoring Wells**  
(Jan 2015 - February 2024)

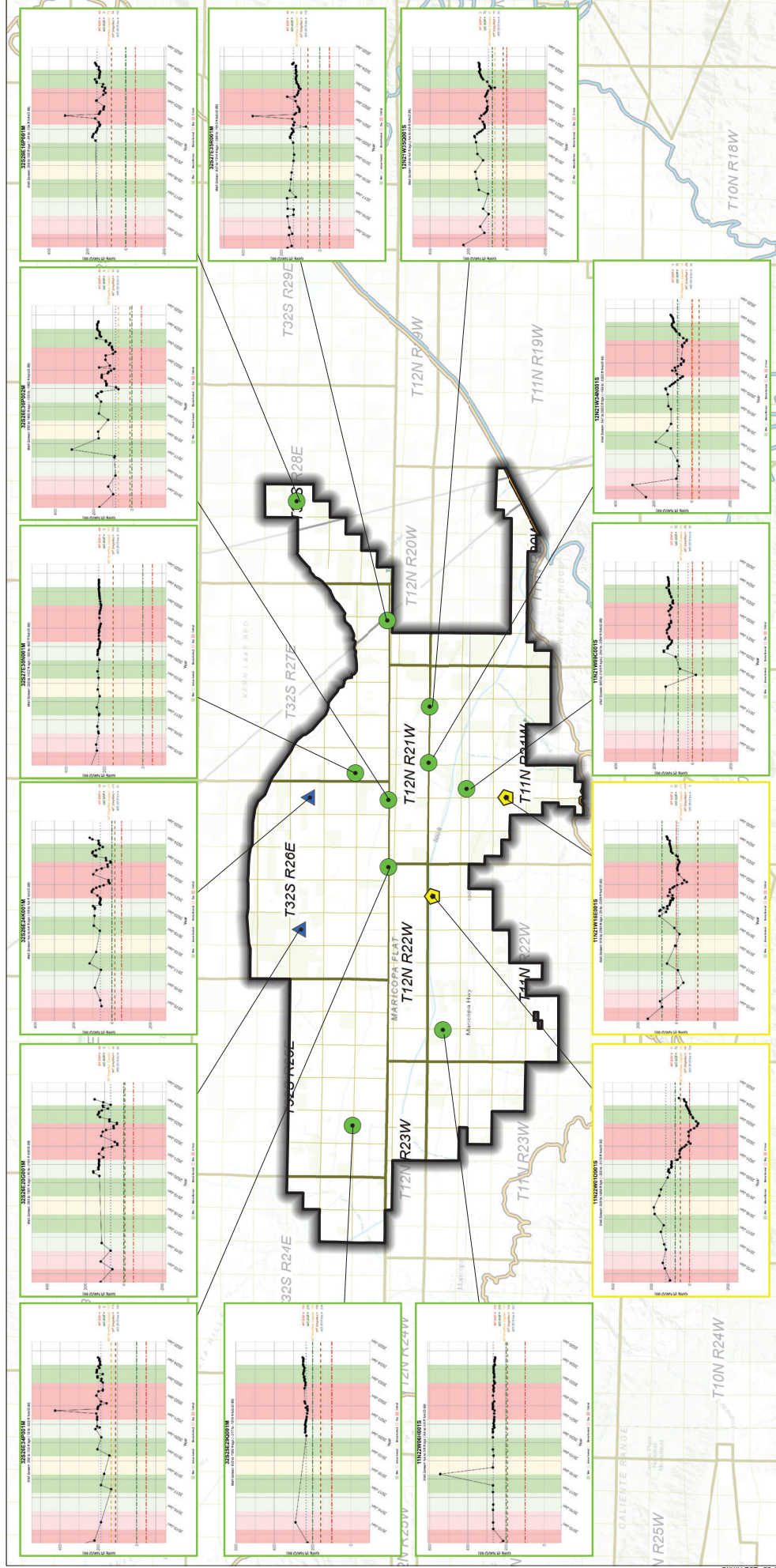
Arvin-Edison Water Storage District  
Kern County, CA  
February 2024  
C20055.01



**Figure 4**

INTERIM FIGURE - FOR INFORMATIONAL PURPOSES ONLY





**Legend**

- Water Level Above MO (10 or 72%)
- Water Level Between MO and MT but closer to MO (2 or 14%)
- No Measurement (2 or 14%)
- Wheeler Ridge-Maricopa GSA
- Groundwater Subbasin
- Kern County (DWR 5-022.14)
- White Wolf (DWR 5-022.18)

**Notes**

- All locations are approximate.
- Groundwater elevations are in feet mean sea level.
- Undesirable Results are deemed to occur if groundwater levels in 40% or more (6 or more) RWMs are below their respective MT for 4 consecutive bi-annual measurements (Spring and Fall).
- All RWM status based on February 2024 measurements.

**Abbreviations**

- DWR = California Department of Water Resources
- ft msl = feet above mean sea level
- GSA = Groundwater Sustainability Agency
- MO = Measurable Objective
- MT = Minimum Threshold
- RWM = Representative Monitoring Well
- WRMWS = Wheeler Ridge-Maricopa Water Storage District

**Hydrographs in Representative Monitoring Wells (January 2015 - February 2024)**

Wheeler Ridge-Maricopa Water Storage District  
Kern County, CA  
February 2024  
B70103.01

**eki environment & water**

**Figure 5**

INTERIM FIGURE - FOR INFORMATIONAL PURPOSES ONLY

## **Proposal for Additional Data Collection and Modeling to Support Subsidence Mitigation Cost Analysis for the Friant Kern Canal**

Additional data-collection, analysis, and modeling is necessary to evaluate future impacts on water levels and subsidence along the Friant Kern Canal (FKC) from groundwater pumping in different GSAs within the Kern Subbasin. This data collection and analysis was not included in the original scope and budget to support GSP revisions, as the previous sustainable management criteria for the FKC had not accounted for conveyance loss from future subsidence. Any unmitigated conveyance loss due to subsidence along the FKC has been deemed an “undesirable result” under SGMA by the Friant Water Authority (FWA). Hence, mitigation alternatives to raise the liner (and associated infrastructure) along the sagging sections of the canal are being evaluated currently. A cost-sharing framework is being developed to fund these future mitigation efforts. The cost-sharing framework will entail attributing costs based on future impacts on water levels and subsidence along sagging sections of the FKC from groundwater pumping in different GSAs. This proposal outlines the approach and cost involved with the data-collection, analysis, and modeling for this effort.

### **Task 1. Recover and survey elevations at selected benchmarks**

Perform GPS RTK survey methods at eight benchmark sites near the FKC to obtain ellipsoid and orthometric elevations processed through NOAA's Online Positioning User Service (OPUS). For benchmarks located in areas where direct GPS observations are not possible, a nearby reference mark will be established, and conventional leveling will be used to determine the elevation of the benchmark.

**Estimated Cost: \$12,000**

### **Task 2. Analyze and prepare long-term groundwater level and subsidence time series data and figures**

Evaluate water-level data from the current period and historical water-level data near the FKC to provide a time series of data for the 1D model (Task 3) and to determine the pre-consolidation head and current critical head at eight selected locations of geodetic control (benchmarks). A time series of leveling data from benchmarks monumented by the National Geodetic Survey, U.S. Geological Survey, U.S. Bureau of Reclamation, and California Department of Transportation will be constructed from blue-booked leveled elevations and recoveries. Data compiled from the CASGEM, DWR water data library, and USGS will be used near the benchmark sites to construct a time series of water level data at various depth intervals. Approximately 75% of this data has already been collected as part of the development of the subsidence sustainable management criteria (SMCs). The cost below is for *additional* data collection and analysis to support the 1D modeling under Task 3.

**Estimated Cost: \$10,000**

### **Task 3. Subsidence analysis using the Stanford 1D model**

Use the Stanford 1D model to forecast subsidence through 2040 or other desired planning timeframe to connect water levels and subsidence along the Friant Kern Canal (FKC). The model will be calibrated to the long-term subsidence and groundwater level data from Task 2. Well-log data will be compiled for each of the 8 sites to estimate the number and thickness of clay interbeds.

**Estimated Cost: \$35,000**

#### **Task 4. Updated model analysis of water level changes by GSA**

Use updated IWFM-Kern model (currently being updated by Todd Groundwater to support the GSP revisions) to evaluate change in groundwater levels through 2040 or other desired planning timeframes to simulate future change in water levels under a range of different scenarios with GSAs within the Kern subbasin pumping at different rates to assess impacts on future water levels along the Friant Kern Canal. INTERA will work with Todd Groundwater to perform the water level scenarios. Water level results from the scenarios will be linked to the 1D subsidence model (Task 3) to translate water level impacts to subsidence impacts along the FKC. The 1D subsidence model is necessary since the IWFM-Kern model has not been calibrated to subsidence. This task assumes multiple iterations to support the determination of potential attribution of water level and subsidence impacts along the FKC. Relative contribution to future water level declines and subsidence along the most vulnerable reaches of the FKC would be the basis for the cost-sharing framework between the GSAs determined to be contributing to water level declines and subsidence along the FKC.

**Estimated Cost: \$60,000**

#### **Task 5. Meetings and Presentations**

Results from the evaluation will be presented to the Kern Subbasin subsidence sub-committee, GSA managers, and coordination committee. The analysis will also be presented to the Friant Water Authority to get their buy-in on the approach and results. The analysis will be documented in a technical memorandum that may be used as an attachment to the Kern Subbasin revised GSP to document the FKC mitigation alternative.

**Estimated Cost: \$3,000**

#### **Total Cost and Schedule**

The total cost for the scope above is estimated to be **\$120,000**. Tasks 1-3 can be completed within 3 months of notice to proceed. Task 4 and 5 will require 3 additional months (including the time for presentation at various committee meetings) from receiving revised IWFM-Kern model files from Todd Groundwater. It is anticipated that the IWFM-Kern model will be ready for the modeling analysis by the late summer (August, 2024) timeframe.