

TECHNICAL MEMORANDUM

DATE: March 14, 2024
SENT VIA: EMAIL
Project No.: 1105-80-23-01

TO: Kristin Sicke, PE
Yolo Subbasin Groundwater Agency
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Woodland, CA 95695

FROM: Ken Loy, PG, CHG, CEG
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REVIEWED BY: Ken Loy, PG, CHG, CEG (March 14, 2024)
REVISED BY: *Kristin Sicke, PE (April 18, 2024)*

SUBJECT: Delineation of Focus Areas Map and Guidelines and Evaluation Criteria for Hydrogeologist Reports to Address Executive Orders N-7-22 Paragraph 9 and N-3-23 Paragraph 4 through a Tiered Review Process

INTRODUCTION

West Yost prepared this Technical Memorandum (TM) for the Yolo Subbasin Groundwater Agency (YSGA) to support the development and implementation of procedures to comply with Governor's Executive Order N-7-22 (EO) issued on March 28, 2022, and Governor's Executive Order N-3-23 (EO-2) issued on February 13, 2023. Paragraph 9 of the EO and Paragraph 4 of the EO-2 (collectively, EOs) describe requirements for permitting new or replacement water wells.

Yolo County Community Services Department, Environmental Health Division (County) is responsible for well permitting in Yolo County. YSGA is the Groundwater Sustainability Agency (GSA) for the Yolo Subbasin and is responsible for the sustainable management of groundwater in accordance with the Sustainable Groundwater Management Act (SGMA). Most of the Yolo Subbasin is within Yolo County¹.

¹ The Yolo Subbasin extends into small areas of Solano County, including a 3.8-square-mile area bounded by Miner Slough at its southeastern corner and a 2-square-mile area of the UC Davis. (The Solano Subbasin extends into the County in three small areas (4.8 square miles, total) to the south of Davis and are related to the jurisdiction of two reclamation districts.) (Yolo Subbasin Groundwater Agency 2022 Groundwater Sustainability Plan, Yolo County, CA, adopted January 2022).

Based on feedback from the YSGA Board and Drought Contingency Planning Committee in November and December of 2023, a tiered review process was proposed to achieve economies of scale, reduce the cost and time burden on well applicants, and reasonably factor in the impact of the pumping capacity of the proposed well. The tiered review process contains two tiers. A Tier 1 analysis would be completed by YSGA staff to evaluate a well application and identify any concerns that may indicate noncompliance with the EO. If one or more concerns are identified in Tier 1, a well applicant would be required to perform a Tier 2 analysis. A Tier 2 analysis requires a well applicant to provide supplemental information in a Hydrogeologist's Report prepared by a licensed and qualified professional geologist (PG) or hydrogeologist (CHG).² The proposed tiered approach would only apply to wells within Focus Areas identified by the YSGA. For any wells outside of the YSGA Focus Areas, a Hydrogeologist's Report will be required by the County if an application does not meet the County's proposed minimum separation distance requirement from existing neighboring wells³.

PURPOSE AND INTENDED USE

The purpose of this TM is to document:

- Delineation of Focus Areas within the Yolo Subbasin

Requirements, Guidance, and Evaluation Criteria for the Tiered Analysis

The YSGA may evaluate a Hydrogeologist's Report according to the proposed criteria and consult with the County to support compliance with the applicable sections of the EOs. The YSGA may contract a third-party PG or CHG to support the review of Hydrogeologist Reports if the YSGA does not have a PG or CHG on staff to review Hydrogeologist Reports upon receiving a Hydrogeologist Report associated with a well permit. This may also apply to the County if the County does not have a qualified PG or CHG on staff to review Hydrogeologist Reports.

Applications for wells of certain types and capacities are exempted, as described below. The proposed process may be revised based on feedback from the YSGA and County Boards, staff, stakeholders, and members of the public.

ORGANIZATION

This TM is organized in the following sections:

- Requirements and Background
- Modifications to the County Well Permitting Process
- Focus Area Requirements
- Other Requirements

² Must be currently licensed in California. Professional geologists must be able to furnish documentation demonstrating a minimum of two years of experience designing and assessing the impacts of water wells if requested by the YSGA.

³ Certain wells are exempted as described in the Modifications to the County Well Permitting Process section.

- Overview of Tiered Review Process
- Tier 1 Analysis
- Tier 2 Analysis
- Proposed Implementation

Supporting information is provided in the following appendices:

- Appendix A – Governor’s Executive Order N-7-22
- Appendix B – Governor’s Executive Order N-3-23
- Appendix C – YSGA Adopted Resolution No. 22-01
- Appendix D – YSGA Adopted Resolution No. 22-02
- Appendix E – YSGA Well Permit Application Acknowledgement
- Appendix F – YSGA Tier 1 Well Permit Review Form
- Appendix G – Yolo County Temporary Well Permitting Procedures to Address Executive Order N-3-23⁴
- Appendix H – YSGA Adopted Resolution No. 23-01
- Appendix I – Technical Data and Methods for Delineating Focus Areas
- Appendix J – Tier 2 Well Permit Review Form
- Appendix K – YSGA Tiered Approach Flow Chart

REQUIREMENTS AND BACKGROUND

The EO and EO-2 are provided in Appendices A and B. Paragraph 4 of EO-2 replaces Paragraph 9 of the EO and defines requirements to be addressed before the County issuing a well permit. Paragraph 4a of EO-2 prohibits the County from issuing a permit for a new well or alteration of an existing well unless YSGA provides written verification that extraction of groundwater from the new or altered well would not:

- Be inconsistent with any sustainable management program in the adopted Yolo Subbasin GSP⁵
- Decrease the likelihood of achieving a sustainability goal for the Yolo Subbasin.

Paragraph 4b prohibits the County from issuing a permit for a new well or alteration of an existing well without first determining that extraction of groundwater from the new or altered well is not likely to:

- Interfere with the production and functioning of existing nearby wells, and
- Cause subsidence that would adversely impact or damage nearby infrastructure.

⁴ LSCE, 2023, Yolo County Temporary Well Permitting Procedures to Address Executive Order N-3-23, prepared for Yolo County Department of Community Services, Environmental Health Division, December 23, 2023.

⁵ https://www.yologroundwater.org/files/acff83c75/YoloGSP_Adopted.pdf

Paragraph 4 of EO-2 also defines exemptions. The exemptions are:

- Wells producing less than two acre-feet per year for individual domestic water use
- Public supply system wells as defined in Health & Safety Code § 116275
- Replacement wells that would produce an equivalent quantity of water as the existing well that has been acquired by eminent domain or acquired while under threat of condemnation

Since the issuance of the EOs, YSGA has adopted two resolutions (No. 22-01, Appendix C; No. 22-02, Appendix D) that define the procedures to comply with the EO and a cost recovery fee schedule for verification and review of well permit applications related to the EO. Additionally, YSGA has adopted (September 12, 2023) a resolution (No. 23-01, Appendix H) that documents the proposed process for memorializing an update to the YSGA's procedures for complying with the EO. The YSGA has also created an Agricultural Well Application Acknowledgement form (Appendix E) that is required to be completed by well applicants to verify they acknowledge the powers the YSGA may exercise, limitations of the YSGA's verification of a well permit, indemnify the YSGA from legal liability, and collects additional information from the well applicant about the well and its intended use. The County assisted the YSGA in creating a Tier 1 Well Permit Review form (Appendix F) that well applicants are required to fill out to provide additional detail for the YSGA to better understand the purpose of an existing well's proposed alteration/modification and proposed new well's construction, use, and pumping capacity.

As of March 2024, YSGA has reviewed 89 well permit applications and provided written verification to the County for 60 of these applications. In recent years, domestic well owners in some areas of the Yolo Subbasin have expressed concerns over declining groundwater levels and dry wells, and some have reported collapsed well casings. Concerns about the permitting of agricultural wells near domestic wells have resulted in domestic well owners speaking at County Board of Supervisors and YSGA Board of Directors meetings or writing letters to the YSGA and the County requesting greater oversight over well permitting.

MODIFICATIONS TO THE COUNTY WELL PERMITTING PROCESS

YSGA is not the well permitting authority for the groundwater basin. Still, YSGA has groundwater management responsibilities in the basin and is required by the EOs to provide specific verifications to the County in connection with the County's well permit-issuance process. Given that relationship, YSGA is closely coordinating with the County in planning for EO compliance.

The County retained Luhdorff and Scalmanini, Consulting Engineers (LCSE) to develop modifications to the County's well permitting procedure to address the County's responsibilities under Paragraph 9b of the EO (which is now superseded by Paragraph 4b of EO-2). LCSE's TM was adopted in December 2022, and consequently revised in December 2023, and is provided in Appendix G. Like the processes identified in this TM, the County well permitting process requires supplemental Hydrogeologist Reports to support the County's separate findings under the EOs. Table 1 lists the County's minimum well separation distances and thresholds that would trigger a Hydrogeologist Report to be completed by the well applicant.

Table 1. Minimum Well Separation Distances	
Pumping Capacity, gpm	Minimum Well Separation Distance, ft
Wells Within the Valley Floor Areas⁶ of the County	
< 500	250
500 – 1,000	500
1,000 – 1,500	1,000
1,500 – 2,000	2,000
> 2,000	Report Required
Wells in the Upland Areas⁷ of the County	
< 15	500
15 – 100	1,000
> 100	Report Required
<i>Source: LSCE, 2022</i>	

Under the County’s requirements, for proposed wells within the Valley Floor Areas⁶ with pumping capacities greater than 2,000 gallons per minute (gpm) or within the Upland Areas⁷ with pumping capacities greater than 100 gpm (Figure 2), a Hydrogeologist Report must be completed by a licensed professional geologist or hydrogeologist to determine if the well is unlikely to interfere with the function and operation of nearby wells and is unlikely to cause land subsidence that would adversely impact or damage nearby infrastructure.

The YSGA will rely on the Hydrogeologist Report guidelines defined in this TM to evaluate Hydrogeologist Reports forwarded by the County for the YSGA’s review for well applications that fall outside of the Focus Areas. However, because there is some overlap between the YSGA and County in evaluating well applications relative to EO-2, YSGA has identified additional criteria intended to support its issuance of verifications as described in the following sections.

⁶ Valley Floor Areas are designated by the County as synonymous with the Yolo Subbasin.

⁷ Upland Areas are designated by the County as areas in Yolo County but not within the Yolo Subbasin. Upland Areas are generally in the Coast Range west of the Yolo Subbasin.

FOCUS AREAS REQUIREMENTS

The YSGA retained West Yost to help delineate Focus Areas within the Yolo Subbasin. Figure 1 shows the draft Focus Areas delineation map. The Focus Areas map was reviewed and approved for release for public comment by the YSGA Board on October 27, 2023. The YSGA delineated Focus Areas within the Yolo Subbasin where:

- Groundwater levels in Spring 2023 were below the minimum thresholds (MTs) defined in the Yolo Subbasin Groundwater sustainability Plan (GSP).
- Groundwater levels have declined more than 25 feet over 10 years (Spring 2013 – Spring 2023). Note: Two wells within the Subbasin where there was a decline of more than 25 feet over 10 years were in areas where the Tehama Formation was absent at the surface and where no other wells within the vicinity experienced the same (or greater) level of decline. These two wells were excluded to prevent delineation of an area around a single well point, which would not appropriately represent a broader area of groundwater decline.
- Dry wells and citizen concerns are reported.
- Domestic well densities are high. A 2,000-foot buffer which corresponds to the County's maximum setback distance requirement (Table 1) was added around areas of high domestic well density.
- Small water systems are present.
- Permeability and recharge potential is low.
- Groundwater data are limited.

Under the YSGA's proposed verification process, permit applications for new wells or well alterations resulting in increases in pumping capacity would be subject to the following requirements if they are within the Focus Areas and not exempt under the EOs:

- If the proposed well is anticipated to pump less than 100 gpm or have a well casing diameter of 6 inches or less, YSGA would not require any additional information or analysis and would proceed to provide written verification to the County.
- If the proposed well is anticipated to pump greater than 100 gpm or have a well casing diameter greater than 6 inches, YSGA will perform a Tier 1 analysis. Based on the results from the Tier 1 analysis, the well applicant may be required to perform a Tier 2 analysis which would include the preparation and submission of a Hydrogeologist's Report as part of the YSGA's verification process in the County well permitting process.

YSGA staff created a web page⁸ that allows well applicants to assess if a proposed well is located within a Focus Area. Appendix I provides detailed documentation describing the technical data and methods used to delineate the Focus Areas map.

⁸ <https://portal.giscloud.com/map/2496272/ysga-draft-focus-areas>

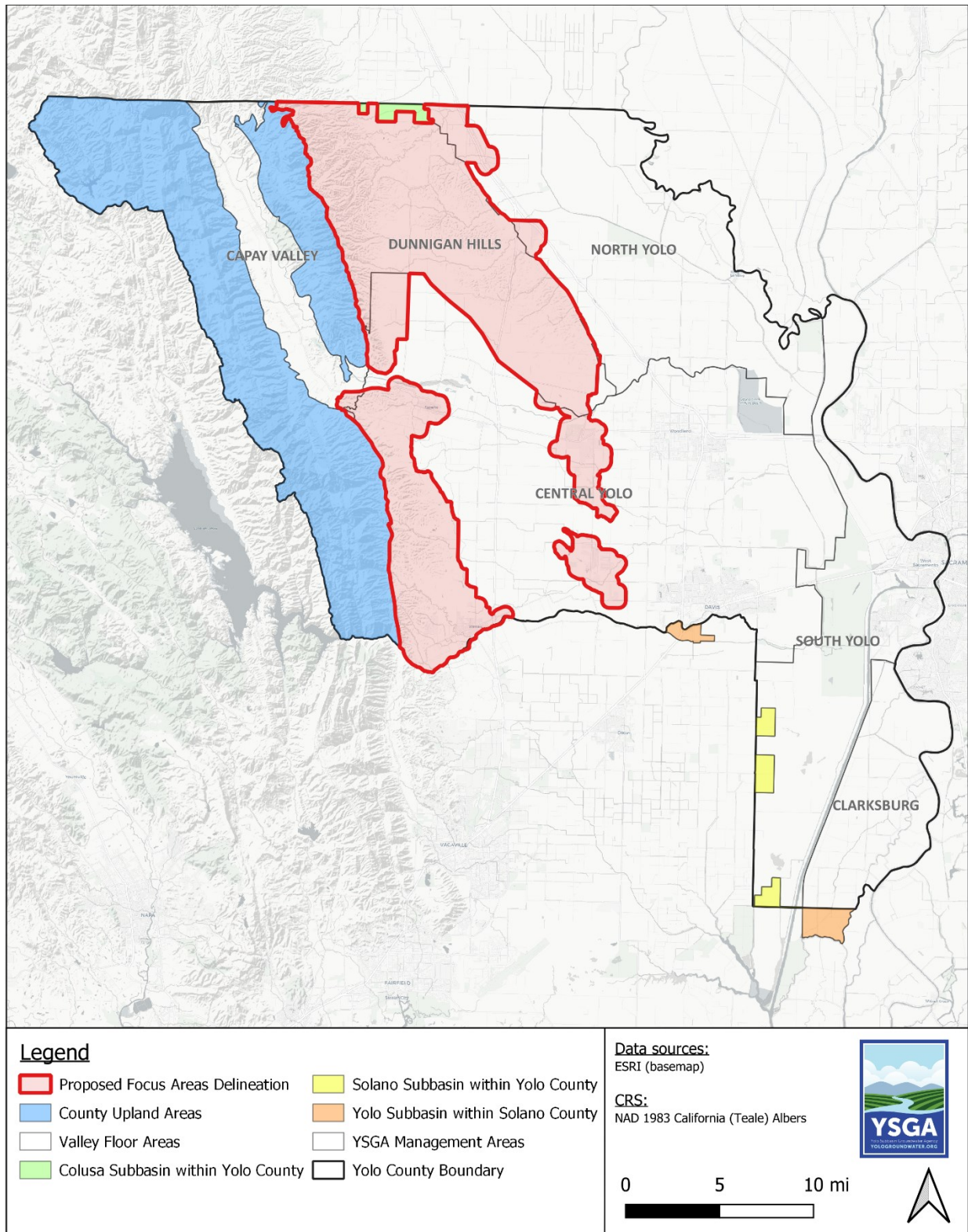


Figure 1. Proposed Delineated Focus Areas Relative to County Defined Valley Floor and Upland Areas.

OTHER REQUIREMENTS

The YSGA will require well applicants that proceed with well construction after permit issuance to submit the following information to the County for forwarding to YSGA:

- For Tier 2 applicants, final ‘as built’ well construction diagram produced by a C-57 well drilling contractor, PG, or CHG prepared using the well diagram template in Appendix J.
- Completed DWR Well Completion Report⁹ signed by applicant’s C-57 well drilling contractor. The WCR shall document the well drilling contractor’s test pumping results, including pumping rate, pumping duration, static groundwater level, pumping groundwater level, and the date of the test pumping. The WCR must be submitted to the YSGA for all wells completed within the Yolo Subbasin within 60 calendar days of well completion.

This information will be used by the YSGA and County to verify well permit application information is relatively consistent with what was proposed and to document aquifer stratigraphy, hydraulic properties, the capacity of the new or altered well, and the well casing diameter size and other well construction information. The YSGA understands that there may be a need based on what is encountered during drilling to modify the well design (e.g. add an additional 10 feet of well screen; add an additional 5-foot layer of bentonite; etc.) and that the final construction of the well may deviate from the proposed well design provided in the application. Note that constructed well is expected to have the same well casing diameter size as what was proposed on the application.

The other requirements originally included in the March 14, 2024 draft version of this TM related to geophysical logs and final ‘as built’ well construction diagrams for all permits issued was removed given the construct of the Well Permit Review Procedures (adopted March 18, 2024). YSGA will coordinate with the County to consider these requirements as part of an updated County groundwater ordinance or a future, revised YSGA Well Permit Review Procedures.

OVERVIEW OF TIERED REVIEW PROCESS

For a proposed well located with the Focus Areas (Figure 1), the well applicant would be required to provide information required for the YSGA’s Tier 1 analysis. The information required for the Tier 1 analysis would be requested from the applicant after filing a well permit application with the County and once the YSGA has determined the well is located in a Focus Area. YSGA staff would then complete the Tier 1 analysis to determine possible issues with complying with the EO. The information required by the YSGA Tier 1 Well Permit Review Form (Appendix F) consists of the following.

⁹ Well completion reports must have the following sections filled out with the best available information: well owner, planned use and activity, well location, borehole information, water level and yield of completed well, geologic log (with detailed descriptions), casings, annual material, borehole specifications, and certification statement.

Location of Proposed Well or Alteration to Existing Well

The location of the proposed well or alteration to existing well shall contain the following information:

- Well location map that shows roads, neighboring landowners, existing water infrastructure, and wells within a 1-mile radius. Geographic information may be obtained using Google Earth, GIS software, or printed map information. Neighboring well information may be obtained from DWR's Online System for Well Completion Reports (OSWCR) and visual verification of possible wells through aerial imagery.
- GPS coordinates (Datum: WGS 1984) for latitude and longitude in degrees and decimal minutes to five decimal places (e.g., 38.67030, -121.87109).

Description of Proposed Well or Alteration to Existing Well Project

The description in this section shall contain the following information:

- Proposed new well or alteration to existing well
- Purpose of the well
- A description of conjunctive use features offsetting pumping demands (surface water diversions, recharge credits, etc.) and estimated volumes. If this information is not provided, YSGA will assume the applicant is not using surface water to offset pumping at the well.
- Planned pumping capacity and operating schedule incorporating conjunctive use estimates. If this information is not provided, YSGA will only use the pumping rate and assumed pumping schedule provided on the form to estimate pumping at the well.
- Planned start and completion of drilling dates

Design of Proposed Well or Existing Well to be Altered

The following information shall be included, in addition to what is included in the Yolo County Well Permit Application:

- Depth and diameter of the pilot borehole
- Screened intervals and slot size
- Sand pack interval and grain size
- Pump intake depth

The YSGA acknowledges that some of this information may either be duplicative or not known at the time of preparing and submitting the YSGA Tier 1 Well Permit Review Form (Appendix F). This information should be provided upon completion of a well as described in the Other Requirements section (page 8).

Well Permit Review Process

Upon receiving this information from the well applicant, YSGA staff would follow the proposed tiered review process (Appendix K).

For wells located outside of designated Focus Areas, YSGA verification will be issued upon completion of the initial review of the well permit application transferred from the County.

For well permits within a YSGA Focus Area, Tier 1 analysis would be completed by YSGA staff to identify any concerns that may indicate possible noncompliance with the EO. If one or more concerns are identified in Tier 1, YSGA would notify the well applicant in writing that a Tier 2 analysis is required. The YSGA in their written notification would provide the well applicant a summary of the YSGA's Tier 1 findings, a copy of this TM that includes the Hydrogeologist Report guidelines, and a request for the well applicant to prepare and submit a Hydrogeologist Report addressing the YSGA's identified concerns. A Hydrogeologist Report is required to be prepared by a PG or CHG registered in California.

YSGA staff would evaluate the Hydrogeologist Report for compliance with the guidelines below and its responsiveness to the YSGA's concerns. If the YSGA finds the Hydrogeologist Report is incomplete or does not adequately address the concerns identified by the YSGA, YSGA will notify the well applicant in writing. The applicant may request a meeting with the YSGA staff to discuss options to address the YSGA's concerns and identify a path forward for the well application's verification.

All wells within Yolo County will be required to meet the County's minimum setback separation requirements or complete a Hydrogeologist Report, as outlined in LSCE's TM (LCSE, 2023).

TIER 1 ANALYSIS

This section describes the tools, guidelines, and evaluation criteria the YSGA will use to conduct the Tier 1 analysis.

Tools

YSGA staff will use the best available information and tools to conduct the Tier 1 analysis. These will include information and tools developed to prepare the YSGA Groundwater Sustainability Plan (GSP) and annual reports such as YSGA's groundwater database, DWR's SGMA Data Viewer, DWR's Well Completion Report Map Application, published reports, and other relevant information. Key elements of the GSP include:

- Basin Setting Section - documents the hydrogeologic conceptual model, groundwater conditions, water budget, and management areas for the Yolo Subbasin
- Sustainable Management Criteria (SMC) Section - documents the undesirable results and SMCs for the relevant sustainability indicators
- Monitoring Networks Section - documents the monitoring network and data sources
- Projects and Management Actions (PMAs) Section - documents the PMAs that may be affected by pumping from new or altered wells
- GSP Appendices - document the Yolo Subbasin Groundwater-Surface Water Model, groundwater dependent species, potential impacts to domestic wells, and PMAs.

Additional information may be obtained from online resources, Yolo County Flood Control and Water Conservation District (YCFWCWD), and YSGA records that may include supplemental data on groundwater levels, land subsidence (InSAR), well completion reports, and YCFWCWD surface water availability and deliveries.

YSGA staff will assess the drawdown caused by pumping in the proposed new well or proposed altered well using the USGS groundwater model WTAQ Version 1.3¹⁰. WTAQ is a computer program that implements the analytical solution for drawdown due to pumping in a confined or unconfined aquifer from a partially or fully penetrating well in a homogenous, anisotropic aquifer. The program provides drawdown results at discrete points in time and space. WTAQ is available for public use and can be downloaded from the USGS website¹¹.

YSGA staff will use the proposed location, depth, diameter, and pumping rate of the proposed well to simulate drawdown of groundwater levels due to the proposed pumping. The hydraulic properties (hydraulic conductivity and storage coefficient or specific yield) will be obtained from the calibrated Yolo Subbasin Groundwater-Surface Water Model based on the location and depth of the proposed well. The drawdown simulated using WTAQ will be used, along with other relevant information, to conduct a weight-of-evidence assessment of the proposed well or well alteration project using the criteria listed below.

Guidelines and Evaluation Criteria

YSGA staff will use the tools described above to perform a high-level hydrogeologic evaluation of the wells location and perform an impact assessment using the provided information from the well application and the YSGA Tier 1 Well Permit Review Form (Appendix F). The guidelines YSGA staff will use to perform each are described below.

Hydrogeologic Evaluation

Using the tools described above, YSGA staff will perform a high-level hydrogeologic evaluation at the location of the well that is anticipate being completed within 1 – 2 hours per application. The following will be identified:

- Tables summarizing:
 - Hydrogeologic units and primary aquifers that are expected to be encountered during drilling to an anticipated total depth. This table will also include the hydraulic parameters (i.e., transmissivity and storage coefficient) and confining conditions (unconfined or confined) of hydrogeologic units penetrated by the well.
 - Total depths, screen interval depths, usage (e.g., agricultural, domestic, etc.) and capacities, of existing wells within a 2,000-foot radius of the proposed well.
- Maps or charts of groundwater conditions showing:
 - Anticipated depths to groundwater based on the historic range.
 - Anticipated gradient (magnitude and direction).
 - Proximity to hydraulic barriers to groundwater flow (e.g., geologic faults or folds).

¹⁰ Barlow, P.M. and Moench, A.F., 1999, WTAQ - A computer program for calculating drawdowns and estimating hydraulic properties for confined and water-table aquifers: U.S. Geological Survey Water-Resources Investigations Report 99-4225.

¹¹ <https://water.usgs.gov/water-resources>.

- Proximity to natural surface water features and man-made canals.
- Historical measurements of subsidence and locations of critical infrastructure within a 1-mile-radius of the proposed well.
- Locations of wells within a 1-mile radius.

Impact Assessment

Using the tools and results from the hydrogeologic evaluation, YSGA will perform an impact assessment that is anticipated to be completed within 1 hour per application. The impact assessment will first quantify the magnitude and extent of the drawdown at the proposed well's primary production depth interval(s) up to 5,000 feet from the proposed location. Using this information, each of the following will be quantified and evaluated as follows:

- Anticipated impacts on groundwater levels at neighboring wells and groundwater in storage.
 - If no wells exist, or the only existing wells are owned by the applicant, then no concern will be noted.
 - If neighboring wells exist and are not solely owned by the applicant, the drawdown will be evaluated relative to the primary production depth of the well and any neighboring wells or Representative Monitoring Well (RMW) based on the following:
 - Does the operation of the new well lower groundwater levels below the Minimum Threshold (MT) at the nearest RMW?
 - Does the operation of the new well lower groundwater levels by more than 10% of the historical range at the nearest monitoring well (including domestic)?

If the drawdown is calculated to impact the MT at the nearest RMW or be greater than 10% of the historical range at the nearest monitoring well, then the well would be noted to have a possible negative impact on neighboring wells and a Tier 2 analysis is necessary.

- Anticipated conjunctive use.
 - If the well is located on a parcel that has historically received surface water from the YCFWCWD or another surface water provider, YSGA will assume surface water is used at the parcel to offset pumping at the well.
 - If the well has not historically received surface water from YCFWCWD or another surface water provider, YSGA will not assume any surface water will be used at the parcel to offset pumping at the well.
- Anticipated impacts on nearby interconnected surface waters.
 - If no interconnected surface waters exist within 2,000 feet of the well, then no concern will be noted.
 - If interconnected surface waters exist within 2,000 feet of the well and drawdown from the well is anticipated to trigger depletion of interconnected surface water MTs for the area, then the well would be noted to have possible negative impacts to interconnected surface waters and a Tier 2 analysis is necessary.
- Anticipated impacts on TDS concentrations in the targeted aquifer(s).

- If no historical/known elevated TDS concentrations exist within the aquifer (or aquifers) targeted by the well, then no concern will be noted.
- If historical/known elevated TDS concentrations exist within the targeted aquifer (or aquifers) and drawdown at the well may cause migration of elevated TDS concentrations such that it would negatively impact water quality and trigger the MT for TDS, then the well would be noted to have possible negative water quality impacts and a Tier 2 analysis is necessary.
- Anticipated impacts on land subsidence.
 - If the well is not located in an area that is experiencing subsidence based on InSAR data or is not located near critical infrastructure, then no concern is noted.
 - If the well is in an area that is experiencing subsidence in exceedance of the MT based on InSAR data, then the well would be noted to have possible negative land subsidence impacts and a Tier 2 analysis is necessary.

If one or more of these criteria are noted to necessitate a Tier 2 analysis, YSGA would notify the well applicant as described above in the Review Process section.

TIER 2 ANALYSIS

The purpose of the Tier 2 analysis is to resolve YSGA concerns identified in the Tier 1 analysis by conducting a more thorough evaluation of the proposed well or well alteration project. The Tier 2 analysis would require a Hydrogeologist's Report to be prepared by a PG or CHG of the well applicant's choosing, accompanied by the YSGA Tier 2 Well Permit Review Form (Appendix J), and submitted to the YSGA. The Hydrogeologist's Report would be required to document information, analysis, conclusions, and recommendations fully addressing the concerns YSGA staff identified in the Tier 1 analysis. This section describes the suggested tools and guidelines the well applicant's consultant would use to conduct the Tier 2 analysis to the YSGA's standards and the evaluation criteria the YSGA would follow to evaluate the results from the Tier 2 analysis. The Tier 2 guidelines presented in this section may be used by well applicants who are not located within the Focus Areas identified by the YSGA and do not meet the County's setback criteria.

Tools

Tools that may be used by the well applicant's consultant per their discretion may include, but are not limited to, the following tools:

- Analytical models including Theis, Cooper-Jacob, Theis Unconfined, Hantush, Hantush and Jacob, and Moench. USGS groundwater model WTAQ Version 1.3 may be used.
- Numerical models including GSFLOW, MODFLOW, and IWFM.

The most recent version of the YSGA's calibrated model files will be provided upon request.

Guidelines and Evaluation Criteria

Hydrogeologist Report Guidelines for Well Applicant

The following guidelines will be used by the well applicant's consultant to prepare a Hydrogeologist Report.

Hydrogeologist's Report Findings Summary Form

The YSGA Tier 2 Well Permit Review Form (Appendix J) shall be completed by the well applicant's consultant. The information provided in the form shall fully and adequately summarize the results of the Hydrogeologist's Report. **The complete Hydrogeologist's Report will be included as an attachment to the summary form.**

The content of the Hydrogeologist's Report is described below.

Cover Page

The cover page shall contain the following information:

- Site Address
- APN
- Date Submitted
- Seal and signature by PG or CHG registered with the state of California

Introduction

The introduction section of the Hydrogeologist's Report shall contain information to familiarize the reviewer with the property owner's information, the location of the well, and a description of the proposed well project.

Hydrogeologic Evaluation

The hydrogeologic evaluation section of the Hydrogeologist's Report shall contain the following information:

- Descriptions of the expected geologic formations to be encountered during drilling to an anticipated total depth.
- Description of the expected hydrogeologic unit, primary aquifers, and aquitards that are designated in the Yolo Subbasin GSP.
- Groundwater conditions as shown on a map and in tables.

Impact Assessment

The impact assessment section of the Hydrogeologist's Report shall address the concerns identified by the YSGA staff during their Tier 1 analysis, including the following categories of concerns:

- Impacts on Groundwater Levels in Neighboring Wells and Groundwater in Storage
- Impacts on Nearby Interconnected Surface Waters
- Impacts on Aquifer Water Quality

- Impacts on Inelastic Land Subsidence

Hydrogeologist Report Findings

The Hydrogeologist Report Findings section of the Hydrogeologist’s Report shall include a statement that, in the opinion of the PG or CHG, the well permit application complies or does not comply with EO-2 Section 4a and 4b where the proposed new well or alteration to existing well would not:

- Be inconsistent with any sustainable management program in the adopted YSGA GSP, and
- Decrease the likelihood of achieving a sustainability goal for the basin.

Also, the Hydrogeologist Report Findings section of the Hydrogeologist’s Report shall include a statement that, in the opinion of the consultant, the well permit application complies or does not comply, as required by the County well permitting process, with EO-2 Section 4b where the proposed well would not likely:

- Interfere with the production and functioning of existing nearby wells, and
- Cause subsidence that would adversely impact or damage nearby infrastructure.

In the event the findings from the Hydrogeologist’s Report do not conclude that the well permit complies with the EOs, the well applicant and their PG or CHG are encouraged to request a consultation with YSGA and County staff to assess possible changes to the well permit application to achieve compliance.

References

The references section shall include all reference material used in the Hydrogeologist’s Report and follow APA formatting¹².

Appendices

The appendices shall include all materials that are necessary to fully and adequately support the findings and conclusions of the Hydrogeologist’s Report.

Tier 2 Analysis Guidelines and Evaluation Criteria for YSGA

The following guidelines and evaluation criteria will be used by YSGA staff to evaluate the results from the Hydrogeologist Report.

EO-2 Section 4a (GSA)

1. Does the Hydrogeologist’s Report follow all guidelines in this TM, including the Hydrogeologist’s Report Findings Summary Form?
 - a. If not, document deficiencies and provide the well applicant with comments to be addressed in an amended application and Hydrogeologist Report.
2. Does the Hydrogeologist’s Report validate the information provided on the Hydrogeologist’s Report Findings Summary Form?

¹²<https://www.bibliography.com/apa/apa-reference-page-examples-and-format-guide/#APA%20Reference%20Page>

- a. If not, rely on the information provided in the Hydrogeologist’s Report, document the inconsistencies, and provide the well applicant with comments to be addressed in an amended application and Hydrogeologist Report.

When these two criteria are met, proceed with the following evaluations.

Sustainable Management Criteria, Sustainability Goals, and Management Actions

1. **Groundwater Levels at Neighboring Wells and Groundwater in Storage:** Does the well have the potential to trigger a chronic lowering of groundwater level/reduction in groundwater storage MT at the nearest RMW or cause a decline in groundwater levels greater than 10% of the historical range at the nearest monitoring well? Will surface water be used to offset groundwater pumping?
2. **Degraded Water Quality:** Does the well have the potential to cause migration of TDS concentrations such that it may negatively impact water quality at nearby wells, including the nearest RMW?
3. **Land Subsidence:** Does the well have the potential to exacerbate the rate or extent of inelastic land subsidence near critical infrastructure?
4. **Depletion of Interconnected Surface Water:** Does the well have the potential to trigger depletion of interconnected surface water MT?
5. **Sustainability Goal:** Does the well have the potential to negatively impact the YSGA’s ability to achieve the sustainability goal?
6. **Management Actions:** Does the well have the potential to negatively impact the YSGA’s ability to implement management actions?

If all of these are found to be not of concern to the YSGA, YSGA will issue written verification of the well application and notify the County and well applicant. If one or more of these are found to be of concern to the YSGA, YSGA will document the results of their evaluation and contact the well applicant to request a meeting to discuss possible options to bring the well into compliance with the EO. Note: The YSGA has summarized the GSP SMCs and Programs and Sustainability Goals in Tables 2 and 3, respectively.

EO-2 Section 4b

The County will review well permit applications and evaluate the following criteria:

1. Is the well likely to interfere with the production and functioning of existing nearby wells?
Note: this is not solely the responsibility of the County to evaluate as it does relate to the YSGA’s responsibility to sustainably manage the basin and avoid undesirable results related to the chronic lowering of water levels sustainable management criterion.
2. Is the well likely to cause subsidence that would adversely impact or damage nearby infrastructure? Note: this is not solely the responsibility of the County to evaluate as it does relate to the YSGA’s responsibility to sustainably manage the basin and avoid undesirable results related to the land subsidence sustainable management criterion.

Table 2. Yolo Subbasin GSP (Submitted January 2022) Sustainable Management Criteria.

Sustainable Management Criteria (SMC)	Description	Undesirable Result	Minimum Thresholds	
Chronic Lowering of Groundwater levels	The point at which significant and unreasonable impacts over the planning and implementation horizon, as determined by depth or elevation of groundwater, affect the reasonable beneficial use of, and access to, groundwater by overlying users.	Occurs when the MT criteria is exceeded in 51 percent or more of representative monitoring wells in two MAs.	Capay Valley	A well violates the minimum threshold when the groundwater elevation exceeds the historic (pre-2016) minimum elevation in the period of record of each Representative Well in two consecutive fall measurements.
			Dunnigan Hills	
			Central Yolo	
			South Yolo	A well violates the minimum threshold when the groundwater elevation exceeds the historic minimum elevation in the period of record (pre-2016) of each Representative Well plus 20 percent of the depth between the historic maximum and historic minimum elevation for the period of record (pre-2016) of the Representative Well in two consecutive fall measurements.
			North Yolo	
Clarksburg	NA due to limited data			
Reduction in Groundwater Storage	The point at which significant and unreasonable impacts over the planning and implementation horizon, as determined by the amount of groundwater storage in the Yolo Subbasin, affect the reasonable and beneficial use of, and access to, groundwater by overlying users. In the Subbasin groundwater elevations serve as a proxy for groundwater storage.	GW Levels used as proxy. See Chronic Lowering of GW Levels Undesirable Results.	Capay Valley	See Chronic Lowering of GW Levels MTs
			Dunnigan Hills	
			Central Yolo	
			South Yolo	
			North Yolo	
			Clarksburg	
Degraded Groundwater Quality	The point at which water quality is degraded to the extent of causing significant and unreasonable impacts from groundwater management actions in the Yolo Subbasin, that affect the reasonable and beneficial use of, and access to, groundwater by overlying users.	An undesirable result occurs when the MT criteria is exceeded in 50 percent or more of representative monitoring wells monitored for total dissolved solids.	Capay Valley	A representative monitoring well violates the minimum threshold when the TDS concentration exceeds 1,000 ppm over a three (3) year rolling average.
			Dunnigan Hills	
			Central Yolo	
			South Yolo	
			North Yolo	
			Clarksburg	
Land Subsidence	The point at which the rate and extent of subsidence in the Subbasin causes significant and unreasonable impacts to surface land uses or critical infrastructure.	An undesirable result occurs when the MT value is exceeded over 25 percent of the management or sub-MA in three (3) or more management or sub-MAs in the same reporting year.	Capay Valley	TBD
			Dunnigan Hills	1.8 cm/yr
			East Central Yolo	3.0 cm/yr
			West Central Yolo	1.8 cm/yr
			South Yolo	0 cm/yr
			North Yolo	3.0 cm/yr
			Clarksburg	0 cm/yr
Depletion of Interconnected Surface Water	The point at which significant and unreasonable impacts to the surface waters affect the reasonable and beneficial use of those surface waters by overlying users, including associated ecosystems.	An undesirable result occurs when the Minimum Threshold is exceeded in over 50 percent of the interconnected surface water representative monitoring wells in two (2) or more interconnected surface water MAs in the same reporting year. Note: An interconnected surface water management zone will be considered an “undesirable result watch area” when 50 percent or more of the representative monitoring wells (RMWs) in that management zone exceed their minimum threshold value.	Lower Cache Creek	The recurrence of the spring (March-May) average measurement for 1975 to present at the RMWs at least one spring in every seven (7) years.
			Upper Cache Creek	Equal to the minimum elevation for the period of record at the RMW, exceeded in 2 consecutive years.
			Putah Creek	
			Lower Sacramento River	Exceedance of the historic minimum elevation in the period of record of each RMW plus 20 percent of the depth between the historic maximum and historic minimum elevation for the period of record of the RMW in 2 consecutive years.
			Upper Sacramento River	

Table 3. Yolo Subbasin GSP (Submitted January 2022) Programs (Management Actions) and Sustainability Goals

Management Action/Project Number	Management Action/Project Name	Description	Relevant Sustainability Indicators Affected			
			Groundwater Levels	Groundwater Quality	Land Subsidence	Interconnected Surface Water-Groundwater
MA 1	Continued and Improved Groundwater Monitoring Program	Several groundwater monitoring programs exist within the Yolo Subbasin. Efforts to aggregate these monitoring programs include the Yolo County Water Resources Information Database (WRID) and DWR’s Water Data Library. The WRID also receives well water level data from the cooperating agencies, monitoring about 550 wells distributed Countywide semi-annually. Most groundwater level data received or collected in the WRID is submitted to the state’s Water Data Library. Existing programs monitor both water quality and water levels. Continuing to monitor groundwater conditions in the Yolo Subbasin is a critical component of a sustainable future. Improvements can be made to the current program by expanding monitoring efforts into data gaps, improving coordination between programs, and ensuring sustainable funding of monitoring efforts.	X	X	X	X
MA 2	Continue coordination efforts with other management and monitoring entities	Coordination efforts are ongoing related to groundwater management and monitoring in the Yolo Subbasin. Continuing these coordination efforts will yield better information and allow for a collaborative and conjunctive decision-making process. This includes evaluation of well permit applications and working with Yolo County in the well permitting process.	X	X	X	X
MA 3	Subsidence Monitoring Program	Continue to investigate subsidence and causes of subsidence in the Yolo Subbasin.			X	
MA 4	Preparedness through Increased Groundwater Recharge and Managed Aquifer Recharge Projects	This project encompasses all efforts to increase groundwater recharge in the Yolo Subbasin. This includes diversion of winter flows for groundwater recharge, increased groundwater infiltration from precipitation, aquifer storage and recovery projects, for example. Increased groundwater recharge efforts and winter diversions may result in creation of seasonal wetlands in some scenarios. YCFC&WCD proposes to divert winter flows from Cache Creek into the canal system to increase groundwater recharge. Groundwater recharge and recovery is central to good conjunctive management of surface and groundwater resources. Currently, by YCFC&WCD policy, 160 miles of surface water canals remain unlined, providing summertime groundwater recharge services that benefit the aquifer and riparian habitat. The recharged groundwater is used by beneficial users in the Subbasin. Utilizing TNC’s Multi-Benefit Recharge Project Methodology Guidance Document will help make these projects successful. Managed wetlands within the Subbasin already provide multi-benefit recharge services, and increased coordination with wetland managers will provide opportunity for information sharing and potential managed aquifer recharge projects. Additional methods of groundwater recharge that will be considered include flood water and drain flows in the Yolo Bypass, drain flows in the Colusa Basin Drain, and application of irrigation water more than crop evapotranspiration needs.	X		X	
MA 5	Conjunctive Water Use Program	This conjunctive water use project envisions using a variety of methods (recharge/recovery, off-stream storage and canal system modernization) to effectively store and conjunctively use groundwater in the District's service area. The new water that will be developed can be used to the benefit of agriculture, environmental and municipal interests. A significant amount of work has already been completed on this project including establishment of a groundwater monitoring program.	X			
MA 6	Increased outreach and information sharing of groundwater resources and knowledge within the Yolo Subbasin	Information sharing, collaboration, and communication will be an important part of groundwater sustainability in the Yolo Subbasin. This project will convey information, best practices, funding opportunities, data, and observations to as wide of a group as possible. This project relates to the Communication and Engagement Plan that the YSGA has created for the Yolo Subbasin.	X	X	X	X

Table 3. Yolo Subbasin GSP (Submitted January 2022) Programs (Management Actions) and Sustainability Goals

Management Action/Project Number	Management Action/Project Name	Description	Relevant Sustainability Indicators Affected			
			Groundwater Levels	Groundwater Quality	Land Subsidence	Interconnected Surface Water-Groundwater
MA 7	Domestic Well Impact Mitigation Program	The YSGA is working to create a domestic well impact mitigation program to mitigate any potential impacts to domestic well users. This program will identify potential funding sources for both temporary and permanent domestic water solutions in cases where domestic well users are impacted due to changing groundwater conditions as a result of groundwater management actions. The minimum thresholds and measurable objectives established in this document are generally protective of domestic well users in the Yolo Subbasin. The Domestic Well Impact Mitigation Program will provide resources and information in cases where management actions result in impacts to domestic well users.	X			
MA 8	Surface Water Monitoring Program	There is no coordinated Countywide surface water monitoring program at present. However, on-going monitoring programs are in-place on various waterways, and a large number of smaller temporary investigations have occurred over the years. These individual surface water monitoring efforts need to be consolidated to improve the value of the data for implementation of actions identified in this GSP.	X	X	X	X
MA 9	Management Consideration of Grey Areas in the Yolo Subbasin	During the formation of the GSA for the Yolo Subbasin, the eligible entities were identified based on SGMA’s definition. Irrigated areas outside of water or irrigation district service areas were known as “white areas” since they did not have an eligible entity (other than the County) to form or become a GSA. The YSGA was formed in June 2017, with Yolo County serving as a member of the JPA to cover these “white areas”. The YSGA now has the authority and responsibility for this area; however, there is still no formal mechanism for receiving revenues for SGMA implementation, which has made these areas slightly complicated, or now known as “grey areas”. There is a desire for the YSGA to work closely with landowners in these “grey areas” to assess the best solution for implementing the GSP and ensuring future sustainability. Ideas for these areas include, annexing the property into an existing irrigation or reclamation district (as an “Area B” or an Improvement District); creating or forming a new water district; or simply implementing a countywide assessment for all properties in the Yolo Subbasin.	X	X	X	X
MA 10	Coordination Efforts with Land Use Planning Entities	The YSGA and member entities will work on an as-needed basis with Yolo County and municipalities within the Yolo Subbasin to promote the sustainable use and protection of groundwater resources including GDEs and interconnected surface water bodies. These coordination efforts will include inputs to general plan updates in the future	X	X	X	X
MA 11	Continued Investigation of subsurface geology and aquifer properties in the Yolo Subbasin	There are portions of the Yolo Subbasin where the geologic properties of the aquifer are well understood. Alternatively, there are areas where geologic conditions are not well described or understood. This Management Action would work to improve geologic information in areas of the subbasin where the aquifer is poorly described. This includes looking at existing geologic cross-sections, AEM surveys, and investigation of driller's reports.	X	X	X	X
MA 12	Coordinated Response to Minimum Threshold Exceedances	The YSGA will coordinate responses to minimum threshold exceedances. When a single well minimum threshold is exceeded, the YSGA will verify the exceedance, analyze causes and trends, and evaluate mitigation. When multiple wells exceed minimum thresholds, causes and trends will be evaluated by MA entities and potential mitigation actions (projects and management actions) will be identified. When wells exceed the minimum threshold for a MA, causes and trends will be evaluated, potential mitigation actions (projects and management actions) will be evaluated and a plan for implementation will be developed. This will involve basin-wide coordination.	X	X	X	X

Table 3. Yolo Subbasin GSP (Submitted January 2022) Programs (Management Actions) and Sustainability Goals

Management Action/Project Number	Management Action/Project Name	Description	Relevant Sustainability Indicators Affected			
			Groundwater Levels	Groundwater Quality	Land Subsidence	Interconnected Surface Water-Groundwater
GSP Sustainability Goals						
<ol style="list-style-type: none"> 1. Achieve sustainable groundwater management in the Yolo Subbasin by maintaining or enhancing groundwater quantity and quality through the implementation of projects and management actions to support beneficial uses and users. 2. Maintain surface water flows and quality to support conjunctive use programs in the Subbasin that promote increased groundwater levels and improved water quality 3. Operate within the established sustainable management criteria and maintain sustainable groundwater use through continued implementation of a monitoring and reporting program 4. Maintain sustainable operations to maintain sustainability over the implementation and planning horizon 						

PROPOSED IMPLEMENTATION

Yolo County's well permitting process requires Hydrogeologist's Reports for proposed new wells or alteration of existing wells if they are not exempt from the EOs and fall into either of the following categories:

- Wells that are located in the Upland areas that are intended to pump greater than 100 gpm.
- Wells that are located in Valley Floor areas that pump greater than 2,000 gpm.

Hydrogeologist Reports submitted to the County in support of its well permitting process will also be available to YSGA to support its verification efforts under the EOs. This TM presented the proposed guidelines that well applicant may use to prepare Hydrogeologist Reports, and evaluation criteria the YSGA and County reviewers may use to evaluate Hydrogeologist Reports to verify compliance with the EOs.

Some wells subject to the County's Hydrogeologist Report requirement will fall within YSGA's proposed Focus Areas, while others will not. For wells that are located within the YSGA's proposed Focus Areas, the following would apply:

- If the proposed well is anticipated to pump less than 100 gpm or have a well casing diameter of 6 inches or less, YSGA would not require any additional information or analysis and would proceed to provide written verification to the County.
- If the proposed well is anticipated to pump greater than 100 gpm or have a well casing diameter greater than 6 inches, YSGA will perform a Tier 1 analysis. Based on the results from the Tier 1 analysis, the well applicant may be required to perform a Tier 2 analysis which would include the preparation and submission of a Hydrogeologist's Report as part of the YSGA's verification process in the County well permitting process.

The delineation of Focus Areas within the Yolo Subbasin may be updated by the YSGA from time to time to adapt to changing groundwater conditions or improved data in the region. Updated Focus Area maps will be circulated for public review and comment prior to their adoption by the YSGA.

This proposed implementation process will accomplish the following:

- Enable the YSGA to fulfill its obligations defined in Paragraph 9 of the EO and Paragraph 4 of EO-2
- Address citizen concerns related to declining groundwater levels, possible interference with domestic wells, and dry wells by providing additional review
- Provide additional data to the YSGA to better understand the subsurface aquifer system and well construction information throughout the basin
- Support the YSGA in adaptively managing the Yolo Subbasin in response to changing groundwater conditions

Governor's Executive Order N-7-22

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-7-22

WHEREAS on April 12, 2021, May 10, 2021, July 8, 2021, and October 19, 2021, I proclaimed states of emergency that continue today and exist across all the counties of California, due to extreme and expanding drought conditions; and

WHEREAS climate change continues to intensify the impacts of droughts on our communities, environment, and economy, and California is in a third consecutive year of dry conditions, resulting in continuing drought in all parts of the State; and

WHEREAS the 21st century to date has been characterized by record warmth and predominantly dry conditions, and the 2021 meteorological summer in California and the rest of the western United States was the hottest on record; and

WHEREAS since my October 19, 2021 Proclamation, early rains in October and December 2021 gave way to the driest January and February in recorded history for the watersheds that provide much of California's water supply; and

WHEREAS the ongoing drought will have significant, immediate impacts on communities with vulnerable water supplies, farms that rely on irrigation to grow food and fiber, and fish and wildlife that rely on stream flows and cool water; and

WHEREAS the two largest reservoirs of the Central Valley Project, which supplies water to farms and communities in the Central Valley and the Santa Clara Valley and provides critical cold-water habitat for salmon and other anadromous fish, have water storage levels that are approximately 1.1 million acre-feet below last year's low levels on this date; and

WHEREAS the record-breaking dry period in January and February and the absence of significant rains in March have required the Department of Water Resources to reduce anticipated deliveries from the State Water Project to 5 percent of requested supplies; and

WHEREAS delivery of water by bottle or truck is necessary to protect human safety and public health in those places where water supplies are disrupted; and

WHEREAS groundwater use accounts for 41 percent of the State's total water supply on an average annual basis but as much as 58 percent in a critically dry year, and approximately 85 percent of public water systems rely on groundwater as their primary supply; and

WHEREAS coordination between local entities that approve permits for new groundwater wells and local groundwater sustainability agencies is important to achieving sustainable levels of groundwater in critically overdrafted basins; and

WHEREAS the duration of the drought, especially following a multiyear drought that abated only five years ago, underscores the need for California to redouble near-, medium-, and long-term efforts to adapt its water management and delivery systems to a changing climate, shifting precipitation patterns, and water scarcity; and

WHEREAS the most consequential, immediate action Californians can take to extend available supplies is to voluntarily reduce their water use by 15 percent from their 2020 levels by implementing the commonsense measures identified in operative paragraph 1 of Executive Order N-10-21 (July 8, 2021); and

WHEREAS to protect public health and safety, it is critical the State take certain immediate actions without undue delay to prepare for and mitigate the effects of the drought conditions, and under Government Code section 8571, I find that strict compliance with various statutes and regulations specified in this Proclamation would prevent, hinder, or delay the mitigation of the effects of the drought conditions.

NOW, THEREFORE, I, GAVIN NEWSOM, Governor of the State of California, in accordance with the authority vested in me by the State Constitution and statutes, including the California Emergency Services Act, and in particular, Government Code sections 8567, 8571, and 8627, do hereby issue the following Order to become effective immediately:

IT IS HEREBY ORDERED THAT:

1. The orders and provisions contained in my April 21, 2021, May 10, 2021, July 8, 2021, and October 19, 2021 Proclamations remain in full force and effect, except as modified by those Proclamations and herein. State agencies shall continue to implement all directions from those Proclamations and accelerate implementation where feasible.
2. To help the State achieve its conservation goals and ensure sufficient water for essential indoor and outdoor use, I call on all Californians to strive to limit summertime water use and to use water more efficiently indoors and out. The statewide Save Our Water conservation campaign at SaveOurWater.com provides simple ways for Californians to reduce water use in their everyday lives. Furthermore, I encourage Californians to understand and track the amount of water they use and measure their progress toward their conservation goals.
3. By May 25, 2022, the State Water Resources Control Board (Water Board) shall consider adopting emergency regulations that include all of the following:
 - a. A requirement that each urban water supplier, as defined in section 10617 of the Water Code, shall submit to the Department of Water Resources a preliminary annual water supply and demand assessment consistent with section 10632.1 of the Water Code no later than June 1, 2022, and submit a final annual water

supply and demand assessment to the Department of Water Resources no later than the deadline set by section 10632.1 of the Water Code;

- b. A requirement that each urban water supplier that has submitted a water shortage contingency plan to the Department of Water Resources implement, at a minimum, the shortage response actions adopted under section 10632 of the Water Code for a shortage level of up to twenty percent (Level 2), by a date to be set by the Water Board; and
- c. A requirement that each urban water supplier that has not submitted a water shortage contingency plan to the Department of Water Resources implement, at a minimum, shortage response actions established by the Water Board, which shall take into consideration model actions that the Department of Water Resources shall develop for urban water supplier water shortage contingency planning for Level 2, by a date to be set by the Water Board.

To further conserve water and improve drought resiliency if the drought lasts beyond this year, I encourage urban water suppliers to conserve more than required by the emergency regulations described in this paragraph and to voluntarily activate more stringent local requirements based on a shortage level of up to thirty percent (Level 3).

- 4. To promote water conservation, the Department of Water Resources shall consult with leaders in the commercial, industrial, and institutional sectors to develop strategies for improving water conservation, including direct technical assistance, financial assistance, and other approaches. By May 25, 2022, the Water Board shall consider adopting emergency regulations defining "non-functional turf" (that is, a definition of turf that is ornamental and not otherwise used for human recreation purposes such as school fields, sports fields, and parks) and banning irrigation of non-functional turf in the commercial, industrial, and institutional sectors except as it may be required to ensure the health of trees and other perennial non-turf plantings.
- 5. In order to maximize the efficient use of water and to preserve water supplies critical to human health and safety and the environment, Public Resources Code, Division 13 (commencing with section 21000) and regulations adopted pursuant to that Division are hereby suspended, with respect to the directives in paragraphs 3 and 4 of this Order and any other projects and activities for the purpose of water conservation to the extent necessary to address the impacts of the drought, and any permits necessary to carry out such projects or activities. Entities that desire to conduct activities under this suspension, other than the directives in paragraphs 3 and 4 of this Order, shall first request that the Secretary of the Natural Resources Agency make a determination that the proposed activities are eligible to be conducted under this suspension. The Secretary shall use sound discretion in applying this Executive Order to ensure that the suspension serves the purpose of accelerating conservation projects that are necessary to address impacts of the drought, while at the same time

protecting public health and the environment. The entities implementing these directives or conducting activities under this suspension shall maintain on their websites a list of all activities or approvals for which these provisions are suspended.

6. To support voluntary approaches to improve fish habitat that would require change petitions under Water Code section 1707 and either Water Code sections 1425 through 1432 or Water Code sections 1725 through 1732, and where the primary purpose is to improve conditions for fish, the Water Board shall expeditiously consider petitions that add a fish and wildlife beneficial use or point of diversion and place of storage to improve conditions for anadromous fish. California Code of Regulations, title 23, section 1064, subdivisions (a)(1)(A)(i)-(ii) are suspended with respect to any petition that is subject to this paragraph.
7. To facilitate the hauling of water for domestic use by local communities and domestic water users threatened with the loss of water supply or degraded water quality resulting from drought, any ordinance, regulation, prohibition, policy, or requirement of any kind adopted by a public agency that prohibits the hauling of water out of the water's basin of origin or a public agency's jurisdiction is hereby suspended. The suspension authorized pursuant to this paragraph shall be limited to the hauling of water by truck or bottle to be used for human consumption, cooking, or sanitation in communities or residences threatened with the loss of affordable safe drinking water. Nothing in this paragraph limits any public health or safety requirement to ensure the safety of hauled water.
8. The Water Board shall expand inspections to determine whether illegal diversions or wasteful or unreasonable use of water are occurring and bring enforcement actions against illegal diverters and those engaging in the wasteful and unreasonable use of water. When access is not granted by a property owner, the Water Board may obtain an inspection warrant pursuant to the procedures set forth in Title 13 (commencing with section 1822.50) of Part 3 of the Code of Civil Procedure for the purposes of conducting an inspection pursuant to this directive.
9. To protect health, safety, and the environment during this drought emergency, a county, city, or other public agency shall not:
 - a. Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability

Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan; or

- b. Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure.

This paragraph shall not apply to permits for wells that will provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code.

10. To address household or small community drinking water shortages dependent upon groundwater wells that have failed due to drought conditions, the Department of Water Resources shall work with other state agencies to investigate expedited regulatory pathways to modify, repair, or reconstruct failed household or small community or public supply wells, while recognizing the need to ensure the sustainability of such wells as provided for in paragraph 9.
11. State agencies shall collaborate with tribes and federal, regional, and local agencies on actions related to promoting groundwater recharge and increasing storage.
12. To help advance groundwater recharge projects, and to demonstrate the feasibility of projects that can use available high water flows to recharge local groundwater while minimizing flood risks, the Water Board and Regional Water Quality Control Boards shall prioritize water right permits, water quality certifications, waste discharge requirements, and conditional waivers of waste discharge requirements to accelerate approvals for projects that enhance the ability of a local or state agency to capture high precipitation events for local storage or recharge, consistent with water right priorities and protections for fish and wildlife. For the purposes of carrying out this paragraph, Division 13 (commencing with section 21000) of the Public Resources Code and regulations adopted pursuant to that Division, and Chapter 3 (commencing with section 85225) of Part 3 of Division 35 of the Water Code and regulations adopted pursuant thereto are hereby suspended to the extent necessary to address the impacts of the drought. This suspension applies to (a) any actions taken by state agencies, (b) any actions taken by local agencies where the state agency with primary responsibility for the implementation of the directives concurs that local action is required, and (c) permits necessary to carry out actions under (a) or (b). The entities implementing these directives shall maintain on their websites a list of all activities or approvals for which these provisions are suspended.
13. With respect to recharge projects under either Flood-Managed Aquifer Recharge or the Department of Water Resources Sustainable

Groundwater Management Grant Program occurring on open and working lands to replenish and store water in groundwater basins that will help mitigate groundwater conditions impacted by drought, for any (a) actions taken by state agencies, (b) actions taken by a local agency where the Department of Water Resources concurs that local action is required, and (c) permits necessary to carry out actions under (a) or (b), Public Resources Code, Division 13 (commencing with section 21000) and regulations adopted pursuant to that Division are hereby suspended to the extent necessary to address the impacts of the drought. The entities implementing these directives shall maintain on their websites a list of all activities or approvals for which these provisions are suspended.

14. To increase resilience of state water supplies during prolonged drought conditions, the Department of Water Resources shall prepare for the potential creation and implementation of a multi-year transfer program pilot project for the purpose of acquiring water from willing partners and storing and conveying water to areas of need.
15. By April 15, 2022, state agencies shall submit to the Department of Finance for my consideration proposals to mitigate the worsening effects of severe drought, including emergency assistance to communities and households and others facing water shortages as a result of the drought, facilitation of groundwater recharge and wastewater recycling, improvements in water use efficiency, protection of fish and wildlife, mitigation of drought-related economic or water-supply disruption, and other potential investments to support short- and long-term drought response.

IT IS FURTHER ORDERED that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this Order.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 28th day of March 2022.



GAVIN NEWSOM
Governor of California

ATTEST:

SHIRLEY N. WEBER, PH.D.
Secretary of State

Appendix B

Governor's Executive Order N-3-23

EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA

EXECUTIVE ORDER N-3-23

WHEREAS on April 21, 2021, May 10, 2021, July 8, 2021, and October 19, 2021, I proclaimed States of Emergency due to drought conditions that continue today and exist across California; and

WHEREAS climate change continues to intensify the impacts of droughts on our communities, environment, and economy, and these impacts continue to affect groundwater basins, local water supplies, and ecosystems, resulting in continuing drought in the State; and

WHEREAS the ongoing drought continues to have significant, immediate impacts on communities with vulnerable water supplies, farms that rely on irrigation to grow food and fiber, and fish and wildlife that rely on stream flows and cool water; and

WHEREAS early, substantial rains in October and December 2021 gave way to the driest January-February-March period in over 100 years in California, leading the October 2021 to September 2022 water year to end with statewide precipitation at 76 percent of average, with statewide reservoir storage at 69 percent of average, and with Lake Oroville—the State Water Project's largest reservoir—at 64 percent of average; and

WHEREAS in January 2023, the State experienced one of the wettest three-week periods on record, yielding a snowpack that was at 205 percent of average on February 1, 2023, yet to date February has been drier than average; and

WHEREAS the current snowpack has not reduced stresses upon the State's water resources, including low storage levels, depleted aquifers, and diminished local water supplies; and

WHEREAS the State can expect continued swings between extreme wet and extreme dry periods that can present risks of severe flooding and extreme drought in the same year; and

WHEREAS California must adapt to a hotter, drier future in which a greater share of rain and snowfall during the wetter months will be absorbed by dry soils, consumed by plants, and evaporated into the air, leaving less water for communities, species, and agriculture; and

WHEREAS the frequency of hydrologic extremes experienced in the State is indicative of an overarching need to continually reexamine policies to promote resiliency in a changing climate; and

WHEREAS Californians continue to make progress conserving water, with urban water users conserving 17.1 percent statewide in December 2022 compared to December 2020 and agricultural producers continuing to invest in more efficient irrigation; and

WHEREAS despite this progress, the uncertainty of precipitation during the remainder of the winter and spring, and the potential of dry conditions next

winter and of drought conditions extending to a fifth year, make it necessary for the State to continue water-conservation measures and drought-resilience actions to extend available supplies, protect water reserves, and maintain critical flows for fish and wildlife; and

WHEREAS as directed in "California's Water Supply Strategy: Adapting to a Hotter, Drier Future," the State plans to stretch water supplies by storing, recycling, de-salting, and conserving the water it will need to keep up with the increasing pace of climate change; and

WHEREAS multiple regions of the State, such as the Klamath Basin and the Colorado River system, face severe water shortage conditions, and groundwater basins in the Central Valley continue to be depleted from years of drought and overdraft; and

WHEREAS groundwater use accounts for 41 percent of the State's total water supply on an average annual basis but as much as 58 percent in a critically dry year, and approximately 85 percent of public water systems rely on groundwater as their primary supply; and

WHEREAS capturing and storing storm and snowpack runoff underground to recharge aquifers is an important strategy to help regions stabilize water supplies in the face of hydrologic extremes; and

WHEREAS state agencies have created streamlined permitting pathways to enable groundwater recharge that augments natural aquifer recharge, while protecting the environment and other water users, but more opportunities exist to facilitate groundwater recharge; and

WHEREAS coordination between local entities that approve permits for new groundwater wells and local groundwater sustainability agencies is important to achieving sustainable levels of groundwater in critically overdrafted basins; and

WHEREAS to protect public health and safety, it is critical the State take certain immediate actions without undue delay to prepare for and mitigate the effects of the drought conditions, and under Government Code section 8571, I find that strict compliance with various statutes and regulations specified in this Order would prevent, hinder, or delay the mitigation of the effects of the drought conditions.

NOW, THEREFORE, I, GAVIN NEWSOM, Governor of the State of California, in accordance with the authority vested in me by the State Constitution and statutes, including the California Emergency Services Act, and in particular, Government Code sections 8567, 8571, and 8627, do hereby issue the following Order to become effective immediately:

IT IS HEREBY ORDERED THAT:

1. The orders and provisions contained in my State of Emergency Proclamations dated April 21, 2021, May 10, 2021, July 8, 2021, and October 19, 2021, and Executive Orders N-10-21 (July 8, 2021) and N-7-22 (March 28, 2022), remain in full force and effect, except as modified by those proclamations and orders and herein. State agencies shall

continue to implement all directions from those proclamations and orders and accelerate implementation where feasible.

2. To maximize the extent to which winter precipitation recharges underground aquifers, the Department of Water Resources, the State Water Resources Control Board (Water Board), and the Department of Fish and Wildlife shall continue to collaborate on expediting permitting of recharge projects and shall work with local water districts to facilitate recharge projects.
3. Paragraph 4 of my State of Emergency Proclamation dated May 10, 2021 and Paragraph 4 of my State of Emergency Proclamation dated July 8, 2021 are withdrawn, and each is replaced with the following text:

To ensure adequate water supplies for purposes of health, safety, the environment, or drought resilient water supplies, the Water Board shall consider modifying requirements for reservoir releases or diversion limitations in Central Valley Project or State Water Project facilities to: (i) conserve water upstream later in the year in order to protect cold water pools for salmon and steelhead, (ii) enhance instream conditions for fish and wildlife, (iii) improve water quality, (iv) protect carry-over storage, (v) ensure minimum health and safety water supplies, or (vi) provide opportunities to maintain or to expand water supplies north and south of the Delta. The Water Board shall require monitoring and evaluation of any such changes to inform future actions. For any actions taken pursuant to this paragraph and any approvals granted in furtherance of this paragraph, Water Code Section 13247 and Public Resources Code, Division 13 (commencing with Section 21000) and regulations adopted pursuant to that Division are suspended. Nothing in this Paragraph affects or limits the validity of actions already taken or ongoing under Paragraph 4 of my May 10, 2021 Proclamation or Paragraph 4 of my July 8, 2021 Proclamation.

4. Paragraph 9 of Executive Order N-7-22 is withdrawn and replaced with the following text:

To protect health, safety, and the environment during this drought emergency, a county, city, or other public agency shall not:

- a. Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan; or

- b. Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure.

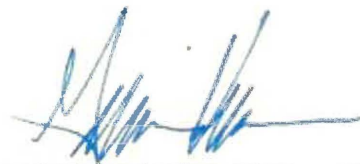
This Paragraph shall not apply to permits for wells (i) that will provide less than two acre-feet per year of groundwater for individual domestic users, (ii) that will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code, or (iii) that are replacing existing, currently permitted wells with new wells that will produce an equivalent quantity of water as the well being replaced when the existing well is being replaced because it has been acquired by eminent domain or acquired while under threat of condemnation.

5. No later than April 28, 2023, state agencies shall send me their recommendations for what further actions, if any, are necessary for on-going emergency drought response, and their views on whether any existing provisions in my proclamations and executive orders related to the drought emergency are no longer needed to prepare for and mitigate the effects of the drought conditions.

IT IS FURTHER ORDERED that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this Order.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have
hereunto set my hand and caused
the Great Seal of the State of
California to be affixed this 13th day
of February 2023.



GAVIN NEWSOM
Governor of California

ATTEST:

SHIRLEY N. WEBER, PH.D.
Secretary of State

YSGA Adopted Resolution No. 22-01

**RESOLUTION NO. 22-01
OF THE
BOARD OF DIRECTORS OF THE
YOLO SUBBASIN GROUNDWATER AGENCY**

***IN THE MATTER OF:* AN EMERGENCY RESOLUTION ESTABLISHING YOLO
SUBBASIN GROUNDWATER AGENCY’S PROCEDURES
FOR COMPLIANCE WITH EXECUTIVE ORDER N-7-22
PARAGRAPH 9 REGARDING GROUNDWATER WELL
PERMITS**

WHEREAS, the Yolo Subbasin Groundwater Agency (“YSGA”) is a joint powers authority established and existing pursuant to a Joint Exercise of Powers Agreement dated and effective June 19, 2017 and the Joint Exercise of Powers Act, Cal. Government Code section 6500 *et seq.*; and

WHEREAS, on August 29, 2014, the California Legislature passed comprehensive groundwater legislation contained in SB 1168, SB 1319 and AB 1739. Collectively, those bills, as subsequently amended, enacted the Sustainable Groundwater Management Act (“SGMA”). SGMA became effective on January 1, 2015; and

WHEREAS, pursuant to SGMA, YSGA is the Groundwater Sustainability Agency for the Yolo Subbasin of the Sacramento Valley Groundwater Basin, California Department of Water Resources Basin No. 5-21.67 (“Subbasin”); and

WHEREAS, on October 19, 2021, pursuant to Executive Order N-10-21, Governor Gavin Newsom proclaimed a State of Emergency “to exist in the State due to drought in the remaining counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Francisco, and Ventura, such that the drought state of emergency is now in effect statewide”; and

WHEREAS, on March 28, 2022, Governor Newsom issued Executive Order N-7-22, which reaffirms the State of Emergency proclaimed in October 2021 and orders that said proclamation and related proclamations “remain in full force and effect”; and

WHEREAS, paragraph 9 of Executive Order N-7-22 provides:

“9. To protect health, safety, and the environment during this drought emergency, a county, city, or other public agency shall not:

a. Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability

Plan adopted by that Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan; or

b. Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure. This paragraph shall not apply to permits for wells that will provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems as defined in section 116275 of the Health and Safety Code.”; and

WHEREAS, in light of the State of Emergency declared pursuant to Executive Order N-10-21 and reaffirmed in Executive Order N-7-22, and in light of the directives of paragraph 9 of Executive Order N-7-22, the Board of Directors of YSGA finds and determines that it is necessary and appropriate for YSGA to develop, adopt and implement procedures for compliance with paragraph 9 of Executive Order N-10-21, as set forth in this Resolution.

NOW, THEREFORE, BE IT RESOLVED:

1. The Executive Officer and his or her designee (“Executive Officer”), of YSGA is hereby delegated full authority to develop, adopt and implement written procedures (hereinafter “Well Permit Procedures”) for YSGA compliance with paragraph 9 of Executive Order N-10-21. The Well Permit Procedures shall be consistent with the terms and conditions of this Resolution.
2. The Executive Officer of YSGA shall report in writing to the YSGA Board of Directors on a monthly basis regarding all activities and actions undertaken pursuant to the Well Permit Procedures.
3. The Well Permit Procedures and the delegation of authority contained in this Resolution shall remain in full force and effect until termination of the drought emergency described in Executive Orders N-10-21 and N-7-22.
4. In the event of any modification of paragraph 9 of Executive Order N-7-22, the YSGA Board of Directors shall consider whether modification of this Resolution or the Well Permit Procedures is warranted.
5. With respect to any request or application for alteration or replacement of an existing groundwater well within the Subbasin, for which no increase in total groundwater pumping by the altered or replaced well is contemplated, the Executive Officer, and his or her designee, shall expedite review of such request or application and shall apply a rebuttable presumption that (i) groundwater extraction by the proposed altered or replaced well would be consistent with the sustainable groundwater management program established in the YSGA Groundwater Sustainability Plan for the Subbasin; and (ii) groundwater extraction by the proposed altered or replaced well would not decrease the likelihood of achieving a sustainability goal for the Subbasin. The Executive Officer shall review all relevant evidence submitted by any interested party in connection with the request or application and shall determine whether the evidence presented is

sufficient to overcome the rebuttable presumption set forth in this paragraph 5. The Executive Officer shall then determine, based on all evidence submitted, whether the written verifications contemplated in paragraph 9.a of Executive Order N-7-22 will be made by YSGA and shall communicate such determination, in writing, promptly to the County of Yolo.

6. With respect to any request or application to approve a permit for a new groundwater well or for alteration of an existing well, in which an increase in total groundwater pumping by the altered or replaced well is contemplated, the Executive Officer shall make a preliminary determination as to whether (i) groundwater extraction by the proposed well would be inconsistent with the sustainable groundwater management program established in the Yolo Subbasin Groundwater Sustainability Plan for the Subbasin; or (ii) that groundwater extraction by the proposed well would decrease the likelihood of achieving a sustainability goal for the Subbasin. If the Executive Officer's preliminary determination is to answer either item (i) or (ii) in the affirmative, the Executive Officer shall immediately contact the County requesting additional data and information and provide the applicant with an opportunity to submit additional supporting documentation for the purpose of demonstrating that the well would address the preliminary determination stated above (i) and (ii). If additional information is submitted, the Executive Officer shall consider it fully and fairly. The Executive Officer shall then determine, based on all evidence submitted, whether the written verifications contemplated in paragraph 9.a of Executive Order N-7-22 will be made by YSGA and shall communicate such determination, in writing, promptly to the County of Yolo; *provided* that if the Executive Officer determines that (i) groundwater extraction by the proposed well would be inconsistent with the sustainable groundwater management program established in the Yolo Subbasin Groundwater Sustainability Plan for the Subbasin; or (ii) groundwater extraction by the proposed well would decrease the likelihood of achieving a sustainability goal for the Subbasin, the Executive Officer shall convene a meeting of the YSGA Ad Hoc Drought Contingency Planning Committee ("Drought Committee") to review the Executive Officer's determination and, if appropriate, recommend additional analyses to be completed by the applicant. The Drought Committee shall have full and final authority to determine the nature and scope of any additional analyses to be completed by the applicant.

7. The determinations made by the Executive Officer in accordance with paragraphs 5 and 6 of this Resolution shall be final for all purposes.

8. The Board of Directors of YSGA hereby finds that the adoption of this Resolution and the implementation of the Well Permit Procedures are exempt from the California Environmental Quality Act ("CEQA") under CEQA Guidelines sections 15261(a) and 15301 as a part of an ongoing pre-CEQA project and the continued operation of existing facilities. Furthermore, the Program is exempt under Water Code Section 1729 and as emergency projects under Public Resources Code Sections 21080(b)(3) and 21080(b)(4) and CEQA Guidelines Section 15269(c). The Executive Officer is authorized and directed to prepare and process an appropriate Notice of Exemption.

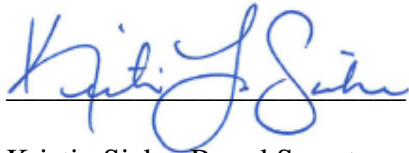
Certification of Secretary

The undersigned hereby certifies that the foregoing resolution was duly adopted by the Board of Directors of YSGA at a special meeting held on May 6, 2022, by the following vote:

AYES (15): City of Davis, City of West Sacramento, Dunnigan Water District, Madison CSD, RD 108, RD 307, RD 537, RD 730, RD 787, RD 999, Yocha Dehe Wintun Nation, Yolo County, YCFC&WCD, Cal Am Water – Dunnigan, Yolo County Farm Bureau

NOES (1): Esparto CSD

ABSENT (10): City of Winters, City of Woodland, RD 150, RD 765, RD 1600, RD 2035, Rumsey Water Users Association, UC Davis, Colusa Drain MWC, and Environmental Representative – Ann Brice



Kristin Sicke, Board Secretary

Dated: May 6, 2022

YSGA Adopted Resolution No. 22-02

**RESOLUTION NO. 22-02
OF THE
BOARD OF DIRECTORS OF THE
YOLO SUBBASIN GROUNDWATER AGENCY**

***IN THE MATTER OF:* ADOPTING A COST RECOVERY FEE SCHEDULE FOR
VERIFICATION AND REVIEW OF WELL PERMIT
APPLICATIONS PURSUANT TO EXECUTIVE ORDER N-7-22**

WHEREAS, the Yolo Subbasin Groundwater Agency (“YSGA”) is a joint powers authority established and existing pursuant to a Joint Exercise of Powers Agreement dated and effective June 19, 2017 and the Joint Exercise of Powers Act, Cal. Government Code section 6500 *et seq.*; and

WHEREAS, on August 29, 2014, the California Legislature passed comprehensive groundwater legislation contained in SB 1168, SB 1319 and AB 1739. Collectively, those bills, as subsequently amended, enacted the Sustainable Groundwater Management Act (“SGMA”). SGMA became effective on January 1, 2015; and

WHEREAS, pursuant to SGMA, YSGA is the Groundwater Sustainability Agency for the Yolo Subbasin of the Sacramento Valley Groundwater Basin, California Department of Water Resources Basin No. 5-21.67 (“Subbasin”); and

WHEREAS, on October 19, 2021, pursuant to Executive Order N-10-21, Governor Gavin Newsom proclaimed a State of Emergency “to exist in the State due to drought in the remaining counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Francisco, and Ventura, such that the drought state of emergency is now in effect statewide”; and

WHEREAS, on March 28, 2022, Governor Newsom issued Executive Order N-7-22, which reaffirms the State of Emergency proclaimed in October 2021 and orders that said proclamation and related proclamations “remain in full force and effect”; and

WHEREAS, paragraph 9 of Executive Order N-7-22 imposes new review and verification requirements on the issuance of certain well permits and directs that well permitting authority may not issue a permit for well covered in the Order without first obtaining written verification from the Groundwater Sustainability Agency managing the basin regarding the proposed wells’ consistent with the Groundwater Sustainability Plan and potential impact on neighboring wells; and

WHEREAS, Yolo County is the permitting authority and the Environmental Health Division receives all well permit application requests; and

WHEREAS, consistent with the requirements of the Order, YSGA adopted Resolution No. 2022-01, directing the development of procedures to provide the necessary review and verifications to the County during the well permitting process; and

WHEREAS, the cost of providing this verification and review is approximately \$150 for each replacement well permit and \$350 for each new well permit covered under the Order; and

WHEREAS, the provision of these review and verification services are a recoverable cost of implementing this regulatory program, and the proposed fees do not exceed the cost of providing these services.

NOW, THEREFORE, BE IT RESOLVED:

1. The Board of Directors of YSGA adopts a Cost Recovery Fee schedule of \$150 per replacement well permit verification and review; and \$350 per new well permit verification and review, to be invoiced to the County in connection with each review.
2. YSGA staff shall provide regular reports on the costs of providing these review and verification services, and will provide recommendations to the Board of Directors regarding any proposed modification of the fee schedule necessary to adequately and equitably recover these costs.
3. This fee schedule applies to all projects for which verification and review by YSGA is required under the Order, effective with those projects undergoing the verification process on or after July 1, 2022.
4. The Yolo County Environmental Health Division and Board of Supervisors are authorized to include these charges in their Master Fee Schedule for purposes of accounting for and collecting charges associated with well permit issuances under the Order.
5. YSGA staff are hereby authorized and directed to take such other and further actions as may be necessary or appropriate to implement the intent and purposes of this resolution.

Certification of Secretary

The undersigned hereby certifies that the foregoing resolution was duly adopted by the Board of Directors of YSGA at a regular meeting held on June 20, 2022, by the following vote:

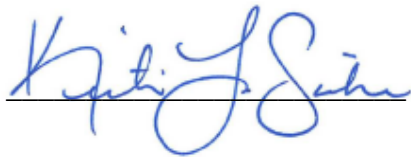
AYES: City of Davis, City of West Sacramento, City of Winters, City of Woodland, Dunnigan

Water District, RD 108, RD 150, RD 307, RD 537, RD 787, RD 999, Yocha Dehe Wintun Nation, Yolo County, Cal Am Water – Dunnigan, Colusa Drain MWC, Environmental Representative – Ann Brice

NOES: Esparto CSD

ABSENT: Madison CSD, RD 730, RD 765, RD 1600, RD 2035, Rumsey Water Users Association, UC Davis, Yolo County Farm Bureau

RECUSAL: YCFC&WCD



Kristin Sicke, Board Secretary

Dated: June 20, 2022

Well Permit Acknowledgement

YSGA -- AGRICULTURAL WELL PERMIT APPLICATION ACKNOWLEDGEMENT

_____ I acknowledge that the Sustainable Groundwater Management Act requires that a groundwater sustainability agency (GSA) manage groundwater in the Yolo Subbasin and the Yolo Subbasin Groundwater Agency (YSGA) is the GSA with groundwater management authority over the land subject to Application # _____.

_____ I acknowledge that the YSGA has the authority to limit extractions within the Yolo Subbasin including extractions from any well permitted pursuant to Application # _____.

_____ I acknowledge that a well permit issued by the County does not guarantee the extraction of any specific amount of water now or in the future.

_____ I acknowledge that the Yolo Subbasin GSP monitors groundwater conditions with designated representative monitoring wells minimum thresholds and measurable objectives and agree that my groundwater use will comply with these requirements.

_____ I acknowledge the YSGA cannot guarantee the maintenance of any defined water level or level of water quality in the Yolo Subbasin.

_____ I acknowledge the YSGA is not responsible for or otherwise liable for any costs, investments or payments related to any groundwater well permitted pursuant to Application # _____, including pumping fees, costs related to well failure, well deepening, increased maintenance, replacement, or operational costs.

_____ I agree to use available surface water prior to utilizing the well permitted pursuant to Application # _____.

_____ I agree to hold the YSGA and the County harmless and indemnify the YSGA and the County for any liability stemming from or related to the County issuing a well permit in response to Application # _____.

By acknowledging and initialing the above provisions, _____ agrees the above ACKNOWLEDGEMENT will be incorporated into the terms and conditions of any well permit issued pursuant to Application # _____.

Signature of Landowner

Date

Application #

The groundwater monitoring network includes private wells throughout the Yolo Subbasin. Please provide your email address here if you are interested in discussing the potential inclusion of your well in the groundwater monitoring network. We will contact you with more details if your well is located in an area that would be useful to add to the existing network.

Email address: _____

Tier 1 Well Permit Review Form



Tier 1 Well Permit Review Form

Yolo Subbasin Groundwater Agency
34274 State Highway 16, Woodland CA 95695
530-662-3211 wellpermits@yolosga.org

Permit Number: _____

**designates a required field*

Project Description

Location of Proposed Well

Provide the well location*: _____
(decimal degrees to 5 decimal places; e.g., 38.67030, -121.87109)

Purpose of new well or alteration to existing well

Describe the project purpose*:

Will the proposed well increase the amount of groundwater used on the parcel?*

Yes No Unsure

Explain*:

Land Use

	Previous (before well construction)*	Planned (after well construction)*
Crop or Land Use*		
Acres*		

Estimated drilling schedule

Start date: _____ Completion Date: _____

Proposed Well Operation

Will conjunctive use of surface water occur on the parcel? *

No Yes - if so: Source: _____ Amount (AF/year): _____

Extraction Information

Planned GPM*: _____ Planned AF/yr extraction*: _____

Operating schedule

Provide the planned pumping at the well in hours per week for each month in a typical year. If this information is not provided, YSGA will use an assumed pumping schedule to estimate impacts of the well.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Hours pumped per week												

Continue on reverse

Design of Proposed Well or Existing Well to be Altered

The YSGA acknowledges that some of this information may not be known at the time of preparing and submitting this form. If not provided here, this information should be provided upon completion of the well.

Pilot Borehole

Depth (ft): _____ Diameter (in)*: _____

Pump Information

Pump intake depth (ft): _____

Completed Well

Depth (ft)*: _____ Casing Diameter (in)*: _____

Well Design

Include perforated intervals

Depth from Surface			Casing Information			Annular Material	
Feet	To	Feet	Type	Material	Slot Size	Fill	Description

Yolo County Temporary Well Permitting Procedures to
Address Executive Order N-3-23



Technical Memorandum

DATE: December 20, 2022 (revised June 30, 2023) PROJECT: 22-1-085

TO: Yolo County Department of Community Services, Environmental Health Division
Jianmin Huang
April Meneghetti
Elisa Sabatini

FROM: Luhdorff and Scalmanini, Consulting Engineers
Nick Watterson, PG, CHG
Matt Sturdivant
Vicki Kretsinger Grabert

SUBJECT: **YOLO COUNTY TEMPORARY WELL PERMITTING PROCEDURES TO ADDRESS EXECUTIVE ORDER N-7-22 SECTION 9**

1. INTRODUCTION

This Technical Memorandum (TM) was prepared for Yolo County Community Services Department, Environmental Health Division by Luhdorff and Scalmanini, Consulting Engineers to support the County's development and implementation of temporary, modified water well permitting procedures to comply with the Governor's Executive Order N-7-22 (EO) issued on March 28, 2022. Included in Section 9 of the EO are requirements that prior to issuing a new well permit, all well permit applications (with limited exceptions) must be evaluated and a determination must be made that (A) the proposed well is consistent with any applicable Groundwater Sustainability Plan (GSP) and (B) the well will not likely interfere with the operation and function of existing nearby wells or likely cause land subsidence that impacts nearby infrastructure.

- A. Section 9A of the EO specifies that well permit applications in medium or high priority groundwater basins or subbasins subject to the Sustainable Groundwater Management Act (SGMA) must be reviewed by the local Groundwater Sustainability Agency (GSA) to ensure it is consistent with the GSP for the subbasin or basin where the well is planned.
- B. Section 9B of the EO states that a permit cannot be issued without first determining that the extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure. Yolo County is the well permitting entity for all areas of the County. This TM presents proposed modifications to the County's well permitting procedure to specifically address the County's responsibilities, as the well permitting entity, under Section 9B in the EO. The EO is included as an attachment to this TM.

2. BACKGROUND

Yolo County overlaps three groundwater subbasins of the Sacramento Valley Groundwater Basin with additional areas outside of any groundwater basin. Groundwater basins and subbasins in California have been delineated by the Department of Water Resources (DWR) to coincide with the extent of unconsolidated geologic materials of alluvial origin. The groundwater subbasins overlapping the County include the Yolo Subbasin with small areas within the Solano and Colusa Subbasins. The Yolo and Colusa Subbasins are designated as high priority subbasins by DWR and the Solano Subbasin is a medium priority subbasin. The area of the County within the Yolo, Solano, and Colusa Subbasins are referred to in this Technical Memorandum as the “Valley Floor areas” of the County. The County also includes areas in the western part of the County that are outside of any designated groundwater basin or subbasin. The areas outside of the Valley Floor areas of the County are referred to as “Upland areas” of the County in this document. **Figure 1** presents the groundwater subbasin boundaries in relation to the County and highlights the areas referred to as Valley Floor areas and Upland areas in this document.

The unconsolidated sediments that occur within the Valley Floor areas of the County have potential to store and yield large quantities of groundwater. The geologic materials in the Valley Floor areas consist primarily of unconsolidated alluvial sediments ranging from fine-grained clay to coarser-grained sands and gravels. Because these materials are unconsolidated, they also have potential to compact when the groundwater pore pressure is reduced (such as occurs when groundwater levels decline) within these materials. Most historical land subsidence and potential for future land subsidence in the County are attributable to this mechanism of compaction of unconsolidated sediments within the Valley Floor areas. The consolidated geologic materials comprising the Upland areas of the County have very little or no potential for compaction and any associated land subsidence.

The Yolo, Solano, and Colusa Subbasins have developed GSPs that address undesirable results related to sustainability indicators consisting of groundwater levels, groundwater storage, groundwater quality, land subsidence, and interconnected surface water. The GSAs within each of the three subbasins in the County are responsible for implementing the GSP covering their jurisdiction and managing groundwater in a manner that is consistent with the GSP. The GSPs have defined sustainable management criteria (SMC) including minimum thresholds, measurable objectives, and undesirable results for all applicable sustainability indicators. The GSAs in the three subbasins have the authority and responsibility to ensure groundwater management is sustainable in the subbasins and undesirable results are avoided including through implementation of management actions and projects, as needed. Management actions available for GSAs to implement could include demand management efforts such as limitations on groundwater pumping or incentives for reducing pumping and can also include augmentation of water supplies through enhanced recharge or other projects.

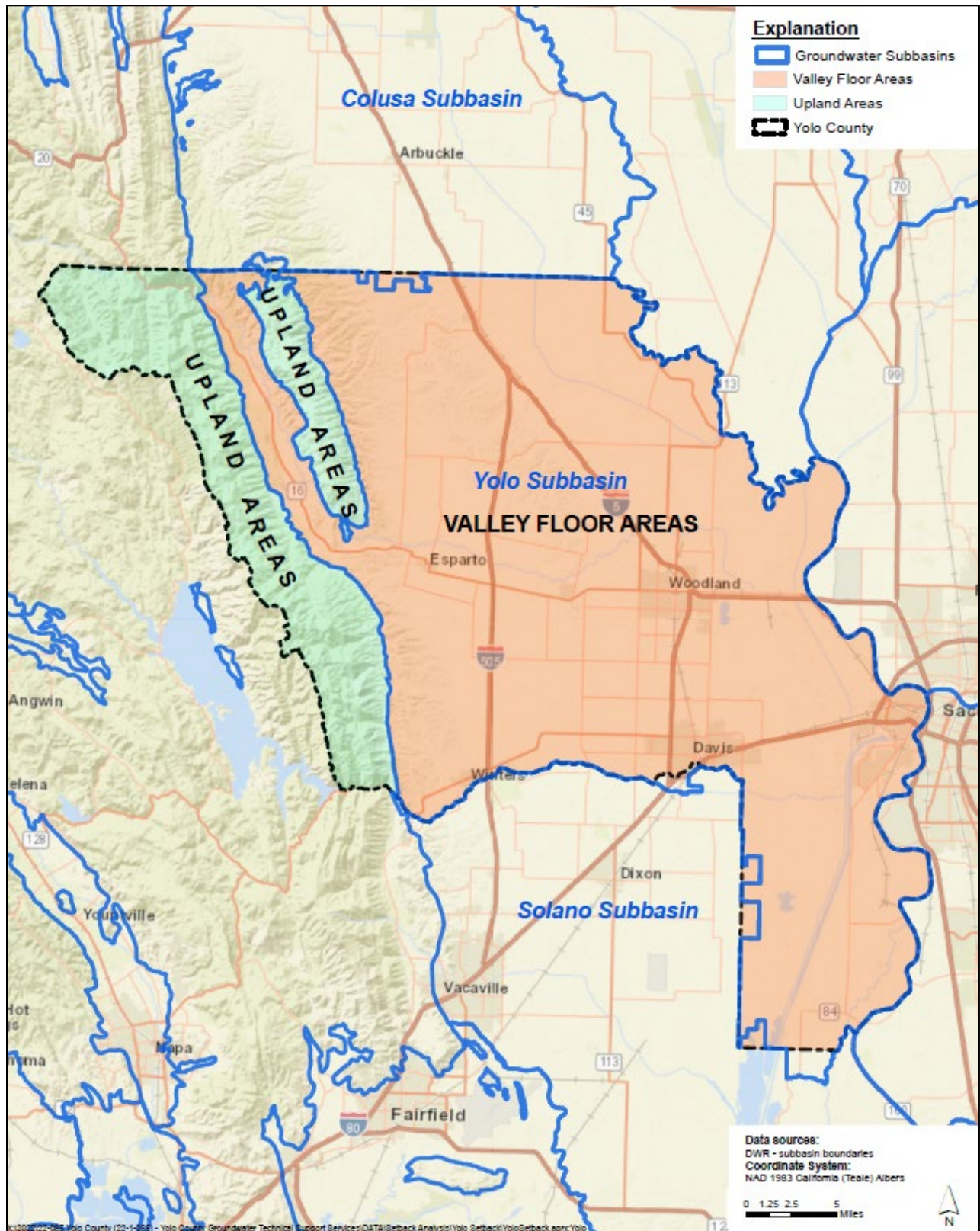


Figure 1. Map of Groundwater Subbasins Overlapping Yolo County

3. OVERVIEW OF PROCESS FOR REVIEWING WELL PERMIT APPLICATIONS FOR COMPLIANCE WITH EO N-7-22

Well permit applications will first be evaluated to determine if the proposed well is exempt from the additional EO well permitting process. Wells producing less than two acre-feet per year for individual domestic water use and public supply system wells are exempt from the EO. Monitoring wells or other wells not intended for extraction of groundwater, are also exempt from the EO well permitting procedures. As indicated in the EO, well permit applications for the construction or alteration of other types of wells with the purpose of extracting groundwater (production wells), including agricultural (irrigation) wells, are subject to the EO. In accordance with Section 9A of the EO, all new well permit applications for non-exempt wells located within the Valley Floor areas of the County will be provided to the respective GSA to complete a determination regarding whether the proposed well permit is consistent with the GSP. The County will review all non-exempt well permit applications for compliance with Section 9B.

4. WELLS EXEMPT FROM COMPLIANCE WITH EO SECTION 9B

The following are exempt from compliance with the EO well permitting process because they are explicitly exempted in the EO or because they are unlikely to interfere with the operation of nearby wells or cause land subsidence:

- Wells producing less than two acre-feet per year for individual domestic water use
- Public supply system wells as defined in Health & Safety Code § 116275
- Monitoring wells or other wells not intended for extraction of groundwater
- Replacement production wells meeting the requirements for exemption herein
- Minor alterations of production wells meeting the requirements for exemption herein.

With respect to permit applications for replacement production wells and minor alterations of production wells, additional Environmental Health well permit application requirements and review procedures for determining compliance with EO Section 9B will not be applied to such permits. The continued production of groundwater at a proposed well site in a manner consistent with previous operation of the well being replaced or modified is unlikely to interfere with the operation and function of nearby wells or cause land subsidence that impacts nearby infrastructure. The future operation of all wells within the Valley Floor areas of the County are subject to potential management actions implemented by GSAs to manage groundwater and ensure groundwater sustainability is maintained and undesirable results, including those related to land subsidence, are avoided.

Replacement Production Wells

A replacement production well is defined as a production well that is intended to replace an existing production well. A replacement well must be located within 100 feet of the well it is replacing and have similar construction characteristics (e.g., same or smaller casing size, similar proposed depth, similar screen interval) and groundwater production as the well it is replacing. Production wells that will increase total groundwater pumping relative to the well they are replacing are not exempt from the additional compliance requirements of EO Section 9B. If records of the construction details for well depth and screen interval are not available for a well being replaced, the applicant should make reasonable efforts to obtain the information through downhole investigative methods including tagging the total completed depth of the well or other methods. Replacement production wells within the Yolo Subbasin must also be reviewed by the Yolo Subbasin Groundwater Agency (YSGA) pursuant to

paragraph 5 of the YSGA's Resolution No. 22-01. Replacement wells within the Colusa and Solano Subbasins are subject to review in accordance with permitting procedures adopted by the respective GSAs for these areas. Formal abandonment and destruction of wells being replaced must be conducted within six months of the completion date (date of final inspection) of the replacement well and shall be performed in accordance with County requirements for well destructions.

Minor Production Well Alterations

Minor alterations to production wells are modifications to the well structure that are not intended to increase the discharge rate for the well or significantly alter the depth interval from which groundwater is extracted with the well. Minor alterations may include activities such as installing casing liners, patches, or other work although such work must not modify the well in a manner that increases the total groundwater pumping. Applications for permits for minor well alterations will be subject to review by the YSGA pursuant to paragraph 5 of the YSGA's Resolution No. 22-01 for wells within the Yolo Subbasin and in accordance with permitting procedures adopted by the respective GSAs in the Colusa and Solano Subbasins.

5. WELLS SUBJECT TO COMPLIANCE WITH EO SECTION 9B

Procedure to Address EO Section 9B (1): Determining Well is Not Likely to Interfere with Existing Wells

Well permit applications subject to the EO, including for new production wells (not replacement production wells, as defined on the prior page) and production wells or well alterations considered beyond the definition herein of the replacement production wells or minor well alterations, must be determined unlikely to interfere with the function and operation of existing nearby wells to comply with EO Section 9B(1). There are two ways by which an applicant can demonstrate that a proposed new well or well alteration work is unlikely to interfere with the function and operation of nearby wells: 1) meeting minimum separation distance from existing nearby wells, or 2) submitting a report by a professional geologist or hydrogeologist (licensed in the State of California) including associated information concluding that the proposed well or well alteration work will not interfere with the function and operation of nearby wells. Existing wells owned by the applicant located on the same parcel as the proposed well or on a parcel adjacent to the parcel with the proposed well are exempt from the minimum well separation distance requirement.

The County requires minimum well separation distances for ensuring proposed new wells or well alterations are unlikely to interfere with the function and operation of nearby wells. **Table 1** presents these minimum required distances from nearby active wells according to the proposed well pumping capacity and proposed well location (i.e., Valley Floor areas versus Upland areas).

Table 1. Minimum Well Separation Distances

Pumping Capacity (gallons per minute)	Minimum Well Separation Distance (feet)
<i>Wells Within the Valley Floor Areas of the County</i>	
<500	250
500-999	500
1000-1499	1000
1500-1999	2000
≥2000	Report Required
<i>Wells in the Upland Areas of the County</i>	
<15	500
15-99	1000
≥100	Report Required

For proposed wells within the Valley Floor areas with engineered pumping capacities greater than or equal to 2,000 gallons per minute, a report completed by a licensed professional geologist or hydrogeologist is required to conclude the well is unlikely to interfere with the function and operation of nearby wells. For proposed wells in the Upland areas with engineered pumping capacities greater than or equal to 100 gallons per minute a report by licensed professional geologist or hydrogeologist will be required. If the location of the proposed new well or well alteration does not meet the minimum separation distances from existing wells presented in **Table 1**, the applicant may submit a report prepared by a licensed professional geologist or hydrogeologist presenting site-specific information (e.g., aquifer properties) and analyses concluding that the well is unlikely to interfere with the function and operation of nearby wells.

For all permit applications not exempt from EO Item 9B (as described above), the applicant must submit a map and list of known active wells within a radial distance equal to the minimum separation distance required for the well (as presented in **Table 1**) plus 500 feet. The map should include the proposed well site with known nearby active domestic, public supply, agricultural/irrigation, industrial, or other groundwater production wells. Active wells include wells recently operated (within last five years) as production wells and equipped with an operational pumping and discharge assembly, or wells in the process of being prepared to be operated. The table listing known nearby wells must include the well type, latitude/longitude coordinates, distance from the proposed well site (in feet), and Assessor's Parcel Number (APN). Any wells owned by the applicant should be indicated on the map and list of nearby wells. The County will review the information on nearby wells provided by the applicant in conjunction with additional review of available well location information from Environmental Health's database to confirm the minimum well separation is satisfied. However, it is the responsibility of the applicant to investigate and confirm the accuracy and completeness of the list of nearby wells.

Procedure to Address EO Section 9B (2): Determining Well is Not Likely to Cause Land Subsidence

As described above, the principal cause of land subsidence in the Valley Floor areas of the County is the regional persistent lowering of groundwater levels and associated decreases in pore pressure in the groundwater system. Such conditions are a result of the aggregate groundwater extraction by many wells and are distinct from intermittent water level changes associated with seasonal fluctuations or localized pumping influences from a given individual well. The Upland areas of the County outside of the Sacramento Valley Groundwater Basin have hydrogeologic properties that make the occurrence of land subsidence caused by groundwater pumping very unlikely because of the consolidated nature of many of the geologic materials in these areas and limited thickness of any alluvial sediments in these parts of the County. For new well permit applications in Upland areas of the County where land subsidence caused by groundwater pumping is very unlikely to occur because of the geologic setting, the well will be determined unlikely to cause land subsidence and no review of the well permit application for potential to cause land subsidence will be required.

The procedure for reviewing the compliance of new well permit applications with EO Section 9B(2) within the Valley Floor areas of the County will rely on the review of the GSA where the well is located. The GSAs are the local entities responsible for implementing the GSPs in the Valley Floor areas of the County. The GSPs include thresholds and metrics for undesirable results, including for land subsidence impacts on infrastructure. The objective of the GSPs is to avoid undesirable results. Therefore, if a well is determined to not be inconsistent with the applicable GSP, the County will consider it to be unlikely to cause land subsidence that will damage nearby infrastructure.

YSGA Adopted Resolution No. 23-01

**RESOLUTION NO. 23-01
OF THE
BOARD OF DIRECTORS OF THE
YOLO SUBBASIN GROUNDWATER AGENCY**

***IN THE MATTER OF:* A RESOLUTION DIRECTING THE PREPARATION AND
IMPEMENTATION OF UPDATED WELL PERMIT REVIEW
PROCEDURES IN THE YOLO SUBBASIN GROUNDWATER
AGENCY**

WHEREAS, Yolo Sustainable Groundwater Agency is the Groundwater Sustainability Agency (“GSA”) for the Yolo Subbasin of the Sacramento Valley Groundwater Basin, California Department of Water Resources Basin No. 5-21.67 (“Subbasin”) and in that role is responsible for implementing the Sustainable Groundwater Management Act (“SGMA”) within the Subbasin; and

WHEREAS, pursuant to Executive Orders N-10-21 and N-7-22, Governor Gavin Newsom proclaimed a statewide State of Emergency due to drought conditions, and directed GSAs and local well permitting authorities to make certain findings before issuing permits for groundwater wells subject to those Orders; and

WHEREAS, Paragraph 9 of each Order provides that a county, city, or other public agency shall not:

“Approve a permit for a new groundwater well or for alteration of an existing well in a basin subject to [SGMA] and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed to be located that groundwater extraction by the proposed well would not be inconsistent with any sustainable groundwater management program established in any applicable Groundwater Sustainability Plan adopted by that Groundwater Sustainability Agency and would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan;” and

WHEREAS, paragraph 9 further provides that a county, city, or other public agency shall not:

“Issue a permit for a new groundwater well or for alteration of an existing well without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure.”; and

WHEREAS, these requirements were renewed and clarified by Executive Order N-3-23, and are currently in effect; and

WHEREAS, Yolo County Department of Environmental Health is the local agency responsible for issuing groundwater well permits under the Executive Orders; and

WHEREAS, YSGA is the Groundwater Sustainability Agency responsible for providing the County with the written verifications required by the Orders, specifically, for determining that the proposed groundwater extraction “would not be inconsistent with any sustainable groundwater

management program” in the Subbasin’s GSP and “would not decrease the likelihood of achieving a sustainability goal for the basin covered by such a plan;” and

WHEREAS, in May 2022 YSGA Board adopted Resolution No. 22-01, setting parameters for the development of Well Permit Procedures that would guide YSGA in making the findings required by Paragraph 9; and

WHEREAS, through the process of developing the Well Permit Procedures, YSGA has now identified certain areas where groundwater monitoring data is limited or incomplete (“data gap” regions), as well as areas where landowners have reported concerns regarding potentially decreasing groundwater levels (“Areas of Special Concern”); and

WHEREAS, staff require additional direction from the YSGA Board to develop a suitable review process to address these areas; and

WHEREAS, on September 12, 2023, the Yolo County Board of Supervisors announced its intention to impose 45-day moratorium on new agricultural well permits at their September 26, 2023 Board of Supervisors meeting to allow YSGA to address the Areas of Special Concern and data gaps in its Well Permit Procedures.

NOW, THEREFORE, BE IT RESOLVED:

1. As the exclusive Groundwater Sustainability Agency for the Yolo Subbasin, YSGA is responsible for and committed to achieving the sustainability goals set out in the GSP. Adoption of standardized Well Permit Procedures will support these sustainability goals, in that they will provide YSGA, permit applicants, and the public a clear framework for evaluating a permit application’s consistency with the GSP.
2. YSGA further recognizes that data gaps and localized groundwater conditions may sometimes require a specialized approach for particular portions of the basin; appropriately addressing these issues can assist the YSGA in its pursuit of basinwide sustainability.
3. YSGA staff are directed to prepare proposed Well Permit Procedures for consideration and review by the YSGA Board no later than November 20, 2023.
4. The Well Permit Procedures to be proposed to the Board will include, at a minimum:
 - An outline of the processes to be followed in YSGA’s issuance of the written verifications required by the Executive Orders.
 - A draft map depicting regions proposed to be identified as “Areas of Special Concern,” as well as a description of the characteristics that would trigger that special designation.
 - A draft map depicting regions of known gaps in groundwater monitoring data (“Data Gap Map”), identifying those portions of the basin where additional groundwater monitoring data is necessary to assist the YSGA in achieving the sustainability goals for the Subbasin.
 - Proposed standardized criteria for the hydrogeologist reports or other additional

supporting information that will be required in the “Areas of Special Concern” and “Data Gap” regions for new agricultural well permits.

- A proposed schedule for public review and comment on these materials.
5. In response to stakeholder requests and separate from the Well Permit Procedures, the *Ad Hoc Drought Contingency Planning Committee* is authorized to work with the Executive Officer and Legal Counsel to investigate the potential demand management strategies, including but not limited to voluntary allocation systems, in the designated “Areas of Special Concern.” The Committee’s findings will be reported back to the YSGA Board before the agency takes any binding action to implement such a system.
 6. No later than January 22, 2024, the Executive Officer, supported by Legal Counsel, will present a proposed structure and schedule for the implementation of Management Area Advisory Committees, which shall be tasked with providing feedback on unique regional groundwater concerns, as well as serving as a public advisory forum to inform the Board’s continued pursuit of the sustainability goals.


Certification of Secretary

The undersigned hereby certifies that the foregoing resolution was duly adopted by the Board of Directors of YSGA at a special meeting held on September 18, 2023, by the following vote:

AYES: City of Davis, City of West Sacramento, City of Winters, City of Woodland, Dunnigan Water District, Madison Community Services District, Reclamation District 108, Reclamation District 307, Reclamation District 537, Reclamation District 730, Reclamation District 765, Reclamation District 787, Reclamation District 999, Reclamation District 1600, Rumsey Water Users Association, Yocha Dehe Wintun Nation, Yolo County, Yolo County Flood Control and Water Conservation District, California American Water – Dunnigan, Yolo County Farm Bureau, and Environmental Representative – Ann Brice

NOES: None

ABSENT: Reclamation District 150, Reclamation District 2035, and Colusa Drain Mutual Water Company



Kristin Sicke, Board Secretary

Dated: September 18, 2023

Technical Data and Methods for Delineating Focus Areas

TECHNICAL DATA AND METHODS FOR DELINEATING FOCUS AREAS

This section provides an overview of the technical data and methods used to delineate Focus Areas in the Yolo Subbasin as shown on Figure 1 and how the Focus Areas are proposed to be applied in the County's well permitting process to comply with Paragraph 9 of the EO and Paragraph 4 of EO-2.

Technical Data

Technical data and information reviewed by West Yost and YSGA staff included groundwater levels, geologic and geomorphologic maps, reported citizen concerns on proximity and cumulative impact of agricultural wells to domestic wells and declining groundwater levels, domestic well density and small water systems, and reported dry wells. These data were reviewed in detail by West Yost and YSGA staff. Each data set is described in the following sections.

Appendix I

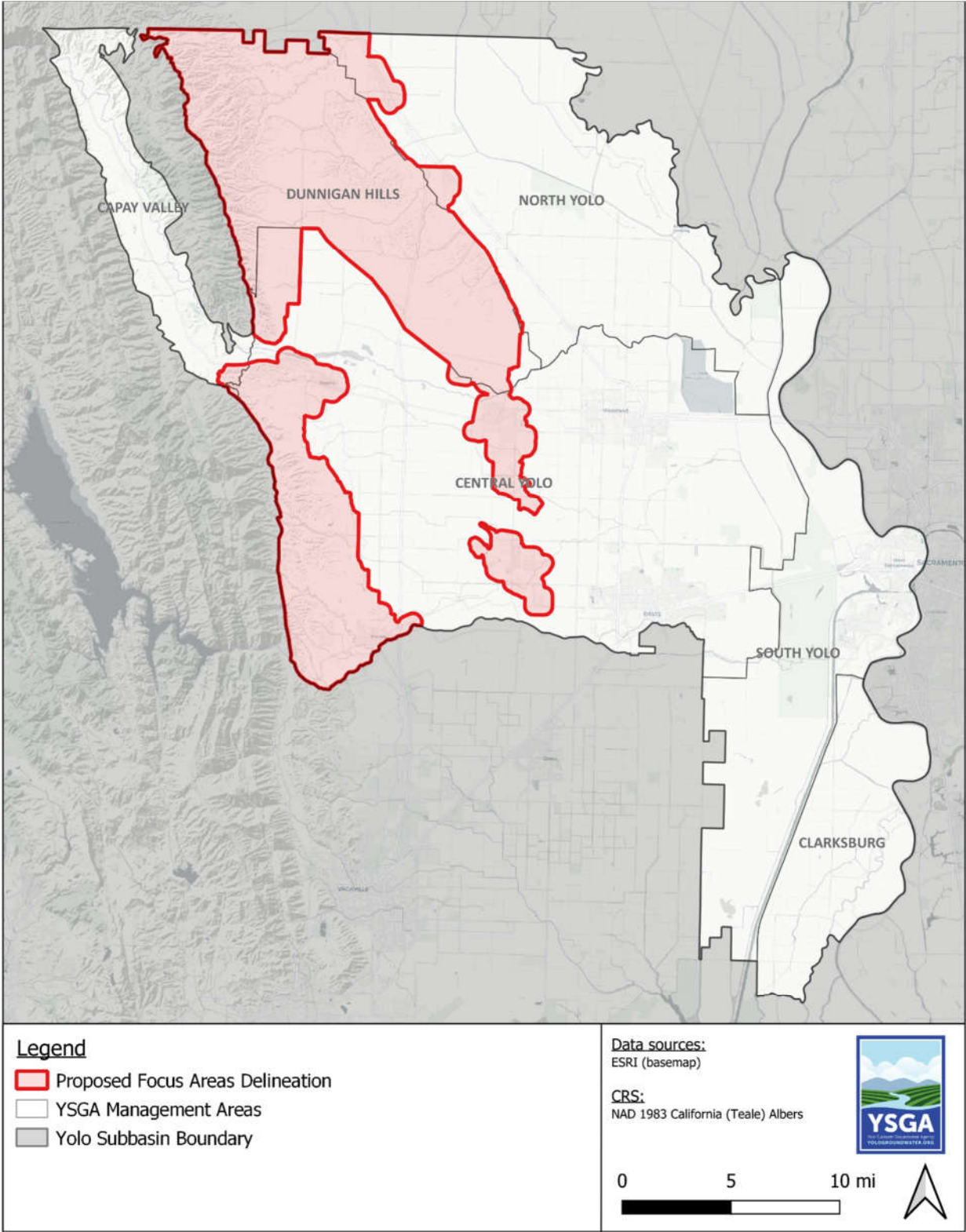


Figure 1. Proposed Delineated Focus Areas within the Yolo Subbasin.

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Groundwater Levels and Monitoring Data

Groundwater levels from YSGA representative monitoring wells (RMWs) and other monitoring wells located within the Yolo Subbasin were reviewed to identify areas where significant declines in groundwater levels have occurred between 2013 to 2023, and where there was an exceedance of the MTs at RMWs in Fall 2023. Figure 2 shows the 10-year water level trends (Fall 2013-Fall 2023) in the available groundwater monitoring network. Figure 3 shows a map of the RMWs and corresponding MT status as of October 2023. There are some areas of the Yolo Subbasin with inadequate monitoring well density for the analysis of groundwater levels. Figure 4 illustrates the YSGA monitoring wells with at least 10 years of historic groundwater level data and highlights the areas of the Yolo Subbasin with inadequate data.

Appendix I

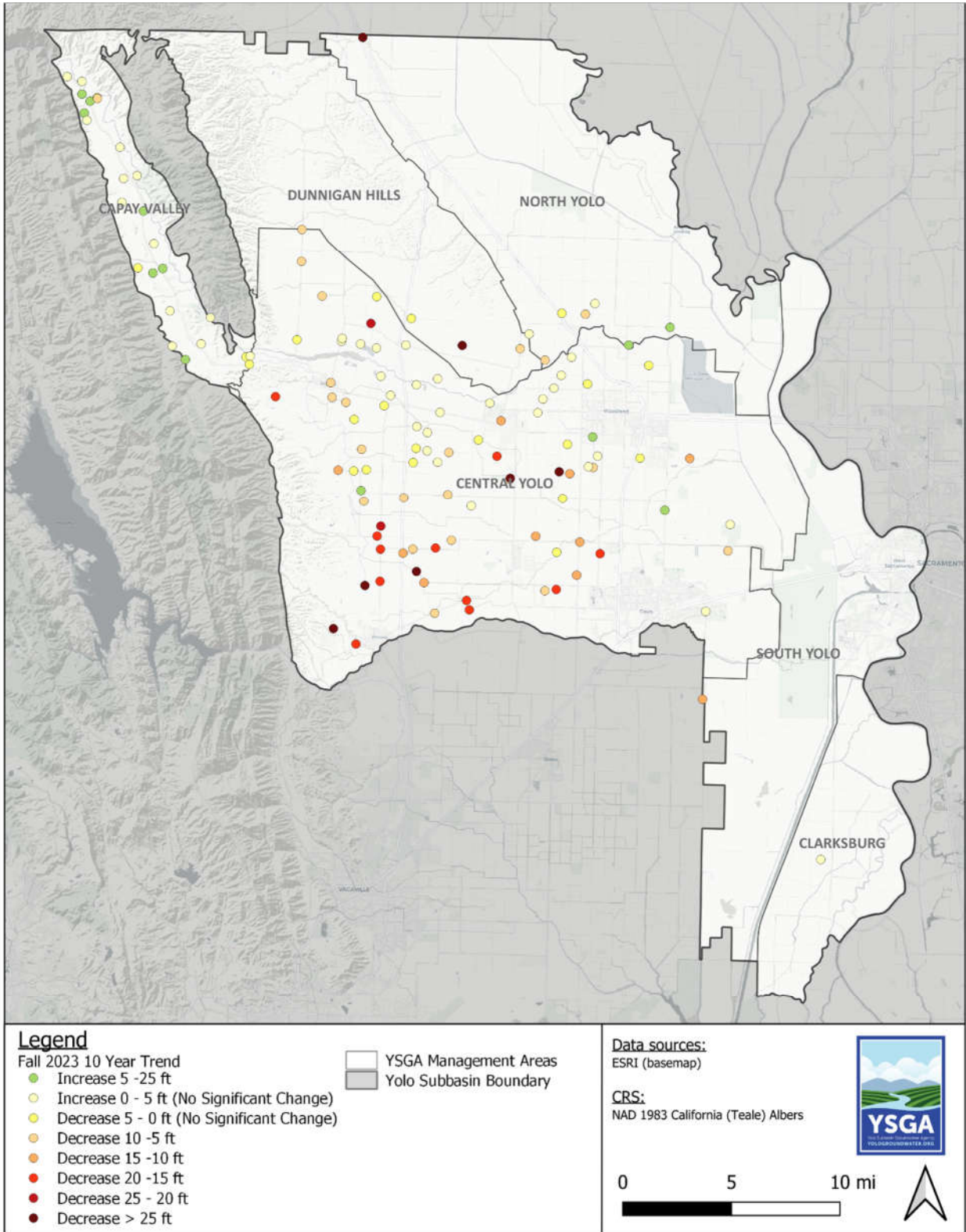


Figure 2. 10 -Year Change in Groundwater Levels from Fall 2013 to Fall 2023.

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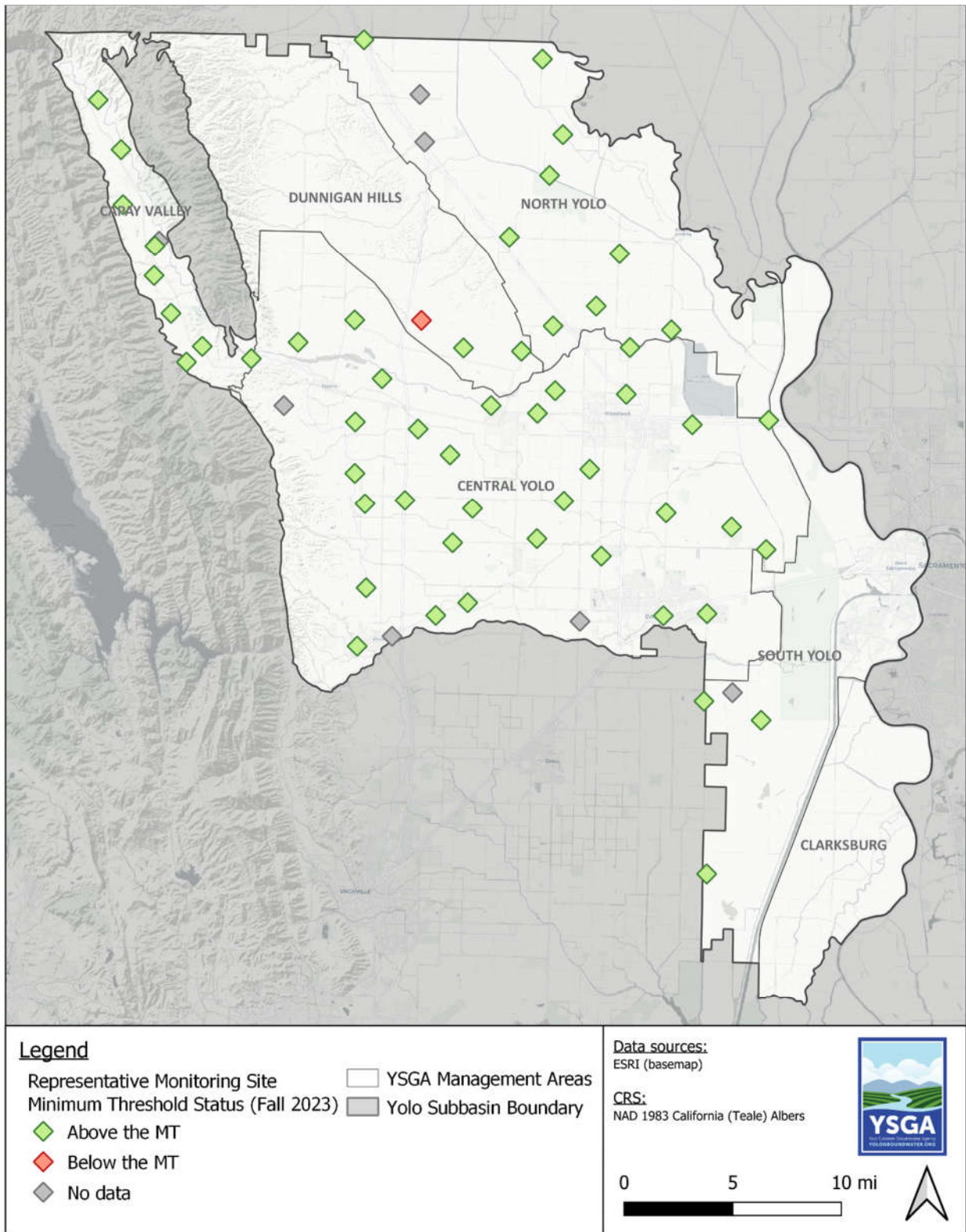


Figure 3. Representative Monitoring Wells and Minimum Threshold Status as of Fall 2023.

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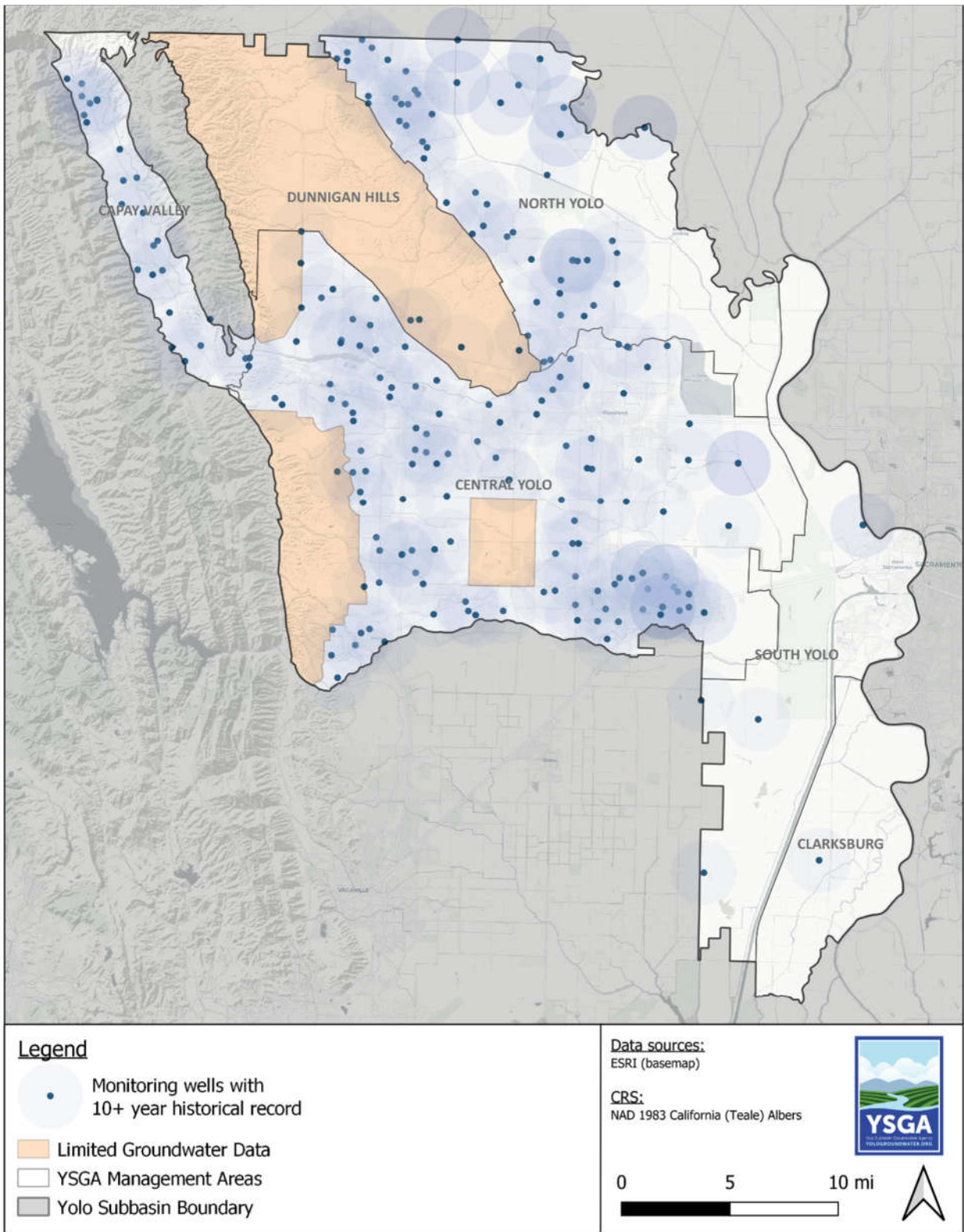


Figure 4. Areas within the Yolo Subbasin with Limited Groundwater Data.

Appendix I

Geologic and Geomorphology Maps

The Yolo Subbasin contains complex geologic and geomorphic features that affect aquifer permeability and recharge potential. Topographic, geologic, and geomorphic data were reviewed to assess the relative permeability and recharge potential throughout the Yolo Subbasin. Figures 5 and 6 show the topographic, geologic, and geomorphic features within the Subbasin. Areas where the Tehama Formation is present are typically associated with topographic highs and have low permeability and recharge potential relative to areas where younger alluvium deposits are present.

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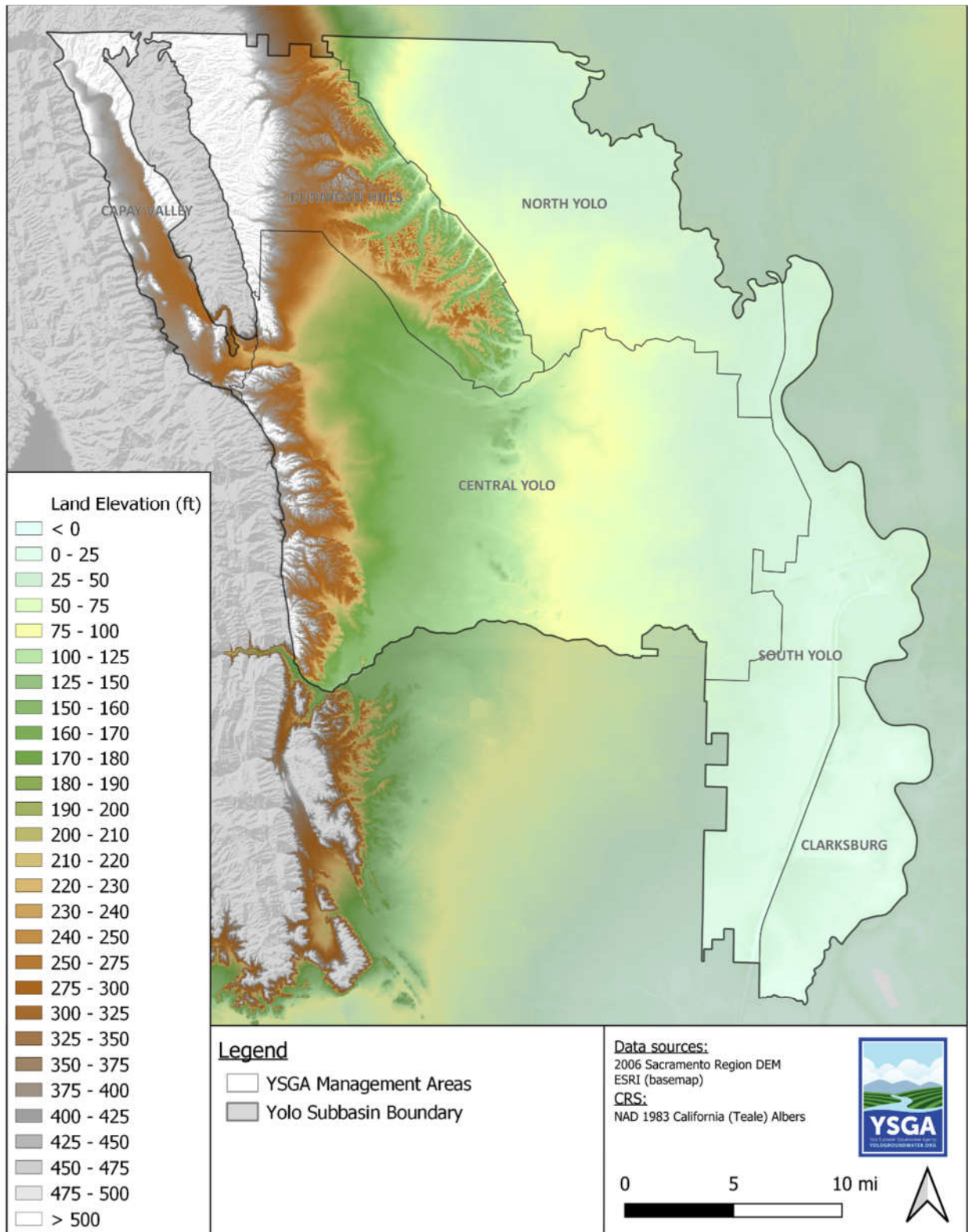


Figure 5. Topography of the Yolo Subbasin.

Appendix I

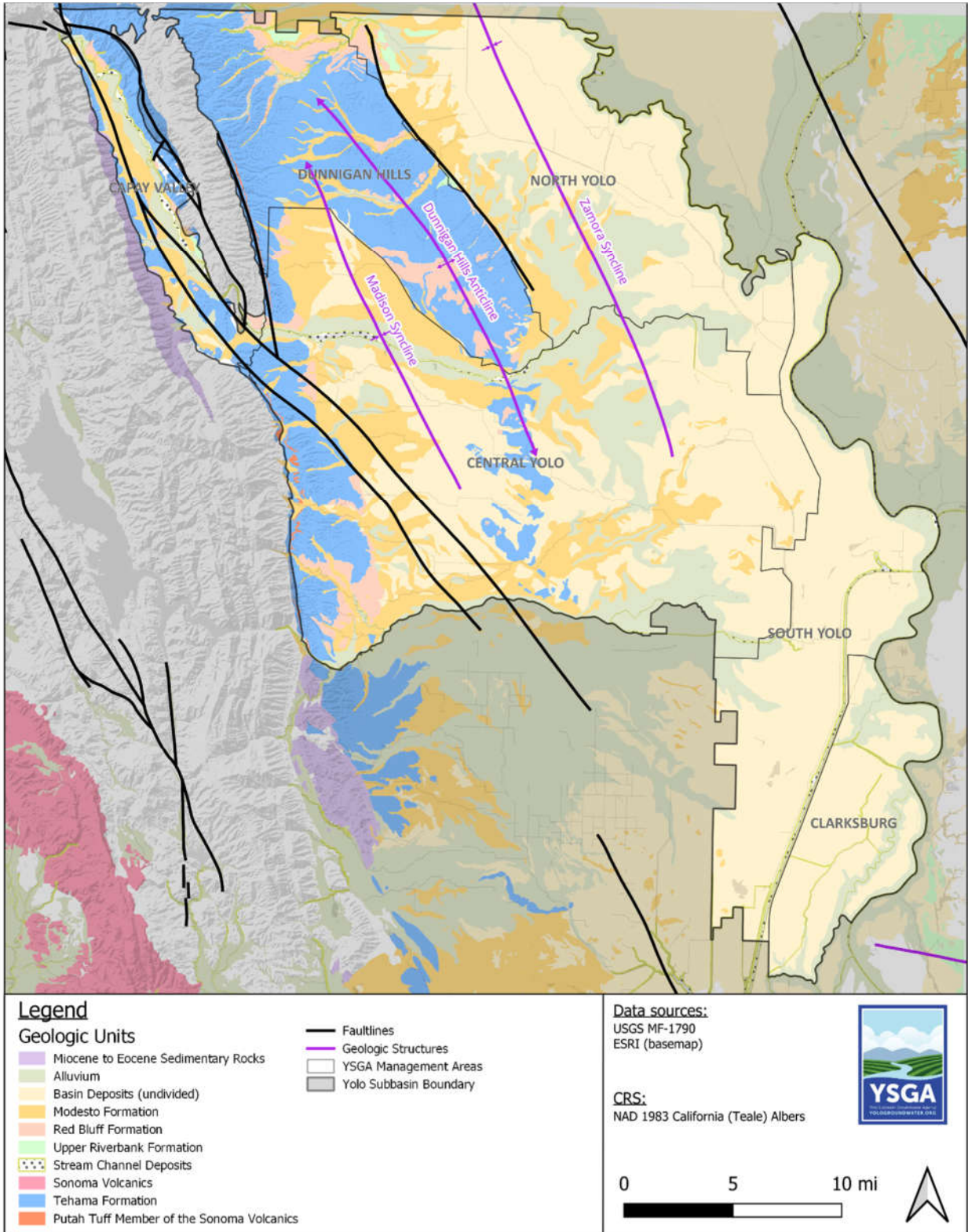


Figure 6. Geology of the Yolo Subbasin.

Appendix I

Reported Concerns on Declining Groundwater Levels

Areas where citizens have expressed concern to the YSGA & County include the following locations, shown in Figure 7 below:

1. Hungry Hollow area (County Roads 84A and 84B)
2. West of Winters (Golden Bear Estates)
3. Dunnigan Hills area (County Roads 20 and 92C)
4. Monument Hills/Hillcrest/Wild Wings CSA
5. West Plainfield/Corcoran Hill Lane
6. West of Davis (Cassidy Lane)
7. North of Zamora (County Road 91B)

Appendix I

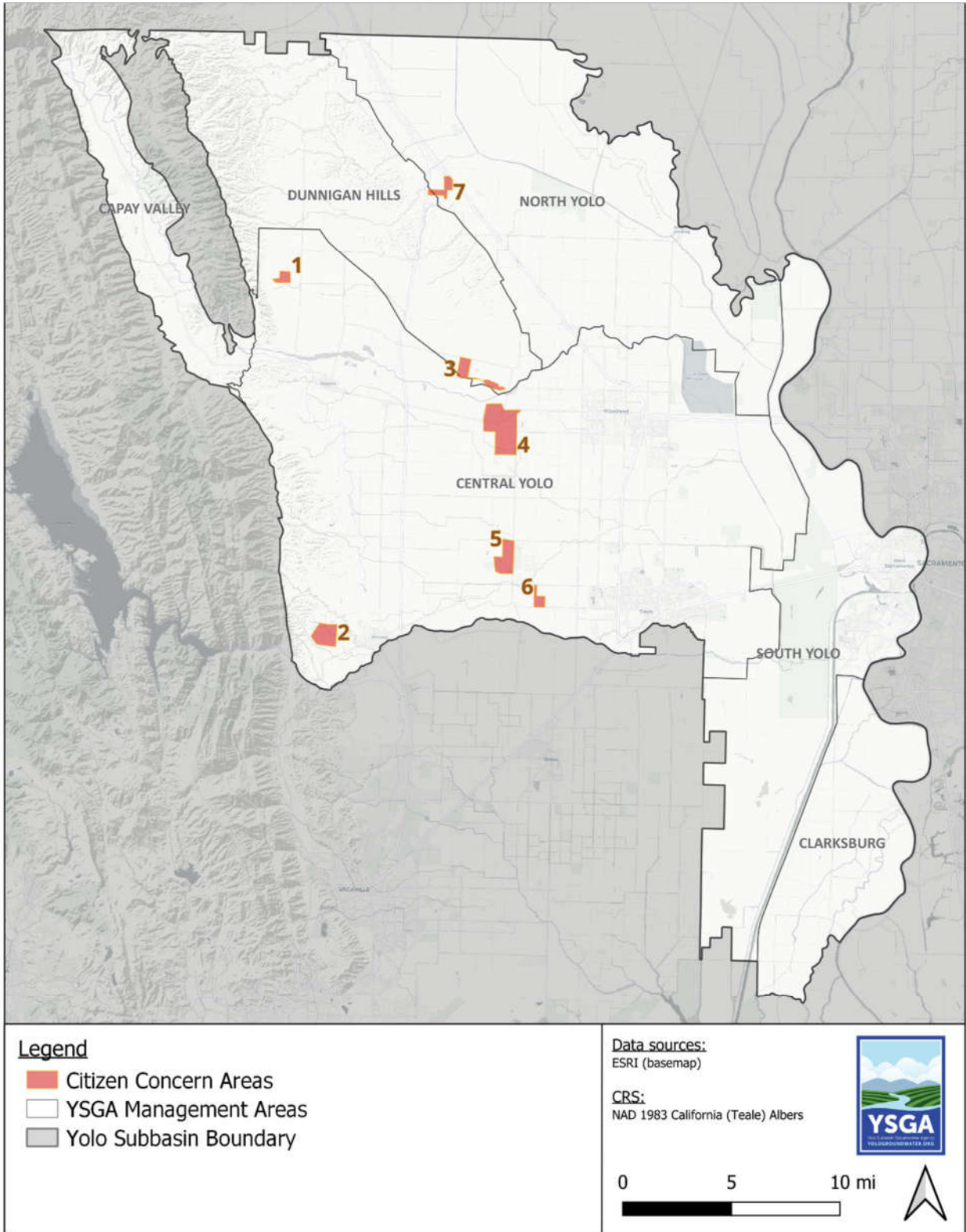


Figure 7. Citizen Concern Areas within the Yolo Subbasin.

Appendix I

Domestic Well Density and Small Water Systems

DWR's OSWCR¹ database was utilized to determine the areas within the Yolo Subbasin that contain a high density of domestic wells. Notable areas with high domestic well density include Dunnigan, Capay, and rural neighborhoods outside of Woodland, Winters, and Davis. Additionally, small public water systems were considered; notable groundwater dependent- public water systems include the City of Winters, El Rio Villa, Esparto, Wild Wings Community Service Area, and Rolling Acres Mutual Water Company. Figure 8 shows domestic well density and location of small water systems within the Yolo Subbasin.

¹ DWR Online System of Well Completion Reports (OSWCR) at <https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Completion-Reports>.

Appendix I

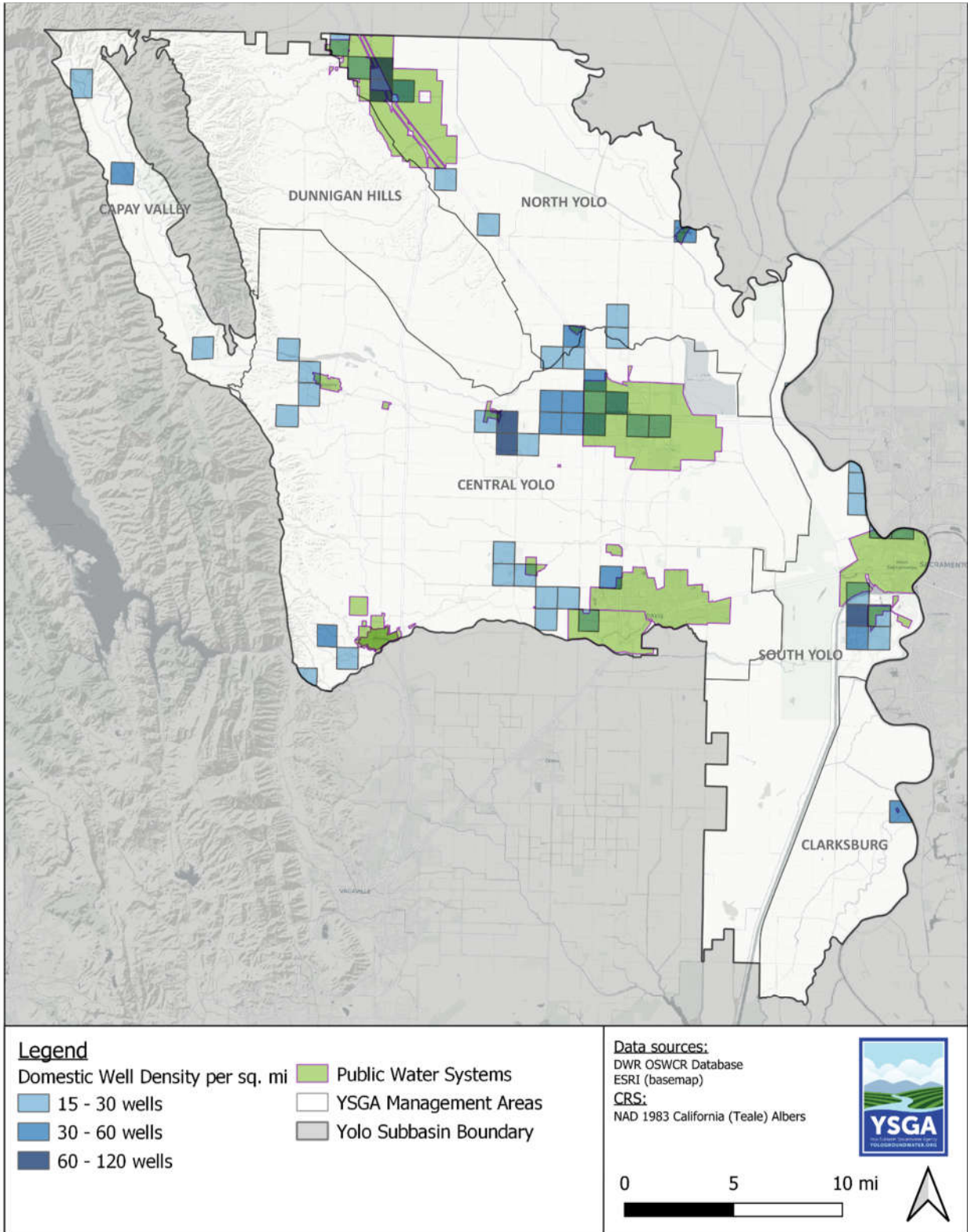


Figure 8. Domestic Well Density and Locations of Small Water Systems within the Yolo Subbasin.

Appendix I

Reported Dry Wells

During the 2021-2022 drought, the Yolo County Office of Emergency services received 54 dry domestic well reports. Dry domestic wells indicate that groundwater levels reached an all-time low over the life of the well, and therefore indicate an area of potential concern. The dry well reports shown in Figure 9 exclude reports that exhibited any of the following conditions:

- Water access was restored by lowering pump or other repair
- Wells with unknown depth
- Wells that have total depths shallower than historic low groundwater level (Fall 1977, where data is available)
- Water levels recovered sufficiently to restore well function

Appendix I

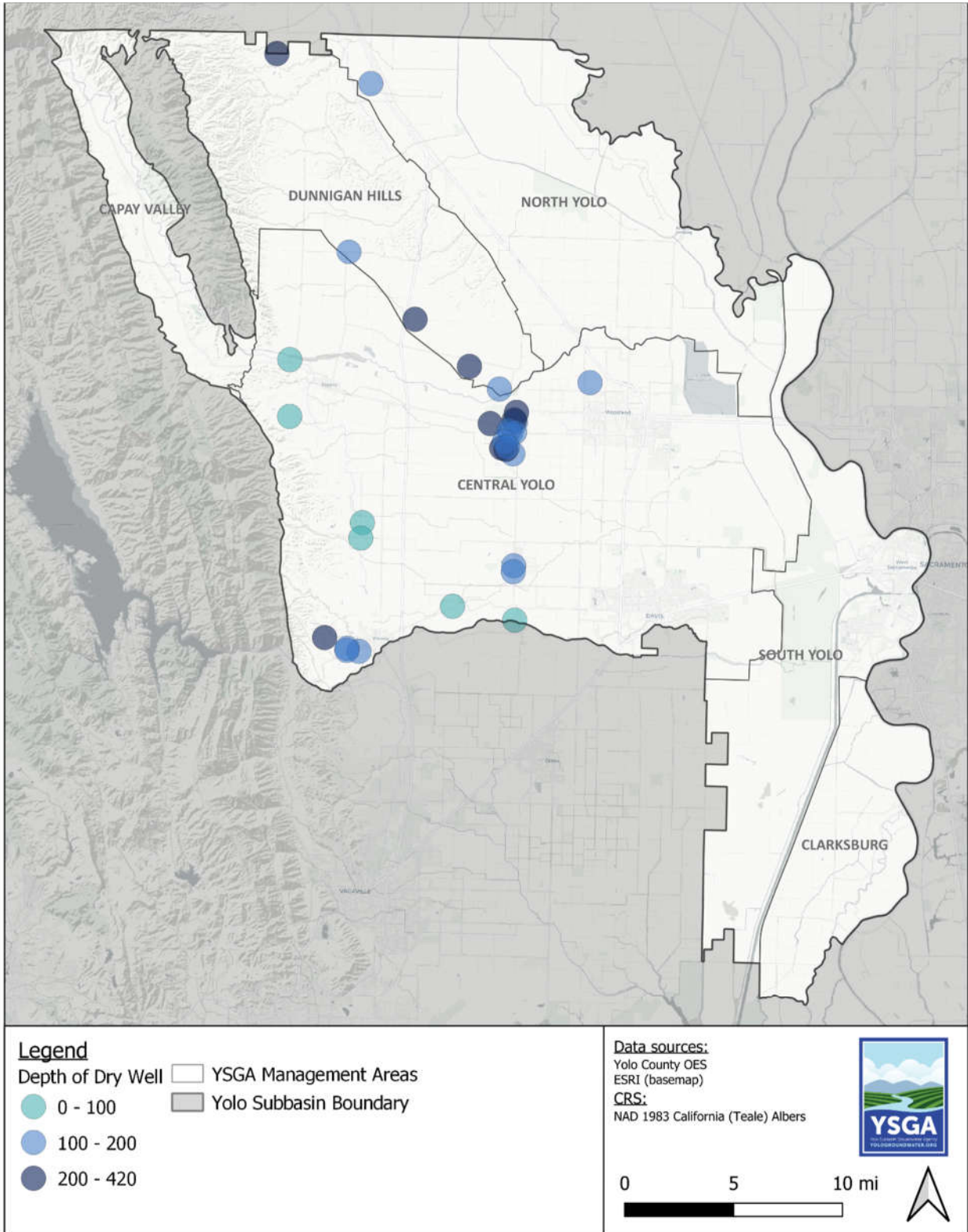


Figure 9. Location and Depth of Dry Wells within the Yolo Subbasin.

Appendix I

Methods for Delineating Focus Areas

Upon review of the data, West Yost worked closely with YSGA staff to delineate proposed Focus Areas. Preliminary Focus Area boundaries were identified based on the following primary factors:

- Greater than 25-foot decline in groundwater levels from 2013 to 2023 (Figure 2), or
- An exceedance of groundwater level minimum thresholds (MTs) in a representative monitoring well (RMW) that occurred in Fall 2023 (Figure 3), or
- Limited groundwater monitoring data (Figure 4), and/or
- Limited recharge potential and low permeability (Figure 6)

If the preliminary Focus Area boundaries were adjacent to or overlapping any of the below secondary factors, boundaries were expanded to include them. To account for uncertainty in coordinate accuracy of input datasets, the County's setback requirements for wells, and proximity to rural neighborhoods with high domestic well densities, a 2,000-foot buffer was added to the delineation in these areas:

- Reported concerns about declining groundwater levels in domestic wells (Figure 7), or
- Areas of dense domestic wells or groundwater dependent- small water systems (Figure 8), or
- Reported dry wells that have not experienced recovery in groundwater levels (Figure 9)

Considering these factors, the Focus Areas were delineated and shown on Figure 1.

Tier 2 Well Permit Review Form

Permit Number:



Tier 2 Well Permit Review Form

Yolo Subbasin Groundwater Agency
34274 State Highway 16, Woodland CA 95695
530-662-3211 wellpermits@yolosga.org

Property Owner Information

Site Address: _____

Property Owner Name: _____

Mailing Address (if different than site address):

Phone Number: _____

Email: _____

Location of Proposed Well or Alteration to Existing Well

Latitude / Longitude: _____

PLSS Range and Quarter Section: _____

APN: _____

Description of Proposed Well or Alteration to Existing Well Project

Well permit application type (Select one): Proposed new well Alteration to existing well

Purpose of well:

Permit Number:

Planned pumping capacity and operating schedule:

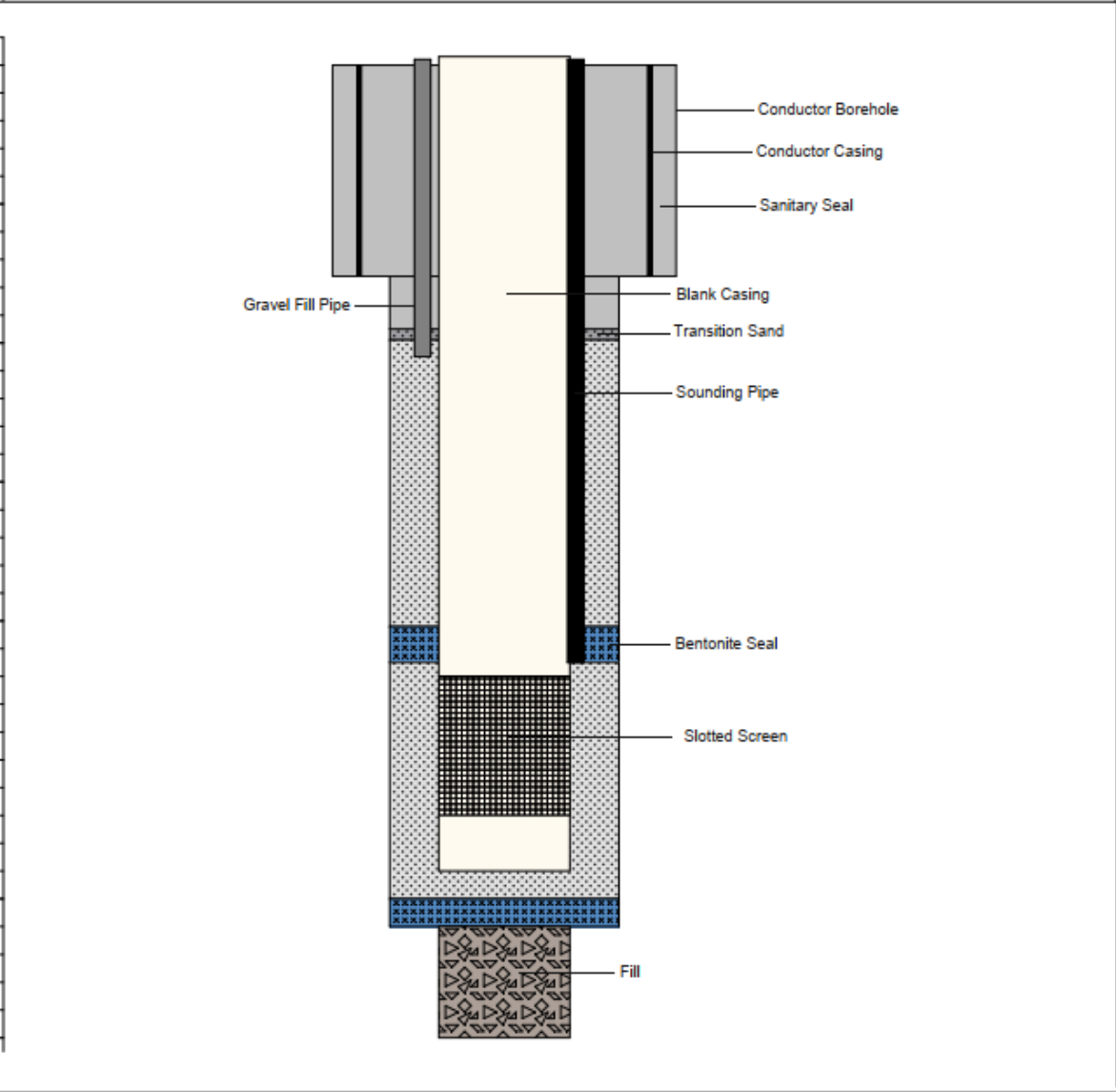
Project elements offsetting pumping demands:

Permitting and construction schedule:

Permit Number:

Design of Proposed Well or Existing Well to be Altered

Well Construction Diagram Template

Depth (ft)	<p>Instructions:</p> <ul style="list-style-type: none">- Provide well construction details below, where applicable (Ex. Conductor Casing - 28-inch O.D. by 3/8-Inch Wall Conductor Casing, ASTM A 53, Grade B)- Label depth scale and note depths for sanitary seal, transition sand, gravel fill pipe, screened casing, bentonite seal, blank casing, end cap, gravel pack, and total depth of well and pilot borehole.- Provide overall depth range of well screen intervals. Note: well screen intervals (and subsequent bentonite seal, etc.) may be changed based on what is encountered during drilling.
 <p>The diagram illustrates a well construction cross-section. At the top, a 'Conductor Borehole' is shown with 'Conductor Casing' and a 'Sanitary Seal'. Below this is a section of 'Gravel Fill Pipe' and 'Blank Casing'. A 'Transition Sand' layer is present, along with a 'Sounding Pipe'. A 'Bentonite Seal' is shown as a blue hatched layer. Below the seal is a 'Slotted Screen' section, followed by another 'Bentonite Seal' layer. The bottom of the well is filled with 'Fill' material, represented by a pattern of triangles.</p>	
<p>Drilling Contractor: _____ Address: _____ Date Started: _____ Owner: _____ Date Ended: _____ Location (X & Y Coordinates): _____</p>	

Permit Number:

Hydrogeologic Evaluation

List the geologic formations anticipated to be encountered during drilling:

Description of the hydrogeologic units, primary aquifers, and aquitards:

Summary of the groundwater conditions:

Permit Number:

Impact Assessment

Summary descriptions for each of the following that apply

Methods used to analyze the well's impact:

Impacts on Groundwater Levels in Neighboring Wells and Groundwater in storage:

Impacts on Nearby Interconnected Surface Waters:

Impacts on Aquifer Water Quality:

Impacts on Land Subsidence:

Permit Number:

Hydrogeologist Report Findings

The hydrogeologist report completed by _____ for well
FIRST AND LAST NAME OF PG or CHG with COMPANY NAME

permit application No. _____ submitted by _____ located at _____
WELL OWNER NAME ADDRESS

_____ was evaluated for compliance with the EO N-3-23 for both Section 4A and 4B based on the YSGA’s Hydrogeologist Report Guidelines and associated EO Well Permitting policies. It is my professional judgement based on the analysis completed for this well permit application that the well or well alteration is:

- Likely to be compliant with Section 4A
- Likely to be compliant with Section 4B
- Likely to be not compliant as originally proposed with either Section 4A or 4B of the EO and a consultation with YSGA and County staff is requested to assess possible changes to well permit application.

PG/CHG Stamp and signature

Attachment A – Hydrogeologist Report for Well Permit Application No. _____

YSGA Tiered Well Permit Review Process Flow Chart

YSGA Tiered Well Permit Review Process Flow Chart

