INITIAL STUDY

Discretionary Well Permitting and Management Program
Stanislaus County, California

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Prepared for:

Stanislaus County
Department of Environmental Resources
3800 Cornucopia Road
Modesto, California 95358

Prepared by:

Jacobson James & Associates, Inc.
9083 Foothills Boulevard, Suite 370
Roseville, California 95747

and

Tetra Tech, Inc.
1999 Harrison Street, Suite 500
Oakland, California 94612

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LIST OF ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Trips
amsl	Above mean sea level
APE	Area of potential effects
AQMP	Air Quality Management Plan
BMP	Best Management Practice
BPS	Best Performance Standard
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon dioxide
CO2e	Carbon Dioxide equivalents
dB	Decibels
dBA	A-weighted decibels
DOT	Department of Transportation
DWR	California Department of Water Resources
EIR	Environmental Impact Report
ESA	Endangered Species Act
FPMP	Fugitive PM_{10} Management Plan
GDE	Groundwater dependent ecosystem
gpm	Gallons per minute
GHG	Greenhouse Gas
GMP	Groundwater Management Plan
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
H_2O	Water (vapor)
H_2S	Hydrogen sulfide

LIST OF ACRONYMS AND ABBREVIATIONS

HFC	Hydrofluorocarbon
MBTA	Migratory Bird Treaty Act
MCL	Maximum contaminant level
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MSDS	Material Safety Data Sheet
MTBE	Methyl tertiary-butyl ether
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
N_2O	Nitrous Oxide
NO_2	Nitrogen dioxide
NOP	Notice of Preparation
NSR	New source review
OPR	Office of Planning and Research
Pb	Lead
PFC	Perfluorocarbon
PEIR	Program Environmental Impact Report
$PM_{2.5}$	Airborne particulate matter with a diameter of less than 2.5 microns
PM_{10}	Airborne particulate matter with a diameter of less than 10 microns
RWQCB	Regional Water Quality Control Board
SCHM	Stanislaus County Hydrologic Model
SF_6	Sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SJVGB	San Joaquin Valley Groundwater Basin
SLDMWMA	San Luis and Delta-Mendota Water Management Authority
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur Dioxide
STRGBA	Stanislaus and Tuolumne Rivers Groundwater Basin Association
TGBA	Turlock Groundwater Basin Association

LIST OF ACRONYMS AND ABBREVIATIONS

U.S. EPA	U.S. Environmental Protection Agency
VdB	Vibration decibels

1.0 INTRODUCTION

1.1 Project Background

Stanislaus County adopted a Groundwater Ordinance in November 2014 (Chapter 9.37 of the County Code, hereinafter, the "Ordinance") that codifies requirements, prohibitions, and exemptions intended to help promote sustainable groundwater extraction in unincorporated areas of the county. The Ordinance prohibits the unsustainable extraction of groundwater and makes issuing permits for new wells that are not exempt from this prohibition discretionary. Applications for non-exempt wells must include substantial evidence that they will not withdraw groundwater unsustainably. In addition, after an unincorporated area adopts a Groundwater Sustainability Plan (GSP) pursuant to California's Sustainable Groundwater Management Act (SGMA), the county can require holders of permits for wells it reasonably concludes are withdrawing groundwater unsustainably to provide substantial evidence that continued operation of such wells does not constitute unsustainable extraction, and has the authority to regulate future groundwater extraction.

As the lead agency under the California Environmental Quality Act (CEQA), Stanislaus County is preparing a Program Environmental Impact Report for Discretionary Well Permitting and Management under the Stanislaus County Groundwater Ordinance (the PEIR) to evaluate the broad-scale environmental impacts of issuing discretionary well permits and regulating potentially unsustainable wells under the Ordinance. The purpose of the PEIR is to develop a more robust basis for managing these discretionary programs and streamline the application and review process for new well permits. CEQA provides a lead agency with the flexibility to prepare different types of EIRs and to employ different procedural means to focus environmental analysis on the issues appropriate for decision at each level of environmental review (Public Resources Code § 21093[a]).[1] In this case, the county will prepare a Tier 1 PEIR that can be referenced by CEQA documents prepared for the issuance of subsequent discretionary well permits at the Tier 2 level.[2] The PEIR may also identify policy alternatives and, if necessary, mitigation measures.

1.2 Lead Agency

The Stanislaus County Department of Environmental Resources is the Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and implementing regulations.[3] The Lead Agency has the principal responsibility for implementing and approving a project that may have a significant effect on the environment.

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[1] CEQA provides that the "degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR" (State CEQA Guidelines Section 15146).

[2] State CEQA Guidelines Sections 15168(b) and (c)

[3] Public Resources Code §§ 21000 - 21177 and California Code of Regulations Title 14, Division 6, Chapter 3.

1.3 CEQA Overview

1.3.1 Purpose of CEQA

All discretionary projects within California are required to undergo environmental review under CEQA. A project is defined in CEQA Guidelines § 15378 as the whole of the action having the potential to result in a direct physical change or a reasonably foreseeable indirect change to the environment and is any of the following:

- An activity directly undertaken by any public agency, including, but not limited to, public works construction and related activities, clearing or grading land, improvements to existing public structures, enactment and amendment of zoning ordinances, and adoption and amendment of local General Plans or elements. An activity undertaken by a person that is supported in whole or in part through public agency contacts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
- An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

CEQA Guidelines § 15002 lists the basic purposes of CEQA as follows:

- To inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities;
- To identify the ways that environmental damage can be avoided or significantly reduced;
- To prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- To disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

1.3.2 Authority to Mitigate

CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible. Under CEQA Guidelines § 15041, a Lead Agency for a project has authority to require feasible changes in any or all activities involved in the project to substantially lessen or avoid significant effects on the environment, consistent with applicable constitutional requirements such as the "nexus"[4] and "rough proportionality"[5] standards.

[4] A nexus (connection) must be established between the mitigation measure and a legitimate governmental interest.
[5] The mitigation measure must be "roughly proportional" to the impacts of the project.

CEQA allows a Lead Agency to approve a project even though the project would cause a significant effect on the environment if the agency makes a fully informed and publicly disclosed decision that there is no feasible way to lessen or avoid the significant effect. In such cases, the Lead Agency must specifically identify expected benefits and other overriding considerations from the project that outweigh the policy of reducing or avoiding significant environmental impacts of the project.

1.4 Purpose of Initial Study

The purposes of an Initial Study as listed in § 15063(c) of the CEQA Guidelines are to:

- Provide the Lead Agency with information necessary to decide if an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) should be prepared;
- Enable a Lead Agency to modify a project to mitigate adverse impacts before an EIR is prepared, thereby enabling the project to qualify for an ND or MND;
- Assist in the preparation of an EIR, if required, by focusing the EIR on adverse effects determined to be significant, identifying the adverse effects determined not to be significant, explaining the reasons for determining that potentially significant adverse effects would not be significant, and identifying whether a program EIR, or other process, can be used to analyze adverse environmental effects of the project;
- Facilitate an environmental assessment early during project design;
- Provide documentation in the ND or MND that a project would not have a significant effect on the environment;
- Eliminate unnecessary EIRs; or
- Determine if a previously prepared EIR could be used for the project.

The purpose of this Initial Study is to support the Notice of Preparation (NOP) for the PEIR. The Initial Study provides information to help focus the environmental analysis proposed in the PEIR. Specifically, the Initial Study identifies resources that could experience significant adverse impacts as a result of implementing the Discretionary Well Permitting and Management Program under the Ordinance and that warrant further evaluation in the PEIR. Similarly, resources and issues that are reasonably expected to experience no impacts, or impacts that are less than significant, will not warrant further evaluation in the PEIR.

1.5 Other Agencies

Other public agencies are provided the opportunity to review and comment on the Initial Study. Each of these agency types is described briefly below.

- A Responsible Agency (14 California Code of Regulations [CCR] § 15381) is a public agency, other than the Lead Agency, that has discretionary approval power over the project, such as permit issuance or plan approval authority.

- A Trustee Agency[6] (14 CCR § 15386) is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California.
- Agencies with Jurisdiction by Law (14 CCR § 15366) are any public agencies that have authority (1) to grant a permit or other entitlement for use; (2) to provide funding for the project in question; or (3) to exercise authority over resources that may be affected by the project. Furthermore, a city or county will have jurisdiction by law with respect to a project when the city or county having primary jurisdiction over the area involved is: (1) the site of the project; (2) the area which the major environmental effects will occur; or (3) the area where those citizens most directly concerned by any such environmental effects reside.

1.6 Organization of Initial Study

This Initial Study is organized to satisfy CEQA Guidelines § 15063(d), and includes the following sections:

- Chapter 1, Introduction, which identifies the purpose and scope of the Initial Study.
- Chapter 2, Project Description, which provides an overview of the program objectives.
- Chapter 3, Environmental Setting, which describes location, existing site conditions, land uses, zoning designations, topography, and vegetation associated with the program location and surrounding area.
- Chapter 4, Environmental Checklist, which presents checklist responses for each resource topic to briefly assess the impacts associated with the proposed program and to identify which topics require review in the Program EIR (PEIR).
- Chapter 5, References, which includes a list of documents cited in the Initial Study.
- Chapter 6, List of Preparers, which identifies the persons who participated in preparing the Initial Study.

1.7 Incorporation by Reference

As permitted by CEQA Guidelines § 15150, this Initial Study references several technical studies, analyses, and previously certified environmental documentation contained in the Stanislaus County General Plan and Environmental Impact Report, which were adopted in August 2016 and are incorporated by reference. Information that has been incorporated by reference has been briefly discussed in the appropriate section(s).

[6] The four Trustee Agencies in California listed in CEQA Guidelines § 15386 are California Department of Fish and Wildlife, State Lands Commission, State Department of Parks and Recreation, and University of California.

2.0 PROJECT DESCRIPTION

2.1 Background and Overview

Stanislaus County is underlain by the Delta-Mendota, Eastern San Joaquin, Modesto, and Turlock groundwater subbasins of the San Joaquin Valley Groundwater Basin. Groundwater in most of the county has been sustainably managed for many years through conjunctive use with surface water under groundwater management plans that are being implemented by the San Luis and Delta-Mendota Water Management Authority (SLDMWMA), the Stanislaus and Tuolumne Rivers Groundwater Basin Association (STRGBA), and the Turlock Groundwater Basin Association (TGBA). Nevertheless, all four subbasins are experiencing storage depletion and other stresses resulting from the current drought. Particular concerns include new groundwater demand to supply the conversion of rangeland to irrigated agricultural production in the eastern portion of the county and increased reliance on groundwater in the western portion of the county in areas where surface water deliveries have been curtailed due to the drought and changing surface water allocations. In addition, the Eastern San Joaquin Subbasin and the Delta-Mendota Subbasin, portions of which underlie the county, have been designated as critically overdrafted[7] by the Department of Water Resources (DWR) as a result of overdraft conditions outside the county.

To address these evolving water supply challenges, Stanislaus County prepared and adopted the Ordinance to be deliberately aligned with sustainable groundwater management concepts defined in the Sustainable Groundwater Management Act (SGMA). Implementation guidelines for well permitting under the new Ordinance were adopted in August 2015. These guidelines and the Ordinance are incorporated by reference into this project description and are provided in Appendix A.

2.2 Program Requirements to be Evaluated

The following clauses in the Ordinance form the basis of the "program" to be addressed in the PEIR:

- ***Stanislaus County Code §9.37.040.*** *Except as otherwise provided in this Chapter, the following actions are prohibited:*

  A. The unsustainable extraction of groundwater within the unincorporated areas of the County.

- ***Stanislaus County Code §9.37.045 A.*** *The prohibition set forth in Paragraph A of Section 9.37.040 is applicable to the extraction from any groundwater well for which an application for a new Well Construction Permit pursuant to Chapter 9.36 is filed after November 25, 2014. Applications for a Well Construction Permit submitted after that date shall demonstrate, based on substantial evidence, that either (1) one or more of the exemptions set forth in Section 9.37.050 apply, or (2)*

[7] SGMA includes the following definition of critical overdraft: "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts."

that extraction of groundwater from the proposed well will not constitute unsustainable extraction of groundwater. This paragraph shall not apply to a well designed to replace an existing well that has been permitted under Chapter 9.36 prior to November 25, 2014 if the replacement well has no greater capacity than the well it is replacing.

- ***Stanislaus County Code §9.37.050 A.*** *The following water management practices are exempt from the prohibitions in Section 9.37.040:*
  1. *Water resources management practices of public water agencies that have jurisdictional authority within the County, and their water rate payers, that are in compliance with and included in groundwater management plans and policies adopted by that agency in accordance with applicable state law and regulations, as may be amended, including but not limited to the California Groundwater Management Act (Water Code Sections 10750 et seq.), or that are in compliance with an approved Groundwater Sustainability Plan.*
  2. *De minimis extractions as set forth in Section 9.37.030 (10) of this Chapter.*
- ***Stanislaus County Code §9.37.045 B.*** *Effective upon adoption of an applicable groundwater sustainability plan, the prohibition set forth in Paragraph A of Section 9.37.040 shall be applicable to the extraction from any groundwater well for which the County reasonably concludes that the extraction of groundwater constitutes unsustainable extraction of groundwater. In the event of such determination by the County, the affected holder or holders of a Well Construction Permit issued pursuant to Chapter 9.36 for such well shall be notified and shall be required to demonstrate, based on substantial evidence, that continued extraction of groundwater will not result in an unsustainable extraction of groundwater as defined in Paragraph 6 of Section 9.37.030.*
- ***Stanislaus County Code §9.37.040.*** *Except as otherwise provided in this Chapter, the following actions are prohibited: A. The unsustainable extraction of groundwater within the unincorporated areas of the County.*

Based on the above, the Ordinance divides the county into the following areas for application of discretionary well permitting and management requirements, which are shown on Figure 2-1:

- **Incorporated Areas**. The Ordinance does not apply to the incorporated areas of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford.
- **Exempt Areas.** Groundwater management in these areas occurs under the authority of a public water agency in compliance with a Groundwater Management Plan (GMP) or a GSP. Before GSPs are adopted under SGMA, the county's groundwater management authority in these areas is generally limited to issuing ministerial[8] well permits that are exempt from the prohibition against

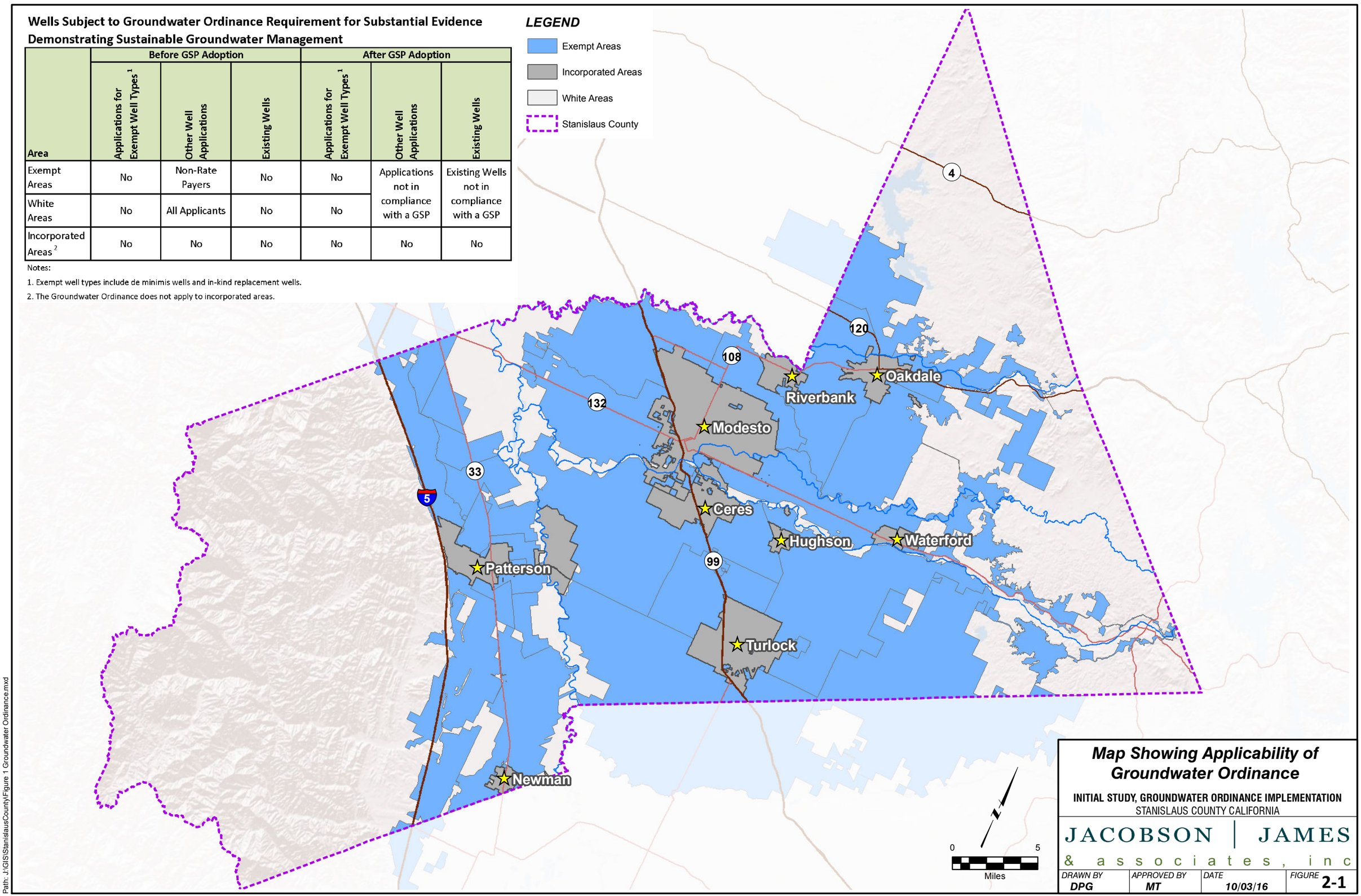
[8] A ministerial decision involves only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgment in deciding whether or how the project should be carried out. (State CEQA Guidelines Section 15369). By themselves, ministerial actions are not subject to CEQA.

Wells Subject to Groundwater Ordinance Requirement for Substantial Evidence Demonstrating Sustainable Groundwater Management

Area	Before GSP Adoption			After GSP Adoption		
	Applications for Exempt Well Types [1]	Other Well Applications	Existing Wells	Applications for Exempt Well Types [1]	Other Well Applications	Existing Wells
Exempt Areas	No	Non-Rate Payers	No	No	Applications not in compliance with a GSP	Existing Wells not in compliance with a GSP
White Areas	No	All Applicants	No	No		
Incorporated Areas [2]	No	No	No	No	No	No

Notes:

1. Exempt well types include de minimis wells and in-kind replacement wells.
2. The Groundwater Ordinance does not apply to incorporated areas.



Map Showing Applicability of Groundwater Ordinance

INITIAL STUDY, GROUNDWATER ORDINANCE IMPLEMENTATION
STANISLAUS COUNTY CALIFORNIA

JACOBSON | JAMES & associates, inc

DRAWN BY	APPROVED BY	DATE	FIGURE
DPG	MT	10/03/16	2-1

Path: J:\GIS\StanislausCounty\Figure 1 Groundwater Ordinance.mxd

unsustainable extraction.[9] After GSPs are adopted, the Ordinance prohibition against unsustainable groundwater extraction will apply to any well (including new and existing wells) from which the county reasonably concludes that groundwater is being unsustainably withdrawn. Issuing permits for new wells for which such a determination is made would therefore become discretionary.[10] In addition, the county would determine whether continued groundwater extraction from existing wells for which such a determination is made is unsustainable, and therefore prohibited.

- **"White Areas."** These include unincorporated areas that are not within the jurisdictional boundaries of a public water agency covered by a GMP or GSP. The county has primary authority for groundwater management in these areas and is responsible for issuing discretionary permits for new wells that are subject to the Ordinance prohibition. Note that SGMA requires the formation of Groundwater Sustainability Agencies (GSAs) in all areas of the county by mid-2017 and the adoption of GSPs by 2020 or 2022. After this time, applications for new well permits will be exempt from the Ordinance prohibition[11] and will be issued on a ministerial basis, unless the county reasonably concludes that groundwater extraction from the proposed well will be unsustainable. In addition, existing wells for which the county reasonably concludes groundwater extraction is unsustainable would be subject to the prohibition.

The program to be evaluated in the PEIR consists of the following actions that are implemented under the ordinance in the unincorporated areas of the county:

- ***Issuing discretionary well permits before a GSP is adopted for proposed new wells that are subject to the Ordinance prohibition against unsustainable extraction.*** The county is responsible to implement a discretionary well permitting program for new wells that are subject to the Ordinance prohibition against unsustainable extraction. The applicant must provide substantial evidence that the proposed groundwater extraction will be sustainable, as defined under the Ordinance, for new wells to be constructed in the White Areas before the GSP is adopted or in the exempt areas if the applicant is not a rate payer. The well permitting guidelines developed under the Ordinance outline the requirements for substantial evidence that must accompany non-exempt well permit applications and the criteria for their evaluation and prescribe well permit conditions for new wells as needed to assure they are operated sustainably as defined under the Ordinance.
- **Issuing discretionary well permits after adoption of GSPs for any new well that the county reasonably concludes is not in compliance with a GSP.** After GSPs have been adopted, the

[9] Because the exemption applies to the water management actions of public water agencies and their rate payers, applications for permits to construct new wells from non-rate payers would still be subject to the prohibition in the Ordinance because such wells are not subject regulation under GMPs. Permits for such wells would be discretionary.

[10] "Discretionary project" means a project which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity. (State CEQA Guidelines Section 15357).

[11] After GSP adoption, the primary groundwater management authority in these areas will be vested with GSAs, which will manage and regulate groundwater resources in compliance with their GSP. Groundwater extractors (except *de minimis* extractors) will be required to pay rates to the GSAs for their extraction.

prohibition against unsustainable extraction will no longer presumptively apply to all new wells that are not exempt, but will apply to any new well in the unincorporated areas of the county from which the county reasonably concludes groundwater would be unsustainably withdrawn. In essence, these are proposed wells that do not appear to be in compliance with a GSP. In the event such a determination is made, the affected applicant will be notified and must provide substantial evidence that the proposed groundwater extraction will be sustainable, as defined under the Ordinance. Well permitting would then proceed under the county's discretionary program developed for non-exempt wells.

- **Regulating groundwater extraction after adoption of GSPs from any existing well that the county reasonably concludes is not in compliance with a GSP.** After GSPs have been adopted, the prohibition against unsustainable extraction will apply to any existing well in the unincorporated areas of the county from which the County reasonably concludes groundwater is being unsustainably withdrawn. In essence, these are existing wells that do not appear to be operated in compliance with a GSP. In the event such a determination is made, the affected holder of a Well Construction Permit for the well will be notified and required to demonstrate, based on substantial evidence, that continued extraction of groundwater will not result in an unsustainable extraction of groundwater as defined in the Ordinance.[12] If the county determines that continued groundwater extraction from such a well is not sustainable, it will be subject to the prohibition in the Ordinance.

For perspective, since the adoption of the Ordinance in November 2014, more than 100 ministerial well permits have been issued for wells found to be exempt from the Ordinance, but only one discretionary well permit has been processed for a non-exempt well. It is anticipated that as the discretionary well permitting program matures, the number of discretionary permits issued will increase. However, based on experience to date, it is reasonable to assume that the rate at which discretionary permits are issued will not exceed 10 percent of the ministerial permitting rate. In addition, the time period during which most of these permits would be issued extends only until 2022. After this time, most well permitting is expected to be in compliance with adopted GSPs, and to be performed on a ministerial basis.

As noted above, the county will issue discretionary well permits under the Implementation Guidelines developed per the requirements of the Ordinance. These implementation guidelines include thresholds that trigger requirements for implementation of certain investigations, monitoring, well design standards, or mitigation measures that are intended to assure the new wells will comply with the prohibition in the Ordinance against unsustainable groundwater extraction. The implementation guidelines are embodied in several documents that are included as Appendix A. The guidelines include the following requirements:

[12] This "Look Back Provision" is intended to serve as a continuing safeguard against unsustainable extraction from new and existing wells in the both the exempt and non-exempt areas of the county after GSPs are adopted.

Groundwater Levels and Storage:

- Predicted drawdown induced by new non-exempt wells may not exceed 10 percent of the pumped aquifer thickness.
- If predicted interference drawdown exceeds 5 feet at an existing domestic well, or 20 feet at an existing irrigation, municipal, or industrial well, the applicant must implement a Well Interference Drawdown Monitoring and Mitigation Program to identify and ameliorate any significant adverse impacts to these wells.
- If the proposed well is located in an area designated by the county as a Groundwater Level Management Zone, the applicant must (1) provide and implement a Groundwater Extraction Offset plan that demonstrates the well will not result in a net increase in groundwater demand, or (2) complete a Groundwater Resources Investigation that demonstrates the proposed groundwater extraction will not result in adverse critical overdraft conditions as defined by DWR; and (3) provide and implement a groundwater level monitoring program.

Water Quality:

- If the proposed well is located in a county-designated Groundwater Quality Protection Zone (within an area underlain by the Corcoran Clay), well construction standards must be implemented that prevent potential water quality degradation caused by cross connecting the confined and unconfined aquifer systems.
- If the proposed well is located in a county-designated Groundwater Quality Study Zone (within 1 mile of a well that produces water with solute concentrations that exceed primary or secondary maximum contaminant levels [MCLs] or other applicable Water Quality Objectives), or within 1 mile of a reported contamination incident, the applicant must submit a Groundwater Quality Investigation that demonstrates the proposed groundwater extraction will not result in the capture or migration of contaminated or poor quality groundwater.

Subsidence:

- If the proposed well is located in a county-designated Subsidence Study Zone (within 2 miles of an area underlain by the Corcoran Clay), and the well is predicted to draw down groundwater levels in the confined aquifer system to an elevation below historical low levels or subsidence has been reported nearby, the applicant must submit a Geotechnical Subsidence Investigation to assess subsidence that may be induced by the proposed groundwater extraction and provide recommendations for monitoring and mitigation, as appropriate.

Surface Water Depletion:

- If the proposed well is located in a county-designated Surface Water Protection Zone (within 1 mile of groundwater-connected streams, tributaries, or reservoirs associated with the Calaveras, San Joaquin, Stanislaus, or Tuolumne Rivers if the well screen and gravel pack are completed within 200 feet vertically of the streambed elevation, and within 2,500 feet if the well screen and gravel pack are completed at least 200 feet below the streambed elevation), the applicant must perform a

Surface-Groundwater Interaction Study that demonstrates the proposed groundwater extraction will not cause depletion of surface water that unreasonably affects beneficial surface water uses.

Groundwater-Dependent Ecosystems (GDEs):

- If predicted drawdown of the shallow aquifer exceeds 1 foot at any groundwater dependent ecosystem (GDE), a GDE Impact Assessment must be performed, including identification and mitigation of any potentially significant adverse impacts to GDEs.

2.3 Hydrologic Modeling for Program Evaluation

Evaluation of the potential environmental effects associated with the program requires modeling of program implementation using a hydrologic computer model (the Stanislaus County Hydrologic Model, or SCHM). This evaluation will include development of projections regarding future groundwater demand, including the installation and general location of new wells, to represent implementation of the Groundwater Ordinance, as described in the previous section. Projected groundwater demand will be assessed by simulating groundwater extraction from a set of hypothetical wells, added to the SCHM in areas where expanded extraction is expected or planned. The number, depth and capacity of these hypothetical wells will be based on known groundwater supply projects that are expected to be implemented, anticipated groundwater demand trends based on information in planning documents, historical well permitting trends in the areas exempt from the prohibitions in the Ordinance, and historical well permitting trends in the unincorporated areas of the county that are subject to the prohibitions in the Ordinance. Regarding the latter category, it is anticipated that the rate of non-exempt well installation will increase over time as the program matures, and the PEIR is completed.

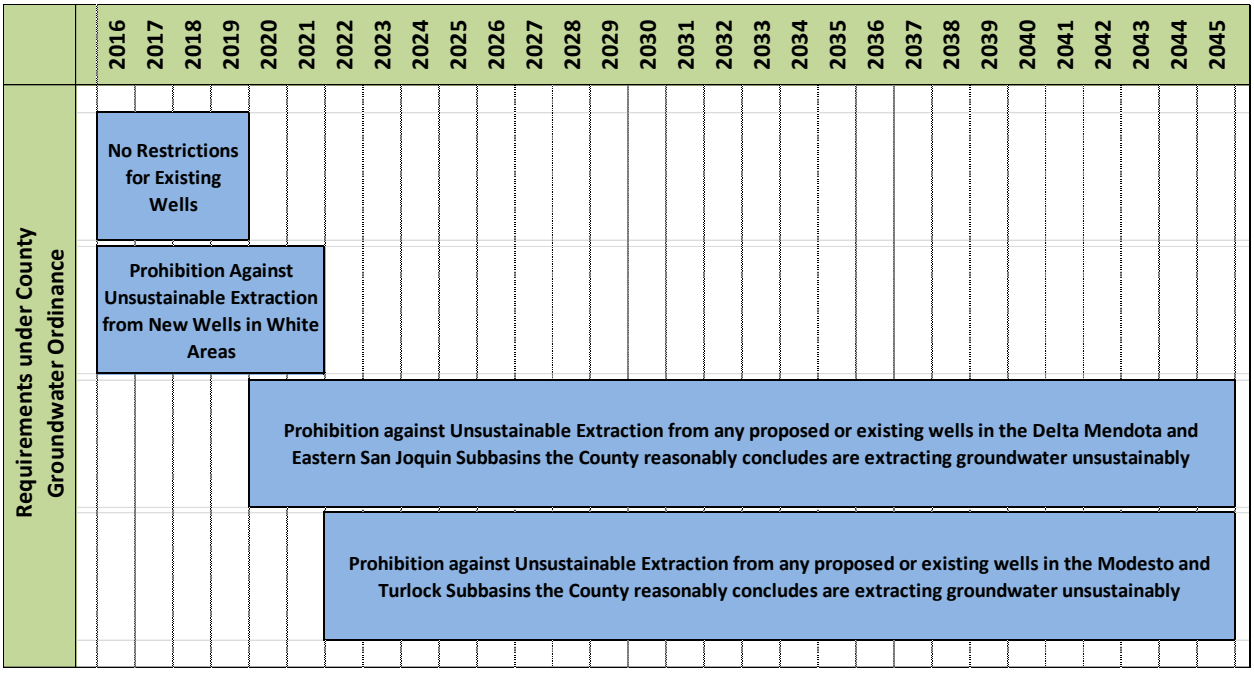
The Ordinance requirements applicable to wells in the county over the implementation horizon evaluated in this PEIR are shown graphically in Figure 2-2, below. These requirements coincide with the adoption and implementation of GSPs in the Delta Mendota and Eastern San Joaquin Subbasins beginning in 2020 and in the Modesto and Turlock Subbasins beginning in 2022, with achievement of sustainable groundwater management throughout the basins within 20 years after the GSP is adopted.

2.4 Evaluation of Indirect Actions

CEQA requires that an environmental analysis include the whole of an action and its potential consequences. This includes off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts, as long as they are reasonably foreseeable.[13] The primary impacts that will be evaluated in the PEIR (and this Initial Study) are the direct and indirect impacts associated with the primary action – construction and operation of groundwater extraction wells. Indirect actions that will be considered include the secondary actions resulting from issuing discretionary permits for

[13] CEQA Guidelines § 15378.

Figure 2-2: Timeline for Well Permitting Requirements to be Evaluated in the SCHM



wells that will be used to supply water for cultivation in areas previously occupied by open rangeland (i.e., for agricultural conversion), or the secondary actions that denying discretionary permits (or curtailing groundwater extraction) would trigger regarding agricultural site uses or utility service systems. However, tertiary and higher-tier actions, such as shifts in population growth or employment patterns in response to changes in land use, and their associated environmental effects are considered too speculative for analysis in the PEIR or this Initial Study. This is because the number, locations and distribution of new wells evaluated under the program are not known, and higher-tier indirect effects are often driven by influences that are not reasonably foreseeable, such as future implementation of GSPs, or adoption of state standards and policies that affect surface water flow requirements and water supply deliveries.

3.0 ENVIRONMENTAL SETTING

3.1 General

The program that will be evaluated by the proposed PEIR is applicable to unincorporated areas of Stanislaus County in central California. The county covers 1,515 square miles in the northern San Joaquin Valley and surrounding coast range to the west and Sierra Nevada foothills to the east. Stanislaus County had a population of 531,997 residents in 2014, which is projected to grow to 611,376 by 2025.[14] The county is noted for its agriculture and food processing; agricultural sales and related industry accounted for $13 billion in economic activity in 2013. Other major segments of the economy include manufacturing and a range of service industries (healthcare, retail, and others). The largest manufacturing companies in the county are associated with the production of food and wine. Water supply is a major concern and is considered key to future economic prosperity, particularly in light of projected population increases.

As noted in the Section 2, Project Description, this evaluation focuses on unincorporated portions of the county because the Ordinance does not apply to the incorporated areas. The portion of the county located in the Coast Range west of the San Joaquin Valley is largely occupied by open rangeland and underlain by relatively impermeable bedrock of the Diablo Range. Groundwater supplies are very limited in this area, and groundwater demand consists of relatively few domestic and stock wells, which would be considered *de minimis* and therefore exempt from the Ordinance. The area of potential effects (APE) considered in this Initial Study and the PEIR therefore does not include this area, and focuses on the portion of the county within the San Joaquin Valley and the eastern foothills. These areas are underlain by regional aquifers within the San Joaquin Groundwater Basin and associated subbasins, as described in greater detail below.

Conditions that may be of specific concern to this Initial Study and the PEIR include new groundwater demand to supply the conversion of rangeland to agricultural production in the eastern portion of the county, and increased reliance on groundwater in the western portion of the San Joaquin Valley, where surface water deliveries have become less reliable as a result of the current drought and increased allocation of surface water to environmental uses. These trends were partially responsible for the adoption of the Ordinance in 2014. Conjunctive use of groundwater and surface water is of critical importance to the reliability of both agricultural and municipal water supplies in the county. Throughout most of the county, and especially within the boundaries of public water agencies, this has been effectively accomplished as evidenced by the long terms stability of groundwater levels. However, increased reliance on groundwater in some areas, exclusive long-term reliance on groundwater in other areas, and the effects of the drought over the last five years have resulted in stresses to groundwater resources. Some of these stresses will be alleviated by the end of the current drought and a return of more normal climatic conditions; however,

[14] Stanislaus County, 2016. Stanislaus County Comprehensive Economic Development Strategy, 2016-2021.

trends toward agricultural land conversion and increased allocation of surface water for environmental purposes will continue to pose challenges in the future.

3.2 Land Use

Land use in Stanislaus County consists primarily of agricultural development. The communities of Ceres, Hughson, Modesto, Newman, Patterson, Riverbank, and Turlock are also located in this area. The low foothills that comprise the eastern portion of the county are occupied primarily by open rangeland and some cultivated land, as well as several unincorporated communities. Several reservoirs important to the management of local water supplies are also located in this area.

3.3 Water Supply

Stanislaus County relies on the conjunctive use of surface water and groundwater. The Stanislaus and Tuolumne Rivers are an important agricultural and municipal water supply source to the county via diversions that occur under senior water rights held by Modesto Irrigation District, Oakdale Irrigation District and Turlock Irrigation District. These districts deliver water to their agricultural and municipal customers through locally developed and financed water projects. Several public water agencies also divert at least a portion of the water they deliver from the San Joaquin River, for example El Solyo Water District, Patterson Irrigation District and Westside Irrigation District. Additional riparian and appropriative water rights holders near these rivers divert water for local use. The California Aqueduct and Delta Mendota Canal skirt the western edge of the San Joaquin Valley and also provide water to several public water agencies, for example Central California Irrigation District, Del Puerto Water District, Oak Flat Water District, Patterson Irrigation District and Westside Irrigation District.

Groundwater is the predominant source of municipal water in the county, although surface water makes up a growing percentage of the municipal water supply, and additional projects to provide surface water for municipal use are being planned. Throughout most of the county, groundwater is used conjunctively with surface water as an irrigation water supply. Generally, in areas that receive surface water deliveries, groundwater is used as a supplemental irrigation supply during times of surface water shortage. This conjunctive use pattern, combined with deep percolation of applied water to recharge groundwater supplies, has resulted in generally stable groundwater levels over the long term. A few areas rely primarily on groundwater as an irrigation water supply. These areas include, for example, Eastin Water District, Eastside Water District and the unincorporated areas of the county that are located outside of the boundaries of existing public water agencies (the "White Areas" discussed in Section 2.2. Groundwater resources in these areas are more vulnerable to long term stress and depletion; however, enhanced groundwater recharge and other means of relieving stress on groundwater resources are being investigated in these areas.

Due to regulatory restrictions associated with pumping water through the Sacramento-San Joaquin Delta and recent drought conditions, surface water deliveries from the state and federal water projects to water agencies west of the San Joaquin River have been significantly less than their contract allocations. For

example, during the last seven years, Del Puerto Water District received 10% (2009), 80% (2010), 45% (2011), 40% (2012), 20% (2013), 0% (2014), and 0% (2015) of its contact allocation.[15] In addition, irrigation districts east of the San Joaquin River have not been able to deliver their full allocations during the drought. The affected water districts have actively engaged in local, regional, and statewide efforts to secure additional water supplies as needed to help meet customer demand; however, in some cases landowners have relied on the fallowing of productive lands or turned to groundwater for irrigation supplies, where available.

3.4 Physiographic Setting

The APE considered in this Initial Study includes the portions of Stanislaus County occupied by the San Joaquin Valley and the low Sierra Nevada foothills to the east. The San Joaquin Valley comprises the southern two thirds of California's Central Valley, a long asymmetrical trough that extends north-northwest for approximately 400 miles between the Coast Ranges on the west and the Sierra Nevada and Cascade Mountains to the east, and is approximately 40 to 60 miles wide. In Stanislaus County, the valley floor ranges in elevation from approximately 70 to 150 feet above mean sea level (amsl) near the southern county boundary to 30 to 100 feet amsl near the northern boundary. It is bounded by abruptly rising hills and mountains of the Diablo Range to the west that rise to elevations as high as 3,000 to 4,000 feet amsl. To the east are gently rising rolling foothills of the Sierra Nevada, which reach elevations of approximately 400 to 700 feet amsl near the eastern county boundary.

3.5 Climate

The area has a "Mediterranean" climate characterized by hot, dry summers and short, wet winters, and averages more than 260 sunny days per year. The average annual precipitation at the Modesto meteorological station is just over 13 inches per year, with 88 percent occurring between November and April.[16,17]

Much of California, including the Central Valley, has experienced unprecedented drought conditions over the last four years. As a result, water conservation measures have been mandated, delivery of surface water from the state and federal water systems has been curtailed, and reliance on groundwater resources for agricultural uses has increased.

[15] Stanislaus Local Agency Formation Commission, 2016. Municipal Service Review and Sphere of Influence Update for: Del Puerto, Eastin, El Solyo and Oak Flat Water Districts, Patterson and West Stanislaus Irrigation Districts.

[16] Turlock Irrigation District, 2012. 2012 Agricultural Water Management Plan.

[17] Sperlings Best Places, 2016. http://www.bestplaces.net/climate/county/california/stanislaus. Accessed April 25.

3.6 Hydrology

Stanislaus County is located in the northern portion of the San Joaquin River Hydrologic Region. Major drainages entering the county from the east include the Stanislaus and Tuolumne Rivers, which are fed by storm runoff and snowmelt from the Sierra Nevada and constitute an important water supply for the county. These rivers are tributary to the San Joaquin River, which enters the county from the south and flows north-northwestward through the low point of the San Joaquin Valley. Streams entering Stanislaus County from the Diablo Range to the west are smaller and typically ephemeral in nature, reaching the San Joaquin River for only part of the year.

3.7 Geology

The San Joaquin Valley is a deep, north-northwest trending alluvial basin filled with a succession of Recent to upper Tertiary alluvial sediments derived from the Coast Range to the west and the Sierra Nevada to the east. The materials are underlain by a succession of Tertiary and Mesozoic marine sedimentary formations. On the western side of the San Joaquin Valley, Quaternary alluvial deposits are underlain by the Plio-Pleistocene Tulare Formation, which increases in thickness eastward away from the Diablo Range to a maximum thickness of approximately 1,400 feet near the valley axis.[18] Similarly, east of the San Joaquin River, Quaternary alluvium is underlain by the Pleistocene Modesto and Riverbank Formations, and the Plio-Pleistocene Turlock Lake Formations. The Tulare, Modesto, Riverbank and Turlock Lake Formations all consist largely of alluvial deposits separated by a series of fine-grained lacustrine deposits, which increase in frequency and thickness toward the valley center. The most regionally extensive lacustrine deposit is the Corcoran Clay member of the Tulare and Turlock Lake Formations, which is thickest near the axis of the basin and thins or is absent near the basin edges.

On the east side of the county, the volcano-fluvial Pliocene-Miocene Mehrten Formation underlies the Turlock Lake Formation and crops out in the foothills, where it forms a dissected upland. The Mehrten Formation consists of semi-consolidated to well consolidated sandstones, conglomerates and siltstones, and is underlain by lower Tertiary volcanic and volcano-fluvial formations in the foothills, and marine sedimentary formations beneath the valley.

3.8 Hydrogeology

Stanislaus County is underlain by the East San Joaquin, Modesto, Turlock, and Delta Mendota Subbasins of the San Joaquin Valley Groundwater Basin (SJVGB). Aquifer systems in the SJVGB consist mostly of continental sediments derived from erosion of the Sierra Nevada to the east and the Coast Ranges to the west and deposited in the valley. The alluvial aquifer system, much of which occurs as fan deposits, consists

[18] San Luis and Delta-Mendota Water Users Authority, 2011. Groundwater Management Plan for the Northern Agencies in the Delta Mendota Canal Service Area.

of a complex set of interbedded aquifers and aquitards that function regionally as a single water-yielding system. The aquifers are relatively thick, with the upper 800 feet providing the primary source of groundwater supply in the area. Aquifer materials consist of gravel and sand, which become increasingly interbedded with fine-grained silt, clay, and lakebed deposits toward the center of the valley. Regionally, the aquifer system of the SJVGB can be divided into an upper unconfined to semi-confined aquifer system, a series of geographically extensive confining clay layers, and a deep confined aquifer system that occupies the central portions of the basin. Toward the center of the valley, the distal, finer-grained facies of the alluvial deposits are interfingered and interbedded with floodplain and basin deposits. Buried river-channel deposits occur in the alluvial fan deposits at the margins of the valley and along Pleistocene and modern river courses.[19]

Although in most of the county groundwater levels have been relatively stable over the long term through conjunctive use of surface water and groundwater, all four of the subbasins underlying the county have experienced areas of stress. In some areas, these stresses have been exacerbated by drought conditions over the last five years, which have decreased surface water availability and increased reliance on groundwater for the agricultural sector. The East San Joaquin and Delta Mendota Subbasins are designated as being in a state of critical overdraft by the California Department of Water Resources (DWR), primarily due to subsidence caused by overdraft outside of the county.[20] Up to approximately 2.5 inches of subsidence has been reported in the Delta Mendota Subbasin within the county, and three of the four subbasins underlying the county have been identified as having a high or medium to high potential for future subsidence. In addition, the Delta Mendota Subbasin has experienced increased stress on groundwater resources due to the unreliability of surface water deliveries from the state and federal water projects, and the remaining subbasins are experiencing increased stress due to greater groundwater demand caused by conversion of rangeland to agricultural cultivation.

The lack of current surface-water supply options in eastern Stanislaus County, coupled with an increased rate of rangeland conversion to agricultural use, has placed significant stress on groundwater resources within the portion of the East San Joaquin Subbasin that underlies the county and on the eastern Modesto and Turlock Subbasins. Over the last 10 years, over 60,000 acres of rangeland have been converted to irrigated agriculture in these areas and are almost entirely dependent on groundwater. In addition, the predominant crop types involved are nut trees, vines and other permanent crops, resulting in a significant hardening of this new groundwater demand. This has placed a significant new stress on limited groundwater resources in the Mehrten Formation uplands that may be expected to continue, if not grow,

[19] DWR, 2013. California's Groundwater Update 2013, A Compilation of Enhanced Content for California Water Plan Update 2013, Chapter 8 – San Joaquin River Hydrologic Region. April.

[20] DWR, 2016b. Groundwater Information Center Interactive Map Application. https://gis.water.ca.gov/app/gicima/. Accessed May 20.

over the foreseeable future. Groundwater monitoring data are limited in this portion of the county; however, this new groundwater demand has caused significant public concern.

3.9 Biological Resources

Stanislaus County is located within the San Joaquin Valley and Central Coast bioregions. These bioregions have a Mediterranean climate and support a variety of habitat types, including blue oak-digger pine forest, chaparral, annual grassland, alkali desert scrubland, tule marsh, riparian forest, freshwater emergent wetland, vernal pools, valley foothill riparian, valley oak savannah, blue oak woodland, and valley oak woodland, among others.[21] The majority of Stanislaus County lies within the San Joaquin Valley, which has a mix of agricultural and urban land uses. San Joaquin Valley grassland, rangeland, and agricultural areas provide wildlife habitat as described below.

Grassland habitats in the San Joaquin Valley were originally composed of a mix of native perennial and annual grasses such as needle grass (*Stipa cernua, S. pulchra*), and alkali sacaton (*Sporobolus airiodes*), but have since been degraded with a dominance of naturalized annual grasses such as soft chess (*Bromus hordeaceus*), red brome (*B. madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), and medusa head (*Elymus caput-medusae*). Forbs include lupines (*Lupinus* spp.), Bird's foot trefoil (*Acmispon americanus*), Mariposa lilies (*Calochortus venustus*), popcorn flower (*Cryptantha* sp.), filaree (*Erodium cicutarium* and *E. brachycarpum*), and California poppy (*Eschscholzia californica)*. Vernal pools occur in grassland habitats in small depressions underlain with an impermeable substrate that creates ephemeral wetlands with winter rains. Special status invertebrates are found in vernal pools, including federally threatened vernal pool fairy shrimp *(Branchinecta lynchi)* and federally endangered vernal pool tadpole shrimp (*Lepidurus packardi)*. Grassland habitats also support large populations of small prey species, including deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), and California ground squirrel (*Spermophilus beecheyi*). Common reptiles and amphibians of grasslands include western fence lizard (*Sceloporus occidentalis*), common kingsnake (*Lampropeltis getula*), western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis melanoleucus*), western toad (*Anaxyrus boreas*), and western spadefoot toad (*Spea hammondii*). Grasslands are important foraging areas for a variety of wildlife including coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), San Joaquin kit fox (*Vulpes macrotis mutica*) (federally endangered and state threatened), American badger (*Taxidea taxus*) (species of special concern), and numerous bird species, including red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), yellow-billed magpie (*Pica nuttalli*), loggerhead shrike (*Lanius ludovicianus*), and savannah sparrow (*Passerculus sandwichensis*). Nesting birds of grasslands include killdeer (*Charadrius vociferous*), ring-necked pheasant

[21] Welsh, Hartwell H., 1994. *Bioregions: An Ecological and Evolutionary Perspective and a Proposal for California*. California Department of Fish and Game.

(*Phasianus colchicus)*, western kingbird (*Tyrannus verticalis*), western meadowlark (*Strunella neglecta*), and horned lark (*Eremophila alpestris*).

Rangeland is managed for foraging livestock and is a mix of herbaceous dominated by grasses and forbs, and shrub and brush rangeland that has a mix of woody vegetation. Depending on the level of grazing, rangeland can have sparse or weedy vegetation. Coyote, black-tailed jackrabbit (*Lepus californicus*), and California kangaroo rat (*Dipodomys californicus*) are commonly found in rangeland.[22][23]

Agricultural areas include two types: (1) cropland and pasture and (2) orchards and vineyards. Irrigated pastures provide foraging and roosting opportunities for shorebirds and wading birds; unirrigated pastures provide forage for seed-eating birds and small mammals. Small mammals found in pastures include California voles, Botta's pocket gophers, and California ground squirrels, which are prey for foraging raptors, including red-tailed hawks, white-tailed kites (*Elanus leucurus*), and prairie falcons (*Falco mexicanus*). Crops include row crops, grain crops, rice, and cotton. Cropland is more intensively managed and is regularly disturbed throughout the year, generally providing lower quality habitat. Rodent species, such as the California vole, deer mouse, and California ground squirrel, are common and are preyed upon by various raptors. Orchards and vineyards are typically open, single-species habitats that are intensively managed; vineyards are often treated with herbicides to prevent understory growth of competing herbaceous species. Wildlife found in orchards and vineyards includes deer mouse, California quail (*Callipepla californica*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), California ground squirrel, black-tailed jackrabbit, mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), and northern flicker (*Colaptes auratus*).[24][25]

A query of the California Natural Diversity Database (CNDDB) records of occurrences of threatened, endangered, and special status species covered all of Stanislaus County. Results of the database query are in Tables 3.7.1 and 3.7.2, which list species with the potential to occur in project areas within the county. Sensitive vegetation communities identified by the CNDDB query include Northern Hardpan Vernal Pool, Coastal and Valley Freshwater Marsh, Elderberry Savannah, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Valley Oak Riparian Forest, and Sycamore Alluvial Woodland.[26]

[22] East Stanislaus Region, 2013. East Stanislaus Region Integrated Regional Water Management Plan. December.

[23] San Luis and Delta-Mendota Water Authority, 2014. San Luis and Delta-Mendota Water Authority, Westside-San Joaquin Integrated Water Resources Plan (Draft). July.

[24] East Stanislaus Region, 2013. East Stanislaus Region Integrated Regional Water Management Plan. December.

[25] San Luis and Delta-Mendota Water Authority 2014. San Luis and Delta-Mendota Water Authority, Westside-San Joaquin Integrated Water Resources Plan (Draft). July.

[26] California Department of Fish and Wildlife, 2016. California Natural Diversity Database (CNDDB) query of special status plants, wildlife, and communities records for Stanislaus County. August.

Table 3.7-1 Special-Status Wildlife Species Potentially Occurring in Stanislaus County

Scientific Name	Common Name	Federal/State Status
AMPHIBIANS		
Ambystoma californiense	California tiger salamander	FT/ST
Rana boylii	foothill yellow-legged frog	SSC
Rana draytonii	California red-legged frog	FT, SSC
Spea hammondii	western spadefoot	SSC
BIRDS		
Agelaius tricolor	tricolored blackbird	SSC
Aquila chrysaetos	golden eagle	CFP
Athene cunicularia	burrowing owl	SSC
Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	FD
Buteo swainsoni	Swainson's hawk	FT
Charadrius montanus	mountain plover	SSC
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT, SE
Haliaeetus leucocephalus	bald eagle	FD, SE
Icteria virens	yellow-breasted chat	SSC
Lanius ludovicianus	loggerhead shrike	SSC
Melospiza melodia	song sparrow ("Modesto" population)	SSC
Vireo bellii pusillus	least Bell's vireo	FE, SE
CRUSTACEANS		
Branchinecta conservatio	Conservancy fairy shrimp	FE
Branchinecta lynchi	vernal pool fairy shrimp	FT
Lepidurus packardi	vernal pool tadpole shrimp	FE
FISH		
Lavinia symmetricus ssp. *1*	San Joaquin roach	SSC
Mylopharodon conocephalus	Hardhead	SSC
Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	FT
Pogonichthys macrolepidotus	Sacramento splittail	SSC
INSECTS		
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT
MAMMALS		
Antrozous pallidus	pallid bat	SSC
Corynorhinus townsendii	Townsend's big-eared bat	CT
Eumops perotis californicus	western mastiff bat	SSC
Lasiurus blossevillii	western red bat	SSC
Neotoma fuscipes riparia	riparian (=San Joaquin Valley) woodrat	FE, SSC
Sylvilagus bachmani riparius	riparian brush rabbit	FE, SE
Taxidea taxus	American badger	SSC
Vulpes macrotis mutica	San Joaquin kit fox	FE, ST

Scientific Name	Common Name	Federal/State Status
REPTILES		
Emys marmorata	western pond turtle	SSC
Masticophis flagellum ruddocki	San Joaquin coachwhip	SSC
Masticophis lateralis euryxanthus	Alameda whipsnake	FT, ST
Phrynosoma blainvillii	coast horned lizard	SSC

Notes:
FE Federally Endangered
FT Federally Threatened
FC Federal Candidate
FD Federally Delisted
PT Federally Proposed Threatened
SSC Species of Special Concern
CFP California Fully Protected Species
SE State Endangered
ST State Threatened
SR State Rare
CT State Candidate Threatened

Table 3.7-2 Special-Status Plant Species Potentially Occurring in Stanislaus County

Scientific Name	Common Name	Federal/State Status
PLANTS		
Acmispon rubriflorus	red-flowered bird's-foot-trefoil	CNPS 1B.1
Allium sharsmithiae	Sharsmith's onion	CNPS 1B.3
Astragalus tener var. *tener*	alkali milk-vetch	CNPS 1B.2
Atriplex cordulata var. *cordulata*	heartscale	CNPS 1B.2
Atriplex minuscula	lesser saltscale	CNPS 1B.1
Atriplex persistens	vernal pool smallscale	CNPS 1B.2
Atriplex subtilis	subtle orache	CNPS 1B.2
Blepharizonia plumosa	big tarplant	CNPS 1B.1
California macrophylla	round-leaved filaree	CNPS 1B.2
Calycadenia hooveri	Hoover's calycadenia	CNPS 1B.3
Campanula exigua	chaparral harebell	CNPS 1B.2
Campanula sharsmithiae	Sharsmith's harebell	CNPS 1B.2
Castilleja campestris var. succulenta	succulent owl's-clover	FT, SE, CNPS 1B.2
Caulanthus lemmonii	Lemmon's jewelflower	CNPS 1B.2
Cirsium fontinale var. *campylon*	Mt. Hamilton fountain thistle	CNPS 1B.2
Clarkia rostrate	beaked clarkia	CNPS 1B.3
Cryptantha hooveri	Hoover's cryptantha	CNPS 1A
Cryptantha mariposae	Mariposa cryptantha	CNPS 1B.3
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	CNPS 1B.2
Downingia pusilla	dwarf downingia	CNPS 2B.2

Scientific Name	Common Name	Federal/State Status
PLANTS		
Eriastrum tracyi	Tracy's eriastrum	SR, CNPS 3.2
Eryngium racemosum	Delta button-celery	FE, CNPS 1B.1
Eryngium spinosepalum	spiny-sepaled button-celery	CNPS 1B.2
Eschscholzia rhombipetala	diamond-petaled California poppy	CNPS 1B.1
Euphorbia hooveri	Hoover's spurge	FT, CNPS 1B.2
Fritillaria agrestis	stinkbells	CNPS 4.2
Fritillaria falcata	talus fritillary	CNPS 1B.2
Juncus nodosus	knotted rush	CNPS 2B.3
Lagophylla dichotoma	forked hare-leaf	CNPS 1B.1
Legenere limosa	legenere	CNPS 1B.1
Leptosyne hamiltonii	Mt. Hamilton coreopsis	CNPS 1B.2
Lomatium observatorium	Mt. Hamilton lomatium	CNPS 1B.2
Madia radiate	showy golden madia	CNPS 1B.1
Malacothamnus hallii	Hall's bush-mallow	CNPS 1B.2
Monardella leucocephala	Merced monardella	CNPS 1A
Navarretia gowenii	Lime Ridge navarretia	CNPS 1B.1
Neostapfia colusana	Colusa grass	FT, SE, CNPS 1B.1
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT, SE, CNPS 1B.1
Orcuttia pilosa	hairy Orcutt grass	FE, SE, CNPS 1B.1
Phacelia phacelioides	Mt. Diablo phacelia	CNPS 1B.2
Plagiobothrys verrucosus	warty popcornflower	CNPS 2B.1
Pseudobahia bahiifolia	Hartweg's golden sunburst	FE, SE, CNPS 1B.1
Puccinellia simplex	California alkali grass	CNPS 1B.2
Sphenopholis obtusata	prairie wedge grass	CNPS 2B.2
Tuctoria greenei	Greene's tuctoria	FE, SR, CNPS 1B.1

Notes: FE Federally Endangered
FT Federally Threatened
SE State Endangered
SR State Rare
CNPS California Native Plant Society
California Native Plant Society Rankings:
Rare Plant Ranks–
1A= Plants presumed extirpated in California and either rare or extinct elsewhere
1B=Plants rare, threatened, or endangered in California and elsewhere
2B=Plants rare, threatened, or endangered in California, but more common elsewhere
3=Plants about which more information is needed
4=Plants of limited distribution
Threat Ranks (listed after the rare plant rank with the following format [for example]: 1B.1)–
0.1–Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2–Moderately threatened in California (20–80% occurrences threatened/moderate degree and immediacy of threat)
0.3–Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
(CNPS 2016 http://www.cnps.org/cnps/rareplants/ranking.php)

4.0 ENVIRONMENTAL CHECKLIST

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or as a "Potentially Significant Unless Mitigation Incorporated," as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Greenhouse Gas Emissions	☐ Population and Housing
☒ Agriculture and Forestry Resources	☒ Hazards and Hazardous Materials	☐ Public Services
☒ Air Quality	☒ Hydrology and Water Quality	☐ Recreation
☒ Biological Resources	☒ Land Use and Planning	☐ Transportation and Traffic
☒ Cultural Resources	☐ Mineral Resources	☒ Utilities and Service Systems
☒ Geology and Soils	☒ Noise	☐ Mandatory Findings of Significance

Determination (To Be Completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLRATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Evaluation of Environmental Impacts

A brief explanation is required for all answers except "No Impact" that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (for example, the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (for example the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

All answers must take into account the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

"Negative Declaration: Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact."

Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (such as general plans and zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list should be attached and other sources used or individuals contacted should be cited in the discussion.

Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

This form is only suggested, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

The explanation of each issue should identify the significance criteria or threshold, if any, used to evaluate each question.

4.1 Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?			**X**	
b. Substantially damage scenic resources, including, but not limited to, trees, outcroppings, and historic buildings within a state scenic highway?			**X**	
c. Substantially degrade the existing visual character or quality of the site and its surroundings?			**X**	
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

a. Would the project have a substantial adverse effect on a scenic vista?

The construction of new wells would not have a substantial adverse effect on a scenic vista because any aboveground infrastructure associated with well construction would be relatively minor in scale and would not block or otherwise obstruct a scenic vista. Unincorporated Stanislaus County is not densely populated, and there are large expanses of agricultural scenery so that a small feature associated with an underground well would not be easily noticed. Additional equipment and vehicles would be present during construction of a well, but these impacts would be temporary and these features would be removed when construction is complete.

Some new irrigation wells for which discretionary permits are issued would be used to facilitate new agricultural cultivation in areas that were previously uncultivated. Land uses supported by these new wells would be consistent with existing zoning requirements and would generally be consistent with existing land uses and vistas. Therefore direct and indirect impacts from the project on scenic vistas are likely to be less than significant. For these reasons, this issue does not require further analysis in the PEIR.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Interstate Route 5 from the Stanislaus County border to the San Joaquin County border is designated a State Scenic Highway. It parallels the Delta-Mendota Canal and the California Aqueduct and is called the West Side Freeway. Developing new wells in unincorporated Stanislaus County is not likely to substantially damage scenic resources, including those within the West Side Freeway, because any associated aboveground structures would be small and would not be noticeable when traveling on the scenic highway.

Viewers drive along the highway in vehicles at high speeds, further increasing the difficulty in noticing small-scale features, such as well infrastructure. During construction of wells, it is expected that construction vehicles and equipment would be sited away from trees, rock outcroppings, and historic buildings within the scenic highway. Any impacts during construction would be temporary, ending when construction is complete.

Some new irrigation wells for which discretionary permits are issued would be used to facilitate new agricultural cultivation in areas that were previously uncultivated. Land uses supported by new wells would be consistent with existing zoning requirements and would generally be consistent with existing land uses and vistas. Therefore, direct and indirect impacts from the project on scenic resources are likely to be less than significant. For these reasons, this issue does not require further analysis in the PEIR.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Construction of new wells would not substantially degrade the existing visual character and surroundings of unincorporated Stanislaus County because wells and their aboveground infrastructure would not be inconsistent visual features of the sites and their surroundings. As unincorporated Stanislaus County is not densely populated and is agricultural in nature, wells would be consistent with other agricultural uses in the area, and small features associated with wells would not detract from the overall character of the area. Construction of wells may temporarily affect the character of the surroundings resulting from the presence of construction vehicles and equipment, but those impacts would be temporary, lasting only during the construction period.

Some irrigation wells for which discretionary permits are issued would be used to facilitate new agricultural cultivation in areas that were previously uncultivated. Land uses supported by new wells would be consistent with existing zoning requirements and would generally be consistent with the existing visual character and quality of the sites and surrounding area. Therefore, direct and indirect impacts from the project on the existing visual character or quality of sites undergoing agricultural conversion and surrounding areas are likely to be less than significant. For these reasons, this issue does not require further analysis in the PEIR.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Neither the construction of wells for which discretionary permits are issued nor any permanent infrastructure associated with them would be a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Outdoor lighting would be controlled by the Stanislaus County General Plan Land Use Element, Goal 2, Policy 16, Implementation Measure 1 (develop light and glare standards to ensure that artificial outdoor lighting is efficient and focused on achieving safety and security requirements for the associated land use) and Implementation Measure 2 (outdoor lighting shall be required to provide minimum impact to the surrounding environment and where feasible will utilize downcast, cut-off type fixtures that are shielded and direct the light only towards objects requiring

illumination). During construction, on-site lighting may be necessary if well drilling occurs at night; however, any light sources would be minimized, directed away from populated areas, and focused on the project site. Construction activities would be temporary. Operation of the wells may require security lighting at night, but this lighting would be shielded and directed downward to minimize light spill. Direct and indirect impacts from this project related to light and glare would be less than significant, and this issue does not require further analysis in the PEIR.

4.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	**X**			
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?			**X**	
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Codes section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				**X**
d. Result in the loss of forest land or conversion of forest land to non-forest use?				**X**
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	**X**			

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Most new wells for which discretionary permits are issued would be irrigation wells related to the continuance of existing agricultural use or conversion from one agricultural use to another (such as rangeland to orchards). The permitting of new wells would not result in the conversion of farmland to non-agricultural uses. Stanislaus County General Plan Land Use Element, Goal 7, Policy 32, states that any decision by the Board of Supervisors of the county to approve the redesignation or rezoning of land from an agricultural or open space use to a residential use requires and is contingent upon approval by a majority vote of the county voters at a general or special local election. Also, the majority of lands zoned General Agriculture District (A-2) are subject to Williamson Action contracts. Finally, land use conversion is also limited by Stanislaus County General Plan Agricultural Element, Goal 2, Policy 2.4 (to reduce development pressures on agricultural lands, higher density development and in-filling shall be encouraged). If, under the Ordinance, groundwater extraction from a new well is determined to be unsustainable, a permit to construct the well would not be issued, or permit conditions would be assigned to limit groundwater extraction from the well to sustainable quantities. In addition, after GSPs are adopted, if the county finds that groundwater extraction from an existing well is not sustainable, the county could require that groundwater extraction from that well be terminated or curtailed to sustainable levels. Under either of these circumstances, it is possible that the volume of irrigation water available at existing farmland would be insufficient to meet irrigation demands, resulting in changes in cultivation to non-irrigated crops or pastures (a reversal of current trends). Limitations on irrigation water availability when surface water deliveries are curtailed (e.g., during droughts) could result in some lands lying fallow for the short-term. If irrigation water restrictions were to continue long-term, there could be local conversion of farmland to non-agricultural uses. The PEIR will evaluate the potential impacts of the project on the availability of irrigation water to farmlands, and the potential for long-term or permanent conversion of unirrigated lands to non-agricultural uses.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project would not directly result in the change of any zoning or Williamson Act contracts. The permitting of new wells for which discretionary permits are issued would support ongoing use of areas zoned for agriculture. Limits on the permitting of new wells could impact the continued use of agricultural lands if the volume of available irrigation water were insufficient to support irrigated cultivation; however, such limits would not create a direct conflict with existing agricultural zoning or Williamson Act Contracts. Direct and indirect impacts from the project would be less than significant, and this issue does not require further analysis in the PEIR.

c. Would the project (c) conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220(g)), timberland (as defined by Public Resources Codes § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))?

Stanislaus County does not contain land designated as forest land or timberland.[27] This issue does not require further analysis in the PEIR.

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Stanislaus County does not contain land designated as forest land. This issue does not require further analysis in the PEIR.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Limits on the construction of new wells, or on groundwater extraction from new or existing wells from which groundwater extraction is found to be unsustainable, could result in some lands lying fallow for the short term when combined with long-term limits on the availability of surface water (such as during droughts). If irrigation water restrictions were to continue long term, there could be local conversion of farmland to non-agricultural uses. This issue will be further evaluated in the PEIR.

4.3 Air Quality

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	**X**			
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	**X**			
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing	**X**			

[27] Stanislaus County General Plan, Conservation/Open Space Element.

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
emissions which exceed quantitative thresholds for ozone precursors)?				
d. Expose sensitive receptors to substantial pollutant concentrations?				**X**
e. Create objectionable odors affecting a substantial number of people?				**X**

4.3.1 Background

In accordance with the Clean Air Act, the U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for criteria pollutants: the federal National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). These criteria pollutants include ozone, carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), lead (Pb) and nitrogen dioxide (NO_2).[28] Additional criteria pollutants for California include sulfates, visibility-reducing particulates, hydrogen sulfide (H_2S), and vinyl chloride. California has set standards for certain pollutants, such as particulate matter and ozone, that are more protective of public health than the corresponding federal standards. California is divided into 15 air basins that group together areas with similar geographical and meteorological features and practical combinations of political boundaries. The CARB has designated each area as attainment, nonattainment, or unclassified for each state standard.

4.3.1.1 San Joaquin Valley Air Basin

The project is located within the San Joaquin Valley Air Basin (SJVAB), which includes all of Stanislaus County. The SJVAB covers approximately 25,000 square miles, including San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties, and the Valley portion of Kern County. The SJVAB consists of a continuous inter-mountain valley approximately 250 miles long and averaging 80 miles wide. The region's topographic features restrict air movement through and out of the air basin. The SJVAB is highly susceptible to pollutant accumulation over time. Table 4.3-1 below shows the attainment status of the SJVAB for the CAAQS and NAAQS.

[28] U.S. Environmental Protection Agency, 2016. Air Quality Planning and Standards. https://www3.epa.gov/airquality/cleanair.html. Accessed September.

Table 4.3-1 SJVAB Attainment Status[29]

Pollutant	Designation/Classification	
Ozone - One hour	No Federal Standard	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

It is thought that the bulk of the valley's summer and winter air pollution is caused by locally generated emissions. Nearly all development projects within the SJVAB have the potential to generate air pollutants, increasing the difficulty in attaining state and federal ambient air quality standards. About 16.7 percent of pollutants in the SJVAB derive from stationary and area sources and approximately 11.4 percent come from farm equipment.

4.3.1.2 San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the agency principally responsible for comprehensive air pollution control in the SJVAB. The SJVAPCD has developed plans to attain state and federal standards for ozone and particulate matter. The SJVAPCD's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The SJVAPCD develops rules and regulations,

[29] San Joaquin Valley Air Pollution Control District, 2016a. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aqinfo/attainment.htm. Accessed September 2016.

establishes permitting requirements, inspects emissions sources, and enforces such measures though educational programs or fines, when necessary.

The SJVAPCD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a series of Air Quality Management Plans (AQMPs) covering ozone and particulate matter. The AQMPs were prepared to comply with the federal and state Clean Air Acts and amendments, to accommodate growth, to reduce the high pollutant levels of pollutants in the SJVAB, to meet federal and state air quality standards, and to minimize the fiscal impact of pollution control measures on the local economy. The SJVAPCD adopted the 2016 Plan for the 2008 8-Hour Ozone Standard in June 2016 and the 2013 Plan for the Revoked 1-Hour Ozone Standard in September 2013. The 2016 plan satisfies Clean Air Act requirements and ensures expeditious attainment of the 75 parts per billion 8-hour ozone standard.[30] On May 21, 2015, CARB approved the SJVAPCD's 2015 $PM_{2.5}$ State Implementation Plan, which outlines the strategy to attain the federal 1997 24-hour $PM_{2.5}$ standard by 2018 and the 1997 Annual $PM_{2.5}$ standard by 2020.[31] The AQMPs identify the control measures that will be implemented to reduce major sources of pollutants. SJVAPCD regulations ensure that stationary source emissions will be reduced or mitigated to below the SJVAPCD's significance thresholds. SJVAPCD implementation of new source review (NSR) ensures that there is no net increase in emissions above specified thresholds from new and modified stationary sources for all nonattainment pollutants and their precursors. Furthermore, in general, permitted sources emitting more than the NSR offset thresholds for any criteria pollutant must offset all emission increases in excess of the thresholds.

4.3.1.3 Applicable SJVAPCD Regulations

Regulation II (Permits) deals with permitting emission sources**.**

Rule 2010 requires operators of emission sources to obtain an authority to construct and permit to operate from the SJVAPCD.

Rule 2201 provides for the review of new and modified stationary sources of air pollution and provides mechanisms, including emission trade-offs, that would allow construction of these sources without interfering with the attainment or maintenance of ambient air quality standards. It would preclude a net increase in emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and their precursors.

Rule 2301 provides an administrative mechanism for sources to store emission reduction credits for later use as offsets and transfer emission reduction credits to other sources for use as offsets and defines eligibility standards, quantitative procedures, and administrative practices to ensure that emission reduction credits are real, permanent, quantifiable, surplus, and enforceable.

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[30] SJVAPCD, 2016e. Ozone Plans. http://www.valleyair.org/Air_Quality_Plans/Ozone_Plans.htm. Accessed September.

[31] SJVAPCD, 2016f. Particulate Matter Plans. http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm. Accessed September.

Regulation VIII, Fugitive PM_{10} Prohibition, was adopted to reduce ambient concentrations of fine particulate matter by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Regulation VIII requires property owners, farmers, and public agencies to control fugitive dust emissions from specified outdoor sources, including construction sites, paved and unpaved roads, vacant land, bulk material transport, and similar activities.

Rule 8081 limits fugitive dust emissions from agricultural sources associated with transportation of materials and commodities. Farmers must prepare a Fugitive PM_{10} Management Plan (FPMP) to address use of dust suppressants on unpaved roads and unpaved vehicle traffic areas.

Rule 4303, Orchard Heaters, limits air emissions from gas-fired heaters used to protect orchards from frost.

Rule 4550, Conservation Management, requires preparation and implementation of a Conservation Management Plan outlining practices used to limit fugitive dust emissions from agricultural sites.

Rule 4702 regulates emissions from stationary agricultural equipment by requiring non-emergency certified diesel internal combustion engines greater than 50 horsepower to be replaced by Tier 3 engines or by electrified equipment. As of January 2015, Rule 4702 requires all diesel-fired engines to be replaced with the latest tier engines or be electrified.[32]

4.3.2 Discussion of Impacts

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

There would be no direct impacts to implementation of SJVAB air quality plans associated with issuing discretionary well permits. Discretionary permits would be issued for wells that would be constructed and operated in compliance with these plans. An increase in the number of discretionary well permits and a consequent increase in the conversion of rangeland to irrigated farmland could increase the level of air pollution, which could conflict with implementation of the AQMPs. The potential for these impacts will be examined further in the PEIR.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Construction. Well construction would involve exhaust emissions from construction equipment, motor vehicles traveling to and from the site, and fugitive dust generated by traveling on unpaved roads. Given the short-term nature of construction-related activity, and assuming compliance with control measures outlined in Regulation VIII, construction emissions would fall below the SJVAPCD threshold of 100 pounds per day of any criteria pollutant. These construction-related emissions would not likely contribute to a violation of any air quality standard, and impacts would be less than significant.

[32] SJVAPCD, 2016b. Current District Rules and Regulations. http://www.valleyair.org/rules/1ruleslist.htm. Accessed September.

Operation. Operation of permitted wells and their associated infrastructure could increase concentrations of air pollutants. Assuming that operation would generally be limited to the typical period of irrigation (from March through October) and would most often involve the use of electrical pumps, these potential emissions would be minimized. Some irrigation wells for which discretionary permits are issued would be used to facilitate new agricultural cultivation in areas that were previously uncultivated. Increased farm operations could increase the level of air pollution in the SJVAB as a result of increased use of pump engines, boilers, vehicles, and orchard heaters, and from travel on unpaved roads. The SJVAPCD requires agricultural operations to comply with a variety of regulations designed to limit fugitive dust from crop cultivation and exhaust emissions from agricultural equipment. Future agricultural operations in the SJVAB would be subject to these requirements, which would minimize the contribution of new agricultural operations to a violation of air quality standards. This issue will be further evaluated in the PEIR.

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Increased air emissions would result from a potential increase in the number of wells, the conversion of rangeland to cultivated farm operations, and the consequent increase in the amount of equipment and travel generating emission as an indirect consequence of implementation of the permitting plan. This issue will be further evaluated in the PEIR.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

New wells for which discretionary permits are issued would be developed in unincorporated parts of the county, in agricultural settings, and likely away from population centers. The direct and indirect sources of emissions associated with well development are not generally expected to be located sufficiently close to sensitive receptors that those receptors would be exposed to substantial pollutant concentrations. This issue does not require further analysis in the PEIR.

e. Would the project create objectionable odors affecting a substantial number of people?

New wells for which discretionary permits are issued would be developed in unincorporated parts of the county, in agricultural settings, and generally away from population centers. As a result, the construction- and operation-phase use of chemicals, solvents, petroleum products, and other strong-smelling products would not likely result in adverse impacts on a substantial number of people. Some irrigation wells for which discretionary permits are issued under may be used to support conversion of currently uncultivated land to irrigated cultivation. Agricultural conversion would be conducted in a manner that is consistent with existing zoning and the Stanislaus County Right to Farm Ordinance, which addresses potential conflicts between agricultural operations and other land uses that could result from the application of fertilizer, pesticides and herbicides, and other odor-producing agricultural activities. This issue does not require further analysis in the PEIR.

4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife[33] or U.S. Fish and Wildlife Service?	**X**			
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	**X**			
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	**X**			
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites?				**X**
e. Conflict with any local policies or ordinances protecting biological	**X**			

[33] Beginning January 1, 2013, the California Department of Fish and Game (CDFG) officially changed its name to California Department of Fish and Wildlife (CDFW); however, CEQA Guidelines Appendix G: Environmental Checklist Form has not been updated to reflect this name change.

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
resources, such as a tree preservation policy or ordinance?				
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

a. Could the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Stanislaus County contains federally and state-listed threatened and endangered and special-status species (listed in Tables 3.7-1 and 3.7-2). The project's potential for indirect impacts related to conversion from rangeland to irrigated farmland may result in habitat modification affecting these species. This issue will be further evaluated in the PEIR.

b. Could the project have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Stanislaus County contains riparian habitats and sensitive vegetation communities, including Northern Hardpan Vernal Pool, Coastal and Valley Freshwater Marsh, Elderberry Savannah, Great Valley Cottonwood Riparian Forest, Great Valley Mixed Riparian Forest, Great Valley Valley Oak Riparian Forest, and Sycamore Alluvial Woodland.[34] The project's potential for indirect impacts related to conversion from rangeland to irrigated farmland may result in modification of these sensitive habitats. This issue will be further evaluated in the PEIR.

c. Have a substantial adverse effect on federally protected wetlands as defined by § 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Stanislaus County contains federally protected wetlands, including riparian, emergent, and vernal pool wetlands. The operation of new wells for which discretionary permits are issued could result in shallow

[34] California Department of Fish and Wildlife, 2016. California Natural Diversity Database (CNDDB) query of special status plants, wildlife, and communities records for Stanislaus County. August.

groundwater level drawdown beneath these sensitive habitats, causing or contributing to hydrologic interruption. This issue will be further evaluated in the PEIR.

d. Could the project interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

The construction and operation of wells subject to the Ordinance prohibition would involve discrete areas and negligible amounts of aboveground infrastructure that would not affect migratory movement or use of wildlife nursery sites. The adequacy of surface water flows to support anadromous fisheries is maintained through surface water releases from reservoirs and is not affected by groundwater withdrawals. This issue does not require further analysis in the PEIR.

e. Could the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The construction and operation of wells subject to the Ordinance prohibition would involve discrete areas and negligible amounts of aboveground infrastructure and would be conducted in compliance with applicable local policies and ordinances. Some wells for which discretionary permits are issued under the Ordinance may be used to support conversion of currently uncultivated land to irrigated cultivation. Because the potential conflicts between land use changes and local policies and ordinances is not known at this time, this issue will be further evaluated in the PEIR.

f. Could the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Stanislaus County is not known to be subject to or designated for any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. This issue does not require further analysis in the PEIR.

4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	**X**			
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	**X**			

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	**X**			
d. Disturb any human remains, including those interred outside of formal cemeteries?	**X**			

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?

Cultural resources in the county are Under Stanislaus County General Plan Conservation/Open Space Element, Goal 8, Policy 24, Implementation Measure 5 (the county shall utilize the CEQA process to protect archaeological, or historic, or paleontological resources. Most discretionary projects require review for compliance with CEQA. As part of this review, potential impacts must be identified and mitigated.) and Implementation Measure 6 (the county shall make referrals to the Office of Historic Preservation and the Central California Information Center as required to meet CEQA requirements). Construction of new wells for which discretionary permits are issued would include below-ground drilling, which may cause a localized substantial adverse change in the significance of a historic resource if the resource is located on or adjacent to the site of the new well. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation. The conversion of rangeland may cause a substantial adverse change in the significance of a historical resource, if it is located in or adjacent to the area that would be disturbed by cultivation. This issue will be further evaluated in the PEIR.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Construction of new wells for which discretionary permits are issued would include below-ground drilling, which may cause a localized substantial adverse change in the significance of an archaeological resource if the resource is located on or adjacent to the site of the new well. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation. The conversion of rangeland may cause a substantial adverse change in the significance of an archaeological resource, if it is located in or adjacent to the area that would be disturbed by cultivation. This issue will be further evaluated in the PEIR.

c. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction of new wells for which discretionary permits are issued would include below-ground drilling, which may cause a localized substantial adverse change in the significance of a paleontological resource or site or unique geologic feature if the resource is located on or adjacent to the site of the new well. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation. The conversion of rangeland may directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature, if they are located in the area that would be disturbed by cultivation. This issue will be further evaluated in the PEIR.

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Construction of new wells would include below-ground drilling, which may cause a localized substantial adverse change in the significance of human remains interred outside of formal cemeteries if human remains are located on or adjacent to the site of the new well. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation. The conversion of rangeland may disturb human remains, including those interred outside of formal cemeteries, if they are located in the area that would be disturbed by cultivation. This issue will be further evaluated in the PEIR.

4.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. (1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.				**X**
ii. Strong seismic ground shaking?			**X**	
iii. Seismic related ground failure, including liquefaction?			**X**	
iv. Landslides?			**X**	
b. Result in substantial soil erosion or the loss of topsoil?			**X**	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off site landslide, lateral spreading, subsidence, liquefaction or collapse?	**X**			

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
d. Be located on expansive soil, as defined in Table 18-1 B of the Uniform Building Code (1994), creating substantial risks to life or property?				**X**
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				**X**

a. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

The affected portion of the county is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, no known active, potentially active, or inactive faults underlie the San Joaquin Groundwater Basin within Stanislaus County. The only active fault identified in Stanislaus County is the Ortigalita Fault, which is located in the Diablo Range in the southwest corner of the County.[35] Therefore, this issue does not require further evaluation in the PEIR.

Stanislaus County is located in a region of California associated with generally low to moderate seismic shaking potential.[36] The San Joaquin and Vernalis Faults, both blind thrust faults associated with the Great Valley thrust fault system, have been classified as potentially active within Stanislaus County. The San Joaquin Fault is inferred to be located beneath or slightly west of Interstate 5 on the west side of the valley, and the Vernalis Fault is inferred to be west of the San Joaquin River between Tracy and Patterson (Vernalis

[35] California Department of Conservation, California Geological Survey, 2010. Fault Activity Map of California (2010).

[36] Branum, D., Harmsen, S., Kalkan, E., Petersen, M., and Wills, C., 2008. Earthquake Shaking Potential for California, California Geological Survey Map Sheet 48 (Revised 2008).

Fault.)[37] Both faults are reported as showing evidence of Quaternary activity; activity along the San Joaquin fault is inferred to have occurred within the last 700,000 years. Outside of Stanislaus County to the west, faults associated with the San Andreas, Hayward, and Calaveras Fault systems are considered some of the most seismically active in the state. A significant earthquake on one of these faults, or on a closer potentially active fault, could cause low to moderate ground shaking in the portion of the county underlain by the San Joaquin Groundwater Basin. Strong ground shaking is possible if a very large earthquake occurs, or if an earthquake occurs on one of the potentially active faults underlying the county, but this is less likely. The project does not involve the construction of any habitable or other structures that could be damaged by strong ground shaking, and wells not generally expected to be adversely affected by strong seismic ground shaking. This issue does not require further evaluation in the PEIR.

Sediments considered most susceptible to earthquake-induced liquefaction are saturated, uniformly graded, loose sands that occur within about 50 feet of the ground surface. Liquefiable deposits could underlie portions of the San Joaquin Groundwater Basin in the county, especially near rivers; however, the likelihood of ground motion strong enough to cause liquefaction is relatively small. In addition, wells generally are less susceptible to damage from liquefaction than surface structures. This issue does not require further evaluation in the PEIR.

The area of the county affected by the permitting and operation of wells under the Ordinance is relatively level and is not included in any landslide hazard areas designated by the California Department of Conservation[38] or Stanislaus County. Steeper slopes exist near the incised river drainages on the east side of the county; however, the geologic deposits into which these drainages are incised are relatively well indurated and generally stable. This issue does not require further evaluation in the PEIR.

The permitting and operation of wells would not increase the likelihood or severity of fault rupture, seismic ground shaking, liquefaction or landsliding. No impacts would occur, and this issue does not require further evaluation in the PEIR.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction of new wells for which discretionary permits are issued would involve limited ground-disturbing activities, including drilling of the well and excavation and closure of a mud pit (assuming wells are installed by mud rotary drilling). This work is not anticipated to result in substantial changes to the surface topography, construction of slopes, or concentration of flow. It is anticipated that typical drilling industry methods would be employed to minimize soil erosion during well installation.

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[37] William Lettis & Associates, Inc.., 2007. Final Technical Report: Assessment and Documentation of Transpressional Structures, Northeastern Diablo Range, for the Quaternary Fault Map Database: Collaborative Research with William Lettis & Associates, Inc., and the U.S. Geological Survey. June.

[38] California Department of Conservation, California Geological Survey, 2016. CGS Information Warehouse: Landslides. http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=landslides. Accessed August 9.

Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation, consistent with applicable land use and zoning requirements. The conversion of rangeland to actively cultivated land would disturb the soil; however, as with any agricultural operation, soil conservation measures would be implemented to minimize the loss of topsoil. For these reasons, this issue does not require further evaluation in the PEIR.

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off site landslide, lateral spreading, subsidence, liquefaction or collapse?

Land subsidence can occur when compressible clays are depressurized as a result of groundwater extraction, triggering water to flow from the clays into the surrounding aquifer, and ultimately consolidation of the clay under pressure from the overlying sediments. This can happen especially in confined aquifer conditions, such as below the Corcoran Clay, where the depressurization resulting from groundwater extraction is greater than in unconfined aquifers. DWR has included three of the four groundwater subbasins within Stanislaus County as having a high or medium to high potential for future subsidence[39] and identified the East San Joaquin and Delta Mendota Subbasins as being critically overdrafted basins, largely due to overdraft and subsidence reported outside Stanislaus County to the south.[40]

Although the Ordinance is intended to reduce the potential for subsidence in unincorporated portions of the county, increased groundwater extraction due to construction of new wells for which discretionary permits are issued, or the continued extraction of groundwater from existing wells, has the potential to cause subsidence. For this reason, this issue will be further evaluated in the PEIR.

Liquefaction, landsliding, soil collapse and lateral spreading are not expected to occur as a result of construction or operation of wells, and these issues will not be further evaluated in the PEIR.

d. Would the project be located on expansive soil, as defined in Table 18-1 B of the Uniform Building Code (1994), creating substantial risks to life or property?

The project involves permitting, construction, and operation of groundwater wells, which would not be susceptible to damage from expansive soils. In addition, agricultural operations supported by groundwater extracted from wells would not be susceptible to damage from expansive soils. Thus, although expansive soils occur in portions of the San Joaquin Valley in Stanislaus County, this issue does not require further evaluation in the PEIR.

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[39] DWR, 2016b. Groundwater Information Center Interactive Map Application. *https://gis.water.ca.gov/app/gicima/. Accessed May 20.*

[40] DWR, 2016a. SGM Sustainable Groundwater Management, Critically Overdrafted Basins. *http://www.water.ca.gov/groundwater/sgm/cod.cfm. Accessed May 20.*

e. Would the Project Site have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project involves permitting, construction, and operation of groundwater wells and does not include the generation of disposal of waste water. No impact would occur; therefore, this issue does not require further evaluation in the PEIR.

4.7 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	X			
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	X			

4.7.1 Background

CEQA requires that public agencies refrain from approving projects with significant adverse impacts from greenhouse gas (GHG) emissions and their consequent adverse impacts on the world's climate if feasible alternatives or mitigation measures can substantially reduce or avoid these impacts. These gases trap heat in the atmosphere, and the major concern is that increases in GHG emissions are causing global climate change. It is thought that there is a direct link between increased emission of GHGs and long-term global temperature. GHGs allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation and warm up the air. Both natural processes and human activities generate GHGs.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H_2O). CO_2 is the reference gas for climate change because it is the predominant greenhouse gas emitted. GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e) to account for the varying warming potential of different GHGs.

4.7.2 Regulatory Setting

4.7.2.1 State of California

The Global Warming Solutions Act of 2006 (Assembly Bill 32) requires that CARB estimate the statewide 1990 GHG emission level and approve a statewide greenhouse gas emissions limit, equal to the 1990 level, to be achieved by 2020. Assembly Bill 1803, which became law in 2006, made CARB responsible for

preparing, adopting, and updating California's GHG inventory. In April 2015, Governor Edmund G. Brown, Jr., issued an executive order to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030.

In August 2007, the legislature adopted Senate Bill 97, which required the Governor's Office of Planning and Research to prepare and transmit new CEQA guidelines for the mitigation of GHG emissions or the effects of GHG emissions to the Natural Resources Agency by July 1, 2009.

The amendments adopted to the CEQA guidelines became effective on March 18, 2010. A threshold of significance for GHG emissions was not specified in those amendments, nor do they prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis and rely on the lead agencies to make their own significance threshold determinations based on substantial evidence.

4.7.2.2 San Joaquin Valley Air Pollution Control District

In December 2009, the SJVAPCD adopted a policy to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHGs on global climate change: District Policy – Addressing GHG Emission Impacts for Stationary Source Projects under CEQA. The policy relies on the use of performance-based standards, otherwise known as Best Performance Standards (BPSs) to assess significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA. BPSs for traditional stationary source projects include equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category.[41]

Use of BPSs is a method of streamlining the CEQA process of evaluating significance and is not a required emission reduction measure. Projects implementing BPSs would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions from a continuation of existing operations is required to determine that a project would have a less than cumulatively significant impact. The SJVAPCD has developed BPSs for the following stationary sources: boilers; steam generators; gasoline dispensing facilities; dry cleaners; oil and gas extraction, storage, transportation, refining operations; and co-generation.[42]

4.7.2.3 Stanislaus County

The Stanislaus Countywide Regional Community Greenhouse Gas Inventory was prepared to quantify GHG community emissions for the county as a whole for the year 2005. Using the methodology for the regional

[41] SJVAPCD, 2009. District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.

[42] SJVAPCD. 2016g. Best Performance Standards (BPS) for Stationary Sources. http://www.valleyair.org/programs/CCAP/bps/BPS_idx.htm#Oil&Gas. Accessed September.

inventory, separate GHG community inventories were prepared for each jurisdiction in the county and provided to the individual cities and the unincorporated county for their use.[43]

4.7.3 Discussion of Impacts

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Developing new wells for which discretionary permits are issued could increase GHGs during construction through operation of construction vehicles and operation of construction equipment. Well operations could generate GHGs from the use of electricity, motor vehicle emissions associated with periodic maintenance at the well site, and operation of the well pump. The use of operational efficiency measures, such as properly matching the pump to the well conditions and water demand, would minimize the horsepower required by a pump and would reduce energy use and associated GHGs. SJAVPCD has not yet adopted BPSs for well operation, but inclusion of energy efficient features would be consistent with the SJVAPCD's approach of implementing BPSs and minimizing GHGs.

Indirect impacts on GHGs also could result if the conversion of rangeland to irrigated farmland would increase as a result of an increase in the number of wells drilled under discretionary permits. Operation of farm vehicles and equipment, such as tractors, orchard heaters, and other equipment requiring diesel fuel, could increase the percentage of GHGs in the SJVAB. Implementing best management practices (BMPs), such as using energy efficient motors in farm equipment, employing BPSs, or demonstrating a 29 percent reduction in GHG emissions from a continuation of existing operations, would reduce the potential for increases in GHGs and minimize these indirect effects to a less than cumulatively significant impact. This issue will be further evaluated in the PEIR.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An increase in the number of wells and an increase in farming activity could increase the level of GHGs generated within the SJVAB. Compliance with the goals in AB 32 and the SJVAPCD's guidance and policy for addressing GHG emissions would minimize these potential effects. This issue will be further evaluated in the PEIR.

[43] Stanislaus County. 2013. Stanislaus Countywide Regional Community Greenhouse Gas Inventory. July 2013.

4.8 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			**X**	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one quarter mile of an existing or proposed school?	**X**			
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 or a list of hazardous substance release sites identified by the state Department of Health Services pursuant to § 25356 of the Health & Safety Code and, as a result, would it create a significant hazard to the public or the environment? [PRC § 21151.8(a)(1)(B)]				**X**
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				**X**
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				**X**

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			**X**	

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Developing new wells for which discretionary permits are issued would involve use of hazardous materials such as cement grout, vehicle fuels, and hydraulic fluids. Operation of new wells would also involve use of solvents, lubricants, and well rehabilitation chemicals for well maintenance. Indirectly, the agricultural operations enabled by the irrigation water from the new wells for which discretionary permits are issued would involve use of fuels and agrichemicals. These hazardous materials are assumed to be stored in designated staging areas in compliance with local, state, and federal requirements, and consistent with their labeling and Material Safety Data Sheets (MSDS). As required, personnel handling these hazardous substances would follow the requirements to be properly and regularly trained in their proper handling and disposal, and the transportation of these hazardous materials would be conducted in compliance with Department of Transportation (DOT) requirements. For these reasons, direct and indirect impacts from this project would be less than significant, and this issue does not require further analysis in the PEIR.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

The potential for an accidental spill or release of hazardous materials exists during construction and operation of any new well, including those for which a discretionary permit is issued. In addition, an accidental spill or release of hazardous substances could occur during agricultural operations using water from such wells. As required, personnel involved with well construction and operations would follow the safety procedures in their Injury and Illness Prevention Programs (if applicable), specified on MSDSs, and outlined in the material labeling. Stanislaus County Division of Environmental Resources regulates the use and storage of hazardous materials in the county. Therefore, hazards to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant, and this issue does not require further analysis in the PEIR.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

While the location of the individual wells that would be permitted is unknown at this time, they would be in unincorporated Stanislaus County and most likely away from populated areas, including school sites. Nevertheless, because the possibility exists, this issue will be further evaluated in the PEIR.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 or a list of hazardous substance release sites identified by the state Department of Health Services pursuant to § 25356 of the Health & Safety Code and, as a result, would it create a significant hazard to the public or the environment?

While the location of the individual wells that would be permitted is unknown at this time, they would be in unincorporated Stanislaus County and are not likely to be constructed on listed hazardous materials and release sites. In addition, the discretionary well permitting program established by the county includes a requirement that hazardous substance release sites be identified prior to granting a discretionary permit for construction of a new well. Appropriate permit conditions would be adopted to prevent potential hazards to the public or the environment. This issue does not require further analysis in the PEIR.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

While the location of the individual wells that would be permitted is unknown at this time, they would be in unincorporated Stanislaus County. Drilling activities would be conducted in compliance with applicable regulations. Wellhead completions and power feed infrastructure are not expected to create safety hazards associated with airports. For these reasons, this issue does not require further analysis in the PEIR.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

While the location of the individual wells that would be permitted is unknown at this time, they would be in unincorporated Stanislaus County. Drilling activities would be conducted in compliance with applicable regulations. Wellhead completions and power feed infrastructure are not expected to create safety hazards associated with private airstrips. For these reasons, this issue does not require further analysis in the PEIR.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would involve construction and operation of groundwater wells. Road closures are not anticipated to be required during construction or operation associated with the new wells. Irrigation wells for which discretionary permits are issued under may be used to support irrigated cultivation, and associated agricultural traffic may result. Such use would be consistent with existing zoning and the Stanislaus County Right to Farm Ordinance, which addresses potential conflicts between agricultural operations and other land uses and plans that could result from agricultural traffic on surface streets. These

activities would impair implementation of or physically interfere with an adopted emergency response or evacuation plan. Therefore, this issue does not require further analysis in the PEIR.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

During construction of new wells for which discretionary permits are issued, the drilling contractor would maintain fire extinguishers within the construction area and use standard fire prevention measures. New wells permitted under the program would mostly support ongoing or new agriculture, which would be expected to result in no change to or a decrease in fire hazard severity. For these reasons, impacts are anticipated to be less than significant, and this issue does not require further analysis in the PEIR.

4.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	**X**			
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	**X**			
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	**X**			
d. Substantially alter the existing drainage pattern of the site or area, including through the alternation of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	**X**			
e. Create or contribute runoff water which would exceed the capacity of existing or			**X**	

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
planned storm water drainage systems or provide substantial additional sources of polluted runoff?				
f. Otherwise substantially degrade water quality?	**X**			
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				**X**
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				**X**
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or dam inundation?				**X**
j. Cause inundation by seiche, tsunami, or mudflow?				**X**

a. Would the project violate any water quality standards or waste discharge requirements?

The construction and operation of wells could potentially cause the migration of impaired groundwater in violation of applicable water quality objectives and the state's anti-degradation policy. Although the Ordinance is intended to address such eventualities, because they are a possibility, this issue will be further evaluated in the PEIR.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Stanislaus County plans and policies related to hydrology and water resources include Stanislaus County General Plan Conservation/Open Space Element, Goal 2, Policy 5 (protect groundwater aquifers and recharge areas, particularly those critical for the replenishment of reservoirs and aquifers), Policy 7 (new development that does not derive domestic water from pre-existing domestic and public water supply systems shall be required to have a documented water supply that does not adversely impact Stanislaus County water resources), and Policy 8 (the county shall support efforts to develop and implement water management strategies). Other applicable parts of the Stanislaus County General Plan include Agricultural

Element, Goal 3, Objective 3.2, Policy 3.4 (the county shall encourage the conservation of water for both agricultural, rural domestic, and urban uses), Policy 3.5 (the county will continue to protect the quality of water necessary for crop production and marketing), and Policy 3.6 (the county will continue to protect local groundwater for agricultural, rural domestic, and urban use in Stanislaus County).

All four subbasins within the county are experiencing storage depletion and other stresses resulting from current drought conditions. Particular concerns include new groundwater demand to supply the conversion of rangeland to irrigated agricultural production in the eastern portion of the county and increased reliance on groundwater in the western portion of the county in areas where surface water deliveries have been curtailed due to drought conditions and changing surface water allocations. In addition, the Eastern San Joaquin Subbasin and the Delta-Mendota Subbasin, portions of which underlie the county, have been designated as critically overdrafted[44] by the DWR.

Although the Ordinance is intended to support sustainable groundwater extraction, the construction and operation of new groundwater wells for which discretionary permits are issued, or the operation of existing wells that could become subject to the Ordinance prohibition after GSPs are adopted, may substantially deplete groundwater supplies or cause a lowering of groundwater levels. This issue will be further evaluated in the PEIR.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The project involves construction and operation of groundwater wells. The wells and their appurtenances are unlikely to be located within surface water bodies or drainages where they could alter the course of a stream or river and result in substantial erosion or siltation. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation, consistent with applicable land use and zoning requirements. The conversion of rangeland to actively cultivated land may cause some alteration of drainage patterns; however, as with any agricultural operation, impacts to surface drainages that cause erosion or siltation would be minimized. Nevertheless, because some alteration is possible, this issue will be further evaluated in the PEIR.

d. Would the project substantially alter the existing drainage pattern of the site or area, including through the alternation of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

The project involves the construction and sustainable operation of groundwater wells. The wells and their appurtenances are unlikely to be located within surface water bodies or drainages where they could alter

[44] SGMA includes the following definition of critical overdraft, adapted from DWR Bulletin 118-80: "A basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts."

the course of a stream or river and result in an increase in surface runoff resulting in flooding. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation, consistent with applicable land use and zoning requirements. The conversion of rangeland to actively cultivated land would not add impervious surface and is not likely to result in changes in surface runoff. In addition, while conversion of rangeland to cultivated agriculture may cause some alteration of drainage patterns, as with any agricultural operation, impacts to surface drainages would be minimized. Nevertheless, because some alteration is possible, this issue will be further evaluated in the PEIR.

e. Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

The project involves construction and operation of groundwater wells. Construction and operation of the wells and their appurtenances would not result in significant increases in storm water runoff or provide additional sources of polluted runoff. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation, but would not add impervious surface and is not likely to result in changes in surface runoff. This issue does not require further evaluation in the PEIR.

f. Would the project otherwise substantially degrade water quality?

The construction and operation of wells could potentially cause degradation of water quality due to cross connection of aquifers of varying quality or induced migration of groundwater with impaired water quality. Although the Ordinance is intended to address these eventualities, it is possible that water quality could be degraded. Therefore, this issue will be further evaluated in the PEIR.

g. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The project involves construction and sustainable operation of groundwater wells, and its implementation would not result in the construction of housing in floodplains. No impact would occur; therefore, this issue does not require further analysis in the PEIR.

h. Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

The project involves construction and sustainable operation of groundwater wells, and its implementation would not result in the construction of structures that would impede or redirect flood flows, either directly or indirectly. No impact would occur; therefore, this issue does not require further analysis in the PEIR.

i. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or dam inundation?

The project involves construction and sustainable operation of groundwater wells, and its implementation would not result in the exposure of people or structures to flood hazards. No impact would occur; therefore, this issue does not require further analysis in the PEIR.

j. Would the project cause inundation by seiche, tsunami, or mudflow?

The project involves construction and sustainable operation of groundwater wells, and its implementation would not result in the exposure of people or structures to seiche, tsunami or mud flows. No impact would occur; therefore, this issue does not require further analysis in the PEIR.

4.10 Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Physically divide an established community?				**X**
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	**X**			
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

a. Would the project physically divide an established community?

Well development or operation under this project would not involve activities that could physically divide a community. This issue does not require further analysis in the PEIR.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Well development under this project would not result in any changes in zoning or land use designations, so it is not expected to directly conflict with any agency plans or policies regarding mitigation of environmental

effects. Stanislaus County General Plan Land Use Element, Goal 7, Policy 32, states that any decision by the Board of Supervisors of the county to approve the redesignation or rezoning of land from an agricultural or open space use to a residential use requires and is contingent upon approval by a majority vote of the county voters at a general or special local election. Some irrigation wells for which discretionary permits are issued may be used to support conversion of undeveloped rangeland to irrigated cultivation, with unknown effects on environmental mitigation plans and policies. This issue will be further evaluated in the PEIR.

c. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Stanislaus County is not known to be subject to or designated for any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan. This issue does not require further analysis in the PEIR.

4.11 Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Minerals with known extraction value that are found within the county include bementite, braunite, chromite, cinnabar, garnet, gypsum, hausmannite, hydromagnesite, inesite, magnesite, psilomelane, and rhodochrosite. Small deposits of gold, clay, and lead are also known to exist within the county. Most of these deposits occur in the Diablo Range, or, in the case of gold, the Sierra Nevada foothills. Commercial extraction of these resources does not currently occur within the county. Numerous exploratory oil and gas wells have been drilled within the county, and the underlying geological structure of the county indicates oil or gas may be present. A small portion of the Vernalis gas field crosses into the northern portion of Stanislaus County near the San Joaquin River north of State Highway 132. This is the only active oil or gas

field within the county and includes only three producing gas wells within the County.[45] Sand and gravel deposits currently constitute the only significant commercially extractive mineral resource in the region. The majority of sand and gravel deposits are a result of stream deposition or dredge tailings. The most significant deposits are found in old stream beds and along rivers and streams such as the San Joaquin River and Orestimba Creek. The construction of new wells would not require large amounts of land for each well and would not affect the availability of mineral resources in the county. Operation of the wells may support agricultural activities, but this would occur in areas that are zoned for this purpose and would not result in the long-term loss of potential mineral resources. This issue does not require further analysis in the PEIR.

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Under the Surface Mining and Reclamation Act (SMARA), the California Department of Conservation classified land in Stanislaus County into Mineral Resource Zones (MRZs). Twenty-two areas within the county are classified as MRZ-2a, zones with known mineral significant mineral deposits, or MRZ-2b, zones with inferred significant mineral deposits. These zones total approximately 32 square miles (about 2 percent) of the area of the County. Thirteen of these zones (totaling approximately 29.4 square miles) are underlain by aggregate resources, and the remaining nine zones (totaling approximately 2.6 square miles) are underlain by industrial minerals (such as kaolinitic clay, diatomite, silica, and specialty sand). While the location of the individual wells for which discretionary permits are issued is unknown at this time, construction of new wells is not expected to affect the availability of mineral resources. Operation of the wells may support agricultural activities, but this would occur in areas that are zoned for this purpose and would not result in the long-term loss of potential mineral resources. This issue does not require further analysis in the PEIR.

4.12 Noise

Would the project result in:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exposure of persons to or generation of noise level in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**X**			

[45] California Department of Conservation, Division of Oil Gas and Geothermal Resources (DOGGR), 2016. Well Finder. http://maps.conservation.ca.gov/doggr/#close. Accessed September 15, 2016.

Would the project result in:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				**X**
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			**X**	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	**X**			
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				**X**
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				**X**

4.12.1 Background

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired. Three components make up sound: source, path, and receiver. All three components must be present for sound to exist. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) which is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. The perception of sound and noise is determined by its effects on receptors. Examples of sensitive noise receptors are facilities or areas, including residential areas, hospitals, and schools, where excessive noise levels would be considered an annoyance. The "A-weighted" noise scale (measured in A-weighted decibels (dBA)) was developed because it corresponds closer to people's subjective judgment of sound levels.

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or individual vehicles; and (2) line sources, such as a roadway with large number of cars. Sound generated by a point source typically attenuates at a rate of 6 dBA for each doubling of distance from the source to the receptor

at acoustically soft sites such as vacant land.[46] Sound levels can also be attenuated by placement of barriers such as solid walls or berms between the source and receptor.

Community reaction to noise is assessed on a scale that averages varying noise exposures over time and quantifies the results in terms of a single value. The Community Noise Equivalent Level (CNEL) is an average A-weighted scale measured over a 24-hour period and adjusted to account for increased sensitivity to noise levels during evening and nighttime hours. A CNEL noise measurement is obtained after adding 5 decibels to sound levels occurring during the evening from 7:00 p.m. to 10:00 p.m., and 10 decibels to sound occurring during the nighttime from 10:00 p.m. to 7:00 a.m. The major sources of noise in Stanislaus County are roadway traffic, railroad noise, airport operations, and industrial activities. The quietest areas of unincorporated Stanislaus County are those that are removed from major transportation-related noise sources and local industrial or other stationary noise sources. Examples of these quiet areas are rural areas such as Hickman, Valley Home, and La Grange. The maximum noise levels in these areas are generated by local automobile traffic or heavy trucks. Other sources of maximum noise levels include occasional aircraft overflights and, in some areas, railroad operations, particularly horns. Background noise levels in the absence of these sources derive from distant traffic, wind in the trees, running water, birds, and distant industrial or other stationary noise sources.[47,48]

Vibration is sound radiated through the ground. Typical sources of ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads, which can create vibration waves that propagate through the soil to the foundations of nearby buildings. Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise, which is usually characterized with the A-weighted sound level. Ground-borne noise is perceived as louder than the same broadband noise because the human ear perceives sound dominated by low-frequency components as louder than broadband sounds that have the same A-weighted level. The background vibration velocity level perceptibility threshold is about 65 vibration decibels (VdB), and human response to vibration is not usually significant unless the vibration exceeds 70 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels.[49]

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[46] La Plata County, 2002. La Plata County Impact Report, Coal Bed Methane Development. October 20002. http://lpccds.org/UserFiles/Servers/Server_1323669/File/2002%20Oil%20and%20Gas%20Impact%20Report.pdf. Accessed September 2016.

[47] Stanislaus County Planning and Development Department, 2005. Stanislaus County General Plan Update, Technical Reference Document for Noise Analysis. Modesto, California. November 25, 2005.

[48] Stanislaus County Planning and Development Department, 2016. Stanislaus County General Plan Noise Element. http://www.stancounty.com/planning/pl/gp/gp-chapter4.pdf. Accessed September.

[49] U.S. Department of Transportation, Federal Transit Authority, Office of Planning and Environment, 2006. Transit Noise and Vibration Impact Assessment. May 2006.

4.12.2 Applicable Noise Regulations

General Plan Noise Element. The Stanislaus County General Plan Noise Element was designed to limit the exposure of the community to excessive noise levels. The plan prohibits new development of noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise. These measures include:

- For transportation noise sources, 60 dBA CNEL or less in outdoor activity areas of single-family residences, 65 dBA CNEL or less in community outdoor space for multi-family residences, and 45 dBA CNEL or less within noise-sensitive interior spaces. An exterior noise level of up to 65 dBA CNEL will be allowed where best available noise-reduction technology cannot produce the prescribed noise level. However, interior noise with the windows and doors closed in residential uses may not exceed 45 dBA CNEL.[50]
- The standards for other noise sources such as local industries or other stationary noise sources (such as groundwater well pumps) are listed below in Table 4.12-1. These standards apply at a residential or other noise-sensitive land use and not on the property of a noise-generating land use. Where measured ambient noise levels exceed the standards, the standards would be equal to those ambient noise levels.

Table 4.12-1. Maximum Allowable Noise Exposure from Stationary Sources[51]

	Daytime 7:00 AM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Average equivalent continuous noise level (dBA)	55	45
Maximum noise level (dBA)	75	65

Stanislaus County Noise Ordinance. The Stanislaus County Noise Control Ordinance is codified in Chapter 10.46 of the Municipal Code. This ordinance restricts creation of noise that causes the exterior noise level when measured at any property situated in either the incorporated or unincorporated area of the county to exceed adopted noise levels. Agricultural activity is exempt under the ordinance. Construction equipment noise beyond the property line of any property where a dwelling unit is located cannot exceed an average sound level greater than 75 dBA between the hours of 7:00 p.m. and 7:00 a.m.[52]

[50] Stanislaus County Planning and Development Department, 2016. Stanislaus County General Plan Noise Element. http://www.stancounty.com/planning/pl/gp/gp-chapter4.pdf. Accessed September.

[51] Stanislaus County Code, 2016. Chapter 10.46, Noise Control. http://qcode.us/codes/stanislauscounty/?view=desktop&topic=10-10_46-10_46_080. Accessed September.

[52] Stanislaus County Code, 2016. Chapter 10.46, Noise Control. http://qcode.us/codes/stanislauscounty/?view=desktop&topic=10-10_46-10_46_080. Accessed September.

4.12.3 Discussion of Impacts

a. Would the project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction of wells for which discretionary permits are issued could increase noise levels through operation of construction vehicles and construction equipment, such as drilling rigs, portable generators, compressors, and power tools. These construction activities may occur 24 hours per day. The Stanislaus County Noise Ordinance limits noise generated by use of construction equipment to 75 dBA between 7:00 p.m. and 7:00 a.m. at the property line. A study of drilling rig noise levels conducted for the oil and gas well industry reported measurable noise at 700 feet from the drilling rig and audible noise at 1,000 feet from the drilling rig. The maximum noise levels were produced by running casing and were measured at an average of 102 dBA at a distance of 10 feet from the drill rig engine. Average noise levels of 71 to 79 dBA were found at a distance of 200 feet from the drilling rig.[53] Noise levels typically attenuate at approximately 6 dB for each doubling of distance from the noise source.[54] While the potential for significant noise impacts is small, this issue will be further evaluated in the PEIR.

While operation of newly permitted wells could result in long-term noise increases, agricultural activity is exempt under the Stanislaus County Noise Ordinance. According to the Federal Highway Administration Noise Handbook, pumps are rated at a noise level of 77 dBA at a distance of 50 feet.[55] At an attenuation of 6 dB for every doubling of distance from the noise source,[56] well operations would have a less than significant effect at approximately 70 feet from the nearest sensitive receptor. In general, these wells are not expected to operate 24 hours per day, but only when irrigation is taking place during daytime hours, which coincides with the time when receptors are least sensitive to noise exposure. This issue does not require further analysis in the PEIR.

b. Would the project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Groundborne vibration and noise could be increase during construction of wells for which discretionary permits are issued, through use of construction vehicles and construction equipment, such as drilling rigs. According to the Federal Transit Administration's Transit Noise and Vibration Impact Assessment,[57] use of

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[53] Behrens and Associates, Inc., 2006. *Gas Well Drilling Noise Impact and Mitigation Study.*

[54] La Plata County, 2002. La Plata County Impact Report, Coal Bed Methane Development. October 20002. http://lpccds.org/UserFiles/Servers/Server_1323669/File/2002%20Oil%20and%20Gas%20Impact%20Report.pdf. Accessed September 2016.

[55] Federal Highway Administration, 2016. Construction Noise Handbook. https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm. Accessed September.

[56] La Plata County, 2002. La Plata County Impact Report, Coal Bed Methane Development. October 20002. http://lpccds.org/UserFiles/Servers/Server_1323669/File/2002%20Oil%20and%20Gas%20Impact%20Report.pdf. Accessed September 2016.

[57] U.S. Department of Transportation, Federal Transit Authority, Office of Planning and Environment, 2006. Transit Noise and Vibration Impact Assessment. May 2006.

heavy equipment during well construction could generate vibration levels up to 0.089 peak particle velocity or 87 VdB (for caisson drilling) at a distance of 25 feet. Structures can typically be exposed to groundborne vibration levels of 0.2 peak particle velocity without experiencing damage. Sensitive structures would have to be closer than 25 feet to the well construction area to experience groundborne vibration that exceeds the building damage threshold of 0.2 peak particle velocity. At a distance of 50 feet from the well construction area, groundborne vibration is estimated at 78 VdB, which is slightly greater than the 75 VdB-level of human response. While the well locations are unknown at this time, they would be located in unincorporated areas of the county and in predominantly agricultural areas, and well away from inhabited structures that are sufficiently close to the well locations to experience excessive groundborne vibrations or noise levels.

Operation of the wells would not likely result in negatively perceptible or damage-causing groundborne vibration or noise, nor would conversion of rangeland to farmland operations be likely to have significant adverse impacts. Also, agricultural activity is exempt under the Stanislaus County Noise Ordinance. This issue does not require further analysis in the PEIR.

c. Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Agricultural activity is exempt under the Stanislaus County Noise Ordinance. The wells developed under this project are expected to operate intermittently, primarily during daytime hours within the irrigation season. As a result, the project would not cause an increase in sustained ambient noise levels. This issue does not require further analysis in the PEIR.

d. Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Agricultural activity is exempt under the Stanislaus County Noise Ordinance. The wells developed under this project would operate intermittently during the irrigation season and may increase ambient noise levels during those periods of operation. As discussed above, pumps are rated at a noise level of 77 dBA at a distance of 50 feet. At an attenuation of 6 dB, well operations would have a less than significant effect at approximately 70 feet from the property line.[58] Given that the wells would be located largely in rural, unincorporated parts of the county, the increases in ambient noise levels are not expected to be substantial relative to the locations of the nearest sensitive receptors. Nevertheless, because the uses and locations of wells for which discretionary permits will be issued is not known, this issue will be further evaluated in the PEIR.

[58] La Plata County, 2002. La Plata County Impact Report, Coal Bed Methane Development. October 20002. http://lpccds.org/UserFiles/Servers/Server_1323669/File/2002%20Oil%20and%20Gas%20Impact%20Report.pdf. Accessed September 2016.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The project would not result in facilities where people would be residing or working, so it would not expose people to airport noise. This issue does not require further analysis in the PEIR.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project would not result in facilities where people would be residing or working, so it would not expose people to noise from private airstrips. This issue does not require further analysis in the PEIR.

4.13 Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			**X**	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**

4.13.1 Background

The population of Stanislaus County is estimated at 538,388, which is a 4.7 percent increase from 2010. The population of the state increased by about 5.1 percent. Annual population growth in unincorporated Stanislaus County is projected to be 0.69 percent by 2020 and 1.25 percent by 2040.[59]

Between 2010 and 2015, the housing supply increased by approximately 0.67 percent, from 179,503 units to 180,704 units. According to recent estimates, about 57.2 percent of the housing in Stanislaus County is

[59] U.S. Census Bureau, 2016. Stanislaus County Quickfacts. http://www.census.gov/quickfacts/table/LFE041214/06099,06. Accessed September.

owner-occupied, and the average household size is 3.07 people. About 82.2 percent of families are living in the same house as the year before.[60] Much of the population growth over the last two decades was the result of the county's location near the San Francisco Bay Area. The combination of Bay Area job markets and freeway access to inexpensive land for housing development in Stanislaus County contributed to increased development pressures in the cities within the county. Within the rapidly urbanizing San Joaquin Valley, many forecasters believe Stanislaus County would be the fastest growing region in California in the coming decades. However, Stanislaus County was hit particularly hard in the recent economic downturn, with some of the highest home foreclosure rates in the nation. Most of the future residential growth in Stanislaus County is projected to follow historical trends and occur within the limits of the incorporated cities.[61]

Approximately 62.3 percent of the population is estimated to be in the civilian labor force. Farming employs about 14,500 workers, which is about 8.0 percent of total employment in Stanislaus County and is an increase from 2010 of approximately 12.4 percent. Civilian unemployment decreased from 16.9 percent in 2010 to 9.5 percent.[62] Employment of farmers, ranchers, and other agricultural managers is projected to decrease in Stanislaus County by 4.7 percent between 2010 and 2020, and the number of agricultural workers is forecast to increase by 1.3 percent (140 jobs). Employment of agricultural inspectors is expected to increase by 16.7 percent (10 workers). Construction and extraction occupations are projected to increase by 47.6 percent (3,000 jobs) between 2010 and 2020.[63]

The jobs/housing balance is the ratio of jobs in a jurisdiction compared to the number of housing units in a jurisdiction. Jobs and housing are considered to be balanced when there is an equal number of housing units to jobs within a given area, an optimal ratio of approximately 1.0. There were 68,086 employed persons and 36,684 housing units in Stanislaus County in 2010, a ratio of 0.54 employed workers per housing unit, which indicates an imbalance in the jobs-to-housing ratio. By 2020, this ratio is projected to decrease to 5.0, and by 2040 it would be 4.7, indicating an increasing disparity between employment and available housing in Stanislaus County.[64]

Stanislaus County General Plan Land Use Element, Goal 7, Policy 32, states that any decision by the Board of Supervisors of the county to approve the redesignation or rezoning of land from an agricultural or open space use to a residential use requires and is contingent upon approval by a majority vote of the county voters at a general or special local election.

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[60] Ibid

[61] Michael Baker International, 2016. Stanislaus County Housing Element 2015-2023. April 2016. http://www.stancounty.com/planning/pl/gp/gp-chapter6-housing-element.pdf. Accessed September.

[62] U.S. Census Bureau, 2016. Stanislaus County Quickfacts. http://www.census.gov/quickfacts/table/LFE041214/06099,06. Accessed September.

[63] California Employment Development Department, Labor Market Information Division, 2013. 2010-2020 Occupational Employment Projections, Modesto Metropolitan Statistical Area (Stanislaus County). August 16, 2013.

[64] Michael Baker International, 2016. Stanislaus County Housing Element 2015-2023. April 2016. http://www.stancounty.com/planning/pl/gp/gp-chapter6-housing-element.pdf. Accessed September.

4.13.2 Discussion of Impacts

a. Would the project induce substantial growth in an area either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?

No housing or businesses would be created by issuing discretionary well permits or by regulating extraction from existing wells, and these actions would not directly induce growth. Well construction could generate temporary increases in employment and population; however, the number of new wells for which discretionary permits would be issued is relatively small, and much of this temporary increase can be expected to be derived from the existing labor force.

Some of the wells for which discretional permits are issued may be used to supply water to newly cultivated areas that were previously used as rangeland. While such an increase in farming activity could attract more workers from outside the local economy over time and induce population growth, the number of new wells permitted is expected to be relatively small, and well construction would not by itself induce growth in the absence of more direct factors such as agricultural economics, demographic changes, governmental policies and other factors. This issue does not require further analysis in the PEIR.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

None of the activities associated with the project would displace housing units. This issue does not require further analysis in the PEIR.

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

None of the activities associated with the project would displace people. This issue does not require further analysis in the PEIR.

4.14 Public Services

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a. Fire protection?			**X**	
b. Police protection?			**X**	
c. Schools?			**X**	

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
d. Parks?			**X**	
e. Other public facilities?			**X**	
f. Does the site promote the joint use of parks, libraries, museums, and other public services?				**X**

a. Fire protection?

b. Police protection?

c. Schools?

d. Parks?

e. Other public facilities?

f. Does the site promote the joint use of parks, libraries, museums, and other public services?

The project would not directly or indirectly result in new or physically altered government facilities, so it would not cause adverse physical impacts or significant environmental impacts. No housing or businesses would be created by the project, and it would not directly induce growth and would not increase the demand for public facilities and services. The indirect effects of construction and operation of new wells and the potential for an increase in farming activity as a result of conversion of rangeland to irrigated farmland could induce growth in Stanislaus County and increase the demand for fire and police protection, schools, parks, and other public facilities. Because this growth and the potential for increased demand for public services would be dispersed throughout unincorporated Stanislaus County, and agricultural operations are not very labor intensive and are likely to be staffed by existing local residents, it is not expected to increase the demand for public services and facilities beyond the capacity of existing governmental facilities. This issue does not require further analysis in the PEIR.

4.15 Recreation

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			**X**	

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Developing new wells in unincorporated Stanislaus County would not increase the use of existing neighborhood or regional parks or other recreational facilities, as construction and operation of new wells would not likely to increase the number of permanent residents or otherwise increase the use of existing recreational facilities so as to substantially deteriorate those facilities. Direct and indirect impacts from this project would be less than significant, and this issue does not require further analysis in the PEIR.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project does not include recreational facilities and would not require the expansion or construction of recreational facilities. This issue does not require further analysis in the PEIR.

4.16 Transportation and Traffic

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				**X**
b. Conflict with an applicable congestion management program, including, but not limited to level of				**X**

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, which results in substantial safety risks?				**X**
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e. Result in inadequate emergency access?				**X**
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				**X**

a. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

There would be a negligible increase in vehicle trips associated with workers traveling to and from the well site and transport of drilling equipment and materials during construction of wells for which discretionary permits are issued. No additional vehicle trips are expected during well operation. As a result, the project would not affect established transportation performance standards. This issue does not require further analysis in the PEIR.

b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The increase in vehicle trips during well construction under would be a negligible, and there would be no additional trips during well operation. As a result, the project would have no effects on congestion management programs. This issue does not require further analysis in the PEIR.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, which results in substantial safety risks?

Well development under this project would not affect air traffic. This issue does not require further analysis in the PEIR.

d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

There are no project design features, and use of farm equipment would continue in the unincorporated and predominantly rural areas where wells would be developed, consistent with existing land uses and zoning, and in compliance with the county's Right to Farm Ordinance. There would be no substantial increase in traffic hazards. This issue does not require further analysis in the PEIR.

e. Would the project result in inadequate emergency access?

The project would not result in road closures or other actions that could affect emergency access. This issue does not require further analysis in the PEIR.

f. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The increase in vehicle trips during well construction under would be a negligible, and there would be no additional trips during well operation. As such, the project is not expect to affect public transit, bicycle, or pedestrian facility policies, plans, or programs. This issue does not require further analysis in the PEIR.

4.17 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?				**X**
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of				**X**

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
existing facilities, the construction of which could cause significant environmental effects?				
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				**X**
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	**X**			
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				**X**
f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				**X**
g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?				**X**

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB)?

The project would not generate wastewater requiring treatment. This issue does not require further analysis in the PEIR.

b. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The project would not generate wastewater requiring treatment or require additional treatment of water supplies. This issue does not require further analysis in the PEIR.

c. Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The proposed project would construct and operate new wells within unincorporated Stanislaus County, which would not increase the amount of stormwater runoff or result in the need to expand existing facilities or construct new stormwater drainage facilities.[65] This issue does not require further analysis in the PEIR.

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The project is intended to assure sustainable groundwater extraction as a condition of approving construction of new wells and, after GSP adoption, from the operation of existing wells. The Ordinance includes measures to ensure that construction of new wells will be in areas that have sufficient groundwater supplies and that wells will be sustainably operated. Before a discretionary permit can be issued, the Ordinance requires the applicant to provide substantial evidence that the proposed groundwater extraction will be sustainable, as defined under both the Ordinance and SGMA. In addition, the well permitting guidelines developed under the Ordinance prescribe well permit conditions for new wells as needed to assure they are operated sustainably. These conditions could result in an inability to meet proposed or existing groundwater demands without additional surface water entitlements or development of other water sources. This issue will be further evaluated in the PEIR.

e. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The project would not generate wastewater requiring treatment. This issue does not require further analysis in the PEIR.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

The project would not generate solid waste requiring disposal. This issue does not require further analysis in the PEIR.

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The project would not generate solid waste requiring disposal and would not require compliance with related statutes and regulations. This issue does not require further analysis in the PEIR.

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[65] California State Water Resources Control Board, 2015. A Guide for Private Domestic Well Owners: http://www.waterboards.ca.gov/gama/docs/wellowner_guide.pdf. Accessed September 14, 2016.

4.18 Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
a. The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	**X**			
b. Impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	**X**			
c. Environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	**X**			

Based on the screening analysis conducted in the preceding sections for the 17 environmental resources, it has been determined that Agriculture and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, and Utilities and Service Systems will be further evaluated in the PEIR. No additional analysis is required for Aesthetics, Mineral Resources, Population and Housing, Public Services, Recreation, and Transportation and Traffic.

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6.0 LIST OF PREPARERS

6.1 Lead Agency

Walter Ward, Water Resources Manager, reviewed the Initial Study.

Angela Freitas, Planning Director, reviewed the Initial Study.

Kristin Doud, Associate Planner, reviewed the Initial Study.

6.2 Consultants

Mike Tietze, PG, CHG, CEG, Principal Engineering Geologist with Jacobson James & Associates, prepared the Geology and Soils, and Hydrology and Water Quality sections. Mr. Tietze also prepared the Project Description and reviewed the Initial Study.

Joel Bauman, Principal with Jacobson James & Associates, prepared the Geology and Soils and Hydrology and Water Quality sections.

John Bock, Senior Environmental Scientist with Tetra Tech, prepared the Land Use and Planning and Transportation and Traffic sections. Mr. Bock also reviewed the Initial Study.

Julia Mates, Historian with Tetra Tech, prepared the Aesthetics, Cultural Resources, Recreation, and Utilities and Service Systems sections.

Cliff Jarman, Senior Geologist with Tetra Tech, prepared the Agriculture and Forestry Resources, Hazards and Hazardous Materials, and Mineral Resources sections.

Genevieve Kaiser, Senior Planner with Tetra Tech, prepared the Air Quality, Greenhouse Gas Emissions, Noise, Population and Housing, and Public Services sections.

Angela Lortie, Biologist with Tetra Tech, prepared the Biological Resources section.

Ann Zoidis, Senior Biologist with Tetra Tech, prepared the Biological Resources section.

APPENDIX A

STANISLAUS COUNTY GROUNDWATER ORDINANCE AND IMPLEMENTATION GUIDELINES

Chapter 9.37 GROUNDWATER

9.37.010 Title.

The ordinance codified in this chapter may be cited as the Stanislaus County Groundwater Ordinance. (Ord. CS 1155 §2, 2014; Ord. CS 1138 §1, 2013).

9.37.020 Findings.

The Stanislaus County Board of Supervisors hereby finds:

1. The protection of the health, welfare, and safety of the residents of the county require that the groundwater resources of Stanislaus County be protected from adverse impacts resulting from the specific acts of unsustainable groundwater extraction within the county and the export of water outside of the county; and

2. Groundwater is an essential resource for continued agricultural production within the county which production includes, but is not limited to, field crops, nut and fruit crops, vegetable crops, seed crops, poultry and livestock and products which significantly contribute to the gross value of the total agricultural production of the county; and

3. Groundwater is an essential resource for municipal, industrial and domestic uses within the county; and

4. The unsustainable extraction of groundwater resources within the county and the export of water outside of the county each could have adverse environmental impacts on the county, including, but not limited to, increased groundwater overdraft, land subsidence, uncontrolled movement of inferior quality groundwater, the lowering of groundwater levels, and increased groundwater degradation; and

5. The unsustainable extraction of groundwater resources within the county and the export of water outside of the county each could have adverse economic impacts on the county, including, but not limited to, loss of arable land, a decline in property values, increased pumping costs due to the lowering of groundwater levels, increased groundwater quality treatment costs, and replacement of wells due to declining groundwater levels, replacement of damaged wells, conveyance infrastructure, roads, bridges and other appurtenances, structures, or facilities due to land subsidence; and

6. California Constitution, Article X, Section 2, as well as Water Code Section 100 prohibit the waste, unreasonable use, unreasonable method of use, and unreasonable method of diversion of water. The county finds that the unsustainable extraction of groundwater and the export of water outside of the county are presumptively inconsistent with the California Constitution and the California Water Code; and

7. Nothing in this chapter determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights; and

8. There is a critical need for water well extraction data to analyze and understand the degree of groundwater depletion or recharge, to establish water budgets, and to balance conjunctive use of groundwater resources. The county finds and determines that

such data is critical to the implementation of groundwater regulation under this chapter. The county finds and determines that such data from persons is presumptively confidential and proprietary information, including geological and geophysical data, plant production data, or trade secrets. The county further finds and determines that the need to receive or obtain such data, and to maintain its confidentiality, outweighs the

public need for site specific private information and that the public will have access to the aggregate of such information which is a better measure of the cumulative status of groundwater resources. (Ord. CS 1155 §3, 2014; Ord. CS 1138 §1, 2013).

9.37.030 Definitions.

The following words and phrases shall have the following meanings when used in this chapter:

1. "County" means the county of Stanislaus.

2. "Board" means the board of supervisors of Stanislaus County.

3. "Person" means and includes natural persons, corporations, firms, partnerships, joint stock companies, associations and other organizations of persons, and public entities.

4. "Groundwater" means water that occurs beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.

5. "Public water agency" means any local public agency, mutual water company, or nonprofit tax-exempt unincorporated association within, or partially within, Stanislaus County that has authority to undertake water-related activities.

6. "Unsustainable extraction of groundwater" means the extraction of groundwater in a manner that is not sustainable groundwater management as defined in this chapter or state law.

7. "Export of water" means the act of conveying groundwater, or surface water for which groundwater has been substituted, out of the county.

8. "Sustainable groundwater management" means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon as defined in subdivision (q) of Water Code Section 10721 without causing or substantially contributing to undesirable results.

9. "Undesirable result" means one or more of the following:

a. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.

b. Significant and unreasonable reduction of groundwater storage.

c. Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

d. Significant and unreasonable land subsidence that substantially interferes with surface land uses.

e. Surface water depletions that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

10. "De minimis extractor" means a person who extracts two acre-feet or less per year.

11. "Groundwater sustainability plan" means a plan adopted pursuant to Water Code Section 10727 et seq. (Ord. CS 1155 §4, 2014; Ord. CS 1138 §1, 2013).

9.37.040 Prohibition.

Except as otherwise provided in this chapter, the following actions are prohibited:

A. The unsustainable extraction of groundwater within the unincorporated areas of the county.

B. The export of water. (Ord. CS 1155 §5, 2014; Ord. CS 1138 §1, 2013).

9.37.045 Application.

A. The prohibition set forth in subsection A of Section 9.37.040 is applicable to the extraction from any groundwater well for which an application for a new well construction permit pursuant to Chapter 9.36 is filed after November 25, 2014. Applications for a well construction permit submitted after that date shall demonstrate, based on substantial evidence, that either: (1) one or more of the exemptions set forth in Section 9.37.050 apply; or (2) that extraction of groundwater from the proposed well will not constitute unsustainable extraction of groundwater. This subsection shall not apply to a well designed to replace an existing well that has been permitted under Chapter 9.36 prior to November 25, 2014 if the replacement well has no greater capacity than the well it is replacing.

B. Effective upon adoption of an applicable groundwater sustainability plan, the prohibition set forth in subsection A of Section 9.37.040 shall be applicable to the extraction from any groundwater well for which the county reasonably concludes that the extraction of groundwater constitutes unsustainable extraction of groundwater. In the event of such determination by the county, the affected holder or holders of a well construction permit issued pursuant to Chapter 9.36 for such well shall be notified and shall be required to demonstrate, based on substantial evidence, that continued extraction of groundwater will not result in an unsustainable extraction of groundwater as defined in subsection 6 of Section 9.37.030.

C. This section does not limit the application of subsection B of Section 9.37.040.

D. The regulations and prohibitions set forth in this chapter apply only to the unincorporated areas of Stanislaus County. (Ord. CS 1155 §6, 2014).

9.37.050 Exemptions.

A. The following water management practices are exempt from the prohibitions in Section 9.37.040:

1. Water resources management practices of public water agencies that have jurisdictional authority within the county, and their water rate payers, that are in compliance with and included in groundwater management plans and policies adopted by that agency in accordance with applicable state law and regulations, as may be amended, including, but not limited to, the California Groundwater Management Act (Water Code Sections 10750 et seq.), or that are in compliance with an approved groundwater sustainability plan.

2. De minimis extractions as set forth in Section 9.37.030(10) of this chapter.

3. Groundwater extraction or the export of water in compliance with a permit issued by the Stanislaus County department of environmental resources pursuant to this chapter.

B. The following water management practices are exempt from the prohibition against export of water in this chapter:

1. De-watering of shallow water tables where the net benefits of the removal of subsurface water substantially outweighs the loss of water because of damage the high water table reasonably may cause to agriculture, industry, commerce and other property uses. The groundwater in some areas of the county is very near the surface and if not removed by interceptor ditches or subsurface tile drains, the water can seriously impact crop root zones for agricultural production or destroy foundations, equipment, materials, buildings and infrastructure used for residences, industry, utilities or commerce. This groundwater may or may not be reused for other purposes and at times may leave the county and its groundwater system.

2. Reasonable use of groundwater resources to supplement or replace surface water released for other reasonable and beneficial purposes, including, but not limited to, fisheries, ecosystem habitat or downstream water quality or quantity needs, when required pursuant to federal and state law, regulations, licenses or permit conditions.

3. Conservation of water in compliance with applicable state law that authorizes public water agencies to transfer water outside its usual place of use. Conservation investments may include, but are not limited to, irrigation practices in agricultural areas where the crops grown use less water, or communities that produce recycled water, fix leaks or promote other water saving devices and methods to conserve water on a temporary or permanent basis.

4. Recharge of groundwater in locations in the county that are capable of improving groundwater conditions in order to meet total water demands of beneficial uses in the hydrologic and groundwater basin area including, but not limited to, the following sources: surface water, treated municipal drinking water, recycled water and stormwater. The amount of recaptured groundwater transferred out of the area should not exceed the amount of water used to recharge the aquifer. The transfer can be accomplished by either direct or indirect transfer, that is, a public water agency can leave the water in the ground and transfer other supplies in lieu of pumping out the recharge water.

5. Remediation of contaminated groundwater that is pumped and treated to remove contaminants that are in violation of standards for beneficial uses. The extracted and treated water may be released out of the county, resulting in a net loss to the groundwater basin, if the release complies with discharge permits issued by the federal, state or state resource agencies.

6. Export of water that reasonably supports agricultural operations on property outside the county that is contiguous with property within the county and is under common ownership.

7. Export of water from a private water source that is bottled in compliance with a private water source operator license issued by the state pursuant to Health and Safety Code Section 111120.

C. The exemptions set forth in subsections A and B above do not exempt the activities described in those subsections from subsection B of Section 9.37.045. (Ord. CS 1155 §7, 2014; Ord. CS 1138 §1, 2013).

9.37.060 Implementation.

A. The Stanislaus County department of environmental resources shall have the primary responsibility for implementation of this chapter and regulations adopted by the board of supervisors. That responsibility shall include any preparation, approval, and/or certification of any environmental document pursuant to the California Environmental Quality Act (CEQA) for issuance of any permit for a groundwater well, to the extent required by CEQA, or a determination that such permit is not subject to, or is exempt from, CEQA.

B. The department of environmental resources shall establish a system of permits to authorize water management practices otherwise prohibited by this chapter. The department may issue a permit for a water management practice to the extent that such practice is consistent with the statements of county policy set forth in Section 9.37.020 of this chapter, and provided that such practice is for a reasonable and beneficial use of groundwater resources, supports sustainable groundwater management, and promotes the public interest. The term of a groundwater extraction permit issued by the department pursuant to this subsection shall not exceed the remaining term of any applicable groundwater sustainability plan.

C. The department of environmental resources shall have authority to investigate any activity subject to this chapter. Compliance with this chapter will be determined based on the submission of a technical report to the department of environmental resources on a form provided by the county. The department is authorized to enforce the prohibition of any activity that is determined to be in violation of this chapter or regulations adopted by the board of supervisors.

D. Any interested person or entity may appeal an administrative determination made by the department under this chapter which: (1) finds that an application is complete or incomplete; (2) establishes or modifies operating conditions; (3) grants or denies a permit; or (4) suspends or revokes a permit. Administrative appeals under this section must be made in writing, must clearly set forth the reasons why the appeal ought to be granted, and must be received by the chief executive officer within fifteen days of the postmark date on the envelope that transmits the administrative determination. Any appeal that is not timely filed, or that is not accompanied by the required fee, will be deemed ineffective and the administrative determination that is being appealed will become final. The chief executive officer shall fix a reasonable time for the hearing of an appeal of an administrative determination, and shall provide written notice of the appeal hearing to the appellant and all interested parties, and to all landowners within one-quarter mile of the parcel where operations will occur. An appeal review committee comprised of the chief executive officer or designee, the chair and vice chair of the board of supervisors shall hear the appeal and issue a decision within thirty days after the hearing. The appeal review committee may take any appropriate action upon the original administrative action that was appealed, including granting or denying the appeal in whole or in part, or imposing, deleting or modifying operating conditions of the permit. The decision of the appeal review committee shall be final.

E. Any interested person or entity may appeal to the board of supervisors the following decisions and determinations of the department regarding a groundwater well permit: (1) a decision to approve or deny a negative declaration; (2) a decision to certify or refuse to certify an environmental impact report; or (3) a determination that a permit is not subject to, or is exempt from, CEQA. (Ord. CS 1155 §8, 2014; Ord. CS 1138 §1, 2013).

9.37.065 Groundwater monitoring.

A. All persons, including public water agencies that extract groundwater within the county shall cause to be prepared and submitted to the county department of environmental resources periodic reports of groundwater information that are reasonably necessary to monitor the existing condition of groundwater resources within the county, to determine trends, or to develop effective sustainable groundwater management plans and policies. A de minimis extractor shall not be required to submit such information.

B. The department shall develop and recommend regulations to be adopted by the board that establish the frequency and timing of required reports, and the required information to be monitored, including, without limitation, water level and pumping data, or other data necessary for any other method to determine groundwater production.

C. The county presumes that information submitted pursuant to this section will be exempt from disclosure under the California Public Records Act. The regulations developed under subsection B of this section shall include a process for submitters to confirm that their information is exempt from disclosure. Any document that aggregates information submitted under this section shall not be treated as exempt from disclosure if such document neither identifies the sources of that information nor permits the reader to otherwise determine the sources of that information. (Ord. CS 1155 §9, 2014).

9.37.070 Penalty for violation.

A. Any person violating any of the provisions of this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be punished as set forth in Stanislaus County Code Section 1.36.010. Each person shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or allowed and shall be punishable accordingly.

B. In addition to or in lieu of the penalty provisions or remedies set forth in this chapter, any violation may be abated in any manner set forth in Chapter 2.92 of the Stanislaus County Code, including, but not limited to, abatement or issuance of administrative citations.

C. In addition to or in lieu of the penalty provisions or remedies set forth in this chapter, any violation of any of the provisions of this chapter, and any condition caused or allowed to exist in violation of any of the provisions of this chapter, shall be deemed a public nuisance and shall, at the discretion of county, create a cause of action for injunctive relief, including but not limited to any remedy under Chapter 5 (commencing with Section 17200) of Part 2 of Division 7 of the Business and Professions Code. (Ord. CS 1138 §1, 2013).

9.37.080 Severability and effect.

A. The provisions of this chapter are hereby declared to be severable. If any provision, clause, word, sentence or paragraph of this chapter or the application thereof to any person, establishment or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this chapter.

B. The prohibitions of this chapter shall not be applicable to the extent that their application would result in a violation of the Constitution or other laws of the United States or the state of California. The department of environmental resources shall issue a permit to authorize conduct otherwise prohibited under this chapter if the applicant demonstrates that such permit is necessary to avoid such a violation of state or federal law. (Ord. CS 1138 §1, 2013).

DEPARTMENT OF ENVIRONMENTAL RESOURCES

3800 Cornucopia Way, Suite C, Modesto, CA 95358-9592
Phone: 209.525.6770 Fax: 209.525.6773

COUNTY GROUNDWATER ORDINANCE

WELL PERMIT APPLICATION REVIEW PROCESS

The following process has been adopted by the Stanislaus County Department of Environmental Resources (DER) to review and process well permit applications under the County Groundwater Ordinance (Chapter 9.37 of the Stanislaus County Code) after the effective date of November 26, 2014. The process is also illustrated graphically on the attached flow chart.

1. The Applicant submits a Well Permit Application using the Application Packet available at http://www.stancounty.com/ER/pdf/water-well-construction-and-destruction-application.pdf, or from the DER office, and provides a check for the appropriate permit fees.
2. After receipt of a Permit Application, it is reviewed by the DER to determine whether it is subject to the prohibitions in the Groundwater Ordinance against unsustainable groundwater extraction and the export of water using the following criteria:
   a. Section 9.37.030 (4): If the Permit Application is for a well that will pump water from a known and definite channel, it is not pumping groundwater as defined by the Groundwater Ordinance, and the prohibitions of the Ordinance do not apply. (A copy of the "Application to Appropriate Water" submitted to the California State Water Resources Control Board (SWRCB) is required.)
   b. Section 9.37.045 (A): The prohibition against unsustainable groundwater extraction does not apply to an application for a well designed to replace an existing well permitted prior to November 25, 2014, provided the replacement well has no greater capacity than the well it is replacing. (Construction details and groundwater extraction capacities for the original and replacement well are required.)
   c. Section 9.37.045 (D): The prohibitions and requirements of the Groundwater Ordinance do not apply to Permit Applications for wells that are not located in an unincorporated area of the County.
   d. Section 9.37.050 (A1) Permit Applications for wells on property served by a public water agency that is in compliance with an adopted Groundwater Management Plan or Groundwater Sustainability Plan are not subject to the prohibitions in the Groundwater Ordinance. (Current proof that water delivery charges are being paid by the parcel in question is required.)
   e. Section 9.37.050 (A2): Permit Applications for wells intended to extract 2 acre-feet/year of groundwater or less are exempt from the prohibitions in the Groundwater Ordinance. (Construction and pump details are required.)

f. Section 9.37.050 (A3): Groundwater extraction or water export in compliance with a permit previously granted by the DER is exempt from the prohibitions in the Groundwater Ordinance. (A copy of the permit is required.)

   Based on this review, if the Permit Application is exempt, it is processed and a permit is issued by DER after receipt of the required permit fees.[1]

3. If the Permit Application is not exempt, the Applicant must submit a Supplemental Application for Non-Exempt Wells with information to demonstrate that groundwater pumped from the well is being sustainably extracted and will not cause any of the "Undesirable Results" listed in Section 97.030 (9) the Ordinance. This Supplemental Application is reviewed to determine whether the information provided is complete and adequate to demonstrate that the Permit Application complies with the Groundwater Ordinance. The review is completed over a 30-day period and is conducted at the expense of the Applicant. Additional permit application fees may be due at the time the supplemental information is provided and/or prior to issuance of the permit.

   a. A copy of the Supplemental Application for Non-Exempt Wells is attached. The DER will contact the Applicant to review what is required, which may vary depending on location and well depth.

   b. After the Applicant submits the supplemental information, it is administratively checked to verify that all of the required information has been provided. The Applicant will be notified if any additional information is required before review of the Permit Application for compliance with the Groundwater Ordinance can begin. This may include special studies that are required under some circumstances.

   c. Next, the Permit Application and supplemental information provided by the applicant is reviewed to determine whether the Applicant has met the requirement to demonstrate by "Substantial Evidence" (Section 97.045 (A)) that the proposed groundwater extraction will not result in "Unsustainable Groundwater Extraction" as defined in Sections 97.030 (6) and 97.030 (8) of the Groundwater Ordinance. Specifically, a technical review is conducted to verify whether the information submitted by the Applicant demonstrates that groundwater extraction from the well will not cause, or substantially contribute to, any of the "Undesirable Results" listed in Section 97.030 (9) of the Groundwater Ordinance. These Undesirable Results include the following:

      i. Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and

[1] Note that effective upon adoption of an applicable Groundwater Sustainability Plan, the prohibition against unsustainable groundwater extraction shall be applicable to any well for which the County reasonably concludes that the extraction of groundwater constitutes unsustainable extraction of groundwater. In addition, if the proposed well is intended to be used for the export of water as defined in the Groundwater Ordinance, a separate review is conducted to determine whether such export is exempt from the Ordinance prohibition against such export.

recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.

ii. Significant and unreasonable reduction of groundwater storage.

iii. Significant and unreasonable degradation of water quality, including the migration of contaminant plumes that impair water quality.

iv. Significant and unreasonable land subsidence that substantially interferes with surface land uses.

v. Surface water depletions that have significant and unreasonable adverse impacts on the beneficial uses of the surface water.

d. If the review finds the Applicant has failed to demonstrate that the their proposed groundwater extraction will not cause or substantially contribute to any of the above-listed Undesirable Results, the application is discussed with the Applicant, and they are given the opportunity to submit additional data, accept mitigation measures that will lessen the Undesirable Results to an insignificant level, or amend their application. Note that the Applicant is not required to submit additional date, amend their application or accept the mitigation measures in such a situation; however, it they do not do so, an Environmental Impact Report (EIR) will be required.

4. After completion of the Groundwater Ordinance Completeness and Compliance Review, the application is reviewed as required under the California Environmental Quality Act (CEQA) to determine whether construction and use of the proposed well could result in potentially significant environmental impacts, and to determine what type of environmental document is appropriate for evaluation of the project and compliance with the CEQA. This is called a CEQA Initial Study, and is completed during a 30-day period. If the Initial Study finds that construction and operation of the proposed well will not result in potentially significant environmental impacts, or that the impacts will be mitigated to a less-than-significant level, then the application qualifies for processing under a Negative Declaration (ND) or a Mitigated Negative Declaration (MND). If the Initial Study finds that there are potentially significant environmental impacts, then an EIR is required.

5. If the application qualifies for a ND or MND, then the appropriate CEQA document is prepared and processed. Under the State CEQA Guidelines, the County has 180 days to complete this process. First, the DER prepares the draft document (either a ND or MND) and files a Notice of Intent with the County Clerk; then, a 30-day public comment period is opened.

6. If the application requires preparation of an EIR, the DER will meet with the applicant to go over the requirements. EIR's will usually require more in depth studies to evaluate specific impacts and determine whether or not they are significant. Under the CEQA Guidelines, the County has one year to complete the EIR, but this period may be extended by 90 days.

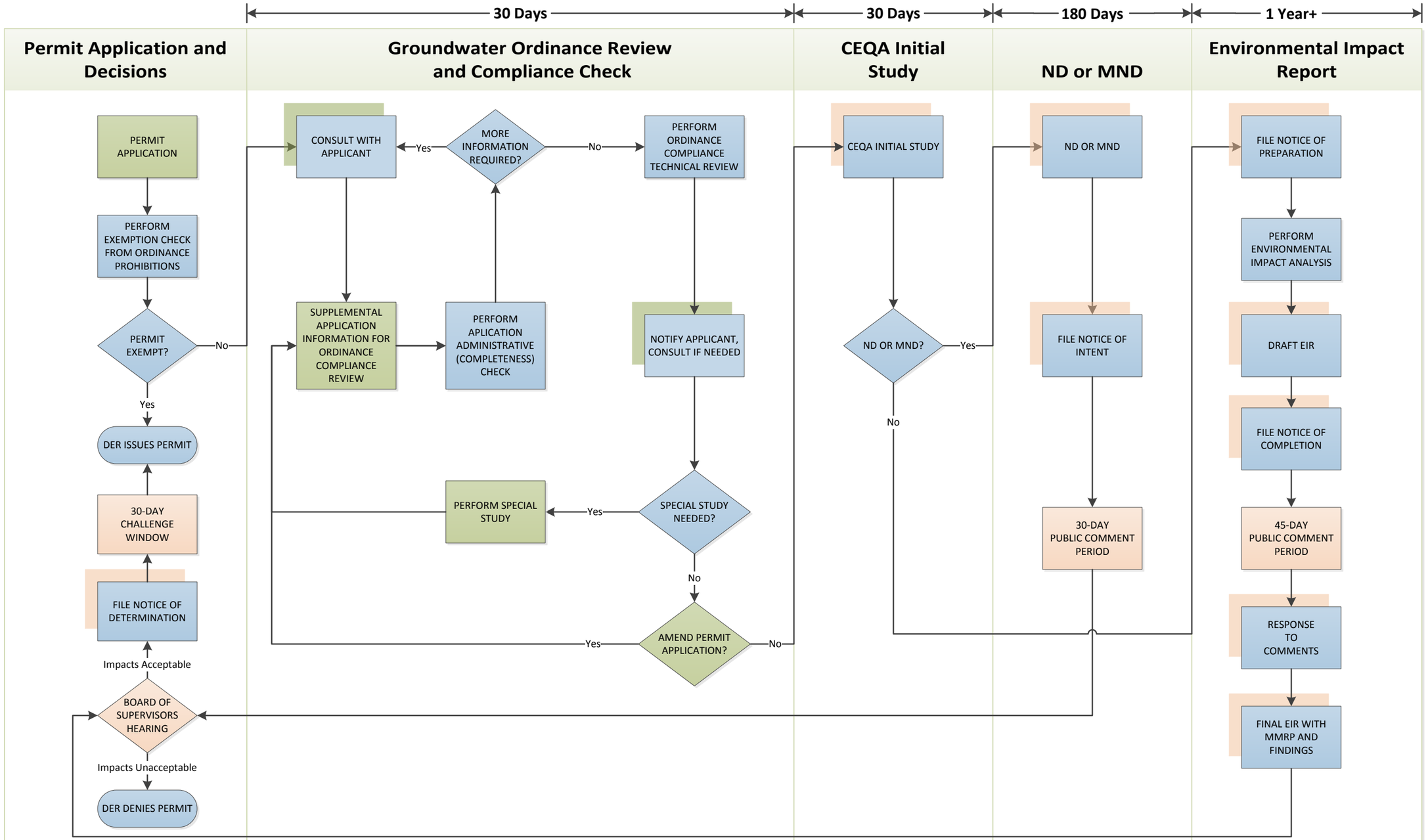
7. After conclusion of the public comment period for the ND, MND or EIR, and development of appropriate responses to any comments that are received, the well

permit application receives a public hearing during a regularly-schedule Board of Supervisors meeting, and the application is voted upon. If the application is accepted, then a Notice of Determination is filed with the County Clerk. After the Notice of Determination is filed, there is a 30-day period during which the County's decision can be legally challenged. After this period is over, if no challenges are received, the DER will issue the permit, pending receipt of any fees that are due for review and processing of the permit application.

Attachments:

1. Stanislaus County Groundwater Ordinance Well Permitting Process Flow Chart
2. Supplemental Application for Non-Exempt Wells

STANISLAUS COUNTY GROUNDWATER ORDINANCE WELL PERMITTING PROCESS



LEGEND

Process or Document

Decision Point

Terminal Point/ Result

Completed by Applicant

Completed by County

Public Process

CEQA – California Environmental Quality Act
DER – Department of Environmental Resources
EIR – Environmental Impact Report
MMRP – Mitigation Monitoring and Reporting Program
MND – Mitigated Negative Declaration
ND – Negative Declaration

Stanislaus County
Striving to be the Best

Jacobson James & Associates, Rev C August 7, 2015

DEPARTMENT OF ENVIRONMENTAL RESOURCES

3800 Cornucopia Way, Suite C, Modesto, CA 95358-9592
Phone: 209.525.6770 Fax: 209.525.6773

SUPPLEMENTAL APPLICATION FOR NON-EXEMPT WELLS

The following supplemental information is required for all wells that are determined not to be exempt from the prohibitions and requirements of the County Groundwater Ordinance effective November 25, 2014.

Applicant Information

Name of Applicant:		Firm (if applicable):	
Address:	City:	State:	Zip Code:
Daytime Phone Number:	Fax Number	Email:	
Name of Owner (if different from Applicant):		Firm (if applicable):	
Address:	City:	State:	Zip Code:
Daytime Phone Number:	Fax Number	Email:	

Licensed Professional Information (Professional Engineer or Geologist)

Name of Licensed Professional:		Firm:	
Address:	City:	State:	Zip Code:
Daytime Phone Number:	Fax Number	Email:	
License Type and Number:	Sections of Application Completed:		
Name of Licensed Professional:		Firm:	
Address:	City:	State:	Zip Code:
Daytime Phone Number:	Fax Number	Email:	
License Type and Number:	Sections of Application Completed:		

For County Use Only

I. Location Map

Provide a map or maps showing the following:

A. Well location

B. Outline of property to be served by the well, and APN number(s)

C. Outline of contiguous owned property surrounding the well location, and APN number(s)

D. Streams and lakes within 2 miles

E. Springs, seeps, wetlands and other Groundwater-Dependent Ecosystems (GDEs) within 3 miles. (Use USGS topographic maps, aerial photo imagery available from the internet or other sources, state databases, studies, DER resources, or knowledge of the area to identify any areas where groundwater may be discharging to surface water either perennially or seasonally.)

F. Existing sewer lines, cisterns and septic disposal systems within 250 feet

G. Concentrated Animal Feeding Operations (CAFOs) within 1 mile

H. Reported hazardous materials and hazardous waste sites or release incidents within 1 mile (from Section VI.A.)

I. Existing wells on the property, keyed to a table that provides well use, depth, diameter, screen interval, and pumping rate. If available, attach information regarding any specific capacity or other pumping tests completed.

J. Predicted area of drawdown exceeding 5 feet (from Section III, below).

K. For proposed wells within 2 miles of areas underlain by the Corcoran Clay and completed below the depth of the Corcoran Clay, the location of any infrastructure within 2 miles that is potentially sensitive to subsidence. This includes, but is not necessarily limited to, canals, ditches, pipelines, utility corridors, and roads.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

II. Pumping and Water Use Data

Provide the following information regarding groundwater extraction from the proposed well.

A. For irrigation wells, use the following table to calculate the water demand to be served by the proposed well.

Crop Type	Irrigated Acres	Irrigation System Type	Irrigation Season Length (days)	Average Annual Demand (AFY)	Maximum Monthly Demand (MGM)	Peak Daily Demand (GPM)

B. Estimated pumping rate of proposed well: _____ gpm

C. Anticipated pumping schedule for proposed well (hours per day, days per week, approximate annual start date and stop date for seasonal pumping):

D. Estimated annual extraction volume: _____ gal

E. Estimated cumulative extraction volume prior to January 1, 2022: _____ gal

F. Estimated cumulative extraction volume in 20 years: _____ gal

G. Planned water use: ☐ Irrigation ☐ Stock ☐ Domestic ☐ Municipal ☐ Industrial ☐ Other (describe): _____

H. Size of area to be served by the well: _____ acres

I. Size of contiguous owned property on which the well is located: _____ acres

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

III. Water Export

A. Will groundwater extracted from the well be exported from the County, or substituted for surface water that will be exported form the County,

B. If the attach a Groundwater Export Proposal that includes, at a minimum, the following:

1. List the exemptions from Section 9.37.050 of the Groundwater Ordinance that apply and provide any substantiating evidence.
2. Provide specific timeframes and conveyance mechanisms by which the groundwater will be conveyed out of the County.
3. Indicate the purpose and use of such water at the terminal point of delivery.
4. Indicate the methods used to monitor and report the volume of water to be exported.
5. Explain whether the project involves exporting water during periods of emergency. (An emergency includes (1) states of emergency as described in the California Government Code, section 8558; (2) states of water shortage emergency as determined by the California Department of Water Resources; or (3) determination by the Stanislaus County Board of Supervisors that groundwater within the County can assist areas outside the County.)
6. Groundwater extraction for the purpose of emergency relief shall be monitored so that the volume of water exported can be determined.
7. The duration of groundwater extraction for the purpose of emergency relief shall not exceed the time frame of the emergency.
8. Groundwater extraction for the purpose of emergency relief does not set precedents or entitles the exporter to future exports.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

IV. Local Groundwater Level Decline

Provide distance-drawdown calculations for groundwater extraction from the proposed well. The approach taken may include calculations, spreadsheets, analytical computer models or numerical computer models, at the discretion of the Applicant. The DER can provide additional guidance if needed. Evaluation may consist of a simple one dimensional distance-drawdown calculation using the Theiss Equation, or more complex two and three dimensional approaches may be taken when the applicant feels that doing so presents a more realistic assessment of potential impacts. Input parameters for aquifer properties (Transmissivity and Storativity) may be derived from local pump and aquifer tests, other site investigation data, the County's well database, literature, or professional judgment based on the materials in which the well is completed. A description of the conceptual approach taken to the analysis must be provided, and justification must be provided for all inputs and assumptions to assure that impacts are not underestimated.

A. Method used: ☐Calculations ☐Spreadsheet ☐Computer Model

B. Describe Approach (attach additional sheets, calculations and results):

C. Provide drawdown estimates for January 1, 2022 and after 20 years of pumping:

1. Distance to 5 feet drawdown: _____ feet
2. Distance to 20 feet drawdown: _____ feet
3. Drawdown at the nearest property line: _____ feet
4. If the well is in a Subsidence Study Zone (within 2 miles of an area underlain by the Corcoran Clay) and completed in a confined aquifer system, maximum drawdown at the nearest ditch, canal, utility easement or other sensitive infrastructure: _____ (feature); _____ feet
5. Maximum drawdown at each GDE within 3 miles or less of the proposed well: _____ feet

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

V. Wells in a Groundwater Level Management Zone

If the proposed well is in a County-designated Groundwater Level Management Zone, the Applicant shall provide the following:

A. A Groundwater Extraction Offset Plan that demonstrates that the proposed groundwater extraction will be 100% offset. The scope of the Groundwater Extraction Offset Plan must be discussed with the DER and agreed to prior to implementation. The Plan shall include, at a minimum, the following:

1. The proposed method and location of offset;
2. The proposed timing and duration of offset;
3. Supporting calculations to demonstrate offset volume; and
4. Any assurances and/or agreements with other parties that verify their agreement to support the proposed offset.

OR B. A Groundwater Resources Investigation that demonstrates the proposed groundwater extraction will not cause or contribute to Undesirable Results in the Groundwater Level Management Zone. The scope of the Groundwater Resources investigation must be discussed with the DER and agreed to prior to implementation and, at a minimum, shall include the following:

1. A summary of previous studies and reports;
2. A summary of available information regarding undesirable results observed in the area;
3. Analysis of local and regional groundwater level trends based on available well hydrographs within no less than 5 miles of the proposed well;
4. Any additional site specific hydrogeologic investigation performed;
5. An analysis of the local groundwater balance;
6. A prediction of future groundwater level drawdown and trends in the area with and without the proposed well;
7. Evaluation and conclusions whether the proposed groundwater extraction will cause, or contribute to, undesirable results; and
8. Signature by a Registered Professional Geologist or Registered Professional Engineer in California.

AND C. A Groundwater Level Monitoring Plan that includes, at a minimum, the following:

1. A description of the aquifers to be monitored;
2. A description of any existing or new wells to be used, their locations, construction specifications and completion depths; and
3. Water level measurement methods and frequency (minimum spring and fall).

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

VI. Regional Groundwater Level Decline and Storage Reduction

For all proposed well not located within a County-designated Groundwater Level Management Zone, the Applicant shall provide the following:

A. Calculate available aquifer storage beneath the contiguous property owned by the Applicant on which the proposed well is located: _____ acre-feet

Parameter	**Value**	**Source/Justification** (attach additional information as needed)
Size of Property (acres)		
Aquifer Thickness (feet)		
Specific Yield (assume 0.25 or provide justification for alternate value)		

B. Divide the cumulative groundwater extraction volume prior to January 1, 2022 by the available aquifer storage calculated above: _____ %

C. Divide the cumulative groundwater extraction volume for the first 20 years of well operation by the available aquifer storage calculated above: _____ %

D. If the cumulative extraction volume exceeds 10% of available aquifer storage, submit a Groundwater Level Monitoring Plan that includes, at a minimum, the following:

   a. A description of the aquifers to be monitored;

   b. A description of any existing or new wells to be used, their locations, construction specifications and completion depths; and

   c. Water level measurement methods and frequency (minimum spring and fall).

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

VII. Water Quality Degradation

A. Provide a database search for reported hazardous materials and waste sites and release incidents near the proposed well with search radii that comply with ASTM Standard 1527. (Commercial database search services provide this service.)

B. Provide water quality data available within 1 mile of the proposed well for small water supply systems regulated by the County or the State, and from the State Geotracker website (http://geotracker.waterboards.ca.gov/) and from the USGS NWIS Database (http://maps.waterdata.usgs.gov/mapper/index.html).

C. If the well is located in a County-designated Groundwater Quality Protection Zone (in an area underlain by the Corcoran Clay), the Applicant shall provide data regarding the well seals and construction methods used to prevent communication between the unconfined aquifer system overlying the Corcoran Clay with the confined aquifer system underlying the Corcoran Clay.

D. If the well is located in a County-designated Groundwater Quality Study Zone (within 1 mile of a well that produces water with solute concentrations that exceed primary or secondary MCLs or other applicable Water Quality Objectives), or within 1 mile of a reported contamination incident identified by the database search, the Applicant shall submit a Groundwater Quality Investigation. The scope of the Groundwater Quality investigation must be discussed with the DER and agreed to prior to implementation. At a minimum, the Groundwater Quality Investigation shall include the following:

1. A summary of relevant data, studies and/or reports regarding the local aquifer system, groundwater quality and contaminant transport;
2. Analysis of local and regional groundwater quality trends based on available data in the area;
3. The methods and results of any additional site-specific hydrogeologic and groundwater quality investigation;
4. Evaluation of the potential effect of the proposed well on future groundwater quality trends and contaminant migration;
5. Evaluation of whether the proposed groundwater extraction will cause, or contribute to, groundwater quality degradation in excess of applicable standards for beneficial uses, or will interfere with groundwater quality management or remediation efforts overseen by State or Federal agencies; and
6. Signature by a Registered Professional Geologist or Registered Professional Engineer in California.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

VIII. Land Subsidence

A. If the well is in a Subsidence Study Zone (i.e., it is within 2 miles of an area underlain by the Corcoran Clay) and is proposed to be completed in the confined aquifer system, the Applicant shall provide the following:

1. The estimated maximum drawdown on January 1, 2022 and after 20 years of pumping at the nearest property line, ditch, canal, utility easement other sensitive infrastructure: _____ ft on January 1, 2022 and _____ feet after 20 years.
2. Attach hydrographs for nearby wells showing lowest historical groundwater levels. (Hydrographs are available from https://www.casgem.water.ca.gov and http://maps.waterdata.usgs.gov/mapper/index.html.)

Well ID	Distance and Direction from Proposed Well	Date Range of Data	Lowest Groundwater Level and Date

3. Attach data relevant to subsidence from the Groundwater Information Center Interactive Map Application (https://gis.water.ca.gov/app/gicima/)
4. If the above information indicates the predicted drawdown is lower than the historical low groundwater level, or inelastic subsidence has been measured in the vicinity of the proposed well, the Applicant shall submit a Geotechnical Subsidence Investigation. The scope of the Geotechnical Subsidence Investigation must be discussed with the County Geologist and agreed to prior to implementation. At a minimum, the Geotechnical Subsidence Investigation shall include the following:
   a. A description of available information regarding the local geology and hydrogeology, especially as it relates to potential compression of fine grained aquitards in confined aquifer systems;
   b. A summary of data, studies and/or reports regarding subsidence in the area;
   c. Analysis of historical and current local and regional groundwater level trends based on available well hydrographs;
   d. Prediction of future groundwater level drawdown and trends;
   e. Any additional site specific investigation performed by the Applicant of conditions related to subsidence;
   f. Evaluation of whether, and to what extent, the proposed groundwater extraction will cause, or contribute to, subsidence; and
   g. Signature by a Registered Professional Civil or Geotechnical Engineer in California.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

IX. Surface Water Depletion

If the well is in a Surface Water Protection Zone (within 1 mile of groundwater-connected streams, tributaries or reservoirs associated with the Calaveras, Stanislaus or Tuolumne Rivers if the well screen and gravel pack are completed within 200 feet of the streambed elevation, and within 2,500 feet if the well screen and gravel pack are completed at least 200 feet below the streambed elevation) the Applicant shall submit a Surface-Groundwater Interaction Study. The scope of the Surface-Groundwater Interaction Study must be discussed with the DER and agreed to prior to implementation. At a minimum, the Surface-Groundwater Interaction Study shall include the following:

A. A summary of previous data, reports and/or studies relevant to hydrostratigraphy and surface-groundwater interaction;
B. Additional site-specific investigation of conditions related to surface-groundwater interaction as may be required by the County, including but not necessarily limited to well-log interpretation or pumping tests;
C. Evaluation of the predicted surface water depletion by the proposed groundwater extraction using on-line analytical models available from the USGS (http://mi.water.usgs.gov/software/groundwater/strmdepl08/) or other methods approved by the County; and
D. Signature by a Registered Professional Geologist or Engineer in California.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

X. Impacts to Groundwater Dependent Ecosystems (GDEs)

If drawdown at any GDE is projected to exceed 1 foot in Section IV.C.5, the Applicant shall submit a GDE Impact Study. The scope of the GDE Impact Study must be discussed with the DER and agreed to prior to implementation. At a minimum, the GDE Impact Study shall include the following:

A. A summary of previous groundwater resources and GDE studies and reports in the area;
B. A description of the groundwater flow regime and aquifer system in the area and the nature of the groundwater discharge at the GDE;
C. Analysis of local and regional groundwater level trends based on available well hydrographs within no less than 5 miles of the proposed well;
D. Any additional site specific hydrogeologic investigation performed;
E. An analysis of the local groundwater balance and the impact of the proposed groundwater extraction on surface water discharge, including evapo-transpiration, if applicable;
F. A prediction of future groundwater level drawdown and trends in the area with and without the proposed well;
G. Evaluation of the GDE for the presence of habitat and for the potential presence of any sensitive, threatened, or endangered species or rare plants;
H. Evaluation and conclusions regarding the impact of the proposed groundwater extraction on the GDE; and
I. Signature by a Registered Professional Geologist or Engineer in California, and a qualified biologist or environmental scientist.

For County Use Only

Data Adequate? ☐ Yes ☐ No

Comments:

INDEMNIFICATION

In consideration of the County's processing and consideration of this application for approval of the groundwater project being applied for (the "Project"), and the related CEQA consideration by the County, the Owner and Applicant, jointly and severally, agree to indemnify the County of Stanislaus ("County") from liability or loss connected with the Project approvals as follows:

1. The Owner and Applicant shall defend, indemnify and hold harmless the County and its agents, officers and employees from any claim, action, or proceeding against the County or its agents, officers or employees to attack, set aside, void, or annul the Project or any prior or subsequent development approvals regarding the Project or Project condition imposed by the County or any of its agencies, departments, commissions, agents, officers or employees concerning the said Project, or to impose personal liability against such agents, officers or employees resulting from their involvement in the Project, including any claim for private attorney general fees claimed by or awarded to any party from County. The obligations of the Owner and Applicant under this Indemnification shall apply regardless of whether any permits or entitlements are issued.
2. The County will promptly notify Owner and Applicant of any such claim, action, or proceeding, that is or may be subject to this Indemnification and, will cooperate fully in the defense.
3. The County may, within its unlimited discretion, participate in the defense of any such claim, action, or proceeding if the County defends the claim, actions, or proceeding in good faith. To the extent that County uses any of its resources responding to such claim, action, or proceeding, Owner and Applicant will reimburse County upon demand. Such resources include, but are not limited to, staff time, court costs, County Counsel's time at their regular rate for external or non-County agencies, and any other direct or indirect cost associated with responding to the claim, action, or proceedings.
4. The Owner and Applicant shall not be required to pay or perform any settlement by the County of such claim, action or proceeding unless the settlement is approved in writing by Owner and Applicant, which approval shall not be unreasonably withheld.
5. The Owner and Applicant shall pay all court ordered costs and attorney fees.
6. This Indemnification represents the complete understanding between the Owner and Applicant and the County with respect to matters set forth herein.

The Stanislaus County Department of Environmental Resources (DER) will notify the applicant of the date in which the completed information has been received. This date will trigger the 30-day review period to determine whether the application is complete. If

additional information is needed or requested, this will trigger another 30-day review period.

IN WITNESS WHEREOF, by their signature below, the Owner and Applicant hereby acknowledge that they have read, understand and agree to perform their obligations under this Indemnification.

Signature of Applicant/Date	Signature of Owner(s)/Power of Attorney/Legal Representative/Date •

Note: Applications are not valid without the property owner's signature.

NOTICE TO ALL APPLICANTS

Pursuant to California Fish and Game Code §711.4, the County of Stanislaus is required to collect filing fees for the California Department of Fish and Wildlife for all projects subject to the California Environmental Quality Act (CEQA) unless a fee exemption is provided in writing from the California Department of Fish and Wildlife. Pursuant to California Fish & Game Code §711.4(d), all applicable fees are required to be paid within 5 DAYS of approval of any project subject to CEQA. These fees are subject to change without County approval required and are expected to increase yearly. Please contact the Department of Environmental Resources or refer to the current fee schedule for information on current fee amounts.

If a required filing fee is not paid for a project, the project will not be operative, vested or final and any local permits issued for the project will be invalid. (Section 711.4(c)(3) of the Fish and Game Code.)

Under the revised statute, a lead agency may no longer exempt a project from the filing fee requirement by determining that the project will have a de minimis effect on fish and wildlife. Instead, a filing fee will have to be paid unless the project will have no effect on fish and wildlife. (Section 711.4 (c)(2) of the Fish and Game Code). If the project will have any effect on fish and wildlife resources, even a minimal or de minimis effect, the fee is required.

A project proponent who believes the project will have no effect on fish and wildlife should contact the California Department of Fish and Wildlife. If the California Department of Fish and Wildlife concurs the project will have no such effect, the Department will provide the project proponent with a form that will exempt the project from the filing fee requirement. Project proponents may contact the Department by phone at (916) 651-0603 or through the Department's website at www.dfg.ca.gov.

Pursuant to California Fish and Game Code §711.4(e)(3) , the department (CDFW) shall assess a penalty of 10 percent of the amount of fees due for any failure to remit the amount payable when due. The department may pursue collection of delinquent fees through the Controller's office pursuant to Section 12419.5 of the Government Code.

Additionally California Fish and Game Code §711.4(f) states the following: Notwithstanding Section 12000, failure to pay the fee under subdivision (d) is not a misdemeanor. All unpaid fees are a statutory assessment subject to collection under procedures as provided in the Revenue and Taxation Code.

Failure to pay the necessary fee will also extend the statute of limitations for challenging the environmental determination made by the County, thus increasing exposure to legal challenge. The type of environmental determination to be made by the County may be discussed with the project reviewer following the environmental review stage of the project and will be outlined in a Board of Supervisor's staff report.

REQUIRED ADDITIONAL FEE: STANISLAUS COUNTY RECORDER

Upon approval of the proposed project, Stanislaus County will record either a “Notice of Exemption” or a “Notice of Determination” pursuant to CEQA Guidelines. The Clerk Recorder charges an additional fee of $57.00 for recording these documents. A separate check made payable to “Stanislaus County” is due and payable within 5 DAYS of approval of the project.