SGWP Grant Application: Programmatic EIR for Implementation of the Stanislaus County Groundwater Ordinance

December 8, 2015

Prepared for:

Stanislaus County
Department of Environmental Resources
3800 Cornucopia Way, Suite C
Modesto, California 95358

Prepared by:

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Roseville, California 95747

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2969 Prospect Park Drive, Suite 100,
Rancho Cordova, California 95670

COMPLETED APPLICANT INFORMATION, PROJECT INFORMATION, AND QUESTIONS IN DWR GRANTS DATABASE

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

Proposal Full View

Print

APPLICANT INFORMATION

Organization Name *	DER
Tax ID	946000540
Point Of Contact *	**Division/Address List:** **Address1:** 3800 Cornucopia Way, Suite C **Address2:** **City:** Modesto **State:** CA **Zip:** 95358 **First Name:** Walter **Last Name:** Ward **Email:** wward@envres.org **Phone (Direct):** 2095256710
Point Of Contact Position Title *	Walter Ward, Water Resources Manager
Proposal Name *	Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance
Proposal Objective*	Stanislaus County was the first county in California to adopt a groundwater ordinance deliberately aligned with sustainable groundwater management concepts defined in SGMA. Adopted in late 2014, the ordinance codifies requirements, prohibitions, and exemptions that assure sustainable groundwater extraction from new wells. The requested grant will support preparation of a Programmatic Environmental Impact Report (PEIR) to facilitate implementation of the ordinance, streamline the permit application and review process, and provide a foundation for development of future Groundwater Sustainability Plans under SGMA. The PEIR will evaluate the effects of ordinance implementation under reasonably foreseeable demand trends and groundwater management requirements, with the following objectives: (1) Early stakeholder engagement that builds on the county's history of collaborative solutions to water management through the CEQA scoping process; (2) Compilation and use of existing water management plans, studies, and data to characterize the groundwater basins, develop a water budget, forecast water source/demand trends, describe groundwater-related agricultural/municipal land-use trends, assess surface water-groundwater interactions, and identify groundwater-dependent ecosystems (GDEs); (3) Developing a 3D hydrologic model as a tool to characterize groundwater conditions, simulate groundwater-surface water conditions, and forecast impacts under a range of future scenarios; (4) Evaluation of direct impacts such as regional drawdown and groundwater storage depletion, surface water depletion, effects on GDEs, water quality, land subsidence, and ability to meet future water demands; as well as non-hydrologic, indirect, and cumulative impacts; (5) To the extent possible, identifying data gaps, issues, and opportunities related to groundwater management, to facilitate refinement of well permitting, water management, and sustainability planning under SGMA.

BUDGET

Other Contribution	85000
Local Contribution	250000
Federal Contribution	0
Inkind Contribution	0
Amount Requested *	250000

Total Proposal Cost *	585000

GEOGRAPHIC INFORMATION

Latitude *	**DD(+/-):**	37	**MM:**	34	**SS:**	52
Longitude *	**DD(+/-):**	-120	**MM:**	59	**SS:**	31
Longitude/Latitude Clarification	Department of Environmental Resources, 3800 Cornucopia Way, Suite C, Modesto, CA		**Location**	DER offices located near center of County.		
County*	Stanislaus					
Ground Water Basin	San Joaquin Valley-Delta-Mendota,San Joaquin Valley-Eastern San Joaquin,San Joaquin Valley-Modesto,San Joaquin Valley-Turlock					
Hydrologic Region	San Joaquin					
Watershed	East San Joaquin Subbasin primarily underlies watershed 91 6531 - North Valley Floor; Modesto and Turlock Subbasins underlie watershed 95 6535 - San Joaquin Valley Floor; Delta Mendota Subbasin underlies watershed 101 6541 - Delta Mendota Canal					

LEGISLATIVE INFORMATION

Assembly District*	12th Assembly District,21st Assembly District
Senate District*	12th Senate District,14th Senate District,5th Senate District
US Congressional District*	District 10 (CA)

Project Information

PROJECT NAME: PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT FOR IMPLEMENTATION OF THE STANISLAUS COUNTY GROUNDWATER ORDINANCE

PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT FOR IMPLEMENTATION OF THE STANISLAUS COUNTY GROUNDWATER ORDINANCE

Implementing Organization	Stanislaus County
Secondary Implementing Organization	Nineteen other water agencies, municipalities and public interest groups affiliated with the STRGBA, TGBA, WAC and TAC.
Proposed Start Date	7/1/2016
Proposed End Date	12/31/2017
Scope Of Work	Per PSP Guidelines, summary information is provided in the Applicant Info tab and Attachment 3.
Project Description	Per PSP Guidelines, summary information is provided in the Applicant Info tab and Attachment 3.
Project Objective	Per PSP Guidelines, summary information is provided in the Applicant Info tab and Attachment 3.

PROJECT BENEFITS INFORMATION

No records found.

BUDGET

Other Contribution	85000
Local Contribution	250000
Federal Contribution	0
Inkind Contribution	0
Amount Requested*	250000
Total Project Cost*	585000

GEOGRAPHIC INFORMATION

Latitude *	**DD(+/-):**	37	**MM:**	34	**SS:**	52
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Longitude/Latitude Clarification	Department of Environmental Resources, 3800 Cornucopia Way, Suite C, Modesto, CA	**Location**	DER offices located near center of County.			
County*	Stanislaus					
Ground Water Basin	San Joaquin Valley-Delta-Mendota,San Joaquin Valley-Eastern San Joaquin,San Joaquin Valley-Modesto,San Joaquin Valley-Turlock					
Hydrologic Region	San Joaquin					
Watershed	Lower San Joaquin River, Upper Tuolumne River, Upper Stanislaus, and Rock Creek - French Camp Slough Watersheds. Small portions of the Upper Calaveras, San Joaquin Delta and Upper Merced watersheds.					

LEGISLATIVE INFORMATION

Assembly District*	12th Assembly District,21st Assembly District
Senate District*	12th Senate District,14th Senate District,5th Senate District
US Congressional District*	District 10 (CA)

Section : Questions

Questions

Q1. Project Representative:

Provide the name and details of the person responsible for signing and executing the grant agreement for the applicant. Persons that are subcontractors to be paid by the grant cannot be listed as the Project Director.

Jami Aggers Director Department of Environmental Resources Stanislaus County 3800 Cornucopia Way, Suite C Modesto, CA 95358 Email: jaggers@envres.org Phone: (209)525-6700

Q2. Project Manager:

Provide the name, title, and contact information of the Project Manager from the applicant agency or organization that will be the day-to-day contact on this application.

Walter Ward Water Resources Manager Department of Environmental Resources Stanislaus County 3800 Cornucopia Way, Suite C Modesto, CA 95358 Email: wward@envres.org Office Phone: (209)525-6710 Mobile Phone: (209)272-6156

Q3. Eligibility:

Has the County met the requirements of DWR's CASGEM Program?

1) (•) Yes
2) ( ) No

Q4. Eligibility:

Is the County an agricultural water supplier? If yes, has the County submitted a complete Agricultural Water Management Plan (AWMP) to DWR? Has the AWMP been verified as complete by DWR? If the AWMP has not been submitted, please indicate the anticipated submittal date? If the County is not an agricultural water supplier, please indicate so and go to Q5.

The county is not an agricultural water supplier.

Q5. Eligibility:

Is the County an urban water supplier? If yes, has the County submitted a complete Urban Water Management Plan (UWMP) to DWR? Has the UWMP been verified as complete by DWR? If the UWMP has not been submitted, explain and provide the anticipated date for submittal. Is the County in compliance with AB 1420; please submit that self-certification form to document compliance status. If the County is not an urban water supplier, please indicate so and go to Q6.

The county is not an urban water supplier.

Q6. Eligibility:

Is the County a surface water diverter? If yes, has the County submitted to the State Water Resources Control Board their surface water diversion reports in compliance with requirements outlined in Part 5.1 (commencing with §5100) of Division 2 of the Water Code? If the reports have not been submitted, explain and provide the anticipated date for meeting the requirements. If the County is not a surface water diverter, please indicate so and go to Q7.

The county held a surface water diversion right until late 2015 which has not been utilized for several years (A016669). All reports are current through the 2014 reporting period as further Demonstrated in Attachment 1. Ownership of the right was transferred to Camp Taylor, Inc. effective 10/14/2015 as indicated in Attachment 1.

Q7. Eligibility:

Does the project include any of the following activities: (Check all that Apply)

1) ☐ The potential to adversely impact a wild and scenic river or any river afforded protection under the California or Federal Wild and Scenic Rivers Act
2) ☐ Acquisition of land through eminent domain
3) ☐ Design, construction, operation, mitigation, or maintenance of Delta conveyance facilities
4) ☐ Acquisition of water except for projects that will provide fisheries or ecosystem benefits or improvements that are greater than required currently applicable environmental mitigation measures or compliance obligations
5) ☐ Pay any share of the costs of remediation recovered from parties responsible for the contamination of a groundwater storage aquifer
6) ☐ Projects or groundwater planning activities associated with adjudicated groundwater basins
7) ☑ None of the above

Q8. DAC or EDA Funding Match Waiver or Reduction:

Are you applying for funding match waiver or reduction as a DAC, SDAC, or EDA? If not identified as a DAC, SDAC, or EDA in Table 1, fill out Attachment 7 or Attachment 8 as appropriate.

1) ○ Yes
2) ◉ No

Section : Attachments

Attachments

Attachment 1: Authorization and Eligibility Requirements

Upload Authorization and Eligibility Requirement documentation here. This attachment is mandatory.

Last Uploaded Attachments: Att1_SGWP2015CO_Eligible_1of1.pdf

Attachment 2: Basin Conditions

Upload Basin Condition documentation here. This attachment is mandatory.

Last Uploaded Attachments: Att2_SGWP2015CO_Conditions_1of1.pdf

Attachment 3: Work Plan

Upload Work Plan documentation here. This attachment is mandatory.

Last Uploaded Attachments:
Att3_SGWP2015CO_WorkPlan_1of3.pdf,Att3_SGWP2015CO_WorkPlan_2of3.pdf,Att3_SGWP2015CO_WorkPlan3of3.pdf

Attachment 4: Budget

Upload Budget documentation here. This attachment is mandatory.

Last Uploaded Attachments: Att4_SGWP2015CO_Budget_1of1.pdf

Attachment 5: Schedule

Upload Schedule documentation here. This attachment is mandatory.

Last Uploaded Attachments: Att5_SGWP2015CO_Schedule_1of1.pdf

Attachment 6: Program Preferences

Upload Program Funding Priorities here (if applicable).

Last Uploaded Attachments: Att6_SGWP2015CO_Preference_1of1.pdf

Attachment 7: Disadvantaged Community

Upload Disadvantaged Community documentation here (if applicable).

Attachment 8: Economically Distressed Area

Upload Economically Distressed Area documentation here (if applicable).

ATTACHMENT 1: AUTHORIZATION AND ELIGIBILITY REQUIREMENTS

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

1.0 AUTHORIZING DOCUMENTATION

A resolution designating an authorized representative to submit this grant application and execute an agreement with the State of California for a SGWP Counties with Stressed Basins Grant was adopted by the Stanislaus County Board of Supervisors on November 24, 2015. A copy of Resolution 2015-581 is attached hereto.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 24, 2015 2015-581

On motion of Supervisor Chiesa Seconded by Supervisor O'Brien
and approved by the following vote,
Ayes: Supervisors: O'Brien, Chiesa, Monteith, DeMartini and Chairman Withrow
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

THE FOLLOWING RESOLUTION WAS ADOPTED: Item # *B-2

A RESOLUTION OF THE BOARD OF SUPERVISORS AUTHORIZING THE DIRECTOR OF ENVIRONMENTAL RESOURCES TO SIGN THE STRESSED BASINS GRANT

WHEREAS, The Stanislaus County Board of Supervisors authorizes that an application be made to the California Department of Water Resources to obtain a Counties with Stressed Basins Grant under the Sustainable Groundwater Planning Grant Program pursuant to the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1) (Water Code Section 79700 et seq.); and,

WHEREAS, the Director of Environmental Resources or designee is hereby authorized and empowered to enter into an agreement to receive the grant for the: Programmatic Environmental Impact Report for Groundwater Ordinance Implementation.

THEREFORE, BE IT FURTHER RESOLVED, that the Director of the Department of Environmental Resources of Stanislaus County is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with California Department of Water Resources.

ATTEST: **CHRISTINE FERRARO TALLMAN, Clerk**
Stanislaus County Board of Supervisors,
State of California

Christine Ferraro

File No.

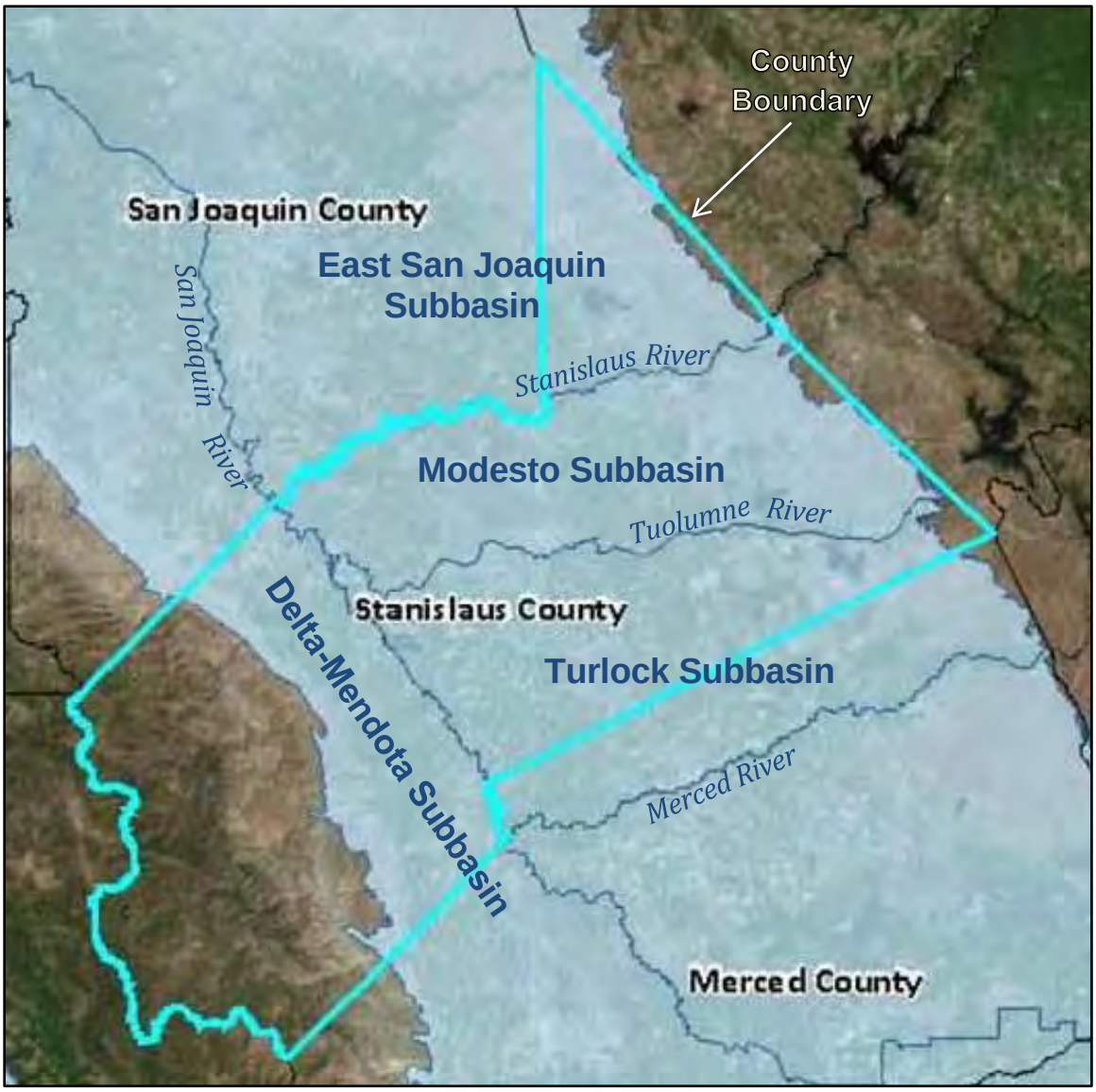
2.0 CASGEM BASIN PRIORITIZATION AND COMPLIANCE

Stanislaus County is underlain by four groundwater subbasins of the San Joaquin Valley Groundwater Basin. The subbasins underlying the County, their priority ranking under the California Statewide Groundwater Elevation Monitoring (CASGEM) program, and their designated CASGEM monitoring entity are listed below in Table 1. Figures 1 shows the extent of these subbasins relative to the county boundaries, and Figure 2 shows the status of CASGEM monitoring entity assignments as of October 19, 2015. Since October 19, 2015, Stanislaus County registered as the CASGEM monitoring entity for the portion of the East San Joaquin Subbasin that underlies the portion of the County north of the Stanislaus River. This area is commonly referred to as the "northern triangle," and comprises approximately 170 square miles, or about 15 percent of the subbasin area. A monitoring plan for the area was submitted by Stanislaus County to the Department of Water Resources (DWR) on December 1, 2015 and Stanislaus County registered as the CASGEM monitoring entity for the area. The monitoring plan was accepted in principal by DWR staff, and Stanislaus County is current working with staff to resolve several administrative details. Based on the status of Stanislaus County's response, we understand that Mr. Brett Wycoff, CASGEM Program Manager for DWR, and Ms. Laura McLean, the DWR Program Manager for the Groundwater Sustainability Planning Grant program for Counties with Stressed Basins, have determined that Stanislaus County is in compliance with this eligibility requirement. As such, as of this date of this application, the entirety of all medium and high priority basins lying within Stanislaus County's jurisdictional boundaries have a designated CASGEM monitoring entity.

Table 1: Summary of Stanislaus County Groundwater Subbasins

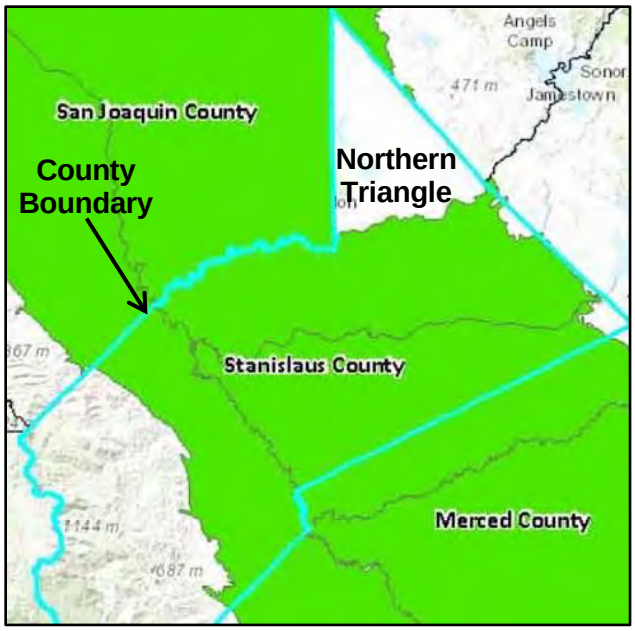
Groundwater Subbasin (DWR Number)	CASGEM Priority	CASGEM Monitoring Entity	Remarks
East San Joaquin Subbasin (5-22.01)	High	Stanislaus County	A monitoring plan was submitted to DWR on December 1, 2015 and has been approved.
Modesto Subbasin (5-22.02)	High	Stanislaus and Tuolumne Rivers Groundwater Basin Association	
Turlock Subbasin (5-22.03)	High	Turlock Groundwater Basin Association	
Delta-Mendota Subbasin (5-22.07)	High	San Luis & Delta Mendota Water Authority	

Figure 1: Groundwater Subbasins of Stanislaus County



(Adapted from DWR, 2015)

Figure 2: CASGEM Monitoring Entity Assignment Status



(Adapted from DWR, 2015)

0 10 20mi

Subbasin area with an assigned CASGEM Monitoring Entity as of October 19, 2015

3.0 SURFACE WATER DIVERTER COMPLIANCE

Stanislaus County formerly owned an Appropriative Water Right to divert up to 9 acre-feet of water per year from Turlock Irrigation District Lateral #2 in Stanislaus County for irrigation of 2.5 acres of land. The right is designated as Application ID A016669, Permit ID 010438, and License ID 009157. Stanislaus County did not exercise this right since at least 2008. In September 2015, Stanislaus County sold the property to which the right was attached to Camp Taylor, Inc. The right was transferred to Camp Taylor, Inc., effective October 14, 2015. The required Report of Licensee for the diversion right has been submitted by Stanislaus County for every year of record and Stanislaus County is therefore in compliance with the reporting requirements outlines in Part 5.1 of Division 2 of the California Water Code.

Attached are the following documents retrieved from the State Water Quality Control Board (SWRCB) Electronic Water Rights Information Management System (e-WRIMS), which demonstrate Stanislaus County's compliance with reporting requirements under its former surface water diversion right:

- A copy of the e-WRIMS Public Summary Page, documenting submittal of the Report of Licensee for 2008 through 2014;
- A copy of the e-WRIMS Party List, showing transfer of the water right effective October 14, 2015; and
- A copy of the e-WRIMS Report of Licensee for 2014, providing details about the most recent report.

e-WRIMS Public Summary Page

[Return to Water Right Search] [Return to Water Right Search Results]

Application ID: A016669
Permit ID: 010438
License ID: 009157 View License
Water Right Type: Appropriative
Water Rights Status: Licensed (10/17/1955)
Primary Owner: CAMP TAYLOR, INC.

Current Parties	Relationship	Effective Date
CAMP TAYLOR, INC.	Primary Owner	10/14/2015
Need to report a change of ownership or agent? Click Here		

Historical Parties

Record Summary	
Application Acceptance Date	10/17/1955
Permit Issuance Date	06/25/1956
License Issuance Date	02/27/1970
Face Value Amount	9.0
Subtypes (Statements Only)	

Name(s) of Sources of Water	County Location	Parcel Number	Diversion Site Name	Lat/Long Coordinates
TURLOCK IRRIGATION DISTRICT LATERAL #2	Stanislaus			37.55970994 ; -121.14100277

Map It

Beneficial Uses	Acres	Direct Diversion Season	Collection to Storage Season
Irrigation	2.5	4/15 **to** 10/1	

Electronic Reports				
Year	**Revision**	**Report Type**	**Date Received**	**View Report PDF**

2014	1	Report of Licensee	10/14/2015	• View
2013	1	Report of Licensee	03/07/2014	• View
2012	2	Report of Licensee	10/14/2015	• View
2012	1	Report of Licensee	06/28/2013	• View
2011	1	Report of Licensee	06/28/2013	• View
2010	1	Report of Licensee	10/14/2015	• View
2009	1	Report of Licensee	10/14/2015	• View
2008	1	Report of Licensee	10/14/2015	• View

***For reports submitted prior to 2009, please contact our records room.**

Water Rights Associated with Primary Owner		
Application ID	**Water Right Type**	**Water Right Status**
A016669	Appropriative	Licensed

Associated Decisions/Orders			
Decision/Order Number	**Date**	**Description**	**View Document**

e-WRIMS Party List

[Return to Water Right Search] [Return to Water Right Search Results]

Application ID: A016669 **Water Right Type:** Appropriative Map It Paperless Documents
Permit ID: 010438 **Water Rights Status:** Licensed (10/17/1955) Report Data Errors
License ID: 009157 View License **Primary Owner:** CAMP TAYLOR, INC.

Application | Parties | Status | Uses and Seasons | PODs and Sources | Assignments | Notices | Protests | Permit/License | Petitions | Complaints
Investigations | Enforcements | Related Records | Returned Docs | Reporting | Billings | Summary

[Back to Parties Search Screen]

Party ID	Name	Name Type	Mail Receiver	Effective From Date	Effective To Date
553577	CAMP TAYLOR, INC.	Primary Owner	Y	10/14/2015	
403597	COUNTY OF STANISLAUS	Primary Owner	Y	09/15/1994	10/13/2015

Download to Excel Manage Parties

Party-Related Attachments

Filename	Description	Upload Date	Uploaded By	Delete
No Party-Related Attachments Available for this Water Right. Please Use the Form Below to Upload Attachments.				

Choose File: Browse... Enter File Description (Optional): Upload File

[SUMMARY OF FINAL SUBMITTED VERSION]

REPORT OF LICENSEE FOR 2014

Primary Owner: COUNTY OF STANISLAUS
Primary Contact: COUNTY OF STANISLAUS

Date Submitted: 2015-10-14

Application Number: A016669
License Number: 009157

Source(s) of Water	POD Parcel Number	County
TURLOCK IRRIGATION DISTRICT LATERAL #2		Stanislaus

MAX Direct Diversion Rate: 0.03 CFS
MAX Collection to Storage: 0.0 AC-FT
Face Value: 9.0 AC-FT

Licensed Use(s)	Acres	Direct Diversion Season	Storage Season
Irrigation	2.5	04/15 to 10/01	

1. Project Abandoned	
The project has been abandoned and I request revocation of my water right license	No

2. Compliance with License Terms and Conditions	
I have currently reviewed my water right license and I am complying with all terms and conditions	Yes
Description of noncompliance with terms and conditions	

3. Changes to the Project	
Intake location has been changed	
Description of intake location changes	
Type of use has changed	
Description of type of use changes	
Place of use has changed	
Description of place of use changes	
Other changes	
Description of other changes	

4. Purpose of Use
No Use

5. Amount of Water Diverted and Used			
Month	**Amount directly diverted (Acre-Feet)**	**Amount diverted or collected to storage (Acre-Feet)**	**Amount used (Acre-Feet)**
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0

June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	0	0	0
Comments	No water was diverter or used. The property remained vacant from 8/1/2013 to current. Stanislaus County sold the property to Camp Taylor, Inc. effective September 23, 2015 (Change of Ownership separately filed.)		

Water Transfers	
8e. Water transfered	No
8f. Quantity transfered (Acre-Feet)	
8g. Dates which transfer occurred	/ to /
8h. Transfer approved by	

Water Supply Contracts	
8i. Water supply contract	No
8j. Contract with	
8k. Other provider	
8l. Contract number	
8m. Source from which contract water was diverted	
8n. Point of diversion same as identified water right	
8o. Amount (Acre-Feet) authorized to divert under this contract	
8p. Amount (Acre-Feet) authorized to be diverted in 2014	
8q. Amount (Acre-Feet) projected for 2015	
8r. Exchange or settlement of prior rights	
8s. All monthly reported diversion claimed under the prior rights	
8t. Amount (Acre-Feet) of reported diversion solely under contract	0

6. Maximum Rate of Diversion for each Month	
Month	**Maximum Rate of Diversion (GPM)**
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0

7. Storage					
Reservoir name	**Spilled this year**	**Feet below spillway at maximum storage**	**Completely emptied**	**Feet below spillway at minimum storage**	**Method used to measure water level**

Conservation of Water	
8. Are you now employing water conservation efforts?	Yes
Description of water conservation efforts	Use of the subject property was vacated (non-occupied) pending sale.
9. Amount of water conserved	0 Gallons

Water Quality and Wastewater Reclamation	
10. During the period covered by this Report, did you use reclaimed water from a wastewater treatment facility, water from a desalination facility, or water polluted by waste to a degree which unreasonably affects the water for other beneficial uses?	No
11. Amount of reclaimed, desalinated, or polluted water used	

Conjuctive Use of Groundwater and Surface Water	
12. During the period covered by this Report, were you using groundwater in lieu of available surface water authorized under your license?	No
13. Amounts of groundwater used	

Additional Remarks
The property was vacated (non-occupied) by Stanislaus County as of 8/1/2013 pending sale of the site. Sale was completed on 9/23/2015 to Camp Taylor, Inc. (see separate Change of Ownership.)

Attachments		
File Name	**Description**	**Size**
No Attachments		

Contact Information of the Person Submitting the Form	
First Name	Tim
Last Name	Fedorchak
Relation to Water Right	Primary Owner of Record
Has read the form and agrees the information in the report is true to the best of his/her knowledge and belief	Yes

ATTACHMENT 2:
BASIN CONDITIONS

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

1.0 HYDROGEOLOGIC SETTING

Stanislaus County is located in the San Joaquin River Hydrologic Region and underlain by the East San Joaquin, Modesto, Turlock, and Delta Mendota Subbasins of the San Joaquin Valley Groundwater Basin (SJVGB). The locations of these subbasins are shown on Figure 1. 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 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 flood plain 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 (DWR, 2013). A map and conceptual cross section of the geologic units that make up this aquifer system are shown in Figures 2 and 3, respectively.

The principal water-bearing formations on the east side of SJVGB include the semi-consolidated to consolidated Mehrten Formation (Miocene-Pliocene), the semi-consolidated to unconsolidated Turlock Lake Formation (Plio-Pleistocene),[1] the unconsolidated Riverbank and Modesto Formations (Pleistocene), and the overlying unconsolidated Holocene Alluvium and Basin Deposits. These sedimentary deposits dip gently westward and increase in thickness with distance from the Sierra Nevada foothills and from north to south along the valley axis. Aquifers in these deposits tend to be unconfined to semi-confined near the valley margin, grading to semi-confined and confined near the valley axis (USGS, 2004; DWR, 2013).

The principal water-bearing formation on the west side of the SJVGB is the Plio-Pleistocene Tulare Formation, which increases in thickness eastward away from the Coast Range to a maximum thickness of approximately 1,400 feet near the valley axis (SLDMWUA, 2011). The Tulare Formation consists of alluvial deposits separated by a series of fine-grained lacustrine deposits. It is broadly separated into an upper unconfined to semi-confined aquifer and a lower confined aquifer. The unconfined and confined aquifer systems are separated by a regionally extensive lacustrine unit in the upper Tulare Formation known as the Corcoran Clay, which is important throughout the SJVGB (USGS, 2004; DWR, 2013).[2]

As discussed in greater detail in the following sections and summarized in Table 1, all four of the subbasins underlying the County are either critically overdrafted or are stressed, as defined under the grant Proposal

[1] Some workers have mapped the Turlock Lake Formation as transitioning to the Plio-Pleistocene Laguna Formation north of Oakdale.

[2] The Corcoran Clay is also reported as a member of the Turlock Lake Formation, which is coeval and interfingered with the Tulare Formation near the center of the SJVGB (USGS, 2004).

Solicitation Package. The East San Joaquin Subbasin is designated as being in a state of critical overdraft by the Department of Water Resources (DWR), and the Delta Mendota Subbasin has been proposed for inclusion on the list of critically overdrafted basins. Subsidence has been reported in the Delta Mendota Subbasin, 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 range land to agricultural cultivation.

The lack of current surface-water supply options in eastern Stanislaus County, coupled an increased rate of range land 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 range land have been converted to irrigated agriculture in these areas, and are almost entirely dependent on groundwater (Stanislaus County, 2015). 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, 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.

Table 1: Summary of Stanislaus County Groundwater Subbasins

Groundwater Subbasin (DWR Number)	Approximate Area (mi^2)	CASGEM Priority	Critical Overdraft Listing	Documented Subsidence/ Potential for Future Subsidence	Other Stresses
East San Joaquin Subbasin (5-22.01)	1,105 (including areas outside the county)	High	Listed	Medium to high potential for future subsidence.	Declining groundwater storage; trend of groundwater-reliant conversion of range land to agricultural use.
Modesto Subbasin (5-22.02)	385 (entirely within county)	High	No	Medium to high potential for future subsidence.	Declining groundwater storage; trend of groundwater-reliant conversion of range land to agricultural use in eastern county; Potential for surface water depletion.
Turlock Subbasin (5-22.03)	542 (including areas outside the county)	High	No	Low to medium potential for future subsidence.	
Delta-Mendota Subbasin (5-22.07)	1,170 (including areas outside county)	High	Proposed	1”-2.5” subsidence near Patterson and southward/High potential for future subsidence.	Groundwater levels in much of basin are near or below historical lows; increasing agricultural and municipal groundwater use.

Groundwater management is coordinated throughout Stanislaus County by a series of regional associations, joint-powers authorities, and working groups. Member agencies of these groups and representatives of the agricultural, water-well drilling, and water supply industries, as well as the general public, are engaged by the County through representation on the Stanislaus County Water Advisory Committee (WAC), which meets monthly, and the Stanislaus County Technical Advisory Committee (TAC), which meets bimonthly. In addition, Stanislaus County is part of a Regional Groundwater Coordination Committee (RGCC), which includes members from within Stanislaus County as well as adjacent counties. The scope and function of the RGCC is currently being developed via a process facilitated by the Center for Collaborative Policy.

The following sections present additional detail regarding the groundwater subbasins, stresses on groundwater resources within the subbasins, and current groundwater management and monitoring activities, including the entities responsible and their relationship to the County.

2.0 EAST SAN JOAQUIN GROUNDWATER SUBBASIN

The East San Joaquin Subbasin underlies the "northern triangle" of Stanislaus County. Topographically, this area is characterized by low, rolling hills on the eastern flank of the San Joaquin Valley. It is bounded to the south by the Stanislaus River and to the east by low-permeability bedrock formations of the Sierra Nevada. To the north and west it extends outside the county boundaries into San Joaquin County. A small portion of the East San Joaquin Subbasin also extends into Calaveras County to the east. Woodward Reservoir is located in the south-central portion of the northern triangle, and the Calaveras River is located near its northern apex (Figure 4).

Groundwater in this portion of the subbasin occurs primarily in the Mehrten Formation under unconfined to semi-confined conditions. The southeastern portion of this area is also underlain by the Turlock Lake, Laguna, and Riverbank Formations, and by valley-fill alluvium near the Stanislaus River. These units supply more limited quantities of groundwater. The Stanislaus River in this area is groundwater-connected and includes both gaining and losing reaches (USGS, 2004; SWRCB, 2012).

A portion of the area southwest of Woodward Reservoir is served by surface water from the Oakdale Irrigation District; however, groundwater is the primary water source for most of the remaining portion of the East San Joaquin Subbasin that underlies the County. Most high-capacity irrigation wells in the area are completed in the Mehrten Formation; whereas the Turlock Lake Formation, Riverbank Formation, and valley-fill alluvium primarily serve as the water supply for lower-capacity and domestic wells.

As discussed above, the lack of current surface-water supply options in the eastern portions of the County, coupled with agricultural land conversion trends that are served almost exclusively by local groundwater extraction, have placed significant stress on groundwater resources in the portion of the East San Joaquin Subbasin underlying the County. Because economic pressures toward land conversion to predominantly permanent crops are ongoing, these groundwater stresses may be expected to continue, if not increase. Groundwater monitoring data are limited in this; however, information compiled by the County suggests

that groundwater levels have fallen in some areas by tens of feet in recent years. At this time, available data are insufficient to assess long-term trends.

The County recently registered with the Department of Water Resources (DWR) to be the California Statewide Groundwater Elevation Monitoring (CASGEM) monitoring entity for the portion of the East San Joaquin Subbasin that lies within the County's boundaries, and has submitted a monitoring plan that was recently accepted by DWR (included in Attachment 1). Stanislaus County is coordinating monitoring activities in this area with Oakdale Irrigation District, Rock Creek Water District, private land owners, and the East San Joaquin Groundwater Basin Association (which manages the portion of the subbasin in San Joaquin County). These agencies will be invited to participate in the project scoping process and review of the draft Programmatic Environmental Impact Report (PEIR). The locations of water agencies in the County involved in this monitoring effort are shown in Figure 5. The public agencies involved in groundwater management within the Eastern San Joaquin Groundwater Subbasin, including Stanislaus County, have collectively agreed to address compliance with the Sustainable Groundwater Management Act (SGMA) through the creation of a formal Workgroup operating under the guidelines of a Chartered document, and it is anticipated this group may evolve into the GSA for portion of the East San Joaquin Subbasin that underlies the County. Facilitated efforts to form this workgroup are currently in progress. It is anticipated that workgroup members within the County will participate in funding the proposed project. In addition, it is anticipated they will be involved in the scoping process, will provide comments on the draft PEIR, and will receive GSA support services under Task 10 of the project.

3.0 MODESTO GROUNDWATER SUBBASIN

The Modesto Subbasin is bounded to the south by the Tuolumne River, to the north by the Stanislaus River, to the west by the San Joaquin River, and to the east by low-permeability bedrock formations of the Sierra Nevada. The subbasin lies entirely within the County. Topography ranges from gently rolling hills in the eastern portion of the subbasin to alluvial plains in the central and western portions. Modesto Reservoir is located in the rolling topography in the eastern portion of the subbasin, near the contact between the Mehrten Formation and the younger alluvial formations.

Groundwater in the eastern portion of the subbasin occurs primarily in the Mehrten, Turlock Lake, Riverbank, and Modesto formations under unconfined to semi-confined conditions. In the central and western portions of the subbasin, an unconfined to semi-confined aquifer system occurs above the Corcoran Clay in the Modesto and Riverbank Formations and Holocene alluvial deposits (Figure 3). Confined aquifers occur in the Turlock Lake Formation and Mehrten Formation below the Corcoran Clay. The Corcoran Clay extends eastward to approximately 2 miles east of Highway 99 (Figure 2). Groundwater production wells are completed in both the confined and unconfined aquifer systems. The Stanislaus and Tuolumne Rivers are groundwater-connected, and include both gaining and losing reaches (USGS, 2015; TGBA, 2008).

Agricultural water demand in the central and western portions of the subbasin are primarily served by surface-water deliveries from Modesto Irrigation District and Oakdale Irrigation District, and to a lesser

extent by groundwater extraction. Municipal water demand is met with a combination of surface water and groundwater supplied by the Cities of Modesto, Oakdale, Riverbank, and Waterford. The central and western portions of the Modesto Subbasin have a history of successful conjunctive use of groundwater and surface water that spans several decades, as evidenced by long-term well hydrographs indicating groundwater levels have generally recovered after periods of drought. The eastern portion of the subbasin is served almost exclusively by groundwater derived from the Mehrten Formation. Recent groundwater-level declines in portions of the basin that have been monitored under the CASGEM program are shown in Figure 6.

As discussed above, the lack of current surface-water supply options in the eastern portions of the subbasin, coupled with agricultural land conversion trends that are served almost exclusively by local groundwater extraction, have placed significant stress on groundwater resources in the Modesto Subbasin. Because economic pressures toward land conversion to predominantly permanent crops are ongoing, these groundwater stresses may be expected to continue, if not increase. Groundwater monitoring data are limited in the eastern portion of the County; however, information compiled by the County suggests that groundwater levels have fallen in some areas by tens of feet in recent years. At this time, available data are insufficient to assess long-term trends.

Additional stress on the entire subbasin may occur if, as expected, the state mandates minimum unimpaired flow requirements for the Stanislaus and Tuolumne Rivers as part of the Basin Plan Amendment process. Under these conditions, it is anticipated that less water will be available for diversion to meet existing agricultural and municipal water demands. The shortfall in demand is expected to be met through additional groundwater pumping. This scenario will potentially result in significant additional stress throughout the subbasin.

Stanislaus County, Oakdale Irrigation District, Modesto Irrigation District, and the cities of Oakdale, Riverbank, and Modesto (Figure 7) created an association known as the Stanislaus and Tuolumne Rivers Groundwater Basin Association (STRGBA) in 1994 to monitor and manage the Modesto Subbasin. At this time, the STRGBA member agencies are seeking to amend and renew the existing agreement among the parties for the purpose of Groundwater Sustainability (GSA) formation and the preparation and adoption of a single, basin-wide Groundwater Sustainability Plan (GSP). The agreement is also being amended to include the membership of a new party, the City of Waterford. STRGBA is the designated CASGEM monitoring entity for the Modesto Subbasin. It is anticipated that STRGBA members will participate in funding the proposed project. In addition, it is anticipated that STRGBA will be involved in the scoping process, will provide comments on the draft PEIR, and will receive GSA support services under Task 10 of the project.

4.0 TURLOCK GROUNDWATER SUBBASIN

Turlock Subbasin is bounded to the south by Merced River, to the north by Tuolumne River, to the west by San Joaquin River, and to the east by low-permeability bedrock formations of the Sierra Nevada; the subbasin extends southward from Stanislaus County into Merced County (Figure 1). Topography ranges

from gently rolling hills in the eastern subbasin to alluvial plains in the central and western portions. Turlock Lake is located in the rolling topography in the eastern portion of the subbasin.

Similar to the Modesto Subbasin, groundwater in the eastern portion of the Turlock Subbasin occurs mainly in the Mehrten, Turlock Lake, Riverbank, and Modesto formations under unconfined to semi-confined conditions. An unconfined to semi-confined aquifer system occurs in the central and western portions of the subbasin in the Modesto and Riverbank Formations and Holocene alluvial deposits overlying the Corcoran Clay, and confined aquifers occur in the Turlock Lake Formation and Mehrten Formation below the Corcoran Clay (Figure 3). The Corcoran Clay extends eastward to approximately 4 miles east of Highway 99 (Figure 2). Groundwater production wells are completed in both the confined and unconfined aquifer systems. The Tuolumne River is groundwater-connected and includes both gaining and losing reaches (SWRCB, 2012; TGBA, 2008).

Agricultural water demand in the western and central portions of the subbasin is served primarily by surface-water deliveries from Turlock Irrigation District and to a lesser extent by groundwater extraction. Within Eastside Irrigation District, irrigation water demand is met entirely by groundwater pumping. Municipal water demand is met via groundwater supplied by the Cities of Turlock, Ceres, Delano, Denair, and Hughson. New projects are proposed that would increase reliance on conjunctive use of groundwater and surface water. The central and western portions of the basin have a history of successful agricultural conjunctive use of groundwater and surface water that spans several decades, as evidenced by long-term well hydrographs indicating groundwater levels have recovered after periods of drought. The eastern portion of the subbasin is served almost exclusively by groundwater from the Mehrten Formation and overlying alluvial aquifers. Recent groundwater-level declines in portions of the basin that have been monitored under the CASGEM program are shown in Figure 8.

As discussed above, the lack of current surface-water supply options in the eastern portions of the subbasin, coupled with agricultural land conversion trends that are served almost exclusively by local groundwater extraction, has placed significant stress on groundwater resources in the Turlock Subbasin. Because economic pressures toward land conversion to predominantly permanent crops are ongoing, this groundwater stress may be expected to continue, if not increase. Groundwater monitoring data in the vicinity of Eastside Irrigation District indicate groundwater-level declines of over 40 feet within the last 10 years with a resulting groundwater gradient reversal near the Tuolumne River (TGBA, 2008, see Figure 9). Data are limited further east; however, information compiled by the County suggests that groundwater levels have fallen in some areas by tens of feet in recent years. At this time, available data are insufficient to assess long-term trends.

Additional stress on the entire subbasin may occur if, as expected, the state mandates minimum unimpaired flow requirements for the Stanislaus and Tuolumne Rivers as part of the Basin Plan Amendment process. Under these conditions, it is anticipated that less water will be available for diversion to meet existing agricultural and municipal water demands. The shortfall in demand is expected to be met through additional groundwater pumping. This scenario will potentially result in significant additional groundwater stress throughout the subbasin.

In 1995, the Turlock Groundwater Basin Association (TGBA) was formed via a Memorandum of Understanding (MOU) between Stanislaus County, Turlock Irrigation District, Eastside Irrigation District, and the cities of Modesto, Hughson, Ceres, and Turlock. Because the subbasin extends into Merced County, Merced County, Denair Community Service District, Ballico-Cortez Water District, Hilmar Water District, and Merced Irrigation District are also signatories to this MOU and part of TGBA. The TGBA member agencies have decided to create a MOU to establish an agreed upon approach to SGMA compliance, including GSA formation, GSP preparation and adoption, monitoring and other compliance activities. TGBA is the designated CASGEM monitoring entity for the Turlock Subbasin. It is anticipated that TGBA members will participate in funding the proposed project. In addition, it is anticipated that TGBA will be involved in the scoping process, will provide comments on the draft PEIR, and will receive GSA support services under Task 10 of the project.

5.0 DELTA MENDOTA SUBBASIN

Within Stanislaus County, the Delta Mendota Subbasin is bounded to the east by the San Joaquin River and to the west by low-permeability bedrock formations of the Coast Ranges (Figure 1). The subbasin extends southward from the northern boundary of Stanislaus County along the west side of San Joaquin Valley for approximately 80 miles, and crosses a total of five counties. The western margin of the subbasin consists of low hills and dissected alluvial fans at the foot of the Coast Range. A short distance to the east, elevations drop off into alluvial and flood plains associated with the San Joaquin River. The Delta Mendota Canal and California Aqueduct run along the western margin of the subbasin.

Groundwater in the Delta Mendota Subbasin occurs in the Tulare Formation and overlying Holocene Alluvium. The Corcoran Clay occurs at depths of approximately 100 to 300 feet in this area, and extends from near the western margin of the subbasin to beneath the San Joaquin River (Figure 2). Near the western margin of the subbasin, the Corcoran Clay divides the Tulare Formation into an upper aquifer system that is unconfined to semi-confined and a lower aquifer system that is confined. The Tulare Formation extends to a depth of over 1,000 feet and includes other lacustrine clay units; however, the Corcoran Clay is the most prominent and continuous (DWR, 2013). Groundwater production wells are completed in both the unconfined and confined aquifer systems; however, most high-capacity wells extend into the confined aquifer system. Portions of the San Joaquin River are groundwater-connected (SWRCB, 2015).

Land use overlying the Delta Mendota Subbasin is primarily agricultural, with agricultural water demand served by surface-water deliveries from Del Puerto Water District, West Stanislaus Irrigation District, and Central California Irrigation District (one of the San Joaquin Exchange Contractors), supplemented by groundwater extraction. Municipal water demand for the City of Patterson is met using groundwater.

DWR has proposed that the Delta Mendota Subbasin be included on the list of critically overdrafted basins, largely due to overdraft and subsidence reported outside Stanislaus County to the south (DWR, 2015a). Nevertheless, the unreliability of surface-water deliveries from the State and Federal water projects has resulted in an increase in agricultural and municipal groundwater demand. This trend is expected to

continue in the future as climatic conditions and environmental flow requirements continue to affect the reliability of surface-water deliveries. As shown in Figure 10, groundwater levels have fallen over 40 feet in the last 10 years in the southern portion of the Delta Mendota Subbasin in Stanislaus County. In addition, active subsidence of 1 to 2.5 inches has been reported at a continuous survey station near Patterson (DWR, 2015b). DWR has designated the Delta Mendota Subbasin as having a high potential for future subsidence.

Groundwater monitoring and management in the Delta Mendota Subbasin are currently implemented through the San Luis & Delta Mendota Water Users Authority (SLDMWUA), of which Del Puerto Water District, West Stanislaus Irrigation District, and Central California Irrigation District are members (Figure 11). Stanislaus County coordinates groundwater-related activities in the subbasin with these entities, and shares information with them through direct communication and via the WAC and TAC. The Water Users Authority is currently considering appropriate governance structures for SGMA compliance. It is anticipated that SLDMWUA members located in Stanislaus County will participate in funding the proposed project. In addition, it is anticipated that SLDMWUA will be involved in the scoping process, will provide comments on the draft PEIR, and will receive GSA support services under Task 10 of the project.

6.0 REFERENCES

California Department of Water Resources (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.

_____, 2015a. *Draft List of Critically Overdrafted Basins – August 6, 2015.* August.

_____, 2015b. Groundwater Information Center Interactive Mapping Application. Online: https://gis.water.ca.gov/app/gicima/. Last edited January 15, 2015. Accessed December, 2015.

_____, 2015c. Groundwater Basin Boundary Assessment Tool. Online: https://gis.water.ca.gov/app/bbat/. Last edited September 28, 2015. Accessed December, 2015.

California State Water Resources Control Board (SWRCB), 2012. *Draft Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the Bay-Delta: San Joaquin River Flows and Southern Delta Water Quality.* December.

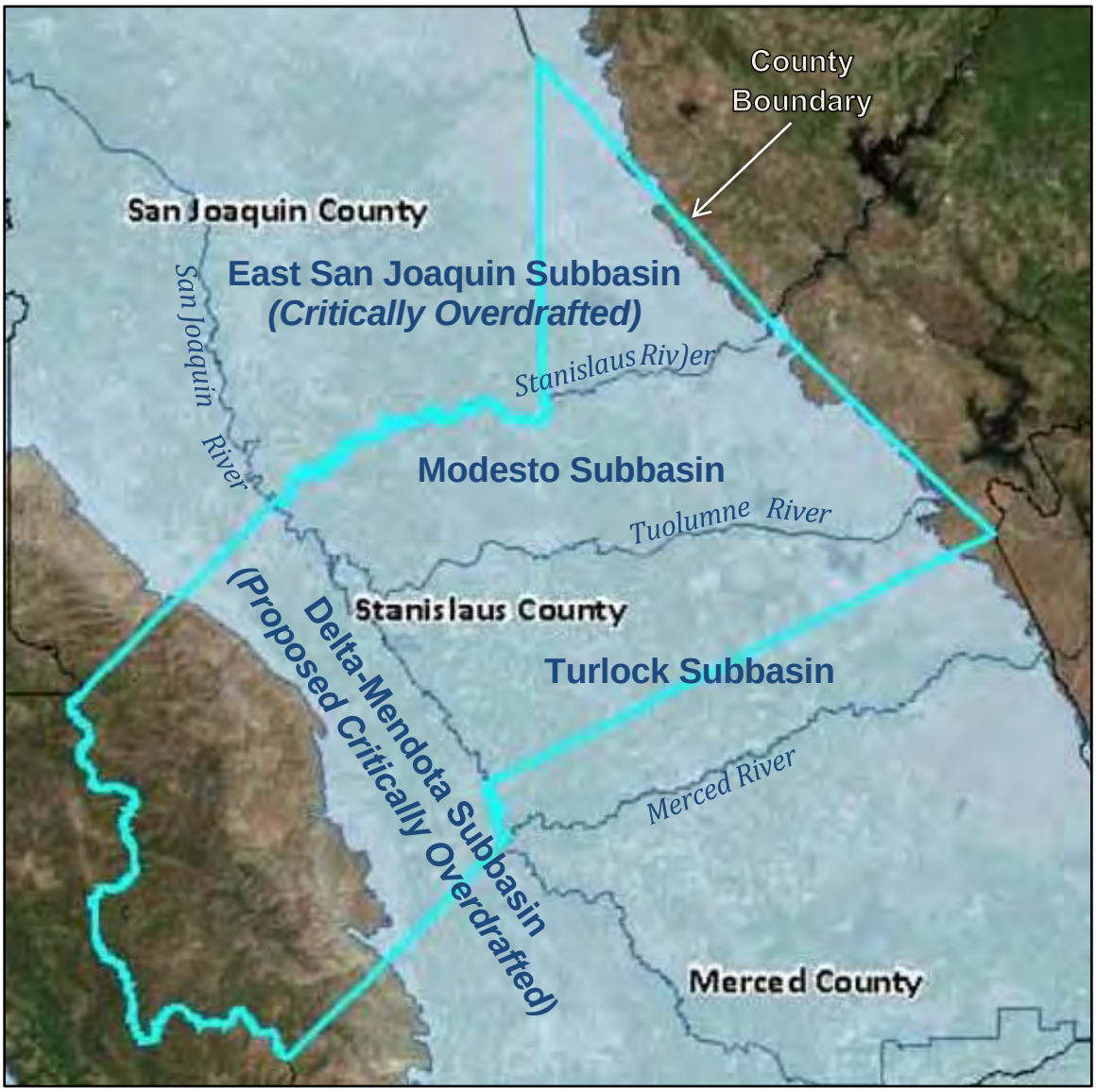
San Luis & Delta Mendota Water Use Authority (SLDMWUA), 2011. *Groundwater Management Plan for the Northern Agencies in the Delta Mendota Canal Service Area.* November.

Turlock Groundwater Basin Association (TGBA), 2008. *Turlock Groundwater Basin Groundwater Management Plan.* March.

United States Geological Survey (USGS), 2004. *Hydrogeologic Characterization of the Modesto Area, San Joaquin Valley, California*. Scientific Investigations Report 2004-5232.

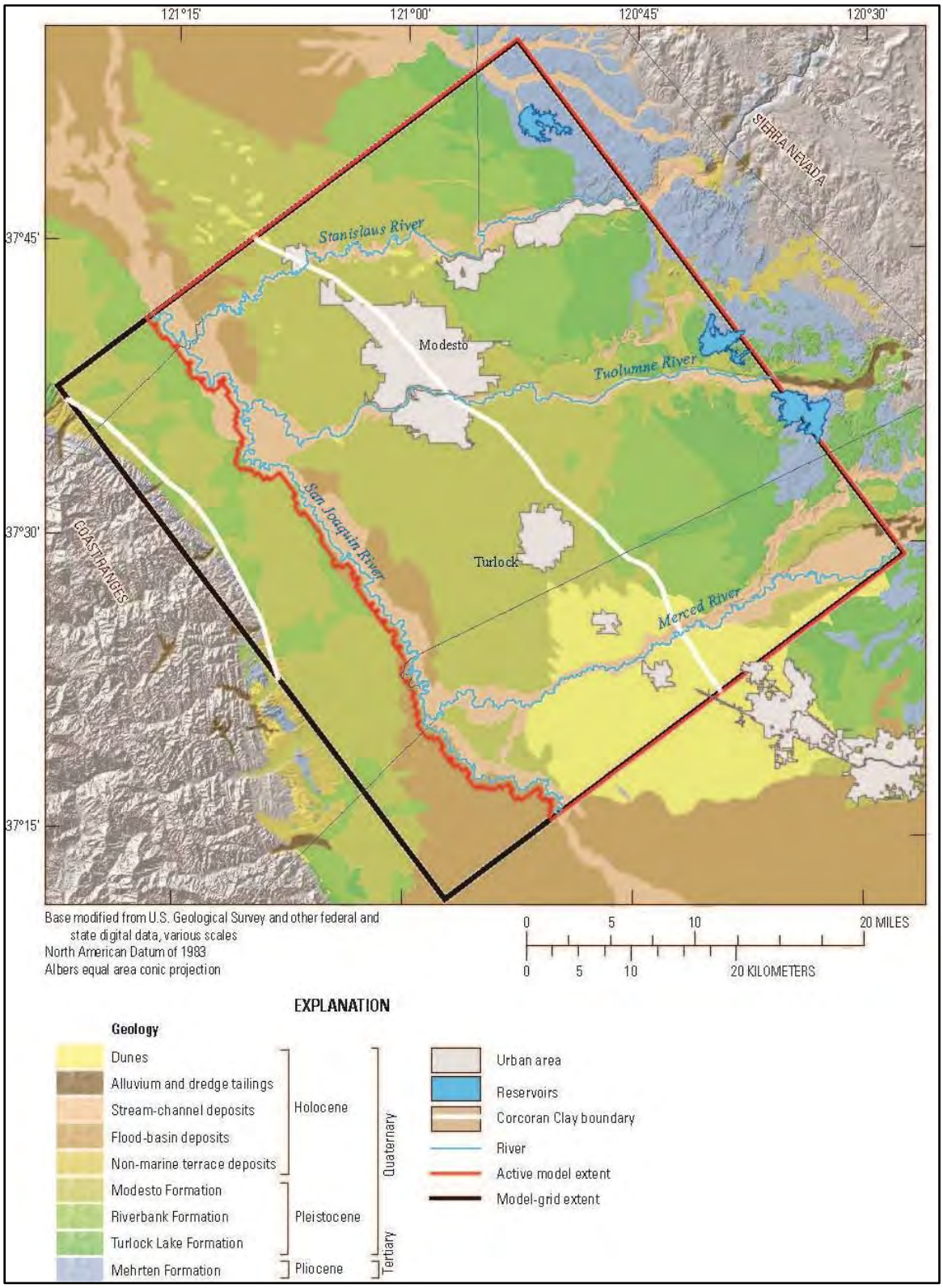
_____, 2015. *Hydrologic Model of the Modesto Region, California, 1960 – 2004*. Scientific Investigations Report 22015-5045.

Figure 1: Groundwater Subbasins of Stanislaus County



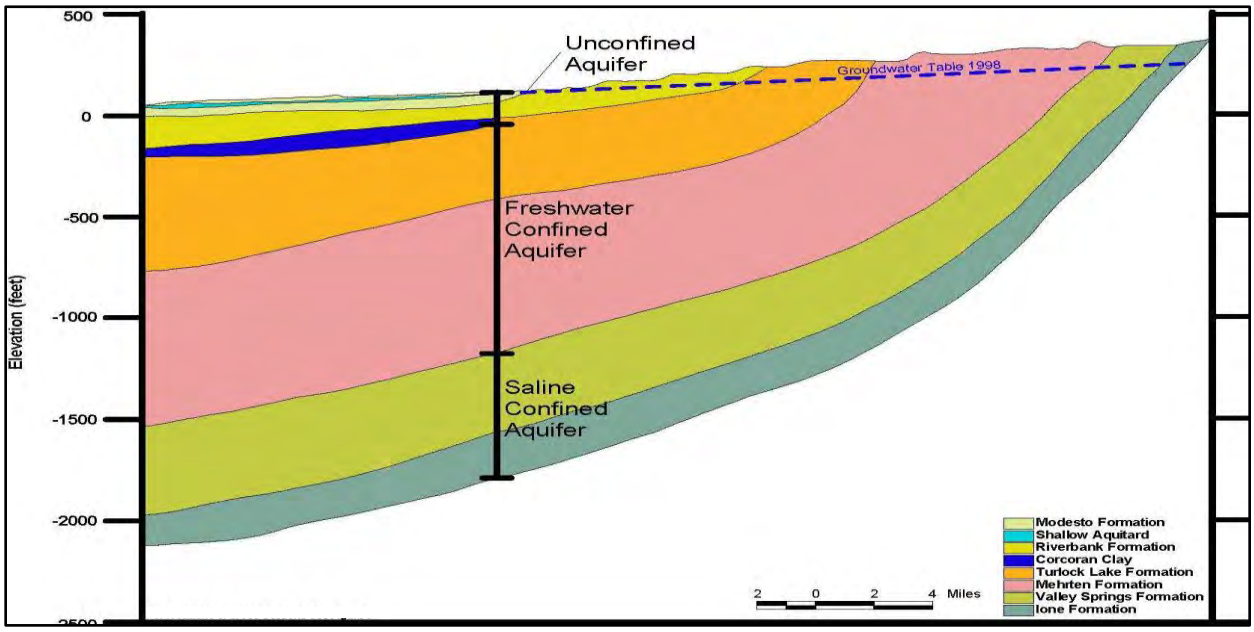
(Adapted from DWR, 2015c)

Figure 2: Geologic Map of the Stanislaus County Area



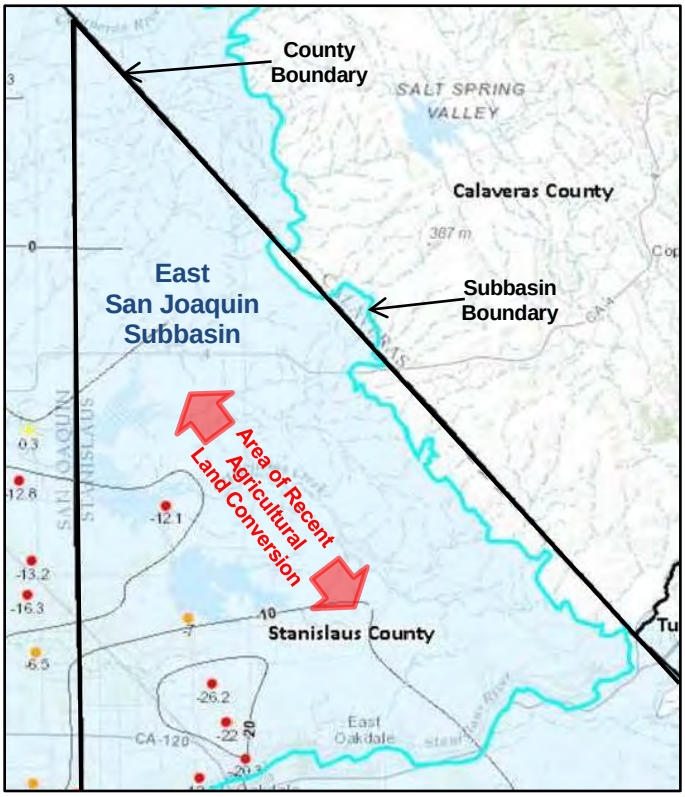
(Taken from USGS, 2015)

Figure 3: Generalized Geologic Cross Section of Stanislaus County Aquifers



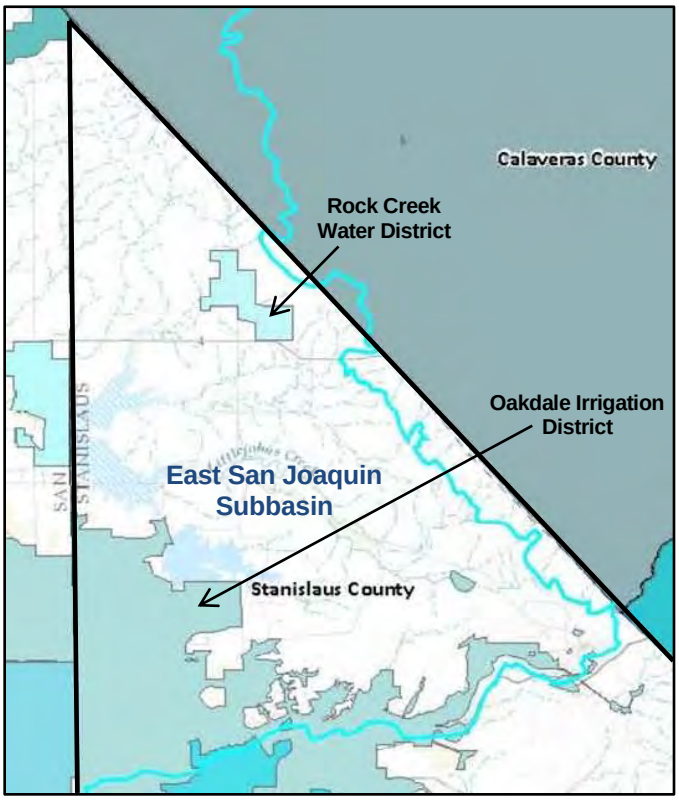
(Taken from TGBA, 2008)

Figure 4: East San Joaquin Subbasin Groundwater Level Change (2005 – 2015)



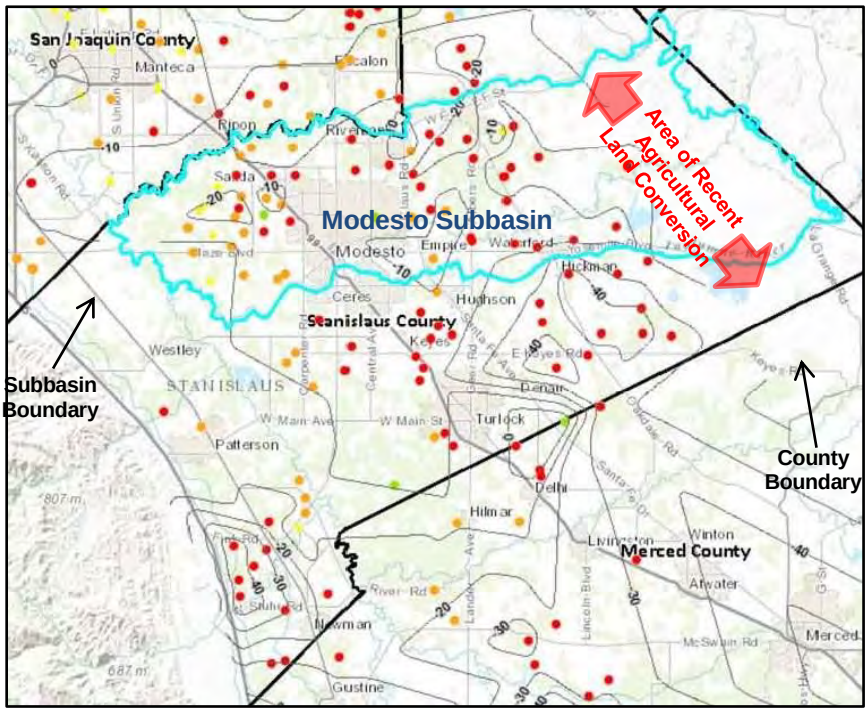
(Adapted from DWR, 2015b)

Figure 5: Eastern San Joaquin Subbasin Water Agencies



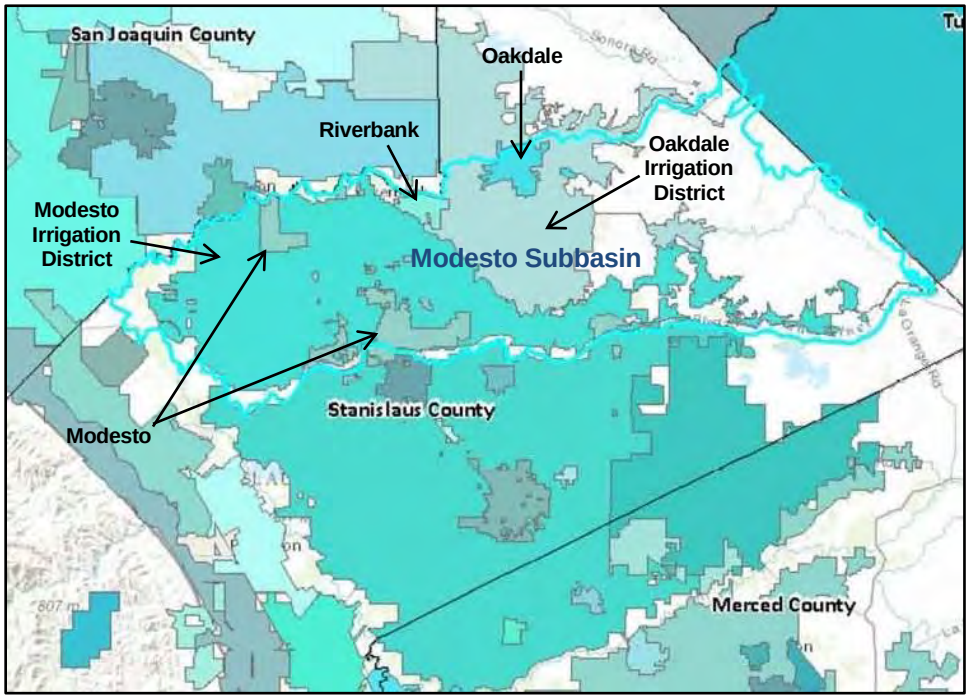
(Adapted from DWR, 2015c)

Figure 6: Modesto Subbasin Groundwater Level Change (2005 – 2015)



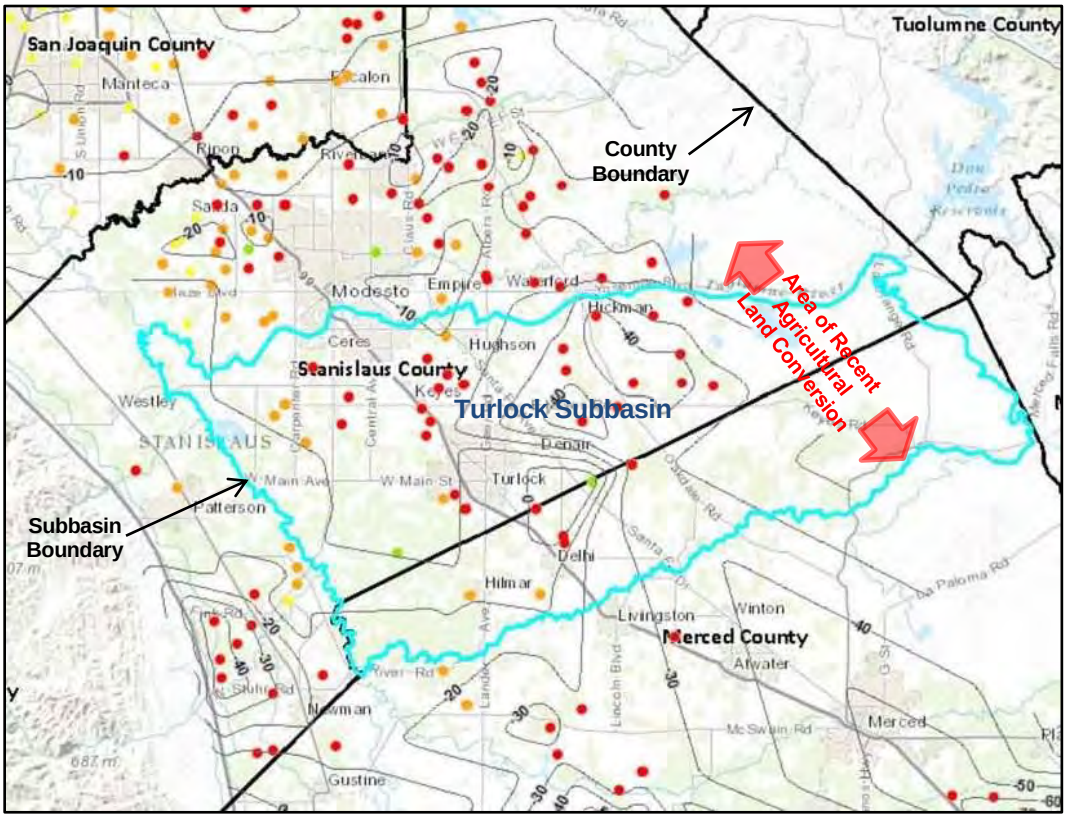
(Adapted from DWR, 2015b)

Figure 7: Modesto Subbasin Water Agencies



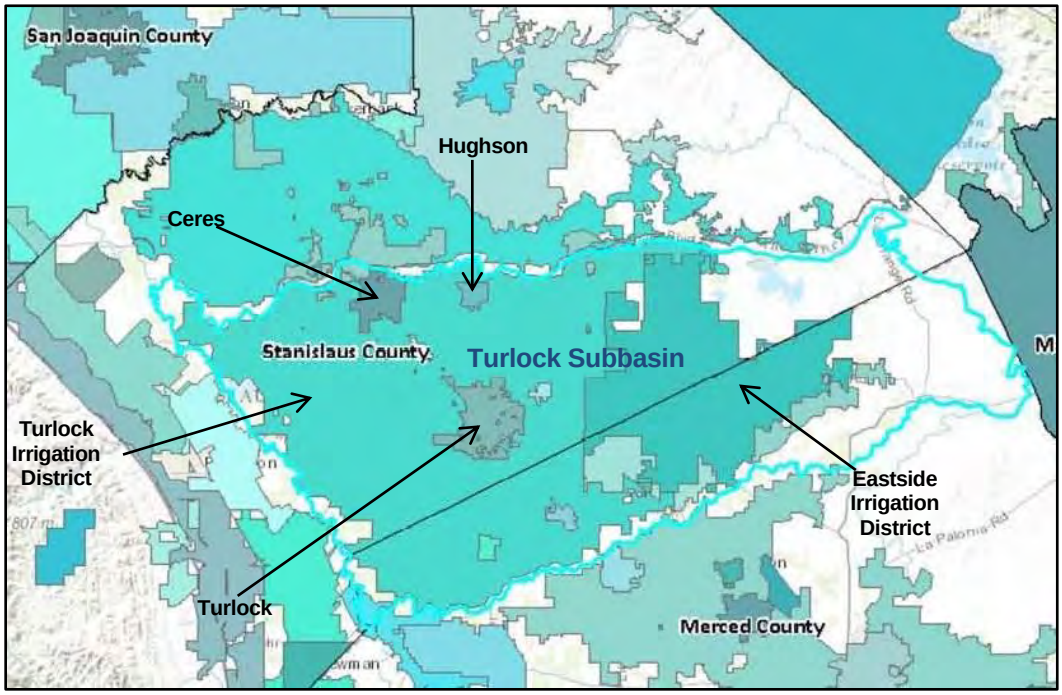
(Adapted from DWR, 2015c)

Figure 8: Turlock Subbasin Groundwater Level Change (2005 – 2015)



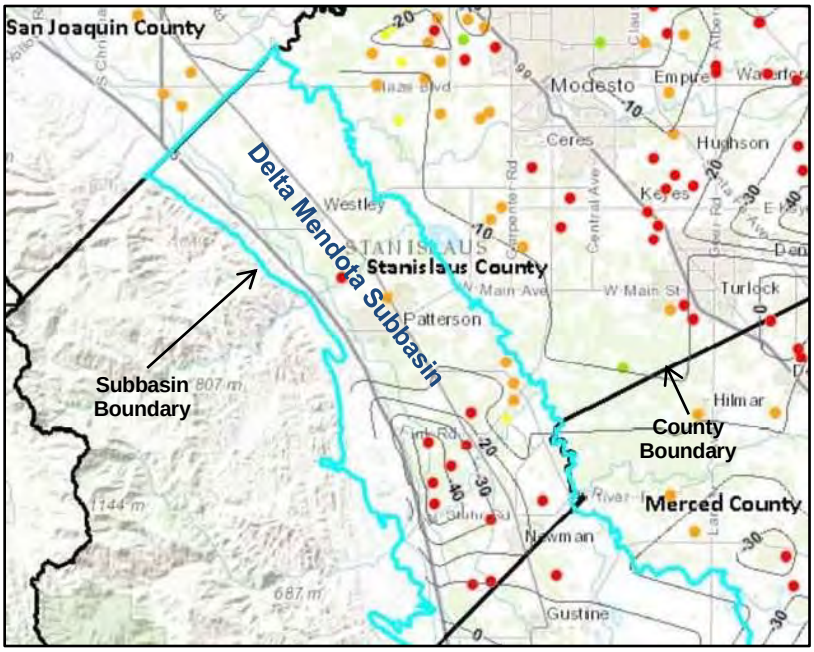
(Adapted from DWR, 2015b)

Figure 9: Turlock Subbasin Water Agencies



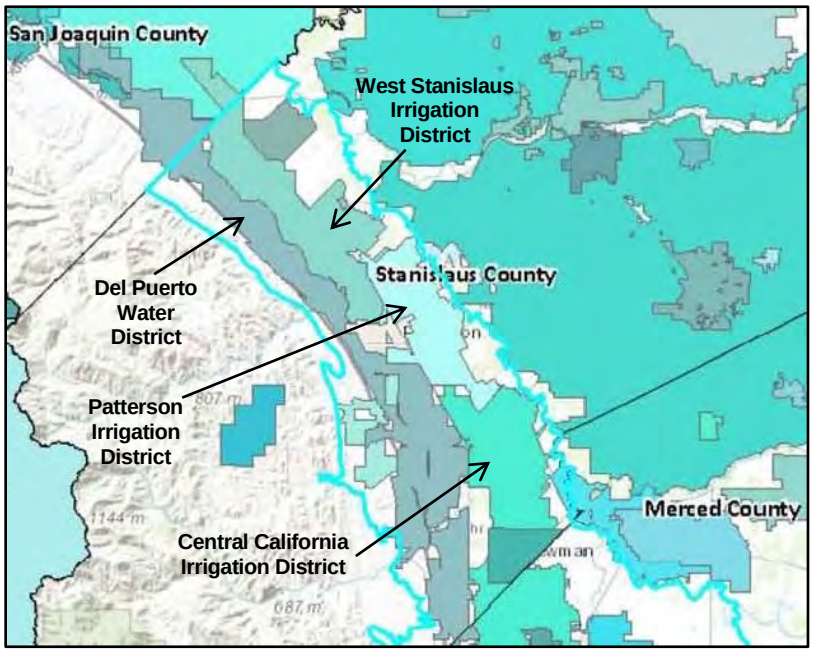
(Adapted from DWR, 2015c)

Figure 10: Delta Mendota Subbasin Groundwater Level Change (2005 – 2015)



(Adapted from DWR, 2015b)

Figure 11: Delta Mendota Subbasin Water Agencies



(Adapted from DWR, 2015c)

ATTACHMENT 3: WORKPLAN

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

LIST OF ACRONYMS

AWMP	Agricultural Water Management Plan
CASGEM	California Statewide Groundwater Elevation Monitoring
C2VSim	California Central Valley Groundwater-Surface Water Simulation Model
CalLite	Central Valley Water Management Screening Model
CVHM	Central Valley Hydrologic Model
CEQA	California Environmental Quality Act
DWR	California Department of Water Resources
EIR	Environmental Impact Report
eWRIMS	Electronic Water Rights Information System
FCGRMP	Flood Control and Groundwater Recharge Master Plan
GDE	Groundwater-Dependent Ecosystem
GIS	Geographic Information System
GMP	Groundwater Management Plans
GSP	Groundwater Sustainability Plan
IRWMP	Integrated Regional Water Management Plan
IWFM	Integrated Water Flow Model
JJ&A	Jacobson James & Associates, Inc.
MERSTAN	Merced-Stanislaus
MMRP	Mitigation Monitoring and Reporting Program
MODFLOW-OWHM	MODFLOW One Water Hydrologic Model
PEST	Model-Independent Parameter Estimation
QA/QC	Quality Assurance/Quality Control
RGCC	Regional Groundwater Coordination Committee
SCHM	Stanislaus County Hydrologic Model
SGMA	Sustainable Groundwater Management Act
STRGBA	Stanislaus and Tuolumne Rivers Groundwater Basin Association
SWRCB	State Water Resource Control Board
TBGA	Turlock Basin Groundwater Association
TID	Turlock Irrigation District
USGS	United States Geological Survey
UWMP	Urban Water Management Plan

1.0 PROJECT SUMMARY

As discussed in Attachment 2, Stanislaus County is underlain by four groundwater subbasins of the San Joaquin Valley Groundwater Basin. One of these basins has been designated as critically overdrafted by the Department of Water Resources (DWR) and one has been proposed for inclusion in the list of critically overdrafted basins. The two remaining basins are experiencing stresses including storage depletion resulting from new groundwater demand caused by conversion of range land to agricultural production. The State's proposed unimpaired flow requirements for the Stanislaus and Tuolumne Rivers, if adopted, are expected to place additional stress on the groundwater resources in these subbasins.

As a step to address these stresses and comply with the Sustainable Groundwater Management Act (SGMA), Stanislaus County was the first county in California to adopt a Groundwater Ordinance that is deliberately aligned with sustainable groundwater management concepts as defined in the Act (Attachment 2 of 3). The Ordinance was adopted in November 2014, and codifies requirements, prohibitions, and exemptions intended to assure sustainable groundwater extraction as a condition for permitting new wells. Implementation guidelines for well permitting under the new Ordinance were adopted in August 2015 (Attachment 3 of 3). As the lead agency under the California Environmental Quality Act (CEQA), Stanislaus County is planning to prepare a Programmatic Environmental Impact Report (Programmatic EIR) to streamline the application and review process for new well permits, develop a more robust basis for managing this program, and build a foundation for the development of Groundwater Sustainability Plans (GSPs) by newly formed Groundwater Sustainability Agencies (GSAs) under SGMA. The PEIR will evaluate the effects of Ordinance implementation under reasonably foreseeable demand trends and groundwater management requirements, with the following major objectives:

- Early stakeholder engagement through the CEQA scoping process that builds on the history of collaborative solutions and transparency in water management by stakeholders within the County;
- Compilation and use of existing water management plans, studies, and data to characterize the groundwater basins, develop a county-wide water budget, forecast water source/demand trends, describe groundwater-related agricultural/municipal land-use trends, assess groundwater-surface water interactions, and identify groundwater-dependent ecosystems (GDEs);
- Developing a 3D hydrologic model as a tool to characterize groundwater conditions, simulate groundwater-surface water conditions, and forecast impacts under a range of future scenarios;
- Evaluating hydrologic and water supply impacts, such as regional drawdown, groundwater storage depletion, surface water depletion, effects on GDEs, water quality, land subsidence, and ability to meet future water demands; as well as non-hydrologic, indirect, and cumulative impacts; and
- As a support to GSAs and other stakeholders, developing data regarding key groundwater management issues that fills existing data gaps, identifies remaining data needs, supports development of tools needed for sustainability planning, identifies opportunities related to groundwater management under SGMA, and supports outreach to their constituents.

2.0 SCOPE OF WORK

2.1 Overview

Preparation of a Programmatic EIR is the primary focus of the project for which grant funding is being sought. However, in a broader context, the proposed project addresses several key aspects relevant to early stages of SGMA-compliance planning in the County, including issues identification, analysis of data gaps, and assessment of mitigation and management opportunities. As such, a central underlying objective is to facilitate communication, outreach, and data sharing to support both GSA formation and the early stages of post-GSA formation studies, which will form the foundation for sustainability planning. The scope of work has been developed with these objectives in mind.

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 Section 21093[a]). 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). In the case of the Groundwater Ordinance, Stanislaus County is seeking to prepare a Tier-1 Programmatic EIR that considers broad-scale environmental impacts associated with issuing permits for new water-supply wells. The purpose is to provide policy alternatives and program-wide mitigation measures early in the Ordinance implementation process. Subsequent activities would then be evaluated in light of the Programmatic EIR to determine if additional environmental documentation is required (State CEQA Guidelines Sections 15168(b) and (c)).

The "program" to be addressed by the Programmatic EIR consists of the following actions that are implemented under the Groundwater Ordinance:

- ***Issuing discretionary[1] well permits for proposed new wells that are not exempt from the Ordinance.*** Before a permit can be issued for such wells, the Groundwater 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.
- ***Issuing ministerial[2] well permits for proposed new wells that are exempt from the Ordinance.*** These include (1) proposed wells within the boundaries of water agencies that are in compliance with an existing Groundwater Management Plan, (2) "*de minimis"* wells that will be used to extract less than 2 acre-feet of water per year, and (3) in-kind replacement wells. It

[1] "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)

[2] 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; however, because these permits are part of the County's well permitting responsibility under the Ordinance, they are considered part of the Project.

should be noted that areas falling under (1) are served primarily by surface water, and groundwater levels in these areas have been generally stable over the last several decades.

- ***Issuing well permits for exempt and non-exempt wells after adoption of GSPs under SGMA.*** After adoption of GSPs, sustainable extraction will be required for new and existing wells under both SGMA and the Ordinance. GSPs are expected to be adopted for the East San Joaquin and Delta-Mendota Subbasins in 2020, and in 2022 for the Modesto and Turlock Subbasins.

Program impacts will be evaluated over a Planning Horizon that extends until 2042, when SGMA requires that medium- and high-priority basins achieve sustainable groundwater management.

2.2 Project Team

The project team will be led by Mr. Walter Ward, the Stanislaus County Water Resources Manager. Mr. Ward will lead implementation of the project under the direction of the Director of the Stanislaus County Department of Environmental Resources. He will be supported by a core consulting team that includes professionals from two firms: Jacobson James & Associates, Inc. (JJ&A) a woman-owned small business enterprise specializing in groundwater management, and Tetra Tech, Inc., a large national environmental consulting firm with a focus on water resources. Furthermore, the project team will coordinate with relevant stakeholders in the County to evaluate adding other technical resources as appropriate. The core consulting team will be led by Michael Tietze of JJ&A with support from Stephen Carlton of Tetra Tech, both of whom are California-registered Certified Hydrogeologists with a strong history of work in Stanislaus County.

2.3 Detailed Scope of Work Description

The scope of work includes the following ten tasks, which are described in detail below:

Task	Description
1	Project Management and Coordination
2	Programmatic EIR Scoping
3	Description of Affected Environment
4	Project Description
5	Hydrologic Modeling
6	Impact Analysis
7	Mitigation Monitoring and Reporting Program
8	Programmatic EIR Preparation
9	Findings of Fact and Statement of Overriding Considerations
10	GSA Support

Task 1 – Project Management and Coordination

Management of the project will include the following activities:

- ***Project Setup.*** Project setup includes completion of all contracting and subcontracting activities, and setup of the Project in the team financial systems to assure that management and documentation are fully compliant with grant guidelines and grant agreement requirements.
- ***Project Execution Plan.*** An integrated Project Execution Plan will be developed that includes a work plan, Microsoft Project schedule, budget breakdown, communication and file management plan, and quality assurance/quality control (QA/QC) plan. The plan will outline project tasks, milestones, deliverables, and meeting schedules to guide delivery of the Programmatic EIR and provide the basis by which the project status will be measured, communicated, and managed. The plan will include a detailed breakdown, by task, of deliverables, costs, staffing, and schedule, as well as an overall work flow chart identifying the critical path items.
- ***Project Kickoff Meeting.*** A project kickoff meeting will be convened at County's offices in Modesto. The kickoff meeting will be attended by key project personnel to present the project objectives and expectations and review the contents of the Project Execution Plan.
- ***Project Status Reporting and Team Meetings.*** Monthly team status reports and quarterly status reports to DWR will be prepared to summarize the status of the scope, schedule and budget; work completed in the past period and scheduled for the next period; and challenges encountered or anticipated and corrective action plans. A team conference call will be held each month to review the status report. In addition, up to four update meetings will be convened with the County and other stakeholders to report and document the status of the work, identify and discuss potential issues, recommend action plans, and/or to review findings and work products. For each meeting, an agenda and minutes will be prepared.
- ***Project Management.*** Project management includes monthly generation and review of project financial reports, invoicing, review of the project schedule, and status of deliverables.

Task 2 – Programmatic EIR Scoping

Task 2.1 – Initial Study

An Initial Study will be prepared using the checklist included in Appendix G to the CEQA Guidelines to help establish which resource areas should receive more detailed evaluation under the Programmatic EIR.

Task 2.2 – Scoping Activities

Scoping activities will include the following tasks.

- ***Notice of Preparation.*** The Notice of Preparation will be filed with the County Clerk, sent to stakeholders in the County and the adjacent counties as well as interested agencies, and filed with the California Office of Planning and Research.
- ***Scoping Meetings.*** Three scoping meetings will be held: one coinciding with a regularly scheduled meeting of the Stanislaus County Water Advisory Committee (WAC), one coinciding with a regularly scheduled meeting of the Stanislaus County Technical Advisory Committee (TAC), and one at a public venue and time to be established by the County. The scoping meetings

will be advertised in local newspapers and on the County's Groundwater Resources web page. In addition, notification regarding the scoping meetings will be sent to water agencies, cities, groundwater management associations, special interest groups, and other stakeholders within the County. Notification will also be sent to neighboring counties, potential participating agencies, and the Regional Groundwater Working Group.

- ***Compilation and Review of Comments.*** Comments received during the scoping process will be compiled, reviewed, and addressed through adjustments to the scope of work, as appropriate.

Task 3 – Description of the Affected Environment

An overview of the affected environment will be developed based on information provided in the County General Plan and other planning documents and studies. The description will address each of the pertinent resource areas addressed by CEQA, and will include tables and maps as necessary for clarity of presentation. Based on the nature of the project, additional detail is anticipated to be compiled for resource areas listed in Table 1.

Table 1: Summary of Additional Data Requirements for Selected Resource Areas

Resource Area	Additional Detail Required
Hydrology and Water Quality	• Maps and descriptions of the groundwater subbasins in the County derived from published reports, studies, public information websites, County databases, and other sources. • Maps and description of surface water hydrology overlying the groundwater subbasins within the County. • A summary of water resources and supply management within the County, with a focus on groundwater resources and on current and forecasted groundwater demand, derived from published General Plan documents, Urban Water Management Plans (UWMPs), Integrated Regional Water Management Plans (IRWMPs), Groundwater Management Plans (GMPs), Agricultural Water Management Plans (AWMPs), information available from water agencies within the County, and studies performed for the 2013 update of the California Water Plan. • A discussion of the management, hydrology, water demand, and environmental flow requirements of County surface water resources that are interconnected with groundwater.
Soils and Geology	• A description of the geology of groundwater basins in the County derived from published reports, studies, public information websites, County databases, and other sources. • An assessment of historical subsidence in the County, the findings of current subsidence monitoring programs, and the potential for future subsidence.
Agriculture and Forestry	• A discussion of the relationship between water management and agriculture in the County. • A summary of current agricultural land use and practices within the County, and anticipated trends. • Maps as needed to illustrate agricultural land use distribution.

Resource Area	Additional Detail Required
Biology	• A discussion of Groundwater-Dependent Ecosystems (GDEs) within the County, including seeps, springs, wetlands, and riparian vegetation that are underlain by a shallow regional water table and may be affected by groundwater withdrawal. • A map showing the locations of GDEs derived from data regarding the depth to the regional water table, the United States Geological Survey (USGS) National Hydrography Database, the United States Fish and Wildlife Service National Wetlands Inventory, and other public GIS data sources.
Population and Housing	• A discussion of communities (including disadvantaged communities), and population trends within the County that may affect or may be affected by water management, as derived from UWMPs, the County General Plan, and studies conducted for the 2013 update of the California Water Plan.

Task 4 – Project Description

A detailed description of the "project" for which impacts are to be evaluated (i.e., the program), will be prepared to serve as a basis for impact evaluation. The project description will summarize the requirements for well permitting under the Groundwater Ordinance, exemptions from the Ordinance, procedures and criteria adopted under the implementation guidelines for well permitting under the Ordinance, and the relationship between the Ordinance and other planned and anticipated groundwater management activities under SGMA.

Task 5 – Hydrologic Modeling

Development of a Stanislaus County Hydrologic Model (SCHM) is proposed to serve as a key tool for characterizing groundwater conditions in the County and evaluating the impacts of implementing the well permitting program required under the Groundwater Ordinance. The SCHM will consist of (1) a baseline model that simulates groundwater and surface water conditions through 2014 under a range of reasonably-foreseeable water management scenarios, and (2) a set of forecast scenarios to evaluate the impacts of groundwater withdrawal from new wells permitted under the Groundwater Ordinance. A Modeling Plan, based on review of available groundwater modeling data and basin characterization reports within the County, will first be developed and vetted with stakeholders and the DWR as part of the scoping process. The Modeling Plan will be guided by the following objectives:

- Extensive groundwater basin characterization and modeling has been completed in the County by the USGS, California Department of Water Resources (DWR), STRGBA, TGBA, and other stakeholders. The proposed SCHM should respect, utilize, and build on this work to the extent possible to leverage this previous work for the proposed effort.

- In view of future modeling requirements for individual subbasins in support of GSP preparation, the SCHM will not aspire to be the definitive treatise or tool for groundwater modeling in the County, but should be sufficient for programmatic, county-wide assessment of impacts associated with implementation of the Groundwater Ordinance. Nevertheless, the model should be capable of informing and possibly supporting future modeling efforts by others, including models that may be used for further groundwater sustainability evaluations. For the present, a superposition modeling approach (i.e., a model that focuses on evaluating the effects of future groundwater withdrawals relative to a baseline condition) that builds on existing models in the County is considered adequate for the Programmatic EIR.
- The modeling approach should address issues related to boundary conditions, inter-basin underflow, and groundwater-surface water-interactions at a level of detail appropriate to achieve the above modeling objectives.
- The model should incorporate current and reasonably foreseeable groundwater demand and management trends to serve as a representation of the affected hydrologic environment.
- To the extent possible, the modeling effort should identify and fill data gaps, help to characterize issues, and support further development of tools needed to plan for sustainable groundwater management in the County. Doing so will provide data useful to support GSAs during formation and the early stages of sustainability planning, and will facilitate outreach to their constituents.

Several existing groundwater flow models have been developed that cover all or portions of Stanislaus County and may be useful for informing the proposed modeling effort:

- The Merced-Stanislaus (MERSTAN) model was completed by USGS in 2015 and covers portions of three of the four groundwater subbasins in the County.[3] It encompasses an area of about 1,000 square miles centered on the Cities of Modesto and Turlock and was developed using the MODFLOW-OWHM modeling code.
- The more generalized Central Valley Hydrologic Model (CVHM) is a regional model developed by USGS and includes all of the groundwater subbasins in the County.[4] The revised version of CVHM was also developed using the MODFLOW-OWHM code and is expected be updated in early to mid-2016.
- A three-dimensional finite element model was prepared for the Turlock Subbasin by Timothy J. Durban as a consultant for Turlock Basin Groundwater Association (TGBA) and Turlock Irrigation District (TID) using the FEMFLOW3D modeling code (the TID Model). Updating of this model is being considered by TGBA.

[3] Phillips, S.P., Rewis, D.L., and Traum, J.A., 2015, Hydrologic model of the Modesto Region, California, 1960–2004: U.S. Geological Survey Scientific Investigations Report, 2015–5045, 69 p., http://dx.doi.org/10.3133/sir20155045.

[4] http://ca.water.usgs.gov/projects/central-valley/central-valley-hydrologic-model.html

- In support of its Aquifer Characterization and Recharge Project, the City of Modesto has developed a city-wide groundwater flow model with the USGS MODFLOW code, using the GMS modeling platform (the Modesto Model).
- The California Central Valley Groundwater-Surface Water Simulation Model (C2VSim) was developed by DWR with the Integrated Water Flow Model (IWFM) code to evaluate groundwater and surface water management issues in the Central Valley and delta.[5]

Construction of the proposed SCHM will be focused on utilizing, to the maximum extent feasible, the models described above. For example, the MERSTAN model and relevant portions of the CVHM could be combined to provide a foundation on which to build the SCHM. A preliminary approach for embedding the MERSTAN model as a child model within the parent-model CVHM using MODFLOW-OWHM's shared-node local grid refinement capability is discussed below, but may be adjusted as appropriate based on stakeholder input. This and other potential modeling approaches will be evaluated and documented in the Modeling Plan. During the evaluation process, model results from DWR's C2VSim model will also be assessed. The C2VSim and CVHM models use different underlying codes, and yield different results. Our goal will be to use the most appropriate set of input conditions for the SCHM from both these sources. The TID and Modesto models will also be evaluated and may be used to support development of the SCHM.

For the preliminary approach described above, the SCHM would consist of a coupled groundwater-surface water model of the County constructed with the USGS MODFLOW-OWHM code, ArcGIS, and other graphical user interfaces (e.g., USGS ModelMuse) as appropriate. MODFLOW-OWHM is an integrated groundwater-surface water modeling code based on the proven MODFLOW platform, and can incorporate a broad range of processes useful for evaluating conjunctive groundwater-surface water operations based on physical water supply and demand processes. Among other features, it supports the Farm Process, which provides a direct interface between agricultural land use, water demand and recharge; the Streamflow Routing Package and the Unsaturated Flow Package, which together can simulate groundwater-surface water interactions for both connected and disconnected streams; and the Riparian Evapotranspiration Package, by which the relationship between riparian vegetation and groundwater flow can be evaluated.

Task 5.1 – Modeling Plan Development

Based on review of information regarding the available groundwater models that cover the County, a Modeling Plan will be developed. The modeling plan will serve as a vehicle for collaboration and transparency among the stakeholders in the County, and serve as a pragmatic and comprehensive basis to build on the years of work in groundwater analysis and planning that has occurred. The Modeling Plan will provide the rationale for code selection and utilization of existing models. The Modeling Plan will also define the modeling objectives, domain discretization, boundary conditions, calibration methodology, and forecasting scenarios. Options for future model updates and management will also be considered. The Plan will be provided for review and comment to key stakeholders in the County.

[5] http://baydeltaoffice.water.ca.gov/modeling/hydrology/C2VSim/index_C2VSIM.cfm

Task 5.2 – Hydrologic and Water Budget Data Compilation

Information regarding the water budget for County groundwater subbasins will be compiled and incorporated into the SCHM to inform the analysis for a range of environmental impacts. Information will generally include, but is not limited to, the sources listed in Table 2, in addition to information derived from existing models and modeling results.

Table 2: List of Hydrologic Data Sources

Hydrologic Data	Sources
Groundwater Elevations	• CASGEM data.
Surface Water Recharge/ Discharge	• Gaging station data.
Underflow In/Out	• Water level data and Darcy flow calculations. • Published studies and reports. • Simulated water balances.
Areal Recharge from Precipitation	• Climate station data • Simulated water balances
Agricultural Groundwater Demand, Evapotranspiration of Applied Water and Deep Percolation	• AWMPs and reported pumping by irrigation districts. • Reported surface water diversions by irrigation districts and in the State Water Resource Control Board (SWRCB) Electronic Water Rights Information System (eWRIMS). • DWR studies for 2013 update of the California Water Plan. • Supplemental GIS and aerial imagery data and County Agricultural Commissioner Reports analyzed using the MODFLOW –OWHM Farm Package.
Domestic Groundwater Demand	• GIS analysis of census block data in areas not served by public water agencies. • Data regarding small water systems from the County and SWRCB Division of Drinking Water.
Municipal Groundwater Demand	• UWMPs and reported municipal pumping data. • DWR studies for 2013 update of the California Water Plan.
Municipal Wastewater Discharge	• Data from municipal wastewater treatment plants. • Data from the Regional Water Quality Control Board for Waste Discharge Requirements permits.

Task 5.3 – Geologic and Hydrogeologic Data Compilation

Data will be compiled to update and refine, as needed, the geologic and hydrogeologic framework on which the existing models are based. The initial premise will be that the existing models and model results provide sufficient characterization, unless data review indicates otherwise. These data would be derived from the several sources, including but not necessarily limited to the following:

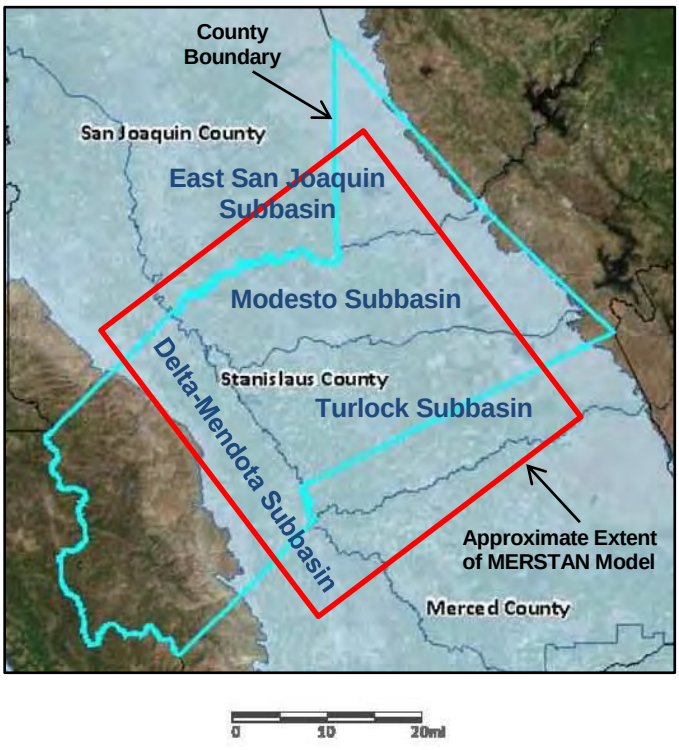
- Published USGS studies and reports;
- Scientific papers and consulting reports; and
- Well logs, specific capacity test data, and pumping test data compiled by the County or available from DWR.

Task 5.4 – Model Construction

Construction of the SCHM will be guided by the Modeling Plan with the objective of developing a model domain that encompasses the entire County (see Figure 1, below). The exact boundary locations and boundary conditions will be determined during the model-development process with the goal of minimizing the size of the model, to the extent possible, while not introducing artificial boundary effects within the model domain.

The existing models provide a platform and fundamental data for development of the SCHM. The forthcoming update of the CVHM will be used for the proposed effort and is expected to incorporate hydrologic and land use data through 2014. The MERSTAN model currently incorporates hydrologic and land use data through 2004, and will be updated to incorporate more recent land use, water demand, streamflow, and groundwater recharge, such that the new baseline SCHM will simulate groundwater and surface water conditions through 2014. The C2VSim model contains historical stream inflows, surface water diversions, precipitation, land use, and crop acreages through 2009. Geologic, hydrologic, and agricultural data compiled for Task 3 will form the basis for updating, where appropriate, the SCHM through 2014.

Figure 1: Existing Model Domains and Groundwater Subbasins



Task 5.5 – Model Calibration

Model performance will be rigorously evaluated using quantitative statistical techniques. The accuracy of simulation results will be improved by analyzing the statistical results and identifying aquifer parameters that need to be modified or additional processes that need to be considered.

The baseline model will initially be calibrated by matching of (1) historic groundwater levels for calibration wells distributed throughout the model domain and (2) historic streamflow in the Stanislaus River, Tuolumne River, and other County streams for which gaging data can be obtained. The calibration will then be expanded to include higher-order observations such as changes in water levels, vertical water-level differences, diversions, streamflow gains and losses, and pumpage through time. The calibration process will also include qualitative and quantitative evaluation of the water budget.

The model performance objective is to minimize the residual between observed and simulated values. The modeling process will include a sensitivity analysis and iterative modification within appropriate ranges of aquifer parameters and boundary conditions to achieve this performance objective. After qualitative calibration by trial-and-error, the final model will be calibrated quantitatively using the optimization-based inverse modeling techniques found in the Model-Independent Parameter Estimation code, PEST. These techniques facilitate quantification of (1) the quality of calibration, (2) data shortcomings and needs, and (3) uncertainty of parameter estimates and predictions.

Task 5.6 – Model Forecasts and Reporting

Once a baseline model has been constructed and calibrated, forecast scenarios will be run to assess the effects of implementing the Groundwater Ordinance relative to reasonably foreseeable demand trends and groundwater management requirements. The proposed scenarios are described below, but may be adjusted pending input from stakeholders within the County. A table and time line presenting additional detail regarding the scenarios are presented after the descriptions. All scenarios are anticipated to extend through 2042, when SGMA requires that all medium- and high-priority basins be managed within their sustainable yields. The following scenarios will be simulated:

- ***Scenario 1a – Continuation of Current Conditions.*** Scenario 1a is based on the projected future groundwater demand forecasted in existing GWMPs, UWMPs and AWMPs. In areas not subject to these plans, or where data regarding groundwater demand are not available, groundwater demand will be forecasted based on projected land use and agricultural trends.
- ***Scenario 1b – Current Conditions with Implementation of 35% Unimpaired Flow.*** Scenario 1b is identical to Scenario 1a, except it assumes a 35% Unimpaired Flow Requirement will be mandated by the State on the Stanislaus, Tuolumne, and Merced Rivers starting in 2020 as part of the Basin Plan Amendment process, resulting in decreased availability of surface water. Demand deficits caused by the flow requirements will be addressed through additional groundwater pumping.
- ***Scenarios 2a and 2b – Implementation of GSPs.*** These scenarios are modifications of Scenarios 1a and 1b, respectively, and are intended to simulate implementation of GSPs in the East San Joaquin and Delta-Mendota Subbasins starting in 2020, and in the Modesto and Turlock Subbasins starting in 2022. Implementation of GSPs will be simulated by applying the sustainability criteria adopted in

the County Groundwater Ordinance well permitting program for non-exempt wells as summarized below. Specifically, the groundwater demand in each subbasin will be iteratively decreased until the following criteria are met 20 years after the GSPs are adopted:

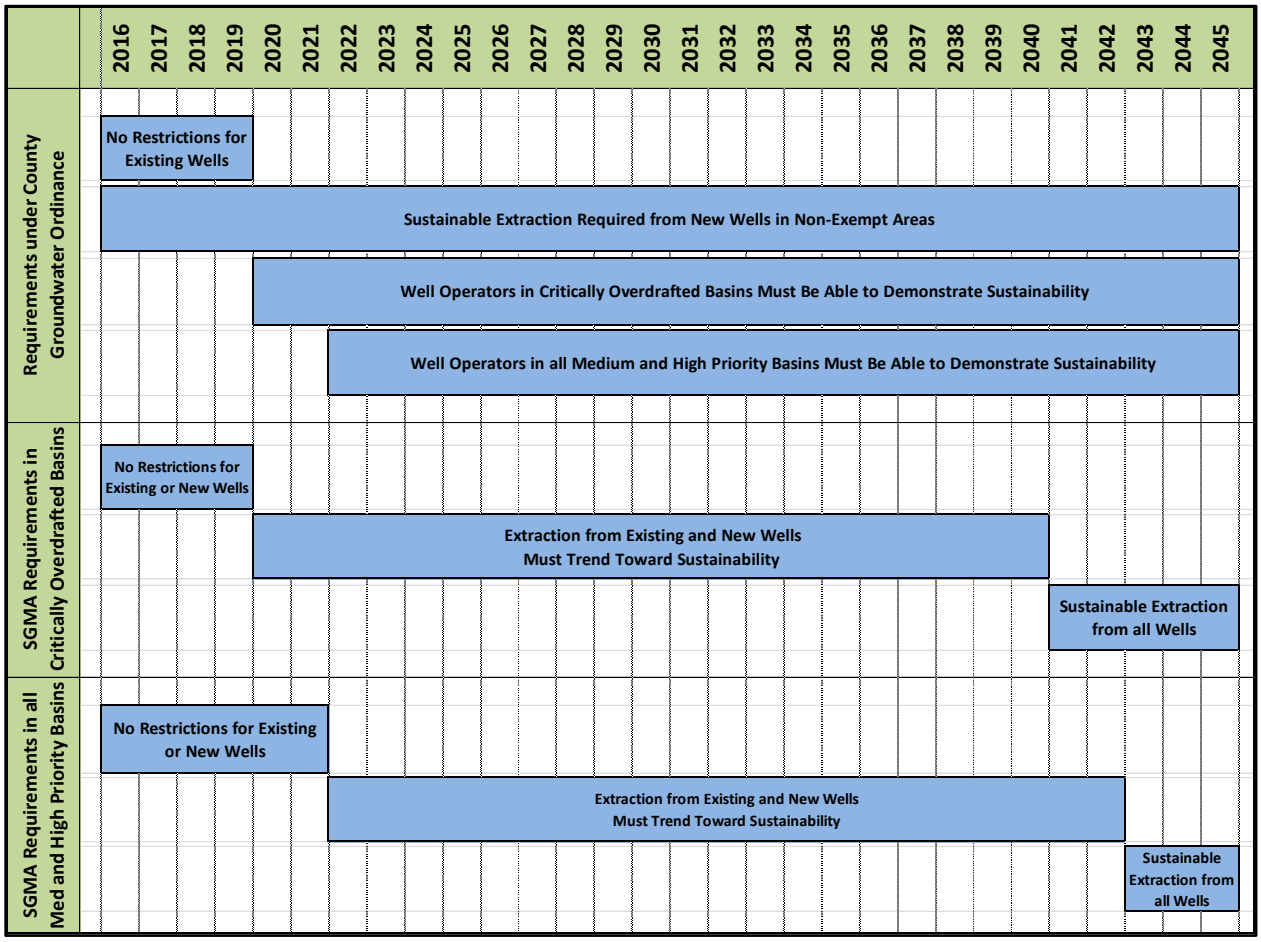
- Drawdown of no more than 10% of aquifer thickness;
- Drawdown of no more than 5 feet in the upper 50 feet of shallow aquifer in areas zoned Residential or Rural Residential that are not served by a municipal water agency or small community water supply system;
- Drawdown of no more than 1 foot at any GDE;
- Cumulative streamflow depletion (compared to an average year baseline) within the range of error of gaging stations for groundwater-connected streams; and
- Water levels maintained above historical lows in confined aquifer systems underlying the Corcoran Clay.

- ***Scenarios 3a and 3b – Implementation of the Groundwater Ordinance Well Permitting Program.*** These scenarios add implementation of the County Groundwater Ordinance to Scenarios 2a and 2b, respectively. Consistent with the County's implementation guidelines for well permitting, starting in 2015, new groundwater demand would be added in non-exempt areas of the County only as long as the following conditions are met:
  - No additional permitted groundwater demand in areas displaying evidence of unsustainable extraction under Scenarios 2a and 2b;
  - Drawdown of no more than 10% of aquifer thickness in any non-exempt area;
  - Drawdown of no more than 5 feet in the upper 50 feet of shallow aquifer in areas zoned Residential or Rural Residential that are not served by a municipal water agency or small community water supply system;
  - Drawdown of no more than 1 foot at any GDE;
  - Cumulative additional streamflow depletion (compared to an average year baseline) within the range of error of gaging stations for groundwater-connected streams; and
  - Water levels maintained above historical lows in confined aquifer systems underlying the Corcoran Clay.
- ***Scenarios 4a and 4b – Implementation of Mitigation by Enhanced Recharge.*** These scenarios are modifications of Scenarios 3a and 3b, respectively, and simulate implementation of the County Groundwater Ordinance, GSPs and the County's proposed Flood Control and Groundwater Recharge Master Plan (FCGRMP), a proposed program to divert flood flows and use them for enhanced recharge. Implementation of the FCGRMP will be simulated by applying up to 100,000 AFY of stormwater flood flows to amenable areas identified by the County's screening studies.

Table 3: Summary of Forecast Components

Forecast Component	Scenarios							
	1a	1b	2a	2b	3a	3b	4a	4b
Current and Forecasted Groundwater Demand	✓	✓	✓	✓	✓	✓	✓	✓
35% Unimpaired Flow		✓		✓		✓		✓
GSP Implementation			✓	✓	✓	✓	✓	✓
Ordinance Implementation					✓	✓	✓	✓
Mitigation							✓	✓
Scenario with and without Climate Change					✓	✓		

Figure 2: Timeline for Forecast Scenario Components



Each of the scenarios requires groundwater demand, including the installation of new wells, to be projected into the future. Projected groundwater demand will be implemented by simulating groundwater extraction from a set of hypothetical wells, added to the SCHM in areas where expanded extraction is expected or planned.

The potential impacts of climate change would be addressed through a simplified analysis to serve as an initial estimate and baseline for future evaluations. Potential impacts will be simulated by modifying precipitation and evapotranspiration by specified percentages. Implementation of these modifications will occur in the Farm Process though the use of adjusted climate data and specific crop coefficients (e.g., minimum and maximum cutoff temperatures). The percent changes to be used will be determined collaboratively with the County and stakeholders based on studies conducted for the 2013 update of the DWR California Water Plan[6] and the USGS work on climate change in the Central Valley.[7]

Surface water monthly time series corresponding to the above scenarios will be developed using DWR's CalLite model. CalLite simulates the hydrology of the Central Valley, reservoir operations, delivery allocation decisions, delta salinity, and habitat-ecosystem flow indices over an 82-year planning period. Two separate inputs will be developed:

- Without implementation of 35% Unimpaired Flow Requirements for Scenarios 1a, 2a, 3a and 4a; and
- With implementation of 35% Unimpaired Flow Requirements for Scenarios 1b, 2b, 3b and 4b.

For each scenario, drawdown distribution, groundwater levels, and streamflow discharge will be compared to baseline conditions representing a dry hydrologic year[8] and a normal hydrologic year[9], and changes will be evaluated. Groundwater level trends at key locations and depths will be evaluated in specific detail. In addition, the results for the forecast scenarios will be compared to each other to assess the effects of implementing the County Groundwater Ordinance relative to other reasonably-anticipated water management requirements (such as implementation of GSPs and unimpaired flow requirements).

A technical memorandum will be prepared that presents the methods, findings and conclusions of the hydrologic modeling task. The memorandum will be supplemented with tables, figures, and attachments as necessary for clarity and completeness of presentation. The technical memorandum will discuss effects and trends relative to baseline conditions associated with GSP implementation, unimpaired flow implementation, climate change, well permitting under the Ordinance, and mitigation. Effects on groundwater levels and storage, surface water discharge, evapotranspiration and groundwater levels at potential GDEs, cross boundary fluxes and underflow, and sustainable extraction rates will be discussed.

[6] http://www.waterplan.water.ca.gov/cwpu2013/final/index.cfm

[7] http://ca.water.usgs.gov/projects/central-valley/climate.html

[8] 2014 is proposed based on precipitation of 50% of normal, for the Southern Sierra 5-Station Precipitation Index.

[9] 2010 is proposed based on precipitation of 106% of normal for the San Joaquin River Hydrologic Region.

Task 6 – Impact Analysis

An impact analysis will be conducted to evaluate the potential direct and indirect environmental effects associated with implementation of the County Groundwater Ordinance. The following focus areas associated with the direct impacts of implementing the Groundwater Ordinance will be evaluated.

Task 6.1 – Direct Hydrological, Water Supply and Water Quality Impacts

Consistent with the focus of the Programmatic EIR, the effect of the Project on groundwater resources and interconnected surface water resources will be evaluated in greater detail, addressing the direct impacts of the well permitting program on Hydrology and Water Quality, Agriculture, Biology, Geology and Soils, and Utilities and Service Systems. This portion of the impact analysis will include the following.

- ***Regional Drawdown and Groundwater Storage Depletion.*** Predicted regional drawdown in Scenarios 3a and 3b will be compared to Scenarios 2a and 2b, and groundwater level trends will be evaluated to assess whether or not the well permitting program may result in significant and unreasonable chronic water level decline or significant and unreasonable depletion in regional groundwater storage. Because the Ordinance is intended to prevent such undesirable results, the effect of implementing the Project is expected to result in a net decrease of drawdown and groundwater storage depletion.
- ***Surface Water Depletion.*** Predicted surface water depletion resulting from implementation of the well permitting program will be evaluated by assessing potentially significant changes in discharge volumes for groundwater-connected stream reaches under Scenarios 3a and 3b compared to Scenarios 2a and 2b, especially during seasonal low-flow periods. The predicted surface water depletion at established gaging stations will be compared to the error inherent in gaging station measurements (usually approximately +/- 5 percent).
- ***Water Quality.*** Potential impacts to water quality in surface water and groundwater will be evaluated using a narrative approach to assess whether implementation of the well permitting program is likely to cause significant and unreasonable degradation of water quality relative to the no-project condition. Because the well permitting guidelines adopted under the Ordinance are specifically intended to protect groundwater quality, the effect of implementing the Project is expected to be protection of water quality.
- ***Land Subsidence.*** The potential for the well permitting program to result in significant subsidence will be evaluated on a narrative basis relative to the no-project condition. In general, it is expected that implementation of the Project will result in less subsidence, because the Ordinance is intended to avoid this undesirable result.
- ***Groundwater Dependent Ecosystems.*** In order to assess potential impacts to GDEs, the change in the water table elevation at groundwater-connected GDEs identified during Task 3 will be assessed under Scenarios 3a and 3b vs. Scenarios 2a and 2b. In addition, the change in riparian evapotranspiration will be assessed. Based on these results, the general potential for habitat loss will be discussed, with emphasis on the general effects to aquatic habitat, riparian habitat, wetlands, and other sensitive natural communities and special status wildlife.

- ***Agricultural Resources.*** Implementation of the Groundwater Ordinance may result in less water being available for irrigation in some areas. The potential for a shortfall in the amount of groundwater available for irrigation will be evaluated by comparing the decrease in groundwater availability caused by implementation of the Ordinance (Scenarios 3a and 3b) with AWMP and GIS-based supply and demand forecasts. To evaluate the relative impact on agriculture caused by the Groundwater Ordinance vs. GSP implementation alone, the changes in groundwater availability for agriculture from Scenarios 3a and 3b will be compared to Scenarios 2a and 2b. The general effect of decreased irrigation water supply on existing agricultural land uses will be discussed.
- ***Utilities and Service Systems.*** The effect of the well permitting program on the ability of water agencies to meet the projected water demand in their service territories will be evaluated by comparing the decrease in available groundwater with implementation of the Ordinance (Scenarios 3a and 3b) with AWMP and UWMP supply and demand forecasts. Since areas within water agencies are currently exempt from the Ordinance prohibitions, it is anticipated that the Ordinance will have no effect in these areas.

Task 6.2 – Other Impacts

Non-hydrologic impacts and indirect impacts of implementing the Groundwater Ordinance will be identified and discussed at a broad scale, with a focus on identifying the kinds of impacts that may be expected. Potential direct impacts include those associated with the installation and operation of new wells. Potential indirect impacts include effects resulting from range land conversion to agricultural use. Special focus is expected to be placed on the following resource areas and impacts:

- Air Quality (including Greenhouse Gases (GHG));
- Biological Resources;
- Cultural Resources; and
- Land Use and Planning.

In addition to the above, the potential for the Project to directly or indirectly contribute to cumulative effects related to the above resource areas will be discussed.

Task 7 – Mitigation, Monitoring and Reporting Program

A Mitigation Monitoring and Reporting Program (MMRP) will be prepared as required by Section 15097 of the CEQA Guidelines. The program may include the following:

- Implementation of specific studies to evaluate site-specific environmental impacts;
- Implementation of monitoring programs; and
- Implementation of other mitigation measures, such as conjunctive use programs, enhanced or in lieu groundwater recharge programs, establishment of special management zones, adoption of additional or changed well permit requirements, and/or additional groundwater resource management procedures.

Task 8 – Programmatic EIR Preparation

In preparation of the draft Programmatic EIR, comments received on an administrative draft during internal review will be addressed. The Draft Programmatic EIR will be prepared and distributed for public review to a mailing list provided by County staff. Each comment received in response to the Draft Programmatic EIR review will be reviewed and catalogued. The Team will prepare a matrix listing commenter, environmental issue area addressed, and work assignments required to adequately address each comment. A reasoned response to environmental issues raised in the comments will be prepared.

The comments and responses, along with any revisions to the text of the Draft Programmatic EIR incorporated to address these comments, will be used to produce the Final Programmatic EIR.

Task 9 – Preparation of Findings of Fact and Statement of Overriding Consideration (if needed)

Findings of fact will be prepared for each Project impact as required by Section 15091 of the CEQA Guidelines. If necessary, a draft Statement of Overriding Consideration consistent with Section 15093 of the CEQA Guidelines will also be prepared.

Task 10 –GSA Support

Stanislaus County will likely encompass five GSAs within four related, but hydrogeologically distinct, groundwater subbasins. As described in Attachment 2, a SGMA Working Group is being convened in the East San Joaquin Subbasin and will likely form a single GSA. A single GSA is also anticipated to be formed in the Modesto Subbasin by the Stanislaus and Tuolumne Rivers Groundwater Basin Association (STRGBA). Two GSAs are likely to be formed within the Turlock Subbasin, one by the TGBA and one by Eastside Water District. Multiple GSAs may form in the Delta-Mendota Subbasin, one of which will be located within Stanislaus County. In addition, coordination and data sharing across County lines is being conducted under the umbrella of the Regional Groundwater Coordination Committee (RGCC), whose membership includes agencies from Stanislaus, San Joaquin, and Merced counties.

Stanislaus County anticipates the need for significant coordination at all stages of GSA formation to ensure transparent, cohesive, and coordinated groundwater management under SGMA. GSA formation activities will be specific to the local agencies and groundwater management entities that currently manage groundwater in the four subbasins. However, it is anticipated that the proposed Programmatic EIR will generate information that can help to facilitate and inform the GSA-formation process. Therefore, the following GSA support tasks are included.

The County will engage in regular communication and share regional data with other stakeholders via the WAC, TAC, STRGBA, TGBA, and RGCC. Additional outreach, consultation, and data exchange may occur with (or on behalf of) individual member agencies as appropriate to facilitate regional coordination, data sharing, dialog regarding issues, opportunities, data gaps, and priorities important to GSA formation and groundwater management planning. To further support this objective, up to five workshops will be held with aspiring GSAs to discuss the findings of the evaluation described in Task 5 and presented in the Technical Memorandum described in Task 5.6 relative to their jurisdictional areas. To the degree desired by individual stakeholders, these findings will generally include, but may not be limited to, the following:

- Assessments (including land-use based assessment) to qualitatively and quantitatively describe "undesirable results" and other potentially significant impacts within the four subbasins on a preliminary basis;
- Preliminary assessment of inter-jurisdictional and inter-subbasin groundwater fluxes;
- Evaluation of the adequacy of current monitoring networks and data measurement accuracies to manage undesirable results and delivery of preliminary recommendations to accommodate future SGMA needs, as appropriate;
- Preliminary assessment of the adequacy of current tools available to groundwater management entities within the County and the identification of opportunities for GSA and inter-GSA collaborations to use or improve these tools;
- Evaluating potential data gaps and opportunities related to active groundwater management plans; and
- Preliminary estimation of sustainable yield and identification of remaining data gaps.

2.4 Current Status of Work Tasks

Work to support implementation of the Stanislaus County Groundwater Ordinance is in progress, and coordination between the County and other stakeholders to plan for GSA formation and SGMA compliance is also in progress as described elsewhere in the grant application. In addition, planning for implementation of the proposed Programmatic EIR by the County and coordination with stakeholders is occurring at this time. The proposed scope of work will build on these ongoing efforts; however, it is assumed the work outlined in this workplan will not commence until the execution of a grant funding agreement, assuming this proposal is accepted for funding. As such, the tasks are deemed 0 percent complete.

2.5 Project Deliverables

The scope of work includes the project deliverables identified in Table 4, below.

Table 4: List of Deliverables

Task	Deliverables
Task 1: Project Management and Coordination	• Project Execution Plan. • Project meeting agendas and minutes. • Monthly Project Status Reports.
Task 2: Programmatic EIR Scoping	• CEQA Initial Study. • Notice of Preparation. • Memorandum with catalog of scoping comments and responses.
Task 3: Description of Affected	• A description of the affected environment will be included in the Draft Programmatic EIR.

Environment	
Task 4: Project Description	• A project description will be included in the Draft Programmatic EIR.
Task 5: Hydrologic Modeling	• Modeling Plan. • Modeling Technical Memorandum describing the modeling approach and findings.
Task	**Deliverables**
Task 6: Impact Analysis	• A description of the impact analysis with supporting tables, figures and attachments will be included in the Draft Programmatic EIR.
Task 7: MMRP	• Draft and Final Mitigation Monitoring and Reporting Program.
Task 8: Programmatic EIR Preparation	• Notice of Completion/Notice of Availability. • Draft Programmatic EIR in hard copy and electronic format. • Final Programmatic EIR with MMRP and Responses to Comments in hard copy and electronic format.
Task 9: Preparation of Findings of Fact and Statement of Overriding Considerations	• Findings of Fact. • Statement of Overriding Considerations (if needed).
Task 10: GSA Support	• Summary presentations at up to five regional workshops with aspiring GSAs that describe findings, opportunities, issues, and data gaps in their jurisdictional areas.

ORDINANCE NO. C.S. _____

AN ORDINANCE AMENDING CHAPTER 9.37 RELATING TO GROUNDWATER

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS, STATE OF CALIFORNIA, ORDAINS AS FOLLOWS:

Section 1. The title of Chapter 9.37 of the Stanislaus County Code is amended to read as follows: "Groundwater."

Section 2. Section 9.37.010 of the Stanislaus County Code is amended to read as follows:

"The ordinance codified in this Chapter may be cited as the Stanislaus County 'Groundwater Ordinance.'"

Section 3. Section 9.37.020 of the Stanislaus County Code is amended to read as follows:

"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.

"7. Nothing in this Chapter 9.37 determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights.

"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 9.37. 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."

Section 4. Section 9.37.030 of the Stanislaus County Code is amended to read as follows:

"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 Chapter 9.37 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 (2) acre-feet or less per year.

"11. 'Groundwater sustainability plan' means a plan adopted pursuant to Water Code section 10727 et seq."

Section 5. Section 9.37.040 of the Stanislaus County Code is amended to read as follows:

"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."

Section 6. Section 9.37.045 is added to the Stanislaus County Code to read as follows:

"9.37.045 Application.

"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) 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.

"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.

"C. This Section does not limit the application of Paragraph B of Section 9.37.040.

"D. The regulations and prohibitions set forth in this Chapter 9.37 apply only to the unincorporated areas of Stanislaus County."

Section 7. Section 9.37.050 of the Stanislaus County Code is amended to read as follows:

"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 Paragraphs A and B above do not exempt the activities described in those subsections from paragraph B of Section 9.37.045."

Section 8. Section 9.37.060 of the Stanislaus County Code is amended to read as follows:

"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 Paragraph 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 Chairman and Vice Chairman 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."

Section 9. Section 9.37.065 is added to the Stanislaus County Code to read as follows:

"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 paragraph 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.

Section 10. This ordinance shall take effect thirty (30) days from and after the date of its passage and before the expiration of fifteen (15) days after its passage it shall be published once, with the names of the members voting for and against the same, in the Modesto Bee, a newspaper published in the County of Stanislaus, State of California.

Upon motion of Supervisor _____, seconded by Supervisor _____, the foregoing resolution was passed and adopted at a regular meeting of the Board of Supervisors of the County of Stanislaus, State of California, the _____ day of _____, 2014, by the following called vote:

AYES: Supervisors:

NOES: Supervisors:

ABSENT: Supervisors:

_____
Jim DeMartini, Chair of the Board of Supervisors of the County of Stanislaus, State of California

ATTEST:
Christine Ferraro Tallman
Clerk of the Board of Supervisors of the County of Stanislaus, State of California

By _____
Deputy

APPROVED AS TO FORM:

By _____
John P. Doering
County Counsel

V:\CO\jpd\Documents\ORDINANC\MISC\Groundwater\Chapter 9.37 Amendment Ordinance

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.

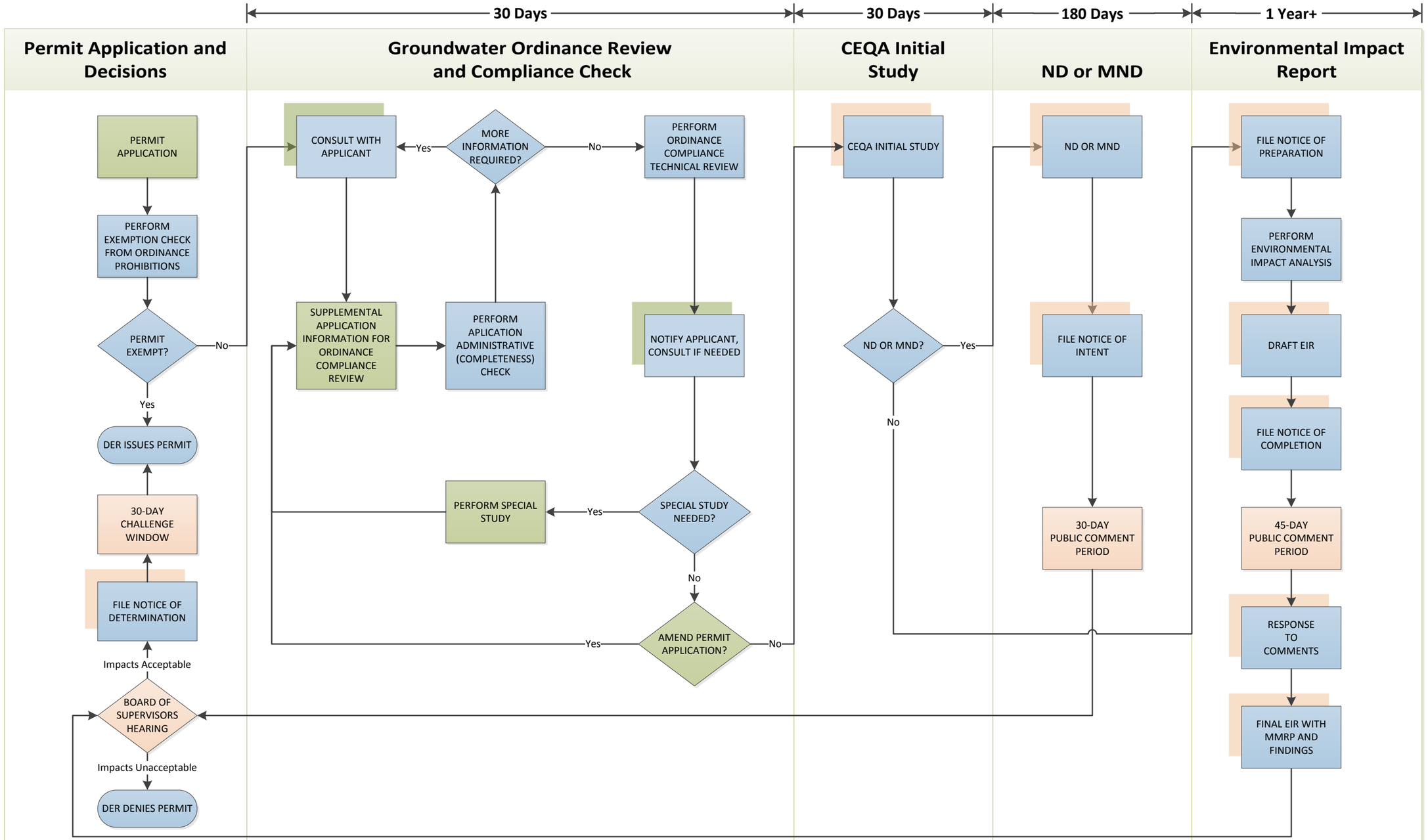
7. After conclusion of the public comment period for the ND, MND or EIR, and development of appropriate responses to any comments that are received, the well

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.

ATTACHMENT 4:
BUDGET

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

1.0 BUDGET DESCRIPTION

As summarized in Table 4, the budget for the proposed project is $585,000, and is proposed to be funded by a combination of a $250,000 Grant from the State of California, a Local Match of $250,000, and Other Funds of $85,000. Of the Local Match and Other Funds ($335,000 in total) the County will contribute the largest share, with additional contributions from other stakeholders, including, but not limited to, the following:

- The incorporated cities of Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford;
- Public agencies including Central California Irrigation District, Del Puerto Water District, Eastside Water District, Modesto Irrigation District, Oakdale Irrigation District, Patterson Irrigation District, Turlock Irrigation District, and West Stanislaus Irrigation District; and
- Private sources, such as development, agricultural, and other commercial or industrial interests.

The budget was established based on a detailed, resource-loaded cost estimate prepared by the County's consulting team, which is prepared to contract for the work, should the grant be awarded. The following labor and scope assumptions were incorporated into the budget.

Budget Labor and Scope Assumptions

Tasks and Subtasks	Labor Hours	Description
Task 1.0 - Project Management and Coordination	335	Project setup, coordination, and management for 18 months, including: • Project setup and Project Execution Plan development; • Meetings and teleconferences; • Monthly and quarterly status reports; and • Project controls.
Task 2.1 - Initial Study Preparation	206	Complete CEQA Initial Study to identify resource areas requiring additional focus/evaluation in the PEIR.
Task 2.2 - Scoping Activities	271	Perform scoping activities including notifications, three scoping meetings, and compilation and review of comments.
Task 3.0 - Description of Affected Environment	441	Prepare a description of the affected environment, including: • A general description of the setting or each of the 17 resource areas to be evaluated by the PEIR; • Surface and groundwater resources and trends; • Agricultural land uses and trends; • Biological resources that are groundwater dependent; • Population trends and their relationship to water resources; • Soils and geology, as they relate to surface and groundwater resources.
Task 4.0 - Project Description	8	Refine the existing description of the well permitting program under the Groundwater Ordinance as the basis for impact assessment.
Task 5.1 - Modeling Plan Development	50	Review available models, develop modeling plan, and consult with stakeholders.
Task 5.2 - Hydrologic and Water Budget Data Compilation	340	Compile data regarding water budget elements from publically available data, compile data regarding surface water discharges, and evaluate surface water discharge using the CalLite model.

Tasks and Subtasks	Labor Hours	Description
Task 5.3 - Geologic and Hydrogeologic Data Compilation	130	Compile geologic and hydrogeologic data for model updates.
Task 5.4 - Model Construction	350	Construct the model according to final Modeling Plan; update period of coverage of existing models as needed.
Task 5.5 - Model Calibration	330	Calibrate model to observed data including groundwater levels, stream discharge, drawdown, groundwater gradients, streamflow gains and losses, etc.
Task 5.6 - Model Forecasts and Reporting	540	Conduct forecast modeling and prepare a report, including: • Run forecast scenarios for baseline conditions, GSP implementation, implementation of 35% unimpaired flow, climate change, implementation of the well permitting program, and mitigation. • Prepare a Technical Memorandum presenting the methods, results and conclusions of the hydrologic modeling program.
Task 6.1 - Direct Hydrological, Water Supply and Water Quality Impacts	180	Evaluate and describe direct hydrological, water supply, and water quality impacts, including the following: • Regional Drawdown, Groundwater Storage Depletion, Surface Water Depletion and Groundwater Quality; • Land Subsidence; • Groundwater Dependent Ecosystems; • Agricultural Resources; and • Utilities and Service Systems.
Task 6.2 - Other Impacts	133	Identify and describe non-hydrologic and indirect impacts, including: • Air Resources (including Greenhouse Gases (GHG)) • Biological Resources; • Cultural Resources; • Land Use and Planning; • Other Impacts; and • Cumulative Impacts.
Task 7.0 - Mitigation Monitoring and Reporting Program	63	Prepare a Mitigation Monitoring and Reporting Program that identifies the kinds of investigations and monitoring that will be required to address potential impacts and data gaps identified by the PEIR, and that identifies the kinds of mitigation measures that may be studied and implemented by the County or project applicants.
Task 8.0 - Programmatic EIR Preparation	518	Prepare and process the PEIR, including the following: • Prepare an Administrative Draft PEIR; • Prepare and issue a Draft PEIR; • Compile and respond to comments; • Prepare and issue a Final PEIR; and • Complete required filings and notifications.
Task 9.0 - Findings of Fact and Statement of Overriding Considerations	11	Prepare the Findings of Fact and, if necessary a Statement of Overriding Considerations, to support certification of the PEIR by the County Board of Supervisors.
Task 10.0 - GSA Support	332	GSA support during and after formation, including: • Support outreach, data sharing and communications; • Assess model forecast evaluations to make preliminary determinations regarding areas with undesirable results, cross-boundary groundwater fluxes, monitoring programs, management tools, and sustainable yield; and • Conduct up to five workshops with GSAs forming within the County to discuss issues, data gaps and opportunities identified by the hydrologic model and PEIR.
TOTAL PROJECT LABOR HOURS	4,236	

Table 4 - Project Budget Programmatic EIR for Implementation of the Stanislaus County Groundwater Ordinance					
Tasks		(a) Requested Grant Amount	(b) Local Cost Share: Non-State Fund Source [1]	(c) Other Cost Share	(d) Total Cost
(a)	Task 1 - Project Management and Coordination	$0.00	$0.00	$52,500.00	$52,500.00
(b)	Task 2.1 - Initial Study	$10,600.00	$10,600.00	$5,300.00	$26,500.00
(c)	Task 2.2 - Scoping Activities	$18,350.00	$18,350.00	$0.00	$36,700.00
(d)	Task 3 - Description of Affected Environment	$25,000.00	$25,000.00	$6,100.00	$56,100.00
(e)	Task 4 - Project Description	$0.00	$0.00	$1,100.00	$1,100.00
(f)	Task 5.1 - Modeling Plan Development	$3,450.00	$3,450.00	$0.00	$6,900.00
(g)	Task 5.2 - Hydrologic and Water Budget Data Compilation	$22,050.00	$22,050.00	$0.00	$44,100.00
(h)	Task 5.3 - Geologic and Hydrogeologic Data Compilation	$9,250.00	$9,250.00	$0.00	$18,500.00
(i)	Task 5.4 - Model Construction	$24,150.00	$24,150.00	$0.00	$48,300.00
(j)	Task 5.5 - Model Calibration	$22,950.00	$22,950.00	$0.00	$45,900.00
(k)	Task 5.6 - Model Forecasts and Reporting	$36,400.00	$36,400.00	$0.00	$72,800.00
(l)	Task 6.1 - Direct Hydrological, Water Supply and Water Quality Impacts	$11,100.00	$11,100.00	$0.00	$22,200.00
(m)	Task 6.2 - Other Impacts	$0.00	$0.00	$18,200.00	$18,200.00
(n)	Task 7 - Mitigation Monitoring and Reporting Program	$5,000.00	$5,000.00	$0.00	$10,000.00
(o)	Task 8 - Program EIR Preparation	$38,850.00	$38,850.00	$0.00	$77,700.00
(p)	Task 9 - Findings of Fact and Statement of Overriding Considerations	$0.00	$0.00	$1,800.00	$1,800.00
(q)	Task 10 - GSA and GSP Support	$22,850.00	$22,850.00	$0.00	$45,700.00
(r)	Grand Total	$250,000.00	$250,000.00	$85,000.00	$585,000.00

Notes: Local matching funds will be provided by Stanislaus County and other stakeholders, anticipated to include:

- Cities: Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank, Turlock, and Waterford;
- Agencies: Central California Irrigation District, Del Puerto Water District, Eastside Water District, Modesto Irrigation District, Oakdale Irrigation District, Patterson Irrigation District, Turlock Irrigation District, and West Stanislaus Irrigation District; and
- Other private sources, such as development, agricultural and other commercial and industrial interests.

ATTACHMENT 5:
SCHEDULE

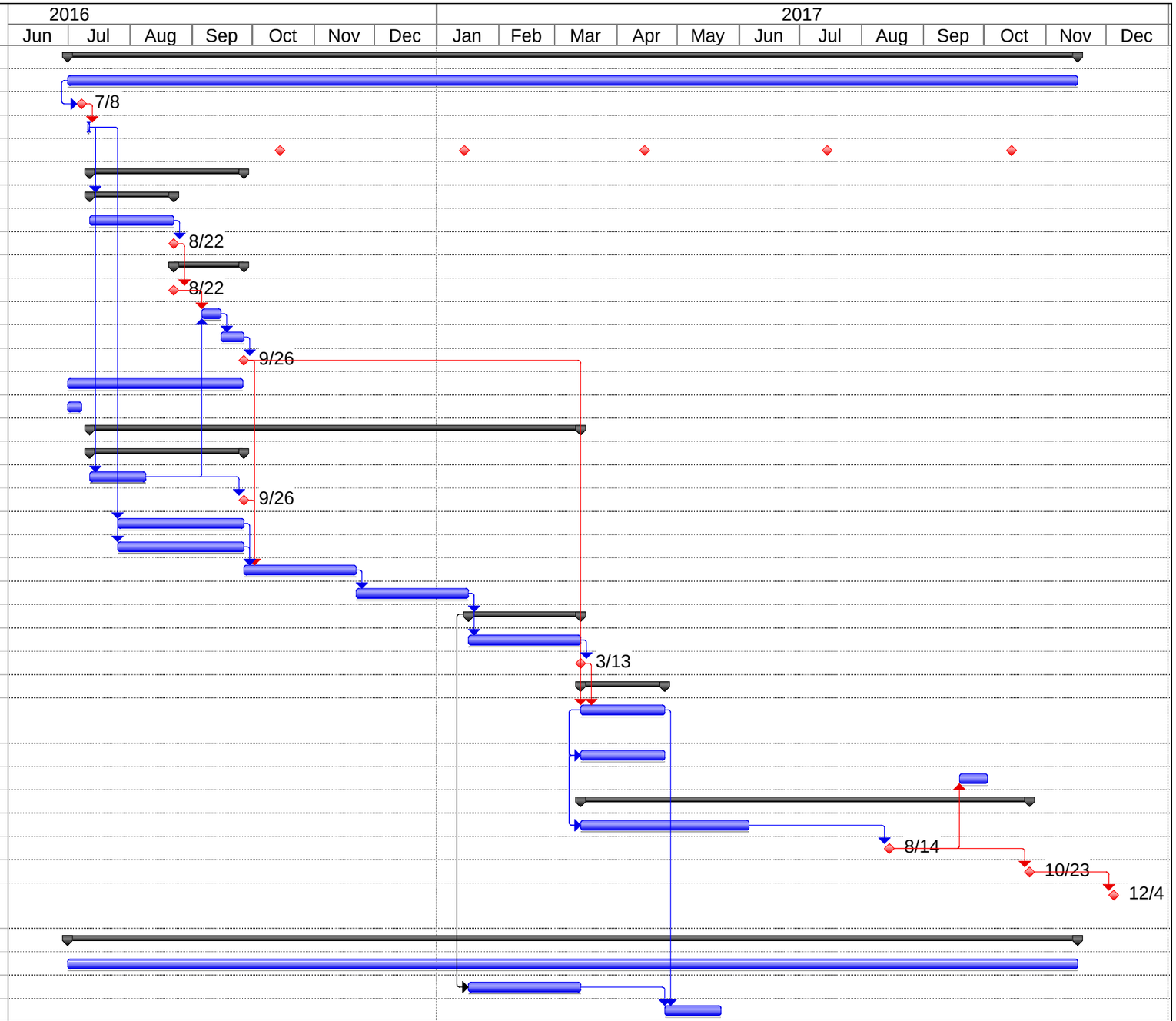
Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

1.0 SCHEDULE DESCRIPTION

The Programmatic Environmental Impact Report (PEIR) for the Stanislaus County Groundwater Ordinance is a high-level programmatic review document that will require coordination with a relatively large number of stakeholders, compilation of a large, countywide dataset, construction and calibration of a groundwater-surface water flow model, preparation of the PEIR document, and compliance with CEQA-mandated processes and public review schedules. The schedule proposed for the project assumes completion of the work over an approximately 18 month implementation schedule. Key scheduling considerations in order to assure timely completion include the following:

- Coordination of the project with stakeholders in the County will take advantage of existing forums in which the County is already actively coordinating with stakeholders regarding compliance with the Sustainable Groundwater Management Act (SGMA), as well as implementation of this work scope. Coordination and data sharing will be continuous; however, the CEQA scoping process and development of a Groundwater Modeling Plan during the first three months of project implementation will help to further assure refined scoping and broad acceptance of the PEIR.
- Data compilation will start shortly after project inception and continue over the three-month scoping and stakeholder outreach period, with completion scheduled to coincide with adoption of a final Groundwater Modeling Plan. The data that will be used are publically available and will build on extensive work completed by the County, the United States Geological Survey (USGS), the Department of Water Resources (DWR), and various local water agencies. As such, three months is considered adequate for data compilation for this project.
- Development of a countywide groundwater-surface water flow model will start after adoption of a final Groundwater Modeling Plan and will build on existing groundwater flow models developed for various portions of the County. In support of this application, the County's hydrogeological consulting team has developed a detailed conceptual approach that can be implemented well within the scheduled five-month period for this task. Forecast scenarios evaluated with the completed model are scheduled to be completed over a period of two months.
- Preparation of PEIR sections will begin with description of the affected environment shortly after project inception. Preparation of a Technical Memorandum regarding the hydrologic modeling study is included in the modeling task. After completion of the modeling task, Impact Analysis and preparation of an Administrative Draft PEIR is scheduled to be completed over a period of three months. A public Draft PEIR is scheduled to be released two months later. Public review, response to comments, development of a Mitigation Monitoring and Reporting Program (MMRP), and release of a Final PEIR is scheduled to be completed within a two-and-a-half month period.
- Communication, data sharing, and other support for GSAs during formation and after they are formed will take place throughout the project. Workshops with GSAs to present and discuss findings pertinent to their jurisdictions is scheduled to occur in the early period after GSA formation, and will be useful to GSAs in planning further studies needed for SGMA compliance.

ID	Task Name	Start	Finish
1	Task 1.0 - Project Management and Coordination	7/1/16	11/16/17
2	Project Management and Coordination	7/1/16	11/16/17
3	Project Plan	7/8/16	7/8/16
4	Kickoff Meeting	7/11/16	7/11/16
5	Quarterly Status Reports	10/15/16	10/15/17
11	Task 2.0 - Programmatic EIR Scoping	7/12/16	9/26/16
12	Task 2.1 CEQA Initial Study	7/12/16	8/22/16
13	Prepare Initial Study	7/12/16	8/22/16
14	Issue Initial Study	8/22/16	8/22/16
15	Task 2.2 Scoping Process	8/22/16	9/26/16
16	File NOP	8/22/16	8/22/16
17	Scoping Meetings	9/6/16	9/15/16
18	Compile/Review Comments	9/15/16	9/26/16
19	Final Workplan	9/26/16	9/26/16
20	Task 3.0 - Descrition of Affected Environment	7/1/16	9/26/16
21	Task 4.0 - Project Description	7/1/16	7/7/16
22	Task 5.0 - Hydrologic Modeling	7/12/16	3/13/17
23	Task 5.1 - Modeling Plan Development	7/12/16	9/26/16
24	Review Consultation and Draft Plan Development	7/12/16	8/8/16
25	Final Modeling Plan	9/26/16	9/26/16
26	Task 5.2 - Hydrologic and Water Budget Data Compilation	7/26/16	9/26/16
27	Task 5.3 - Geologic and Hydrogeologic Data Compilation	7/26/16	9/26/16
28	Task 5.4 - Model Construction	9/27/16	11/21/16
29	Task 5.5 - Model Calibration	11/22/16	1/16/17
30	Task 5.6 - Model Forecasts and Reporting	1/17/17	3/13/17
31	Forecast Modeling and Data Analysis	1/17/17	3/13/17
32	Technical Memorandum	3/13/17	3/13/17
33	Task 6.0 - Impact Analysis	3/14/17	4/24/17
34	Task 6.1 - Direct Hydrological, Water Supply and Water Quality Impacts	3/14/17	4/24/17
35	Task 6.2 - Other Impacts	3/14/17	4/24/17
36	Task 7.0 - Mitigation Monitoring and Reporting Program	9/19/17	10/2/17
37	Task 8.0 - Programmatic EIR Preparation	3/14/17	10/23/17
38	Administrative Draft PEIR	3/14/17	6/5/17
39	Draft PEIR	8/14/17	8/14/17
40	Final PEIR	10/23/17	10/23/17
41	Task 9.0 - Findings of Fact and Statement of Overriding Considerations	12/4/17	12/4/17
42	Task 10.0 - GSA Support	7/1/16	11/16/17
43	Coordination and Data Sharing	7/1/16	11/16/17
44	Supplemental Forecast Modeling	1/17/17	3/13/17
45	GSA Workshops	4/25/17	5/22/17



Programmatic EIR for Implementation of the Stanislaus County Groundwater Ordinance

Task

Milestone Deliverable

Summary

ATTACHMENT 6: PROGRAM PREFERENCES

Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance

1.0 PROGRAM PREFERENCES

Table 1 summarizes the alignment of the proposed project with Program Preferences referenced in the Department of Water Resource (DWR) Grant Program Guidelines.

Table 1: Summary of Project Alignment with Program Preferences

Program Preference	Project Benefits
Leverage funds (Water Code §79707.(b)	The project will leverage funds from other local public and private stakeholders in addition to the County to provide broad benefits for County-wide water management. Not only will the project benefit the County and well permit applicants, but the information developed will assist GSAs and stakeholders throughout the County during the early stages of post-GSA formation sustainability planning. Letters of support received to date from key stakeholders are attached.
Enhancement of local water supply reliability (Water Code §79771.(b)(3)	The project will enhance local water supply reliability by fostering sustainable well permitting practices and by disseminating information key to regional groundwater sustainability planning.
Maximize recharge of vulnerable, high use groundwater basins and optimize groundwater supplies (Water Code §79771.(b)(4)	The project will include a preliminary evaluation of the effectiveness of the County's proposed Flood Control and Groundwater Recharge Master Plan to divert flood flows to recharge stressed groundwater subbasin areas. This evaluation is key to moving forward with much needed mitigation to optimize groundwater supplies.

2.0 STATEWIDE PRIORITIES

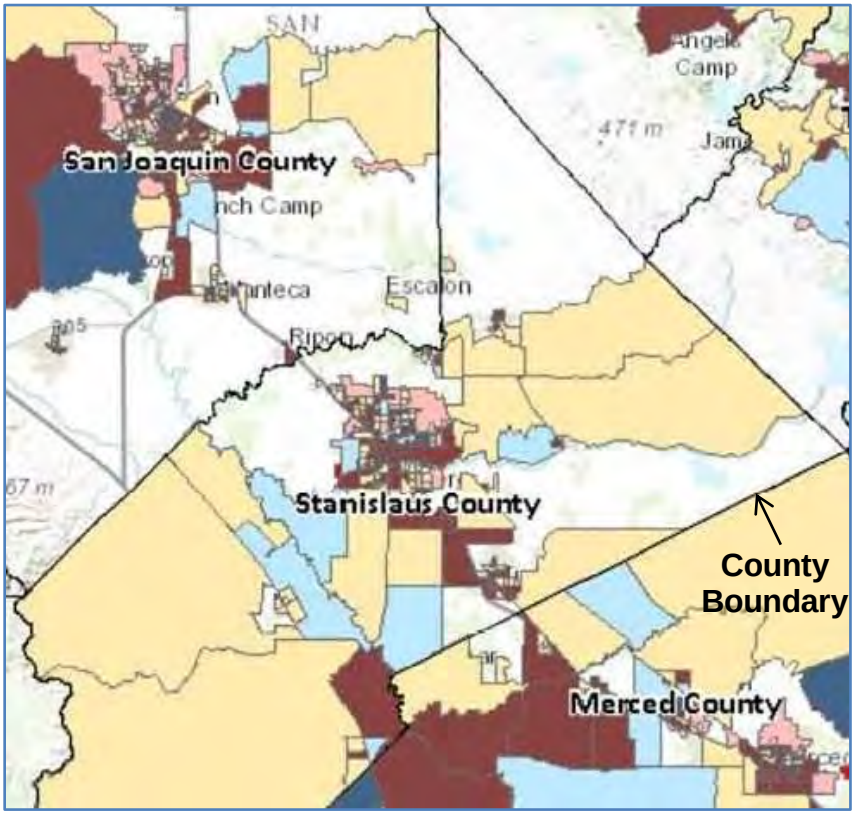
Table 2 summarizes the alignment of the proposed project with Program Preferences referenced in the DWR Grant Program Guidelines.

Table 2: Summary of Project Alignment with Statewide Priorities

Program Preference	Project Benefits
Direct Benefit to a Disadvantaged Community (DAC)	The stressed groundwater basins underlying the County provide irrigation, municipal, and domestic water supplies to a large number of DACs. Maps showing the locations of DACs within the County are included in the attached figures. Implementation of the project will help to decrease the likelihood of well interference with domestic wells, which has been a problem in many DACs. It will also provide key data that will focus and support groundwater management planning so avoid undesirable results in these communities, and enhance water supply reliability.
Participation in the Formation of Groundwater Sustainability Agencies (GSAs)	Through the project, the County will engage in planning, data sharing and dialog that will support the formation of GSAs and foster collaborative and constructive dialog based on technical data regarding issues, opportunities and data gaps. The data gathered and analyses performed will directly benefit these GSAs as they plan for studies and other activities to prepare Groundwater Sustainability Plans (GSPs).

FIGURES

Figure 1: Distribution of DACs within Stanislaus County



(Prepared using the DWR DAC Mapping Tool, https://gis.water.ca.gov/app/dacs/)

- DISADVANTAGED COMMUNITY BLOCK GROUP
- SEVERELY DISADVANTAGED COMMUNITY BLOCK GROUP
- DISADVANTAGED COMMUNITY TRACT
- SEVERELY DISADVANTAGED COMMUNITY TRACT
- DISADVANTAGED COMMUNITY PLACE

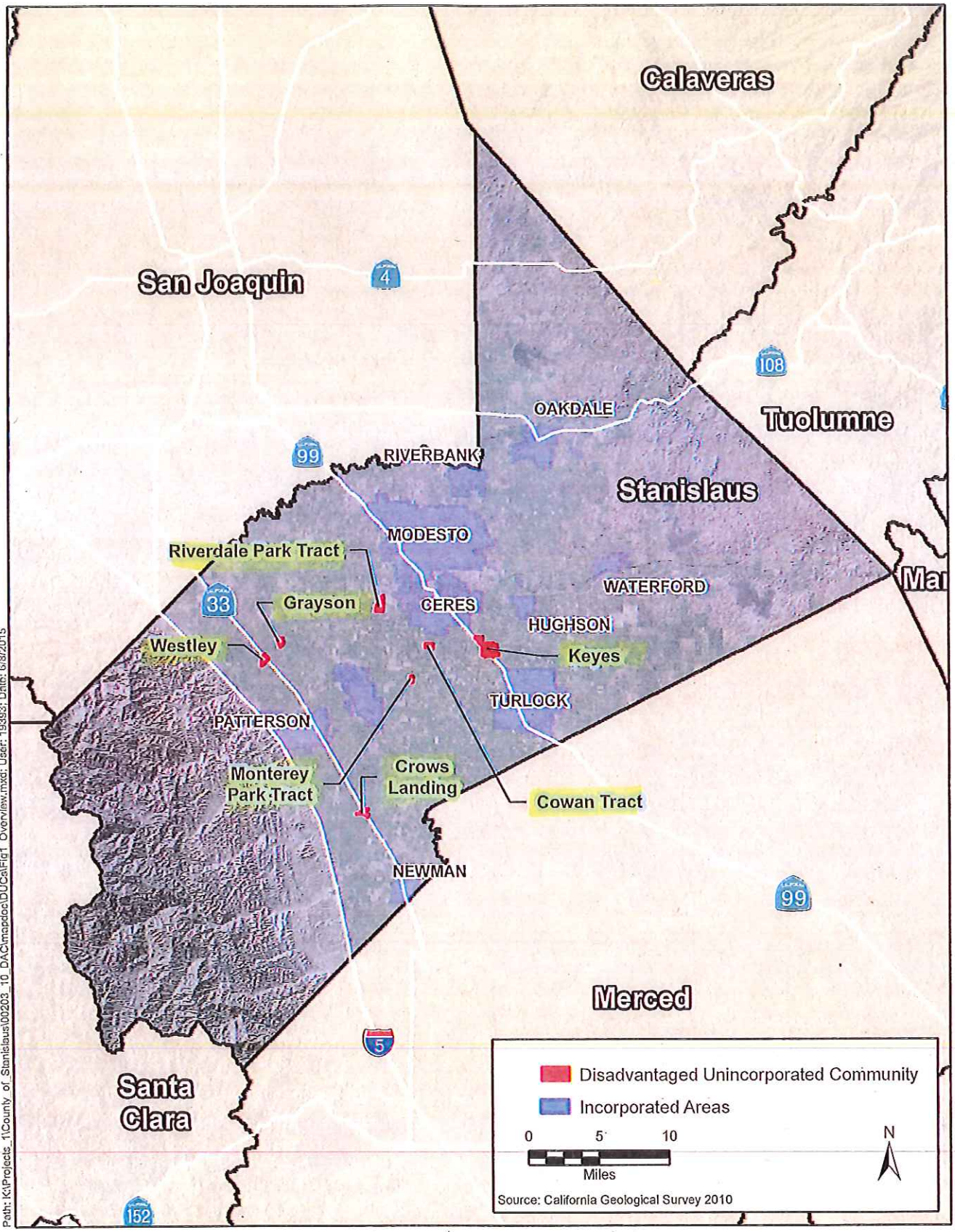


Figure
Disadvantaged Unincorporated Communities in Stanislaus County

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

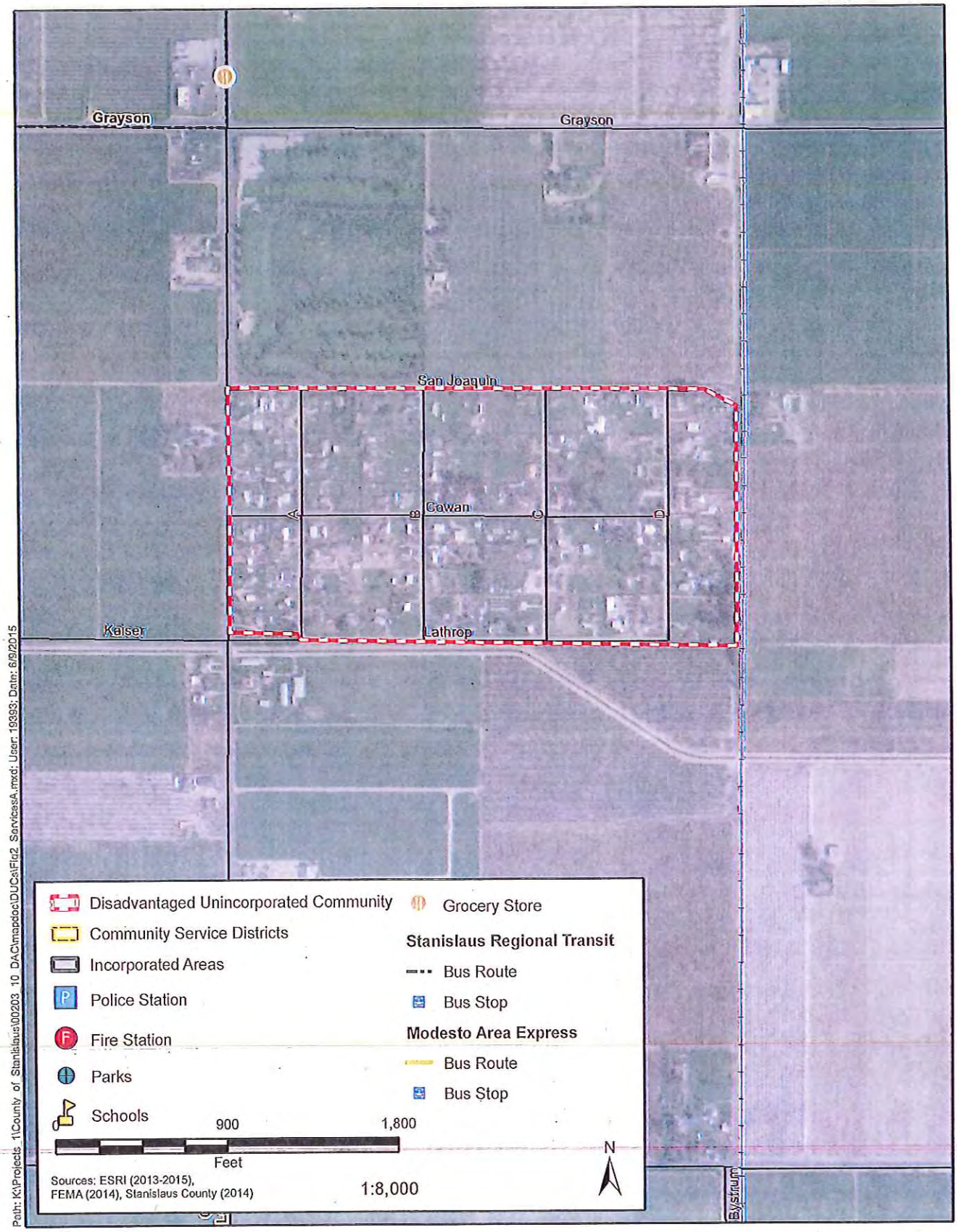


Figure _

Cowan Tract Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

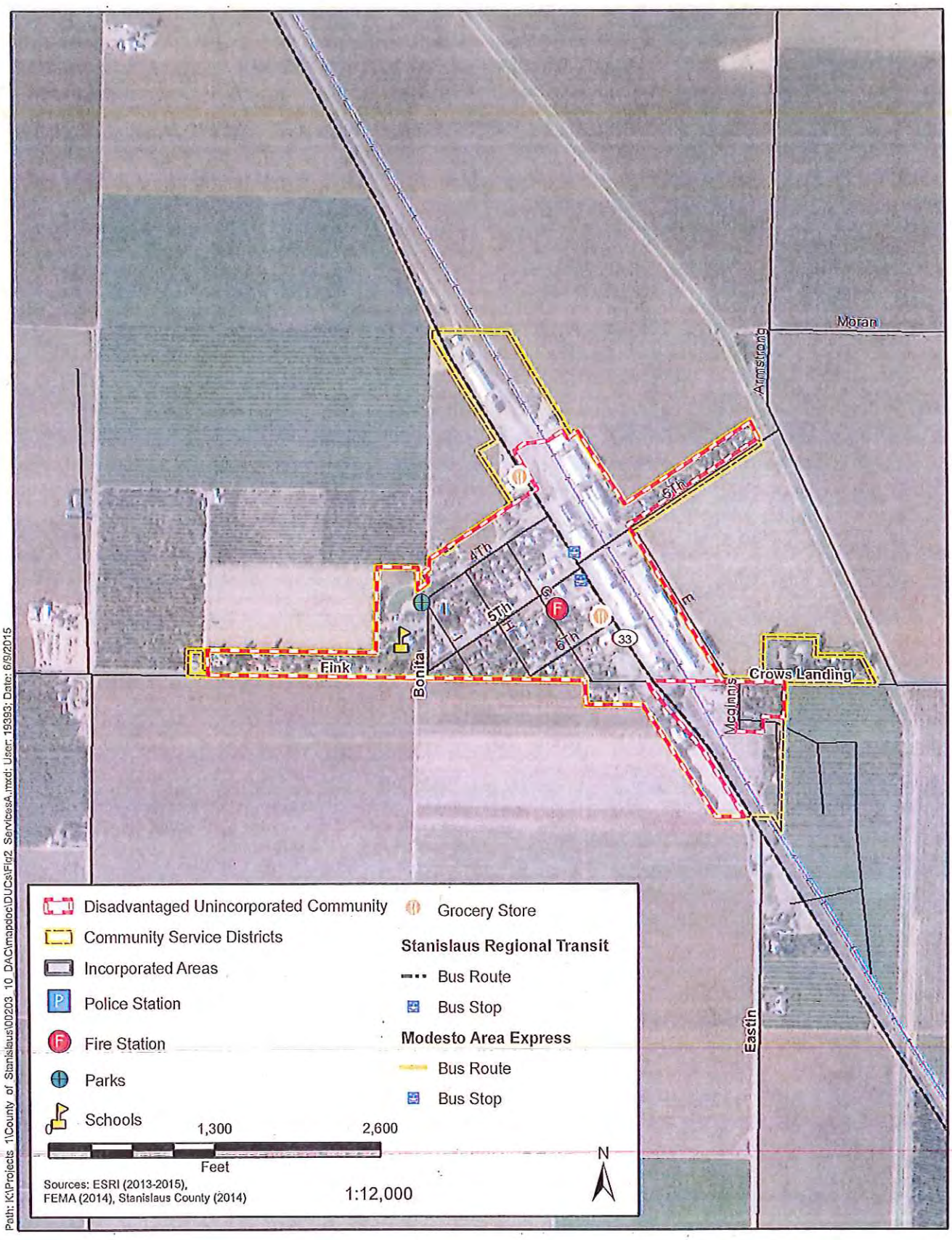


Figure
Crows Landing Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

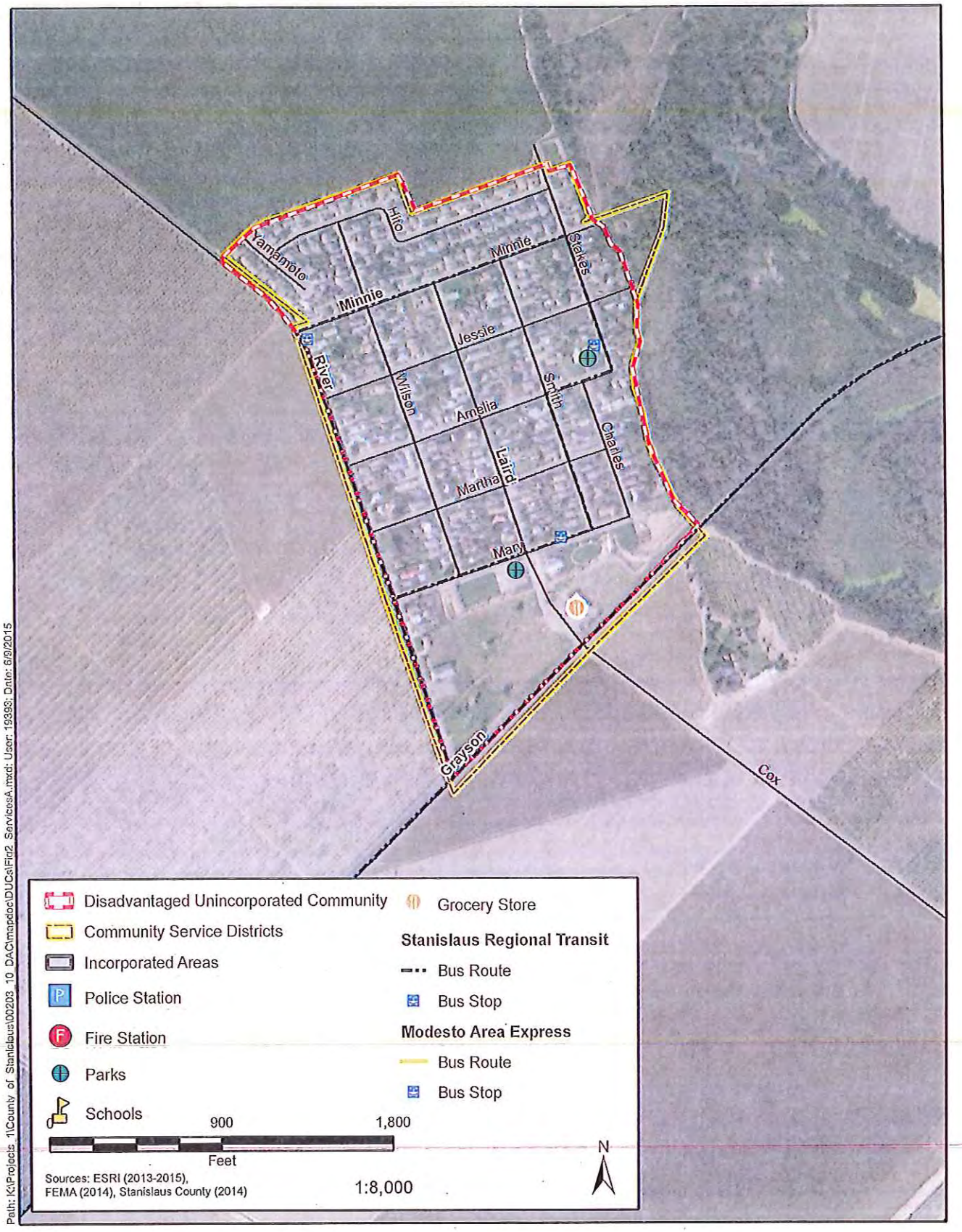


Figure
Grayson Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

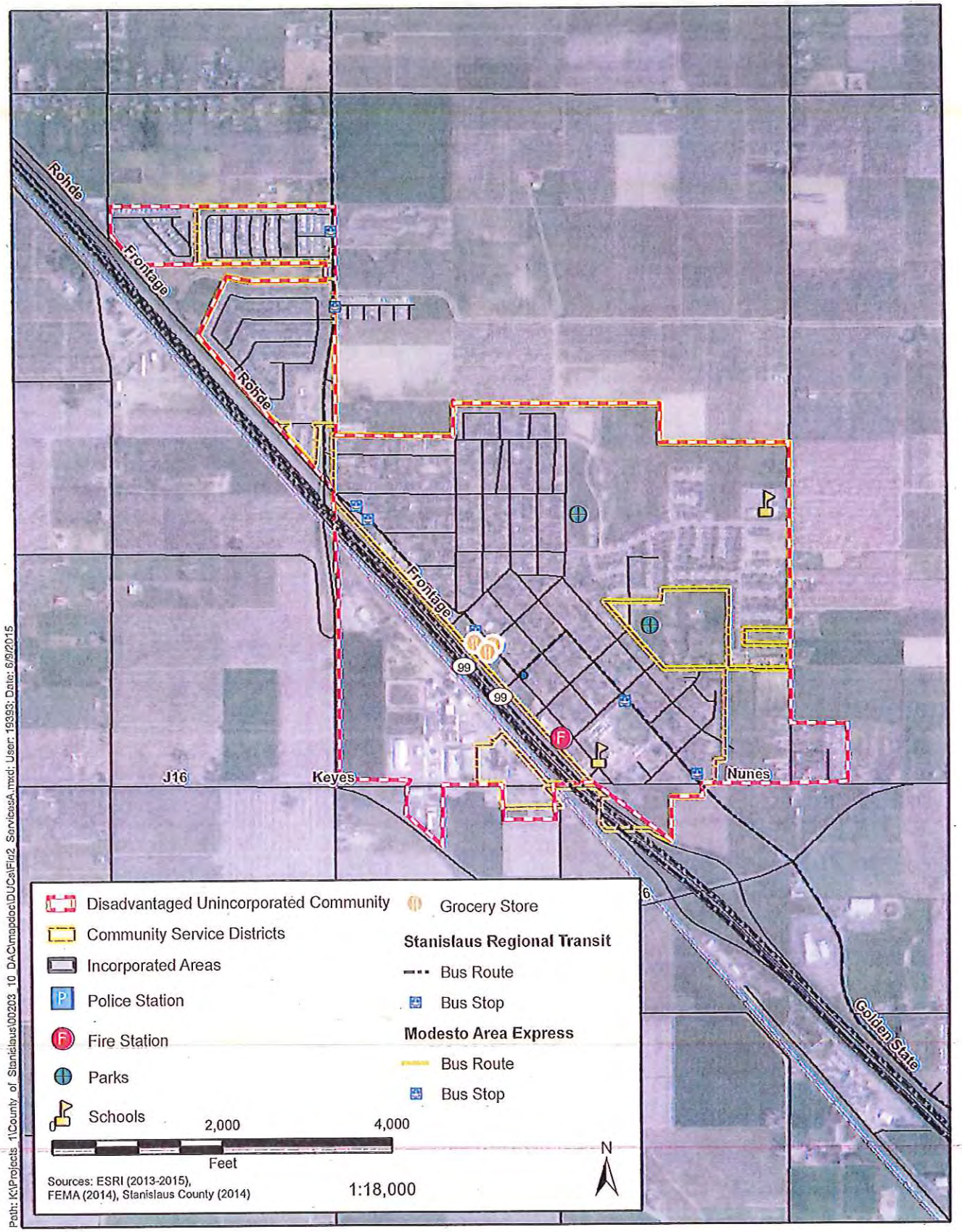


Figure
Keyes Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

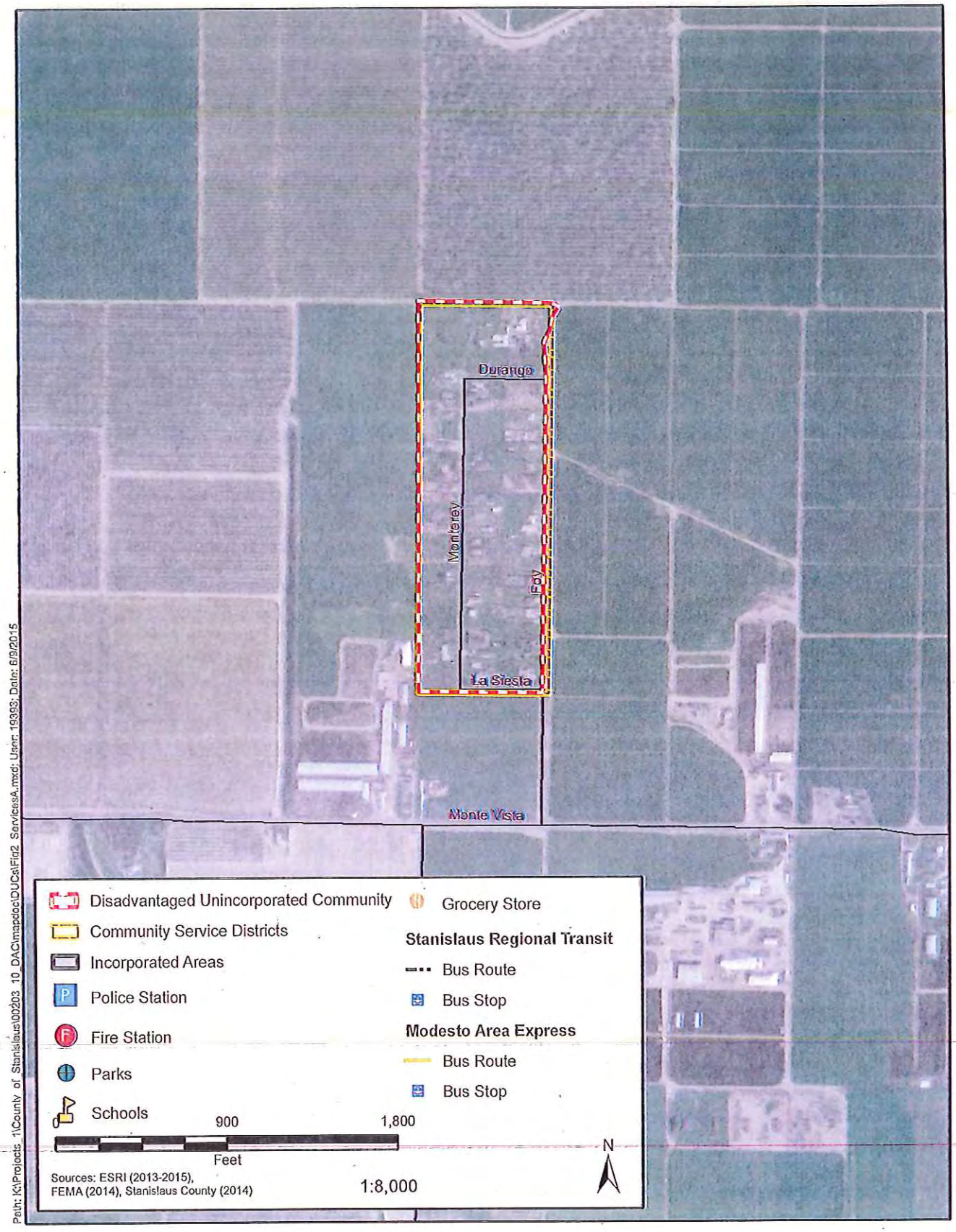
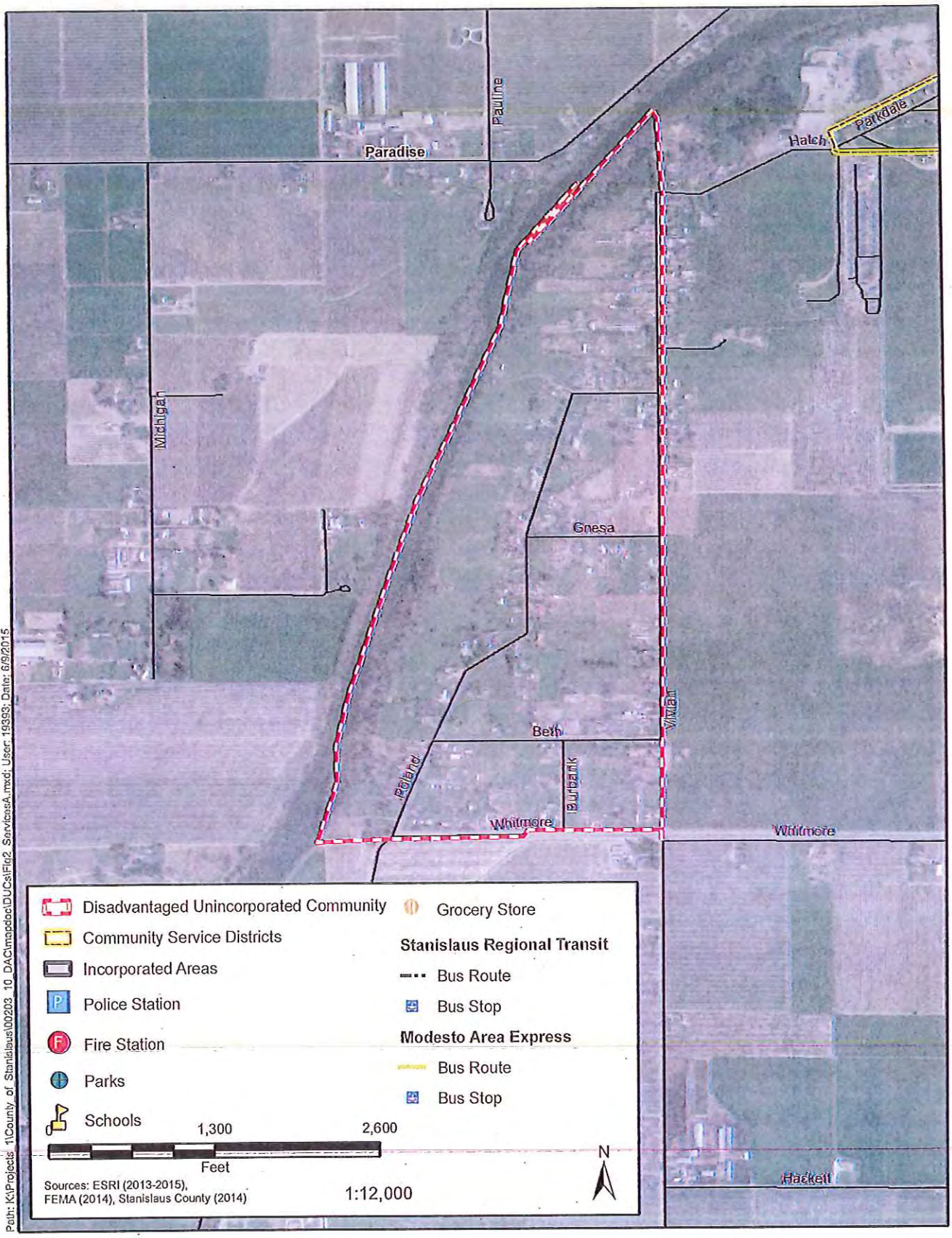


Figure
Monterey Park Tract Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)



Figure

Riverdale Park Tract Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

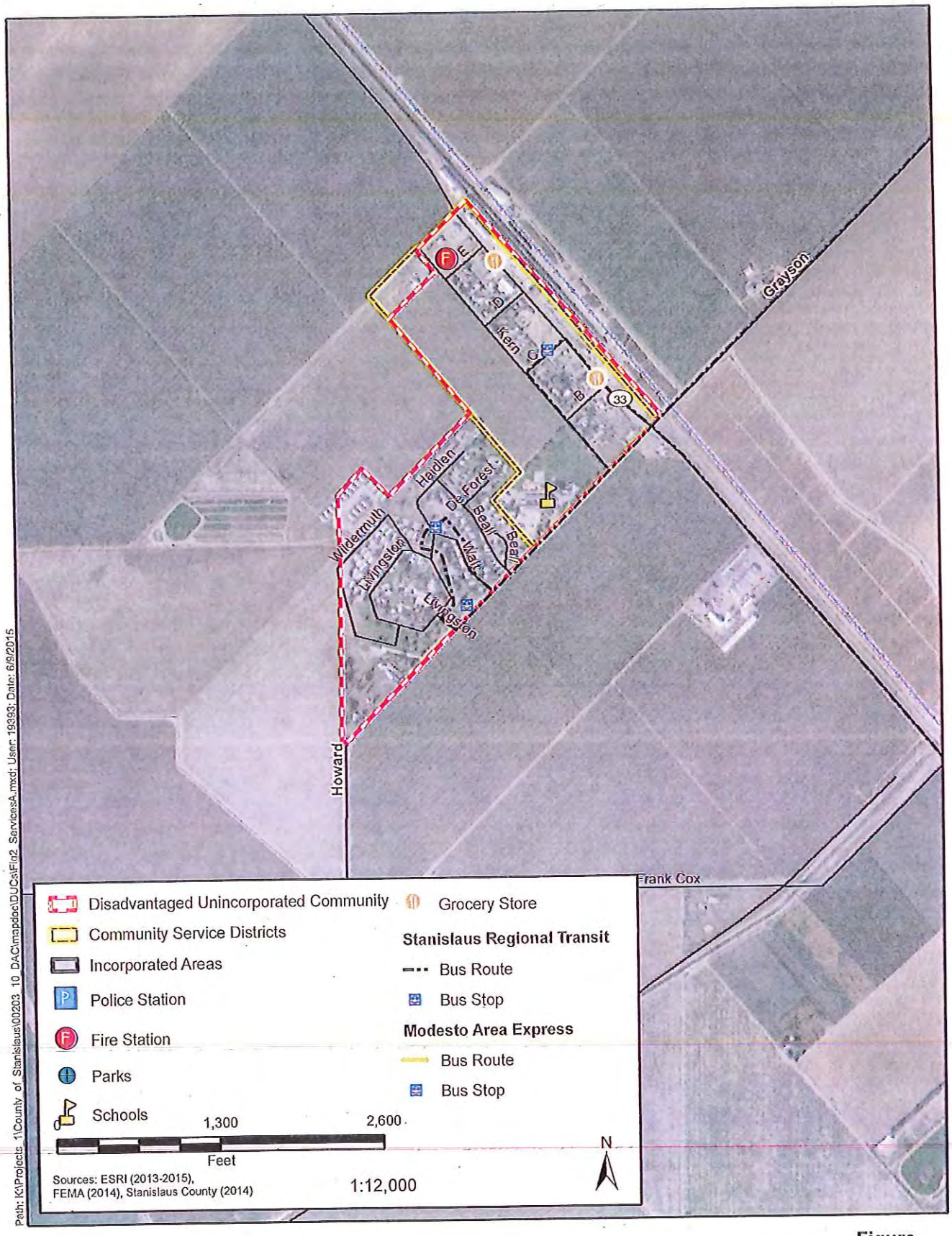


Figure
Westley Disadvantaged Unincorporated Community

(From "Stanislaus County Disadvantaged Unincorporated Communities Report," prepared for Stanislaus County Department of Planning and Community Development by ICF International, in progress)

LETTERS OF SUPPORT

Stanislaus County
Water Advisory Committee

3800 Cornucopia Way, Suite C, Modesto, CA 95358

To Whom It May Concern,

The Stanislaus County Water Advisory Committee (WAC) is a policy advisory body to the County Board of Supervisors that includes technical experts, business leaders and elected officials representing many of the key groundwater stakeholders in the County, including municipalities, water districts, the agricultural industry, the water well industry, as well as the general population. Acting in its role to evaluate the status of the County's groundwater resources, identify and develop programs and practices that ensure a reliable and sustainable groundwater supply for the benefit of its citizens, and make recommendations to the Board of Supervisors, the WAC strongly supports the County's application for a Sustainable Ground Water Planning Grant for Counties with Stressed Basins to help fund preparation of a Programmatic Environmental Impact Report for Implementation of the Stanislaus County Groundwater Ordinance.

Of the four groundwater subbasins that underlie the County, one has been designated as being in a state of critical overdraft by the Department of Water Resources (DWR) and another has been proposed by DWR to be included in the list of critically overdrafted basins. The remaining two basins, although they have a long history of sustainable management, are experiencing new stresses due to increasing groundwater demand related to the conversion of range land for agricultural production that are resulting in groundwater storage depletion and may affect surface water flows. In response to these conditions, in November 2014, the County was the first in the state to adopt a Groundwater Ordinance with well permitting requirements deliberately aligned with the requirements of the Sustainable Groundwater Management Act. Guidelines for implementation of the new well permitting program were adopted in August 2015. To streamline the application and review process for new wells, further support implementation of this new program, and develop a foundation for the development of Groundwater Sustainability Plans (GSPs), Stanislaus County is planning to prepare a Programmatic Environmental Impact Report (Programmatic EIR).

The Programmatic EIR will provide multiple benefits that will promote sustainable groundwater management in the County. The project will include the use of a County-wide groundwater model to examine the hydrologic and other effects of implementing the new well permitting program under current and reasonably foreseeable water supply and demand scenarios. The results of this analysis will be used to develop a framework of program-level mitigation measures, study requirements, and monitoring recommendations. Thus, the Programmatic EIR will serve as a basis to refine and streamline the well permitting program, while also providing data that will be useful for County-wide groundwater management issues identification, gap analysis, and opportunity assessment. The development of this information will come at a key time in groundwater management planning in the County – the work will be scoped and implemented cooperatively with all local groundwater stakeholders in the County as they prepare for the formation of Groundwater Sustainability Agencies

(GSAs). Then, completion of the work will coincide with the early stages of developing GSPs for the groundwater basins in the County.

If funded, the proposed work will leverage the grant provided by the state with matching funds from multiple local stakeholders to promote broad water management benefits, and will develop information that can be used to help enhance local water supply reliability and optimize groundwater supplies.

If you have any questions, please contact me directly at (209) 522-7278 or via email at WayneZ@StanFarmBureau.org. Thank you.

Sincerely,

Wayne D. Zipser

Wayne Zipser
Chairperson
Stanislaus County Water Advisory Committee

Executive Director
Stanislaus County Farm Bureau

*Underlined items are Action Items subject to vote as described in the committee by-laws.

City of Modesto
Office of the City Manager
1010 Tenth Street, Suite 6100
Modesto, CA 95354

December 3, 2015

Mr. Terry Withrow, Chairman
Stanislaus County Board of Supervisors
1010 Tenth Street, Suite 6500
Modesto, CA 95354

RE: Letter of Support for Programmatic Environmental Impact Report Grant Study

Dear Mr. Withrow,

The City of Modesto fully supports the development of the proposed Programmatic Environmental Impact Report (PEIR). The PEIR as proposed will provide benefits for all parties within Stanislaus County involved in groundwater management. More importantly it will promote the achievement of sustainable groundwater management throughout the County.

We understand the primary goal of the PEIR is to enhance the County well permitting process, however, the data collected provides value to all local groundwater stakeholders as we develop Groundwater Sustainability Plans. Therefore, the City intends to be included as a stakeholder that also contributes funding towards the PEIR.

If you have any questions or require further information please contact me at (209) 577-5224 or Larry Parlin, Director of Utilities at (209) 577-5261.

Sincerely,

James N. Holgersson
City Manager – City of Modesto

cc: Bill Zoslocki, Councilmember - City of Modesto
Walter Ward, Stanislaus County Groundwater Manager

December 4, 2015

The Honorable Terry Withrow, Chairman
Stanislaus County Board of Supervisors
1010 10th Street, Suite 6800
Modesto CA 95354

RE: Letter of Support – Sustainable Groundwater Planning Grant.

Dear Chairman Withrow:

The City of Newman would like to thank you and your staff for the leadership you have demonstrated on the effort to establish sustainable groundwater management practices on a countywide level. To continue this endeavor, the City wholly supports the submittal of an application for a Sustainable Groundwater Planning Grant available to 'Counties with Stressed Basins.'

The City understands and supports a grant application for the preparation of a Programmatic Environmental Impact Report to streamline implementation of a countywide sustainable groundwater management program. This type of document would be valuable tool and help to provide information and data which could be helpful to stakeholders in developing groundwater sustainability plans that are consistent with State regulations.

We hope the State recognizes the important and beneficial effort that is occurring in Stanislaus County and awards a Sustainable Groundwater Planning Grant to the region. Thank you again for your leadership on this important issue that affects all sectors of life in Stanislaus County.

Sincerely,

Michael E. Holland
City Manager

City of Riverbank

6707 Third Street · Riverbank, CA 95367-2305
Phone: (209) 869-7101 · Fax: (209) 869-7100

November 25, 2015

The Honorable Terry Withrow, Chairman
Stanislaus County Board of Supervisors
1010 10th Street, Suite 6800
Modesto, CA 95354

Subject: Support for a Sustainable Groundwater Planning Grant Application

Dear Chairman Withrow,

The City of Riverbank is pleased to support the County of Stanislaus as it leads the continuing effort to improve groundwater management practices in the County. As a result, the City fully supports the submittal of an application to the Department of Water Resources for a Sustainable Groundwater Planning Grant available to "Counties with Stressed Basins."

The proposal to use the grant for a Programmatic Environmental Impact Report (EIR) to enhance and streamline the implementation of the groundwater well permitting requirements adopted to be in alignment with the requirements of the Sustainable Groundwater Management Act. Riverbank concurs that the Programmatic EIR would be a valuable tool to help refine and streamline the well permitting program, while providing valuable data that would be useful for County-wide groundwater management activities. This information could then be used by local groundwater stakeholders for the development of the Groundwater Sustainability Plans (GSP) consistent with state law.

A Programmatic EIR would provide multiple benefits for all parties and would promote the achievement of sustainable groundwater management throughout the County. The opportunity to leverage a State grant program with local cost sharing between the County, Cities, Special Water Districts, as well as Private Agricultural and Business Interests, provides a cost effective way to meet State and Local groundwater management goals.

Thank you for your leadership in the important work of advancing groundwater management practices in Stanislaus County.

Sincerely,

Jill Anderson
City Manager

cc: Mayor O'Brien and Members of the City Council

EASTSIDE WATER DISTRICT

November 24, 2015

Mr. Terry Withrow, Chair
Stanislaus County Board of Supervisors
1010 10th Street, Suite 6500
Modesto, CA 95354

Re: Letter of Support – Proposition 1 Grant Application – PEIR to Implement Groundwater Ordinance

Mr. Withrow:

The purpose of this letter is to commit formal Eastside Water District support for the above referenced application.

Stanislaus County has acted decisively during this ongoing drought, attempting to bring relief to its residents and assistance to the water agencies and other organizations that operate within its boundaries. The groundwater ordinance is now in place until the GSAs adopt a GSP for the groundwater sub-basins below the County. To comfortably implement the provisions of the groundwater ordinance and provide a series of additional benefits to the residents, water agencies, and other organizations of Stanislaus County this programmatic environment impact report is deemed necessary.

Stanislaus County and Eastside Water District (EWD) have worked cooperatively over the years to understand the conditions of the Turlock Sub-Basin. Residents over the Turlock Sub-Basin will benefit from the comprehensive planning actions that are included in your application. EWD will continue to cooperate in providing information, in-kind services, and appropriate financial support as part of the County's local cost share for this grant application.

Please contact our water consultant, Kevin Kauffman should you have any questions or require additional information.

Sincerely,

Al Rossini by KK

Al Rossini, Board President

cc: Board of Directors and Water Consultant

Office of the City Manager
2720 2nd Street
Ceres, CA 95307
(209) 538-5755

December 7, 2015

Supervisor Terry Withrow, Chairman
Stanislaus County Board of Supervisors
District Three
1010 10th Street, Suite 6800
Modesto, CA 95354

Subject: **Letter of Support for application to the Department of Water Resources for funding under a Sustainable Groundwater Planning Grant Program for Counties with Stressed Basins.**

The City of Ceres supports the efforts of Stanislaus County in the preparation of a Programmatic Environmental Impact Report (Programmatic EIR) to promote the achievement of sustainable groundwater management throughout the County.

The preparation of the Programmatic EIR will provide numerous benefits to the region from assisting the permitting processes to the implementation of Groundwater Sustainability Agencies (GSAs). The City of Ceres is committed to assisting in the long term goals of these efforts and strongly supports the County's efforts to obtain grant funding to assist in covering the costs associated with this critical effort.

Thank you for your time and consideration on this matter.

Sincerely,

Toby Wells, P.E.
City Manager

Agricultural Preservation Alliance, Inc. (APA)
1800 E. Oakdale Rd, Suite E-2
Modesto, CA 95355

November 25, 2015

Mr. Terry Withrow, Chair
Stanislaus County Board of Supervisors
1010 10th Street, Suite 6500
Modesto, CA 95354

Re: Letter of Support – Proposition 1 Grant Application – PEIR to Implement Groundwater Ordinance

Supervisor Withrow:

The purpose of this letter is to formally commit Agricultural Preservation Alliance (APA) support for the above referenced application.

Stanislaus County has stepped-up to the plate during this ongoing drought, attempting to bring relief to its residents and assistance to the water agencies and other organizations that operate within its boundaries. The groundwater ordinance is in place until the GSAs adopt a GSP for the groundwater sub-basins below the County. To fully implement the provisions of the groundwater ordinance and to provide a series of additional benefits to the residents, water agencies, and other organizations of Stanislaus County this programmatic environment impact report is necessary.

The Agricultural Preservation Alliance represents landowners in the northeast portion of the County that are outside of either the Oakdale or Modesto Irrigation Districts. APA intends to continue to cooperate with Stanislaus County in its water planning efforts. APA is willing to contribute financial support toward this effort.

Please contact our water consultant, Kevin Kauffman, should you have any questions or require additional information.

Sincerely,

Dennis Wittchow, President
Agricultural Preservation Alliance

cc: Board of Directors and Water Consultant
Walt Ward

KEYES COMMUNITY SERVICES DISTRICT
5601 7TH STREET
P O BOX 699
KEYES, CA 95328

December 7, 2015

Mr. Terry Withrow, Chairman
Stanislaus County Board of Supervisors
1010 10th Street – Suite 6800
Modesto, CA 95354

Dear Mr. Withrow,

This letter is to proclaim full support from the Keyes Community Services District for Stanislaus County to apply for grant funding under a Sustainable Groundwater Planning Grant Program entitled "Counties with Stressed Basins."

Our frequent monitoring of our water table in Keyes, CA indicates that our water table has diminished considerably during the last three to four years thereby causing us great concern.

We truly are looking forward to participating in the creation of Groundwater Sustainability Agencies and the development of Groundwater Sustainability Plans.

Sincerely,

Ernie Garza
KCSD General Manager

Cc: File Copy

PEREZ FARMS

P.O. Box 97 • Crows Landing, CA 95313 • Phone: (209) 837-4701

December 2, 2015

Terry Withrow, Chairman,
Stanislaus County Board of Supervisors
1010 10th Street – Suite 6800
Modesto, CA 95354

Dear Mr. Terry Withrow,

As a director of Del Puerto Water District, I am writing this letter in support of grant funding under a Sustainable Groundwater Planning Grant Program entitled "Counties with Stressed Basins." I am in favor of proposing to prepare a Programmatic Environmental Impact Report to be funded, in part, through the state grant program mentioned above and by local cost share among the County, Cities, and Special Water Districts and Private Agricultural and Business industry interests.

The Programmatic EIR will be beneficial and will promote the achievement of sustainable groundwater management throughout the county.

Sincerely,

Earl Perez

Director of Del Puerto Water District

City of Patterson

1 Plaza, P.O. Box 667 Patterson, CA 95363
Phone: (209) 895-8010 Fax: (209) 895-8019

December 8, 2015

The Honorable Terry Withrow, Chairman
Stanislaus County Board of Supervisors
1010 10th Street, Suite 6800
Modesto, CA 95354

Subject: Support for a Sustainable Groundwater Planning Grant Application

Dear Chairman Withrow,

The City of Patterson is please to support the County of Stanislaus as it leads the continuing effort to improve groundwater management practices in the County. As a result, the City fully supports the submittal of an application to the Department of Water Resources for a Sustainable Groundwater Planning Grant available to "Counties with Stressed Basins."

The proposal to use the grant for a Programmatic Environmental Impact Report (EIR) to enhance and streamline the implementation of the groundwater well permitting requirements adopted to be in alignment with the requirements of the Sustainable Groundwater Management Act. Patterson concurs that the Programmatic EIR would be a valuable tool to help refine and streamline the well permitting program, while providing valuable data that would be useful for County-wide groundwater management activities. This information could then be used by local groundwater stakeholders for the development of the Groundwater Sustainability Plans (GSP) consistent with state law.

A Programmatic EIR would provide multiple benefits for all parties and would promote the achievement of sustainable groundwater management throughout the County. The opportunity to leverage a State grant program with local cost sharing between the County, Cities, Special Water Districts, as well as Private Agricultural and Business Interests, provides a cost effective way to meet State and Local groundwater management goals.

Thank you for your leadership in the important work of advancing groundwater management practices in Stanislaus County.

Sincerely,

Ken Irwin
City Manager

Cc: Mayor Molina and Members of the City Council