6.2.11. Speakers Bureau

Efforts should be made to conduct outreach at events and meetings that already occur (e.g. Farm Bureau meetings, Rotary Club, etc.). A list of knowledgeable presenters should be developed in the event an organization or other entity would like a presentation. Speakers Bureau engagements should be recorded on the planning project meeting calendar.

6.2.12. Existing Group Venues

Fully leverage the activities of existing groups.

- Maintain a roster of existing groups and typical meeting schedules with a nexus to GSP(s) development. Add the dates to the messaging calendar.
- The list of audiences, messages and existing groups should be referenced when there is a need to deploy information.
- Conduct informal outreach with the leaders of such groups to determine the best way to interact.
- Determine what communications channels these groups are using and equally leverage these, for example by placement of articles in newsletters.

6.2.13. Outreach Documentation

A central point of contact should be identified on the website and an outreach statistics inventory should be established that identifies dates, times, audiences and attendance. This information will be also be useful in conducting follow up with stakeholders as well as documenting outreach as part of GSP submittal guidelines.

6.3. Procedural and Legally Mandated Outreach

A discussion of SGMA outreach requirements was provided in Chapter 1 and a full list of requirements is contained in Appendix 1. One major feature of the requirements is a submission to DWR of the opportunities that interested parties will be given to participate in the GSP deliberations. The Situation Assessment provides an initial description that can be added to with additional outreach.

Following are the Required Interested Parties for the purpose of mandated outreach:

Table 9 provides a list of the mandated outreach and the timeframe in which is required.

Table 8. Mandated Outreach

Timeframe	Item
Prior to initiating plan development	1. Statement of how interested parties may contact the Agency and participate in development and implementation of the plan submitted to DWR.

Timeframe	Item
	2. Web posting of same information.
Prior to plan development	1. Must establish and maintain an interested persons list. 2. Must prepare a written statement describing the manner in which interested parties may participate in GSP development and implementation. Statement must be provided to: a. Legislative body of any city and/or county within the geographic area of the plan b. Public Utilities Commission if the geographic area includes a regulated public water system regulated by that Commission c. DWR d. Interested parties (see Section 10927) e. The public
Prior to and with GSP submission	1. Statements of issues and interests of beneficial users of basin groundwater, including types of parties representing the interests and consultation process 2. Lists of public meetings 3. Inventory of comments and summary of responses 4. Communication section in plan that includes: • Agency decision making process • ID of public engagement opportunities and response process • Description of process for inclusion • Method for public information related to progress in implementing the plan (status, projects, actions)
90 days prior to GSP Adoption Hearing	1. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must notify cities and/or counties of geographic area 90 days in advance.
90 days or less prior to GSP Adoption Hearing	2. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must: a. Consider and review comments b. Conduct consultation within 30 days of receipt with cities or counties so requesting
GSP Adoption or Amendment	1. GSP must be adopted or amended at Public Hearing.
60 days after plan submission	1. 60-day comment period for plans under submission to DWR. Comments will be used to evaluate the submission.
Prior to adoption of fees	1. Public meeting required prior to adoption of, or increase to fees. Oral or written presentations may be made as part of the meeting. 2. Public notice shall include: a. Time and place of meeting b. General explanation of matter to be considered

Timeframe	Item
	c. Statement of availability for data required to initiate or amend such fees d. Public posting on Agency Website and provision by mail to interested parties of supporting data (at least 20 days in advance) 3. Mailing lists for interested parties are valid for 1 year from date of request and may be renewed by written request of the parties on or before April 1 of each year. 4. Includes procedural requirements per Government Code, Section 6066.
Prior to conducting a fee adoption hearing.	1. Must publish notices in a newspaper of general circulation as prescribed. 2. Publication shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. 3. The period of notice begins the first day of publication and terminates at the end of the fourteenth day, (which includes the first day.)

6.4. Items for Future Consideration

This GSP(s) Coms Plan outlines an outreach effort based on project and stakeholder needs and preferences. This document has been prepared as a working draft living document and should be updated as new information and the GSP(s) development process needs are developed.

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MEASUREMENTS & EVALUATION

A guiding principle for evaluation and measurement of the Coms Plan's success is to provide regular, unbiased reporting of progress toward achieving goals. Success may be evaluated in several ways, including process measures, outcome measures, and an annual evaluation of accomplishments. Optional evaluation measures are described below.

As part of each outreach effort debrief the following process and outcome measures will be discussed and recorded in a check sheet. The check sheets will be prepared with the goal of continuous improvement rather than criticisms.

7.2. Process Measures

Process measures track progress toward meeting the goals of the Coms Plan. These include:

- Level of attendance at outreach meetings
- Shared understanding of the overarching aims, activities, and opportunities presented by different planning approaches and project activities
- Productive dialogue among participants at meetings and events
- Sense of authentic engagement; people understand why they have been asked to participate, and feel that they can contribute meaningfully
- Timely and accurate public reporting of planning milestones
- Feedback from Coordinating Body and GSA members, regulators, stakeholders, and interested parties about the quality and availability of information materials
- Level of stakeholder interest in the GSP(s) development process information

7.3. Outcome Measures

Outcome measures track the level of success of the Coms Plan in meeting its overall goals. Some outcome measures considered for the GSP(s) development process include the following:

- Consistent participation by key stakeholders and interested parties in essential activities. Participants should have no difficulty locating the meetings, and should be informed as to when and where they will be held.
- Response from meeting participants that the engagement methods provided for a fair and balanced exchange of information.
- Feedback from interested parties that they understand how their input is used, where to track data, and what results to expect.
- The project receives quality media coverage that is accurate, complete and fair.

7.4. Mid-cycle Evaluation of Accomplishments

A mid-cycle evaluation provides an opportunity to examine the current effectiveness of the Coms Plan and provides a chance to reevaluate strategies to meet the GSP(s) development process objectives. The evaluation tasks may include:

- Preparation of an executive-level summary detailing high-level initiatives and accomplishments of the previous cycle. This evaluation should also include positive news, best practices, goals and objectives, notable changes, timelines, and priorities.
- Identifying gaps and areas for improvement.
- Highlighting how gaps and areas for improvement in the cycle has been addressed.
- Outlining process and outcome measures and their current results.

ROLES AND RESPONSIBILITIES

The GSP(s) development Coms Plan outlines numerous strategies, activities and tactics. While none are highly complex, there is a requirement for coordination and clarity regarding who will be responsible for executing the tasks.

After the planning team evaluates the timelines and priorities for each of the communications activities a recommended next step is completion of a Responsible, Accountable, Consulted, and Informed (RACI) Chart. This Chart, as displayed in **Table 10**, outlines key tasks and the assignment of roles and responsibilities for accomplishing them.

Table 9. Sample RACI Chart

Activity TYPE	SPECIFIC PRODUCT	RESPONSIBLE	ACCOUNTABLE	CONSULTED	INFORMED
Internal Staff Communications, information materials for/briefings	Draft	Person A	Person E	Person I	
	Final Draft	Person A	Person E	Person I	Project Team
List Serves, mailing lists	Customer Contacts	Person B - Person A	Person E	Person I	Project Team
	Concurrent jurisdictions	Lisa Beutler/MWH	Person G	Person I	Project Team
	Other - identified stakeholders	Person A	Person G	Person I	Project Team
Web Content and Maintenance	Draft Content and Content Refresh	Lisa Beutler/MWH/	Person G	Person H	Project Team
	Site Administration	Person A	Person G	Person H	
General public Intro Packets, Fact Sheets and Brochures	Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Revised Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Final Draft	Person D	Person E	Person I- Subject Matter Experts	Project Team
Newsletter Content	Draft	Lisa Beutler/MWH	Person E	Person I- Subject Matter Experts	Person J
	Revised Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Final Draft	Person D	Person E	Person I- Subject Matter Experts	Project Team

Responsible
Those who do the work to achieve the task. There is at least one person with a role of *responsible*, although others can be delegated to assist in the work required.

Accountable (also approver or final approving authority)
This is the person ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. There **may only** be only one *accountable* specified for each task or deliverable.

Consulted
Those whose opinions are sought, typically subject matter experts were people that are impacted by the activity; and with whom there is two-way communication.

Informed
Those who are kept up-to-date on progress, typically on the launch and completion of the task or deliverable. This is one way communication.

Role distinction
There is a distinction between a role and the individual assigned the task. Role is a descriptor of an associated set of tasks that could be performed by just one or many people.

In the case of the RACI Chart, the team may list as many people as is logical except for the Accountable role.

Scope of Work
Completion of the RACI Chart will also support development of any future scopes of work for consultant provided communication and outreach services.

LIST OF APPENDICES

Appendix 1-Public Outreach Requirements under SGMA

Appendix 2-Communications Governance

Appendix 1. Public Outreach Requirements under SGMA

GSP Regulations

CODE	PUBLIC OUTREACH REQUIREMENT
§ 353.6. Initial Notification (a) Each Agency shall notify the Department, in writing, prior to initiating development of a Plan. The notification shall provide general information about the Agency's process for developing the Plan, including the manner in which interested parties may contact the Agency and participate in the development and implementation of the Plan. The Agency shall make the information publicly available by posting relevant information on the Agency's website.	1. Statement of how interested parties may contact the Agency and participate in development and implementation of the plan submitted to DWR. 2. Web posting of same information. **Timing**: *Prior to initiating development of a plan.*
§ 353.8. Comments (a) Any person may provide comments to the Department regarding a proposed or adopted Plan. (b) Pursuant to Water Code Section 10733.4, the Department shall establish a comment period of no less than 60 days for an adopted Plan that has been accepted by the Department for evaluation pursuant to Section 355.2. (c) In addition to the comment period required by Water Code Section 10733.4, the Department shall accept comments on an Agency's decision to develop a Plan as described in Section 353.6, including comments on elements of a proposed Plan under consideration by the Agency.	1. 60-day comment period for plans under submission to DWR. Comments will be used to evaluate the submission. 2. Parties may also comment on a GSA's (or GSAs') statements submitted under section 353.6 **Timing**: For GSP Submittal - *60 days after submission to DWR*
§ 354.10. Notice and Communication Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following: (a) A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties. (b) A list of public meetings at which the Plan was discussed or considered by the Agency. (c) Comments regarding the Plan received by the Agency and a summary of any responses by the Agency. (d) A communication section of the Plan that includes the following: (1) An explanation of the Agency's decision-making process. (2) Identification of opportunities for public engagement and a discussion of how public input and response will be used.	5. Statements of issues and interests of beneficial users of basin groundwater, including types of parties representing the interests and consultation process 6. Lists of public meetings 7. Inventory of comments and summary of responses 8. Communication section in plan that includes: • Agency decision making process • ID of public engagement opportunities and response process • Description of process for inclusion • Method for public information related to progress in implementing the plan (status, projects, actions) **Timing**: For GSP Submittal – *with plan* For GSP Development – *continuous. [Note: activities should be included*

CODE	PUBLIC OUTREACH REQUIREMENT
(3) A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin. (4) The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.	*in the project schedule and information posted on web.]*
§ 355.2. (c) Department Review of Adopted Plan (c) The Department (DWR) shall establish a period of no less than 60 days to receive public comments on the adopted Plan, as described in Section 353.8.	1. 60 day public review period for public comment on submitted plan. **Timing**: After GSP Submittal to DWR – *60 days*
§ 355.4. & 355.10 Criteria for Plan Evaluation The basin shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act. The Department shall evaluate an adopted Plan for compliance with this requirement as follows: (b) (4) Whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered. … (10) Whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan.	1. Required public outreach and stakeholder information is submitted, including statement of issues and interests of beneficial users. 2. Public and stakeholder comments and questions adequately addressed during planning process. **Timing**: For GSP Submittal – *with plan* For resubmittal related to corrective action – *with submittal*

California Water Code

CODE	PUBLIC OUTREACH REQUIREMENT
10720. This part shall be known, and may be cited, as the "Sustainable Groundwater Management Act." **10720.3** (a) This part applies to all groundwater basins in the state. … (c) The federal government or any federally recognized Indian tribe, appreciating the shared interest in assuring the sustainability of groundwater resources, may voluntarily agree to participate in the preparation or administration of a groundwater sustainability plan or groundwater management plan under this part through a joint powers authority or other agreement with local agencies in the basin. A participating tribe shall be eligible to participate fully in planning, financing, and management under this part, including eligibility for grants and technical assistance, if any exercise of regulatory authority, enforcement, or imposition and collection of fees is pursuant to	1. Tribes and the federal government may voluntarily participate in GSA governance and GSP development. **Timing**: *Prior to initiating development of a plan.*

CODE	PUBLIC OUTREACH REQUIREMENT
the tribe's independent authority and not pursuant to authority granted to a groundwater sustainability agency under this part.	
CHAPTER 4. Establishing Groundwater Sustainability Agencies [10723 - 10724]	
10723. a) Except as provided in subdivision (c), any local agency or combination of local agencies overlying a groundwater basin may decide to become a groundwater sustainability agency for that basin. (b) Before deciding to become a groundwater sustainability agency, and after publication of notice pursuant to Section 6066 of the Government Code, the local agency or agencies shall hold a public hearing in the county or counties overlying the basin.	1. Must hold public hearing in the county or counties overlying the basin, prior to becoming a GSA **Timing**: *Prior to becoming a GSA.*
10723.2 The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following: (a) Holders of overlying groundwater rights, including: (1) Agricultural users. (2) Domestic well owners. (b) Municipal well operators. (c) Public water systems. (d) Local land use planning agencies. (e) Environmental users of groundwater. (f) Surface water users, if there is a hydrologic connection between surface and groundwater bodies. (g) The federal government, including, but not limited to, the military and managers of federal lands. (h) California Native American tribes. (i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems. (j) Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.	1. Must consider interest of all beneficial uses and users of groundwater. 2. Includes specific stakeholders as listed. **Timing**: *During development of a GSP.*
10723.4. The groundwater sustainability agency shall establish and maintain a list of persons interested in receiving notices regarding plan preparation, meeting announcements, and availability of draft plans, maps, and other relevant documents. Any person may request, in writing, to be placed on the list of interested persons.	3. Must establish and maintain an interested persons list. 4. Any person may ask to be added to the list **Timing**: *On forming a GSA.*
10723.8. (a) Within 30 days of deciding to become or form a groundwater sustainability agency, the local agency or combination of local agencies shall inform the department of its decision and its intent to undertake sustainable groundwater management. The	1. Creates notification requirements that include: a. A list of interested parties b. An explanation of how interests will be considered

CODE	PUBLIC OUTREACH REQUIREMENT
notification shall include the following information, as applicable: … (4) A list of interested parties developed pursuant to Section 10723.2 and an explanation of how their interests will be considered in the development and operation of the groundwater sustainability agency and the development and implementation of the agency's sustainability plan.	**Timing**: *On forming a GSA & with submittal of GSP*
10727.8 (a) Prior to initiating the development of a groundwater sustainability plan, the groundwater sustainability agency shall make available to the public and the department a written statement describing the manner in which interested parties may participate in the development and implementation of the groundwater sustainability plan. The groundwater sustainability agency shall provide the written statement to the legislative body of any city, county, or city and county located within the geographic area to be covered by the plan. The groundwater sustainability agency may appoint and consult with an advisory committee consisting of interested parties for the purposes of developing and implementing a groundwater sustainability plan. The groundwater sustainability agency shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin prior to and during the development and implementation of the groundwater sustainability plan. If the geographic area to be covered by the plan includes a public water system regulated by the Public Utilities Commission, the groundwater sustainability agency shall provide the written statement to the commission. (b) For purposes of this section, interested parties include entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.	2. Agencies preparing a GSP must prepare a written statement describing the manner in which interested parties may participate in its development and implementation. 3. Statement must be provided to: a. Legislative body of any city and/or county within the geographic area of the plan b. Public Utilities Commission if the geographic area includes a regulated public water system regulated by that Commission c. DWR d. Interested parties (see Section 10927) e. The public 4. GSP entities may form an advisory committee for the GSP preparation and implementation. 5. The GSP entities are to encourage active involvement of diverse social, cultural and economic elements of the affected populations. **Timing**: *On initiating GSP*
10728.4 Public Notice of Proposed Adoption, GSP Adoption Pubic Hearing A groundwater sustainability agency may adopt or amend a groundwater sustainability plan after a public hearing, held at least 90 days after providing notice to a city or county within the area of the proposed plan or amendment. The groundwater sustainability agency shall review and consider comments from any city or county that receives notice pursuant to this section and shall consult with a city or county that requests consultation within 30 days of receipt of the notice. Nothing in this section is intended to	3. GSP must be adopted or amended at Public Hearing. 4. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must: a. Notify cities and/or counties of geographic area 90 days in advance. b. Consider and review comments

CODE	PUBLIC OUTREACH REQUIREMENT
preclude an agency and a city or county from otherwise consulting or commenting regarding the adoption or amendment of a plan.	c. Conduct consultation within 30 days of receipt with cities or counties so requesting
10730 Fees. (a) A groundwater sustainability agency may impose fees, including, but not limited to, permit fees and fees on groundwater extraction or other regulated activity, to fund the costs of a groundwater sustainability program, including, but not limited to, preparation, adoption, and amendment of a groundwater sustainability plan, and investigations, inspections, compliance assistance, enforcement, and program administration, including a prudent reserve. A groundwater sustainability agency shall not impose a fee pursuant to this subdivision on a de minimis extractor unless the agency has regulated the users pursuant to this part. (b) (1) Prior to imposing or increasing a fee, a groundwater sustainability agency shall hold at least one public meeting, at which oral or written presentations may be made as part of the meeting. (2) Notice of the time and place of the meeting shall include a general explanation of the matter to be considered and a statement that the data required by this section is available. The notice shall be provided by publication pursuant to Section 6066 of the Government Code, by posting notice on the Internet Web site of the groundwater sustainability agency, and by mail to any interested party who files a written request with the agency for mailed notice of the meeting on new or increased fees. A written request for mailed notices shall be valid for one year from the date that the request is made and may be renewed by making a written request on or before April 1 of each year. (3) At least 20 days prior to the meeting, the groundwater sustainability agency shall make available to the public data upon which the proposed fee is based. (c) Any action by a groundwater sustainability agency to impose or increase a fee shall be taken only by ordinance or resolution. (d) (1) As an alternative method for the collection of fees imposed pursuant to this section, a groundwater sustainability agency may adopt a resolution requesting collection of the fees in the same manner as ordinary municipal ad valorem taxes. (2) A resolution described in paragraph (1) shall be adopted and furnished to the county auditor-controller and board of supervisors on or before August 1 of each year that the alternative collection of the fees is being requested. The resolution shall include a list of parcels and the amount to be collected for each parcel. (e) The power granted by this section is in addition to any powers a groundwater sustainability agency has under any other law.	Related to GSAs 5. Public meeting required prior to adoption of, or increase to fees. Oral or written presentations may be made as part of the meeting. 6. Public notice shall include: a. Time and place of meeting b. General explanation of matter to be considered c. Statement of availability for data required to initiate or amend such fees d. Public posting on Agency Website and provision by mail to interested parties of supporting data (at least 20 days in advance) 7. Mailing lists for interested parties are valid for 1 year from date of request and may be renewed by written request of the parties on or before April 1 of each year. 8. Includes procedural requirements per Government Code, Section 6066. **Timing**: *Prior to adopting fees.*

California Government Code

CODE	PUBLIC OUTREACH REQUIREMENT
6060 Whenever any law provides that publication of notice shall be made pursuant to a designated section of this article, such notice shall be published in a newspaper of general circulation for the period prescribed, the number of times, and in the manner provided in that section. As used in this article, "notice" includes official advertising, resolutions, orders, or other matter of any nature whatsoever that are required by law to be published in a newspaper of general circulation. **6066** Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.	4. Must publish notices in a newspaper of general circulation as prescribed. 5. Publication shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. 6. The period of notice begins the first day of publication and terminates at the end of the fourteenth day, (which includes the first day.) **Timing**: *Prior to adopting fees*

Appendix 2. Communications Governance

Given the relatively large number of stakeholders, a recommendation for coordinated efforts, and the legal requirements for outreach[13] some form of communications governance is recommended.

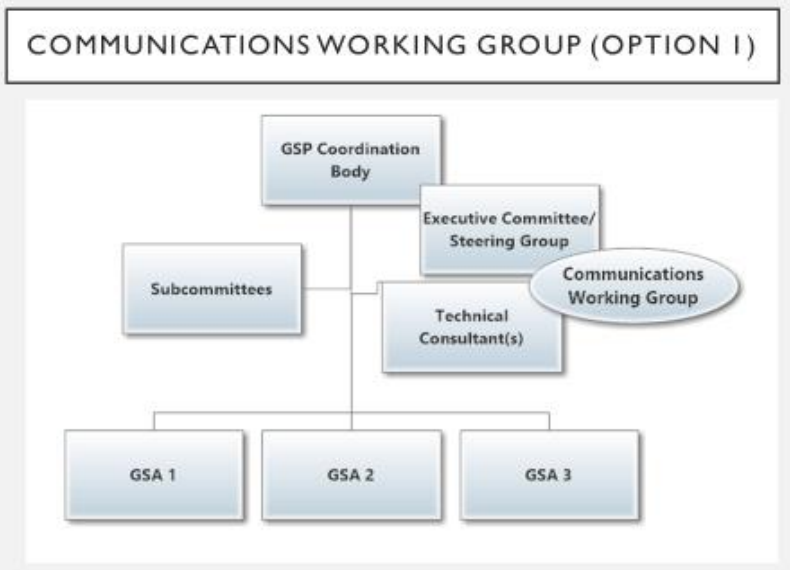
Execution of communications activities can be accomplished by an individual or multiple individuals, and/or include or be solely managed by project consultants. The actual form of the governance is less important than a clear understanding of the roles and responsibilities of those responsible for ensuring required communication. Also essential is a clear chain of command that ensures the elected representatives of GSAs are able to retain communications leadership and guidance.

A driving consideration for establishing a communications governance structure is the level of effort associated with required activities and the fact that communications are highly time dependent. That means that communications activities should be occurring that may happen outside of regularly scheduled GSA meetings. In this case delegation with guidance to a communications team is efficient and effective.

Several governance options for consideration are offered below.

Communications Option 1

Communications Option 1 is based on an overall GSP(s) development structure that includes a GSA member based leadership function that is guiding the Technical Consultants. A communications working group which might include staff, consultants and GSA elected officials, or some combination of those roles could be formed to serve as a communications working group that would ultimately report to the larger GSP coordinating body.

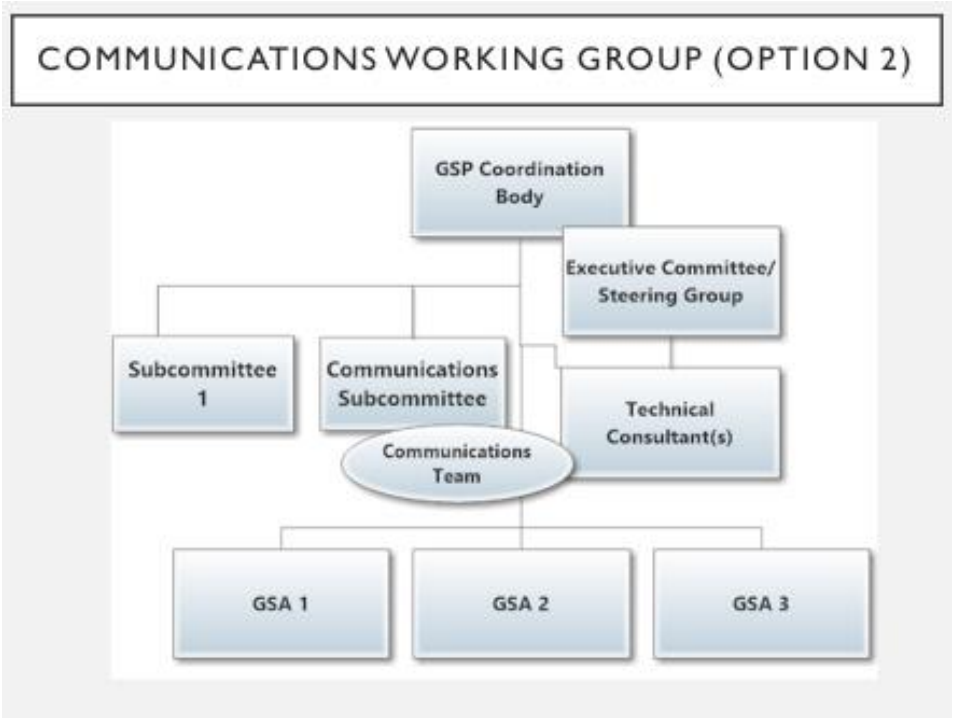


Communications Governance Option 1

Communications Option 2

[13] See Appendix 1

Communications Option 1 is based on an overall GSP(s) development structure that includes a GSA member based subcommittee guiding the Technical Consultants. A communications working group which might include staff, consultants and GSA elected officials, or some combination of those roles could be formed to serve as a communications team that is affiliated with a subcommittee and would ultimately report to the larger GSP coordinating body



Communications Governance Option 2

ATTACHMENT B. COORDINATED PUBLIC WORKSHOP SUMMARIES

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
SPRING 2018 COORDINATED WORKSHOPS

Monday, May 14, 2018, Los Banos
Wednesday, May 16, 2018, Patterson
Thursday, May 17, 2018, Mendota

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about the Sustainable Groundwater Management Act (SGMA) and introduce participants to their local Groundwater Sustainability Agency representatives. Topics covered during the workshop included what is SGMA, the Delta-Mendota Subbasin, and opportunities for public engagement.
- Workshop participants' questions and feedback are summarized as follows:
    - Are the local groundwater regulations going to be re-set on an annual basis based on the water year, snowpack, etc.?
    - Who is the governing board that will make these decisions?
    - If this is a state-wide initiative, who is the decision-making body?
    - Will the California Department of Fish and Wildlife be involved?
    - Has the State provided criteria to what is considered a "chronic loss" of groundwater?
    - Are natural springs included under SGMA?
    - What criteria will you use to measure whether or not springs are overused?
    - What is the ultimate goal of SGMA? What does it mean to us?
    - How is the water budget going to be developed?
    - The Irrigated Lands Program already has a lot of requirements for growers. Is this going to be the same level of detail and effort?
    - What is the goal SGMA is trying to achieve? How are we going to get to sustainability?
    - What will happen when the State and districts do not receive their full surface water allocation and cities keep expanding?
    - It seems to me that the biggest problem is that the State wants to export water to Southern California. How can we come up with a solution if there are factors out of our control?

- How will you know how much I am pumping?

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
FALL 2018 COORDINATED WORKSHOPS

Monday, October 22, Firebaugh
5:00 – 7:00 PM
Firebaugh Middle School MPR

Wednesday, October 24, Los Banos
4:00 – 6:00 PM
College Greens Building

Thursday, October 25, Patterson
4:00 – 6:00 PM
Patterson Senior Center

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about key Sustainable Groundwater Management Act (SGMA) topics in preparation for Groundwater Sustainability Plan (GSP) development workshops in 2019.
- The format and content of each workshop was the same. The workshops began with a 45-minute presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 45 individuals (not including GSA representatives and supporting staff) participated in the workshops. Attendance by location was as follows: Firebaugh – 5 participants; Los Banos – 23 participants; Patterson – 17 participants. Three participants requested Spanish interpretation.
- Most participants heard about the workshops through emails from their local water or irrigation district, or direct flyers and bill inserts sent to them by their water/irrigation district or municipality.
- Presentation topics included: Overview of SGMA, GSP development and implementation process, data management, hydrogeologic conceptual model, numerical and analytical models, and the water budget.
- Workshop participants' questions and feedback are summarized as follows:

  Data

  - How much historical data are the GSAs using to make their assumptions?
  - Will data from counties be used?

- Is the numerical data available on the Delta-Mendota website?
- How big will the GSAs' monitoring network be? Do the GSAs anticipate drilling new monitoring wells?
- How will the GSAs monitor water quality and subsidence? Do the GSAs already have subsidence monitoring wells and data?
- How much data have the GSAs gathered? When will the GSAs stop gathering data?
- How much data will the GSAs be collecting from individual landowners?

Models

- Will the models take into account availability of surface water supplies?
- Will the models take into account changing crops?
- Will the models take into account agricultural areas that are being converted to commercial or urban areas?

Water Budget and Sustainable Yield

- What is the sustainable yield for the Delta-Mendota Subbasin?
- It sounds like the sustainable yield will be a number that oscillates around a baseline. What is this baseline?
- How will the GSAs determine the minimum threshold for the subbasin?
- How will the water budgets account for existing and new wells?
- What are the years for the historic water budget? How was this period set?

Projects and Management Actions

- Based on what is currently known, will the GSAs be able to limit groundwater pumping in the future?
- When the GSAs come up with groundwater management policies, will the policies impact groundwater pumping on an individual level, regional level, or basin-wide level?
- Will the California Department of Water Resources (DWR) or the GSAs be the ones to limit pumping?
- Could a potential management action be limiting pumping?
- Will the GSAs be the agencies to determine if new wells can or cannot be drilled?

Integration with Other Programs/Organizations

- How much are the GSAs integrating with the Irrigated Lands Program?
- How closely do GSAs work with local farm bureaus?

Other

- Will there be an administrative fee for the GSAs to oversee GSP implementation?
- How will the costs for GSP development and implementation be covered?
- Do the GSAs know what DWR's GSP review and certification process will consist of?

- Will the GSAs in the region have influence over how surface water resources are managed on a state-wide level?
- How many GSAs were formed after SGMA passed in 2014?

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
WINTER 2019 COORDINATED WORKSHOPS

Tuesday, February 19, 2019, Los Banos
4:00 – 6:00 PM
College Greens Building

Wednesday, February 20, 2019, Patterson
4:00 – 6:00 pm
City of Patterson City Hall

Monday, March 4, 2019, Santa Nella
6:00 – 8:00 PM
Romero Elementary School

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin during February and March 2019. The purpose of the workshops was to educate stakeholders and members about the public about topics covered in the draft Groundwater Sustainability Plans (GSP) being developed for the subbasin. Topics covered during the workshop included historic and current water budgets, sustainability criteria, undesirable results, and projects and management actions.
- Workshops were promoted via emails sent to each GSA's interested parties database, flyers and utility bill inserts, and social media posts.
- The format and content of each workshop was the same. The workshops began with a short presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 30 individuals (not including GSA representatives and supporting staff) participated in the workshops. Attendance by location was as follows: Patterson – 14, Los Banos – 4, and Santa Nella – 12. Participants represented a range of beneficial users in the subbasin, including domestic well owners, agricultural water users, public water systems, and disadvantaged communities.

- Workshop participants' questions and feedback are summarized as follows:

  Water Budgets

  - Does the land surface budget include inflows from precipitation and applied water to crops?
  - Who provides the information about the inflows and outflows of the aquifer?
  - How is the aquifer recharged?
  - Do reservoirs lose water?
  - What happened between 1985 – now [regarding the historic water budget]?
  - What affect does precipitation have on the aquifer?

  Projects and Management Actions

  - Who will make the decision on who can drill wells and how much can well owners can pump?
  - Will GSAs in the subbasin be able to restrict selling of groundwater outside of the subbasin?
  - Projects and management actions should emphasize flood and stormwater capture and increased stormwater storage.
  - Will use of recycled water in new developments be considered a source of water to balance the water budget?
  - Are there percolation ponds by golf course?

  Sustainability Criteria and Undesirable Results

  - Is it the GSAs' responsibility to set the sustainability criteria for the subbasin?
  - Could this region experience seawater intrusion?
  - What's going to happen in areas like Dos Palos that have poor groundwater quality?

  Other

  - Does the GSP only cover of agricultural uses of groundwater or does it also cover residential and commercial uses of groundwater?
  - Who is doing the work to prepare the GSP?
  - How much does it cost to prepare a GSP?
  - Are there any agencies currently monitoring groundwater pumping and levels?
  - How is groundwater currently being removed from the groundwater basin?
  - How many monitoring stations have been identified? Have GSAs already identified where these monitoring pumps are?
  - Does the California Aqueduct affect the water table in the subbasin?
  - What is the rationale for the North-Central GSP group's boundaries? The north and south areas of the North-Central GSP group are very different.
  - Do water agencies in the subbasin send water to the Santa Clara Valley Water District?
  - Where are the coordinated meetings are held? What time are these meetings?
  - Will this raise our water rates?
  - The community of Tranquillity is currently experiencing land subsidence.

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
SPRING 2019 COORDINATED WORKSHOPS

Monday, May 20, 2019, Patterson
4:00 – 6:00 pm
City of Patterson City Hall

Tuesday, May 21, 2019, Los Banos
4:00 – 6:00 PM
College Greens Building

Wednesday, May 22, 2019, Santa Nella
6:30 – 8:30 PM
Romero Elementary School

Thursday, May 23, 2019, Mendota
6:00 – 8:00 PM
Mendota Library

WORKSHOP SUMMARY

- Four workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about topics covered in the draft Groundwater Sustainability Plans (GSP) being developed for the subbasin. Topics covered during the workshop included water budgets, sustainable yield, projects and management actions, and groundwater monitoring networks.
- Workshops were promoted via emails sent to each GSA's interested parties database, flyers and utility bill inserts, social media posts, and direct outreach to community stakeholders.
- The format and content of each workshop was the same. The workshops began with a short presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 30 individuals participated in the workshops. Attendance by location was as follows: Patterson – 7, Los Banos – 10, Santa Nella – 4, and Mendota – 9. Participants represented a range of beneficial users in the subbasin, including domestic well owners, agricultural water users, public water systems, and disadvantaged communities.

- Workshop participants' questions and feedback are summarized as follows:

  Water Budgets

  - Why is there a difference between the water budgets for the upper and lower aquifers?
  - Why is the change in storage negative?
  - Is there a water budget for each aquifer?
  - When the projected water budgets are finalized, will they include specific projects and management actions?
  - How was the data for the climate change factors developed?
  - Historically, California goes through periodic droughts. Do the projected water budgets account for future droughts?
  - Do the projected water budgets account for future population growth and new developments?
  - Do the water budgets account for percolation from water applied to crops?

  Projects and Management Actions

  - Will management actions include a charge for water pumping?
  - Will pumping restrictions be implemented during dry periods or drought?
  - Will the GSPs identify specific projects and management actions?
  - Will GSAs in the subbasin form a water bank?
  - If pumping restrictions are enacted, GSPs should include a provision that allows private well owners to demonstrate that they aren't overpumping or causing undesirable results.
  - The region needs more surface water storage to supplement groundwater pumping.
  - There should be restrictions on development in the region.

  Sustainable Yield

  - Does increases in groundwater demand relate to the cost of surface water supplies?

  Groundwater Monitoring

  - When local agencies monitor for groundwater, how far down do they monitor?

  GSP Adoption, Implementation and Enforcement

  - What agency approves the GSPs?
  - Will the California Department of Water Resources be the lead agency for providing oversight after the GSP is submitted?
  - Could the State Water Resources Control Board mandate pumping restrictions?
  - Will the state be looking at the drawdown of individual, private wells?
  - Where does the funding to implement GSPs come from?
  - How much will GSP implementation cost?
  - Who has to submit the annual report?

  Other

  - GSAs should be divided into even smaller units to manage projects and management actions locally.

ATTACHMENT C. EXAMPLE PUBLIC WORKSHOP PROMOTION MATERIALS

Groundwater management in our community is changing.

Learn more about how this may impact you.

Collaborating local agencies are hosting a series of public workshops about the Sustainable Groundwater Management Act. Come learn how this landmark legislation may impact our community, what we are doing about it, and how you can get involved. Representatives from local groundwater sustainability agencies will be available to answer questions. You have three opportunities to attend:

Los Banos
Monday, May 14
4:00 - 6:00 PM
San Luis & Delta-Mendota Water Authority Office
842 6th St, Los Banos

Patterson
Wednesday, May 16
4:00 - 6:00 PM
Hammon Senior Center
1033 W Las Palmas Ave, Patterson

Mendota
Thursday, May 17
4:00 - 6:00 PM
Mendota Branch Library
Mendota Meeting Room
1246 Belmont Ave, Mendota

The content of each workshop will be the same. The first thirty minutes of each workshop will consist of an informational presentation, followed by an open house until 6:00 PM. For more information, please visit our website at: www.deltamendota.org.

We look forward to seeing you there!

El manejo del agua subterránea en nuestra comunidad está cambiando.

Obtenga más información sobre como esto puede afectarlo.

Las agencias locales colaboradoras están organizando una serie de talleres públicos sobre la Ley de gestión sostenible del agua subterránea. Venga y aprenda como esta histórica legislación puede afectar a nuestra comunidad, que estamos haciendo al respecto y como puede participar. Los representantes de las agencias locales de sostenibilidad del agua subterránea estarán disponibles para responder preguntas. Tienes tres oportunidades para asistir:

Los Baños
Martes, 14 de Mayo
4:00 - 6:00 PM
San Luis & Delta-Mendota
Water Authority Office
842 6th St, Los Baños

Patterson
Miércoles, 16 de Mayo
4:00 - 6:00 PM
Hammon Senior Center
1033 W Las Palmas Ave, Patterson

Mendota
Jueves, 17 de Mayo
4:00 - 6:00 PM
Mendota Branch Library
Mendota Meeting Room
1246 Belmont Ave, Mendota

El contenido de cada taller será el mismo. Los primeros treinta minutos de cada taller serán consisten de una presentación informativa, seguida de una jornada de puertas abiertas hasta las 6:00 P.M. Para obtener más información, visite nuestro sitio web en: www.deltamendota.org.

Public Notice

Public Groundwater Meeting

Santa Nella County Water District and other local water agencies are developing plans for the future of our groundwater resources. We want to hear from you! Come to an upcoming public workshop to learn more:

Santa Nella
Monday, March 4, 6:000 - 8:00 PM
Romero Elementary School MPR
13500 Luis Ave, Gustine, CA 95322

The first forty minutes of the workshop will consist of a bilingual informational presentation. The presentation will be followed by an interactive discussion on the region's groundwater "budget" and how to define "sustainability" for our groundwater resources. This workshop is open to people with all level of knowledge about water.

Spanish-language interpreters and materials will be available.

For more information, please visit our website at www.deltamendota.org and www.sncwd.com.

For questions or comments, email DMSGMA@sldmwa.org or contact Amy Montgomery, Santa Nella County Water District, at amontgomery@sncwd.com.

We look forward to seeing you there!

Engage in the Future of Our Water Resources!

Week of May 20th

Delta-Mendota SGMA invite you to learn why your local agencies are developing groundwater sustainability plans for the future of our groundwater. Please come to one

- **Patterson**: Mon., May 20, 4:00 – 6:00pm Patterson City Hall 1 Plaza Circle
- **Los Banos**: Tue., May 21, 4:00 – 6:00pm College Greens Building 1815 Scripps Drive
- **Santa Nella**: Wed., May 22, 6:30 – 8:30pm Romero Elem. School 13500 Luis Ave.
- **Mendota**: Thu., May 23, 6:00 – 8:00pm Mendota Library 1246 Belmont Ave.

For more information please visit www.deltamendota.org, To register visit: tinyurl.com/y3bxw3yv

PROP 1 WATER BOND 2014

#DeltaMendotaSGMA | #SLDMWA | #SGMA2020

DELTA-MENDOTA SGMA

Su Opinión es Importante!

Participe en una serie de talleres sobre el futuro de sus recursos hídricos!

Semana del 20 de mayo

Agencias locales están desarrollando planes de sostenibilidad para el futuro de los recursos hídricos del agua subterránea en la región y necesitan su opinión.
Acompáñenos en uno de los siguientes talleres:

- **Patterson**: Lun.,20 de Mayo , 4–6pm Ayuntamiento de Patterson 1 Plaza Circle
- **Los Banos**: Mar., 21 de May, 4–6pm College Greens Building 1815 Scripps Dr.
- **Santa Nella**: Mie., 22 de Mayo, 6:30–8:30pm Escuela Pri. Romero 13500 Luis Ave.
- **Mendota**: Jue., 23 de Mayo, 6–8pm Biblioteca de Mendota 1246 Belmont Ave.

PROP 1 WATER BOND 2014

Para más información visite:
www.deltamendota.org
Tel: 916-418-8288
#DeltaMendotaSGMA | #SLDMWA

DELTA-MENDOTA SGMA

Contact: Kirsten Pringle, Delta-Mendota Subbasin, Stantec
(916) 418-8243, Kirsten.Pringle@stantec.com

FOR IMMEDIATE RELEASE
October 19, 2018

MEDIA ADVISORY

Sustainable Groundwater Management Act Public Workshops

What: Collaborating local agencies are hosting a series of public workshops about the Sustainable Groundwater Management Act. Learn how this landmark legislation may impact our communities, the planning process, and how people can get involved. Spanish translation will be provided.

Format: There are three workshop opportunities to attend; the content of each workshop will be the same. The first 45 minutes of each workshop will consist of an informational presentation, followed by an open house.

When:

Firebaugh – Monday, October 22, 2018
5:00 - 7:00 PM
Firebaugh Middle School MPR
1600 16th Street, Firebaugh, CA

Los Banos – Wednesday, October 24, 2018
4:00 – 6:00 PM
College Greens Building
1815 Scripps Drive, Los Banos, CA

Patterson – Thursday, October 25, 2018
4:00 – 6:00 PM
Hammon Senior Center
1033 W. Las Palmas Avenue, Patterson, CA

Who: Representatives from local groundwater sustainability agencies will be available to answer questions.

Additional Resources: The Sustainable Groundwater Management Act, www.deltamendota.org/,

Background: *The Sustainable Groundwater Management Act (SGMA) is a package of three bills (AB 1739, SB 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. Recognizing that groundwater is most effectively managed at the local level, the SGMA empowers local agencies to achieve sustainability within 20 years.*

ATTACHMENT D. STAKEHOLDER AND COMMUNITY ORGANIZATIONS CONTACTED REGARDING COORDINATED PUBLIC WORKSHOPS

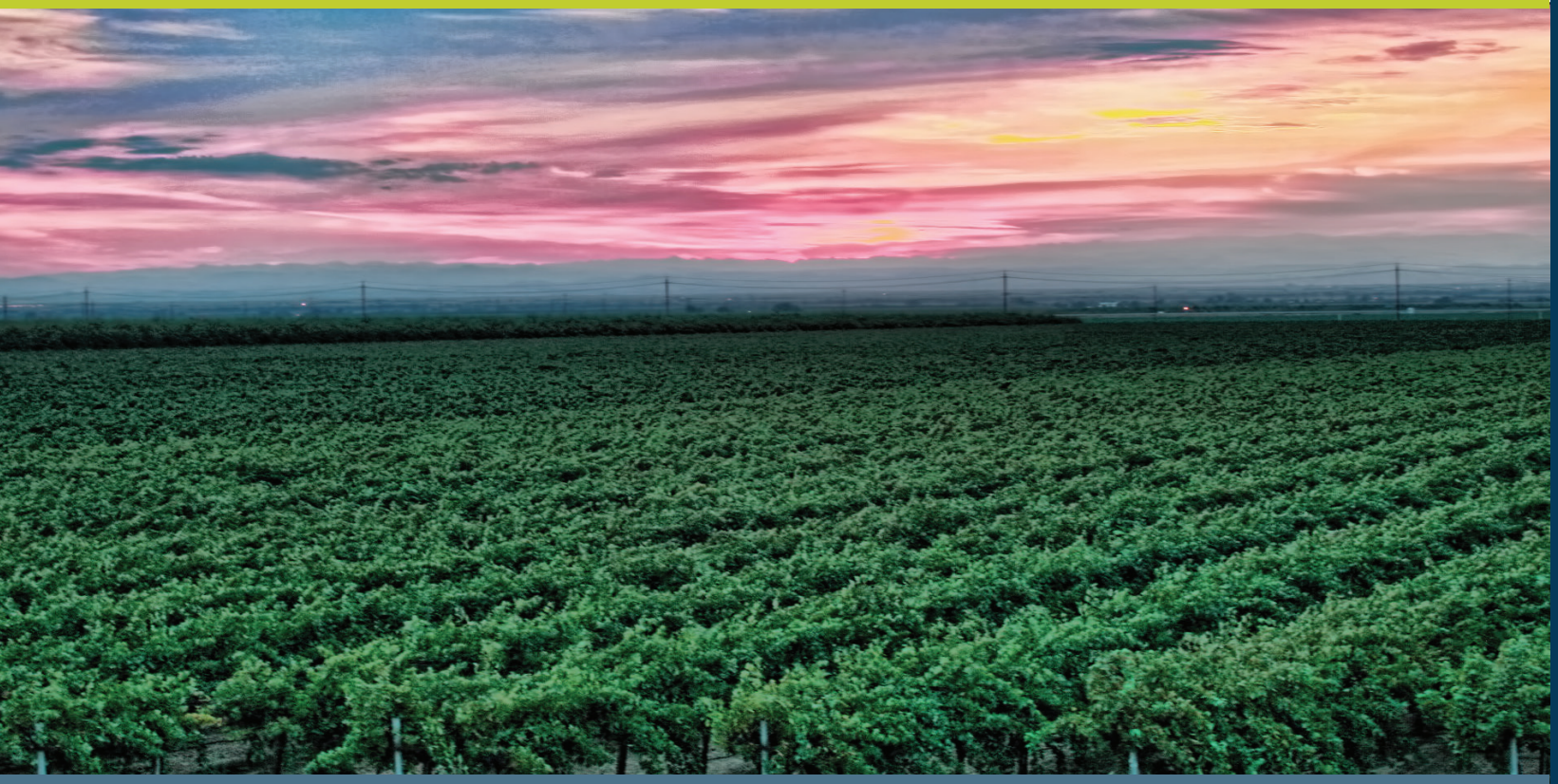
Stakeholder and Community Organizations Contacted Regarding Coordinated SGMA Workshops

Organization Name	Organization Type
Fresno County Farm Bureau	Agriculture
Merced County Farm Bureau	Agriculture
North Grassland Wildlife Foundation	Agriculture
Patterson Apricot Fiesta	Agriculture
Stanislaus County Farm Bureau	Agriculture
Asociación de Charros La Internacional del Valle de Patterson	Business
Adobe Valley Ranch	Business
Gustine Chamber of Commerce	Business
Los Banos Chamber of Commerce	Business
Patterson-Westley Chamber of Commerce	Business
Santa Nella Chamber of Commerce	Business
American Association of University Women	Civic
Gustine Rotary Club	Civic
International Association of Lions Clubs - Patterson	Civic
League of United Latin American Citizens	Civic
Los Banos Lions Club	Civic
Los Banos Rotary Club	Civic
Mendota Community Corporation	Civic
Newman Lions Club	Civic
Newman Rotary Club	Civic
Newman Women's Club	Civic
Patterson Lions Club	Civic
International Association of Lions Clubs - Mendota	Civic
International Association of the Lions Clubs - Los Banos	Civic
Italian Catholic Federation of CA Inc.	Civic
Kiwanis International	Civic
Rotary International - Los Banos	Civic
Rotary International - Patterson	Civic
Firebaugh Rotary Club Inc.	Community General Public
Casa Mobile Home Park	Community/General Public
Center for Environmental Science Accuracy & Reliability	Community/General Public
Firebaugh Senior Center	Community/General Public
Friends of Green Valley Charter	Community/General Public
Friends of the Public Library	Community/General Public
Habitat for Humanity International	Community/General Public
Los Banos Senior Center	Community/General Public
Mendota Community Center	Community/General Public
Mendota Senior Center	Community/General Public
Merced County Library - Dos Palos	Community/General Public
Merced County Library - Gustine	Community/General Public
Merced County Library - Los Banos	Community/General Public
Merced County Library - Santa Nella	Community/General Public
San Joaquin River Resource Mgmt. Coalition	Community/General Public

Santa Nella RV Park	Community/General Public
Stanislaus County Library - Newman	Community/General Public
Stanislaus County Library - Patterson	Community/General Public
Dos Palos Oro Loma Joint Unified School District	Education
Firebaugh-Las Deltas Unified School District	Education
Gustine Unified School District	Education
Los Banos Unified School District	Education
Mendota Unified School District	Education
Merced College	Education
Creekside Parent Club	Education
Academy West Insurance	Other
Academy West Insurance Firebaugh	Other
Amaral & Associates Realty	Other
American Legion	Other
American Legion Auxiliary Elijah B Hayes	Other
Andrea Brandt State Farm Insurance	Other
Benevolent & Protective Order of Elks	Other
Borelli Real Estate Services	Other
California Garden Clubs Inc.	Other
Century 21 M&M & Assoc - Los Banos	Other
Century 21 M&M & Assoc - Patterson	Other
Coldwell Banker Kaljian & Assoc	Other
Eric Rodriguez - Patterson	Other
Farmers Insurance Antonio Gonzales	Other
First Prioirty of the Central Valley	Other
Greg Nunes Real Estate	Other
Joe G. Gutierez State Farm Insurance	Other
Mendota Land Co	Other
Noah's Ark Foundation of Tracy Inc.	Other
PMZ Real Estate - Patterson	Other
PMZ Real Estate - Los Banos	Other
Rafael Ruiz - Patterson	Other
Shane P. Donion Ranch Broker	Other
The Boyd Company	Other
Valley West Properties	Other
Adventure Christian Church of Patterson	Religious
Agape Baptist Church	Religious
Bethel Community Church	Religious
Church of Christ of Patterson	Religious
Church of God of Prophecy	Religious
Connections Christian Church	Religious
Evangelical Church of Los Banos	Religious
Family Christian Center	Religious
First Baptist Church	Religious
Full Gospel Businessmen's Fellowship International	Religious
Harvest Samoan Assembly of God	Religious

Mountain House Foursquare Church	Religious
Movimiento Familiar Cristiano Catolico	Religious
Patterson Covenant Church	Religious
Patterson Christian Fellowship	Religious
Patterson Seventh Day Adventist Church	Religious

Appendix C - Checklist for GSP Submittal



Checklist for Submittal of Delta-Mendota Subbasin Coordinated GSPs

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 3. Technical and Reporting Standards				
352.2		Monitoring Protocols	• Monitoring protocols adopted by the GSA for data collection and management • Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin	• Section 6 – Subbasin Monitoring Program; Section 7 – Subbasin Data Collection and Management • Appendix B, Technical Memorandum (TM) #5 (Assumptions for Delta-Mendota Subbasin Monitoring Network), TM #6 (Coordination of the Delta-Mendota Subbasin Data Management System)
Article 5. Plan Contents, Subarticle 1. Administrative Information				
354.4		General Information	• Executive Summary • List of references and technical studies	• See individual GSPs • Section 9 – References and individual GSPs
354.6		Agency Information	• GSA mailing address • Organization and management structure • Contact information of Plan Manager • Legal authority of GSA • Estimate of implementation costs	• Section 2 – Delta-Mendota Subbasin Governance; Section 2.1 GSA and GSP Coordination and Governance • See individual GSPs for estimate of implementation costs
354.8(a)	10727.2(a)(4)	Map(s)	• Area covered by GSP • Adjudicated areas, other agencies within the basin, and areas covered by an Alternative • Jurisdictional boundaries of federal or State land • Existing land use designations • Density of wells per square mile	• Figure CC-1: Delta-Mendota Subbasin and GSP Regions • Figure CC-18: Land Use Planning Entities • Figure CC-19: Federal and State Lands • Figure CC-20: 2014 Land Use in the Delta-Mendota Subbasin • Figures CC-13 through CC-15: Domestic, Production, and Public Well Density in the Delta-Mendota Subbasin
354.8(b)		Description of the Plan Area	• Summary of jurisdictional areas and other features	Section 3 – Delta-Mendota Subbasin Plan Area

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(f)	10727.2(g)	Land Use Elements or Topic Categories of Applicable General Plans	• Summary of general plans and other land use plans • Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects • Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans • Summary of the process for permitting new or replacement wells in the basin • Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management	• Section 3.3 – General Plans in Plan Area • See individual GSPs for description of implementation impacts on water demands and sustainability • Section 3.4 – Existing Land Use Plans and Impacts to Sustainable Groundwater Management • Section 3.6 – County Well Construction/Destruction Standards & Permitting • Section 3.3 – General Plans in Plan Area
354.8(c) 354.8(d) 354.8(e)	10727.2(g)	Water Resource Monitoring and Management Programs	• Description of water resources monitoring and management programs • Description of how the monitoring networks of those plans will be incorporated into the GSP • Description of how those plans may limit operational flexibility in the basin • Description of conjunctive use programs	Section 3.5 – Existing Water Resources Monitoring and Management Plans; Section 3.7 – Existing and Planned Conjunctive Use Programs

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 1. Administrative Information (Continued)				
354.8(g)	10727.4	Additional GSP Contents	Description of Actions related to: • Control of saline water intrusion • Wellhead protection • Migration of contaminated groundwater • Well abandonment and well destruction program • Replenishment of groundwater extractions • Conjunctive use and underground storage • Well construction policies • Addressing groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects • Efficient water management practices • Relationships with State and federal regulatory agencies • Review of land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity • Impacts on groundwater dependent ecosystems	Section 3.8 – Plan Elements from California Water Code Section 10727.4
354.10		Notice and Communication	• Description of beneficial uses and users • List of public meetings • GSP comments and responses • Decision-making process • Public engagement • Encouraging active involvement • Informing the public on GSP implementation progress	• Section 8 – Stakeholder Outreach • Appendix B, TM #8 (Coordinated Noticing, Communication, and Outreach Activities in the Delta-Mendota Subbasin)
Article 5. Plan Contents, Subarticle 2. Basin Setting				
354.14		Hydrogeologic Conceptual Model	• Description of the Hydrogeologic Conceptual Model • Two scaled cross-sections • Map(s) of physical characteristics: topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies	• Section 4.1 – Hydrogeologic Conceptual Model • Appendix B, TM #2 (Assumptions for Hydrogeologic Conceptual Model of the Delta-Mendota Subbasin)

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 2. Basin Setting (Continued)				
354.14(d)(4)	10727.2(a)(5)	Map of Recharge Areas	• Map delineating existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas	Figure CC-39: Recharge Areas, Seeps and Springs
	10727.2(d)(4)	Recharge Areas	• Description of how recharge areas identified in the plan substantially contribute to the replenishment of the basin	Section 4.1.10 – Topography, Surface Water, Recharge, and Imported Supplies
354.16	10727.2(a)(1) 10727.2(a)(2)	Current and Historical Groundwater Conditions	• Groundwater elevation data • Estimate of groundwater storage • Seawater intrusion conditions • Groundwater quality issues • Land subsidence conditions • Identification of interconnected surface water systems • Identification of groundwater-dependent ecosystems	Section 4.2 – Delta-Mendota Subbasin Groundwater Conditions
354.18	10727.2(a)(3)	Water Budget Information	• Description of inflows, outflows, and change in storage • Quantification of overdraft • Estimate of sustainable yield • Quantification of current, historical, and projected water budgets	• Section 4.3 – Delta-Mendota Subbasin Water Budgets • Appendix B, TM #3 (Assumptions for the Historic, Current and Projected Water Budgets of the Delta-Mendota Subbasin, Change in Storage Cross-Check and Sustainable Yield)
	10727.2(d)(5)	Surface Water Supply	• Description of surface water supply used or available for use for groundwater recharge or in-lieu use	Section 4.3 – Delta-Mendota Subbasin Water Budgets
354.20		Management Areas	• Reason for creation of each management area • Minimum thresholds and measurable objectives for each management area • Level of monitoring and analysis • Explanation of how management of management areas will not cause undesirable results outside the management area • Description of management areas	• Appendix B, TM #4 (Assumptions for Delta-Mendota Subbasin Management Areas, Sustainability Management Criteria) • See individual GSPs

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria				
354.24		Sustainability Goal	• Description of the sustainability goal	Section 5.2 – Coordinated Sustainability Goal and Undesirable Results
354.26		Undesirable Results	• Description of undesirable results • Cause of groundwater conditions that would lead to undesirable results • Criteria used to define undesirable results for each sustainability indicator • Potential effects of undesirable results on beneficial uses and users of groundwater	• Section 5.2 – Coordinated Sustainability Goal and Undesirable Results • Section 5.4 – Delta-Mendota Subbasin Sustainable Management Criteria (Tables CC-14 through CC-18) • Appendix B, TM #4 (Assumptions for Delta-Mendota Subbasin Management Areas, Sustainability Management Criteria)
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria (Continued)				
354.28	10727.2(d)(1) 10727.2(d)(2)	Minimum Thresholds	• Description of each minimum threshold and how they were established for each sustainability indicator • Relationship for each sustainability indicator • Description of how selection of the minimum threshold may affect beneficial uses and users of groundwater • Standards related to sustainability indicators • How each minimum threshold will be quantitatively measured	• Section 5.4 – Delta-Mendota Subbasin Sustainable Management Criteria (Tables CC-14 through CC-18) • Appendix B, TM #4 (Assumptions for Delta-Mendota Subbasin Management Areas, Sustainability Management Criteria)
354.30	10727.2(b)(1) 10727.2(b)(2) 10727.2(d)(1) 10727.2(d)(2)	Measurable Objectives	• Description of establishment of the measurable objectives for each sustainability indicator • Description of how a reasonable margin of safety was established for each measurable objective • Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones	• Section 5.4 – Delta-Mendota Subbasin Sustainable Management Criteria (Tables CC-14 through CC-18) • Appendix B, TM #4 (Assumptions for Delta-Mendota Subbasin Management Areas, Sustainability Management Criteria)

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 5. Plan Contents, Subarticle 4. Monitoring Networks				
354.34	10727.2(d)(1) 10727.2(d)(2) 10727.2(e) 10727.2(f)	Monitoring Networks	• Description of monitoring network • Description of monitoring network objectives • Description of how the monitoring network is designed to: demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions • Description of how the monitoring network provides adequate coverage of Sustainability Indicators • Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends • Scientific rational (or reason) for site selection • Consistency with data and reporting standards • Corresponding sustainability indicator, minimum threshold, measurable objective, and interim milestone • Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used • Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies	• Section 6 – Subbasin Monitoring Program • Appendix B, TM #5 (Assumptions for Delta-Mendota Subbasin Monitoring Network) • Section 7 – Subbasin Data Collection and Management

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
354.36		Representative Monitoring	• Description of representative sites • Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators • Adequate evidence demonstrating site reflects general conditions in the area	• Section 6 – Subbasin Monitoring Program • Appendix B, TM #5 (Assumptions for Delta-Mendota Subbasin Monitoring Network)
Article 5. Plan Contents, Subarticle 4. Monitoring Networks (Continued)				
354.38		Assessment and Improvement of Monitoring Network	• Review and evaluation of the monitoring network • Identification and description of data gaps • Description of steps to fill data gaps • Description of monitoring frequency and density of sites	• Section 6 – Subbasin Monitoring Program • Appendix B, TM #5 (Assumptions for Delta-Mendota Subbasin Monitoring Network)
Article 5. Plan Contents, Subarticle 5. Projects and Management Actions				
354.44		Projects and Management Actions	• Description of projects and management actions that will help achieve the basin's sustainability goal • Measurable objective that is expected to benefit from each project and management action • Circumstances for implementation • Public noticing • Permitting and regulatory process • Timetable for initiation and completion, and the accrual of expected benefits • Expected benefits and how they will be evaluated • How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included. • Legal authority required • Estimated costs and plans to meet those costs • Management of groundwater extractions and recharge	See individual GSPs
354.44(b)(2)	10727.2(d)(3)		• Overdraft mitigation projects and management actions	See individual GSPs

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 8. Interagency Agreements				
357.4	10727.6	Coordination Agreements - Shall be submitted to the Department together with the GSPs for the basin and, if approved, shall become part of the GSP for each participating Agency.	Coordination Agreements shall describe the following: • A point of contact • Responsibilities of each Agency • Procedures for the timely exchange of information between Agencies • Procedures for resolving conflicts between Agencies • How the Agencies have used the same data and methodologies to coordinate GSPs • How the GSPs implemented together satisfy the requirements of SGMA • Process for submitting all Plans, Plan amendments, supporting information, all monitoring data and other pertinent information, along with annual reports and periodic evaluation • A coordinated data management system for the basin • Coordination agreements shall identify adjudicated areas within the basin, and any local agencies that have adopted an Alternative that has been accepted by the Department	• Section 2.1.2 – Intra-Basin Coordination; Section 2.1.3 – Inter-basin Agreements • Appendix B, TM #1 (Common Datasets and Assumptions used in the Delta-Mendota Subbasin GSPs), TM #6 (Coordination of the Delta-Mendota Subbasin Data Management System), TM #7 (Adoption and Use of the Subbasin Coordination Agreement)

Appendix D - Interbasin Agreements

Inter-Basin Agreement Between Northern & Central Delta-Mendota GSP Region and Westlands Water District

DATA SHARING AGREEMENT

Westlands Water District (Westlands) and the San Luis & Delta-Mendota Water Authority, on behalf of the Northern Delta-Mendota Region GSAs and the Central Delta-Mendota Region Multi-Agency GSA (GSAs), (collectively the Parties) desire to establish a set of common assumptions on groundwater conditions on either side of the boundary between Westlands' service area and the Delta-Mendota Subbasin to be used for development of Groundwater Sustainability Plans (GSPs) related to the implementation of the Sustainable Groundwater Management Act (SGMA). To further that effort to develop a set of common assumptions, the Parties agree to provide each other with the following recorded, measured, estimated and/or simulated modeling data located within five (5) miles of the boundary between Westlands' service area and the Delta-Mendota Subbasin:

- Well location (latitude and longitude, preferably in a GIS shapefile)
- Ground surface elevation at well location, including elevation datum
- Depth to groundwater readings from 1960s to present as available per well (preferably in excel or electronic tabular format)
- Water surface elevation (if already in tabular format, otherwise it will be calculated from elevation less depth measured)
- Well driller's log (if available)
- Well information (perforated intervals, seal depth, pumping capacity, water quality, etc., if available)
- Agricultural practices (crop type, irrigation method (flood or drip), surface or groundwater application, etc., if available)
- Canal and irrigation ditch Information (location, dimension, flow direction, etc., if available)
- Tile drain (location, depth, discharge, flow direction, etc., if available)
- Subsidence data (if available)
- Historical reports and associated data, including but not limited to the Grasslands Groundwater Quality Assessment Report

The Parties understand that the requested data will be shared with their consultants, to other stakeholders in their respective basins, and that the information may be made public through the development of Westlands' and the Northern and Central Delta-Mendota Region GSA's respective GSPs and the supporting documentation for those GSPs. Other than publishing information for such purposes, neither Party will disclose the other Party's information to any third party, except if that other Party determines, at its sole discretion, the disclosure is required by law. Each Party may review preliminary results before publishing the information; provided that if a review of preliminary results is desired, the Party seeking to review will make that request in writing to the other party.

The Parties and their authorized representatives, by signatures below, agree to the Data Sharing Agreement.

Note: Return one signature copy to WWD

Westlands Water District:
By: _____
Title: CHIEF OPERATING OFFICER
Date: 4/23/18

SLDMWA on behalf of the Parties:
By: _____
Title: Assistant Executive Director
Date: 4/12/18

Note: Return one signature copy to WWD

Inter-Basin Agreement Between San Joaquin River Exchange Contractors GSP Region and Westlands Water District

DATA SHARING AGREEMENT

Westlands Water District (Westlands) and Central California Irrigation District (CCID), (collectively the Parties) desire to establish a set of common assumptions on groundwater conditions on either side of the boundary between Westlands' service area and the Delta-Mendota Subbasin to be used for development of Groundwater Sustainability Plans (GSPs) related to the implementation of the Sustainable Groundwater Management Act (SGMA). To further that effort to develop a set of common assumptions, the Parties agree to provide each other with the following recorded, measured, estimated and/or simulated modeling data located within five (5) miles of the boundary between Westlands' service area and the Delta-Mendota Subbasin:

- Well location (latitude and longitude, preferably in a GIS shapefile)
- Ground surface elevation at well location, including elevation datum
- Depth to groundwater readings from 1960s to present as available per well (preferably in excel or electronic tabular format)
- Water surface elevation (if already in tabular format, otherwise it will be calculated from elevation less depth measured)
- Well driller's log (if available)
- Well information (perforated intervals, seal depth, pumping capacity, water quality, etc., if available)
- Agricultural practices (crop type, irrigation method (flood or drip), surface or groundwater application, etc., if available)
- Canal and irrigation ditch Information (location, dimension, flow direction, etc., if available)
- Tile drain (location, depth, discharge, flow direction, etc., if available)
- Subsidence data (if available)
- Historical reports and associated data, including but not limited to the Grasslands Groundwater Quality Assessment Report

The Parties understand that the information will be shared with their consultants, to other stakeholders in their respective basins, and that the information will be made public through the development of Westlands' and CCID's GSA's respective GSPs and the supporting documentation for those GSPs. Other than publishing information for such purposes, neither Party will disclose the other Party's information to any third party, except if that other Party determines, at its sole discretion, the disclosure is required by law. Each Party may review preliminary results before publishing the information, provided that if a review of preliminary results is desired, the Party seeking to review will make that request in writing to the other party.

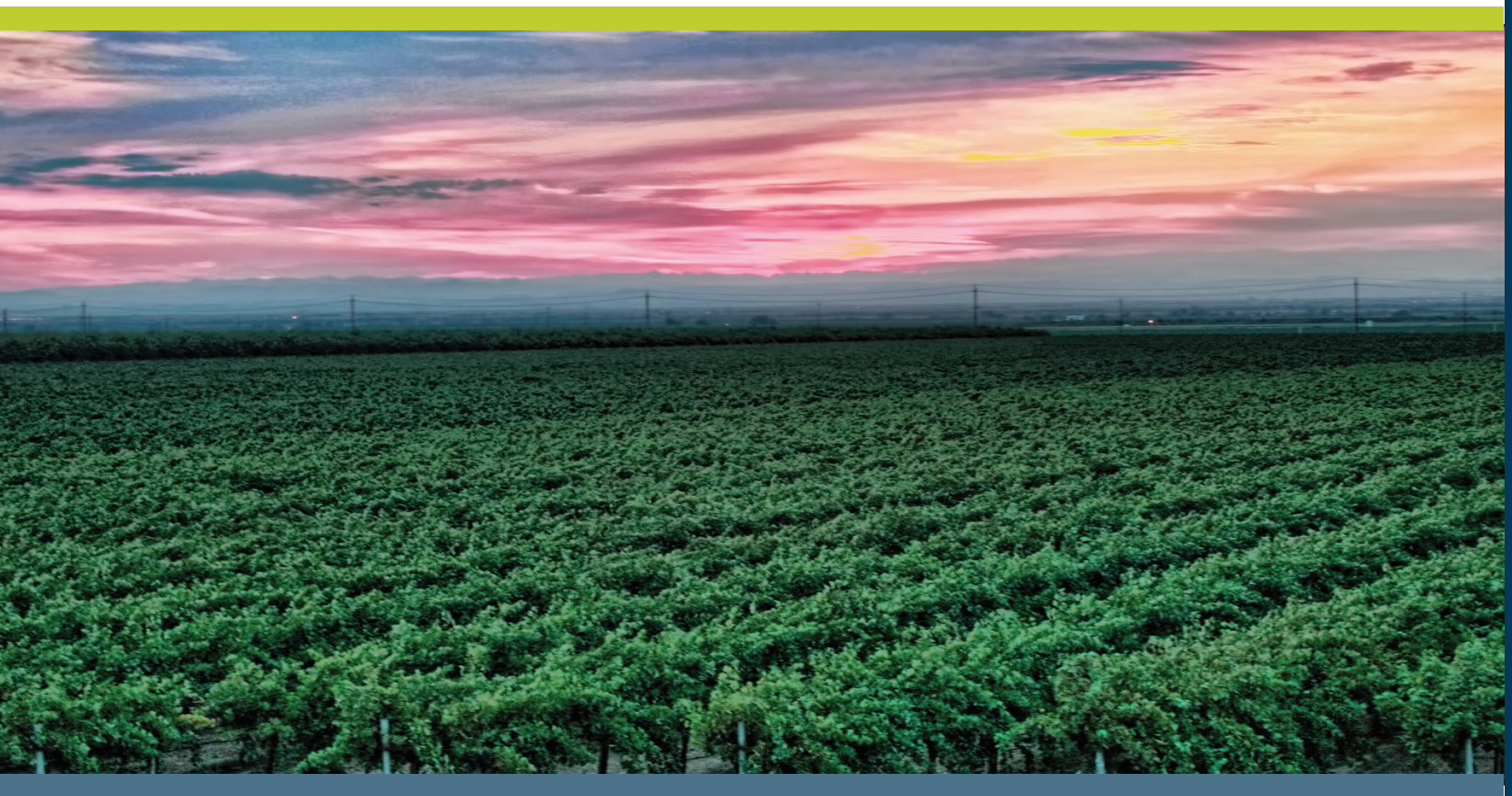
The Parties and their authorized representatives, by signatures below, agree to the Data Sharing Agreement.

Westlands Water District:
By: _____
Title: CHIEF OPERATING OFFICER
Date: May 16, 2018

Central California Irrigation District:
By: _____
Title: General Manager
Date: 5-14-18

Note: Return one signature copy to WWD

Appendix E - Delta-Mendota Subbasin Communications Plan



Delta Mendota Subbasin Groundwater Management

Sustainable Groundwater Management Act Communications Plan

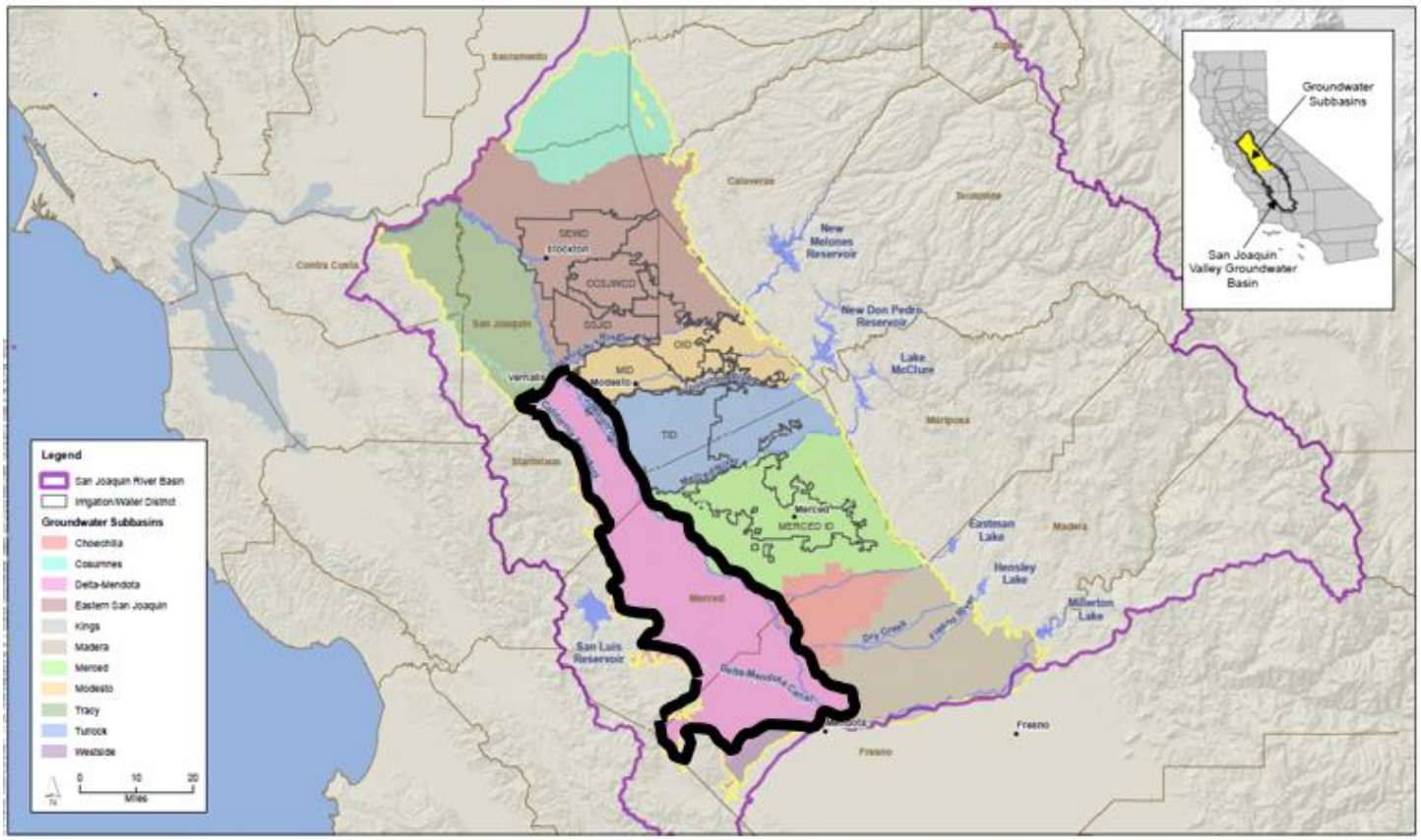


Figure 9-1
Vicinity Map of Groundwater Subbasins

Prepared by:
Lisa Beutler, MWH/Stantec,
Via CA Dept. of Water Resources,
Facilitation Services Technical Assistance

June 2017

Forward: How to use this Plan

This Communication Plan provides a high-level overview of near and long-term outreach and engagement strategies, tactics and tools. Its purpose is to assist the Groundwater Sustainability Agencies (GSAs) of the Delta Mendota Subbasin with stakeholder outreach and other related actions as required by the Sustainable Groundwater Management Act (SGMA) of 2014. It is presented as a working public draft, and should be considered a living document that is continuously refined and updated as circumstances suggest.

Chapter 1*: Introduction and Background* provides text and information about SGMA and the Delta Mendota Subbasin that can be repurposed directly into websites or printed materials by agencies and/or entities with an interest in SGMA and how it will affect the subbasin. This section also describes the communications activities mandated by SGMA.

Chapter 2: *Communications Plan Overview* provides communications planning goals and objectives as well as the scope. This section can be used in support of project management activities.

Chapter 3: *Situation Assessment* provides some of the context for communications activities. This section can be used in developing required assessments of stakeholder issues and interests. It also informs project management activities.

Chapter 4: *Audiences and Messages* identifies key subbasin audiences and message points for specific audience segments. The goal of this chapter is to provide information that can be used by the subbasin GSAs in preparing to work with key stakeholders.

Chapter 5: *Risk Management* is the summary of a communications risk assessment that considers subbasin communications strengths and weakness and proposes on-going adjustments based on best communication management practices. This section informs project management activities and provides a context for some of the recommended communications tactics.

Chapter 6: *Tactical Approaches* offers a communications to do list with specific communications activities relevant for project phases and subbasin audiences.

Chapter 7: *Measurements and Evaluation* outlines methods to determine the effectiveness of outreach and engagement.

Chapter 8: *Roles and Responsibilities* provides a sample list of tasks and illustrates the types of communications roles and responsibilities which might be assigned. This section should be incorporated into project management plans.

Subbasin GSAs should feel free to repurpose any or all parts of the document that will assist them in meeting SGMA requirements.

This document was developed with technical support provided by the California Department of Water Resources' (DWR) SGMA Facilitation Support Services Program and completed by the Communication and Engagement Group of MWH/Stantec.

Delta Mendota Subbasin
Sustainable Groundwater Management Act
Communications Plan
Working Draft

Contents

1. INTRODUCTION AND BACKGROUND 5
2. COMMUNICATIONS PLAN OVERVIEW 11
   2.1. Purpose 11
   2.2. Importance 11
   2.3. Scope 12
   2.4. Communications Goal 12
   2.5. Communications Objectives 12
   2.6. Strategic Approach 12
   2.7. Communications Governance, Communications Team 13
   2.8. Constraints 13
3. SITUATION ASSESSMENT 14
   3.1. Introduction 14
   3.2. Situation Assessments 14
   3.3. Background Research 14
   3.4. Interviews and Consultations 14
   3.5. Summary of key findings 15
   3.6. Promising messages and methods 24
4. AUDIENCES AND MESSAGES 25
   4.1. Two Core Audience Segments 25
   4.2. Communications and Change Management 25
   4.3. Tied to Decision Making 26
   4.4. GSA Boards 27
   4.5. Primary Audiences 27
5. RISK MANAGEMENT 31
   5.1. Technical, quality, or performance 31

5.2. Project management 32
5.3. Organizational / Internal 32
5.4. External 32
5.5. Historical 32
6. TACTICAL APPROACHES 33
6.1. Communications Coordination. 34
6.2. Tactics 34
6.2.1. Website 34
6.2.2. Meeting Calendar 35
6.2.3. Branded Informational Flyers, Templates, PowerPoint Presentations, etc. 36
6.2.4. Periodic Newsletter 36
6.2.5. GSP related mailing lists 36
6.2.6. Descriptions of Interested Parties 36
6.2.7. Issues and Interest Statements for Legally Mandatory Interested Parties 37
6.2.8. Coordinated Public Workshops 37
6.2.9. Message Calendar 37
6.2.10. Press Releases and Guest Editorials 37
6.2.11. Speakers Bureau 38
6.2.12. Existing Group Venues 38
6.2.13. Outreach Documentation 38
6.3. Procedural and Legally Mandated Outreach 38
6.4. Items for Future Consideration 40
7. MEASUREMENTS & EVALUATION 41
7.2. Process Measures 41
7.3. Outcome Measures 41
7.4. Mid-cycle Evaluation of Accomplishments 42
8. ROLES AND RESPONSIBILITIES 43
9. LIST OF APPENDICES 45
10. Appendix 1. Public Outreach Requirements under SGMA ..... - 1 -
11. Appendix 2. Communications Governance ..... - 1 -

List of Figures

Figure 1. Stakeholder Engagement Requirements 7
Figure 2. San Joaquin Valley Groundwater Basin **Error! Bookmark not defined.**
Figure 3. Elements of a Communications Plan 11
Figure 4. Interview and Consultation Quick Facts 15
Figure 5. USGS Illustration of the DMC and Subsidence 17
Figure 6. Integrated Regional Water Management Groups 19
Figure 7. Irrigated Lands Coalitions 19
Figure 8. CV-Salts Initiative 19
Figure 9. Two Core Audience Segments 25
Figure 10. Website Structure 35

List of Tables

Table 1. Revision History iv
Table 2. GSP Submittal Requirements 6
Table 3. Number of Subbasin Public Water Agencies 18
Table 4. Sample – Early Phase Message Elements for Subbasin Stakeholders 26
Table 5. Communications Planning Questions 27
Table 6. Risk Factors 31
Table 7. IAP2 Public Participation Spectrum 33
Table 9. Mandated Outreach 38
Table 10. Sample RACI Chart 43

List of Acronyms and Abbreviations

Item	Description
Basin	Groundwater Basin or Subbasin
Coms Plan	Delta Mendota Subbasin, Sustainable Groundwater Management Act, Working Draft Communications Plan
CSD	Community Service District(s):
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
DAC	Disadvantaged Communities
DMC	Delta-Mendota Canal
DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
IRWMP	Integrated Resource Water Management Plan
PDF	Portable Document Format
RCD	Resource Conservation District(s)
SGMA	Sustainable Groundwater Management Act
SLDMWA	San Luis Delta- Mendota Water Authority
State Board	State Water Resources Control Board

Item	Description
SA	Situation Assessment
USGS	United States Geological Survey

Revision History

Table 1. Revision History

Revision History			
Revision/Dock Title #	Date of Release	Author	Summary of Changes

INTRODUCTION AND BACKGROUND

The purpose of this Communication Plan is to assist the Groundwater Sustainability Agencies (GSAs) of the Delta Mendota Subbasin with stakeholder outreach and other related actions as required by the Sustainable Groundwater Management Act (SGMA) of 2014. Its chapters identify key stakeholders and provide a high-level overview of near and long-term outreach and engagement strategies, tactics and tools. The plan was developed with technical support provided by the California Department of Water Resources' (DWR) SGMA Facilitation Support Services Program.

1.1. SGMA Basics[1]

After decades of debate, in 2014 California lawmakers adopted SGMA. This far-reaching law seeks to bring the State's critically important groundwater basins into a sustainable regime of pumping and recharge. The change in water management laws has created new obligations for residents and water managers in the Delta-Mendota Groundwater Subbasin. The San Luis Delta- Mendota Water Authority (SLDMWA) is assisting its members in implementation of this law.

SGMA requires, **by June 30, 2017**, the formation of locally-controlled GSAs in many of the State's groundwater basins and subbasins (basins). A GSA is responsible for developing and implementing a **groundwater sustainability plan** (GSP). These plans assist the basins in meeting sustainability goals. The primary goal is to maintain sustainable yields without causing undesirable results.

1.1.1. GSAs & GSPs

Any local public agency that has water supply, water management, or land use responsibilities in a basin can decide to become a GSA. A single local agency can decide to become a GSA, or a combination of local agencies can decide to form a GSA by using either a Joint Power Authority (JPA), a memorandum of agreement (MOA), or other legal agreement. If no agency assumes this role the GSA responsibility defaults to the County; however, the County may decline.

A GSP may be any of the following *(Water Code § 10727(b)):*

- A single plan covering the entire basin developed and implemented by one GSA.
- A single plan covering the entire basin developed and implemented by multiple GSAs.

[1] Sections on SGMA are largely drawn, in whole or in part, from publicly available materials from the Department of Water Resources. For more see: http://www.water.ca.gov/groundwater/sgm

- Subject to Water Code Section 10727.6, multiple plans implemented by multiple GSAs and coordinated pursuant to a single coordination agreement that covers the entire basin.

If local agencies are unable to form an approved GSA and/or prepare an approved GSP in the required timeframe, then the basin or subbasin would be considered unmanaged. Unmanaged groundwater basins and subbasins are subject to State Water Resources Control Board (State Board) oversight. This is true even if the vast majority of the subbasin is covered by a plan. Should intervention occur, the State Board is authorized to recover its costs from the GSAs.

1.2. SGMA Communications and Engagement Requirements

SGMA includes specific requirements for communications and engagement by each planning phase. **Figure 1** (next page) illustrates the requirements and provides water code references. The GSP submittal guidelines also describe the outreach and engagement documentation to be submitted with the plan. **Table 2** describes the submittal requirements. A full list of codes and requirements is also provided in **Appendix 1**.

Table 2. GSP Submittal Requirements[2]

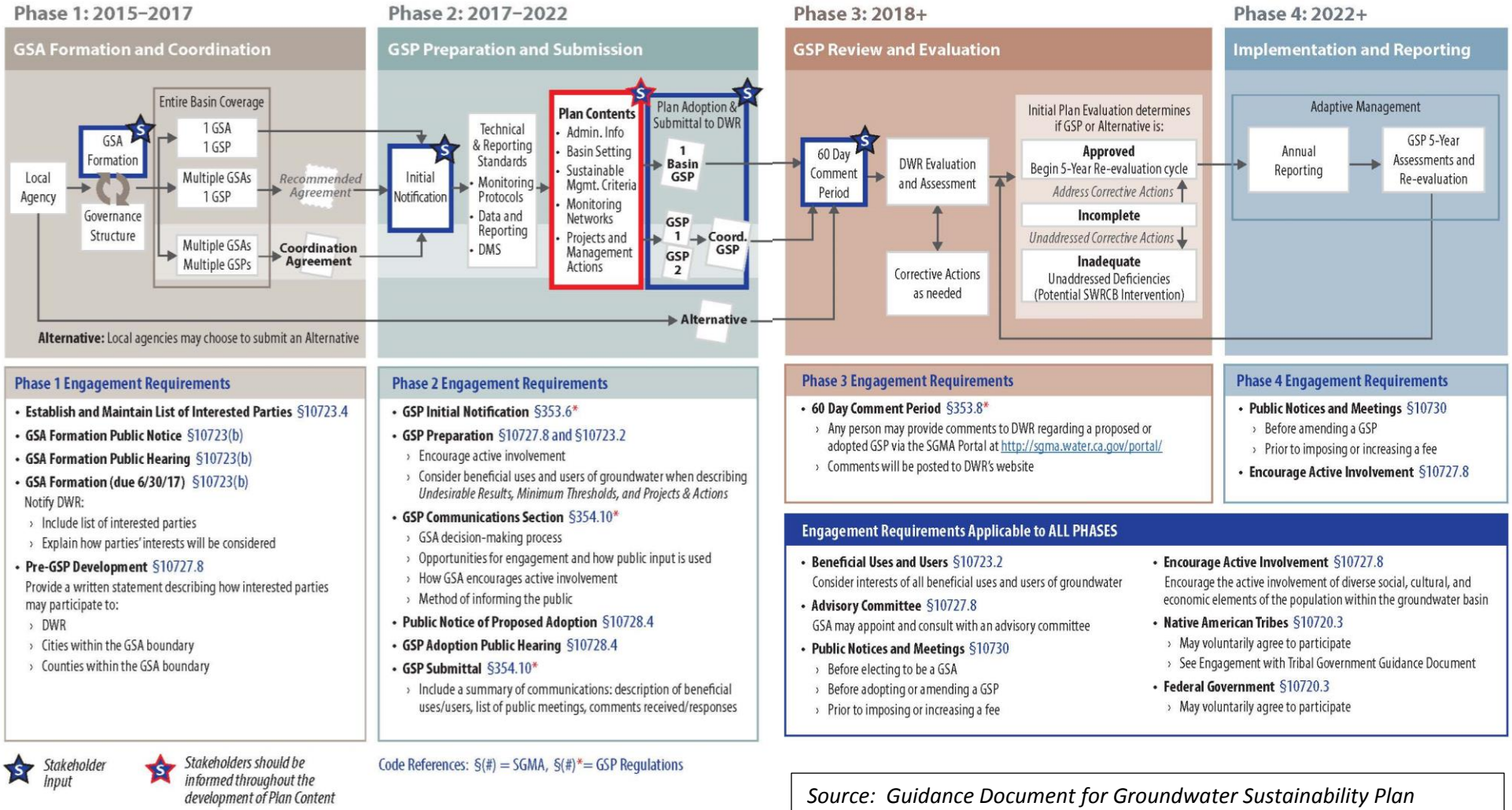
GSP Regulations Section	Requirement	Description
Article 5. Plan Contents, Sub-article 1. Administrative Information		
354.10	Notice and Communication	• Description of beneficial uses and users • List of public meetings with dates • GSP comments and responses • Decision-making process • Public engagement process • Method(s) to encouraging active involvement • Steps to inform the public on GSP implementation progress

1.3. Planning Approach

While the SLDMWA is assisting with the coordination of GSP(s) development, this Communications Plan (Coms Plan) is offered for the voluntary use of all of the GSAs of the Delta-Mendota Subbasin. A full Coms Plan schedule should be developed in conjunction with the overall GSP(s) development schedule. One additional option is for the Coordination Committee of GSAs to provide overall communications guidance. This could potentially be included in a section of the Coordination Agreement.

[2] Guidance Document for the Sustainable Management of Groundwater, Preparation Checklist for GSP Submittal, Department of Water Resources, December 2016

Figure 1. Stakeholder Engagement Requirements



Source: Guidance Document for Groundwater Sustainability Plan Stakeholder Communication and Engagement Department of Water Resources, June 2017

An important additional step will be establishing, in conjunction with the multiple GSAs, the roles and responsibilities for implementing the Coms Plan.

1.4. SGMA and the Delta Mendota Subbasin[3]

The Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin is a long, relatively narrow groundwater basin that covers portions of five counties, from north to south, San Joaquin, Stanislaus, Merced, Madera and Fresno Counties (see **Figure 2**). The Delta-Mendota sub-basin is bounded on the west by the Tertiary and older marine sediments of the Coast Ranges. The northern boundary (from west to east) begins on the west by following the Stanislaus/San Joaquin County line, then deviates to the north to encapsulate all of the Del Puerto Water District before returning back to the Stanislaus/San Joaquin County line. The boundary continues east then deviates north again to encapsulate all of the West Stanislaus Irrigation District before returning back to the Stanislaus/San Joaquin County line. The boundary continues to follow the Stanislaus/San Joaquin County line east until it intersects with the San Joaquin River.

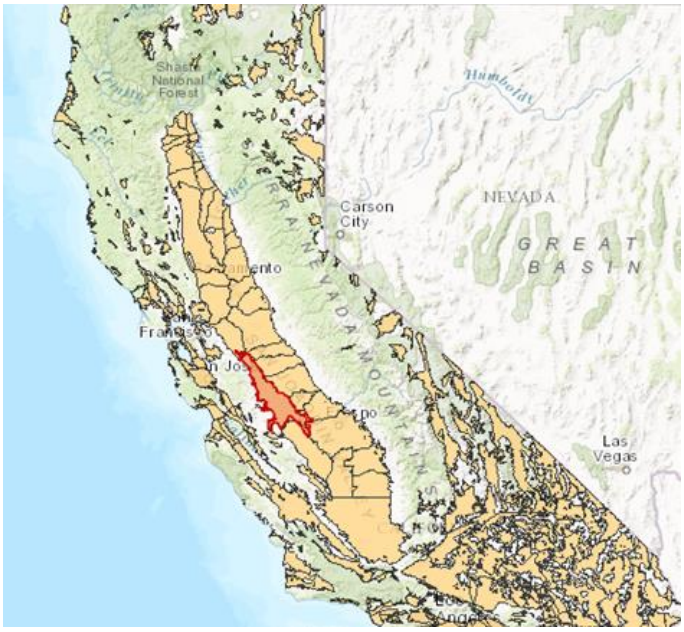


Figure 2. Delta Mendota Subbasin

The eastern boundary (from north to south) follows the San Joaquin River to within Township 11S, where it jogs eastward along the northern boundary of Columbia Canal Company and then follows the eastern boundary of Columbia Canal company until intersecting the northern boundary of the Aliso Water District. The boundary then heads east following the northern and then eastern boundary of the Aliso Water District until intersecting the Madera/Fresno County line. The boundary then heads westerly following the Madera/Fresno County line to the eastern boundary of the Farmers Water District. The boundary then heads southerly along the eastern boundary of the Farmers Water District, and continues southerly along the section line to the intersection with the northern right-of-way of the railroad. The boundary then heads east along the northern right-of-way of the railroad until intersecting with the western boundary of the Mid-Valley Water District. The boundary then heads south along the western boundary of the Mid-Valley Water District to the intersection with the northern boundary of Reclamation District 1606. The boundary then heads west and then south following the boundary of Reclamation District 1606 and James Irrigation District until its intersection with the Westlands Water District boundary.

The southern boundary (from east to west) matches the northerly boundaries of Westlands Water District legal jurisdictional boundary last revised in 2006. The boundary then

[3] Information related to the Delta Mendota subbasin is drawn directly from http://sgma.water.ca.gov/basinmod/basinrequest/preview/23.

proceeds west along the southernmost boundary of the San Luis Water District. The boundary then projects westward from this alignment until intersecting the Delta-Mendota sub-basin Western boundary described above.

1.5. Delta-Mendota Subbasin GSP Planning

The GSAs of the Delta-Mendota Subbasin intend to work together to meet Sustainable Groundwater Management Act (SGMA) requirements and prepare a Groundwater Sustainability Plan (GSP) or coordinated Sustainability Plans by June 31, 2020. The San Luis Delta- Mendota Water Authority (SLDMWA) is assisting its members and non-members in planning and implementation of this law and has been directly assisting a subset of the local GSA eligible agencies in organizing to accomplish required SGMA tasks. The SLDMWA has also hosted informal, information meetings with all of the subbasin GSAs.

While SLDMWA coordinated GSAs are confident in their ability to prepare a GSP for the areas under their jurisdiction, SGMA requires that an approved GSP or multiple coordinated GSPs are in place to provide sustainable management for the entire subbasin. The identified GSAs have been asked to determine how they wish to proceed in individual GSP development or a coordinated single GSP by July 2017 and whether or not they wish to participate in the Prop 1 Sustainable Groundwater Planning Grant as a joint request.

1.6. Delta Mendota Subbasin GSAs

Following are the DWR identified agencies (as of June 15, 2017).[4]

1. Aliso Water District
2. Central Delta-Mendota Region Multi-Agency GSA
3. City of Dos Palos
4. City of Firebaugh
5. City of Gustine
6. City of Los Baños
7. City of Mendota
8. City of Newman
9. City of Patterson
10. County of Madera—3
11. DM-II
12. Farmers Water District
13. Fresno County—Management Area 'A'
14. Fresno County—Management Area 'B'
15. Grasslands Groundwater Sustainability Agency
16. Merced County—Delta-Mendota

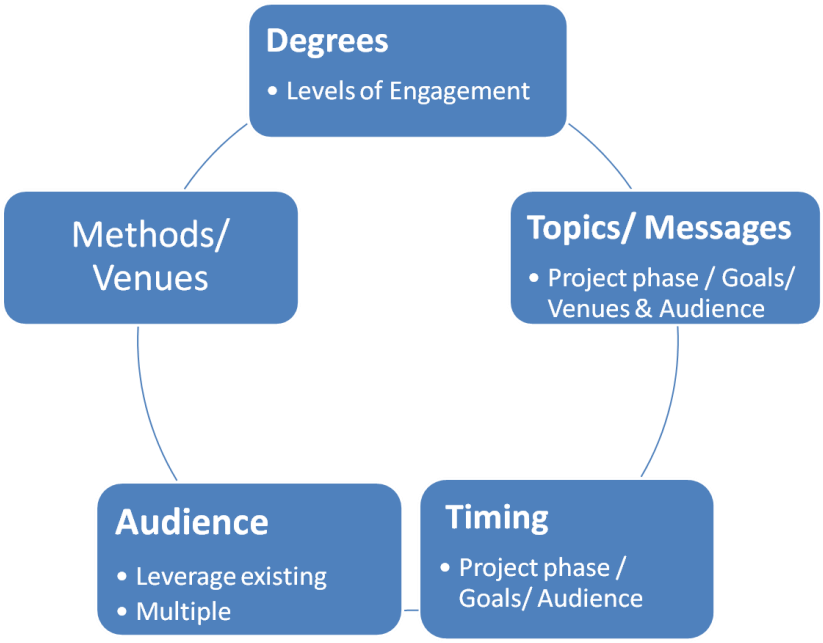
[4] See: http://sgma.water.ca.gov/portal/

17. Northwestern Delta-Mendota GSA
18. Ora Loma Water District
19. Patterson Irrigation District
20. San Joaquin River Exchange Contractors Water Authority
21. Turner Island Water District-2
22. West Stanislaus Irrigation District GSA
23. Widren Water District GSA

COMMUNICATIONS PLAN OVERVIEW

Communication is the process of transmitting ideas and information. According to the Project Management Institute, 75%-90% of a project manager's time is spent communicating. A Coms Plan provides the purpose, method, messages, timing, intensity, and audience of the communication, then describes who will do the communicating, and the frequency of the communication (see **Figure 3**.)

Figure 3. Elements of a Communications Plan



2.1. Purpose

The purpose of the Delta-Mendota Subbasin, Sustainable Groundwater Management Act, Coms Plan is to outline the information and communications needs of the project stakeholders and provide a roadmap to meet them. The Coms Plan then identifies how communications activities, processes, and procedures will be managed throughout the project life cycle.

2.2. Importance

While communications are important in every project, a well-executed communications strategy will be essential to the success of the GSP(s) development and adoption process. The financial and regulatory stakes are high and communication missteps can create project risks. Further, development of a viable GSP(s) will require an on-going collaboration among all the stakeholders, both organizational and external. The plan will be comprehensive and consider multiple variables, a range of system elements and project costs and benefits. Stakeholder input will be needed to refine GSP requirements and fully

define the water management system, and potential impacts, costs and benefits that may result in managing for sustainability.

2.3. Scope

The plan focuses on formal communication elements. Other communication channels exist on informal levels and enhance those discussed within this plan. This plan is not intended to limit, but to enhance communication practices. Open, ongoing communication between stakeholders is critical to the success of the project.

2.4. Communications Goal

Development, adoption and implementation of the GSP(s) will require basin external stakeholders, other agencies, staff, managers, and the multiple GSA Boards to evaluate choices, make decisions and commit resources.

The core communications goal is to plan for and efficiently deliver clear and succinct information:

- At the right time
- To the right people
- With a resonating message

This is done to facilitate quality decision making and build accompanying public support

2.5. Communications Objectives

The Coms Plan Objectives are to present strategies and actions that are:

- Realistic and action-oriented
- Specific and measurable
- Minimal in number (a few well delivered are better than many mediocre efforts)
- Audience relevant

2.6. Strategic Approach

Three primary communications strategies have been identified for the GSP(s) development.

1) Fully leverage the activities of existing groups. This practical approach is cost effective and respectful of the limited time that stakeholders have to participate in collaborative processes.
2) Provide targeted, communications and outreach to opinion leaders in key stakeholder segments.
3) Provide user friendly information and intermittent opportunities through existing communication channels and open houses or workshops to allow interested stakeholders (internal and external) to engage commensurate with their degree of interest.

2.7. Communications Governance, Communications Team

Given the relatively large number of stakeholders, a recommendation for coordinated efforts, and the legal requirements for outreach[5], some form of communications governance is recommended. Several governance options for consideration are offered in Appendix 2. The actual form of the governance is less important than a clear understanding of the roles and responsibilities of those responsible for ensuring required communication. For the purpose of this document, an assumption is made that some form of governance will be identified and a communications team (which may be an individual or multiple individuals, and/or include the project consultants) is designated.

A driving consideration for this recommendation is the level of effort associated with required activities and the fact that communications are highly time dependent. That means that communications activities should be occurring that may happen outside of regularly scheduled GSA meetings. In this case delegation with guidance is efficient and effective.

2.8. Constraints

All projects are subject to limitations and constraints as they must be within scope and adhere to budget, scheduling, and resource requirements. These constraints can be even more challenging in projects with multiple agencies as will be the case with the development and coordination of multiple GSPs.

There are also legislative, regulatory, technology, and other organizational policy requirements which must be followed as part of communications management. These limitations must be clearly understood and communicated where appropriate. While communications management is arguably one of the most important aspects of project management, it must be done in an effective and strategic manner recognizing and balancing the multiple constraints.

All project communication activities should occur within the project's approved budget, schedule, and resource allocations. The GSP(s) project managers and the leadership of the participating GSAs should have identified roles in ensuring that communication activities are performed.

To the extent possible, to support collaboration and reduce costs, GSP(s) partners should utilize standardized formats and templates as well as project file management and collaboration tools.

[5] See Appendix 1

SITUATION ASSESSMENT

3.1. *Introduction*

The challenges of asking a community to make changes in how things are done, or forging an agreement among multiple parties are often large. Prior to preparing a Coms Plan, a neutral, 3rd party facilitator conducted a stakeholder Situation Assessment (SA).

The facilitator's role was to provide an independent evaluation of potential stakeholder's interest in coordination and governance for GSA formation and GSP development and identify any barriers or concerns that would need to be addressed for the GSA formation process and GSP(s) development to be successful.

3.2. *Situation Assessments*

An SA is an information-gathering process that informs outreach, engagement and collaboration. As part of preparing the basin communication's process, it was important to know more about:

- Stakeholder Categories
- Opinion leaders
- Regulatory and political context
- Advocates and detractors
- Attitudes and knowledge
- Other elements useful to the crafting of decisions

An assessment is also a low risk approach to education and signaling a future relationship. It facilitates the community's appraisal of its needs, wants and values. A well-crafted assessment sets the stage for the parties to better understand and interpret their situation so that they can make informed decisions for actions, in the short term and for the future.

The Delta-Mendota subbasin SA included background research and interviews. Interviews were usually with individuals but in a few cases a very small group was convened. To encourage candor, the results of the input process were bundled so those interviewed were not individually identified unless they explicitly indicated they wished to share their individual response.

3.3. *Background Research*

The facilitator worked closely with the SLDMWA and DWR to identify useful documents, plans and activities that might inform the overall communications planning process.

3.4. *Interviews and Consultations*

Using information gathered during the background research and similar GSA formation efforts throughout the state, the facilitator worked with the SLDMWA to craft interview questions. The facilitator also provided some selection criteria to the SLDWMA to help identify a representative group of interview candidates. Once selected, the SLDMWA staff and facilitation team invited the interviewees to participate. In addition to full interviews,

additional calls and in person communications were conducted to acquire amplifying information. **Figure 4** provides a quick overview.

Figure 4. Interview and Consultation Quick Facts

Selected participants were all engaged or otherwise stakeholders in some aspect of the basin GSA development process.

A project background sheet was provided in advance of each formal interview and used again during the interviewee discussions with the facilitator. Each interview followed the same format and included 16-18 questions (depending on whether or not a follow-up question was needed).

The questions covered the following topics pertaining to the GSA formations and GSP(s) development:

1. Overarching perspectives from each key stakeholder on general groundwater conditions, GSA governance; subbasin management and associated SGMA compliance
2. Preferred methods to achieve groundwater sustainability consistent with SGMA requirements
3. The level of agreement/conflict around groundwater governance across the range of stakeholder perspectives
4. Experience with facilitated processes, outreach and engagement, and the goals for such support
5. Potential configurations of governance and formations of GSAs and GSP development

3.5. *Summary of key findings*

Interview results indicate an overall positive environment for the project and project communications; however, the effort will require interactions of a large number of parties and planning for an extremely complex system. Following are the reflections, ideas and suggestions of those contacted.

3.5.1. Related to Groundwater Sources and Trends

- *Significant observed impacts associated with Weather, Water Project Deliveries and Cropping Patterns* – Participants observed a declining

groundwater situation and were able to attribute it to drought and weather (particularly timing of seasonal rainfall and periods of prolonged, higher temperatures), conversion to permanent crops, and significant changes in access to surface water.

- *Surface & Groundwater Nexus* – As noted in comments related to access to surface water, there was a clear understanding of the surface/groundwater nexus. Many believed that any realistic solution would have to include a full assessment of the region's surface water future.

- *Extremely Complex Systems* – Many of those interviewed reported that parts of the subbasin were doing fine and could, with good management, be sustainable. They described problems as being primarily in pockets of the subbasin. They also characterized some parts of the subbasin as not being managed sustainably and indicated that they believe this would have continued had SGMA not passed. While it was generally agreed that it would have been better if SGMA was not driving the change, they felt change would not occur without something like SGMA. Several of the participants were able to describe specific locations and situations that illustrated this.

  Issues related to operations of the Bureau of Reclamation, the Delta-Mendota Canal (DMC), the Mendota Pool and restoration activities are of keen interest to all the stakeholders. Everyone was familiar with issues of subsidence and with the facts and figures represented in graphics like those in **Figure 5**, prepared by the United States Geological Survey (USGS).[6]

  Many perceived that groundwater supplies for municipal uses in some parts of the basin were at risk.

- *Historic Rights and Arrangements* – Access to surface water is based on numerous historic rights and agreements as well as more contemporary agreements. As such there is no **single** description of the status of surface water availability among the many subbasin GSAs,[7] although there is a strong understanding of the rights and arrangements that do exist.[8]

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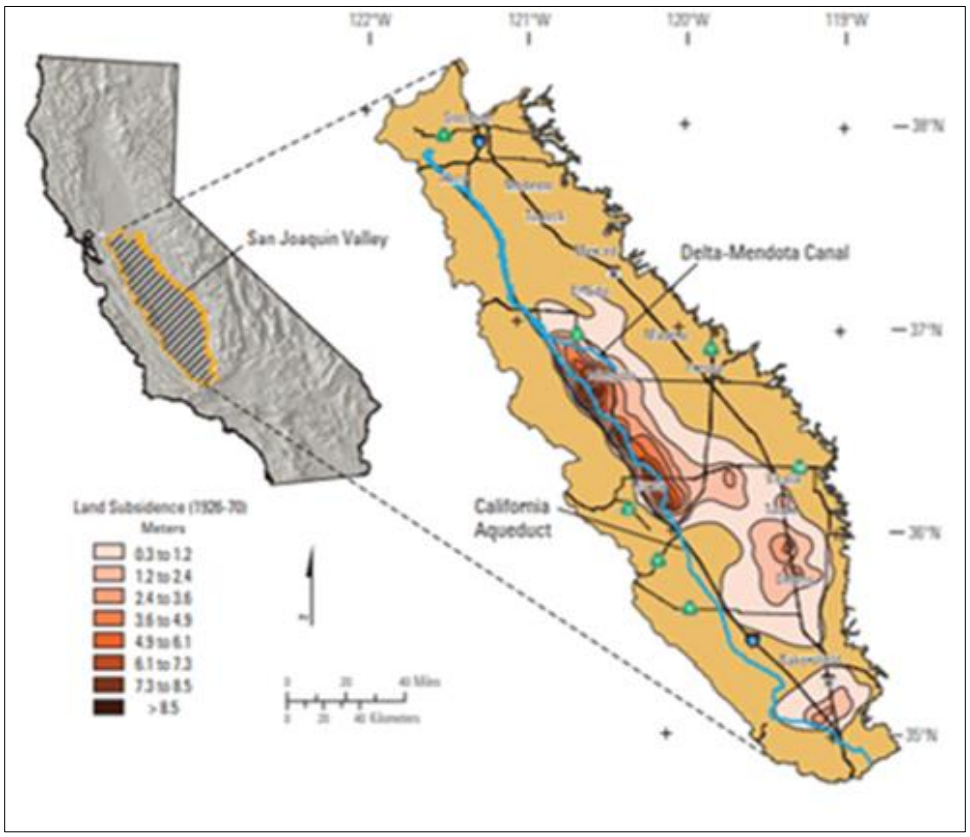
[6] U.S. Department of the Interior | U.S. Geological Survey: https://ca.water.usgs.gov/projects/central-valley/delta-mendota-canal.html, Page Last Modified: Monday, 20-Mar-2017 22:39:47 EDT

[7] A full inventory of water rights and arrangements for the subbasin GSAs is recommended to be prepared as part of the GSP planning process.

[8] In 2010 there were 1,403 water rights claimed in the San Joaquin Delta watershed, the largest number of any watershed in the State. [Source: Associated Press: Original data source is State Water Resources Control Board eWRIMS, Database

Figure 5. USGS Illustration of the DMC and Subsidence



The hierarchy of water rights as well as laws related to groundwater rights will be a significant factor in GSP negotiations.

Another historical factor related to sustainability is the character of land ownership. There was a perceived difference in the values placed on sustainability by multi-generational family farms versus investor driven agriculture and/or water development.

3.5.2. Related to GSA Governance; Subbasin Management and SGMA Compliance

- *Numbers* - The subbasin includes numerous Water Agencies (35) and other potential GSA eligible agencies including Cities and Counties (such as Dos Palos, Firebaugh, Gustine, Los Baños, Mendota, Newman, Patterson, Fresno, Madera, Merced, San Joaquin, and Stanislaus) and Community Service Districts (CSDs) including among others Grayson, Westley, and Volta, as well as multiple Resource Conservation Districts (RCDs) that for the most part were within the general boundaries of other GSA eligible authorities (Panoche, Poso and Grasslands as an example).

  By the June 30, 2017 filing deadline, 23 eligible entities had formally filed GSA formations and met SGMA requirements for subbasin coverage.

Even with this large number of GSA entities, during the SA interviews and in a follow-up survey, most agencies indicated a preference for a reduced number of GSPs and potentially just one or two.

At the time of this assessment there was not a full understanding of all of the potential requirements of being a GSA and ultimately what might be required to prepare a compliant GSP.

Table 3. Number of Subbasin Public Water Agencies

Number of Public Water Agencies		
• Merced County	• Foothill WD	• Panoche WD
• Fresno County	• Fresno Slough WD	• Patterson WD
• Broadview WD	• Grasslands WD	• Romero WD
• Centinella WD	• Hospital WD	• Salado WD
• Central California ID,	• Kern Canon WD	• San Luis Canal Company
• Davis WD	• Laguna WD	• San Luis WD
• Del Puerto WD	• Mercy Springs WD	• Santa Nella C.WD
• Eagle Field WD	• Mustang WD	• Sunflower WD
• El Solyo WD	• Oak Flat WD	• Tranquility ID
• Farmers WD	• Orestimba WD	• West Stanislaus ID
• Firebaugh Canal WD	• Oro Loma WD	• Widren WD
	• Pacheco WD	• Quinto WD

At the time of this assessment participants did not fully recognize the potential number of stakeholders and/or the requirements to conduct outreach.

- *Subbasin Governance Structures* – Many individuals and entities within the subbasin have experience working in cooperative governance and related structures. For example, the SLDMWA provides leadership for an Integrated Resource Water Management Plan (IRWMP) illustrated in **Figure 6**[9] on the following page. Many of the stakeholders are also involved with Irrigated Lands Coalitions (see **Figure 7**).[10]

  Likewise, many are also involved in efforts related to the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative (see **Figure 8**).

[9] Source : San Luis & Delta-Mendota Water Authority, Westside-San Joaquin Integrated Water Resources Plan, July 2014

[10] Source: Central Valley Regional Water Resources Control Board

Existing Cooperative / Collaborative Governance Structures with Delta Mendota Subbasin Stakeholders

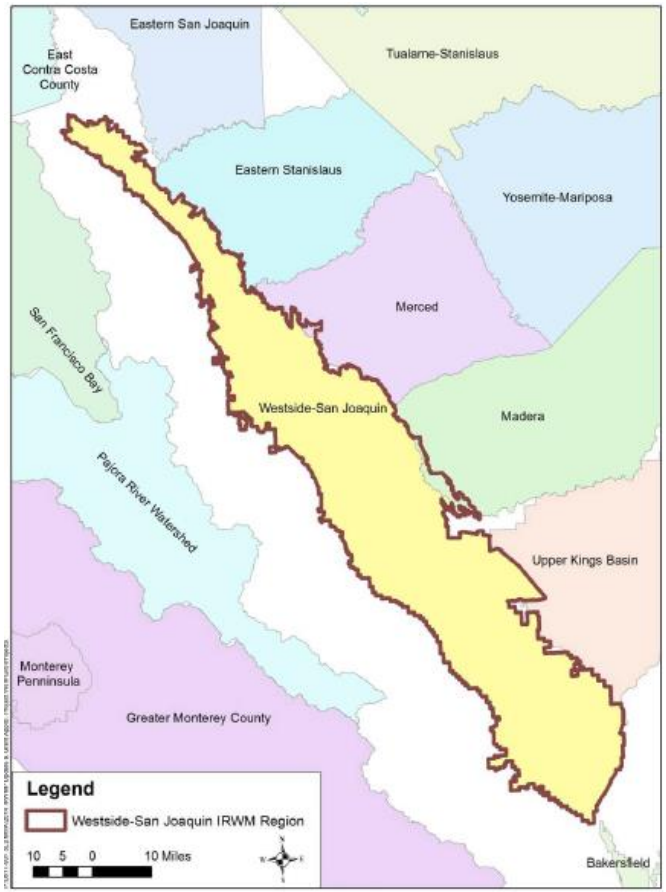


Figure 6. Integrated Regional Water Management Groups

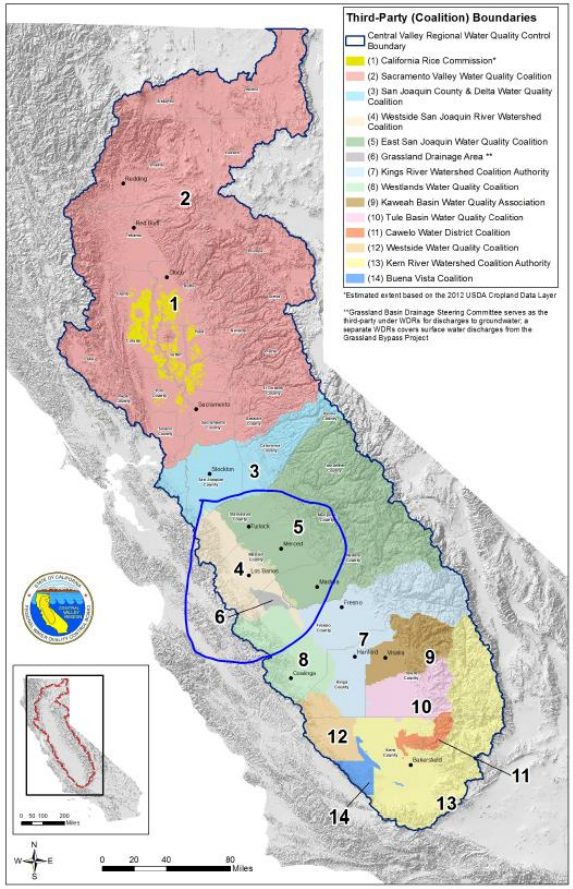


Figure 7. Irrigated Lands Coalitions

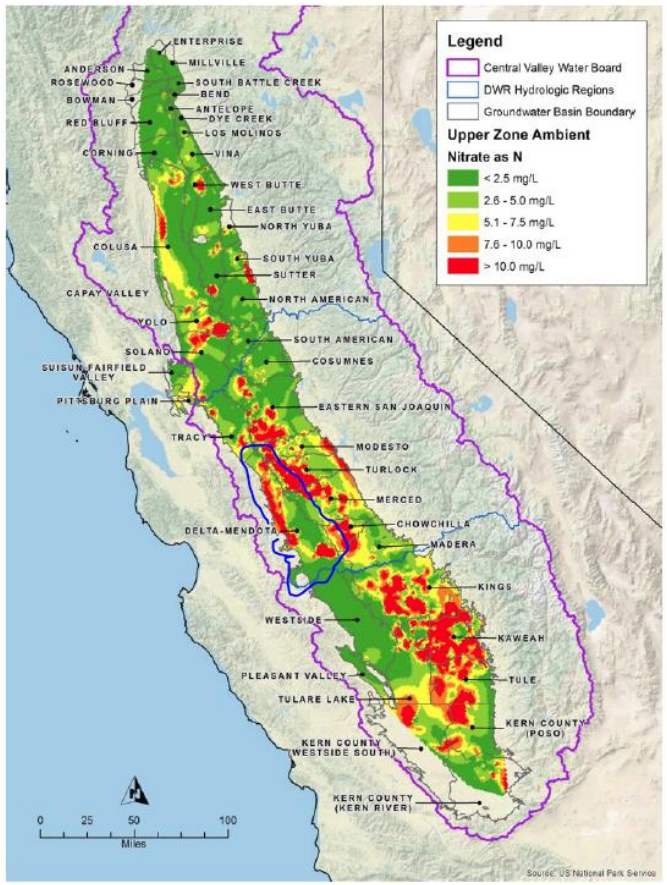


Figure 8. CV-Salts Initiative

CV-Salts was launched to develop sustainable salinity and nitrate management planning for the Central Valley. (See **Figure 8**.[11])

Finally, there are multiple arrangements in place related to surface water transfers and other previous groundwater management planning efforts.

Experience with these programs has created a capacity for collaborative planning that will be essential for GSP development. It also creates opportunities to access and leverage existing stakeholder meetings and events rather than needing to convene multiple new stakeholder processes.

3.5.3. Issues to be Addressed in Creating a Sustainability Plan

Some of the participants indicated they had an extremely good understanding of their section of the subbasin, with exact and extensive records to support their perspective. They found that making projections using historical data had been more reliable than some of the groundwater models that were in use.

In thinking about development of a GSP they felt there could be some difficulty in developing water balances due to lack of quality data for some locations. Another mild concern was the potential for disagreements about the selection of a groundwater model(s) or reconciling differences among methods.

Still another concern was the capacity of the GSAs and/or GSA members to fully participate. Some of these agencies are very lightly staffed and have varying levels of knowledge related to groundwater management. All of the participants had significant other duties prior to the passage of SGMA.

One concern, expressed after completion of the assessment, was the potential for some agencies to simply opt out of participating in the development of a GSP but still receive the benefits of the region having an approved plan without having contributed to the larger good of the subbasin.

3.5.4. Representation

The State Board lists the following as Required Interested Parties for the purpose of SGMA outreach:

- All Groundwater Users
- Holders of Overlying Rights (agriculture and domestic)
- Municipal Well Operators and Public Water Systems
- Tribes
- Counties
- Planning Departments /Land Use
- Local Landowners
- Disadvantaged communities
- Business

[11] Ibid

- Federal Government
- Environmental Uses
- Surface Water Users (if connection between surface and ground water)

All of these stakeholder categories were contacted in the interview process excepting tribes. In the case of tribes, there are no classified tribal lands in the Delta-Mendota subbasin, therefore no planning, outreach or communication needs are currently anticipated for tribes.

Due to subbasin characteristics, a primary focus of the assessment was on agricultural, disadvantaged communities (DACs) and municipal groundwater users.

- *Related to Agricultural Representation* - most respondents believed that the elected leadership of the GSA agencies would do a good job in representing agriculture and noted that many of them were growers themselves. It was also noted that farmers were busy and would be far more interested in any specifics of a GSP that would impact operations or the degree of certainty about water availability than the particulars of GSA governance.

- *Regarding DACs* - Much of the subbasin and its counties (San Joaquin, Stanislaus, Merced, and Fresno) have communities that meet the DAC definition and the region is generally considered disadvantaged. The ability of DACs to participate in GSP development was considered limited and it was thought that there would be a need for specific and direct outreach to DACs through elected leadership and via use of trusted community advocates. As part of the SA, several of those interviewed identified themselves as being able to represent a DAC perspective and one in particular was particularly concerned about the availability of Spanish language materials. As a result, Spanish language materials were included in the meeting materials of the public GSA adoption meetings and the SLDMWA provided a fluent Spanish speaker to assist with meetings.

  In the past, to promote DAC identification and involvement, the Westside-San Joaquin IRWM previously conducted an extensive survey of private and public community representatives to educate and encourage understanding of the IRWM process, to help understand the issues confronted by DACs, and to

better address the needs of minority and/or low-income communities. This effort resulted in identification of DACs in the Region and an initial list of 22 projects that would benefit DACs and low-income communities. Given known constraints on this community it is recommended that more focused DAC outreach should be coordinated with the IRWM. This effort is now in progress.

- *Regarding Municipals* - The SA outreach also included interviewing Municipal Stakeholders. A significant number of the Cities are fully dependent on wells for water supply and issues related groundwater management are of grave concern. These representatives all felt that even while it would be difficult to make time to participate in GSAs and GSP development, that they must make the time. Many had also determined that they wished to form their own GSA to reflect their specific interests in any kind of broader GSP negotiation.

- *Regarding Environmental Interests* - There appeared to be a less defined stakeholder segment representing traditional, environmentally focused issues. Outreach was made to subbasin government agencies that often serve as a surrogate for these interests and an informal consultation occurred with a representative of the Planning and Conservation League to identify any known, active stakeholders. However, no specific entity or individual was identified by those contacted. A general perception was that this community would desire engagement and would designate representatives if the GSP development was thought to potentially impact existing restoration or other environmental concerns but the formation of GSAs per-se, was of less interest. The next phase of communications should include outreach to organizations such as Audubon, the Nature Conservancy and Ducks Unlimited just to ensure due diligence. These connections will be important going forward, particularly if environmental issues are identified.

- *Regarding Industrial Users* – The region includes some industrial water users. This sector has a relatively lower percent of water use compared to other subbasins users; however, representatives of the sector pointed out how essential access to water was to their industry. The interviewees also emphasized how important these industries were to the local economies. There was a stated concern about representation since there didn't appear to be a direct way to engage, particularly with multiple GSAs being formed.

- *Regarding Counties & Planning Agencies* – All of the subbasin counties have designated representatives and all are assisting with GSA coverage for areas not otherwise covered by a GSA. All of the city and county representatives had direct engagement with the planning arms of their jurisdictions, or were staff to the planning departments. These representatives, like the municipal representatives, viewed this as critical issue even as it creates new workload for the already busy entities.

3.5.5. Communications and Facilitation Preferences

Participants were asked to describe their communications preferences. Several offered specific suggestions on written materials. Most did not believe there would be a need for a high frequency of communications directly with non-GSA stakeholders.

Several suggested using regularly scheduled activities of existing groups and gatherings to share information rather than creating stand-alone events. They listed annual meetings of the water agencies as one good venue as well as meetings related to the IRWM and Irrigated Lands. Several also thought that it would be good to go to places like Farmers Markets, particularly for the disadvantaged communities, and County Fairs.

Farm Bureau representatives also indicated a willingness to support outreach efforts. The Merced Farm Bureau, in particular, has already helped to advertise public meetings related to GSA formations.

Related to facilitation there was not a broad exposure to professional facilitators among many of the stakeholders. Even so, participants consistently listed qualities such as fairness and transparency, a good understanding of the issues, and confidence as helpful facilitator strengths. There was a sense that the GSAs would not need hand holding but that facilitation could be useful for helping the stakeholders forge decisions and making what many believed would need to be compromises.

3.5.6. Success Factors, Barriers to Success

The participants were asked to describe their view on the odds for success as well as any barriers that would prevent successful completion of a GSP.

Overall, most participants expressed a medium to high likelihood for success. They noted that the carrot (grants and technical support) and stick (significant regulatory intervention) by the State creates a dynamic that is supportive to success.

Participants stated barriers related to the capacity of the GSAs to participate and ultimately agree to, and implement changes. The much diffused governance structure of multiple GSAs amplifies this dilemma as do actions beyond the control of the subbasin entities (such as climate and water deliveries).

In addition to perceived barriers, participants outlined their thoughts on opportunities and success strategies.

- *Drought* – While the drought was unwelcome it increased awareness of the need for changes. Many felt it would be easier to move forward while the topic is prominent in everyone's minds.
- *Short and Long Game* – Several suggested it will be important to have a plan that includes long and short term strategies and activities.
- *Integrated Planning* – Many of the participants emphasized the importance of integrated planning.

3.5.7. Other Comments and Advice

Many participants expressed appreciation for being contacted and invited the facilitator to contact them again if there were questions.

3.6. *Promising messages and methods*

Three primary communications strategies have already been identified for the GSP(s) development:

- Leveraging the activities of existing groups
- Providing targeted, communications and outreach to opinion leaders in key stakeholder segments
- Providing user friendly information and intermittent opportunities for a broader range of stakeholders

The same strategies aligned with the recommendations of the SA participants. These methods will allow stakeholders to engage commensurate with their degree of interest while providing sufficient information to ensure long-term success for plan development and implementation.

AUDIENCES AND MESSAGES

GSA formation and GSP(s) development**,** like most large planning efforts, consists of a broad range of stakeholders with differing interests and influence.

4.1. Two Core Audience Segments

This Coms Plan Anticipates two core audience segments. First is the subbasin GSA Boards and the communications among and between themselves. This audience segment is significant in size given that 23 GSAs will be working to develop a GSP(s) and each GSA has its own Board and audiences.

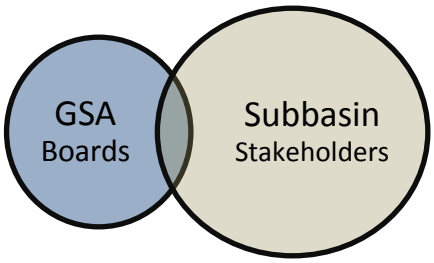


Figure 9. Two Core Audience Segments

The second audience is the subbasin stakeholders as identified in SGMA. This audience is also large. Many of the stakeholders are shared by the GSA Boards and some of the larger stakeholder segments are also represented on the GSA Boards (see **Figure 9**).

Nearly all of the communications strategies apply to both segments; however, some strategies apply to one or the other specifically and are so identified.

4.2. Communications and Change Management

The process of adopting and implementing a GSP will require significant change management. Communications planning should encompass basic change management approaches. Messages should also evolve over time and be tied to the planning process and key decision points. Then, for each audience and each major planning step, communications must do the following:

1. Describe what the actual proposed plan (change) is
2. Articulate how the change will directly impact the category of stakeholder involved
3. Outline the methods that will be used to implement the plan (change)
4. Define the costs and benefits of changing and not changing, and what future conditions will be if change does not occur
5. Consider unintended consequences and others that may also be impacted by the same change then develop a strategy to engage them
6. Offer opportunities for input and for stakeholders and others to improve the approach

The communications requirements for large changes are often underestimated. Some experts indicate that messages may need to be delivered up to 8 different times to be fully absorbed. Communications needs will also evolve as the GSP planning progresses. **Table 4** provides a sample of early communications that focus on SGMA and groundwater basics.

Table 4. Sample – Early Phase Message Elements for Subbasin Stakeholders

Element	What the Change Is	How it will affect the Stakeholder	How the change will be Implemented	Why it is a good idea
Early Phase GSP Development	• Locally governed GSAs will work together to sustainably manage ground water. • The Subbasin /Basin is required to ensure Sustainable Groundwater Management by submitting a sustainability plan by 2020. • The plan must be implemented and found to result in sustainable management by 2040.	(Unique to audience type) • Changes in the current methods of acquiring and utilizing groundwater may occur. • May affect future decisions related to crop types and decisions related to conjunctively using surface water. • May provide additional project resources to the DAC communities.	A collaborative approach is being undertaken to prepare the plan with multiple GSAs coordinating with the SLDMWA as the planning organizer.	• Sustainable and wise use of groundwater allows for the success of future generations and creates greater certainty for today's beneficial users. • Failure to act may result in negative regulatory consequences.

As part of the GSP planning process, the next phase of communications will also need to communicate the requirements for sustainability and how they are achieved in the context of the Delta-Mendota subbasin. Then, communications related to GSP specifics and adoption will require additional outreach, targeted to specific audiences.

4.3. Tied to Decision Making

Communications should also be tightly linked to decision making. For each anticipated decision, stakeholders for that decision should be identified and the following addressed.

1. Who (Is the stakeholder)
    a. An impacted party?
    b. A potential planning partner?
    c. A potential provider of services or resources?
    d. A regulator of the activity?

    (Note: Maybe more than one category.)

2. What (What is the interest of the stakeholder? How will the stakeholder be affected? What are the stakeholders' needs?)
3. Who (Who is the right messenger for the information)
4. How (How should the information be delivered? What are the best methods?)
5. When (What is the appropriate timing for the messages?)
6. Engagement and Knowledge Transfer (How do we create two-way communications?))

Table 5 illustrates some of these ideas.

Table 5. Communications Planning Questions

Who	Interest	Messenger	Delivery	Timing	Knowledge Transfer
• Impacted • Partner • Provider • Regulator	• How will decision affect? • What will stakeholder need?	• Who is a trusted information Source? • How do we ID and Partner	• What are the best delivery methods?	• When should we conduct outreach?	• What do the stakeholders know that we need to know?

4.4. GSA Boards

Due to the multiple subbasin GSAs, specific focus is needed on communications to keep them informed, provide consistent updates and information that the Boards can use in their own outreach, and support their decision making. Primary objectives for communications with the subbasin GSA Boards are to ensure:

- Consistent understanding of the requirements for a GSP and/or GSP coordination
- On-going access to current information
- Timely notice of any significant developments or decision points that may require changes to policies and/or require some other board action
- Confidence that the GSP(s) will be accepted by the GSA's stakeholders

Key communications activities involving the Board include;

1. Providing short and digestible pieces of information to ensure each Board member can quickly articulate to his/her constituents on key matters and remain sufficiently informed so that no decision points are surprises.
2. Provide user-friendly informational materials to be used with public audiences, and will support the Board with their own constituent outreach.
3. Utilize regular Board communications for routine updates and reserve specific Board agenda items for highly significant discussion items.

4.5. Primary Audiences

There are several core stakeholder groups that will require ongoing communications and tailored messaging throughout the planning process. They are:

- Agriculture
- Disadvantaged Communities
- Municipals

Other stakeholders requiring special consideration include:

- Industrial Users/ Business
- Regulators (State and Federal)
- Potential Partners
- Environmental Organizations
- Federal Agencies

While all of the stakeholder types are important to engage for development of a GSP, the first three will be most affected by any changes that might be proposed as a result of the *GSP(s)*.

The following provides an outline of key messages and activities in support of each of the audience types.

4.2.1. Agricultural

Messages about the GSP(s) development should feature the overall desirability of a sustainable management approach how the plan will contribute to management certainty and protect against regulatory oversight.

In thinking about irrigation users it is also important to remember that one size does not fit all.

4.2.2. Disadvantaged Communities

Messages developed for this sector should be tailored and specific to the community. This type of outreach is often best served by use of surrogates and trusted messengers. As identified in the SA, these messages should be aligned with activities of the IRWM, especially given the high, current dependence of many on unsustainable water sources. Messages about ways to access the increased availability of resources due to grant incentives should also be considered.

A specific outreach method to consider relates to the predominance of cells phones within the communities. According to the Pew Research Center, "over 50 percent of low-income households own a smartphone. Smartphone penetration in this demographic creates substantial opportunities for utilities to reach disadvantaged communities with software solutions like customer self-service platforms and targeted digital communications."[12]

4.2.3. Municipals

[12] Secondary Source: Water Smart. https://www.watersmart.com/rethinking-disadvantaged-community-engagement/ (accessed June 1, 2017)

Some care will be needed to address tensions related to the relative percentages of use by Municipal agencies and what constitutes highest and best beneficial uses within an agricultural region. A promising interaction with this community would involve collaboration on messaging to achieve mutually beneficial goals.

Some thought it might be possible for the municipal agencies to provide in-kind support to the GSP development process through support for project websites and mailing lists, production of meeting notices, assistance to the planning process from in-house public information professionals and offering access to physical meeting spaces.

Municipals may need assistance in making the case for the need to think at a Basin scale rather than more local terms.

4.2.4. Business and Industry Interests

Business and industry interests seek assurances about the availability of water for operations and the viability of the farming industry in the region. Messages for these audiences should focus on how the GSP(s) development will contribute to sustainability and how these audiences can participate in discussion specific to their interests.

4.2.5. Regional/Statewide Interests and Regulators

Some degree of uncertainty remains in the overall legal, legislative and regulatory environment as it relates to SGMA implementation.

It is in the interest of the subbasin stakeholders to engage state and federal agencies and regulators throughout the process. These parties may have resources to assist the subbasin and a cooperative attitude will build good will in the event that adjustments are needed to achieve SGMA compliance.

4.2.6. Potential Agency Partners

A variety of collaborations to achieve GSP(s) development goals may be possible. The GSAs should consider the potential for collaboration with non-GSA members and inter-basin (adjacent subbasin) partners, as part of plan deliberations.

4.2.7. GSP Coordinators Planning Forum

A planning forum for subbasin GSP coordinators should be established to further inform a coordination strategy. This forum would include agency representatives as well as the consultant teams and be used for the sole purpose of coordination and mutual support. It is anticipated that this body might meet on a quarterly or as needed basis. This forum would also provide a central point of contact for adjacent subbasin coordinators.

4.2.8. Environmental Community

As noted in the SA, this community will be interested in a GSP features. The focus of messaging for this group being on how the GSP(s) development will contribute to a sustainable regional water portfolio. Special effort should be made to identify specific

topics of interest. For example, as part of GSP development, a list of groundwater dependent species may be created, or impacts to wetlands may be identified. These types of lists would highlight where input from the environmental community might be needed.

4.2.9. Federal Government

Federal representatives interviewed for the assessment asked to be kept informed of subbasin SGMA activities. These agencies have a direct interest in surface water integration as well as SGMA activities that could impact wetlands restoration efforts or groundwater dependent ecosystems and species.

RISK MANAGEMENT

Risk management is the identification, assessment, and prioritization of risks (defined as *the effect of uncertainty on achieving objectives*) followed by coordinated, efficient and economical strategies and actions to minimize, monitor, and control the probability and/or impact of negative events. Strategies and actions may also be used to avert risk by leveraging strengths and opportunities.

Risks can come from uncertainty in economic factors, threats from project failures (at any phase), regulatory and legal uncertainties, natural causes and disasters (drought, flood, etc.), as well as dissention from adversaries, or events of uncertain or unpredictable circumstances. Several risk management standards have been developed. This analysis utilizes those from the Project Management Institute.

Table 6 outlines standardized risk categories and translates them to outreach risks.

Table 6. Risk Factors

RISK CATEGORY	Outreach RISK FACTORS
Technical, quality, or performance	• Realistic performance goals, scope and objectives
Project management	• Quality of outreach design • Outreach deployment and change management • Appropriate allocation of time and resources • Adequate support for Outreach in project management plans
Organizational / Internal	• Executive Sponsorship • Proper prioritization of efforts • Conflicts with other functions • Distribution of workload between organizational and consultant teams
Historical	• Past experiences with similar projects • Organizational relations with stakeholders • Policy and data adequacy • Media and stakeholder fatigue*
External	• Legal and regulatory environment • Changing priorities • Risks related to political dynamics

5.1. Technical, quality, or performance

The subbasin is fortunate to have a high level of water knowledge and skilled personnel available to assist with GSP planning. In general, stakeholder expectations for outreach and performance goals, scope and objectives are attainable. The larger concern in this category is properly communicating the scope of the GSP(s) development and the need for extensive coordination and outreach among a number of parties. Communication of SGMA

requirements for outreach as a planning requirement should be an ongoing consideration and appears to be underestimated in emphasis.

5.2. Project management

A number of positive project management factors are present for the GSP(s) development outreach. Project managers view outreach as an important planning element. The outreach design is based on best management practices and industry standards. It is not overly complicated and with technical services support from DWR and other sources, sufficient resources should be available to properly execute it. Procedures and practices are already in place that can be leveraged to achieve communication goals.

The primary concern in this category relates to GSP coordination. This type of outreach will require additional assessment as the individual GSAs will determine their own protocols for representation.

5.3. Organizational / Internal

Conflicts with other GSA member functions and/or conflicts with outreach activities by efforts that include the same stakeholders (e.g. Irrigated Lands, IRWM, and CV-Salts) should be monitored.

One additional consideration will be the distribution of workload between GSA, organizational and consultant teams. Clear roles and responsibilities must be defined and continuous interaction in place to ensure successful execution.

The GSP(s) development process will also need identified, high level spokespersons or champions. These individuals should be able to discuss subbasin planning with the media, in discussions with regulators and potentially at professional conferences.

5.4. External

The legal and regulatory environment of the GSP(s) development process is complex and evolving. Ongoing issues with surface water deliveries and changing agricultural market conditions are outside of the control of the parties. It will be important for mechanisms to be in place that allow for relatively rapid responses to changing conditions.

5.5. Historical

The primary stakeholders in this process generally view interactions and meetings as productive. There is a history of cooperation and a willingness to work together to save costs and achieve better outcomes.

TACTICAL APPROACHES

Following are specific tactical approaches that may be utilized to deliver the activities, messages, and recommendations of the previous chapters. These approaches are based on best communication practices and grounded in the public participation philosophy of the International Association for Public Participation, Public Participation Spectrum as illustrated in **Table 7**.

The Spectrum represents a philosophy that outreach should match the desired level of input from both the stakeholder and the organizational entity.

Table 7. IAP2 Public Participation Spectrum

IAP2 Public Participation Spectrum

Developed by the International Association for Public Participation

INCREASING LEVEL OF PUBLIC IMPACT

INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
Public Participation Goal:	**Public Participation Goal:**	**Public Participation Goal:**	**Public Participation Goal:**	**Public Participation Goal:**
To provide the public with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public issues and concerns are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the Public:	**Promise to the Public:**	**Promise to the Public:**	**Promise to the Public:**	**Promise to the Public:**
We will keep You informed.	We will keep you informed, listen to and acknowledge concerns and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and issues are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example Tools:	**Example Tools:**	**Example Tools:**	**Example Tools:**	**Example Tools:**
• Fact sheets • Web Sites • Open houses	• Public comment • Focus groups • Surveys • Public meetings	• Workshops • Deliberate polling	• Citizen Advisory Committees • Consensus-building • Participatory decision-making	• Citizen juries • Ballots • Delegated decisions

Based on the assessment findings for the GSP(s) development, most stakeholders would simply like to be INFORMED unless there is a potential for significant changes that may include that stakeholder. Tactics for this group will include fact sheets, websites, open houses, briefings, and informational items placed in publications they already read.

The next largest group of stakeholders, primarily groundwater pumpers and disadvantaged communities, wish to be CONSULTED. This group will have access to all the materials

prepared as part of the informational phase. In addition they should be invited to provide comments on written materials and planning concepts and participate in focused workshops and/or briefings. They should also be invited to attend larger public meetings.

The development of some GSP features may require a higher degree of INVOLVEMENT. This would focus on engagement of a subset of stakeholders that may experience significant impacts associated with SGMA.

COLLABORATION opportunities have also been identified; however, they are of a different character than defined in the Spectrum. Collaboration in this GSP(s) development process will focus on working with partners that have mutual goals to achieve those goals together. This will more resemble a partnership than a public engagement activity.

6.1. Communications Coordination.

Each GSA is required to perform legally mandated outreach activities and the GSP submission guidelines require a minimum level of engagement.

The subbasin GSAs should coordinate outreach activities even if there is a decision to move forward with multiple GSPs. In addition to efficiency and cost savings (the GSAs can share resources) this strategy will allow for consistency in messaging and reduce confusion for stakeholders that may not know what GSA jurisdiction they are in, and/or are in multiple GSA jurisdictions. Following are suggested options for communications coordination.

1. Website
2. Meeting calendar
3. Branded informational Flyers, Templates, PowerPoint Presentations, etc.
4. Periodic newsletter
5. GSP related mailing lists
6. Descriptions of interested parties
7. Issues and interest statements for legally mandatory interested parties
8. Public workshops
9. Message calendar
10. Press releases and guest editorials
11. Speakers Bureau
12. Existing group venues
13. Outreach documentation

6.2. Tactics

6.2.1. Website

As part of the communications plan development, a list of website concepts and draft website content was prepared. The following describes the proposed approach:

a. Centralized – Establish a centralized website for the entire subbasin.
b. Individual GSAs – Posting of material to a website is part of the SGMA requirements. Those GSAs with their own webpages can link to and from the centralized site if they wish to provide their own customized information. For those GSAs without their own website, courtesy pages would be provided as an added feature of the main site. The courtesy pages would all use a single template with the same information to facilitate easy management and updates. Individual GSAs choosing to take advantage of the courtesy pages would be responsible for ensuring that information is current. The page should include a "Last Updated" box to indicate the timeliness of the information.
c. **Basic features** – A basic website framework has already been developed along with introductory information that has prepopulated each page. **Figure 10** illustrates the basic content of the site and includes:
    1. Background information
    2. Information about getting involved, including meeting information
    3. A separate link for Spanish Language materials
    4. Frequently asked questions
    5. Links to GSAs
    6. Contact information

    Should a GSA decide to not participate in the Central website, a similar structure could be utilized.

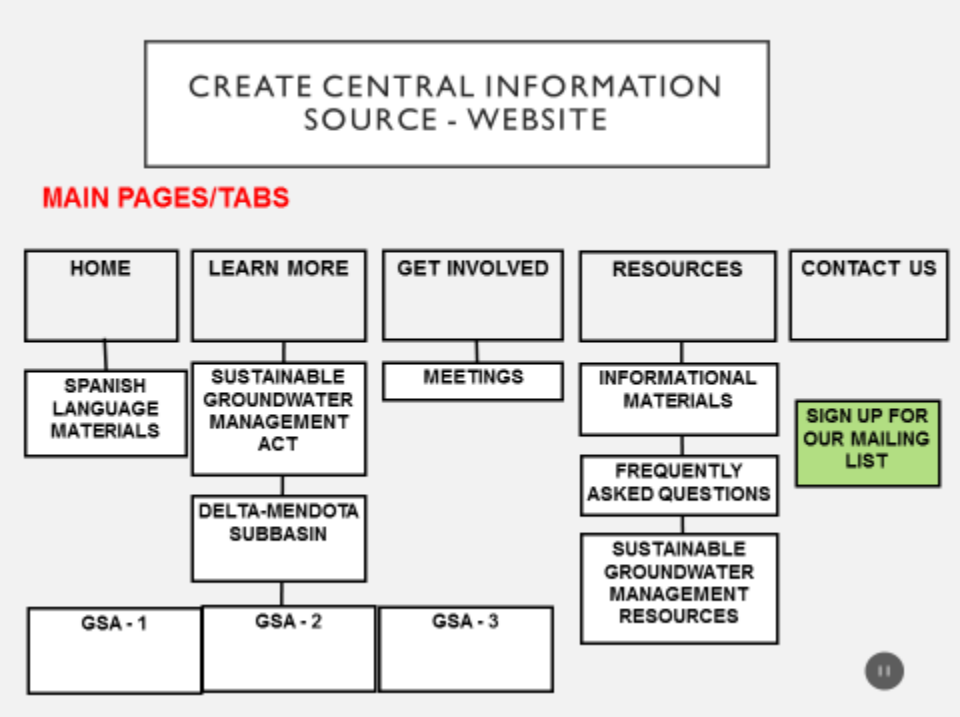


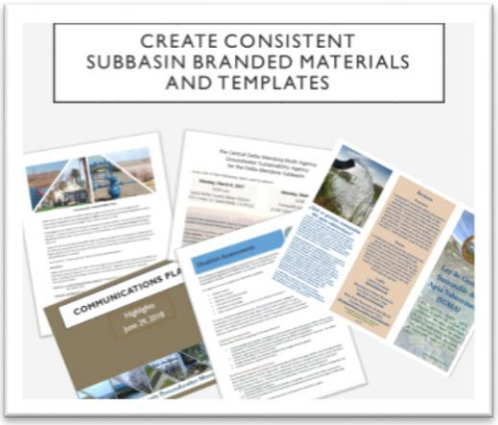
Figure 10. Website Structure

6.2.2. Meeting Calendar

A shared meeting calendar will provide a one-stop shop for stakeholders and assist in preventing meeting conflicts while creating more potential for shared activities. This calendar should include current and scheduled meetings and workshops as well as serve as the repository for agendas and meeting notes, along with copies of meeting materials and presentation.

An integrated project calendar should also be developed that links planning project milestones with communications milestones.

6.2.3. Branded Informational Flyers, Templates, PowerPoint Presentations, etc.



Subbasin level materials should have a single look and feel to create on-going consistency and visual recognition by stakeholders. Use of templates, shared presentations and flyers will create efficiencies and reinforce messaging. This communications plan incorporates some of this type of branding.

6.2.4. Periodic Newsletter

The need for regular communications cannot be overstated. One option is production of a periodic newsletter. Given the relatively short GSP(s) development process timeframe and the GSP development requirements for periodic outreach to identified stakeholders, a quarterly schedule would be realistic and achieve compliance with SGMA requirements for periodic updates to stakeholders. The newsletter should be designed so that individual GSAs can add tailored information if they choose to. For Portable Document Format (PDF) versions of the newsletter, a GSA could add a simple one or two page insert and the edition could be used as a handout or mailer. For a professional looking, email version of the newsletter, we recommend free or low cost services such as Mail Chimp or Constant Comment, which can be integrated with mailing lists.

Adding GSA specific information to an email newsletter can be done with web-links in the email to the very same PDF page prepared for the hardcopy mailer. An alternative is emailing the entire newsletter PDF as an attachment (although this format is less likely to be read than the mailer services).

6.2.5. GSP related mailing lists

Each GSA is required to develop notification lists. A central list may be utilized for GSP(s) related notifications.

6.2.6. Descriptions of Interested Parties

Each GSA is required to develop descriptions of interested parties. These lists should be updated and merged for use in the GSP(s) submittal(s). These can also be provided as background information on the website as part of constructing an administrative record. The SA in Chapter 4 provides an initial start for this documentation.

6.2.7. Issues and Interest Statements for Legally Mandatory Interested Parties

A GSP submission must include a statement of interests for listed stakeholders. As suggested earlier, this can also be included on the website.

6.2.8. Coordinated Public Workshops

SGMA requires a series of public hearings and some public workshops. Such workshops should be coordinated with other subbasin entities.

During the GSA formation process the County of Merced and a forming GSA body conducted a joint workshop to explain more about SGMA and the proposed GSA formation. Distribution of meeting flyers and notices was done concurrently, and DWR attended the event to answer questions. The GSP development process will offer similar opportunities, not only within the subbasin, but with adjacent subbasins.

6.2.9. Message Calendar

Basic messages should be associated with the planning schedule and each stage of GSP(s) development and serve as the theme for the communications materials being generated. For example, during the GSA formation period there was a need to communicate the basics of SGMA and groundwater management. During the GSP(s) initiation phase messages should focus on the basics of groundwater sustainability and the current state of the subbasin. As the GSP(s) begins to take form the specifics of the GSP(s) and what it means for each stakeholder would be the focus.

6.2.10. Press Releases and Guest Editorials

At some point in the GSP development and implementation process, it is likely that stakeholders will be asked to make changes and/or financially support a sustainability effort. It will be more productive for the GSAs and their GSP collaboration partners to frame discussions about these changes than to have others, perhaps with less knowledge, do so on their behalf. For that reason there is a need for press releases and/or guest editorials to offer the media and stakeholders accurate information offered in the context of SGMA. This type of outreach should be closely coordinated as consistency in messages is critical to stakeholder acceptance.

6.2.11. Speakers Bureau

Efforts should be made to conduct outreach at events and meetings that already occur (e.g. Farm Bureau meetings, Rotary Club, etc.). A list of knowledgeable presenters should be developed in the event an organization or other entity would like a presentation. Speakers Bureau engagements should be recorded on the planning project meeting calendar.

6.2.12. Existing Group Venues

Fully leverage the activities of existing groups.

- Maintain a roster of existing groups and typical meeting schedules with a nexus to GSP(s) development. Add the dates to the messaging calendar.
- The list of audiences, messages and existing groups should be referenced when there is a need to deploy information.
- Conduct informal outreach with the leaders of such groups to determine the best way to interact.
- Determine what communications channels these groups are using and equally leverage these, for example by placement of articles in newsletters.

6.2.13. Outreach Documentation

A central point of contact should be identified on the website and an outreach statistics inventory should be established that identifies dates, times, audiences and attendance. This information will be also be useful in conducting follow up with stakeholders as well as documenting outreach as part of GSP submittal guidelines.

6.3. Procedural and Legally Mandated Outreach

A discussion of SGMA outreach requirements was provided in Chapter 1 and a full list of requirements is contained in Appendix 1. One major feature of the requirements is a submission to DWR of the opportunities that interested parties will be given to participate in the GSP deliberations. The Situation Assessment provides an initial description that can be added to with additional outreach.

Following are the Required Interested Parties for the purpose of mandated outreach:

Table 9 provides a list of the mandated outreach and the timeframe in which is required.

Table 8. Mandated Outreach

Timeframe	Item
Prior to initiating plan development	1. Statement of how interested parties may contact the Agency and participate in development and implementation of the plan submitted to DWR.

Timeframe	Item
	2. Web posting of same information.
Prior to plan development	1. Must establish and maintain an interested persons list. 2. Must prepare a written statement describing the manner in which interested parties may participate in GSP development and implementation. Statement must be provided to: a. Legislative body of any city and/or county within the geographic area of the plan b. Public Utilities Commission if the geographic area includes a regulated public water system regulated by that Commission c. DWR d. Interested parties (see Section 10927) e. The public
Prior to and with GSP submission	1. Statements of issues and interests of beneficial users of basin groundwater, including types of parties representing the interests and consultation process 2. Lists of public meetings 3. Inventory of comments and summary of responses 4. Communication section in plan that includes: • Agency decision making process • ID of public engagement opportunities and response process • Description of process for inclusion • Method for public information related to progress in implementing the plan (status, projects, actions)
90 days prior to GSP Adoption Hearing	1. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must notify cities and/or counties of geographic area 90 days in advance.
90 days or less prior to GSP Adoption Hearing	2. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must: a. Consider and review comments b. Conduct consultation within 30 days of receipt with cities or counties so requesting
GSP Adoption or Amendment	1. GSP must be adopted or amended at Public Hearing.
60 days after plan submission	1. 60-day comment period for plans under submission to DWR. Comments will be used to evaluate the submission.
Prior to adoption of fees	1. Public meeting required prior to adoption of, or increase to fees. Oral or written presentations may be made as part of the meeting. 2. Public notice shall include: a. Time and place of meeting b. General explanation of matter to be considered

Timeframe	Item
	c. Statement of availability for data required to initiate or amend such fees d. Public posting on Agency Website and provision by mail to interested parties of supporting data (at least 20 days in advance) 3. Mailing lists for interested parties are valid for 1 year from date of request and may be renewed by written request of the parties on or before April 1 of each year. 4. Includes procedural requirements per Government Code, Section 6066.
Prior to conducting a fee adoption hearing.	1. Must publish notices in a newspaper of general circulation as prescribed. 2. Publication shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. 3. The period of notice begins the first day of publication and terminates at the end of the fourteenth day, (which includes the first day.)

6.4. Items for Future Consideration

This GSP(s) Coms Plan outlines an outreach effort based on project and stakeholder needs and preferences. This document has been prepared as a working draft living document and should be updated as new information and the GSP(s) development process needs are developed.

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MEASUREMENTS & EVALUATION

A guiding principle for evaluation and measurement of the Coms Plan's success is to provide regular, unbiased reporting of progress toward achieving goals. Success may be evaluated in several ways, including process measures, outcome measures, and an annual evaluation of accomplishments. Optional evaluation measures are described below.

As part of each outreach effort debrief the following process and outcome measures will be discussed and recorded in a check sheet. The check sheets will be prepared with the goal of continuous improvement rather than criticisms.

7.2. Process Measures

Process measures track progress toward meeting the goals of the Coms Plan. These include:

- Level of attendance at outreach meetings
- Shared understanding of the overarching aims, activities, and opportunities presented by different planning approaches and project activities
- Productive dialogue among participants at meetings and events
- Sense of authentic engagement; people understand why they have been asked to participate, and feel that they can contribute meaningfully
- Timely and accurate public reporting of planning milestones
- Feedback from Coordinating Body and GSA members, regulators, stakeholders, and interested parties about the quality and availability of information materials
- Level of stakeholder interest in the GSP(s) development process information

7.3. Outcome Measures

Outcome measures track the level of success of the Coms Plan in meeting its overall goals. Some outcome measures considered for the GSP(s) development process include the following:

- Consistent participation by key stakeholders and interested parties in essential activities. Participants should have no difficulty locating the meetings, and should be informed as to when and where they will be held.
- Response from meeting participants that the engagement methods provided for a fair and balanced exchange of information.
- Feedback from interested parties that they understand how their input is used, where to track data, and what results to expect.
- The project receives quality media coverage that is accurate, complete and fair.

7.4. Mid-cycle Evaluation of Accomplishments

A mid-cycle evaluation provides an opportunity to examine the current effectiveness of the Coms Plan and provides a chance to reevaluate strategies to meet the GSP(s) development process objectives. The evaluation tasks may include:

- Preparation of an executive-level summary detailing high-level initiatives and accomplishments of the previous cycle. This evaluation should also include positive news, best practices, goals and objectives, notable changes, timelines, and priorities.
- Identifying gaps and areas for improvement.
- Highlighting how gaps and areas for improvement in the cycle has been addressed.
- Outlining process and outcome measures and their current results.

ROLES AND RESPONSIBILITIES

The GSP(s) development Coms Plan outlines numerous strategies, activities and tactics. While none are highly complex, there is a requirement for coordination and clarity regarding who will be responsible for executing the tasks.

After the planning team evaluates the timelines and priorities for each of the communications activities a recommended next step is completion of a Responsible, Accountable, Consulted, and Informed (RACI) Chart. This Chart, as displayed in **Table 10**, outlines key tasks and the assignment of roles and responsibilities for accomplishing them.

Table 9. Sample RACI Chart

Activity TYPE	SPECIFIC PRODUCT	RESPONSIBLE	ACCOUNTABLE	CONSULTED	INFORMED
Internal Staff Communications, information materials for/briefings	Draft	Person A	Person E	Person I	
	Final Draft	Person A	Person E	Person I	Project Team
List Serves, mailing lists	Customer Contacts	Person B - Person A	Person E	Person I	Project Team
	Concurrent jurisdictions	Lisa Beutler/MWH	Person G	Person I	Project Team
	Other - identified stakeholders	Person A	Person G	Person I	Project Team
Web Content and Maintenance	Draft Content and Content Refresh	Lisa Beutler/MWH/	Person G	Person H	Project Team
	Site Administration	Person A	Person G	Person H	
General public Intro Packets, Fact Sheets and Brochures	Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Revised Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Final Draft	Person D	Person E	Person I- Subject Matter Experts	Project Team
Newsletter Content	Draft	Lisa Beutler/MWH	Person E	Person I- Subject Matter Experts	Person J
	Revised Draft	Person D	Person E	Person I- Subject Matter Experts	Person J
	Final Draft	Person D	Person E	Person I- Subject Matter Experts	Project Team

Responsible
Those who do the work to achieve the task. There is at least one person with a role of *responsible*, although others can be delegated to assist in the work required.

Accountable (also approver or final approving authority)
This is the person ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. There **may only** be only one *accountable* specified for each task or deliverable.

Consulted
Those whose opinions are sought, typically subject matter experts were people that are impacted by the activity; and with whom there is two-way communication.

Informed
Those who are kept up-to-date on progress, typically on the launch and completion of the task or deliverable. This is one way communication.

Role distinction
There is a distinction between a role and the individual assigned the task. Role is a descriptor of an associated set of tasks that could be performed by just one or many people.

In the case of the RACI Chart, the team may list as many people as is logical except for the Accountable role.

Scope of Work
Completion of the RACI Chart will also support development of any future scopes of work for consultant provided communication and outreach services.

LIST OF APPENDICES

Appendix 1-Public Outreach Requirements under SGMA

Appendix 2-Communications Governance

Appendix 1. Public Outreach Requirements under SGMA

GSP Regulations

CODE	PUBLIC OUTREACH REQUIREMENT
§ 353.6. Initial Notification (a) Each Agency shall notify the Department, in writing, prior to initiating development of a Plan. The notification shall provide general information about the Agency's process for developing the Plan, including the manner in which interested parties may contact the Agency and participate in the development and implementation of the Plan. The Agency shall make the information publicly available by posting relevant information on the Agency's website.	1. Statement of how interested parties may contact the Agency and participate in development and implementation of the plan submitted to DWR. 2. Web posting of same information. **Timing**: *Prior to initiating development of a plan.*
§ 353.8. Comments (a) Any person may provide comments to the Department regarding a proposed or adopted Plan. (b) Pursuant to Water Code Section 10733.4, the Department shall establish a comment period of no less than 60 days for an adopted Plan that has been accepted by the Department for evaluation pursuant to Section 355.2. (c) In addition to the comment period required by Water Code Section 10733.4, the Department shall accept comments on an Agency's decision to develop a Plan as described in Section 353.6, including comments on elements of a proposed Plan under consideration by the Agency.	1. 60-day comment period for plans under submission to DWR. Comments will be used to evaluate the submission. 2. Parties may also comment on a GSA's (or GSAs') statements submitted under section 353.6 **Timing**: For GSP Submittal - *60 days after submission to DWR*
§ 354.10. Notice and Communication Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following: (a) A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties. (b) A list of public meetings at which the Plan was discussed or considered by the Agency. (c) Comments regarding the Plan received by the Agency and a summary of any responses by the Agency. (d) A communication section of the Plan that includes the following: (1) An explanation of the Agency's decision-making process. (2) Identification of opportunities for public engagement and a discussion of how public input and response will be used.	5. Statements of issues and interests of beneficial users of basin groundwater, including types of parties representing the interests and consultation process 6. Lists of public meetings 7. Inventory of comments and summary of responses 8. Communication section in plan that includes: • Agency decision making process • ID of public engagement opportunities and response process • Description of process for inclusion • Method for public information related to progress in implementing the plan (status, projects, actions) **Timing**: For GSP Submittal – *with plan* For GSP Development – *continuous. [Note: activities should be included*

CODE	PUBLIC OUTREACH REQUIREMENT
(3) A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin. (4) The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.	*in the project schedule and information posted on web.]*
§ 355.2. (c) Department Review of Adopted Plan (c) The Department (DWR) shall establish a period of no less than 60 days to receive public comments on the adopted Plan, as described in Section 353.8.	1. 60 day public review period for public comment on submitted plan. **Timing**: After GSP Submittal to DWR – *60 days*
§ 355.4. & 355.10 Criteria for Plan Evaluation The basin shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act. The Department shall evaluate an adopted Plan for compliance with this requirement as follows: (b) (4) Whether the interests of the beneficial uses and users of groundwater in the basin, and the land uses and property interests potentially affected by the use of groundwater in the basin, have been considered. … (10) Whether the Agency has adequately responded to comments that raise credible technical or policy issues with the Plan.	1. Required public outreach and stakeholder information is submitted, including statement of issues and interests of beneficial users. 2. Public and stakeholder comments and questions adequately addressed during planning process. **Timing**: For GSP Submittal – *with plan* For resubmittal related to corrective action – *with submittal*

California Water Code

CODE	PUBLIC OUTREACH REQUIREMENT
10720. This part shall be known, and may be cited, as the "Sustainable Groundwater Management Act." **10720.3** (a) This part applies to all groundwater basins in the state. … (c) The federal government or any federally recognized Indian tribe, appreciating the shared interest in assuring the sustainability of groundwater resources, may voluntarily agree to participate in the preparation or administration of a groundwater sustainability plan or groundwater management plan under this part through a joint powers authority or other agreement with local agencies in the basin. A participating tribe shall be eligible to participate fully in planning, financing, and management under this part, including eligibility for grants and technical assistance, if any exercise of regulatory authority, enforcement, or imposition and collection of fees is pursuant to	1. Tribes and the federal government may voluntarily participate in GSA governance and GSP development. **Timing**: *Prior to initiating development of a plan.*

CODE	PUBLIC OUTREACH REQUIREMENT
the tribe's independent authority and not pursuant to authority granted to a groundwater sustainability agency under this part.	
CHAPTER 4. Establishing Groundwater Sustainability Agencies [10723 - 10724]	
10723. a) Except as provided in subdivision (c), any local agency or combination of local agencies overlying a groundwater basin may decide to become a groundwater sustainability agency for that basin. (b) Before deciding to become a groundwater sustainability agency, and after publication of notice pursuant to Section 6066 of the Government Code, the local agency or agencies shall hold a public hearing in the county or counties overlying the basin.	1. Must hold public hearing in the county or counties overlying the basin, prior to becoming a GSA **Timing**: *Prior to becoming a GSA.*
10723.2 The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following: (a) Holders of overlying groundwater rights, including: (1) Agricultural users. (2) Domestic well owners. (b) Municipal well operators. (c) Public water systems. (d) Local land use planning agencies. (e) Environmental users of groundwater. (f) Surface water users, if there is a hydrologic connection between surface and groundwater bodies. (g) The federal government, including, but not limited to, the military and managers of federal lands. (h) California Native American tribes. (i) Disadvantaged communities, including, but not limited to, those served by private domestic wells or small community water systems. (j) Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.	1. Must consider interest of all beneficial uses and users of groundwater. 2. Includes specific stakeholders as listed. **Timing**: *During development of a GSP.*
10723.4. The groundwater sustainability agency shall establish and maintain a list of persons interested in receiving notices regarding plan preparation, meeting announcements, and availability of draft plans, maps, and other relevant documents. Any person may request, in writing, to be placed on the list of interested persons.	3. Must establish and maintain an interested persons list. 4. Any person may ask to be added to the list **Timing**: *On forming a GSA.*
10723.8. (a) Within 30 days of deciding to become or form a groundwater sustainability agency, the local agency or combination of local agencies shall inform the department of its decision and its intent to undertake sustainable groundwater management. The	1. Creates notification requirements that include: a. A list of interested parties b. An explanation of how interests will be considered

CODE	PUBLIC OUTREACH REQUIREMENT
notification shall include the following information, as applicable: … (4) A list of interested parties developed pursuant to Section 10723.2 and an explanation of how their interests will be considered in the development and operation of the groundwater sustainability agency and the development and implementation of the agency's sustainability plan.	**Timing**: *On forming a GSA & with submittal of GSP*
10727.8 (a) Prior to initiating the development of a groundwater sustainability plan, the groundwater sustainability agency shall make available to the public and the department a written statement describing the manner in which interested parties may participate in the development and implementation of the groundwater sustainability plan. The groundwater sustainability agency shall provide the written statement to the legislative body of any city, county, or city and county located within the geographic area to be covered by the plan. The groundwater sustainability agency may appoint and consult with an advisory committee consisting of interested parties for the purposes of developing and implementing a groundwater sustainability plan. The groundwater sustainability agency shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin prior to and during the development and implementation of the groundwater sustainability plan. If the geographic area to be covered by the plan includes a public water system regulated by the Public Utilities Commission, the groundwater sustainability agency shall provide the written statement to the commission. (b) For purposes of this section, interested parties include entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency.	2. Agencies preparing a GSP must prepare a written statement describing the manner in which interested parties may participate in its development and implementation. 3. Statement must be provided to: a. Legislative body of any city and/or county within the geographic area of the plan b. Public Utilities Commission if the geographic area includes a regulated public water system regulated by that Commission c. DWR d. Interested parties (see Section 10927) e. The public 4. GSP entities may form an advisory committee for the GSP preparation and implementation. 5. The GSP entities are to encourage active involvement of diverse social, cultural and economic elements of the affected populations. **Timing**: *On initiating GSP*
10728.4 Public Notice of Proposed Adoption, GSP Adoption Pubic Hearing A groundwater sustainability agency may adopt or amend a groundwater sustainability plan after a public hearing, held at least 90 days after providing notice to a city or county within the area of the proposed plan or amendment. The groundwater sustainability agency shall review and consider comments from any city or county that receives notice pursuant to this section and shall consult with a city or county that requests consultation within 30 days of receipt of the notice. Nothing in this section is intended to	3. GSP must be adopted or amended at Public Hearing. 4. Prior to Public Hearing for adoption or amendment of the GSP, the GSP entities must: a. Notify cities and/or counties of geographic area 90 days in advance. b. Consider and review comments

CODE	PUBLIC OUTREACH REQUIREMENT
preclude an agency and a city or county from otherwise consulting or commenting regarding the adoption or amendment of a plan.	c. Conduct consultation within 30 days of receipt with cities or counties so requesting
10730 Fees. (a) A groundwater sustainability agency may impose fees, including, but not limited to, permit fees and fees on groundwater extraction or other regulated activity, to fund the costs of a groundwater sustainability program, including, but not limited to, preparation, adoption, and amendment of a groundwater sustainability plan, and investigations, inspections, compliance assistance, enforcement, and program administration, including a prudent reserve. A groundwater sustainability agency shall not impose a fee pursuant to this subdivision on a de minimis extractor unless the agency has regulated the users pursuant to this part. (b) (1) Prior to imposing or increasing a fee, a groundwater sustainability agency shall hold at least one public meeting, at which oral or written presentations may be made as part of the meeting. (2) Notice of the time and place of the meeting shall include a general explanation of the matter to be considered and a statement that the data required by this section is available. The notice shall be provided by publication pursuant to Section 6066 of the Government Code, by posting notice on the Internet Web site of the groundwater sustainability agency, and by mail to any interested party who files a written request with the agency for mailed notice of the meeting on new or increased fees. A written request for mailed notices shall be valid for one year from the date that the request is made and may be renewed by making a written request on or before April 1 of each year. (3) At least 20 days prior to the meeting, the groundwater sustainability agency shall make available to the public data upon which the proposed fee is based. (c) Any action by a groundwater sustainability agency to impose or increase a fee shall be taken only by ordinance or resolution. (d) (1) As an alternative method for the collection of fees imposed pursuant to this section, a groundwater sustainability agency may adopt a resolution requesting collection of the fees in the same manner as ordinary municipal ad valorem taxes. (2) A resolution described in paragraph (1) shall be adopted and furnished to the county auditor-controller and board of supervisors on or before August 1 of each year that the alternative collection of the fees is being requested. The resolution shall include a list of parcels and the amount to be collected for each parcel. (e) The power granted by this section is in addition to any powers a groundwater sustainability agency has under any other law.	Related to GSAs 5. Public meeting required prior to adoption of, or increase to fees. Oral or written presentations may be made as part of the meeting. 6. Public notice shall include: a. Time and place of meeting b. General explanation of matter to be considered c. Statement of availability for data required to initiate or amend such fees d. Public posting on Agency Website and provision by mail to interested parties of supporting data (at least 20 days in advance) 7. Mailing lists for interested parties are valid for 1 year from date of request and may be renewed by written request of the parties on or before April 1 of each year. 8. Includes procedural requirements per Government Code, Section 6066. **Timing**: *Prior to adopting fees.*

California Government Code

CODE	PUBLIC OUTREACH REQUIREMENT
6060 Whenever any law provides that publication of notice shall be made pursuant to a designated section of this article, such notice shall be published in a newspaper of general circulation for the period prescribed, the number of times, and in the manner provided in that section. As used in this article, "notice" includes official advertising, resolutions, orders, or other matter of any nature whatsoever that are required by law to be published in a newspaper of general circulation. **6066** Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.	4. Must publish notices in a newspaper of general circulation as prescribed. 5. Publication shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. 6. The period of notice begins the first day of publication and terminates at the end of the fourteenth day, (which includes the first day.) **Timing**: *Prior to adopting fees*

Appendix 2. Communications Governance

Given the relatively large number of stakeholders, a recommendation for coordinated efforts, and the legal requirements for outreach[13] some form of communications governance is recommended.

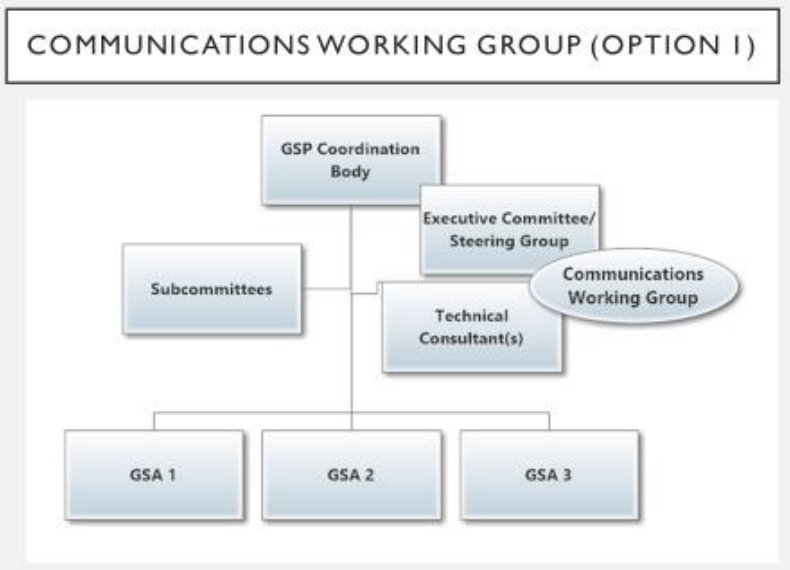
Execution of communications activities can be accomplished by an individual or multiple individuals, and/or include or be solely managed by project consultants. The actual form of the governance is less important than a clear understanding of the roles and responsibilities of those responsible for ensuring required communication. Also essential is a clear chain of command that ensures the elected representatives of GSAs are able to retain communications leadership and guidance.

A driving consideration for establishing a communications governance structure is the level of effort associated with required activities and the fact that communications are highly time dependent. That means that communications activities should be occurring that may happen outside of regularly scheduled GSA meetings. In this case delegation with guidance to a communications team is efficient and effective.

Several governance options for consideration are offered below.

Communications Option 1

Communications Option 1 is based on an overall GSP(s) development structure that includes a GSA member based leadership function that is guiding the Technical Consultants. A communications working group which might include staff, consultants and GSA elected officials, or some combination of those roles could be formed to serve as a communications working group that would ultimately report to the larger GSP coordinating body.

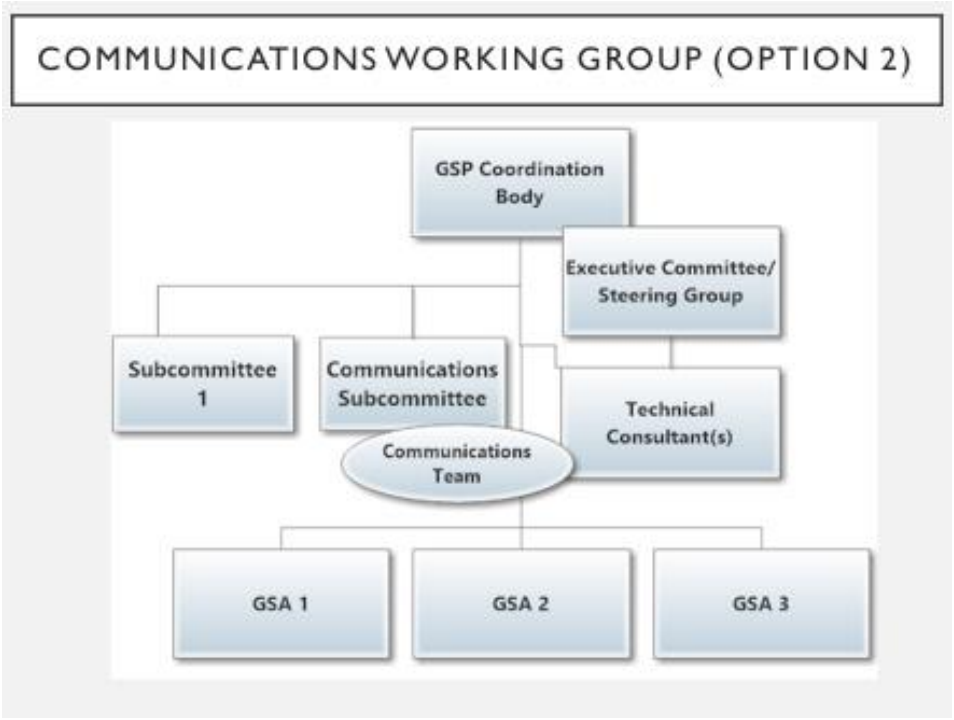


Communications Governance Option 1

Communications Option 2

[13] See Appendix 1

Communications Option 1 is based on an overall GSP(s) development structure that includes a GSA member based subcommittee guiding the Technical Consultants. A communications working group which might include staff, consultants and GSA elected officials, or some combination of those roles could be formed to serve as a communications team that is affiliated with a subcommittee and would ultimately report to the larger GSP coordinating body



Communications Governance Option 2

Appendix F - Summaries of Coordinated Workshops

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
SPRING 2018 COORDINATED WORKSHOPS

Monday, May 14, 2018, Los Banos
Wednesday, May 16, 2018, Patterson
Thursday, May 17, 2018, Mendota

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about the Sustainable Groundwater Management Act (SGMA) and introduce participants to their local Groundwater Sustainability Agency representatives. Topics covered during the workshop included what is SGMA, the Delta-Mendota Subbasin, and opportunities for public engagement.
- Workshop participants' questions and feedback are summarized as follows:
    - Are the local groundwater regulations going to be re-set on an annual basis based on the water year, snowpack, etc.?
    - Who is the governing board that will make these decisions?
    - If this is a state-wide initiative, who is the decision-making body?
    - Will the California Department of Fish and Wildlife be involved?
    - Has the State provided criteria to what is considered a "chronic loss" of groundwater?
    - Are natural springs included under SGMA?
    - What criteria will you use to measure whether or not springs are overused?
    - What is the ultimate goal of SGMA? What does it mean to us?
    - How is the water budget going to be developed?
    - The Irrigated Lands Program already has a lot of requirements for growers. Is this going to be the same level of detail and effort?
    - What is the goal SGMA is trying to achieve? How are we going to get to sustainability?
    - What will happen when the State and districts do not receive their full surface water allocation and cities keep expanding?
    - It seems to me that the biggest problem is that the State wants to export water to Southern California. How can we come up with a solution if there are factors out of our control?

- How will you know how much I am pumping?

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
FALL 2018 COORDINATED WORKSHOPS

Monday, October 22, Firebaugh
5:00 – 7:00 PM
Firebaugh Middle School MPR

Wednesday, October 24, Los Banos
4:00 – 6:00 PM
College Greens Building

Thursday, October 25, Patterson
4:00 – 6:00 PM
Patterson Senior Center

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about key Sustainable Groundwater Management Act (SGMA) topics in preparation for Groundwater Sustainability Plan (GSP) development workshops in 2019.
- The format and content of each workshop was the same. The workshops began with a 45-minute presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 45 individuals (not including GSA representatives and supporting staff) participated in the workshops. Attendance by location was as follows: Firebaugh – 5 participants; Los Banos – 23 participants; Patterson – 17 participants. Three participants requested Spanish interpretation.
- Most participants heard about the workshops through emails from their local water or irrigation district, or direct flyers and bill inserts sent to them by their water/irrigation district or municipality.
- Presentation topics included: Overview of SGMA, GSP development and implementation process, data management, hydrogeologic conceptual model, numerical and analytical models, and the water budget.
- Workshop participants' questions and feedback are summarized as follows:

  Data

  - How much historical data are the GSAs using to make their assumptions?
  - Will data from counties be used?

- Is the numerical data available on the Delta-Mendota website?
- How big will the GSAs' monitoring network be? Do the GSAs anticipate drilling new monitoring wells?
- How will the GSAs monitor water quality and subsidence? Do the GSAs already have subsidence monitoring wells and data?
- How much data have the GSAs gathered? When will the GSAs stop gathering data?
- How much data will the GSAs be collecting from individual landowners?

Models

- Will the models take into account availability of surface water supplies?
- Will the models take into account changing crops?
- Will the models take into account agricultural areas that are being converted to commercial or urban areas?

Water Budget and Sustainable Yield

- What is the sustainable yield for the Delta-Mendota Subbasin?
- It sounds like the sustainable yield will be a number that oscillates around a baseline. What is this baseline?
- How will the GSAs determine the minimum threshold for the subbasin?
- How will the water budgets account for existing and new wells?
- What are the years for the historic water budget? How was this period set?

Projects and Management Actions

- Based on what is currently known, will the GSAs be able to limit groundwater pumping in the future?
- When the GSAs come up with groundwater management policies, will the policies impact groundwater pumping on an individual level, regional level, or basin-wide level?
- Will the California Department of Water Resources (DWR) or the GSAs be the ones to limit pumping?
- Could a potential management action be limiting pumping?
- Will the GSAs be the agencies to determine if new wells can or cannot be drilled?

Integration with Other Programs/Organizations

- How much are the GSAs integrating with the Irrigated Lands Program?
- How closely do GSAs work with local farm bureaus?

Other

- Will there be an administrative fee for the GSAs to oversee GSP implementation?
- How will the costs for GSP development and implementation be covered?
- Do the GSAs know what DWR's GSP review and certification process will consist of?

- Will the GSAs in the region have influence over how surface water resources are managed on a state-wide level?
- How many GSAs were formed after SGMA passed in 2014?

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
WINTER 2019 COORDINATED WORKSHOPS

Tuesday, February 19, 2019, Los Banos
4:00 – 6:00 PM
College Greens Building

Wednesday, February 20, 2019, Patterson
4:00 – 6:00 pm
City of Patterson City Hall

Monday, March 4, 2019, Santa Nella
6:00 – 8:00 PM
Romero Elementary School

WORKSHOP SUMMARY

- Three workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin during February and March 2019. The purpose of the workshops was to educate stakeholders and members about the public about topics covered in the draft Groundwater Sustainability Plans (GSP) being developed for the subbasin. Topics covered during the workshop included historic and current water budgets, sustainability criteria, undesirable results, and projects and management actions.
- Workshops were promoted via emails sent to each GSA's interested parties database, flyers and utility bill inserts, and social media posts.
- The format and content of each workshop was the same. The workshops began with a short presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 30 individuals (not including GSA representatives and supporting staff) participated in the workshops. Attendance by location was as follows: Patterson – 14, Los Banos – 4, and Santa Nella – 12. Participants represented a range of beneficial users in the subbasin, including domestic well owners, agricultural water users, public water systems, and disadvantaged communities.

- Workshop participants' questions and feedback are summarized as follows:

  Water Budgets

  - Does the land surface budget include inflows from precipitation and applied water to crops?
  - Who provides the information about the inflows and outflows of the aquifer?
  - How is the aquifer recharged?
  - Do reservoirs lose water?
  - What happened between 1985 – now [regarding the historic water budget]?
  - What affect does precipitation have on the aquifer?

  Projects and Management Actions

  - Who will make the decision on who can drill wells and how much can well owners can pump?
  - Will GSAs in the subbasin be able to restrict selling of groundwater outside of the subbasin?
  - Projects and management actions should emphasize flood and stormwater capture and increased stormwater storage.
  - Will use of recycled water in new developments be considered a source of water to balance the water budget?
  - Are there percolation ponds by golf course?

  Sustainability Criteria and Undesirable Results

  - Is it the GSAs' responsibility to set the sustainability criteria for the subbasin?
  - Could this region experience seawater intrusion?
  - What's going to happen in areas like Dos Palos that have poor groundwater quality?

  Other

  - Does the GSP only cover of agricultural uses of groundwater or does it also cover residential and commercial uses of groundwater?
  - Who is doing the work to prepare the GSP?
  - How much does it cost to prepare a GSP?
  - Are there any agencies currently monitoring groundwater pumping and levels?
  - How is groundwater currently being removed from the groundwater basin?
  - How many monitoring stations have been identified? Have GSAs already identified where these monitoring pumps are?
  - Does the California Aqueduct affect the water table in the subbasin?
  - What is the rationale for the North-Central GSP group's boundaries? The north and south areas of the North-Central GSP group are very different.
  - Do water agencies in the subbasin send water to the Santa Clara Valley Water District?
  - Where are the coordinated meetings are held? What time are these meetings?
  - Will this raise our water rates?
  - The community of Tranquillity is currently experiencing land subsidence.

DELTA-MENDOTA SUBBASIN
SUSTAINABLE GROUNDATER MANAGEMENT ACT
SPRING 2019 COORDINATED WORKSHOPS

Monday, May 20, 2019, Patterson
4:00 – 6:00 pm
City of Patterson City Hall

Tuesday, May 21, 2019, Los Banos
4:00 – 6:00 PM
College Greens Building

Wednesday, May 22, 2019, Santa Nella
6:30 – 8:30 PM
Romero Elementary School

Thursday, May 23, 2019, Mendota
6:00 – 8:00 PM
Mendota Library

WORKSHOP SUMMARY

- Four workshops were held in the northern, central, and southern parts of the Delta-Mendota Subbasin. The purpose of the workshops was to educate stakeholders and members about the public about topics covered in the draft Groundwater Sustainability Plans (GSP) being developed for the subbasin. Topics covered during the workshop included water budgets, sustainable yield, projects and management actions, and groundwater monitoring networks.
- Workshops were promoted via emails sent to each GSA's interested parties database, flyers and utility bill inserts, social media posts, and direct outreach to community stakeholders.
- The format and content of each workshop was the same. The workshops began with a short presentation, followed by an open house period for participants to talk with their Groundwater Sustainability Agency (GSA) representative. Spanish interpretation was provided at each workshop.
- In total, approximately 30 individuals participated in the workshops. Attendance by location was as follows: Patterson – 7, Los Banos – 10, Santa Nella – 4, and Mendota – 9. Participants represented a range of beneficial users in the subbasin, including domestic well owners, agricultural water users, public water systems, and disadvantaged communities.

- Workshop participants' questions and feedback are summarized as follows:

  Water Budgets

  - Why is there a difference between the water budgets for the upper and lower aquifers?
  - Why is the change in storage negative?
  - Is there a water budget for each aquifer?
  - When the projected water budgets are finalized, will they include specific projects and management actions?
  - How was the data for the climate change factors developed?
  - Historically, California goes through periodic droughts. Do the projected water budgets account for future droughts?
  - Do the projected water budgets account for future population growth and new developments?
  - Do the water budgets account for percolation from water applied to crops?

  Projects and Management Actions

  - Will management actions include a charge for water pumping?
  - Will pumping restrictions be implemented during dry periods or drought?
  - Will the GSPs identify specific projects and management actions?
  - Will GSAs in the subbasin form a water bank?
  - If pumping restrictions are enacted, GSPs should include a provision that allows private well owners to demonstrate that they aren't overpumping or causing undesirable results.
  - The region needs more surface water storage to supplement groundwater pumping.
  - There should be restrictions on development in the region.

  Sustainable Yield

  - Does increases in groundwater demand relate to the cost of surface water supplies?

  Groundwater Monitoring

  - When local agencies monitor for groundwater, how far down do they monitor?

  GSP Adoption, Implementation and Enforcement

  - What agency approves the GSPs?
  - Will the California Department of Water Resources be the lead agency for providing oversight after the GSP is submitted?
  - Could the State Water Resources Control Board mandate pumping restrictions?
  - Will the state be looking at the drawdown of individual, private wells?
  - Where does the funding to implement GSPs come from?
  - How much will GSP implementation cost?
  - Who has to submit the annual report?

  Other

  - GSAs should be divided into even smaller units to manage projects and management actions locally.

Appendix G - Examples of Promotional Materials

Groundwater management in our community is changing.

Learn more about how this may impact you.

Collaborating local agencies are hosting a series of public workshops about the Sustainable Groundwater Management Act. Come learn how this landmark legislation may impact our community, what we are doing about it, and how you can get involved. Representatives from local groundwater sustainability agencies will be available to answer questions. You have three opportunities to attend:

Los Banos
Monday, May 14
4:00 - 6:00 PM
San Luis & Delta-Mendota Water Authority Office
842 6th St, Los Banos

Patterson
Wednesday, May 16
4:00 - 6:00 PM
Hammon Senior Center
1033 W Las Palmas Ave, Patterson

Mendota
Thursday, May 17
4:00 - 6:00 PM
Mendota Branch Library
Mendota Meeting Room
1246 Belmont Ave, Mendota

The content of each workshop will be the same. The first thirty minutes of each workshop will consist of an informational presentation, followed by an open house until 6:00 PM. For more information, please visit our website at: www.deltamendota.org.

We look forward to seeing you there!

El manejo del agua subterránea en nuestra comunidad está cambiando.

Obtenga más información sobre como esto puede afectarlo.

Las agencias locales colaboradoras están organizando una serie de talleres públicos sobre la Ley de gestión sostenible del agua subterránea. Venga y aprenda como esta histórica legislación puede afectar a nuestra comunidad, que estamos haciendo al respecto y como puede participar. Los representantes de las agencias locales de sostenibilidad del agua subterránea estarán disponibles para responder preguntas. Tienes tres oportunidades para asistir:

Los Baños
Martes, 14 de Mayo
4:00 - 6:00 PM
San Luis & Delta-Mendota
Water Authority Office
842 6th St, Los Baños

Patterson
Miércoles, 16 de Mayo
4:00 - 6:00 PM
Hammon Senior Center
1033 W Las Palmas Ave, Patterson

Mendota
Jueves, 17 de Mayo
4:00 - 6:00 PM
Mendota Branch Library
Mendota Meeting Room
1246 Belmont Ave, Mendota

El contenido de cada taller será el mismo. Los primeros treinta minutos de cada taller serán consisten de una presentación informativa, seguida de una jornada de puertas abiertas hasta las 6:00 P.M. Para obtener más información, visite nuestro sitio web en: www.deltamendota.org.

Public Notice

Public Groundwater Meeting

Santa Nella County Water District and other local water agencies are developing plans for the future of our groundwater resources. We want to hear from you! Come to an upcoming public workshop to learn more:

Santa Nella
Monday, March 4, 6:000 - 8:00 PM
Romero Elementary School MPR
13500 Luis Ave, Gustine, CA 95322

The first forty minutes of the workshop will consist of a bilingual informational presentation. The presentation will be followed by an interactive discussion on the region's groundwater "budget" and how to define "sustainability" for our groundwater resources. This workshop is open to people with all level of knowledge about water.

Spanish-language interpreters and materials will be available.

For more information, please visit our website at www.deltamendota.org and www.sncwd.com.

For questions or comments, email DMSGMA@sldmwa.org or contact Amy Montgomery, Santa Nella County Water District, at amontgomery@sncwd.com.

We look forward to seeing you there!

Engage in the Future of Our Water Resources!

Week of May 20th

Delta-Mendota SGMA invite you to learn why your local agencies are developing groundwater sustainability plans for the future of our groundwater. Please come to one

- **Patterson**: Mon., May 20, 4:00 – 6:00pm Patterson City Hall 1 Plaza Circle
- **Los Banos**: Tue., May 21, 4:00 – 6:00pm College Greens Building 1815 Scripps Drive
- **Santa Nella**: Wed., May 22, 6:30 – 8:30pm Romero Elem. School 13500 Luis Ave.
- **Mendota**: Thu., May 23, 6:00 – 8:00pm Mendota Library 1246 Belmont Ave.

For more information please visit www.deltamendota.org, To register visit: tinyurl.com/y3bxw3yv

PROP 1 WATER BOND 2014

#DeltaMendotaSGMA | #SLDMWA | #SGMA2020

DELTA-MENDOTA SGMA

Su Opinión es Importante!

Participe en una serie de talleres sobre el futuro de sus recursos hídricos!

Semana del 20 de mayo

Agencias locales están desarrollando planes de sostenibilidad para el futuro de los recursos hídricos del agua subterránea en la región y necesitan su opinión.
Acompáñenos en uno de los siguientes talleres:

- **Patterson**: Lun.,20 de Mayo , 4–6pm Ayuntamiento de Patterson 1 Plaza Circle
- **Los Banos**: Mar., 21 de May, 4–6pm College Greens Building 1815 Scripps Dr.
- **Santa Nella**: Mie., 22 de Mayo, 6:30–8:30pm Escuela Pri. Romero 13500 Luis Ave.
- **Mendota**: Jue., 23 de Mayo, 6–8pm Biblioteca de Mendota 1246 Belmont Ave.

PROP 1 WATER BOND 2014

Para más información visite:
www.deltamendota.org
Tel: 916-418-8288
#DeltaMendotaSGMA | #SLDMWA

DELTA-MENDOTA SGMA

Contact: Kirsten Pringle, Delta-Mendota Subbasin, Stantec
(916) 418-8243, Kirsten.Pringle@stantec.com

FOR IMMEDIATE RELEASE
October 19, 2018

MEDIA ADVISORY

Sustainable Groundwater Management Act Public Workshops

What: Collaborating local agencies are hosting a series of public workshops about the Sustainable Groundwater Management Act. Learn how this landmark legislation may impact our communities, the planning process, and how people can get involved. Spanish translation will be provided.

Format: There are three workshop opportunities to attend; the content of each workshop will be the same. The first 45 minutes of each workshop will consist of an informational presentation, followed by an open house.

When:

Firebaugh – Monday, October 22, 2018
5:00 - 7:00 PM
Firebaugh Middle School MPR
1600 16th Street, Firebaugh, CA

Los Banos – Wednesday, October 24, 2018
4:00 – 6:00 PM
College Greens Building
1815 Scripps Drive, Los Banos, CA

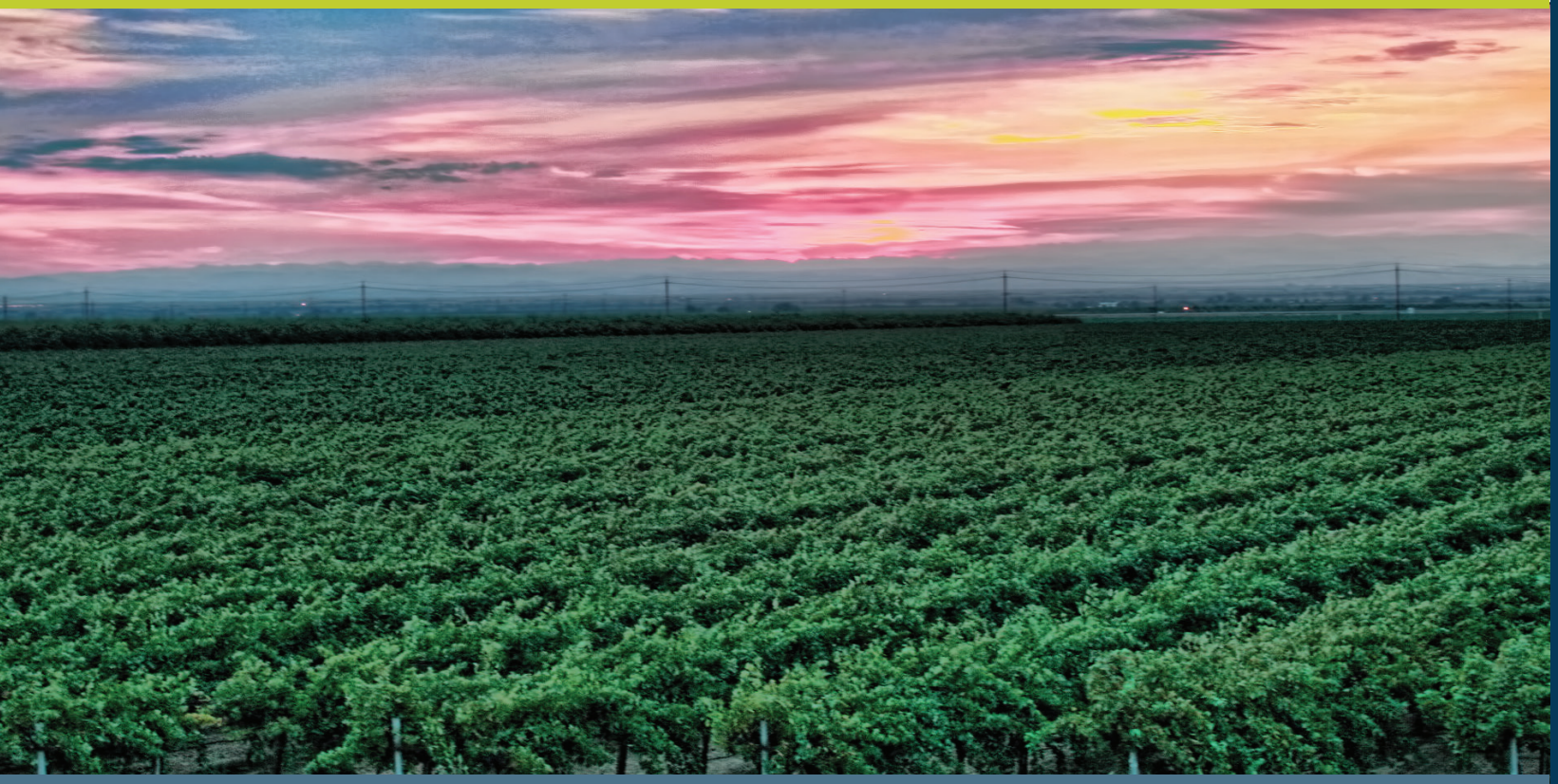
Patterson – Thursday, October 25, 2018
4:00 – 6:00 PM
Hammon Senior Center
1033 W. Las Palmas Avenue, Patterson, CA

Who: Representatives from local groundwater sustainability agencies will be available to answer questions.

Additional Resources: The Sustainable Groundwater Management Act, www.deltamendota.org/,

Background: *The Sustainable Groundwater Management Act (SGMA) is a package of three bills (AB 1739, SB 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. Recognizing that groundwater is most effectively managed at the local level, the SGMA empowers local agencies to achieve sustainability within 20 years.*

Appendix H - List of Stakeholders and Community Organizations Contacted



Stakeholder and Community Organizations Contacted Regarding Coordinated SGMA Workshops

Organization Name	Organization Type
Fresno County Farm Bureau	Agriculture
Merced County Farm Bureau	Agriculture
North Grassland Wildlife Foundation	Agriculture
Patterson Apricot Fiesta	Agriculture
Stanislaus County Farm Bureau	Agriculture
Asociación de Charros La Internacional del Valle de Patterson	Business
Adobe Valley Ranch	Business
Gustine Chamber of Commerce	Business
Los Banos Chamber of Commerce	Business
Patterson-Westley Chamber of Commerce	Business
Santa Nella Chamber of Commerce	Business
American Association of University Women	Civic
Gustine Rotary Club	Civic
International Association of Lions Clubs - Patterson	Civic
League of United Latin American Citizens	Civic
Los Banos Lions Club	Civic
Los Banos Rotary Club	Civic
Mendota Community Corporation	Civic
Newman Lions Club	Civic
Newman Rotary Club	Civic
Newman Women's Club	Civic
Patterson Lions Club	Civic
International Association of Lions Clubs - Mendota	Civic
International Association of the Lions Clubs - Los Banos	Civic
Italian Catholic Federation of CA Inc.	Civic
Kiwanis International	Civic
Rotary International - Los Banos	Civic
Rotary International - Patterson	Civic
Firebaugh Rotary Club Inc.	Community General Public
Casa Mobile Home Park	Community/General Public
Center for Environmental Science Accuracy & Reliability	Community/General Public
Firebaugh Senior Center	Community/General Public
Friends of Green Valley Charter	Community/General Public
Friends of the Public Library	Community/General Public
Habitat for Humanity International	Community/General Public
Los Banos Senior Center	Community/General Public
Mendota Community Center	Community/General Public
Mendota Senior Center	Community/General Public
Merced County Library - Dos Palos	Community/General Public
Merced County Library - Gustine	Community/General Public
Merced County Library - Los Banos	Community/General Public
Merced County Library - Santa Nella	Community/General Public
San Joaquin River Resource Mgmt. Coalition	Community/General Public

Santa Nella RV Park	Community/General Public
Stanislaus County Library - Newman	Community/General Public
Stanislaus County Library - Patterson	Community/General Public
Dos Palos Oro Loma Joint Unified School District	Education
Firebaugh-Las Deltas Unified School District	Education
Gustine Unified School District	Education
Los Banos Unified School District	Education
Mendota Unified School District	Education
Merced College	Education
Creekside Parent Club	Education
Academy West Insurance	Other
Academy West Insurance Firebaugh	Other
Amaral & Associates Realty	Other
American Legion	Other
American Legion Auxiliary Elijah B Hayes	Other
Andrea Brandt State Farm Insurance	Other
Benevolent & Protective Order of Elks	Other
Borelli Real Estate Services	Other
California Garden Clubs Inc.	Other
Century 21 M&M & Assoc - Los Banos	Other
Century 21 M&M & Assoc - Patterson	Other
Coldwell Banker Kaljian & Assoc	Other
Eric Rodriguez - Patterson	Other
Farmers Insurance Antonio Gonzales	Other
First Prioirty of the Central Valley	Other
Greg Nunes Real Estate	Other
Joe G. Gutierez State Farm Insurance	Other
Mendota Land Co	Other
Noah's Ark Foundation of Tracy Inc.	Other
PMZ Real Estate - Patterson	Other
PMZ Real Estate - Los Banos	Other
Rafael Ruiz - Patterson	Other
Shane P. Donion Ranch Broker	Other
The Boyd Company	Other
Valley West Properties	Other
Adventure Christian Church of Patterson	Religious
Agape Baptist Church	Religious
Bethel Community Church	Religious
Church of Christ of Patterson	Religious
Church of God of Prophecy	Religious
Connections Christian Church	Religious
Evangelical Church of Los Banos	Religious
Family Christian Center	Religious
First Baptist Church	Religious
Full Gospel Businessmen's Fellowship International	Religious
Harvest Samoan Assembly of God	Religious

Mountain House Foursquare Church	Religious
Movimiento Familiar Cristiano Catolico	Religious
Patterson Covenant Church	Religious
Patterson Christian Fellowship	Religious
Patterson Seventh Day Adventist Church	Religious

Prepared by:

WOODARD &CURRAN

In association with:

PROVOST& PRITCHARD
CONSULTING GROUP

1545 River Park Dr., Suite 425
Sacramento, CA 95815
916.999.8700

Appendix B – Kenneth D Schmidt & Associates - HCM and GW Conditions Report

HYDROGEOLOGIC CONCEPTUAL MODEL AND GROUNDWATER CONDITIONS FOR THE GRASSLAND WATER DISTRICT EXPANDED GSP

prepared for

Grassland Water District

Los Banos, California

by

Kenneth D. Schmidt & Associates

Groundwater Quality Consultants

Fresno, California

December 2018

TABLE OF CONTENTS

INTRODUCTION 4
SURFICIAL CHARACTERISTICS OF BASIN 4
Topography 4
Surficial Geology 6
Topsoils 6
Surface Water Bodies 9
SUBSURFACE GEOLOGIC CONDITIONS 11
Regional Geologic and Structural Setting 11
Lateral Basin Boundaries 11
Definable Bottom of the Basin 11
Formation Names 14
Confining Beds 14
Principal Aquifers 16
Subsurface Geologic Cross Sections 18
GROUNDWATER USE AND WELL DATA 27
Primary Uses of Each Aquifer 27
WATER LEVELS 27
Depth to Water 27
Water-Level Elevations and Direction of Groundwater Flow 28
Water-Level Fluctuations 32
POTENTIAL SOURCES OF GROUNDWATER RECHARGE 35
POTENTIAL SOURCES OF GROUNDWATER DISCHARGE 37
AQUIFER CHARACTERISTICS 37
Transmissivities 37
Vertical Hydraulic Conductivities 37
Storativity 38
CHANGES IN GROUNDWATER STORAGE 38
Northern Division 38
Southern Division 39
LAND SUBSIDENCE 39
GROUNDWATER QUALITY 42
Northern Division 42

Southern Division 44
INTERCONNECTED SURFACE AND GROUNDWATER SYSTEMS 44
KNOWN CONTAMINATION SITES 45

Table of Figures

Figure 1 - Topography 5
Figure 2 - Surficial Geologic Map 7
Figure 3 - Topsoils 8
Figure 4 - Surface Water Bodies 10
Figure 5 - Definable Bottom of Basin 13
Figure 6 - Depth to Top of the Corcoran Clay 15
Figure 7 - Thickness of the Corcoran Clay 17
Figure 8 - Location of Subsurface Geologic Cross Sections 19
Figure 9 - Subsurface Geologic Cross Section A - A' 20
Figure 10 - Subsurface Geologic Cross Section B - B' 22
Figure 11 - Subsurface Geologic Cross Section C - C' 23
Figure 12 - Subsurface Geologic Cross Section D - D' 25
Figure 13 - Subsurface Geologic Cross Section E - E 26
Figure 14 - Water-Level Elevations and Direction of Groundwater Flow in the Upper Aquifer (Spring 2015) 29
Figure 15 - Water-Level Elevations and Direction of Groundwater Flow in the Lower Aquifer (Spring 2015) 31
Figure 16 - Representative Water-Level Hydrographs for Upper Aquifer Northern Division 33
Figure 17 - Representative Water-Level Hydrographs for Upper Aquifer Southern Division 34
Figure 18 - Potential Groundwater Recharge Areas 36
Figure 19 - Land Surface Elevations Along Highway 152 40
Figure 20 - Land Subsidence (July 2012 - December 2016) 41
Figure 21 – Groundwater Quality in the GWD 43
Figure 22 - Known Contamination Sites 46

HYDROGEOLOGIC CONCEPTUAL MODEL AND GROUNDWATER CONDITIONS FOR THE GRASSLAND WATER DISTRICT EXPANDED GSP

INTRODUCTION

This report is intended to satisfy Sections 354.14 (Hydrologics Conceptual Model) and Section 354.16 (Groundwater Conditions) of a Groundwater Sustainability Plan (GSP) for the Grassland Water District (GWD), several wildlife refuges within the Grassland Resource Conservation District (GRCD) (together the Grassland Groundwater Sustainability Agency), and some other areas in Merced County within the Merced County Delta-Mendota (MCDM) Groundwater Sustainability Agency.

The GWD is divided into two divisions. The North Division is north of Highway 152 and is generally bounded to the east by the San Luis Drain. Three federal wildlife refuges are located adjacent to the Northern Division and are included in the area evaluated. The South Division is located south of Highway 152 and is located east and north of the Central California Irrigation District (CCID) Main Canal. The other MCDM GSA areas include 1) private wetlands, 2) ag lands, 3) the San Luis National Wildlife Refuge, and 4) state refuges (all outside of the Grassland GSA).

SURFICIAL CHARACTERISTICS OF BASIN

Topography

Figure 1 shows topographic conditions in the basin. The land generally slopes to the northeast towards the San Joaquin River. Major drainages that pass through the area are Los Banos Creek, San Luis Creek, Mud Slough, and Salt Slough. The San Joaquin River bounds the San Luis NWR to the north and Los Banos Creek joins the river north of Highway 140. Land surface elevations range from about 130 to 140 feet above mean sea level along the Main Canal south of the Southern Division to about 70 feet above mean sea level near the Highway 140 crossing of the San Joaquin River at Fremont Ford.

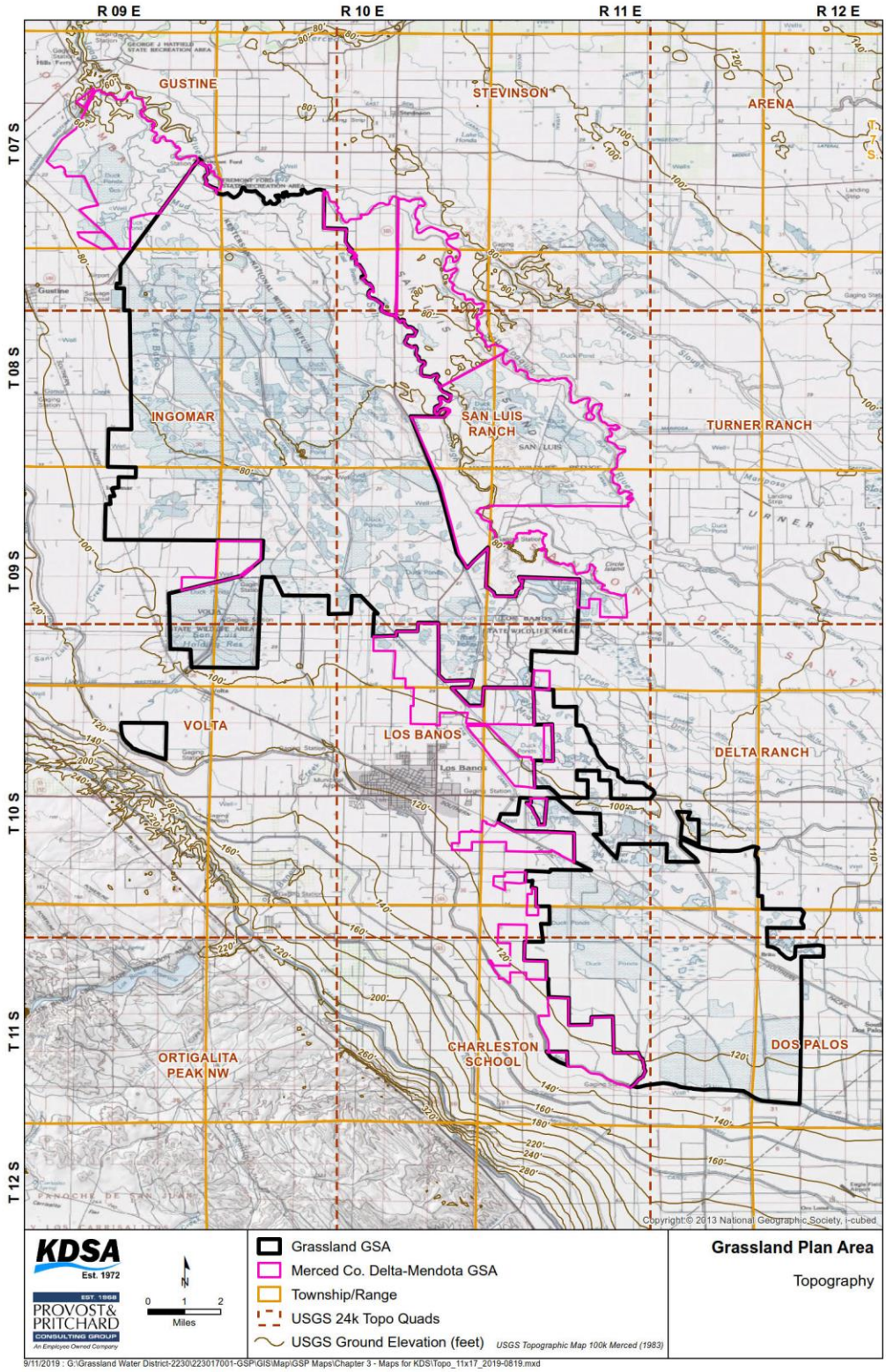


Figure 1 - Topography

Surficial Geology

Hotchkiss and Balding (1971, Plate 1) mapped the surficial geology of the Tracy-Dos Palos Area, which include the area evaluated. Figure 2 shows the part of their map that covers the area evaluated. Except in the southwest edge of the GWD, surficial deposits are mapped as flood basin deposits. These are unconsolidated clay, silt, sand, and gravel deposits on the floodplan of the San Joaquin River. Along the southwest edge of the GWD, alluvial deposits are present, primarily along the San Luis Creek and Los Banos Creek alluvial fans. These are unconsolidated clay, silt, sand, and gravel.

Topsoils

Figure 3 shows the major types of topsoils in the area evaluated, from the U.S. Soils Conservation Service report on soils in the Los Banos area. The soils have been divided into coarse-grained, intermediate textured, and clay and silty clay. Most of the coarse-grained soils are in the north part of the area. In the south part of the area the predominant soils are clay and silty clay, and few coarse-grained soils are present.

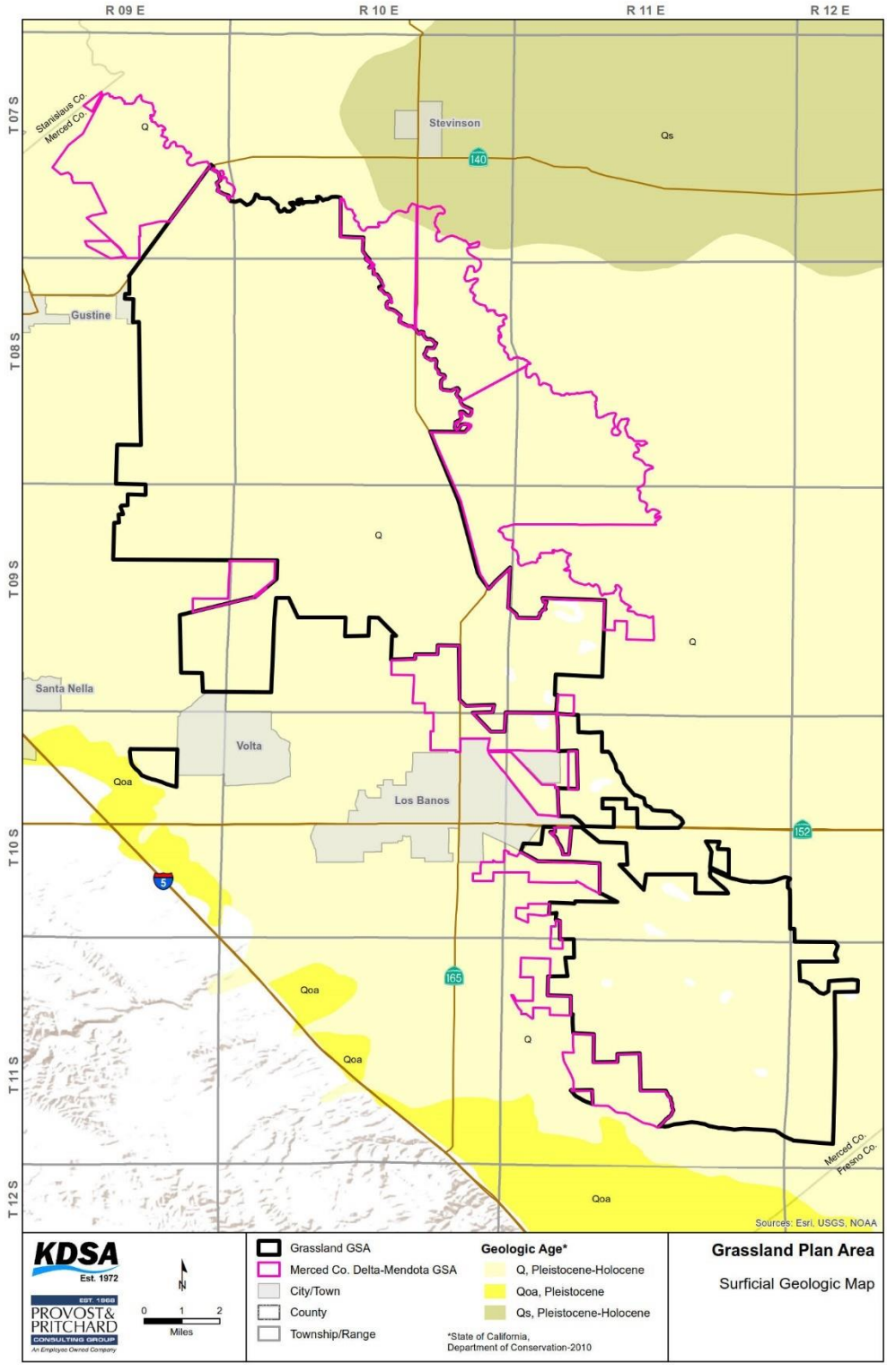


Figure 2 - Surficial Geologic Map

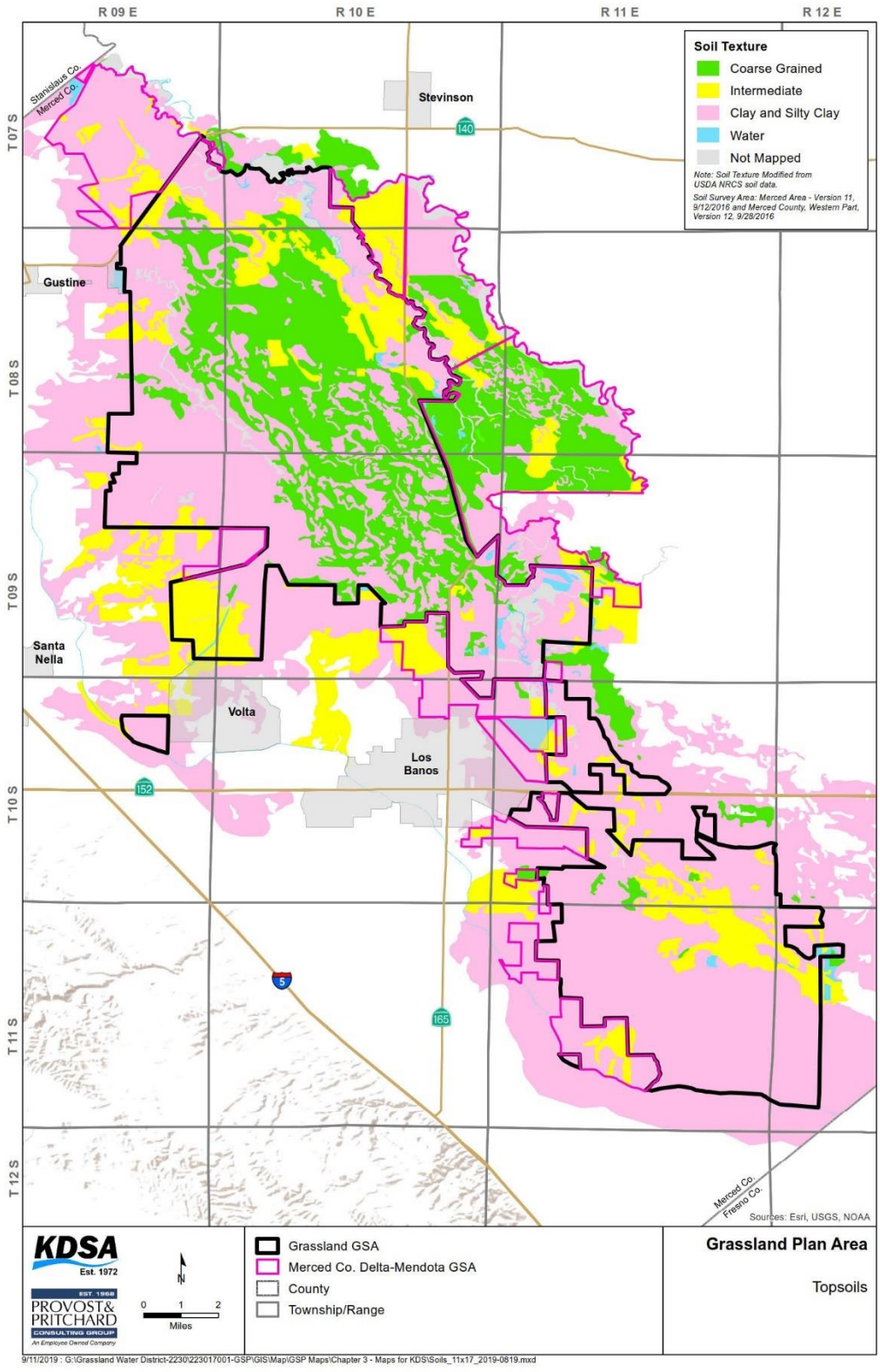


Figure 3 - Topsoils

Surface Water Bodies

Figure 4 shows the location of surface water bodies in the area evaluated. Streams on the west side are San Luis Creek and Los Banos Creek, both of which have been dammed, and Garzas Creek and Ortigalita Creek. Other drainages in the area are Mud Slough and Salt Slough. Los Banos Creek and Mud Slough join the San Joaquin River near or north of the north boundary of the San Luis NWR. Major canals in the area include the Delta-Mendota Canal (DMC) and the CCID's Main and Outside Canals, which are located upslope and to the southwest of the GRCD. Other important canals are the Santa Fe and San Luis Canals. The San Luis Drain was designed to carry subsurface drainage flows, which formerly were discharged to the Kesterson Reservoir, located just east of the north part of the Northern Division.

Lakes and reservoirs are shown as of April 5, 2001, from the California Department of Fish and Game.

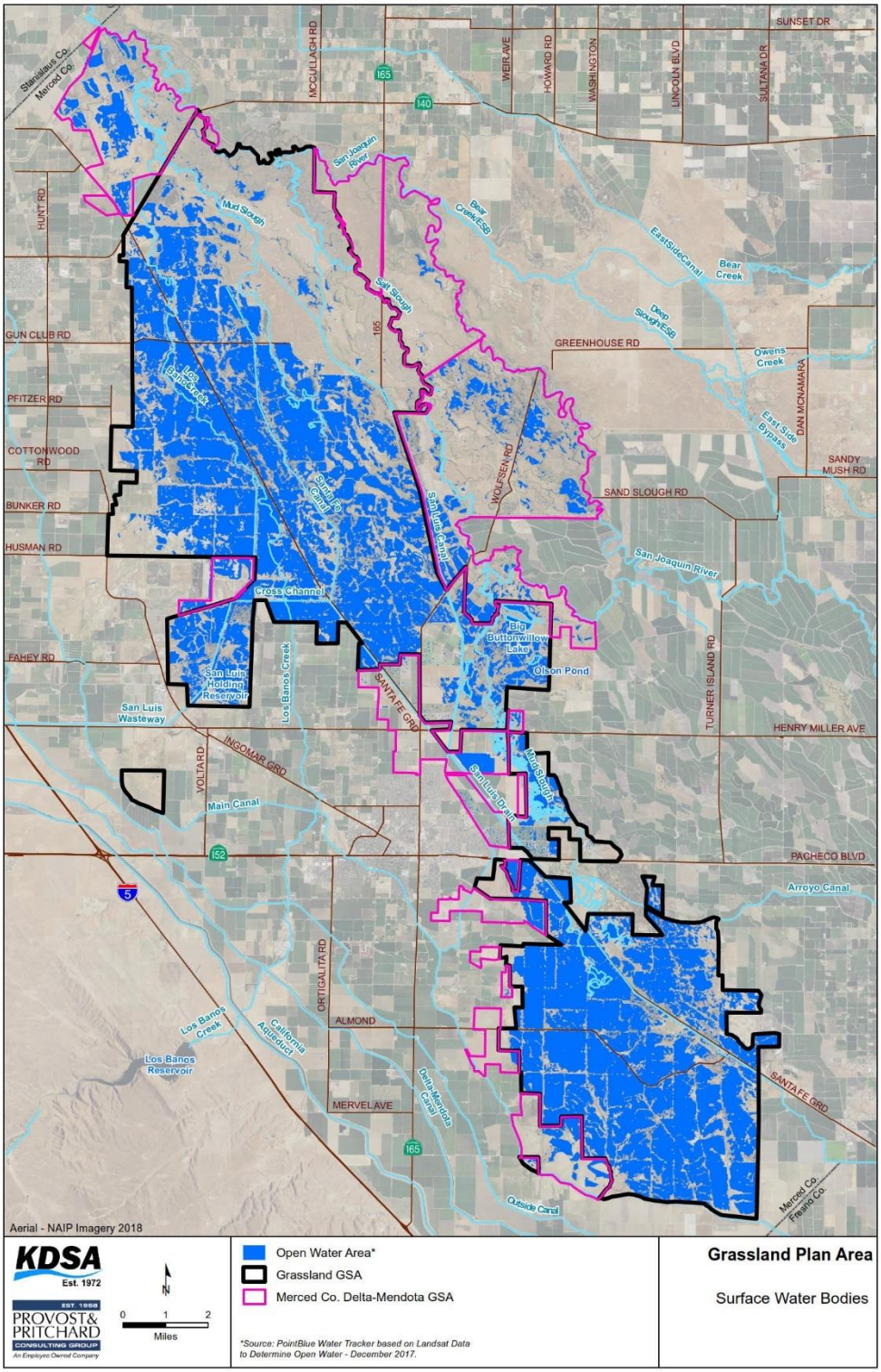


Figure 4 - Surface Water Bodies

SUBSURFACE GEOLOGIC CONDITIONS

Hotchkiss and Balding (1971) described the geology, hydrology, and water quality of the Tracy-Dos Palos Area, which includes the area evaluated. In addition, Kenneth D. Schmidt & Associates (KDSA 1997a) provided a report for the CCID on groundwater conditions in the area between Mendota and Crows Landing. These reports provide significant information on sub-surface geologic conditions that was used in this report.

Regional Geologic and Structural Setting

The area evaluated is within the San Joaquin Valley, which is a topographic and structural trough bounded on the east by the Sierra Nevada fault block and on the west by the folded and faulted Coast Ranges. Both mountain blocks have contributed to marine and continental deposits in the Valley. In the west-central part of the valley, more than 12,000 feet of sediments are present. Groundwater is present in alluvial deposits that dip slightly toward the through of the valley (the San Joaquin River).

Lateral Basin Boundaries

Figure 1 shows the boundaries of the basin. The basin boundaries include the San Joaquin River on the north end, and the CCID Main Canal on the south end. The west boundary of most of the area evaluated is a political boundary with the CCID, whereas the east boundary of the part of the basin north of Highway 152 is the Salt Slough or the San Joaquin River. For the part farther south, the east boundary is the CCID or the San Luis Canal Water Co. All of the basin is in Merced County. A number of national wildlife refuges and State refuges are also included in the area evaluated.

Definable Bottom of the Basin

Figure 5 shows the definable bottom of the basin. Historically, the U.S. Geological Survey (Page, 1973) used an electrical conductivity of about 3,000 micromhos per centimeter at 25°C to delineate the regional base of the fresh groundwater in the San Joaquin Valley. The underlying groundwater is termed "connate water" and is of higher salinity. Page indicated that the base of the fresh groundwater ranged from about 800 to 1,000 feet deep in most of the area evaluated. As part of this evaluation, electric logs for a number of deep holes were obtained from the California Division of Oil & Gas. A review of these logs indicated depths to the base of the fresh groundwater ranging from about 860 to 1,160 feet. For most of the area, the base of the fresh groundwater was less than 1,070 feet deep. When considering depths of the deepest

water supply wells in the area (about 800 to 900 feet), this range is reasonable. Deeper deposits are either primarily clay and/or contain brackish groundwater.

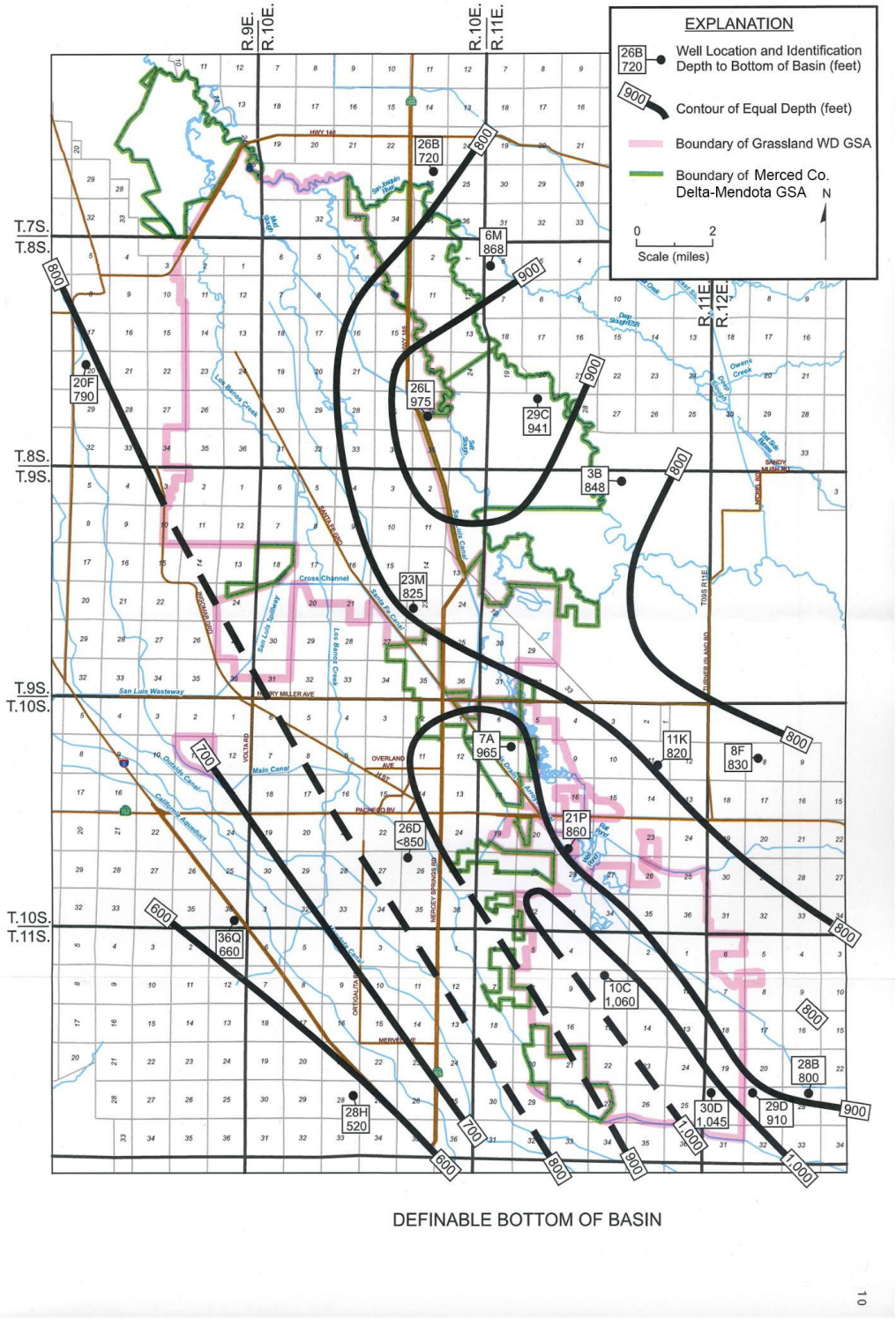


Figure 5 - Definable Bottom of Basin

Formation Names

Hutchkiss and Balding (1971) divided the unconsolidated de-posits in the Tracy-Dos Palos area into flood basin deposits (normally less than 50 feet thick), Quaternary alluvium (usually less than 200 feet thick), and the Tulare Formation (up to almost 1,000 feet thick). The Tulare Formation has an upper, thinner section which is above the Corcoran Clay, and a thicker, lower section below the clay. The Corcoran Clay is a regional confining bed, which divides the groundwater into an upper aquifer and lower aquifer. Deposits in the west part of the area evaluated are generally tan in color and are termed the Diablo Range deposits. Deposits to the east are brown, gray, or white in color and are termed the Sierra deposits. These deposits are shown on a number of subsurface geologic cross sections that are presented later in this report.

Confining Beds

The Corcoran Clay is indicated to be the most important confining bed in the area evaluated. Figure 6 shows the depth to the top of the Corcoran Clay, which was mapped for this evaluation, primarily based on electric logs and geologic logs for test holes and wells. The depth to the top of this clay is generally the greatest in the south central part of the area evaluated. The shallowest depth (about 200 feet) is along the west and east edges of the area evaluated. The shallowest depth along the east edge is about 185 feet. North of Highway 152, the depths to the top of the Corcoran Clay in the central part of the area range from about 250 to 300 feet. South of Highway 152, the depths to the top of the clay range from about 200 to 350 feet. The depths to the top of the Corcoran Clay essentially define the base of the upper aquifer.

The thickness of the Corcoran Clay also tends to be less towards the west and east edges of the area evaluated (Figure 7). For the area north of Highway 152, the thinnest part (less than 40 feet thick) is beneath the northeast part. The Corcoran Clay ranges from about 35 to 50 feet thick along the east edge of the area evaluated, and from about 65 to 120 feet along the west edge. In the area south of Highway 152, the thinnest clay (about 80 feet thick) is along the east edge of the area evaluated, and along the west edge south of Almond Drive Ditch. The thickest area (greater than 120 feet) is west of South Dos Palos.

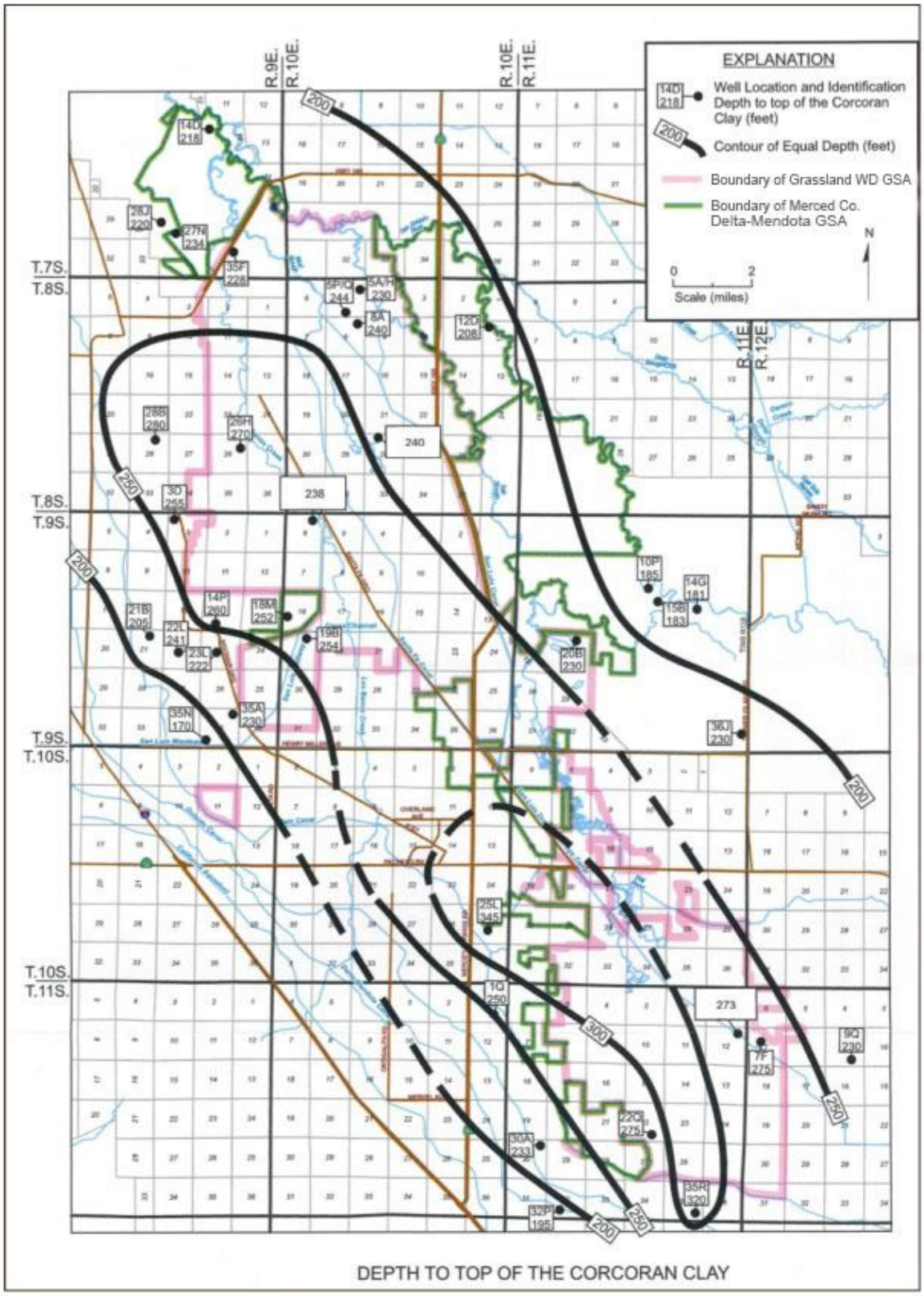


Figure 6 - Depth to Top of the Corcoran Clay

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Principal Aquifers

Based on subsurface geologic cross sections (presented in the next section) and water well drillers logs and completion reports, the upper aquifer is the principal aquifer in most of the area adjoining the GWD (i.e. in the CCID and San Luis Canal Co. service areas). However, in the Panoche WD, the lower aquifer is the principal aquifer. In the GWD, both the upper and lower aquifers are tapped by water supply wells. Most pumping occurs from the upper aquifer, which is considered the principal aquifer.

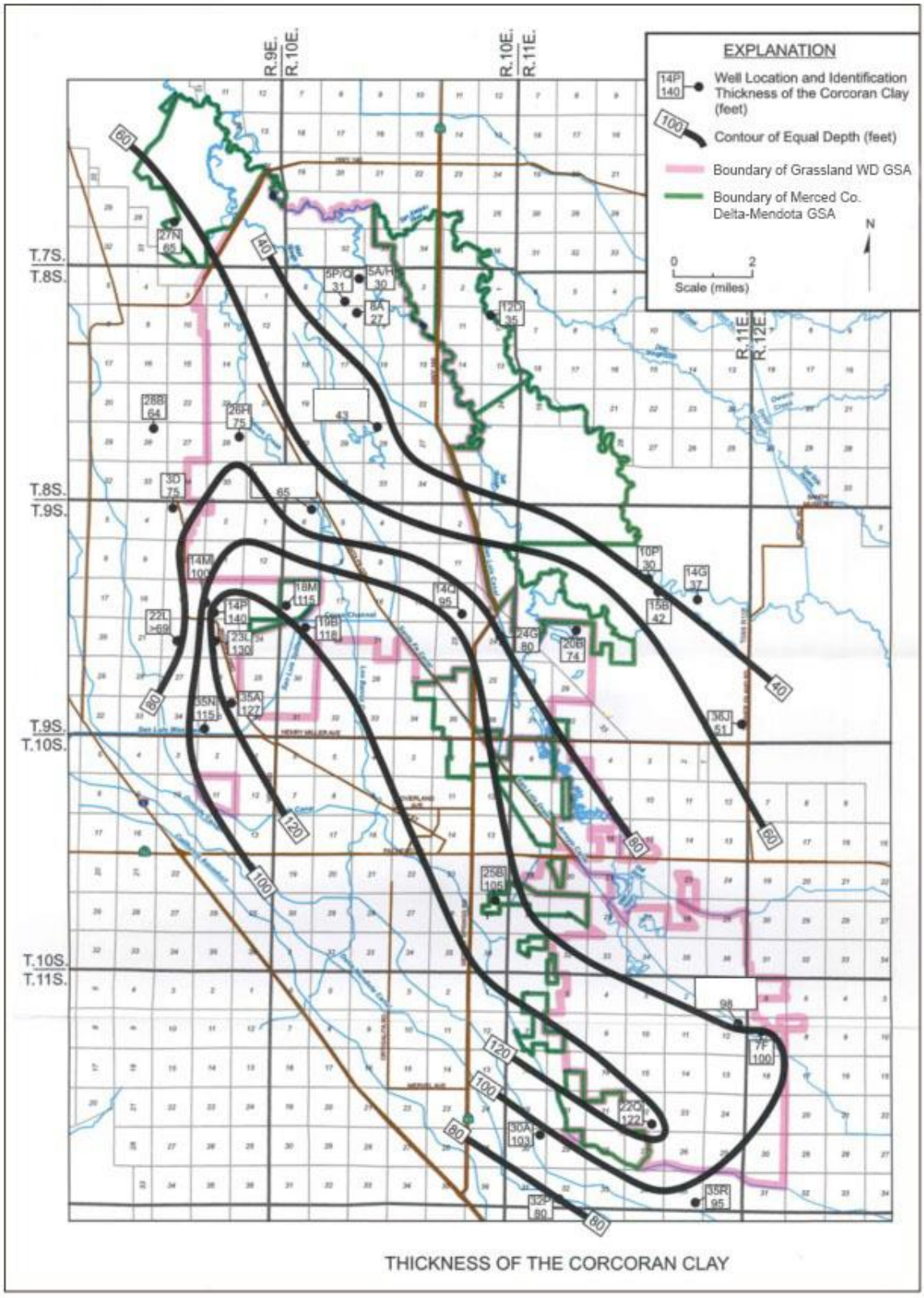


Figure 7 - Thickness of the Corcoran Clay

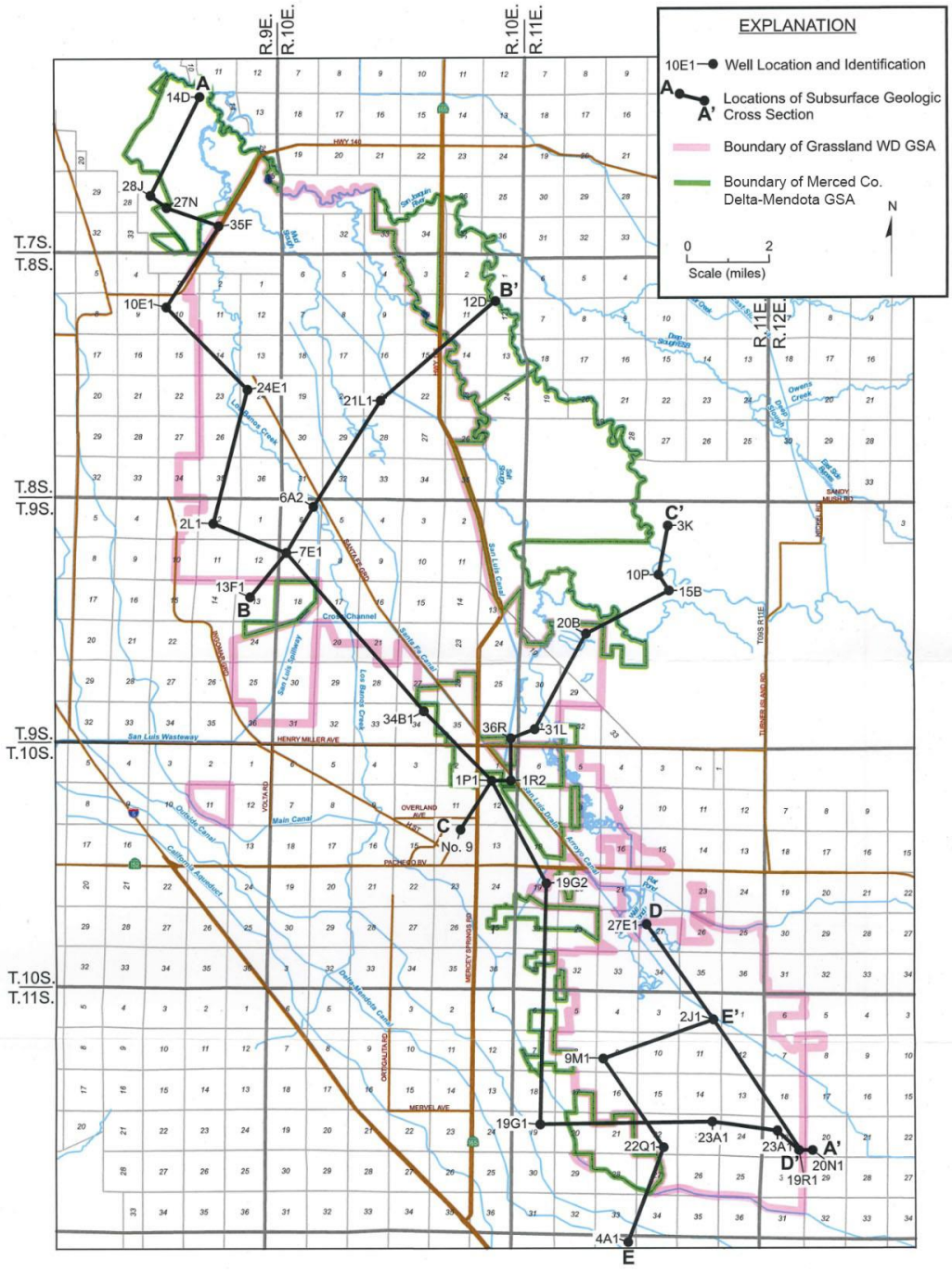
Subsurface Geologic Cross Sections

The subsurface geologic cross sections presented in this report were either ones modified by KDSA from Hotchkiss and Balding (1971) or prepared by KDSA for the CCID and City of Los Banos (KDSA, 1997 and 2013). Locations of the cross sections are provided on Figure 8.

Northern Area

For the area north of Highway 152, three subsurface cross sections are provided. Cross Section A-A' extends from north of Highway 140 on the north end to the south and southeast, to near the Merced County-Fresno County line (Figure 9). This section is generally near the west edge of the area evaluated. The base of the unconsolidated deposits (base of the aquifer) ranges from about 800 to 1,000 feet along this section and Diablo Range deposits are predominant. The Corcoran Clay is at an average elevation of about 200 feet below sea level along the section.

Along the west edge of the Northern Division north of Husman Road, Diablo Range deposits are predominant above the Corcoran Clay, whereas farther south, Sierra deposits are predominant along this section. Below the Corcoran Clay, Sierra deposits are only predominant above a depth of about 600 feet in the area north of Husman Road. Otherwise, Diablo Range deposits are predominant.



LOCATION OF SUBSURFACE GEOLOGIC CROSS SECTIONS

Figure 8 - Location of Subsurface Geologic Cross Sections

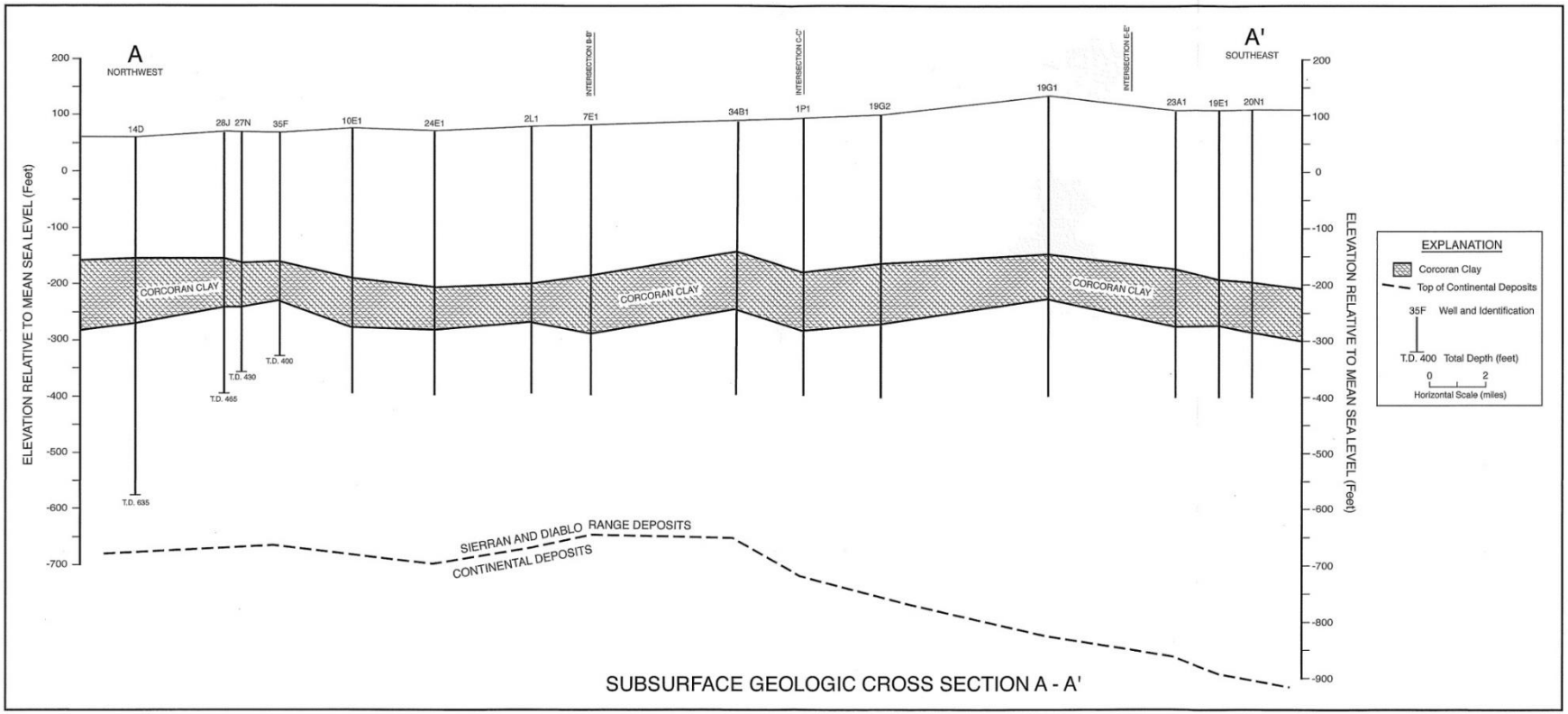
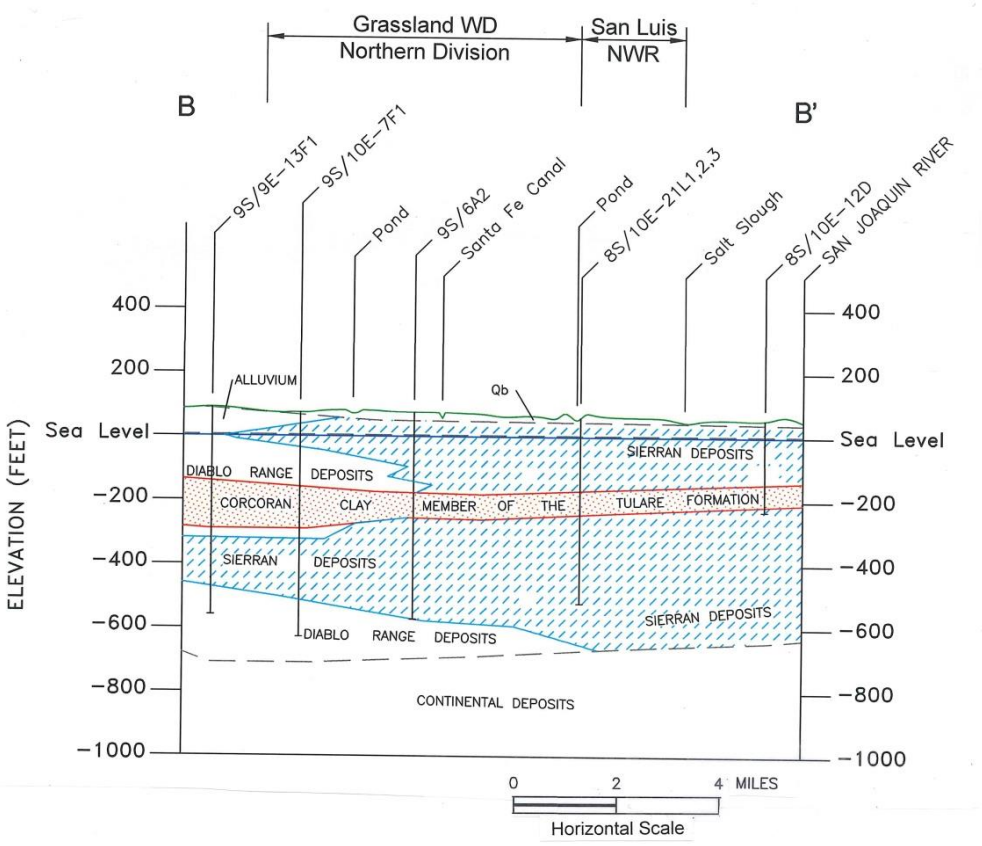


Figure 9 - Subsurface Geologic Cross Section A - A'

Cross Section B-B' (Figure 10) extends from near Husman Road and about half a mile east of the boundary between R9E and R10E, to the northeast to near the San Joaquin River. The former Kesterson Reservoir is located near the northeast edge of the section. This cross section illustrates well the predominance of the Sierra deposits, both above and below the Corcoran Clay in most of the area with the Northern Division and the adjacent San Luis WWR. The Diablo Range deposits are only significant above the Corcoran Clay beneath the west part of the Northern Division along this section, and within the lower 100 to 200 feet of unconsolidated deposits beneath the Sierra deposits.

Cross Section C-C' (Figure 11) was modified from Cross Section A-A' from KDSA. The part of this section northeast of City of Los Banos Well No. 8 was used, and the section was extended to the northeast, past the San Joaquin River. The Corcoran Clay is shallower to the northeast along this section and sand strata above the Corcoran Clay are more extensive to the southwest. Sand strata are common above and below the clay along the southwest and northeast parts of the section.



SUBSURFACE GEOLOGIC CROSS SECTION B-B'

Figure 10 - Subsurface Geologic Cross Section B - B'

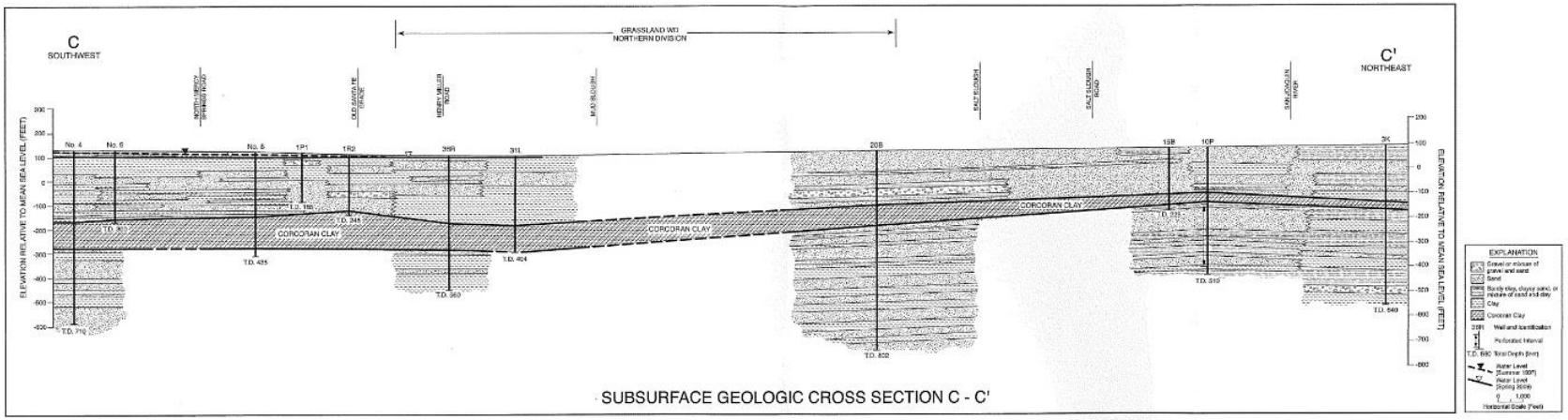
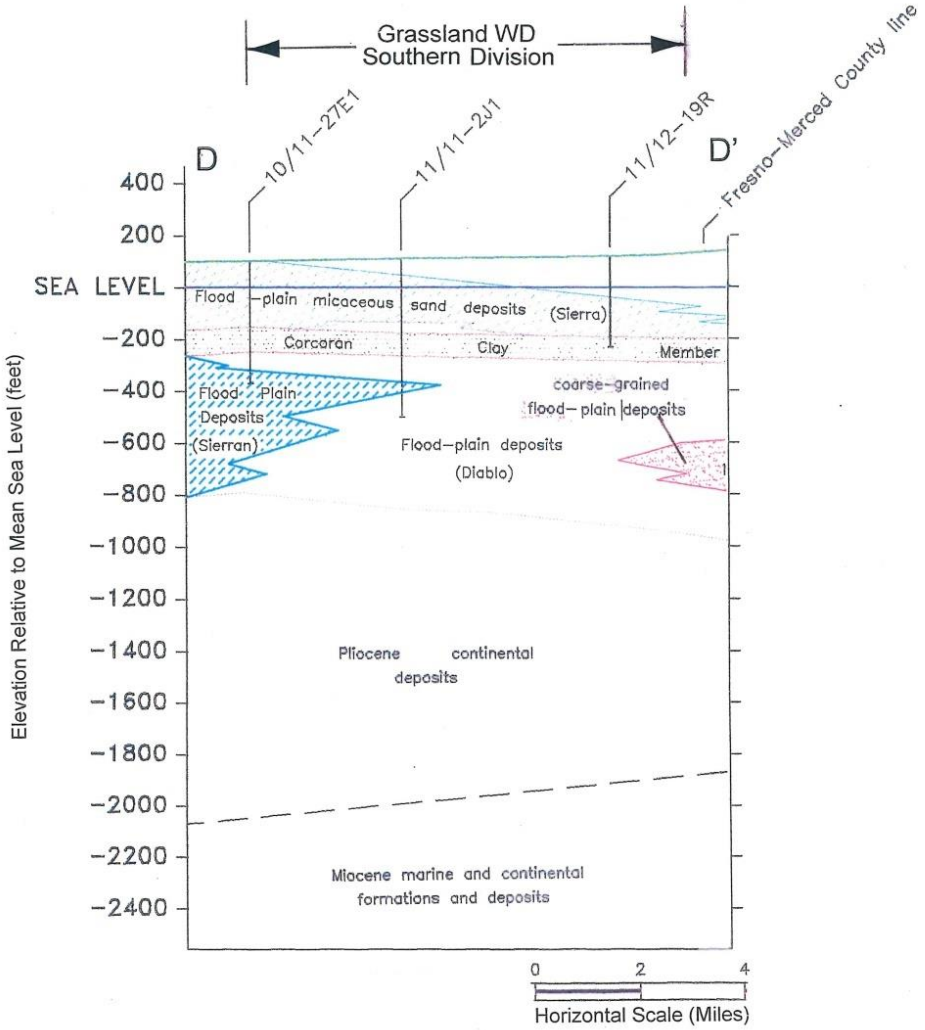


Figure 11 - Subsurface Geologic Cross Section C - C'

Southern Area

Cross Section D-D' (Figure 12) was modified from Meade (198). This section extends from southeast of Los Banos to the south to near Eagle Field. The top of the consolidated deposits deepens to the south along the section, and ranges from about 900 to 1,000 feet deep beneath the Southern Division. The Corcoran Clay averages about 200 feet deep along the part of the section in the Southern Division. Deposits above the Corcoran clay are primarily Sierra floodplain deposits. Deposits below the clay along the north part of this section in the Southern Division are primarily Sierra floodplain deposits, whereas beneath the south part, Diablo floodplain deposits are predominant.

Subsurface Geologic Cross Section E-E' (Figure 13) modified from Hotchkiss and Balding (1971), extends from the northeast near Copa De Oro Avenue and Brito Road to the southwest near Delta Road and the boundary of T11S and T12S, between the Outside Canal and the DMC. The Corcoran Clay dips to the northeast along the southwest part of the section, and to the southwest along the northeast part. Sierra deposits are predominant above the Corcoran Clay, whereas Diablo Range deposits are predominant below the Corcoran Clay along this section. A thin wedge of Sierra deposits is present at a depth of about 600 feet along the east part of the Southern Division along this section.



SUBSURFACE GEOLOGIC CROSS SECTION D-D'

Figure 12 - Subsurface Geologic Cross Section D - D'

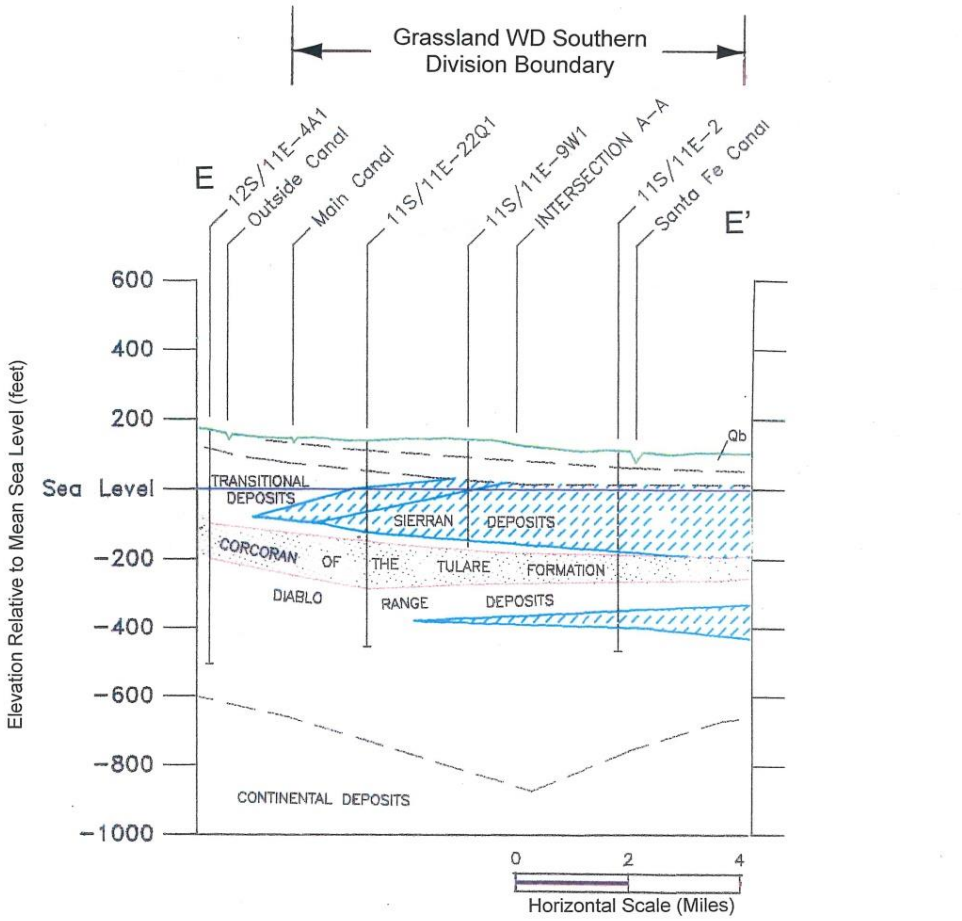


Figure 13 - Subsurface Geologic Cross Section E - E

GROUNDWATER USE AND WELL DATA

Primary Uses of Each Aquifer

The GWD provided drillers logs and electric logs for test holes and water supply wells in and near the GWD. Logs for the federal wildlife refuges, state refuges, and other areas were obtained from the DWR. Most upper aquifer wells generally extend to near the top of the Corcoran Clay, and thus range from about 200 to 300 feet deep. The deepest water supply wells with records in the north part of the area are from about 780 to 870 feet deep. The deepest water supply wells with records in the south part of the area are about 600 to 700 feet deep. Most water supply wells either tap the upper aquifer or lower aquifer, and this has often been based on groundwater quality considerations. The most important chemical constituents in terms of the GWD and the wildlife refuges are total dissolved solids (TDS), selenium, and boron (discussed later in this report). For public supply uses, such as in the City of Los Banos, hexavalent chromium, manganese, TDS, and sulfate are additional constituents of concern.

WATER LEVELS

Water-level records are available from three primary sources in the area evaluated. Included are records from DWR, GWD, and the San Joaquin River Exchange Contractors (SJREC) Water Authority.

Depth to Water

In Spring 2018, the GWD installed shallow monitor wells at ten sites to allow monitoring of shallow water levels. In early March 2018, the depth to water in these wells ranged from about one to five feet. Except for two of these wells, depth to water was 2.5 feet or less. In August-September 2018, depth to water in these wells ranged from 4.2 to 9 feet. Except for two wells, depth to water ranged from about 5.0 to 7.0 feet. These measurements indicate that the groundwater is shallow enough, particularly in the spring and early summer, to be directly evaporated.

The GWD provided a report on February 1, 2016 entitled "Incremental Level 4 Groundwater Development Project Initial Study and Negative Declaration". This project allows the District to acquire up to 29,000 acre-feet per year of privately held groundwater supplies and/or exchange a portion of its surface water for such groundwater supplies. Data for 21 wells was provided in that report, and most of these are along the Santa Fe Canal and tap the upper aquifer. Records for this project indicate that static water levels in most upper aquifer wells were from about 10 to 20 feet deep during 2012-14. On the other hand, static water levels in two lower aquifer wells ranged from about 80 to 100 feet deep.

In Fall 2015, nested monitor wells were installed at three sites in the GWD (Figure 6). Two wells are located in the North Division near the San Luis Drain and Taglio Road and the Santa Fe Canal and Cottonwood Road, respectively. One well is located in the South Division, near Santa Fe Grade and north of Charleston Avenue. The static water level in the one upper aquifer monitor well was 16 feet deep in Fall 2015. The static water levels in two upper aquifer wells at the southern site were about 26 feet deep at that time. The static level in three lower aquifer wells at one of the northern sites ranged from about 50 to 100 feet deep in Fall 2015. The static water levels in four lower aquifer wells at another northern site ranged from about 80 to 90 feet deep at that time.

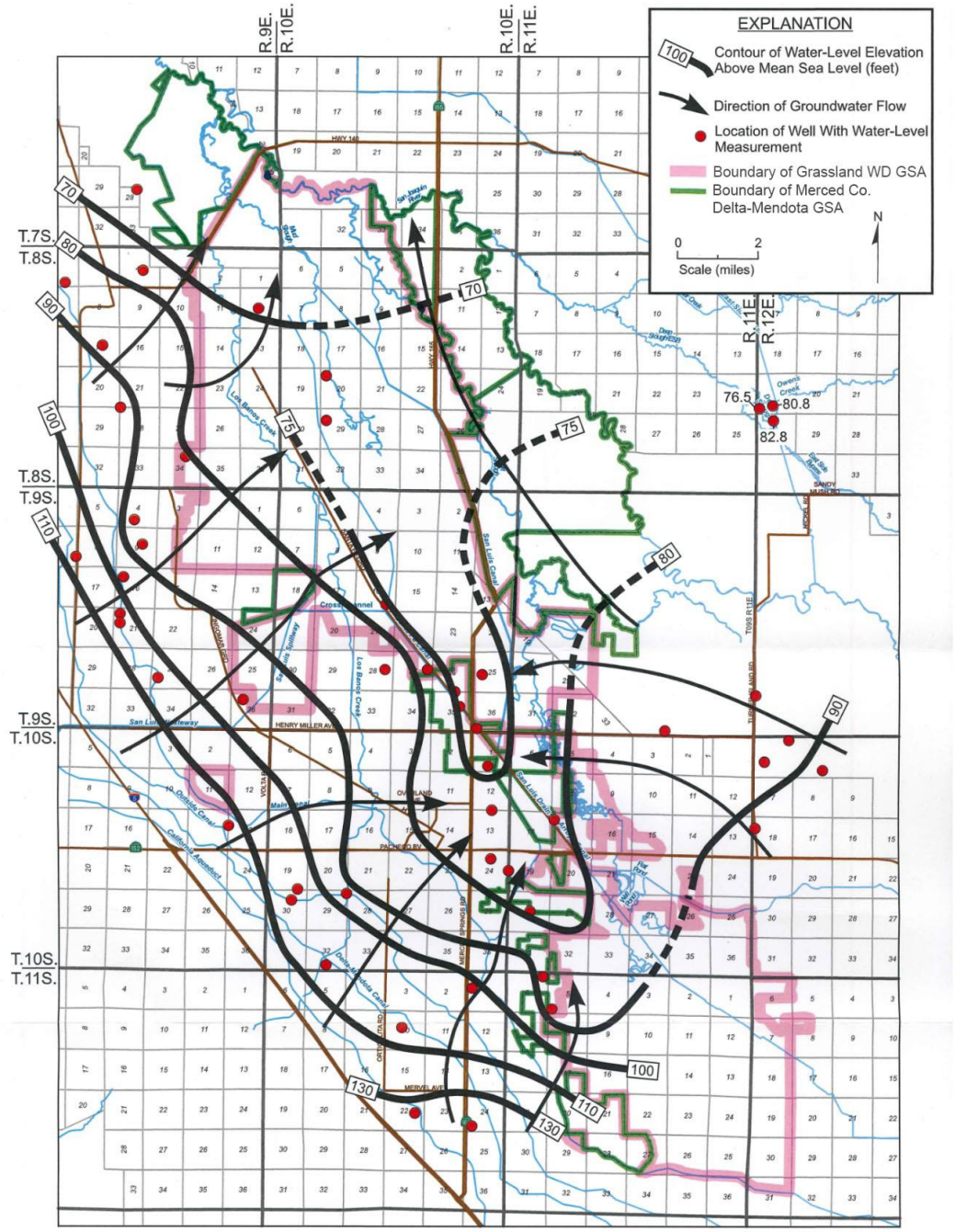
Water-Level Elevations and Direction of Groundwater Flow

Water-level elevation and direction of groundwater flow maps for both the upper aquifer and lower aquifer have been prepared by KDSA for the SJREC service areas, and these maps extend into part of the area evaluated. These maps were prepared to show both normal (Fall 1981) and drought conditions (Spring 1992).

Upper Aquifer

For the north part of the area, water-level elevations in Fall 1981 ranged from about 60 to 90 feet above near sea level and indicated a north to north-northeasterly direction of groundwater flow. Groundwater was moving from west of the North Division in the CCID, through the Northern Division, toward the San Joaquin River. The water-level elevations and direction of groundwater flow in Spring 1992 were essentially the same, indicating little variation in groundwater flow direction with climatic conditions. For the south part of the area, water-level elevations in Fall 1981 ranged from about 90 to 120 feet above mean sea level. The direction of groundwater flow was primarily to the north or northwest. The groundwater in the upper aquifer was flowing toward the Northern Division. Groundwater inflow was coming from the CCID, Pacheco WD, and Panoche WD. The water-level elevations and directions of groundwater flow in Spring 1992 were essentially the same, also indicating little variation with climatic conditions.

Figure 14 shows water-level elevations and the direction of groundwater flow for the upper aquifer for Spring 2015. Essentially, the same water-level elevations and direction of ground-water flow were present beneath the area north of Highway 152 and south of Highway 152 as in Fall 1981. Water-level elevations exceeded 130 feet above mean sea level near the south boundary of the area evaluated (Merced Avenue) and were less than 70 feet near the north boundary. A cone of depression was located east and north east of Los Banos. Groundwater in the south division of the GWD was primary moving to the north towards this depression. In the Northern Division and south of the Cross Channel, groundwater was also moving toward the northwest of these wells. North of Henry Miller road in the east part of the area evaluated, there was a groundwater divide. Northeast of this divide, groundwater moved towards the San Joaquin River.



WATER-LEVEL ELEVATIONS AND DIRECTION OF GROUNDWATER FLOW IN THE UPPER AQUIFER (SPRING 2015)

Figure 14 - Water-Level Elevations and Direction of Groundwater Flow in the Upper Aquifer (Spring 2015)

Lower Aquifer

For the Northern Division, water-level elevations ranged from less than 40 feet above mean sea level to about 60 feet in Fall 1981. There was a depression cone indicated beneath the Northern Division. Groundwater inflow was coming from the CCID on the west and northwest, the CCID and GWD Southern Division to the south, and the San Luis Canal Company, Turner Island W.D., and an undistricted area to the northeast.

For the Southern Division, water-level elevations in Fall 1981 ranged from about 60 feet above mean sea level east of Los Banos to 30 feet near the south end of the GWD. Groundwater was flowing into the Southern Division from the northeast and north-northeast, primarily from the San Luis Canal Company and CCID. Groundwater out-flow was to the south and southwest toward the Pacheco W.D. and Panoche W.D. Water-level elevations in Spring 1992 ranged from about 65 feet above mean sea level east of Los Banos to about 10 feet near the south end of the Southern division. The lower water levels to the south compared to Fall 1981 were likely due to greater lower aquifer pumpage in the Panoche W.D. and nearby areas during the drought.

Figure 15 shows water elevations and the direction of groundwater flow for the lower aquifer in Spring 2015. There was a groundwater divide near Henry Miller Avenue. North of the divide, groundwater flowed into a depression beneath the north part of the area. South of the divide, groundwater flowed to the south into the Panoche W.D. and Westlands W.D. In the north part of the area, water levels in the lower aquifer were about 60 to 90 feet deeper than in the upper aquifer. In the south part of the area, water levels in the lower aquifer were about 50 to 110 feet deeper than in the upper aquifer.

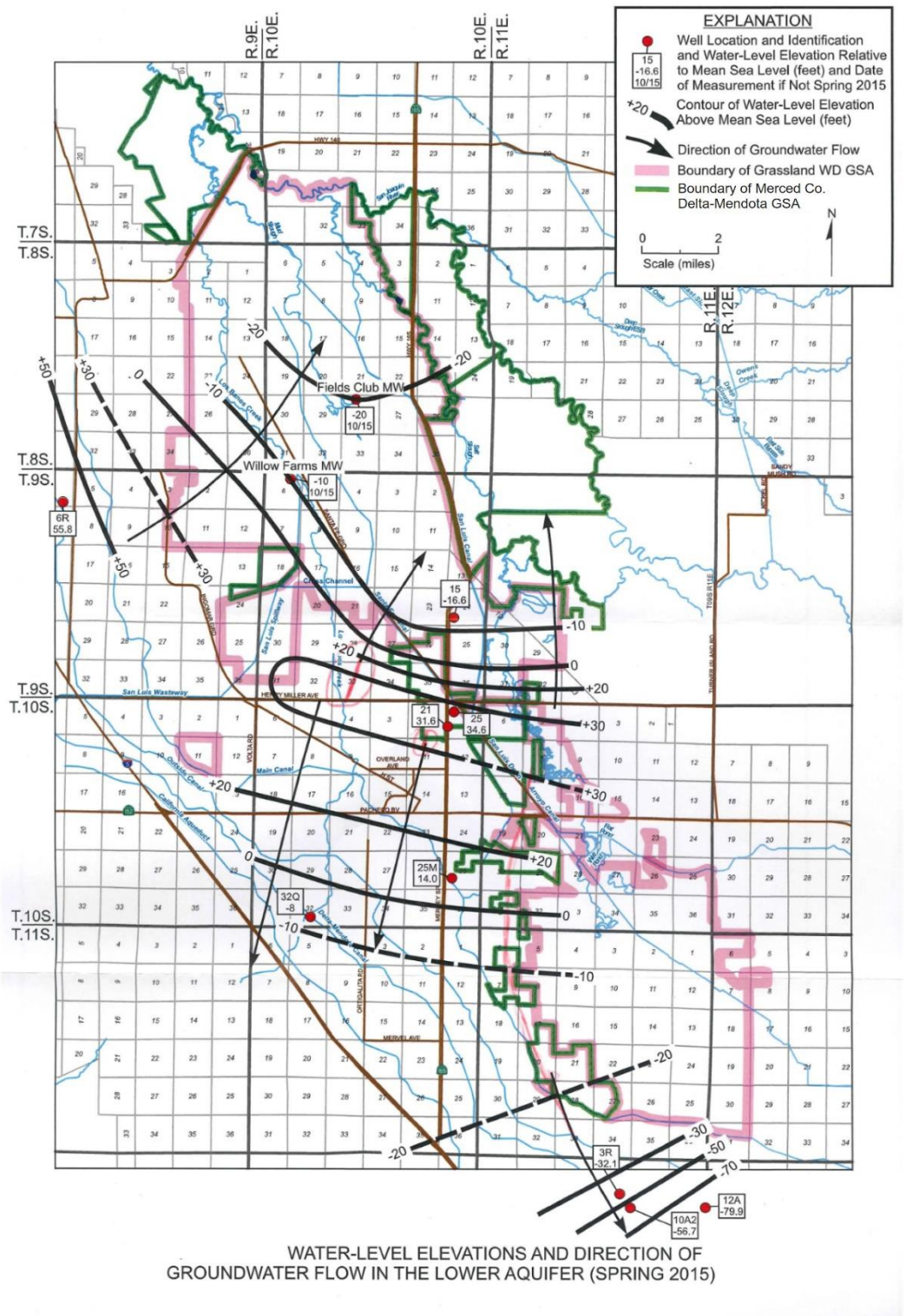


Figure 15 - Water-Level Elevations and Direction of Groundwater Flow in the Lower Aquifer (Spring 2015)

Water-Level Fluctuations

Water-level measurements and hydrographs for wells in and near the GRCD were obtained from DWR websites and from the CCID. In addition, the GWD provided water-level data for a number of wells for 2012-2014.

Upper Aquifer

Long-term water-level records are available for seven upper aquifer wells within or near the Northern Division:

T8S/R9E-10E1, 13E1, and 34G1

T8S/R10E-17N2 and 30E1

T9S/R9E-3C1 and 36P1

Water levels in five of these wells have risen over the long-term, extending back to the 1960s or 1970's. Water levels in two of these wells were relatively stable. Figure 16 shows representative water-level hydrographs for CASGEM wells in the Northern Division. Water levels in the wells have temporarily fallen during drought periods, such as the early 1990s, and then have recovered.

Long-term water-level records are available for 13 upper aquifer wells in or near the Southern Division:

T1OS/R10E-1M1

TlOS/R11E-17E1, 32N1, and 36A1

T11S/R11E-4N1, 6B1, 12P1, 12P3, 17E1, and 17E2

T11S/R12E-8C1, 30H1, and 30H2.

Figure 17 shows representative water-level hydrographs for two CASGEM wells in or near the Southern Division. Water levels in these wells have either risen or been relatively stable during the past several decades.

Static water levels in a number of upper aquifer wells in the GWD were measured prior to pumping and about a day after pumping for the wetlands stopped during 2012-2014. Water-level differences between the pre-pumping and after pumping were generally only several feet. In a number of cases, the post pumping water levels were shallower than those prior to pumping. The upper aquifer water-level fluctuations are indicative of an unconfined aquifer. They clearly indicate that there has been no groundwater overdraft in the GWD. This is consistent with conditions in the surrounding parts of the CCID and San Luis Canal Co. service areas.

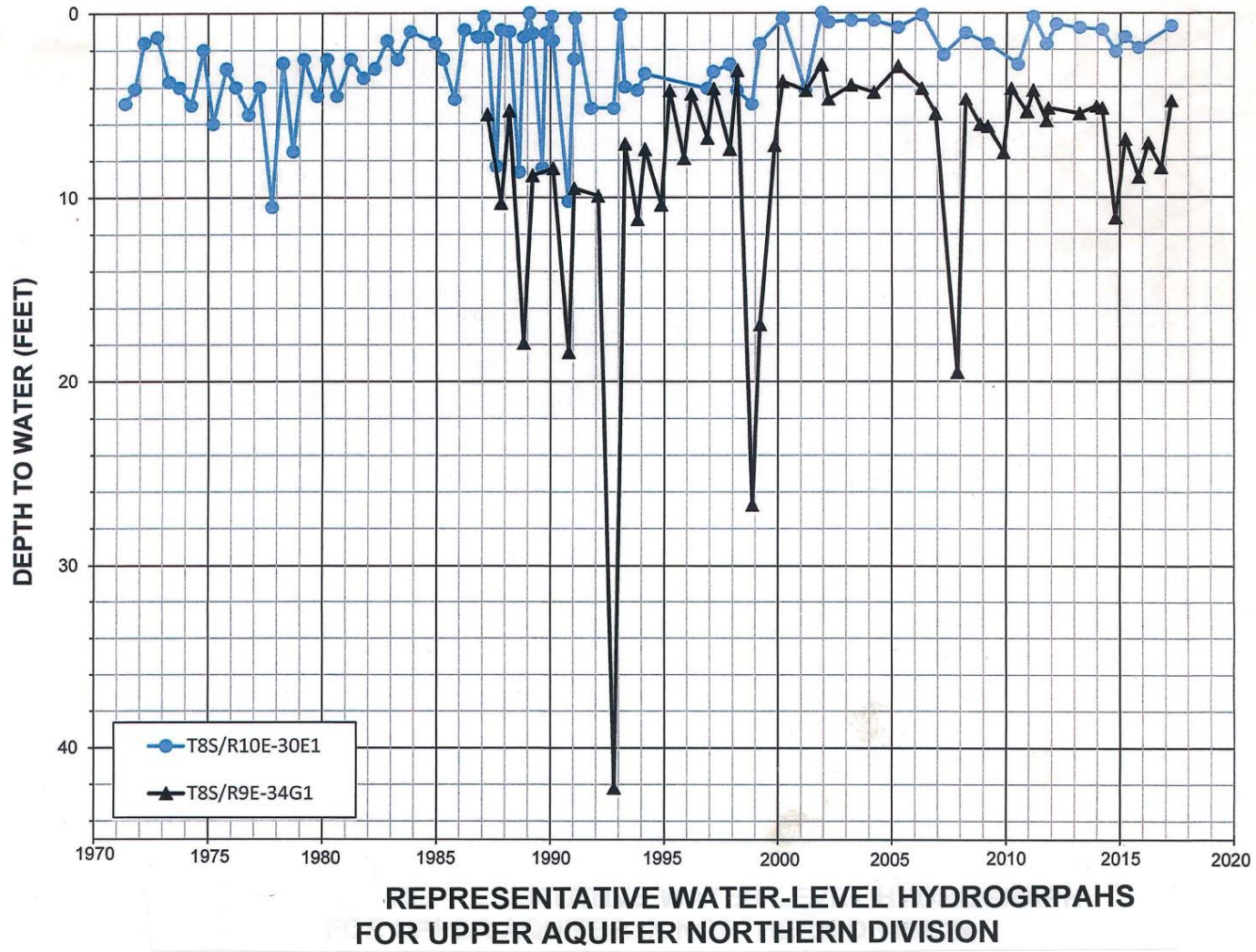


Figure 16 - Representative Water-Level Hydrographs for Upper Aquifer Northern Division

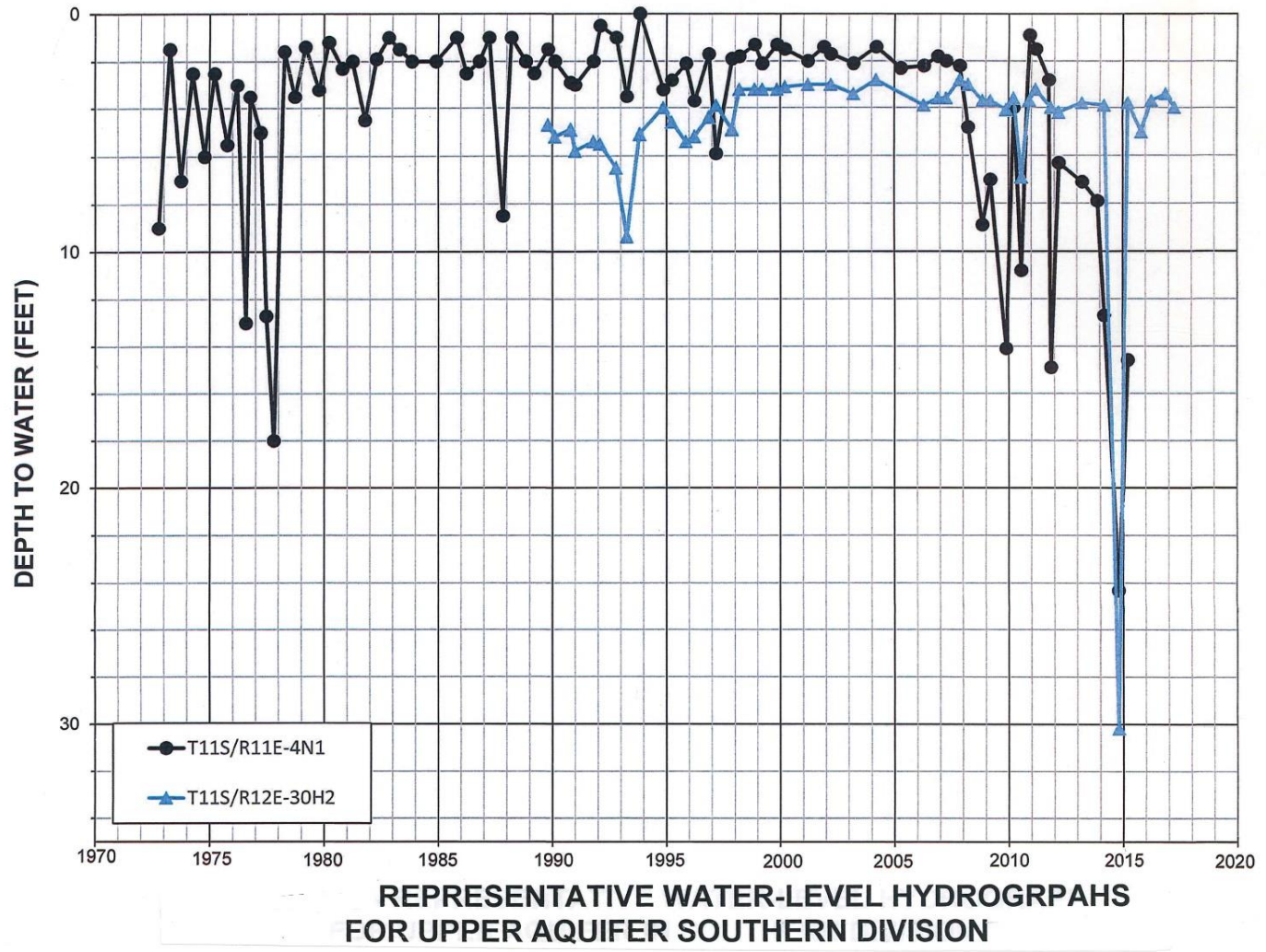


Figure 17 - Representative Water-Level Hydrographs for Upper Aquifer Southern Division

Lower Aquifer

Depth to water in lower aquifer wells has been substantially deeper than in upper aquifer wells, commonly from 50 to 100 feet deep. Long term water-level records aren't available for wells solely tapping the lower aquifer in the GWD. However, records are available for two Volta area wells, which tap both the upper and lower aquifers. Continuous water-level records are available for those wells for 2011-2016. Records for these wells indicate very quick water-level recovery after pumping steps. In 2012, water levels were much shallower after pumping stopped than prior to pumping.

POTENTIAL SOURCES OF GROUNDWATER RECHARGE

Figure 18 shows major potential sources of recharge to groundwater in the area evaluated. The major sources of recharge are groundwater inflow, seepage from conveyance facilities, and deep percolation from the wetlands. The GWD has imported an average of 150,000 acre-feet per year of water from the DMC. Summers Engineering estimated that an average of about 29,000 acre-feet per year have been recharged through unlined conveyance canals within the District. For the upper aquifer, groundwater inflow is primarily from the southwest and south. For the lower aquifer, groundwater in the Northern Division flows into the GWD from almost all directions. In the Southern Division, groundwater inflow was from the north-northwest and northeast. Also, because hydraulic heads are lower in wells tapping the lower aquifer than in those tapping the upper aquifer, there is a trend for downward flow of groundwater through the Corcoran Clay. Amounts of this downward flow in the SJREC service area were estimated by KDSA (1997b).

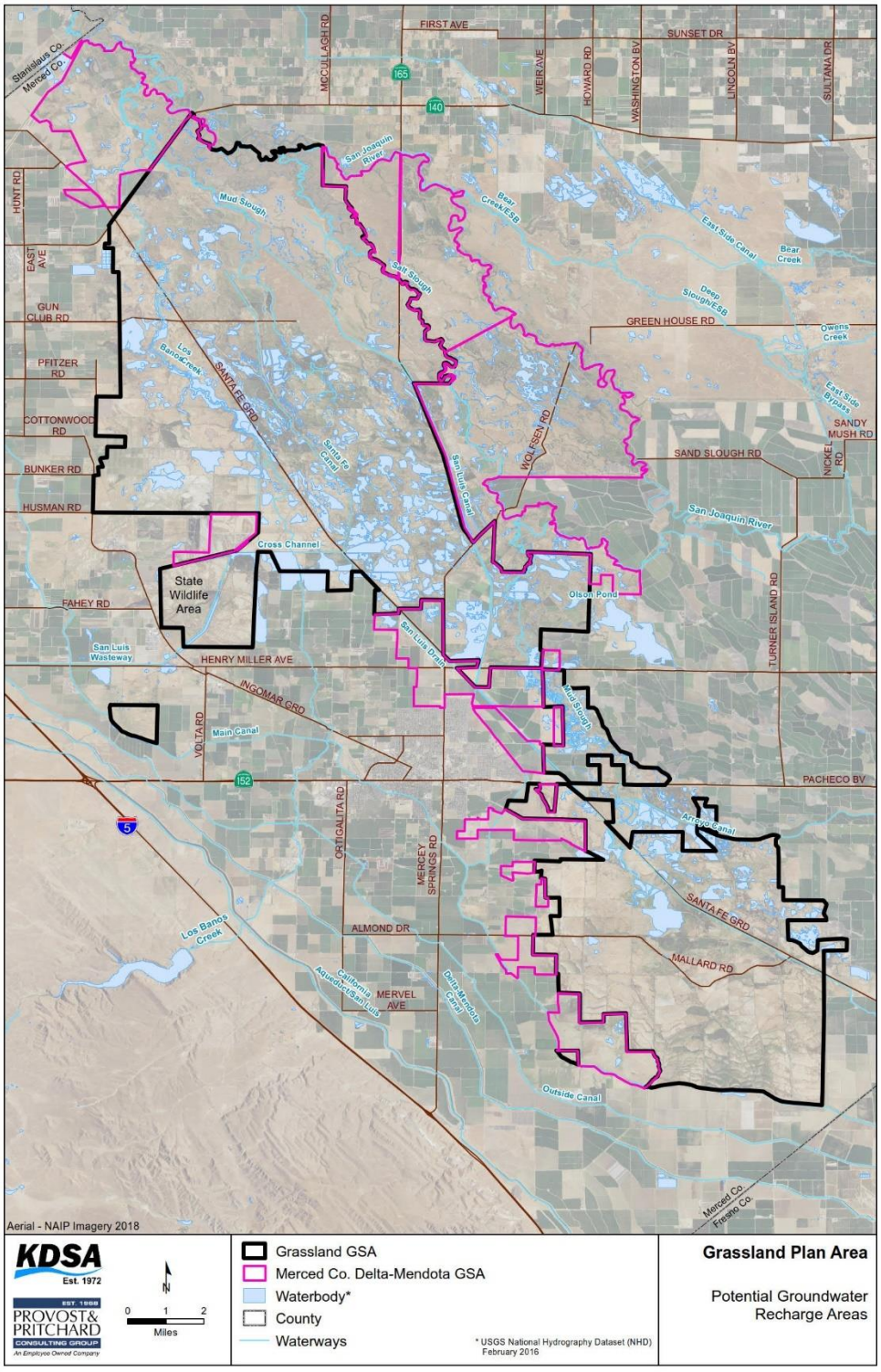


Figure 18 - Potential Groundwater Recharge Areas

POTENTIAL SOURCES OF GROUNDWATER DISCHARGE

Groundwater discharge from the upper aquifer is from pumping wells, groundwater outflow toward the San Joaquin River, downward flow of groundwater through the Corcoran Clay, and from evaporation or evapotranspiration of shallow groundwater. Groundwater discharge from the lower aquifer is primarily from pumping wells and groundwater outflow from the Southern Division.

AQUIFER CHARACTERISTICS

The GWD provided pumping rates for 23 wells in their pilot program. Pumping rates ranged from about 500 to 3,700 gpm. Pumping rates for most of these wells ranged from about 1,350 to 2,300 gpm. Pump tests are available for some of these wells.

Transmissivities

Aquifer transmissivities based on aquifer tests on wells in or near the area evaluated were assembled. Specific capacities for upper aquifer wells can be multiplied by a factor of 1,500 to estimate the transmissivity for areas where aquifer tests aren't available. Similarly, specific capacities for lower aquifer wells can be multiplied by 2,000 to estimate the transmissivity. In addition to these estimates, KDSA (2018) determined transmissivities for specific flow estimates along some of the boundaries with the GWD. For the upper aquifer, these included several inflow segments on the west side, and segments near the south and east side of the Northern Division, and two inflow segments near the southwest side of the Southern Division. For the lower aquifer, transmissivity values were developed for segments northwest, west, south and northeast of the Northern Division. Outflow segments were developed for areas south and southeast of the Northern Division.

KDSA (2018) determined aquifer transmissivities for the upper and lower aquifers from the results of aquifer tests and specific capacity values for wells in the SJREC service areas. KDSA (2018) indicated that transmissivities for the various segments for upper aquifer flow ranged from about 100,000 to 190,000 gpd per foot. The highest values were generally along the area near the southwest boundary of the south part of the area evaluated, and along the east edge of the southerly part of the area evaluated. For the lower aquifer, transmissivities ranged from about 60,000 to 160,000 gpd per foot.

Vertical Hydraulic Conductivities

The vertical hydraulic conductivity of the Corcoran Clay at this location was determined to be less than 0.001 gpd per square foot. For the SJREC service areas, an average vertical hydraulic conductivity for the Corcoran Clay was estimated to be 0.0075 gpd per square foot. This higher

value was indicated to be due to a thinner Corcoran Clay in many areas compared to that at the leaky aquifer test site (110 feet), and to the presence of more well conduits compared to those near the leaky aquifer test site.

Storativity

Values for the specific yield from textural descriptions of deposits tapping the upper aquifer are the best way to estimate specific yields. The U.S. Geological Survey has estimated specific yields in many parts of the San Joaquin Valley. Based on the subsurface geologic cross sections available, an average specific yield of 12 percent is used for the upper aquifer. Storage coefficients for strata confined by the Corcoran Clay are sparse in this area. However, a one-week long leaky aquifer test was conducted using wells located along the DMC near Russell Avenue in January 1997 (KDSA, 1997b). This best value for storage coefficient for the lower aquifer for the test was 0.001.

CHANGES IN GROUNDWATER STORAGE

Changes in storage for coarse-grained deposits in the lower aquifer are indicated to be insignificant, because despite water-level declines, the aquifer remains full of water. However, land subsidence has occurred due to compaction of clays, and the volume of land subsidence can be used to estimate the decrease in storage for confining beds in the lower aquifer, including the Corcoran Clay. For the upper aquifer, long-term water-level changes can be used to determine storage changes during periods when the water levels significantly declined. Because of the relatively small changes in storage, year to year changes are often insignificant, except during severe droughts. Over the long-term, water levels in upper aquifer wells have slightly risen. Thus two changes in storage for the upper aquifer were evaluated: 1) annual decreases in storage during droughts, and 2) long-term increases in storage.

Northern Division

Annual water-level declines during the 1987-93 drought aver-aged 1.4 feet per year. For an acreage of about 90,000 acres and an average specific yield of about 12 percent, the annual loss in groundwater storage was about 15,000 acre-feet per year. As in most areas, water-level hydrographs for wells showing these declines indicated full recovery within several years. Long-term water-level hydrographs for the area evaluated indicate an average water-level rise of about 0.04 foot per year. The in-crease in groundwater storage averaged about 400 acre-feet per year. Over a 30-year period, this would total about 12,000 acre-feet.

Southern Division

Annual water-level declines during the droughts of 1987-93 and the recent one of 2008-14 indicate average annual water-level declines of 1.7 feet per year. For an area of about 60,000 acres and an average specific yield of about 12 percent, this annual loss in groundwater storage was about 12,000 acre-feet per year. It should be noted that water-level hydrographs for the period following the first of these droughts generally indicate full recovery within a few years. Long-term hydrographs indicate an average water-level rise of about 0.04 foot per year. The increase in groundwater storage would be about 300 acre-feet per year. Over a 30-year period, this would total about 9,000 acre-feet.

LAND SUBSIDENCE

Historically, there was little subsidence monitoring in most of the GRCD. However, land surface elevations were periodically measured along Highway 152, between Los Banos and Highway 99 (Figure 19). Near Los Banos, little subsidence was indicated, due to the paucity of pumpage from the lower aquifer in this area. Prior to about 2000, most of the land subsidence along Highway 152 was east of the Eastside Bypass, where numerous wells were present that pumped for the lower aquifer. Starting in about 2008, many more wells tapping the lower aquifer were constructed south of Red Top, both east and west of the Bypass. Pumping of these wells had caused significant land subsidence as of 2016. Figure 20 shows land subsidence determined by the U.S. Geological Survey for July 2012-July 2016. Contours are shown for the area evaluated and to the east. Near the west edge of the north part of the area evaluated, subsidence was apparently about 0.05 foot. Near the eastern edge of the north part of the area evaluated, subsidence was averaged about 0.5 foot. Near the west edge of the south part of the area evaluated, subsidence was about 0.3 foot, and near the east edge averaged about 0.6 foot. In both divisions subsidence increased to the east-northeast. There is some pumpage from lower aquifer wells in the area evaluated and adjoining areas. To the east of the area evaluated, the subsidence increased to more than 2.0 feet for July 2012-July 2016. Land subsidence in part of that area decreased after July 2016 due to mitigating measures that were enacted.

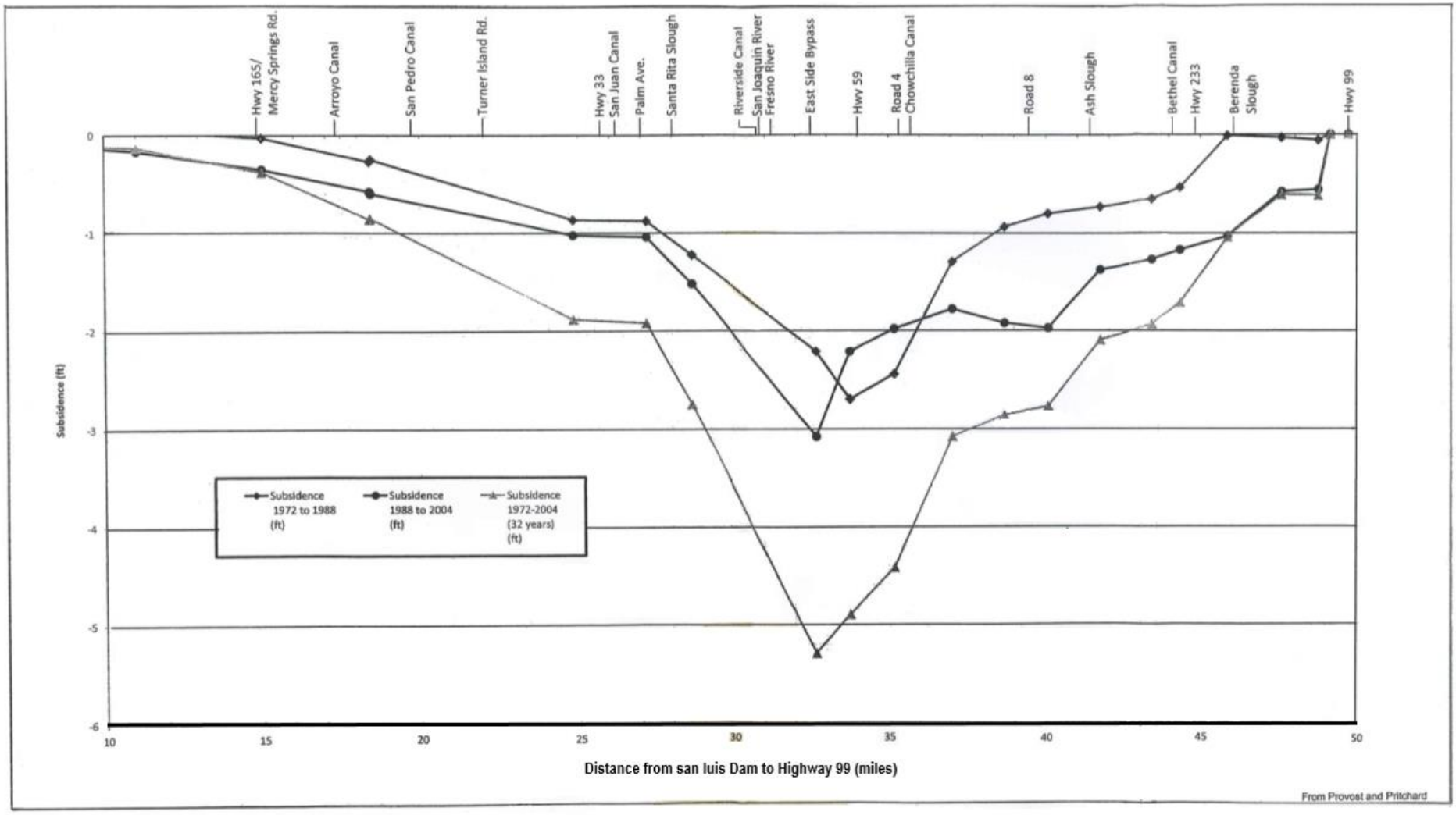


Figure 19 - Land Surface Elevations Along Highway 152

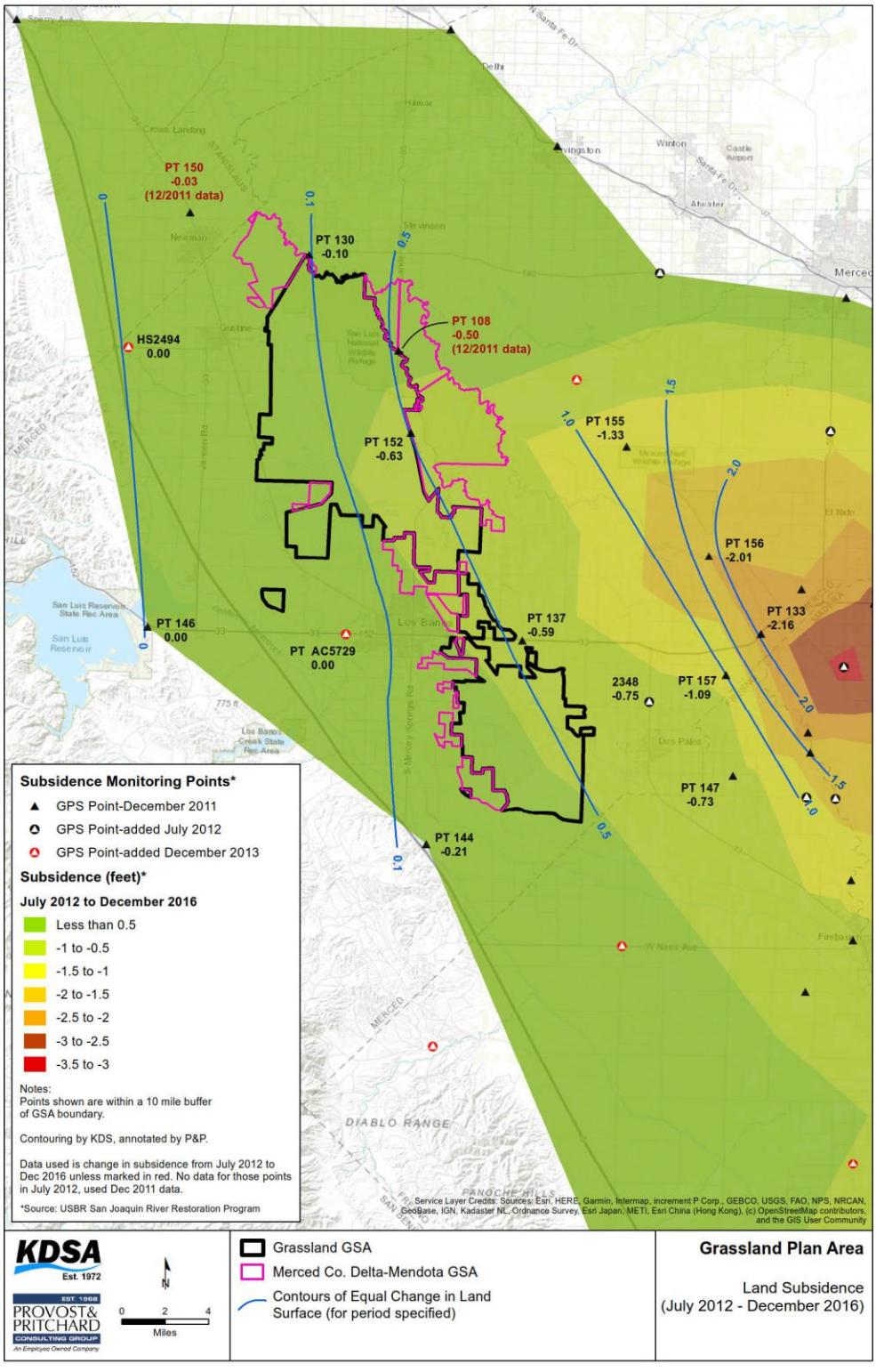


Figure 20 - Land Subsidence (July 2012 - December 2016)

GROUNDWATER QUALITY

Recent information on the chemical quality of groundwater in the area evaluated was derived primarily from the GWD report of February 1, 2016 on the Incremental Level 4 Groundwater Development Project and from the installation of the nested monitor wells at the three sites. Monitoring plans require that the GWD have samples from the District's surface water channels analyzed for total dissolved solids (TDS), selenium, and boron. The Regional Water Quality Control Board has established a maximum selenium concentration in surface water of 2 ppb. The GWD's Board of Directors has adopted a surface water quality objective for TDS of 2,500 mg/l. The GWD and Reclamation have agreed to establish an objective of 4 mg/1 for boron in the receiving channel downstream of a well discharge.

Figure 21 shows recent groundwater quality data for the area evaluated. The 22 supply wells with chemical analyses generally indicate the quality of groundwater that was acceptable for pumping into the GWD system. Much worse quality groundwater is present at some locations and in-depth intervals that are not tapped by these wells.

Northern Division

Most of the chemical analyses for the Northern Division are for wells within about five miles of Los Banos. Also shown are data from the two sites where nested monitor wells were installed.

TDS concentrations in water from upper aquifer supply wells north of Highway 152 ranged from 1,160 to 2,390 mg/l. TDS concentrations exceeding 2,000 mg/1 were present in water from a well near Gun Club Road and two other wells near Henry Miller Road and the Santa Fe Canal. TDS concentrations of less than 1,500 mg/1 were present in water from a well near Carnation Road near the north edge of the GWD, and from six other wells between Highway 152 and Husman Road.

Selenium concentrations in water from upper aquifer wells were only detectable (0.4 ppb or greater) in water from five wells. These five wells were south of Henry Miller Road and north of Highway 152, near or west of the Santa Fe Canal. Selenium concentrations in water from these five wells ranged from 1.6 to 3.6 ppb. Boron concentrations in water from upper aquifer wells ranged from 1.0 to 3.5 mg/l. Boron concentrations exceeding 3.0 mg/1 were present in water from two wells (one near Gun Club Road and another south of Henry Miller Road). Boron concentrations were less than 1.5 mg/1 in north from four upper aquifer wells. One well was located near the north edge of the GWD, east of Santa Fe Grade. The other three were located south of Husman Road near Santa Fe Grade.

Water from a lower aquifer well north of China Camp Road and near the Santa Fe Canal had a TDS concentration of 500 mg/1, boron concentration of 0.66 mg/l, and no detectable selenium.

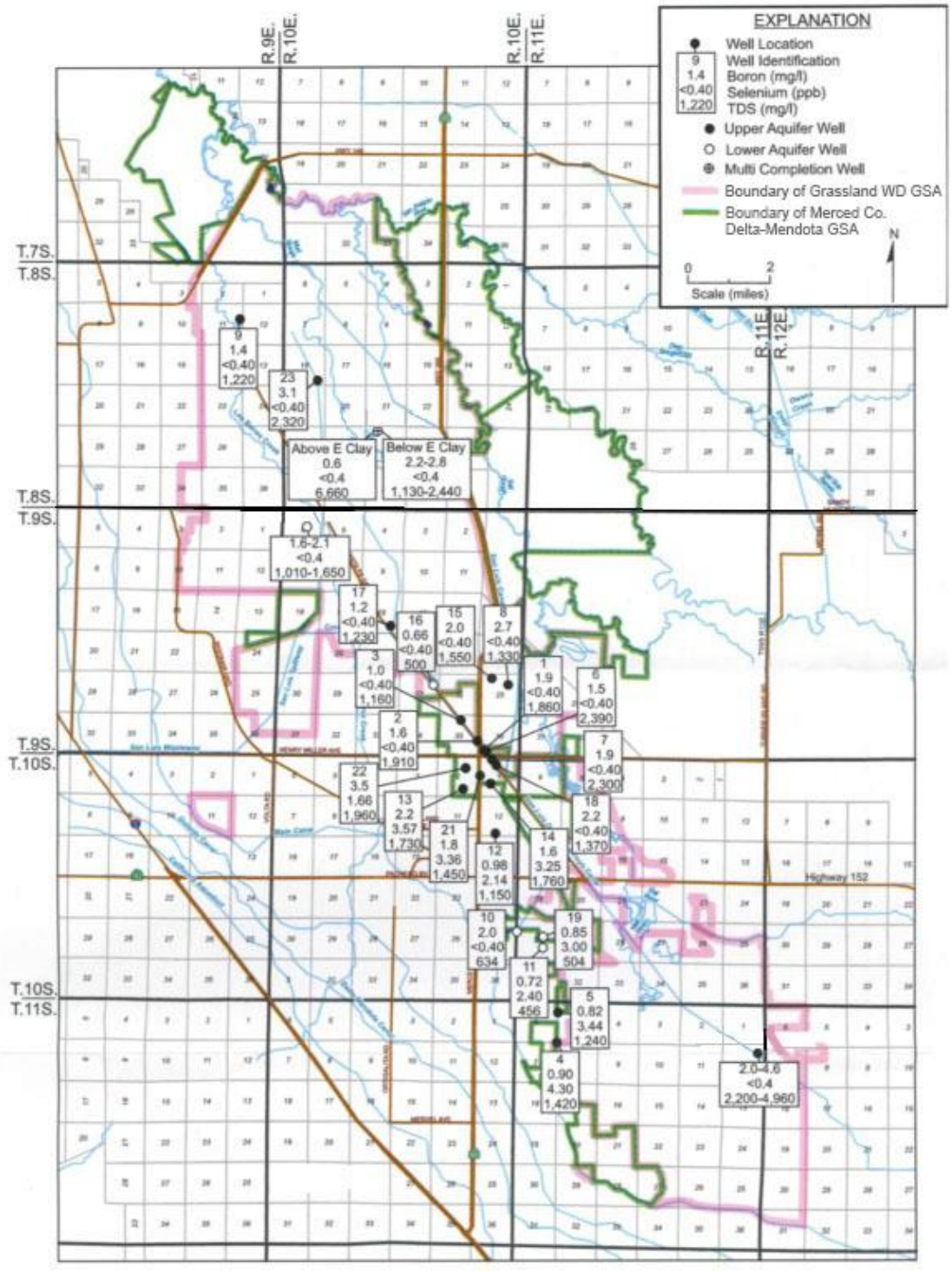


FIGURE 23 - GROUNDWATER QUALITY IN THE GWD

Figure 21 – Groundwater Quality in the GWD

At a northern monitoring site, water samples were collected from both above and below the Corcoran Clay. The water sample from above the Corcoran Clay had a TDS concentration of 6,660 mg/1, a boron concentration of 0.6 mg/1, and the selenium concentration was less than 0.4 ppb. For water samples collected from below the Corcoran Clay, TDS concentrations ranged from 1,130 to 2,440 mg/1, boron concentrations ranged from 2.2 to 2.8 mg/1, and selenium concentrations were not detectable.

At another northern monitoring site, water samples were collected only from below the Corcoran Clay, as brackish groundwater was indicated above the clay. TDS concentrations ranged from 1,010 to 1,650 mg/1, boron concentrations from 1.6 to 2.1 mg/1, and selenium concentrations were less than 0.4 ppb.

Southern Division

All five of the sampled supply wells in the Southern Division were located along the west side of the GWD, between Pioneer and Almond Drive Road. Two of these wells were upper aquifer wells and three were lower aquifer wells. TDS concentrations in water from the upper aquifer wells ranged from 1,240 to 1,470 mg/l. Boron concentrations ranged from 0.8 to 0.9 mg/1 and selenium concentrations ranged from 3.4 to 4.3 ppb. Three wells that tapped the lower aquifer had TDS concentrations ranging from 456 to 634 mg/l. Boron concentrations ranged from 0.7 to 2.0 mg/l. Selenium concentrations ranged from less than 0.4 to 3.0 ppb.

At a southern monitoring site, water samples were collected from two depth intervals above the Corcoran Clay. TDS concentrations ranged from 2,200 to 4,960 mg/1 and boron concentrations ranged from 2.0 to 4.6 mg/l. The selenium concentration in both samples was less than 0.4 ppb. The electric log for the test hole at the site indicated high salinity groundwater below the Corcoran Clay. A similar situation has been found in groundwater elsewhere in the Dos Palos area and to the southeast.

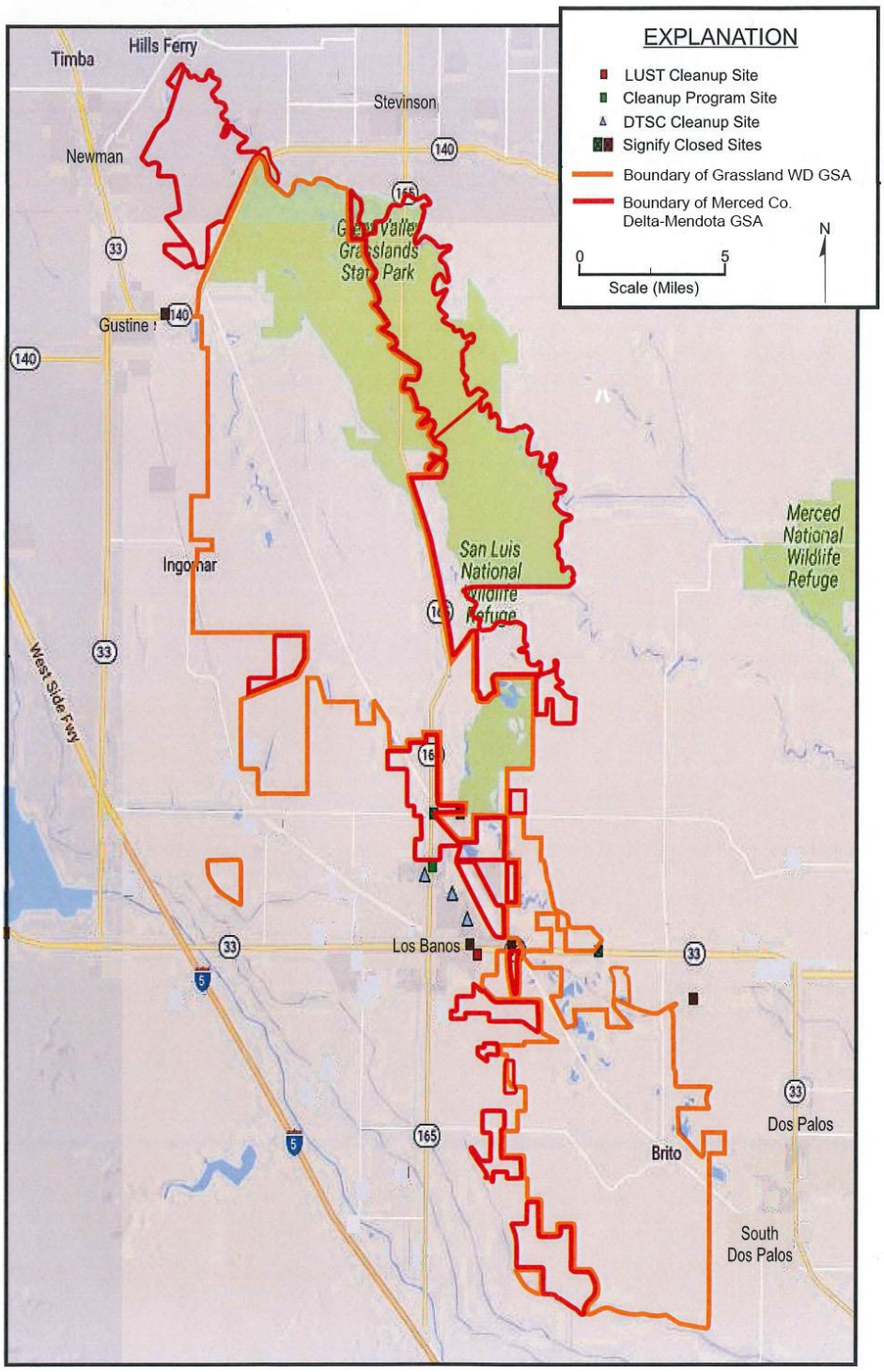
INTERCONNECTED SURFACE AND GROUNDWATER SYSTEMS

The only locations in the area evaluated where groundwater is known to be in direct hydraulic communication with a stream is along a nine-mile long reach of the San Joaquin River, on the north edge of the San Luis WLR. A series of shallow monitor wells has been installed by Reclamation as part of the San Joaquin River restoration project. Water-level maps indicate that groundwater in the upper aquifer discharges to the river along this reach. The GWD has installed a network of shallow (10 to 20 feet deep) observation wells in the District.

Monitoring of such wells will provide more definitive information on the relation between shallow groundwater and streamflow at same locations.

KNOWN CONTAMINATION SITES

Figure 22 shows known groundwater contamination sites, in with the vicinity of the area evaluated, taken from the Central Valley Regional Water Quality Central Board Geotracker website. There were sites near the boundary of the original GSA which have since been closed.



KNOWN CONTAMINATION SITES

Figure 22 - Known Contamination Sites

Appendix C – Water Conservation Plan Annual Report

Grasslands Resource Conservation District

Water Management Plan

December 31, 2017
Final plan submittal date, September 30, 2018

Section A - Background

1. *Identify the staff member responsible for developing and implementing the Plan. Provide their contact information*

   Name: Michael Gardner Title: Chief of Field Operations/Watermaster

   Address: 200 W. Willmott Ave.

   Telephone: 209-826-5188 Fax: 209-826-4984

   E-mail mgardner@gwdwater.org

2. *Year Resource Conservation District established* January 11, 1972

Define year-type used consistently throughout plan Water Year (March 1 – February 28)

3. *Water supplies*

List each annual entitlement of surface water under each water right and/or contract

Supplier	*Water source*	*Contract #*	*Contract restrictions*	*Acre-feet/year*
Federal Level 2	CVP water delivered via the Delta-Mendota Canal (DMC)	01-WC-20-1754	Contingent on Shasta Index Trigger, 3.2 MAF, being reached	125,000
Federal Incremental Level 4	Various depending on Bureau of Reclamation's (BOR or Reclamation) ability to acquire	01-WC-20-1754	Based on the BOR's ability to provide	55,000
State				
Appropriative				
Other, riparian				

4. *Provide a narrative on pre-CVPIA water supplies and water management*

Prior to CVPIA, Grassland Water District contracted for 53,500 acre-feet of water (Contract Nos. 14-06-200-6106, 14-06-200-4658A and 14-06-200-3447A) with Reclamation from the Central Valley Project (CVP). This water was available annually from September 15 through November 30. Along with the CVP water allocations, the District obtained contractual agreements with adjacent agricultural irrigation districts to accept drain water comprised of both surface and subsurface flows. The agricultural drain water was estimated to be 75,000 acre-feet of additional water annually. Typically the wetland waters are held until the middle of March when most landowners drawdown the wetlands. During the spring and summer

months, return flows from adjacent agriculture irrigation districts supplied only enough water to provide for brood habitat and cattle pasture with a minor amount remaining to carry out the irrigation of moist soil plants. An evaluation of the District's spring and summer water supply required to optimize habitat was estimated at approximately 55,000 acre-feet and is referred to as Incremental Level 4. Fall flood up was estimated at 125,000 acre-feet (Level 2), totaling a full need of 180,000 acre-feet (Level 4).

In 1985, new regulatory guidelines prohibited the District from applying water containing over a 2 ppb selenium concentration monthly mean to wetlands. The new selenium regulatory guideline resulted in the loss of nearly two-thirds of the District's water supply forcing the District to begin a search to secure additional water supplies. Various programs were initiated to secure this needed water including off-stream storage projects, temporary contracts with the Bureau of Reclamation, contributions from outside entities, and groundwater acquisition projects. Even with these attempts to supplement the CVP water, the District's supplies remained inadequate to meet habitat requirements. For example, in water year 1991 the total amount of water available for delivery for the entire year was 73,500 acre feet; in water year 1992, deliveries totaled only 77,500 acre feet.

5. *Land use history--Identify habitat types specific to this Resource Conservation District.*
   Attach a map showing habitat location and size
   List habitat-types with 5% or more of total acreage

Habitat type	*Original size*	*1992 acres*	*1997 acres*	*2015 acres*
Seasonal wetland – timothy (not irrig)	NA	NA	NA	0*
Seasonal wetland – timothy (irrigated)	NA	NA	NA	30,800*
Seasonal wetland – smartweed	NA	NA	NA	1,600*
Seasonal wetland - watergrass	NA	NA	NA	3,200*
Permanent wetland	NA	NA	NA	1,200*
Semi-permanent wetland/brood pond	NA	NA	NA	1,200*
Reverse cycle wetlands	NA	NA	NA	0*
Riparian	NA	NA	NA	1,200*
Irrigated pasture	NA	NA	NA	800*
Upland	NA	NA	NA	18,000*
Upland (not irrigated)	NA	NA	NA	18,000*
Upland (managed)	NA	NA	NA	0*
Upland (grains)	NA	NA	NA	0*
Other (>5%)	NA	NA	NA	
Misc. habitat (<5%)				
Sub-total – habitat acres				58,000*
Roads, buildings, etc.				2,000*
Total (size of refuge)				60,000*

*The acres of habitat types listed above are current best estimates. A map detailing these estimates is currently unavailable. GWD, in cooperation with Ducks Unlimited and California Waterfowl Association continues to work on habitat distributions for the wetland complex. GWD supplies 192 private and public landowners. For a list of private lands and corresponding acreages see *Attachment #1*.

Describe Resource Conservation District habitat-type water use characteristics

Habitat type	*AF/ac*	*# of irrigations*	*Flood-up date*	*Draw-down date*
Seasonal wetland	3-6	1-4	August-September	March-May
Seasonal wetland - timothy	3	1	August-September	March-April
Seasonal wetland – watergrass	5	3-4	August-September	April-May
Permanent wetland	9	0	NA	0
Semi-permanent wetland/brood pond	8	2.5	August-September	July
Riparian	6	0	August-September	0
Irrigated pasture	NA			
Upland (not irrigated)	NA			
Upland (managed)	NA			
Upland (grains)	NA			
Other (>5%)	NA			
Misc. habitat (<5%)	NA			

Section B - Water Management Related Goals and Objectives

1. *Describe the Resource Conservation District mission relative to water management. (i.e. crop depredation, legislative mandates, service to landowners)*

   Grassland Water District/Grassland Resource Conservation District is dedicated to maintaining and operating its conveyance system for the purpose of providing its landowners and adjacent refuge areas with water available for the preservation and enhancement of wetland habitat throughout the year.

2. *Describe specific habitat management objectives. Include pertinent information from Resource Conservation District management plans*

   The District's primary habitat management objective is providing water to its landowners and adjacent refuges for the purpose of maintaining wetland habitat during the fall and winter. A co-equal objective, which is entirely dependent upon the availability of Incremental Level 4 water, is providing water for the optimum management of that habitat through the spring and summer months to provide brood habitat and maximize beneficial moist soil plant production to help meet the metabolic needs of migratory water birds.

3. *Describe the strategies used to attain objectives listed above*

   Contingent on a 100% L4 water supply, the District will reserve a minimum of 70% of its water supply for achieving its primary objective of providing fall and winter waterfowl habitat. Any additional water will be reserved for the enhancement of this habitat during the spring and summer months.

4. *Describe constraints that prevent attainment of objectives and explain the effect on operations*

   The lack of full acquisition of Level 4 water supplies by BOR greatly affects the District's ability to provide spring and summer water for optimum habitat management. The relatively short timeframe the District has to conduct its annual construction and maintenance will always create problems with delivery and efficiency of operations. These constraints are in part due to limitations imposed by the Endangered Species Act and the sensitive environment and strict water schedule that the District must work with.

5. *Describe the strategies used to remedy the constraints listed above*

   The Interagency Refuge Water Management Team (IRWMT) comprised of District personnel, along with representatives of the U.S Fish and Wildlife Service, the California Department of Fish and Wildlife and Reclamation, collaborate on the scheduling of refuge water supplies and the acquisition and allocation of Incremental Level 4 water supplies. The District is a strong proponent of securing permanent water supplies in order to assure full spring and summer water supplies are available each and every year. Also, the District has been working with south of Delta agricultural districts to diversify sources of Level 2 water supplies.

Section C - Policies and Procedures

1. *Describe the Resource Conservation District policies/procedures on accepting agricultural drainage water as supply*

   The District does receive a modest amount of operational spill from adjacent agricultural districts and higher quality drainage water provided that meet all objectives set forth by the Central Valley Regional Water Quality Control Board for delivery to wetlands. The District collects regular grab samples at the points of acceptance of these various sources of water to monitor TDS, selenium and boron concentrations.

2. *Describe the Resource Conservation District policies/procedures on water pooling, transfers, reallocations or exchanges*

   As per the GRCD water contract # 01-WC-20-1754 for pooling and transfers:

   Pooling of Water Supplies:

   (a) Whenever the maximum quantities of Level 2 Water Supplies and/or the Incremental Level 4 Water Supplies depicted in Exhibit "B" are reduced pursuant to Article 9 of this Contract, the remaining Level 2 Water Supplies and/or the Incremental Level 4 Water Supplies may be pooled for use on other Refuges(s); Provided, that no individual Refuge shall receive more Level 2 Water Supplies than would have been made available to it absent a reduction pursuant to article 9 of this Contract; or be reduced by more than 25%; Provided further, that the Contracting Officer makes a written determination that pooling of water for use on other Refuge(s) would not have an adverse impact, that cannot be reasonably mitigated, on Project operations, other Project Contractors, or other Project purposes; Provided further, that the Contracting Officer determines that such reallocation is permitted under the terms and conditions of the applicable underlying water right permit and/or license; and Provided still further, that water made available under this contract may not be scheduled for delivery outside the Contractor's Boundary without prior written approval of the Contracting Officer.

(b) An Interagency Refuge Water Management Team, to be chaired by the Contracting Officer and to be established upon execution of this Contract, shall be entitled to collaboratively allocate the pooled water supplies and provide a schedule for delivery of the pooled supplies to meet the highest priority needs of the Refuge(s) as depicted in Exhibit "B"; Provided, however, nothing in this Article is intended to require the Contractor to pool the water supply provided for in this contract. The Interagency Refuge Water Management Team shall be composed of designees of the Bureau of Reclamation, the United States Fish and Wildlife Service, the California Department of Fish and Wildlife, and the Grassland Water District.

Transfers, Reallocations or Exchanges of Water:

(a) Subject to the prior written approval of the Contracting Officer, the Project Water made available under this Contract may be transferred, reallocated or exchanged in that Year to other Refuge(s) or Project contractors if such transfer, reallocation or exchange is requested by the Contractor and is authorized by applicable Federal and California State laws, and then-current applicable guidelines or regulations.

The District is a participant in the Interagency Refuge Water Management Team (IRWMT) that coordinates the acquisition, distribution and allocation of Level4 waters provided by Reclamation. The District encourages any and all pooling, transfers, reallocations or exchanges that will enhance or improve the delivery of water to or through our system.

3. *Describe the Resource Conservation District water accounting policies/procedures for inflow, internal flow and outflow.*

All contract water delivered to the District is monitored and measured by Reclamation or its contractual agent. The District's inflow, internal flow and outflow measurements and recording procedures are established under the direction of the District's General Manager and are currently being accounted for by the District's Chief of Field Operations/Watermaster. All water delivery is based on a water year beginning March 1 and ending on the last day of February of the following year. Outflow is based on a seasonal event period beginning October 1 and ending on September 30 of the following year. The District, in cooperation with Reclamation, the Department of Fish and Wildlife, and United States Fish and Wildlife Service, has implemented a Real-Time Water Quality Monitoring Network (RTWQMN). The RTWQMN currently consists of 20 stations located at major points of acceptance, delivery, canal system confluences, and drainages of the GRCD (*See Attachment 5e – RTWQMN Map*). The RTWQMN continuously monitors flow, temperature, pH and electrical conductivity (EC). Real-time water quality monitoring data is proofed on a monthly basis through a Quality Assurance Program Plan (QAPP). The QAPP includes site visitations where technicians conduct sensor maintenance, calibration, and instantaneous and redundant flow and EC measurements to insure that the data is representative and comprehensive.

4. *Attach a copy of the Resource Conservation District's shortage policies, drought plan, or any similar document.*

The District has established the following priorities (in descending order of importance) for the delivery and use of available water supplies (*See Attachment #2*)

1. Fall habitat water: August 15 - February 28
2. Spring & summer irrigation, brood habitat: March 1 - August 14
3. Moist soil plant management: March 1 - August 14
4. Permanent pasture irrigation, native pasture irrigation: March 1 - August 14

5. (GRCD only) Describe water policies as they pertain to:

a. water allocation policy to customers (Attachment #3a),

Water is delivered to the District's landowners on a pro-rata basis determined by total available water versus the total acres being serviced. As of March 1, 2010, lands that were not wetland habitat at the time of the CVPIA passage were notified that any water they would request in the future for restored habitat would be provided only on a "when available " basis due to restricted amounts of Incremental Level 4 water supplies. Fall habitat water is distributed to clubs from August 15 through the month of February. Customers are charged an annual water service assessment and standby fees on a per acre basis. Water for the optimization of wetland habitat is available for use by the clubs for spring and summer irrigation and brood habitat maintenance when available from March 1 through August 14. The summer water is charged for on a per acre-foot basis.

b. lead time for water orders (Attachment #3b - sample water order form),

The District requires its customers provide at least 72 hours advance notice for all water orders, deliveries and shut-offs.

c. policies for wasteful use of water (Attachment #3a)

The District will notify individual clubs that they are in violation of water conservation policies and request the violations be corrected. If no action is taken, the District will terminate any District controlled deliveries until the situation is corrected. The District may refuse water delivery to any club that does not properly maintain its private water conveyance system or water conveyance structures.

d. pricing and billing policies (Attachment #4a, 4b - sample bills)

The District has two separate charges for water delivery to clubs within the District boundary. Fall habitat water, delivered August 15 through the end of February, is billed on a per acre basis. These charges cover all water needed to fill and maintain the wetland habitat within each individual hunting club. Spring and summer irrigation water, delivered March 1 through August 14, is provided to the clubs for irrigation and brood habitat maintenance and is billed on a per acre-foot basis.

Fixed Charges			
Charges ($ unit)	*Charge units ($/acre), ($/customer) etc.*	*Units billed during year (acres, customer) etc.*	*$ collected ($ times units)*
$21.75	$/Acre	51,200	1,113,604

Volumetric charges			
Charges ($ unit)	*Charge units ($/AF)*	*Units billed during year (AF)*	*$ collected ($ times units)*
$4.00	$/AF	26,000 (average)	104,000

Section D - Inventory of Existing Facilities

1. *Mapping*

   Attach existing facilities map(s) that show points of delivery, turnouts (internal flow), and outflow (spill) points, measurement locations, conveyance system, storage facilities, operational loss recovery system, wells, and water quality monitoring locations. Describe in the body of the plan the information contained in each attached map. (*See Attachment #5a-5d*)

   Attachment 5 is a series of maps including an ownership map and all major canal systems. A second map has been provided that identifies points of delivery and points of measurement. Additionally a map of the Real Time Water Quality Monitoring Network has been provided that currently consists of 20 stations located at major points of acceptance, delivery, canal system confluences, and drainages of the GRCD (*See Attachment #5e*).

2. *Water measurement*

   a. *Inflow/deliveries*

   Total # of inflow locations/points of delivery 37

   Total # of measured points of delivery 37

   Percentage of total inflow (volume) measured during report year 100

Delivering agency	Conveyance facility	*Measuring point*	*Resource Conservation District distribution facility*	*% of total inflow*	*Type of measurement*	*Measuring agency*
1-CCID	Helm 1st Point	Helm 1st Point	Helm Canal	1	Rated canal gate	CCID
2-CCID	Main Canal	Agatha gate	Agatha Canal	15	Rated canal gate	CCID
3-CCID	Main Canal	Coaches gate	Helm Canal	3	Rated canal gate	CCID
4-CCID	Main Canal	Frog Pond gt.	Helm Canal	1>	Rated canal gate	CCID
5-CCID	Main Canal	Meyers gate	Helm Canal	2	Rated canal gate	CCID
6-CCID	Main Canal	Vista gate	Helm Canal	1	Rated canal gate	CCID
7-CCID	Main Canal	Ram gate	Ram Ranch	1>	Rated canal gate	CCID
8-CCID	Main Canal	Camp-13 gate	Camp-13	11	Rated canal gate	CCID
9-CCID	Main Canal	Bayshore gate	Bayshore	1>	Rated canal gate	CCID
10-CCID	Main Canal	Triangle gate	Triangle	1>	Rated canal gate	CCID
11-CCID	Main Canal	Ascot gate	Ascot Ditch	1	Rated canal gate	CCID
12-CCID	Main Canal	Almond gate	Almond Drive	8	Rated canal gate	CCID
13-CCID	Main Canal	Costa gate	Costa	1>	Rated canal gate	CCID
14-CCID	Main Canal	SL gate	San Luis Canal	17	Rated canal gate	CCID
15-CCID	Main Canal	LBCr. gate	Los Banos Creek	1	Rated canal gate	CCID
16-CCID	Main Canal	Sloan gate	Sloan	1>	Rated canal gate	CCID
17-SLDMWA	Volta Wasteway	Pond 10	Cross Channel	10	Rated canal gate	SLDMWA

18-SLDMWA	Volta Wasteway	Pond 10	Mosquito Ditch	6	Rated canal gate	SLDMWA
19-SLDMWA	Volta Wasteway	Pond 10	Malia Ditch	2	Rated canal gate	SLDMWA
20-CCID	Main Canal	Cottonwood Lateral gate	Cottonwood Lateral	1>	Rated canal gate	CCID
21-CCID	Main Canal	Hunt Road	Garzas Creek	9	Rated drop structure	CCID
22-CCID	Outside Canal	Cook gate	Charleston Drain	1>	Rated canal gate	CCID
23-CCID	Helm 1st Point	Gables gate	Gables Ditch	1	Rated canal gate	CCID
24-CCID	Helm 1st Point	Roberts gate	Roberts gate	1>	Rated canal gate	CCID
25-CCID	Branch-3	Branch-3	Bennett Drain	1>	Rated canal gate	CCID
26-SLCC	Arroya Canal	Fagundes gate	Fagundes	1>	Rated canal gate	SLCC
27-SLCC	Arroya Canal	La Canada gt.	La Canada	1>	Rated canal gate	SLCC
28-SLCC	Arroya Canal	Piedmont gate	Piedmont	1>	Rated canal gate	SLCC
29-SLCC	Arroya Cana	San Pedro gt.	San Pedro	1>	Rated canal gate	SLCC
30-SLCC	Arroya Cana	Bardin gate	Bardin	1>	Rated canal gate	SLCC
31-SLCC	San Pedro Canal	Bardin gate	Bardin	1>	Rated canal gate	SLCC
32-SLCC	San Pedro Canal	San Pedro gt.	San Pedro	1>	Rated canal gate	SLCC
33-SLCC	San Pedro Canal	Stevens Creek Quarry gate	Stevens Creek Quarry	1>	Rated canal gate	SLCC
34-SLCC	San Pedro Canal	Klamath gate	Klamath	1>	Rated canal gate	SLCC
35-SLCC	San Pedro Canal	Tramontana gt	Tramontana	1>	Rated canal gate	SLCC
36-SLCC	San Pedro Canal	McDonald gt.	McDonald	1>	Rated canal gate	SLCC
37-SLCC	Arroya Canal	Cocke Ditch gate	Mud Slough Unit (CDF&G)	1	Rated canal gate	SLCC

b. Internal flow at turnouts

Total # of Resource Conservation District water management units (units) 192
Total # of Resource Conservation District water management unit turnouts 230
Total # of Resource Conservation District measured turnouts 225
Estimated % of total internal flow (volume) during report year that was measured at a turnout 98%
Number of turnouts supplying more than one unit or not directly off delivery system 5

Measurement type	*Number of devices*	*Acres served*	*Accuracy (avg or range)*	*Reading frequency*	*Calibration frequency (months)*	*Maintenance frequency (months/days)*
Orifices	212		+/- 12%	Daily	Annually	NA
Propeller						
Weirs	15		+/- 18%	Daily	NA	NA
Flumes						

Venturi						
Alfalfa valves						
Metered gates						
Other, Doppler	3		+/- 5%	Continuous	Monthly	Monthly

* The weirs are canal internal flow water-control devices

c. Outflow

Outflow (AF/yr) 48,408 (average)

Total # of outflow locations/points of spill 8

Total # of measured outflow points 8

Percentage of total outflow (volume) measured during report year 100%

Outflow point	*Measuring point*	*Type of measurement*	*Percent of total outflow (estimated)*	*Measuring agency*	*Acres drained*
DS-31	Los Banos Creek @ Hwy. 140	Doppler Measurement	20	GWD	8,113
DS-32	City Gates	Rated Canal Gate Measurement	16	GWD	Emergency drain
DS-33	Santa Fe Canal Bypass	Weir Measurement	7	GWD	Emergency drain
DS-34	S-Lake Drain	Doppler Measurement	8	GWD	3,802
DS-35	Hollow Tree Drain	Doppler Measurement	11	GWD	2,833
SD-36	Santa Fe Canal (Skeleton Weir)	Weir Measurement	17	GWD	3,190
SD-37	Mud Slough Gun Club Rd.	Doppler Measurement	16	GWD	8,178
DS-38	Fremont Drain	Doppler Measurement	5	GWD	1,996

3. Identify the type and length of the Resource Conservation District internal distribution system

Miles unlined canal	*Miles lined canal*	*Miles piped*	*Miles – other*
135	0	0	0

a. Describe the location and types of identified leaks and areas of higher than average canal seepage, and any relation to soil type

It is the intent of the District to further evaluate seepage and evaporation related losses within its conveyance system. Estimates provided in Table 2 are based on approximations made by District staff and should not be used for any other purpose.

A 1.5 mile section of the Kesterson Ditch, which crosses the old historic Mud Slough (North) channel,

is subject to higher than normal seepage losses due to the large areas of Turlock Sandy Loam soils that are present in the area. There appears to be cross stratums of deeper, more porous sandy loam that intersect the ditch in areas. No plans have been developed to try to correct the situation because of the cost involved. The ditch has a maximum flow capacity of 45 cfs and is used mostly in the fall and spring. After fall deliveries, the surrounding areas become saturated and losses become minimal. Spring irrigations are done quickly to reduce operation times.

4. *Describe the Resource Conservation District's operational loss recovery system*

Initiated in 1996, the Grassland Bypass Project consolidates subsurface drain water from the 97,000 acre Grassland Drainage Area into the San Luis Drain effectively circumventing the wetland complex serviced by the Grassland Water District. Since the Grassland Bypass Project the District has been able to recapture its entire operational spill and return flows from the South Grassland area (20,538 acres) for the reuse in the North Grassland area. Many of the drainage subareas currently flow through other conveyance and wetland unit areas. The entire southern portion of the District (20,538 acres) flows into the Santa Fe Canal. These flows can be mixed with deliveries from the San Luis Canal and the Cross Channel to dilute salts and constituents and reused in the northern portion of the District.

Although there are currently no recover systems in place to move water back upstream in the North Grasslands area, operational spill leaving impoundments do re-enter conveyance for delivery downstream. All discharges leaving the District enter natural riparian areas and therefore are beneficial since the natural flow of most of these streams and tributaries have been diverted by upstream water projects. Seven of the eight discharge sites flow directly into State or Federal Refuges. Under a cooperative agreement with Reclamation the District prepared a project feasibility assessment report (PFAR) for the North Grasslands Water Conservation and Water Quality Control Project (Project) to be located in the northern portion of the District. Based on the findings and recommendations of the PFAR the District worked with Reclamation to develop and complete the required environmental documentation and design of the Project. A small portion of the Project was constructed in 2017 as part of a larger culvert replacement project on the Santa Fe Canal. The remainder of the Project is scheduled to be completed by September 2019. This project will result in the average annual recovery and reuse of approximately 15,000 acre- feet of water.

Unit name	*Current acres*	*Reason for change*	*Proposed acres*	*Estimated cost (in $1,000s)*		
				2017	*2018*	*2019*
*NGWCWQCP	0	Water Conservation	7,778	600	10,000	5,000

*North Grasslands Water Conservation and Water Quality Control Project

5. *Groundwater*

Describe groundwater availability, quality and potential for use

The District is currently implementing a groundwater acquisition project in conjunction with BOR to develop groundwater from privately owned wells to augment currently available Incremental Level 4 water supplies. For additional information on groundwater in the region, see BOR July 2004 "Evaluation of

Groundwater Potential for Incremental Level 4 Refuge Water Supply". Current groundwater availability is limited by funding and water quality constraints. The quality of the District's groundwater highly variable, with TDS levels ranging from approximately 790-1630, as observed in the wells under current agreement with Reclamation.

In addition, the District has implemented several groundwater exchange projects with local CVP contractors in which Level 2 refuge water is exchanged for a greater volume of groundwater. In 2017, the District received 100% of its level 2 and level 4 supplies, so no groundwater exchanges were made.

Groundwater plan *No* _____ *Yes* X *(Attachment #11)*

Groundwater basin(s) that underlie the Resource Conservation District

Name of basin underlying Resource Conservation District	*Size (sq. mi.)*	*Usable capacity (AF)*	*Safe yield (AF/Y)*	*Management agency*	*Relevant reports*
San Joaquin	13,500	80,000,000	Unknown	None	USBR 2004 GW

Identify Resource Conservation District -operated ground water wells[1]

#	*Location/Name*	*Status*	*HP*	*2017 (AF/Y)*	*Future plans*
1	M-3	Operational	N/A	0	Continue to utilize
2	M-4	Operational	N/A	0	Continue to utilize
3	M-5	Operational	N/A	0	Continue to utilize
4	R-1	Operational	N/A	48	Continue to utilize
5	R-2	Operational	N/A	0	Continue to utilize
6	LT-1	Operational	N/A	166	Continue to utilize
7	ABAR-1	Operational	N/A	0	Continue to utilize
8	BS-1	Operational	N/A	0	Continue to utilize
9	BS-2	Operational	N/A	0	Continue to utilize
10	MUR-1	Operational	N/A	0	Continue to utilize
11	ORN-1, 2	Operational	N/A	0	Continue to utilize
12	ORN-3	Operational	N/A	0	Continue to utilize
13	ORN-4	Operational	N/A	0	Continue to utilize

14	ORN-5	Operational	N/A	0	Continue to utilize
15	ORN-6	Operational	N/A	0	Continue to utilize
16	RW-1	Operational	N/A	0	Continue to utilize
17	RW-4	Operational	N/A	0	Continue to utilize
18	RW-10	Operational	N/A	0	Continue to utilize
19	CZ2, CZ3	Operational	N/A	0	Continue to utilize
20	H, K, CVW1, CVE3-4	Operational	N/A	0	Continue to utilize
21	V-1, 2	Operational	N/A	0	Continue to utilize
22	SOU-1	Operational	N/A	92	Continue to utilize

[1] All acquired groundwater is developed from privately operated wells.

In addition, the District has formed the Grassland Groundwater Sustainability Agency (GGSA) to comply with California's Sustainable Groundwater Management Act. The District is currently developing its Groundwater Sustainability Plan (GSP) that is required to be adopted by 2020. The GSP will cover the management of groundwater throughout the GRCD and a small amount of land adjacent to the GRCD that works cooperatively with the District in developing refuge water supplies.

Section E - Environmental Characteristics

1. Topography - describe and discuss impact on water management

The topography in this region was created by natural flows from the floodwaters of the San Joaquin River. In the late 1800's cattle became the primary source of income from the land with duck hunting as a secondary activity. In the 1920's duck hunting began to become more prevalent and by the 1950's duck hunting became the predominant use of the land. Clubs began to develop shallow open water to attract wintering waterfowl. Currently there are 188 individual clubs that rely on gravity flow water to operate and maintain year-round wetland habitat for wildlife. There is 65 feet of elevation fall from the southern boundary of the District to the northern boundary, an approximate distance of 26.6 miles. The District still relies on canals that were built in the late 1800's and are quite efficient. The District is entirely gravity flow with central, natural sloughs flowing through the District to provide drainage.

2. Soils - describe and discuss impact on water management (*See Attachment #6a-6c Soil Survey Maps*)

The northern portion of the District is predominantly made up of Turlock sandy loam. This very deep, very poorly drained soil is on the valley basin rim and on low alluvial fans. It formed in mixed alluvium derived dominantly from granitic rock. Slope is 0 to 2 percent. The micro-relief is hummocky. The characteristic plant community is mainly saltgrass, annual barley, and iodine bush. Elevation is 70 to 110 feet. Typically, the surface layer is grayish brown sandy loam about 3 inches thick. The subsurface layer

is olive gray loam about 1 inch thick. The soil is calcareous below a depth of 25 inches, and it has excess lime below a depth of 36 inches. The soil is saline-sodic below a depth of 11 inches.

Mixed throughout this Turlock sandy loam is Triangle clay. This is a very deep, very poorly drained soil within the basin. It formed in mixed alluvium derived dominantly from sedimentary rock. Slope is 0 to 2 percent. The characteristic plant community is mainly swampgrass and alkali heath. Elevation is 80 to 120 feet.

Also found in the north Grasslands is Triangle clay. This very deep, very poorly drained soil is in the valley basin. It formed in mixed alluvium derived dominantly from granitic rock. Slope is 0 to 2 percent. The characteristic plant community is mainly alkali heath, swamp grass, knot grass, spike rush, and iodine bush. Elevation is 70 to 110 feet. Typically the surface layer is olive gray and dark gray clay about 34 inches thick.

Moving southward, north of Los Banos, the general soil makeup is Turmound sandy loam. This very deep, poorly drained soil is in higher lying, ponded areas of the valley basin. It formed in mixed alluvium derived dominantly from granitic rock. Slope is 0 to 2 percent. The characteristic plant community is mainly saltgrass, Baltic rush, rabbitfootgrass, and iodinebush. Elevation is 70 to 80 feet. Typically the surface layer is dark grey over gray sandy loam about 13 inches thick. Included in this unit are small areas of Triangle clay and Turlock sandy loam in the higher lying areas.

Areas south of Los Banos are made up of Checker loam. This very deep, somewhat poorly drained soil is in higher lying, ponded areas in the valley basin. It formed in mixed alluvium derived dominantly from sedimentary rock. Slope is 0 to 2 percent. The characteristic plant community is mainly saltgrass, Spanish broam, Mediterranean barley, and alkali heath. Elevation is 100 to 110 feet. Typically, the upper 4 inches of the surface layer is grayish brown loam.

Directly east and southeast of Los Banos the soils are mixed with Agnal clay loam and El Nido sandy loam, wet. The Agnal clay loam is very deep, very poorly drained soil in the valley basin. It formed in mixed alluvium derived from Igneous and/or sedimentary rock mixed alluvium. Slope is 0 to 2 percent. The characteristic plant community is mainly saltgrass, iodinebush, and alkali heath. Elevation is 60 to 110 feet. Typically, the upper 2 inches of the surface layer is gray clay loam and the lower 7 inches is dark gray clay. The El Nido sandy loam, wet, is very deep, poorly drained soil in higher lying, ponded areas in the valley basin. It formed in mixed alluvium derived dominantly from granitic rock. Slope is 0 to 2 percent. The characteristic plant community is mainly saltgrass, barley, and alkali sacaton. Elevation is 75 to 110 feet. Included in this unit are small areas of Bolfar clay loam, hummocky, and Dos Palos clay ("Soil Survey of Merced County, CA, Western Part", USDA, Soil Conservation Service – Issued March 1990).

The habitat diversity coupled with and responding to the varieties of soils found within the grassland area imposes challenges in water management. Sandy soils, like the Turlock sandy loam, that is predominant in the northern portion of the District, can cause the greatest amount of seepage losses. The historic delivery of irrigation water imported large deposits of silt that has help seal canals and reduce seepage in District facilities. No attempts have been made to line District facilities since natural earthen channels are more favorable to wildlife and shallow groundwater recharge. Once groundwater saturation is reached, usually occurring in late November through March of the following year, seepage losses are minimal.

Soil Series Name	Soil Classification	Parent Material
Agnal	Fine, smectitic, thermic Typic Aquisalids	Igneous and/or sedimentary rock mixed alluvium
Bolfar	Fine-loamy, mixed, superactive, calcareous, thermic Cumulic Endoaquolls	Granitic mixed alluvium
Checker	Fine-loamy, mixed, active, thermic Calcic Aquisalids	Sedimentary rock mixed alluvium
Dos Palos clay	Fine, smectitic,calcareous, thermic Vertic Endoaquoll	Granitic mixed alluvium
El Nido	Coarse-loamy, mixed, superactive, thermic Typic Endoaquolls	Granitic mixed alluvium
Tirangle clay	Fine, smectitic, thermic Sodic Epiaquert	Granitic mixed alluvium
Turlock sandy loam	Fine-loamy, mixed, superactive, thermic Albic Natraqualfs	Sedimentary rock mixed alluvium
Turmound	Fine-loamy, mixed, superactive, thermic Glossic Natraqualfs	Granitic mixed alluvium

Soil Series Name	K_{sat}	$CaCO^3$	EC_e	SAR	pH	AWC	Depth to water table
	(in/hr)	(max)	dS/m	(max)		(in)	(ft)
Agnal clay loam	0.00 - 0.06	3%	16.0 - 99.0	300	8.0 - 8.8	2.4	0
Bolfar	0.20 - 0.57	5%	0.0 - 8.0	-	8.0	8.6	3.0 - 5.0
Checker loam	0.06 - 0.20	40%	10.0 - 100.0	60	8.0 - 8.5	3.1	3.0 - 4.0
Dos Palos clay loam	0.06 - 0.20	15%	2.0 - 16.0	-	8.0	9.5	3.0 - 5.0
El Nido sandy loam	1.98 - 5.95	0	0.0 - 2.0	-	8.0 - 8.3	6.6	3.5
Tirangle clay	0.00 - 0.06	10%	1.0 - 16.0	30	8.0 - 9.2	5.4 - 6.8	-
Turlock sandy loam	0.00 - 0.06	15%	15.0 - 35.0	35	7.4 - 8.6	4.4	-
Turmound sandy loam	0.06 - 0.20	5%	8.0 - 16.0	45	8.0 - 8.5	4.5	1.5 - 2.5

3. Climate

Western Regional Climate Center, Los Banos, Ca. (045118)

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
avg precip-1	1.93	1.97	1.65	0.63	0.44	0.07	0.04	0.05	0.28	0.56	1.11	1.22	9.95
avg. temp-1	45.9	51.5	55.7	60.6	67.2	73.4	78.1	77.1	73.1	65.1	53.4	45.3	62.2
max temp-1	54.9	62.4	67.5	74.1	81.6	89.0	94.6	93.5	88.8	79.6	65.3	55.1	75.5
min temp-1	36.8	40.5	43.9	47.0	52.7	57.7	61.5	60.6	57.3	50.6	41.4	35.4	48.8
ET_{O-2}	1.08	1.98	3.95	5.61	7.84	8.53	8.30	7.24	5.65	3.93	1.75	1.18	57.05

1=Weather Station ID: WRCC Los Banos. Date Period: 1970 to 2000

2=Weather Station ID: CIMIS Panoche. Date Period: 1996 to 2006

Discuss the impact of climate, and any microclimates, on water management

During the high ET_O observed in the summer and early fall months the wetlands require a much higher rate of water application relative to the same areas flooded and maintained over the winter. Additionally, northern prevailing winds, high winds and winds out of the Pacheco Pass raise ET_O during the spring months. Summer water ponds are maintained at depths to prevent unwanted vegetation from invading the wetlands. Ponds flooded at shallower depths must be disked on an annual basis and kept dry every other

year to control invasive vegetation. The southern portion of the District experiences less precipitation during rain events relative to the north grasslands due to the rain shadow of the coast range. Water managers account for these differences in precipitation and make adjustments in the conveyance and pond levels accordingly.

4. *Water quality monitoring (attach water quality test result forms Attachment #7)*
   If the refuge has a water quality monitoring program complete this table

Analyses performed	*Frequency range*	*Concentration range*	*Average (mean)*
Selenium (mg/L)	Monthly	ND	ND
TDS (mg/L)	Continuous	183-1,525	793
Boron (mg/L)	Monthly	1.0-2.0	1.5
EC (uS/cm)	Continuous	300-2,500	1,300

Discuss the impact of water quality on water management

The major water quality constituents of concern in the GRCD include selenium, boron, and salt. In the current Basin Plan, the Regional Water Quality Control Board (RWQCB) objective for selenium in the Grassland Watershed Wetland Channels is 2 ppb (monthly mean). Since CVPIA, TDS levels of the District's fall and winter water supply have ranged from 130 ppm to 1,500 ppm with a mean of 582 ppm. The elevated TDS levels usually occur during summer months at a time when there is minimal flow moving through the District's conveyance.

Although the Grassland Bypass Project removed the majority of drain water flows from the wetland water supply channels, the District does receive operational spill from adjacent irrigation districts. These additional flows are of good quality and do not exceed RWQCB water quality objectives.

The RWQCB's 2 ppb monthly mean objective for selenium has seldom been observed through instantaneous grab sampling within the District's conveyance at times of limited or no flow or during extremely heavy rain events. During times of limited to no flow selenium enriched shallow groundwater can accrete into the unlined canal system. Once the conveyance is charged, selenium concentrations fall below the RWQCB objective monthly objective of 2 ppb. The District's ability to utilize fresh water dilution flows is an integral component in meeting the RWQCB water quality objectives.

Occasionally selenium and salt enriched flood waters from Grassland Basin Drainers (GBD) discharges exceed the capacity of the San Luis Drain (SLD) forcing the GBD to utilize the GWD conveyance for flood control to prevent selenium enriched sediment disturbance in the SLD. Since the implementation of the Grassland Bypass Project (GBP), there have been three years where the GBP has reached its maximum capacity and the remaining flood waters beyond the GBP maximum capacity were required to be routed through the District's conveyance. During these instances, all District deliveries were terminated and subsequently required the District's canal system to be flushed with CVP delivery water prior to reestablishing deliveries. The flushing usually requires 100 to 200 acre-feet of water to recharge and clean the system.

Selenium and boron concentrations are relatively low during the fall and winter months when District deliveries are substantial enough to provide adequate dilution flow and prevent shallow ground water from

accreting into the conveyance. During spring and summer months, when deliveries are at a minimum, the District can observe elevated EC measurements, however salt load leaving the District during this time is minimal because of the low volume of water being discharged. Drainage water from the District's lands during spring draw down can at times also have elevated EC although recent monitoring indicates the majority of salt load leaving the District occurs during winter storm events. During winter months, operational spill from wetland units is often routed into the delivery conveyance and diluted with fresh water improving the quality in the conveyance and discharges leaving the District.

The District's RTWQMN adds a key tool aiding in decision support to optimize water quality management and water conservation. The District's RTWQMN monitors flow and water quality at 20 key water supply points, inter-conveyance, and drains throughout the District. Use of the RTWQMN, pending RWQCB approval, would allow for the utilization of the Real Time Salt Load Allocation as identified in the RWQCB's Salt and Boron TMDL.

Diversification of the District's Level 2 supply and development of Incremental Level 4 supply could also have an impact on water quality management within the District. Development of groundwater for refuge use is being implemented as a means of providing needed Incremental Level 4 water and to diversify the District's Level 2 supply which benefits both CVP South of Delta Ag Contractors and refuges. Groundwater can contain higher concentrations of salts than project water during certain times of the year. Lower EC project water during times of moderate to high flow can be used to minimize surface water degradation. Conversely the District has observed higher salt concentrations in the surface water than ground water during low flow conditions, due to shallow ground water infiltration into the conveyance. During these low flow conditions deep ground water production has the potential to improve water quality by diluting salts and other constituents.

The District contracts with the Bureau of Reclamation for the delivery of water to both State and Federal wildlife refuges. This contract requires the District to deliver the best quality water that it can provide.

Section F - Transfers, Exchanges and Trades

Provide information on any transfers, exchanges and/or trades into or out of the Resource Conservation District

From whom	To whom	Report year (AF)	Use
GWD	San Luis and Del Puerto WDs	0	Refuge and Ag
GWD	Panoche Water District	0	Refuge and Ag
	TOTAL	0	

The San Luis Water District (SLWD) and the Del Puerto Water District (DPWD) entered into an agreement with BOR for the exchange of groundwater provided to GWD by the Districts for GRCD Level 2 refuge water on an unequal exchange rate. For every two AF of groundwater delivered to GWD, combined SLWD and DPWD received one AF of Level 2 water in the San Luis Reservoir. A total of 0 AF of groundwater was delivered to GWD in exchange for 0 AF of Level 2 water made available to the Districts in Water Year 2017.

Panoche Water District (PWD) also entered into an agreement with BOR for the exchange of groundwater provided to GWD by PWD for GRCD Level 2 refuge water on an unequal exchange rate. For every two AF of groundwater delivered to GWD, PWD received one AF of Level 2 water in the San Luis Reservoir. A

total of 0 AF of groundwater was delivered to PWD in exchange for 0 AF of Level 2 water made available to the PWD in Water Year 2017.

Section G - Water Inventory

See Attached Tables, 5 Year update only.

Section H - Critical Best Management Practices

Describe the 3-year implementation plan and the proposed 3-year funding budget.

1. Management programs

a. Education

Program	*Estimated cost (in $1,000s)*		
	2017	*2018*	*2019*
Landowners Meeting (information)	5	5	5
Grassland Environmental Education Center	100	100	100
District Website	15	3	3

Describe the specifics of each program (number of participants, topics, purpose, etc.) and attach program materials, if available.

The District conducts an annual Landowner's Meeting in the spring of each year for the purpose of informing its customers about current issues. Presentations cover a wide range of topics from current and pending legislation to water quality issues and wetland management. Water conservation techniques are often presented to the landowners with the purpose of encouraging them to employ best water management practices and to introduce them to new products and ideas designed to improve water deliveries and water use efficiency. Attendance may range from 80 to 150 landowners and concerned individuals (*See Attachment #8 2017 Landowner Meeting Agenda*).

In conjunction with the Department of Fish and Wildlife, the District sponsors the Grassland Environmental Education Center (GEECe) for the purpose of educating elementary school students and others about the benefits of wetlands and the valuable role that agriculture can play in the conservation of wildlife habitat. In 2017, 4,680 students and 1,365 adults were given a hands-on introduction to wildlife and wetland habitat. The District and DFW jointly fund a full-time interpreter to coordinate and conduct education classes at a designated wetland site (*See Attachment #9 GEECe Program Flier*).

The District created a website designed to update and inform its landowners and others on current water issues and other important topics. Topics range from current water status to legislative updates. Other topics include conservation programs, wetland enhancement programs, water quality regulation, water quality monitoring, and other wetland water issues (*See Attachment #10 Grassland Water District Website at gwdwater.org*).

b. Water quality monitoring

Type of water	*Existing Estimated cost (in $1,000s)*		
	2017	*2018*	*2019*
Surface Water	10	10	10
Groundwater	30	30	30

Short description of existing or planned program – i.e., required by which agency, coordinated with whom, constituents monitored and frequency.

Since the mid 1980's the District has collected and recorded water quality data on surface inflows and drainage leaving the District. Inflow sites continue to be monitored throughout each water year for TDS, EC, boron and selenium. The grab sampling occurs on a monthly basis at major drainages and at delivery locations to State and Federal Refuges temporarily coinciding with the monthly Irrigated Lands Regulatory Program Ag Waiver sampling efforts. The DFW conducts and shares weekly EC measurements from 19 supply and drainage locations to the Los Banos Wildlife Area and Volta Wildlife Area. Additionally DFW collects groundwater elevation data from monitoring wells on a weekly basis on the Mud Slough Unit of the Los Banos Wildlife Management Area. The District's RTWQMN consists of 20 monitoring stations located at key inflow, delivery and drainages continuously measuring flow, EC, temp, and pH (*See Attachment #5e*).

c. Cooperative efforts

The District, in cooperation with the State Water Resource Control Board, CALFED Bay Delta ERP, the DFW, the Department of Water Resources, UC Davis, and UC Merced investigated Wetland Responses to Adaptive Salinity Drainage Management. The proposed modified hydrology delayed the drainage from the wetland complex to match the assimilative capacity in the San Joaquin River during the flow releases of the Vernalis Adaptive Management Program. This investigation found significant degradation in both seed and biomass production in response to a proposed delayed draw down of seasonal wetlands due to less than optimal germination temps and a shortened growing season. Furthermore the delayed drainage hydrology required significantly more water to maintain the ponds and cause water quality and soil degradation.

Additionally, the District is currently in a cooperative agreement, in cooperation with the DFW and the U.S. Fish and Wildlife Service, to further characterize flow and water quality entering, conveyed within, and leaving the wetland complex. Preliminary findings indicate that the majority of salt loading to the river from the wetland complex is associated with winter storm events and not wetland draw down. The RTWQMN and the aforementioned flow and water quality assessment has fostered the development of a Decision Support System allowing water and wetland mangers to maximize water quality through the mixing of flows from drainage subareas of variable water quality with CVP supplies.

The District is a participant in the Westside San Joaquin River Watershed Coalition's program to implement the requirements of the Central Valley Regional Water Quality Control Board's Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands. Additionally, the District contributes a semi-annual water quality report to the State Board characterizing flow and salt load at the major drainages leaving the District.

The District also participates in other cooperative efforts with numerous agencies to promote more efficient and effective wetland and water management practices. For additional information see Section 1.f. below.

d. Pump evaluations (mobile labs)

Total number of groundwater pumps on Resource Conservation District No District owned wells

Total number of surface water (low-lift) pumps on Resource Conservation District None

Groundwater pumps	*Estimated cost (in $1,000s)*		
	2016	*2017*	*2018*
# of groundwater pumps tested	NA	NA	NA
# of pumps to be fixed or replaced	NA	NA	NA
# of low-lift pumps to be tested	NA	NA	NA
# of pumps to be fixed or replaced	NA	NA	NA

e. Policy evaluation

The District's Board of Directors has formed a Water Management Committee to review and update the District's water conservation policies. This committee reports monthly to the Board of Directors, at their regularly scheduled meeting, and may present proposed modifications or additions to the existing policies for consideration or adoption by the Board.

The ability of districts and refuges to share or transfer waters among agencies would be very valuable. If agricultural districts could trade and transfer water with refuge supplies, without undue paperwork, there could be huge savings in overall water use. Carryover water could be used by Ag and returned at a more desirable time for wetlands.

f. (GRCD only) *Provide Customer Services - Facilitate physical/structural improvements for member units; provide management services and technical advice to raise funds for BMP Implementation and provide customers with water efficiency education programs.*

Service	Number of units needing assistance	Number of units to be assisted yearly	Proposed schedule	Estimated cost
Facilitate physical /structural improvements for member units	5% to 7.5%	8 to 12	None	Billed to customer
Provide management services, technical advice	5% to 7.5%	8 to 12	None	Approx. 20 hrs. staff time
Facilitate fundraising	5%	8	None	10 hrs

The District cooperates with wetland related organizations that provide direct services to its customers. These services include installation of water control structures, development of drainage swales, habitat improvements, water efficiency improvements and water management techniques. Organizations that assist landowners include Ducks Unlimited, California Waterfowl Association, Natural Resource