

Groundwater Sustainability Commission
for the San Luis Obispo Valley Groundwater Basin

Agenda
June 12, 2019

NOTICE IS HEREBY GIVEN that the Groundwater Sustainability Commission for the San Luis Obispo Valley Groundwater Basin will hold a meeting at **3:30 P.M. on Wednesday, June 12, 2019** at the San Luis Obispo City/County Library Community Room, 995 Palm Street, San Luis Obispo, CA 93401.

NOTE: In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations to participate in this meeting, please contact Joey Steil at (805) 781-4076. The Groundwater Sustainability Commission reserves the right to limit each speaker to three (3) minutes per subject or topic.

Adam Hill, Member, County of San Luis Obispo
Bob Schiebelhut, Chair, EVGMWC
Dennis Fernandez, Member, ERMWC/VRMWC
Mark Zimmer, Vice Chair, GSWC
Andy Pease, Member, City of San Luis Obispo

Bruce Gibson, Alternate, County of San Luis Obispo
George Donati, Alternate, EVGMWC
James Lokey, Alternate, ERMWC/VRMWC
Toby Moore, Alternate, GSWC
Aaron Floyd, Alternate, City of San Luis Obispo

-
- 1. Call to Order** (Chair)
 - 2. Roll Call** (City Staff: Mychal Boerman)
 - 3. Pledge of Allegiance** (Chair)
 - 4. Public Comment – Items not on Agenda** (Chair)
 - 5. Approval of Meeting Minutes** (Chair)
 - a) April 10, 2019
 - 6. Draft Communication and Engagement (C&E) Plan** (WSC Consultant Team: Michael Cornelius)
Recommendation
 - a) Consider recommending that each GSA receives and files draft C&E Plan.
 - 7. A Presentation on the Selection of an Integrated Surface and Groundwater Flow Model** (WSC Consultant Team: Michael Cruikshank)
Recommendation
 - a) Receive an update on the selection of an integrated surface and groundwater flow model platform.
 - 8. Future Items** (Chair)
 - a) Basin setting update
 - b) Workshops (meeting dates TBD)
 - 9. Next Regular Meeting: September 11, 2019**
 - 10. Adjourn** (Chair)

Groundwater Sustainability Commission
Regular Meeting Minutes (DRAFT)
April 10, 2019

The following members or alternates were present:

- Bob Schiebelhut**, Chairperson, EVGMWC
- Mark Zimmer**, Vice Chairperson, GSWC
- Dennis Fernandez**, Member, ERMWC/VRMWC
- Andy Pease**, Member, City of San Luis Obispo
- Adam Hill**, Member, County of San Luis Obispo

1. Call to Order	Chairperson, Bob Schiebelhut, calls the meeting to order at 3:30 PM																														
2. Roll Call	City Staff, Mychal Boerman, calls roll.																														
3. Pledge of Allegiance	Chairperson, Bob Schiebelhut, leads the Pledge of Allegiance																														
4. Public Comment – Items not on Agenda	<p>Chairperson Schiebelhut opens the floor for public comment on items not on the Agenda.</p> <ul style="list-style-type: none"> • County Staff, Dick Tzou, introduced himself as the Project Manager and informed the Commission that Mladen Bandov will be replacing Carolyn Berg as County staff. • Mychal Boerman, Water Resources Program Manager, introduced himself as the interim representative for the City. His predecessor, Aaron Floyd, is now the acting Interim Director of Utilities and has recused himself from the Commission. 																														
5. Approval of Meeting Minutes	<p>Chairperson Schiebelhut: asked for Commission comments on Regular Meeting Minutes from December 12, 2018—there were none.</p> <p>Motion By: Commission Member Hill Second By: Commission Member Fernandez Motion: Approve the Regular Meeting minutes from December 12, 2018</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Members</th> <th style="text-align: center;">Ayes</th> <th style="text-align: center;">Noes</th> <th style="text-align: center;">Abstain</th> <th style="text-align: center;">Recuse</th> </tr> </thead> <tbody> <tr> <td>Bob Schieblhut (Chairperson)</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mark Zimmer (Vice Chairperson)</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Andy Pease (Member)</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adam Hill (Member)</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dennis Fernandez (Member)</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Members	Ayes	Noes	Abstain	Recuse	Bob Schieblhut (Chairperson)	X				Mark Zimmer (Vice Chairperson)	X				Andy Pease (Member)	X				Adam Hill (Member)	X				Dennis Fernandez (Member)	X			
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6. Overview of SGMA Compliance Efforts in the San Luis Obispo Valley Groundwater Basin	<p>County Staff, Dick Tzou: Provided a summary update on the SGMA efforts in the San Luis Obispo Valley Groundwater Basin (SLO Basin). The City and the County developed a Memorandum of Agreement to oversee the implementation and development of the Groundwater Sustainability Plan. The County was awarded Prop 1 grant funding to fund a Characterization Study, which helped to develop the Groundwater Sustainability Plan. Tzou also directed the committee to the County’s new San Luis Obispo Valley Groundwater Basin website: www.slocounty.ca.gov/slobasin.</p>																														

Groundwater Sustainability Commission
Regular Meeting Minutes (DRAFT)
April 10, 2019

	<p>Chairperson Schiebelhut: opens the floor for public comment</p> <ul style="list-style-type: none"> • None 																														
<p>7. Consider Formation of a Stakeholder Advisory Committee</p>	<p>County Staff, Dick Tzou; City Staff, Mychal Boerman; Commission Members: Andy Pease and Dennis Fernandez: Consider and approve proposed alternative approach to SAC formation. The representatives listed above met in March to discuss various approaches to public involvement and engagement and how the GSAs would consider the interests of all beneficial users of the SLO Basin, as required by Water Code Section 10723.2. The working group concluded that there is much overlapping of interest groups by forming a separate SAC since the GSC already functions as an advisory body and members of the GSC also represent many of the stakeholder interests in the basin. However, the group recommended as an alternative approach that an active stakeholder list be maintained for outreach purposes, especially for certain focused parties and those stakeholders who are not represented by the GSC members.</p> <p>Commission Member Pease added that the outreach will be better served and be more inclusive than a SAC by inviting all interested parties to attend the various public open forum meetings.</p> <p>Chairperson Schiebelhut: opens the floor for public comment</p> <ul style="list-style-type: none"> • Jean Wolfe, Cal Poly, inquired about the prospect of a more active student body and faculty in the GSC, as a portion of the campus rests within the basin. <p>Motion By: Commission Member Hill Second By: Commission Member Pease Motion: Approve the alternative approach to SAC formation to ensure that the GSC will provide an open forum for all stakeholders to participate and encourage involvement through increased outreach and continue to develop a C&E Plan without a SAC.</p> <table border="1"> <thead> <tr> <th>Members</th> <th>Ayes</th> <th>Noes</th> <th>Abstain</th> <th>Recuse</th> </tr> </thead> <tbody> <tr> <td>Bob Schieblhut (Chairperson)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mark Zimmer (Vice Chairperson)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Andy Pease (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adam Hill (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dennis Fernandez (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Members	Ayes	Noes	Abstain	Recuse	Bob Schieblhut (Chairperson)	X				Mark Zimmer (Vice Chairperson)	X				Andy Pease (Member)	X				Adam Hill (Member)	X				Dennis Fernandez (Member)	X			
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<p>8. Groundwater Sustainability Plan (GSP) Development “Kickoff”</p>	<p>WSC Consultant Team, Michael Cruikshank and Team: Presentation on the basin characterization recap, GSP team member roles and responsibilities, and project approach, scope of work, and schedule. WSC has partnered with GSI Water Solutions, Cleath Harris Geologists, GEI Consultants, and Stillwater Sciences to bring the right combination of technical and stakeholder facilitation expertise to help develop a compliant and defensible plan that will provide the greatest value to the SLO Basin GSAs and GSC participating partners.</p> <p>Chairperson Schiebelhut: opens the floor for public comment</p>																														

Groundwater Sustainability Commission
Regular Meeting Minutes (DRAFT)
April 10, 2019

	<ul style="list-style-type: none"> • A member of the public posed several questions to the team about the timeframe for accessing the Groundwater Communication Portal and the strategy for notifying stakeholders of upcoming workshops, meetings and key decisions. • Sarah Crable asked the consultant team about the staffing needs and associated cost of managing the data once the project is complete. • George Donati suggested engaging farmers in the Edna Valley by sending communications by mail and asks if this is a possibility. • Jean-Pierre Wolfe urged the Commission to assess the need for bilingual notifications for paper mailings and electronic media. He also inquired about the proprietary nature of the information and resources developed by the consultant team, as this is a grant funded project. • Jim Lokey requested clarification on the basin’s change in status from a medium to high priority, and whether the shift affected the timeline for the project. 																														
<p>9. Future Items</p>	<p>Chairperson Schiebelhut:</p> <ul style="list-style-type: none"> • Presentation on the draft Stakeholder Communication and Engagement (C&E) Plan • Presentation on the platform options for an integrated flow model • Next regular meeting on June 12, 2019 <p>Chairperson Schiebelhut: opens the floor for public comment</p> <ul style="list-style-type: none"> • None 																														
<p>10. Adjourn</p>	<p>Motion By: Commission Member Hill Second By: Commission Member Fernandez Motion: The Commission moves to adjourn the meeting at 4:46 PM</p> <table border="1"> <thead> <tr> <th>Members</th> <th>Ayes</th> <th>Noes</th> <th>Abstain</th> <th>Recuse</th> </tr> </thead> <tbody> <tr> <td>Bob Schieblhut (Chairperson)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mark Zimmer (Vice Chairperson)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Andy Pease (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adam Hill (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dennis Fernandez (Member)</td> <td>X</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Members	Ayes	Noes	Abstain	Recuse	Bob Schieblhut (Chairperson)	X				Mark Zimmer (Vice Chairperson)	X				Andy Pease (Member)	X				Adam Hill (Member)	X				Dennis Fernandez (Member)	X			
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DRAFTED BY: City Staff: Megan Wilbanks

Groundwater Sustainability Commission
for the San Luis Obispo Valley Groundwater Basin

June 12, 2019

**Agenda Item 6 – Draft Communication and Engagement (C&E) Plan
(Action Item)**

Recommendation

a) Consider recommending that each GSA receives and files draft C&E Plan.

Prepared by

Michael Cruikshank, Water Systems Consulting, Inc.

Michael Cornelius, GEI Consultants, Inc.

Discussion

The WSC Team, led by GEI Consultants, Inc. (GEI), has been tasked with the preparation of the C&E Plan to meet the requirements of SGMA. This C&E Plan describes the planned activities for engaging interested parties in SGMA implementation efforts in the San Luis Obispo Valley Basin. It is designed to meet the stakeholder engagement requirements of SGMA and the GSP Regulations. The ultimate purpose of the document is to facilitate effective communication and engagement with the multiple and varied stakeholders in the San Luis Obispo Valley Basin to enhance the overall quality and stakeholder buy-in of the GSP.

The C&E Plan identifies the roles and responsibilities of different groups and how they can engage in the GSP development process. This includes the use of workshops and Groundwater Sustainability Commission meetings to communicate to the public and receive input from the various interested parties.

The WSC Team will also utilize the Groundwater Communication Portal (Portal) to facilitate communications and document the implementation of the C&E Plan.

Attachments:

1. Presentation
2. Draft C&E Plan

STAKEHOLDER COMMUNICATION AND ENGAGEMENT PLAN



COMMUNICATION AND ENGAGEMENT (C&E) PLAN

- Draft C&E Plan included in Commission packet
- Sets outreach goals, identifies stakeholders, and plans engagement
- Will be posted to the Groundwater Communication Portal for public comment



C&E PLAN GOALS

- Educate the public about the importance of the GSP and their input
- Engage a diverse group of stakeholders
- Make stakeholder participation easy and accessible
- Allow interested parties the opportunity to provide meaningful input
- Provide a roadmap for GSA leadership



EVERYONE HAS A ROLE TO PLAY IN GSP DEVELOPMENT

WHO	ROLE
Groundwater Sustainability Commission	<ul style="list-style-type: none">• All meetings open to public• Makes recommendations to the City Council* and County Board of Supervisors* regarding GSP development
Technical Experts	<ul style="list-style-type: none">• Determine and communicate facts• Inform about the benefits and consequences of potential projects and management actions
Interested Parties	<ul style="list-style-type: none">• Provide input regarding the priorities and values of the community• Engage via the venues and tools outlined in the C&E Plan (Stakeholder Survey coming soon!)

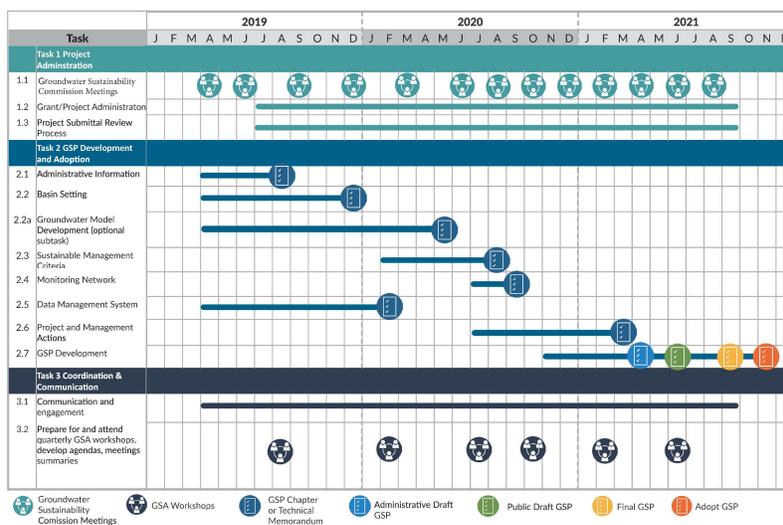
*Final decision-making power to adopt the GSP

C&E PLAN FOCUSES ENGAGEMENT

SUPPORTING ACTIVE INVOLVEMENT OF THE DIVERSE POPULATION

- **Disadvantaged Communities** – posting information about GSP development in public spaces
- **Bilingual Residents** – assessing need and will provide translation services as appropriate
- **Tribal Governments** – reaching out to Native American Tribes to invite participation in GSP process

PROJECT SCHEDULE



Workshops

Potential Workshops

- Basin Setting and Basin Conditions
- Sustainable Management Criteria
- Projects and Management Actions
- GSP Implementation

GSP CHAPTER REVIEW PROCESS



Technical Specialist			
Consultant	X		X
GSA Staff		X	
GSA Leadership			
GSC (the Commission)			X
Interest Parties			
GSA			X

GSP REVIEW PROCESS



Technical Specialist	
Consultant	X
GSA Staff	X
GSA Leadership	
GSC (the Commission)	X
Interest Parties	
GSA	X

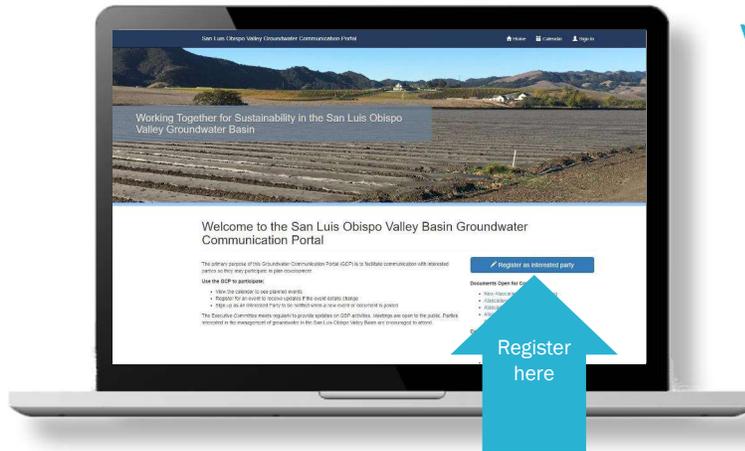
GSP APPROVAL PROCESS



Technical Specialist	
Consultant	
GSA Staff	
GSA Leadership	
GSC (the Commission)	X
Interest Parties	
GSA	X

GROUNDWATER COMMUNICATION PORTAL (GCP)

SIGN UP TODAY!



Visit the GCP for the following:

Register as an interested party

View upcoming meetings

Access meeting materials
(e.g., agendas)

Review draft documents

DRAFT

Communication and Engagement Plan

for Groundwater Sustainability Plan Development
in the San Luis Obispo Valley Groundwater Basin

Prepared for San Luis Obispo County

June 5, 2019

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DRAFT

The Sustainable Groundwater Management Act (SGMA) requires local governments and water agencies in California’s high- and medium-priority groundwater basins, as defined by the California Department of Water Resources (DWR), to form Groundwater Sustainability Agencies (GSAs) and operate under a Groundwater Sustainability Plan (GSP) by the year 2022. Basins subject to critical conditions of overdraft must begin to manage groundwater under a GSP sooner – by January 31, 2020.

This Communication and Engagement Plan (C&E Plan) describes the planned activities for engaging interested parties in SGMA implementation efforts in the San Luis Obispo Valley Basin. It is designed to meet the stakeholder engagement requirements of SGMA and the GSP Regulations. The ultimate purpose of the document is to facilitate effective communication and engagement with the multiple and varied stakeholders in the San Luis Obispo Valley Basin.

Structure of this C&E Plan

DWR defines the purpose of its Stakeholder *Communication and Engagement Guidance Document* (C&E Guidance Document) to:

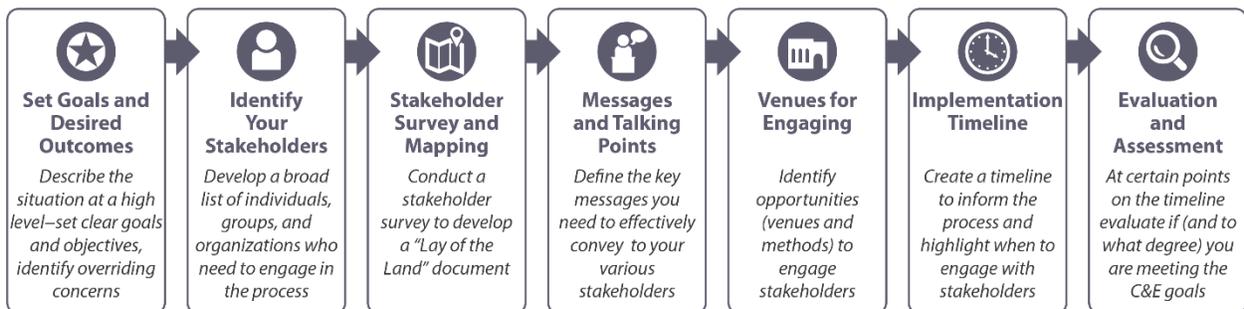
- Demonstrate how a GSA can effectively communicate and engage with multiple and varied stakeholders
- Identify the methods and tools to support communication and engagement
- Identify how a GSA can conduct meaningful engagement to develop a GSP

The C&E Guidance Document describes DWR’s seven-step process for communication and engagement:

1. ***Set Goals and Desired Outcomes***
2. ***Identify Your Stakeholders***
3. ***Stakeholder Survey and Mapping***
4. ***Messages and Talking Points***
5. ***Venues for Engaging***
6. ***Implementation Timeline***
7. ***Evaluation and Assessment***

This C&E Plan is organized to follow the steps suggested above and shown in **Figure 1**.

Figure 1. Engagement Steps from DWR GSP Stakeholder and Engagement Guidance Document



1. Introduction to the San Luis Obispo Valley Basin

The San Luis Obispo Valley Basin (Groundwater Basin 3-009¹) is situated in the San Luis and Edna Valleys in central to southwest San Luis Obispo County. The basin overlies an area of approximately 12,700 acres and is part of the Central Coast Watershed. It is bound on the northeast by the Santa Lucia Range, on the southwest by the San Luis Range, and on all other sides by contact with impermeable Miocene and Franciscan Group rocks. A rise in bedrock south of the San Luis Obispo Airport has created two separate subsurface drainage systems known as the San Luis Valley subbasin and the Edna Valley subbasin. The Edna Valley subbasin covers approximately 4,700 acres and is entirely within the unincorporated San Luis Obispo County (County). The San Luis Valley subbasin spans approximately 8,000 acres and includes both the unincorporated county and city of San Luis Obispo (City).

- **City of San Luis Obispo.** The City of San Luis Obispo is located near the intersection of Highway 101 and Hwy 1. A portion of the City is located within the basin. The City's land uses consist primarily of commercial and residential areas.
- **San Luis Obispo County.** San Luis Obispo County is located in the southern region of California between approximately San Miguel and Santa Maria. The entire basin is located within the County. The County's land uses consist of commercial, agricultural, residential, and undeveloped lands.

The primary sources of water supply for uses in the basin include groundwater from the San Luis Obispo Valley Basin and surface water from the Whale Rock Reservoir, Salinas Reservoir, the Nacimiento Water Project, and recycled water through the City's Water Recycling Program.²

Water users in the basin include municipalities, communities, rural domestic residences, and industrial, environmental, and agricultural users. The major water purveyors are the Edna Valley Growers Mutual Water Company, Varian Ranch Mutual Water Company, Edna Ranch Mutual Water Company, and Golden State Water Company.

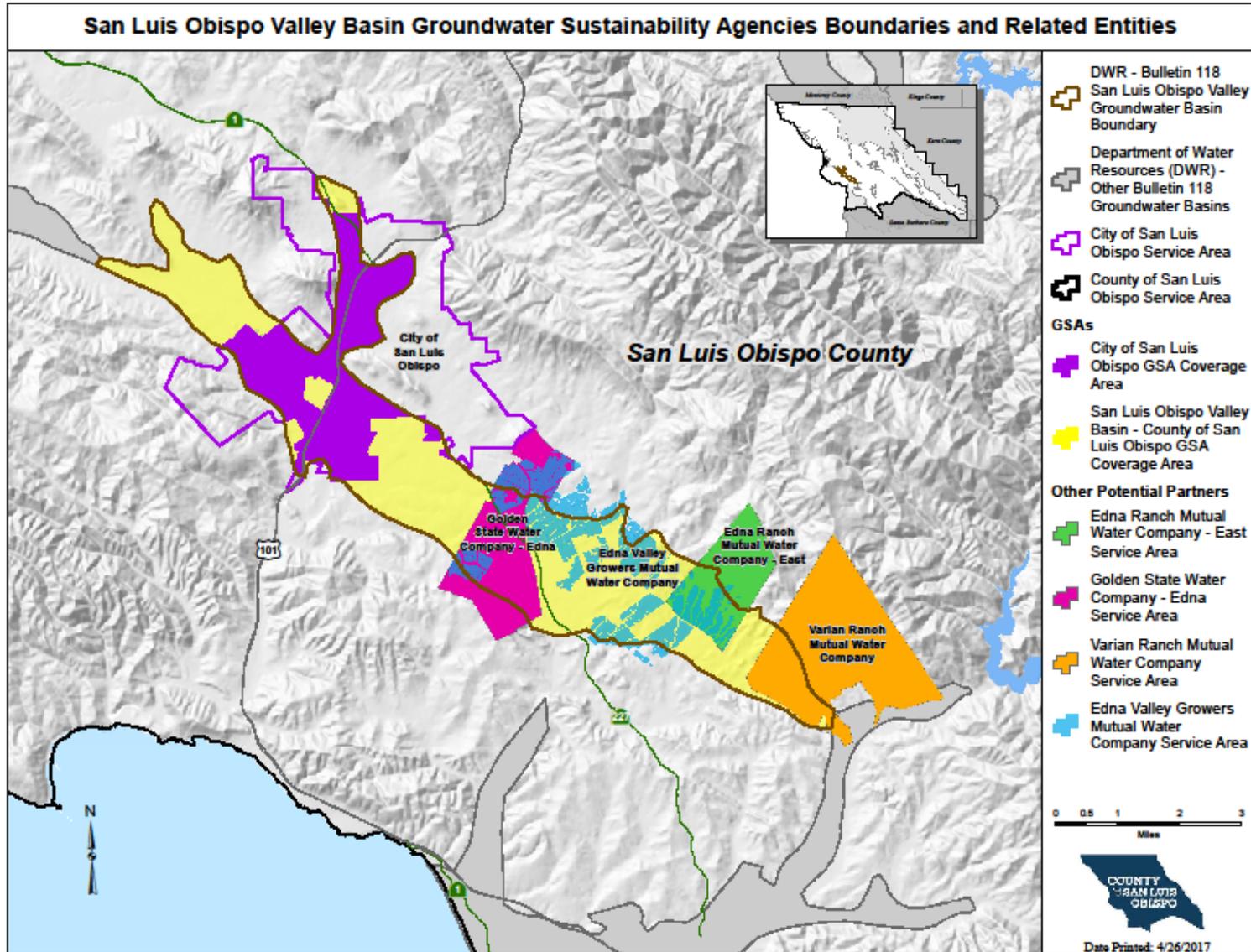
Figure 2 shows the location of the San Luis Obispo Valley Basin and the GSA boundaries.

¹ As identified and delineated in California Department of Water Resources Bulletin 118

<https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>

² <https://www.slocity.org/government/department-directory/utilities-department/water/water-sources/recycled-water>

Figure 2. San Luis Obispo Valley Basin Groundwater Sustainability Agency Boundary



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DRAFT

2. Goals and Desired Outcomes

The goal of this C&E Plan is to describe the planned activities for engaging interested parties in SGMA implementation efforts in the San Luis Obispo Valley Basin and to provide opportunities for interested parties to participate in GSP development. This plan serves as a roadmap to support achieving the desired outcomes identified below.

- **Educate the public about the importance of the GSP and the value of their input.** Stakeholder input is a critical part of the GSP development process. Basin stakeholders define the values of the local community and priorities for groundwater management. This valuable input identifies the unique concerns of the stakeholders and guides decision-making and development of projects and management actions. The C&E Plan is designed to encourage stakeholder participation and to disseminate information about GSP development.
- **Engage a diverse group of stakeholders.** The C&E Plan is developed with thoughtful consideration about how to engage the diverse array of stakeholders in the basin. One size does not fit all when it comes to stakeholder engagement. The C&E Plan outlines multiple venues for communication with varied audiences.
- **Make stakeholder participation easy and accessible.** One way to increase engagement is to make participation easy for the stakeholders. The opportunities for stakeholders to engage in GSP development should be clear and easily accessible. The C&E Plan provides methods to make engagement easy for stakeholders.
- **Allow interested parties the opportunity to provide meaningful input.** Aligning the engagement schedule with the GSP development schedule allows stakeholders to engage at key decision points in the GSP development process. Public meetings will inform interested parties about what decisions need to be made, provide relevant technical information, and request feedback.
- **Provide a roadmap for GSA leadership.** The C&E Plan provides a clear roadmap and schedule for GSA leaders to follow, keeping engagement efforts consistent among stakeholders and on track throughout the duration of the project.

The goal and desired outcomes listed above are the drivers for this planning document. They inform and shape the remainder of this C&E Plan.

3. GSP Participants and the Decision-Making Process

Everyone in the basin has a role to play in GSP development. Generally, participants fall into one of the following groups.

- GSA Leadership
- Technical Experts
- Interested Parties

Each of these groups provide a unique contribution to the GSP.

GSA Leadership

To comply with SGMA, two GSAs were formed to manage the groundwater resources of the San Luis Obispo Valley Basin in a sustainable manner as directed under a GSP that must be prepared by 2022 and implemented for the next 40 years

- City of San Luis Obispo Groundwater Sustainability Agency
- San Luis Obispo Valley Basin - County of San Luis Obispo Groundwater Sustainability Agency

In January 2018, the City and the County entered into a Memorandum of Agreement (MOA) with the Edna Valley Growers Mutual Water Company, Varian Ranch Mutual Water Company, Edna Ranch Mutual Water Company, and Golden State Water Company to prepare a single GSP for the San Luis Obispo Valley Basin, establishing the Groundwater Sustainability Commission (GSC or Commission). The GSC serves as an advisory committee to the San Luis Obispo City Council and County of San Luis Obispo Board of Supervisors.

The GSC has five members as shown in **Table 1**.

Table 1. Commission Membership

San Luis Obispo Valley Groundwater Sustainability Commission Members
<ul style="list-style-type: none">• One member representing the City• One member representing the County• One member representing Edna Valley Growers Mutual Water Company• One member collectively representing Varian Ranch Mutual Water Company and Edna Ranch Mutual Water Company• One member representing Golden State Water Company

All meetings of the Commission are open to the public and interested parties are encouraged to attend. The Commission will make recommendations to the City Council and County Board of Supervisors regarding GSP development (e.g., recommendation to adopt). A public Notice of Intent to adopt the GSP and a public hearing will be held prior to adoption of the GSP. The final decision-making power to adopt the GSP will be executed separately by the City Council and County Board of Supervisors.

Technical Experts

Technical experts are there to provide subject matter expertise on highly complex issues about the basin and surrounding basins and to inform the Commission and interested parties about the benefits and consequences of potential projects and management actions identified in GSP development. Technical experts may include outside consultants or staff of agencies that are signatories to the MOA. Section 3.2 of the MOA outlines how the City and County will retain consultant services.

Interested Parties

Interested parties consist of beneficial users of groundwater, stakeholders, and anyone affected/impacted by groundwater in and around basin. The interested parties may represent environmental interests, Native American tribes, agricultural interests, urban groundwater users, etc. *GSA Leadership and Technical Experts* provide information to interested parties through the engagement venues and tools described in this plan. The interested parties provide input regarding the priorities and values of the community and the likelihood of the success of proposed project concepts and the hurdles that must be overcome to achieve groundwater sustainability. Interested parties may also include agencies, such as the U.S. Department of Fish and Wildlife, with an interest in sustainable groundwater management in the basin. Interested parties can participate in the GSP development process by attending public meetings, commenting on draft documents, and participating in workshops. More information on interested parties is included in **Section 4. Stakeholder Groups**.

GSP Chapter Review Process

The San Luis Obispo Valley Basin GSAs formulated a process for reviewing draft GSP chapters, as illustrated in **Figure 3**. GSA leadership, technical experts, and interested parties have an opportunity to provide feedback on each chapter of the GSP at varying stages of the review process.

The individual chapters will be prepared by the consulting team with input from GSA staff. After the draft chapters have been approved by the Commission they will be posted on the Portal to begin a minimum 30-day comment period. Specific dates will be provided for each draft document to allow for adequate review. Public comments will be submitted through the Portal and all comments received will be available for review. The comments will be reviewed by the technical experts and be considered for inclusion in the draft GSP.

Figure 3. GSP Chapter Review Process



Technical Specialist			
Consultant	X		X
GSA Staff		X	
GSA Leadership			
GSC (the Commission)			X
Interest Parties			
GSA			X

GSP Review Process

Comments collected during public review of draft chapters will be considered when revising the chapters for the Draft GSP. After the draft GSP has been approved by the Commission it will be posted on the Portal to begin an additional minimum 30-day comment period. The roles of the GSP participants in preparation of the Final Draft GSP will follow the steps shown in Figure 4.

Figure 4. GSP Review Process

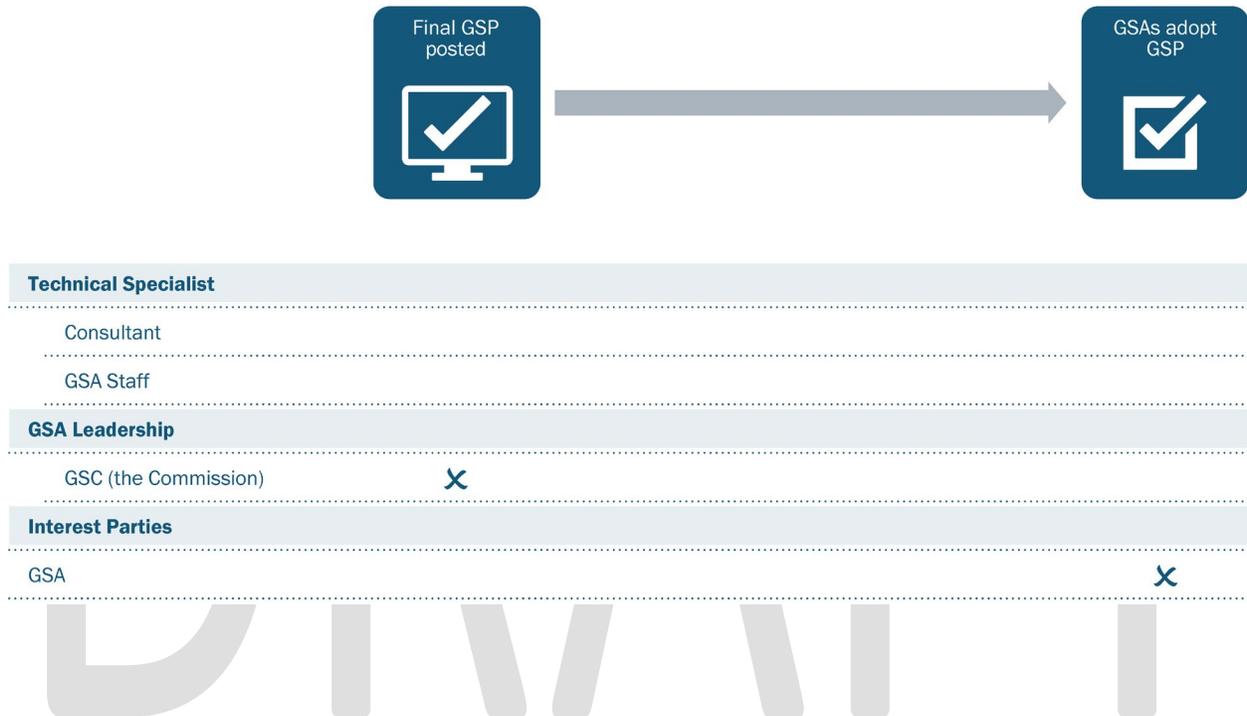


Technical Specialist			
Consultant	X		X
GSA Staff		X	
GSA Leadership			
GSC (the Commission)			X
Interest Parties			
GSA			X

GSP Adoption Process

Once the GSP has been finalized, the Commission will make a recommendation to the GSAs to adopt the GSP. The City of San Luis Obispo City Council and San Luis Obispo County Board of Supervisors will then consider adoption of the GSP. The GSP participants with responsibilities in this phase are shown in Figure 5.

Figure 5. GSP Adoption Process



4. Stakeholder Groups

Pursuant to California Water Code sections 10723.8 and 10723.2, the San Luis Obispo Valley Basin GSAs will consider throughout the project the interests of all beneficial uses and users of groundwater, as well as those that are responsible for implementing the actions developed within the basin's GSP. The San Luis Obispo Valley Basin GSAs are committed to an open public review and feedback process, including active and open discussions with all interested parties during the GSP development process. **Appendix A** includes the initial list of interested parties submitted to the California Department of Water Resources at the time of the GSA's formation. The list includes parties grouped by the categories below.

- Agencies
- Water corporations regulated by PUC or a Mutual Water Company
- Agricultural users
- Domestic well owners
- Municipal well operators
- Public water systems
- Local land use planning agencies
- Environmental users of groundwater
- Surface water users
- Federal government
- California Native American tribes
- Disadvantaged Communities

Stakeholder Group Identification

The stakeholder list provided in **Appendix A** was used to form the Basin's initial interested parties list. The interested parties list was expanded by adding information collected via the SGMA interest e-mail list hosted on the County's website.³ The SGMA interest e-mail list has been online for more than one year and over 280 parties have indicated interest in being added to the Basin's mailing list.

Once signed up for the interest list, parties are contacted via email when events related to GSP development are scheduled for the San Luis Obispo Valley Basin. The interested parties list will continue to expand as people answer the stakeholder survey (**Section 5**) and are encouraged to sign up for communications via the Groundwater Communication Portal described below.

Groundwater Communication Portal

A web-based outreach tool called the San Luis Obispo Valley Basin Groundwater Communication Portal (Portal) electronically notifies interested parties when the GSAs host events regarding groundwater management. The Portal is used to grow and maintain the interested parties list described above. Interested parties can add themselves to the interest list and access draft chapters for review at any time by registering for portal access at [to be added once domain name has been purchased].

³ [https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-\(SGMA\)/San-Luis-Obispo-Valley-Groundwater-Basin.aspx](https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-(SGMA)/San-Luis-Obispo-Valley-Groundwater-Basin.aspx)

The Portal will track outreach engagements such as Commission meetings and communications with individuals or groups of stakeholders involved in the development of the GSP and store the information in a database for GSA retrieval. The database will include meeting dates, locations, times, and documents such as meeting agendas. A description of the Portal and its functions is provided in **Appendix B**.

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5. Stakeholder Survey

DWR created a stakeholder survey template hosted at the Communication and Engagement Digital Toolkit⁴ webpage. The survey is designed to learn about stakeholder interests, issues, and challenges. The survey may include the following questions:

- Are you familiar with SGMA regulations?
- Are you currently engaged in activity or discussions regarding groundwater management in this region?
- Do you own or manage land in this region?
- Do you manage water resources? If yes, what is your role?
- What is your primary interest in land or water resources management?
- Do you have concerns about groundwater management? If so, what are they?
- Do you have recommendations regarding groundwater management? If so, what are they?
- What else do you want us to know?
- Who else should we listen to?

The survey has been customized for San Luis Obispo Valley Basin GSP development and is included as **Appendix C**. The survey is scheduled to be distributed to interested parties in Summer 2019. The results of the survey will be used to inform this plan and will be included in the Final C&E Plan submitted with the Final GSP.

⁴ <https://water.ca.gov/Programs/Groundwater-Management/Assistance-and-Engagement>

6. Venues and Tools: Opportunities for Engagement

The San Luis Obispo Valley GSAs aim to encourage stakeholders with diverse social, cultural, and economic backgrounds to be actively involved in the GSP development. To achieve this goal, *focused engagement* and thoughtfully selected *venues and tools* should be employed.

Focused Engagement

The initial list of interested parties that was imported into the Portal from the County’s SGMA email interest list included 290 entries. To support the diversity of elements and ensure we engage with potentially underrepresented communities on the list, the groups below will be given focused attention when choosing venues and tools for engagement.

- **Disadvantaged Communities.** The City is recognized as a Disadvantaged Community (DAC).⁵ Meetings will be held in proximity to this area to allow easy access for interested parties. Information about GSP development and meeting dates/times will be posted in areas that the City has found to be successful in reaching underrepresented populations in previous outreach efforts. These areas include public events such as the Farmer’s Market, City kiosks at City facilities such as the finance office where utility bills are paid, the parks and recreation department where after-school programs are coordinated, and other City facilities such as the Senior Citizens Center.
- **Bilingual Residents.** The GSAs will gather information regarding the languages spoken in the communities within the basin and provide translation services for the languages as appropriate per the Dymally-Alatorre Bilingual Service Act.
- **Tribal Governments.** Per SGMA §10720.3(c), any federally recognized Indian tribe may voluntarily agree to participate in the planning, financing, and management of groundwater basins. There are no federally recognized Native American tribes within the geographic boundaries of the San Luis Obispo Valley Basin. However, the Northern Chumash Tribal Council community encompasses the County area. Therefore, the San Luis Obispo Valley GSAs will refer to DWR’s [Engagement with Tribal Governments Guidance Document](#) and will contact the tribal representative to invite participation in GSP development.

Stakeholder Workshops

Stakeholder workshops are designed to create opportunities for stakeholders and other interested parties to provide meaningful input during GSP chapter development. The workshop schedule is aligned with the GSP development schedule (**Appendix D**) for this purpose. The workshops will be led by technical experts such as consultants or GSA staff. Workshop dates will vary based on when input is deemed most useful. Suggestions for optimizing the benefit of the workshops are listed below.

- Choose workshop venues, dates, and times to maximize stakeholder participation.
- Use the Portal to inform interested parties about workshops during GSP development.

⁵ Per DWR Disadvantaged Communities Mapping Tool at <https://gis.water.ca.gov/app/dacs/>; accessed May 28, 2019

- Announce the Portal at stakeholder workshops and encourage attendees to sign up.

Groundwater Sustainability Commission Meetings

Regular meetings of the Groundwater Sustainability Commission provide an opportunity for City and County staff, participating parties, and their consultants to present updates on the status of GSP development. Meetings are scheduled every three months (quarterly). See the GSP development schedule (**Appendix D**) for planned dates. An interested party may sign up on the emailing list using the Portal to receive updates on meeting dates and times. Meetings of the Groundwater Sustainability Commission are subject to the Brown Act and are open to the public.

Public Notices and Hearings

Meeting notices will be sent in advance of stakeholder workshops and Commission meetings. SGMA requires a publicly noticed hearing at three distinct points in GSP development:

- At GSA formation §10723(b) – this process is complete
- When a GSP is adopted or amended (§10728.4)
- Before imposing or increasing fees

Public Draft GSP Documents

When draft GSP component documents (e.g., chapters) are released by the Commission, they will also be posted to the Portal and will be open for public comment. A comment form will be available on the Portal to submit comments on draft documents by chapter and section. These comments will be considered when revising the public draft documents and finalizing the Final Draft GSP chapters.

Tools for Communication

Initially, the GSAs anticipate producing the informational materials listed below.

GSA Website

The County has a webpage dedicated to SGMA implementation in the San Luis Obispo Valley Basin. Both the City and County websites point to this page⁶ to share information on GSP development. The site will be supplemented by the Portal as discussed below.

Groundwater Communication Portal (Portal)

The GSAs will use the San Luis Obispo Valley Basin Portal as a tool to communicate with interested parties. The Portal will store interested party information and distribute e-mail invitations for events posted to the calendar, these events may include GSC meetings, workshops, and other outreach events. There are additional tools within the Portal that will be used to enhance communication. These tools include the following:

- **E-Blast.** E-mails will be sent to interested parties for those who sign up for email notifications on the Portal using the e-blast tool. E-blasts will be effective for sending reminders of upcoming deadlines, such as the close of a survey or comment period.
- **Public Comment Form.** During public comment periods, a form will be available on the Portal for interested parties to submit comments on draft GSP documents. The form allows comments

⁶ [https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-\(SGMA\)/San-Luis-Obispo-Valley-Groundwater-Basin.aspx](https://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-(SGMA)/San-Luis-Obispo-Valley-Groundwater-Basin.aspx)

by chapter and automatically stores the information for GSA review, reducing the risk of misplaced comments.

Direct Mailing

Communications about GSP development will be sent only in digital format. For those who don't have access online or prefer to receive direct postal mailings, the agenda and agenda packet will be mailed to those who request it. There may be times when a direct postal mailing is appropriate. The County sent a mailer in May 2019 to provide information about the next two Commission meetings. The mailer also includes a request form for the recipient to fill out and return to the County if he/she desires to receive notification of future events via postal mail. A copy of the mailer is provided as **Appendix E**.

Outreach Materials

Given previous outreach efforts within City limits, the City does not believe a direct mail piece would be effective in reaching community members or the DAC population. To reach these community members, the City plans to direct outreach efforts for SGMA meetings to online resources, public events such as a Farmer's Market, and with outreach at several City kiosks at City facilities including the finance office where utility bills are paid, the parks and recreation department where after-school programs are coordinated, and at other City facilities such as the Senior Citizens Center.

FAQ

A frequently asked questions (FAQ) document will be created and updated periodically throughout the GSP development. The FAQ will address questions about SGMA, San Luis Obispo Valley Basin GSAs, and the development of the GSP. Updates to the FAQ will be posted on the Portal and on the County and City websites.

7. Evaluation and Assessment

The activities identified in this C&E Plan are designed to meet the goals and objectives identified in **Section 2**. Below, **Table 3** lists tasks compiled from the contents of this C&E Plan. This is a working list that will be modified and updated as needed throughout GSP development.

Table 3. Outreach Tasks

C&E Plan Section	Task	Description
4	Launch Groundwater Communication Portal (GCP)	Link to Portal from existing website, announce URL at Commission meeting, post future meetings to calendar, send invitations
5	Conduct Stakeholder Survey	Modify DWR's stakeholder survey for this basin, collect stakeholder feedback via custom survey (Appendix C)
6	Assess need for translation services	Document the GSA determination of what constitutes a substantial number of non-English speaking people per the Dymally-Alatorre Bilingual Service Act and the level to which translation services will be provided
6	Public Postings	Post information about GSP development and meetings in public spaces within the City limits such as Farmer's Market and City facilities
6	Conduct Stakeholder Workshops	Conduct stakeholder workshops per the GSP Development Schedule (Appendix D)
6	Public Notices	Send meeting notices in advance of stakeholder meetings, including Commission meetings
6	Direct Mailing	Send direct mail to land owners in unincorporated areas of the basin to announce GSP development and Commission meetings. Stakeholders who request it may have the agenda and agenda packet sent to them
6	Hold a public hearing for GSP adoption	Per SGMA § 10728.4, give 60-day notice and hold a public hearing to adopt the final GSP before submitting to DWR
6	Include GCP URL on printed materials	Educate public about where they can find information and updates related to groundwater management in the basin
6	Announce GCP at public meetings	Educate public about where they can find information and updates related to groundwater management in the basin (GCP)

Like the list above, this C&E Plan is a living document to be updated as needed throughout GSP development. Successful use and implementation of the task list and C&E Plan will indicate success.

8. Appendices

- Appendix A. Stakeholder lists submitted at time of GSA formations**
- Appendix B. Groundwater Communication Portal (GCP)**
- Appendix C. San Luis Obispo Valley Basin Stakeholder Survey**
- Appendix D. GSP Development Schedule**
- Appendix E. Postal Mailer: Groundwater Sustainability Plan Update**
- Appendix F. References**

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Appendix A.

Stakeholder lists submitted at time of GSA formations

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GSA Formation

Exhibit D: List of Beneficial Users

Initial List of Interested Parties within the San Luis Obispo Valley Basin

Pursuant to the California Water Code Section 10723.2, the San Luis Obispo Valley Basin – County of San Luis Obispo Groundwater Sustainability Agency, in coordination with other GSAs within the San Luis Obispo Valley Groundwater Basin (Basin), will consider the interest of all beneficial uses and users, as well as those responsible for implementing a Groundwater Sustainability Plan (GSP). The County of San Luis Obispo has developed a list of interested parties and will revise the list as needed throughout the development of the GSP. An initial list of stakeholders and interested parties within the proposed San Luis Obispo Valley Basin – County of San Luis Obispo GSA service area, as defined in the water code, follows.

Agency:

County of San Luis Obispo
San Luis Obispo County Flood Control & Water Conservation District
City of San Luis Obispo
Coastal San Luis Resource Conservation District

Water Corporations Regulated by PUC or a Mutual Water Company:

Edna Ranch Mutual Water Company - East
Golden State Water Company - Edna
Varian Ranch Mutual Water Company
Edna Valley Growers Mutual Water Company
Maxwellton Mutual Water

Agricultural users:

Individual agricultural landowners
Farm Bureau
Coastal San Luis Obispo Resource Conservation District
UC Cooperative Extension
USDA Conservation Service
USDA Farm Service Agency
Grower-Shipper Association
SLO Wine Country Association

Domestic well owners:

Individual rural residential/suburban landowners
Tiffany Ranch
O'Conner Way

Municipal well operators:

Covered in other categories

Public water systems:

(per EHS records)
141 Suburban Road Water Supply
200 Suburban Road Water Supply
Bear Valley Water Company

GSA Formation

Exhibit D: List of Beneficial Users

Initial List of Interested Parties within the San Luis Obispo Valley Basin

Buttonwood Industrial Park- Inactive
CB&I Constructors Inc
Chevron - Tank Farm
Congregation Beth David
Copeland S Investments
East Airport Fiero Lane Water Company
Edna Valley Vineyard
Elks Lodge #322
Ernie Ball Inc
Fiero Lane Water Company
Hidden Hills Mobilodge
Higuera Apartments
Holdgraferter & Associates
Horizon Lane Water Supply
Irish Hills
J M Sims Water Supply
Jespersen Ranch
Laureate Water Company
Madonna Inn Water Company
Noll Properties Industrial Park
Paragon Triangle Water Supply
Poly Ranch
R. Howard Strabaugh Inc
San Luis Business Park
San Luis Sourdough - Inactive
San Luis Water & Power
SLO County Farm Bureau
SLO Partners
Sunset Drive-In Snack Bar
Tank Farm Business Park
Tank Farm Industrial Plaza
Tiger Water Supply
Toyota San Luis Obispo
Vachell Water System
Wallace Water Systems
Whitson Industrial Park
Williams Water Company
Edna Ranch West (not in basin)

Local land use planning agencies:

City of San Luis Obispo
County of San Luis Obispo
San Luis Obispo Council of Government (SLO COG)

GSA Formation

Exhibit D: List of Beneficial Users

Initial List of Interested Parties within the San Luis Obispo Valley Basin

Environmental users of groundwater:

Central Coast Salmon Enhancement
The Nature Conservancy

Surface water users:

Individual agricultural landowners
City of San Luis Obispo
Central Coast Salmon Enhancement

Federal government:

U.S. Fish & Wildlife

California Native American tribes:

Chumash – no specific water uses in area

Disadvantaged communities:

Covered under other categories

Appendix B.

Groundwater Communication Portal (Portal)

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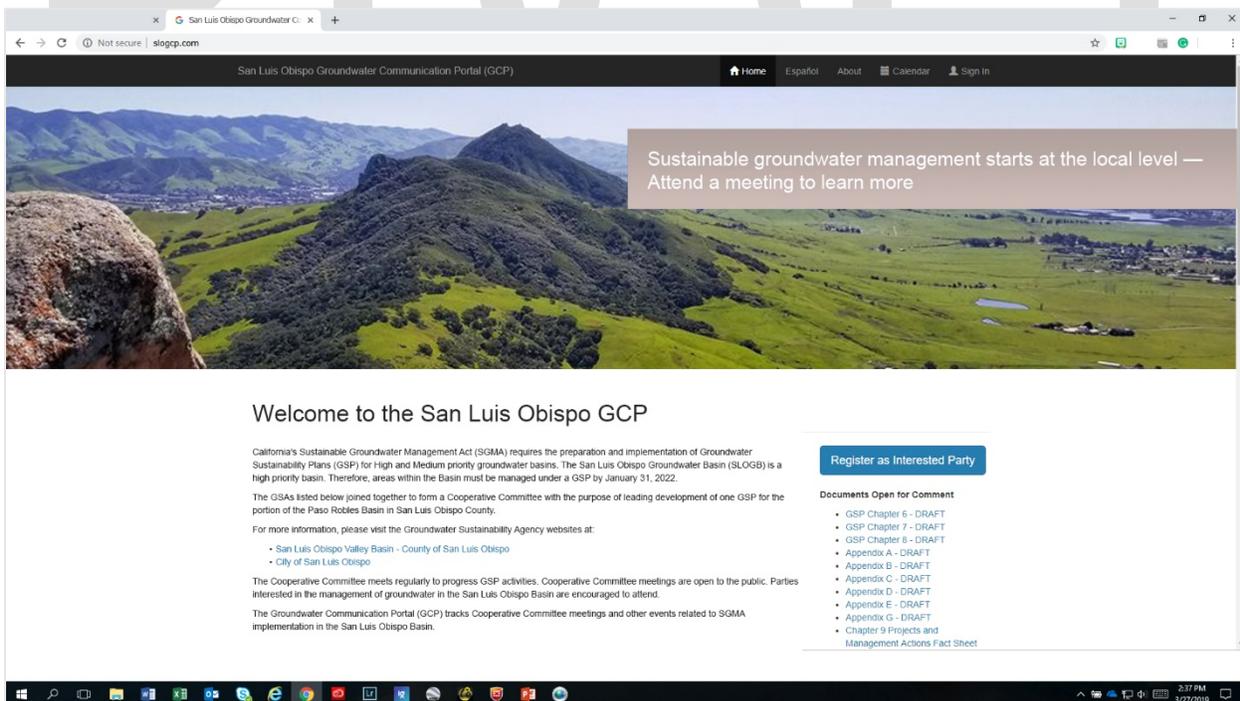
San Luis Obispo Valley Basin Groundwater Communication Portal (Portal)

GEI Consultants developed a tool to help our clients with their SGMA outreach efforts. The tool, referred to as the Groundwater Communication Portal (Portal), can be customized for any groundwater basin to track engagement efforts. The GCP is a web-based tool where you can post events and automatically inform interested parties with the click of a button. Interested parties can register with the GCP to stay informed about events related to GSP development and register for individual events to receive updates.

The GCP serves as a repository for all information about GSA meetings and interested parties. Storing all stakeholder engagement information in one place will be beneficial both for creating the communications section of the GSP and for continued tracking of outreach efforts moving forward to GSP 5-year updates and implementation. The Portal's administrative functions include report generation, so you can easily generate your list of interested parties or details about events (e.g., who was notified). Administrators may also add attachments to the events, including items such as meeting agendas, minutes, and sign-in sheets.

Portal Features

- Maintain the GSAs' list of interested parties
- Allow interested parties to self-register
- Post meeting details and documents
- Automatically notify interested parties with the click of a button
- Track who was notified and who replied to your invitation
- View a calendar of events
- Send e-mail blasts
- Track outreach efforts with a communication log
- Upload project documents and collect public comments



Draft design for the San Luis Obispo Valley GCP

Appendix C.

San Luis Obispo Valley Basin Stakeholder Survey

(not included in this draft)

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Appendix D.

GSP Development Schedule

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Appendix E.

Postal Mailer: Groundwater Sustainability Plan Update

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SLO Basin Groundwater Sustainability Plan Update

The Groundwater Sustainability Commission (GSC) for the San Luis Obispo Valley Groundwater Basin (SLO Basin) is preparing a Groundwater Sustainability Plan (GSP). The purpose of the GSP is to sustainably manage our groundwater resources and meet the requirements of the Sustainable Groundwater Management Act (SGMA). All interested stakeholders and members of the public are encouraged to participate to help guide the GSP development process.



The GSC held a meeting on April 4, 2019 to initiate and provide an overview of the GSP process. The SLO Basin's pathway to sustainability through the development of a GSP is described below.



Upcoming Meetings

JUNE 2019

- » **Wednesday, June 12 || 3:30pm**
Groundwater Sustainability Commission Meeting
 - Draft Communication and Engagement Plan
 - Groundwater Communications Portal Debut
 - Integrated Groundwater-Surface Water Model

AUGUST 2019

- » **Date and Time: TBD**
Groundwater Sustainability Agency Workshop

June 12 meeting located at:

SLO City/County Library
995 Palm Street
San Luis Obispo, CA 93401

If you would like to receive email notification, please sign up for the SGMA Email List at: www.slocounty.ca.gov/slobasin

At this website you can also find out information about progress to-date and all posted agendas and meeting materials.

Postal Mailing List Request Form San Luis Obispo Valley Basin - County of San Luis Obispo Groundwater Sustainability Agency

If you wish to receive meeting notification and printed meeting materials by postal mail, please provide your contact information below: (please check one)

- Agenda
- Agenda Packet (a fee may be applied)
(includes the agenda)

Name _____

Company _____

Address _____

City, State, Zip _____

Please tear along the dotted line and return this Postal Mailing List Request Form to:

Dick Tzou
San Luis Obispo County Public Works Department
County Government Center, Room 206
San Luis Obispo, CA 93408

Email: dtzou@co.slo.ca.us | Phone: (805) 781-4473



Appendix F.

References

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Stakeholder Communication and Engagement Guidance Document for Groundwater Sustainability Plan, Department of Water Resources, January 2018

Engagement with Tribal Governments Guidance Document for Sustainable Management of Groundwater, Department of Water Resources, June 2017

DRAFT

Groundwater Sustainability Commission
for the San Luis Obispo Valley Groundwater Basin

June 12, 2019

**Agenda Item 7 - A Presentation on the Selection of an Integrated Surface and Groundwater Flow Model
(Presentation Item)**

Recommendation

a) Receive an update on the selection of an integrated surface and groundwater flow model platform.

Prepared by

Michael Cruikshank, Water Systems Consulting, Inc.

David O'Rourke, GSI Water Solutions, Inc.

Discussion

The WSC Team, led by GSI Water Solutions, Inc. (GSI), and supported by WSC and Cleath Harris Geologists (CHG) has been tasked with the development of an integrated groundwater/surface water flow model for use in supporting the GSP development. The model will be used to estimate future groundwater levels in the basin, and to demonstrate the effect that various proposed management actions will have on the goal of achieving sustainability by 2042.

Available modeling methods were researched and evaluated for their ability to meet project needs and the general modeling requirements of SGMA which states:

23 CCR §352.4(f) Groundwater and surface water models used for a Plan shall meet the following standards: (1) The model shall include publicly available supporting documentation. (2) The model shall be based on field or laboratory measurements, or equivalent methods that justify the selected values, and calibrated against site-specific field data. (3) Groundwater and surface water models developed in support of a Plan after the effective date of these regulations shall consist of public domain open-source software.

The following modeling platforms were considered and evaluated: MODFLOW + HSPF (Coupled Model), GSFLOW, MODFLOW-OWHM, DWR Integrated flow model (IWFm). All four options would meet the technical requirements of an integrated groundwater/surface water model to support the GSP development in the SLO Basin. However, GSFLOW offers the representation of the groundwater basin watershed from the headlands to the outflow from the groundwater basin, development of streamflow estimates for ungaged streams, and an appropriate level of detail to simulate different management actions.

The WSC team will present the results of the various integrated surface and groundwater flow model platforms evaluated for developing the SLO Basin GSP. The WSC Team recommends the selection of GSFLOW to the GSA staff as the integrated groundwater/surface water model for use in support of the SLO Basin GSP.

Attachments:

1. Presentation



SAN LUIS OBIPSO VALLEY GROUNDWATER BASIN GROUNDWATER SUSTAINABILITY PLAN

Groundwater Sustainability Commission GSP Meeting #2
June 12, 2019



AGENDA

- Pathway to Sustainability
- Need for a Model
- Selection of an Integrated GW/SW Model
- Schedule



2

GSP Phases

BUILD TRUST THROUGH CLARITY, CONSISTENCY, AND INVOLVEMENT

PHASE 1

FACT REPORTING AND EDUCATION

- GSP Kickoff
- C& E Plan
- Plan Area and Basin Setting: Hydrogeologic Conceptual Model, Current Historical GW Conditions, and Water Budget
- Groundwater Model Development
- Data Management System

March 2019 to August 2020

PHASE 2

SUSTAINABLE GOAL SETTING

- Sustainable Management Criteria: Management Areas
- Sustainability Goal Measurable Objectives, Minimum Threshold, and Undesired Results

January 2020 to July 2020

PHASE 3

PLAN TO SUSTAINABILITY

- Projects and Management Actions to Achieve Sustainability
- Plan Implementation: Estimate Costs and Schedule

June 2020 to February 2021

PHASE 4

GSP DOCUMENTATION

- Administrative Draft GSP
- Final GSP

October 2020 to August 2021

SGMA DEFENSIBLE PLAN

3

PATHWAY TO SUSTAINABILITY

ADDRESSING THE SIX UNDESIRABLE RESULTS



Chronic Lowering of Groundwater Levels



Water Quality Degradation



Reduction of Groundwater Storage



Interconnected Surface Water Depletions



Land Subsidence



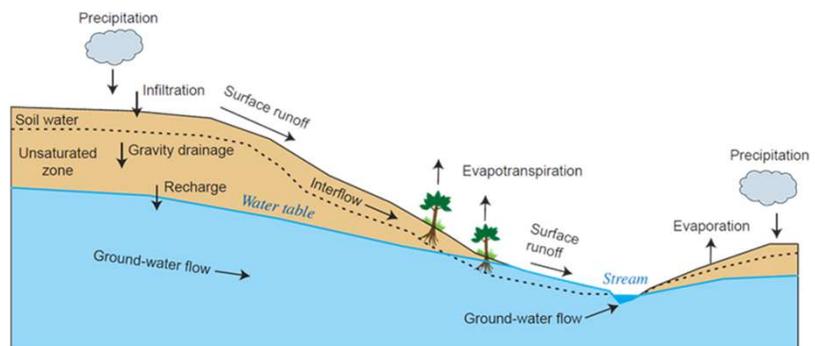
Seawater Intrusion

4

Need for a Groundwater/Surface Water Model

Selection of a Modeling Platform

- A Model is a tool used to represent hydrologic processes, including the movement and use of water.



Modeling Supports the Development of the GSP

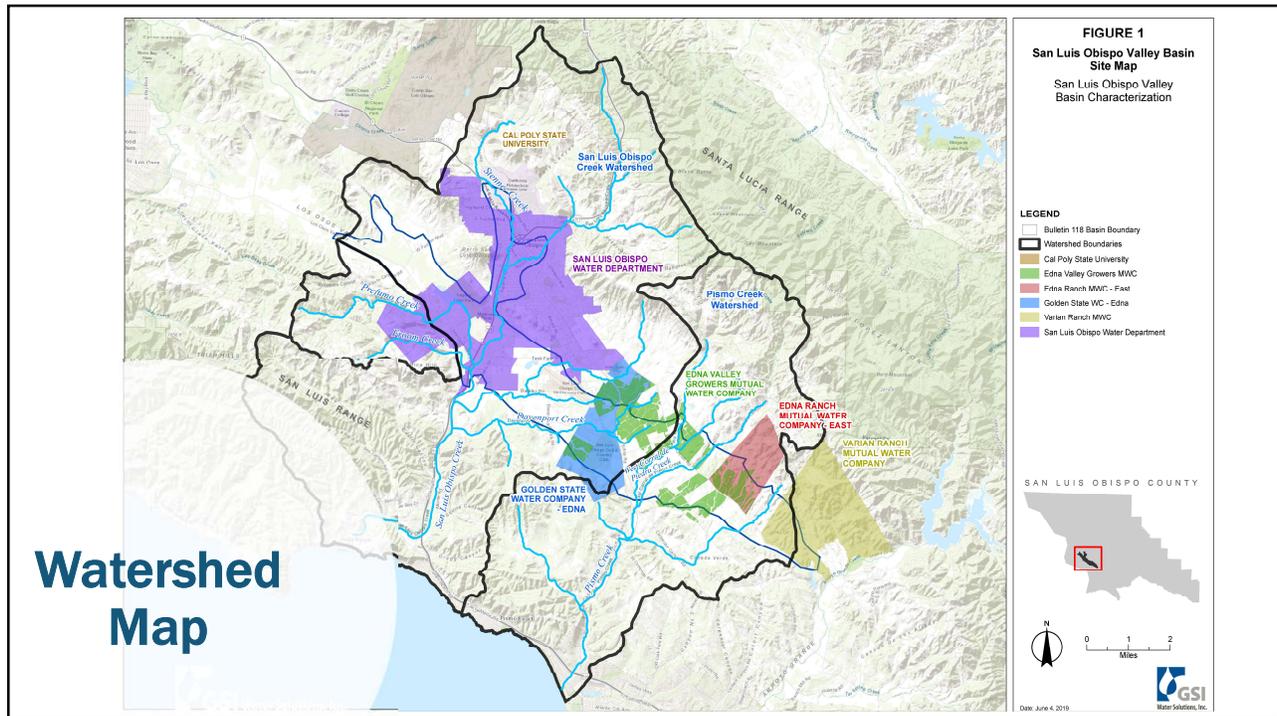
- Supporting the development of the water budget
- Establishing the Sustainable Management Criteria (sustainability goal, undesirable results, minimum thresholds, and *measurable objectives*)
- Supporting identification and development of potential projects and management actions to address undesirable results that exist or are likely to exist in the future
- Supporting the refinement of the monitoring network in the basin over time

DWR 2016 Modeling BMP ⁷

GW/SW Modeling

- Simulates both groundwater and surface water processes
- They can consider feedback processes that affect the timing and rates of precipitation, evapotranspiration, soil-zone flow, surface runoff, and ground-water/surface water interactions
- Wholistic approach to modeling on the watershed scale
- Ability to produce comprehensive water budgets
- Can estimate streamflow in ungaged streams
- Eliminates the necessity of estimating direct recharge to groundwater
- Multiple options are available.

8



Selection of an Integrated Groundwater/Surface Water Model

WSC
WATER SYSTEMS CONSULTING, INC.

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Selection Criteria

- Capability to realistically model essential groundwater – surface water interactions, including rainfall-runoff relationships, streamflow accumulation, surface-water hydrology, variable groundwater elevations, perennial and seasonal groundwater interaction between surface water and groundwater, and irrigation-related return flows to the aquifer
- Perceived credibility, as demonstrated by citation in the peer-reviewed literature
- Meets DWR SGMA public domain requirements
- Ability to model recharge from irrigation and septic systems

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Selection Criteria

- Ability to meet project requirements within the defined scope and budget
- Longevity of model, availability of support/updates
- Transparency
- Degree of leveraging information developed during development of previous models and investigations.
- Proven use for similar applications

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Groundwater Model MODFLOW

- Industry Standard. Most widely used groundwater modeling code in the world. Grid cell-based approach.
- Multiple updates in the past several years
 - MODFLOW-2005
 - MODFLOW-NWT – Great for unsaturated zone and re-wetting of cells
 - MODFLOW-USG – Great for irregular geometry of geologic units (and new solver)
 - MODFLOW 6 – brand new, object-oriented.

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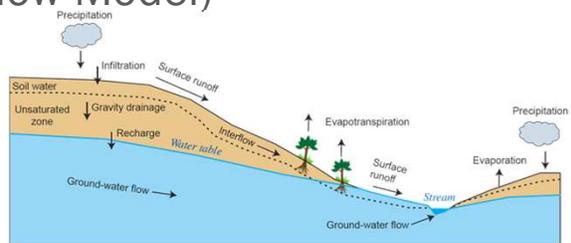
Surface Water Models

- HSPF (Hydrologic Simulation Program Fortran)
- PRMS (Precipitation Runoff Modeling System)
- SWMM (Storm Water Management Model)
- HEC-HMS (Hydrologic Modeling System)

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Integrated GW/SW Flow Models Considered

- MODFLOW + HSPF (or equivalent) coupled model
- GSFLOW
- MODFLOW-OWHM (One Water)
- IWFM (Integrated Water Flow Model)



Coupled GW/SW Model MODFLOW + HSPF (or equivalent)

- Can utilize code specifically designed for GW and SW
- Can use MODFLOW-USG
- Custom computer code required to couple the two individual models. Can be viewed as “black box”.
- California Water Code 23 CCR §352.4(f)(3) states that “Groundwater and surface water models developed in support of a Plan after the effective date of these regulations shall consist of public domain open-source software”.
- The original code required for coupling of two models could be interpreted to violate this requirement.

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GSFLOW

- USGS-developed integrated model
- Utilizes PRMS + MODFLOW
- Incorporates all computations and code under a unified umbrella
- PRMS starts with precipitation and includes computations of ET, soil zone processes, runoff, and deep percolation
- MODFLOW 2005/NWT
- Headwaters to Basin
- Appropriate for application to environmental flows, streamflow generation, water budget analysis, and watershed issues.

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MODFLOW-OWHM (One Water)

- USGS-developed model
- Agriculture-centric
- Calculates crop demand internally
- Allocates crop demand between SW and GW sources
- Complex canals, reservoir operations and rules can be represented
- MODFLOW 2005/NWT
- Does not calculate headwater streamflow generation; recommends using PRMS to do this.
- Appropriate for application to intensive agriculture issues.
- Makes simulation of land use changes, switching crops, fallowing land, etc. easier.
- OWHM Version 2.0 not officially released yet

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IWFM (Integrated Water Flow Model)

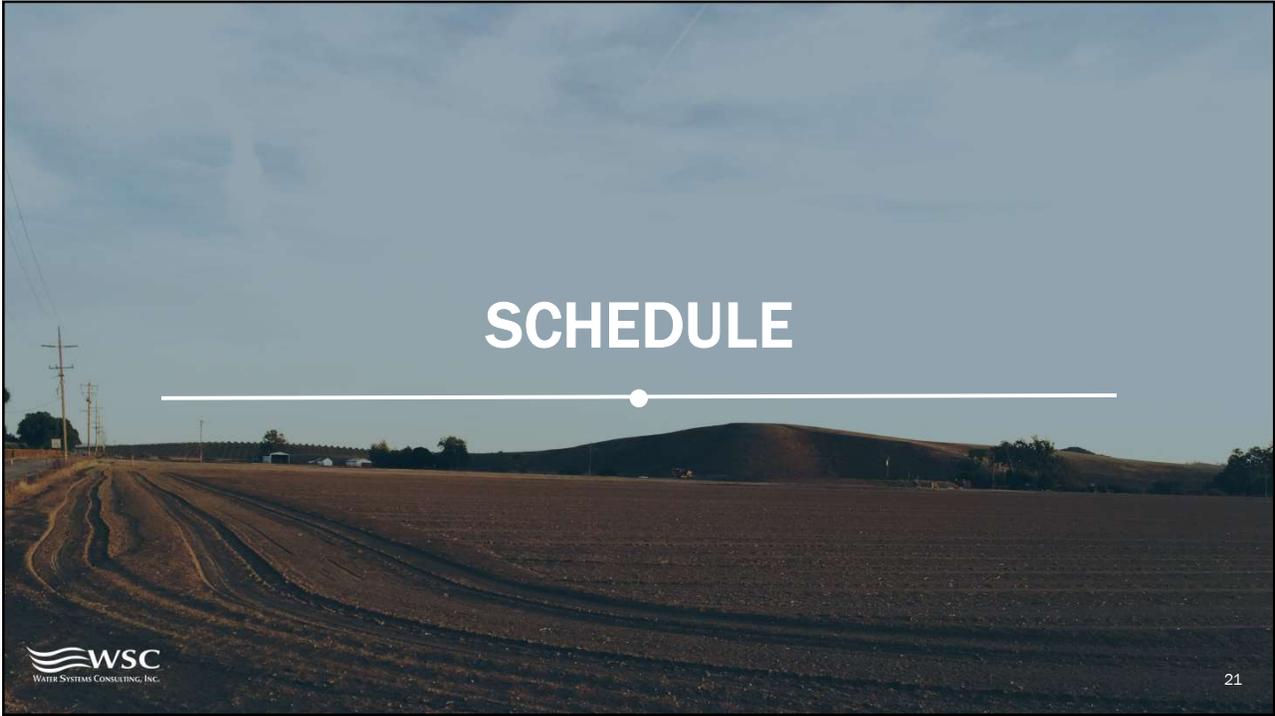
- CA DWR developed integrated finite element model
- Incorporates all computations and code under a unified umbrella
- Starts with precipitation and includes computations of ET, soil zone processes, runoff, and deep percolation
- Can calculate runoff from upstream watershed areas
- Appropriate for application to intensive agriculture issues.
- Not as widely used or documented as MODFLOW.
- GUI under development, not released yet.

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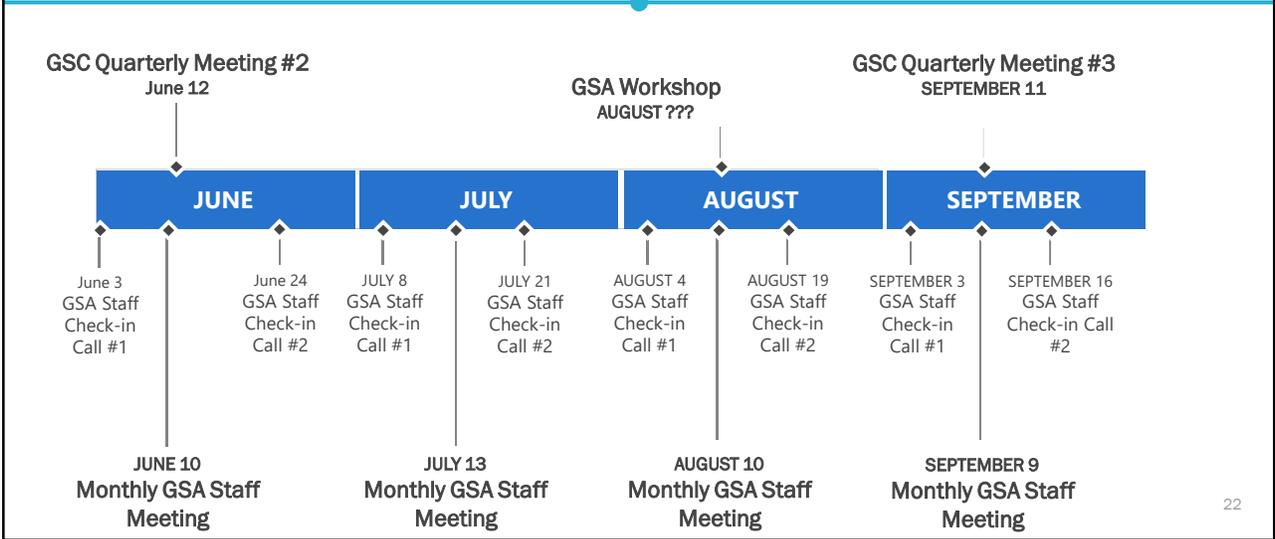
Conclusions

- Coupled Model: Custom code may violate open source and documentation requirement.
- MODFLOW-OWHM: No upstream watershed runoff calculation, version 2 not officially released.
- IWFM: Not as universally used or documented as MODFLOW-based approaches, no interface.
- GSFLOW: Total water approach, upstream flow calculation. **Recommended selection**

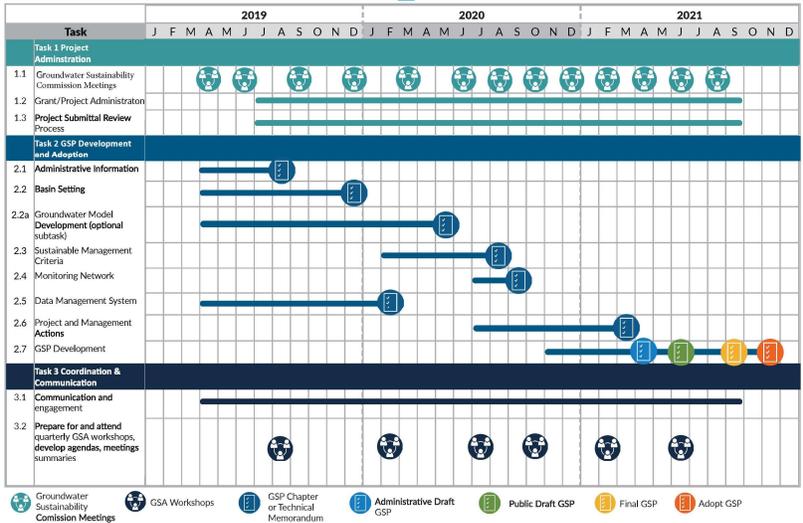
20



STRATEGIC MEETINGS & OUTREACH



PROJECT SCHEDULE



CLEAR DEFENSIBLE LASTING

SAN LUIS OBISPO VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT