

Solano Groundwater Sustainability Plan

August 25, 2021, Virtual Town Hall Meeting Summary

Held virtually via zoom from 5:30 pm - 7:30 pm PST



Virtual Town Hall Objectives

1. Discuss where the Groundwater Sustainability Plan (GSP) is in its phase of development
2. Present and discuss Sustainable Management Criteria (a key part of the GSP)
3. Present and discuss Projects and Management Actions, how they address priorities in the Subbasin, and discuss the community's questions, concerns, and comments
4. Prepare and encourage the community to review the draft sections and the final draft GSP when it's released

Summary of Participation: Number of Participants

Number of registrations: 169

Total participants: 108

Total participants from the general public: 93

Project team and Collaborative members: 15

Community Advisory Committee meeting participants: 7

Outreach Summary

View the full outreach summary report [here](#).

Meeting Highlights

The Solano Virtual Town Hall was held on August 25, 2021. During this meeting, Chris Lee, Solano GSP administrator, and Solano GSA representative gave a presentation on the Groundwater Sustainability Plan (GSP) development team, key components of the GSP, GSP funding, and the timeline for adoption of the GSP. Following this, the Community Engagement Team, including Emily Finnegan, from the Local Government Commission, and Aimee Ryan, Ag Innovations, gave a brief overview of the ways stakeholder input has informed the GSP development process thus far, and how the public can continue to engage in the process.

During the Virtual Town Hall, participants were asked to respond to six polls throughout the night, via Zoom and Slido. Participants were asked to identify the type of water users they were: 27% of participants reported that they are agricultural groundwater users and residential well owners. Participants expressed that the availability of groundwater for residential use, reliability of groundwater supply, and increasing groundwater recharge were amongst their top three groundwater sustainability goals. Participants also asked questions throughout all presentations by utilizing the Q&A feature on Zoom. Questions were answered by GSP technical team members.

Vicki Kretsinger, GSP Technical Team Lead from Luhdorff and Scalmanini, defined key terms involved in developing the GSP, offered an overview of groundwater modeling to date, water budget findings for the subbasin, and the thresholds the subbasin will establish to avoid undesirable results and maintain a sustainable yield. After, Ben Wallace, The Freshwater Trust, gave a brief presentation on how the subbasin can utilize agricultural practices that benefit groundwater. A full draft GSP is anticipated to be available for public review in October 2021. There will be an additional Virtual Town Hall when the full draft is released to the public later this Fall.

Virtual Town Hall Highlights

What follows are highlights from each of the presentations made by GSP project team members.

Overview of Solano's GSP Development Process & Where We Are At

Chris Lee, Solano GSP administrator, and Solano GSA representative gave a presentation on the Groundwater Sustainability Plan (GSP) development team, key components of the GSP, GSP funding, and the timeline for adoption of the GSP. You can view this slide presentation [here](#).

Overview

- Solano Subbasin is a medium priority basin and so falls under the jurisdiction of SGMA
- The GSP has several key sections, which include:
 - Identification of beneficial users; land use elements; subbasin surface, and groundwater conditions; historical, current, and projected water supplies; sustainability goals; modeling results, undesirable results; monitoring and data management; and plan implementation.
- There are five Groundwater Sustainability Agencies working together to develop the GSP: City of Vacaville GSA, Northern Delta GSA, Sacramento County GSA, Solano Irrigation District GSA, and Solano GSA.

GSP Development and Implementation Funding

- Funded with two grants - Proposition 1 and Proposition 68,
- Local agency funding
- DWR facilitation services support and technical services support.
- GSP implementation funding: will use a combination of grants/state funding and local fees.
 - As we move into the implementation phase of the GSP we will be holding public meetings to discuss the fee structure.
 - Fees will be implemented starting in January 2023.

GSP Adoption Timeline

- We hope to have a full draft GSP available for public review in October.
- We will hold another Virtual Town Hall when the full draft is released to the public.
- The Board of Directors for each of the five GSA will be adopting the GSP in December.

Community Engagement - Integrating Public Input into the GSP

Emily Finnegan, Local Government Commission, and Aimee Ryan, Ag Innovations, Solano Community Engagement Team, gave a brief overview of the ways stakeholder input has informed the GSP development process thus far, and how the public can continue to engage in the process.

Stakeholder Input: Key Concerns and Interests

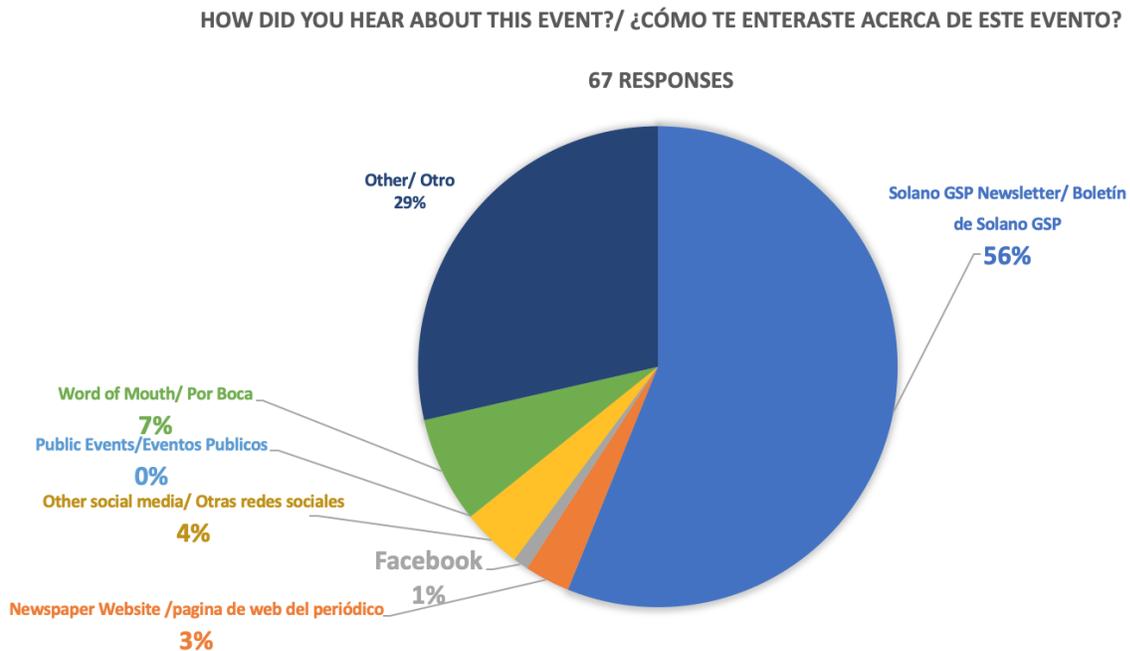
- Early public comments about groundwater levels in the Northwest area of the subbasin led to great consideration in the GSP, including proposed projects and management actions for that area.
- Public concerns about drinking water quality - Water quality is a major priority and has received great consideration in the GSP. The Local Government Commission hosted a Drinking Water Forum in 2020, which led to additional groundwater education.
- Public interest led to developing groundwater education curriculum in local schools as well as the [Groundwater Guide website](#).

Ways to Stay Engaged

- Town Hall Meetings - Another Town Hall will be held this November
- Community Advisory Committee
- GSA Board Meetings
- Review/Comment on the draft GSP on the [Solano GSP website](#)
- www.groundwaterguide.com - educational resource on Solano Subbasin

Participant Poll Responses

Virtual Town Hall participants were asked to respond to six polls throughout the night, via Zoom and Slido. Polls were offered in both English and Spanish. The following are participants' responses to questions regarding how they heard about the Town Hall, what kind of water user they are, and their top 3 groundwater management goals.



Other Responses:

- Solano RCD Meeting
- Email
- Dixon RCD
- Dixon/Solano Water Quality Coalition
- Dixon RCD Partnership meeting
- Solano GSP Website
- Email from UC Extension

What kind of water user are you (Choose 1)? / ¿Qué tipo de usuario de agua eres? 41 Responses	
I use groundwater for drinking, eating, cooking, or bathing on a regular basis/ Utilizo el agua subterránea para beber, comer, cocinar o bañarse con regularidad	5 %
Agricultural groundwater user/ Usuario agrícola de aguas subterráneas	27 %
Residential Well Owner/User/ Propietario Usuario de Pozo Residencial	27 %
City Resident (public water system user)/ Residente de la Ciudad (usuario del sistema público de agua)	10%
Surface Water User (User of water from riparian or canal sources)/ Usuario de Agua Superficial (Usuario de agua de fuentes ribereñas o de canales)	5 %
Municipal well operator/ Operador de pozo municipal	0 %
Commercial/Industrial groundwater user/ Usuario de agua subterránea comercial / Industrial	0 %
Small community water system user/ Usuario del sistema de agua de una pequeña comunidad	2 %
Public water system operator/ Operador del sistema público de agua	2 %
CA Native American Tribe/ Tribu Nativa Americana de CA	0 %
Environmental Representative/ Usuario Ambiental	7 %
Local Agency (district, municipal, county)/ Agencia Local (distrito, municipal, condado)	5 %
Local Land use planners/ Planificadores Locales de Uso de la Tierra	0 %
State, Regional, or Federal Agency/ Agencia Estatal, Regional o Federal	7 %
Groundwater Monitoring Agency/ Agencia de Monitoreo de Aguas Subterráneas	0 %
Other/ Otro	2 %

**What are the top 3 groundwater management goals that are most important to you? /
 ¿Cuáles son los 3 principales objetivos de gestión del agua subterránea que son más importantes
 para usted?
 40 Responses**

Availability of groundwater for industrial and commercial use/ Disponibilidad de agua subterránea para uso industrial y comercial	8 %
Increasing water available in wells because of wells drying up/ Aumento del agua disponible en los pozos debido a que los pozos se están secando	28 %
Preventing seawater intrusion into groundwater/ Prevención de la intrusión de agua de mar en las aguas subterráneas	5 %
Decreasing subsidence (subsidence is land sinking due to a lowering of the groundwater)/ Subsistencia disminución la subsistencia es un hundimiento de la tierra debido a un descenso del agua subterránea)	10 %
Availability of groundwater for residential use/ Disponibilidad de agua subterránea para uso residencial	57 %
Availability of groundwater for environmental use: water availability for fish, fauna, groundwater dependent ecosystems / Disponibilidad de agua subterránea para uso ambiental: agua para peces, fauna, ecosistemas dependientes de agua subterránea	38 %
Increasing Groundwater Recharge (replenishing water into the water table)/ Aumento de la recarga de agua subterránea (reposición de agua en la capa freática)	40 %
Cost of groundwater supply/ Costo del suministro de agua subterránea	15 %
Availability of groundwater for agricultural use/ Disponibilidad de agua subterránea para uso agrícola	35 %
Reliability of groundwater supply/ Fiabilidad del suministro de agua subterránea	53 %
Quality of groundwater supply/ Calidad del suministro de agua subterránea	33 %

Update on Groundwater Conditions in the Solano Subbasin

Vicki Kretsinger, Luhdorff and Scalmanini Consulting Engineers and the GSP Technical Team, defined key terms involved in developing the GSP, offered an overview of groundwater modeling to date, water budget findings for the subbasin, and the thresholds the subbasin will establish to avoid undesirable results and maintain a sustainable yield. You can view the full slide presentation [here](#).

Overview

- Water resources play a critical role in the local economy and environment.
- The Solano Water Project, developed in 1960, reversed the groundwater declines that had occurred before its construction and put the subbasin back into sustainable use.
- The GSP Technical Team developed a Hydrological Conceptual Model to characterize the physical components and intersections of the surface water and groundwater systems in the basin.
- The GSP Technical Team has focused on identifying and monitoring the following to inform sustainable groundwater management:
 - Groundwater level changes
 - The land surface movement that may be inelastic (land surface movement that does not return to previous levels)
 - Groundwater quality: maximum nitrates and total dissolved solids
 - Surface water - groundwater connectivity
 - Groundwater dependent ecosystems

Groundwater Trends in the Northwest Solano Subbasin

- We have seen some groundwater decline overall in the Northwest area. Some wells show recovery following dry year conditions but not all have recovered. We are exploring possible projects and management actions to improve groundwater levels in this portion of the subbasin.

Solano Subbasin Water Budget

- Based on the Integrated Hydrologic Model - refined for local conditions
- Consider the water budget like you would a bank account
 - Inflows - Outflows = changes in groundwater storage
- Reserve is the change in the groundwater storage
- Current and future land use and climate change projections show that the subbasin has a net positive outflow to adjacent subbasins (of about 63,000 Acre Feet per Year, AFY).

Relating Groundwater Conditions to Avoidance of Undesirable Results

- Sustainable yield is met through the avoidance of undesirable results.
- 5 Sustainability indicators we are tracking in the Solano Subbasin:
 - Chronic lowering of groundwater levels: avoid levels with an ongoing decline
 - Reduction of storage: avoid groundwater levels with ongoing decline which could lead to less available groundwater
 - Degraded water quality: avoid groundwater that is unsafe to drink
 - Land subsidence: avoid groundwater level decline and effects on infrastructure
 - Surface water depletion: avoid effects on streamflow and stream/groundwater connections due to pumping

Tools to Identify On-Farm Recharge Opportunities in the Solano Subbasin

Ben Wallace, The Freshwater Trust, gave a brief presentation on how the subbasin can utilize agricultural practices that benefit groundwater. View the full slide presentation [here](#).

- Use of planning and implementation tools: web map, scenario planning tool, groundwater tracking, and crediting
- Optimal crop selection for different parts of the subbasin
- Optimal locations for groundwater recharge

Participant Poll Responses: Projects and Management Actions

Following the presentation from The Freshwater Trust on potential projects and management actions, participants were asked to respond to several polls. The following polls gave the public the opportunity to weigh in on the types of actions they would be interested in, the questions they would want answered before management actions were implemented, as well as how they would want to be notified of these actions were being considered for implementation.

POLL #1

Are you interested in participating in either of these now or in the future (Choose all interests)? / ¿Está interesado en participar en alguno de estos ahora o en el futuro?	
25 Responses	
Recharge, with stormwater capture/ Recarga, con captación de aguas pluviales	72%
Irrigation efficiency practices that benefit groundwater/Prácticas de eficiencia de Irrigación que benefician al agua subterránea	60%

POLL #2

What questions, if any, would you want to see answered before these management actions were implemented? / ¿Qué preguntas le gustaría que se respondiera antes de que se implementaran estas acciones de gestión?
Responses 12
Effect of winter recharge on permanent crops, for example, orchards.
Need to know what they are.
Will there be a posting before the implementation of any actions for public comment?
Are triggers for management actions using a conservative approach given limited data?
Orchard flooding has been proven effective in the south of the state (sandy soils); I am unsure of their effect on orchards with our heavier soils in the Dixon area.
I would like to see a method where the information is distributed to residents prior to Council approval.
Similar to a public hearing information distribution.
Seems like you are minimizing the effects of climate change. Are you sure this is wise?
Recharge credits for high efficiency and /or stormwater recharge
Costs/benefits fairness in application impact on land value
What are the costs of these actions?
What do you mean by "these"?
Would there be incentives offered for putting land to use in these actions?

POLL #3

How would you like to be notified if these management actions are being discussed for your area (choose 1)? / ¿Cómo le gustaría ser notificado si se están discutiendo estas acciones de gestión para su área? 29 Response	
Public meeting (virtual or in-person)/ Reunión pública (virtual o presencial)	24 %
Focus group meeting with different sectors of the community/ Reunión de grupo focal con diferentes sectores de la comunidad.	14 %
Announcements on the Solano GSP website/ Anuncios en el sitio web de Solano GSP	3 %
Announcements through the Solano GSP newsletter/ Anuncios a través del boletín GSP de Solano	28 %
Postcard mailing to residents/ Postal de correo a los residentes	21 %
Other/ Otro: Farm Bureaus, RCD's, 4-H programs, RCD, Dixon Resource Conservation District, emails, or calls	10 %

Participant Question and Answer

In this next section, we have done our best to capture the question and answers offered in the Q&A chat throughout the event. Members of the GSP project team took turns answering questions from meeting attendees. These answers have not been verified for technical accuracy or modified for the most effective language.

Do 400-foot-deep wells refer to bowl depth?

- A: That refers to the total depth of the well (bottom of the well casing).

Why are there two square "knockouts" in the northeast corner of the basin boundary?

- A: These are areas where some of the local agencies overlap into Yolo County.

I'm assuming groundwater pumping is an inherently losing process. So when I hear "stabilize" the aquifers, what does it mean in tangible terms - for example, is it okay to have water level drop within a certain tolerance per year?

- A: Yes, we see that every year. From spring to fall, groundwater is used for agricultural purposes. For the most part, we see these groundwater levels rebound from fall to spring during the nonagricultural season. There are sources of recharge that also occur and serve to replenish the aquifer.

What is the source of the 190,000 AFY of deep percolation water, rain?

- A: Yes, part of it is from precipitation falling within the Subbasin. A large part is the deep percolation of applied (irrigation) water.

Does the evaluation of outflow to adjacent sub-basins include consideration of climate change impacts foreseen by GSPs for those sub-basins?

- A: The model runs evaluating climate change do include climate change in adjacent subbasins within the extent of the model area.

That future-looking model predicts a humongous positive change to stream seepage. Am I confused about that, and, if not, why would that happen?

- A: Yes, there is an increase in stream seepage. This could in part be because of the climate change scenario guidance from DWR, which includes increased precipitation resulting in larger stream flows.

What is the structure of the subbasin? Are there barriers to flow from one area of the subbasin to another or is it effectively one large commingled pool?

- A: Subbasin boundaries do not represent subsurface barriers to groundwater flow. In this area, they are partly jurisdictional and partly based on other factors (e.g., rivers).
- A: There are faults within the Subbasin that can be impediments or conduits for flow. They are not believed to function as barriers to flow.

Are there geologic barriers that obstruct the flow in the subbasin so groundwater levels in one area may be significantly different than in other areas?

- A: There are no known barriers to lateral flow within the subbasin. The many clay layers in the subsurface do result in very different levels within different vertical zones within the subbasin.

With less furrow and more precision irrigation in the area wouldn't any deep percolation from irrigation water be declining over time? (i.e last 30 years)

- A: We do see some reduced deep percolation from changes in irrigation methods.

I don't see how seawater intrusion cannot be a concern going forward in the not too distant future.

- A: We have brackish water downstream, not true seawater. We have looked upon that as a potential concern with degraded water quality and true seawater intrusion and not true seawater intrusion.

How will the drought be accommodated for the thresholds - how long will a drought be considered a reason for short-term drops in groundwater levels?

- A: The thresholds attempt to address the potential for drought conditions to occur that are similar to the drought conditions that have occurred over the past 50 years.

These are some of our best and deepest soils. WHY is there ANY winter runoff from this region?

- A: We have some water years, such as 2017, that are very wet years. When we have saturated soils, percolation will slow down and excess water will flow over land or through surface water systems downstream to the Delta.

Is there consideration to limiting new well drilling? This would seem like one reasonable method to control groundwater level lowering.

- A: No limits on new well drilling are currently being planned. There are some local groundwater level declines in the Northwest Focus Area which will be monitored and, if needed, targeted for implementation of projects and management actions (mainly recharge).

Are draft sustainable management criteria currently available for us to review?

- A: Not quite yet. Section 6 will cover Sustainable Management Criteria. Hopefully, that will be out in the next month or so.

When you refer to Groundwater recharge, is this through percolation recharge or an injection well system for a direct surface to aquifer?

- A: The recharge we are currently focusing on for projects in the Subbasin is recharge from enhanced percolation.

Will the plan address the groundwater impact of the LEHR Superfund Site near Putah Creek?

- A: The plan will focus on water quality impacts that may be exacerbated by groundwater management activities included in the plan. It does not include remediation of pre-existing groundwater contamination.

Next Steps

- Stay Involved:
 - Comment on GSP Sections
 - September CAC Meeting
 - November Virtual Town Hall - Save the Date coming soon!
- GSA Board Meetings
- www.solanogsp.com and sign up for the Solano GSP newsletters
- Email info@aginnoventions.org with any questions