Home Gardens County Water District formed the Temescal GSA in 2017 through a memorandum of understanding. The City of Corona is leading the GSP effort with support from the Corona Department of Water and Power staff and additional consultants. The Technical Advisory Committee (TAC) provides input during GSP preparation, and TAC members communicate with other agencies and interested parties about GSP development. The GSP process is founded on public engagement and stakeholder outreach, which is the purpose of the public workshops.

Taylor explained that more information on the Temescal Basin and the Temescal GSP can be found in the Draft Plan Area Chapter that has been prepared. It is available for review on the Temescal GSA website (CoronaCA.gov/Groundwater). The Draft Plan Area Chapter includes the location of the Temescal Basin in relation to other basins and local hydrology, the public agencies with jurisdictional authority in the area, the general density of existing wells by type, and the current and historical land uses.

Groundwater Sustainability Plan Development

Taylor next provided a summary of the Temescal GSP workplan and schedule. Major Temescal GSP elements include data compilation; plan area; hydrogeologic conceptual model; groundwater model; sustainability goals and criteria; management actions, projects, and monitoring; and plan development. Data compilation and a Draft Plan Area Chapter are already complete. The next steps are to develop the hydrogeological conceptual model, assess current and historical groundwater conditions, and construct a numerical groundwater model. These will be used to calculate groundwater budgets and sustainable yield, so it is known how much groundwater is available for use. After that comes creation of sustainability goals and criteria, which define sustainability in the Temescal Basin. Management actions to meet sustainability goals will then be identified, and a monitoring program will be established. The Draft Temescal GSP will be made available for public review in Summer 2021 after completion of these steps. The final Temescal GSP will be completed by Fall 2021 prior to submittal to DWR.

Indicators for Sustainability

Taylor provided an overview of the six indicators for evaluating groundwater sustainability in a basin: chronic lowering of groundwater levels, reduction of groundwater storage, degradation of water quality, depletion of interconnected surface water affecting beneficial uses, land subsidence affecting land uses, and seawater intrusion (not applicable in the Temescal Basin). Sustainability is defined as local management and use of groundwater in a way that can be maintained without experiencing undesirable results. Undesirable results will be determined for each of the criteria and minimum thresholds will be developed to avoid those results.

Taylor explained the process for achieving sustainability in the Temescal Basin. First, goals and thresholds will be set for each sustainability indicator in the Temescal GSP. Next, the implementation phase will occur, and a monitoring plan will be established. Monitoring will focus on assessing each indicator and will likely include measures for monitoring groundwater levels, water quality, and land subsidence. In addition, the Temescal GSA will undertake projects, such as ones that increase water supply availability, and management actions, such as reducing water use or demand. All components for achieving sustainability will be revisited every 5 years. Monitoring results will be used to refine the Temescal GSP to help better reflect local conditions and changes so that sustainability can be a dynamic long-term practice for the Temescal GSA and Temescal Basin.

Discussion/Q&A

Hughes opened the floor for questions and discussion. Participants were encouraged to answer the following questions: 1) What water supply and quality goals are important to you? and 2) Is there information the project team should review?

- Are there more workshops scheduled?
- Can you share a bit about the efforts being taken to engage people and any future plans to engage the community in the plan?
- Orange County Water District (OCWD) thanks you for reaching out about the GSP process and will be submitting written comments. In 2017, OCWD submitted an alternative to a GSP for the Orange County Groundwater Basin that was approved in 2019. The Temescal Basin is adjacent to that basin, and coordination with Chino and our basin will be important in moving this item forward.
- OCWD owns and manages a large wetland and riparian habitat behind the Prado Dam. That area is dependent on interconnected surface water, so it will be important for the GSP to invest in groundwater dependent ecosystems.

How to Get Involved

Hughes explained how members of the public could be involved throughout GSP preparation, noting the importance of involving the many diverse communities and stakeholders of Corona, Norco, and Home Gardens to create a strong GSP for the Temescal Basin. There will be three public workshops, including the current one, to allow for people to get information about the GSP and give their feedback on its development. Prior to each workshop there will be several outreach methods to circulate information and boost attendance. These methods include emails, social media posts, and fact sheets. The next workshop will be held in winter of 2021 and will focus on sustainability criteria. Another workshop focused on management actions will be held in the spring of 2021.

Hughes spoke about other opportunities to get information about GSP development and provide comment. In addition to the workshops, TAC meetings are open to the public. The public may listen in on those meetings and speak during the public comment portion. The project team will also be giving periodic updates at City Council and Board Meetings, which the public can also attend and comment on. This will be true as well for the Adoption Hearing for the final GSP. Before the Adoption Hearing, there will be a 90-day public comment period.

In addition to these opportunities, draft chapters and other materials will be posted on the project website hosted by the City of Corona Department of Water and Power: CoronaCA.gov/Groundwater. The public can use the form on the website to make comments. Anyone who wants to be included on the mailing list should email Groundwater@CoronaCA.gov. People on the mailing list will receive updates on upcoming public workshops, meetings open to the public, and the availability of draft chapters for comment on the website.

Discussion/Q&A

Comments and questions are summarized below.

- It would be helpful to send out questions or topics for discussion ahead of the workshops to give people time to think about their responses.

6. Wrap-up and Closing

Hughes thanked everyone for participating and encouraged people to sign up for updates on upcoming workshops by emailing Groundwater@CoronaCA.gov to be added to the mailing list. The next public workshop will be held in winter of 2021.

Appendix A

Presentation Slides

TEMESCAL GSP PUBLIC WORKSHOP 1
TEMESCAL GSP TALLER COMUNITARIO 1

About the GSP

The Sustainable Groundwater Management Act or "SGMA" is a California law that gives local agencies new tools for managing groundwater and planning for the future. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Groundwater Sustainability Agency (Temescal GSA) in order to make a **Groundwater Sustainability Plan** for the Temescal Basin. Since groundwater is such an important resource for everyone, we need your help!

Sobre el GSP

La Ley de Gestión Sostenible de Aguas Subterráneas o "SGMA", por sus siglas en inglés, es una ley de California que otorga a las agencias locales nuevas herramientas para gestionar las aguas subterráneas y planificar para el futuro. La Ciudad de Corona, la Ciudad de Norco y el Distrito Hídrico del Condado de Home Gardens han formado la Agencia de Sostenibilidad de Aguas Subterráneas de la Cuenca de Temescal (Temescal Groundwater Sustainability Agency) o Temescal GSA a fin de crear un **Plan de Sostenibilidad de Aguas Subterráneas** para la Cuenca de Temescal. Dado que las aguas subterráneas son un recurso muy importante para todos, ¡necesitamos su ayuda!

TEMESCAL GSA

TEMESCAL GROUNDWATER SUSTAINABLY PLAN PUBLIC WORKSHOP 1

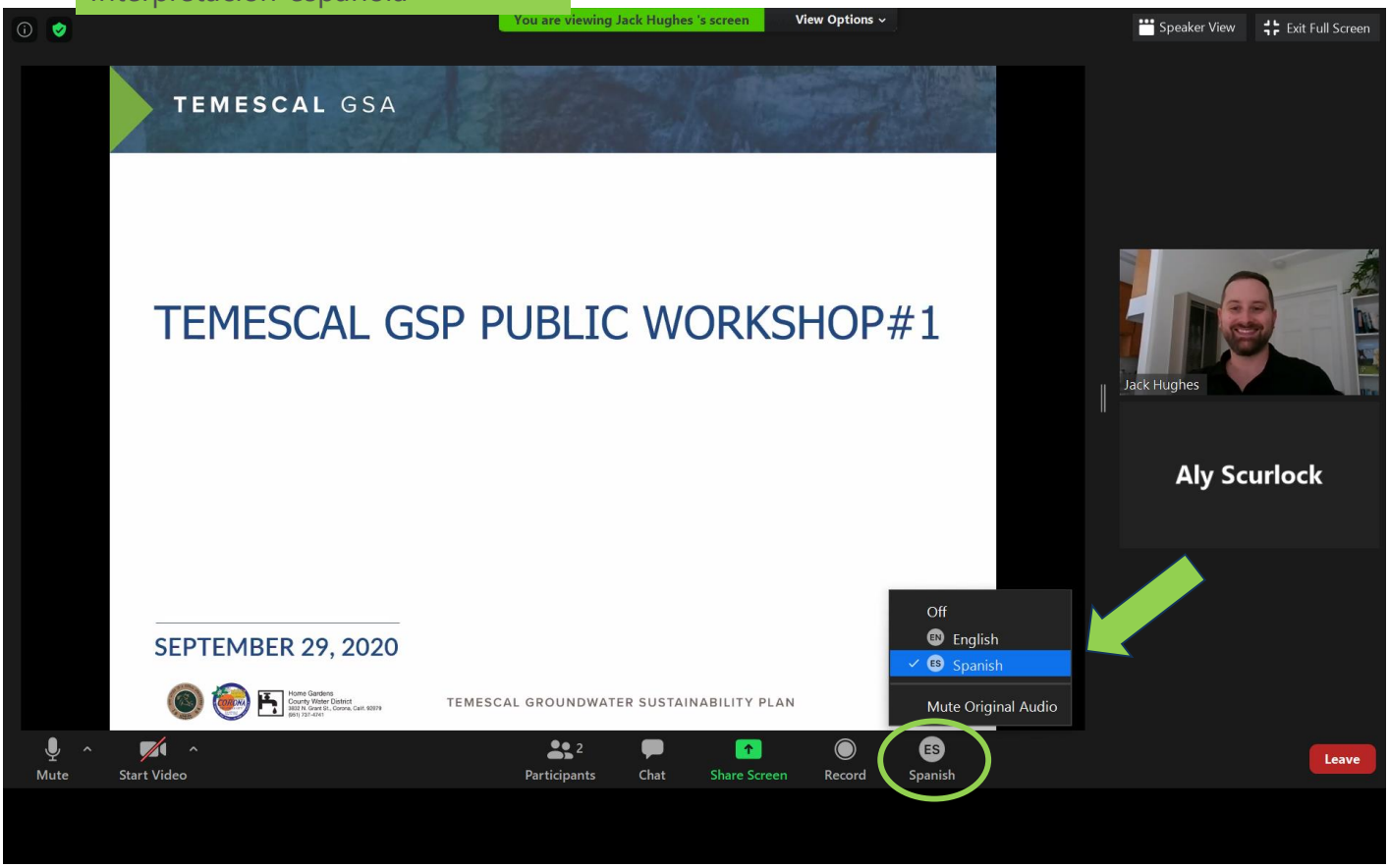
TEMESCAL GSP TALLER COMUNITARIO 1

SEPTEMBER 29, 2020 / 29 DE SEPTIEMBRE DE 2020

Home Gardens County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

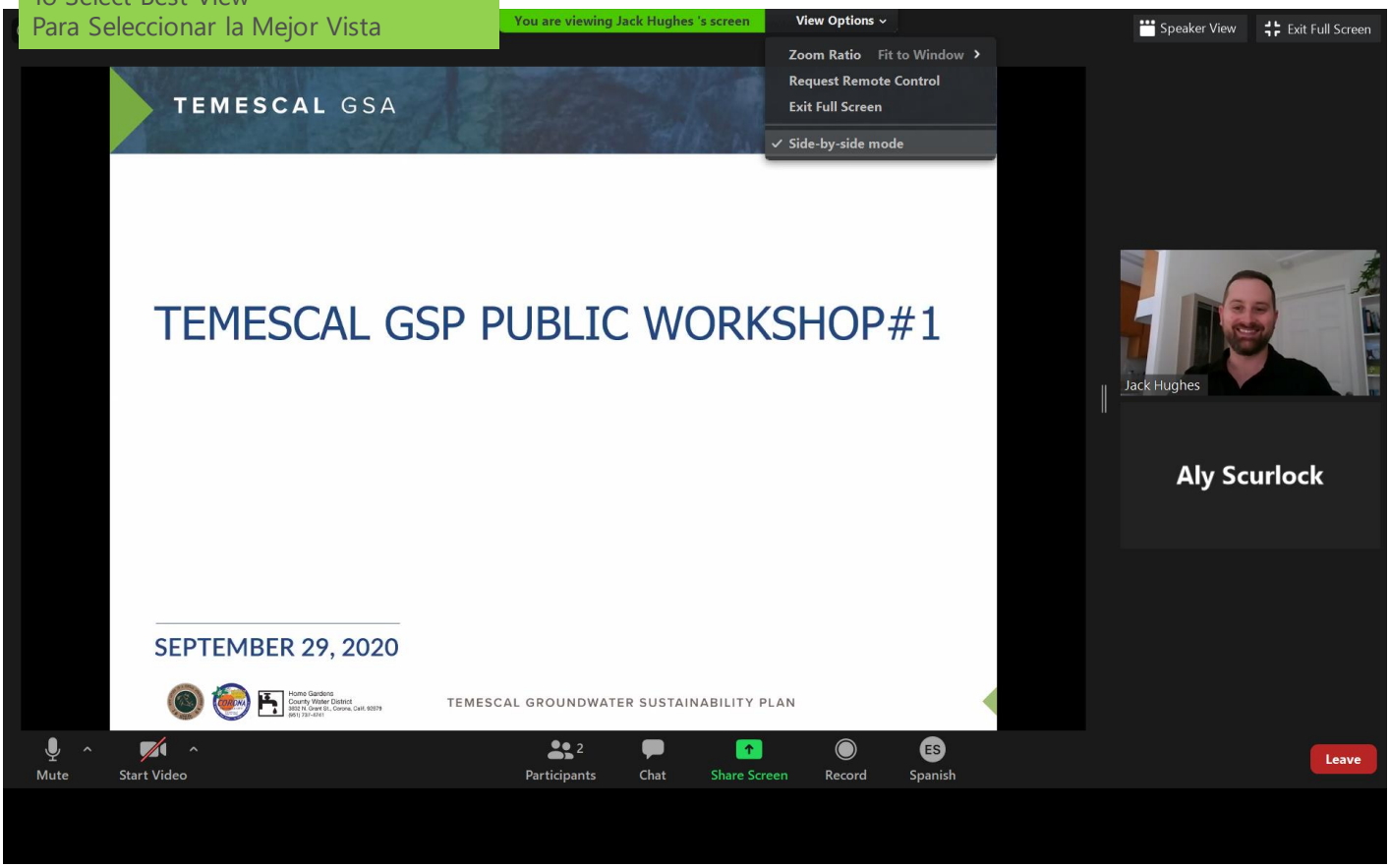
WELCOME
BIENVENIDOS

Interpretación española

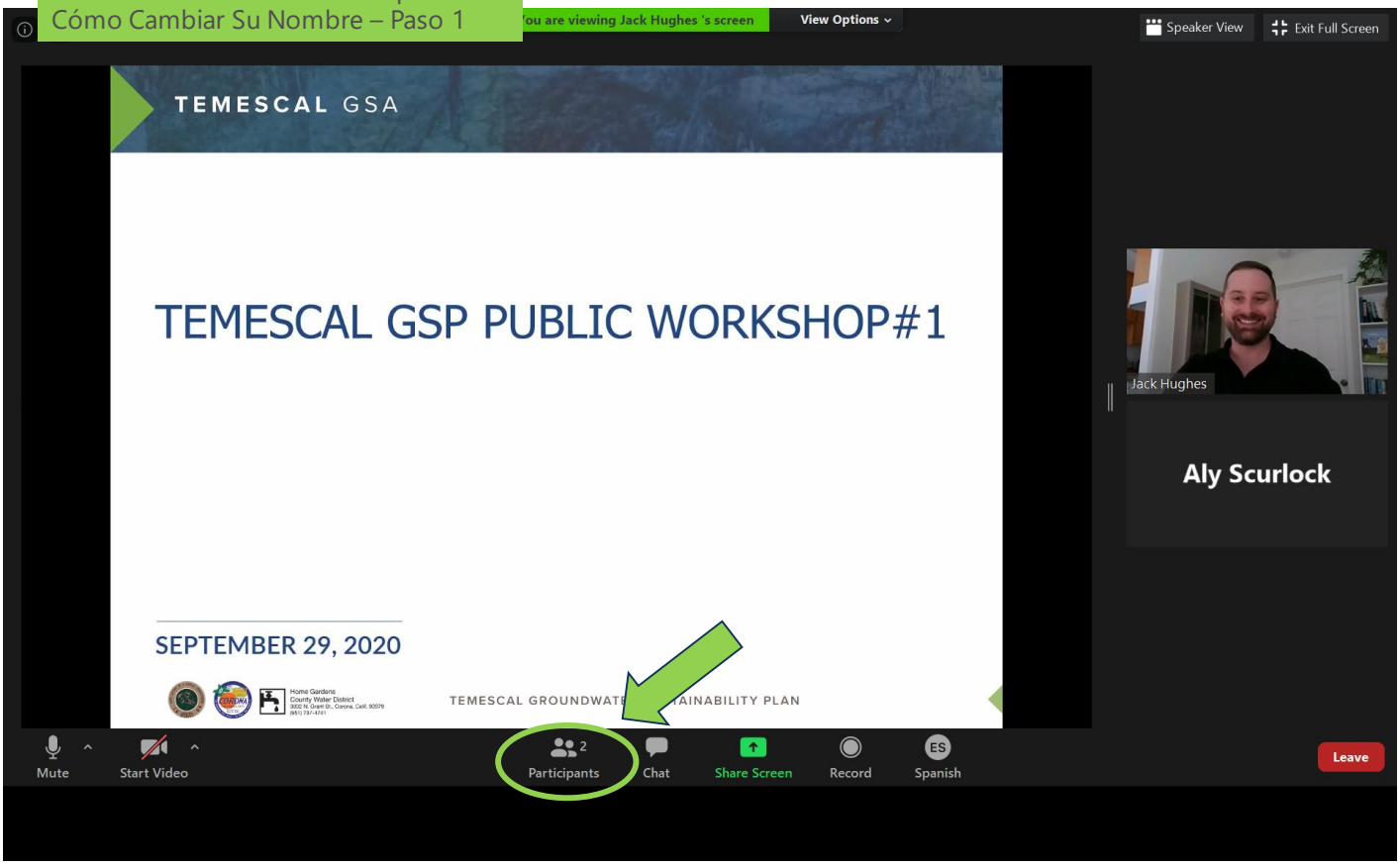


HOW TO USE ZOOM
CÓMO UTILIZAR ZOOM

To Select Best View
Para Seleccionar la Mejor Vista



How to Rename Yourself – Step 1
Cómo Cambiar Su Nombre – Paso 1



How to Rename Yourself – Step 2
Cómo Cambiar Su Nombre – Paso 2

WARM UP QUESTIONS
PREGUNTAS DE CALENTAMIENTO

» Where does the water in your tap come from?

» ¿De dónde viene el agua de tu grifo/llave?

a. Local rivers and lakes / Ríos o lagos locales
b. Local groundwater / Aguas subterráneas locales
c. Imported surface water / Agua superficial importada

» How much water comes from nearby sources?

» ¿Cuánta agua proviene de fuentes cercanas?

a. 0 to 20 percent / 0 a 20 por ciento
b. 20 to 40 percent / 20 a 40 por ciento
c. 40 to 60 percent / 40 a 60 por ciento
d. 60 to 100 percent / 60 a 100 por ciento

TEMESCAL GSA

WORKSHOP PURPOSE
PROPÓSITO DEL TALLER

» Give information about groundwater
Dar información sobre las aguas subterráneas.

» Introduce Sustainable Groundwater Management Act, the Temescal Groundwater Sustainability Agency, the Temescal Basin, and Groundwater Sustainability Plans.
Introducir la Ley de Gestión Sostenible de las Aguas Subterráneas, la Agencia de Sostenibilidad de las Aguas Subterráneas Temescal y la Cuenca del Temescal.

» Learn about your groundwater interests and what is important for you for the future of groundwater in the Temescal Basin.
Conocer sus intereses sobre el agua subterránea y lo que es importante para usted para el futuro del agua subterránea en la Cuenca del Temescal.

INTRODUCTIONS
PRESENTACIONES

TEMESCAL GSA

TIPS FOR A PRODUCTIVE DISCUSSION
CONSEJOS PARA UNA DISCUSIÓN PRODUCTIVA

- One speaker at a time
  Habla solo una persona la vez
- Keep input concise
  Sea conciso
- Actively listen
  Escuche activamente
- Offer solutions
  Ofrezca soluciones

YOUR INPUT MATTERS
SU OPINIÓN ES IMPORTANTE

» The planning team will consider your comments as they prepare the Groundwater Sustainability Plan.
El equipo de planificación considerará sus comentarios mientras prepara el Plan de sostenibilidad de aguas subterráneas.

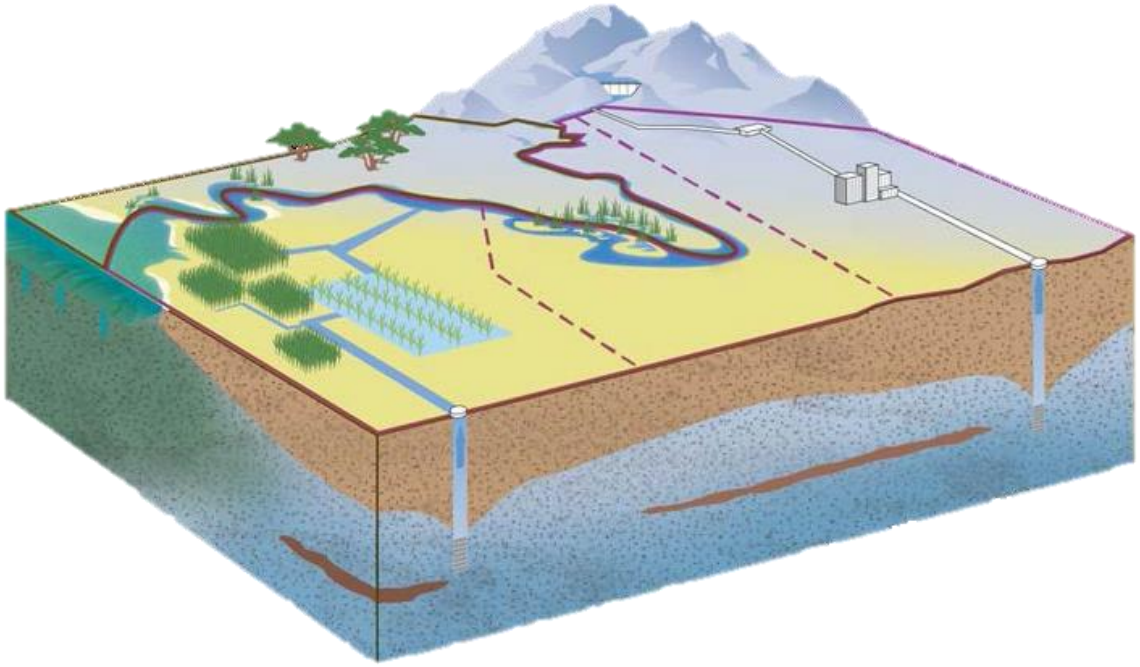
» Your input will be recorded, organized thematically, and presented in a workshop summary on the project website.
Su aportación será registrada, organizada temáticamente y presentada en un resumen del taller en el sitio web del proyecto.

TEMESCAL GSA

INTRODUCTION TO GROUNDWATER

INTRODUCCIÓN A LAS AGUAS SUBTERRÁNEAS

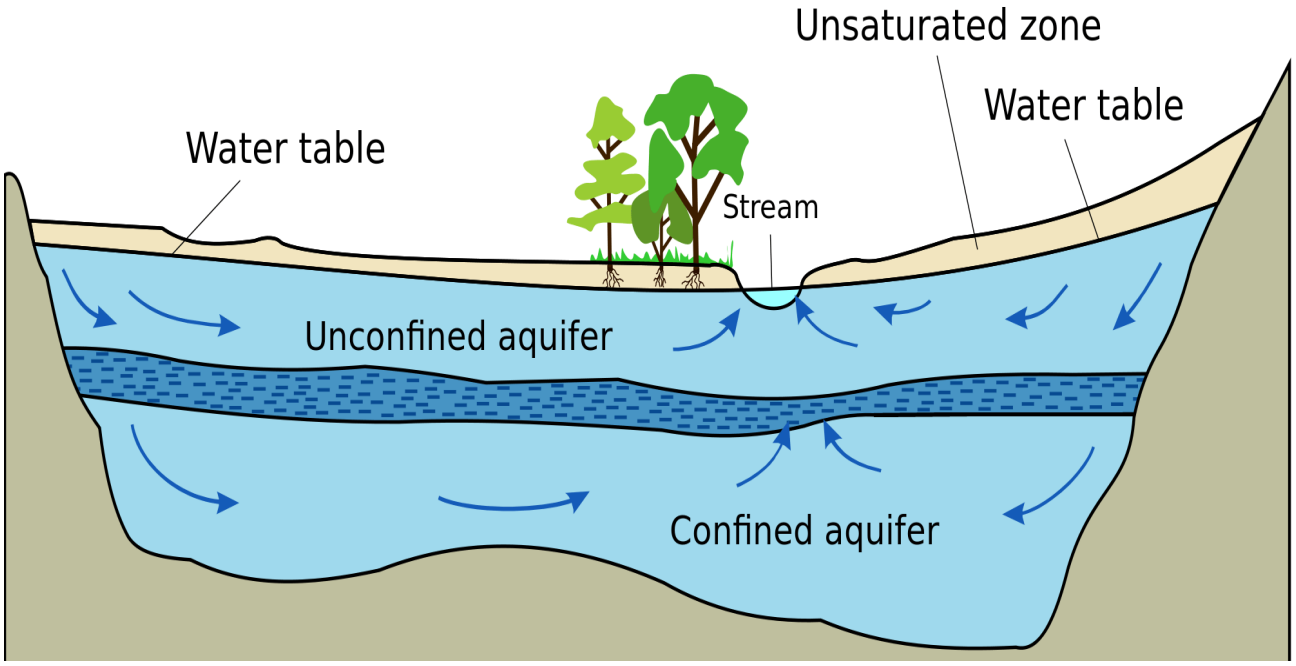
WHAT IS GROUNDWATER?
¿QUÉ SON LAS AGUAS SUBTERRÁNEAS?



TEMESCAL GSA

HOW IS GROUNDWATER ACCESSED?
¿CÓMO SE ACCEDE A LAS AGUAS SUBTERRÁNEAS?

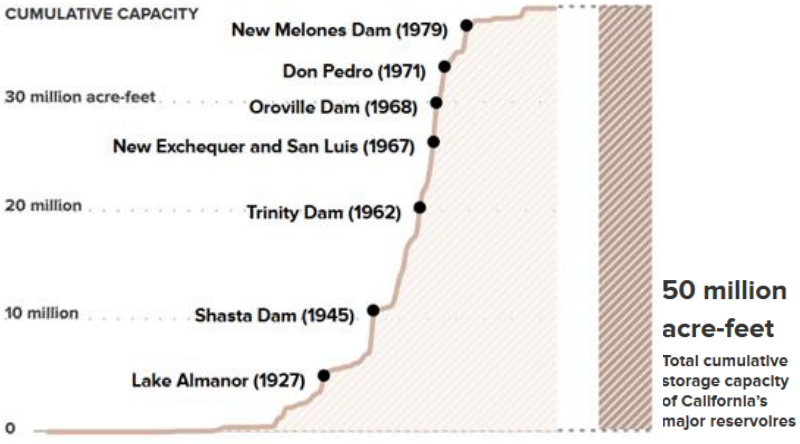
HOW DOES GROUNDWATER OCCUR?
¿CÓMO SURGEN LAS AGUAS SUBTERRÁNEAS?



TEMESCAL GSA

GROUNDWATER IS IMPORTANT
LAS AGUAS SUBTERRÁNEAS SON IMPORTANTES

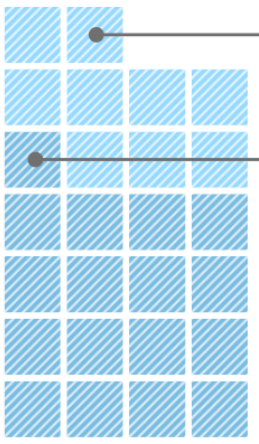
Reservoir Capacity



50 million acre-feet

Total cumulative storage capacity of California's major reservoirs

Groundwater Basin Capacity



1.3 billion

to

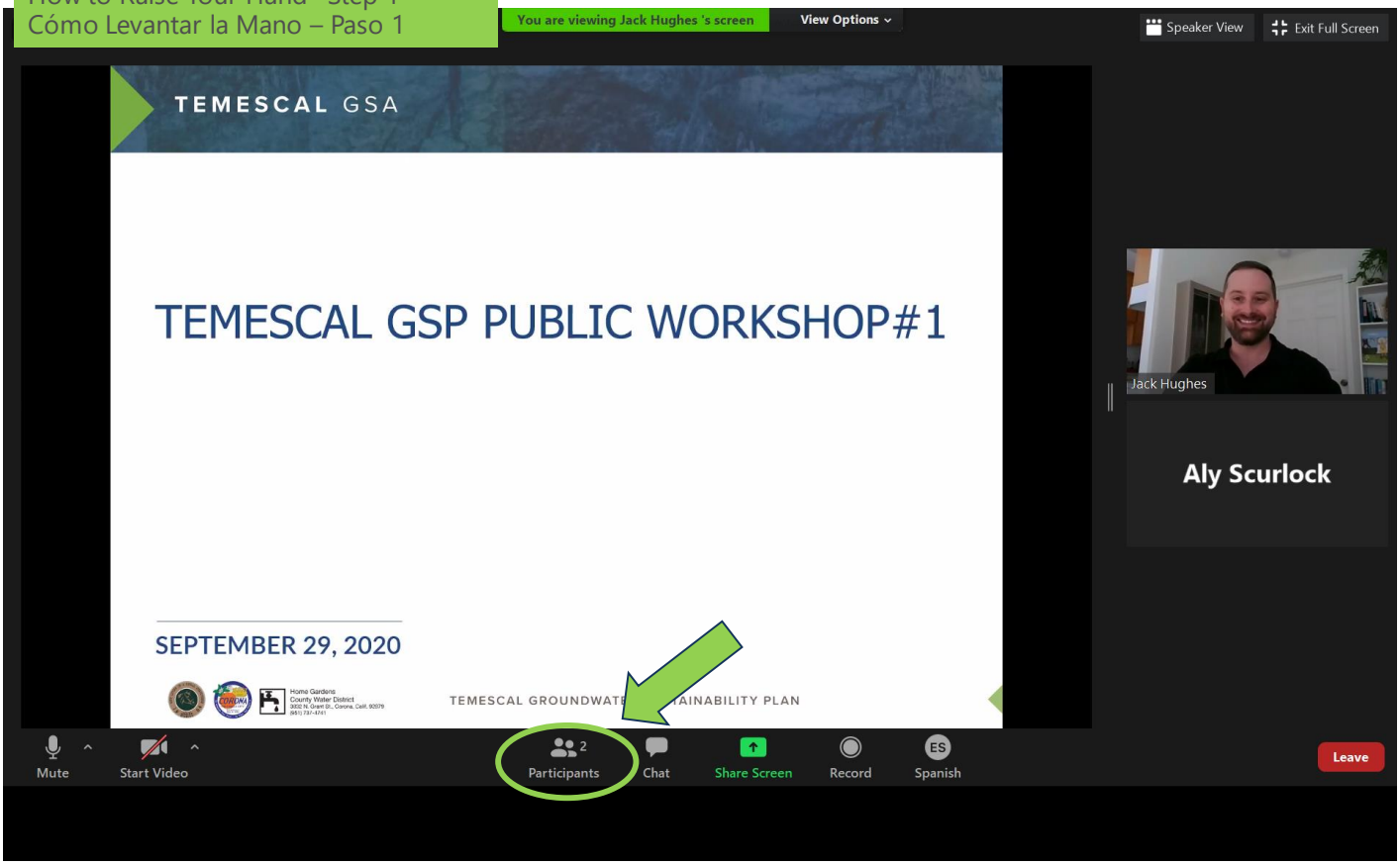
850 million acre-feet

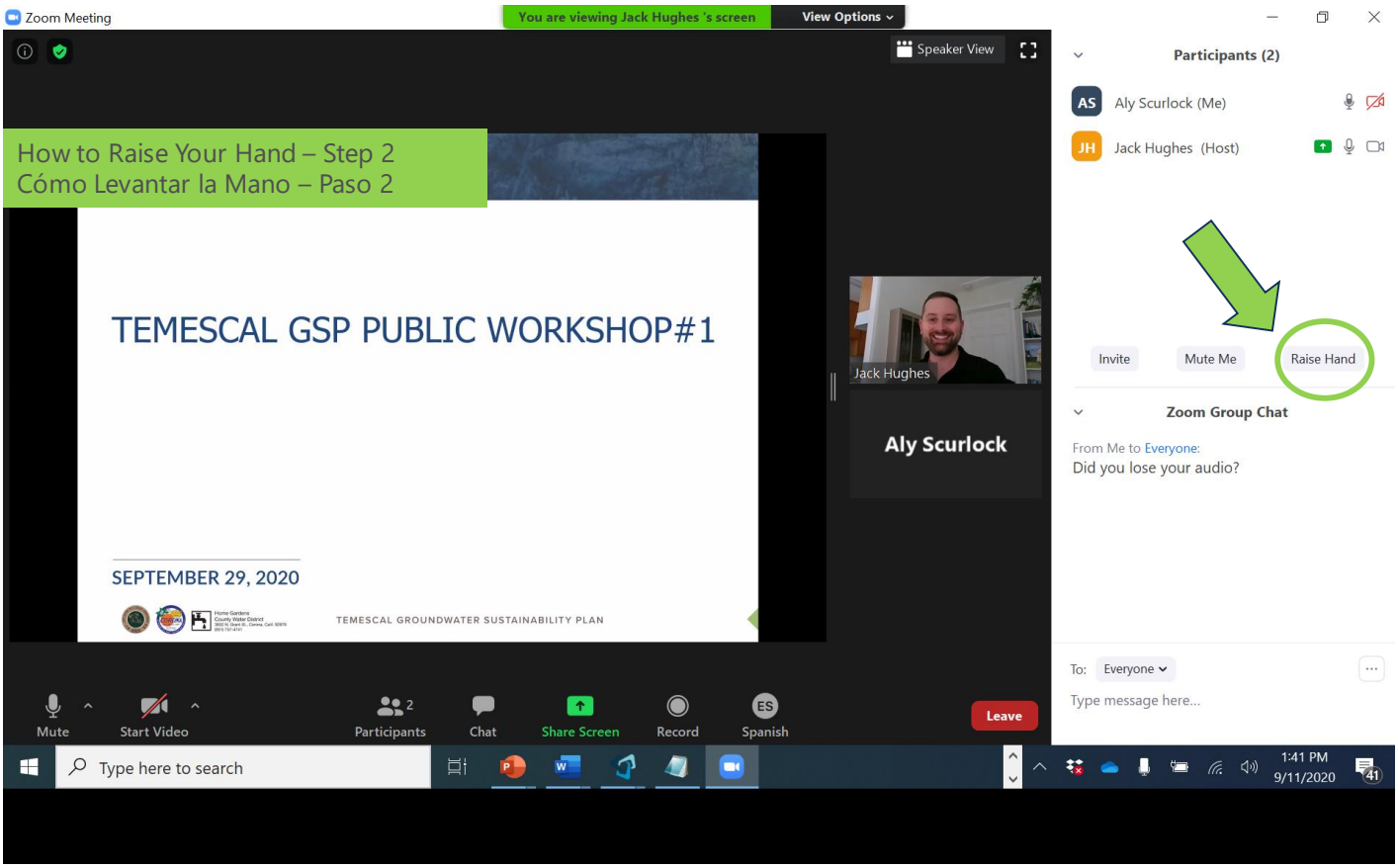
Total storage capacity in California's 515 groundwater basins

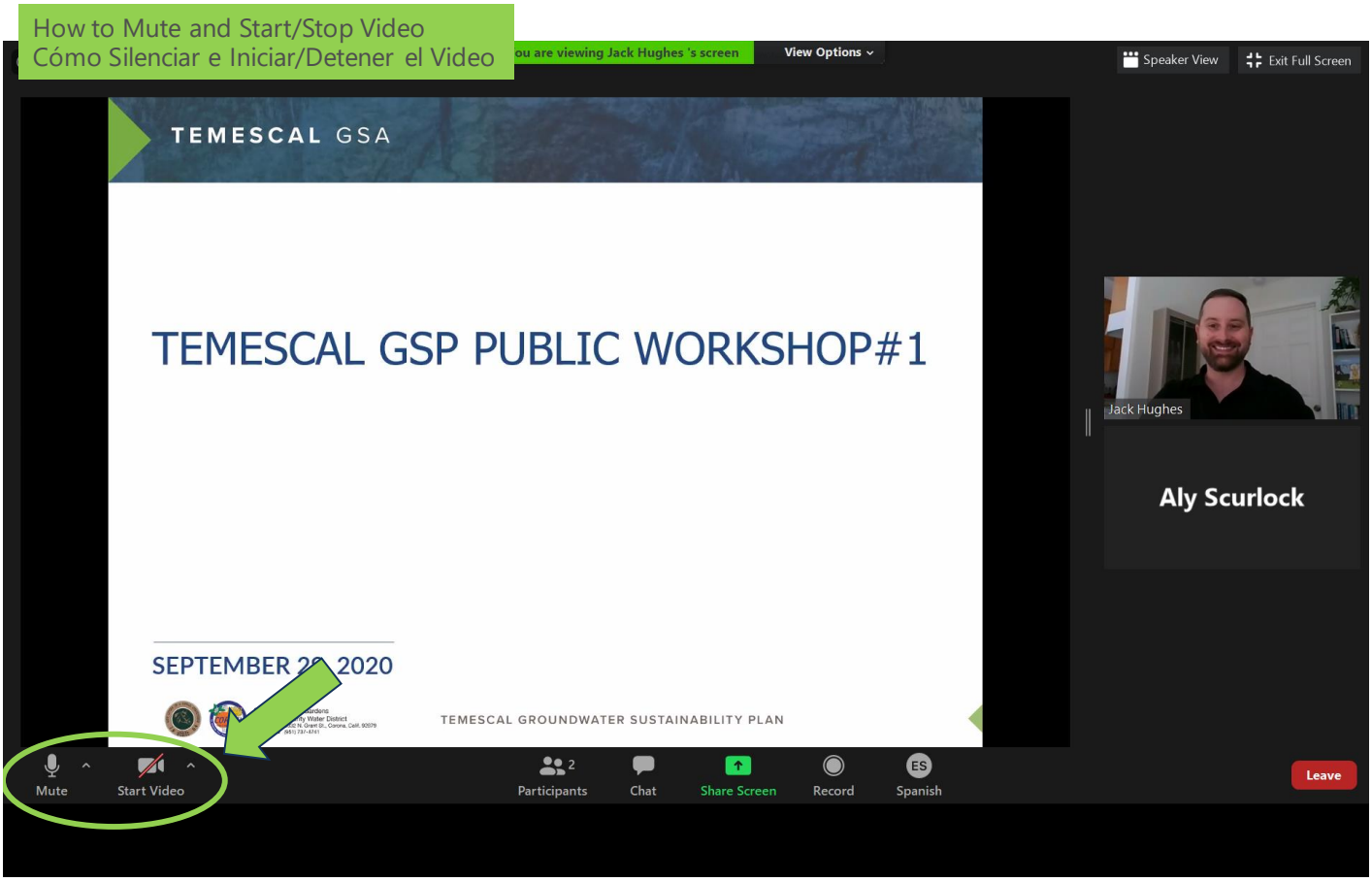
DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

- What interests you about groundwater?
  ¿Qué le interesa sobre las aguas subterráneas?
- Do you have questions or concerns about groundwater?
  ¿Tiene dudas o preocupaciones sobre las aguas subterráneas?
- What else?
  ¿Qué más?

How to Raise Your Hand– Step 1
Cómo Levantar la Mano – Paso 1




How to Raise Your Hand – Step 2
Cómo Levantar la Mano – Paso 2
Zoom Meeting
You are viewing Jack Hughes 's screen
View Options
Speaker View
TEMESCAL GSP PUBLIC WORKSHOP#1
SEPTEMBER 29, 2020
TEMESCAL GROUNDWATER SUSTAINABILITY PLAN
Jack Hughes
Aly Scurlock
Participants (2)
Aly Scurlock (Me)
Jack Hughes (Host)
Invite
Mute Me
Raise Hand
Zoom Group Chat
From Me to Everyone:
Did you lose your audio?
To: Everyone
Type message here...
Mute
Start Video
Participants
Chat
Share Screen
Record
Spanish
Leave
Type here to search
1:41 PM
9/11/2020


How to Mute and Start/Stop Video
Cómo Silenciar e Iniciar/Detener el Video
View Options
Speaker View
Exit Full Screen
TEMESCAL GSA
TEMESCAL GSP PUBLIC WORKSHOP#1
TEMESCAL GROUNDWATER SUSTAINABILITY PLAN
Jack Hughes
Aly Scurlock
Mute
Start Video
Participants
Chat
Share Screen
Record
Spanish
Leave

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

- What interests you about groundwater?
  ¿Qué le interesa sobre las aguas subterráneas?
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  ¿Tiene dudas o preocupaciones sobre las aguas subterráneas?
- What else?
  ¿Qué más?

Groundwater@CoronaCA.gov

TEMESCAL GSA

WHAT IS THE SUSTAINABLE GROUNDWATER MANAGEMENT ACT?

¿QUÉ ES LA LEY DE GESTIÓN SOSTENIBLE DE LAS AGUAS SUBTERRÁNEAS?

SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

Landmark legislation in 2014

- » Recognizes that groundwater management in California is best accomplished locally
- » Includes State intervention if necessary
- » State assistance is also available

Legislación histórica en 2014

- » Reconoce que la gestión de las aguas subterráneas en California se logra mejor a nivel local
- » Incluye intervención estatal si es necesario
- » La asistencia estatal también está disponible

TEMESCAL GSA

SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

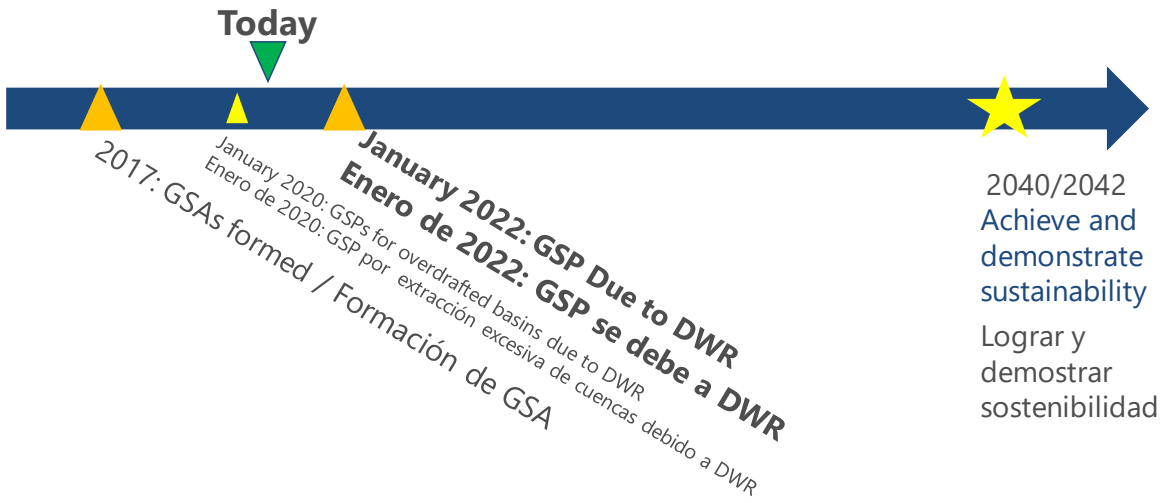
Includes comprehensive requirements for:

- » Forming groundwater sustainability agency (GSA)
- » Preparing groundwater sustainability plan (GSP)

Incluye diversos requisitos para:

- » Agencia de sostenibilidad de las aguas subterráneas (GSA)
- » Preparación de un plan de sostenibilidad de las aguas subterráneas (GSP)

SGMA HAS A REQUIRED TIMELINE
SGMA TIENE UN CRONOGRAMA REQUERIDO



TEMESCAL GSA

INTRODUCTION TO THE TEMESCAL BASIN
INTRODUCCIÓN A LA CUENCA DEL TEMESCAL

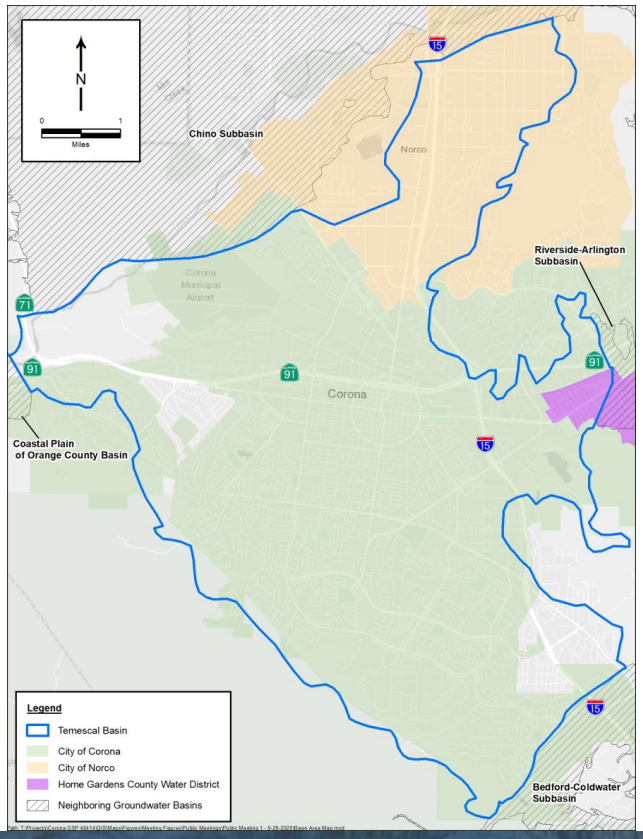
THE TEMESCAL BASIN
LA CUENCA DEL TEMESCAL

» DWR categorized as a Medium Priority Basin

Catalogada por DWR como Cuenca de prioridad media

» Contiguous and connected

Contigua y conectada



TEMESCAL GSA

GSA ORGANIZATION / ORGANIZACÍON

City of Corona

City of Norco

Home Gardens County Water District

Department of Water and Power
Departamento de Aqua y Energía

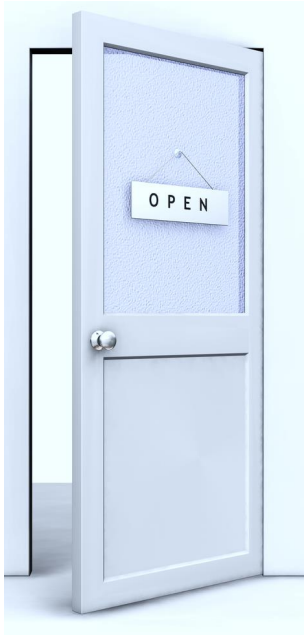
Staff and Consultants
Personal y Consultores
- Corona DWP Staff
- Todd Groundwater
- Carollo Engineers
- Kearns & West

Technical Advisory Committee
Comité Asesor Técnico
- Public agencies/Agencias públicas
- Local businesses/Empresas locales
- Well owners/Propietarios de pozos
- Community interests/Intereses comunitarios

Other agencies and interested parties/Otras agencias y partes interesadas

DRAFT PLAN AREA CHAPTER
ESQUEMA DEL ÁREA DEL PLAN

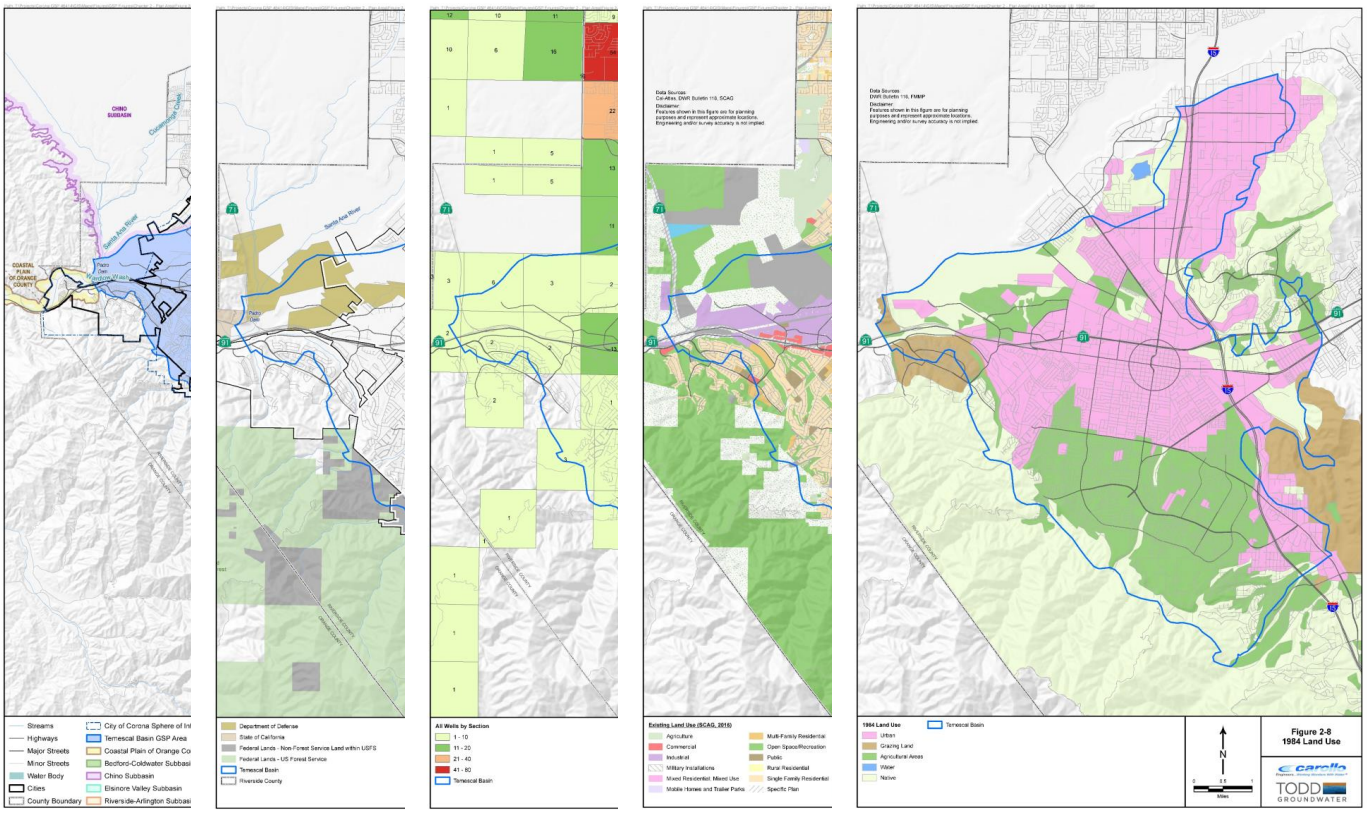
Description of Plan Area
Descripción del Área de Plan



- Jurisdictional boundaries
  Limites jurisdiccionales
- Existing monitoring and management
  Monitoreo y gestión existentes
- Well distribution
  Distribución de pozos
- Land use designations and description
  Designaciones y descripción del uso de la tierra

TEMESCAL GSA

PLAN AREA / ÁREA DEL PLAN

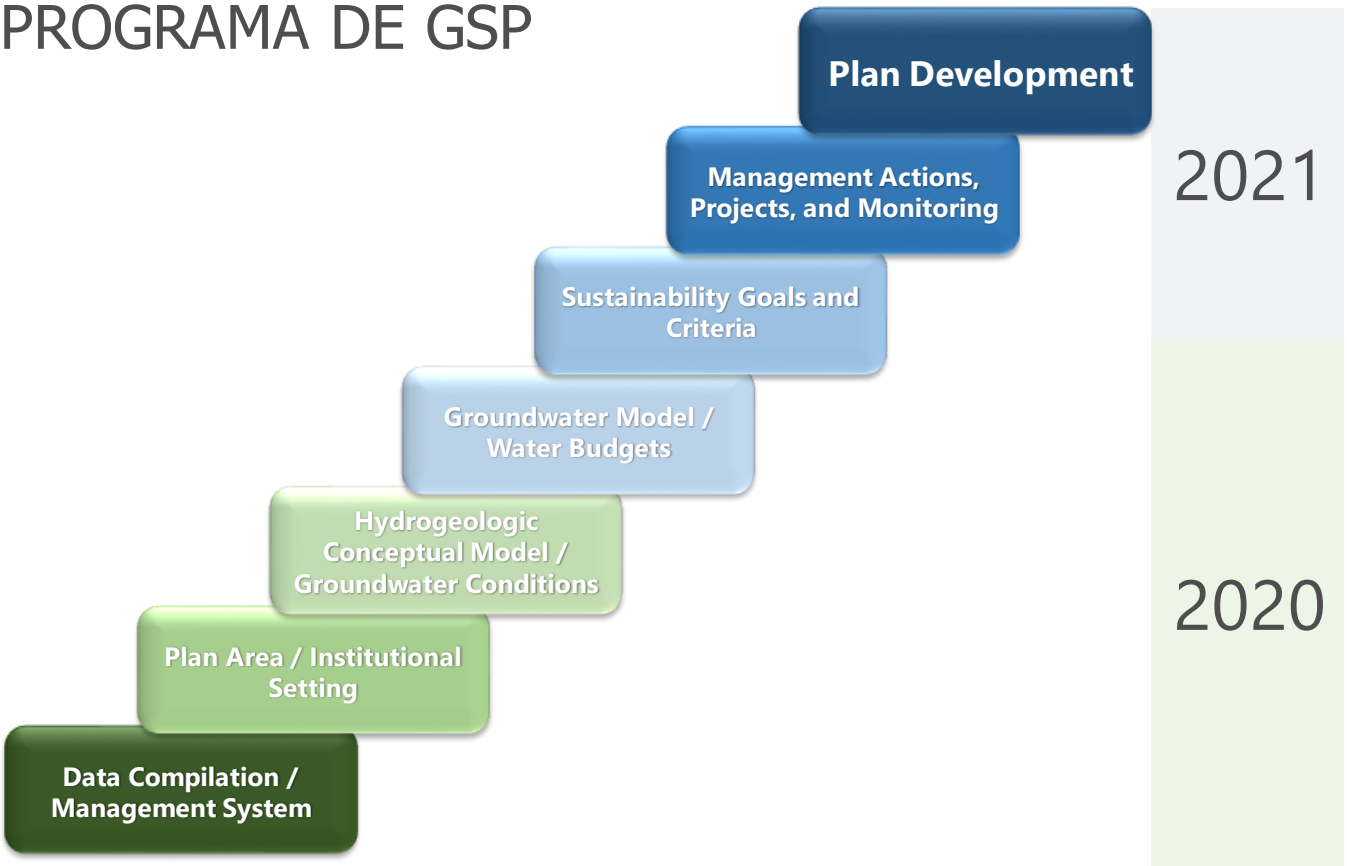


GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

DESARROLLO DE PLAN DE SOSTENIBILIDAD DE AGUAS SUBTERRÁNEAS

TEMESCAL GSA

GSP SCHEDULE
PROGRAMA DE GSP



GSP SCHEDULE
PROGRAMA DE GSP

TEMESCAL GSA

WHAT IS SUSTAINABILITY?
¿QUÉ ES LA SOSTENIBILIDAD?

SUSTAINABILITY CRITERIA
CRITERIOS DE SOSTENIBILIDAD

Chronic lowering of groundwater levels
Disminución crónica de los niveles de aguas subterráneas

Reduction of groundwater storage
Reducción del almacenamiento de aguas subterráneas

Degradation of water quality
Degradación de la calidad del agua

Depletions of interconnected surface water affecting beneficial uses
Agotamiento de las aguas superficiales interconectadas que afectan a los usos beneficiosos

Land subsidence affecting land uses
El hundimiento de la tierra que afecta a los usos de la tierra

Seawater intrusion (not applicable here)
Intrusión de agua de mar (no aplicable aquí)

TEMESCAL GSA

EXAMPLE SUSTAINABILITY CRITERIA: GROUNDWATER LEVELS
EJEMPLO DE CRITERIOS DE SOSTENIBILIDAD: NIVELES DE AGUAS SUBTERRÁNEAS

What undesirable effects do we want to avoid?

» Impacts to shallow wells?

» Maintenance of municipal and industrial water supply?

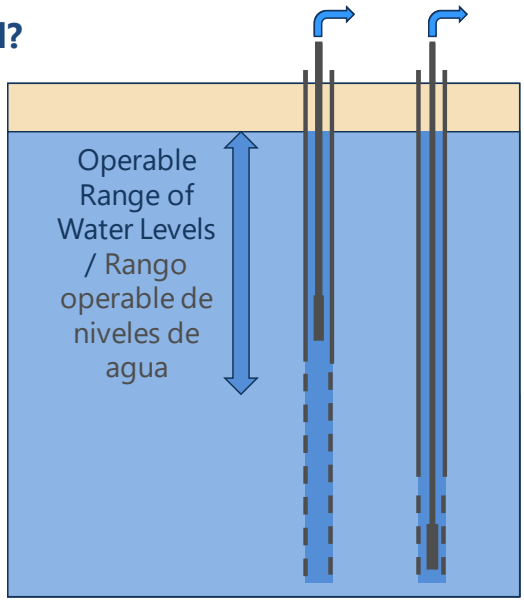
» Other?

¿Qué efectos indeseables queremos evitar?

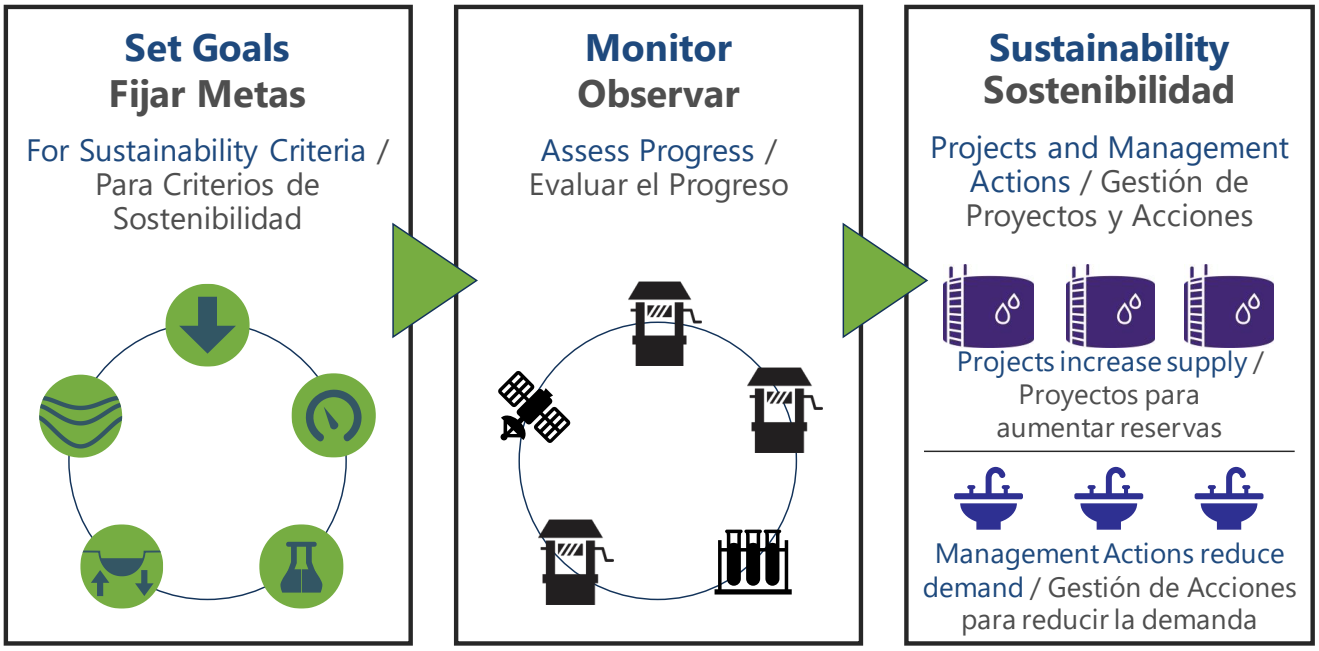
» ¿Impactos en pozos poco profundos?

» ¿Mantenimiento del suministro de agua municipal e industrial?

» ¿Otros?



ACHIEVING SUSTAINABILITY
LOGRAR LA SOSTENIBILIDAD



TEMESCAL GSA

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

» What water supply and quality goals are important to you?

¿Qué objetivos de suministro y calidad de agua son importantes para usted?

» Is there information the project team should review?

¿Hay información que el equipo del proyecto debe revisar?

» What else?

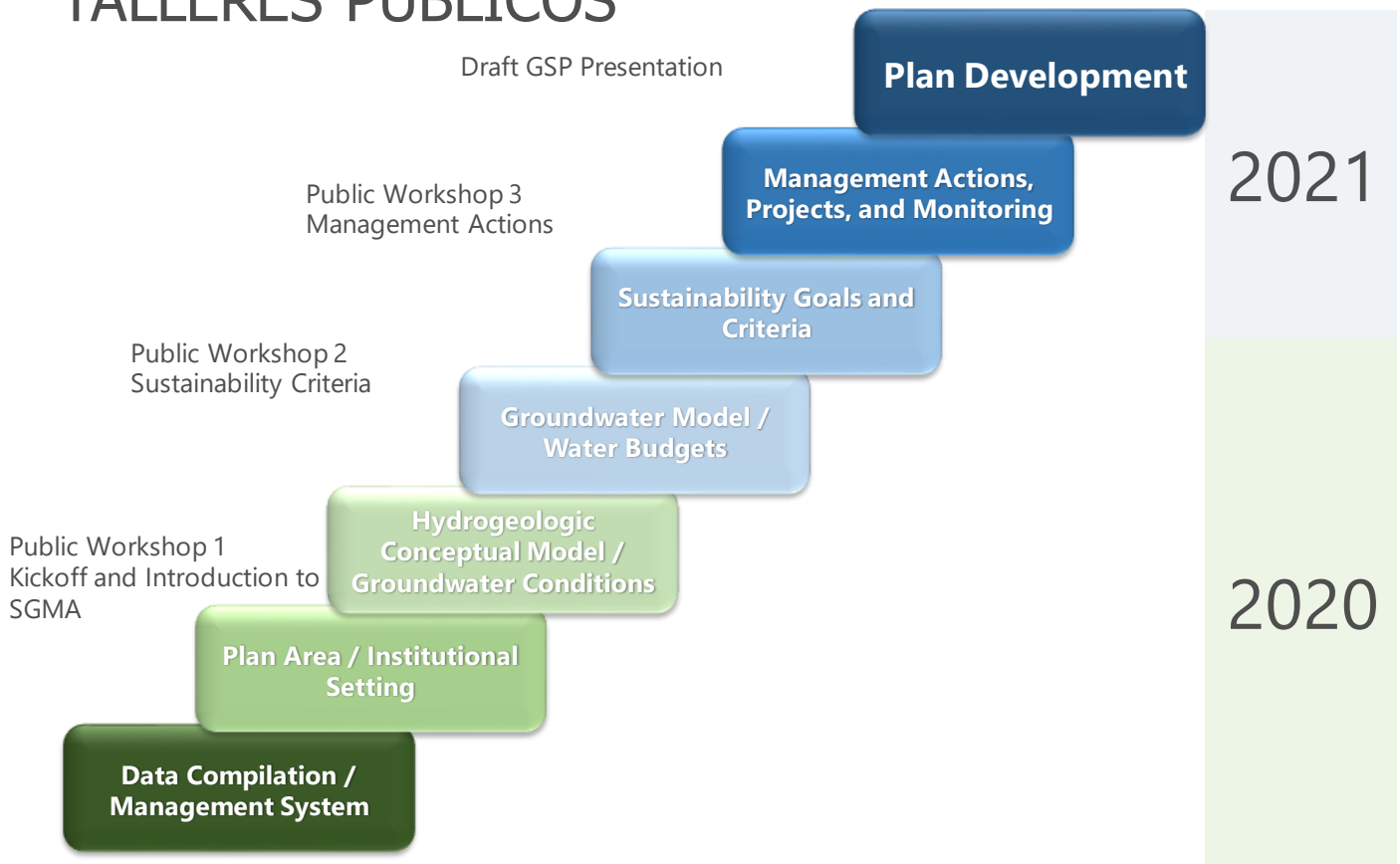
¿Qué más?

Groundwater@CoronaCA.gov

HOW CAN YOU GET INVOLVED?
¿CÓMO PUEDE INVOLUCRARSE?

TEMESCAL GSA

PUBLIC WORKSHOPS
TALLERES PÚBLICOS



PUBLIC WORKSHOPS
TALLERES PÚBLICOS

TEMESCAL GSA

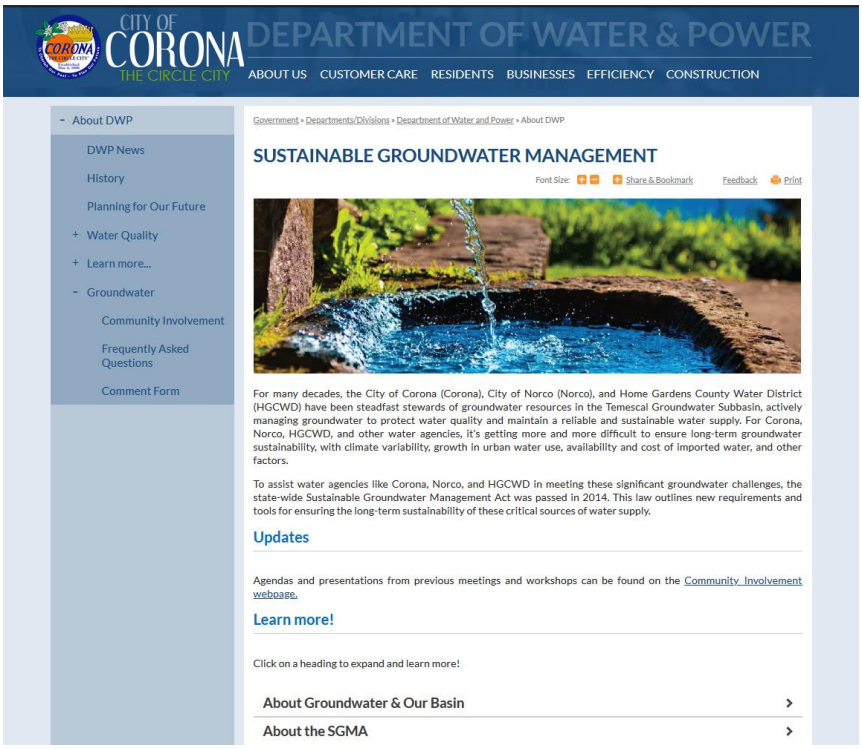
OTHER MEETINGS
OTRAS REUNIONES

» Technical Advisory Committee Meetings
Reuniones del Comité Asesor Técnico

» Updates at City Council and Board Meetings
Actualizaciones en las reuniones del consejo y la junta de la ciudad

» Adoption Hearing for Final GSP
Audiencia de adopción del GSP final

WEBSITE
SITIOS WEB



TEMESCAL GSA

HOW TO KEEP IN TOUCH
CÓMO MANTENERSE EN CONTACTO

» Sign up for the mailing list by emailing Groundwater@CoronaCA.gov
Regístrese en la lista de correo enviando un correo electrónico a Groundwater@CoronaCA.gov

» Visit the website to view information, review draft chapters and other materials, and to submit comments : www.CoronaCA.gov/Groundwater
Visite el sitio web para ver información, revisar borradores de capítulos y otros materiales, y enviar comentarios: www.CoronaCA.gov/Groundwater

THANK YOU

GRACIAS

Temescal Basin Public Workshop 2

Workshop Summary

Contents

Appendix

1. Background

On September 16, 2014, the Governor of California signed into law a legislative package comprised of three bills: Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319. These laws are collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA (pronounced sigma) defines sustainable groundwater management as the "management and use of groundwater in a manner that can be maintained without causing undesirable results." This means keeping balanced levels of pumping and recharge of groundwater while assuring reliable water quality. SGMA provides a comprehensive framework for basin sustainability, additional technical analysis, and quantification of many aspects of basin sustainability and management. This includes extensive and detailed descriptions of the basin setting and conditions and more comprehensive monitoring of groundwater use, quality, and levels, including metering of groundwater usage.

SGMA requires the formation of a locally controlled Groundwater Sustainability Agency (GSA), which is responsible for developing and implementing a Groundwater Sustainability Plan (GSP). The GSP outlines how to achieve groundwater sustainability within 20 years of its adoption. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Basin Groundwater Sustainability Agency (Temescal GSA) to create a GSP for the Temescal Basin.

GSAs must consider the interests of all beneficial uses and users of groundwater. The GSA must provide opportunities for public engagement and active involvement of diverse social, cultural, and economic elements of the population. The Temescal GSA recognizes that stakeholder and public engagement is critical to ensuring that the full range of interests of all beneficial uses and users of groundwater are represented during GSP development.

To share information and get input from stakeholders and the public, the Temescal GSA is holding a series of public workshops. The first public workshop, conducted on September 29, 2020, focused on communicating basic information about SGMA, the Temescal Basin, GSP development, and what sustainability means in a GSP. The second public workshop, conducted on March 2, 2021, focused on providing updates on the Temescal GSP development and introducing the hydrogeologic conceptual model, groundwater conditions, and water budget. This summary documents the outreach methods, time and location, attendance, and major topics presented and discussed at the second public workshop.

2. Pre-Workshop Outreach

The Temescal GSA used a variety of methods to inform stakeholders and community members about the workshop and encourage participation, as shown in Table 1 on the next page.

Table 1: Pre-Workshop Outreach Methods

Method	Description
Website	Workshop information was posted on the project website, hosted by the City of Corona's Department of Water and Power, and was included in a calendar post.
Social Media Posts	The City of Corona posted information about the workshop through a Facebook Event. The City of Norco posted on its Facebook page.
Newsletters	The City of Corona advertised the workshop in its *Inner Circle* newsletter, which is accessible online and distributed via email.
Emails	Invitation emails were sent to those on the interested parties list.

3. When and Where

The workshop was held on March 2, 2021 from 4:00 to 6:00 p.m.

The workshop was held virtually on the Zoom platform. The workshop was streamed on the City of Corona's website, Facebook, and YouTube channels and on Corona TV, viewable on Channel 29 on Time Warner Spectrum and Channel 99 on AT&T.

4. Attendance and Social Media Views

Approximately 24 people attended the Zoom virtual meeting, including 10 stakeholder participants. Others viewed the workshop on Facebook Live, YouTube, and Corona TV. Post-workshop statistics indicated 17 views on YouTube.

5. Summary

Welcome and Introductions

Jack Hughes, facilitator from Kearns & West, welcomed everyone to the second public workshop for the Temescal GSP. Christian Mendez from Kearns & West gave instructions in Spanish for accessing Spanish interpretation on Zoom. Hughes reviewed the workshop purpose, which was to provide Temescal GSP development updates and introduce the hydrogeologic conceptual model, groundwater conditions, and water budget. Additionally, the consultant team wanted to learn from participants what they thought the most important uses of groundwater were and if they know of any current or historical problems regarding the use of groundwater in the Temescal Basin.

Hughes invited the workshop attendees to make introductions using the Zoom chat and recognized the Temescal GSA representatives and elected officials in attendance. Hughes then introduced the additional workshop presenters: Chad Taylor, Principal Hydrogeologist at Todd Groundwater, and Maureen Reilly, Senior Engineer at Todd Groundwater.

Review of Groundwater Sustainability Plan Development

Taylor first presented the background and purpose of SGMA (see Appendix A for presentation slides for this and the following sections). The State can intervene if local agencies are not acting, but that is a

last option. Under SGMA, local agencies are provided guidance for how to assess sustainability, tools for achieving or maintaining sustainability, and financial assistance in the form of grants available from the State. The Temescal GSA, comprised of the City of Corona, the City of Norco, and Home Gardens County Water District, has received a grant to prepare the GSP for the Temescal Basin.

Taylor explained that GSPs are detailed road maps for how groundwater basins will achieve or maintain long-term sustainability. Similar to other state planning requirements that agencies have been undertaking for many years, GSPs have periodic review processes and annual reporting requirements. These include long-term planning components, such as 50-year simulations of future conditions, to ensure long-term sustainability can be maintained.

Taylor described the Temescal Basin area, which covers most of the City of Corona, about half of the City of Norco, and the western part of the Home Gardens County Water District. The Temescal Basin is bounded by the Chino Subbasin to the north, the Riverside-Arlington Subbasin to the east, the Bedford-Coldwater Subbasin to the south, and the Coastal Plain of Orange County on the west. One GSA, Temescal GSA, was formed for the Temescal Basin because the area is hydrologically connected and has historically been managed as one unit. The Department of Water Resources has designated the Temescal Basin as a medium priority basin, which required the Temescal GSA to prepare the Temescal GSP.

Taylor next described the organization of the Temescal GSA. The Temescal GSA provides for decision-making, technical support, and community outreach. The City of Corona, the City of Norco, and Home Gardens County Water District formed the Temescal GSA in 2017 through a memorandum of understanding. The City of Corona is leading the GSP effort with support from Corona Department of Water and Power staff and additional consultants. The Technical Advisory Committee provides input during GSP preparation, and Technical Advisory Committee members communicate with other agencies and interested parties about GSP development. The GSP process is founded on public engagement and stakeholder outreach, which is the purpose of the public workshops.

Participants then answered the following warm up question using a Zoom poll: How many major aquifers are there in the Temescal Basin?

- Two
- Three
- Five
- Ten

Taylor provided and discussed the answer once the poll was closed. There are two major aquifers in the Temescal Basin, depending on how a major aquifer is defined. The section below on the hydrogeologic conceptual model has more information on the aquifers in the basin.

Hydrogeologic Conceptual Model

Taylor presented the hydrogeologic conceptual model. The model is a summary description along with a series of maps and graphics that defines where groundwater is in the Temescal Basin, how it gets there, and how it moves. It considers what areas of the Temescal Basin are made up of coarse or fine materials and includes descriptions of basin boundaries, geology, aquifers and aquitards, aquifer properties, and groundwater use. The model is accompanied by maps and graphics that show

topography, surface water features, geology, soils, aquifer locations, basin thickness, and cross-sections.

Taylor reviewed the surficial geology and the location and characteristics of the channel aquifer in the Temescal Basin. The Temescal Basin in primarily made up of young, unconsolidated deposits surrounded by older bedrock on the western and eastern portions of the basin. There are also some older, partially consolidated deposits in the northern portion of the Temescal Basin. Faulting affects groundwater in much of the Temescal Basin and can restrict groundwater flow laterally. Taylor noted that the principal aquifer in the Temescal Basin is the channel aquifer. The channel aquifer is coarser grained and the more productive wells in the basin draw from the channel aquifer. As a result, most of the municipal supply wells are in the channel aquifer and it is an important component of the groundwater system.

Taylor presented one of the three cross-sections that have been prepared for the Temescal Basin that illustrate the underground conditions. Taylor reviewed the A to A' cross-section that extends from the southwest to northeast. The cross-section starts in the Santa Ana mountains. Moving from southwest to northeast in the Temescal Basin, there are alluvial fan aquifers underlaid by sandstone aquifers, which are the secondary aquifers in the basin. Next is the channel aquifer that is adjacent to the Temescal Wash. The channel aquifer and Temescal Wash have similar deposits, so they are considered functionally similar and connected. They are underlaid by granitic bedrock, which is not very conducive to groundwater presence or flow. Many wells draw groundwater only from the channel aquifer, whereas some wells have screens below the channel aquifer. Lastly, Taylor presented a three-dimensional block diagram that shows the relationship between subsurface materials, ground surface, and basin activities in the Temescal Basin.

Discussion/Q&A

Hughes opened the floor for questions and comments. There were no questions or comments from participants after this presentation.

Groundwater Conditions

Taylor presented groundwater conditions in the Temescal Basin, which include current and historical conditions such as groundwater elevations, water quality, interconnected surface water, and subsidence. The Draft Hydrogeologic Conceptual Model and Groundwater Conditions chapters are available for review on the Temescal GSA website (CoronaCA.gov/Groundwater).

Taylor began by describing groundwater elevation as the height of water above sea level and displayed a groundwater elevation contour map. Water levels can mean groundwater elevation or depth to water. Groundwater elevation contours are used to show water levels in an area to determine what flow is like underground. Flows in the Temescal Basin point toward the northwest and turn to the west in Prado. Taylor noted that groundwater flow direction is generally consistent over time in the basin.

Taylor described groundwater conditions over time in the Temescal Basin and displayed a hydrograph of a representative well. Seasonal and larger-scale patterns can be viewed on the hydrograph. These show responses to changes in climate conditions, weather conditions, wet and dry cycles, and pumping. Taylor explained that the highest water levels occurred in the 1980s following heavy rains during the late 1970s. In the 1990s, there were some wet periods where water levels did not recover as much as in the 1980s because of increased pumping. Many wells have had their lowest water levels in the last

10 years because of the drought that occurred between 2013 and 2017. Water levels have been recovering since then, but it is slow process due to limited precipitation.

Taylor next explained groundwater quality in the Temescal Basin. Primary constituents of concern are total dissolved solids and nitrate. Total dissolved solids are a variety of salts that mostly comes from rocks and are elevated in the channel aquifer. Nitrate is also high in some areas and mostly comes from human-caused activities such as historic agriculture and wastewater treatment and disposal. It is important to note that groundwater that is pumped for public consumption in the Temescal Basin is treated and blended before being distributed. The water served to homes and businesses in the Temescal Basin meets federal, state, and county requirements for public health. Other water quality constituents of concern are being tracked and are discussed in the Groundwater Conditions chapter.

Taylor described interconnected surface water, which means that groundwater is shallow enough to be connected to a surface water body. In these areas, high volumes of pumping could lower groundwater elevations. This can become problematic when there are ecosystems that rely on the groundwater, known as groundwater dependent ecosystems. In the Temescal Basin, the primary interconnected surface waters are in the Prado area, which includes wetlands and plants that rely on groundwater. The Temescal GSA does not want to do anything through groundwater management that will damage the wetlands. Taylor mentioned that subsidence, deformation of the ground surface as a result of groundwater pumping or reduction in groundwater levels, is discussed in the Groundwater Conditions chapter and was not included in the presentation for the sake of brevity since it was not a major issue in the Temescal Basin.

Discussion/Q&A

Hughes opened the floor for questions and comments. Participants were encouraged to answer the following question verbally or using the chat: Do you know of any current or historical problems regarding the use of groundwater in the Temescal Basin? No responses were received.

Water Budget

Reilly presented the purpose of the water budget. The water budget quantifies the inflows and outflows of the Temescal Basin, which vary over time and depend on hydrology and/or management. Inflows in the Temescal Basin include recharge from rainfall, stormwater, and streamflow; reclaimed water from percolation ponds; and subsurface flow from neighboring basins. Outflows occur when water leaves the basin due to pumping, flow to the Santa Ana River, and evapotranspiration.

Reilly explained that the water balance can be viewed as a change in storage, or inflows minus outflows. The numerical model uses inflows and outflows to calculate the change in storage and elements of the hydrogeologic conceptual model to simulate the groundwater aquifer. This tool can be used to simulate what has happened historically in the Temescal Basin and to simulate future conditions. It will be used to look at the sustainability of the Temescal Basin over the next 50 years and test different scenarios.

Discussion/Q&A

Hughes opened the floor for questions and comments. The following are the questions and comments received in the chat box from participants:

- How do you use the Santa Ana River for groundwater recharge?
- Can you discuss or explain sustainability in the Temescal GSP?

How to Stay Involved

Prior to learning how to stay involved in the process, participants answered a question using a Zoom poll. Hughes explained that all beneficial uses and users would be considered in the Temescal GSP, but the project team wanted to know the interests of stakeholders. Participants responded to the following question: What do you think are the most important uses of groundwater from the Temescal Basin?

- Groundwater Dependent Ecosystems
- Industrial Water Supply
- Municipal Water Supply
- Rural Residential Water Supply
- Small Commercial Water Supply
- Small Community Water Supply

The most common answers included groundwater dependent ecosystems, municipal water supply, and rural residential water supply.

Hughes explained how members of the public could be involved throughout GSP preparation, which will continue until January 2022. This was the second public workshop for people to get information about the GSP and give feedback on its development. The third public workshop will be held in summer of 2021 and will focus on sustainability criteria and management actions. The draft GSP presentation in the summer of 2021 will present another opportunity for involvement.

Hughes spoke about other opportunities to learn about GSP development and provide comment. In addition to the workshops, the Technical Advisory Committee meetings are open to the public. The public may listen in on those meetings and speak during the public comment portion. Lastly, the public will have the opportunity to attend and comment at the Adoption Hearing for the final GSP in the fall of 2021.

Draft chapters and other materials such as fact sheets can be found on the project website hosted by the City of Corona Department of Water and Power: CoronaCA.gov/Groundwater. Members of the public can use the form on the website to provide comments. Anyone who wants to be included on the mailing list should email Groundwater@CoronaCA.gov. People on the mailing list will receive updates on upcoming public workshops.

6. Wrap Up and Closing

Hughes thanked everyone for participating. The next public workshop will be held during the summer of 2021.

Appendix A

Presentation Slides

TEMESCAL GSP PUBLIC WORKSHOP 2
TEMESCAL GSP TALLER COMUNITARIO 2

About the Groundwater Sustainability Plan (GSP)

The Sustainable Groundwater Management Act or "SGMA" is a California law that gives local agencies new tools for managing groundwater and planning for the future. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Groundwater Sustainability Agency (Temescal GSA) in order to make a **Groundwater Sustainability Plan** for the Temescal Basin. Since groundwater is such an important resource for everyone, we need your help!

Un poco sobre el plan de sostenibilidad de las aguas subterráneas (GSP)

La Ley de Gestión Sostenible de Aguas Subterráneas o "SGMA", por sus siglas en inglés, es una ley de California que otorga a las agencias locales nuevas herramientas para gestionar las aguas subterráneas y planificar para el futuro. La Ciudad de Corona, la Ciudad de Norco y el Distrito Hídrico del Condado de Home Gardens han formado la Agencia de Sostenibilidad de Aguas Subterráneas de la Cuenca de Temescal (Temescal Groundwater Sustainability Agency) o Temescal GSA a fin de crear un **Plan de Sostenibilidad de Aguas Subterráneas** para la Cuenca de Temescal. Dado que las aguas subterráneas son un recurso muy importante para todos, ¡necesitamos su ayuda!

TEMESCAL GSA

TEMESCAL GROUNDWATER SUSTAINABLY PLAN PUBLIC WORKSHOP 2

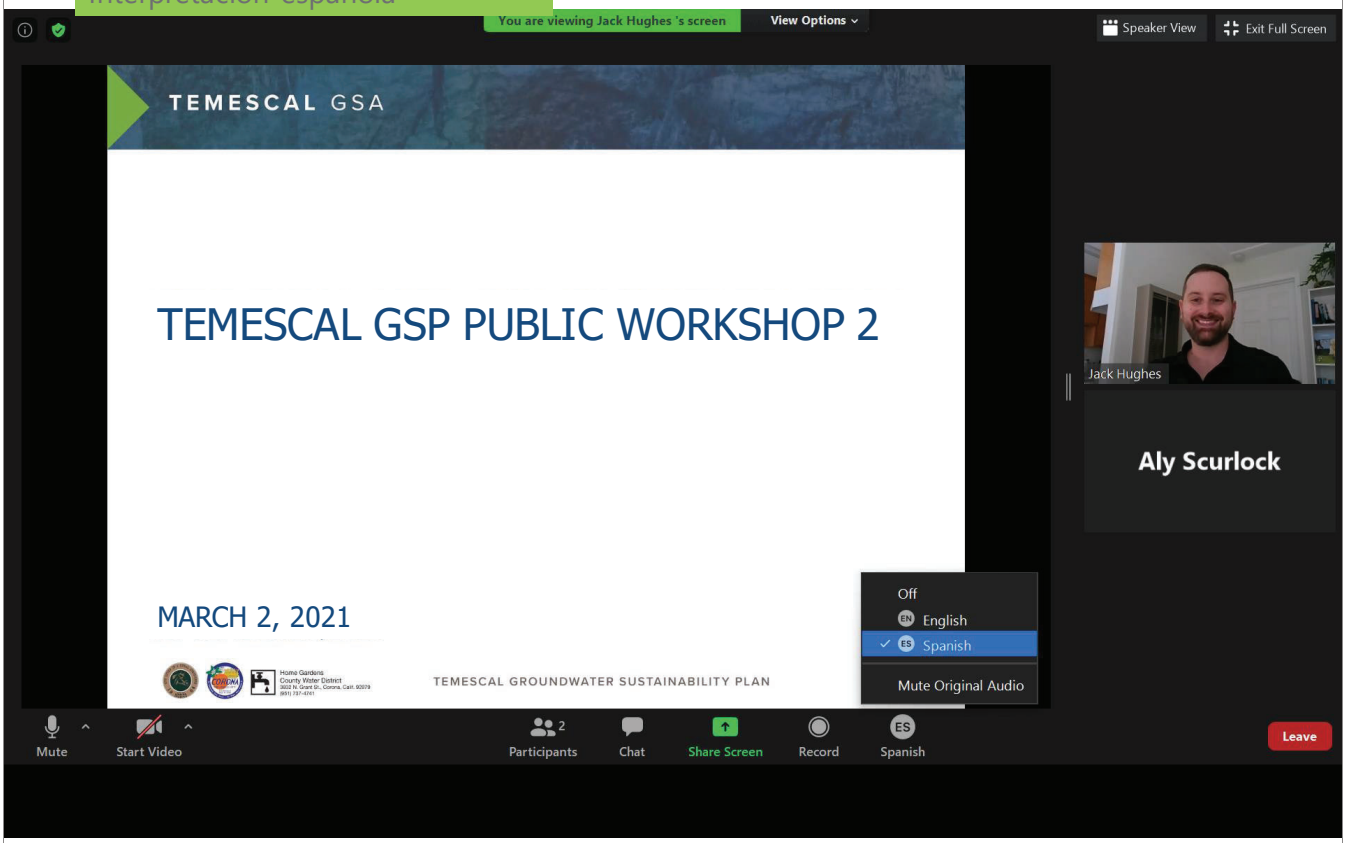
PLAN DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS (GSP) DE TEMESCAL TALLER COMUNITARIO 2 DE TEMESCAL

MARCH 2, 2021 / 2 DE MARZO DE 2021

Home Gardens County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

WELCOME
BIENVENIDOS

Interpretación española



This public workshop is being recorded and will be posted on the website:
www.CoronaCA.gov/Groundwater

Este taller público sera grabado y se publicará en el sitio web:
www.CoronaCA.gov/Groundwater

TEMESCAL GSA

WORKSHOP PURPOSE
PROPÓSITO DE TALLER COMUNITARIO

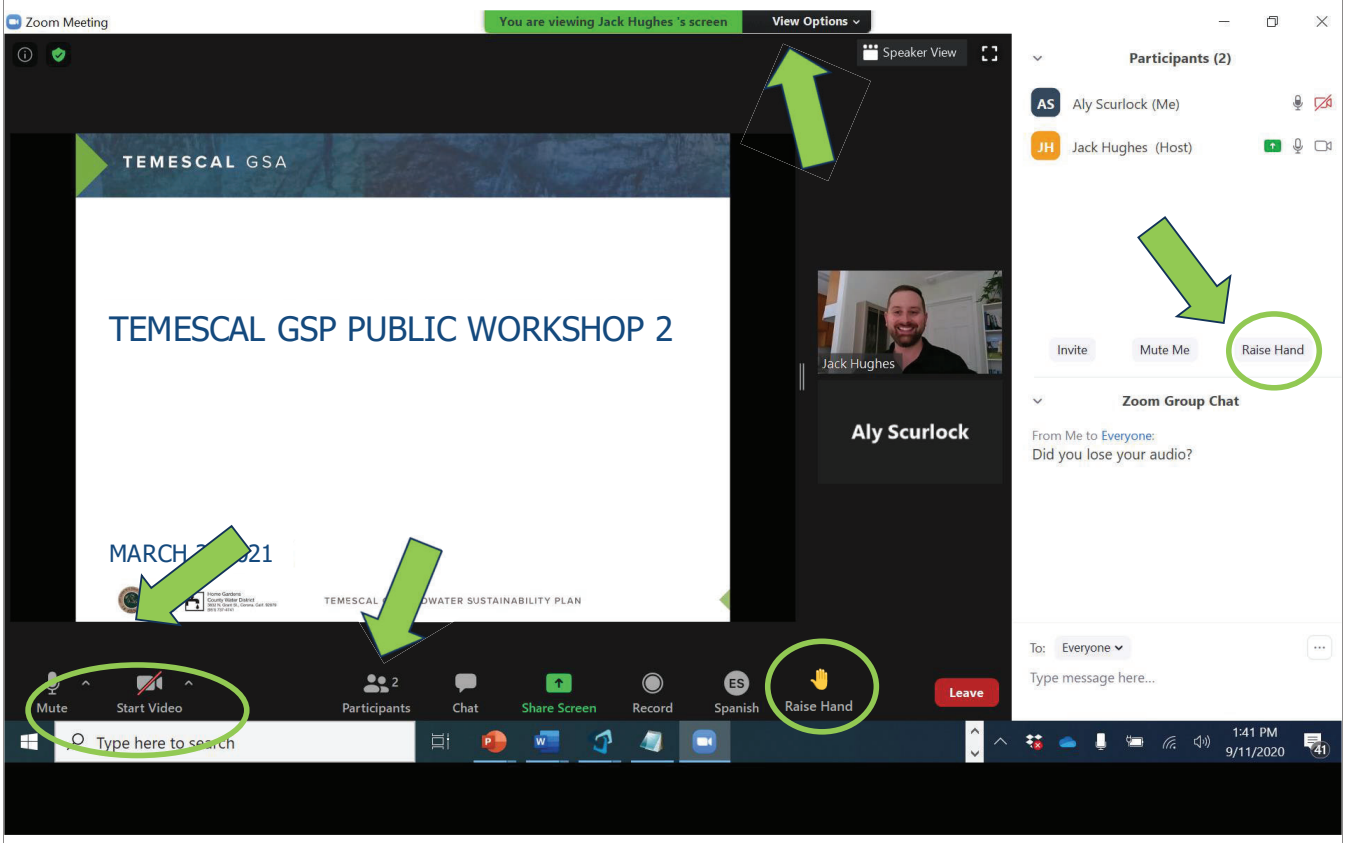
- Give Temescal Groundwater Sustainability Plan development updates.
  Proporcionar actualizaciones del desarrollo del Plan de sostenibilidad de aguas subterráneas de Temescal.
- Introduce the hydrogeologic conceptual model, groundwater conditions, and water budget.
  Introducir el modelo conceptual hidrogeológico, las condiciones del agua subterránea y el presupuesto de agua.

WORKSHOP PURPOSE
PROPÓSITO DE TALLER COMUNITARIO

» Learn what you think the most important uses of groundwater are and if you know of any current or historical problems regarding the use of groundwater in the Temescal Basin.
Conozca cuáles son los usos más importantes de las aguas subterráneas y si conoce algún problema actual o histórico con respecto al uso de las aguas subterráneas en la Cuenca del Temescal.

TEMESCAL GSA

HOW TO USE ZOOM
CÓMO UTILIZAR ZOOM



INTRODUCTIONS
INTRODUCCIONES

TEMESCAL GSA

Home Gardens
County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

TEMESCAL GSA

CONSULTANT TEAM
EQUIPO DE CONSULTORES

Chad Taylor
Todd Groundwater

Maureen Reilly
Todd Groundwater

Jack Hughes
Kearns & West

TIPS FOR A PRODUCTIVE DISCUSSION
CONSEJOS PARA UNA DISCUSIÓN PRODUCTIVA

- One speaker at a time
  Solo una persona habla a la vez
- Keep input concise
  Sea conciso al hablar
- Actively listen
  Escuche activamente
- Offer solutions
  Ofrezca soluciones

TEMESCAL GSA

YOUR INPUT MATTERS
SU OPINIÓN ES IMPORTANTE

- The planning team will consider your comments as they prepare the Groundwater Sustainability Plan.
  El equipo de planificación considerará sus comentarios mientras preparan el Plan de sostenibilidad de aguas subterráneas.
- Your input will be recorded, organized thematically, and presented in a workshop summary on the project website.
  Sus comentarios serán registrados, organizados temáticamente y presentados en un resumen del taller en el sitio web del proyecto.

REVIEW OF GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

REPASO DEL PLAN DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS

TEMESCAL GSA

SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

Landmark legislation in 2014

- » Recognizes that groundwater management in California is best accomplished locally

Legislación histórica en 2014

- » Reconoce que la gestión de las aguas subterráneas en California se logra mejor a nivel local

GROUNDWATER SUSTAINABILITY PLANS
PLANES DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS

- Groundwater sustainability plans are detailed road maps for how groundwater basins will achieve long term sustainability.
- Los planes de sostenibilidad de las aguas subterráneas actuan como mapas que detallan la ruta que hay qe seguir para que cuencas de aguas subterráneas logren la sostenibilidad a largo plazo.

TEMESCAL GSA

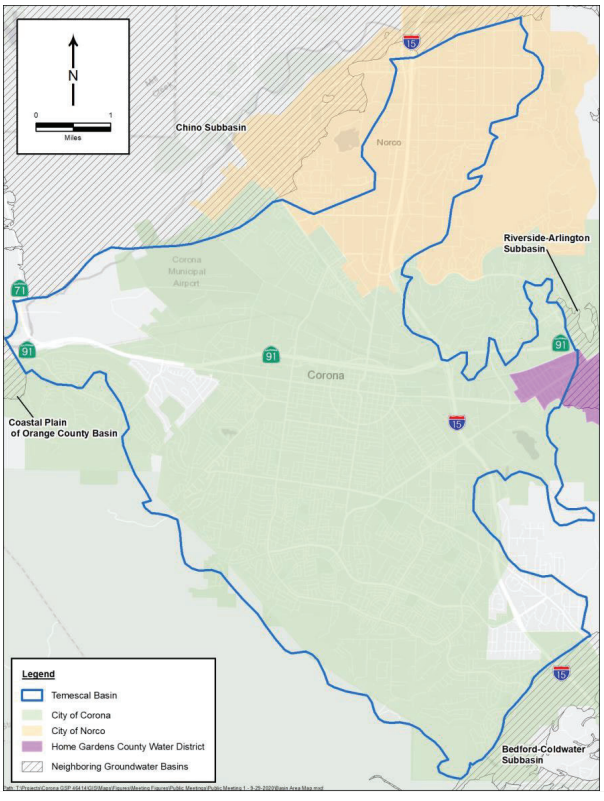
THE TEMESCAL BASIN
LA CUENCA DEL TEMESCAL

- DWR categorized Temescal Basin as a Medium Priority Basin

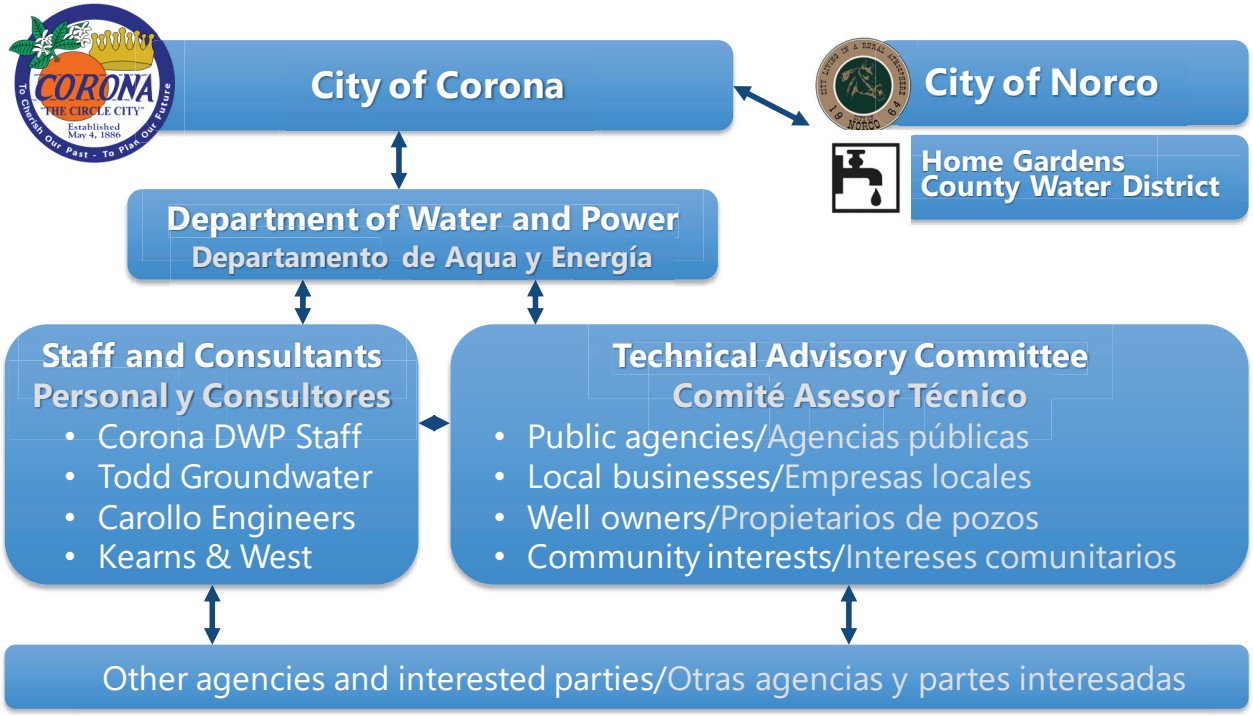
La Cuenca del Temescal fue desginada por DWR como Cuenca de Prioridad Media

- Contiguous and connected

Contigua y conectada



GSA ORGANIZATION / ORGANIZACÍON



TEMESCAL GSA

WARM UP QUESTION

PREGUNTAS DE CALENTAMIENTO

» How many major aquifers are there in the Temescal Basin?

¿Cuántos acuíferos significantes hay en la Cuenca del Temescal?

» Two / Dos
» Three / Tres
» Five / Cinco
» Ten / Diez

HYDROGEOLOGIC CONCEPTUAL MODEL
MODELO CONCEPTUAL HYDROGEOLOGICO

TEMESCAL GSA

HYDROGEOLOGIC CONCEPTUAL MODEL
MODELO CONCEPTUAL HYDROGEOLOGICO

Includes descriptions of:

- Basin boundaries, geology, aquifers and aquitards, aquifer properties, and groundwater use

Maps and Graphics showing:

- Topography, surface water features, geology, soils, aquifer locations, basin thickness, and cross-sections

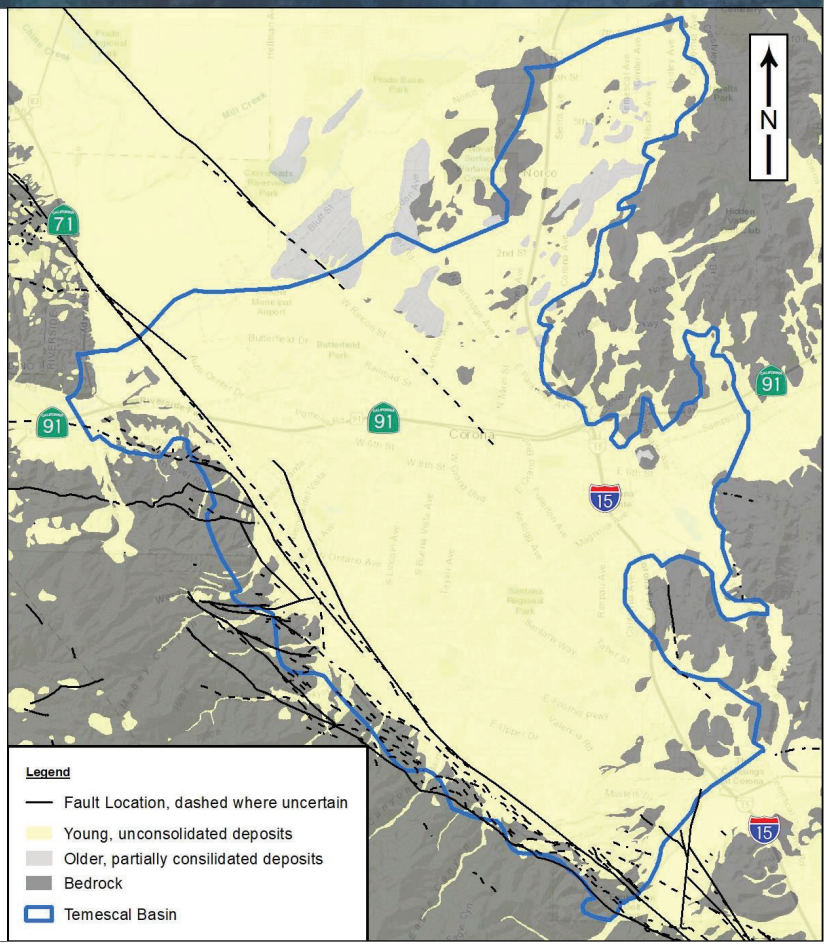
Incluye descripciones de:

- Límites de cuencas, geología, acuíferos y acuitardos, propiedades de acuíferos, y uso de aguas subterráneas

Mapas y gráficos que muestran:

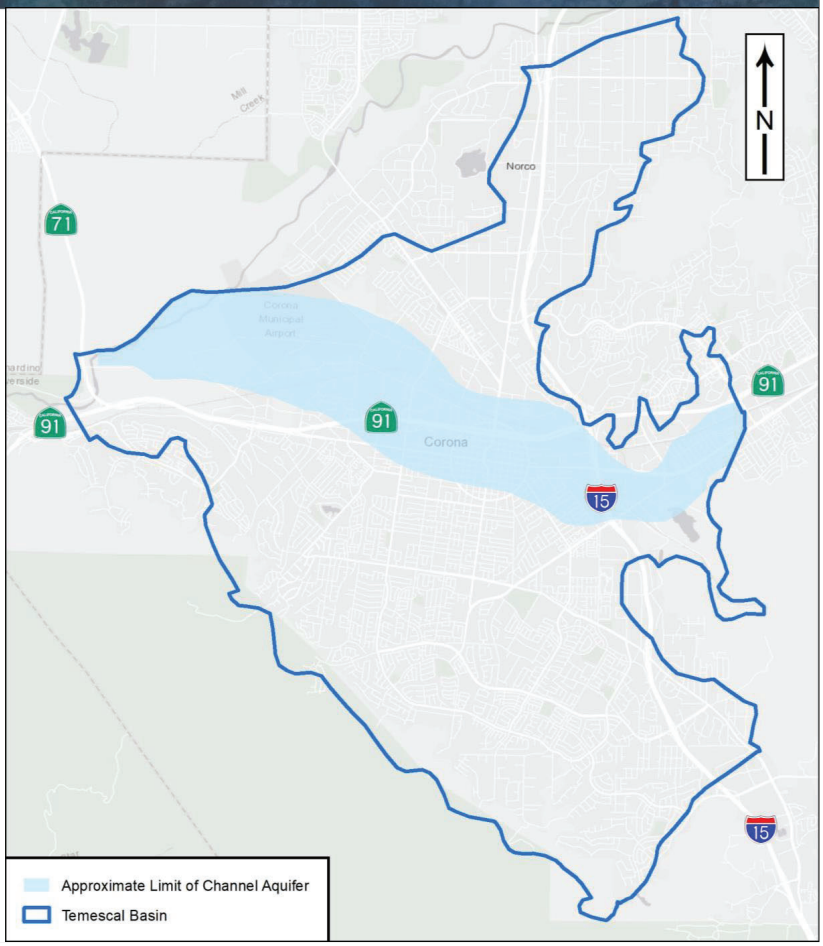
- Topografía, características de aguas superficiales, geología, tipos de tierra, ubicaciones de acuíferos, espesor de cuenca, secciones transversales

SURFICIAL GEOLOGY
GEOLOGÍA SUPERFICIAL

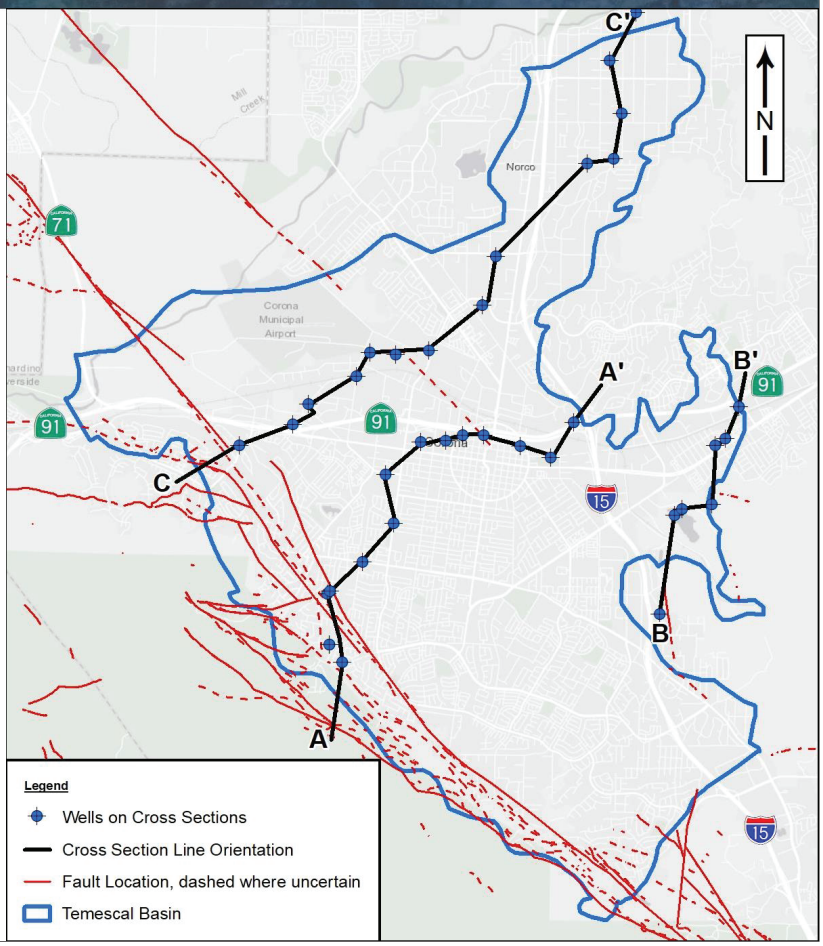


TEMESCAL GSA

CHANNEL AQUIFER
EL ACUÍFERO DEL CANAL



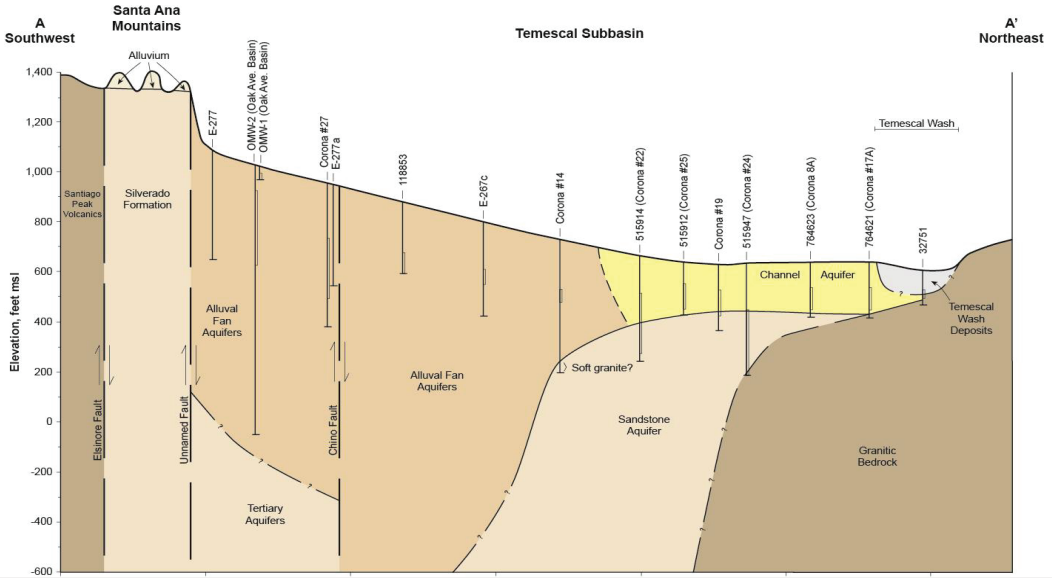
CROSS SECTIONS
SECCIONES TRANSVERSALES



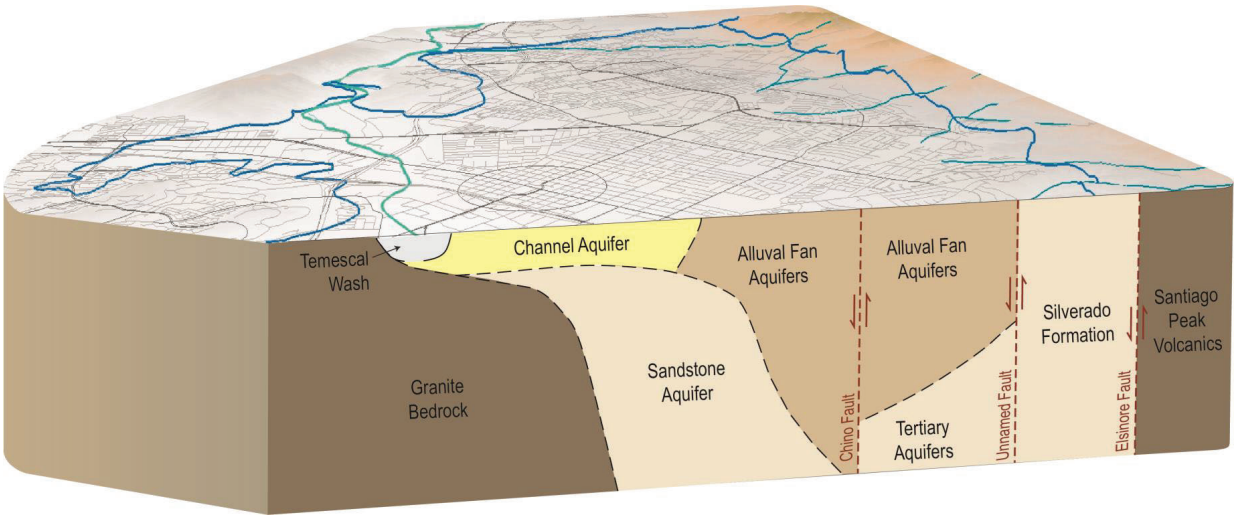
TEMESCAL GSA

CROSS SECTION A
SECCIÓN TRANSVERSAL - A

Channel Aquifer is the principal aquifer
El Acuífero del Canal es el principal acuífero



HYDROGEOLOGIC CONCEPTUAL MODEL
MODELO CONCEPTUAL HYDROGEOLÓGICO



TEMESCAL GSA

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

GROUNDWATER CONDITIONS

CONDICIONES DE AGUAS SUBTERRÁNEAS

TEMESCAL GSA

GROUNDWATER CONDITIONS

CONDICIONES DE AGUAS SUBTERRÁNEAS

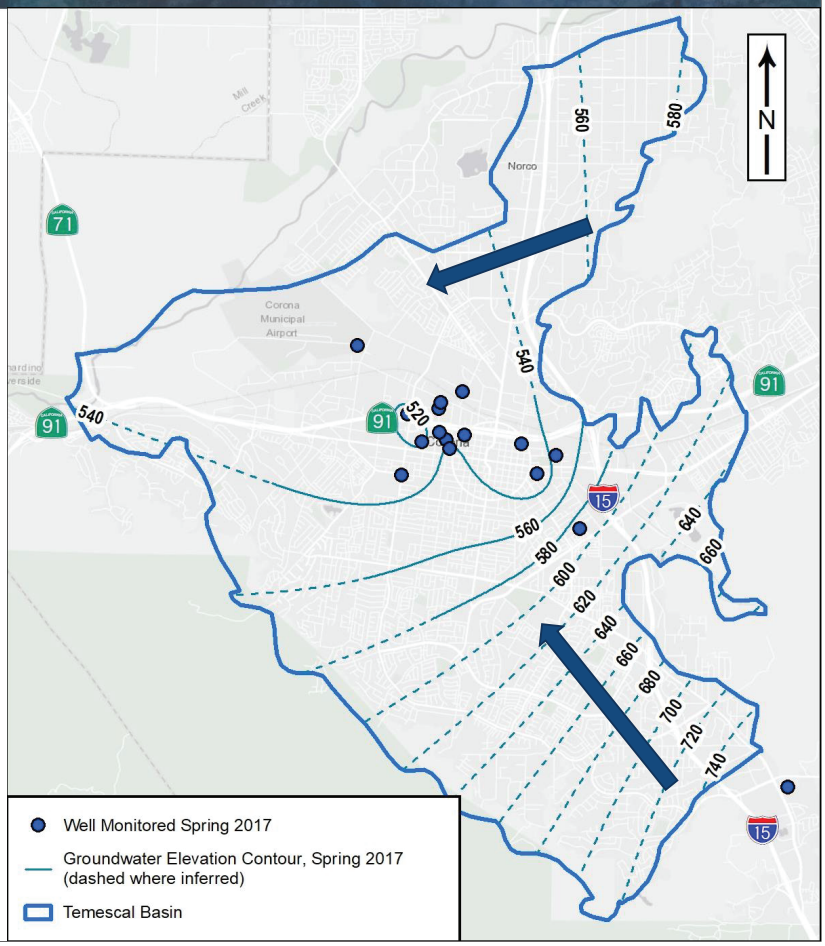
Presentation of current and historical conditions

- » Including groundwater elevations, water quality, interconnected surface water, and subsidence

Presentación de las condiciones actuales e históricas

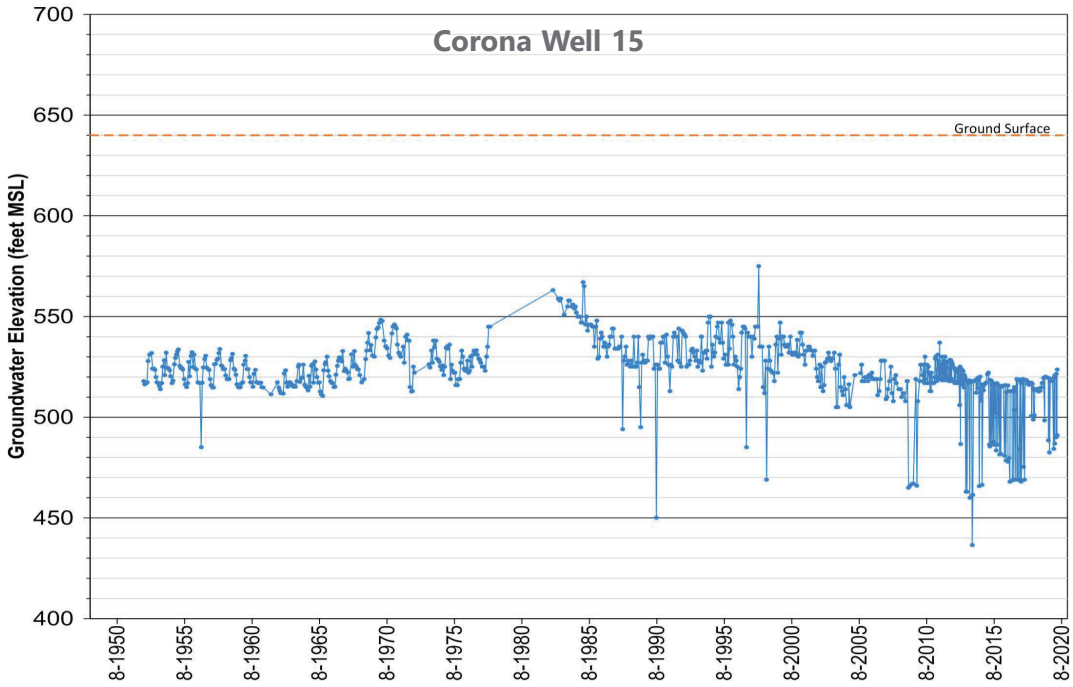
- » Incluyendo las elevaciones de las aguas subterráneas, la calidad del agua, las aguas superficiales interconectadas y el hundimiento

GROUNDWATER ELEVATION CONTOURS
CONTORNOS DE ELEVACIÓN DE AGUA SUBTERRÁNEA

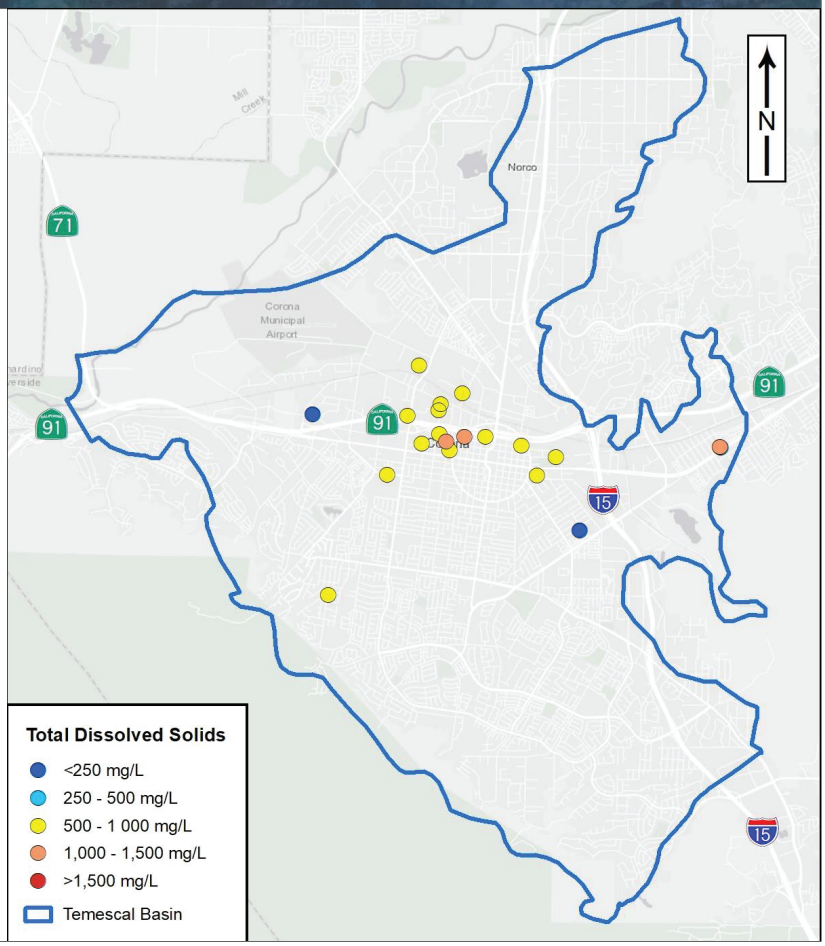


TEMESCAL GSA

HISTORICAL GROUNDWATER ELEVATIONS
ELEVACIONES HISTÓRICAS DE LAS AGUAS SUBTERRÁNEAS

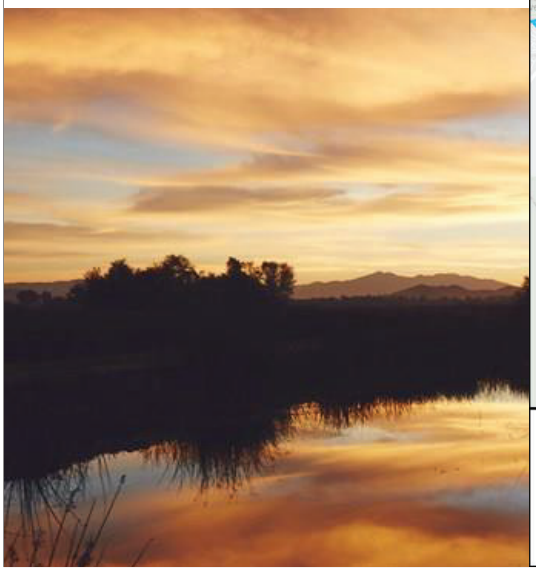


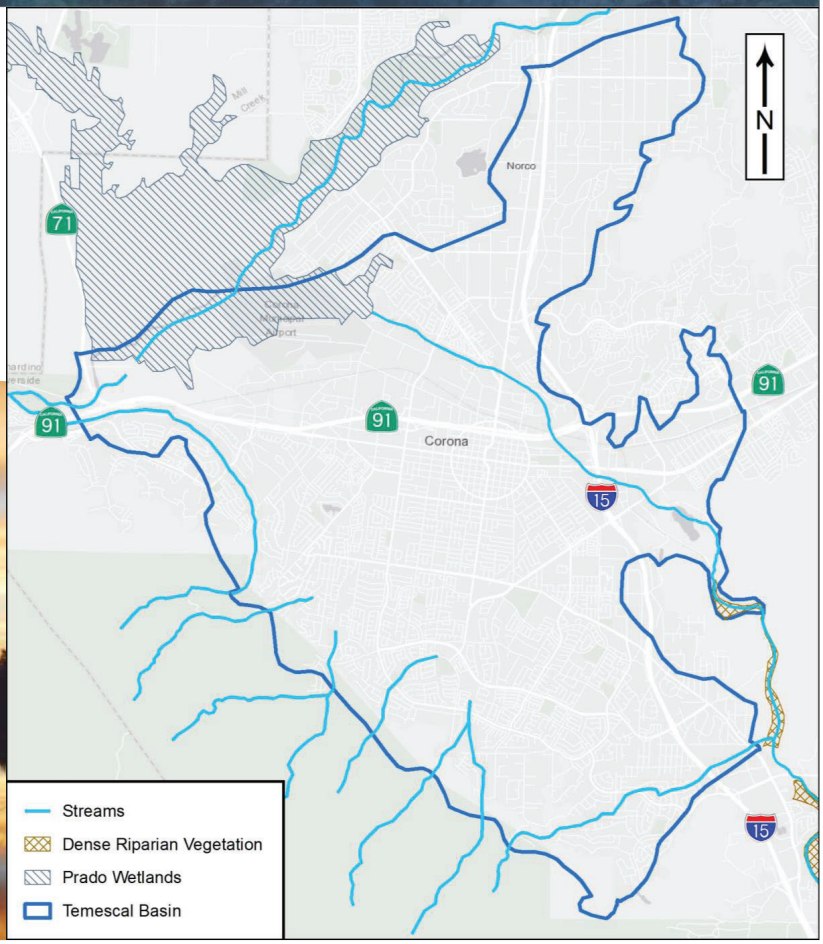
GROUNDWATER QUALITY
CALIDAD DEL AGUA SUBTERRÁNEAS



TEMESCAL GSA

INTERCONNECTED SURFACE WATER
AGUA SUPERFICIAL INTERCONECTADA





DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

» Do you know of any current or historical problems regarding the use of groundwater in the Temescal Basin?

¿Conoce algún problema actual o histórico sobre el uso de aguas subterráneas en la Cuenca del Temescal?

TEMESCAL GSA

WATER BUDGET
PRESUPUESTOS DE AGUAS

WATER BUDGET PURPOSE
PROPÓSITO DEL PRESUPUESTO DEL AGUA

- A water budget quantifies the inflows and outflows of the Temescal Basin over time

  Un presupuesto hídrico cuantifica los flujos de entrada y salida de la Cuenca del Temescal a lo largo del tiempo

- Both inflows and outflows vary from year to year, depending on hydrology or management

  Tanto los flujos de entrada como los de salida varían de un año a otro, dependiendo de la hidrología o la gestión

TEMESCAL GSA

WATER BUDGET – INFLOWS
PRESUPUESTO DEL AGUA – FLUJO DE ENTRADA

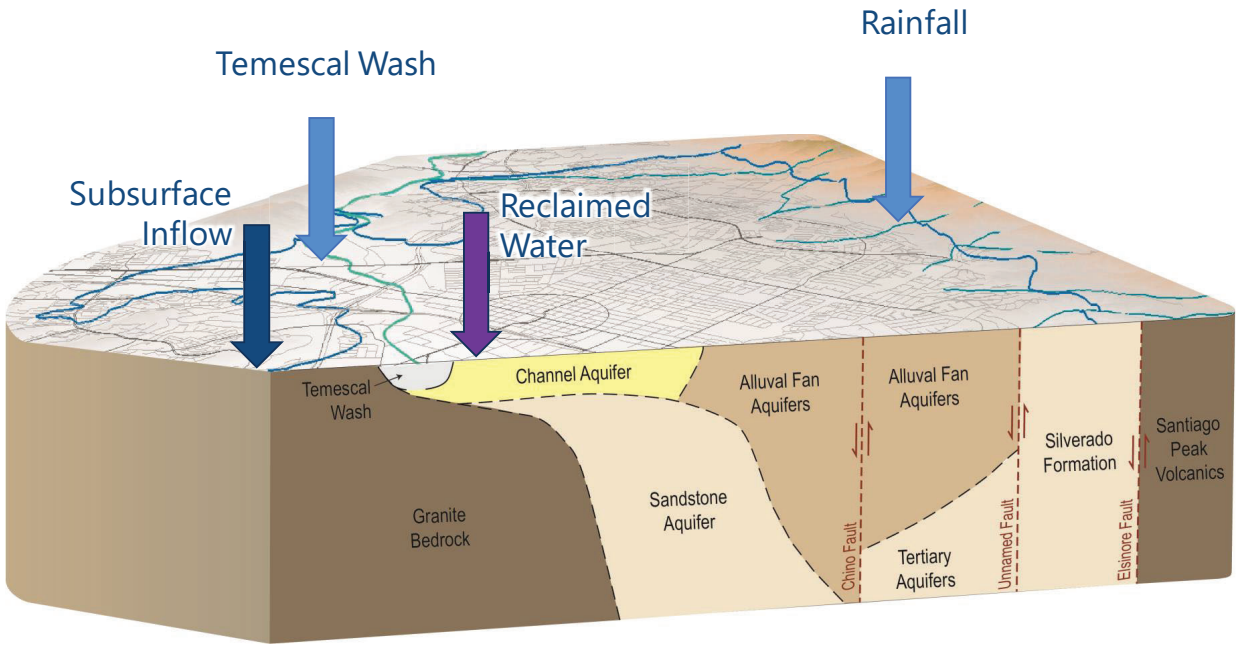
Water enters the groundwater basin through:

- Recharge from rainfall, stormwater, and streamflow
- Reclaimed Water percolation ponds
- Subsurface flow from neighboring basins

El agua entra en la cuenca de aguas subterráneas a través de:

- Recarga natural por lluvias, aguas pluviales y flujo de arroyos
- Estanques de percolación de agua recuperada
- Flujo subterráneo de las cuencas vecinas

WATER BUDGET – INFLOWS
PRESUPUESTO DEL AGUA – FLUJOS DE ENTRADA



TEMESCAL GSA

WATER BUDGET – OUTFLOWS
PRESUPUESTO DEL AGUA – FLUJO DE SALIDA

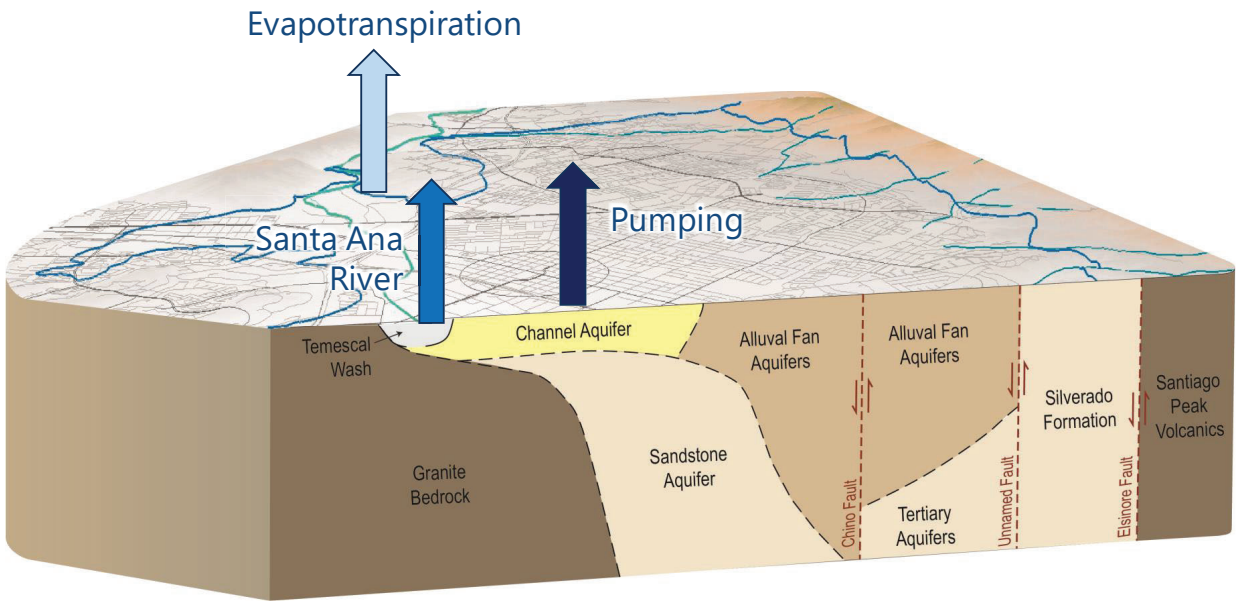
Water leaves the groundwater basin through:

- » Pumping
- » Flow to the Santa Ana River
- » Evapotranspiration

El agua deja la cuenca de agua subterránea a través de:

- » Pozos de Bombeo
- » Flujos al río Santa Ana
- » Evapotranspiración

WATER BUDGET – OUTFLOWS
PRESUPUESTO DEL AGUA – FLUJO DE SALIDA



TEMESCAL GSA

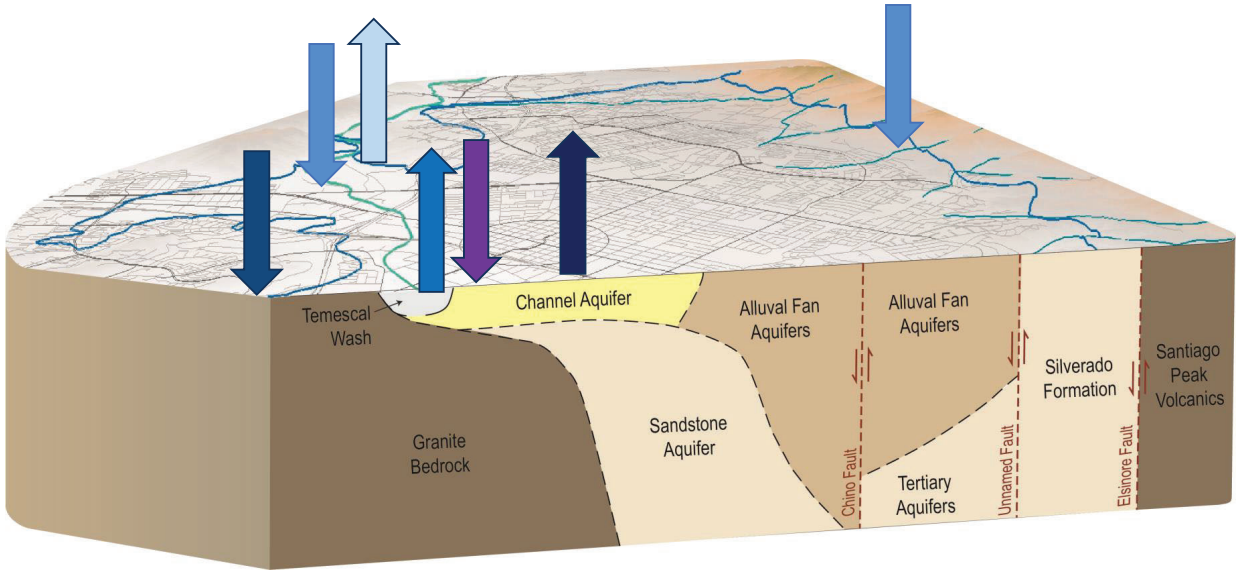
CHANGE IN STORAGE

» Inflows – Outflows = Change in Storage

Flujo de Entrada – Flujo de Salida - Cambio en el almacenamiento

» Numerical model can simulate future conditions

El modelo numérico puede simular condiciones futuras



DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

TEMESCAL GSA

WHAT DO YOU THINK?
¿QUÉ PIENSAS?

- What do you think are the most important uses of groundwater from the Temescal Basin? (Choose up to three)
  ¿Cuáles cree usted que son los usos más importantes de las aguas subterráneas de la Cuenca del Temescal? (Elija hasta tres)

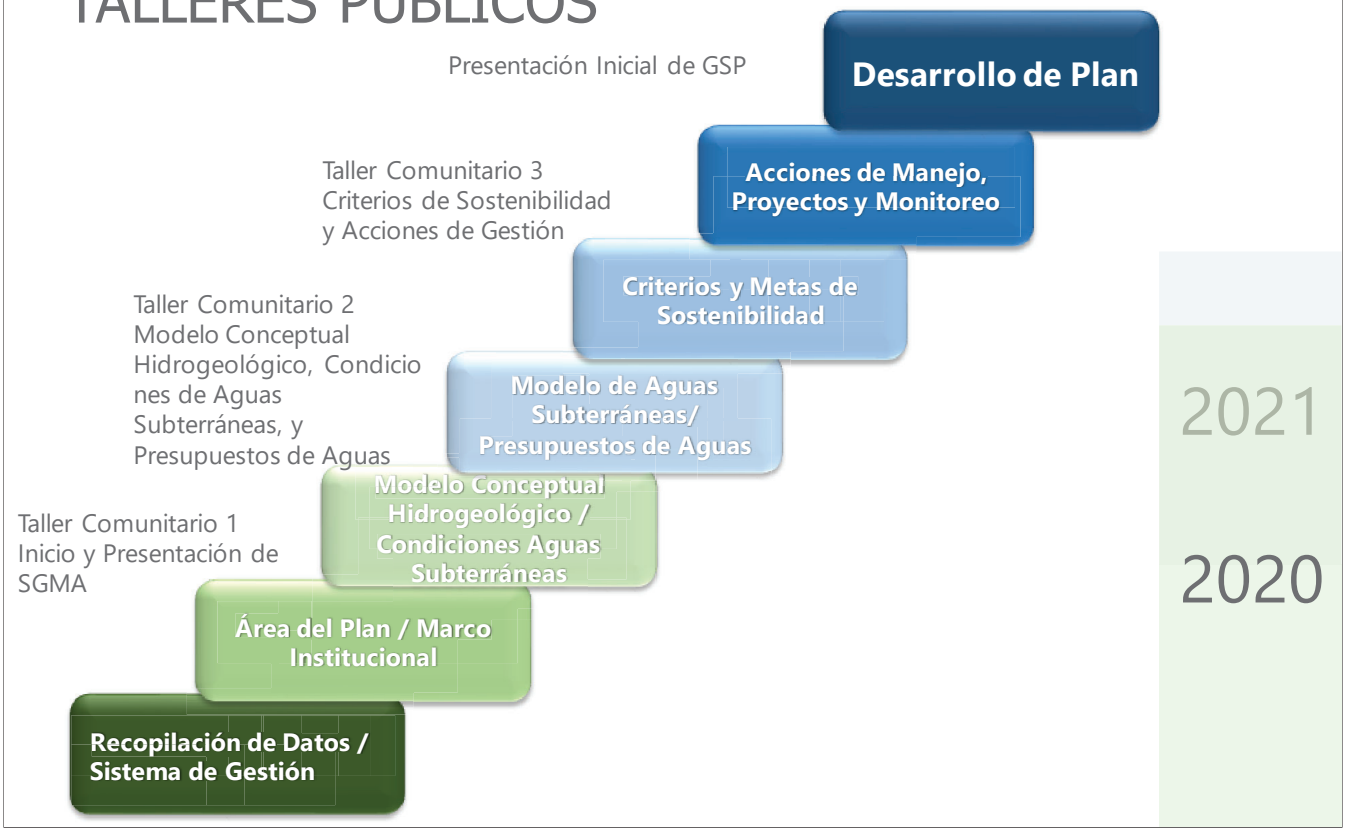
  - Groundwater Dependent Ecosystems/Ecosistemas dependientes del agua subterránea
  - Industrial Water Supply/ Suministro de agua industrial
  - Municipal Water Supply/Suministro de agua municipal
  - Rural Residential Water Supply/ Suministro de agua residencial en áreas rurales
  - Small Commercial Water Supply/ Suministro de agua para negocios comerciales pequeños
  - Small Community Water Supply/Suministro de agua para comunidades pequeñas

HOW TO STAY INVOLVED
CÓMO MANTENERSE INVOLUCRADO

TEMESCAL GSA

PUBLIC WORKSHOPS
TALLERES PÚBLICOS

PUBLIC WORKSHOPS
TALLERES PÚBLICOS

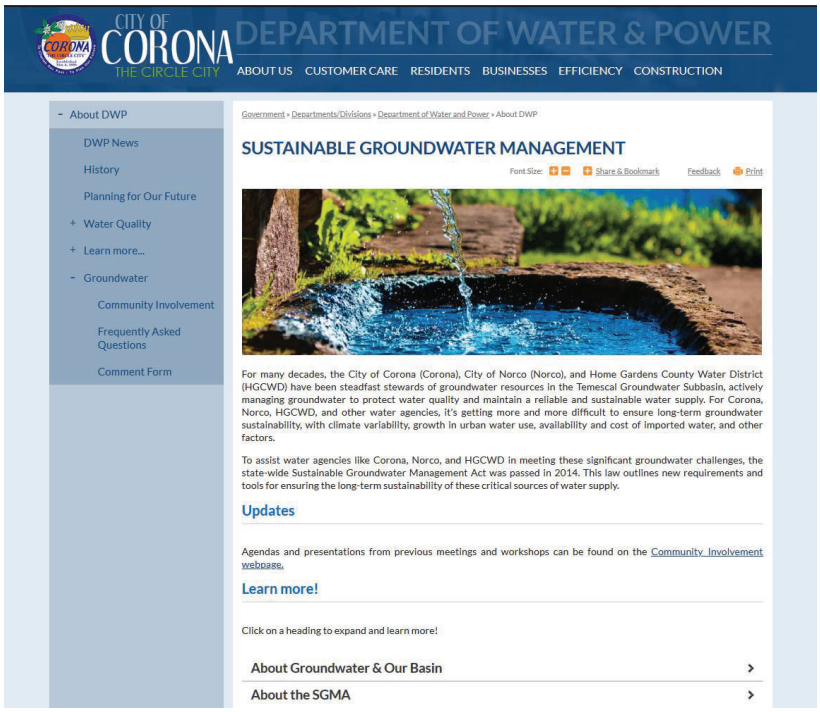


TEMESCAL GSA

OTHER MEETINGS
OTRAS REUNIONES

- Technical Advisory Committee Meetings
  Juntas del Comité Asesor Técnico
- Adoption Hearing for Final GSP
  Audiencia de adopción del GSP final

WEBSITE
SITIO WEB



TEMESCAL GSA

HOW TO KEEP IN TOUCH
CÓMO MANTENERSE EN CONTACTO

- Sign up for the mailing list by emailing groundwater@coronaca.gov
  Regístrese en la lista de correo enviando un correo electrónico a groundwater@coronaca.gov
- Visit the website to view information, review draft chapters and other materials, and to submit comments : www.CoronaCA.gov/Groundwater
  Visite el sitio web para ver información, revisar borradores de capítulos y otros materiales, y enviar comentarios: www.CoronaCA.gov/Groundwater

THANK YOU

GRACIAS

Temescal Basin Public Workshop 3

Workshop Summary

Contents

Appendix

1. Background

On September 16, 2014, the Governor of California signed into law a legislative package comprised of three bills: Assembly Bill (AB) 1739, Senate Bill (SB) 1168, and SB 1319. These laws are collectively known as the Sustainable Groundwater Management Act (SGMA). SGMA (pronounced sigma) defines sustainable groundwater management as the "management and use of groundwater in a manner that can be maintained without causing undesirable results." This means keeping balanced levels of pumping and recharge of groundwater while assuring reliable water quality. SGMA provides a comprehensive framework for basin sustainability, additional technical analysis, and quantification of many aspects of basin sustainability and management. This includes extensive and detailed descriptions of the basin setting and conditions and more comprehensive monitoring of groundwater use, quality, and levels, including metering of groundwater usage.

SGMA requires the formation of a locally controlled Groundwater Sustainability Agency (GSA), which is responsible for developing and implementing a Groundwater Sustainability Plan (GSP). The GSP outlines how to achieve groundwater sustainability within 20 years of its adoption. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Basin Groundwater Sustainability Agency (Temescal GSA) to create a GSP for the Temescal Basin.

GSAs must consider the interests of all beneficial uses and users of groundwater. The GSA must provide opportunities for public engagement and active involvement of diverse social, cultural, and economic elements of the population. The Temescal GSA recognizes that stakeholder and public engagement is critical to ensuring that the full range of interests of all beneficial uses and users of groundwater are represented during GSP development.

To share information and get input from stakeholders and the public, the Temescal GSA has been holding a series of public workshops, of which this is the third. Public Workshop 1, conducted on September 29, 2020, focused on communicating basic information about SGMA, the Temescal Basin, GSP development, and what sustainability means in a GSP. Participants were asked for input about their groundwater interests and what they thought was important for the future of groundwater in the Temescal Basin.

The second Public Workshop, conducted on March 2, 2021, focused on providing updates on the Temescal GSP development and introducing the hydrogeologic conceptual model, groundwater conditions, and water budget. Participants were asked for their input on what they thought the most important uses of groundwater were and if they knew of any current or historical problems regarding the use of groundwater in the Temescal Basin.

Public Workshop 3, conducted on July 8, 2021, focused on providing further updates on the Temescal GSP development and presenting the sustainability management criteria, projects and management actions, and implementation plan. Participants were asked to provide input on the sustainable management criteria, how the volume for groundwater in the Temescal Basin could be increased, and ideas for making groundwater more sustainable.

This summary documents the outreach methods, time and location, attendance, and major topics presented and discussed at this third public workshop.

2. Pre-Workshop Outreach

The Temescal GSA used a variety of methods to inform stakeholders and community members about the workshop and encourage participation, as shown in Table 1.

Table 1: Pre-Workshop Outreach Methods

Method	Description
Social Media Posts	The City of Corona and City of Norco posted information about the workshop on their Facebook pages.
Emails	Invitation emails were sent to those on the interested parties list.
Community Leader Meetings	Two meetings were held on June 29 and July 1. The purpose was to provide information on local water supply to community leaders, learn about needs and perspectives related to the Temescal GSP in vulnerable communities, and get input on what other stakeholders to invite.

3. When and Where

The workshop was held on July 8, 2021 from 4:00 to 6:00 p.m.

The workshop was held virtually on the Zoom platform. People also had the option to view and participate from the City of Corona Council Chambers. The workshop was streamed on the City of Corona's website, Facebook, and YouTube channels and on Corona TV, viewable on Channel 29 on Time Warner Spectrum and Channel 99 on AT&T.

4. Attendance and Social Media Views

Approximately 18 people attended the Zoom virtual meeting, including six stakeholder participants. Spanish interpretation was available for participants to access during the Zoom virtual meeting. Others viewed the workshop on Facebook Live, YouTube, and Corona TV. Post-workshop statistics indicated 18 views on YouTube.

5. Summary

Welcome and Introductions

Jack Hughes, facilitator from Kearns & West, welcomed everyone to the third public workshop for the Temescal GSP. Hughes reviewed the workshop purpose, which was to provide Temescal GSP development updates and present the sustainable management criteria, projects and management actions, and implementation plan. Additionally, the consultant team wanted to hear input from participants on the sustainable management criteria, how the volume for groundwater in the Temescal Basin could be increased, and ideas for making groundwater more sustainable.

Hughes invited the workshop attendees to introduce themselves using the Zoom chat and recognized the Temescal GSA representatives in attendance. Hughes then introduced the additional workshop presenters: Chad Taylor, Principal Hydrogeologist at Todd Groundwater, and Madison Rasmus, Environmental Engineer at Carollo.

Review of Groundwater Sustainability Plan Development

Taylor first reviewed background information on GSP development (see the Appendix for presentation slides for this and the following sections). SGMA is landmark legislation established in 2014 following a long period of statewide drought. SGMA has altered how water is managed in California by providing local agencies with authority and guidance for how to assess sustainability and critical tools to help achieve or maintain sustainability in areas where groundwater is an important water source. Taylor explained that GSPs are detailed road maps for how groundwater basins will achieve or maintain long-term sustainability.

Taylor described the Temescal Basin area, which covers most of the City of Corona, about half of the City of Norco, and the western part of the Home Gardens County Water District. One GSA, the Temescal GSA, was formed for the Temescal Basin because the area is hydrologically connected and has historically been managed as one unit. The California Department of Water Resources has designated the Temescal Basin as a medium priority basin, which required the Temescal GSA to prepare the Temescal GSP.

Taylor next described the organization of the Temescal GSA. The City of Corona, the City of Norco, and Home Gardens County Water District formed the Temescal GSA in 2017 through a memorandum of understanding. The City of Corona is leading the GSP effort with support from Corona Department of Water and Power staff and additional consultants. The Technical Advisory Committee (TAC) has provided input during GSP preparation and includes members that represent public agencies, local businesses, well owners, and community interests. The GSP process is founded on public engagement and stakeholder outreach, which is the purpose of the public workshops.

Groundwater Sustainability Plan Development Update

Taylor provided a status update on the Temescal GSP. The individual chapters that have been prepared are the Introduction, Plan Area, Hydrogeologic Conceptual Model, Groundwater Conditions, Monitoring Network, Projects and Management Actions, and Implementation Plan chapters. Most of these chapters are available online for public review; some chapters are currently being reviewed by the TAC and will be uploaded to the GSA website shortly for public review. The consultant team is finalizing the Water Budget and Sustainability Management Criteria chapters. A draft of the Temescal GSP will be compiled and prepared for public release later in summer 2021.

Discussion/Q&A

Hughes opened the floor for questions and comments. There were no questions or comments from participants after this presentation.

Sustainable Management Criteria

Taylor presented the draft sustainable management criteria for the Temescal Basin. He first defined sustainable management as the management and use of groundwater without causing undesirable results. Taylor explained that the first part of defining sustainability locally is to establish a sustainability goal. The sustainability goal helps to provide a framework for how the sustainability indicators are assessed. The Temescal GSA and TAC worked together to develop the following goal:

To sustain groundwater resources for the current and future beneficial uses of the Temescal Basin in a manner that is adaptive and responsive to the following objectives:

- Provide a long-term, reliable, and efficient groundwater supply for municipal, industrial, and other uses;
- Provide reliable storage for water supply resilience during droughts and shortages;
- Protect groundwater quality;
- Support beneficial uses of interconnected surface waters; and
- Support integrated and cooperative water resource management.

Taylor provided an overview of the six indicators for evaluating groundwater sustainability in a basin: chronic lowering of groundwater levels, reduction of groundwater storage, degradation of water quality, depletion of interconnected surface water affecting beneficial uses, land subsidence affecting land uses, and seawater intrusion, which is not applicable in the Temescal Basin.

Thresholds need to be developed for the five applicable sustainable management criteria for the Temescal Basin. First, undesirable results, or conditions that should be avoided, are defined for each indicator. Once undesirable results are defined, they are used to develop minimum thresholds for assessing each of the sustainability indicators. Next, measurable objectives are set. Beneficial uses in the Temescal Basin also need to be evaluated and considered for each of the sustainability indicators. These include the following:

- Municipal Water Supply
- Industrial Water Supply
- Small Community Water Supply
- Small Commercial Water Supply
- Groundwater Dependent Ecosystems
- Recreational Surface Water Supply

Taylor next explained how the sustainable management criteria were established for each indicator, starting with chronic lowering of groundwater levels. Since there is no record of wells being dry in the Temescal Basin during the range of historic groundwater levels, the assumption was made that historic low groundwater levels could be repeated in the future. The consultant team established a set of representative key wells in the Temescal Basin. These key wells have a long history for monitoring groundwater levels and will continue to be used for monitoring in the future. Taylor explained that the minimum threshold for defining undesirable results relative to chronic lowering of groundwater levels is defined at each key well by the historic minimum static groundwater elevation (or maximum historical depth to groundwater).

Taylor then presented the sustainable management criteria for reduction of groundwater storage, noting that storage is related to groundwater levels. He explained that GSP regulations allow the use of groundwater level minimum thresholds and measurable objectives as a proxy, and that the historic minimum-based groundwater level threshold is well-suited for use as a proxy for groundwater storage. The minimum threshold for groundwater storage is fulfilled by the minimum threshold for groundwater levels (using the historical minimum).

Taylor presented the sustainable management criteria for degradation of water quality. He explained that the Temescal GSA is not responsible for local groundwater quality problems or degradation caused by others. Groundwater quality is under regulatory oversight by state agencies. However, the Temescal GSA is responsible for undesirable results associated with increased concentrations of water quality

contaminants of concern due to groundwater management, such as through recharge and changes in pumping patterns related to groundwater management. The primary contaminants of concern in the Temescal Basin (historically and currently) are total dissolved solids (TDS) and nitrate. The minimum threshold is defined as a statistically significant increase in the percentage of wells with averages exceeding the maximum contaminant level for TDS and/or nitrate, relative to current conditions. Statistically significant is defined as more than a 10 percent increase in the number of wells in a 5-year period.

Taylor next presented the sustainable management criteria for depletions of interconnected surface water affecting beneficial uses. He explained that groundwater close to the ground surface can interact with vegetation or stream flows. Vegetation that relies on groundwater as its primary source of water is called riparian vegetation. Ecosystems that rely on groundwater are referred to as groundwater dependent. Impacts associated with reductions of stream flow, which affect groundwater dependent ecosystems, and potential impacts to riparian vegetation are assessed. Taylor displayed a map showing the maximum depth to water of wells in the Temescal Basin. Groundwater levels in all the wells in the main portion of the Temescal Basin have never been less than 40 feet deep. Water levels in wells in and near the Prado Basin area have never been deeper than 15 feet. Because riparian vegetation roots typically reach 20 to 30 feet at most, it is unlikely that the main part of the basin supports any riparian vegetation; however, the Prado Basin area likely supports riparian vegetation with its shallow groundwater levels. Depths in all wells around the Prado Basin and trends for groundwater levels, groundwater pumping, river flow, and rainfall were analyzed to determine if the Prado wetlands were supported by groundwater. The conclusion is that the Prado wetlands are more dependent on surface inflows than groundwater inflow. Changes in surface inflows have much more influence than changes in groundwater pumping or levels to the north or south. More monitoring is needed in the southern Prado Basin between the Prado wetlands and pumping centers in the Temescal Basin. Taylor explained that the minimum threshold for depletion of interconnected surface water is the historical maximum depth to water in shallow monitoring wells in the southern Prado area, correlated with Temescal Basin pumping or groundwater levels.

Finally, Taylor presented the sustainable management criteria for land subsidence affecting land uses, explaining that when water is removed from an aquifer, fine-grain materials can compact and the ground surface can decline. Ground surface elevation changes that may be related to subsidence statewide has been estimated by satellite measurements in data provided by the California Department of Water Resources dating from 2015 to 2019. This includes ground surface elevation changes in the Temescal Basin. This method has a margin of error of approximately 0.1 feet. The satellite data estimates show ground surface change in the Temescal Basin ranging between a rise of 0.08 feet to a fall of 0.08 feet. This is very small and within the margin of error. Taylor presented the minimum threshold for subsidence, defined as a rate of decline equal to or greater than 0.2 feet in any 5-year period. This has been considered in terms of a cumulative decline equal to or greater than 1.0 foot of decline since 2015, which represents current conditions and aligns with the SGMA start date.

Discussion/Q&A

Hughes opened the floor for questions and comments. There were no questions or comments from participants after this presentation.

Projects and Management Actions

Rasmus presented the draft projects and management actions for the Temescal GSP. She explained the three groupings of actions: baseline, planned, and potential future. Baseline refers to existing or established commitments to projects or actions. Planned actions are developed and evaluated projects or actions. Potential future actions describe projects or actions to be implemented later to achieve sustainability goals.

Rasmus began by describing the baseline projects. The first is groundwater treatment at the Temescal Desalter to reduce nitrates, total suspended solids (TSS), TDS, and other contaminants of concern for the drinking water supply. The second project is water reclamation facility (WRF) percolation ponds that discharge from City of Corona-owned WRFs to percolation ponds that recharge the Temescal Basin. The third project includes water-level quality assurance and quality control activities that maintain the reliability of ongoing groundwater elevation data. The final project Rasmus presented was the Western Riverside County Regional Authority (WRCRWA) plant that will soon supply recycled water for local irrigation use.

Rasmus next reviewed the baseline management actions. These include Water Shortage Contingency Plans, which are plans that detail the stages of water shortage and conservation response based on an agency's available supply and deficit, and Water Conservation Programs, which include response actions to reduce water use in the stages of a water shortage. Additional management actions include the Western Municipal Water District Integrated Regional Water Management Plan, which is a coordinated, long-range regional water quantity and quality management strategy, and the Temescal GSA's involvement in the Santa Ana Watershed Project, which is a coordinated management group formed to protect the Santa Ana River Basin and associated water resources.

Rasmus then reviewed the three projects included in planned actions. First, the Potable Reuse Feasibility Study will look at the possible use of future reclaimed water supply. Second, the mountain runoff capture investigation would explore options for operational changes allowing for additional benefit of groundwater recharge by using storm event runoff that is collected in Riverside County Flood Control and Water Conservation District basins. This would be at the edges of the basin adjacent to the Santa Ana mountains. Lastly, the interconnected surface water monitoring wells project would include three shallow monitoring wells drilled into the Prado Management Area to allow for groundwater elevation monitoring.

Rasmus provided more information on the interconnected surface water monitoring wells project since its implementation date is within the first year of Temescal GSP adoption. Wells will be sited in the southern area of the Prado Management Area. There is no active groundwater monitoring in this location so drilling wells will allow the Temescal GSA to better understand the relationship between the basin and interconnected water in the Prado Wetlands. The project will consist of three groundwater wells about 40-60 feet deep that will allow for continuous groundwater elevation data collection in the area. The data will be incorporated in the 5-year GSP update and these monitoring wells will inform future management actions in the Santa Ana River Watershed.

Lastly, Rasmus presented potential future actions. Data collected from the Prado Management Area monitoring wells will be used as part of monitoring for undesirable results to interconnected surface water in Prado. If this monitoring identifies potential undesirable results to interconnected surface water

in the Prado Management Area, then coordination will be needed with upstream Santa Ana River partners as a management action. If groundwater levels in the Prado Management Area are falling, this approach will allow for coordinated solutions.

There are two additional future management actions. One is for future groundwater treatment, which would entail implementing advanced treatment for previously detected per- and polyfluoroalkyl substances (PFAS), TDS, nitrate, and trichloropropane (TCP). Other future management actions are for urban stormwater treatment, capture, and recharge, which is an exploration of urban stormwater harvesting to offset water supply and/or provide for groundwater recharge.

Discussion/Q&A

Hughes opened the floor for questions and comments. Participants were encouraged to answer the following question verbally or using the chat:

- Are there other potential groundwater related projects we should consider?
- Do you have ideas for how the volume of groundwater in the Temescal Basin could be increased?
- Do you have ideas for making groundwater more sustainable in the Temescal Basin?

The following are the questions and comments received in the chat box from participants:

- Could you confirm that Western Municipal Water District (WMWD) has an Integrated Regional Water Management Plan (IRWMP)?
- Since the 2008 WMWD IRWMP is a bit dated, I would recommend also citing the 2018 Santa Ana Watershed Project Authority (SAWPA) One Water One Watershed (OWOW) Plan.
- If the GSA is not responsible for impacts to groundwater dependent ecosystems resulting from reductions in surface water flow beyond its control, how does the Temescal GSA intend to determine if reductions in Western Riverside County Regional Wastewater Authority (WRCWRA) flows are impacting groundwater dependent ecosystems in the Prado Basin?
- I would recommend that the groundwater basin planning reflect the storage project called Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) of which WMWD is a member.

Groundwater Sustainability Plan Implementation

Taylor presented for discussion four categories of GSP implementation: monitoring of groundwater conditions and use, annual reports, carrying out of projects and management actions, and periodic evaluations/GSP updates. First, monitoring of groundwater conditions and use will occur often throughout the basin. This includes groundwater levels, water quality, stream flow, subsidence, and water use. Second, the data collected through this monitoring will be compiled into annual reports. Annual reports include groundwater level data, storage change, water use, and sustainability progress. Third, carrying out projects and management actions will be an important part of GSP implementation and will be updated and modified over time. Last, periodic evaluations will occur at least every 5 years and GSP updates can occur based on new information becoming available, new projects being added, or the need to modify sustainable management criteria. All modifications should be made to ensure that the GSP continues to provide a reliable roadmap for sustainability for the groundwater basin.

Discussion/Q&A

Hughes opened the floor for questions and comments. There were no questions or comments from participants after this presentation.

How to Stay Involved

Hughes explained how members of the public could be involved throughout the remainder of the Temescal GSP preparation. Once all chapters are completed later in summer 2021, the draft Temescal GSP will be released for a 90-day period where the public can review and comment on the draft plan. The public will also have the opportunity to attend and make comments at the Adoption Hearing for the final GSP in winter 2021 before the final GSP is sent to the California Department of Water Resources by January 2022.

Draft chapters and other materials such as fact sheets can be found on the project website hosted by the City of Corona Department of Water and Power: CoronaCA.gov/Groundwater. Members of the public can use the form on the website to provide comments. Information on attending the Temescal GSP Adoption Hearing will also be posted on the website. Anyone who wants to be included on the mailing list to receive communication about the Temescal GSP should email Groundwater@CoronaCA.gov.

6. Wrap Up and Closing

Hughes thanked everyone for participating.

Appendix

Presentation Slides

TEMESCAL GSP PUBLIC WORKSHOP 3
TEMESCAL GSP TALLER COMUNITARIO 3

About the Groundwater Sustainability Plan (GSP)

The Sustainable Groundwater Management Act or "SGMA" is a California law that gives local agencies new tools for managing groundwater and planning for the future. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Groundwater Sustainability Agency (Temescal GSA) in order to make a **Groundwater Sustainability Plan** for the Temescal Basin. Since groundwater is such an important resource for everyone, we need your help!

Un poco sobre el plan de sostenibilidad de las aguas subterráneas (GSP)

La Ley de Gestión Sostenible de Aguas Subterráneas o "SGMA", por sus siglas en inglés, es una ley de California que otorga a las agencias locales nuevas herramientas para gestionar las aguas subterráneas y planificar para el futuro. La Ciudad de Corona, la Ciudad de Norco y el Distrito Hídrico del Condado de Home Gardens han formado la Agencia de Sostenibilidad de Aguas Subterráneas de la Cuenca de Temescal (Temescal Groundwater Sustainability Agency) o Temescal GSA a fin de crear un **Plan de Sostenibilidad de Aguas Subterráneas** para la Cuenca de Temescal. Dado que las aguas subterráneas son un recurso muy importante para todos, ¡necesitamos su ayuda!

TEMESCAL GSA

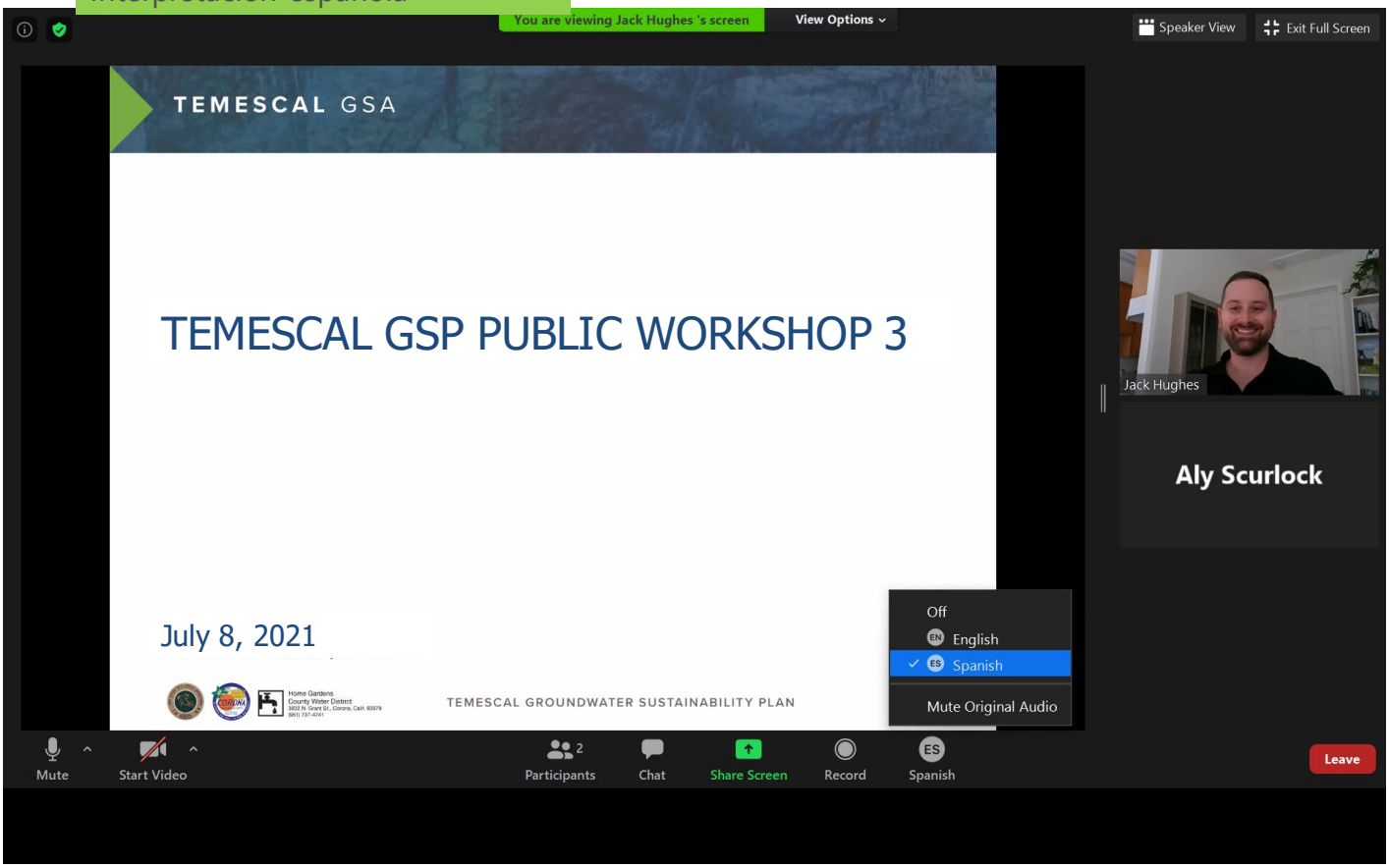
TEMESCAL GROUNDWATER SUSTAINABLY PLAN (GSP) PUBLIC WORKSHOP 3

PLAN DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS (GSP) DE TEMESCAL TALLER COMUNITARIO 3 DE TEMESCAL

JULY 8, 2021 / 8 DE JULIO DE 2021

WELCOME
BIENVENIDOS

Interpretación española



This public workshop is being recorded and will be posted on the website:
www.CoronaCA.gov/Groundwater

Este taller público sera grabado y sera publicado en el sitio web:
www.CoronaCA.gov/Groundwater

TEMESCAL GSA

WORKSHOP PURPOSE
PROPÓSITO DE TALLER COMUNITARIO

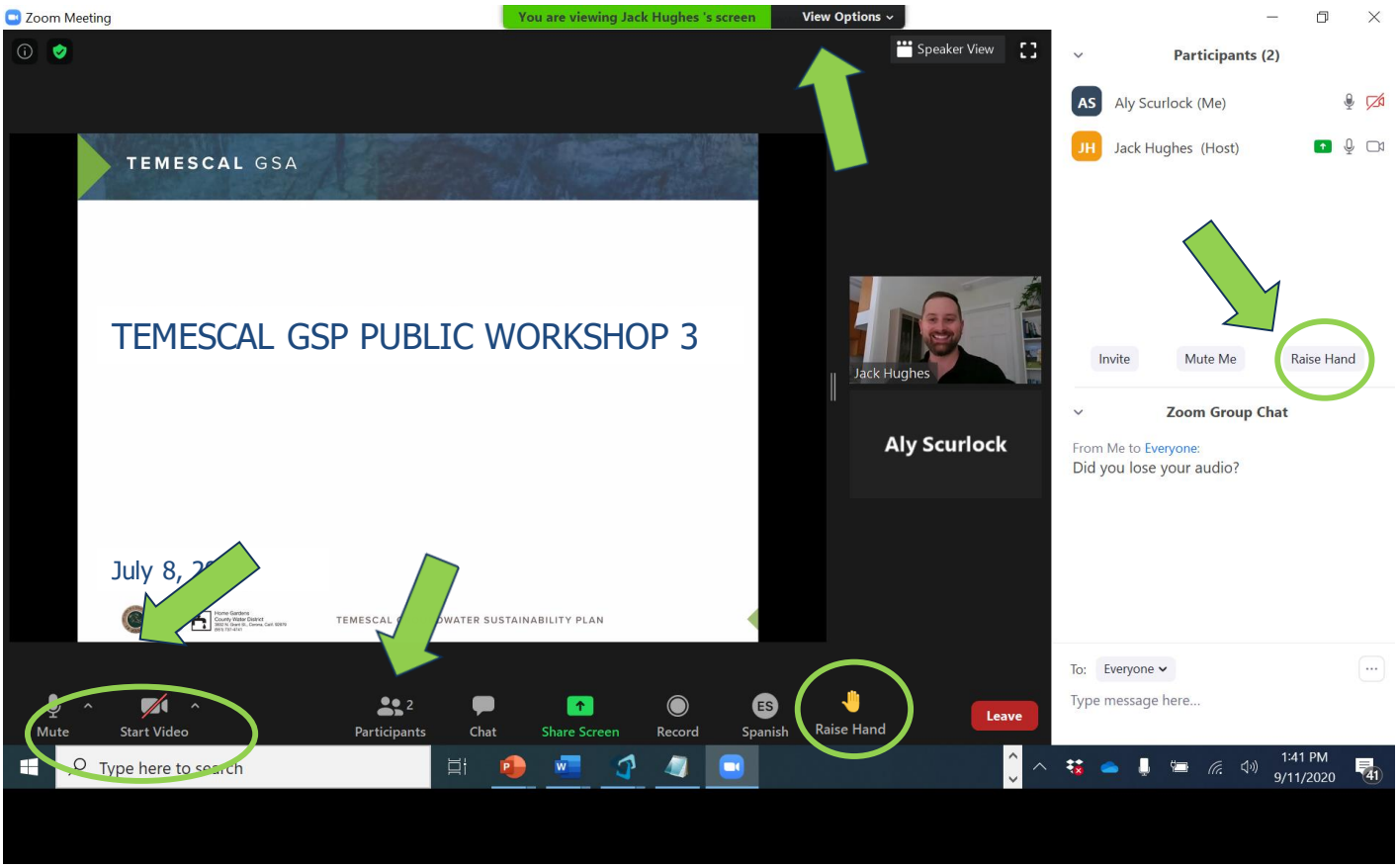
- Give Temescal Groundwater Sustainability Plan development updates.
  Proporcionar actualizaciones del desarrollo del Plan de Sostenibilidad de Aguas Subterráneas de Temescal.
- Present the sustainability criteria, projects and management actions, and implementation plan.
  Presentar los criterios de sostenibilidad, proyectos y acciones de gestión, y plan de implementación.

WORKSHOP PURPOSE
PROPÓSITO DE TALLER COMUNITARIO

» Hear input on sustainability criteria, and how the volume for groundwater in the basin could be increased and ideas for making groundwater more sustainable.
Escuche comentarios sobre criterios de sostenibilidad y cómo se podría aumentar el volumen de agua subterránea en la cuenca e ideas para hacer que el agua subterránea sea más sostenible

TEMESCAL GSA

HOW TO USE ZOOM
CÓMO UTILIZAR ZOOM



TEMESCAL GSA

INTRODUCTIONS
INTRODUCCIONES

TEMESCAL GSA

Home Gardens
County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

TEMESCAL GSA

CONSULTANT TEAM
EQUIPO DE CONSULTORES

Chad Taylor
Todd Groundwater

Madison Rasmus
Carollo Engineers

Jack Hughes
Kearns & West

TIPS FOR A PRODUCTIVE DISCUSSION
CONSEJOS PARA UNA DISCUSIÓN PRODUCTIVA

» One speaker at a time
Solo una persona habla a la vez

» Keep input concise
Sea conciso al hablar

» Actively listen
Escuche activamente

» Offer solutions
Ofrezca soluciones

TEMESCAL GSA

YOUR INPUT MATTERS
SU OPINIÓN ES IMPORTANTE

» The planning team will consider your comments as they prepare the Groundwater Sustainability Plan.
El equipo de planificación considerará sus comentarios mientras preparan el Plan de Sostenibilidad de aguas subterráneas.

» Your input will be recorded, organized thematically, and presented in a workshop summary on the project website.
Sus comentarios serán registrados, organizados temáticamente y presentados en el resumen del taller en el sitio web del proyecto.

REVIEW OF GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

REPASO DEL PLAN DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS

TEMESCAL GSA

SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

GESTIÓN SOSTENIBLE DE AGUAS SUBTERRÁNEAS (SGMA)

Landmark legislation in 2014

- » Recognizes that groundwater management in California is best accomplished locally

Legislación histórica en 2014

- » Reconoce que la gestión de las aguas subterráneas en California se logra mejor a nivel local

GROUNDWATER SUSTAINABILITY PLANS
PLANES DE SOSTENIBILIDAD DE LAS AGUAS SUBTERRÁNEAS

» Groundwater sustainability plans are detailed road maps for how groundwater basins will achieve long term sustainability.

» Los planes de sostenibilidad de las aguas subterráneas actuan como mapas que detallan la ruta que hay que seguir para que cuencas de aguas subterráneas logren la sostenibilidad a largo plazo.

TEMESCAL GSA

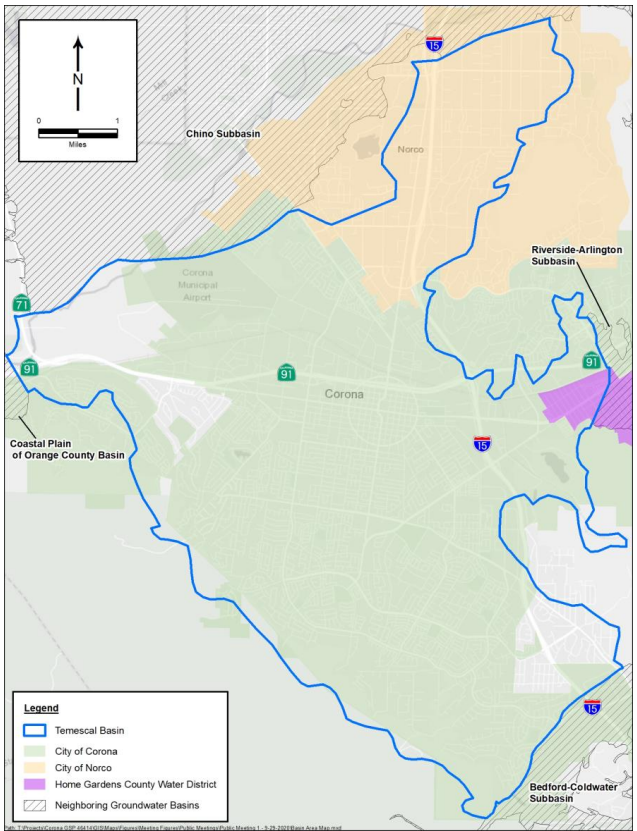
THE TEMESCAL BASIN
LA CUENCA DEL TEMESCAL

» DWR categorized Temescal Basin as a Medium Priority Basin

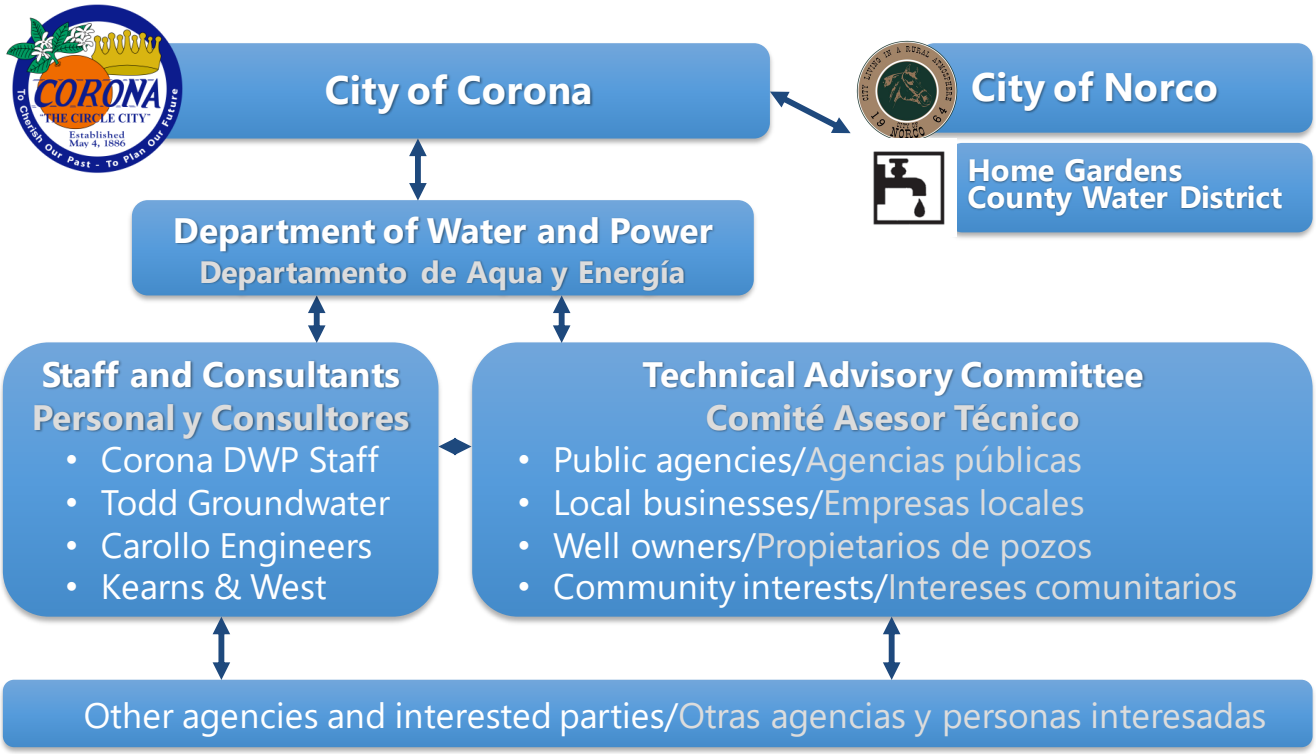
La Cuenca del Temescal fue desginada por DWR como Cuenca de Prioridad Media

» Contiguous and connected

Contigua y conectada



GSA ORGANIZATION / ORGANIZACÍON



TEMESCAL GSA

GSP DEVELOPMENT UPDATE
ACTUALIZACIÓN DE DESARROLLO DEL SGP

GSP STATUS
ESTADO DEL GSP

Individual chapters have been completed:

- Introduction
- Plan Area
- Hydrogeologic Conceptual Model
- Groundwater Conditions
- Monitoring Network
- Projects and Management Actions
- Implementation Plan

Working on finishing drafts of:

- Water Budget
- Sustainability Criteria

Then will be compiling complete GSP for distribution

Se han completado capítulos individuales:

- Introducción
- Área del plan
- Modelo conceptual hidrogeológico
- Condiciones de las aguas subterráneas
- Red de supervisión
- Proyectos y acciones de gestión
- Plan de ejecución

Estamos trabajando en la finalización de borradores de:

- Presupuesto del agua
- Criterios de sostenibilidad

A continuación, se compilará el GSP completo para su distribución

TEMESCAL GSA

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

SUSTAINABLE MANAGEMENT CRITERIA

CRITERIOS DE GESTIÓN SOSTENIBLE

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WHAT IS SUSTAINABLE MANAGEMENT?
¿QUÉ ES LA GESTIÓN SOSTENIBLE?

The management and use of groundwater without causing undesirable results
El gestión y utilización de las aguas subterráneas sin causar resultados indeseables

Chronic lowering of groundwater levels
Reducción crónica de los niveles de aguas subterráneas

Reduction of groundwater storage
Reducción del almacenamiento de aguas subterráneas

Degradation of water quality
Degradación de la calidad del agua

Depletions of interconnected surface water
Agotamiento de aguas superficiales interconectadas

Land subsidence affecting land uses
Hundimiento de tierras que afectan los usos de las tierras

Seawater intrusion (not applicable here)
Inactividad de aguas marinas (no aplicable aquí)

SUSTAINABILITY GOAL
OBJETIVO DE SOSTENIBILIDAD

To sustain groundwater resources for the current and future beneficial uses of the Temescal Basin in a manner that is adaptive and responsive to the following objectives:

- Provide a long-term, reliable and efficient groundwater supply for municipal, industrial, and other uses
- Provide reliable storage for water supply resilience during droughts and shortages
- Protect groundwater quality
- Support beneficial uses of interconnected surface waters, and
- Support integrated and cooperative water resource management.

Sostener los recursos de aguas subterráneas para los usos beneficiosos actuales y futuros de la Cuenca Temescal de manera que sean adaptables y respondan a los siguientes objetivos:

- Proporcionar un suministro de agua subterránea fiable y eficiente a largo plazo para usos municipales, industriales y de otro tipo
- Proporcionar almacenamiento fiable para la resistencia del suministro de agua durante sequías y escaseces
- Proteger la calidad del agua subterránea
- Apoyar los usos beneficiosos de las aguas superficiales interconectadas y
- Apoyar los recursos hídricos integrados y cooperativos

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HOW DO WE MEASURE SUSTAINABILITY?
¿CÓMO MEDIMOS LA SOSTENIBILIDAD?

Sustainability Criteria
Criterios de sostenibilidad:

- Undesirable results / Resultados no deseados
  - What are undesirable results that we want to avoid?
  - ¿Cuáles son los resultados no deseados que queremos evitar?
- Minimum thresholds (MT) / Umbrales mínimos (MT)
  - How low is too low for water levels?
  - ¿Qué tan bajo es demasiado bajo para los niveles de agua?
- Measurable objectives (MO) / Objetivos mensurables (MO)
  - What is the desired range of water levels?
  - ¿Cuál es el rango deseado de niveles de agua?

BENEFICIAL USES
USOS BENEFICIOSOS

- » Municipal water supply
- » Industrial water supply
- » Small community water systems
- » Small commercial water supply
- » Groundwater dependent ecosystems
- » Recreational surface water use

- » Suministro de agua municipal
- » Agua para procesos industriales
- » Sistemas de agua comunitarios pequeños
- » Agua para uso comercial pequeños
- » Ecosistemas dependientes del agua subterránea
- » Uso de aguas superficiales para fines recreativos

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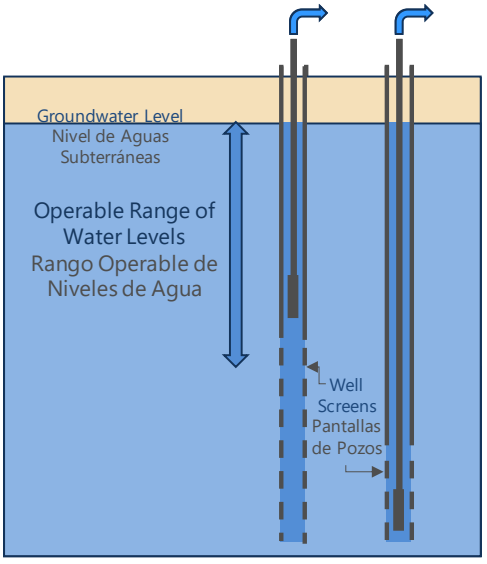
GROUNDWATER LEVELS
NIVELES DE AGUA SUBTERRÁNEA

- » Define MT as historical low level in Key Wells
  Definir MT como nivel bajo histórico en Key Wells

- » Key Wells are a set of representative monitoring wells that will continue to be monitored
  Los pozos clave son un conjunto representativo de pozos de monitoreo que continuarán siendo monitoreados



REDUCTION OF GROUNDWATER STORAGE
REDUCCIÓN DEL ALMACENAMIENTO DE AGUAS SUBTERRÁNEAS

» Groundwater storage is connected to water levels
El almacenamiento de aguas subterráneas está conectado a los niveles de agua

» GSP regulations allow use of groundwater level Minimum Thresholds and Measurable Objectives as a proxy
Las regulaciones del GSP permiten el uso de umbrales mínimos de nivel de aguas subterráneas y objetivos mensurables como proxy

» Historical minimum-based water level threshold is well suited to use as a proxy
El umbral histórico de nivel de agua basado en el mínimo es adecuado para su uso como proxy

» Minimum Threshold for storage is fulfilled by the minimum threshold for groundwater levels
El umbral mínimo para el almacenamiento se cumple con el umbral mínimo para los niveles de aguas subterráneas

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WATER QUALITY / CALIDAD DEL AGUA

» GSA is not responsible for local problems or degradation caused by others.
GSA no es responsable por los problemas locales o la degradación causada por otros.

» Groundwater quality is under regulatory oversight by State Agencies.
La calidad de las aguas subterráneas está bajo la supervisión reglamentaria de las agencias estatales.

» The GSA is responsible for increased concentrations in water quality due to management (recharge, pumping, etc.).
La GSA es responsable por el aumento de las concentraciones en la calidad del agua debido a la gestión (recarga, bombeo, etc.).

WATER QUALITY THRESHOLD
UMBRAL DE CALIDAD DEL AGUA

» Minimum Threshold defined as a statistically significant increase in the percentage of wells with averages exceeding the maximum contaminant level (MCL) for total dissolved solids (TDS) and nitrate, relative to current conditions.

Umbral mínimo definido c omo un aumento estadísticamente significativo en el porcentaje de pocillos con promedios que exceden el nivel máximo de contaminante (MCL) para sólidos disueltos totales (TDS) y nitrato, en relación con las condiciones actuales.

» Statistically significant is defined as more than 10 percent increase in number of wells in 5-year period.

Estadísticamente significativo se define como un aumento de más del 10 por ciento en el número de pozos en un período de 5 años.

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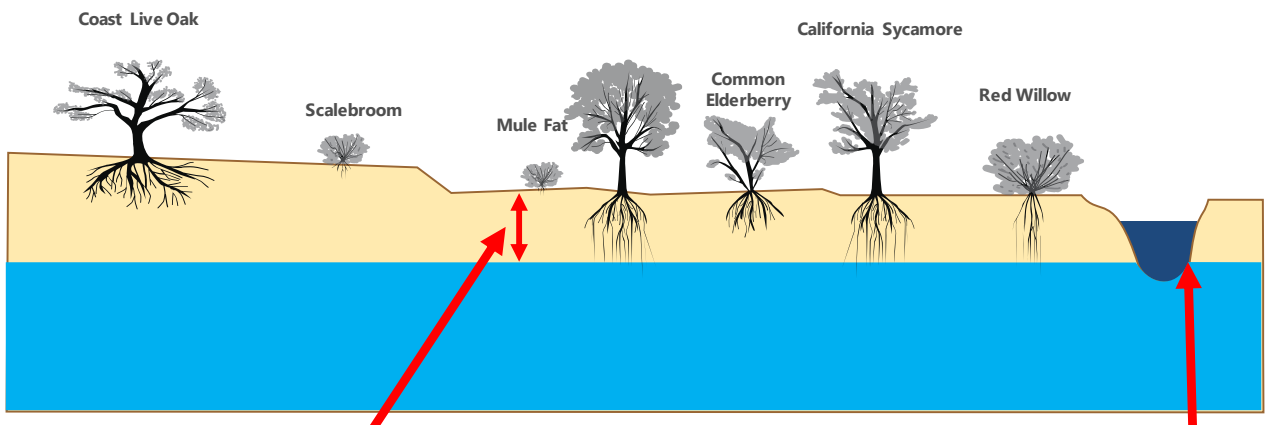
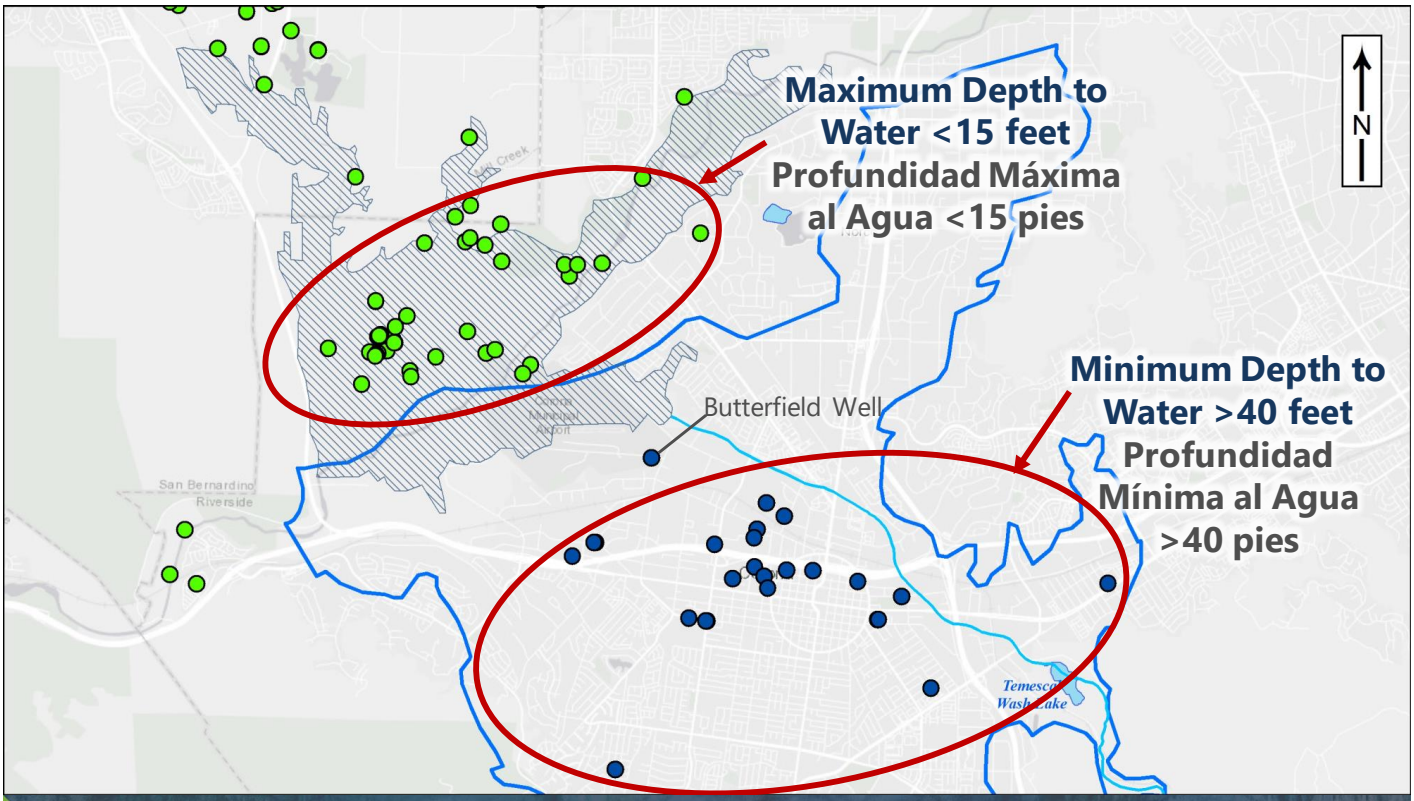
INTERCONNECTED SURFACE WATER
AGUAS SUPERFICIALES INTERCONECTADAS



Riparian Vegetation:
About 20 to 30 feet
Riparian Vegetation:
Cerca de 20 a 30 pies

Stream Flow Depletion:
Stream Bed Elevation
Agotamiento del Flujo de la Corriente:
Elevación del Lecho del Arroyo

DEPTH TO GROUNDWATER
PROFUNDIDAD A LAS AGUAS SUBTERRÁNEAS



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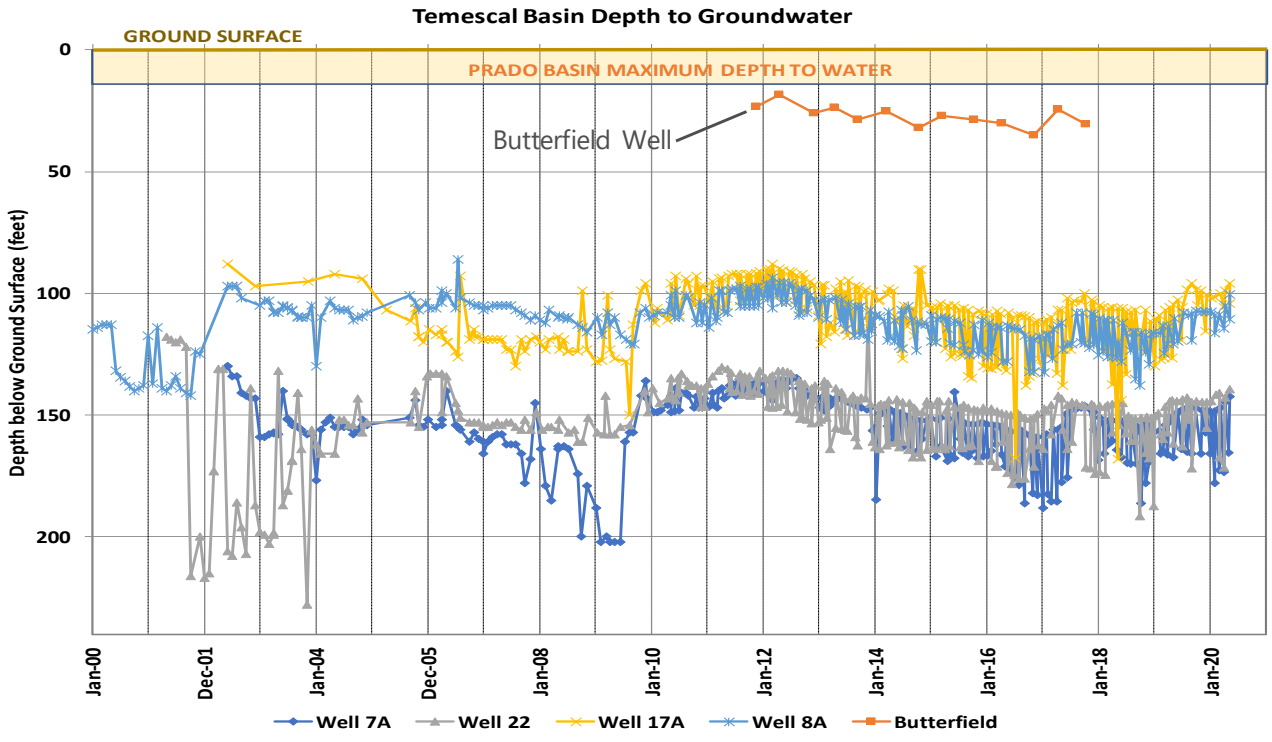
DEPTH TO GROUNDWATER
PROFUNDIDAD A LAS AGUAS SUBTERRÁNEAS



INTERCONNECTED SURFACE WATER CONCLUSIONS
CONCLUSIONES SOBRE LAS AGUAS SUPERFICIALES INTERCONECTADAS

» Prado wetlands are more dependent on surface inflows than groundwater inflow

Los humedales del Prado dependen más de los flujos de entrada superficiales que los flujos de entrada de aguas subterráneas

» Changes in surface inflows have much more influence than changes in groundwater pumping or levels to the north or south

Los cambios en los flujos de entrada superficiales tienen mucha más influencia que los cambios en el bombeo de aguas subterráneas o los niveles hacia el norte o el sur

» More monitoring is needed in the southern Prado between the wetlands and pumping centers in Temescal Basin

Se necesita más vigilancia en el sur del Prado entre los humedales y los centros de bombeo en la cuenca Temescal

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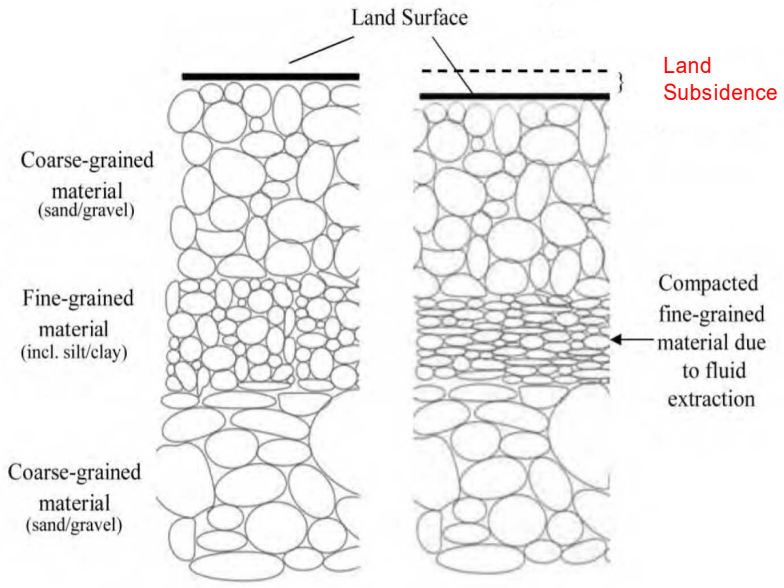
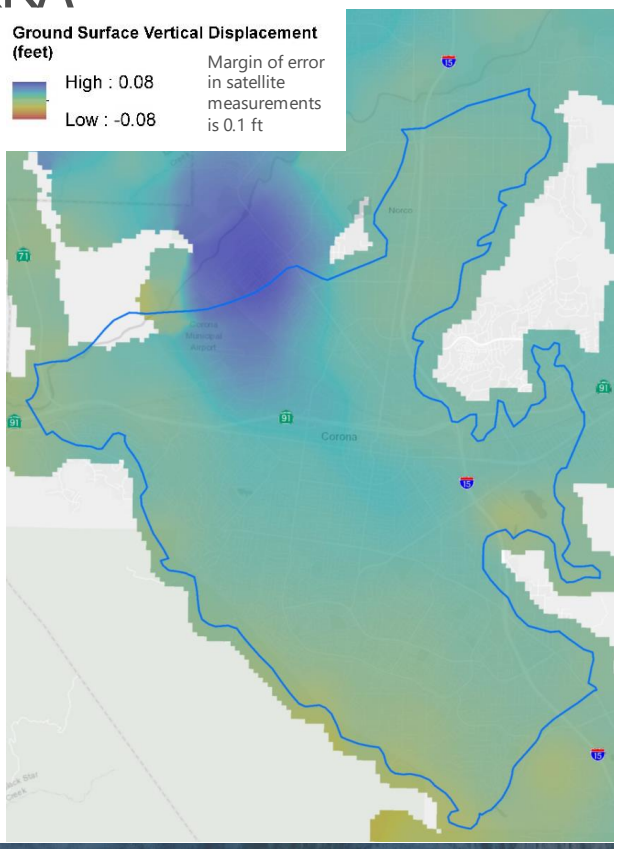
INTERCONNECTED SURFACE WATER THRESHOLD
UMBRAL DE AGUAS SUPERFICIALES INTERCONECTADAS

» Minimum Threshold for depletion of interconnected surface water is historical maximum depth to water in shallow monitoring wells in the southern Prado area, correlated with Temescal Basin pumping or water levels

El umbral mínimo para el agotamiento del agua superficial interconectada es el nivel mínimo histórico del agua (profundidad máxima al agua) en pozos de monitoreo poco profundos en el área sur del Prado, correlacionado con el bombeo de la Cuenca Temescal o los niveles del agua

SUBSIDENCE
HUNDIMIENTO DE LA TIERRA





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SUBSIDENCE THRESHOLD
UMBRAL DE HUNDIMIENTO DE LA TIERRA

» Defined as rate of decline equal to or greater than 0.2 feet in any five-year period

Definido como una tasa de disminución igual o superior a 0.2 pies en cualquier período de cinco años

» This has been considered in terms of a cumulative decline equal to or greater than one foot of decline since 2015

Esto se ha considerado en términos de una disminución acumulada igual o mayor a un pie de disminución, desde el 2015

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

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PROJECTS AND MANAGEMENT ACTIONS
PROYECTOS Y ACCIONES DE GESTIÓN

PROJECT MANAGEMENT/ACTION GROUPINGS

- Group 1: Baseline Actions

  Grupo 1: Acciones de línea de base
- Group 2: Planned Actions

  Grupo 2: Acciones planeadas
- Group 3: Potential Future Actions

  Grupo 3: Posibles acciones futuras

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GROUP 1 PROJECTS
PROYECTOS DEL GRUPO 1

- Groundwater Treatment: Treatment at the Temescal desalter to reduce nitrates, TDS, TSS and other contaminants for the City's drinking water supply

  Tratamiento de aguas subterráneas: tratamiento en la desaladora de Temescal para reducir los nitratos, TDS, TSS y otros contaminantes para el suministro de agua potable de la ciudad.
- Water Reclamation Facility Percolation Ponds: Discharge from percolation ponds that recharge the Basin

  Estanques de percolación de instalaciones de recuperación de agua: descarga de estanques de percolación que recargan la cuenca

GROUP 1 PROJECTS
PROYECTOS DEL GRUPO 1

» Water Level QA/QC: Maintaining the reliability of groundwater elevation data

Control de calidad / control de calidad del nivel del agua: mantenimiento de la confiabilidad de los datos de elevación del agua subterránea

» WRCRWA Recycled Water: This plant will soon produce recycled water for local irrigation use

Agua reciclada de WRCRWA: esta planta pronto producirá agua reciclada para uso de riego local.

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GROUP 1 MANAGEMENT ACTIONS
ACCIONES DE GESTIÓN DEL GRUPO 1

» Water Shortage Contingency Plans: Stages of water shortage and conservation response based on available water supply

Planes de contingencia de escasez de agua: Etapas de escasez de agua y respuesta de conservación en función del suministro de agua disponible

» Water Conservation Programs: Response actions to reduce water use in accordance with water shortage

Programas de conservación de agua: acciones de respuesta para reducir el uso de agua de acuerdo con la escasez de agua

GROUP 1 MANAGEMENT ACTIONS
ACCIONES DE GESTIÓN DEL GRUPO 1

» WMWD IRWMP: Coordinated, long-range regional water quality and management strategy

WMWD IRWMP: Estrategia regional coordinada de gestión y calidad del agua a largo plazo

» Santa Ana Watershed Involvement: Coordinated management group to protect the Santa Ana River basin and associated water resources

Participación de la cuenca de Santa Ana: grupo de gestión coordinado para proteger la cuenca del río Santa Ana y los recursos hídricos asociados

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GROUP 2 PROJECTS
PROYECTOS DEL GRUPO 2

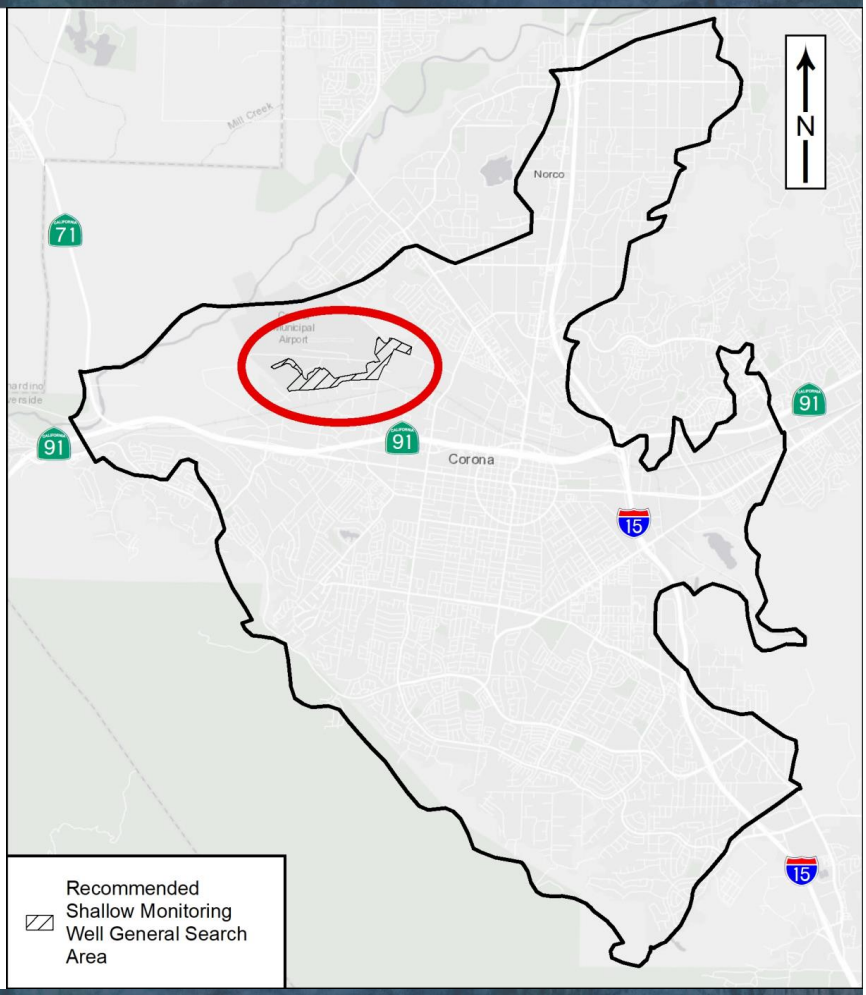
» Potable Reuse Feasibility Study: Study to look at use potential for near to future reclaimed water supply

Estudio de viabilidad de reutilización de agua potable: estudio para analizar el potencial de uso del suministro de agua recuperada en el futuro cercano

» Mountain Runoff Capture Investigation: Runoff during storm events is collected into existing RCFCWCD basins to mitigate flooding. This study would explore options for operational changes to allow for additional benefit of groundwater recharge.

Investigación de captura de escorrentía de montaña: La escorrentía durante tormentas se recolecta en las cuencas RCFCWCD existentes para mitigar las inundaciones. Este estudio exploraría opciones para cambios operativos que permitan un beneficio adicional de la recarga de agua subterránea.

GROUP 2 – MONITORING WELLS PROJECT
GRUPO 2 - PROYECTO DE POZOS DE MONITOREO



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GROUP 2 – MONITORING WELLS PROJECT
GRUPO 2 - PROYECTO DE POZOS DE MONITOREO

- 3 wells, 40-60 feet deep

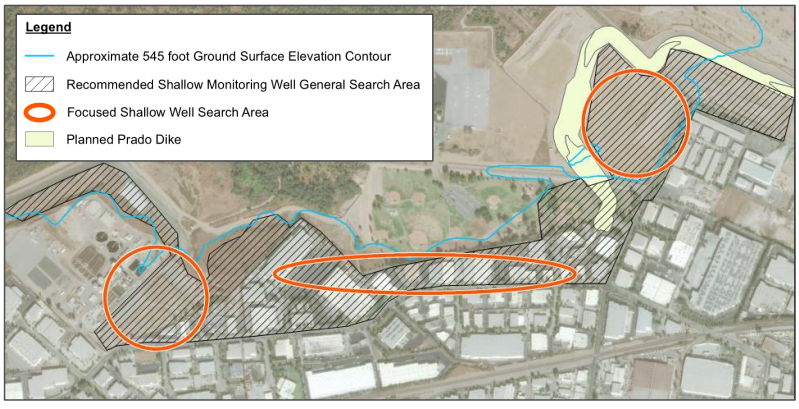
  3 pozos, de 40 a 60 pies de profundidad

- Continuous groundwater elevation data collection to be used in 5-year GSP update

  Recopilación continua de datos de elevación del agua subterránea que se utilizará en la actualización del GSP en 5 años

- Data will inform future management actions

  Los datos informarán las acciones de gestión futuras



GROUP 3 MANAGEMENT ACTIONS
ACCIONES DE GESTIÓN DEL GRUPO 3

» Santa Ana River Wastewater Discharge Coordination for Shallow Groundwater Conditions: Contingent on Prado monitoring well installation. If groundwater levels in Prado are falling, this approach will entail coordination with upstream partners for solutions

Coordinación de descarga de aguas residuales del río Santa Ana para condiciones de aguas subterráneas poco profundas: depende de la instalación del pozo de monitoreo de Prado. Si los niveles de agua subterránea en Prado están cayendo, este enfoque implicará la coordinación con los socios del alrededor para encontrar soluciones

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GROUP 3 PROJECTS
PROYECTOS DEL GRUPO 3

» Future Groundwater Treatment: Implementation of advanced treatment to treat for PFAS as well as TDS, nitrate, and TCP

Tratamiento de aguas subterraneas en el futuro: Implementacion de tratamiento avanzado para tratar agua de PFAS al mismo tiempo que TDS, nitrato, y TCP

» Urban Stormwater Treatment, Capture, and Recharge: Exploration of urban stormwater harvesting to offset water supply and/or provide for groundwater recharge

Tratamiento, captura y recarga de aguas pluviales urbanas: exploración de la captación de aguas pluviales urbanas para compensar el suministro de agua y / o proporcionar recarga de aguas subterráneas

DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

» Are there other potential groundwater related projects we should consider?
¿Hay otros proyectos potenciales relacionados con las aguas subterráneas que deberíamos considerar?

» Do you have ideas for how the volume of groundwater in the Basin could be increased?
¿Tiene ideas sobre cómo se podría aumentar el volumen de aguas subterráneas en la cuenca?

» Do you have ideas for making groundwater more sustainable in the Basin?
¿Tiene ideas para hacer que las aguas subterráneas sean más sostenibles en la cuenca?

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GSP IMPLEMENTATION
IMPLEMENTACIÓN DEL GSP

WHAT IS GSP IMPLEMENTATION?
¿QUÉ ES LA IMPLEMENTACIÓN DEL GSP?

- Monitoring groundwater conditions and use
  Monitoreo de las condiciones y el uso de las aguas subterráneas
- Annual Reports
  Reportes Anuales
- Carrying out projects and management actions
  Realización de proyectos y acciones de gestión
- Periodic Evaluations / GSP Updates
  Evaluaciones Periódicas / Actualizaciones del GSP

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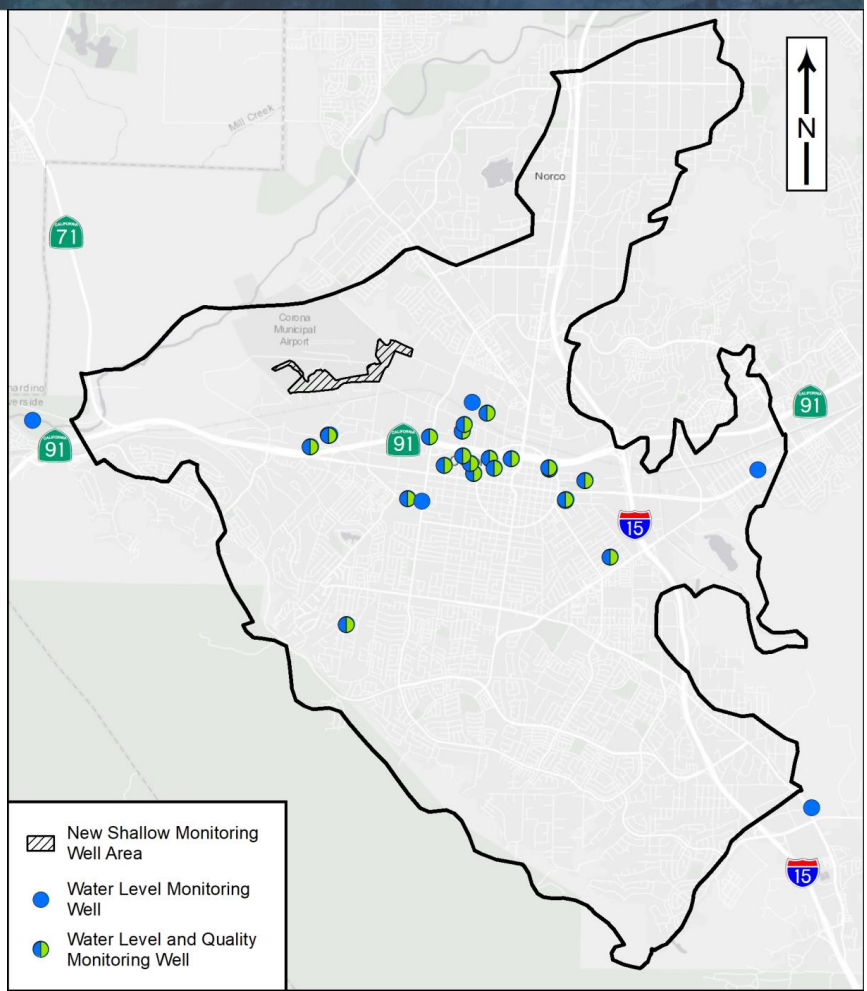
MONITORING
MONITOREO

Includes:
- water levels,
- water quality,
- streamflow,
- subsidence, and
- water use

Incluye:
- los niveles de agua,
- la calidad del agua,
- el flujo de corrientes,
- el hundimiento y
- el uso del agua



ANNUAL REPORTS
INFORMES ANUALES

Include:
- » water level data,
- » storage change,
- » water use,
- » sustainability progress

Incluye:
- » dado de nivel de agua,
- » cambio de almacenamiento,
- » el uso agua,
- » progreso de la sostenibilidad

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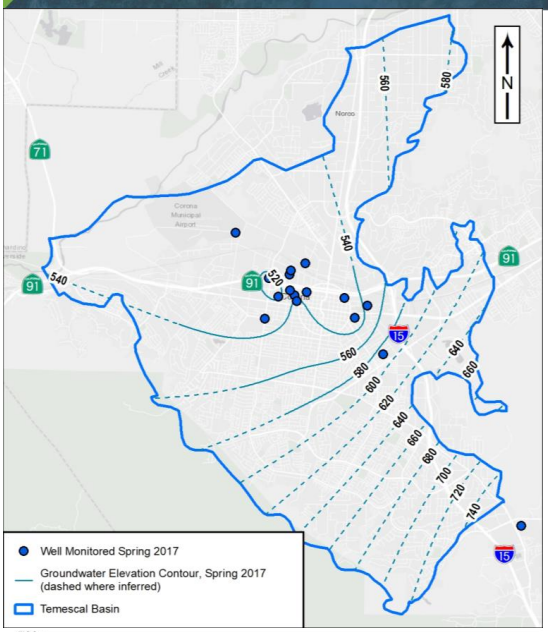
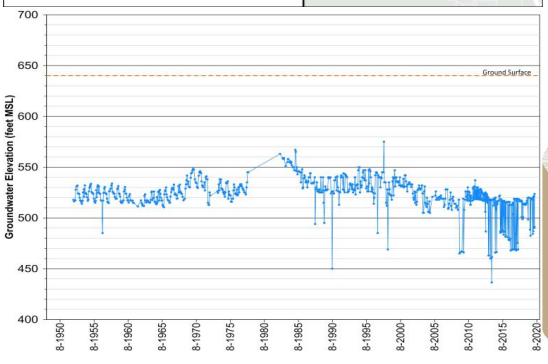
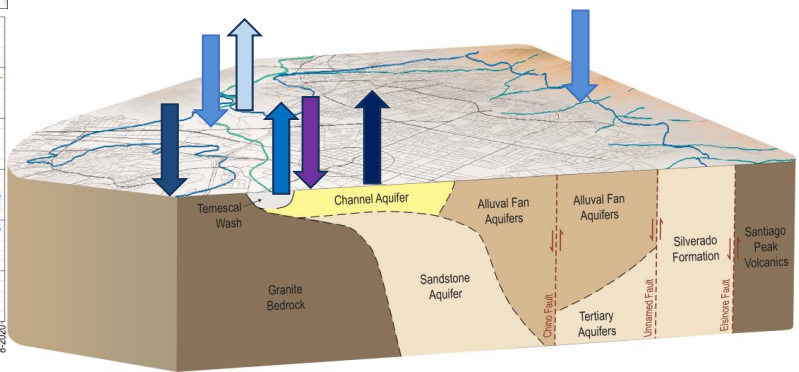


PERIODIC EVALUATIONS / GSP UPDATES
EVALUACIONES PERIÓDICAS / ACTUALIZACIONES DEL GSP





DISCUSSION AND Q&A
DISCUSIÓN / PREGUNTAS Y RESPUESTAS

TEMESCAL GSA

HOW TO STAY INVOLVED
CÓMO MANTENERSE INVOLUCRADO

REVIEW AND ADOPTION
REVISIÓN Y ADOPCIÓN

Draft GSP Released

Publicación del borrador del GSP

90 Day Public Review Period

90 Dias Período de revisión pública

Adoption Hearing

Audiencia de adopción

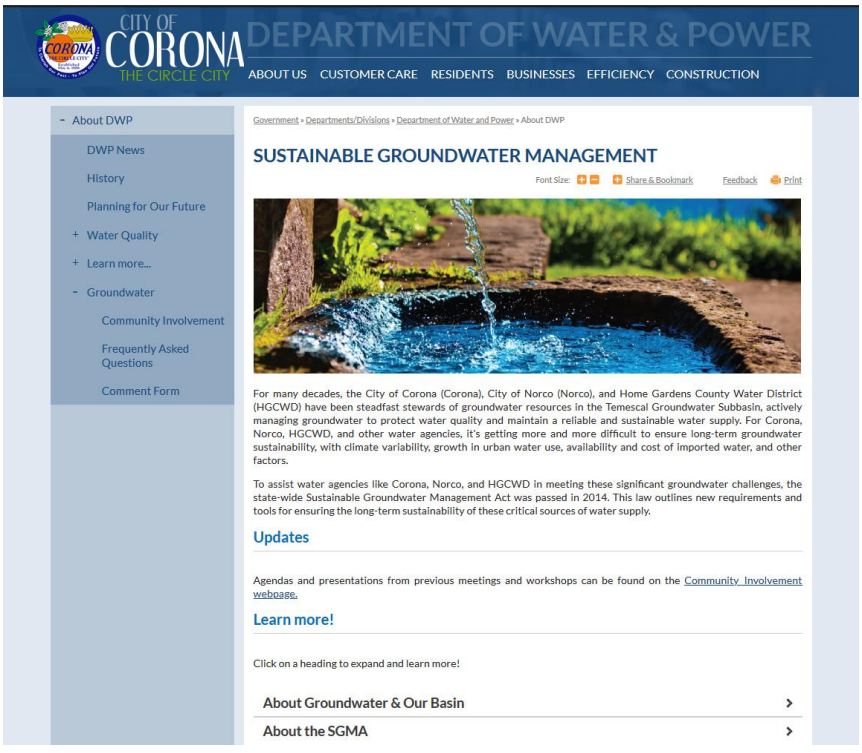
Final GSP Sent to DWR

GSP final enviado a DWR

Late Summer 2021 Finales del verano de 2021	Fall 2021 Otoño 2021	Winter 2021 Invierno 2021	January 2022 Enero 2022

TEMESCAL GSA

WEBSITE
SITIO WEB



HOW TO KEEP IN TOUCH
CÓMO MANTENERSE EN CONTACTO

- Sign up for the mailing list by emailing groundwater@coronaca.gov
  Regístrese en la lista de correo enviando un correo electrónico a groundwater@coronaca.gov
- Visit the website to view information, review draft chapters and other materials, and to submit comments : www.CoronaCA.gov/Groundwater
  Visite el sitio web para ver información, revisar borradores de capítulos y otros materiales, y enviar comentarios: www.CoronaCA.gov/Groundwater

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THANK YOU
GRACIAS

TEMESCAL GSA

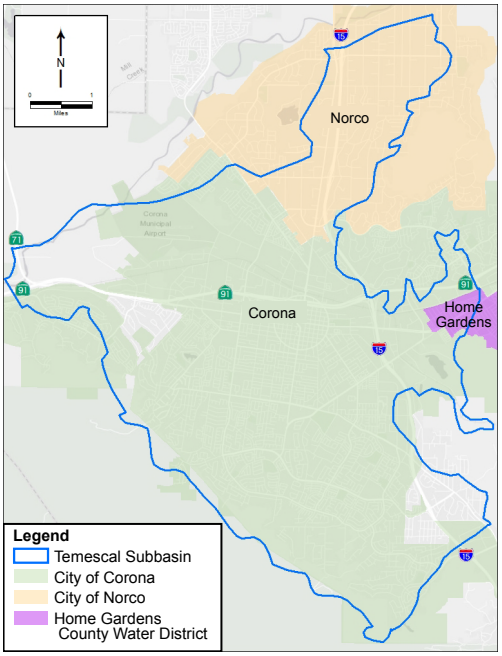
GROUNDWATER FOR PEOPLE, THE ENVIRONMENT, AND THE FUTURE

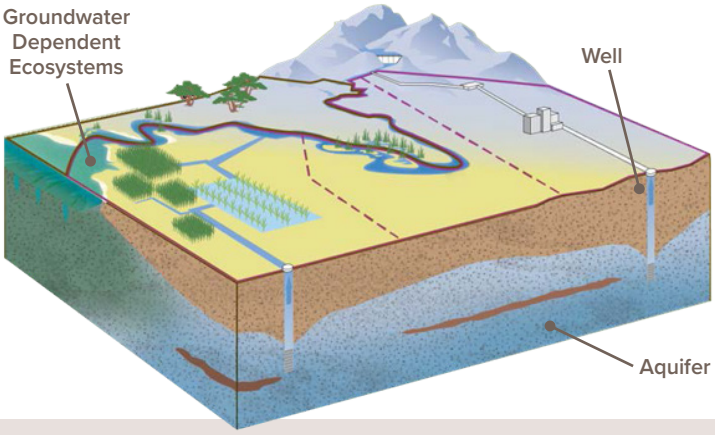
GET INVOLVED! Community input is needed! We want your help to create an effective plan for the future of our groundwater. Visit **CoronaCA.gov/Groundwater** or send an email to **Groundwater@CoronaCA.gov** to attend a workshop or learn more!

THE WATER BENEATH YOUR FEET AND IN YOUR FAUCET

You may not know it, but if you live in Corona, Norco, or Home Gardens, you are likely using groundwater that comes from the **Temescal Basin**. Groundwater from the Temescal Basin and other local groundwater basins, along with water purchased from other areas, is treated and blended together. It then arrives as tap water at your home or business.

The groundwater beneath your feet is an important local resource that will be even more important in the future. On the other side of this factsheet, you can learn more about who manages groundwater in the Temescal Basin and how you can get involved in protecting local groundwater for your community and all who depend on it.





WHAT IS GROUNDWATER?

Groundwater is an important source of water stored in the earth beneath our feet, in spaces between sand, soils, and fractured rock known as an **aquifer**. The areas of the most productive aquifers in California have been defined as **groundwater basins**, which can extend for many miles. The Temescal Basin covers nearly 66 square miles.

WHO USES GROUNDWATER?

Groundwater from aquifers is drawn out by pumps. Cities and water districts pump groundwater from **wells** to supply to businesses and homes. People in rural areas may have their own wells for personal use and/or to water crops. Groundwater also has many uses in manufacturing and industry. It can be used to process, wash, cool, or transport a product.

Groundwater is important to the environment, it flows to and from wetlands, springs, creeks, lakes, and other bodies of water. The plants and animals that live near or in these bodies of water sometimes depend on it for their survival. These areas are called **Groundwater Dependent Ecosystems**.

Home Gardens
County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

TEMESCAL GSA

GROUNDWATER FOR PEOPLE, THE ENVIRONMENT, AND THE FUTURE

GROUNDWATER MANAGEMENT

For many decades, the City of Corona, City of Norco, and Home Gardens County Water District have carefully managed groundwater in the Temescal Basin. They have made sure that there is enough clean and drinkable water for the communities that need it. This has become more of a challenge due to changes in climate, the cost of importing water, and the fact that more water is needed because communities are growing. To help all stewards of groundwater plan for these changes, the state-wide **Sustainable Groundwater Management Act** was passed in 2014.

The Sustainable Groundwater Management Act or "SGMA" is a California law that gives local agencies new tools for managing groundwater and planning for the future. The City of Corona, City of Norco, and Home Gardens County Water District have formed the Temescal Subbasin Groundwater Sustainability Agency (Temescal GSA) in order to make a **Groundwater Sustainability Plan** for the Temescal Basin. Since groundwater is such an important resource for everyone, we need your help!

GROUNDWATER FOR THE FUTURE

Important factors for groundwater basin management can be seen on the right. By creating a Groundwater Sustainability Plan, we will better manage the groundwater in the Temescal Basin and ensure we have enough for current and future generations. We will seek understanding of past groundwater use and plan for the sustainable use of future groundwater. Whether you own your own well, use water from the tap, irrigate your crops, or pump groundwater for your business, **everyone can participate in making this plan a success!** We want to hear your questions, ideas, and concerns about protecting our groundwater supply and quality in the Temescal Basin. To find out how, please visit the website at **CoronaCA.gov/Groundwater**.

To learn more about the TEMESCAL GROUNDWATER SUSTAINABILITY PLAN, including dates of public workshops and other ways to get involved:

Please visit **CoronaCA.gov/Groundwater**

Send an email to **Groundwater@CoronaCA.gov**

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TEMESCAL GSA

GROUNDWATER FOR PEOPLE, THE ENVIRONMENT, AND THE FUTURE

GET INVOLVED! Community input is needed! Visit CoronaCA.gov/Groundwater or send an email to Groundwater@CoronaCA.gov to attend a workshop, review draft chapters, and learn more!

To learn more about the Temescal GSA, GSPs, and groundwater see Fact Sheet 1.

PREPARING TO DEFINE SUSTAINABILITY

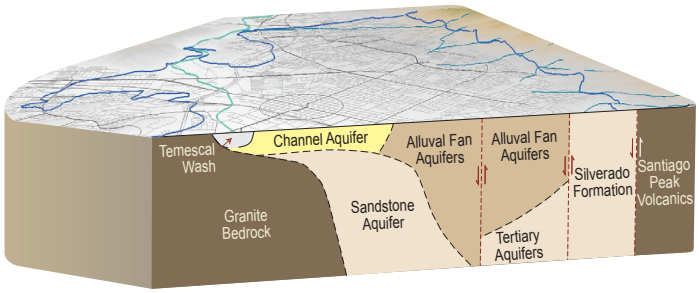
The Temescal GSA is preparing to define groundwater sustainability for the Temescal Basin to ensure we have enough groundwater for current and future generations. First, it is important to understand more about the Basin. This fact sheet explains some important information that will be in the Temescal Groundwater Sustainability Plan to provide that understanding.

HOW WE LEARN ABOUT THE TEMESCAL BASIN

A **hydrogeologic conceptual model** provides a description of the physical features within a groundwater basin. It will summarize information about basin boundaries, soils, geologic structure, and aquifers within the Temescal Basin. It will also illustrate where and how water flows in and through the Basin.

Current and historical groundwater conditions give an understanding of Basin health over time and show patterns of use that are important for understanding current and future sustainability. Groundwater conditions will be described in terms of the six sustainability indicators shown below, which will also be used for planning for sustainability in the Basin.

- Lowering GW Levels
- Reduction of Storage
- Degraded Quality
- Surface Water Depletion
- Land Subsidence
- Saltwater Intrusion



This block diagram shows some important features of the Temescal Basin described in the hydrogeologic conceptual model

A **water budget** quantifies the volumes of ground and surface water moving through a basin. It will also estimate changes in storage, a measure of how much groundwater enters or leaves the Basin in any given period. The water budget and change in storage are important factors in estimating sustainable yield, or how much water can be pumped from the Basin without significant and unreasonable impacts.

This information will provide a framework for defining sustainability in the Temescal Basin in the context of the six sustainability indicators shown to the left. Once sustainability is defined, we will prepare management actions and projects to maintain sustainability into the future.

To learn more about the TEMESCAL GROUNDWATER SUSTAINABILITY PLAN, including dates of public workshops and other ways to get involved:

Please visit **CoronaCA.gov/Groundwater** Send an email to **Groundwater@CoronaCA.gov**

Home Gardens County Water District
3832 N. Grant St., Corona, Calif. 92879
(951) 737-4741

TEMESCAL GSA

AGUAS SUBTERRÁNEAS PARA CONSUMO HUMANO, EL MEDIO AMBIENTE Y EL FUTURO

¡PARTICIPE!

¡Necesitamos la opinión de la comunidad! ¡Visite CoronaCA.gov/Groundwater o envíe un correo electrónico a Groundwater@CoronaCA.gov para asistir a un taller, revisar los borradores de los capítulos y aprender más!

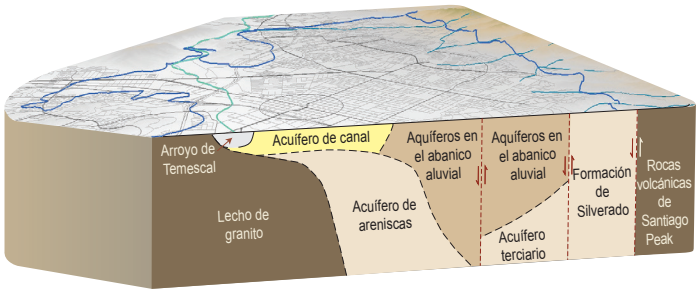
Para obtener más información sobre Temescal GSA, el GSP y el agua subterránea vea la Hoja de datos 1.

PREPARÁNDONOS PARA DEFINIR LA SOSTENIBILIDAD

La Agencia de Sostenibilidad de Aguas Subterráneas de Temescal (Temescal GSA) se está preparando para definir la sostenibilidad de las aguas subterráneas para la cuenca de Temescal a fin de asegurarnos de tener suficiente agua subterránea para las generaciones actuales y futuras. En primer lugar, es importante comprender más sobre la cuenca. Esta hoja de datos explica cierta información importante que se incluirá en el Plan de Sostenibilidad de Aguas Subterráneas de Temescal para ayudar a comprenderla.

CÓMO OBTENEMOS INFORMACIÓN SOBRE LA CUENCA DE TEMESCAL

Un **modelo conceptual hidrogeológico** brindará una descripción de las características físicas en una cuenca de aguas subterráneas. Resumirá la información sobre los límites de la cuenca, los suelos, la estructura geológica y los acuíferos en la cuenca de Temescal. También ilustrará dónde y cómo fluye el agua hacia y a través de la cuenca.



Este diagrama de bloque muestra algunas características importantes de la cuenca de Temescal descritas en el modelo conceptual hidrogeológico

Las condiciones actuales e históricas del agua subterránea ayudan a comprender la salud de la cuenca a lo largo del tiempo y muestran patrones de uso que son importantes para entender la sostenibilidad actual y futura. Las condiciones del agua subterránea se describirán en términos de los seis indicadores de sostenibilidad que se muestran abajo, que también se utilizarán para planificar la sostenibilidad en la cuenca.

- Bajada de los niveles de agua subterránea
- Reducción del almacenamiento
- Degradación de la calidad
- Merma del agua superficial
- Hundimiento de tierras
- Intrusión de agua de mar

Un **balance hídrico** cuantifica los volúmenes de agua subterránea y agua superficial que se desplazan a través de una cuenca. También estima los cambios en el almacenamiento, una medida de cuánta agua subterránea entra a la cuenca o sale de esta en un período determinado. El balance hídrico y el cambio en el almacenamiento son factores importantes en la estimación del rendimiento sostenible, o de cuánta agua se puede bombear desde la cuenca sin producir un impacto significativo y poco razonable.

Esta información proporcionará un marco para definir la sostenibilidad en la cuenca de Temescal en el contexto de los seis indicadores de sostenibilidad que se muestran a la izquierda. Una vez que hayamos definido la sostenibilidad, prepararemos las acciones y los proyectos de gestión para mantener la sostenibilidad en el futuro.

Para obtener más información sobre el PLAN DE SOSTENIBILIDAD DE AGUAS SUBTERRÁNEAS DE TEMESCAL, incluidas las fechas de los talleres públicos y otras formas de participar:

Visite CoronaCA.gov/Groundwater

Envíe un correo electrónico a Groundwater@CoronaCA.gov

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TEMESCAL GSA

GROUNDWATER FOR PEOPLE, THE ENVIRONMENT, AND THE FUTURE

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To learn more about background information prepared for the GSP see Fact Sheet 2.

DEFINING SUSTAINABILITY AND TAKING ACTION

Now that the background information and modeling is complete, we will define groundwater sustainability for the Temescal Basin. Management actions and projects will keep us on course, so we have enough groundwater for current and future generations. This fact sheet gives more information of these important parts of the Temescal Groundwater Sustainability Plan (GSP).

WHAT IS SUSTAINABILITY IN A GROUNDWATER SUSTAINABILITY PLAN?

The Temescal GSP must include an overall goal that states the desired objectives and conditions for the Temescal Basin. That goal then helps define a sustainability framework to **avoid** lowering groundwater levels, reduction of storage, degraded water quality, surface water depletion, and land subsidence. The framework defines the concepts below, so that we will know if action is needed to maintain sustainability:

1) **Undesirable results** are conditions we want to avoid in the Temescal Basin
2) **Minimum thresholds** set quantifiable measures for undesirable results
3) **Measurable objectives** establish quantifiable goals to maintain or improve groundwater conditions

Groundwater Dependent Ecosystems

GSPs must protect against surface water depletion. This is because surface water that is connected to groundwater is important for groundwater dependent ecosystems (GDEs). GDEs can include plants or animals that depend on groundwater. The Temescal Basin includes GDEs, primarily in the Prado Basin.

HOW CAN WE MAINTAIN SUSTAINABILITY?

With goals defined, the next step is to meet the standards we have set! Management actions and projects help us maintain sustainability by managing the groundwater resource to avoid undesirable results. Some of the actions and projects that will be included in the GSP are already happening, some are planned and will be implemented within the next few years, and others are potential actions that will be taken in response to future changing groundwater conditions in the Temescal Basin.

Examples of Management Actions and Projects

CURRENT	PLANNED	POTENTIAL FUTURE
▸ Groundwater treatment ▸ Water Shortage Contingency Plans ▸ Water Conservation Programs	▸ Interconnected surface water monitoring ▸ Groundwater recharge feasibility studies	▸ Additional groundwater treatment ▸ Stormwater capture, treatment, and recharge

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GSA DE TEMESCAL

AGUA SUBTERRÁNEA PARA CONSUMO HUMANO, EL MEDIO AMBIENTE Y EL FUTURO

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Para obtener más información sobre la información de antecedentes preparada para el GSP, consulte la Hoja informativa 2.

DEFINIR LA SOSTENIBILIDAD Y TOMAR ACCIÓN

Ahora que la información de antecedentes y el modelado están completos, definiremos la sostenibilidad del agua subterránea para la Cuenca de Temescal. Las acciones y proyectos de gestión nos mantendrán en el rumbo, por lo que tendremos suficiente agua subterránea para las generaciones actuales y futuras. Esta hoja informativa brinda más información sobre estas partes importantes del Plan de Sostenibilidad de Aguas Subterráneas (GSP) de Temescal.

¿QUÉ ES LA SOSTENIBILIDAD EN UN PLAN DE SOSTENIBILIDAD DE AGUAS SUBTERRÁNEAS?

El GSP de Temescal debe incluir una meta general que establezca los objetivos y condiciones deseados para la Cuenca de Temescal. Luego, esa meta ayuda a definir un marco de sostenibilidad para **evitar** la disminución de los niveles de agua subterránea, la reducción del almacenamiento, la degradación de la calidad del agua, el agotamiento de las aguas superficiales y el hundimiento de la tierra. El marco define los conceptos a continuación, de modo que sepamos si es necesario actuar para mantener la sostenibilidad:

1) **Resultados indeseables** son condiciones que queremos evitar en la Cuenca de Temescal
2) **Umbrales mínimos** establecen medidas cuantificables para resultados no deseados
3) **Objetivos medibles** establecen metas cuantificables para mantener o mejorar las condiciones del agua subterránea

¿CÓMO PODEMOS MANTENER LA SOSTENIBILIDAD?

Con las metas definidas, el siguiente paso es cumplir con los estándares que hemos establecido. Las acciones y proyectos de gestión nos ayudan a mantener la sostenibilidad mediante la gestión del recurso hídrico subterráneo para evitar resultados indeseables. Algunas de las acciones y proyectos que se incluirán en el GSP ya están en marcha, algunas están planificadas y se implementarán en los próximos años, y otras son acciones potenciales que se tomarán en respuesta a las futuras condiciones cambiantes de las aguas subterráneas en la Cuenca de Temescal.

Ecosistemas dependientes del agua subterránea

Los GSP deben proteger contra el agotamiento de las aguas superficiales. Esto se debe a que el agua superficial que está conectada al agua subterránea es importante para los ecosistemas dependientes del agua subterránea (GDE, por sus siglas en inglés). Los GDE pueden incluir plantas o animales que dependen del agua subterránea. La Cuenca de Temescal incluye GDE, principalmente en la Cuenca de Prado.

Ejemplos de acciones y proyectos de gestión

ACTUAL	PLANEADO	FUTURO POTENCIAL
▶ Tratamiento de aguas subterráneas ▶ Planes de contingencia de escasez de agua ▶ Programas de conservación de agua	▶ Monitoreo interconectado de aguas superficiales ▶ Estudios de viabilidad de recarga de aguas subterráneas	▶ Tratamiento adicional de aguas subterráneas ▶ Capturar, tratar, y recargar aguas pluviales

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APPENDIX H

Summaries of Neighboring Basin Coordination and Community Leader Outreach Meetings

MEETING NOTES

TEMESCAL BASIN GROUNDWATER SUSTAINABILITY PLAN

CITY OF CORONA

DWR PLANNING GRANT NO. 4600012652

Date:	November 30, 2020	**Time:**	1:00 to 2:00 PM
Location:	Teams Web Conference	**Project No.:**	46414
Subject:	Temescal GSP Coordination with Arlington GSA - Meeting 1		
Attendees:	Tom Moody, Katie Hockett, Kristian Alfelor, Melissa Estrada-Maravilla - , Corona DWP, Ryan Shaw – Western / Arlington GSA, Chad Taylor, Gus Yates, and Maureen Reilly – Todd Groundwater		

The City of Corona is preparing a GSP for the Temescal Basin and wants to coordinate with Arlington GSA and the work they are doing to prepare a GSP

- Our coordination will largely focus on the water budget and model for Temescal
- We know there is a model for Arlington that includes estimates of outflow to Temescal
- We want to start the coordination process and plan for requesting data and information from the Arlington GSA

Geoscience is Arlington GSAs consultant preparing GSP

- They are a bit overbudget, but we can request data from them as needed.

They're using the Santa Ana River Integrated Model for the GSP and water budget.

Water budget indicates little flow out of Arlington through the Gap in the current and future periods. The flow has decreased in recent years, but not by an amount that is significant in the context of either basin's water budget.

Willing to coordinate on outflows to some extent, but their water budget is ahead of ours and they have a small basin they feel is well defined.

They have no interconnected surface water or GDE concerns.

- There is a small lake in the basin (Hull Lake) that may have some interconnection, but they don't feel they have any need for criteria to address it.
- Arlington is defining water level SMC's operationally, with respect to well depths, screened intervals, pump settings, etc.

MEETING NOTES

TEMESCAL BASIN GROUNDWATER SUSTAINABILITY PLAN

CITY OF CORONA

DWR PLANNING GRANT NO. 4600012652

Date:	December 9, 2020	**Time:**	11:00 to 12:00
Location:	Teams Web Conference	**Project No.:**	46414
Subject:	Temescal GSP Coordination with Chino GSA - Meeting 1		
Attendees:	Tom Moody, Katie Hockett, Kristian Alfelor, Melissa Estrada-Maravilla - , Corona DWP, Edgar Tellez Foster – Chino Watermaster, Chad Taylor, Gus Yates, and Maureen Reilly – Todd Groundwater		

Introductions

The City of Corona is preparing a GSP for the Temescal Basin and wants to coordinate with Chino Watermaster as a neighboring basin.

- Our coordination will largely focus on the water budget and model for Temescal
- We know Chino has a model that includes some of the Temescal Basin
- We want to start the coordination process and plan for requesting data and information from the Watermaster

Chino has an Optimum Basin Management Plan first prepared in 2000 and updated in 2020.

- This is the equivalent of a GSP for Chino
- Uses material physical injury in place of sustainability indicators
- Available on watermaster website

Chino Valley model includes parts of the Temescal Basin and other neighboring basins as well.

- Needs to talk to consultant (Wildermuth, now West Yost) about how Temescal in represented in their model

Currently no plans to increase capture area or volume in their desalter system above the 40,000 AFY. The desalter wells are intended to function more or less the way ag wells functioned historically in terms of groundwater budget and flow patterns.

How does the Watermaster balance their desalter water quality goals with wetlands and other volumetric considerations?

- They have a monitoring and reporting program that includes groundwater elevation and vegetation monitoring in the Prado Basin Habitat Sustainability reporting, most recent in April 2020
- They also have a State of the Basin report that periodically reports on overall basin conditions
    - The last State of the Basin report was through 2018
    - They are working on the current report through 2020 now

It seems like there is some variability in flow dynamics around the boundary between the two basins, how does the Chino model handle the dynamic flow in this area?

- This is a question for Wildermuth / West Yost

Does the Watermaster have any agreements with OCWD?

- No, but they are bound by the Santa Ana River Watershed agreement that requires a certain outflow past Prado Dam.
- They do coordinate with OCWD in some data collection, but no operations commitments

How can we request data efficiently?

- Submit requests to request email from website and copy Edgar
- They have some data sharing limitations for private well data
- Special model runs can be completed, but there would be a passthrough cost
- Can we request output data from existing/past model runs?
    - Yes, make request through the same channels

Does there desalter capture system capture all the water coming from the north, and do they rely on water coming from the Temescal Basin?

- Their desalter wells create a trough that captures water from both directions
- The intent is to keep high TDS water from the former dairy operations from flowing to and entering the Santa Ana River, simulating historical agricultural pumping

Chino Watermaster is interested in engaging with the preparation of the Temescal GSP.

MEETING NOTES

TEMESCAL BASIN GROUNDWATER SUSTAINABILITY PLAN

CITY OF CORONA

DWR PLANNING GRANT NO. 4600012652

Date:	November 30, 2020	**Time:**	2:00 to 3:00 PM
Location:	Teams Web Conference	**Project No.:**	46414
Subject:	Temescal GSP Coordination with OCWD - Meeting 1		
Attendees:	Tom Moody, Katie Hockett, Kristian Alfelor, Melissa Estrada-Maravilla - , Corona DWP Chad Taylor, Gus Yates, and Maureen Reilly – Todd Groundwater, Adam Hutchinson – OCWD		

The City of Corona is preparing a GSP for the Temescal Basin and wants to coordinate with OCWD in their capacity as the GSA for the neighboring Coastal Plain Basin as a neighboring basin with an approved alternative plan.

- Our coordination will largely focus on the water budget and model for Temescal
- We've looked at the Coastal Plain water budget as presented in the alternative plan and want to coordinate our water budget in this area
- We want to start the coordination process and plan for requesting data and information from OCWD
- We also want to make sure we know if OCWD has questions or concerns about the Temescal

Did we receive the comments on the Plan Area chapter of the Temescal GSP?

- Yes
- Adam wanted to make sure that the Temescal GSP note and incorporate management in the upstream Chino and Riverside-Arlington basins
- Pumping for water quality management in these basins captures a large volume of the outflow that would otherwise come into Temescal and then on to Prado and eventually out to the Coastal Plain of OC basin

Geoscience is working on the Santa Ana River Integrated Model

    - OCWD has been working closely with Geoscience on this model
    - The model needs improvement, and OCWD is working with Geoscience on a version focused on the Prado area
- There is a recently published HCP prepared by Valley District that is watershed-wide and applies to the Basin and Prado
    - It is under review now
    - It is an attempt to combine all the HCPs into one framework

Are you refining water budget, specifically inflow across basin boundary?

- No, that term is relatively static because there is virtually no change between Prado dam and the OCWD rubber dam
- They assume the 1,580 AFY is pretty much all surface water flow

What are OCWD's main concerns relating to the Temescal GSP?

- From a water quality perspective, they are focused on PFOS
    - They sampled in Temescal and see some PFOS in and around Temescal Creek and other waterways
    - This included *first flush* sampling of many streams at the beginning of a significant storm
    - Also sampled one of the new monitoring wells in Prado
    - Temescal Wash showed the highest PFOS surface water concentrations
- OCWD is very concerned about maintaining habitat quantity and quality in the Prado wetlands. OCWD owns about 2,000 acres of the wetlands.
    - Least Bell's vireo is a key management species.
    - OCWD recently installed ten new shallow piezometers to measure water table depth in Prado, supplementing information from drive point piezometers installed previously.
    - Adam is interested in having a multi-depth monitoring well near Prado Dam.
    - Water requirements for sustaining Prado habitat might have a secondary effect of increasing flow past Prado Dam.
- Adam wants the Temescal GSP to include a good and complete description of the entire upper Santa Ana River watershed and groundwater basins.

MEETING NOTES

TEMESCAL SUBBASIN GROUNDWATER SUSTAINABILITY PLAN

CITY OF CORONA

DWR PLANNING GRANT NO. 4600012652

Date:	July 13, 2020	**Time:**	9 to 9:30 AM
Location:	City of Corona Dept. of Water and Power	**Project No.:**	46414
Subject:	Initial Meeting with Eileen Navarro, Community Orgainizer		
Attendees:	Melissa Estrada-Maravilla & Kristian Alfelor – Corona DWP, Jack Hughes– Kearns & West, Chad Taylor– Todd Groundwater, and Eileen Navarro		

1. Brief introduction to SGMA and the GSP process
Chad gives a brief introduction to SGMA legislation

2. Introductions
Eileen recently finished college w/ degree in political science and community outreach. She's recently been working with Vice Mayor Casillas and learning about the Home Gardens community

3. Background information regarding the Home Gardens community
Home Gardens is an unincorporated community with no elected officials or independent governance.

There aren't any formal community groups, but there is active involvement on specific issues and social media engagement.

A large percentage of the community is Latinx with Spanish as their primary language. Lack of Spanish-language outreach has often been an impediment to engagement for the community. There has also been limited engagement due to fear of legal repercussions related to immigration status.

However, the community has come together in the past to lobby for specific items like sidewalks and Policing.

There is a school, Home Gardens Academy, which serves as a local meeting place and information hub and there is also a library where meetings and gatherings are sometimes held

People are currently most engaged in COVID, schools reopening, an increase in car break-ins, policing, and the potential for incorporation.

Active discussion about incorporating into either Corona or Riverside is occurring now.

The Incorporation discussion was started because of policing issues, and Eileen has been involved in information gathering and discussions on this topic.

Melissa asks if there have been any discussions regarding water service from Corona?

> Yes, there has been discussion of water service; approximately half of the community pays to Corona/Home Gardens WD while others pay directly to the City of Riverside. The divide is at McKinley Street.
>
> Eileen is not aware of other water problems or questions from people in Home Gardens.

Melissa asks if Eileen is interested in being involved in the GSP process? And if so, would she like to be on the TAC?

> Eileen indicated that she is interested in being updated during preparation of the GSP as an interested party, but she doesn't think she'll have time to be on the TAC because she is planning to start law school soon.

MEETING AGENDA

TEMESCAL SUBBASIN GROUNDWATER SUSTAINABILITY PLAN

CITY OF CORONA

DWR PLANNING GRANT NO. 4600012652

Date:	August 11, 2020	**Time:**	11AM to 12PM
Location:	Teams Web Conference	**Project No.:**	46414
Subject:	Temescal GSP TAC Outreach Planning with Corona Council Members		
Attendees:	Vice Mayor Jacque Casillas and Council Member Jason Scott – Corona, Katie Hockett, Kristian Alfelor, Melissa Estrada-Maravilla – Corona DWP, Jack Hughes & Joan Isaacson Kearns & West, and Chad Taylor Todd Groundwater		

INTRODUCTIONS

PROJECT OVERVIEW

Chad gives a brief summary of SGMA and the GSP process and an introduction to the outreach requirements and plans

PURPOSE OF THE MEETING

Summary of the outreach and engagement we are planning for and to learn what we should know and consider for outreach in the communities Vice Mayor Casillas and Councilmember Scott work with/represent. Particularly on the areas designated as disadvantaged communities by the State of California and called out for inclusion in outreach and engagement by DWR in GSP preparation.

GSP COMMUNICATIONS AND OUTREACH REQUIREMENT SUMMARY

Jack notes that SGMA calls for consideration of all interests of all beneficial uses and users of groundwater. K&W has developed an Outreach and Involvement Plan that includes multiple avenues for public engagement including public workshops, pre workshop outreach, TACs,

City Council and Board of Directors Meeting Presentations, plus website, fact sheet, translation, etc.

Focused Outreach (Jack/Joan)

Jack notes that there are areas in the Basin designated as Disadvantaged Communities, which are census block groups with less than 80% of the State's median household income or severely disadvantaged communities where (less than 60% of the State's median household income).

Vice Mayor Casillas notes that we should try to meet people where they are. There are multiple Catholic churches (St Edwards and Corpus Christi) that should be included.

Is there a way to incentive people to attend within the grant?

- Hard to move grant funds toward incentives, and reductions in water bills run up on Prop 218 restrictions
- However, we could potentially coordinate with food distribution by providing fact sheets for distribution.

Council member Scott recommends using simple language in communications, reaching out to YMCA and mobile home parks, two work force housing developments 6th street near armory and near City Hall, and American Legion (Joe Domingus).

Vice Mayor Casillas mentions the Corona Norco Parent Teacher Center

Spanish language radio add-buys

Are community members open to shorter content on alternative platforms?

- Yes, especially younger people.
- Should consider packaging items developed for or during public meetings for alternative platform distribution later.

Discussion of character of districts and/or nearby communities (All)

- Do people have any concerns pertaining to water, water quality, and the environment, and if so, what are they?
    - They have not heard of concerns specific to water, except for questions about water bills from municipal providers.

Community Leader Meetings

Draft Notes

Tuesday, June 29, 2021
1:00 p.m. – 2:00 p.m.
Location: Zoom Virtual Meeting

Attendees

- Marven Norman, Center for Community Action and Environmental Justice (CCAEJ)

City of Corona Department of Water and Power Staff

- Katie Hockett
- Kristian Alfelor
- Melissa Estrada-Maravilla

Consultant Team

- Chad Taylor, Todd Groundwater
- Maureen Reilly, Todd Groundwater
- Christian Mendez, Kearns & West
- Jack Hughes, Kearns & West

Notes

As a local leader, does water come up in a conversations with others in the community?

- CCAEJ's big focus is on air quality and other impacts to communities from warehouses and industrial uses. This has not been an issue near the City of Corona as far as CCAEJ knows. Water is not a major focus for CCAEJ, but they have been asked to be involved in a lawsuit pertaining to impacts to groundwater from warehouse runoff.

What questions do you have about water today and tomorrow?

- What happens if we start having more droughts?
- What are the plans if there need to be reduction in water use?

Thursday, July 1, 2021
1:00 p.m. – 2:00 p.m.
Location: Zoom Virtual Meeting

Attendees

- Alma Marquez, Center for Community Action and Environmental Justice (CCAEJ)
- Fauzia Rizvi, Western Municipal Water District
- Elizabeth Toups, IE Works
- Scott Goodell, IE Works
- Diana Meza, City of Corona Planning and Housing

City of Corona Department of Water and Power Staff

- Katie Hockett
- Kristian Alfelor
- Melissa Estrada-Maravilla

Consultant Team

- Chad Taylor, Todd Groundwater
- Maureen Reilly, Todd Groundwater
- Christian Mendez, Kearns & West
- Jack Hughes, Kearns & West

Notes

As a Local Leader, does water come up in a conversations with others in the community?

- CCAEJ is interested in runoff pollution and its impact to groundwater. They would be interested in exploring this in communities outside the City of Corona. They are looking at initiating conversations on education and policy focusing on the impacts of runoff pollution to groundwater.
- Water is not often spoken about in the City of Corona Planning and Housing Commission. There needs to be more education on water conservation and groundwater.
- The only time people speak about water is when there is something wrong.
- There should be an awareness campaign about water issues like costs, drought, and conservation.

Are you aware of any private wells in your community?

- There is a community in Norco on Bluff Street that has a private well (this well appears to be outside the Temescal Basin boundaries).

What other groups/individuals should we invite to the Public Workshop on July 8?

- Outreach to farmers markets, swap meets, and churches
- CCAEJ can support by posting via social media
- Leela Project
- Local group that works with youth: could focus on job mobility
- Outreach material should include: What's in it for me? Why should I care?
- Include higher education and K-12

Other questions and comments from participants:

- What about future job availability?
- Alma Marquez expressed interest in the desalter tour

APPENDIX I

Draft GSP Comments and Responses

December 14, 2021

Temescal GSA
755 Public Safety Way
Corona, CA 92878

Submitted via email: Groundwater@coronaca.gov

Re: Public Comment Letter for Temescal Basin Draft GSP

Dear Melissa Estrada-Maravilla,

On behalf of the above-listed organizations, we appreciate the opportunity to comment on the Draft Groundwater Sustainability Plan (GSP) for the Temescal Basin being prepared under the Sustainable Groundwater Management Act (SGMA). Our organizations are deeply engaged in and committed to the successful implementation of SGMA because we understand that groundwater is critical for the resilience of California's water portfolio, particularly in light of changing climate. Under the requirements of SGMA, Groundwater Sustainability Agencies (GSAs) must consider the interests of all beneficial uses and users of groundwater, such as domestic well owners, environmental users, surface water users, federal government, California Native American tribes and disadvantaged communities (Water Code 10723.2).

As stakeholder representatives for beneficial users of groundwater, our GSP review focuses on how well disadvantaged communities, drinking water users, tribes, climate change, and the environment were addressed in the GSP. While we appreciate that some basins have consulted us directly via focus groups, workshops, and working groups, we are providing public comment letters to all GSAs as a means to engage in the development of 2022 GSPs across the state. Recognizing that GSPs are complicated and resource intensive to develop, the intention of this letter is to provide constructive stakeholder feedback that can improve the GSP prior to submission to the State.

Based on our review, we have significant concerns regarding the treatment of key beneficial users in the Draft GSP and consider the GSP to be **insufficient** under SGMA. We highlight the following findings:

1. Beneficial uses and users **are not sufficiently** considered in GSP development.
    a. Human Right to Water considerations **are not sufficiently** incorporated.
    b. Public trust resources **are not sufficiently** considered.
    c. Impacts of Minimum Thresholds, Measurable Objectives and Undesirable Results on beneficial uses and users **are not sufficiently** analyzed.
2. Climate change **is not sufficiently** considered.

3. Data gaps **are not sufficiently** identified and the GSP **needs additional plans** to eliminate them.
4. Projects and Management Actions **do not sufficiently consider** potential impacts or benefits to beneficial uses and users.

Our specific comments related to the deficiencies of the Temescal Basin Draft GSP along with recommendations on how to reconcile them, are provided in detail in **Attachment A.**

Please refer to the enclosed list of attachments for additional technical recommendations:

Attachment A	GSP Specific Comments
Attachment B	SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users
Attachment C	Freshwater species located in the basin
Attachment D	The Nature Conservancy's "Identifying GDEs under SGMA: Best Practices for using the NC Dataset"
Attachment E	Maps of representative monitoring sites in relation to key beneficial users

Thank you for fully considering our comments as you finalize your GSP.

Best Regards,

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Attachment A

Specific Comments on the Temescal Basin Draft Groundwater Sustainability Plan

1. Consideration of Beneficial Uses and Users in GSP development

Consideration of beneficial uses and users in GSP development is contingent upon adequate identification and engagement of the appropriate stakeholders. The (A) identification, (B) engagement, and (C) consideration of disadvantaged communities, drinking water users, tribes,[1] groundwater dependent ecosystems, streams, wetlands, and freshwater species are essential for ensuring the GSP integrates existing state policies on the Human Right to Water and the Public Trust Doctrine.

A. Identification of Key Beneficial Uses and Users

Disadvantaged Communities and Drinking Water Users

The identification of Disadvantaged Communities (DACs) and drinking water users is **incomplete**. The GSP provides information on DACs, including identification by name and location on a map (Figure 2-13). However, the GSP fails to clearly state the population of each DAC.

The GSP provides a density map of domestic wells in the basin (Figure 2-5). However, the plan fails to provide depth of these wells (such as minimum well depth, average well depth, or depth range) within the basin. This information is necessary to understand the distribution of shallow and vulnerable drinking water wells within the basin.

These missing elements are required for the GSAs to fully understand the specific interests and water demands of these beneficial users, and to support the consideration of beneficial users in the development of sustainable management criteria and selection of projects and management actions.

RECOMMENDATIONS

- Provide the population of each identified DAC.
- Include a map showing domestic well locations and average well depth across the basin.

Interconnected Surface Waters

The identification of Interconnected Surface Waters (ISWs) is **insufficient**, due to lack of supporting information provided for the ISW analysis. The GSP describes the use of aerial photos to analyze stream reaches and presents analysis of stream gage and groundwater elevation data. The ISW section concludes with the following statement (p. 4-16): *"In spite of these accuracy limitations, contours of depth to water measured in wells—in combination with depth to water data*

[1] Our letter provides a review of the identification and consideration of federally recognized tribes (Data source: SGMA Data viewer) within the GSP from non-tribal members and NGOs. Based on the likely incomplete information available to our organizations for this review, we recommend that the GSA utilize the California Department of Water Resources' "Engagement with Tribal Governments" Guidance Document (https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents) to comprehensively address these important beneficial users in their GSP.

for the downstream end of the Bedford-Coldwater Subbasin (also shown in Figure 4-20) —indicates that there are only two areas in or near the Basin where depth to water is likely shallow enough to be within the root zone of vegetation or possibly discharge into stream channels or wetlands (Figure 4-20). One of the areas is the 2-mile bedrock reach of Temescal Wash between the Bedford-Coldwater Subbasin and Basin, and the other is the Prado Wetlands, where contouring suggests groundwater discharges into the wetlands. Depth to water in spring of 2017 was less than 20 feet downstream of about North Lincoln Avenue." The spring 2017 depth to water data are the only data discussed when referring to depth to water. However, using seasonal groundwater elevation data over multiple water year types is an essential component of identifying ISWs. The use of data from one point in time does not reflect the temporal (seasonal and interannual) variability inherent in California's climate.

On the map of stream reaches in the basin (Figure 4.17 Regional Surface Water Features), the reaches are not labeled as interconnected and disconnected, nor are areas with data gaps noted. Therefore, potential ISWs are not being identified, described, nor managed in the GSP. Until a disconnection can be proven, include all potential ISWs in the GSP. This is necessary to assess whether surface water depletions caused by groundwater use are having an adverse impact on environmental beneficial users of surface water.

RECOMMENDATIONS

- Provide a map showing all the stream reaches in the basin, with reaches clearly labeled as interconnected (gaining/losing) or disconnected. Consider any segments with data gaps as potential ISWs and clearly mark them as such on maps provided in the GSP.
- Use seasonal data over multiple water year types to capture the variability in environmental conditions inherent in California's climate, when mapping ISWs. We recommend the 10-year pre-SGMA baseline period of 2005 to 2015.
- Provide depth-to-groundwater contour maps using the best practices presented in Attachment D, to aid in the determination of ISWs. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a digital elevation model (DEM) to estimate depth to groundwater contours across the landscape. This will provide accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.
- Reconcile ISW data gaps with specific measures (shallow monitoring wells, stream gauges, and nested/clustered wells) along surface water features in the Monitoring Network section of the GSP.

Groundwater Dependent Ecosystems

The identification of Groundwater Dependent Ecosystems (GDEs) is **incomplete**. The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset). However, the GDE section of the GSP could be improved by more clearly describing and mapping the basin's GDEs to show the data sources and areas of data gaps. Figure 4-21(Critical Habitat Areas) shows a map layer called "NCCAG riparian vegetation," however based on the description in the text, it is not clear if this is the entire NC dataset or if any screening criteria were used to modify the mapped potential GDEs. The GSP

text (p. 4-17) discusses the corridor of dense riparian trees and shrubs along the bedrock reach of Temescal Wash between the Bedford-Coldwater Subbasin and the Temescal Basin, but does not explicitly state the data source (i.e., field verification) or whether this vegetation is included in the set of potential GDEs. Data gaps are described in the text, but the areas of data gaps are not clearly labeled on the map.

The GSP discusses trends in groundwater elevations over the period 2010 to 2020 and plots a limited set of hydrographs over this period in Figure 4-23. However, the only depth to groundwater contours show are from Spring 2017. The GSP could be improved by mapping depth to groundwater contours over multiple years and seasons to illustrate the temporal (seasonal and interannual) variability inherent in California's climate.

RECOMMENDATIONS

- Provide a comprehensive set of maps for the basin's GDEs. For example, provide a map of the NC Dataset. On the map, label polygons retained, removed, or added to/from the NC dataset (include the removal reason if polygons are not considered potential GDEs, or include the data source if polygons are added). Discuss how local groundwater data was used to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer.

- Provide depth-to-groundwater contour maps from multiple seasons and water year types (e.g., wet, dry, average, drought), noting the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a DEM to estimate depth-to-groundwater contours across the landscape. We recommend that a baseline period (10 years from 2005 to 2015) be established to characterize groundwater conditions over multiple water year types.

- If insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons as "Potential GDEs" in the GSP until data gaps are reconciled in the monitoring network.

Native Vegetation and Managed Wetlands

Native vegetation and managed wetlands are water use sectors that are required to be included into the water budget.[2,3] The integration of these ecosystems into the water budget is **insufficient**. Appendix I (Temescal Groundwater Sustainability Plan Numerical Groundwater Model Documentation Report) that accompanies the water budget section of the GSP was not included in the published version of the Draft GSP. Without this Appendix of the GSP, which documents the water budgets, we could not evaluate whether the water budget includes the current, historical, and projected demands of native vegetation. Inclusion of the explicit demands for native vegetation is essential so that key environmental uses of groundwater are being accounted for as water supply decisions are made using this budget and considered in project

[2] "'Water use sector' refers to categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation." [23 CCR §351(al)]

[3] "The water budget shall quantify the following, either through direct measurements or estimates based on data: (3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow." [23 CCR §354.18]

and management actions. Managed wetlands are not mentioned in the GSP, so it is not known whether or not they are present in the basin.

RECOMMENDATIONS

- Quantify and present all water use sector demands in the historical, current, and projected water budgets with individual line items for each water use sector, including native vegetation.
- State whether or not there are managed wetlands in the basin. If there are, ensure that their groundwater demands are included as separate line items in the historical, current, and projected water budgets.

B. Engaging Stakeholders

Stakeholder Engagement During GSP Development

Stakeholder engagement during GSP development is **insufficient**. SGMA's requirement for public notice and engagement of stakeholders is not fully met by the description in the Outreach and Stakeholder Involvement Communications Plan (Appendix D).[4]

The GSP documents targeted outreach to DACs, including distribution of SGMA Fact Sheets through local churches and community centers; Spanish translation of materials and interpretation at events; and meetings with community leaders, community action organizations, and elected officials. However, we note the following deficiencies with the overall stakeholder engagement process:

- The GSA's Technical Advisory Committee fails to include representation from DACs and environmental stakeholders in the basin.
- Aside from the details of the Technical Advisory Committee, the GSP documents opportunities for public involvement and engagement in general terms. These include communication and engagement through the GSP webpage, outreach materials, communication through social media, websites, and email, and public workshops. The plan lacks specific details of outreach and engagement targeted to environmental stakeholders.
- The plan fails to document the outcome of the outreach and engagement conducted, nor does it document how information obtained from beneficial users was incorporated into the GSP development process.
- The GSP describes plans for Technical Advisory Committee meetings to continue during the implementation phase of the GSP. However, the GSP does not include a detailed plan for continual opportunities for engagement outside of these meetings through the *implementation* phase of the GSP that is specifically directed to DACs, domestic well owners, and environmental stakeholders within the basin.

[4] "A communication section of the Plan shall include a requirement that the GSP identify how it encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin." [23 CCR §354.10(d)(3)]

RECOMMENDATIONS

- In the Outreach and Stakeholder Involvement Communications Plan, describe active and targeted outreach to engage all stakeholders throughout the GSP development and implementation phases. Refer to Attachment B for specific recommendations on how to actively engage stakeholders during all phases of the GSP process.
- Utilize DWR's tribal engagement guidance to comprehensively identify, involve, and address all tribes and tribal interests that may be present in the basin.[5]

C. Considering Beneficial Uses and Users When Establishing Sustainable Management Criteria and Analyzing Impacts on Beneficial Uses and Users

The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is **insufficient**. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results and establishing minimum thresholds.[6,7,8]

Disadvantaged Communities and Drinking Water Users

For chronic lowering of groundwater levels, minimum thresholds are defined at each representative well as historical groundwater low levels. The GSP discounts private domestic wells when establishing SMC, based on the following rationale (6-6): *"There are very few active private wells in the Basin (see Section 2.3.2.1). The owners and operators of those wells are known and they have not reported any adverse effects to those wells in the past; None of the existing private well owners report that their wells went dry or were otherwise affected during the recent drought. Because of this, some flexibility exists for purposes of analysis; Responsibility for potential undesirable results to shallow wells is shared between a GSA and a well owner; there is a reasonable expectation that a well owner would construct, maintain, and operate the well to provide its expected yield over the well's life span, including droughts; As discussed below, MTs are initially set at historical groundwater level lows and then adjusted upward to be protective."* No further details are provided regarding the minimum threshold impacts on domestic wells. The GSP does not sufficiently describe whether minimum thresholds will avoid significant and unreasonable loss of drinking water to domestic well users that are not protected by the minimum threshold. In addition, the GSP does not sufficiently describe or analyze direct or indirect impacts on DACs or drinking water users when defining undesirable results, nor does it describe how the groundwater levels minimum thresholds are consistent with Human Right to Water policy.[9]

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[5] Engagement with Tribal Governments Guidance Document. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/Guidance-Doc-for-SGM-Engagement-with-Tribal-Govt_ay_19.pdf

[6] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results." [23 CCR §354.26(b)(3)]

[7] "The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[8] "The description of minimum thresholds shall include [...] how state, federal, or local standards relate to the relevant sustainability indicator. If the minimum threshold differs from other regulatory standards, the agency shall explain the nature of and the basis for the difference." [23 CCR §354.28(b)(5)]

[9] California Water Code §106.3. Available at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=WAT&sectionNum=106.3

For degraded water quality, constituents of concern (COCs) are total dissolved solids (TDS) and nitrate. The minimum threshold for nitrate is defined as the percentage of wells with concentrations exceeding the nitrate MCL (45 mg/L) based on current conditions (2015-2019), which is 50% of wells. The minimum threshold for TDS is defined as the percentage of wells with concentrations exceeding the TDS value of 1,000 mg/L based on current conditions (2015-2019), which is 26 percent of wells. However, according to the state's anti-degradation policy,[10] water quality should be protected and is only allowed to worsen if a finding is made that it is in the best interest of the people of the State of California. No analysis has been done and no such finding has been made.

The GSP states (p. 6-25): *"Other constituents have been documented (see Groundwater Conditions Section 4.8) but occurrences of these are either under regulation by RWQCB (e.g., perchlorate) or are naturally occurring with no recent exceedances of MCLs and limited potential for mobilization due to management actions (e.g., arsenic, chromium, iron, and manganese)."* However, all COCs in the basin that may be impacted or exacerbated by groundwater use and/or management should be included in the SMC, in addition to coordinating with water quality regulatory programs.

RECOMMENDATIONS

Chronic Lowering of Groundwater Levels

- Describe direct and indirect impacts on drinking water users and DACs when describing undesirable results and defining minimum thresholds for chronic lowering of groundwater levels.

- Consider and evaluate the impacts of selected minimum thresholds and measurable objectives on drinking water users and DACs within the basin. Further describe the impact of passing the minimum threshold for these users. For example, provide the number of domestic wells that would be fully or partially de-watered at the minimum threshold.

Degraded Water Quality

- Describe direct and indirect impacts on drinking water users and DACs when defining undesirable results for degraded water quality.[11] For specific guidance on how to consider these users, refer to "Guide to Protecting Water Quality Under the Sustainable Groundwater Management Act."[12]

- Evaluate the cumulative or indirect impacts of proposed minimum thresholds for degraded water quality on drinking water users and DACs.

[10] Anti-degradation Policy
https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf

[11] "Degraded Water Quality [...] collect sufficient spatial and temporal data from each applicable principal aquifer to determine groundwater quality trends for water quality indicators, as determined by the Agency, to address known water quality issues." [23 CCR §354.34(c)(4)]

[12] Guide to Protecting Water Quality under the Sustainable Groundwater Management Act
https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.

- Set minimum thresholds and measurable objectives for all water quality constituents within the basin that can be impacted and/or exacerbated as a result of groundwater use or groundwater management.

- Set minimum thresholds that do not allow water quality to degrade to levels at or above the MCL trigger level.

Groundwater Dependent Ecosystems and Interconnected Surface Waters

Sustainable management criteria for chronic lowering of groundwater levels provided in the GSP do not consider potential impacts to environmental beneficial users. The GSP neither describes nor analyzes direct or indirect impacts on environmental users of groundwater when defining undesirable results. This is problematic because without identifying potential impacts on GDEs, minimum thresholds may compromise, or even destroy, these environmental beneficial users. Since GDEs are present in the basin, they must be considered when developing SMC.

For depletion of interconnected surface waters, SMC are only established for the Prado Wetlands area. Our comments above in the ISW section of this letter note that interconnected surface waters have not been sufficiently identified and mapped in the basin. Therefore, SMC for depletion of interconnected surface waters may disregard some of the ISWs in the basin.

For the Prado Wetlands area, SMC are established as follows (p. 6-34): *"The Minimum Threshold for depletion of interconnected surface water is the amount of depletion that occurs when the depth to the water along the southern edge of the Prado Wetlands is greater than 15 feet for a period exceeding one year. This threshold corresponds approximately to the maximum depth to water measured in shallow monitoring wells in the northern part of the Prado Wetlands."* However, if minimum thresholds are set to historic low groundwater levels and the basin is allowed to operate at or close to those levels over many years, there is a risk of causing catastrophic damage to ecosystems that are more adverse than what was occurring at the height of the 2012-2016 drought. This is because California ecosystems, which are adapted to our Mediterranean climate, have some drought strategies that they can utilize to deal with short-term water stress. However, if the drought conditions are prolonged, the ecosystem can collapse. No analysis or discussion is presented to describe how the SMC will affect beneficial users, and more specifically GDEs, or the impact of these minimum thresholds on GDEs in the basin. Furthermore, the GSP makes no attempt to evaluate how the proposed minimum thresholds and measurable objectives avoid significant and unreasonable effects on surface water beneficial users in the basin (see Attachment C for a list of environmental users in the basin), such as increased mortality and inability to perform key life processes (e.g., reproduction, migration).

RECOMMENDATIONS

- Evaluate impacts on GDEs when establishing SMC for chronic lowering of groundwater levels. When defining undesirable results, provide specifics on what biological responses (e.g., extent of habitat, growth, recruitment rates) would best characterize a significant and unreasonable impact to GDEs. Undesirable results to environmental users occur when 'significant and unreasonable' effects on beneficial users are caused by one of the sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, or depletion of interconnected surface water). Thus, potential impacts on environmental beneficial uses and users need to be

considered when defining undesirable results in the basin.[13] Defining undesirable results is the crucial first step before the minimum thresholds can be determined.[14]

- Re-evaluate the extent of ISWs in the basin. When defining undesirable results for depletion of interconnected surface water, include a description of potential impacts on instream habitats within ISWs when minimum thresholds in the basin are reached.[15] The GSP should confirm that minimum thresholds for ISWs avoid adverse impacts on environmental beneficial users of interconnected surface waters as these environmental users could be left unprotected by the GSP. These recommendations apply especially to environmental beneficial users that are already protected under pre-existing state or federal law.[6,16]

- When establishing SMC for the basin, consider that the SGMA statute [Water Code §10727.4(l)] specifically calls out that GSPs shall include "impacts on groundwater dependent ecosystems."

2. Climate Change

The SGMA statute identifies climate change as a significant threat to groundwater resources and one that must be examined and incorporated in the GSPs. The GSP Regulations require integration of climate change into the projected water budget to ensure that projects and management actions sufficiently account for the range of potential climate futures.[17] The effects of climate change will intensify the impacts of water stress on GDEs, making available shallow groundwater resources especially critical to their survival. Condon *et al.* (2020) shows that GDEs are more likely to succumb to water stress and rely more on groundwater during times of drought.[18] When shallow groundwater is unavailable, riparian forests can die off and key life processes (e.g., migration and spawning) for aquatic organisms, such as steelhead, can be impeded.

The integration of climate change into the projected water budget is **insufficient**. The GSP does incorporate climate change into the projected water budget using DWR change factors for 2070. However, the plan does not consider multiple climate scenarios (e.g., the 2070 extremely wet and extremely dry climate scenarios) in the projected water budget. The GSP would benefit from clearly and transparently incorporating the extremely wet and dry scenarios provided by DWR into projected water budgets or select more appropriate extreme scenarios for the basin. While these extreme scenarios may

[13] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results". [23 CCR §354.26(b)(3)]

[14] The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[15] "The minimum threshold for depletions of interconnected surface water shall be the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results." [23 CCR §354.28(c)(6)]

[16] Rohde MM, Seapy B, Rogers R, Castañeda X, editors. 2019. Critical Species LookBook: A compendium of California's threatened and endangered species for sustainable groundwater management. The Nature Conservancy, San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/Critical_Species_LookBook_91819.pdf

[17] "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow." [23 CCR §354.18(e)]

[18] Condon et al. 2020. Evapotranspiration depletes groundwater under warming over the contiguous United States. Nature Communications. Available at: https://www.nature.com/articles/s41467-020-14688-0

have a lower likelihood of occurring, their consequences could be significant and their inclusion can help identify important vulnerabilities in the basin's approach to groundwater management.

The GSP appears to integrate climate change into key inputs (e.g., changes in precipitation and evapotranspiration) of the rainfall-runoff-recharge model. However, this could not be confirmed since the details of the described rainfall-runoff-recharge model included in Appendix I were not included for review in the Draft GSP. Furthermore, water is imported into the basin, but these inputs are not quantified and included in the surface water flow volumes of the water budget tables and it is unclear if these inputs are adjusted for climate change.

The sustainable yield is calculated based on the projected water budget with climate change incorporated. However, if the water budgets are incomplete, including the omission of extreme climate scenarios as well as the omission of projected climate change effects on key inputs (e.g., precipitation, evapotranspiration, imported water flows), then there is increased uncertainty in virtually every subsequent calculation used to plan for projects, derive measurable objectives, and set minimum thresholds. Plans that do not adequately include climate change projections may underestimate future impacts on vulnerable beneficial users of groundwater such as ecosystems, DACs, and domestic well owners.

RECOMMENDATIONS

- Ensure that Appendix I, including a description of the rainfall-runoff-recharge model, is included in the GSP.
- Integrate climate change, including extreme climate scenarios, into all elements of the projected water budget to form the basis for development of sustainable management criteria and projects and management actions.
- Integrate climate change into precipitation and evapotranspiration inputs and include the values in the projected water budget tables.
- Integrate climate change into surface water flow inputs, including imported water, for the projected water budget.
- Incorporate climate change scenarios into projects and management actions.

3. Data Gaps

The consideration of beneficial users when establishing monitoring networks is **insufficient**, due to lack of specific plans to increase the Representative Monitoring Wells (RMWs) in the monitoring network that represent water quality conditions and shallow groundwater elevations around domestic wells, GDEs, and ISWs in the basin. These beneficial users may remain unprotected by the GSP without adequate monitoring and identification of data gaps in the shallow aquifer. The Plan therefore fails to meet SGMA's requirements for the monitoring network.[19]

Figure 7-1 (Groundwater Level Monitoring Wells) shows insufficient representation of GDEs and drinking water users for groundwater elevation monitoring. Figure 7-2 (Water Quality Monitoring Wells) shows

[19] "The monitoring network objectives shall be implemented to accomplish the following: [...] (2) Monitor impacts to the beneficial uses or users of groundwater." [23 CCR §354.34(b)(2)]

insufficient representation of drinking water users for water quality monitoring. Refer to Attachment E for maps of these monitoring sites in relation to key beneficial users of groundwater.

The GSP includes plans to install three shallow monitoring wells near the Prado Wetlands to monitor GDEs in this area. However, our comments above note that since this is the only area of the basin where SMC to protect ecosystems have been established, the GSP disregards other areas of the basin where GDEs and ISW may exist. Additional monitoring may be needed to adequately assess the presence of GDEs and ISWs and to monitor the impact of SMC on these ecosystems.

RECOMMENDATIONS

- Provide maps that overlay current and proposed monitoring well locations with the locations of DACs, domestic wells, and GDEs to clearly identify monitored areas.
- Increase the number of RMWs in the shallow aquifer across the basin as needed to map ISWs and adequately monitor all groundwater condition indicators across the basin and at appropriate depths for *all* beneficial users. Prioritize proximity to DACs, domestic wells, GDEs, and ISWs when identifying new RMWs.
- Ensure groundwater elevation and water quality RMWs are monitoring groundwater conditions spatially and at the correct depth for *all* beneficial users - especially DACs, domestic wells, and GDEs.
- Further describe biological monitoring that can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the basin.

4. Addressing Beneficial Users in Projects and Management Actions

The consideration of beneficial users when developing projects and management actions is **insufficient**, due to the failure to completely identify benefits or impacts of identified projects and management actions, including water quality impacts, to key beneficial users of groundwater such as GDEs, aquatic habitats, surface water users, DACs, and drinking water users. Therefore, potential project and management actions may not protect these beneficial users. Groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for *all* beneficial users.

RECOMMENDATIONS

- For DACs and domestic well owners, include a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program.
- For DACs and domestic well owners, include a discussion of whether potential impacts to water quality from projects and management actions could occur and how the GSA plans to mitigate such impacts.

- Recharge ponds, reservoirs, and facilities for managed aquifer recharge can be designed as multiple-benefit projects to include elements that act functionally as wetlands and provide a benefit for wildlife and aquatic species. For guidance on how to integrate multi-benefit recharge projects into your GSP, refer to the “Multi-Benefit Recharge Project Methodology Guidance Document.”[20]

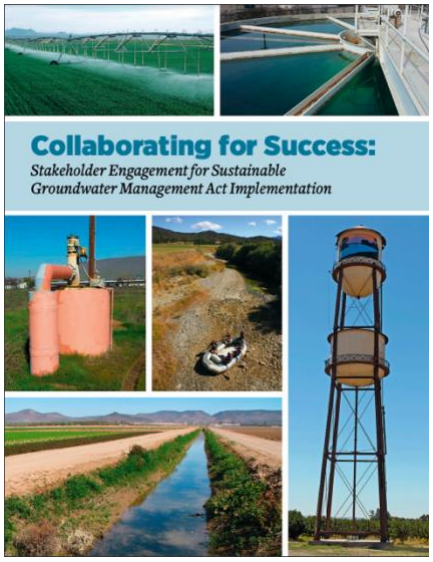
- Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.

[20] The Nature Conservancy. 2021. Multi-Benefit Recharge Project Methodology for Inclusion in Groundwater Sustainability Plans. Sacramento. Available at: https://groundwaterresourcehub.org/sgma-tools/multi-benefit-recharge-project-methodology-guidance/

Attachment B

SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users

Stakeholder Engagement and Outreach



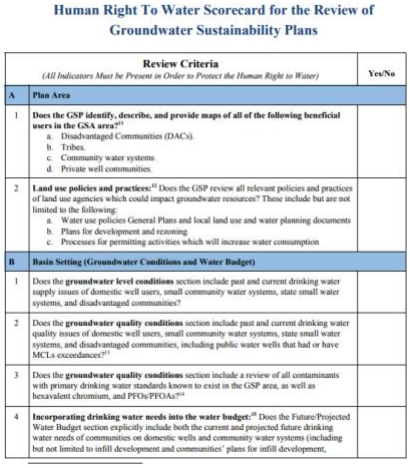
Clean Water Action, Community Water Center and Union of Concerned Scientists developed a guidance document called Collaborating for success: Stakeholder engagement for Sustainable Groundwater Management Act Implementation. It provides details on how to conduct targeted and broad outreach and engagement during Groundwater Sustainability Plan (GSP) development and implementation. Conducting a targeted outreach involves:

- Developing a robust Stakeholder Communication and Engagement plan that includes outreach at frequented locations (schools, farmers markets, religious settings, events) across the plan area to increase the involvement and participation of disadvantaged communities, drinking water users and the environmental stakeholders.

- Providing translation services during meetings and technical assistance to enable easy participation for non-English speaking stakeholders.

- GSP should adequately describe the process for requesting input from beneficial users and provide details on how input is incorporated into the GSP.

The Human Right to Water

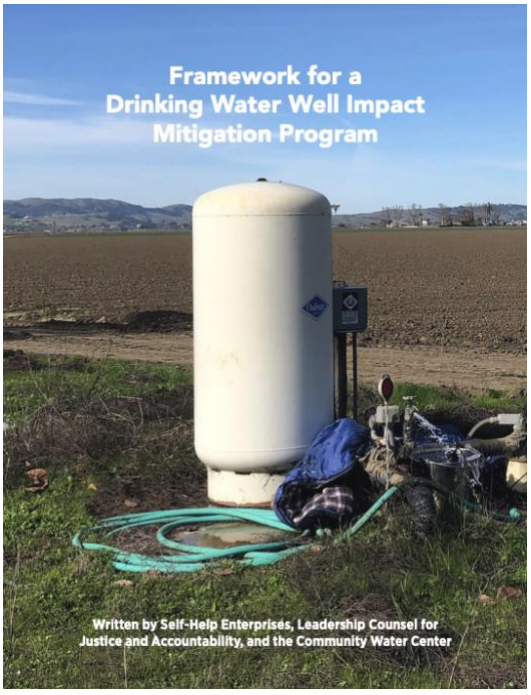


Human Right To Water Scorecard for the Review of Groundwater Sustainability Plans

	Review Criteria *(All Indicators Must be Present in Order to Protect the Human Right to Water)*	Yes/No
A	**Plan Area**	
1	**Does the GSP identify, describe, and provide maps of all of the following beneficial users in the GSA area?**[43] a. Disadvantaged Communities (DACs). b. Tribes. c. Community water systems. d. Private well communities.	
2	**Land use policies and practices:**[44] Does the GSP review all relevant policies and practices of land use agencies which could impact groundwater resources? These include but are not limited to the following: a. Water use policies General Plans and local land use and water planning documents b. Plans for development and rezoning c. Processes for permitting activities which will increase water consumption	
B	**Basin Setting (Groundwater Conditions and Water Budget)**	
1	Does the **groundwater level conditions** section include past and current drinking water supply issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities?	
2	Does the **groundwater quality conditions** section include past and current drinking water quality issues of domestic well users, small community water systems, state small water systems, and disadvantaged communities, including public water wells that had or have MCLs exceedances?[45]	
3	Does the **groundwater quality conditions** section include a review of all contaminants with primary drinking water standards known to exist in the GSP area, as well as hexavalent chromium, and PFOs/PFOAs?[46]	
4	**Incorporating drinking water needs into the water budget:**[48] Does the Future/Projected Water Budget section explicitly include both the current and projected future drinking water needs of communities on domestic wells and community water systems (including but not limited to infill development and communities' plans for infill development,	

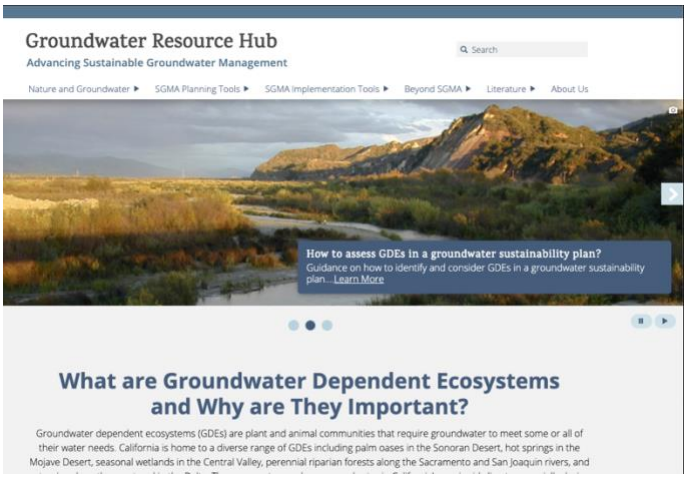
The Human Right to Water Scorecard was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid Groundwater Sustainability Agencies (GSAs) in prioritizing drinking water needs in SGMA. The scorecard identifies elements that must exist in GSPs to adequately protect the Human Right to Drinking water.

Drinking Water Well Impact Mitigation Framework



The Drinking Water Well Impact Mitigation Framework was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid GSAs in the development and implementation of their GSPs. The framework provides a clear roadmap for how a GSA can best structure its data gathering, monitoring network and management actions to proactively monitor and protect drinking water wells and mitigate impacts should they occur.

Groundwater Resource Hub



The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at GroundwaterResourceHub.org. The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Rooting Depth Database

The Plant Rooting Depth Database provides information that can help assess whether groundwater-dependent vegetation are accessing groundwater. Actual rooting depths will depend on the plant species and site-specific conditions, such as soil type and

availability of other water sources. Site-specific knowledge of depth to groundwater combined with rooting depths will help provide an understanding of the potential groundwater levels are needed to sustain GDEs.

How to use the database

The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NC Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes[1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet. However, it is important to note that deeper thresholds are necessary for other plants that have reported maximum root depths that exceed the averaged 30 feet threshold, such as valley oak (*Quercus lobata*), Euphrates poplar (*Populus euphratica*), salt cedar (*Tamarix spp.*), and shadescale (*Atriplex confertifolia*). The Nature Conservancy advises that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to groundwater threshold of 80 feet should be used instead of the 30 ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

The Plant Rooting Depth Database is an Excel workbook composed of four worksheets:

1. California phreatophyte rooting depth data (included in the NC Dataset)
2. Global phreatophyte rooting depth data
3. Metadata
4. References

How the database was compiled

The Plant Rooting Depth Database is a compilation of rooting depth information for the groundwater-dependent plant species identified in the NC Dataset. Rooting depth data were compiled from published scientific literature and expert opinion through a crowdsourcing campaign. As more information becomes available, the database of rooting depths will be updated. Please Contact Us if you have additional rooting depth data for California phreatophytes.

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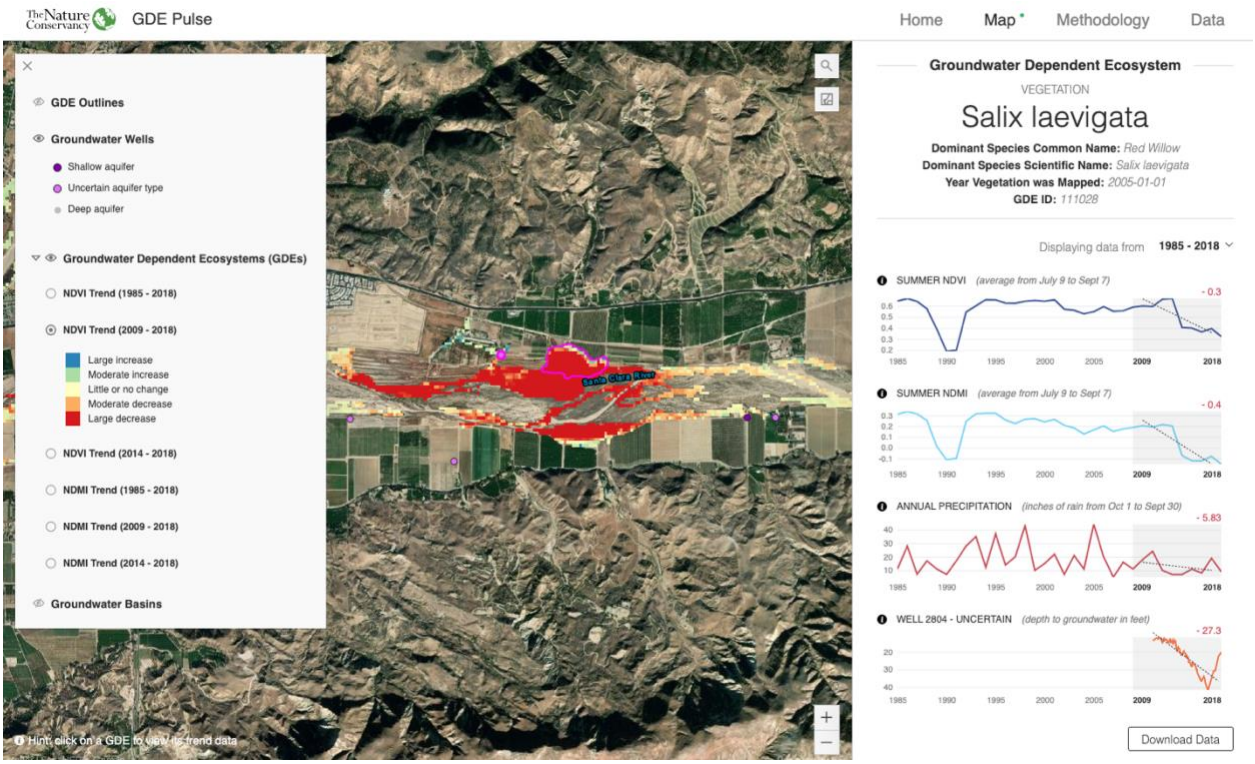
[1] Canadell, J., Jackson, R.B., Ehleringer, J.B. et al. 1996. Maximum rooting depth of vegetation types at the global scale. Oecologia 108, 583–595. https://doi.org/10.1007/BF00329030

GDE Pulse



GDE Pulse is a free online tool that allows Groundwater Sustainability Agencies to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data. Remote sensing data from satellites has been used to monitor the health of vegetation all over the planet. GDE pulse has compiled 35 years of satellite imagery from NASA's Landsat mission for every polygon in the Natural Communities Commonly Associated with Groundwater Dataset. The following datasets are available for downloading:

Normalized Difference Vegetation Index (NDVI) is a satellite-derived index that represents the greenness of vegetation. Healthy green vegetation tends to have a higher NDVI, while dead leaves have a lower NDVI. We calculated the average NDVI during the driest part of the year (July - Sept) to estimate vegetation health when the plants are most likely dependent on groundwater.

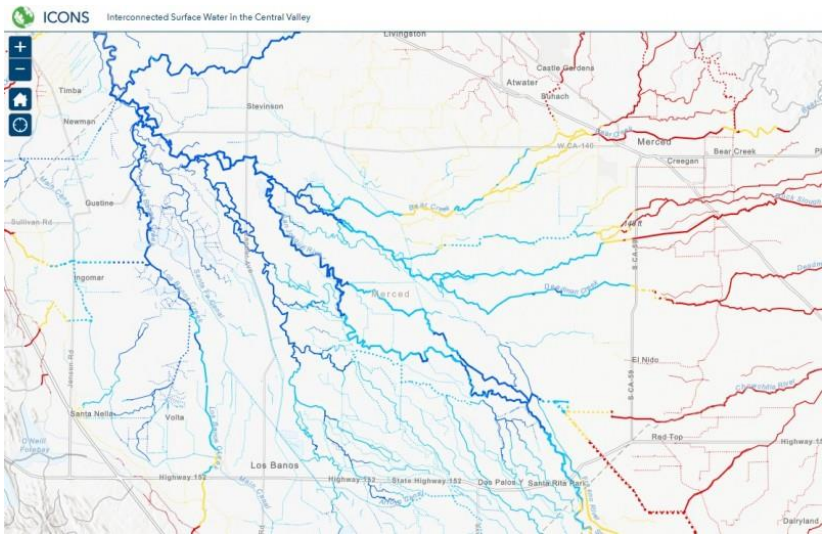
Normalized Difference Moisture Index (NDMI) is a satellite-derived index that represents water content in vegetation. NDMI is derived from the Near-Infrared (NIR) and Short-Wave Infrared (SWIR) channels. Vegetation with adequate access to water tends to have higher NDMI, while vegetation that is water stressed tends to have lower NDMI. We calculated the average NDVI during the driest part of the year (July–September) to estimate vegetation health when the plants are most likely dependent on groundwater.

Annual Precipitation is the total precipitation for the water year (October 1st – September 30th) from the PRISM dataset. The amount of local precipitation can affect vegetation with more precipitation generally leading to higher NDVI and NDMI.

Depth to Groundwater measurements provide an indication of the groundwater levels and changes over time for the surrounding area. We used groundwater well measurements from nearby (<1km) wells to estimate the depth to groundwater below the GDE based on the average elevation of the GDE (using a digital elevation model) minus the measured groundwater surface elevation.

ICONOS Mapper

Interconnected Surface Water in the Central Valley



ICONS maps the likely presence of interconnected surface water (ISW) in the Central Valley using depth to groundwater data. Using data from 2011-2018, the ISW dataset represents the likely connection between surface water and groundwater for rivers and streams in California's Central Valley. It includes information on the mean, maximum, and minimum depth to groundwater for each stream segment over the years with available data, as well as the likely presence of ISW based on the minimum depth to groundwater. The Nature Conservancy developed this database, with guidance and input from expert academics, consultants, and state agencies.

We developed this dataset using groundwater elevation data available online from the California Department of Water Resources (DWR). DWR only provides this data for the Central Valley. For GSAs outside of the valley, who have groundwater well measurements, we recommend following our methods to determine likely ISW in your region. The Nature Conservancy's ISW dataset should be used as a first step in reviewing ISW and should be supplemented with local or more recent groundwater depth data.

Attachment C

Freshwater Species Located in the Temescal Basin

To assist in identifying the beneficial users of surface water necessary to assess the undesirable result "depletion of interconnected surface waters", Attachment C provides a list of freshwater species located in the Temescal Basin. To produce the freshwater species list, we used ArcGIS to select features within the California Freshwater Species Database version 2.0.9 within the basin boundary. This database contains information on ~4,000 vertebrates, macroinvertebrates and vascular plants that depend on fresh water for at least one stage of their life cycle. The methods used to compile the California Freshwater Species Database can be found in Howard et al. 2015[1]. The spatial database contains locality observations and/or distribution information from ~400 data sources. The database is housed in the California Department of Fish and Wildlife's BIOS[2] as well as on The Nature Conservancy's science website[3].

Scientific Name	Common Name	Legal Protected Status		
		Federal	State	Other
BIRDS				
Aechmophorus clarkii	Clark's Grebe			
Aix sponsa	Wood Duck			
Anas acuta	Northern Pintail			
Anas americana	American Wigeon			
Anas clypeata	Northern Shoveler			
Anas crecca	Green-winged Teal			
Anas cyanoptera	Cinnamon Teal			
Anas platyrhynchos	Mallard			
Anas strepera	Gadwall			
Ardea alba	Great Egret			
Ardea herodias	Great Blue Heron			
Aythya affinis	Lesser Scaup			
Aythya americana	Redhead		Special Concern	BSSC - Third priority
Bucephala albeola	Bufflehead			
Bucephala clangula	Common Goldeneye			
Butorides virescens	Green Heron			
Calidris mauri	Western Sandpiper			
Calidris minutilla	Least Sandpiper			
Chroicocephalus philadelphia	Bonaparte's Gull			
Cistothorus palustris palustris	Marsh Wren			

[1] Howard, J.K. et al. 2015. Patterns of Freshwater Species Richness, Endemism, and Vulnerability in California. PLoSONE, 11(7). Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130710

[2] California Department of Fish and Wildlife BIOS: https://www.wildlife.ca.gov/data/BIOS

[3] Science for Conservation: https://www.scienceforconservation.org/products/california-freshwater-species-database

Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo	Candidate - Threatened	Endangered	
Egretta thula	Snowy Egret			
Fulica americana	American Coot			
Gallinago delicata	Wilson's Snipe			
Haliaeetus leucocephalus	Bald Eagle	Bird of Conservation Concern	Endangered	
Himantopus mexicanus	Black-necked Stilt			
Icteria virens	Yellow-breasted Chat		Special Concern	BSSC - Third priority
Limnodromus scolopaceus	Long-billed Dowitcher			
Megaceryle alcyon	Belted Kingfisher			
Nycticorax nycticorax	Black-crowned Night-Heron			
Oxyura jamaicensis	Ruddy Duck			
Phalacrocorax auritus	Double-crested Cormorant			
Plegadis chihi	White-faced Ibis		Watch list	
Podiceps nigricollis	Eared Grebe			
Recurvirostra americana	American Avocet			
Setophaga petechia	Yellow Warbler			BSSC - Second priority
Tachycineta bicolor	Tree Swallow			
Vireo bellii	Bell's Vireo			
Vireo bellii pusillus	Least Bell's Vireo	Endangered	Endangered	
CRUSTACEANS				
Hyalella spp.	Hyalella spp.			
FISH				
Catostomus santaanae	Santa Ana sucker	Threatened	Special Concern	Endangered - Moyle 2013
HERPS				
Actinemys marmorata marmorata	Western Pond Turtle		Special Concern	ARSSC
Anaxyrus boreas boreas	Boreal Toad			
Anaxyrus californicus	Arroyo Toad	Endangered	Special Concern	ARSSC
Pseudacris cadaverina	California Treefrog			ARSSC
Rana draytonii	California Red-legged Frog	Threatened	Special Concern	ARSSC
Spea hammondii	Western Spadefoot	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Taricha torosa	Coast Range Newt		Special Concern	ARSSC

Thamnophis hammondii hammondii	Two-striped Gartersnake		Special Concern	ARSSC
Thamnophis sirtalis sirtalis	Common Gartersnake			
INSECTS & OTHER INVERTS				
Apedilum spp.	Apedilum spp.			
Chaoboridae fam.	Chaoboridae fam.			
Chironomus spp.	Chironomus spp.			
Corixidae fam.	Corixidae fam.			
Cricotopus spp.	Cricotopus spp.			
Cryptochironomus spp.	Cryptochironomus spp.			
Dicrotendipes spp.	Dicrotendipes spp.			
Ephydridae fam.	Ephydridae fam.			
Fallceon spp.	Fallceon spp.			
Hydroptila spp.	Hydroptila spp.			
Hydroptilidae fam.	Hydroptilidae fam.			
Nanocladius spp.	Nanocladius spp.			
Phaenopsectra spp.	Phaenopsectra spp.			
Polypedilum spp.	Polypedilum spp.			
Pseudochironomus spp.	Pseudochironomus spp.			
Psychodidae fam.	Psychodidae fam.			
Simulium spp.	Simulium spp.			
Thienemannimyia spp.	Thienemannimyia spp.			
MOLLUSKS				
Gyraulus spp.	Gyraulus spp.			
Physa spp.	Physa spp.			
Pisidium spp.	Pisidium spp.			
PLANTS				
Arundo donax	NA			
Baccharis salicina				Not on any status lists
Marsilea vestita vestita	NA			Not on any status lists

Attachment D

The Nature Conservancy

July 2019

IDENTIFYING GDEs UNDER SGMA

Best Practices for using the NC Dataset

The Sustainable Groundwater Management Act (SGMA) requires that groundwater dependent ecosystems (GDEs) be identified in Groundwater Sustainability Plans (GSPs). As a starting point, the Department of Water Resources (DWR) is providing the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) online[1] to help Groundwater Sustainability Agencies (GSAs), consultants, and stakeholders identify GDEs within individual groundwater basins. To apply information from the NC Dataset to local areas, GSAs should combine it with the best available science on local hydrology, geology, and groundwater levels to verify whether polygons in the NC dataset are likely supported by groundwater in an aquifer (Figure 1)[2]. This document highlights six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater.

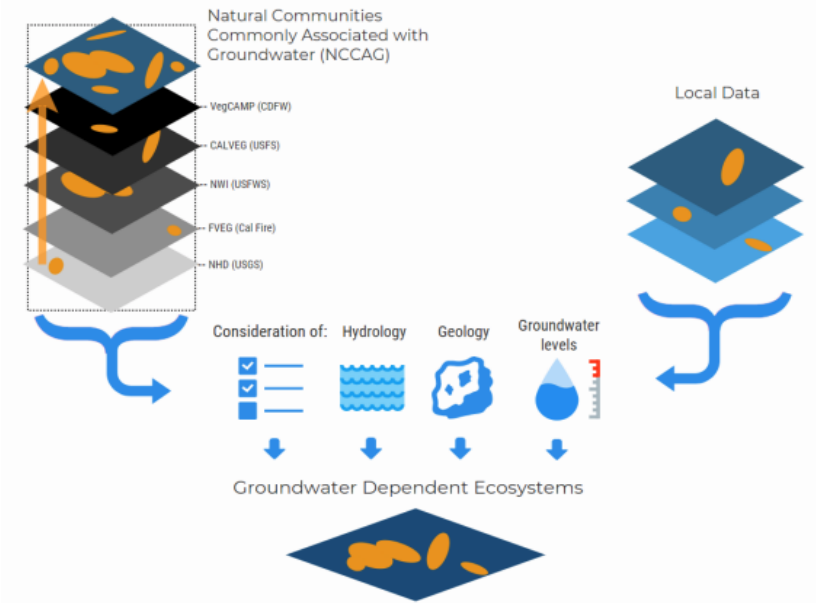


Figure 1. Considerations for GDE identification.
Source: DWR[2]

[1] NC Dataset Online Viewer: https://gis.water.ca.gov/app/NCDatasetViewer/
[2] California Department of Water Resources (DWR). 2018. Summary of the "Natural Communities Commonly Associated with Groundwater" Dataset and Online Web Viewer. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf

The NC Dataset identifies vegetation and wetland features that are good indicators of a GDE. The dataset is comprised of 48 publicly available state and federal datasets that map vegetation, wetlands, springs, and seeps commonly associated with groundwater in California[3]. It was developed through a collaboration between DWR, the Department of Fish and Wildlife, and The Nature Conservancy (TNC). TNC has also provided detailed guidance on identifying GDEs from the NC dataset[4] on the Groundwater Resource Hub[5], a website dedicated to GDEs.

BEST PRACTICE #1. Establishing a Connection to Groundwater

Groundwater basins can be comprised of one continuous aquifer (Figure 2a) or multiple aquifers stacked on top of each other (Figure 2b). In unconfined aquifers (Figure 2a), using the depth-to-groundwater and the rooting depth of the vegetation is a reasonable method to infer groundwater dependence for GDEs. If groundwater is well below the rooting (and capillary) zone of the plants and any wetland features, the ecosystem is considered disconnected and groundwater management is not likely to affect the ecosystem (Figure 2d). However, it is important to consider local conditions (e.g., soil type, groundwater flow gradients, and aquifer parameters) and to review groundwater depth data from multiple seasons and water year types (wet and dry) because intermittent periods of high groundwater levels can replenish perched clay lenses that serve as the water source for GDEs (Figure 2c). Maintaining these natural groundwater fluctuations are important to sustaining GDE health.

Basins with a stacked series of aquifers (Figure 2b) may have varying levels of pumping across aquifers in the basin, depending on the production capacity or water quality associated with each aquifer. If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water. The goal of SGMA is to sustainably manage groundwater resources for current and future social, economic, and environmental benefits. While groundwater pumping may not be currently occurring in a shallower aquifer, use of this water may become more appealing and economically viable in future years as pumping restrictions are placed on the deeper production aquifers in the basin to meet the sustainable yield and criteria. Thus, identifying GDEs in the basin should done irrespective to the amount of current pumping occurring in a particular aquifer, so that future impacts on GDEs due to new production can be avoided. A good rule of thumb to follow is: *if groundwater can be pumped from a well - it's an aquifer*.

[3] For more details on the mapping methods, refer to: Klausmeyer, K., J. Howard, T. Keeler-Wolf, K. Davis-Fadtke, R. Hull, A. Lyons. 2018. Mapping Indicators of Groundwater Dependent Ecosystems in California: Methods Report. San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/iGDE_data_paper_20180423.pdf
[4] "Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans" is available at: https://groundwaterresourcehub.org/gde-tools/gsp-guidance-document/
[5] The Groundwater Resource Hub: www.GroundwaterResourceHub.org

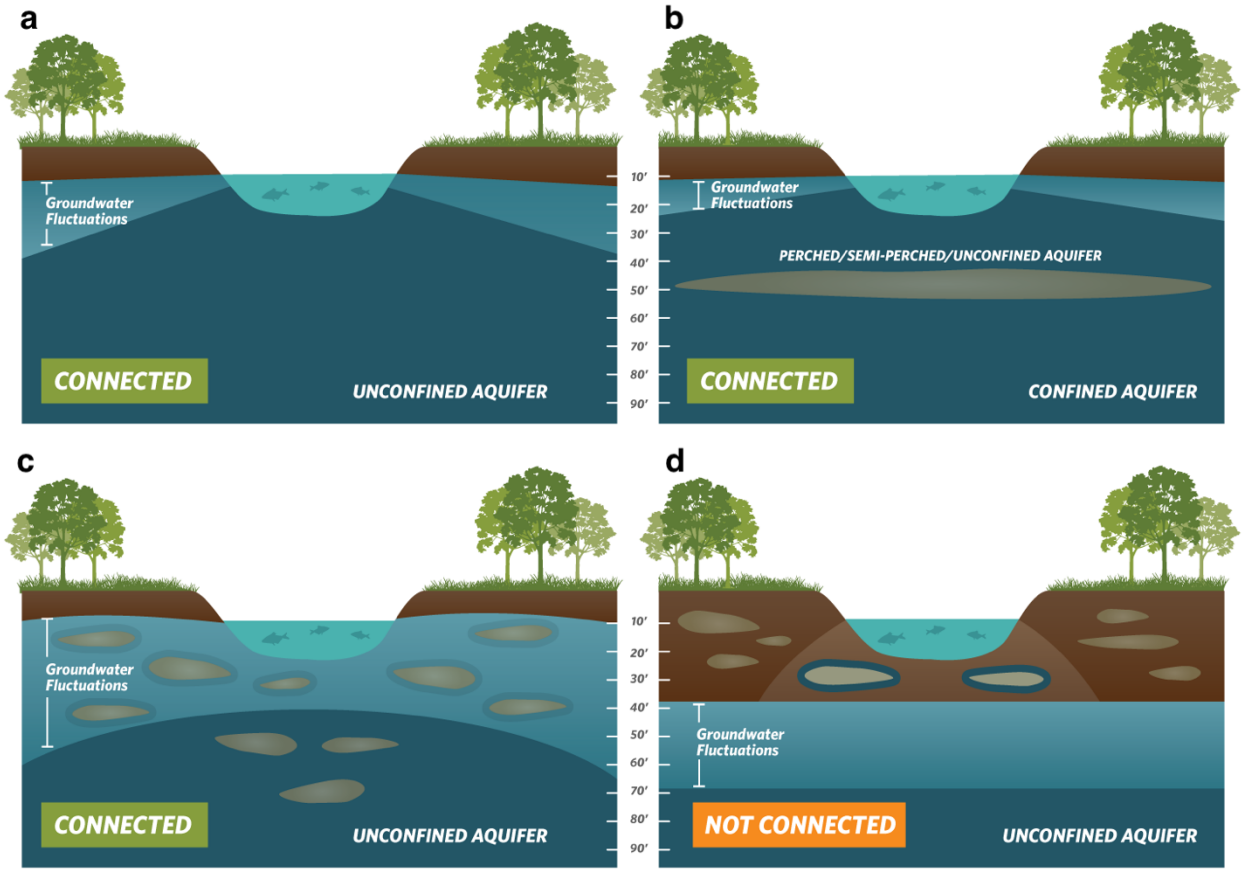


Figure 2. Confirming whether an ecosystem is connected to groundwater. Top: (a) Under the ecosystem is an unconfined aquifer with depth-to-groundwater fluctuating seasonally and interannually within 30 feet from land surface. **(b)** Depth-to-groundwater in the shallow aquifer is connected to overlying ecosystem. Pumping predominately occurs in the confined aquifer, but pumping is possible in the shallow aquifer. **Bottom: (c)** Depth-to-groundwater fluctuations are seasonally and interannually large, however, clay layers in the near surface prolong the ecosystem's connection to groundwater. **(d)** Groundwater is disconnected from surface water, and any water in the vadose (unsaturated) zone is due to direct recharge from precipitation and indirect recharge under the surface water feature. These areas are not connected to groundwater and typically support species that do not require access to groundwater to survive.

BEST PRACTICE #2. Characterize Seasonal and Interannual Groundwater Conditions

SGMA requires GSAs to describe current and historical groundwater conditions when identifying GDEs [23 CCR §354.16(g)]. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions (e.g., depth-to-groundwater) is inadequate because managing groundwater conditions with data from one time point fails to capture the seasonal and interannual variability typical of California's climate. DWR's Best Management Practices document on water budgets[6] recommends using 10 years of water supply and water budget information to describe how historical conditions have impacted the operation of the basin within sustainable yield, implying that a baseline[7] could be determined based on data between 2005 and 2015. Using this or a similar time period, depending on data availability, is recommended for determining the depth-to-groundwater.

GDEs depend on groundwater levels being close enough to the land surface to interconnect with surface water systems or plant rooting networks. The most practical approach[8] for a GSA to assess whether polygons in the NC dataset are connected to groundwater is to rely on groundwater elevation data. As detailed in TNC's GDE guidance document[4], one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5).

Groundwater levels fluctuate over time and space due to California's Mediterranean climate (dry summers and wet winters), climate change (flood and drought years), and subsurface heterogeneity in the subsurface (Figure 3). Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. While depth-to-groundwater levels within 30 feet[4] of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. Utilizing groundwater data from one point in time can misrepresent groundwater levels required by GDEs, and inadvertently result in adverse impacts to the GDEs. Time series data on groundwater elevations and depths are available on the SGMA Data Viewer[9]. However, if insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons in the GSP until data gaps are reconciled in the monitoring network (see Best Practice #6).

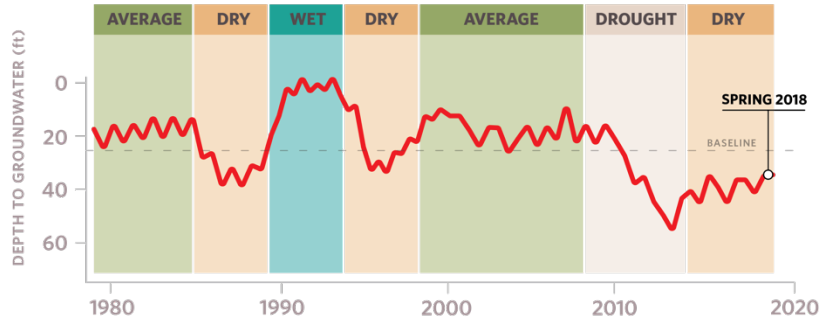


Figure 3. Example seasonality and interannual variability in depth-to-groundwater over time. Selecting one point in time, such as Spring 2018, to characterize groundwater conditions in GDEs fails to capture what groundwater conditions are necessary to maintain the ecosystem status into the future so adverse impacts are avoided.

[6] DWR. 2016. Water Budget Best Management Practice. Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Water_Budget_Final_2016-12-23.pdf

[7] Baseline is defined under the GSP regulations as "historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin." [23 CCR §351(e)]

[8] Groundwater reliance can also be confirmed via stable isotope analysis and geophysical surveys. For more information see The GDE Assessment Toolbox (Appendix IV, GDE Guidance Document for GSPs[4]).

[9] SGMA Data Viewer: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer

BEST PRACTICE #3. Ecosystems Often Rely on Both Groundwater and Surface Water

GDEs are plants and animals that rely on groundwater for all or some of its water needs, and thus can be supported by multiple water sources. The presence of non-groundwater sources (e.g., surface water, soil moisture in the vadose zone, applied water, treated wastewater effluent, urban stormwater, irrigated return flow) within and around a GDE does not preclude the possibility that it is supported by groundwater, too. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" [23 CCR §351(m)]. Hence, depth-to-groundwater data should be used to identify whether NC polygons are supported by groundwater and should be considered GDEs. In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals[10], which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water.

GSAs are only responsible for impacts to GDEs resulting from groundwater conditions in the basin, so if adverse impacts to GDEs result from the diversion of applied water, treated wastewater, or irrigation return flow away from the GDE, then those impacts will be evaluated by other permitting requirements (e.g., CEQA) and may not be the responsibility of the GSA. However, if adverse impacts occur to the GDE due to changing groundwater conditions resulting from pumping or groundwater management activities, then the GSA would be responsible (Figure 4).

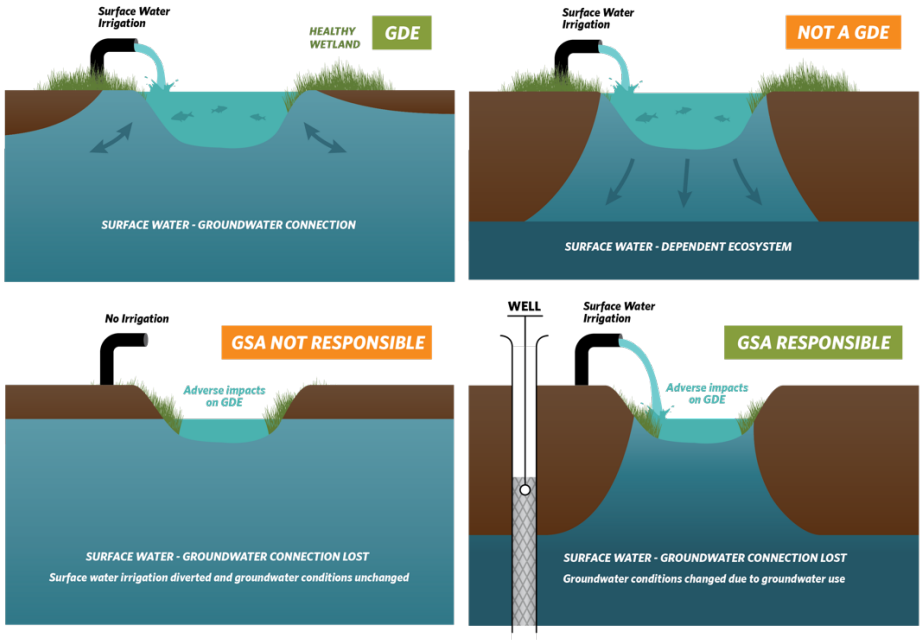


Figure 4. Ecosystems often depend on multiple sources of water. Top: (Left) Surface water and groundwater are interconnected, meaning that the GDE is supported by both groundwater and surface water. **(Right)** Ecosystems that are only reliant on non-groundwater sources are not groundwater-dependent. **Bottom: (Left)** An ecosystem that was once dependent on an interconnected surface water, but loses access to groundwater solely due to surface water diversions may not be the GSA's responsibility. **(Right)** Groundwater dependent ecosystems once dependent on an interconnected surface water system, but loses that access due to groundwater pumping is the GSA's responsibility.

[10] For a list of environmental beneficial users of surface water by basin, visit: https://groundwaterresourcehub.org/gde-tools/environmental-surface-water-beneficiaries/

BEST PRACTICE #4. Select Representative Groundwater Wells

Identifying GDEs in a basin requires that groundwater conditions are characterized to confirm whether polygons in the NC dataset are supported by the underlying aquifer. To do this, proximate groundwater wells should be identified to characterize groundwater conditions (Figure 5). When selecting representative wells, it is particularly important to consider the subsurface heterogeneity around NC polygons, especially near surface water features where groundwater and surface water interactions occur around heterogeneous stratigraphic units or aquitards formed by fluvial deposits. The following selection criteria can help ensure groundwater levels are representative of conditions within the GDE area:

- Choose wells that are within 5 kilometers (3.1 miles) of each NC Dataset polygons because they are more likely to reflect the local conditions relevant to the ecosystem. If there are no wells within 5km of the center of a NC dataset polygon, then there is insufficient information to remove the polygon based on groundwater depth. Instead, it should be retained as a potential GDE until there are sufficient data to determine whether or not the NC Dataset polygon is supported by groundwater.

- Choose wells that are screened within the surficial unconfined aquifer and capable of measuring the true water table.

- Avoid relying on wells that have insufficient information on the screened well depth interval for excluding GDEs because they could be providing data on the wrong aquifer. This type of well data should not be used to remove any NC polygons.

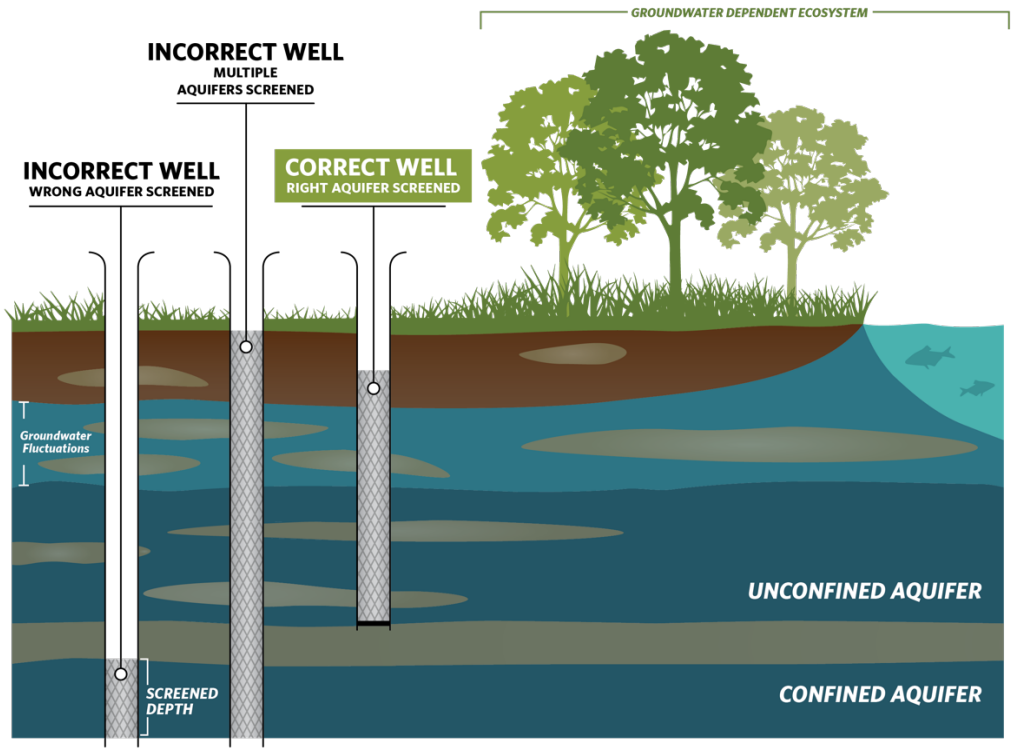


Figure 5. Selecting representative wells to characterize groundwater conditions near GDEs.

BEST PRACTICE #5. Contouring Groundwater Elevations

The common practice to contour depth-to-groundwater over a large area by interpolating measurements at monitoring wells is unsuitable for assessing whether an ecosystem is supported by groundwater. This practice causes errors when the land surface contains features like stream and wetland depressions because it assumes the land surface is constant across the landscape and depth-to-groundwater is constant below these low-lying areas (Figure 6a). A more accurate approach is to interpolate **groundwater elevations** at monitoring wells to get groundwater elevation contours across the landscape. This layer can then be subtracted from land surface elevations from a Digital Elevation Model (DEM)[11] to estimate depth-to-groundwater contours across the landscape (Figure b; Figure 7). This will provide a much more accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.

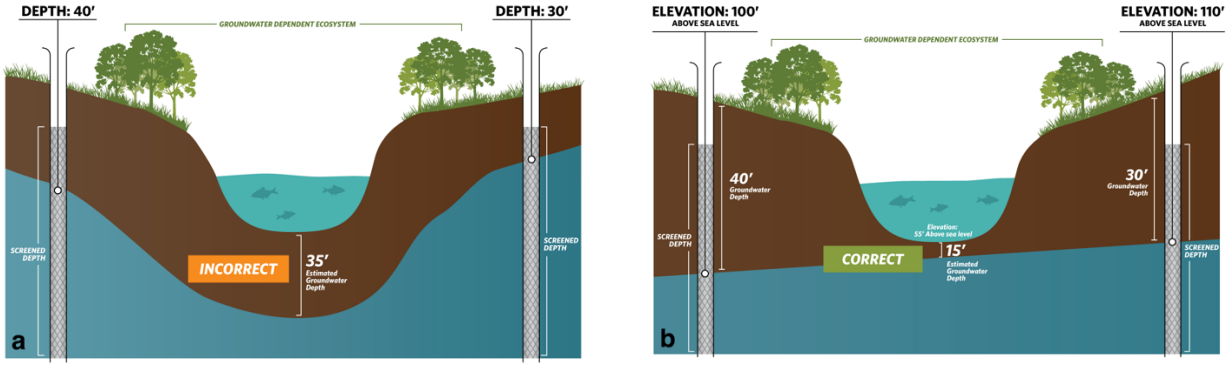


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. **(b)** Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

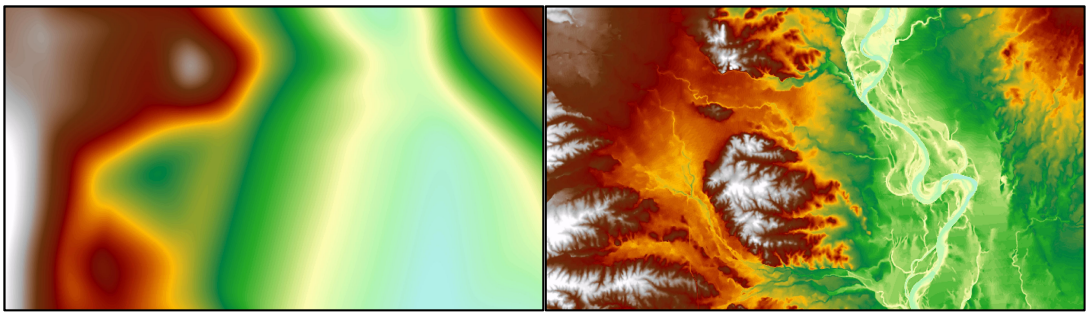


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. **(Right)** Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

[11] USGS Digital Elevation Model data products are described at: https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services and can be downloaded at: https://iewer.nationalmap.gov/basic/

BEST PRACTICE #6. Best Available Science

Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decisions, and using the data collected through monitoring programs to revise decisions in the future. In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, **The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network.** Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.

KEY DEFINITIONS

Groundwater basin is an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom. *23 CCR §341(g)(1)*

Groundwater dependent ecosystem (GDE) are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. *23 CCR §351(m)*

Interconnected surface water (ISW) surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted. *23 CCR §351(o)*

Principal aquifers are aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems. *23 CCR §351(aa)*

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and waters on which all life depends*. To support successful SGMA implementation that meets the future needs of people, the economy, and the environment, TNC has developed tools and resources (www.groundwaterresourcehub.org) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Attachment E

Maps of representative monitoring sites in relation to key beneficial users

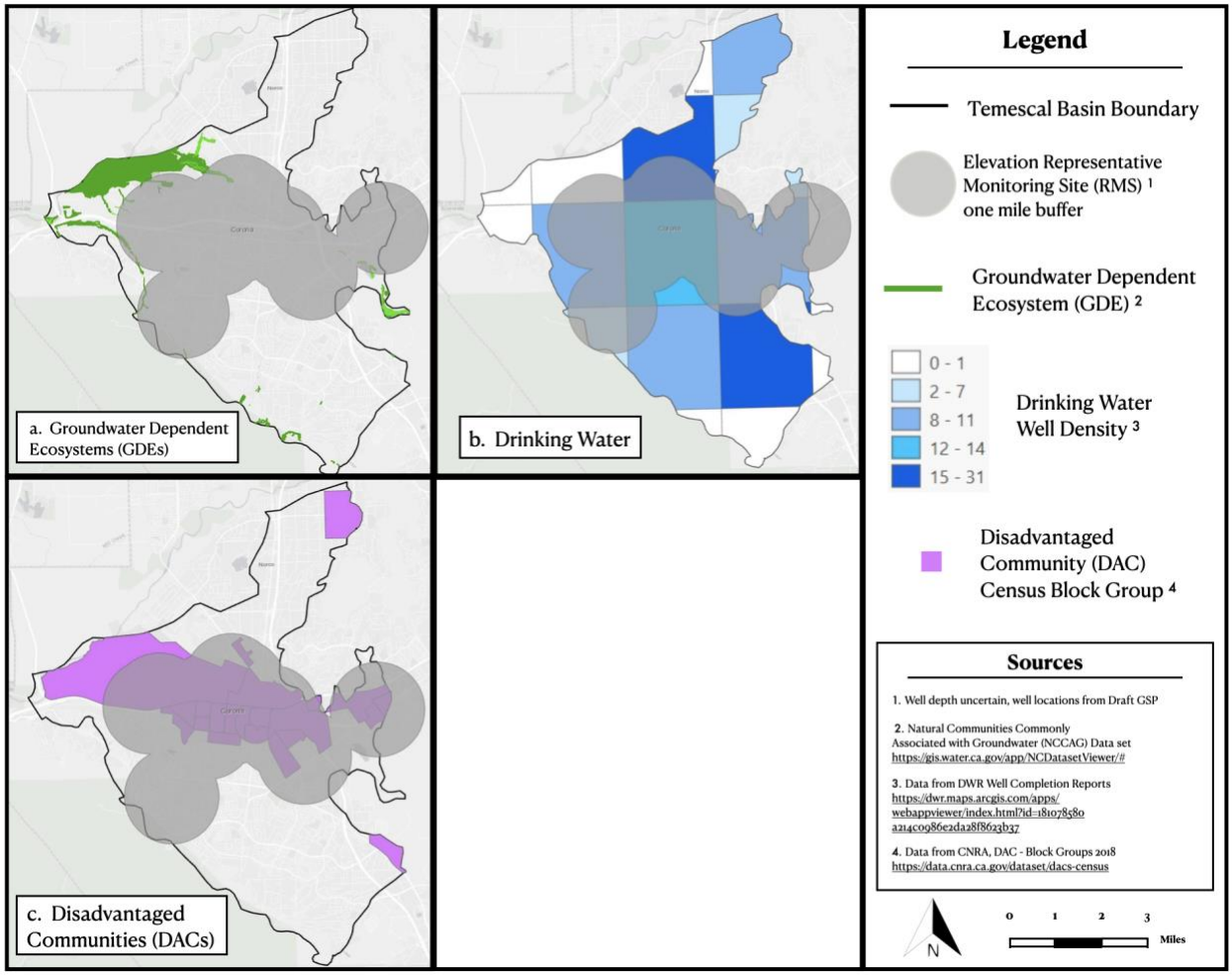


Figure 1. Groundwater elevation representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

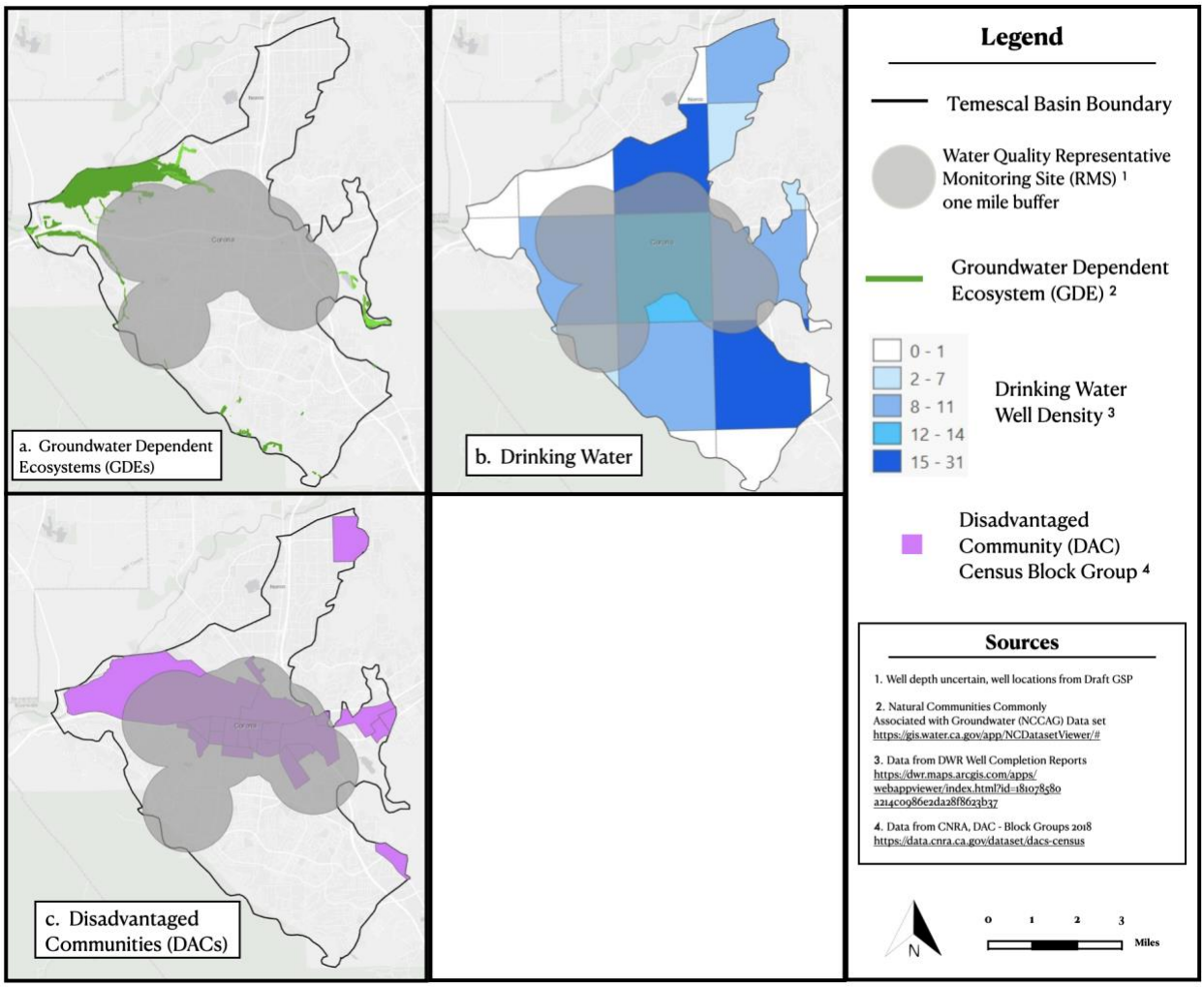


Figure 2. Groundwater quality representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

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January 13, 2021

To: Ngoro Atume – Clean Water Action/Clean Water Fund
Dr. J. Pablo Ortiz-Partida – Union of Concerned Scientists
Samantha Arthur – Audubon California
Danielle V. Dolan – Local Government Commission
E.J. Remson – The Nature Conservancy (TNC)
Melissa M. Rohde – The Nature Conservancy

RE: Public Comment Letter for the Temescal Basin Draft GSP Dated December 4, 2021

The Temescal Groundwater Sustainability Agency (GSA) appreciates your thorough review of our Groundwater Sustainability Plan (GSP). Throughout the process, the Temescal GSA has encouraged and welcomed public input, including the comment letter you submitted on December 14, 2021. We have reviewed your comments. Detailed responses to your comments, including identification of edits to the GSP, are provided below.
Responses are organized according to the Specific Comments in Attachment A of your December 14, 2021 comment letter, which is attached for reference.

COMMENT 1. ***Beneficial uses and users are not sufficiently considered in GSP development.***

COMMENT 1a. ***Human Right to Water considerations are not sufficiently incorporated.***

Multiple topics were included in this comment; these are presented with responses by topic below.

Comment:

The identification of Disadvantaged Communities (DACs) and drinking water users is insufficient.

Response:

The text in Section 2.8.4 discusses DACs within the Basin and the DACs are delineated in Figure 2-13. This section specifically addresses the fact that the DAC and SDAC areas of the Basin are within the service areas of the City of Corona (Corona) and the Home Gardens County Water District (HGCWD) and that there are no active private wells within these areas.

Comment:

The identification of Interconnected Surface Waters (ISWs) is insufficient, due to lack of supporting information provided for the ISW analysis. The GSP describes the use of aerial photos to analyze stream reaches and presents analysis of stream gage and groundwater elevation data. The spring 2017 depth to water data are the only data discussed when referring

to depth to water. However, using seasonal groundwater elevation data over multiple water year types is an essential component of identifying ISWs. The use of data from one point in time does not reflect the temporal (seasonal and interannual) variability inherent in California's climate.
On the map of stream reaches in the basin (Figure 4.17 Regional Surface Water Features), the reaches are not labeled as interconnected and disconnected, nor are areas with data gaps noted. Therefore, potential ISWs are not being identified, described, nor managed in the GSP. Until a disconnection can be proven, include all potential ISWs in the GSP. This is necessary to assess whether surface water depletions caused by groundwater use are having an adverse impact on environmental beneficial users of surface water.

Response:

We have modified Figure 4-21 so that all stream reaches are designated "mostly interconnected", "mostly not interconnected" or "disconnected". Interconnection can vary over time and over short distances along a stream. The "mostly interconnected" category is one where the water table is shallow enough to allow phreatophytic riparian vegetation to become established and develop tall stature and dense canopy. The "mostly not interconnected" category is assigned to reaches that might have shallow water table conditions or gaining stream flow under wet conditions, but not with enough frequency or duration to develop dense riparian vegetation.

"Disconnected" stream reaches are ones where the water table of the regional groundwater system is almost always 30 or more feet below the stream bed elevation. This can occur where surface flow from tributary watersheds enters the Basin. The regional water table is far below the stream bed at those locations, but persistent base flow in the tributary streams can create enough soil saturation in the stream banks along a short reach of stream to support lush riparian vegetation. Examples include the dense riparian vegetation along Temescal Wash for about 1 mile downstream of the Basin boundary and several NCCAG riparian vegetation polygons along the western margin of the Basin.

The depth to water in the three wells closest to the Temescal Wash vegetation (south of well Corona 13 in Figure 4-1) was historically 50-150 feet below the ground surface. Depth to water increases from the center of the Channel Aquifer area toward the margins of the Basin because the ground slope (0.04-0.13 ft/ft from Figure 3-1) is four or more times steeper than the water table slope (about 0.01 ft/ft from Figures 4-10 and 4-11). Thus, the depth to water at the Temescal Wash riparian vegetation is likely greater than the 50-150 foot range of the three wells farther north. Groundwater elevations at the vegetation location is not considered a data gap because available data indicate that the regional water table could not plausibly be less than 30 ft below the ground surface.

Water level data for the four wells midway along the western margin (see Figure 4-1) are available from the 1930s to 1970s. Depths to water were generally 100-180 feet, and 185-220 feet in the southernmost of those wells. Water levels could not plausibly have risen 70-150 feet in that region in the past 60 years. Thus, there is no data gap with respect to water table elevation at those NCCAG

polygons. The vegetation is clearly disconnected from the regional groundwater system that is the focus of this GSP.

Three wells near the north end of the western Basin margin (near State Highway 91) also have historical water levels from the 1930s to 1960s, which were generally 85-105 feet below the ground surface. The ground elevation at the wells is roughly the same as the bed elevation at the nearest point along Wardlow Wash. Riparian tree cover is fairly dense along much of the Wash, and the NCCAG mapping indicates that cottonwood (an obligate phreatophyte) and sycamore (a facultative phreatophyte) are the most common tree species. Intervening hydrogeology—such as the faults shown in Figure 3-6—could result in a higher water table at Wardlow Wash than at the wells, but by the same token that hydrogeology would block the spread of pumping drawdown from the wells to the wash. Wardlow Wash is conservatively classified as "mostly interconnected" in Figure 4-17.

The comment requests additional contour maps of groundwater elevation, apparently on the assumption that seasonal or annual fluctuations in groundwater elevation change the lengths or locations of interconnected stream reaches. The GSP presents contour maps for two dates (fall 2015 in Figure 4-10 and spring 2017 in Figures 4-11 and 4-21), not just one date as implied by the comment. Transient changes in depth to water are also shown in the hydrographs in Figures 4-2 through 4-9, each of which indicates the ground surface elevation at the well. More importantly, long-term variations in spring groundwater elevation have been on the order of 20 feet even in the heavily pumped Channel Aquifer area (Figures 4-2 through 4-9). Variations are likely smaller in the alluvial aquifer area where pumping stresses are much smaller. That magnitude of variation is not large enough to fundamentally alter the designation of stream interconnection status or riparian vegetation interconnection status.

Comment:

The identification of Groundwater Dependent Ecosystems (GDEs) is incomplete. The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset). However, the GDE section of the GSP could be improved by more clearly describing and mapping the basin's GDEs to show the data sources and areas of data gaps. Figure 4-21 (Critical Habitat Areas) shows a map layer called "NCCAG riparian vegetation," however based on the description in the text, it is not clear if this is the entire NC dataset or if any screening criteria were used to modify the mapped potential GDEs. The GSP text (p. 4-17) discusses the corridor of dense riparian trees and shrubs along the bedrock reach of Temescal Wash between the Bedford-Coldwater Subbasin and the Temescal Basin, but does not explicitly state the data source (i.e., field verification) or whether this vegetation is included in the set of potential GDEs. Data gaps are described in the text, but the areas of data gaps are not clearly labeled on the map.

The GSP discusses trends in groundwater elevations over the period 2010 to 2020 and plots a limited set of hydrographs over this period in Figure 4-23. However, the only depth to groundwater contours show are from Spring

2017. The GSP could be improved by mapping depth to groundwater contours over multiple years and seasons to illustrate the temporal (seasonal and interannual) variability inherent in California's climate.

Response:

The comment inquired about the source of the vegetation mapping. The area mapped as "dense riparian vegetation" along Temescal Wash was delineated for this GSP by outlining areas of dense riparian vegetation visible in recent high-resolution aerial photographs (Google Earth©). The riparian vegetation polygons shown in Figure 4- 21 include all of the NCCAG mapped polygons. The Prado Wetlands boundary is from the Prado Basin Habitat Sustainability Program (WEI 2020). The figure does not show NCCAG wetland polygons. Almost all of those polygons are within or immediately adjacent to NCCAG riparian vegetation polygons, and conclusions regarding depth to groundwater and interconnection are consequently the same. One small polygon is mapped where a canyon enters the Basin near the Main Street stormwater detention basin. That polygon is plausibly supported by groundwater leaking from fractured bedrock in the tributary watershed. That source is not affected by Basin management, and the depth of the regional water table at the wetland location is greater than the few feet required by wetland vegetation, for the reasons explained above. A couple of tiny mapped wetland polygons in the middle of the stormwater detention basin are bare dirt in aerial photographs and were at best transient patches of mesic vegetation that appeared after a storm event.

Comment:

Native vegetation and managed wetlands are water use sectors that are required to be included into the water budget. The integration of these ecosystems into the water budget is insufficient. Appendix I (Temescal Groundwater Sustainability Plan Numerical Groundwater Model Documentation Report) that accompanies the water budget section of the GSP was not included in the published version of the Draft GSP. Without this Appendix of the GSP, which documents the water budgets, we could not evaluate whether the water budget includes the current, historical, and projected demands of native vegetation. Inclusion of the explicit demands for native vegetation is essential so that key environmental uses of groundwater are being accounted for as water supply decisions are made using this budget and considered in project and management actions. Managed wetlands are not mentioned in the GSP, so it is not known whether or not they are present in the basin.

Response:

The comment stated that the GSP does not discuss managed wetlands. While the exact phrase "management wetlands" was not used, the text clearly indicates that Prado wetlands are managed: "Prado Dam impounds the river to regulate flood flows in winter and sustain a perennial wetland…. Surface water behind the dam is maintained at a specified elevation" (Section 4.10.4). We have inserted the word "managed" in the text for clarity.

COMMENT 1b. ***Public trust resources are not sufficiently considered. Stakeholder engagement during GSP development is insufficient.***

Response:

The Temescal GSA encouraged stakeholder engagement throughout the GSP process. Outreach efforts included website updates, individual phone calls, email, and postal mail. Domestic well owners, environmental stakeholders, and the community at large were invited to participate through these communication mediums, and there was participation in GSP development from private pumpers and other interested parties. Local DAC representatives and environmental stakeholders were contacted early in GSP development and invited to participate, including receiving invitations to attend and participate in Technical Advisory Committee (TAC) meetings. However, these individuals and agencies declined the invitation to be on the TAC and generally did not participate either the well-advertised public workshops or the public TAC meetings. Information regarding targeted outreach to DACs was included in the draft GSP.

The GSP does document the outcome of the outreach and engagement through presentation of notes from all public meetings in Appendices F, G, and H of the draft GSP. Very little feedback was received during these public meetings. However, all feedback was considered in development of the GSP.

The comment criticizes the plan for ongoing engagement in GSP implementation. The draft GSP indicated that TAC meetings will continue during GSP implementation. These are public meetings open to all interested parties, including DACs, domestic well owners, and environmental stakeholders. So, it is the opinion of the GSA that continued TAC meetings does constitute a plan for continual opportunities for engagement for all interested parties.

There are no known tribal lands within the Temescal Basin.

COMMENT 1c. ***Impacts of Minimum Thresholds, Measurable Objectives and Undesirable Results on beneficial uses and users are not sufficiently analyzed.***

Multiple topics were included in this comment; these are presented with responses by topic below.

Comment:

For chronic lowering of groundwater levels, minimum thresholds are defined at each representative well as historical groundwater low levels. The GSP discounts private domestic wells when establishing SMC, based on the following rationale (6-6): "There are very few active private wells in the Basin (see Section 2.3.2.1). The owners and operators of those wells are known and they have not reported any adverse effects to those wells in the past; None of the existing private well owners report that their wells went dry or were otherwise affected during the recent drought. Because of this, some flexibility exists for purposes of analysis; Responsibility for potential undesirable results to shallow wells is shared between a GSA and a well owner; there is a reasonable expectation that a well owner would construct, maintain, and operate the well to provide its expected yield over the well's life span, including droughts; As discussed below, MTs are initially set at historical groundwater level lows and then adjusted upward to be protective." No further details are provided regarding the minimum threshold impacts on domestic wells. The GSP does not sufficiently describe whether minimum thresholds will avoid significant and unreasonable loss of drinking water to domestic well users that are not

protected by the minimum threshold. In addition, the GSP does not sufficiently describe or analyze direct or indirect impacts on DACs or drinking water users when defining undesirable results, nor does it describe how the groundwater levels minimum thresholds are consistent with Human Right to Water policy.

Response:

The quoted text from the GSP specifically addresses all private wells and does not discount domestic wells. The quoted text also references an earlier section of the GSP which states the following:

> *The GSA agencies searched for existing active wells within the Basin. This search included reviewing water use records and contacting owners of large private properties (domestic, commercial, and industrial), inquiring about private wells in discussions with knowledgeable local residents and community leaders, and polling interested parties during public meetings. This effort indicated that the only private pumpers in the Basin are All American Asphalt, Dart Corporation, and 3M. No active private domestic wells were identified in this search.*

The comment ignores these earlier statements that clearly indicate that there are no known active domestic wells in the Basin. The GSA believes that all domestic water use in the Basin is supplied by the municipal water purveyors that make up the GSA (the cities of Corona and Norco and the Home Gardens County Water District). This includes the DAC areas of the Basin. The known private wells in the Basin are operated by industrial water users who have reported no previous problems with water shortages. Additionally, no private wells have been reported to have water shortages for the Basin in the DWR led *Household Water Supply Shortage Reporting System*. Therefore, it is the opinion of the GSA that the use of historical minimum groundwater elevations as the minimum threshold for water levels is protective of all groundwater users.

Comment:

For degraded water quality, constituents of concern (COCs) are total dissolved solids (TDS) and nitrate. The minimum threshold for nitrate is defined as the percentage of wells with concentrations exceeding the nitrate MCL (45 mg/L) based on current conditions (2015-2019), which is 50% of wells. The minimum threshold for TDS is defined as the percentage of wells with concentrations exceeding the TDS value of 1,000 mg/L based on current conditions (2015-2019), which is 26 percent of wells. However, according to the state's anti-degradation policy, water quality should be protected and is only allowed to worsen if a finding is made that it is in the best interest of the people of the State of California. No analysis has been done and no such finding has been made.

Response:

There is no indication that water quality will worsen in the Basin due to groundwater management. The minimum thresholds for water quality are designed to recognize baseline conditions and monitor the Basin for potential changes related to groundwater management. The minimum threshold would be exceeded If water quality is significantly degraded and additional projects and

management actions would be triggered. In addition, groundwater in the Temescal Basin is treated before being delivered to municipal customers, there are no known domestic wells that use untreated groundwater for drinking water or any other potable uses.

Comment:

Sustainable management criteria for chronic lowering of groundwater levels provided in the GSP do not consider potential impacts to environmental beneficial users. The GSP neither describes nor analyzes direct or indirect impacts on environmental users of groundwater when defining undesirable results. This is problematic because without identifying potential impacts on GDEs, minimum thresholds may compromise, or even destroy, these environmental beneficial users. Since GDEs are present in the basin, they must be considered when developing SMC.

Response:

The comment correctly notes that the short paragraph on impacts of the water-level minimum threshold on beneficial (Section 6.2.4) uses does not mention interconnected surface water or GDEs at all. We have added a sentence directing the reader to the interconnected surface water sustainable management criteria section (specifically section 6.7.6.1), where the consistency of the interconnected surface water minimum threshold and water-level minimum threshold is explicitly discussed, and to Sections 4.10.4 and 6.7.4 which lay out the evidence that changes in Prado Wetlands vegetation have not historically correlated with changes in water levels in production wells north or south of the Wetlands. Noticeable vegetation die-back along Temescal Wash where it enters the Prado Wetlands started around 2009 and has been attributed to decreased base flows in Temescal Wash (McMichael 2021). No shallow water table information is available for that area and time period. This is an important data gap that will be filled by installing shallow monitoring wells in the southern Prado Wetlands area.

COMMENT 2. ***Climate change is not sufficiently considered.***

Response:

The comment states that “the GSP does not consider multiple climate scenarios (e.g., the 2070 extremely wet and extremely dry climate scenarios) in the projected water budget.” The comment appears to be referring to two alternative sets of monthly climate multipliers provided in the files of climate change factors downloadable from the SGMA Data Portal. Those sets of factors are labeled Drier/Extreme-Warming (DEW) and Wetter/Moderate-Warming (WMW). There is no requirement to use anything but the expected factors. The California Department of Water Resources (DWR) document “Guidance for Climate Change Data Use during Groundwater Sustainability Plan Development” does not even mention the alternative data sets. Rather, Section 4.5 of the guidance document states that uncertainty in climate change predictions is represented by inter-annual variability in the 50-year future simulations. It also states that the evaluation of sustainability will be based on the “central tendency” of the climate change factors, which is represented by the primary climate factor data set. The

DEW and WMW data sets are for optional research purposes. Therefore, the climate change analysis in the GSP is adequate.

COMMENT 3. ***Data gaps are not sufficiently identified and the GSP does not have a plan to eliminate them.***

Response:

In the context of SGMA, a data gap is "a lack of information that significantly affects the understanding of basin setting or evaluation of the efficacy of the Plan implementation and could limit the ability to assess whether a basin is being sustainably managed." Data gaps were identified in the monitoring network (Chapter 7), and construction of new shallow monitoring wells for interconnected surface water monitoring are included in a project in Chapter 8 of the draft GSP. The comment asserts that the wells in the monitoring network do not adequately represent GDEs and drinking water users. The new shallow monitoring well project is specifically designed to represent GDE and interconnected surface water conditions, and as noted in previous responses, drinking water users in the Basin receive water supply directly from the agencies that make up the GSA. The wells these agencies use are adequately monitored in the existing monitoring network. The comment also asserts that the monitoring network does not adequately identify data gaps in the shallow aquifer. However, there is not a shallow aquifer in the Temescal Basin that is separate from either the principal or secondary aquifer, as described in Chapter 3.

COMMENT 4. ***Projects and Management Actions do not sufficiently consider potential impacts or benefits to beneficial uses and users.***

Response:

The comment claims that the projects and management actions in the GSP do not completely identify benefits or impacts to all beneficial users. The projects and management actions in the GSP do assess effects on beneficial uses and users consistent with SGMA. The recommendations related to this comment specifically request the addition of discussion and mitigation for DAC and domestic well owners. As noted in previous responses, there are no known domestic well users within the Basin. The agencies that make up the GSA are municipal water purveyors who provide service to domestic, municipal, commercial, and industrial users throughout the Basin, including the DAC areas. Climate and water delivery uncertainties have been included in the water budget analysis (Chapter 5).