



Public
Utilities

January 9, 2020 Advisory Committee Meeting
Handout #2



Groundwater Sustainability Plan: Public Work Plan

Prepared for:

Advisory Committee

Prepared by:



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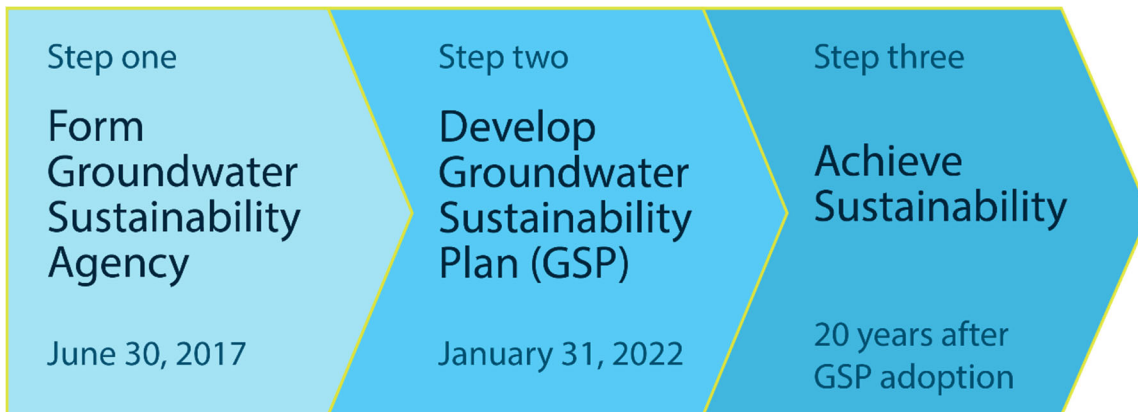
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Introduction

In 2014, the California Legislature passed the three-bill legislative package known as the Sustainable Groundwater Management Act (SGMA), which provides a new framework for managing groundwater resources in California. SGMA requires areas like the City and County of San Diego to form a Groundwater Sustainability Agency (GSA), which will prepare and implement a Groundwater Sustainability Plan (GSP) for sustainably managing groundwater in and around San Diego. In 2016, the City of San Diego and County of San Diego signed an agreement to form the San Pasqual Valley GSA for this purpose.



To help GSAs meet the new SGMA requirements, the California Department of Water Resources (DWR) established which areas of the state need to manage groundwater first. Their document, *Bulletin 118*, designated San Diego's San Pasqual Valley Groundwater Basin (Basin) as a medium priority basin, which means that the new GSA must submit a GSP by January, 2022. The San Pasqual Valley GSA is now developing a GSP for the Basin.

The GSA needs the help of specialists to create their GSP, and selected an Advisory Committee (AC) and a Technical Peer Review (TPR) team to make sure the GSP is complete, accurate, and uses the best science available. The AC and TPR team will meet quarterly to provide input and guidance on the development of the GSP.

This Work Plan describes how the GSA and its team of specialists will develop the GSP. Attachment A is a schedule showing when parts of the GSP will be finished. This schedule also shows when GSP development tasks will occur, and how these tasks align with meetings of the AC and TPR.

Public Outreach

Successful implementation of the GSP depends on efficient outreach, education, and communication, and making sure the GSA and local communities and stakeholders work together. The GSA will listen to and understand stakeholder concerns. The GSA will also educate stakeholders about SGMA efforts, and involve stakeholders in SGMA-related activities and decision-making processes.

The AC will meet every three months to talk about how the GSP is being developed; everyone can attend these meetings, and members of the public are encouraged to attend. The GSA also has a website with more information about the GSP at <https://www.sandiegocounty.gov/content/sdc/pds/SGMA/san-pasqual-valley.html>. Materials from AC meetings are available on the website. Additionally, the GSA has an email list to notify stakeholders about meetings and share other announcements.

GSP Plan Area, Hydrogeologic Conceptual Model, and Groundwater Conditions Sections

In the GSP, there will be an overview of the Basin's physical conditions, which will include the Plan Area, Hydrogeologic Conceptual Model, and Groundwater Conditions Sections. The GSP's Plan Area section will describe the Basin through maps and descriptions of conditions on the ground surface, including information about how land is used and what agencies have jurisdiction over the groundwater in the Basin. The Plan Area section will summarize information about applicable general plans, land use elements, water resource monitoring, and management programs that affect groundwater management and sustainability.



The Hydrogeological Conceptual Model section will describe the Basin's geology and hydrogeology, and the underground framework that water moves through in the Basin. The Hydrogeologic Conceptual Model section will also describe aquifer units, their capacity to store and transmit water, and any geologic features that may affect groundwater flow.

The GSP's Groundwater Conditions section will describe how groundwater is stored and moves through the Basin. It will contain information about groundwater elevation data, which will demonstrate water flow directions, gradients, and regional water pumping

patterns. The Groundwater Conditions section will also describe water quality issues that might affect the supply and beneficial uses of groundwater. The section will also describe subsidence, if it is occurring, interconnected surface water systems, and groundwater dependent ecosystems.

Water Budget Section and Supporting Numerical Model

Water budgets are an important component of GSPs; they show how much surface water and groundwater enter and leave the Basin, and how the water is used. Water budgets help estimate available water supplies, urban and agricultural water demands, based on how land is used, and hydrological conditions. Most importantly, the water budget will determine the Basin's sustainable yield of groundwater, which is the amount of water that can be pumped out of the ground without causing undesirable results. Undesirable results consider six sustainability indicators, groundwater levels, groundwater storage, groundwater quality, seawater intrusion, inelastic land subsidence, and surface water interaction. Water budgets will be created for historical, current, and projected conditions in the Basin.

To prepare reliable water budgets, the GSA will develop a numerical groundwater flow model for the Basin. The numerical model uses calculations to estimate the flow of water through the Basin, and uses the hydrogeologic conceptual model's information to inform its calculations. The flow model will incorporate historical data including surface water-groundwater interactions, boundary conditions, aquifer thicknesses, groundwater gradients, along with other components. Together, this information will be used to calibrate the model to represent physical conditions.

The calibrated model will then be used to predict future conditions, including the effects of climate change and how sustainability will be improved as a result of SGMA-related projects and management actions.

Monitoring Program and Data Management System Section

To evaluate whether undesirable results are happening in the Basin, and whether GSP implementation is working, the GSA is required to establish a Basin-wide monitoring network which expands on the City's existing monitoring network. The monitoring network will track groundwater levels and surface water flows. It will also track the results of groundwater quality sampling, making sure that sampling is done at an adequate spatial distribution, and samples are taken at the correct frequency. The data collected from the monitoring network will be managed using an OPTI online geodatabase, which stores monitoring data and the locations of that data, which will be customized to the Basin; these data will be available on the GSA's website.

These data will also be used to establish and monitor sustainable management criteria (described below).

GSP Undesirable Results and Sustainable Management Criteria Sections

These sections of the GSP will describe SGMA-related sustainable management criteria, including the Basin's sustainability goal, which is the overarching goal of the GSP, what an undesirable result in the Basin might be, and what minimum thresholds and measurable objectives are.

As part of defining what might be an undesirable result in the Basin, thresholds will be set on the monitoring network. These thresholds will help the GSA identify when undesirable results might be occurring in areas described by the six sustainability indicators, as established by SGMA. The monitoring network thresholds will include minimum thresholds, interim milestones, and measurable objectives. These thresholds will be developed through meeting and talking with the AC, TPR, and stakeholders, through technical analysis, and by using groundwater model simulations.

GSP Projects and Management Actions, and GSP Implementation Sections

These GSP sections will identify projects and management actions that the GSA will use to reach its sustainability goal. The GSA will use management actions, undertake projects to improve water supply and/or quality, and use adaptive management strategies if specific future conditions occur. As the projects and management actions are established, an implementation schedule will also be created. These GSP sections will also describe the expected benefits, required legal authority, required regulatory permitting, and estimate implementation costs. The GSP implementation plan will provide a schedule for implementation over a 20-year planning horizon.

Field Program

The GSA's Field Program consists of two separate tasks as described below. The field work program was included as part the GSP planning grant that the City successfully applied for in 2016. Costs for the two new groundwater monitoring wells and aquifer performance testing were included in the grant.

Install Additional Groundwater Monitoring Wells

The GSA will install two nested monitoring wells in the Basin to help better understand groundwater flow directions and the effects of groundwater pumping. The nested monitoring wells shall consist of three individually cased wells installed within the same borehole and terminating at three different depths to draw water from three different geologic layers in the ground. The shallowest well will be screened to draw water from the alluvium layer, the intermediate well will be screened to draw water from the residuum layer, and the deepest well will be screened to draw water from the bedrock.

The San Diego County Department of Environmental Health (SDDEH) requires completion of a boring permit and payment of fees prior to drilling of soil borings. All boring permit have been approved prior to drilling activities and sampling. Drilling to construct the wells is planned to start in mid-January 2020, but will vary depending on City of San Diego contracting approval, the City's leaseholders' needs, weather conditions, and drilling rig availability. Construction of the wells is planned to take 2 to 4 months. When the wells are complete, a report for each well will be prepared that will summarize how the well was installed and what happened during well installation. A Well Completion Report will also be completed and submitted to DWR.

Assess Aquifer Performance and Recharge

Once the two new wells are installed, then aquifer tests will be conducted using the City's existing and new monitoring wells. To assess the actual stresses occurring on the Basin, tests will be performed during normal irrigation pumping for agricultural wells within the Basin. All wells used for the tests, including the pumping wells, will be outfitted with pressure transducers and data loggers. Hand measurements will be made throughout the test to confirm the pressure transducer readings. The testing will include background monitoring for a period of at least one-week prior to the start of pumping, constant rate tests with durations dictated by irrigation practices, and recovery tests. The testing will be conducted as part of the normal irrigation practices of the production wells.

The City will coordinate access to leaseholders' pumping wells and schedule pumping dates. If necessary, pressure transducers will be installed on selected monitoring wells. Up to two aquifer tests will be performed, with each test lasting approximately three days. It assumed that one test will be conducted in the eastern portion of the basin and one test in the western portion of the basin. The actual duration of a planned aquifer test will be based on leaseholders' normal irrigation practices. The timing of aquifer tests will also vary depending on availability of the leaseholder, City task order approval time, and other factors.

GSP Compilation

As the GSP is developed, analyses will be conducted and documented for the draft and final GSP sections. In addition to the GSP sections described above, the GSP will include an Executive Summary, an introduction section, a list of references, and appendices. GSP sections are listed below.

- Introduction
- Plan Area
- Hydrogeological Conceptual Model
- Groundwater Conditions
- Water Budgets
- Monitoring Networks and Data Management System
- Undesirable Results
- Sustainable Management Criteria
- Projects and Management Actions
- GSP Implementation

The draft GSP will be complete and available for public review on April 8, 2021. The public review and comment period will last for 60 days. The final GSP is proposed to be presented to the AC for approval on July 8, 2021. The final GSP must be submitted to DWR by January 31, 2022.

Attachment A – Workplan Schedule

Year	Quarter	Advisory Committee Topics	Technical Peer Review Topics	Outreach	Plan Area, HCM, GW Conditions	Model Development and Water Budgets	Monitoring and DMS	Undesirable Results and Sustainable Management Criteria	Projects and Management Actions and Implementation	Field Program	GSP Compilation
2019	Q4	Introduce the consulting team Initiate data collection efforts Review GSP development process Review communications plan	TPR schedule Data Collection Section 2: Plan Area Section 3: Hydrogeologic Conceptual Model Section 4: Groundwater Conditions								
2020	Q1	Hydrogeologic Conceptual Model Groundwater Conditions Undesirable Results Introduction	Section 2: Plan Area Section 3: Hydrogeologic Conceptual Model Section 4: Groundwater Conditions Section 6: Undesirable results, Groundwater model approach - Model code - Model data								
2020	Q2	Undesirable Results Groundwater Model Overview Sustainable Management Criteria Review Field Program Update	Section 6: Undesirable results, Groundwater model approach - Model code - Model data Groundwater model check in - calibration - Fate and transport Section 7: Monitoring Networks Section 8: Sustainable Management Criteria								Completed Analysis: Physical Conditions Sections: Section 2: Plan Area Section 3: Hydrogeologic Conceptual Model Section 4: Groundwater Conditions
2020	Q3	Groundwater Model Update Sustainable Management Criteria Projects and Management Actions	Groundwater model check in - calibration - Fate and transport Section 5: Water Budgets Section 6: Undesirable results Section 7: Monitoring Networks Section 8: Sustainable Management Criteria Groundwater model check in Section 8: Sustainable								
2020	Q4	Water Budgets Sustainable Management Criteria Projects and Management Actions	Groundwater model check in Section 5: Water Budget - Baselines - Forecasts Section 8: Sustainable Management Criteria Section 9: Projects and Management Actions								Completed Analysis: Sections Include: Section 6: Undesirable Results Section 7: Monitoring Networks Section 8: Sustainable Management Criteria

Year	Quarter	Advisory Committee Topics	Technical Peer Review Topics	Outreach	Plan Area, HCM, GW Conditions	Model Development and Water Budgets	Monitoring and DMS	Undesirable Results and Sustainable Management Criteria	Projects and Management Actions and Implementation	Field Program	GSP Compilation
2021	Q1	Projects and Management Actions Plan Implementation	Section 5: Water Budget - Baselines - Forecasts Section 9: Projects and Management Actions Section 10: Plan Implementation								
2021	Q2	Share Draft GSP to AC and TPR for review	No Meeting								Completed Analysis: Sections Include: Section 5: Water Budget Section 9: Projects and Management Actions Section 10: Project Implementation
2021	Q3	Presentation of the Final GSP, which will incorporate comments from Draft GSP Seek AC recommendation for adoption	No Meeting								
2021	Q4	Docketing deadline to adopt GSP – Public Hearing date - TBD									
2022	Q1	Final GSP submitted to DWR									