San Pasqual Valley Groundwater Basin Sustainable Groundwater Management Act Advisory Committee Meeting

Water Budget Primer
Sustainable Management Criteria
Projects and Management Actions



January 14, 2021

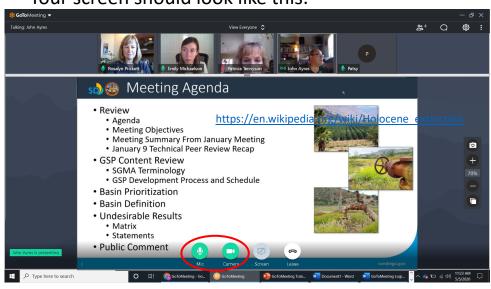


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5D 6 GoToMeeting – Quick How To

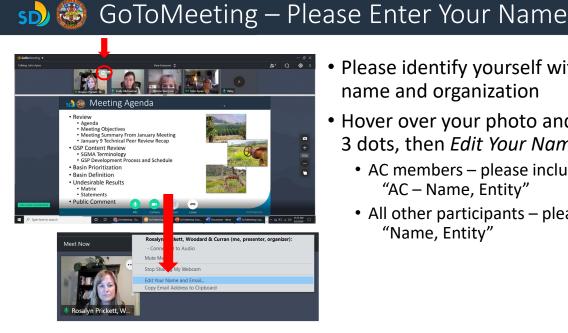
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- Turn on/off your Mic (mute) and Camera (video) using the controls along the bottom
- During the meeting, you may need to wiggle your mouse to make the controls appear

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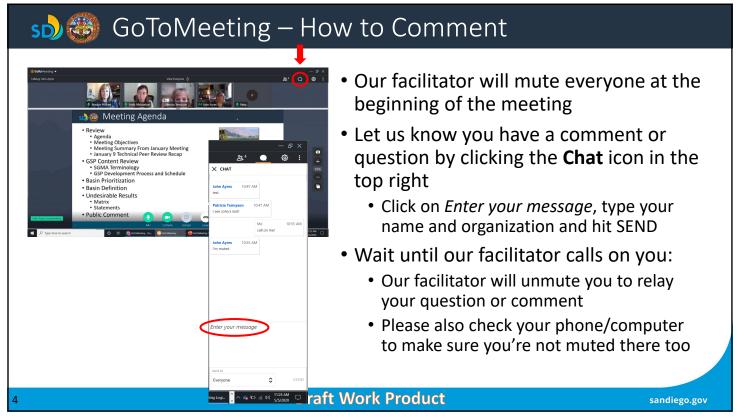
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- - Please identify yourself with your full name and organization
 - Hover over your photo and click on the 3 dots, then Edit Your Name and Email
 - AC members please include "AC - Name, Entity"
 - All other participants please include "Name, Entity"

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San Pasqual Valley GSP **Advisory Committee Meeting**

REVIEW



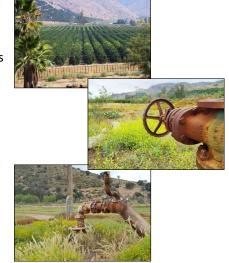
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Meeting Agenda

- 1. Roll Call & Introductions
- 2. Review
 - Agenda
 - · Meeting Objectives
 - Previous Meeting Summary

 - · TPR Meeting Recap
 - · Review of Ground Rules
 - · Public Comment Format
- 3. GSP Content Review
 - GSP Development Process
 - · Project Schedule
- Groundwater Model Update
 - · Intended Uses of Model
 - Model Construction Overview
 - Water Budget Primer

- 5. Sustainable Management Criteria
 - · Minimum Thresholds
 - · Adaptive Management Thresholds
 - · Groundwater Levels and Quality
- Summary of Comments Received 6. Projects and Management **Actions**
 - Adaptive Management
 - · Initial Project and Management Action List
 - 7. Public Comments
 - 8. Next Steps & Closing Remarks



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Meeting Objectives, Summary, and Comments Received

- Meeting Objectives
 - Provide Groundwater Model details and water budget primer
 - Share and discuss Sustainable Management Criteria
 - Share and discuss Projects and Management Actions
- Previous Meeting Summary
 - See Handout 1
- Summary of Comments Received
 - No Comments Received

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ы 🤯 Updated Public Comment Format

- Those wishing to comment should place their name and organization in the Chat; participants will be called on in the order received
- Public comment will take place at the conclusion of all TPR discussion; members of the Core Team and the TPR will not engage in dialogue with those making public comment
- If TPR or AC members have responses to public comment, they should be e-mailed to Karina Danek (kdanek@sandiego.gov)

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Technical Peer Review (TPR) Recap

- December 17 TPR Meeting:
 - Groundwater Model Update
 - Intended Uses of Model
 - Model Construction
 - Historical Model Approach
 - Projection Model Approach

- January 14 TPR Meeting:
 - Sustainable Management Criteria
 - Projects and Management Actions
 - Groundwater Model Update
 - Sensitivity Analysis
 - **Hydrographs**
 - Water Budgets

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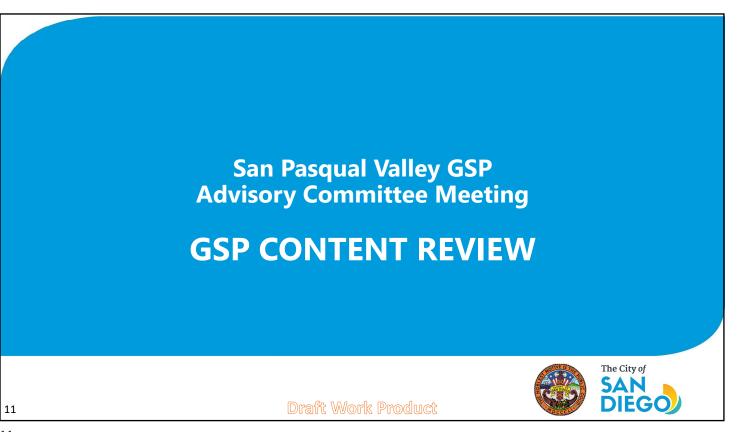
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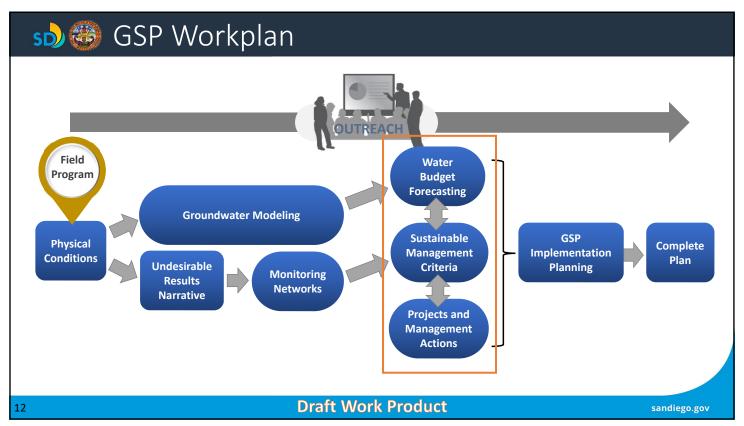
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Year		Quarter	Advisory Committee Topics	Technical Peer Review Topics	Outreach	Plan Area, HCM, GW Conditions	Model Development and Water Budgets	Monitoring and DMS	Undesirable Results and Sustainable Management Criteria	Management Actions and	Field Program
2020	0	Q2	Undesirable Results Groundwater Model Overview Sustainable Management Criteria Review Field Program Update	Section 6: Undestrable 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							
2020	0	03	Groundwater Model Update Sustainable Management Criteria Projects and Management Actions	Groundwater model check in - calibration - Fate and transport							
2020	0	Q4	Water Budgets Sustainable Management Criteria Projects and Management Actions	Groundwater model check in Section 5: Water Budget - Basellines - Forecasts Section 8: Sustainable Management Criteria Section 9: Projects and Management Actions							
2021	1	Óī	Projects and Management Actions Plan Implementation	Section 5: Water Budget - Baselines - Forecasts Section 9: Projects and Management Actions Section 10: Plan Implementation							
2021	1	Q2	Share Draft GSP to AC and TPR for review	No Meeting							

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GROUNDWATER MODEL UPDATE



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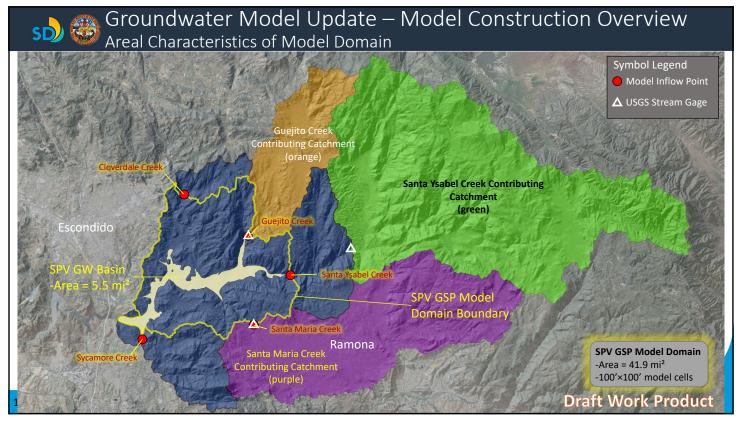
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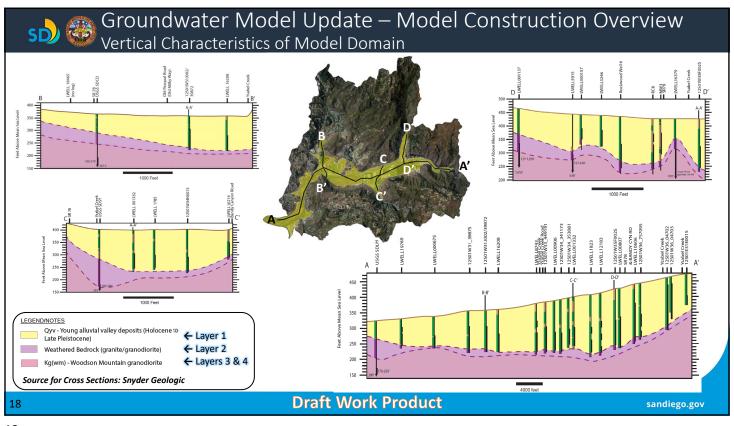
Groundwater Model Update – Intended Model Uses

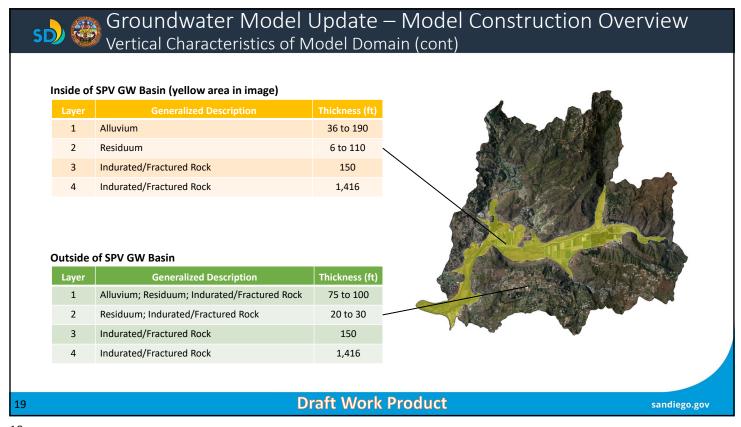
- Support developing surface water (SW) & groundwater (GW) budgets
- Support evaluating Sustainable Management Criteria (SMC)
- Help identify and prioritize data gaps
- Support refinement of monitoring networks used during GSP implementation

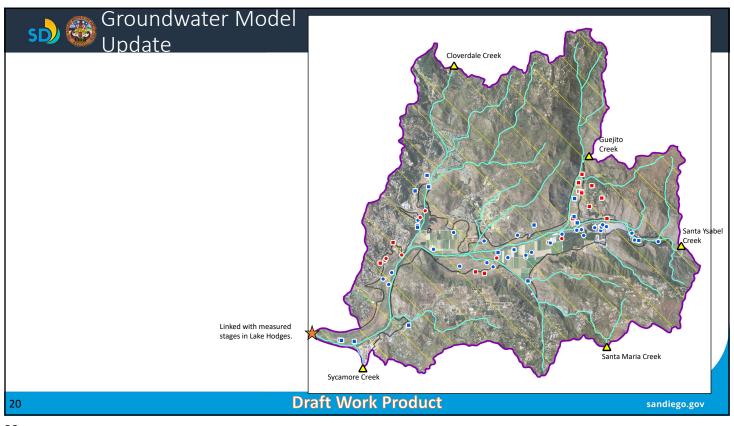
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sb) @ Model Information for February Meeting

- Model Calibration
- Model Forecast Development
- Water Budgets
 - Historical Water Budget
 - Current Water Budget
 - Forecast Water Budget



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SUSTAINABLE MANAGEMENT CRITERIA



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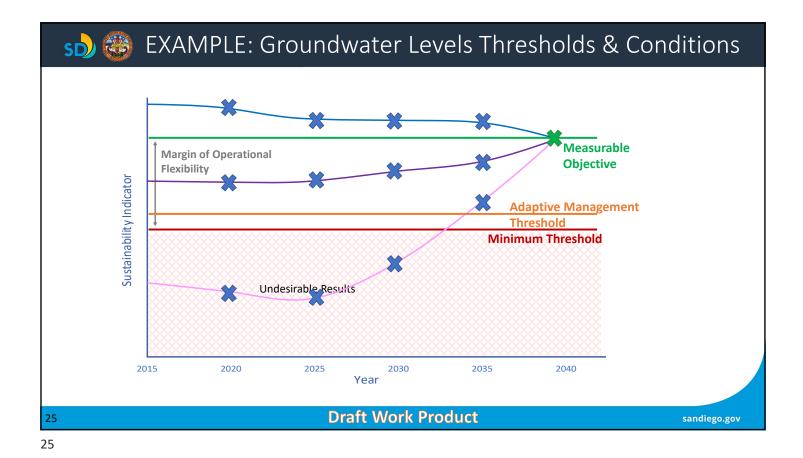
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- SMC are made up of these components:
 - Undesirable Results Help us understand what conditions to avoid
 - Sustainability Goal statement that provides the overarching goal of the GSP
 - *Monitoring Networks* how we will monitor things to see if they are becoming or are undesirable
 - Minimum Threshold Below this means the basin may be experiencing an undesirable result
 - Measurable Objective This is where the basin sets its goals to be

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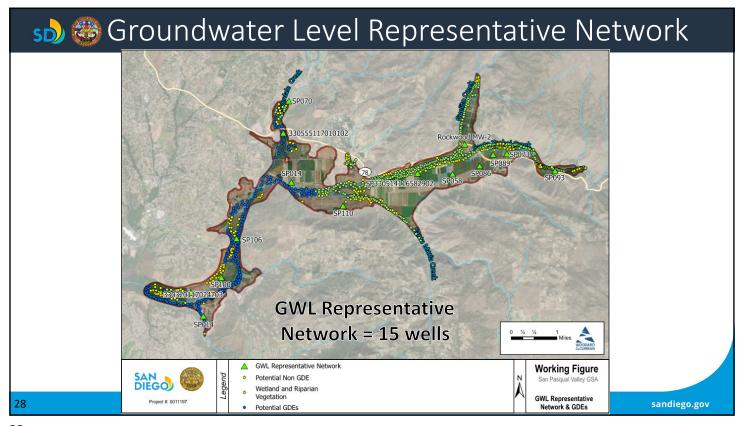
sb) 🚳 Sustainable Management Criteria (SMC) **Sustainability Indicator | Measurement Process Groundwater Levels Groundwater elevations Groundwater Storage** Groundwater elevations **Location of isocontour** Seawater Intrusion Degraded Groundwater Water quality measurements Quality Land Subsidence Groundwater Elevations Depletion of **Groundwater Elevations** Interconnected Surface Waters **Draft Work Product** 26 sandiego.gov

Groundwater Levels

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sb) 🚳 Approach to Groundwater Level Thresholds

Groundwater Levels:

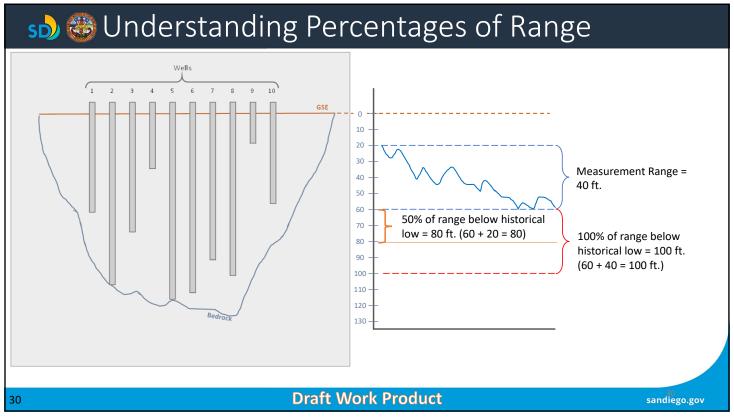
- Thresholds for the 15 representative wells in the levels monitoring network
 - · Minimum Threshold
 - · Adaptive Management Threshold
 - · Measurable Objective
- Thresholds needed to consider:
 - · Nearby well infrastructure
 - Groundwater Dependent Ecosystems
 - Historical changes in groundwater level

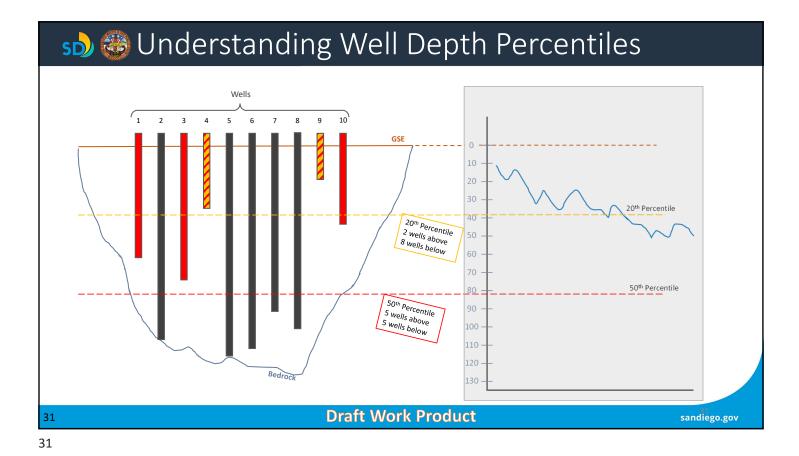
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- Intentionally designed to be:
 - Deeper than historical low, above bedrock, and above 20th percentile of nearby wells
 - Responsive to local monitoring well conditions
 - Below this threshold would be considered significant and unreasonable



Note: historical range refers to the historical fluctuation of water levels within a given well

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- An Adaptive Management Threshold (AMT) is an intermediate threshold used to inform the GSA when adaptive management strategies may be implemented to avoid future undesirable results
 - Why is it useful? Think of it as a less stressful low fuel light on your dash. "You are getting close, lets think about finding the next gas station."
 - NOT required per SGMA regulations
 - Prompts GSA to begin Adaptive Management

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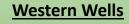
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🚮 🚳 Adaptive Management Threshold (AT)

- Intentionally designed to be:
 - Shallower than minimum thresholds and deeper than measurable objective
 - Closer to minimum threshold than measurable objective
 - Responsive to local monitoring well conditions



80% of historical range below historical minimum



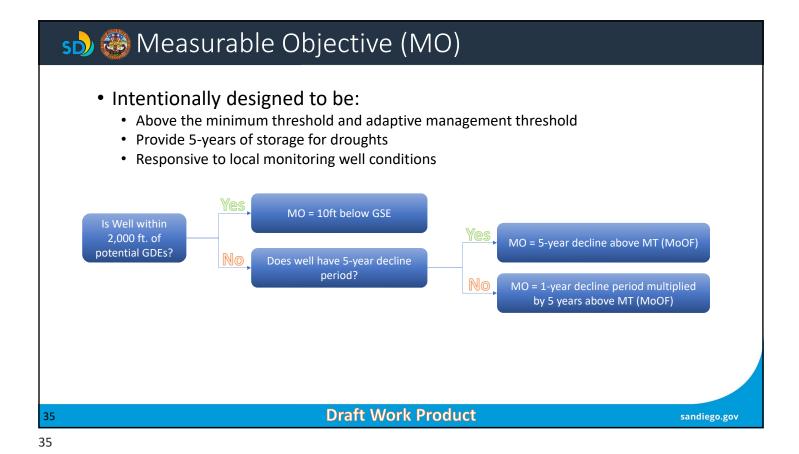
Eastern Wells

30% of historical range below historical minimum

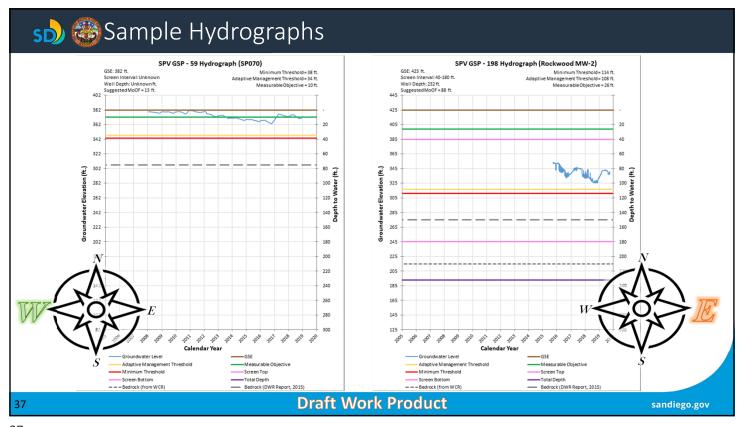
Note: historical range refers to the historical fluctuation of water levels within a given well

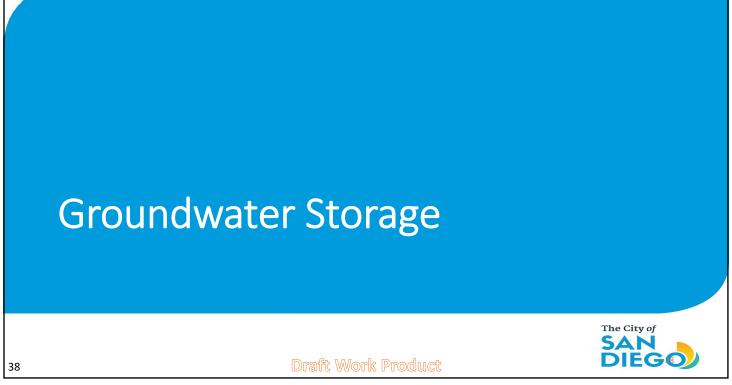
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sp) 🚳 Sample Hydrographs SPV GSP - 168 Hydrograph (330555117010102) Minimum Threshold = 37 ft Adaptive Management Threshold = 34 ft Measurable Objective = 10 ft val: 110-130 ft aptive Management Threshold = 133 ft. Measurable Objective = 85 ft. 322 40 399 302 282 £ Elevation (ft.) Elevation 262 339 222 160 202 182 180 200 220 260 280 Adaptive Management Threshold Screen Top Minimum Threshold -Screen Top Screen Bottom
Bedrock (from WCR) **Draft Work Product** sandiego.gov





ы 🍪 Groundwater Storage

- Uses groundwater levels as a proxy
 - Permitted by SGMA
 - San Pasqual Valley does not have a regional confined aquifer
 - Simple and straight forward (no additional calculations, no annual modeling work)
 - Groundwater level sustainability criteria are protective of groundwater storage.

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Groundwater Quality

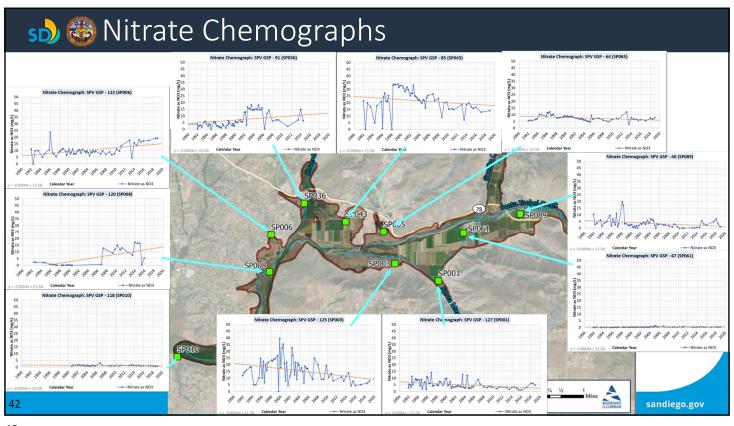


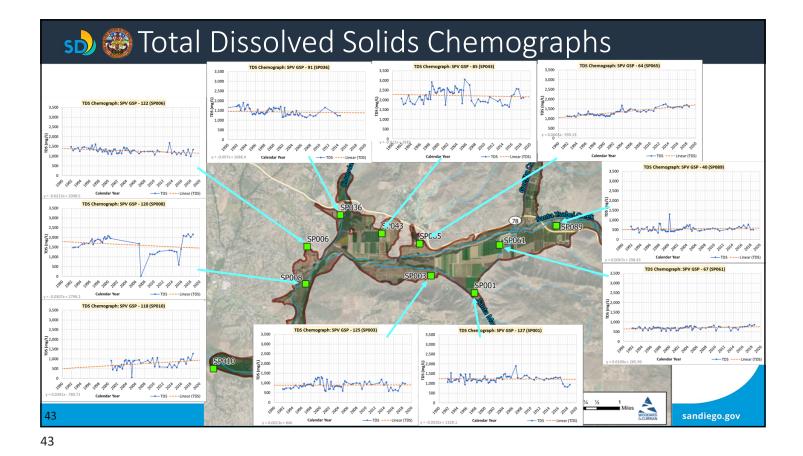
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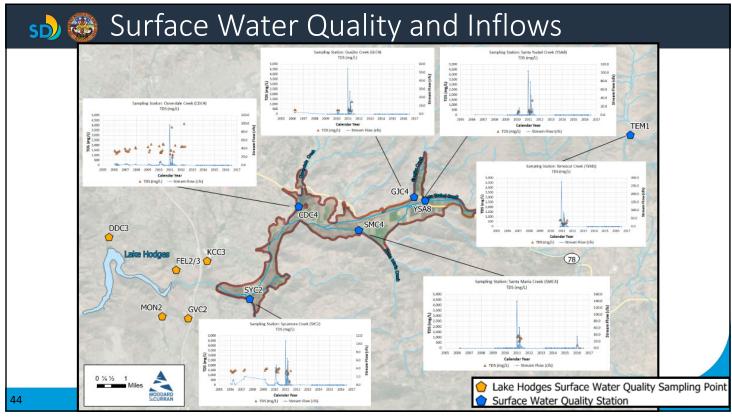
ы 🚳 Groundwater Quality Thresholds

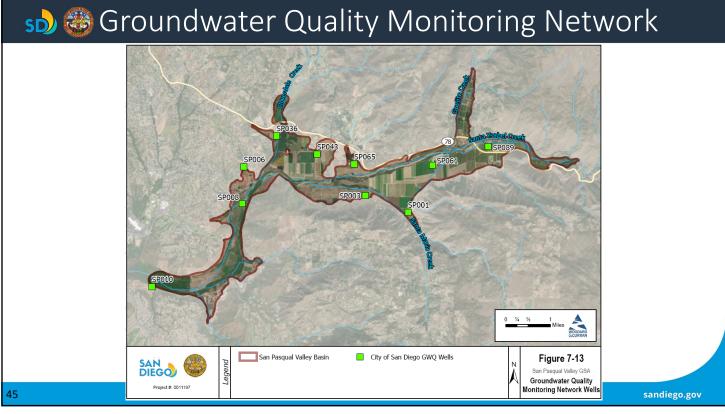
- Considerations
 - High concentration of TDS and nitrate in some creek inflows
 - In several wells, groundwater concentrations for Total Dissolved Solids (TDS) and Nitrate were highest around 2000
 - Salt Nutrient Management Plan indicates largest sources of loading are fertilizer use and evapoconcentration
- We want to set thresholds on constituents that are reflective of the tools the GSA has that may affect groundwater quality, which means:
 - 1. Constituent can be affected by water volume management
 - Thresholds should be set within a range that the GSA can perform costappropriate management
 - 3. Rely on monitoring directly for reporting at each well site

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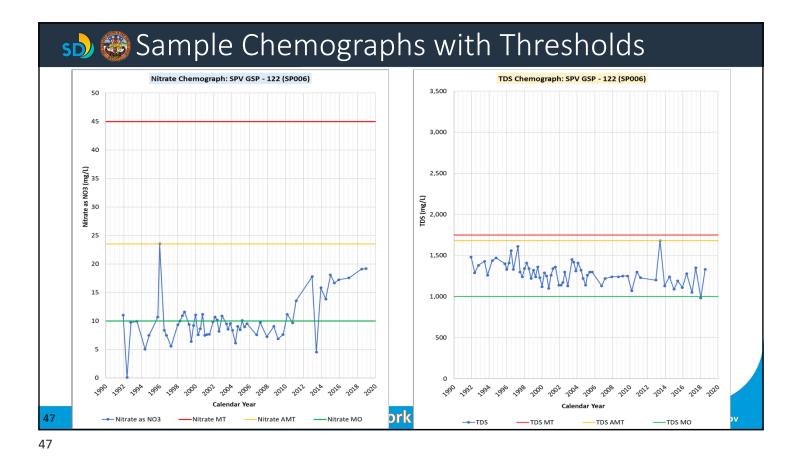
🔂 🚳 Groundwater Quality Thresholds

SMC methodology for the 10 monitoring sites:

- Nitrate (NO3):
 - Minimum Threshold = Basin Plan Water Quality Objective (45 mg/L)
 - Adaptive Management Threshold = Historic high measurement *or* measurable objective, whichever is higher in concentration
 - Measurable Objective = SNMP Water Quality Objective (10 mg/L)
- TDS:
 - Minimum Threshold = 10% of range above the historic high measurement
 - Adaptive Management Threshold = historic high measurement
 - Measurable Objective = 1,000 mg/L
- Adaptive management is triggered when 30% (3 of 10) well's concentration rises about the Adaptive Management Threshold for 12 months for either constituent
- Undesirable result is detected when 30% (3 of 10) well's concentration rises about the Minimum Threshold for 24 months for either constituent

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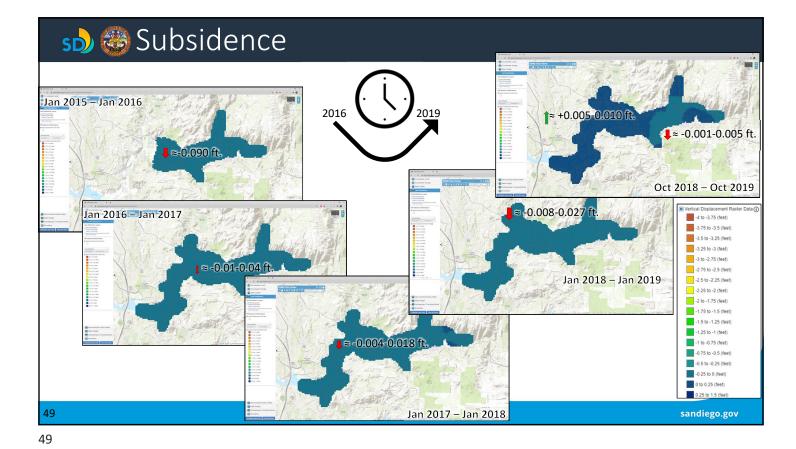
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Subsidence

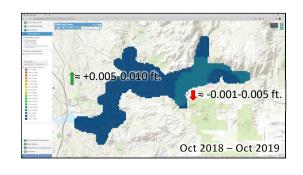
The City of SALSON

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sb) 🍪 Subsidence

- Subsidence is not a sustainability indicator that is likely to cause an undesirable result in the San Pasqual Valley Basin and will not be monitored
 - No historical inelastic subsidence
 - No major infrastructure
 - Few clays present in alluvium limits possibility of future subsidence



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Interconnected Surface Water



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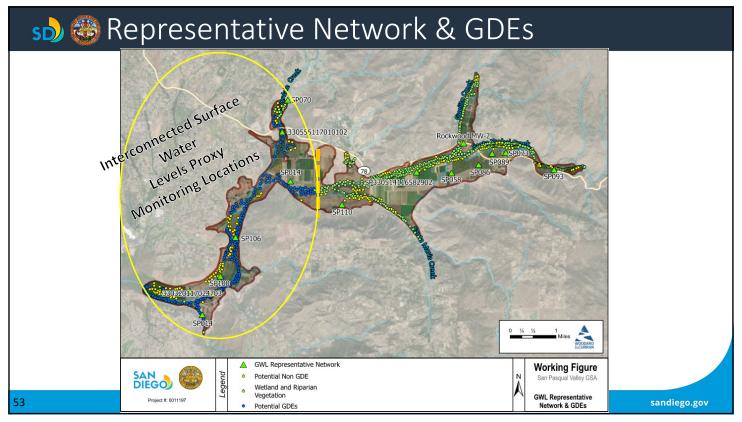
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Depletions of Interconnected Surface Water

- Use water levels as a proxy (as allowed in SGMA)
- Intended to be protective of potential GDEs
- In the eastern portion of the Basin, depth to water has been greater than 30 feet for over 5 years – shows that habitat in this region is *not* groundwater dependent
- In the western portion of the Basin, depth to water is consistently shallower than 30 feet – and GDEs are potentially present in this portion, therefore thresholds are set
- There are six wells in Interconnected Surface Water Proxy Monitoring Network.
- Adaptive management trigger 2/6 (30%) of wells fall below adaptive management threshold for more than 24 consecutive months (2 years)
 - What happens at this trigger may include a GDE study in this region to evaluate extent of GDEs.

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Advisory Committee Comments



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PROJECTS AND MANAGEMENT ACTIONS



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sp) 🝪 Projects and Management Actions

- GSP Regulation 354.44 (a): "Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin."
- We are meeting this regulation through Adaptive Management framework

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SD) & Projects and Management Actions

- GSP Regulation 354.44 (b)(1):
 - "A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent."
- Categories of projects and management actions
 - GSP Implementation Activities that will be conducted regardless of basin conditions
 - Adaptive Management Activities that will be conducted only as needed
 - Projects
 - Management Actions

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Adaptive Management Process: Step-by-Step



- Provides adequate "warning time" to the GSA so that projects and management actions can be implemented to address a problem *before* an undesirable result occurs
- Adaptive Management An
 Adaptive Management Threshold
 (AMT) is an intermediate threshold
 used to inform the GSA when
 adaptive management strategies
 may be implemented to avoid
 future undesirable results



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sb) 🚳 Management Triggers

Adaptive Management

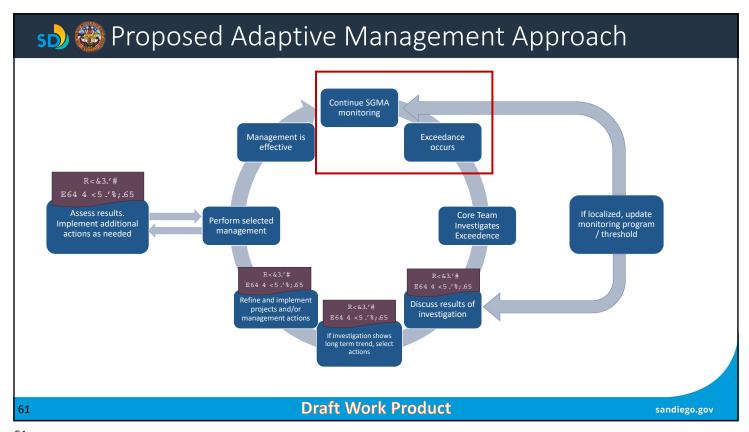
 Adaptive management is triggered when 30% of the wells (5 of 15 for levels or 3 of 10 for quality) exceed adaptive management thresholds for 12 months for either constituent

Undesirable Results

 Undesirable result is detected when 30% of the wells (5 of 15 for levels or 3 of 10 for quality) exceed minimum thresholds for 12 months for either constituent

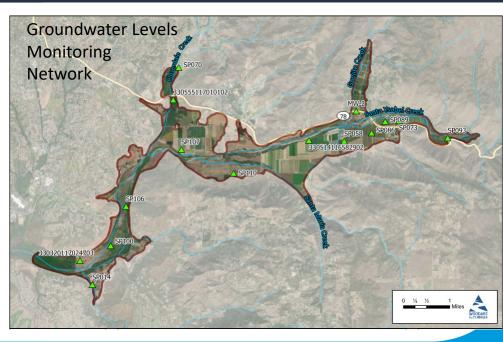
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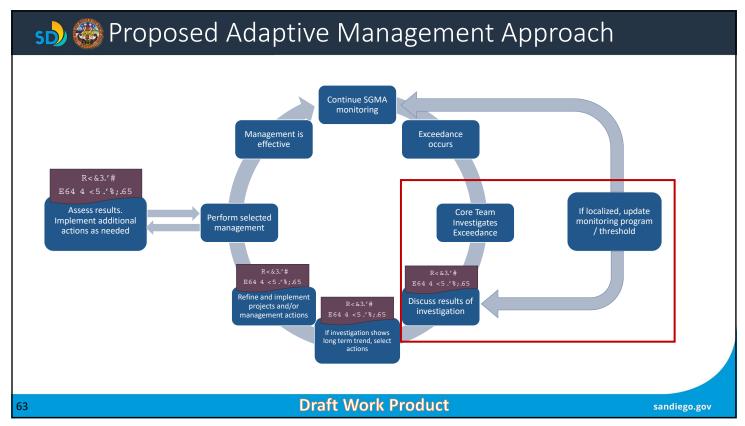


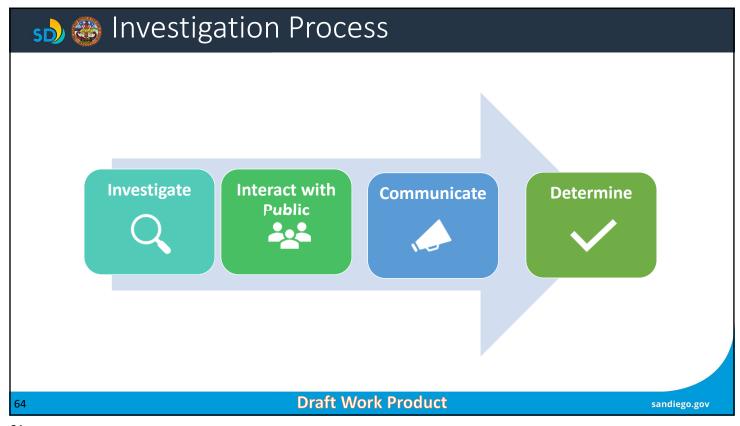
sb) @ Perform SGMA Monitoring and Assess

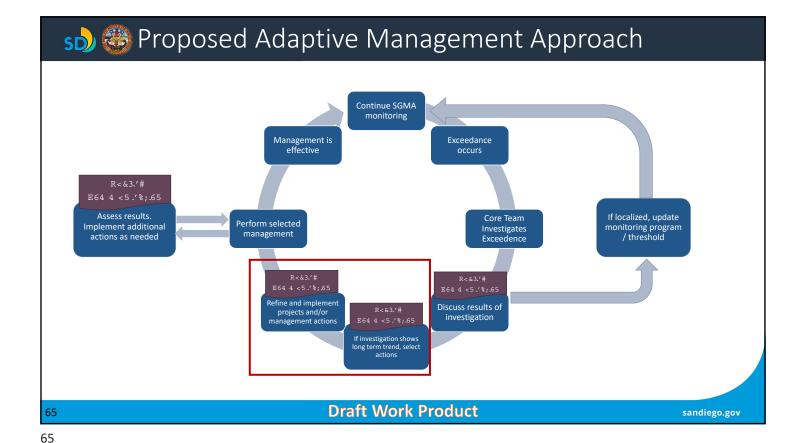
- The GSA will implement its monitoring program to measure groundwater levels and quality over time
- GW level and quality measurements will be compared to AMTs to determine if an exceedance has occurred



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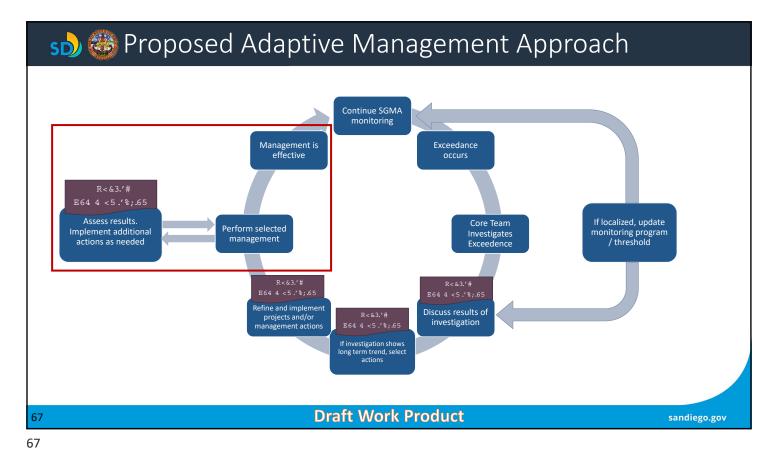


sb) 🚳 Implementation of Projects & Mgmt Actions

- Project & Management Action implementation steps:
 - Public communication: the GSA Core Team may hold a public workshop to discuss the proposed options and receive feedback
 - Determine costs and benefits
 - Identify funding sources and assign costs
 - Environmental documentation (if needed)

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sb) 🚳 Perform Selected Management

- The GSA Core Team will implement the chosen option(s)
- Following implementation, SGMA monitoring will continue and GSA will assess the results.
- If the implemented action(s) do not perform as expected, the GSA Core Team will revisit the list of projects and management actions and may select an additional option(s) to implement

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Projects and Management Actions List



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SD) 🚳 SGMA Regulations for Projects and Management Actions

• GSP Regulation 354.44 (b)(1):

"A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent."

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sb) @Projects and Management Actions

- Two Major Groupings:
 - GSP Implementation Tasks
 - Conducted on an as needed or annual basis regardless of SPV's physical conditions
 - Mostly administrative
 - Projects and Management Actions
 - Includes Projects
 - Includes Management Actions
 - Implemented as directed by the Core team under Adaptive Management

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ы 🍪 GSP Implementation Tasks

- GSP Implementation tasks are undertaken by nearly all Subbasins following submission of their GSP
- Activities included:
 - 1. Monitoring (Groundwater Levels and Quality)
 - 2. Meetings (Public and Core Team)
 - 3. Reporting (Annual Report and GSP 5-year Update)
 - 4. Numerical Model Updates as Needed
 - 5. Pursue Funding Opportunities
 - 6. Groundwater Monitoring Improvements
 - 7. Public Outreach and Website Maintenance
 - 8. Education and outreach for TDS / Nitrate loading
- Schedule, cost and funding source will need to be identified for each task
- Recommendation: include all implementation tasks in the GSP

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ы 🚳 List of Projects & Management Actions

- An appendix will be included in the GSP describing the screening process and listing the screened-out projects and management actions
- The following list of projects & management actions will be included as options in the main GSP section.

Management Actions

Well Inventory

- Study of Groundwater Dependent Ecosystems (GDE)
- Basin wide Metering Program
- Education and Outreach to Encourage Demand Softening
- **Pumping Restrictions and Enforcement**
- **Farming Best Practices**
- Support WQIP actions to Update Agricultural Leases to include Nutrient Control Measures and Stormwater BMPs
- Coordinate and Collaborate with other entities and agencies to Implement Regional Projects

Projects

- Coordinate on the construction of Infiltration Basins at San Pasqual Union Elementary
- Coordinate on the implementation of Invasive Species Removal

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San Pasqual Valley GSP Technical Peer Review Meeting

FINAL THOUGHTS BY AC

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PUBLIC COMMENT



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NEXT STEPS & CLOSING REMARKS



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so) 🍪 Next Meeting

- Next AC Meeting:
 - February 18, 2020, 2-4pm
- Public Notices are at:
 - Online:

https://www.sandiegocounty.gov/content/sdc/pds/SGMA/san-pasqual-valley.html

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• For additional information, please contact:

Karina Danek at (619) 533-7402

kdanek@sandiego.gov

Thank You!

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