

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

Sustainable Management Criteria  
Water Budgets  
Projects and Management Actions



February 18, 2021

Draft Work Product



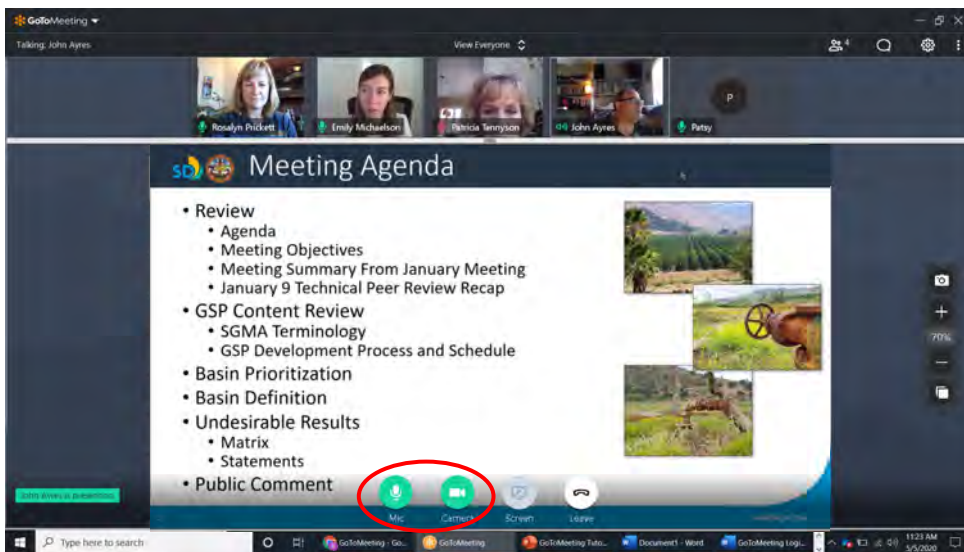
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## GoToMeeting – Quick How To

• Your screen should look like this:



- 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

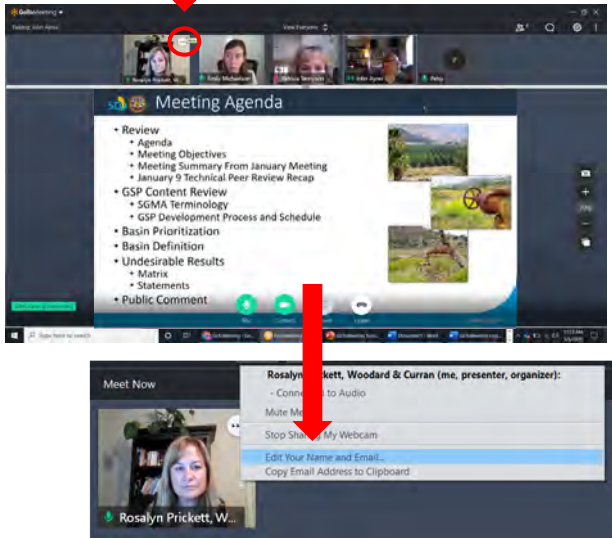
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## GoToMeeting – Please Enter Your Name



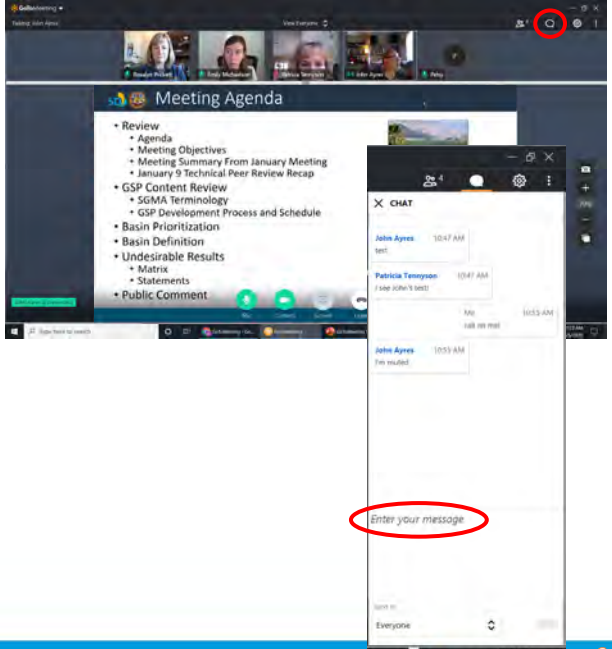
- Please identify yourself with your full name and organization
- Hover over your photo and click on the 3 dots, then *Edit Your Name and Email*
  - AC members – please include “AC – Name, Entity”
  - All other participants – please include “Name, Entity”

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## GoToMeeting – How to Comment



- Our facilitator will mute everyone at the beginning of the meeting
- Let us know you have a comment or question by clicking the **Chat** icon in the top right
  - Click on *Enter your message*, type your name and organization and hit SEND
- Wait until our facilitator calls on you:
  - Our facilitator will unmute you to relay your question or comment
  - Please also check your phone/computer to make sure you’re not muted there too

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# San Pasqual Valley GSP Advisory Committee Meeting

## REVIEW

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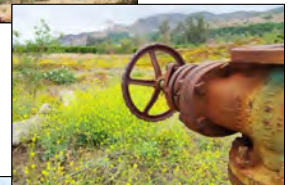


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## Meeting Agenda

1. Roll Call & Introductions
2. Review
  - Agenda
  - Meeting Objectives
  - Previous Meeting Summary
  - Summary of Comments Received
  - TPR Meeting Recap
  - Public Comment Format
3. GSP Content Review
  - GSP Development Process
  - Project Schedule
4. Sustainable Management Criteria
  - Minimum Thresholds
  - Planning Threshold
  - Measurable Objective
5. Water Budgets
  - Climate Projection
  - Historical Water Budget
  - Projected Water Budget
6. Projects and Management Actions
  - Adaptive Management
  - Tier Zero
  - Tier One
  - Tier Two
7. Public Comments
8. Next Steps & Closing Remarks



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## Meeting Objectives, Summary, and Comments Received

- Meeting Objectives
  - Share and discuss Water Budgets
  - Share and discuss Sustainable Management Criteria
  - Share and discuss Projects and Management Actions
- Previous Meeting Summary
  - See Handout 1
- Summary of Comments Received
  - Request to raise the Adaptive Management Threshold

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## Technical Peer Review (TPR) Recap

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

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## 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 AC discussion; members of the Core Team and the AC will not engage in dialogue with those making public comment
- If AC members have responses to public comment, they should be e-mailed to **Karina Danek (kdanek@sandiego.gov)**

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## Advisory Committee Comments

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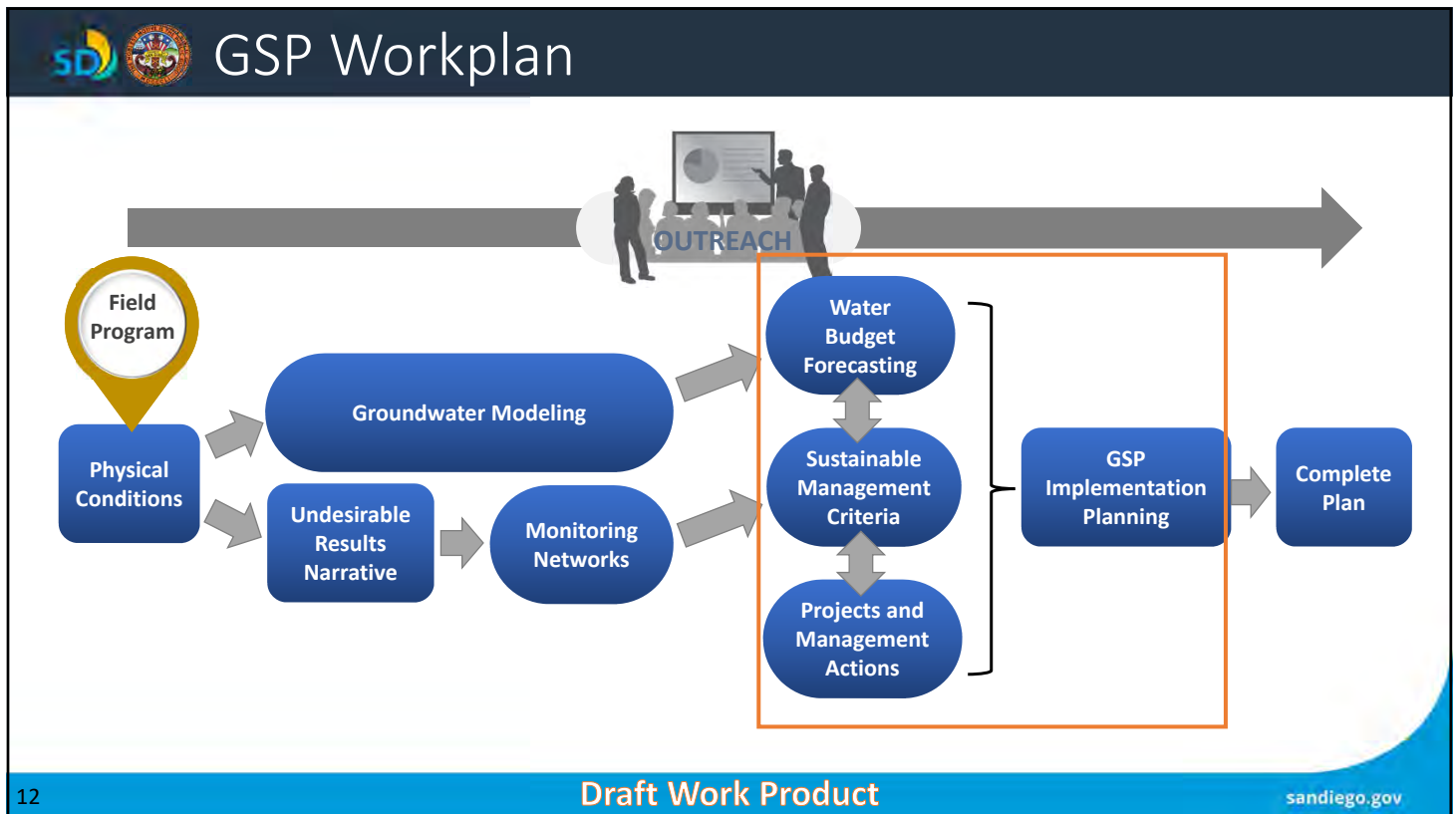
# San Pasqual Valley GSP Advisory Committee Meeting GSP CONTENT REVIEW

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# GSP Schedule


Meeting	Date	Subjects
Advisory Committee	February 18, 2021	Water Budgets Sustainable Management Criteria Projects and Management Actions
Advisory Committee	April 8, 2021	Present Draft GSP for public review
Advisory Committee	July 8, 2021	Present Final GSP

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## San Pasqual Valley GSP Advisory Committee Meeting

# Advisory Committee Comments



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# SUSTAINABLE MANAGEMENT CRITERIA

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## Sustainable Management Criteria (SMC)

- 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* – Point or limit that indicates the basin may be experiencing an undesirable result
  - *Measurable Objective* – This is where the basin sets its goals to be
  - *Margin of Operational Flexibility* – This is the amount of storage the Basin would like to have above the minimum threshold for use during droughts

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Sustainable Management Criteria (SMC)

Sustainability Indicator	Measurement Process	
Groundwater Levels	Groundwater elevations	← Today!
Groundwater storage	Groundwater elevations	
Seawater Intrusion	Location of isocontour	
Degraded Groundwater Quality	Water quality measurements	
Land Subsidence	Groundwater Elevations	← Covered Last Meeting
Depletion of Interconnected Surface Waters	Groundwater Elevations	

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Groundwater Level Representative Network

GWL Representative Network = 15 wells

Project #: 001197

**Legend**

- ▲ GWL Representative Network
- Potential Non GDE
- Wetland and Riparian Vegetation
- Potential GDEs

**Working Figure**  
San Pasqual Valley GSA

**GWL Representative Network & GDEs**

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## Projects & Management Actions (PMA) Tiers

Tier 0	Tier 1	Tier 2
May be implemented after GSP adoption	Implemented if Tier 1 Triggered	Implemented if Tier 2 Triggered
<ul style="list-style-type: none"> <li>Monitoring (Groundwater Levels and Quality)</li> <li>Meetings (Public and Core Team)</li> <li>Reporting (Annual Report and GSP 5-year Update)</li> <li>Numerical Model Updates as Needed</li> <li>Pursue Funding Opportunities</li> <li>Groundwater Monitoring Improvements</li> <li>Public Outreach and Website Maintenance</li> <li>Education and Outreach for TDS / Nitrate Loading</li> <li>Education and Outreach to Encourage Demand Softening</li> <li>Farming Best Practices</li> <li>Coordinate and Collaborate with Other Entities and Agencies to Implement Regional Projects</li> <li>Support WQIP Actions to Update Agricultural Leases to include Nutrient Control Measures and Stormwater BMPs</li> <li>Coordinate on the Implementation of Invasive Species Removal</li> <li>Coordinate on the Construction of Infiltration Basins at San Pasqual Union Elementary</li> </ul>	<ul style="list-style-type: none"> <li>Well Inventory</li> <li>Develop Pumping Restrictions and Enforcement Plan</li> <li>Basin-wide Metering Program</li> </ul>	<ul style="list-style-type: none"> <li>Implement Pumping Restrictions and Enforcement</li> </ul>

Note: Study of Groundwater Dependent Ecosystems (GDEs) has separate thresholds as described in the January AC meeting presentation.

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## Example Timeline for PMA Tiers

The diagram illustrates a 5-year timeline for PMA tiers based on groundwater conditions. The timeline is divided into four stages:

- Year 0:** Sustainable (Green bar). Trigger: 5 wells below Planning Threshold simultaneously.
- Year 1:** Planning (Tier 1) (Yellow bar). Trigger: 5 wells below Minimum Threshold simultaneously.
- Year 2:** Implementation (Tier 2) (Orange bar). Trigger: 5 wells below Minimum Threshold for 24 months.
- Year 3-4:** Undesirable Result (Red bar). Includes Potential Probationary Status (Red box) and Tier 2 - Implement Pumping Reductions (Orange bar).

Management Actions (PMA) are shown as horizontal bars below the timeline:

- Tier 0 – Most Projects and Management Actions:** Active from Year 0 to Year 4.
- Tier 1 - Plan Pumping Reduction Strategies:** Active from Year 1 to Year 4.
- Tier 2 - Implement Pumping Reductions:** Active from Year 2 to Year 4.

Note: Timeline conservatively assumes a sustained drought in which no actions have occurred to curtail pumping.

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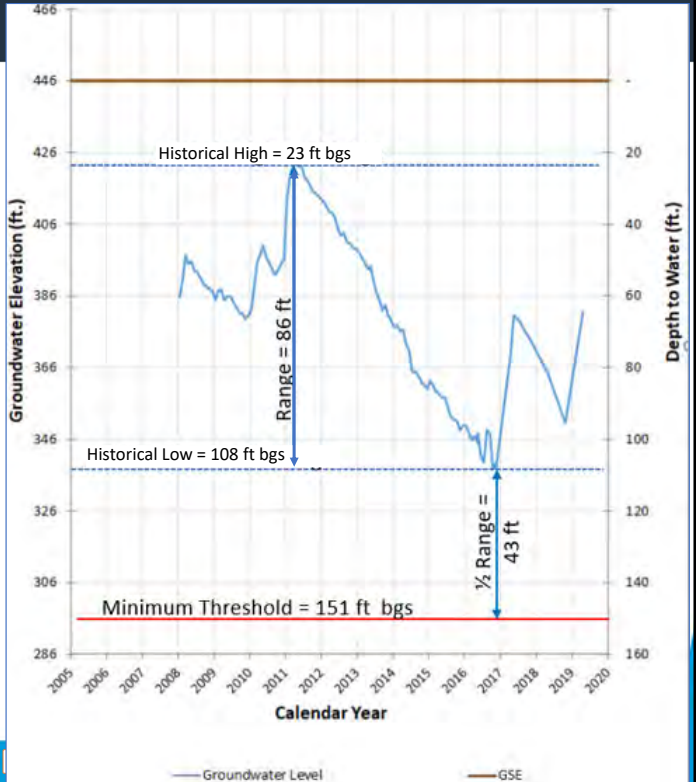
# SD Approach to Groundwater Level Thresholds

- **Minimum Thresholds:**
  - Deeper than historical low measurements
  - Shallower than bottom of alluvium and residuum
  - Protective of well infrastructure
  - Responsive to local conditions
- **Margin of Operational Flexibility (MoOF):**
  - Estimated to provide an estimated 5 years of storage during drought periods
- **Measurable Objective:**
  - Set to provide an estimated 5 years of storage during drought periods above the minimum threshold
- **Tier 1 Trigger (uses Planning Threshold):**
  - Set to provide an estimated 18 months of time for planning prior to reaching the minimum threshold
- **Tier 2 Trigger (uses Minimum Threshold):**
  - Set to provide at least 24 months to avoid reaching an undesirable result

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## SD Minimum Threshold Calculation

- Minimum Threshold (MT) =
- **Western Wells** - 100% of historical range below historical minimum
  - **Eastern Wells** - 50% of historical range below historical minimum
  - Sets MT at levels that are below historical low, yet above nearby well infrastructure and the bottom of the alluvium or residuum.



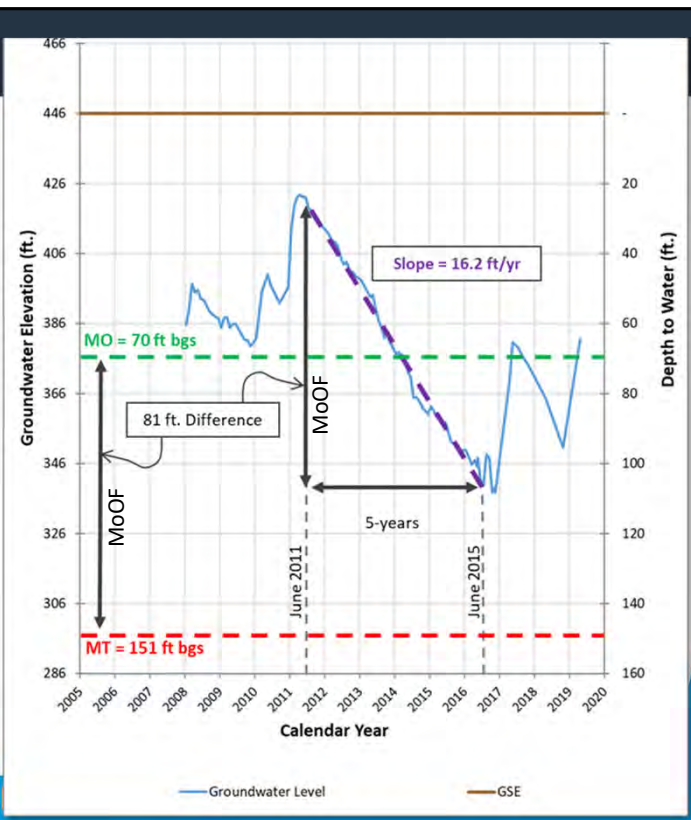
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## Measurable Objective Calculation

Measurable Objective (MO) =

- Wells w/in 2,000 ft of potential GDEs – 10 ft. below GSE
- Wells further than 2,000 ft. of potential GDEs – 5- years of drought buffer (100% of MoOF) above the MT
- Sets MO using the estimated Margin of Operational Flexibility (MoOF) at levels that provide an estimated 5 years of storage during drought conditions

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## Planning Threshold

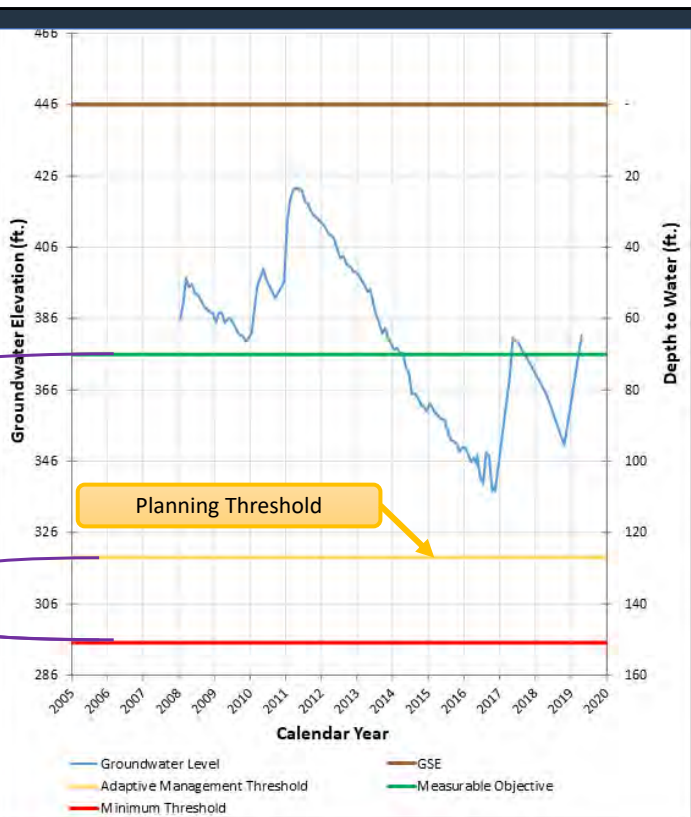
Planning Threshold (PT):

- 30% of the MoOF above the MT
- Provides approximately 18 months of drought buffer (30% of MoOF) before the MT is reached

100% MoOF


30% MoOF

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# Threshold Approaches

### Threshold Calculation

- **Measurable Objective (MO) =**
  - **Wells w/in 2,000 ft of potential GDEs** – 10 ft. below ground surface
  - **Wells further than 2,000 ft. of potential GDEs** – 5 years of drought buffer (100% of MoOF) above the MT
- **Planning Threshold (PT) =**
  - **Western Wells** - 30% of MoOF (18-mon drought buffer) above the MT
  - **Eastern Wells** - 30% of MoOF (18-mon drought buffer) above the MT
- **Tier 2 Threshold =**
  - **Western Wells** - 100% of historical range below historical minimum
  - **Eastern Wells** - 50% of historical range below historical minimum
- **Minimum Threshold (MT) =**
  - **Western Wells** - 100% of historical range below historical minimum
  - **Eastern Wells** - 50% of historical range below historical minimum

### Trigger

None

30% of wells  
(5 of 15)  
beyond PT simultaneously

30% of wells  
(5 of 15)  
beyond MT simultaneously

30% of wells  
(5 of 15)  
beyond MT for 24 months

### Actions

Tier Zero


Tier One

Tier Two

Undesirable Result

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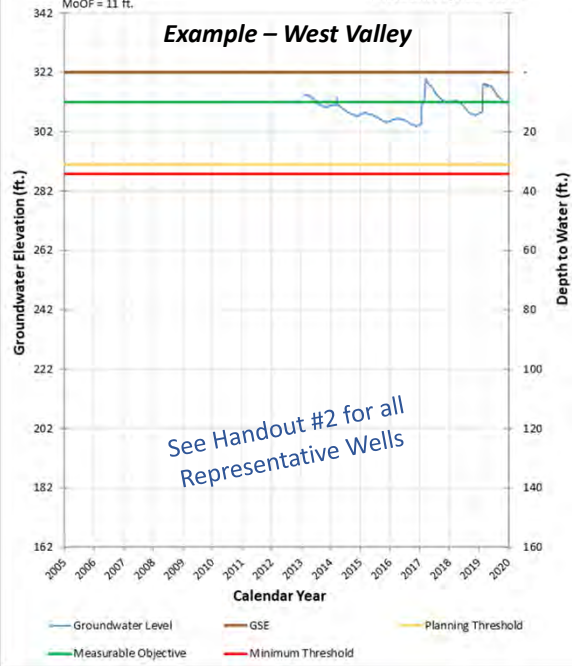
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#### SPV GSP - 131 Hydrograph (330320117024703)

GSE: 322 ft. Screen Interval: 30-50 ft. Well Depth: 280 ft. MoOF = 11 ft. Minimum Threshold = 34 ft. Planning Threshold = 31 ft. Measurable Objective = 10 ft.

### Example – West Valley

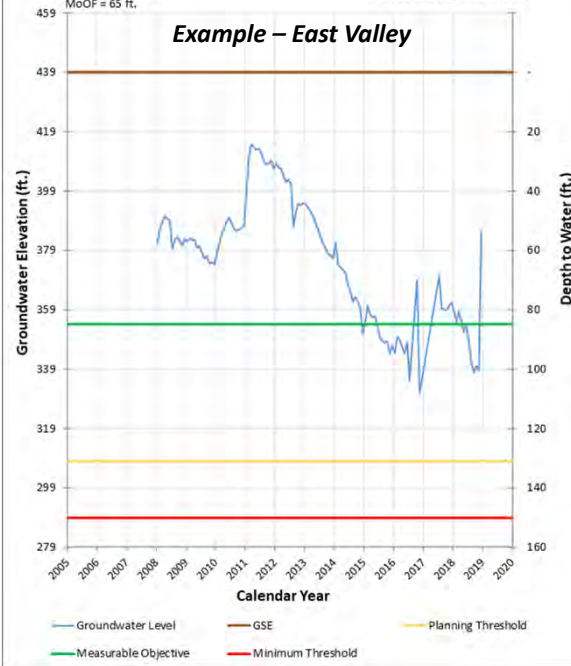


See Handout #2 for all Representative Wells

#### SPV GSP - 40 Hydrograph (SP089)

GSE: 439 ft. Screen Interval: 60-183 ft. Well Depth: 190 ft. MoOF = 65 ft. Minimum Threshold = 150 ft. Planning Threshold = 131 ft. Measurable Objective = 85 ft.

### Example – East Valley



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## Advisory Committee Comments

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## MODEL RESULTS AND WATER BUDGETS

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## Numeric Modeling and Water Budgets Approach

- Construct model
- Populate with historical information (groundwater levels, stream flows, pumping, etc)
- Calibrate model to historical conditions
- Historical budgets are prepared
- Develop forecast
- Use model to predict conditions using forecast
- Forecast water budgets are prepared

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## Role of Modeling on this Project

The SPV GSP Model is only one line of analysis being used to help the GSA develop its GSP. This model will not ultimately “decide” whether the Basin is being managed sustainably. Collection, reporting, and analysis of field data during GSP implementation will be used in conjunction with SMCs to demonstrate to DWR whether the Basin is being managed sustainably.

The main purpose of the model is to provide plausible water budgets to alert the GSA to potential future conditions, so it can develop a plan to responsibly manage the SPV GW Basin.

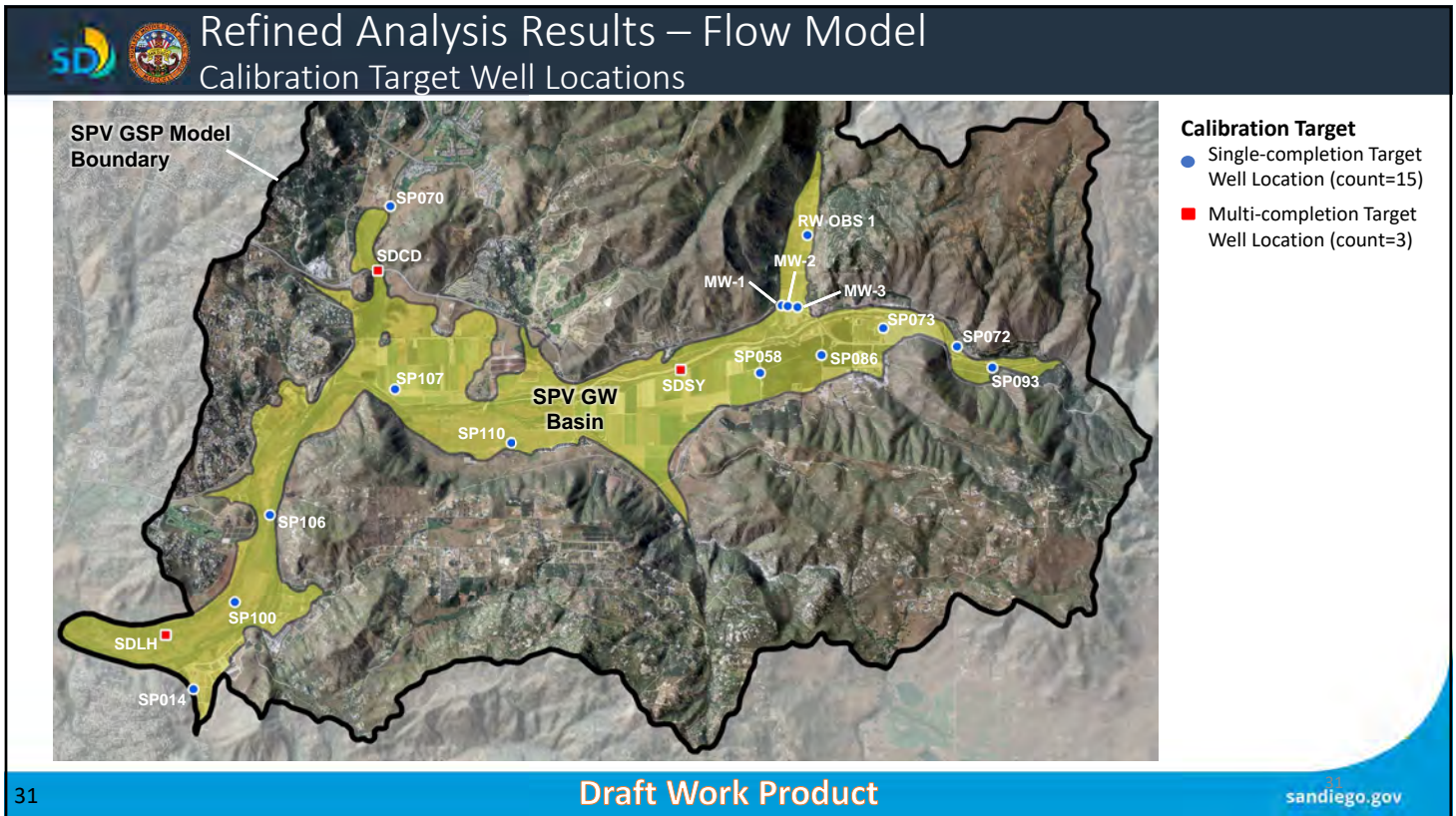
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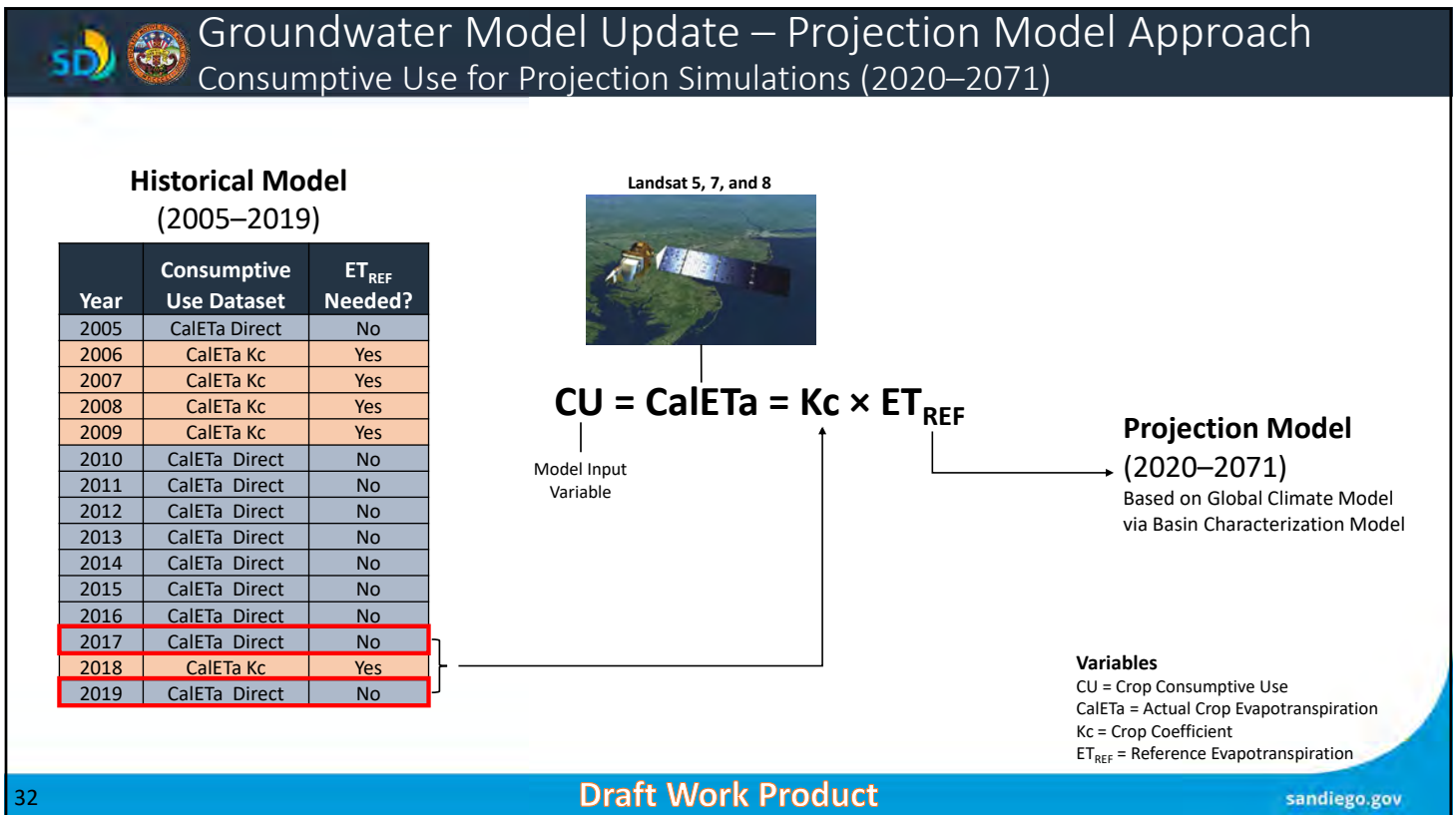
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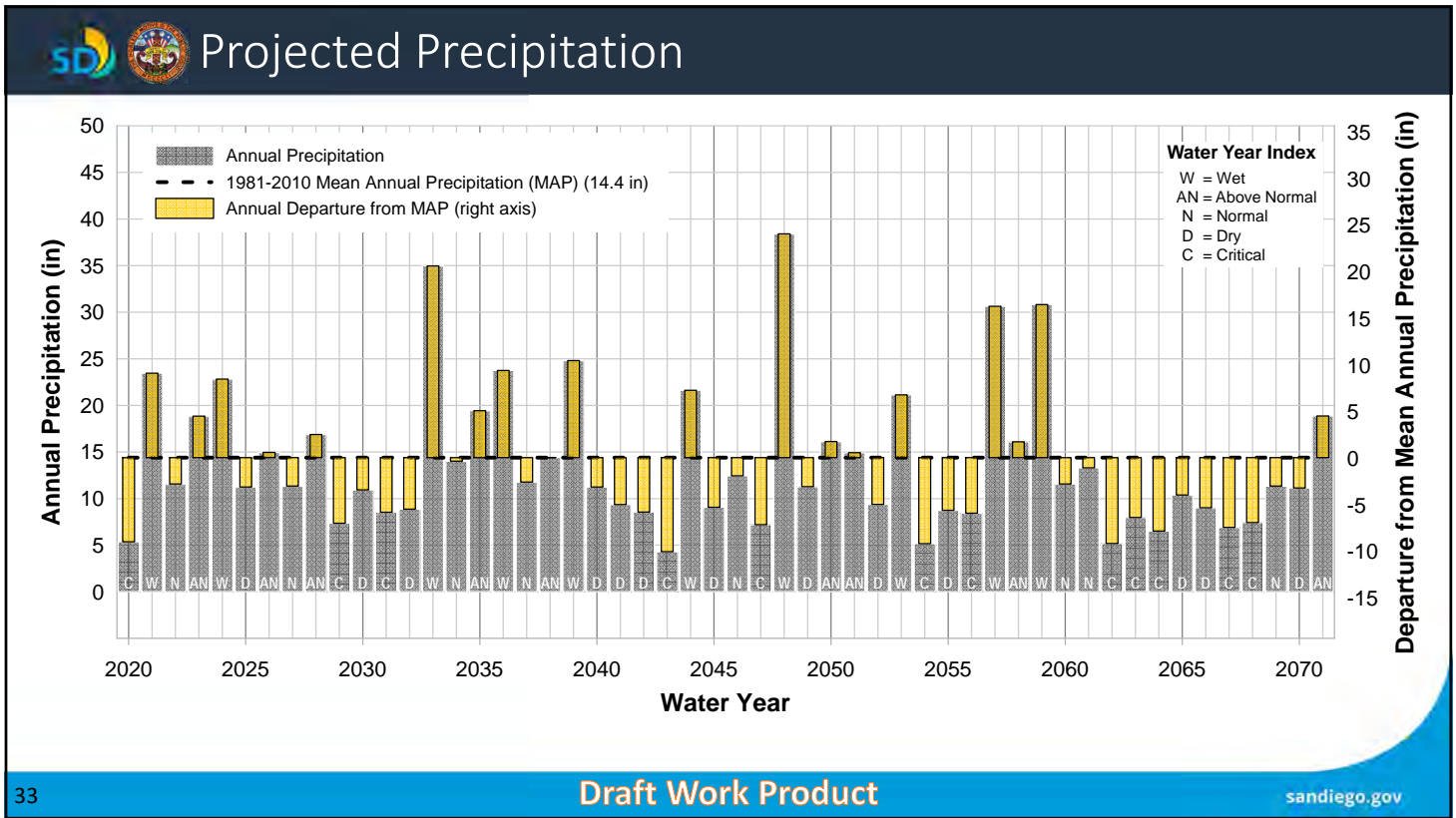




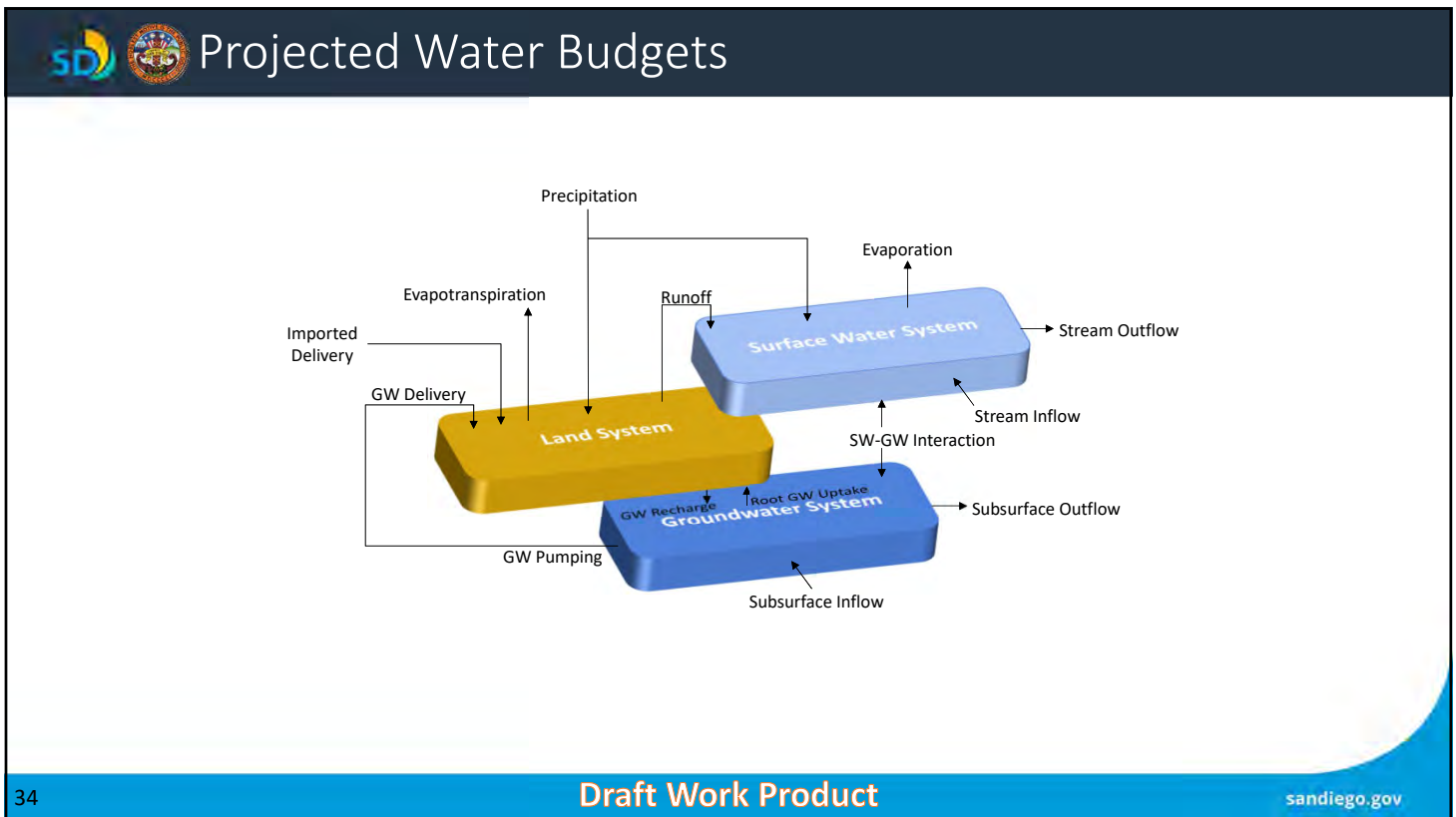
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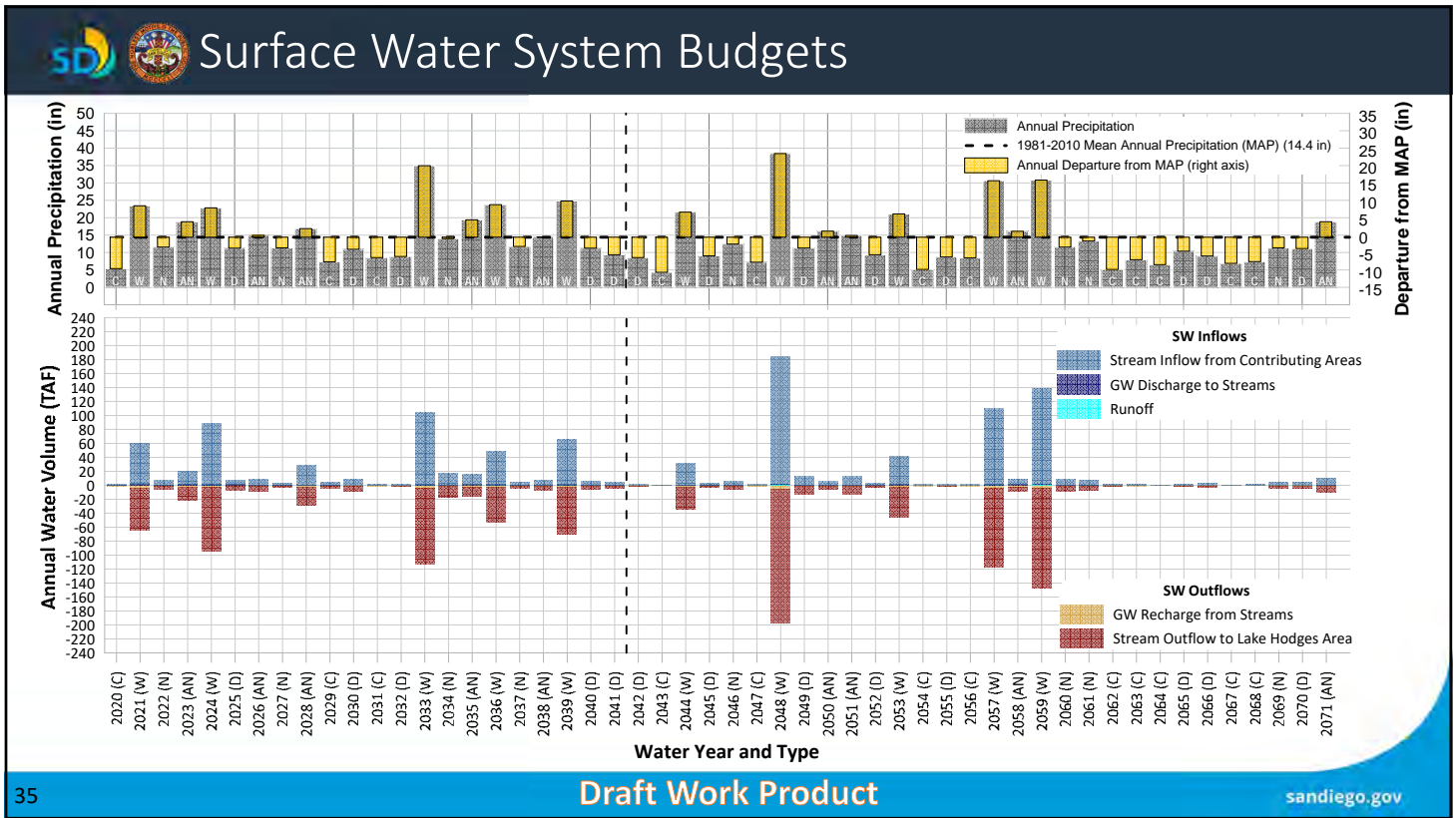
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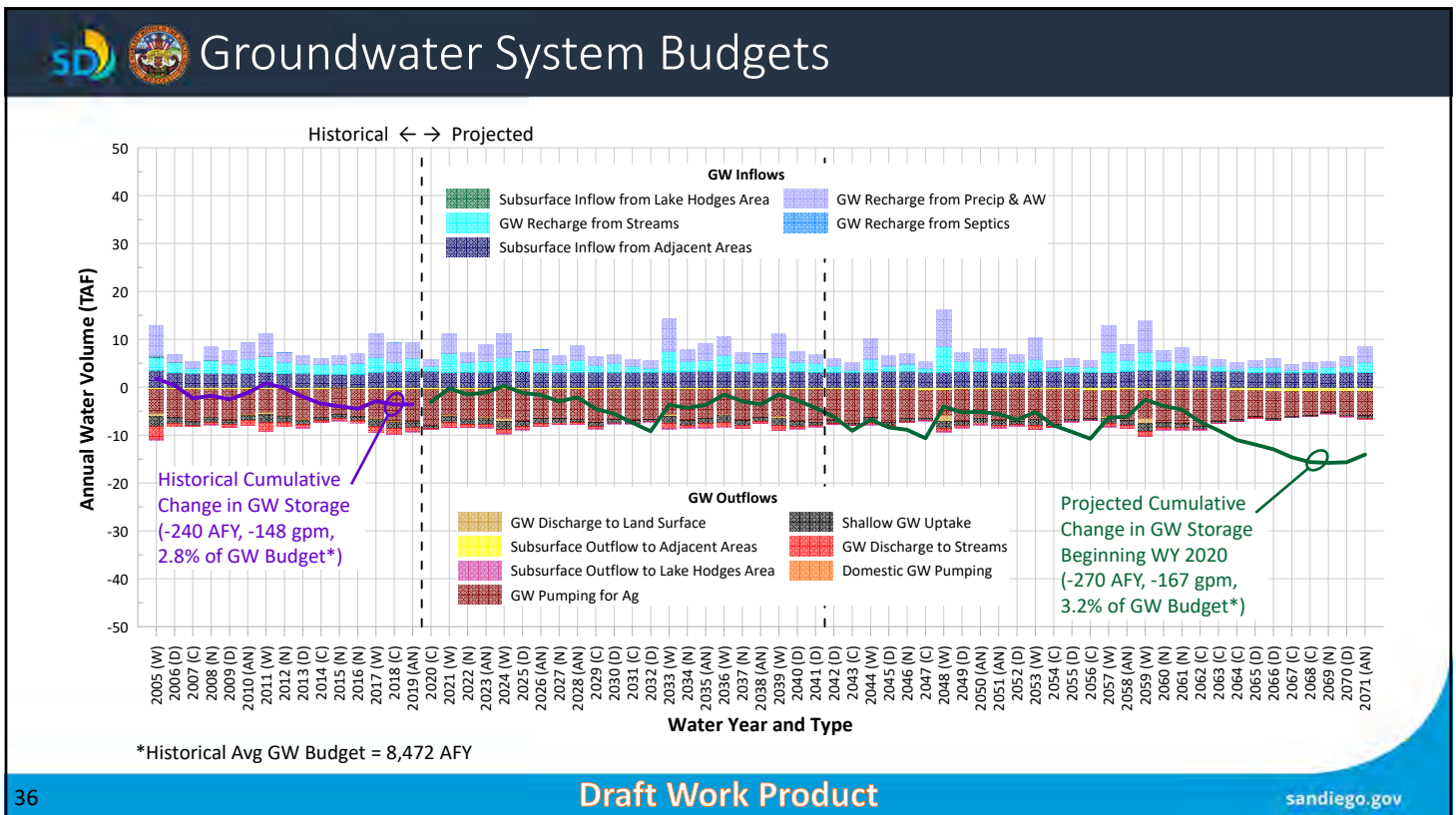


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## Groundwater Budgets - Projected

- Projections indicate the potential for some depletion of GW storage, primarily in eastern portion of Basin; magnitude/rate of depletion depends on the hydrology of the averaging period

Period	Start Year	End Year	Budget (AFY)	Rate (gpm)	% of GW Budget
Historical	2005	2020	-240	-148	2.8%
Projected (GSP Implementation Period)	2020	2042	-197	-122	2.3%
Projected	2042	2072	-270	-167	3.2%

\*Historical Avg GW Budget = 8,472 AFY

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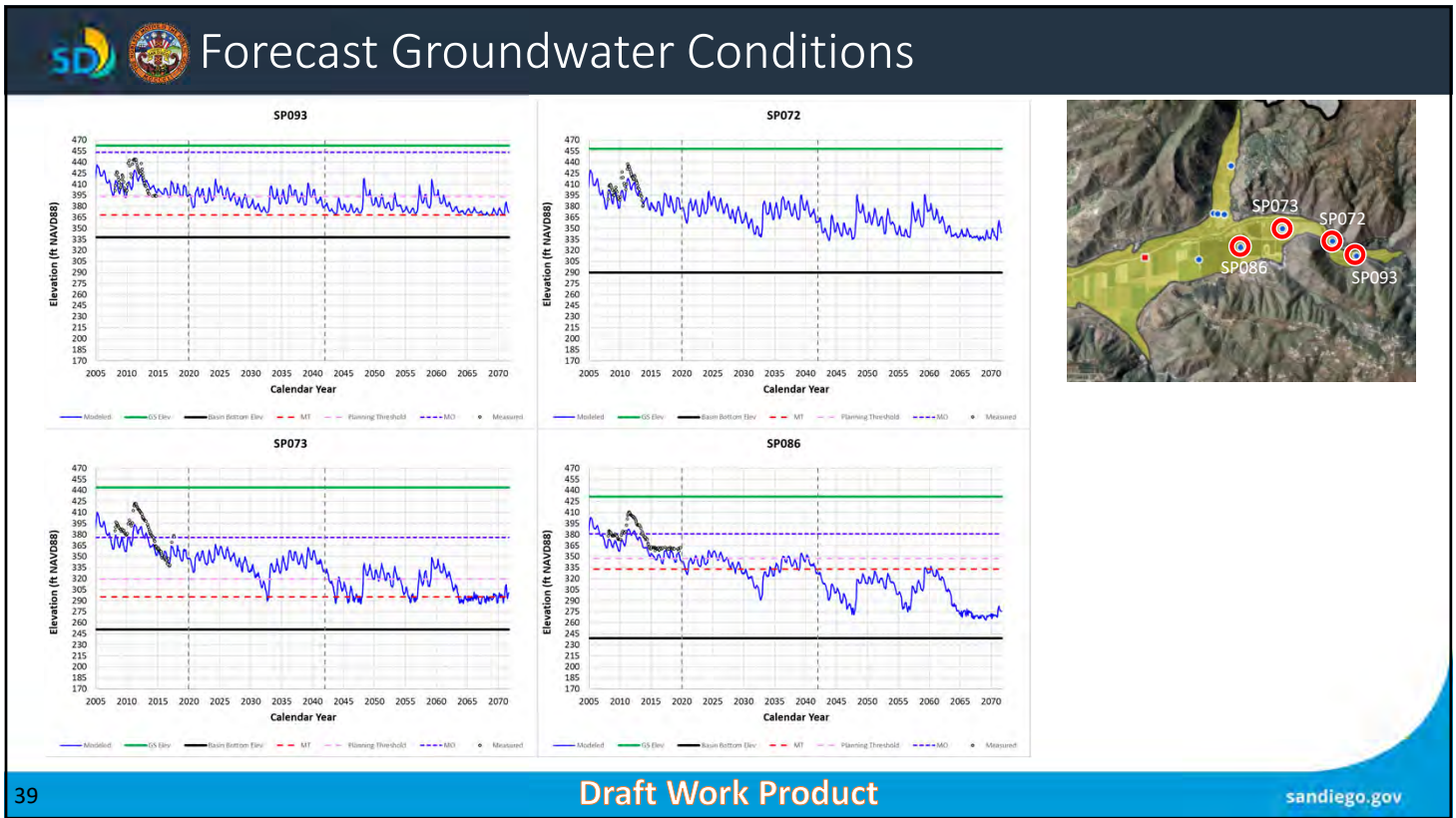
## Forecast Groundwater Conditions

- Future GW levels in eastern portion of Basin could be lower than current GW levels (some additional depletion of GW storage could occur)
- Future GW levels at some monitoring wells in eastern portion of Basin could periodically be near/below proposed Minimum Thresholds
- Implementing adaptive management actions during GSP implementation period might be necessary

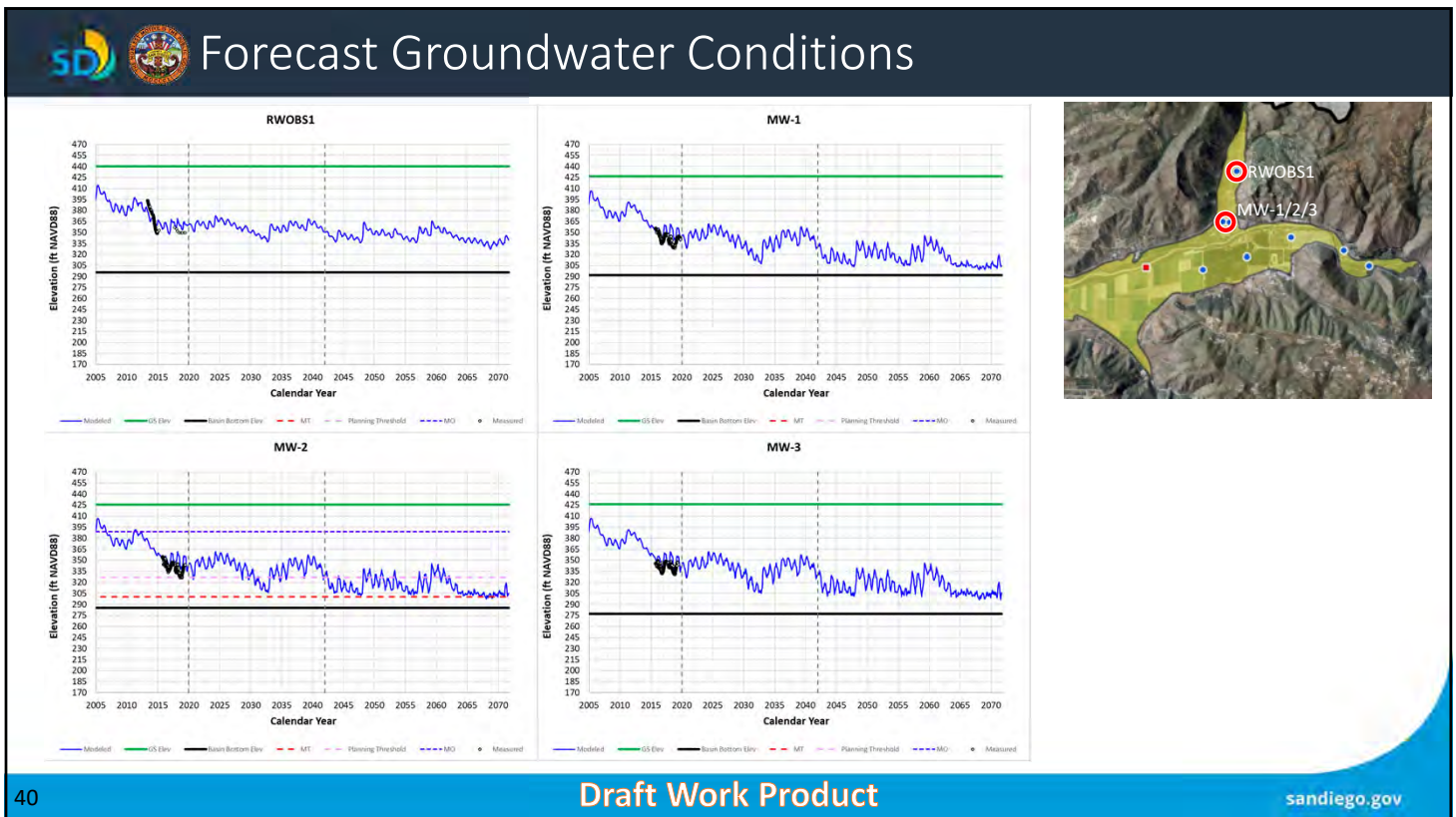
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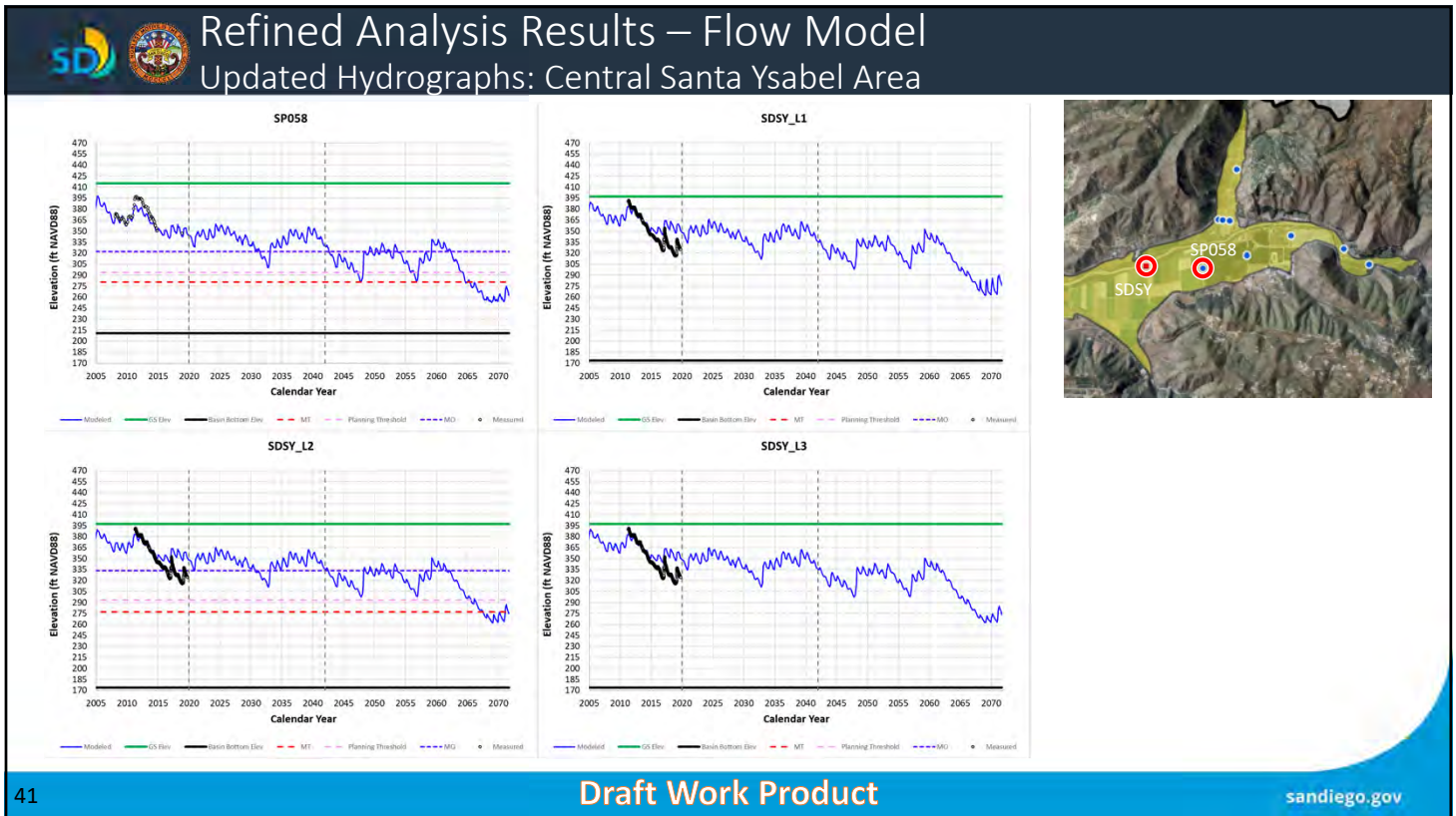




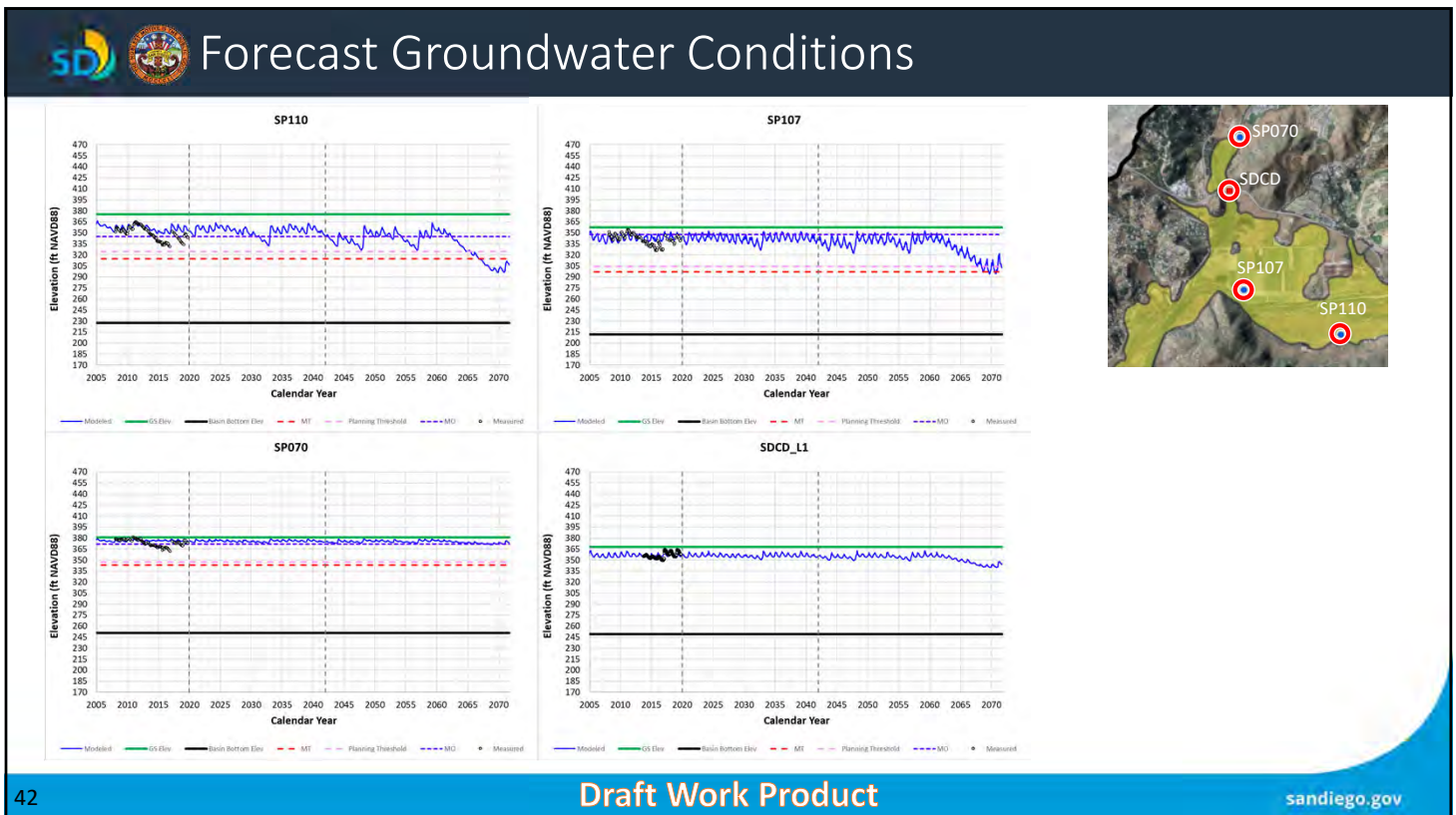
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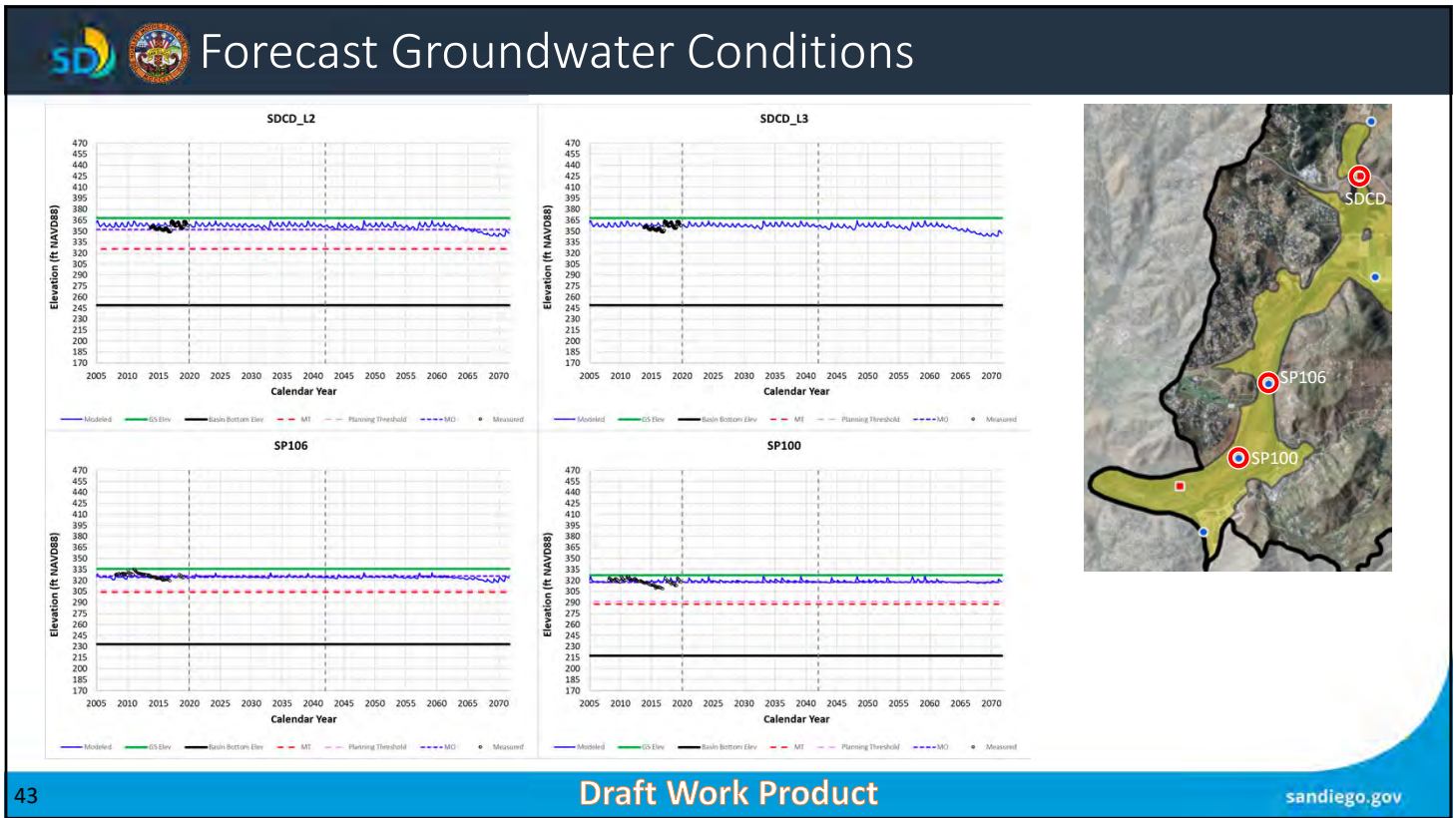


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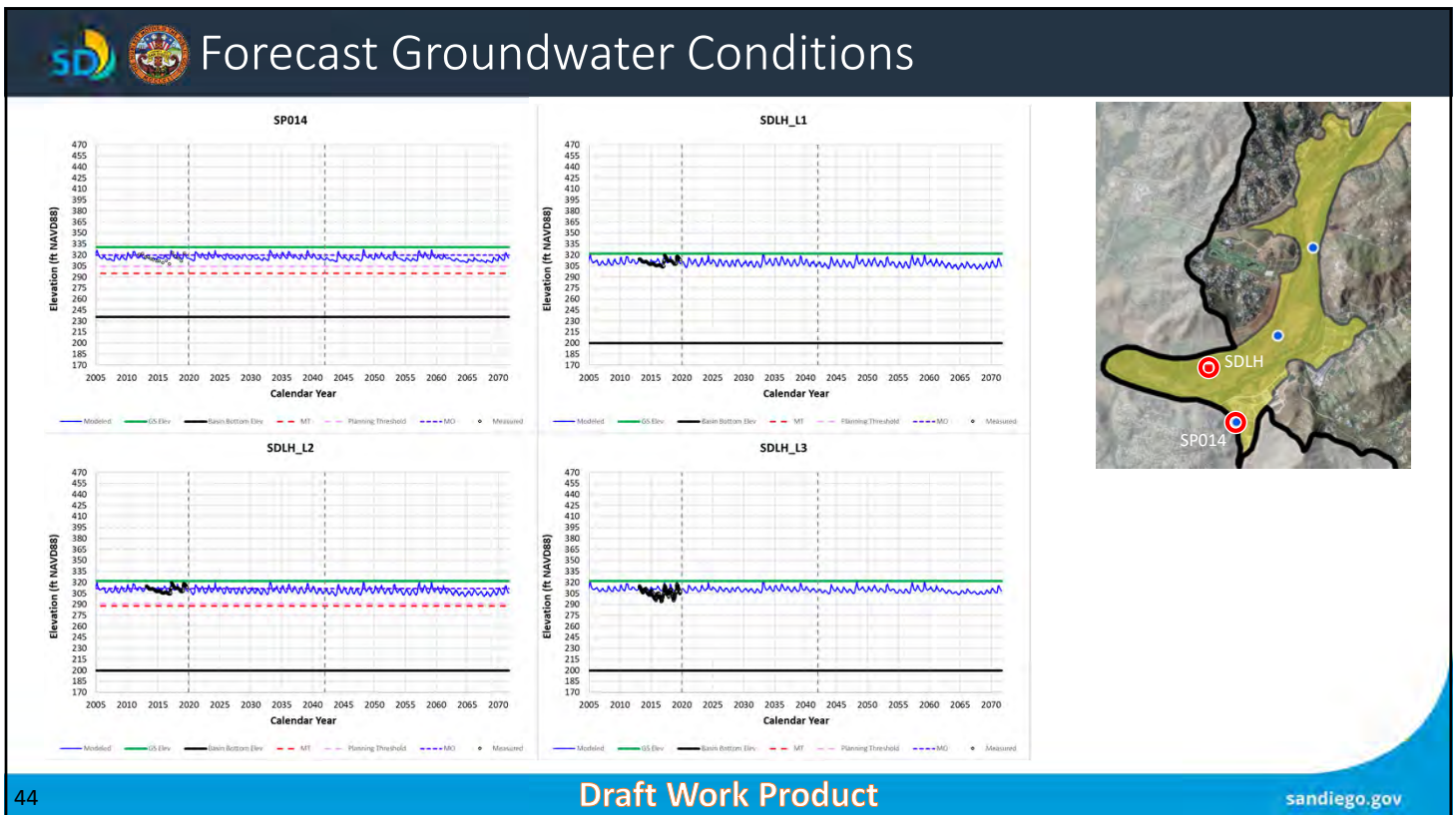


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**Advisory Committee Comments**

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**PROJECTS AND MANAGEMENT ACTIONS**

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## 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.”

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## Projects and Management Actions

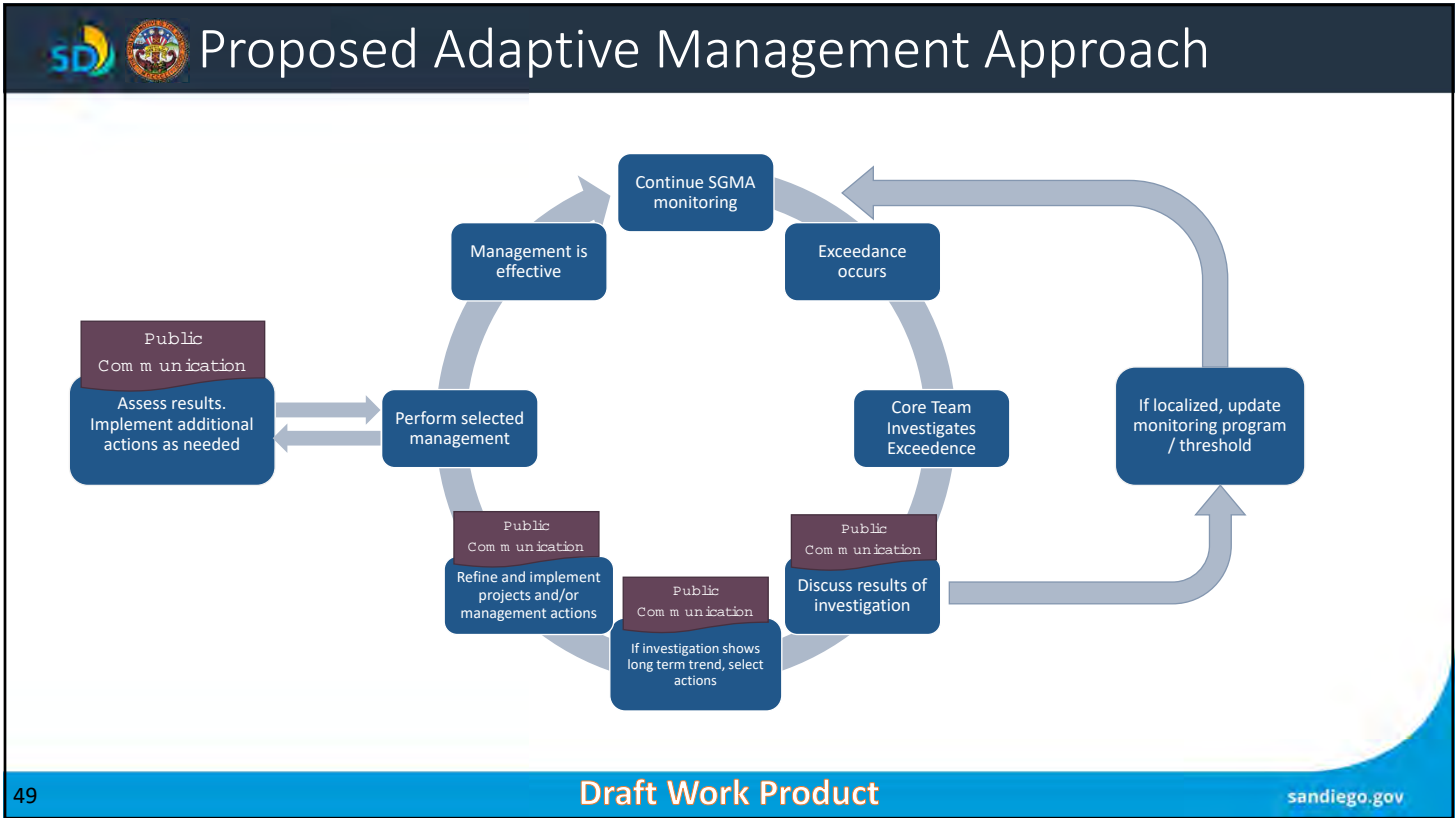
- GSP Regulation 354.44 (b)(1):  
“A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent.”

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**Projects & Management Actions**  
Tier 0 – GSP Implementation Activities

**Tier 0**  
May be implemented after GSP adoption

- Meetings (Public and Core Team)
- Monitoring (Groundwater Levels and Quality)
- Reporting (Annual Report and GSP 5-year Update)
- Numerical Model Updates as Needed
- Pursue Funding Opportunities
- Groundwater Monitoring Improvements
- Public Outreach and Website Maintenance



Note: Study of Groundwater Dependent Ecosystems (GDEs) has separate thresholds as described in the January AC meeting presentation.

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  **Projects & Management Actions**  
**Tier 0 – Voluntary Programs**



**Tier 0**  
 May be implemented after GSP adoption

- Education and Outreach for TDS / Nitrate Loading
- Education and Outreach to Encourage Demand Softening
- Farming Best Practices
- Coordinate and Collaborate with Other Entities and Agencies to Implement Regional Projects
- Support WQIP Actions to Update Agricultural Leases to include Nutrient Control Measures and Stormwater BMPs
- Coordinate on the Implementation of Invasive Species Removal
- Coordinate on the Construction of Infiltration Basins at San Pasqual Union Elementary

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  **Projects & Management Actions (PMA) Tiers 1 and 2**

**Tier 1**  
 Implemented if Tier 1 Triggered

- Well Inventory
- Develop Pumping Restrictions and Enforcement Plan
- Basin-wide Metering Program

**Tier 2**  
 Implemented if Tier 2 Triggered

- Implement Pumping Restrictions and Enforcement

Note: Study of Groundwater Dependent Ecosystems (GDEs) has separate thresholds as described in the January AC meeting presentation.

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## PMA Screening

- Projects and management actions were considered for inclusion in the GSP
- Some projects and management actions were identified to be infeasible or too expensive for use as a GSP implementation action
- See Handout #3:
  - List of projects and management actions considered

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# San Pasqual Valley GSP Advisory Committee Meeting Advisory Committee Comments

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**San Pasqual Valley GSP  
Technical Peer Review Meeting**

**FINAL THOUGHTS BY AC**

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Advisory Committee Meeting**

**PUBLIC COMMENT**

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## San Pasqual Valley GSP Advisory Committee Meeting

# NEXT STEPS & CLOSING REMARKS

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## Next Meeting

- Next AC Meeting:
  - April 8, 2021 2-4pm
  - Overview of GSP content
- Public Draft of GSP
  - Available by early May 2021
- Public Notices are at:
  - Online:  
<https://www.sandiegocounty.gov/content/sdc/pds/SGMA/san-pasqual-valley.html>

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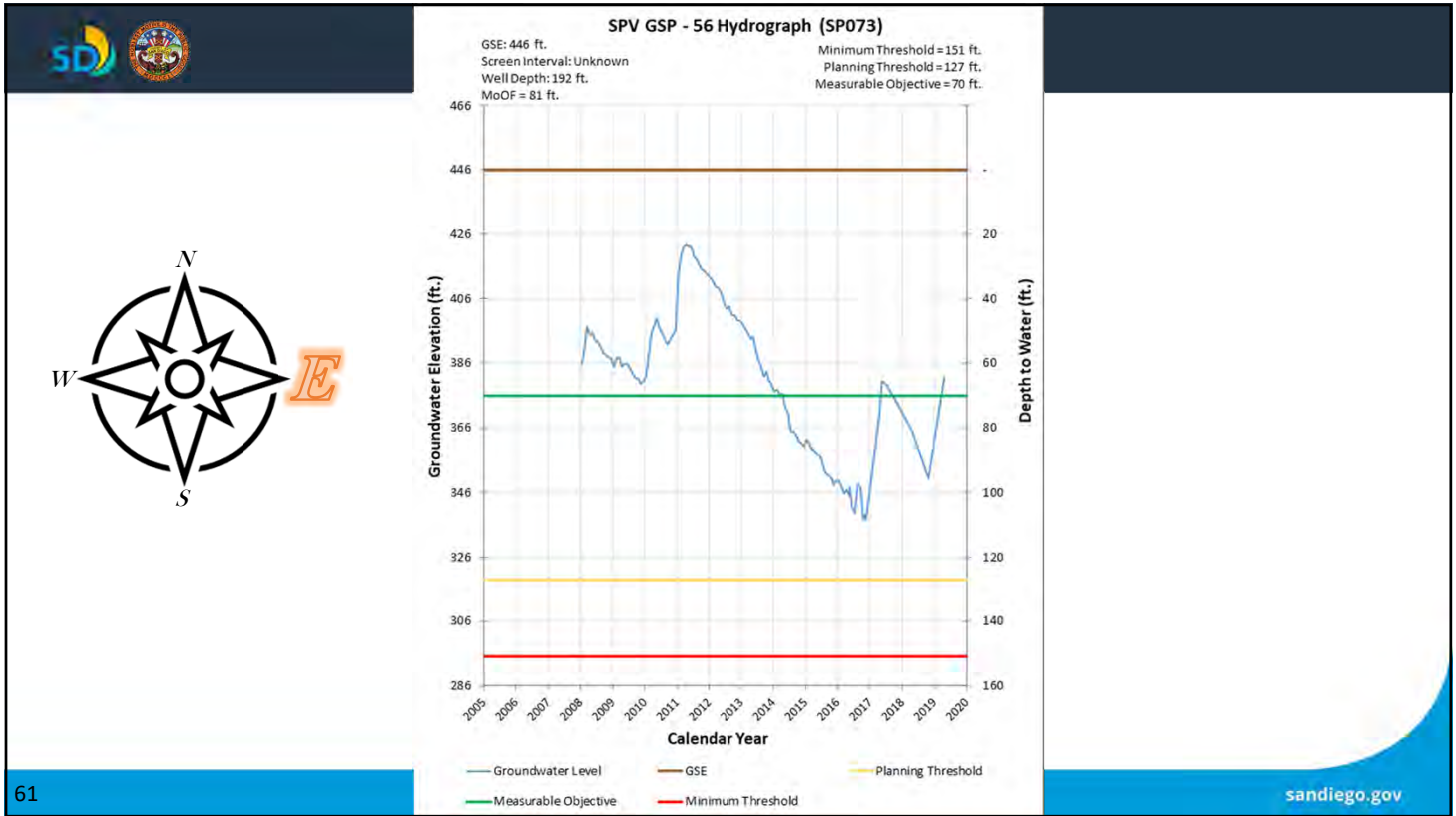


- For additional information, please contact:  
**Karina Danek** at (619) 533-7402  
**[kdanek@sandiego.gov](mailto:kdanek@sandiego.gov)**

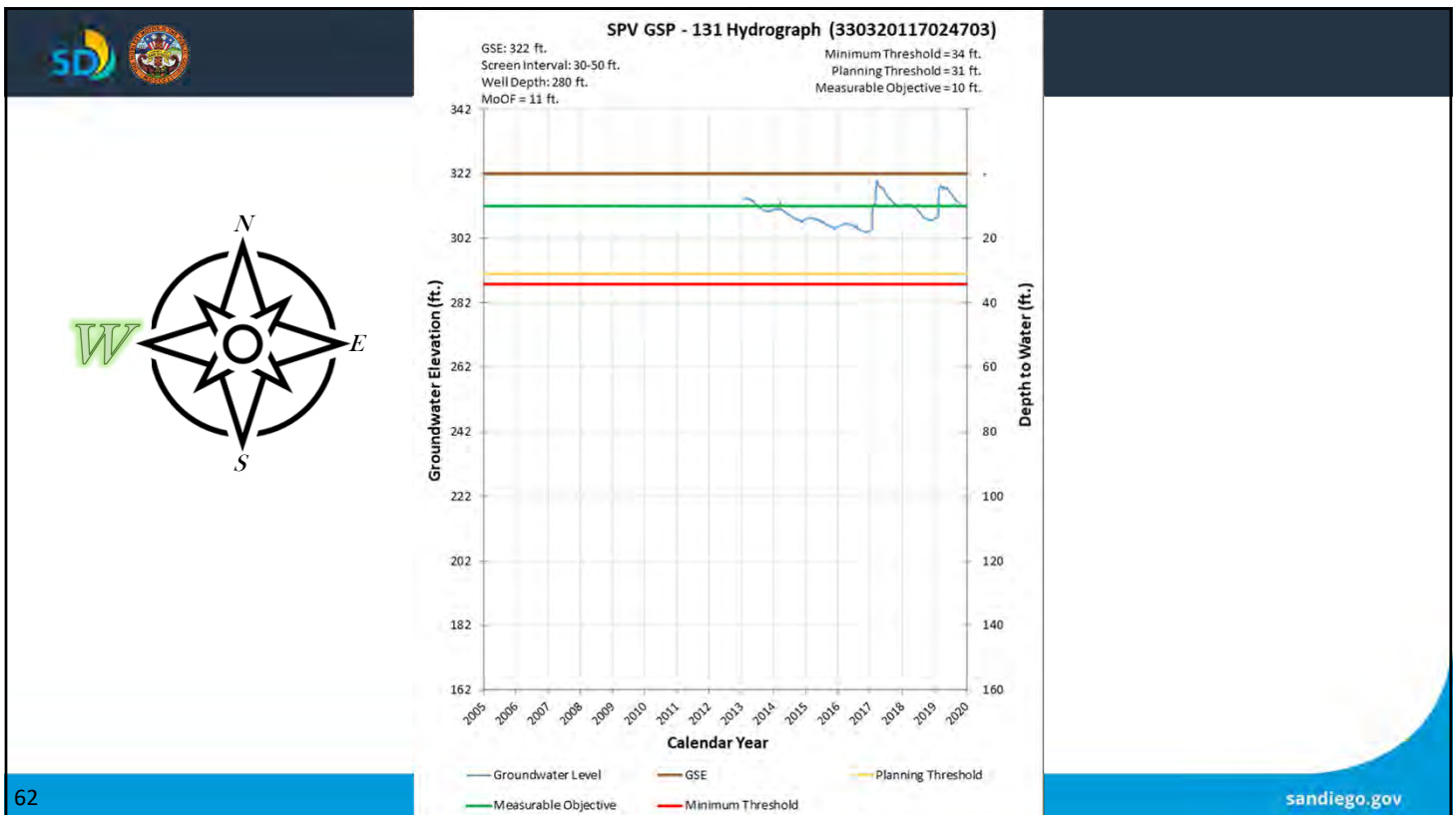
**Thank You!**

# Hydrographs with Thresholds

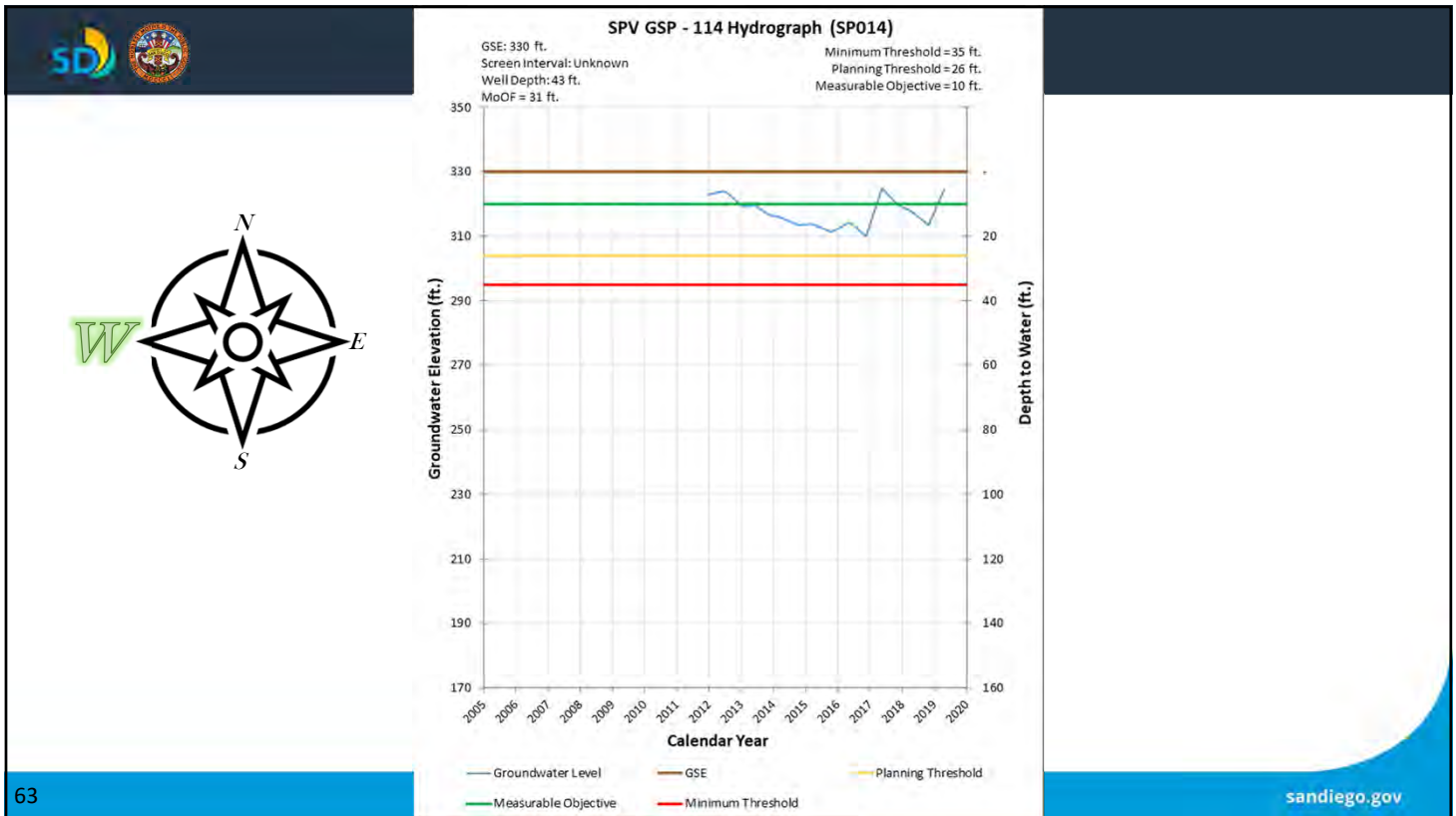




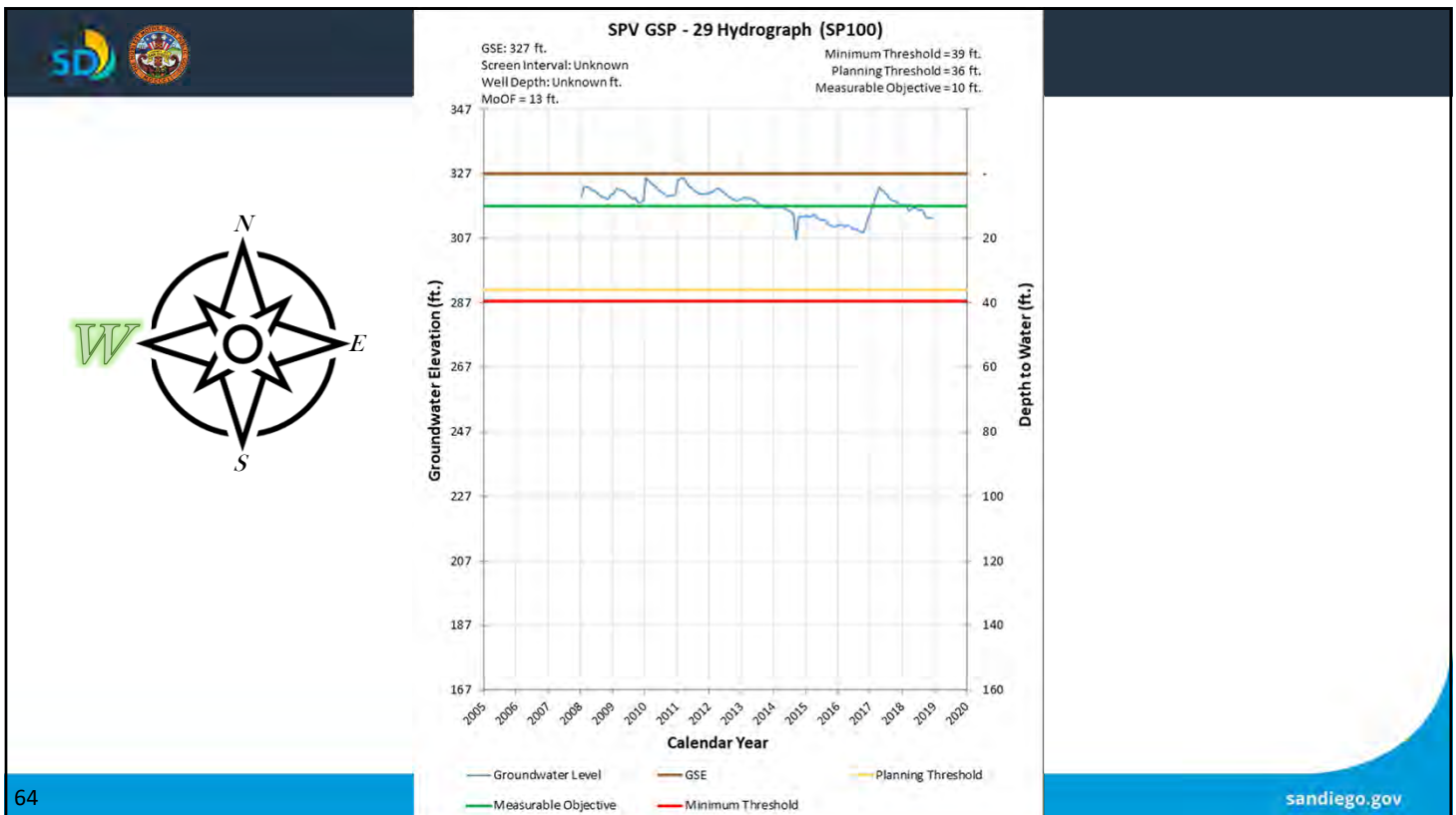
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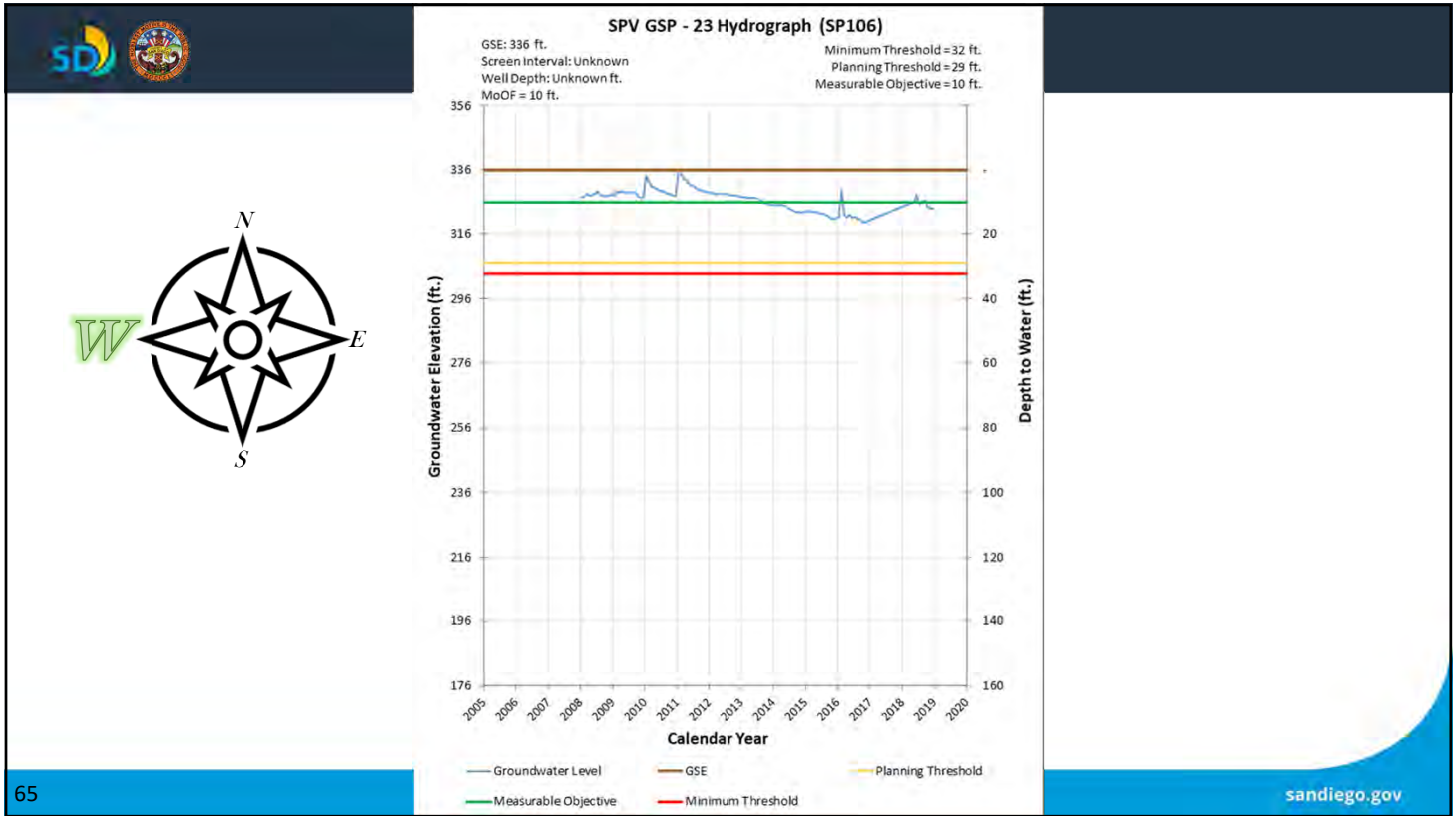
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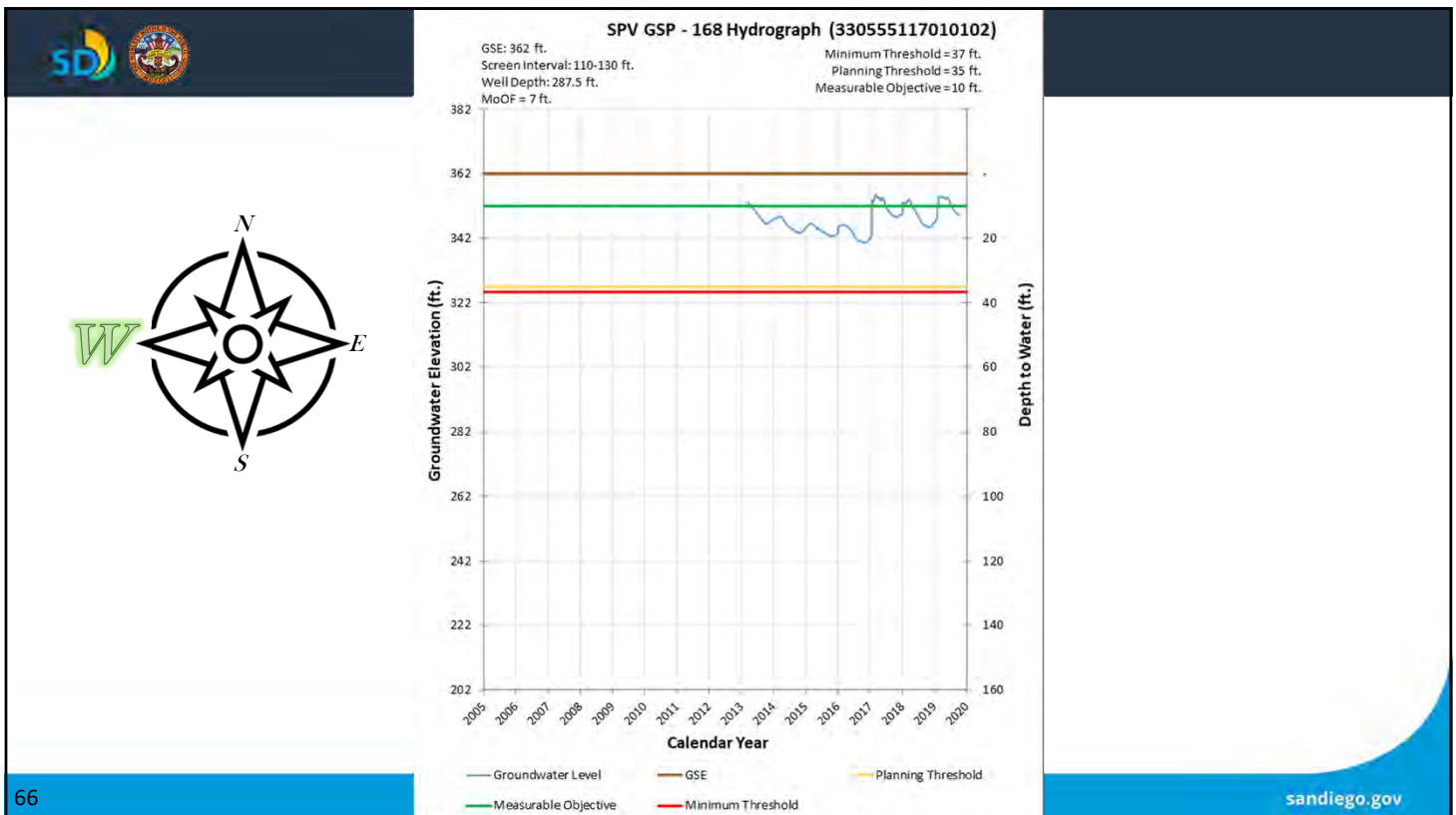
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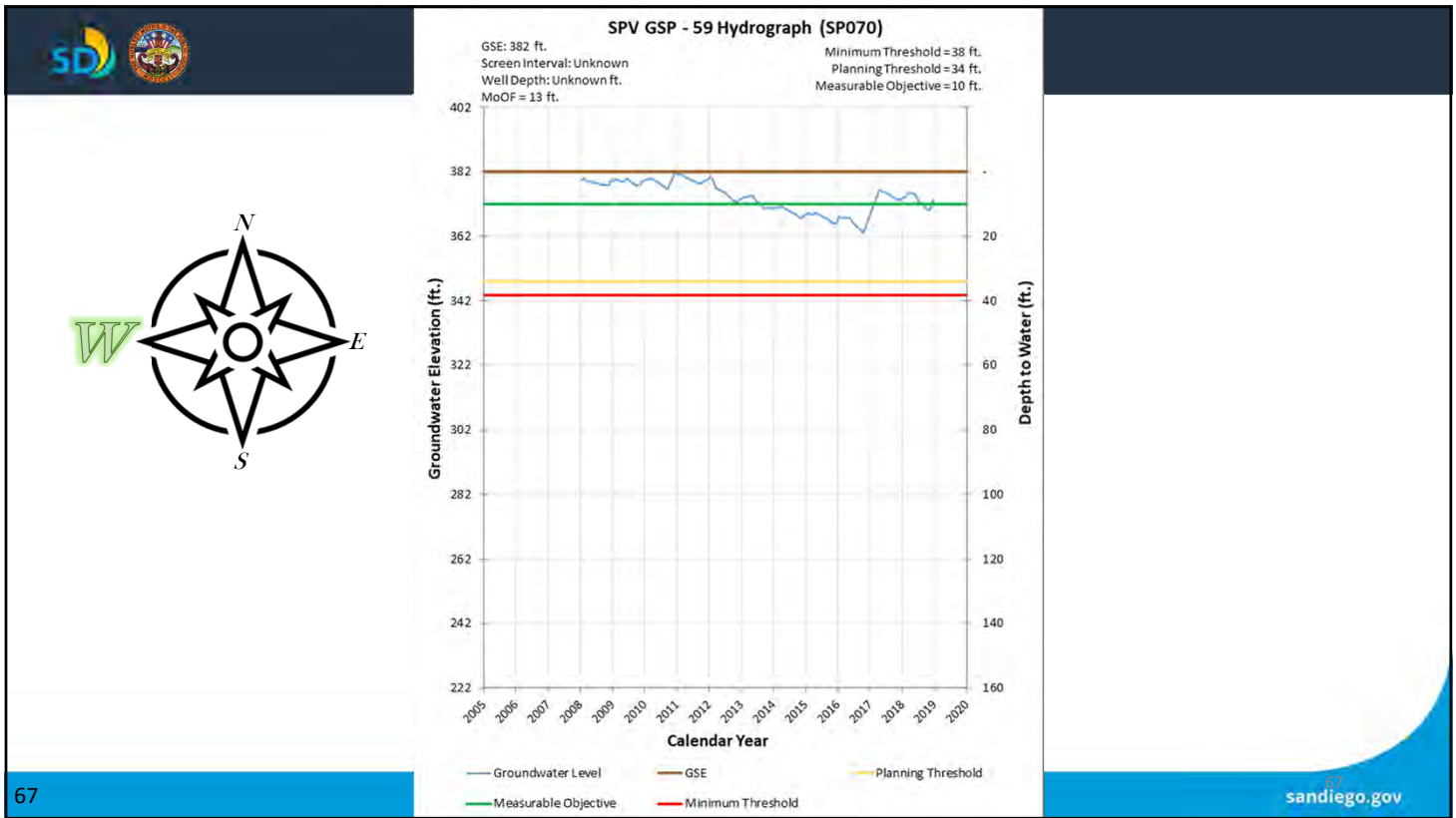
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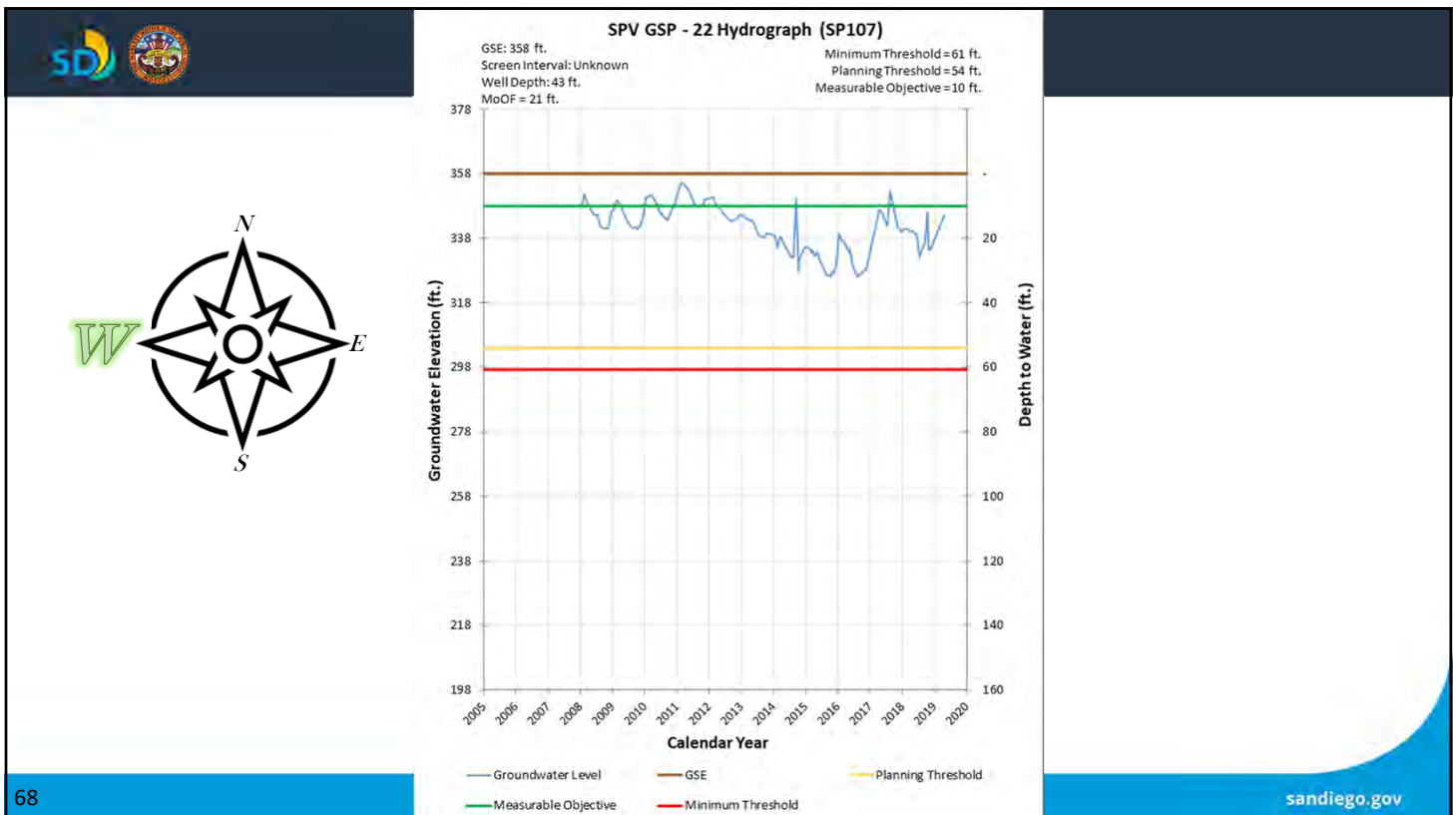
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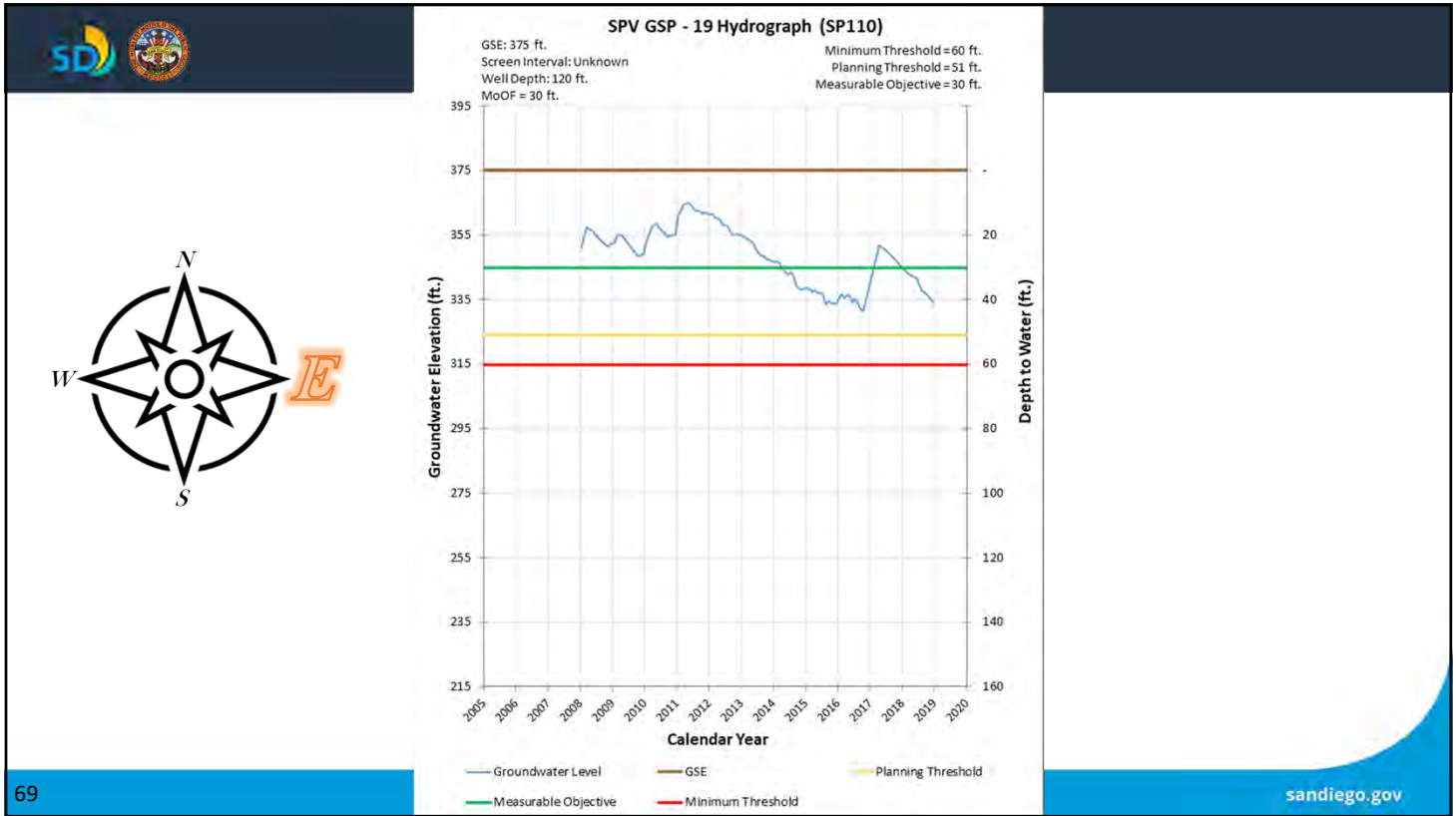


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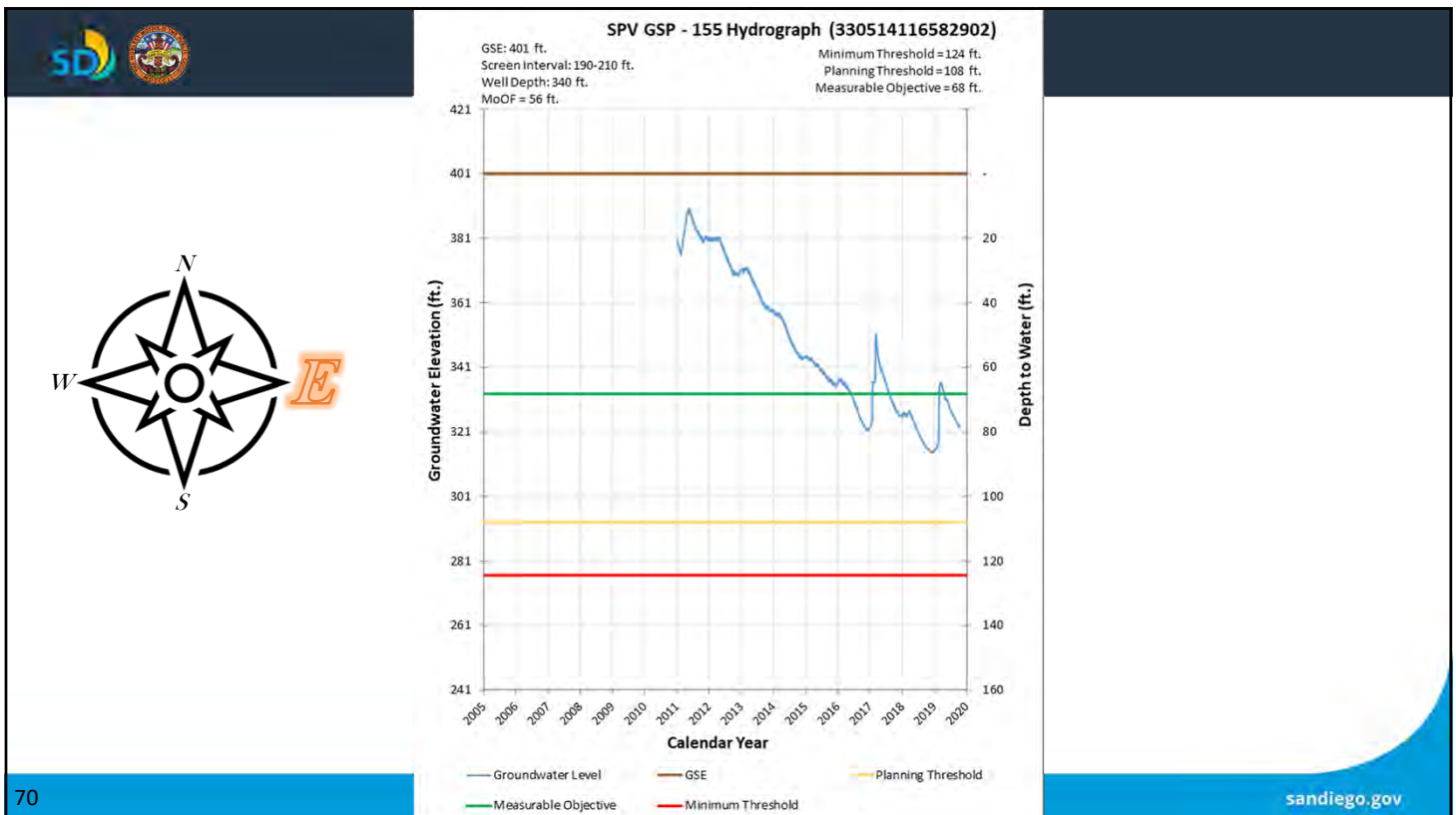




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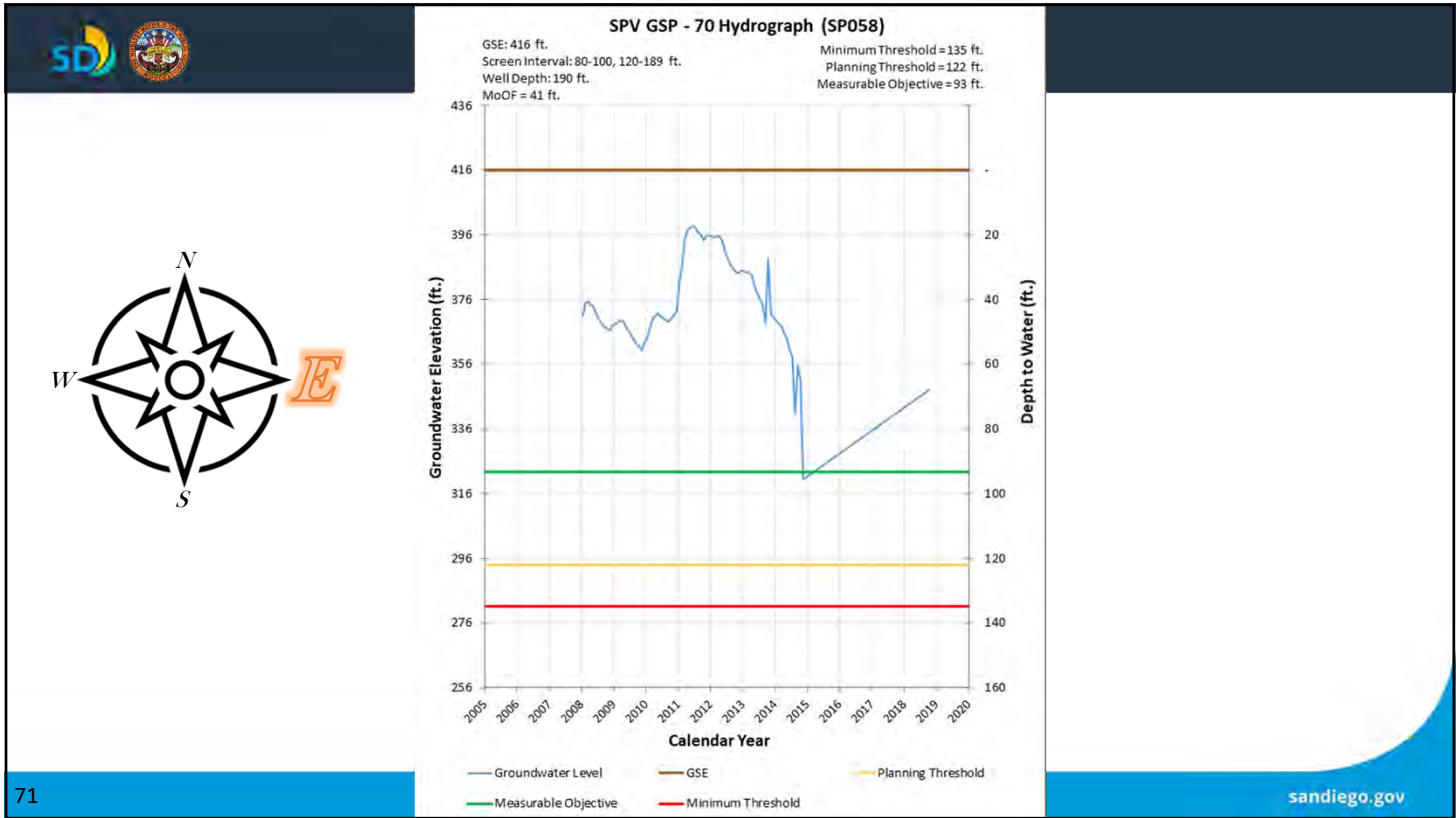
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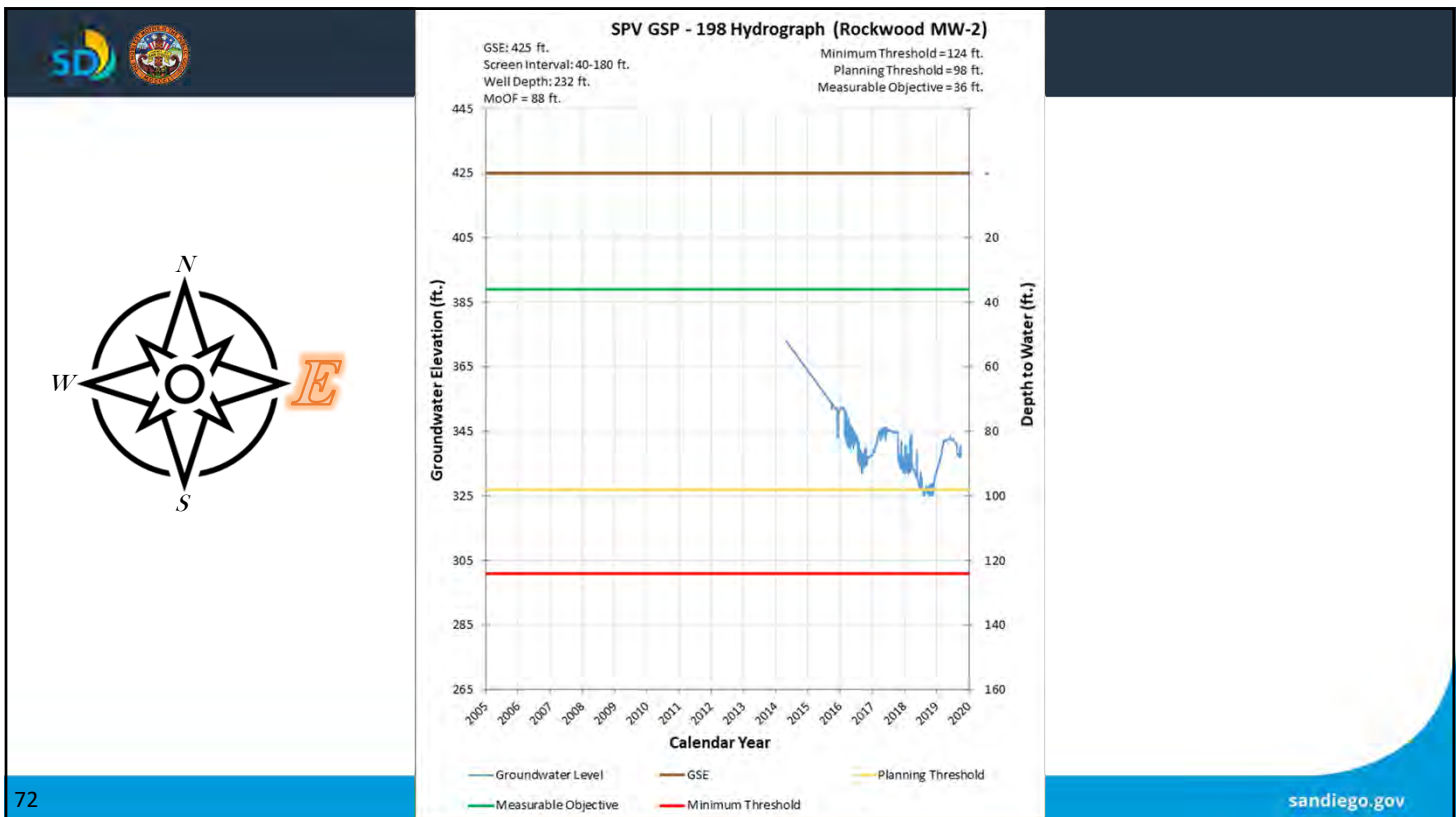
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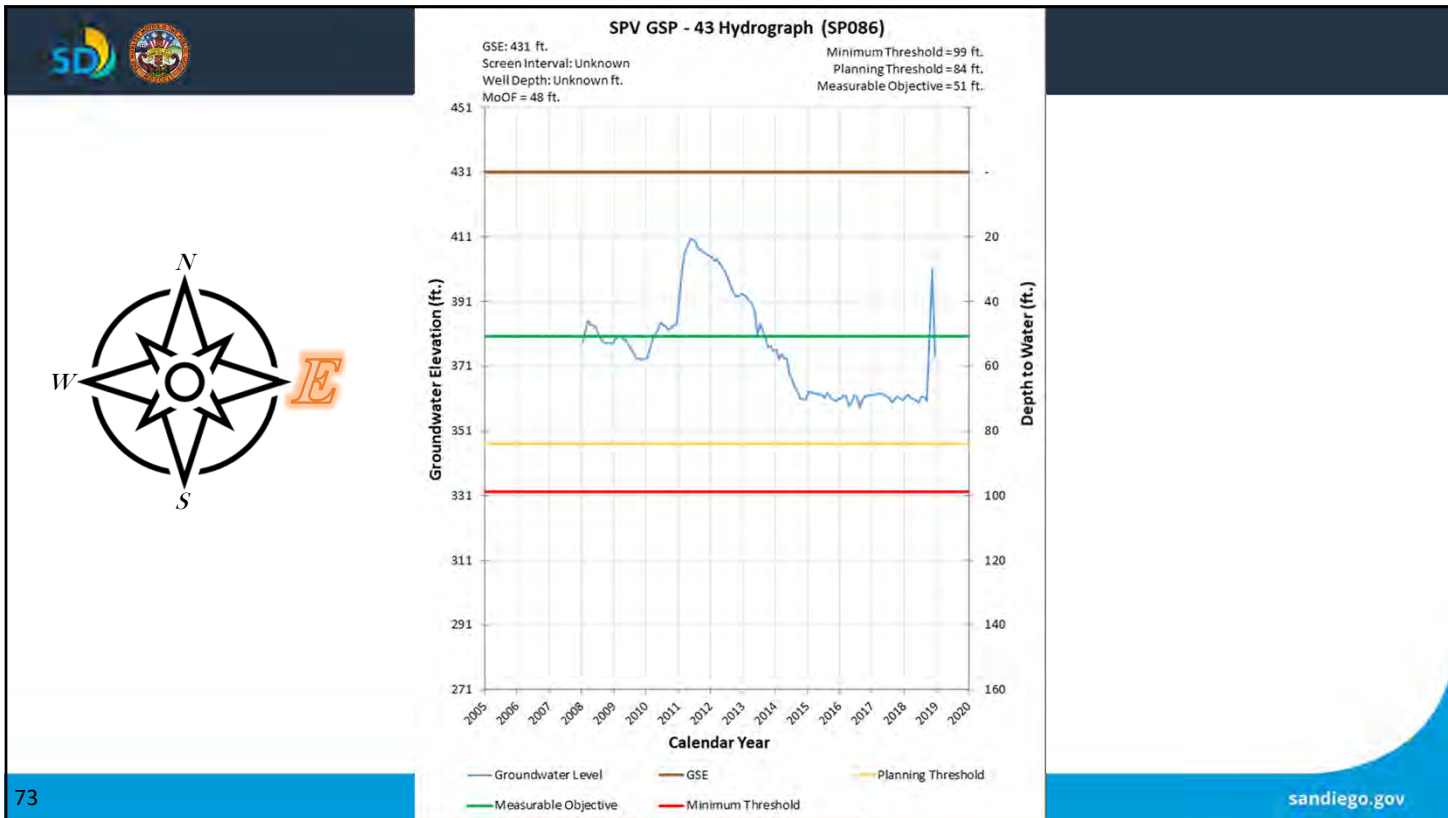


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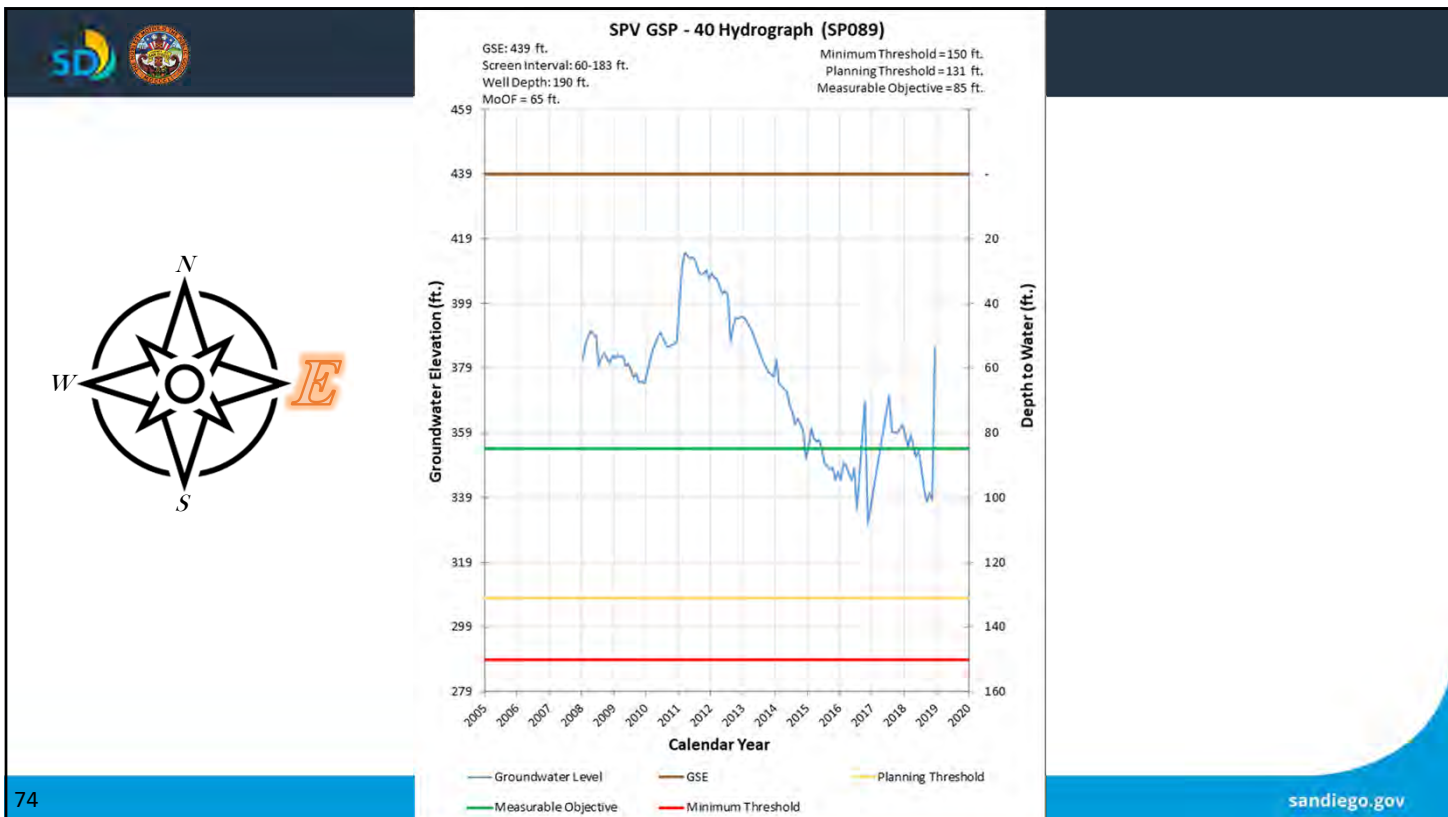
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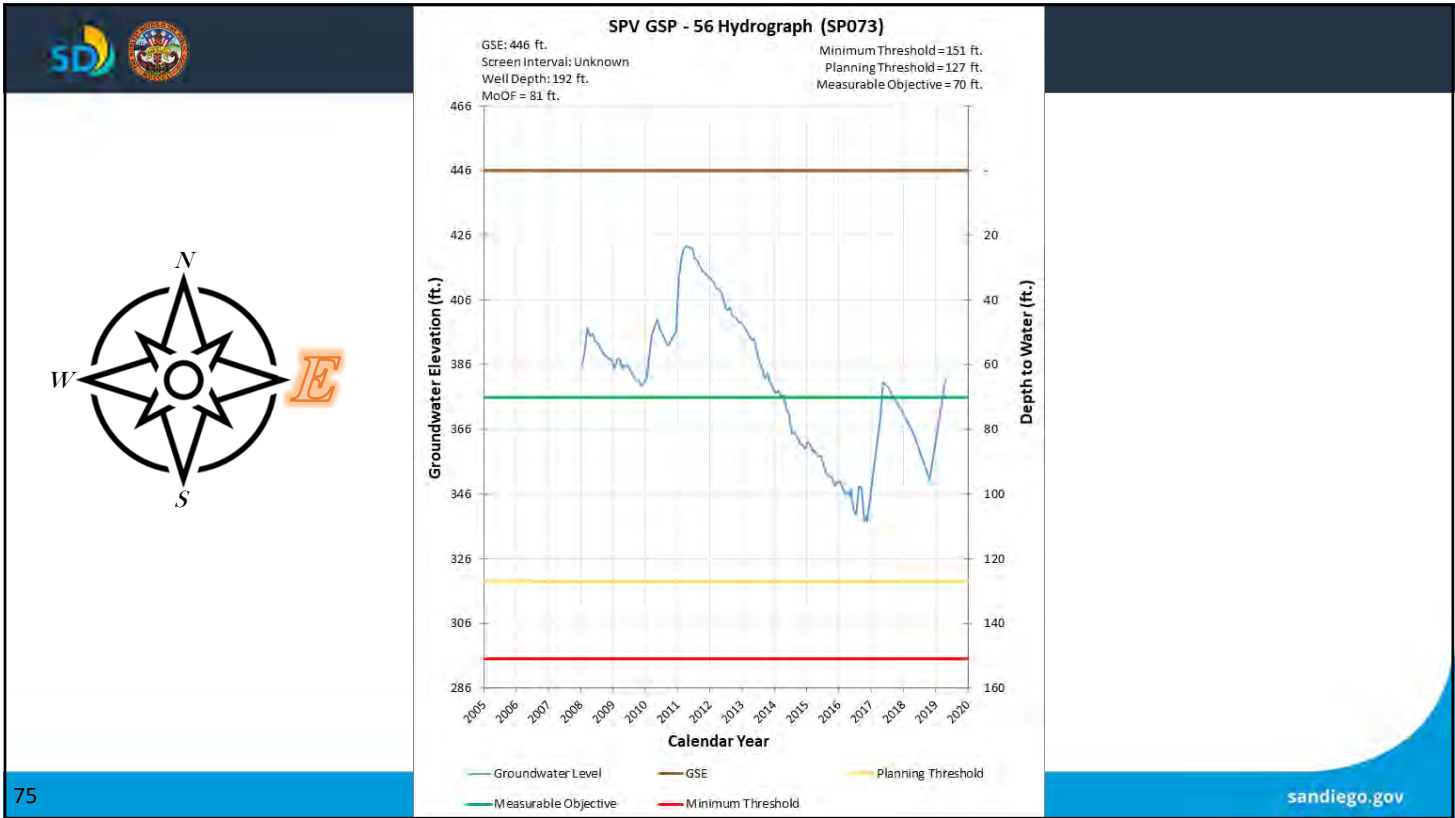




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