West San Jacinto Groundwater Sustainability Agency (GSA) Development of the West San Jacinto Groundwater Sustainability Plan (GSP) – July 14, 2020

Rachel Gray
July 14, 2020
Introduction

• Project Overview
  – What is the Sustainable Groundwater Management Act?
  – What is a Groundwater Sustainability Plan?

• Update on the Groundwater Sustainability Plan Development
  – Historical, Current, and Projected Baseline Water Budgets for the West San Jacinto GSA Area
  – Representative Monitoring Points
  – Minimum Thresholds for Groundwater Levels
  – Timeline and Next Steps

• SGMA Webpage

• Feedback

• Questions and Answers
Project Overview
What is the Sustainable Groundwater Management Act?

- Signed September 16, 2014
- Effective January 1, 2015
- Requires:
  - Formation of groundwater sustainability agencies (GSAs) for high and medium priority groundwater basins
  - Preparation of groundwater sustainability plans (GSPs) by 2022
  - Achieve sustainability within 20 years of plan adoption
- “A central tenet of these bills is the recognition that groundwater management is best accomplished locally.”
  - Governor Edmund G. Brown Jr.
GSP Development Process

**Start GSP**
- Data Collection, Review Background Information
- Start: Feb 2019

**Basin Area + Setting**
- Analyze Data, Conceptual Model, Historical and Current Groundwater Conditions
- Start: Feb 2019

**Water Budget**
- Historical and Projected
- April 2019 - April 2020

**Identify Sustainable Management Criteria**
- Representative monitoring points
- Undesirable results
- Minimum Thresholds
- Measureable objectives
- Sep 2019

**Public Outreach & Engagement Plan**
- Jan 2020

**Develop Long-term Sustainable Yield**

**Plan Implementation Actions**
- January 2020 - July 2020

**Evaluate Projects and Management Actions**
- Dec 2019 - July 2020

**Admin Draft GSP**
- September 2020

**Public Draft GSP**
- February 2021

**GSP to DWR**
- September 2021
Update on the Groundwater Sustainability Plan Development
West San Jacinto Groundwater Basin (WSJGB)
Importance of the Monitoring Network

- From the SGMA Emergency Regulations (23 CCR § 354.34. Monitoring Networks):
  - “Each [GSA] shall develop a monitoring network capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface water conditions”

- From DWR’s Monitoring Network BMP:
  - “Monitoring is a fundamental component necessary to measure progress toward the achievement of any management goal”
  - “SGMA requires GSAs to establish and track” groundwater conditions “for each of the sustainability indicators”
  - “Groundwater monitoring is a fundamental component of SGMA as each GSP must include a sufficient network that provides data”
Monitoring Well Network Evaluation

- 2018 Monitoring Well Network:
  - 175 Total Wells

- Network Density:
  - GSA shall determine the density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends
  - Current density: 1.1 wells/mile$^2$
  - Recommended minimum density: 0.04 well/mile$^2$ (4 well/100 mile$^2$)
Value of Representative Monitoring Points

23 CCR § 354.36:

- “Each [GSA] may designate a subset of monitoring sites as representative of conditions in the basin or an area of the basin”

  - Representative monitoring sites may be designated by the [GSA] as the point at which sustainability indicators are monitored and for which quantitative values for minimum thresholds, measurable objective, and interim milestones are defined

![Figure 3: Representative Monitoring Points](image)

DWR 2016. Monitoring Networks and Identification of Data Gaps BMP
Value of Representative Monitoring Points

- Select sufficient number of representative monitoring points (RMPs) to characterize groundwater conditions in areas of groundwater production throughout the Plan Area
  - Select Sustainable Management Criteria for these points only
    - Minimum Thresholds
    - Measurable Objectives

- Maintain focus on production zones within the Plan Area, rather than management zones for water quality

- Maintain overall monitoring network to understand basin conditions, EMWD operational requirements, and EMWD non-SGMA regulatory requirements
**Production Areas**

**MORENO VALLEY PRODUCTION AREA**
4,400 – 6,500 AF
(EMWD 65/66, CCN 1-4; East Well and Santiago)

**NORTH PERRIS PRODUCTION AREA**
1,947 AF
EMWD + Liberty Utilities (Park Water)
1,050-1,550 AF (EMWD 204)

**SOUTH PERRIS PRODUCTION AREA**
7,502 AF
Excluding 75/78
185 AF

**NUEVO/LAKEVIEW PRODUCTION AREA**
2,777 AF
EMWD + NWC
3,018 AF

**MENIFEE PRODUCTION AREA**
1,083 AF
EMWD 82
3,894 AF

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**Municipal Calendar Year Production 2019**

**Future Municipal Production**

**Agricultural / Private Production 2019**
Evaluation Criteria for RMP Selection

- Primary designation as a monitoring well
- Ability to collect both water quality and water level samples
- Known well construction
- Geographic location of the RMP within the Plan Area
- Length of historical data record at the RMP
- Inclusion of RMP in additional monitoring programs
- Vertical distribution of well screen intervals for each RMP
- Long-term accessibility and well ownership considerations

2018 Monitoring Network

Designated Monitoring Wells

Water Quality and Water Levels

Known Well Construction

Location, vertical distribution, historical record, other monitoring programs, access
Site Ranking

Potential Sites Ranked Using Initial Screening Criteria:

- **Active Extraction Well?**
  - No: 1 point

- **Monitoring Type**
  - Quality and level: 2 points
  - Quality or Level: 1 point

- **Perforations**
  - 1 point if representative

- **EMWD Well?**
  - Yes: 1 point

- **Basin Plan Well?**
  - Yes: 1 point

- **Perris II MRP Well?**
  - Yes: 1 point

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Higher Ranked Sites

- Eliminate wells scoring 3 or lower in ranking system
- Review remaining potential sites with EMWD staff
- Focus
  - Wells near active or planned production
  - Wells with representative water levels
  - Wells with representative perforation intervals
Recommended Wells

- Review water level hydrographs within each production area to select potential representative monitoring points
- 7 representative monitoring points
  - Nutrilite 07
  - EMWD 94
  - EMWD Skiland 05
  - EMWD A1
  - EMWD 74 Menifee 04
  - EMWD 52 Follico
  - UCR Scott*

* Pending video log to determine well perforations
Production Areas

MORENO VALLEY PRODUCTION AREA
4,400 – 6,500 AF
(EMWD 65/66, CCN 1-4; East Well and Santiago)
Water Levels: Moreno Valley Production Area
Production Areas

NORTH PERRIS PRODUCTION AREA

1,947 AF
EMWD + Liberty Utilities (Park Water)

1,050-1,550 AF (EMWD 204)
Water Levels: North Perris Production Area

Groundwater Elevation (ft MSL)

- AG Sod Barret (Wellsite ID 20834)
- EMWD 50 Perry (Wellsite ID 20835)
- EMWD 51 Bonge West (Wellsite ID 21404)
- EMWD 52 Follico (Wellsite ID 23027)

EMWD 52 Follico
Production Areas

SOUTH PERRIS PRODUCTION AREA

7,502 AF
Excluding 75/78

185 AF

Municipal Calendar Year Production 2019
Future Municipal Production
Agricultural / Private Production 2019
Water Levels: South Perris Production Area

Groundwater Elevation (ft MSL)

- EMWD A1 (Wellsite ID 21714)
- EMWD Skiland 05 (Wellsite ID 21436)
- Perris Properties Kmart (Wellsite ID 21456)
- EMWD A3 (Wellsite ID 21782)
- EMWD B6 (Wellsite ID 22759)
- EMWD Skiland 05 (Wellsite ID 21444)
- City of Perris Bob Long Memorial Park (Wellsite ID 21444)
Production Areas

MENIFEE
PRODUCTION AREA
1,083 AF
EMWD 82
3,894 AF
Water Levels: Menifee Production Area

- Agri Leon/Holland (Wellsite ID 20965)
- EMWD 53 Menifee Test East (Wellsite ID 21803)
- EMWD 74 Menifee 04 (Wellsite ID 21829)
- Menifee Lakes 01 (Wellsite ID 21834)
Production Areas

EMWD 94
Nutrilite 07

NUEVO/LAKEVIEW PRODUCTION AREA
2,777 AF
EMWD + NWC
3,018 AF
Water Levels: Nuevo/Lakeview Area

Note: EMWD 94 was not online in 2018.
Recommended Wells

- 7 currently recommended representative monitoring points
  - Nutrilite 07
  - EMWD 94
  - EMWD Skiland 05
  - EMWD A1
  - EMWD 74 Menifee 04
  - EMWD 52 Follico
  - UCR Scott*
    * Pending video log to determine well perforations

- Add monitoring well (or wells) for Perris North project once they have been drilled and water levels are determined to be representative of aquifer conditions
Minimum Thresholds Under SGMA

- From the SGMA Emergency Regulations:
  - “Each Agency in its Plan shall establish minimum thresholds that quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site established pursuant to Section 354.36 (Representative Monitoring)” (23 CCR § 354.28. Minimum Thresholds)
  - “‘Minimum thresholds’ refers to a numeric value for each sustainability indicator used to define undesirable results.” (23 CCR § 351(t))

**SUSTAINABILITY INDICATORS: TODAY’S FOCUS**

- **Groundwater elevation**
- **Groundwater in storage**
- **To Be Discussed:**
  - Groundwater quality
  - Interconnected surface water and groundwater
  - Land Subsidence
  - Seawater Intrusion – not applicable
Minimum Thresholds Under SGMA

- The San Jacinto GSP is required to (23 CCR § 354.28):
  - Describe the information and criteria relied upon to justify the minimum threshold (MT) for each sustainability indicator
    - Today’s focus is groundwater elevation and groundwater in storage
  - Justify the value for the MT
    - Use information described in the basin setting
    - Data qualified by uncertainty in understanding the basin setting
    - Models qualified by uncertainty in the understanding of the basin setting
  - Describe how the MTs have been selected to *avoid undesirable results*
Undesirable Results Under SGMA

SUSTAINABILITY INDICATORS

- Review data
- Consider beneficial uses and users of groundwater
- Review specific metrics for each sustainability indicator

APPLY SUSTAINABLE MANAGEMENT CRITERIA

- At any single representative monitoring site are any minimum thresholds being exceeded?
  - YES
  - Does any combination of minimum threshold exceedances constitute a locally-defined significant and unreasonable effect?
    - YES
      - Undesirable Results
    - NO
      - No Undesirable Results
  - NO
    - No Undesirable Results

EMWD Next Steps

IS THE BASIN EXPERIENCING UNDESIRABLE RESULTS?
Representative Monitoring Wells in the Plan Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
Evaluation Criteria for Proposed MTs

- Hydrogeologic considerations:
  - Trends in historical groundwater elevations
  - Local saturated thickness of the aquifer
  - Basin-wide saturated thickness of the aquifer
- EMWD and Stakeholder Operational Considerations:
  - Static groundwater elevations relative to screen intervals at nearby production wells
  - Pumping groundwater elevations at nearby production wells
  - Ability to meet operational demands
  - Ability to lower pump intakes if necessary
  - Ability/ willingness to deepen wells if necessary
- Consideration of modeled potential future groundwater elevations
Menifee Production Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
Proposed MT at EMWD 74

- Proposed minimum threshold = 1200 ft. MSL.
- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 60% in the Menifee Production Area

**Current WL:** 1354 ft. MSL

- Land Surface Elevation: 1444 ft MSL
- Currently: 805 ft. of saturated aquifer
- Saturated aquifer at proposed MT: 650 ft.
South Perris Production Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris:
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
Proposed MT at EMWD A1

- Proposed minimum threshold = 1200 ft. MSL.
- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 70%

**Graphical Elements:**
- Land Surface Elevation: 1424 ft. MSL
- Current WL: 1363 ft. MSL
- Proposed MT = 1200 ft MSL
- Currently: 895 ft. of saturated aquifer
- Saturated aquifer at proposed MT: 730 ft.
- Bedrock Elevation = 468 ft.
Proposed minimum threshold = 1200 ft. MSL.

- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 70% in the South Perris Production Area

**Representative Monitoring Well Skiland 05**

![Graph showing land surface elevation and current water level.](graph.png)

- Land Surface Elevation: 1418 ft. MSL
- Current WL: 1345 ft. MSL
- MT = 1200 ft. MSL
Nuevo/Lakeview Production Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris:
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
Representative Well EMWD 94

- EMWD 94 is a production well
- Current WL is from nearby well
- Future WLs anticipated to decline initially and then stabilize
- Proposed Minimum Threshold – 1200 ft MSL
- > 70% aquifer saturation
Representative Monitoring Well Nutrilite 07

- Nutrilite 07 is a monitoring well
- Future groundwater elevations not well characterized
- Historical water levels have been as low as 1150 ft MSL
- Proposed MT = 1100 ft MSL
  - 140 feet lower than current WL
- >70% aquifer saturation
North Perris Production Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris:
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
**Representative Monitoring Well EMWD 52**

- EMWD 52 is a monitoring well.
- Future WLs anticipated to decline.
- Proposed Minimum Threshold – 1200 ft. MSL.
- Preserves >60% aquifer saturation in North Perris Production Area.

![Graph showing monitoring well performance and proposed minimum threshold.](https://via.placeholder.com/150)

**Key Points:**
- Current WL: 1389 ft. MSL.
- Saturated aquifer at proposed MT: 300 ft.
- Currently: 490 ft. of saturated aquifer.
- Bedrock Elevation: 901 ft.
- Land Surface Elevation: 1448 ft.
Moreno Valley Production Area

- Menifee
  - EMWD 74 Menifee 04
- South Perris
  - EMWD Skiland 05
  - EMWD A1
- Nuevo/Lakeview
  - EMWD 94
  - Nutrilite 07
- North Perris:
  - EMWD 52 Follico
- Moreno Valley
  - UCR Scott
Representative Monitoring Well UCR Scott

- Proposed MT lower than historical low water level
- Preserves saturation of >60% at UCR Scott
Summary

- Followed DWR guidance to propose *water level and groundwater in storage* minimum thresholds at each representative monitoring point
  - Reviewed:
    - Historical data
    - Impacts to other sustainability indicators (subsidence, water quality, groundwater dependent ecosystems)
    - Potential impacts to existing EMWD wells
    - Potential future water levels based on planned future operations
Summary

- Followed DWR guidance to propose *water level and groundwater in storage* minimum thresholds at each representative monitoring point.

<table>
<thead>
<tr>
<th>RMP</th>
<th>Proposed MT (ft MSL)</th>
<th>Operational Flexibility (ft)</th>
<th>Aquifer Saturation % at Proposed MT</th>
<th>MT At or Above Historical Low WL?</th>
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</thead>
<tbody>
<tr>
<td>EMWD 74</td>
<td>1200</td>
<td>154</td>
<td>&gt;60%</td>
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<tr>
<td>EMWD A1</td>
<td>1200</td>
<td>163</td>
<td>&gt;70%</td>
<td>NO</td>
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<td>&gt;70%</td>
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<tr>
<td>EMWD 52</td>
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<tr>
<td>UCR Scott</td>
<td>1300</td>
<td>165</td>
<td>Varies From North to South (&lt;10% to &gt;60%)</td>
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</tr>
</tbody>
</table>
Next Steps

- Incorporate feedback from this group
- Develop measurable objectives
  - Based on EMWD operational objectives
Timeline and Next Steps
GSP Development Process

Start GSP
Data Collection, Review Background Information
Start: Feb 2019

Basin Area + Setting
Analyze Data, Conceptual Model, Historical and Current Groundwater Conditions
Start: Feb 2019

Water Budget
Historical and Projected
April 2019 - April 2020

Identify Sustainable Management Criteria
Representative monitoring points
Undesirable results
Minimum Thresholds
Measureable objectives
Sep 2019

Public Outreach & Engagement Plan
Jan 2020

Develop Long-term Sustainable Yield

Admin Draft GSP
September 2020

Plan Implementation Actions
January 2020 - July 2020

Evaluate Projects and Management Actions
Dec 2019 - July 2020

Public Draft GSP
February 2021

GSP to DWR
September 2021
Next Steps

• EMWD and consultant team will continue to work together to:
  – Conduct additional groundwater budget analysis
    • Evaluate the future water budget
    • Evaluate the water budget of the east side of the San Jacinto Groundwater Basin
  – Continue to define sustainable management criteria
    • Measurable objectives
    – Evaluate potential projects and management actions
• Next stakeholder advisory group meeting scheduled for October 2020
Questions