Sustainable Groundwater Management Act Compliance in the Santa Ynez River Valley Basin

Presented to: WE WATCH and Santa Ynez Valley Natural History Society

Presentation on Water
Bill Buelow, PG.
Santa Ynez River Water Conservation District
July 8, 2021
Santa Ynez River Water Conservation District

- Water management agency formed in 1939 under CA Water Code.
- District was formed to protect water rights of residents of the Santa Ynez and Lompoc Valleys.
  - Downstream water right holders rely on the permit conditions set on the Cachuma Project by the SWRCB Board Order 2019-0148.
  - District provides water downstream so residents can exercise their water rights.
  - Coordinating Agency for three Groundwater Sustainability Agencies
  - Groundwater Reporting and Well Registration Programs.

- Bradbury Dam opened in 1953 and is operated by USBR principally for the benefit of South Coast water users.
- District often confused with water purveyor SYRWCD Improvement District Number One or “ID No. 1”.
Mandatory for groundwater basins in State designated as “high or medium” priority, including the Santa Ynez River Valley Groundwater Basin (DWR Bulletin 118).
Precipitation and Drought Trends
<table>
<thead>
<tr>
<th>Water Year</th>
<th>Precipitation (in/year)</th>
<th>% of Average</th>
<th>Lompoc City Hall</th>
<th>WMA</th>
<th>USGS Gage 11132500 (Salsipuedes Creek)</th>
<th>SWRCB WRO 2019-14S</th>
<th>Climatic Trends</th>
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<tr>
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<td>11.9</td>
<td>81%</td>
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<td>Wet</td>
<td>Wet</td>
<td>Wet</td>
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<td>1986</td>
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<td>Wet</td>
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<td>Wet</td>
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<tr>
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<td>Wet</td>
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<td>2000</td>
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<tr>
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<td>2005</td>
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<td>Normal</td>
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<tr>
<td>2006</td>
<td>16.8</td>
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<tr>
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<tr>
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<td>2009</td>
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<td>Normal</td>
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<tr>
<td>2010</td>
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<td>132%</td>
<td>Below normal</td>
<td>Above normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Wet</td>
</tr>
<tr>
<td>2011</td>
<td>24.8</td>
<td>182%</td>
<td>Wet</td>
<td>Wet</td>
<td>Wet</td>
<td>Normal</td>
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<td>2012</td>
<td>16.6</td>
<td>72%</td>
<td>Dry</td>
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<tr>
<td>2013</td>
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<tr>
<td>2014</td>
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<td>55%</td>
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<td>2016</td>
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<tr>
<td>2017</td>
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<td>Normal</td>
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<tr>
<td>2018</td>
<td>8.3</td>
<td>56%</td>
<td>Critically Dry</td>
<td>Dry</td>
<td>Normal</td>
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<td>Wet</td>
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</tbody>
</table>
### Santa Barbara County Integrated Regional Water Management Plan

#### Impacts of Climate Change on the Region by Mid-Century

<table>
<thead>
<tr>
<th>Impact</th>
<th>Ranges*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Winter: Projected increases of 4°F to 5°F</td>
</tr>
<tr>
<td></td>
<td>Summer: Projected increases of 5°F to 6°F</td>
</tr>
<tr>
<td>Precipitation</td>
<td>5- to 7-inch decrease in average annual rainfall</td>
</tr>
<tr>
<td></td>
<td>Increase in annual precipitation variability, fewer and more intense storms, and longer dry periods</td>
</tr>
<tr>
<td>Sea-Level Rise</td>
<td>4–30 centimeters (cm) by 2030</td>
</tr>
<tr>
<td></td>
<td>12–61 cm by 2050</td>
</tr>
<tr>
<td></td>
<td>42–167 cm by 2100</td>
</tr>
<tr>
<td>Supply</td>
<td>State Water Project delivery decrease of 7%–10% by 2050, and 21%–25% by 2100; changes to local supply not quantified</td>
</tr>
<tr>
<td>Wildfire</td>
<td>Low to moderate increase in projected fire risk</td>
</tr>
<tr>
<td>Flooding</td>
<td>Greater flood magnitudes**</td>
</tr>
</tbody>
</table>

* Source: Santa Barbara County IRWMP

- Impacts of Climate Change on the Region by Mid-Century
- Source: Santa Barbara County IRWMP
2015 SGMA law went into effect
SYVGW Basin is “medium priority”
Basin must be sustainable in 20 years
SGMA gives local control of water management
Each GSA will prepare a Groundwater Sustainability Plan (GSP) and submit to DWR by January 2022
State Water Board is enforcement if locals do not comply
New law was in response to periodic droughts in California
SGMA History
Santa Ynez River Valley Groundwater Basin

- 2017 - three Memorandum of Agreement (MOA)
  - Establishes three GSA Committees
    - WMA, CMA and EMA
  - County Water Agency $1M+ contribution for EMA
  - DWR Grants
GSA Formation and History Continued

- Three Groundwater Sustainability Agencies in the Santa Ynez Basin
  - Eastern Management Area GSA - Solvang, SYRWCD, ID No 1, County
  - Central Management Area GSA - Buellton, SYRWCD, County
  - Western Management Area GSA - Lompoc, Vandenberg Village, Mission Hills, SYRWCD, and County
- One representative (elected official) and one alternate per agency
- Late 2018 - first GSA Committee meetings were held
SGMA Meetings

- GSA Committee Quarterly Regular Meetings
- Special meetings as needed
- All meetings are held virtually, since March 2020, due to COVID restrictions
- Citizen Advisory Group Meetings (CAG)
  - Chosen by GSA Committee
  - Provide focused public comment on draft documents
  - Cross section of uses and users of groundwater
Sustainable Groundwater Management Act

- GSPs will address six “undesirable results” from groundwater pumping
  - Chronic lowering of groundwater levels
  - Significant and unreasonable reduction of groundwater storage
  - Significant and unreasonable degraded water quality
  - Depletions of interconnected surface water
  - Significant and unreasonable land subsidence
  - Significant and unreasonable seawater intrusion
Groundwater Sustainability Plans

- Plans are due to DWR on or before January 31, 2022
- Plans must contain:
  - Basin Setting
  - Sustainable Management Criteria
  - Monitoring Networks
  - Projects and Management Actions
- Post GSP submittal activities TBD
Aerial Electromagnetic Survey
Geologic Model

Completed: Geologic model
Decline of groundwater in storage: 70,000 Acre-feet

indicates deficit of 2,011 AFY
Sustainability Management Criteria

- Sustainability Goal for Basin
- Minimum Thresholds (MTs)
- Measurable Objectives (MOs)
- Interim Milestones (if applicable)
- Undesirable Results
Well Impact Evaluation
Careaga Sand

Well Impact
Evaluation

Careaga Sand
Spring 2018
Setting Minimum Thresholds

Representative Groundwater Hydrographs – Paso Robles Formation
Projects and Management Actions

Actions if Minimum Thresholds are Reached

**Chronic Lowering of Groundwater Levels and Chronic Reduction in Storage**

**Sustainability Criteria**
- Undesirable Result
  - Water levels fall below MTs after average and above average rainfall periods in 50% of representative wells over two consecutive years
  - Significant number of wells unable to produce usual historical quantities of water
  - Groundwater in storage continues to decrease over multiple years in the future
- Minimum Threshold
  - Paso Formation Wells: 15 feet below Spring 2018 water levels in representative wells
  - Careaga Sand Wells: 12 feet below Spring 2018 water levels in representative wells

**Evaluation**
- Evaluate cause and trends
- Consult with basin stakeholders on remedies
- If undesirable results are anticipated and are a result of pumping, then management actions taken
Projects and Management Actions con’t

Potential Management Actions

*Initial Management Actions During GSP Implementation*
1. Address data gaps in priority areas
2. Metering program to improve estimates of actual water use
3. Promote water efficiency program
4. SGMA well registration program

*More Intensive Management Actions if Needed*
1. Demand management program
2. Groundwater credit program
Projects and Management Actions con’t

- Potential Projects
  - Stormwater Capture and Recharge
  - Recycled water and indirect potable reuse
  - Precipitation enhancement
  - Conjunctive Use
Groundwater Sustainability Plans-Input

- Several opportunities to provide input
- After completion of each draft section
- Upon completion of Draft GSP and prior to adoption by the GSA
- After submittal of Final GSP to DWR
Public Meetings and Outreach

- Groundwater Communication Portal (GCP)
- Over 103 meetings basin-wide
- Citizen Advisory Group Meetings (CAG) - one for each GSA, meet as needed
- Newsletters sent in Member Agency utility bills, and available on-line

![Image of Sustainable Groundwater Management Act Newsletter No. 3](image-url)
Remaining Schedule for GSPs

- July 2021 - Complete remaining sections
  - Monitoring Network
  - Projects and Management Actions
- GSA Meetings (July and August) - watch for eblasts!
- Public Comment on Draft GSP - August to October
- Final GSP and GSA Committee Adoption - December
- **GSP due date January 31, 2021**
- Submittal starts DWR Public Comment Period
- Implementation of GSP starts upon submittal
- First annual report due 1 April 2022 (one for each GSP)
Sign up to receive email blasts on upcoming GSA or CAG meetings

www.santaynezwater.org
QUESTIONS?