

# Management Actions and Projects

## Santa Ynez Basin - EMA

May 27, 2021

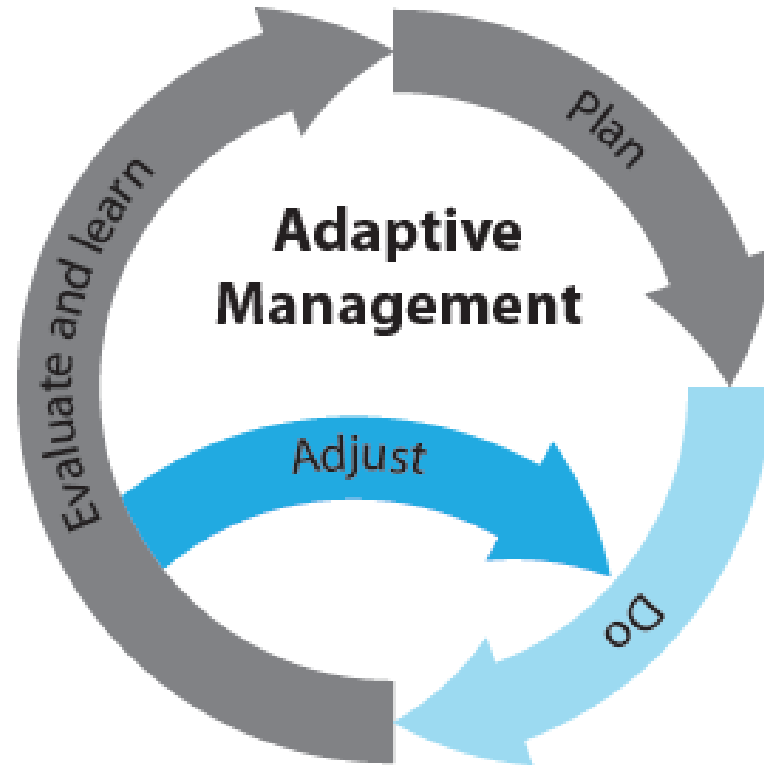
Presented by  
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# Topics of Discussion

- Management Actions if Minimum Thresholds Exceeded
  - Initial Management Actions During GSP Implementation
  - More Intensive Management Actions if Needed
- Brainstorm Potential Management Actions and Projects

# Actions if Minimum Thresholds Exceeded



# Actions if Minimum Thresholds are Reached

- The cause will be evaluated
  - Pumping vs drought?
  - Are undesirable results occurring and why?
- If the cause is due to groundwater extraction and/or the trend indicates that undesirable results are occurring, then management actions would be called upon
  - Recall that undesirable results are defined by exceeding minimum thresholds for a certain number of representative wells over a certain period of time.

# Drought and GSA Response

- The relative effect of drought vs. pumping on water levels may be complex.
- If water levels fall below MTs, an evaluation is performed
  - If water level decline during drought is expected to reverse before undesirable results are reached, the GSA may defer implementing management actions and reevaluate later.
  - If the downward trend toward undesirable results continues then management actions would be implemented.

# Actions if Minimum Thresholds are Reached

- Significant and unreasonable:
  - Chronic Lowering of Groundwater Levels and Chronic Reduction in Storage
  - Degraded Water Quality
  - Subsidence
  - Depletion of Interconnected Surface Water

# 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

# Actions if Minimum Thresholds are Reached

## Degraded Water Quality Due to Pumping (not expected to be a concern)

### Sustainability Criteria

- Undesirable Result
  - Concentrations of regulated contaminants in municipal, private domestic, or agricultural wells exceed regulatory thresholds caused by pumping or GSA actions.
  - Groundwater pumping causes concentrations of salts and nutrients to exceed Basin Plan Water Quality Objectives.
- Minimum Threshold
  - No minimum threshold set for regulated contaminants – State is responsible for management.
  - For salts and nutrients, Water Quality Objectives in Basin Plan exceeded in three consecutive monitoring events in more than 50 percent of wells or is greater than concentrations present when SGMA was enacted (January 2015).

### Evaluation

- Evaluate cause and trends
- Consult with regulatory agencies if drinking water is being impacted



# Actions if Minimum Thresholds are Reached

## Subsidence Due to Pumping (not expected to be a concern)

### Sustainability Criteria

- Undesirable Result
  - Significant and unreasonable subsidence caused by groundwater extraction and
  - Causes damage to structures and infrastructure and substantially interferes with surface land uses.
- Minimum Threshold
  - Rate of subsidence exceeds 1.0 inch per year measured at the InSAR and fixed elevation monitoring stations located in the EMA, caused by EMA groundwater pumping and results in damage to surface land uses.

### Evaluation

- Evaluate cause and trend
- Water level SMC avoids subsidence
- If undesirable results are observed and a result of pumping, then management actions taken

# Actions if Minimum Thresholds are Reached

## Depletion of Interconnected Surface Water

### Sustainability Criteria

- Undesirable Result
  - Category A GDEs present in tributaries are significantly and unreasonably impacted as a result of groundwater pumping when groundwater levels drop below the maximum rooting depth for three consecutive quarters
- Minimum Threshold
  - Observed groundwater level >15ft. below streambed measured in a dedicated piezometer within a Category A GDE tributary area

### Evaluation

- Evaluate cause and trends
- Assess if significant and unreasonable adverse impacts to GDEs can be observed
- Consult with basin stakeholders on remedies
- If undesirable results are observed and are a result of pumping, then management actions taken

# Potential Management Actions and Projects

## Objectives:

- **Maintain viable economy while addressing storage deficit and avoiding undesirable results within the next 20 years**
- **Avoid depletions of interconnected surface waters that have significant and unreasonable adverse impacts to beneficial uses of surface water and associated GDEs**
- **Start with initial management actions right away that reduce likelihood for undesirable results after submittal of the GSP**
- **Plan for more intensive actions if minimum thresholds are reached and undesirable results are observed based on established criteria**

# Potential Management Actions and Projects

## Process:

1. Develop list of management actions and projects
2. Quantify benefits to EMA (AF), costs (per AF), reliability, permitability, time to implement
3. Select subset of preferred management actions and projects and prioritize them with stakeholder input
4. Develop implementation plan and schedule

# 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

# Potential Management Actions

## Initial Actions during GSP implementation

### 1. Address data gaps in priority areas

- Identify existing wells or install new wells that can be included in monitoring program in NW area of EMA \*
- Perform video surveys in representative wells to confirm well construction \*
- Install automated water level monitoring (pressure transducers) in selected representative wells
- Install shallow piezometers in Alamo Pintado and Zanja de Cota Creek GDE area \*
- Review/update water use factors and crop acreages – update water budget

### 2. Metering program to improve estimates of actual water use

- Identify funding (SB County)
- Create incentives to install meters in all wells (GSA consider making mandatory)
- Workshop and/or mailer to promote with landowners
- Develop plan for installation, reporting, calibration

\* Funding available through DWR

# Potential Management Actions

## Initial Actions during GSP implementation

### 3. Promote Water Efficiency Program

- Work with RCD to perform Irrigation Audits and provide technical support for optimizing water use (NRCS funded)
- Promote use of automated irrigation and soil moisture monitoring equipment
- Develop weather station and automated data for landowners using frost protection
- Promote non-water intensive methods for frost protection
- Promote use of soil amendments (organic compost) to improve health of soils, plant health, and reduce water use
- Municipal providers continue to promote water conservation for residents and businesses

# Potential Management Actions

## Initial Actions during GSP implementation

### 4. SGMA Well registration program

- Where is pumping and how much?
- What is baseline condition of wells so that depletion of supply can be identified?
- Coordination between GSA, SYRWCD, and County DHS and Planning
- Notification of new well permits



# Potential Management Actions

## More Intensive Actions if needed

### 5. Develop demand management program

#### Primary Actions:

- ✓ Start with low hanging fruit with least economic impact
- ✓ Pumping fee to pay for GSP implementation
- ✓ Promote voluntary / temporary fallowing
- ✓ Implement projects (discussed later)

#### Secondary Actions (if minimum thresholds reached):

- ✓ Restrictions on pumping from newly installed wells
- ✓ Pumping reduction program if levels exceed minimum thresholds in specified number of representative wells over specified duration, considering climatic cycles, and undesirable results are observed after implementing other management actions
- ✓ Develop water credit program under GSA management

# Potential Projects

1. Stormwater capture and recharge
  - Flood recharge vs. off channel infiltration basins vs. off stream storage
  - Where and how much water?
  - Permitting?
  - Cost?
2. Recycled water programs and indirect potable reuse
3. Precipitation enhancement
  - Partner with Santa Barbara County
4. Conjunctive use - Managed Aquifer Recharge (MAR) using imported water
  - Unused or surplus supply – available during wet years
  - Aquifer Storage and Recovery (ASR) using treated, infiltration basins using untreated
  - In-lieu recharge – deliver stored water rather than pumping groundwater

# Next Steps

Deliverable/Meeting	Release Date
Draft Sustainable Management Criteria Section	June 4, 2021
Draft Monitoring Section	June 11, 2021
Draft Management Actions and Projects	June 17, 2021
GSA meeting to discuss projects and management actions	June 24, 2021
Administrative Draft GSP	July 2, 2021
Public Draft GSP	August 2, 2021
Public Comment Period Begins	August 2, 2021
GSA Meeting to discuss draft GSP	August 26, 2021
Public Comment Period Ends	September 17, 2021
Final Draft GSP	October 29, 2021
GSA Committee Adopt GSP	December 2, 2021
Submit GSP to DWR on or before	January 14, 2022

**Thank you!**

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