

# Public Review Draft Groundwater Sustainability Plan



October 17, 2019  
City of Sanger

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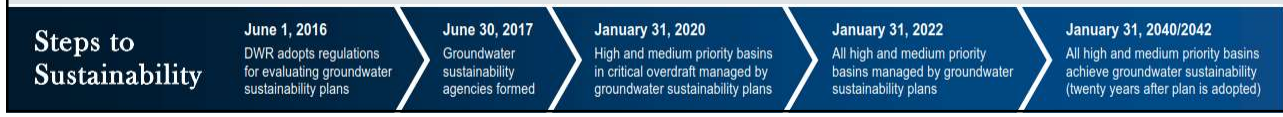
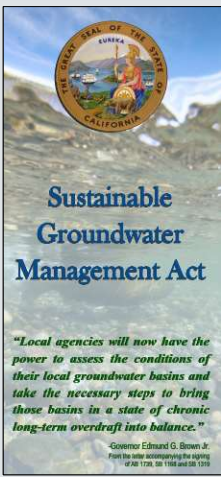
## SGMA Overview

- Sustainable Groundwater Management Act = SGMA
- Combination of three bills passed by State Legislature and signed into law by California Governor Jerry Brown in September 2014
  - Assembly Bill 1739, Senate Bill 1168 and Senate Bill 1319
- Provides local agencies with framework to manage groundwater basins in a sustainable manner at the local level

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## SGMA Overview – Timeline

- Establishment of groundwater sustainability agencies (GSAs) by June 2017
- Groundwater Sustainability Plan (GSP) adoption required by January 2020
- Annual Reports due April 1 starting in 2020 and GSP updates every five years
- Reach Groundwater Sustainability by 2040



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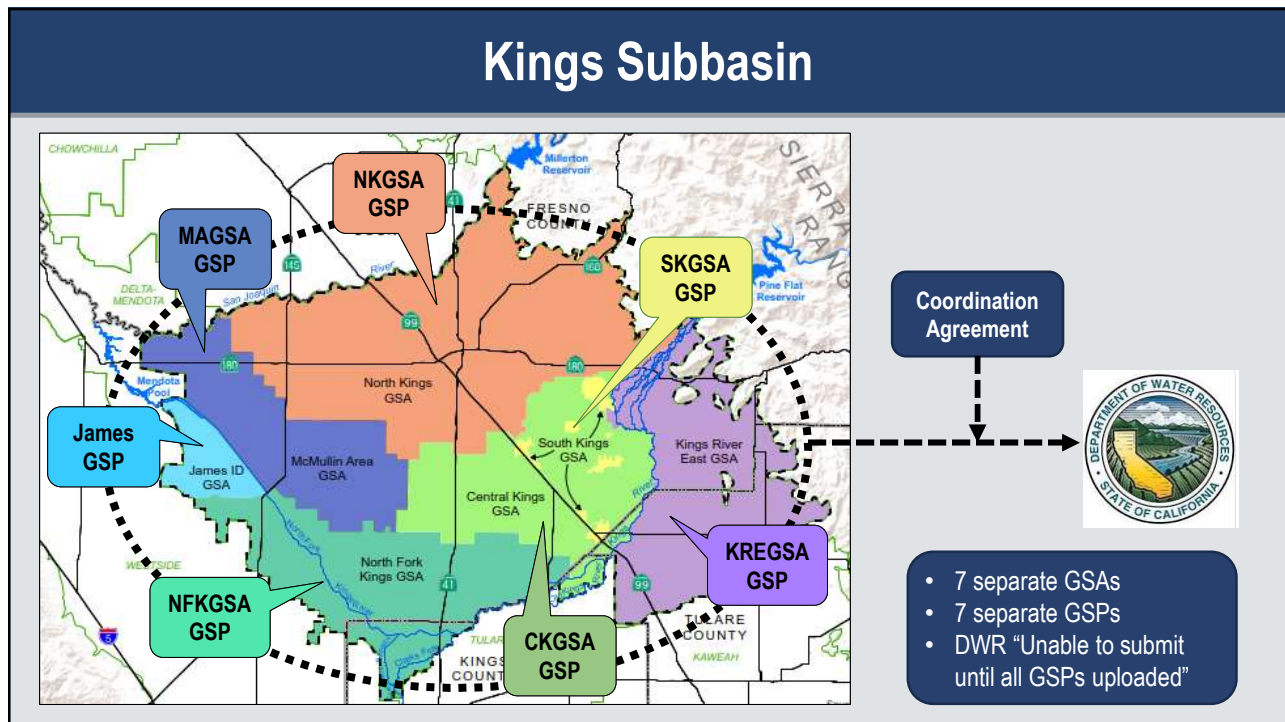
## How SGMA Implementation Can Affect You

- Top Issues Concerning Groundwater and SGMA:
  - Economic impacts
  - Government regulations and involvement
  - Long-term water quantity and quality affects
  - Fallowing of farmland
  - Legal rights to groundwater
  - Water usage (surface water vs. groundwater)
  - Costs of SGMA implementation

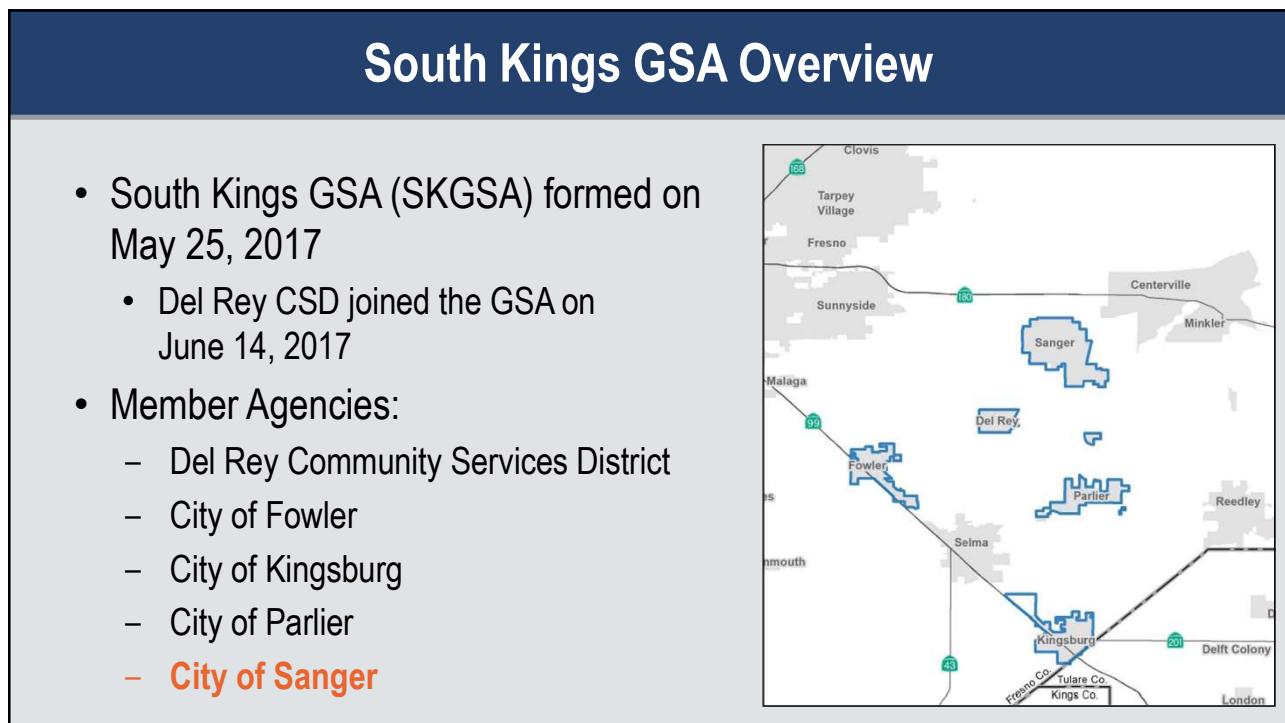
### Groundwater Uses



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## GSP Development Process

- Prepared by representatives of each member agency
- Meeting monthly since 2017
- Reviewed requirements, identified issues, developed draft language by section
- Kings Basin Coordination Efforts incorporated

### Acknowledgements

The South Kings Groundwater Sustainability Agency would like to thank the following members of the Technical Subcommittee and others who made significant contributions to this Groundwater Sustainability Plan:

Bruce Blayney, City of Kingsburg  
 Daniel Ramirez, Del Rey CSD  
 Dave Peters, Peters Engineering  
 Frank Gonzalez, City of Sanger  
 Gavin O'Leary, Provost & Pritchard Consulting Group  
 Heather Bashian, Provost & Pritchard Consulting Group  
 Josh Rogers, Yamabe & Horn  
 Kamig Kazarian, City of Fowler  
 Ken Schmidt, Hydrogeologist  
 Mark Reitz, AECOM  
 Owen Kubit, Provost & Pritchard Consulting Group  
 Philip Desatoff, Consolidated Irrigation District  
 Philip Romero, Yamabe & Horn  
 Ronald Samuelian, Provost & Pritchard Consulting Group  
 Shay Overton, Provost & Pritchard Consulting Group  
 Taylor Pinkerton, Provost & Pritchard Consulting Group  
 Trinidad Pimentel, City of Parlier

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## GSP Organization

- Executive Summary
- 1 – Introduction
- 2 – Plan Area
- 3 – Basin Setting
- 4 – Sustainable Management Criteria
- 5 – Monitoring Network
- 6 – Projects and Management Actions
- 7 – Implementation



### Groundwater Sustainability Plan

Public Review Draft

August 28, 2019

Prepared for:  
 South Kings Groundwater Sustainability Agency  
 Fresno County, CA

Prepared by:  
 Provost & Pritchard Consulting Group  
 288 W. Cornell Avenue, Fresno, California 93711

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## GSP Organization

- Common outline used by all GSAs in the Kings Subbasin
- Regulation Requirements listed first
- Followed by Response

### 1.5.1 Organization and Management Structure of the GSA

#### Regulation Requirements:

§354.6(b) The organization and management structure of the Agency, identifying persons with management authority for implementation of the Plan.

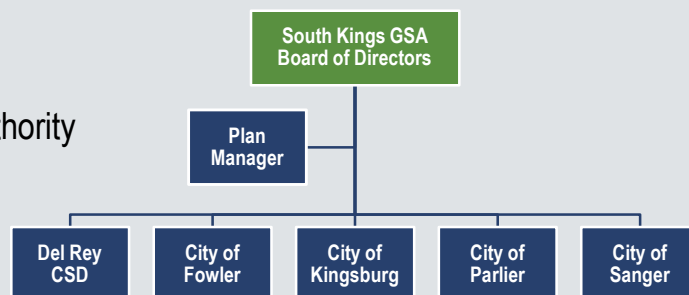
§354.6(c) The name and contact information, including the phone number, mailing address and electronic mail address, of the plan manager.

The SKGSA was formed as a Joint Powers Authority (JPA), pursuant to the Joint Exercise of Power Act (Government Code § 6500, et seq), comprised of the cities of Fowler, Kingsburg, Parlier and Sanger and the Del Rey Community Service District. The Del Rey Community Service District was established under the Municipal Water District Act of 1911 (California Water Code (CWC) 7100). The five member agencies, either incorporated cities or districts, have the authority and responsibility to manage water supply within their respective boundaries and therefore have the authority to implement this GSP.

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## GSP Sections – Executive Summary & Section 1

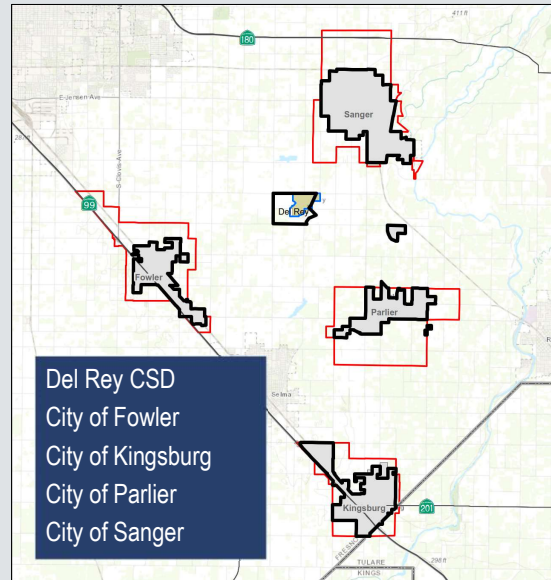
- Executive Summary
  - Brief summary of each Section in the GSP
- Section 1: Introduction
  - Purpose of the GSP
  - Coordination Agreement
  - SKGSA Organization and Authority
  - GSP Organization



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## GSP Sections – Section 2

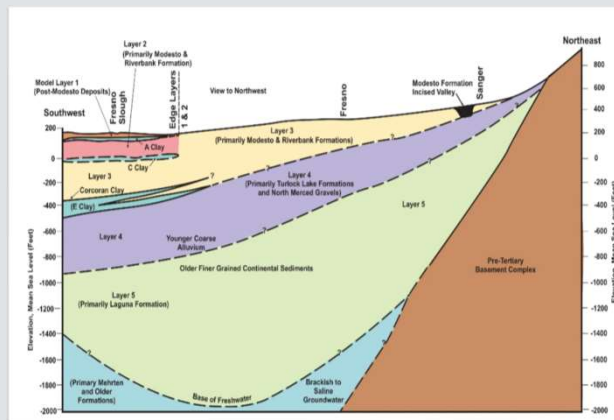
- Section 2: Plan Area
  - Describe each member agency
  - Relation to Planning documents
  - Notice and Communication
    - GSP Development
    - Public Engagement



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## GSP Sections – Section 3

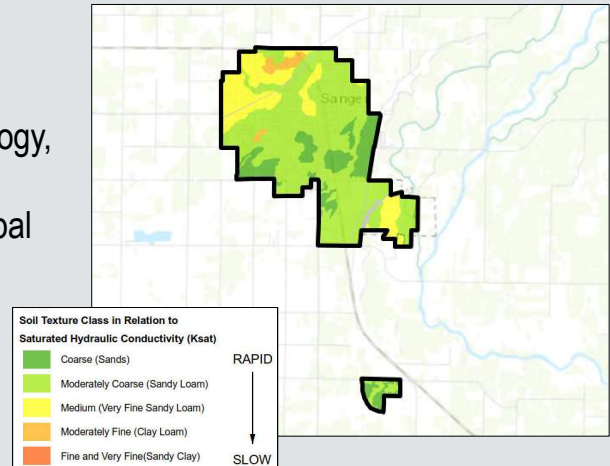
- Section 3: Basin Setting
  - Longest Section; 5 Subsections
    - Hydrogeologic Conceptual Model
    - Groundwater Conditions
    - Water Budget
    - Water Supply for Augmentation
    - Management Areas



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## GSP Sections – Section 3

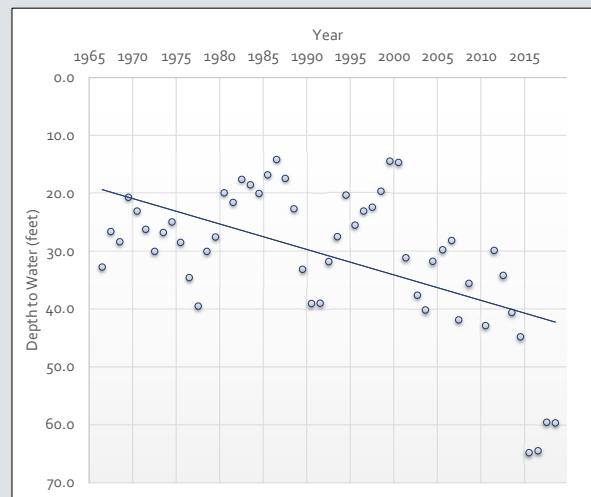
- Hydrogeologic Conceptual Model
  - Not a surface-groundwater model
  - Description of the general physical characteristics of the regions, hydrology, geology, geologic structure, water quality, principal aquifers, and principal aquitards in the basin setting



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## GSP Sections – Section 3

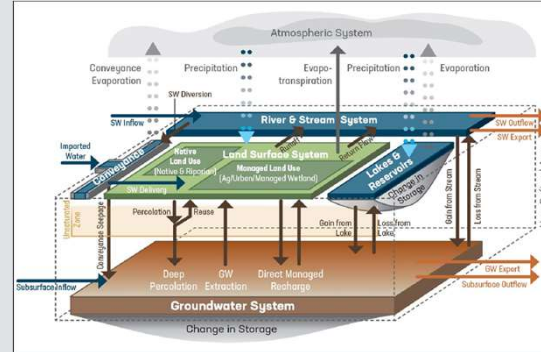
- Groundwater Conditions
  - Levels
  - Movement
  - Quality
  - Subsidence
  - Interconnected Surface Water
  - Groundwater Dependent Ecosystems



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## GSP Sections – Section 3

- Water Budget
  - Common Approach by all GSA
    - Mathematical Model
  - 3 Water Budgets:
    - Historic (1997-2011)
    - Current (2016-2017)
    - Future (2040 and 2070)
  - Future includes population/use projection and climate change
  - 30 Factors – 8 Measured, Remainder Calculated/Estimated
  - Compared to Storage Change Estimations



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## GSP Sections – Section 3

- Water Use Projection Assumptions

Organization	Per Capita Demand	Population Growth	Notes
Del Rey CSD	262 gpcd	0.5%	Population/Per Capita based on 10-year average
City of Fowler	310 gpcd	2.0%	Population projections – General Plan Per capita demand – 10-year average
City of Kingsburg	259 gpcd	1.1%	Population/Per Capita based on 2015 UWMP
City of Parlier	145 gpcd	0.8%	Population projections – County of Fresno 2050 Growth Projections Per capita demand – 10-year average
City of Sanger	176 gpcd	1.3%	Population/Per Capita based on 2015 UWMP

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## GSP Sections – Section 4

- Section 4.1: Sustainability Goal

The **sustainability goal** of the Kings Basin and this GSA is **to ensure** that **by 2040** the **basin is being operated to maintain a reliable water supply for current and future beneficial uses without experiencing undesirable results.** This goal will be met by balancing water demand with available water supply to stabilize declining groundwater levels without significantly and unreasonably impacting water quality, land subsidence, or interconnected surface water. The goal of the basin is to correct and end the long-term trend of a declining water table understanding that water levels will fluctuate based on the season, hydrologic cycle, and changing groundwater demands within the basin and its proximity.

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## GSP Sections – Sections 4 and 5

- Section 4 – Sustainable Management Criteria
- Section 5 – Monitoring Network
- Sustainable Management Criteria
  - Defined by GSA and Basin coordination
  - Include:
    - Undesirable Results (UR)
    - Minimum Thresholds (MT)
    - Measurable Objectives (MO)

### Sustainability Indicators



Groundwater Levels



Groundwater Storage



Water Quality



Land Subsidence



Depletion of Interconnected Surface Water

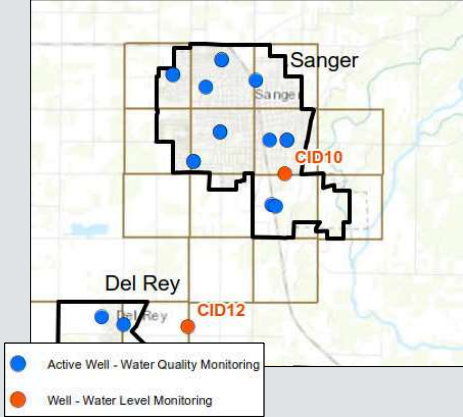


Seawater Intrusion

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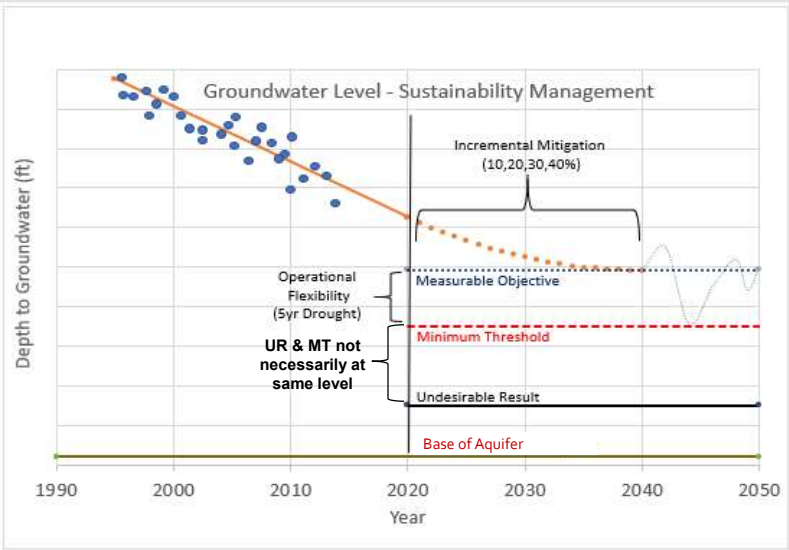
# Groundwater Levels – Sections 4.2 and 5.2

- Representative Monitoring Network
- Wells selected from existing network
- MOs and MTs set at each well
- Undesirable Result
  - Water level has declined to a depth that a new productive well cannot be constructed
  - Water level has declined to a depth that water quality cannot be treated for beneficial use



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# Groundwater Levels – Sections 4.2 and 5.2



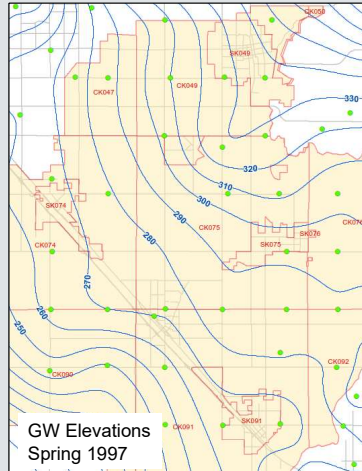
- Setting MO:
  - Hydrograph trendline projected
  - Mitigation applied
- Setting MT:
  - Drought trendline rate of decline
  - Decline rate for 5 years
  - Total decline added from MO

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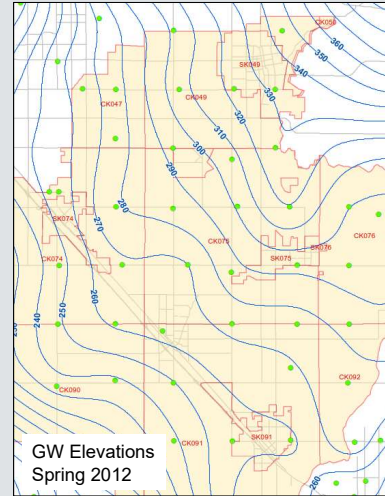
## Groundwater Storage – Sections 4.3 and 5.3



- Linked to Groundwater Level MOs & MTs
- Common Method for Storage Change calculation
- Undesirable result occurs if total amount of water in storage is less than the amount below the MT



GW Elevations  
Spring 1997



GW Elevations  
Spring 2012

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## Groundwater Quality – Sections 4.4 and 5.5



- Undesirable results:
  - Well without MCL violations: the degradation of water quality to excess of MCLs
  - Wells with MCL violations: a statistically significant increase in degradation
- MTs:
  - Set at the MCL for each constituent
- MOs:
  - Maintain wells below MCLs
  - Maintain or improve wells above MCLs

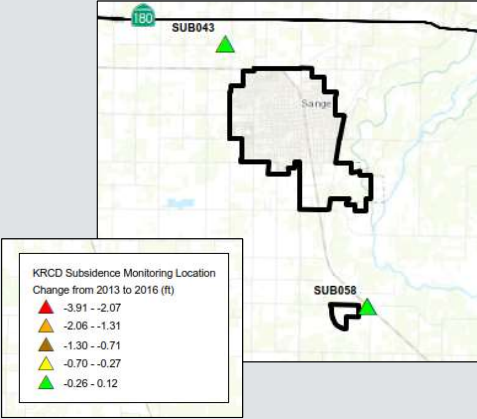
Constituent of Concern	California Primary MCL
Arsenic (Ar)	0.010 mg/L
Dibromo-Chloropropane (DBCP)	0.0002 mg/L
Hexavalent Chromium [Cr(VI)]	0.05 mg/L
Methyl Tert-Butyl Ether (MTBE)	0.013 mg/L
Nitrate (NO <sub>3</sub> )	45 mg/L
Nitrate as Nitrogen (NO <sub>3</sub> -N)	10 mg/L
Tetrachloroethene (PCE)	0.005 mg/L
Trichloroethylene (TCE)	0.005 mg/L
1,2,3-Trichloropropane (TCP)	0.005 µg/L
Uranium (Ur)	20 pCi/L

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## Land Subsidence – Sections 4.5 and 5.6



- NASA, USBR and KRCD data reviewed
- Minimal/No subsidence occurring in the SKGSA area
- KRCD Network will be used for monitoring
  - NASA INSAR also to be reviewed



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## Section 6 – Projects and Management Actions

- Projects implemented by GSA or members
- Recharge parameters:
  - 1 acre-foot per acre per day (0.5 AFAD for Del Rey CSD)
  - Water availability – 100 days/year, 4 of each 5 years (80 day/yr)
  - 42% Groundwater Extraction Offset

Basin Mitigation Schedule		
Period	Percent of Overdraft Mitigated	Cumulative Mitigation
2020-2025	10%	10%
2025-2030	20%	30%
2030-2035	30%	60%
2035-2040	40%	100%

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## Section 6 – Projects and Management Actions

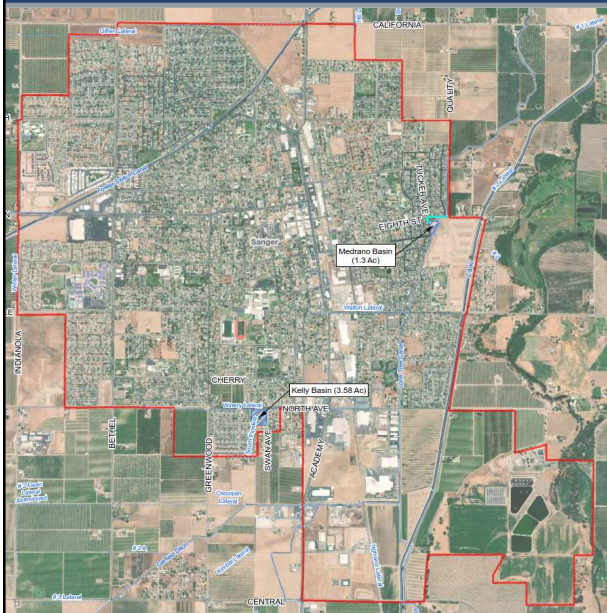
- Sustainability is achievable mainly through projects

Potential Implementing Agency	2040 Mitigation Target (AFY)	Area of Projects (acres)	Cost Estimate	2040 Annual Water Cost
Del Rey CSD	206	5.2	\$589,000	\$81,000
City of Fowler	1,424	17.8	\$2,462,000	\$563,000
City of Kingsburg	2,071	25.9	\$3,018,000	\$818,000
City of Parlier	1,272	15.9	\$2,441,000	\$502,000
<b>City of Sanger</b>	<b>2,864</b>	<b>35.8</b>	<b>\$3,892,000</b>	<b>\$1,100,000</b>
<b>SKGSA Totals:</b>	<b>7,837</b>	<b>100.7</b>	<b>\$12,402,000</b>	<b>\$3,100,000</b>

- GSP does include possible Management Actions

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## Section 6 – Potential Projects



Project Title	Project Size (acres)	Project Benefit (AFY)	Start Date	Completion Date	Completion Milestone Year	Cost Estimate
Kelly Basin	3.6	231	Jan 2023	Dec 2023	2025	\$106,000
Medrano Basin	1.3	68	Jan 2024	Dec 2024	2025	\$134,000
West Sanger Basin	7.6	528	Jan 2028	Dec 2028	2030	\$170,000
North Sanger Basin	27.4	2,548	Jan 2038	Dec 2039	2040	\$3,482,000
<b>City of Sanger Subtotal</b>	<b>39.9</b>	<b>2,866</b>				<b>\$3,892,000</b>

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## Section 7 – Implementation

- Implementation costs:
  - Ongoing Administrative and Project Costs: Cost Sharing TBD
- Data Management System (DMS):
  - Coordinated with Basin; Limited to required data for DWR
- Annual Reporting:
  - Coordinated with Basin
  - First report due April 2020; Outline/format identified

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## South Kings GSP Public Review Process

- 90-Day Public Review Period: September 3, 2019 through December 3, 2019
  - Review a hard copy of the GSP at the City of Sanger office, or download from [www.southkingsgsa.org](http://www.southkingsgsa.org)
- Public Hearing: 6 p.m., Tuesday, December 3, 2019 at City of Sanger's City Hall, located at 1700 7<sup>th</sup> Street, Sanger

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## South Kings GSP Public Review Process

- Written comments regarding the Groundwater Sustainability Plan may be submitted up to the Public Hearing:
  - Mail to South Kings GSA, 952 Pollasky Ave, Clovis, CA 93612
  - Email to [davidpeters@peters-engineering.com](mailto:davidpeters@peters-engineering.com)
  - Provide oral and/or written comments at the public hearing

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Questions?



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