

GROUNDWATER SUSTAINABILITY PLAN  
FOR THE  
SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN  
BULLETIN 118 BASIN NO. 3-15  
CENTRAL MANAGEMENT AREA  
GROUNDWATER SUSTAINABILITY AGENCY



JANUARY 2022



WATER RESOURCE PROFESSIONALS  
SERVING CLIENTS SINCE 1957

*(Page Intentionally Left Blank)*

---

# TABLE OF CONTENTS

---

<b>Front Matter</b>	<b>ii</b>
COVER PHOTOGRAPHS	iii
TITLE PAGE	v
ACKNOWLEDGEMENTS	xi
TABLE OF CONTENTS	xiii
LIST OF TABLES	xx
LIST OF FIGURES	xxvii
LIST OF APPENDICES	xxxiii
LIST OF ACRONYMS AND ABBREVIATIONS	xxxvii
WELL NUMBERING DESCRIPTION	xli
WATER YEAR DESCRIPTION	xlili
<b>Executive Summary</b>	<b>ES-1</b>
ES Abstract	ES-1
ES Chapter 1: Introduction	ES-1
ES Introduction, Agency, and Communication (GSP Sections 1a, 1b, 1c)	ES-1
ES Plan Area (GSP Section 1d)	ES-2
ES 4 Additional GSP Elements (GSP Section 1e)	ES-3
ES Chapter 2: Basin Setting	ES-3
ES Hydrogeologic Conceptual Model (GSP Section 2a)	ES-3
ES Groundwater Conditions (GSP Section 2b)	ES-5
ES Water Budgets (GSP Section 2c)	ES-6
ES Chapter 3: Monitoring Networks and Sustainable Management Criteria	ES-8
ES Monitoring Networks (GSP Section 3a)	ES-8
ES Sustainable Management Criteria (GSP Section 3b)	ES-9
ES Chapter 4: Projects and Management Actions (GSP Section 4)	ES-14
ES Chapter 5: Plan Implementation (GSP Section 5)	ES-15
<b>Chapter 1: Introduction and Plan Area</b>	<b>1a-1</b>
<b>Section 1a – Introduction</b>	<b>1a-1</b>
1a.1 Purpose of the Groundwater Sustainability Plan	1a-7
1a.2 Sustainable Management Indicators	1a-9
1a.3 Groundwater Sustainability Plan Organization	1a-11
<b>Section 1b – Administrative Information</b>	<b>1b-1</b>
1b.1 Agency Background	1b-1
1b.1-1 Organizational and Management Structure of the Central Management Agency	1b-2
1b.1-2 Governance	1b-5
1b.1-3 Legal Authority	1b-5
1b.1-4 Implementation and Costs	1b-6
1b.2 Intra-Basin Coordination Between Management Areas	1b-9
<b>Section 1c – Notes and Communication</b>	<b>1c-1</b>
1c.1 Communication	1c-1
1c.1-1 Public Outreach and Engagement Plan	1c-1

1c.1-2	Identified Stakeholders in the Plan Area	1c-1
1c.1-3	Decision Making Process	1c-3
1c.2	Public Engagement	1c-3
1c.2-1	Public Meetings and Public Meeting Notices	1c-3
1c.2-2	Citizens Advisory Group	1c-4
1c.2-3	Newsletters and Press Releases	1c-5
1c.2-4	Communication Website: SantaYnezWater.Org	1c-5
1c.3	Public Comments	1c-6
1c.4	Future Public Engagement	1c-7
<b>Section 1d – Plan Area</b>		<b>1d-1</b>
1d.1	CMA Plan Area Location	1d-3
1d.1-1	Santa Ynez River Valley Groundwater Basin and Adjacent Basins	1d-3
1d.1-2	SGMA Coverage of Basin	1d-8
1d.1-3	Plan Area: Central Management Area	1d-8
1d.2	Summary of Jurisdictional Areas and Other Features	1d-15
1d.2-1	Land Use Jurisdictions within the CMA Plan Area	1d-15
1d.2-2	Water Agencies Relevant to the Plan	1d-21
1d.3	Well Density	1d-29
1d.4	Water Resources Monitoring and Management Programs	1d-37
1d.4-1	Water Resources Monitoring	1d-37
1d.4-2	Management Plans	1d-39
1d.5	Regulatory Programs	1d-43
1d.5-1	Porter-Cologne Water Quality Control Act and Clean Water Act Permitting	1d-43
1d.5-2	Groundwater Well Permitting	1d-49
1d.5-3	Title 22 Drinking Water Program	1d-49
1d.5-4	Water Supply Planning and Water Use Efficiency	1d-50
1d.5-5	Operational Flexibility and Conjunctive Management Considerations	1d-52
1d.5-6	Water Rights Agreements and Environmental Regulations	1d-53
1d.6	Land Use Considerations	1d-55
1d.6-1	Land Use and Population	1d-56
1d.6-2	General Plans	1d-65
1d.6-3	Other Planning / Land Use Considerations	1d-80
1d.6-4	Well Permitting Process Summary	1d-81
<b>Section 1e - Additional GSP Elements</b>		<b>1e-1</b>
1e.1	Data Management System	1e-2
1e.1-1	Data Management Plan	1e-2
1e.1-2	Implementation	1e-3
<b>Chapter 2: Basin Setting</b>		<b>2a-1</b>
<b>Section 2a – Hydrogeologic Conceptual Model</b>		<b>2a-3</b>
2a.1	Central Management Area and Adjacent Geology	2a-5
2a.1-1	Mapped Surface Geology	2a-5
2a.1-2	Key Geologic Structures within the Central Management Area	2a-12
2a.1-3	Subsurface Geologic Modeling	2a-13
2a.2	Principal Aquifers and Aquitards	2a-23
2a.2-1	Central Management Area Buellton Aquifer Basin Extent and Thickness	2a-27
2a.2-2	Principal Aquifers and Description for Central Management Area Subareas	2a-33
2a.2-3	Summary of the Aquifer Properties	2a-45
2a.3	Hydrologic Characteristics	2a-51
2a.3-1	Topography	2a-51

2a.3-2	Precipitation _____	2a-55
2a.3-3	Soils and Infiltration _____	2a-61
2a.3-4	Runoff and Surface Flows _____	2a-67
2a.4	Uses and Users of Groundwater in the Central Management Area _____	2a-89
2a.4-1	Primary Uses of Groundwater _____	2a-89
2a.4-2	Agricultural Lands _____	2a-93
2a.4-3	Industrial Use _____	2a-99
2a.4-4	Water Export _____	2a-99
2a.4-5	Potential Groundwater Dependent Ecosystems _____	2a-103
2a.4-6	Wildlife Habitat _____	2a-111
2a.5	Data Gaps and Uncertainty _____	2a-119
2a.5-1	Geologic Model of the Buellton Aquifer in the Buellton Upland Subarea _____	2a-119
2a.5-2	Connection between the Buellton Aquifer in the Buellton Upland and Surrounding Area _____	2a-120
<b>Section 2b – Groundwater Conditions _____</b>		<b>2b-1</b>
<b>2b.1</b>	<b>Groundwater Elevation _____</b>	<b>2b-5</b>
2b.1-1	Groundwater Elevation Data _____	2b-5
2b.1-2	Groundwater Elevation Contour Maps _____	2b-6
2b.1-3	Groundwater Hydrographs _____	2b-11
<b>2b.2</b>	<b>Groundwater Storage _____</b>	<b>2b-27</b>
2b.2-1	Cumulative Change in Groundwater Storage _____	2b-27
2b.2-2	Classification of Wet and Dry Years _____	2b-31
2b.2-3	Groundwater Use and Effects on Storage _____	2b-35
<b>2b.3</b>	<b>Water Quality _____</b>	<b>2b-41</b>
2b.3-1	Beneficial Uses _____	2b-41
2b.3-2	Suitability for Beneficial Use _____	2b-43
2b.3-3	Groundwater Contamination Sites and Plumes _____	2b-45
2b.3-4	Current Groundwater Quality (2015-2018) _____	2b-51
<b>2b.4</b>	<b>Seawater Intrusion _____</b>	<b>2b-77</b>
<b>2b.5</b>	<b>Land Subsidence _____</b>	<b>2b-79</b>
2b.5-1	Geologic Setting _____	2b-80
2b.5-2	Historical Records _____	2b-80
2b.5-3	Remote Sensing Data _____	2b-81
2b.5-4	Continuous Global Positioning System Data _____	2b-81
<b>2b.6</b>	<b>Interconnected Surface Water and Groundwater Dependent Ecosystems _____</b>	<b>2b-87</b>
2b.6-1	Current Surface Water Conditions _____	2b-87
2b.6-2	Interconnected Surface Water for the Santa Ynez River _____	2b-94
2b.6-3	Interconnected Surface Water for Tributaries to the Santa Ynez River _____	2b-97
2b.6-4	Groundwater Dependent Ecosystems in the Central Management Area _____	2b-97
<b>Section 2c – Water Budget _____</b>		<b>2c-1</b>
2c.1	Water Budget Elements _____	2c-5
2c.1-1	Water Year Type Classification _____	2c-5
2c.1-2	Water Budget Analysis Time Periods (Historical, Current, and Projected) _____	2c-10
2c.1-3	Surface Water and the Santa Ynez River Alluvium _____	2c-15
2c.2	Water Budget Data Sources _____	2c-17
2c.2-1	Sources of Surface Water Inflows _____	2c-19
2c.2-2	Sources of Groundwater Inflows _____	2c-22
2c.2-3	Sources of Surface Water Outflows _____	2c-29
2c.2-4	Sources of Groundwater Outflows _____	2c-30
2c.3	Historical Water Budget _____	2c-35

2c.3-1	Historical Surface Water Component _____	2c-35
2c.3-2	Historical Groundwater Budget _____	2c-47
2c.3-3	Sustainable Perennial Yield Estimate of the Basin _____	2c-59
2c.3-4	Reliability of Historical Surface Water Supplies _____	2c-60
2c.4	Current Water Budget _____	2c-61
2c.4-1	Current Surface Water Component _____	2c-61
2c.4-2	Current Groundwater Budget _____	2c-63
2c.5	Projected Water Budget _____	2c-71
2c.5-1	Projected Estimation Methodology _____	2c-71
2c.5-2	Projected Water Supply _____	2c-79
2c.5-3	Summary of Projected Water Budget _____	2c-80

**Chapter 3: Monitoring Networks and Sustainable Management Criteria \_\_\_\_\_ 3a-1**

**Section 3a – Monitoring Networks \_\_\_\_\_ 3a-3**

3a.1	Monitoring Networks Objectives _____	3a-5
3a.1-1	CMA Basin Conditions _____	3a-6
3a.2	Existing Monitoring Networks _____	3a-9
3a.2-1	Groundwater Levels _____	3a-9
3a.2-2	Groundwater Storage _____	3a-14
3a.2-3	Groundwater Quality _____	3a-14
3a.2-4	Seawater Intrusion _____	3a-19
3a.2-5	Land Subsidence _____	3a-19
3a.2-6	Surface Water Monitoring _____	3a-20
3a.3	Recommended Monitoring Networks _____	3a-23
3a.3-1	Groundwater Levels _____	3a-23
3a.3-2	Groundwater Storage _____	3a-28
3a.3-3	Groundwater Quality _____	3a-28
3a.3-4	Seawater Intrusion _____	3a-33
3a.3-5	Land Subsidence _____	3a-33
3a.3-6	Surface Water Depletions and Groundwater Dependent Ecosystems _____	3a-33
3a.4	Monitoring Protocols _____	3a-37
3a.4-1	Identified CMA Data Gaps for Monitoring Network _____	3a-37
3a.4-2	Plans to Fill Identified CMA Data Gaps in Monitoring Network _____	3a-37

**Section 3b – Sustainable Management Criteria \_\_\_\_\_ 3b-1**

3b.1	Sustainability Goal _____	3b-3
3b.1-1	The Santa Ynez River Alluvium _____	3b-4
3b.1-2	Buellton Aquifer Data Gaps _____	3b-4
3b.2	Undesirable Results _____	3b-7
3b.2-1	Chronic Lowering of Groundwater Levels – Undesirable Results _____	3b-8
3b.2-2	Reduction of Groundwater in Storage – Undesirable Results _____	3b-18
3b.2-3	Seawater Intrusion – Undesirable Results _____	3b-20
3b.2-4	Degradation of Water Quality – Undesirable Results _____	3b-20
3b.2-5	Land Subsidence – Undesirable Results _____	3b-29
3b.2-6	Interconnected Surface and Groundwater – Undesirable Results _____	3b-30
3b.3	Minimum Threshold _____	3b-37
3b.3-1	Chronic Lowering of Groundwater Levels – Minimum Thresholds _____	3b-38
3b.3-2	Reduction in Groundwater Storage– Minimum Thresholds _____	3b-40
3b.3-3	Seawater Intrusion – Minimum Thresholds _____	3b-40
3b.3-4	Degraded Water Quality – Minimum Thresholds _____	3b-40
3b.3-5	Land Subsidence – Minimum Thresholds _____	3b-41



3b.3-6	Depletion of Interconnected Surface and Groundwater –Minimum Thresholds _____	3b-41
3b.3-7	Relationship between Minimum Thresholds for all Sustainability Indicators _____	3b-42
3b.4	Measurable Objectives _____	3b-45
3b.4-1	Chronic Lowering of Groundwater Levels – Measurable Objectives _____	3b-46
3b.4-2	Reduction of Groundwater in Storage – Measurable Objectives _____	3b-46
3b.4-3	Seawater Intrusion – Measurable Objectives _____	3b-47
3b.4-4	Degraded Water Quality – Measurable Objectives _____	3b-47
3b.4-5	Land Subsidence– Measurable Objectives _____	3b-47
3b.4-6	Depletions of Interconnected Surface Water and Groundwater – Measurable Objectives _	3b-47
3b.5	Interim Milestones _____	3b-49
3b.5-1	Groundwater Elevation Milestones _____	3b-49
3b.5-2	Groundwater Storage Milestones _____	3b-49
3b.5-3	Seawater Intrusion Milestones _____	3b-50
3b.5-4	Water Quality Milestones _____	3b-50
3b.5-5	Land Subsidence Milestones _____	3b-50
3b.5-6	Interconnected Surface Water Milestones _____	3b-50
3b.6	Effects of Sustainable Management Criteria on Neighboring Basins _____	3b-51

**Chapter 4: Projects and Management Actions \_\_\_\_\_ 4a-1**

**Section 4a – Summary of Project and Management Actions \_\_\_\_\_ 4a-1**

**Section 4b – Planned Projects And Management Actions (Group 1) \_\_\_\_\_ 4b-1**

4b.1	Project and Management Action No. 1: Basin-Wide Conservation Efforts _____	4b-3
4b.1-1	Project Description _____	4b-3
4b.1-2	Project Benefits _____	4b-5
4b.1-3	Justification _____	4b-6
4b.1-4	Project Costs _____	4b-6
4b.1-5	Permitting and Regulatory Process _____	4b-6
4b.1-6	Public Notice _____	4b-6
4b.1-7	Implementation Process and Timetable _____	4b-7
4b.1-8	Legal Authority _____	4b-7
4b.2	Project and Management Action No. 2: Implement Groundwater Extraction Fees with Mandatory Well Metering and Update Well Registration _____	4b-9
4b.2-1	Management Action Description _____	4b-9
4b.2-2	Management Action Benefits _____	4b-10
4b.2-3	Justification _____	4b-11
4b.2-4	Costs _____	4b-11
4b.2-5	Permitting and Regulatory Process _____	4b-11
4b.2-6	Public Notice _____	4b-11
4b.2-7	Implementation Process and Timetable _____	4b-12
4b.2-8	Legal Authority _____	4b-12
4b.3	Project No. 3: Supplemental Imported Water Program _____	4b-13
4b.3-1	Project Description _____	4b-13
4b.3-2	Project Benefits _____	4b-13
4b.3-3	Justification _____	4b-13
4b.3-4	Project Costs _____	4b-14
4b.3-5	Permitting and Regulatory Process _____	4b-14
4b.3-6	Public Notice _____	4b-14
4b.3-7	Implementation Process and Timetable _____	4b-14
4b.3-8	Legal Authority _____	4b-15
4b.3-9	Source and Reliability _____	4b-15

4b.4	Project Management Action No. 4: Increase Stormwater Recharge _____	4b-17
4b.4-1	Project Description _____	4b-17
4b.4-2	Project Benefits _____	4b-17
4b.4-3	Justification _____	4b-18
4b.4-4	Project Costs _____	4b-18
4b.4-5	Permitting and Regulatory Process _____	4b-18
4b.4-6	Public Notice _____	4b-19
4b.4-7	Implementation Process and Timetable _____	4b-19
4b.4-8	Legal Authority _____	4b-19
4b.4-9	Source and Reliability _____	4b-20
<b>Section 4c – Responsive Projects and Management Actions (Groups 2 and 3) _____</b>		<b>4c-1</b>
4c.1	Project and Management Action No. 5: Water Rights Release Request _____	4c-3
4c.1-1	Project Management Description _____	4c-3
4c.1-2	Project Benefits and Justification _____	4c-3
4c.1-3	Project Costs _____	4c-3
4c.1-4	Permitting and Regulatory Process and Public Notice _____	4c-3
4c.1-5	Implementation Process and Timetable _____	4c-3
4c.1-6	Legal Authority _____	4c-4
4c.2	Management Action No. 6: Supplemental Conditions on New Well _____	4c-5
4c.2-1	Management Action Description _____	4c-5
4c.2-2	Project Benefits and Justification _____	4c-5
4c.2-3	Project Costs _____	4c-5
4c.2-4	Permitting and Regulatory Process and Public Notice _____	4c-5
4c.2-5	Implementation Process and Timetable _____	4c-5
4c.2-6	Legal Authority _____	4c-6
4c.3	Management Action No. 7: Implement Annual Pumping Allocation Plan, Transient Pool and Fallowing Program (If Necessary) _____	4c-7
4c.3-1	Project Description _____	4c-7
4c.3-2	Project Benefits _____	4c-8
4c.3-3	Justification _____	4c-8
4c.3-4	Costs _____	4c-9
4c.3-5	Permitting and Regulatory Process _____	4c-9
4c.3-6	Public Notice _____	4c-9
4c.3-7	Implementation Process and Timetable _____	4c-10
4c.3-8	Legal Authority _____	4c-10
<b>Section 4d – Other Projects And Management Actions (Group 4) _____</b>		<b>4d-1</b>
<b>Chapter 5: Plan Implementation _____</b>		<b>5a-1</b>
<b>Section 5a – Implementation Projects _____</b>		<b>5a-3</b>
5a.1	Completing Ongoing Field Investigations _____	5a-4
5a.1-1	Surveying Representative Wells _____	5a-4
5a.1-2	SkyTEM Airborne Geophysics Results _____	5a-4
5a.2	Monitoring Network Data Gaps _____	5a-7
5a.2-1	Video Logging and Sounding of Representative Wells _____	5a-7
5a.2-2	Add Suggested Wells to Groundwater Level Monitoring Program _____	5a-8
5a.2-3	Drill Dedicated Groundwater Level Monitoring Wells _____	5a-9
5a.2-4	Install Surface Water Gage _____	5a-10
5a.3	Improved Management Information _____	5a-11
5a.3-1	Update Well Registration Program _____	5a-11
5a.3-2	Well Metering Requirement _____	5a-12



5a.4	Data Management System Maintenance	5a-15
5a.5	Reporting and Plan Updates	5a-17
5a.5-1	Annual Reports	5a-17
5a.5-2	Five-Year Plan Assessment	5a-18
<b>Section 5b – Implementation Timeline</b>		<b>5b-1</b>
<b>Section 5c – Plan Funding</b>		<b>5c-1</b>
5c.1	Funding for Development of this GSP	5c-1
5c.2	Funding for Future CMA GSA Activities	5c-2
5c.2-1	Potential State of California Grant Programs	5c-3
5c.2-2	Potential Federal Grant Programs	5c-4
<b>Chapter 6: References</b>		<b>6-1</b>
<b>Chapter 1 – Introduction and Plan Area</b>		<b>6-1</b>
Section 1a: Introduction		6-1
Section 1b: Administrative Information		6-1
Section 1c: Notes and Communication		6-1
Section 1d: Plan Area		6-1
Section 1e: Additional GSP Elements		6-4
<b>Chapter 2 – Basin Setting</b>		<b>6-4</b>
Section 2a: Hydrogeologic Conceptual Model		6-4
Section 2b: Groundwater Conditions		6-9
Section 2c: Water Budget		6-10
<b>Chapter 3 – Monitoring and Sustainable Management Criteria</b>		<b>6-11</b>
Section 3a: Monitoring Networks		6-11
Section 3b: Sustainable Management Criteria		6-12
<b>Chapter 4 – Project and Management Actions</b>		<b>6-13</b>
<b>Chapter 5 – Plan Implementation</b>		<b>6-13</b>
Section 5a: Estimate of GSP Implementation Costs		6-13
Section 5b: Implementation Timeline		6-13
Section 5c: Plan Funding		6-13
<b>Chapter 7: Appendices</b>		

*(Page Intentionally Left Blank)*

## LIST OF TABLES

### ***Executive Summary***

Table ES.1 Sustainable Management Criteria Indicator Summary for the CMA ..... ES-11

### ***Chapter 1 – Introduction and Plan Area***

#### Section 1a Introduction

##### *Purpose of the Groundwater Sustainability Plan (1a.1)*

Table 1a.1-1 Management Areas of the Santa Ynez River Valley Groundwater Basin ..... 1a-2

##### *Sustainable Management Indicators (1a.2)*

No Tables

##### *Groundwater Sustainability Plan Organization (1a.3)*

Table 1a.3-1 Organization of the Groundwater Sustainability Plan..... 1a-12

#### Section 1b Administrative Information

Table 1b.1-1 Summary Implementation Costs to Manage CMA Groundwater..... 1b-7

Table 1b.1-2 Sustainability Project and Management Actions: General Management Summary  
Costs for CMA ..... 1b-8

#### Section 1c Notes and Communications

##### *Administration (1c.1)*

Table 1c.1-1 Stakeholder Categories in the CMA Plan Area ..... 1c-2

#### Section 1d Plan Area

##### *Plan Area Location (1d.1)*

Table 1d.1-1 Summary of the Santa Ynez River Valley Groundwater Basin, Adjacent Basins, and  
Contributing Watershed Area ..... 1d-7

Table 1d.1-2 Summary of CMA Subareas by Area..... 1d-13

##### *Summary of Jurisdictional Areas and Other Features (1d.2)*

Table 1d.2-1 Summary of Land Ownership in the CMA Plan Area ..... 1d-15

Table 1d.2-2 City of Buellton Annual Water Use..... 1d-24

##### *Well Density (1d.3)*

Table 1d.3-1 Well Density by Water Use for CMA Subareas..... 1d-29

##### *Water Resources Monitoring and Management Programs (1d.4)*

No Tables

*Regulatory Programs (1d.5)*

Table 1d.5-1 Median Groundwater Objectives for the Santa Ynez River Valley Groundwater Basin .....1d-44

*Land Use and Population (1d.6)*

Table 1d.6-1 Summary of Land Use in the CMA Plan Area .....1d-56  
 Table 1d.6-2 Past, Current, and Projected Population for Santa Barbara County, City of Buellton, and CMA Plan Area .....1d-60  
 Table 1d.6-3 Disadvantaged Communities and Severely Disadvantaged Communities Census Tract Level .....1d-65  
 Table 1d.6-4 Summary of General Plan Policies Relevant to Groundwater Sustainability in the CMA Plan Area.....1d-69  
 Table 1d.6-5 Summary of Santa Barbara County Land Use Permit Requirements by Zone Type in Unincorporated CMA .....1d-82

Section 1e Additional GSP Elements

No Tables

**Chapter 2: Basin Setting**

Section 2a Hydrogeologic Conceptual Model - Introduction

*CMA and Adjacent Geology (2a.1)*

No Tables

*Principal Aquifers and Aquitards (2a.2)*

No Tables

*Hydrologic Characteristics (2a.3)*

Table 2a.3-1 Summary of Average Annual Precipitation by CMA Subarea .....2a-55  
 Table 2a.3-2 Imported CCWA Water Quality in mg/L at Polonio Pass Water Treatment Facilities .....2a-78  
 Table 2a.3-3 Wastewater Treatment Facilities .....2a-83  
 Table 2a.3-4 City of Buellton Secondary Treated Effluent Wastewater Volumes .....2a-87

*Uses and Users of Groundwater in the CMA (2a.4)*

Table 2a.4-1 Summary of CMA Land Use for Agriculture.....2a-97  
 Table 2a.4-2 CMA Agriculture Land Use for 1984/1986, 2016, and 2018.....2a-97  
 Table 2a.4-3 CMA Cannabis Cultivation Land Use Permits as of August 2021 .....2a-99  
 Table 2a.4-4 Natural Communities Dataset Mapped Extent of Vegetation Communities in the CMA.....2a-107  
 Table 2a.4-5 Natural Communities Dataset Mapped Extent of Wetlands in the CMA.....2a-107  
 Table 2a.4-6 U.S. Fish and Wildlife Service Identified Threatened and Endangered Species with Habitat within the CMA.....2a-115

*Data Gaps and Uncertainty (2a.5)*

No Tables

Section 2b Groundwater Conditions

*Groundwater Elevation (2b.1)*

Table 2b.1-1 CMA Groundwater Elevation Data Sources.....2b-6

*Groundwater Storage (2b.2)*

No Tables

*Water Quality (2b.3)*

Table 2b.3-1 Median Groundwater Objectives in MG/L for the Central Management Area.....2b-43

Table 2b.3-2 Count of Potential Point Sources of Groundwater Contamination Shown on Figure 2b.3-1 by CMA Subarea .....2b-51

Table 2b.3-3 Summary of Salinity as Total Dissolved Solids (TDS) in the CMA during Water Years 2015–2018 .....2b-53

Table 2b.3-4 Summary of Chloride (CL) Concentrations in the CMA during Water Years 2015–2018 .....2b-57

Table 2b.3-5 Summary of Sulfate Concentrations in the CMA during Water Years 2015–2018 .....2b-63

Table 2b.3-6 Summary of Boron Concentrations in the CMA during Water Years 2015–2018 .....2b-67

Table 2b.3-7 Summary of Sodium Concentrations in the CMA during Water Years 2015–2018 .....2b-67

Table 2b.3-8 Summary of Nitrate as Nitrogen in the CMA during Water Years 2015–2018.....2b-71

*Seawater Intrusion (2b.4)*

No Tables

*Land Subsidence (2b.5)*

No Tables

*Interconnected Surface Water and Groundwater Dependent Ecosystems (2b.6)*

Table 2b.6-1 Annual Minimum Gaged Flows of the Santa Ynez River in the CMA .....2b-93

Table 2b.6-2 Potential CMA Groundwater Dependent Ecosystem Categorization.....2b-103

Section 2c Water Budget

*Water Budget Elements (2c.1)*

Table 2c.1-1 Annual Precipitation and Water Year Classification for CMA ..... 2c-9

*Water Budget Data Sources (2c.2)*

Table 2c.2 1 Water Budget Data Sources ..... 2c-17

Table 2c.2 2 Tributary Creeks of the CMA ..... 2c-21

Table 2c.2 3 CIMIS Monthly Average Reference Evapotranspiration (2010 through 2019) ..... 2c-33

*Historical Water Budget (2c.3)*

Table 2c.3-1 Annual Surface Water Inflow, Historical Period (1982 through 2018)..... 2c-37

Table 2c.3-2 Annual Surface Water Outflow, Historical Period (1982 through 2018)..... 2c-38

Table 2c.3-3 Annual Surface Water Components, Historical Period (1982 through 2018) ..... 2c-45

Table 2c.3-4	Annual Groundwater Inflow, Historical Period (1982 through 2018) .....	2c-47
Table 2c.3-5	Annual Groundwater Outflow, Historical Period (1982 through 2018) .....	2c-48
Table 2c.3-6	Annual Groundwater Inflows, Outflow, and Change in Storage, Historical Period (1982 through 2018).....	2c-57

*Current Water Budget (2c.4)*

Table 2c.4-1	Annual Surface Water Inflow, Current Period (2011 through 2018) .....	2c-62
Table 2c.4-2	Annual Surface Water Outflow, Current Period (2011 through 2018).....	2c-63
Table 2c.4-3	Annual Groundwater Inflow, Current Period (2011 through 2018).....	2c-64
Table 2c.4-4	Annual Groundwater Outflow, Current Period (2011 through 2018).....	2c-65

*Projected Water Budget (2c.5)*

Table 2c.5-1	Summary of Climate Scenarios.....	2c-72
Table 2c.5-2	Projected Water Demand for CMA .....	2c-78
Table 2c.5-3	Projected Groundwater Budget for CMA .....	2c-83

**Chapter 3: Monitoring Networks and Sustainable Management Criteria**

Section 3a Monitoring Networks

*Monitoring Networks Objectives (3a.1)*

No Tables

*Existing Monitoring Networks (3a.2)*

Table 3a.2-1	Summary of Existing Groundwater Elevation Monitoring Network Wells Spring 2015 through Spring 2021 .....	3a-9
Table 3a.2-2	List of CMA CASGEM Wells (10 wells) Spring 2015-Spring 2021.....	3a-13
Table 3a.2-3	Summary of Existing CMA Groundwater Quality Monitoring Networks Spring 2015 through Spring 2021 .....	3a-19
Table 3a.2-4	USGS Stream Gages relevant to the CMA .....	3a-20

*Recommended Monitoring Networks (3a.3)*

Table 3a.3-1	Representative Monitoring Wells.....	3a-25
Table 3a.3-2	Buellton Aquifer Wells Groundwater Level Data Spring 2015 through Spring 2021 .....	3a-27

*Monitoring Protocols (3a.4)*

No Tables

Section 3b Sustainable Management Criteria

*Sustainability Goal (3b.1)*

No Tables



*Undesirable Results (3b.2)*

Table 3b.2-1 Median Groundwater Quality Objectives (mg/L) and Average 2015-2018 Salt and Nutrient Concentrations (mg/L) in the Buellton Aquifer CMA .....3b-23

Table 3b.2-2 Historical Water Quality Summary, Representative Monitoring Wells.....3b-25

*Minimum Threshold (3b.3)*

Table 3b.3-1 Minimum Thresholds at Representative Monitoring Wells .....3b-37

*Measurable Objectives (3b.4)*

Table 3b.4-1 Measurable Objectives at Representative Monitoring Wells .....3b-45

*Interim Milestones (3b.5)*

No Tables

*Effects of Sustainable Management Criteria on Neighboring Basins (3b.6)*

No Tables

**Chapter 4: Projects and Management Actions**

Section 4a Planned Management Projects and Management Actions

Table 4a.1-1 Summary of Project and Management Actions in the CMA to Achieve Current and Future Groundwater Sustainability .....4a-3

Table 4a.1-2 Summary of Project and Management Actions in the CMA - Sustainability Benefits and Implementation Process.....4a-6

Section 4b Planned Projects and Management Actions

Table 4b.1-1 5-Year Timeline of Sustainability Project and Management Actions – General Management (Group 1).....4b-2

Table 4b.1-2 Current Year (2020) Per Capita Water Use.....4b-4

Section 4c Responsive Projects and Management Actions

No Tables

Section 4d Other Projects and Management Actions

No Tables

**Chapter 5: Plan Implementation**

Section 5a Implementation Projects

*Completing Ongoing Field Investigations (5a.1)*

Table 5a.1-1 Summary of Implementation Projects .....5a-3

*Monitoring Network Data Gaps (5a.2)*

Table 5a.2-1 CMA Representative Wells with Unknown Depths or Screened Intervals.....5a-7

*Improved Management Information (5a.3)*

No Tables

*Update Data Management System (5a.4)*

No Tables

*Reporting and Plan Updates (5a.5)*

No Tables

Section 5b Implementation Timeline

Table 5b.1-1 5-Year Implementation Timeline of CMA GSP .....5b-2

Section 5c Plan Funding

Table 5c.1-1 State of California Grant Contributions to Development of this Groundwater  
Sustainability Plan ..... 5c-1

---

## LIST OF FIGURES

---

### ***Executive Summary***

Figure ES.1 Sustainable Management Criteria Indicator Summary for the CMA..... ES-11

### ***Chapter 1 – Introduction and Plan Area***

#### **Section 1a Introduction**

Figure 1a.1-1 Santa Ynez River Valley Groundwater Basin (DWR Bulletin 118 Basin No. 3-105) and SGMA Management Area Boundaries..... 1a-3

Figure 1a.1-2 Santa Ynez River Watershed and Santa Ynez River Valley Groundwater Basin, Central Management Area ..... 1a-5

#### *Purpose of the Groundwater Sustainability Plan (1a.1)*

No Figures

#### *Sustainable Management Indicators (1a.2)*

No Figures

#### *Groundwater Sustainability Plan Organization (1a.3)*

No Figures

#### **Section 1b Administrative Information**

Figure 1b.1-1 Santa Ynez River Valley Groundwater Basin SGMA Organizational Documents ..... 1b-3

#### *Agency Background (1b.1)*

No Figures

#### *Intra-Basin Coordination Between Management Area (1b.2)*

No Figures

#### **Section 1c Notes and Communication**

##### *Communication (1c.1)*

No Figures

##### *Public Engagement (1c.2)*

No Figures

##### *Public Comments (1c.3)*

No Figures

##### *Future Public Engagement (1c.4)*

No Figures

**Section 1d Plan Area***CMA Plan Area Location (1d.1)*

Figure 1d.1-1	Adjacent and Neighboring Groundwater Basins, Central Management Area .....	1d-5
Figure 1d.1-2	Central Management Area Boundary Santa Ynez River Valley Groundwater Basin, Groundwater Sustainability Agency .....	1d-9
Figure 1d.1-3	Subareas, Central Management Agency .....	1d-11

*Summary of Jurisdictional Areas and Other Features (1d.2)*

Figure 1d.2-1	Public Lands, Central Management Agency .....	1d-17
Figure 1d.2-2	State and Federal Lands, Central Management Agency .....	1d-19
Figure 1d.2-3	Water Agencies and Infrastructure, Central Management Agency .....	1d-23

*Well Density (1d.3)*

Figure 1d.3-1	Registered Pumping Wells, Agricultural Use, Density by Section .....	1d-31
Figure 1d.3-2	Registered Pumping Wells, Domestic Use, Density by Section .....	1d-33
Figure 1d.3-3	Registered Pumping Wells, Municipal Use, Density by Section .....	1d-35

*Water Resources Monitoring and Management Programs (1d.4)*

No Figures

*Regulatory Programs (1d.5)*

No Figures

*Land Use Considerations (1d.6)*

Figure 1d.6-1	Land Use, Central Management Agency .....	1d-57
Figure 1d.6-2	Population Density, Central Management Agency .....	1d-61
Figure 1d.6-3	Disadvantaged Communities Within Santa Ynez River Valley Groundwater Basin by Census Tract .....	1d-63
Figure 1d.6-4	Central Management Area General Plan Boundary, Santa Ynez River Valley Groundwater Basin, Groundwater Sustainability Agency .....	1d-67

**Section 1e Additional GSP Elements***Data Management System (1e.1)*

No Figures

**Chapter 2: Basin Setting****Section 2a Hydrogeologic Conceptual Model***Central Management Area and Adjacent Geology (2a.1)*

Figure 2a.1-1	Surface Geology, Central Management Area .....	2a-7
Figure 2a.1-2	Geologic Cross Sections, Central Management Area .....	2a-15
Figure 2a.1-3a	Central Management Area, Geologic Cross Section A-A' .....	2a-17
<a href="#">Figure 2a.1-3b</a>	<a href="#">Central Management Area, Geologic Cross Section B-B'</a> .....	2a-17
<a href="#">Figure 2a.1-3c</a>	<a href="#">Central Management Area, Geologic Cross Section C-C'</a> .....	2a-21

*Principal Aquifers and Aquitards (2a.2)*

Figure 2a.2-1 Extents of the Buellton Aquifer, Central Management Agency ..... 2a-25

Figure 2a.2-2 Bottom of the Basin Subsurface Elevation Contour Within Central Management Area ..... 2a-29

Figure 2a.2-3 Maximum Thickness of the Basin Within Central Management Area ..... 2a-31

Figure 2a.2-4 Santa Ynez River Water Conservation District Groundwater Zones and the Central Management Area ..... 2a-35

Figure 2a.2-5 Central Management Area Aquifer Cross Section A-A' ..... 2a-39

Figure 2a.2-6 Groundwater Flow Concept, Central Management Area ..... 2a-43

Figure 2a.2-7 Relative Groundwater Age, Central Management Area ..... 2a-47

*Hydrologic Characteristics (2a.3)*

Figure 2a.3-1 Topography, Central Management Area ..... 2a-53

Figure 2a.3-2 Precipitation Stations and Isohyetals, Central Management Area ..... 2a-57

Figure 2a.3-3 Buellton Fire Station Precipitation and Cumulative Departure from Mean WY 1955-2020 ..... 2a-59

Figure 2a.3-4 Soil Characteristics, Central Management Area ..... 2a-63

Figure 2a.3-5 Potential Groundwater Recharge Areas, Central Management Area ..... 2a-65

Figure 2a.3-6 Santa Ynez River Watershed and Santa Ynez River Valley Groundwater Basin, Central Management Area ..... 2a-69

Figure 2a.3-7 Tributary Drainage Areas, Central Management Area ..... 2a-71

Figure 2a.3-8 Annual Flows, Santa Ynez River ..... 2a-75

Figure 2a.3-9 Water Imports, CCWA Pipeline and San Antonio Wells, Western and Central Management Areas ..... 2a-79

Figure 2a.3-10 Annual Water Imports, Central Coast Water Authority ..... 2a-81

Figure 2a.3-11 Wastewater Treatment Plants, Central Management Area ..... 2a-85

*Uses and Users of Groundwater in the Central Management Area (2a.4)*

Figure 2a.4-1 Groundwater Use, District Zone D ..... 2a-91

Figure 2a.4-2 Active Agricultural Area 2016, Central Management Area ..... 2a-95

Figure 2a.4-3 Oil and Gas Well Locations ..... 2a-101

Figure 2a.4-4 Potential Groundwater Dependent Ecosystems and Groundwater Discharge Areas, Central Management Area ..... 2a-105

Figure 2a.4-5 Vegetation Community Classification, Central Management Area ..... 2a-109

Figure 2a.4-6 Threatened & Endangered Species Active Critical Habitat ..... 2a-113

*Data Gaps and Uncertainty (2a.5)*

No Figures

**Section 2b Groundwater Conditions**

*Groundwater Elevation (2b.1)*

Figure 2b.1-1 Groundwater and Underflow Elevation Contours, Seasonal High, Spring 2020, Central Management Area ..... 2b-9

Figure 2b.1-2	Groundwater and Underflow Elevation Contours, Seasonal Low, Fall 2019, Central Management Area.....	2b-13
Figure 2b.1-3	Well Hydrograph Locations Within Central Management Area .....	2b-15
Figure 2b.1-4AB	Selected Hydrographs, Buellton Upland .....	2b-19
Figure 2b.1-5AB	Selected Hydrographs, Santa Ynez River Alluvium .....	2b-23
<a href="#">Figure 2b.1-5CD</a>	<a href="#">Selected Hydrographs, Santa Ynez River Alluvium</a> .....	2b-23
 <i>Groundwater Storage (2b.2)</i>		
Figure 2b.2-1	Cumulative Change in Groundwater Storage Relative to March 1995.....	2b-29
Figure 2b.2-2	11132500 Salsipuedes Creek Near Lompoc Cumulative Departure from Mean and Period of Record (WY 1942 - 2020).....	2b-33
Figure 2b.2-3	Water Year Type, Santa Ynez River Valley Groundwater Basin .....	2b-37
Figure 2b.2-4	Change in Storage and Use .....	2b-39
 <i>Water Quality (2b.3)</i>		
Figure 2b.3-1	Location of Potential Point Sources of Groundwater Contaminants, Central Management Area .....	2b-47
Figure 2b.3-2	Groundwater Contaminate Plumes, Central Management Area.....	2b-49
Figure 2b.3-3	Salinity - Total Dissolved Solids Average WY 2015 – 2018, Central Management Area .....	2b-55
Figure 2b.3-4	Chloride (CL), Average WY 2015 – 2018, Central Management Area.....	2b-59
Figure 2b.3-5	Sulfate (SO <sub>4</sub> ), Average WY 2015 – 2018, Central Management Area .....	2b-61
Figure 2b.3-6	Boron (B), Average WY 2015 – 2018, Central Management Area .....	2b-65
Figure 2b.3-7	Sodium (NA) Average WY 2015 – 2018, Central Management Area .....	2b-69
Figure 2b.3-8	Nitrate as Nitrogen (NO <sub>3</sub> as N), Average WY 2015 – 2018, Central Management Area .....	2b-73
 <i>Seawater Intrusion (2b.4)</i>		
No Figures		
 <i>Land Subsidence (2b.5)</i>		
Figure 2b.5-1	Land Subsidence, January 2015 to September 2019, InSAR Data within Central Management Area .....	2b-83
Figure 2b.5-2	Continuous Global Positioning System, BUEG Station Trends.....	2b-85
 <i>Interconnected Surface Water and Groundwater Dependent Ecosystems (2b.6)</i>		
Figure 2b.6-1	Detailed Streams and USGS Gages, Central Management Area.....	2b-89
Figure 2b.6-2	Monthly Flow Statistics, Santa Ynez River .....	2b-91
Figure 2b.6-3	Interconnected Surface Waters in the Central Management Area .....	2b-95
Figure 2b.6-4	Evaluation of Groundwater Dependent Ecosystems .....	2b-101



**Section 2c Water Budget**

*Water Budget Elements (2c.1)*

Figure 2c.1-1 Hydrogeological Conceptual Model, Central Management Area, Santa Ynez River Valley Groundwater Basin..... 2c-7

Figure 2c.1-2 Historical, Current, and Projected Water Budget Periods ..... 2c-13

*Water Budget Data Sources (2c.2)*

Figure 2c.2-1 Basin Characterization Model Water Components ..... 2c-23

Figure 2c.2-2 Basin Characterization Model (BCM) Recharge ..... 2c-25

*Historical Water Budget (2c.3)*

Figure 2c.3-1 Historical Surface Water Components 1982-2018..... 2c-39

Figure 2c.3-2 Groundwater Pumping by Sector WY1982-2018 ..... 2c-41

Figure 2c.3-3AB Average Groundwater Budget Volumes, Historical WY1982-2018 ..... 2c-43

Figure 2c.3-4 Historical Groundwater Components 1982-2018..... 2c-51

Figure 2c.3-5 Cumulative Change in Groundwater Storage 1982-2018 ..... 2c-53

*Current Water Budget (2c.4)*

Figure 2c.4-1AB Average Groundwater Budget Volumes, Current WY2011-2018 ..... 2c-67

*Projected Water Budget (2c.5)*

Figure 2c.5-1 Annual Average Maximum Temperature at Buellton, Climate Projections..... 2c-75

Figure 2c.5-2AB Average Groundwater Budget Volumes, Future Projections..... 2c-81

**Chapter 3: Monitoring Networks and Sustainable Management Criteria**

**Section 3a Monitoring Networks**

*Monitoring Networks Objectives (3a.1)*

No Figures

*Existing Monitoring Networks (3a.2)*

Figure 3a.2-1 Current Groundwater Level Monitoring Programs ..... 3a-11

Figure 3a.2-2 Current Water Quality Monitoring Programs ..... 3a-15

Figure 3a.2-3 Land Subsidence Monitoring within Central Management Area..... 3a-17

*Recommended Monitoring Network (3a.3)*

Figure 3a.3-1 CMA Monitoring Network and Representative Monitoring Wells for Groundwater Levels and Groundwater Storage..... 3a-29

Figure 3a.3-2 CMA Monitoring Network and Representative Monitoring Wells for Water Quality..... 3a-31

Figure 3a.3-3 CMA Monitoring Network and Representative Monitoring for Interconnected Surface Water and Groundwater Dependent Ecosystems ..... 3a-35

*Monitoring Protocols (3a.4)*

No Figures

**Section 3b Sustainable Management Criteria***Sustainability Goal (3b.1)*

No Figures

*Undesirable Results (3b.2)*

Figure 3b.2-1 Registered Active and Inactive Wells, District Zone D .....3b-11

Figure 3b.2-2 Well Perforations Relative to Buellton Aquifer, Spring 2020 Water Depth.....3b-15

*Minimum Threshold (3b.3)*

No Figures

*Measurable Objectives (3b.4)*

No Figures

*Interim Milestones (3b.5)*

No Figures

*Effects of Sustainable Management Criteria on Neighboring Basins (3b.6)*

No Figures

**Chapter 4: Projects and Management Actions**

No Figures

**Chapter 5: Plan Implementation**

No Figures

---

## LIST OF APPENDICES

---

### **Chapter 1 – Introduction and Plan Area**

- Appendix 1b-A: Memorandum of Understanding for Implementation of the Sustainable Groundwater Management Act in the Santa Ynez River Valley Groundwater Basin, dated May 23, 2016. 10 pg.
- Appendix 1b-B: SYRWCD Letter, Notice of Decision to Become a Groundwater Sustainability Agency - Santa Ynez River Valley Groundwater Basin, Central Management Area, dated February 2, 2017. 33 pg.
- Appendix 1b-C: Intra-Basin Administrative Agreement for Implementation of the Sustainable Groundwater Management Act in the Santa Ynez River Valley Groundwater Basin. 16 pg.
- Appendix 1b-D: [PLACEHOLDER] Coordination Agreement. 10 pg.
- Appendix 1c-A: Draft Final Public Outreach and Engagement Plan, Central Management Area, dated February 2020. 26 pg.
- Appendix 1c-B: Santa Ynez SGMA Meeting List, dated November 17, 2021. 3 pg.
- Appendix 1c-C: Restrictions on Public Meetings due to SARS-COV-2 (COVID-19). 35 pg.
- Appendix 1c-D: Sustainable Groundwater Management Act Newsletter No.1 through No.6 and Press Releases. 14 pg.
- Appendix 1c-E: Groundwater Communication Portal, Location: California, Client: California Department of Water Resources by GEI Consultants, 2018. 3 pg.
- Appendix 1d-A: Stetson Engineers Technical Memorandum, Santa Ynez River Valley Groundwater Basin - Internal Management Area Boundary Changes, dated August 10, 2021. 4 pg.
- Appendix 1d-B: Stetson Engineers Technical Memorandum, Hydrogeological Basis for Characterization of Water within the Santa Ynez River Alluvium Upstream of the Lompoc Narrows as Underflow of the River in a Known and Definite Channel, Dated December 15, 2021. 9 pg.
- Appendix 1d-C: Santa Barbara County, California, Code of Ordinances, Chapter 34A – Wells. Dated June 19, 2018. 11 pg.
- Appendix 1d-D: City of Buellton, California, Buellton Municipal Code, Chapter 8.20 Water Wells. Accessed December 14, 2021. 5 pg.
- Appendix 1e-A: Draft Final Data Management Plan, Central Management Area, dated February 2020. 33 pg.
- Appendix 1e-B: Draft Technical Memorandum Phase I Data Compilation for the Santa Ynez River Groundwater Basin Data Management System (WMA and CMA), dated May 5, 2020. 9 pg.

**Chapter 2 – Basin Setting**

Appendix 2a-A: Geosyntec Consultants Draft Technical Memorandum, Regional Geology and 3D Geologic Model for the Santa Ynez River Valley Groundwater Basin, Dated May 12, 2020. 19 pg.

Appendix 2b-A: Dudek Land Subsidence Technical Memorandum 11736, Dated December 2020. 21 pg.

Appendix 2c-A: Stetson Engineers Draft Technical Memorandum, WMA/CMA Numerical Model Documentation, Dated May 19, 2021. 109 pg.

**Chapter 3 – Monitoring Networks and Sustainable Management Criteria**

Appendix 3a-A: California Statewide Groundwater Elevation Monitoring (CASGEM) Program Procedures for Monitoring Entity Reporting. Dated December 2010. 33 pg.

Appendix 3b-A: Groundwater Level Hydrographs for Assessing Chronic Decline in Groundwater Levels, Central Management Area. 5 pg.

Appendix 3b-B: Stetson Engineers Draft Technical Memorandum Sustainable Management Criteria: CMA Groundwater Decline Analysis, Dated May 17, 2021. 17 pg.

Appendix 3b-C: Time Series Graphs for Assessing Degraded Groundwater Quality, Central Management Area. 22 pg.

Appendix 3b-D: Stetson Engineers Groundwater Level Hydrographs for Assessing Surface Water Depletion, Central Management Area. 4 pg.

**Chapter 4 – Project and Management Actions**

No Appendices

**Chapter 5 – Plan Implementation**

No Appendices

**Chapter 6 – References**

No Appendices

**Public Review Comments**

Appendix PC-A: Public Comments

Appendix PC-B: Central Management Area Groundwater Sustainability Plan Public Draft Comments and Responses

Appendix PC-C: Public Citizen Len F, Dated October 8, 2021. 6 pg.

Appendix PC-D: Santa Ynez Water Group, Klein DeNatale Goldner Attorneys at Law, Dated September 21, 2021. 3 pg.

Appendix PC-E: Santa Ynez Water Group, Klein DeNatale Goldner Attorneys at Law, Dated October 26, 2021. 5 pg.

Appendix PC-F: State of California – Natural Resources Agency, Department of Fish and Wildlife, Dated October 26, 2021. 14 pg.

Appendix PC-G: The Nature Conservancy, Clean Water Action/Clean Water Fund, Union of Concerned Scientists, Audubon California, Local Government Commission, Dated October 26, 2021. 39 pg.

*(Page Intentionally Left Blank)*



## EXECUTIVE SUMMARY

### ES ABSTRACT

---

This Groundwater Sustainability Plan (GSP) is prepared in accordance with the 2014 Sustainable Groundwater Management Act (SGMA) and covers the Central Management Area (CMA) of the Santa Ynez River Valley Groundwater Basin (Basin or SYRVGB) located in coastal central California. There is one principal aquifer in the CMA: the Buellton Aquifer which covers the Buellton Upland and the older formations that lie under the Santa Ynez River alluvium near the City of Buellton. The Santa Ynez River is the primary surface water source within the Basin. The underflow of the Santa Ynez River is considered part of the river flow and is managed as surface water pursuant to the administrative authority and jurisdiction of the State Water Resources Control Board (SWRCB) over waters flowing in known and definite channels. The analyses conducted for this GSP indicate that current Basin conditions are sustainable and no undesirable results (defined as significant and unreasonable impacts to sustainability indicators) are occurring. Potential undesirable results have been identified and specific minimum thresholds have been developed to help ensure that undesirable results do not occur under future conditions. Potential project operations and management actions designed to maintain and improve groundwater conditions and sustainability have been identified and are described within this GSP.

### ES CHAPTER 1: INTRODUCTION

---

#### ES Introduction, Agency, and Communication (GSP Sections 1a, 1b, 1c)

SGMA requires that the Basin develop one or more GSPs that outline how the Basin will achieve groundwater sustainability by 2042. Physical and political complexities within the Basin resulted in decisions by local public agencies to develop three GSPs under a coordination agreement to satisfy SGMA requirements for the entire Basin. The Western, Central, and Eastern Management Areas (WMA, CMA, and EMA) make up the Basin. This GSP is prepared to address the SGMA requirements for the CMA portion of the Basin.

The primary sustainability goal and purpose of these GSPs are to manage groundwater resources in the WMA, CMA, and EMA without causing undesirable results and facilitate long-term beneficial uses of groundwater within the Basin. Beneficial uses of groundwater in the Basin include municipal, domestic, and agricultural uses, in addition to riparian habitat that supports environmental ecosystems.

In 2016 and 2017, three local Groundwater Sustainability Agencies (GSA) were established for the Basin. Three GSA-eligible public entities ratified an agreement and formed the CMA GSA, with each of the public entities having a seat on the CMA GSA Committee. Two of the three member agencies, the City of Buellton and the Santa Ynez River Water Conservation District both have voting seats on the Committee, whereas the Santa Barbara County Water Agency has a non-voting seat.

During the development of this GSP the CMA GSA committee met regularly on SGMA matters. The GSA developed an Outreach and Engagement Plan to facilitate engagement with stakeholders. A volunteer public Citizens Advisory Group (CAG) was created with members representing a group of groundwater users to help solicit public feedback on GSP elements. Newsletters and press releases about the GSA and SGMA were created and distributed through numerous channels, including utility bills. All three management areas used a centralized website to aid with communications, tracking meetings, and receiving public comments.

### ES Plan Area (GSP Section 1d)

The Basin is a coastal groundwater basin measuring approximately 317 square miles, located in Santa Barbara County, California. Each of the three management areas of the Basin is covered by a GSP; this GSP is for the CMA, which is approximately 32.8 square miles. The CMA itself is divided into two subareas based on hydrogeology and topography: the Buellton Upland which is relatively steep topography, and the Santa Ynez River Alluvium which consists of the relatively flat area cut by the historical movements of the Santa Ynez River. The Santa Ynez River Alluvium contains the Santa Ynez River, and the underflow of the River in that area is not groundwater as defined by SGMA and thus is not be managed by the CMA GSA, because such underflow constitutes subterranean water flowing in known and definite channels that is treated as surface water and subject to the jurisdiction of and regulation by SWRCB.

Approximately 95% of the CMA is privately held land. There is Federal Bureau of Land Management land, State California Wildlife Conservation Board land, as well as local cities, school districts, and other district properties.

The public water agencies in the CMA are the City of Buellton Water Department, and there are several small Mutual Water Companies (MWC) which supply water outside of the city. The Central Coast Water Authority (CCWA), a wholesale water agency, operates a water pipeline that passes through the CMA and conveys imported water from the State Water Project to the City of Buellton within the CMA.

Population data for communities within the CMA indicate that most people live near or within the City of Buellton or along the highway 246 corridor.

There are three General Plans, or equivalent plan areas, outlining land use in the CMA. The City of Buellton has a General Plan within its jurisdiction. The Santa Ynez Valley Community Plan is a specific General Plan from the County of Santa Barbara for the area around the city. The entire CMA is within the general plan area of the County of Santa Barbara.

#### **ES 4 Additional GSP Elements (GSP Section 1e)**

A data management system was implemented for this GSP in accordance with the SMGA. As part of its communications and public outreach, the CMA GSA prepared and distributed the Data Management Plan, a whitepaper describing the data management system. The DMS was then implemented.

### **ES CHAPTER 2: BASIN SETTING**

---

#### **ES Hydrogeologic Conceptual Model (GSP Section 2a)**

A hydrogeologic conceptual model was developed and used to identify existing and projected groundwater conditions for the Basin. The hydrogeologic conceptual model presents the various conceptual components of the CMA's groundwater system, including the geologic setting; aquifer extents; physical properties, including water imports; and land use.

The geologic setting is related to the northward movement of the Pacific Plate relative to the North America Plate. Groundwater is found in younger geologic formations that have been uplifted and deformed into a large syncline fold. The Santa Ynez River has cut through and filled in the existing geology. Alluvium subareas are where the Santa Ynez River cut into underlying non-water bearing units causing a 'bedrock channel,' which limits groundwater flow. The definable bottom and lateral extents of the Basin were determined using the three-dimensional geologic model included in the hydrogeologic conceptual model. For groundwater management purposes one principal aquifer, the Buellton Aquifer, was defined as the principal formation in the Buellton Upland subarea, and the lower non-alluvial formation in the Santa Ynez River Alluvium (SYRA) subarea. The SYRA subarea consists of upper alluvial formations in a bedrock channel that convey the Santa Ynez River and the underflow of the river. Accordingly, the Santa Ynez River and its underflow are within the jurisdiction of and regulated by the SWRCB.

The topography of the CMA is varied with low hills with steep canyons in the north and a relatively flat plain towards the south around the Santa Ynez River. Rainfall is highly influenced by local topography. However, local slope and soil types influence runoff and the amount of potential recharge to the aquifers in any particular location.

Since 1997, the CCWA has delivered State Water Project water to the Basin through the 130 mile long Coastal Branch Pipeline that enters the Basin at Vandenberg Space Force Base and terminates at Lake Cachuma. State Project Water deliveries from the pipeline are received by the City of Buellton in the CMA. Other water from this pipeline is delivered to ID No.1, City of Solvang, and Lake Cachuma, east and upstream of the CMA. The Tecolote Tunnel conveys water from Lake Cachuma to the Santa Barbara County south coast including the cities of Santa Barbara, Goleta, Montecito, and Carpinteria. The Tecolote Tunnel was completed in 1955 and is the newest of three tunnels used for exporting Santa Ynez River water to the south coast of Santa Barbara County.

Groundwater within the CMA is primarily used for agriculture, which represents the largest proportion of land and water use within the Basin. Other uses of groundwater in the basin include municipal and light industrial, small domestic uses, and environmental uses, such as groundwater dependent ecosystems.

## ES Groundwater Conditions (GSP Section 2b)

This GSP describes historical, existing, and projected groundwater conditions with regard to each of the six SGMA sustainability indicators including: the chronic lowering of groundwater levels, significant and unreasonable reduction of groundwater in storage, significant and unreasonable seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water.

Groundwater elevation data was collected from wells throughout the CMA, in both the seasonal high (spring) and seasonal low (fall) conditions. Groundwater contours were developed by interpolating between monitoring wells. Groundwater levels were plotted over time (hydrographs) were developed to show the change in groundwater elevation at each location over time to evaluate groundwater levels and groundwater storage.

Groundwater storage over time was compared against the year type and groundwater pumping: year type was found to be a primary influence on groundwater storage. To support this analysis, a quantitate method using flow at the Salsipuedes Creek measured by the U.S. Geologic Survey (USGS) streamflow gage is described which identify the qualitative “dry” and “wet” years.

Location of known potential groundwater contamination sites were identified. The responsibility of remediating groundwater is not under the jurisdiction of the GSA but lies with other state and local agencies. Assessments to beneficial users in the basin and an assessment of recent (2015-2018) groundwater quality data were made for six constituents identified by the SWRCB. The goal of the GSP is to ensure than groundwater quality is not further degraded by groundwater pumping managed under this GSP. As an inland management area seawater intrusion was not applicable, but is addressed by the coastal WMA GSP.

Land subsidence was determined to be unlikely due to the geologic setting of the CMA, and the nature of the aquifer. Recent remote sensing data provided by Department of Water Resources (DWR) from 2015 – present show very little change in land surface elevation. Additionally, historical infrastructure records do not indicate land subsidence.

In the CMA, interconnected surface water for both the Santa Ynez River and its tributaries to the Buellton Aquifer is unlikely given that there is little perennial surface water in the CMA. The Santa Ynez River is

separated from the Buellton Aquifer by bedrock west of the Buellton Bend. The extent that the Buellton Aquifer underlies the Santa Ynez River and alluvial underflow deposits east of the Buellton Bend is a data gap that will be addressed during the first year of GSP implementation (see Chapter 5). In connection with this data gap east of the Buellton Bend, the quantity and timing of flow from the Buellton Aquifer to the streamflow is also currently a data gap. Because the flow from the Buellton Aquifer would have to go through the underflow deposits before reaching the river, the potential effect of groundwater pumping on surface flow is expected to be minimal. With the improved mapping of contact between the two formations and additional surface water data collected, the groundwater model will be updated to improve the accuracy of the estimated flow from the groundwater aquifer to the underflow deposits and Santa Ynez River surface flows. However, the surface water of the Santa Ynez River within the CMA is still primarily influenced by releases from Cachuma Reservoir and by diversions via shallow wells in the alluvial underflow deposits, both of which are administered by the SWRCB.

Groundwater Dependent Ecosystems (GDEs) in the CMA were assessed using an assumed rooting depth and the current depth to groundwater. A map of the GDEs in the CMA was developed. Potential GDEs along the CMA upland tributaries were greater than 30 feet above the groundwater table and were screened out of consideration for future groundwater management. The exception being an isolated area near the confluence of Santa Rosa Creek and the Santa Ynez River mainstem, where groundwater levels are estimated to be within 30-feet of the ground surface. This area will be surveyed to evaluate the potential for GDEs. Potential GDEs along the Santa Ynez River are not considered vulnerable due to historically stable water levels, based on a review of previous studies done in the area. The stability may in part be due to the management of the Santa Ynez River under SWRCB Order 2019-148.

### ES Water Budgets (GSP Section 2c)

Water budgets are calculations of the flows of water in and out of the various components of the Basin's surface water and groundwater systems. The various components of the water budget are introduced in the hydrogeologic conceptual model. Three water budget periods were created: historical, current, and projected. Water flows in any particular year are highly dependent on the weather, and to a lesser extent, the antecedent conditions. The selection of hydrologic years for each of the three budget periods was coordinated with the other two management areas (WMA and EMA).

The period of 1982 through 2018 was selected as the historical period. Stream flow along Salsipuedes Creek were used as a proxy for water supply conditions in the Basin. Flows during this historical period are similar to the long-term monitoring at the same gage, indicating that the years are likely representative of the long-term period. The years from 2012 to 2018 were all relatively dry years, so the current period was started in 2011. To meet the 50-year planning horizon required by SGMA, the projected period is 2018 through 2072.

The length of the historical water budget in this GSP is 36 years, which exceeds the 10-year SGMA requirement. For surface water, the average inflows were 100,200 acre-feet per year (AFY) and ranged from 4,570 to 724,710 AFY, with most of this variability influenced by the Santa Ynez River flows. Surface water outflows were on average 100,070 AFY and ranged from 7,085 to 710,805 AFY. Groundwater is less variable, with inflows ranging between 1,990 to 6,570 AFY, and an average inflow of 3,550 AFY. The two primary drivers of variability in groundwater were percolation from surface water and recharge from precipitation. Groundwater outflows ranged from 1,450 to 5,590 AFY with an average of 3,540 AFY. Agricultural pumping was the largest influence on groundwater flow and had the greatest variation over the historical period. The average annual pumping total of 2,760 AFY (Table 2c.2-5) for the historical period (1982 through 2018, 37 years) resulted in zero net change in groundwater storage in the Buellton Aquifer, so this water budget analysis indicates that the sustainable perennial yield of the CMA is approximately 2,800 AFY.

For the current period (2011 through 2018), surface water average inflows were 32,040 acre-feet per year (AFY) and ranged from 9,130 to 141,660 AFY, with most of this variability influenced by the Santa Ynez River flows. Surface water outflows were on average 32,040 AFY and ranged from 11,100 to 140,540 AFY. Groundwater is less variable for the current period, with inflows ranging between 2,150 to 4,160 AFY, and an average inflow of 2,810 AFY. For groundwater, the two primary drivers of variability were percolation from surface water and recharge from precipitation. Groundwater outflows ranged from 3,000 to 5,290 AFY, and an average of 4,170 AFY. Agricultural pumping was the largest influence on groundwater flow and had the greatest variation over this current period.

The projected period water budget estimates population increases, projected precipitation and climate change factors. However, population of the Buellton area is expected to grow by up to 45% over the 20-year planning period (by 2042), but water use is expected to grow by only 15%. Within the 50 year

planning period (by 2072) the total water usage is expected to increase by 20%. Groundwater demand is expected to increase from 3,015 AFY in 2018 to 3,198 AFY in 2042, and 3,328 AF in 2072. Projected water availability is expected to be relatively similar to historical conditions, which will likely result in a loss of groundwater storage, unless projects and management actions are undertaken to maintain sustainability.

## ES CHAPTER 3: MONITORING NETWORKS AND SUSTAINABLE MANAGEMENT CRITERIA

---

### ES Monitoring Networks (GSP Section 3a)

The Monitoring Networks section of the GSP summarizes the parameters that were monitored in the Basin and identifies representative sites for monitoring for five applicable SGMA sustainability indicators. Seawater intrusion is not directly applicable to the non-coastal CMA.

Federal, state, and local monitoring networks are responsible for groundwater monitoring in the CMA, are described in this GSP. Prior to 2019 the United States Geological Survey (USGS) conducted groundwater level monitoring in the CMA and the entire Basin. Starting in 2019 the groundwater level monitoring was taken over by the Santa Barbara County Water Agency. The City of Buellton also collects groundwater levels in its wells. Estimates for groundwater storage rely on using the same network data.

Groundwater quality is currently monitored by two programs in the CMA:

- Public water system monitoring of drinking water sources by water suppliers as reported to Safe Drinking Water Information System; and
- Monitoring by commercial agriculture as part of the Irrigated Lands Regulatory Program.

Land subsidence is monitored using monthly remote sensing satellite data, which covers the entire CMA. Additionally, there is a continuous GPS (CGPS) station in the CMA, and the Central Coast Water Authority, which operates the State Water Project pipeline, has remote access to operators that can be contacted in the event of subsidence. The remote sensing tracks elevation change, while CGPS tracks elevation and horizontal movement. If a decline in land surface elevation is observed, a follow-up analysis would need to be conducted to determine whether the cause was subsidence from groundwater depletion.



Finally, two U.S. Geological Survey stream gages measure and record surface water flows, each within one mile of the CMA east boundary that monitor surface water inflow into the CMA. The surface water outflow from the CMA is currently a data gap which will be addressed with spot flow measurements in the first year of implementation and correlation with an existing nearby gage with a long history of record. Monitoring of potential surface water depletion is performed by collecting water levels in the underflow alluvium near the Santa Ynez River in addition to the monitoring of groundwater levels in the Buellton Aquifer.

These existing monitoring networks were reviewed, and wells were selected from each based upon representativeness. Additionally, several areas were identified as locations where the network should be improved.

### ES Sustainable Management Criteria (GSP Section 3b)

This section identifies the sustainability goal of the Basin, conditions of undesirable results for each of the six SGMA sustainability indicators, Minimum Thresholds at the representative sites, and Measurable Objectives. These criteria are described below and summarized in **Table ES.1**.

Sustainability goals were identified as follows:







- (1) Maintain long-term groundwater elevation at levels adequate to support existing and anticipated beneficial uses,
- (2) Maintain a sufficient volume of groundwater in storage to ensure groundwater availability during periods of drought and recovery during wet climate conditions,
- (3) Maintain water quality conditions to support ongoing beneficial use of groundwater for agricultural, municipal, domestic, and industrial and environmental uses.

For each of the five applicable SGMA sustainability indicators the potential undesirable result was identified. The potential undesirable result is determined, quantified based on the identification criteria, and the potential effects on beneficial users are described.

Undesirable results from chronic lowering of groundwater levels would result in beneficial well users' access to water being impaired. This impairment would require more energy to pump water and potential

replacement of wells to access water. This undesirable result could occur if groundwater extractions exceed the sustainable yield over a period of years. Evaluation of this potential undesirable result will be based on direct measurements of groundwater levels.

**Table ES.1  
Sustainable Management Criteria Indicator Summary for the CMA**

Sustainability Indicator	Minimum Threshold	Measurement	Measurable Objective	Undesirable Result
 <b>Chronic lowering of groundwater levels</b>	Water level minimum thresholds for Representative Monitoring Wells (RMWs) screened in the Buellton Aquifer established 15 feet or more below the 2020 levels.	Groundwater elevations measured at 4 RMWs screened in the Buellton Aquifer.	Spring 2011 groundwater elevations.	Spring groundwater elevations that drop below the established groundwater elevation minimum thresholds in more than 50% of the RMWs for 2 consecutive non-drought years.
 <b>Reduction of groundwater in storage</b>	Water level minimum thresholds for RMWs screened in the Buellton Aquifer established 15 feet or more below the 2020 levels.	Groundwater elevations are used a proxy for the total volume of groundwater in storage. Groundwater elevations will be measured at 4 RMWs screened in the Buellton Aquifer	Spring 2011 groundwater elevations.	Spring groundwater elevations that drop below the established groundwater elevation minimum thresholds in more than 50% of the RMWs for 2 consecutive non-drought years.
 <b>Seawater Intrusion</b>	Not applicable: non-coastal management area	Not applicable.	Not applicable.	Not applicable.
 <b>Degraded Water Quality</b>	For all constituents except Nitrate and Total Dissolved Solids (TDS), minimum threshold concentrations were established as the Water Quality Objectives by RWQCB. Nitrate minimum threshold concentration established at the drinking water Maximum Contaminate Level (MCL), and TDS is the drinking water Secondary Maximum Contaminate Level (SMCL).	Salt and nutrient concentrations measured at 7 RMWs.	For Nitrate and TDS: the MCL and SMCL.  Other constituents: Median Groundwater Quality Objectives.	Minimum threshold exceedances for each constituent in more than 50% of the RMWs for 2 consecutive non-drought years.
 <b>Subsidence</b>	A decline of six inches from 2015 land surface elevation resulting from groundwater extractions.	Review of publicly available land subsidence satellite data and continuous GPS data.	Land subsidence less than two inches compared to the 2015 InSAR data.	Land subsidence associated with groundwater production that exceeds half a foot from 2015 conditions.
 <b>Depletion of interconnected surface water</b>	Water Elevations in underflow alluvium near the Santa Ynez River that drop 15 feet or more below the Santa Ynez River channel bottom.	Water elevations in underflow alluvium measured at three RMWs.	Water elevations in underflow alluvium equal to five feet below the elevation of the Santa Ynez River channel bottom.	Water elevations in underflow alluvium near the Santa Ynez River that drop 15 feet or more below the channel bottom in 2 of the 3 surface water depletion RMWs for 2 consecutive non-drought years. Key undesirable result is more surface water depletion due to groundwater extraction than prior to 2015.

RMW = Representative monitoring wells; RWQCB = Regional Water Quality Control Board; MCL =maximum contaminate level; SMCL = secondary maximum contaminate level; TDS = total dissolved solids; GPS = Global Positioning System; InSAR = Interferometric synthetic aperture radar; mg/L = milligrams per liter

*(Page Intentionally Left Blank)*

The potential undesirable result from chronic lowering of groundwater levels is less water available for beneficial users using existing infrastructure. This impairment would require more energy to pump water and potential replacement of wells to access water. This undesirable result could occur if groundwater extractions exceed the sustainable yield over a period of years. Evaluation of this potential undesirable result will be based on direct measurements of groundwater levels.

Groundwater storage is the volume of water that is stored in an aquifer. The potential undesirable result of a decline in groundwater storage is less water available for beneficial users, meaning that the water is physically not present to be extracted. As with groundwater levels, groundwater storage is related to pumping and other outflows exceeding the amount of water inflows into the groundwater basin over a period of years. Groundwater storage will be estimated using the groundwater elevation data to assess the volume of water involved.

In the CMA there is no direct potential undesirable result from seawater intrusion.

Potential undesirable results from degradation of water quality is impaired beneficial uses of the groundwater. To assess water quality, specific salts and nutrients are chosen for analysis. Specifically, concentrations of total dissolved solids, chloride, sulfate, boron, sodium, and nitrate.

Potential undesirable results due to land subsidence may include damage to surface infrastructure and collapsed pore space in the aquifers. Land-surface elevation changes are quantified by a remote sensing (satellite) system which uses interference patterns between radar returns to accurately calculate changes in elevation over a wide region.

The potential undesirable results related to depletions in interconnected surface water and groundwater dependent ecosystems occur when impacts are greater than impacts due to groundwater extraction prior to 2015. The Santa Ynez River and River alluvium are under the jurisdiction of the SWRCB. The SWRCB retains administrative authority over the surface flow and underflow of the Santa Ynez River, including wells that divert the underflow. Depletions in interconnected surface water are evaluated by assessing water levels in potential GDE areas.

With each of the six potential undesirable results described above, specific minimum thresholds were determined to protect against the potential undesirable results. For groundwater levels, minimum thresholds were based on well screen elevations and historical low groundwater levels. For groundwater storage, minimum thresholds are based on the number of wells that met the groundwater level criteria. Minimum thresholds for water quality are based on Water Quality Objectives from the SWRCB. The land subsidence minimum threshold six inches or less relative to the 2015 elevations. Minimum thresholds for interconnected surface water will be monitored by measured water level elevations in nearby wells at or above historical low water levels and within 15 feet of the elevation of the river channel bottom.

Quantifiable goals for the maintenance or improvement of the Basin were identified as the measurable objectives. Groundwater elevations pre-drought conditions (i.e., Spring 2011) were identified as the measurable objective for groundwater levels and storage. No decline in water quality relative to 2015 was set for water quality. Less than two inches of land subsidence since 2015 was set for land subsidence. Finally, to protect surface water, nearby groundwater levels no lower than 5 feet below the local river channel bottom was set as the measurable objective.

Impacts of setting these management criteria on neighboring groundwater basins is expected to be minimal as the CMA is not directly connected to neighboring groundwater basins.

## **ES CHAPTER 4: PROJECTS AND MANAGEMENT ACTIONS (GSP SECTION 4)**

---

Projects and Management actions (PMAs) will be implemented to maintain groundwater sustainability in the CMA. The PMAs are categorized into four groups based on when each PMA would be implemented. Group 1 PMAs would be initiated within the first year after GSP submittal. Group 1 Management Actions such as water conservation, pumping fees and the installation of well meters are anticipated to close any shortfalls in maintaining the sustainable yield identified in the water budget and maintain sustainability goals. Additional Group 1 PMAs will increase water supplies further such as increased recharge through stormwater capture and supplemental imported water projects.

If Group 1 PMAs fail to have the expected results, then further actions through the implementation of other PMA groups 2, 3, and 4 will be required. PMAs in Group 2 and 3 will be implemented when the early warning and Minimum Threshold triggers for the sustainability indicators are reached.

The CMA GSA is taking an adaptive management approach to CMA management over the planning horizon. Consequently, potential projects and management actions will continuously be considered and evaluated over the planning horizon to ensure that the most beneficial and economically feasible projects and management actions are implemented to achieve the sustainability goal in the CMA and Basin. Proposed projects and management actions may be modified, as necessary, if the intended project benefits are not realized in the intended timeframe.

## ES CHAPTER 5: PLAN IMPLEMENTATION (GSP SECTION 5)

---

This chapter describes actions to implement this GSP. Five implementation categories are described.

Implementation Group 1 is completion of work started during the drafting of this GSP. This is completion of data collection and survey work that commenced during the development of this GSP. This includes surveying all representative wells in the representative monitoring network. Additionally, data collected during the SkyTEM Airborne Geophysics aerial electromagnetic survey will be evaluated and used to update the existing geologic model, hydrogeologic conceptual model and numeric groundwater model.

Implementation Group 2 resolves data gaps in the monitoring network and the conceptual framework as identified in this GSP. This includes determining information about monitoring wells that currently have no well perforation information by video surveying and sounding, and working with landowners on adding voluntary wells to the water level and quality monitoring network. A new piezometer will also be needed to assess and monitor a potential GDE on Santa Rosa Creek. New surface water measurements will also be taken on the Santa Ynez River at the CMA/WMA boundary to better quantify the amount of surface flow leaving the CMA.

Implementation Group 3 implementation items are data collection actions to allow for improved management of the CMA. Efforts to improve data collection information on water use in the Basin will be

done, including the collection of additional information from well owners. In addition, the GSA will require the installation of water meters on all wells (excluding *de minimis* domestic wells).

Implementation Group 4 and Implementation Group 5 is improved data management and SGMA updates. The former consists of update and utilized the data management system, the latter is completing SGMA annual reports (first due in 2022) and 5-year assessment and updates to the GSP (first due in 2027) will be done as required by SGMA.