EXECUTIVE SUMMARY (ES)

The State of California enacted the Sustainable Groundwater Management Act (SGMA), effective January 1, 2015, as the first legislation in the state's history to mandate comprehensive sustainable groundwater resources management. The Santa Cruz Mid-County Groundwater Agency (MGA or Agency) was formed under SGMA to develop this Groundwater Sustainability Plan (GSP or Plan) for the Santa Cruz Mid-County Groundwater Basin (Basin).

The Basin is classified by the California Department of Water Resources (DWR) as a high priority basin in a state of critical overdraft because of seawater intrusion. Based on this critical overdraft designation, the MGA is required to submit its Board adopted GSP to DWR by January 31, 2020. The MGA initiated development of this GSP in 2017 to guide ongoing management of the Basin with a goal to achieve and maintain groundwater sustainability over a 50-year planning and implementation horizon.

While the SGMA will revolutionize groundwater management in California, MGA member agencies began studying groundwater and managing the Basin long before SGMA was passed into law. The City of Santa Cruz Water Department and Soquel Creek Water District acquired interests in groundwater pumping in the Basin, and together with Santa Cruz County commissioned the first hydrogeologic study of the Basin in the mid-1960's (USGS, 1968). Seawater intrusion identified in the Basin in the 1980s required water managers to develop an extensive monitoring network of wells to monitor the Basin's groundwater and to help improve understanding of the Basin, and to implement water conservation and groundwater management strategies to balance groundwater demand with the Basin's groundwater budget.

This GSP presents detailed information to understand the occurrence of groundwater in the Basin and provides solutions to achieve the Basin's sustainability goals. This GSP and Executive Summary are organized following DWR's guidance documents (DWR, 2016):

- Executive Summary
- Section 1 Introduction to the MGA
- Section 2 Plan and Basin Setting
- Section 3 Sustainable Management Criteria
- Section 4 Projects and Management Actions to Achieve Sustainability
- Section 5 Plan Implementation, Budget and Schedule
- Section 6 References and Technical Studies used to Develop the GSP

Section ES-1: Introduction

The MGA formed in March 2016 as a Joint Powers Authority, with four member agencies: Central Water District, City of Santa Cruz, County of Santa Cruz, and Soquel Creek Water District. The MGA Board of Directors includes two representatives from each member agency and three private well owner representatives. These four agencies have been actively working together and reaching out to private well owners on Basin management since the 1990s, well before SGMA became law in 2015.

Plan development was a collaborative effort among the member agencies and technical consultants, and was informed by input from resource management agencies, community members, and stakeholders. In recognition of the fundamental importance of public engagement, the MGA Board established a GSP Advisory Committee and selected 13 members representing Basin water users and uses including Agricultural, Business, Environmental Uses, Institutional Users, Small Water Systems, and Water Utility Rate Payers. GSP Advisory Committee meetings were open to the public and comments were incorporated into the planning process. Between October 2017 and June 2019, the Advisory Committee convened 20 formal meetings, additional orientation sessions, enrichment sessions, and technical working groups. Based on an open and public process, the Committee provided recommendations on how to address key policy issues required by SGMA.

Section ES-2: Plan and Basin Setting

Section 2 of the Plan describes the Basin setting based on existing studies relating to geology, hydrogeology, climate, historical groundwater conditions, and history of the Basin's groundwater management.

The Basin is located at the northern end of the Central Coast hydrologic region, extending from the Santa Cruz Mountains to the Pacific Ocean, and from Live Oak to La Selva Beach along the Pacific coast. The Plan area and Basin setting are defined by geologic, hydrologic, and jurisdictional boundaries. The Basin includes a portion of the City of Santa Cruz, all of the City of Capitola, and unincorporated areas of Santa Cruz County. Land use is predominantly residential (50%) and open space/parks (34%), with limited commercial (8%) and agriculture (2%). Land use is further divided between urban and rural areas; development densities are greatest in the urban/suburban areas located on the coastal terraces, with much lower densities in the rural areas in the foothills and mountains.

All the major water supply purveyors in Santa Cruz County rely on local sources and import no water from outside the County. Estimated population within the Basin is 92,000 (AMBAG, 2018). Approximately 80,500 residents (88%) receive water from municipal suppliers and 11,600 residents are supplied by private wells or small water systems. Roughly 50,000 Basin residents (54%) rely solely upon groundwater. The remaining 42,000 residents are served by the City of Santa Cruz, with approximately 95% of its supply sourced from surface water from outside the Basin and 5% from groundwater within the Basin (SCWD, 2016).

DWR classified the Basin as in critical overdraft because seawater intrusion is actively occurring (DWR, 2018b). Groundwater extractions in the Basin peaked between the mid-1980s and mid-1990s, causing groundwater overdraft. Over-pumping of Basin aquifers lowered groundwater elevations in the coastal portions of the Basin where the majority of municipal pumping takes place. Lowered groundwater levels allowed seawater intrusion into portions of the aquifer and posed a threat of more widespread seawater intrusion. Since 1995, extensive and effective water conservation efforts have reduced water demand and total Basin groundwater pumping, but modeling conducted as part of GSP development indicates that additional supplemental water is needed to achieve groundwater sustainability.

Groundwater Model

MGA technical consultants developed a computerized numerical model to help understand the hydrogeology of the Basin and to simulate future groundwater conditions for GSP planning purposes. The Basin GSFLOW model is an integrated surface water and groundwater model that combines both Precipitation-Runoff Modeling System (PRMS) and MODFLOW code. It simulates both hydrogeologic and hydrologic conditions within the Basin. The PRMS portion of the model handles watershed flows, MODFLOW simulates subsurface flow, and the MODFLOW Streamflow-Routing (SFR) package simulates streamflow.

Projected Future Basin Conditions, Land Use and Water Use

The Plan includes projects and management actions to stop the advancement of seawater intrusion and to maintain sustainability under future Basin conditions that will be impacted by changes in land use, water use, and climate. The projected climate change effects include 2.3 feet of sea level rise by 2070 and a warmer and drier climate that has an average temperature increase of 2.4° F, a decrease in precipitation of up to 3.1 inches per year, and a 6% increase in evapotranspiration. Land use patterns are assumed to be unchanged while accommodating projected regional population growth of 4.2% pre-2035 and 2.1% post-2035. Projected non-municipal groundwater demand for domestic use assumes pre-drought (2012 – 2015) water demand of 0.35 acre-feet per year per household. Groundwater demand for larger institutions such as camps, retreats, and schools, and agricultural irrigation are assumed to remain the same as historical demands.

Water Budget

Precipitation as rainfall is the primary source of water that becomes either surface water or groundwater in the Basin. Rainfall that falls in the Basin’s watersheds is either evapotransported, flows overland and into streams, percolates into the subsurface and becomes groundwater, or remains in the soil zone as soil moisture. Historically from water years 1985 - 2015, 66% of rainfall that falls in the Basin is evaporated or transpired without reaching a surface water body. Twenty six percent of rainfall (an average of 25,320 acre-feet per year) becomes overland flow that eventually enters streams and creeks within the Basin. Five percent of rainfall percolates beyond the root zone and recharges the Basin. The remaining portion (3%) reflects the net change in soil moisture stored in the soil layers overlying the Basin.

Table ES-2 summarizes the relative distribution of precipitation derived from model simulations for different time periods. During the drier periods (current and projected) when there is less rainfall than the historical period, evapotranspiration takes up a greater proportion of rainfall, with overland flow/streamflow receiving less water. The relative proportion of rainfall that becomes groundwater recharge remains similar for the three different climatic periods.

Table ES-2. Percentage Distribution of Precipitation in Santa Cruz Mid-County Basin

Precipitation Budget Component	Historical (1985 – 2015)	Current (2010 – 2015)	Projected (2016 – 2069)
Precipitation (acre-feet)	96,200	81,600	87,280
Evapotranspiration	66%	72%	69%
Overland Flow	26%	23%	25%
Groundwater Recharge from Precipitation	5%	5%	4%
Soil Moisture	3%	0%	2%

Streamflow occurring in the Basin is fed by a number of sources both within and outside of the Basin. Over the historical period from 1985 – 2015, 55% of streamflow (an average of 25,320 acre-feet per year) is from overland flow generated within the Basin. Flows from upstream of the Basin constitute 43% of flows into the Basin. Groundwater contributions to streamflow are around 3%. Surface water outflows from the Basin are predominantly to the ocean (89%), with the remaining 11% flowing out to neighboring groundwater basins. Relative percentages of surface water inflows and outflows for different time periods are summarized in Table ES-3. In general, the relative percentages of inflow and outflow are similar for the different climatic periods but the volume of inflows is controlled by the amount of precipitation both within and outside the Basin.

Table ES-3. Average Percentage Distribution of Surface Water Budget in Mid-County Basin

Surface Water Budget Component	Historical (1985 – 2015)	Current (2010 – 2015)	Projected (2016 – 2069)
Inflows (acre-feet)	45,800	32,110	37,400
Overland Flow	55%	58%	59%
Flows from Upstream of the Basin	43%	39%	38%
Net Flows From Groundwater	2%	3%	3%
Outflows (acre-feet)	45,800	32,110	37,400
Ocean Outflow	89%	90%	89%
Outflow in Branciforte Creek	9%	8%	9%
Pajaro Valley Subbasin	1%	1%	1%
Santa Margarita Basin	<1%	<1%	<1%

The historical groundwater budget (1985 – 2015) consists of inflows from surface recharge (60% of inflows) and subsurface inflows from the Purisima Highlands Subbasin (40% of inflows). Outflows are primarily by groundwater extraction (59% of outflows) and to the Pajaro Valley (32% of outflows), with only 3% of outflows going to the Santa Margarita Basin. Overall, groundwater flows to and from the ocean are net outflows to the ocean (6% of outflows). However, net flows from offshore occur in the Purisima DEF/F and A-unit aquifers where seawater intrusion is already observed. Relative percentages of groundwater inflows and outflows for different time periods are summarized in Table ES-4. The historical change of groundwater in storage has been an annual increase of 480 acre-feet per year. This reflects recovery from historic low Basin groundwater levels in the 1990s and early 2000s that has been achieved through water conservation efforts and redistributing pumping.

Table ES-4. Average Percentage Distribution of the Groundwater Budget in Santa Cruz Mid-County Basin

Groundwater Budget Component	Historical (1985 – 2015)	Current (2010 – 2015)	Projected (2016 – 2069)	
			Baseline	GSP Implementation
Inflows (acre-feet)	13,070	11,490	11,290	10,920
UZF Recharge	34%	31%	34%	35%
Net Recharge from Stream Alluvium	10%	8%	9%	6%
Recharge from Terrace Deposits	16%	16%	16%	16%
Subsurface Inflow from Purisima Highlands Subbasin	40%	45%	41%	43%
Outflows (acre-feet)	12,590	11,650	11,220	10,570
Pumping	59%	53%	6,190	43%
Subsurface Outflow to Santa Margarita Subbasin	3%	2%	210	2%
Net Subsurface Outflow to Pajaro Valley Subbasin	32%	36%	3,670	37%
Net Outflow Offshore	6%	8%	1,150	19%
Change in Storage (acre-feet per year)	+480	-160	-70	+350

As a result of drier climate, groundwater inflow volumes for current and projected conditions are less than historical inflows (Table ES-4). The current groundwater budget has similar proportions of inflows and outflows to the historical budget. The main changes over this recent period are 1) decreased recharge due to reduced rainfall and 2) decreased municipal pumping due to water conservation. Even though there was decreased recharge, decreases in pumping allowed recovery of groundwater levels. The higher groundwater levels caused slightly more outflow to the ocean and a smaller increase in outflows to the Pajaro Valley Subbasin. The net result was that the Basin experienced only a relatively small decrease of 160 acre-feet per year of groundwater in storage.

Without additional projects and management actions implemented to achieve groundwater sustainability (Baseline scenario), it is projected that the Basin will experience a small loss of 70 acre-feet per year in groundwater storage. Modeled climate change results in a projected average decrease in Baseline groundwater inflows of around 200 acre-feet per year from current inflows. Projected groundwater pumping in the Baseline groundwater budget is expected to be similar to recent pumping. As a result of the projected recharge and pumping conditions, outflow to the ocean remains virtually the same as experienced currently, which will do little to prevent future advancement of seawater intrusion.

With GSP Implementation of projects and management actions to achieve groundwater sustainability, projected average net pumping is reduced by 1,740 acre-feet per year because groundwater demand is offset by supplemental water injected into the Basin. This results in increase of outflows to the ocean that ensures seawater intrusion does not move onshore farther than it is currently, and may potentially even push it back.

Sustainable Yield

The projected sustainable yield is the amount of net Basin pumping that can occur while avoiding undesirable results for the Basin's applicable sustainability indicators. Net pumping is pumping minus volume of managed aquifer recharge. Table ES-5 lists the projected sustainable yields for three aquifer groups that are grouped according to how production wells are typically screened. Section 2.2.3.7 provides details on how the sustainable yield was developed.

Table ES-5. Projected Sustainable Yield

Aquifer Group	Sustainable Yield (acre-feet per year)
Aromas Red Sands and Purisima F	1,650
Purisima DEF, D, BC, A and AA	2,290
Tu	930
Total	**4,870**

Section ES-3: Sustainable Management Criteria

The SGMA's requirement for establishing and maintaining sustainability are based on development of sustainable management criteria (SMC) for six sustainability indicators**.** The MGA developed a Sustainability Goal for the Basin discussed in Sections 1.2, and 3.1 and identified undesirable results, minimum thresholds, measurable objectives, and interim milestones for the sustainability indicators relevant to the Basin as discussed in Sections 3.4 through 3.9. The six sustainability indicators that are required by SGMA are listed below with a general summary of key Basin management objectives for each:

Seawater Intrusion: Prevent seawater from moving farther inland than was observed from 2013 – 2017. Seek to maintain groundwater in coastal monitoring wells at levels that prevent further seawater intrusion with at least 99% modeled probability

Degradation of Groundwater Quality: Maintain groundwater quality so that no state drinking water standard is exceeded in any representative monitoring well as a result of groundwater pumping or managed aquifer recharge.

Chronic Lowering of Groundwater Levels: Do not allow groundwater levels to decline to a level that no longer supports beneficial uses like agricultural, industrial, private and municipal production wells.

Depletion of Interconnected Surface Water: In interconnected streams supporting priority species, ensure there is no more surface water depletion due to groundwater extraction than prior to 2015.

Land Subsidence: The Plan does not include SMCs for the subsidence indicator because the Basin is not geologically susceptible to subsidence.

Reduction of Groundwater in Storage: Maintain net groundwater extraction (pumping minus annual volume of managed aquifer recharge) so other sustainability indicators aren't negatively affected.

The SGMA requires use of monitoring networks to measure the health of the Basin and its progress towards sustainability. An extensive GSP monitoring network of 168 wells will collect data of sufficient quality, frequency, and spatial distribution to characterize groundwater and related surface water conditions in the Basin, and to evaluate changing conditions that occur during implementation of the GSP, particularly relative to the established measurable SMCs.

All of the wells in the GSP monitoring network comprise dedicated monitoring and production wells from MGA member agencies designed to collect information to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface conditions. The GSP monitoring network will be expanded as needed to fully address monitoring needs for GSP implementation. Details on the Basin's GSP monitoring network are provided in Section 3.

As noted in the discussion in Section ES-2 above, seawater intrusion is the primary reason why the Basin is classified as critically overdrafted. Therefore, preventing seawater intrusion is the main focus of sustainability planning. Additionally, the GFLOW model demonstrates that if protective groundwater elevations at the coast are met, undesirable results for other applicable sustainability indicators are also avoided: reduction of groundwater in storage, chronic lowering of groundwater levels, and depletion of interconnected surface water sustainability indicators. This Executive Summary provides the details of the seawater intrusion SMC as it is a highly relevant and representative example of the approach used for all of the SMCs that are fully discussed in Section 3.

SEAWATER INTRUSION SUSTAINABLE MANAGEMENT CRITERIA

SIGNIFICANT AND UNREASONABLE CONDITIONS

Seawater moving farther inland than was observed from 2013 through 2017.

SEAWATER INTRUSION UNDESIRABLE RESULTS

The undesirable results for seawater intrusion are related to the inland movement of chloride. The extent of seawater intrusion currently observed is tracked through chloride concentrations in representative monitoring wells along the coast. Additionally, protective groundwater elevations are used as a proxy for seawater intrusion. Any of the following undesirable results would be considered significant and unreasonable conditions for seawater intrusion.

1. **Undesirable Results for Intruded Coastal Monitoring Wells**
   Any coastal monitoring well with current seawater intrusion that has a chloride concentration above its 2013-2017 maximum chloride concentration. This concentration must be exceeded in 2 or more of the last 4 consecutive quarterly samples.

2. **Undesirable Results for Unintruded Coastal Monitoring Wells, and Inland Monitoring and Production Wells closest to the Coast**
   A. Any unintruded coastal monitoring well that obtains a chloride concentration above 250 mg/L. This concentration must be exceeded in 2 or more of the last 4 consecutive quarterly samples.

   B. Any unintruded inland monitoring well (which includes municipal production wells closest to the coast and other non-coastal monitoring wells) that obtains a chloride concentration above 150 mg/L. This concentration must be exceeded in 2 or more of the last 4 consecutive quarterly samples.

3. **Undesirable Results for Protective Groundwater Elevations**
   Five-year average groundwater elevations identified below protective groundwater elevations for any coastal monitoring well.

Components of Sustainable Management Criteria

Significant and Unreasonable Condition: A qualitative statement regarding conditions that should be avoided.

Undesirable Results: Undesirable results are a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the Basin.

Minimum Thresholds: Minimum thresholds are the quantitative values used to define undesirable results.

Measurable Objectives: Measurable objectives are quantitative goals that reflect the desired groundwater conditions and will guide the MGA to achieve its sustainability goal within 20 years.

SEAWATER INTRUSION MINIMUM THRESHOLDS

Groundwater Elevations as Proxy Minimum Thresholds

Protective groundwater elevations are used as a proxy for seawater intrusion. Since 2009, seawater intrusion in the Basin has been managed by striving to maintain groundwater levels at protective elevations that prevent further seawater intrusion at the coastline. Protective groundwater elevations are also easier to measure and manage than relying solely on chloride concentrations

Chloride Isocontours Minimum Threshold (Aromas and Purisima aquifers)

Separate 250 mg/L chloride isocontours for Aromas and Purisima aquifers (Figure ES-1) have been drawn based on current chloride concentrations in coastal monitoring wells.

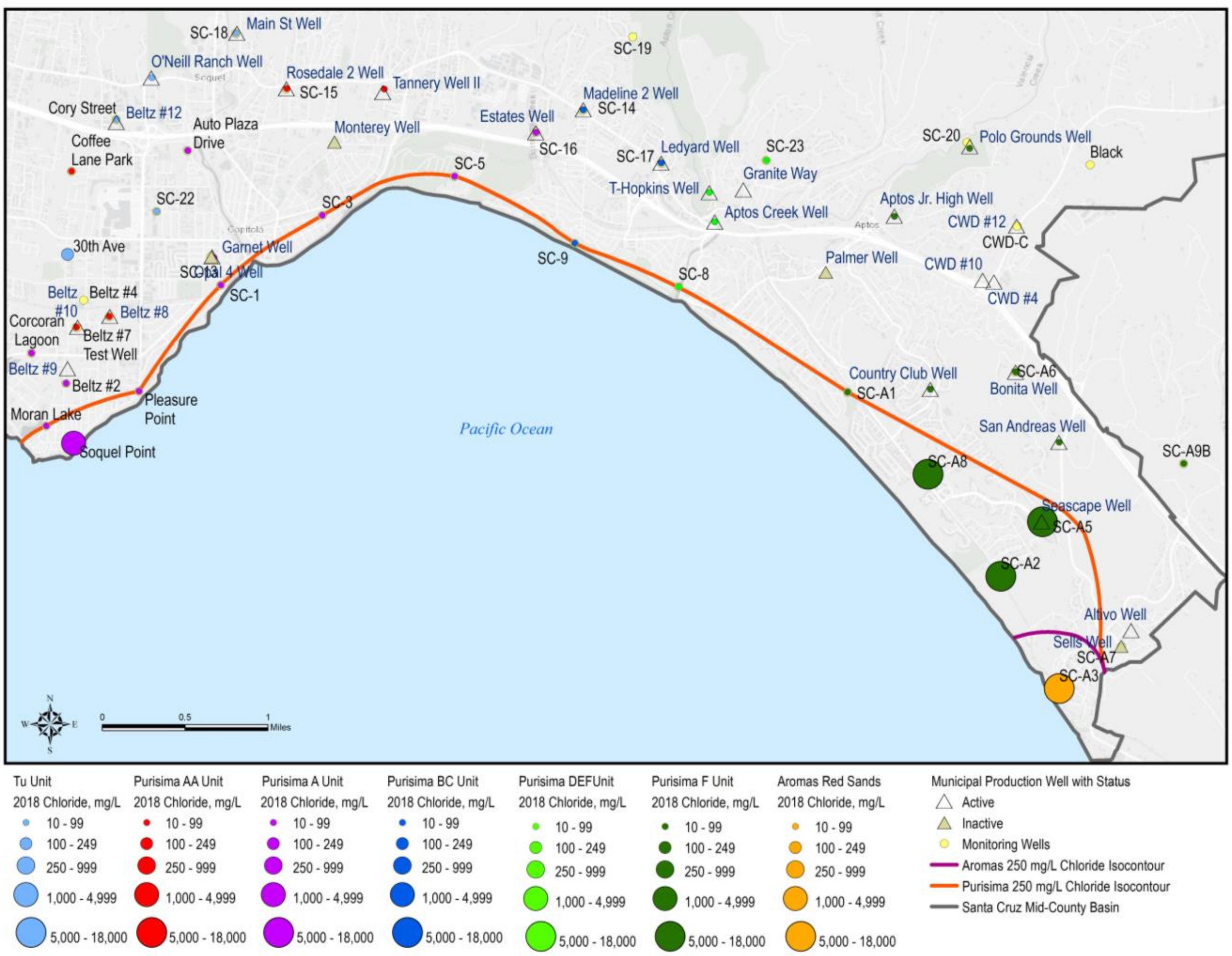

Figure ES-1. 250 mg/L Chloride Isocontours for the Aromas and Purisima Aquifers

SEAWATER INTRUSION MEASURABLE OBJECTIVES

Isocontour Measurable Objective

To reduce the chloride concentration at the same locations as the minimum threshold isocontour shown on Figure ES-1, from 250 mg/L (minimum threshold) to 100 mg/L (measurable objective).

Groundwater Elevations as a Proxy Measurable Objectives

Groundwater elevations as a proxy measurable objectives are determined based on whether the cross-sectional groundwater model is available for the area or not. Measureable objective are:

A. Cross-sectional model available: groundwater elevations for each monitoring well that represent >99% of cross-sectional model simulations as being protective against seawater intrusion. For monitoring wells where seawater intrusion has not been observed, cross-sectional model estimates protective elevations for the entire depth of the aquifer unit of the monitoring wells' lowest screen. For wells where seawater intrusion has been observed, protective elevations to prevent seawater advancement as demonstrated by the cross-sectional model estimate.

B. Cross-sectional model not available: groundwater elevations that represent protective elevations estimated by using the Ghyben-Herzberg method to protect the entire depth of the aquifer unit where the wells are screened.

Section ES-4: Projects and Management Actions to Achieve Sustainability Goal

DWR regulations require each GSP to include a description of projects and management actions necessary to achieve the Basin's sustainability goal.

In November 2018, the MGA Board discussed the agency's role in implementing projects and management actions. It was agreed that the most efficient approach is to have the MGA member agencies perform this function. A major rationale for this decision was the long-standing engagement of member agencies in groundwater management and water supply reliability planning work. In particular, the City of Santa Cruz and Soquel Creek Water District have actively evaluated and pursued supplemental supply options for the last five years.

Projects and management actions have been identified that address sustainability goals, measurable objectives, and undesirable results described for the Basin in Section 3; primarily the avoidance of seawater intrusion, with related benefits to surface water and groundwater dependent ecosystems (GDEs). Because the City of Santa Cruz water system relies heavily on surface water, an additional focus of several of the management actions discussed in this section is creation of a supplemental drought supply to improve reliability for the City's water service area.

Section 4 presents projects and management actions in three groups based on how and when they will be implemented.

Baseline Projects and Management Actions (Group 1)

Group 1 activities represent existing groundwater management commitments by MGA member agencies, including: water conservation and demand management; and installation and redistribution of municipal groundwater pumping. Group 1 activities are currently being implemented and are expected to continue to be implemented to achieve groundwater sustainability within the Basin. Activities in Group 1 are incorporated into the model's baseline when evaluating Group 2 projects and management actions.

Projects and Management Actions Evaluated Against the Sustainable Management Criteria (Group 2)

Activities in Group 2 have been developed and thoroughly vetted by MGA member agencies and are planned for near-term implementation, including: Pure Water Soquel; aquifer storage and recovery (ASR); water transfers / in-lieu groundwater recharge; and distributed storm water managed aquifer recharge.

Identified Projects and Management Actions That May Be Evaluated in the Future (Group 3)

MGA's analysis indicates the ongoing implementation of Group 1 activities and the added implementation of Group 2 projects and management actions will bring the Basin into sustainability. However, if one of the projects and management actions required for sustainability in Group 2 either fails to take place or does not have the expected results, further actions will be required. In that case, appropriate projects and/or management actions will be chosen from Group 3, which include recycled water reuse, desalination, water use curtailment, or other projects that may become possible through emerging technology. The specific activity selected will be based on factors such as size of the water shortage, speed of implementation, and scale of regulatory and political hurdles.

Section ES-5: Plan Implementation

Estimated Cost to Implement the GSP

The estimated total cost to the MGA of GSP Implementation over the 20-year planning horizon is approximately $15.8 million (Section 5, Table 5-1). Costs are based on best estimates available and reflect the MGA's current understanding of Basin conditions and MGA's role and responsibilities under the SGMA. Individual member agencies will continue to fulfill the lead role in funding individual projects and/or management actions.

MGA's major implementation cost categories include: Agency administration and operations, legal services, management and coordination, data collection/analysis/reporting, data management, GSP reporting to DWR, community outreach & education, and financial reserves and contingencies.

Activities of MGA Member Agencies

Monitoring: Individual MGA member agencies conduct groundwater, streamflow and watershed monitoring that informs the management responsibilities of their respective agencies. The MGA does not contribute towards these monitoring efforts and these costs are not included in the MGA's estimated implementation costs. However, the results of these monitoring activities are relevant to the MGA and will inform sustainable Basin management and assessment.

Projects and Management Actions: Individual MGA member agencies are responsible for projects and management actions to achieve groundwater sustainability. These include continuation of existing programs and the implementation of proposed water supply augmentation projects discussed in Section 4, Group 1 and Group 2 respectively. It is largely the projects and management actions implemented by individual MGA member agencies that collectively determine successful achievement of Basin sustainability.

Funding Sources and Mechanisms

Initial GSP Implementation Phase (2020 – 2025): Funding for the initial phase will be obtained from the annual contributions of MGA member agencies. This funding approach will be reevaluated over time. The MGA will also continue to pursue grant funding when available.

Ongoing GSP Implementation (2026 – 2040): As authorized under the SGMA, the MGA may impose fees including, but not limited to, permit fees and fees on groundwater extraction or other regulated activity to fund the costs of a groundwater sustainability program. The MGA had an initial evaluation of funding mechanisms and fee criteria completed to identify alternatives to recover the costs of GSP administration and Basin management. The report is discussed in Section 5.1.4 and attached as Appendix 5-A.Any alternative cost allocation should be equitable to MGA members and basin users. As the GSP implementation proceeds, the MGA may further evaluate funding mechanisms, and possible application of fees to users.

Schedule for Implementation

Figure ES-2 provides an overview of the preliminary schedule of MGA administration, management and coordination activities, GSP reporting and community outreach and education.

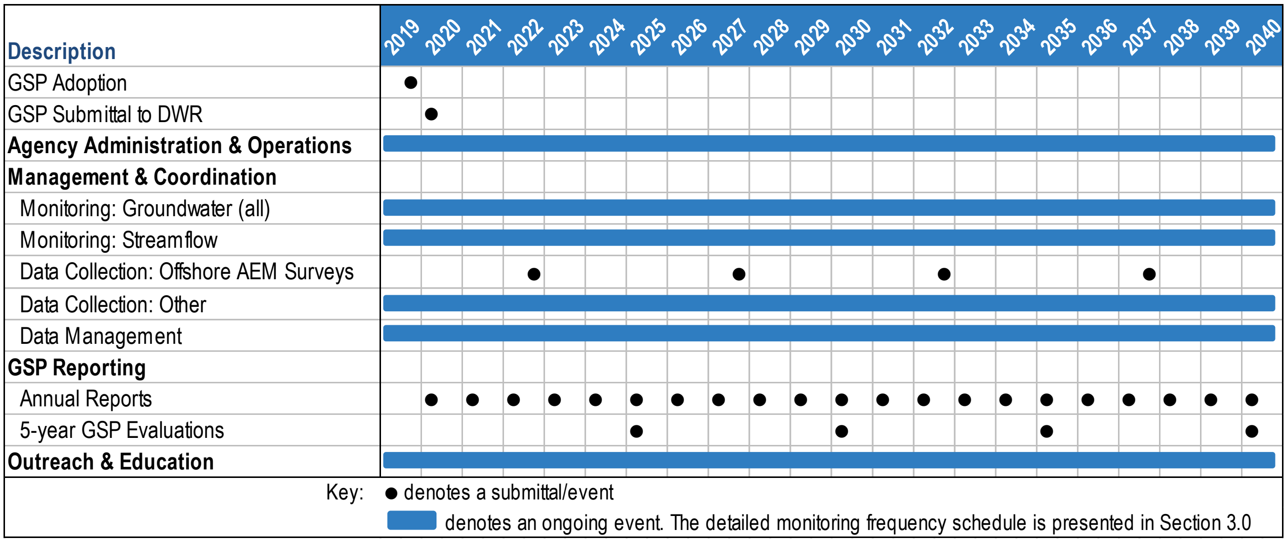

Figure ES-2. GSP Implementation Preliminary Schedule

The estimated schedule for the individual MGA member agency projects and management actions is presented in Figure ES-3. Group 1 Baseline projects are anticipated to be evaluated through the GSP planning and implementation horizon of 50 years. Group 2 estimated schedules for individual member agency projects are based on current estimates. Some projects, such as Distributed Stormwater Managed Aquifer Recharge, include multiple individual projects at separate locations, thus an overlap in development and implementation phases. The timeline for each project is dependent on factors such as permitting, approval, and funding.

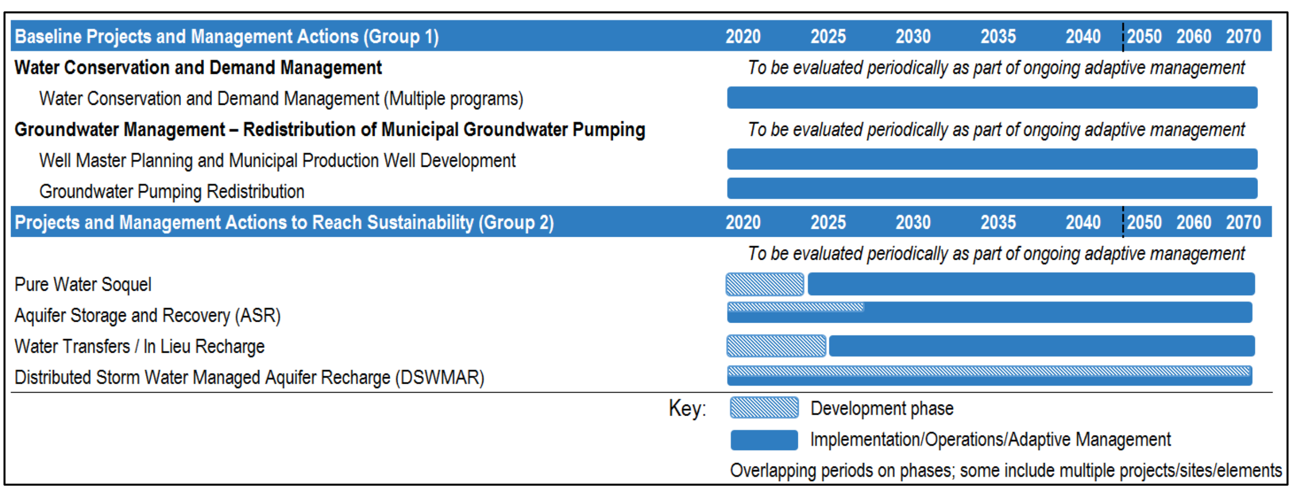

Figure ES-3. GSP Implementation Schedule

Section ES-6: References and Technical Studies

The final section of the GSP includes a complete list of references and technical studies that supported development of this GSP.