SANTA CRUZ MID-COUNTY GROUNDWATER BASIN

Introduction to the Draft Groundwater Sustainability Plan

SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY

July 20th and 22nd 2019

Presentation Outline

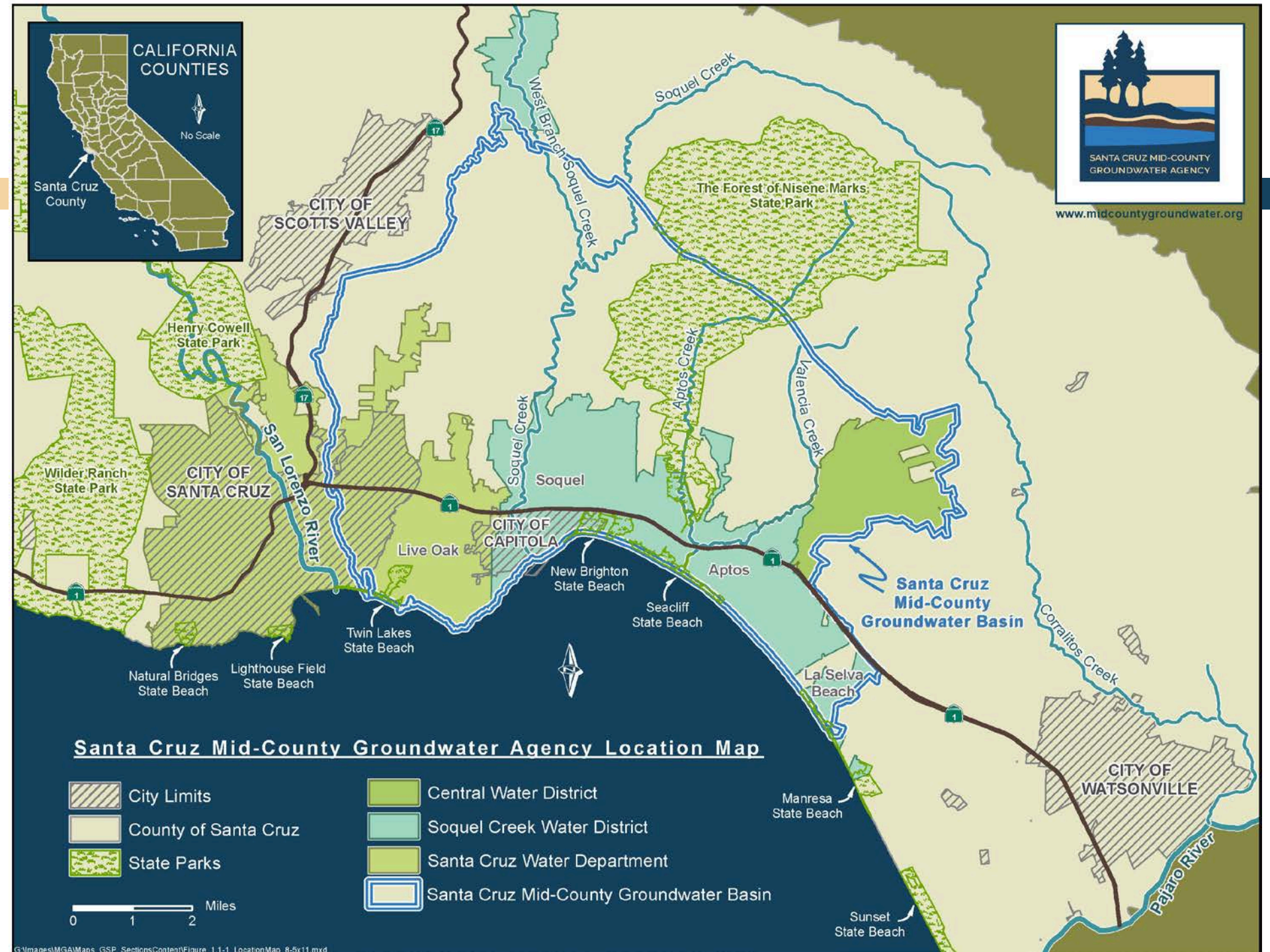
- Introduction
- Plan Area and Basin Setting
- Sustainable Management Criteria
- Projects and Management Actions
- Plan Implementation
- Public and Stakeholder Involvement in Plan Development
- Process for Review and Adoption

GSP Key Takeaways

- The GSP is Required by Law
- High Priority Basin in Critical Overdraft
- Water Supply Threatened by Seawater Contamination
- Collaborative Public Process
- Technologically Advanced Basin Modeling
- Basin is Improving, More is Needed for Sustainability
- Multiple Projects and Management Actions Needed
- Ongoing Adaptive Management
- Costs Currently Paid by the Agencies

Introduction

- Basin
- Agency
- SGMA


CALIFORNIA COUNTIES
No Scale
Santa Cruz County
SANTA CRUZ MID-COUNTY GROUNDWATER AGENCY
www.midcountygroundwater.org
CITY OF SCOTTS VALLEY
West Branch Soquel Creek
Soquel Creek
The Forest of Nisene Marks State Park
Henry Cowell State Park
Aptos Creek
Valencia Creek
San Lorenzo River
Wilder Ranch State Park
CITY OF SANTA CRUZ
Soquel
CITY OF CAPITOLA
Live Oak
New Brighton State Beach
Aptos
Seacliff State Beach
Santa Cruz Mid-County Groundwater Basin
Twin Lakes State Beach
Natural Bridges State Beach
Lighthouse Field State Beach
La Selva Beach
Corralitos Creek
CITY OF WATSONVILLE
Manresa State Beach
Pajaro River
Sunset State Beach
Santa Cruz Mid-County Groundwater Agency Location Map
City Limits
County of Santa Cruz
State Parks
Central Water District
Soquel Creek Water District
Santa Cruz Water Department
Santa Cruz Mid-County Groundwater Basin
Miles
0
1
2
G:\Images\MGA\Maps_GSP_SectionsContent\Figure_1.1-1_LocationMap_8-5x11.mxd

Groundwater Sustainability Mandate

State Law Requires:

- Groundwater Sustainability Plan by January 2020
- Groundwater Basins Sustainable by 2040
- Basins to Remain Sustainable for 50-year planning horizon
- Basin's Principal Challenges are:
  - Maintain Groundwater Levels
  - Prevent Further Seawater Intrusion
  - Protect Groundwater Dependent Ecosystems

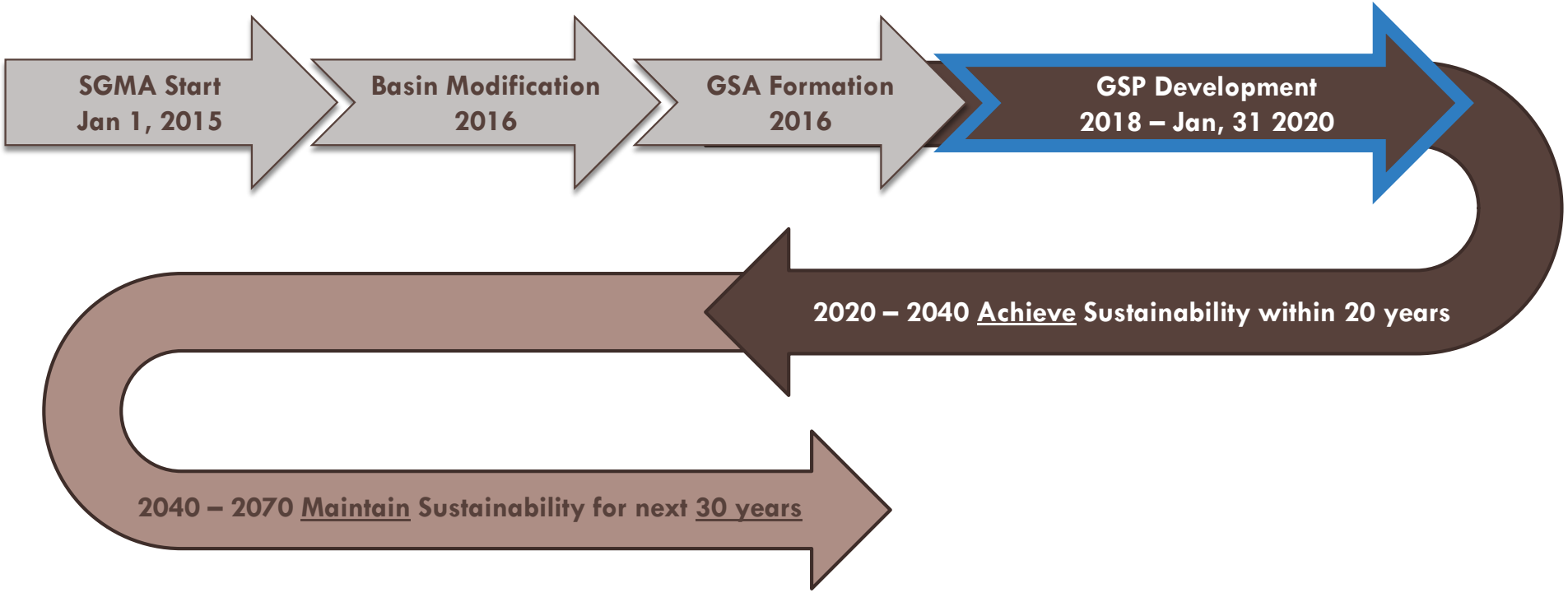
MGA – Regional Groundwater Agency

- 1995 Coordinated Local Groundwater Management
- 2015 Sustainable Groundwater Management Act
- 2016 MGA Established by Local Water Agencies
  - County of Santa Cruz (2)
  - City of Santa Cruz (2)
  - Central Water District (2)
  - Soquel Creek Water District (2), plus
  - Private Well Representatives (3)
- GSP Advisory Committee Met from October 2017 to June 2019
- Draft Plan Published July 2019

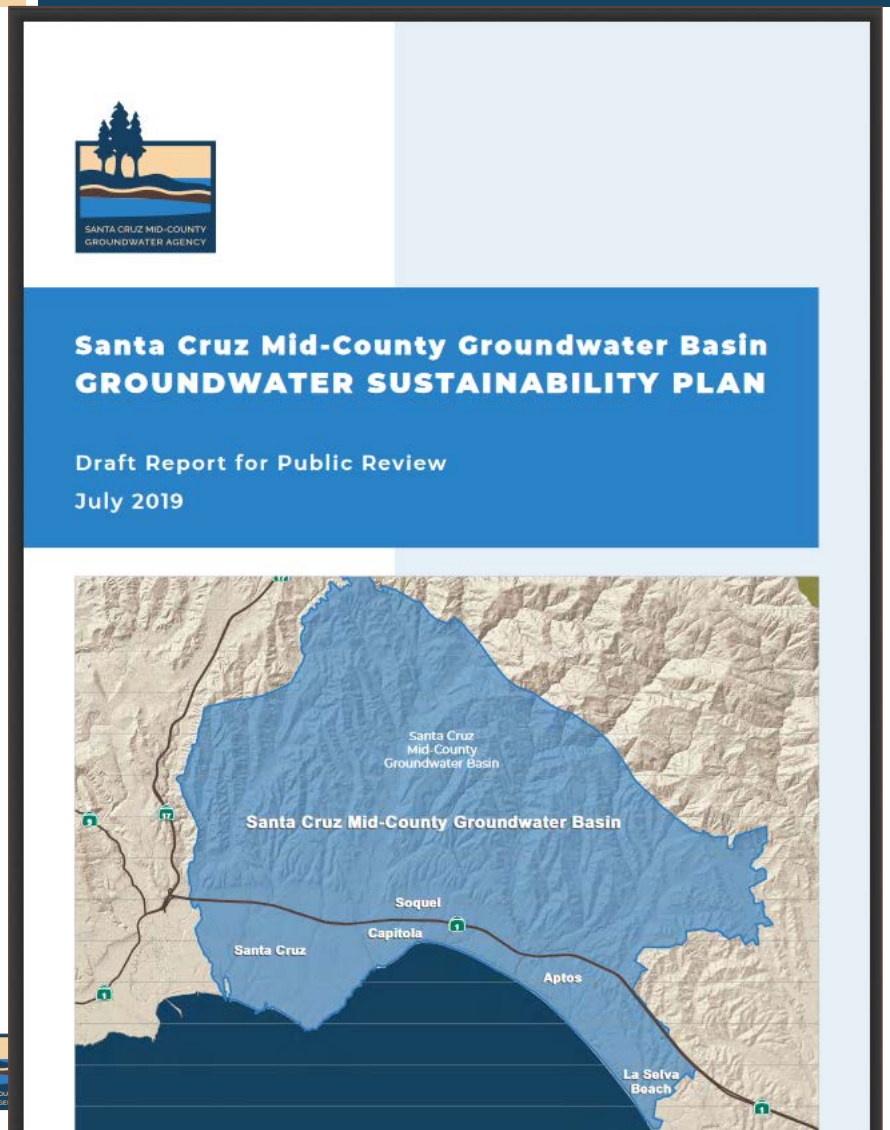
GSP Advisory Committee

- Made Policy Recommendations to the MGA Board for the Groundwater Sustainability Plan
- Committee Represents Basin Water Uses and Users
  - Agricultural users (1)
  - Business concerns (1)
  - Environmental concerns (1)
  - Institutional users (1)
  - Municipal ratepayers (1)
  - Small water system operators (1)
  - At-large representatives (3)
  - MGA member representatives (5):
    - One from each MGA member agency and one private well representative

SGMA Timeline



GSP Organization



- Executive Summary
- Chapter 1: Introduction
- Chapter 2: Plan Area and Basin Setting
- Chapter 3: Sustainable Management Criteria
- Chapter 4: Projects and Management Actions
- Chapter 5: Plan Implementation
- Chapter 6: Technical References

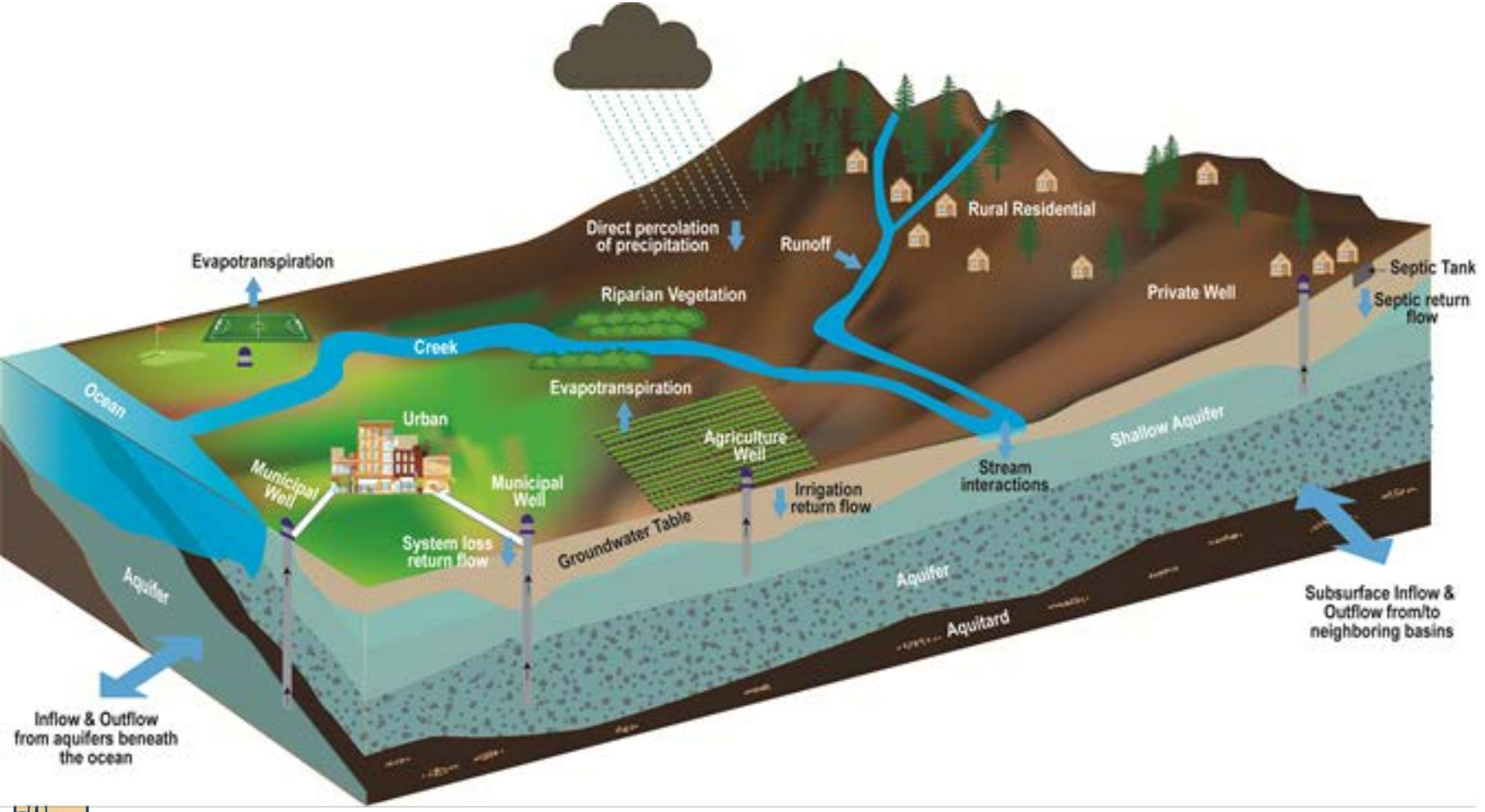
Plan Area and Basin Setting

- Current conditions
- Assumed future conditions

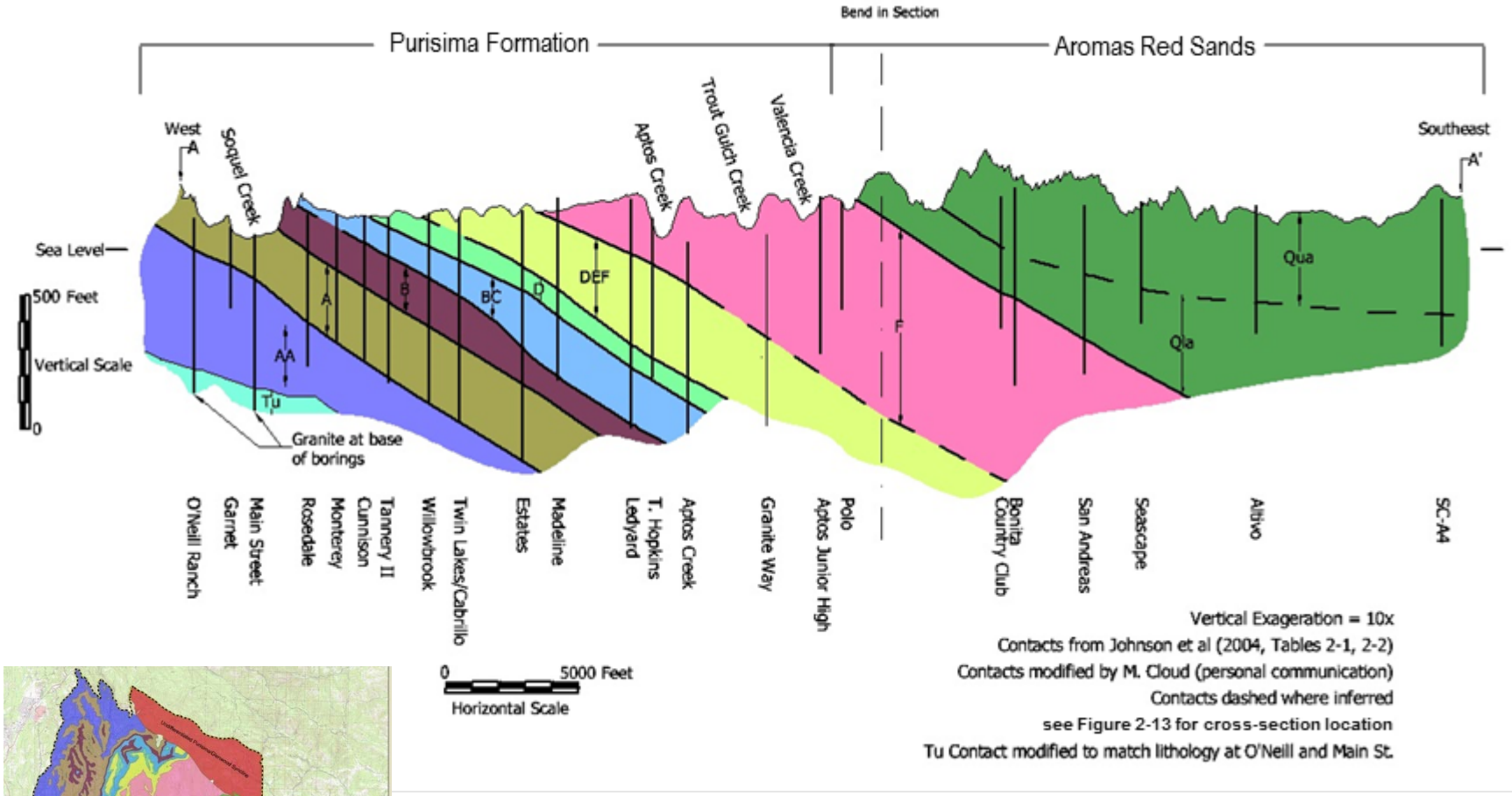
Basin Basics

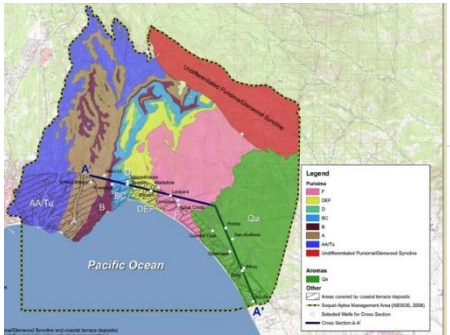
- Population in the Basin is 92,000
- 50,000 people are completely dependent on the groundwater basin (40,400 served by SqCWD)
- SqCWD serves 80% of the groundwater dependent population with approximately 57% of Basin pumping
- Basin is in critical overdraft from historic overpumping that ended in the mid-1990s
- Key challenges are seawater intrusion and surface water depletions
- Basin modeling is used to understand Basin conditions and evaluate response to projects and management actions

Basin Conceptual Model



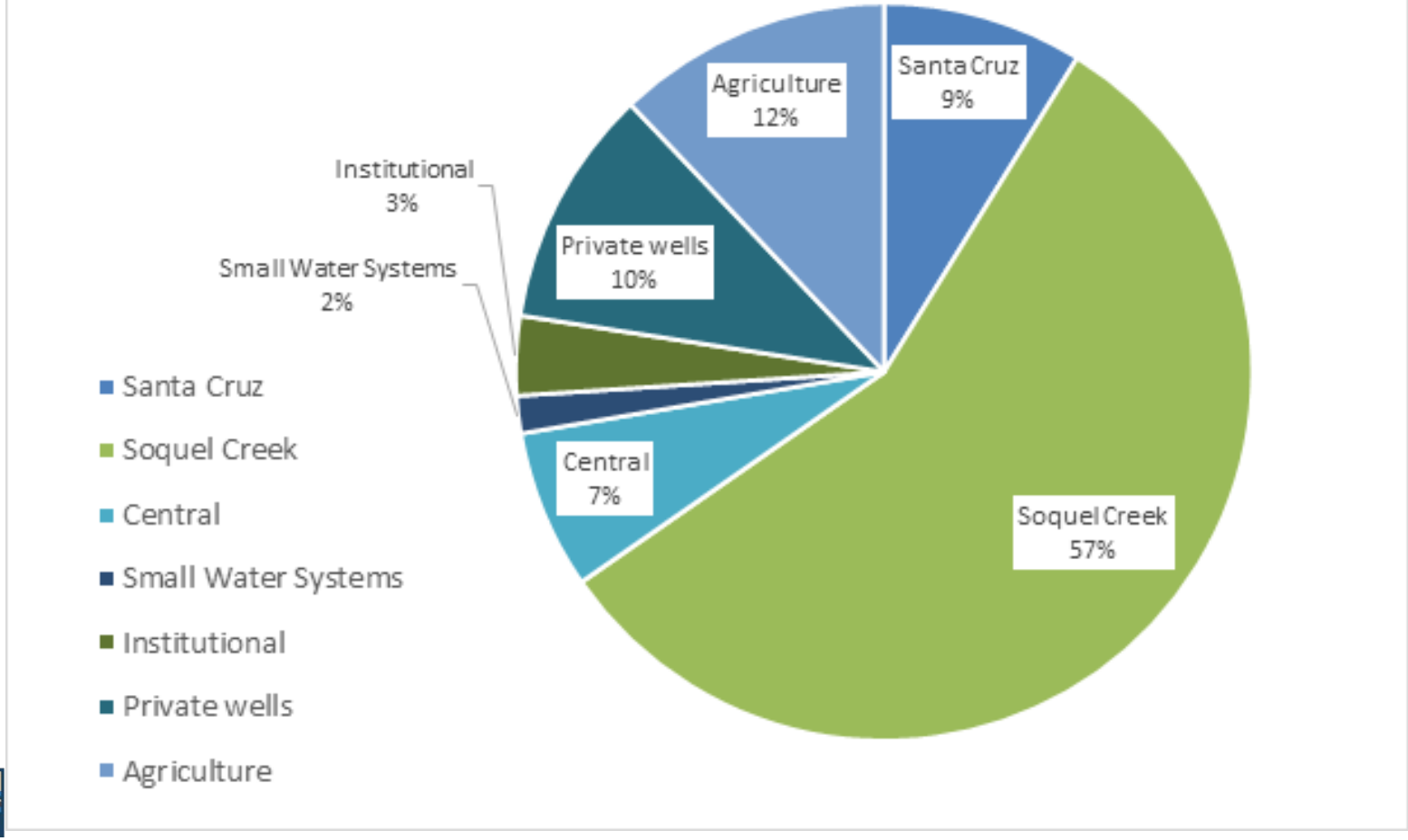
Cross-Section of Stacked Aquifer Units



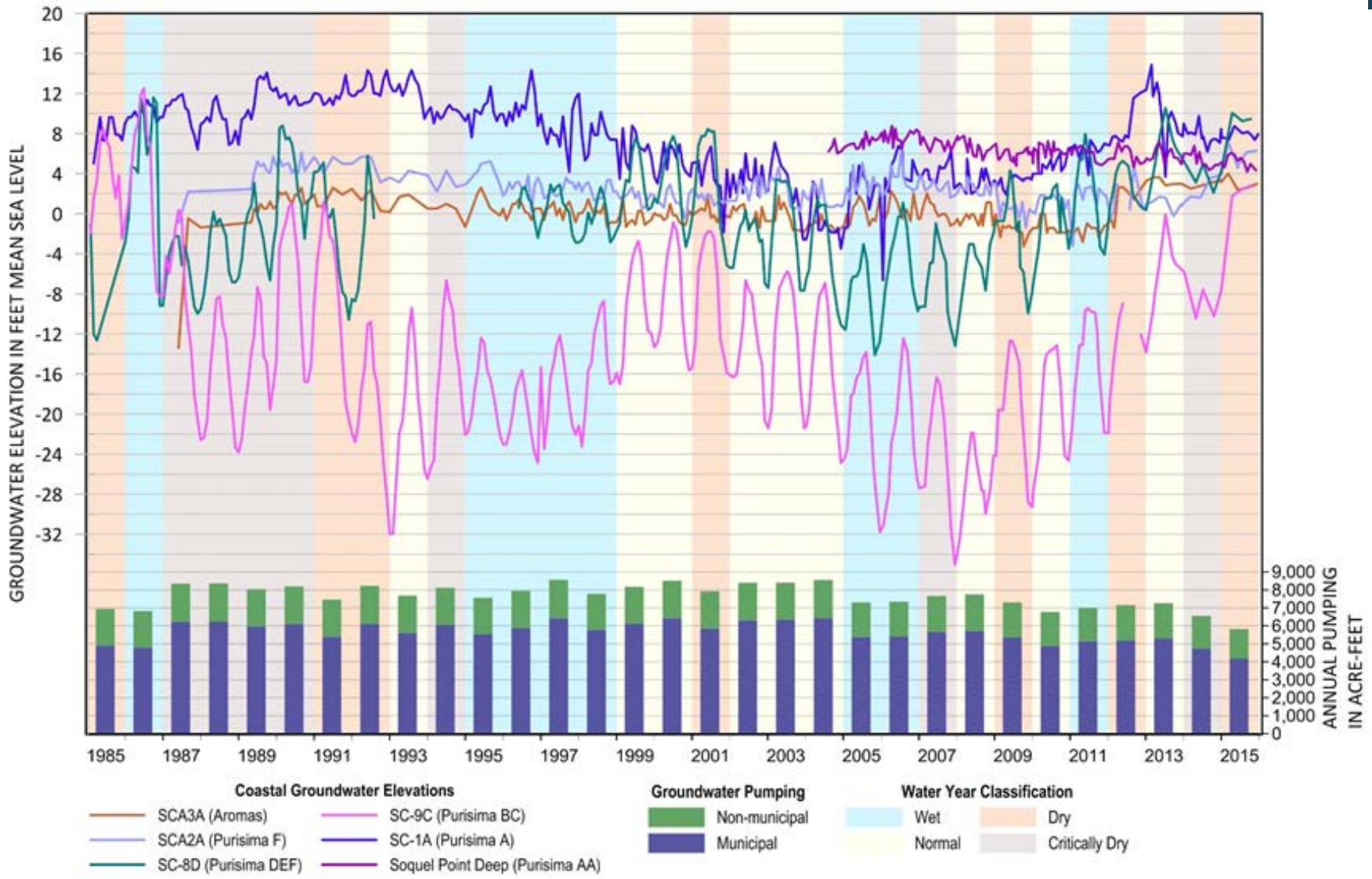


Annual Groundwater Production

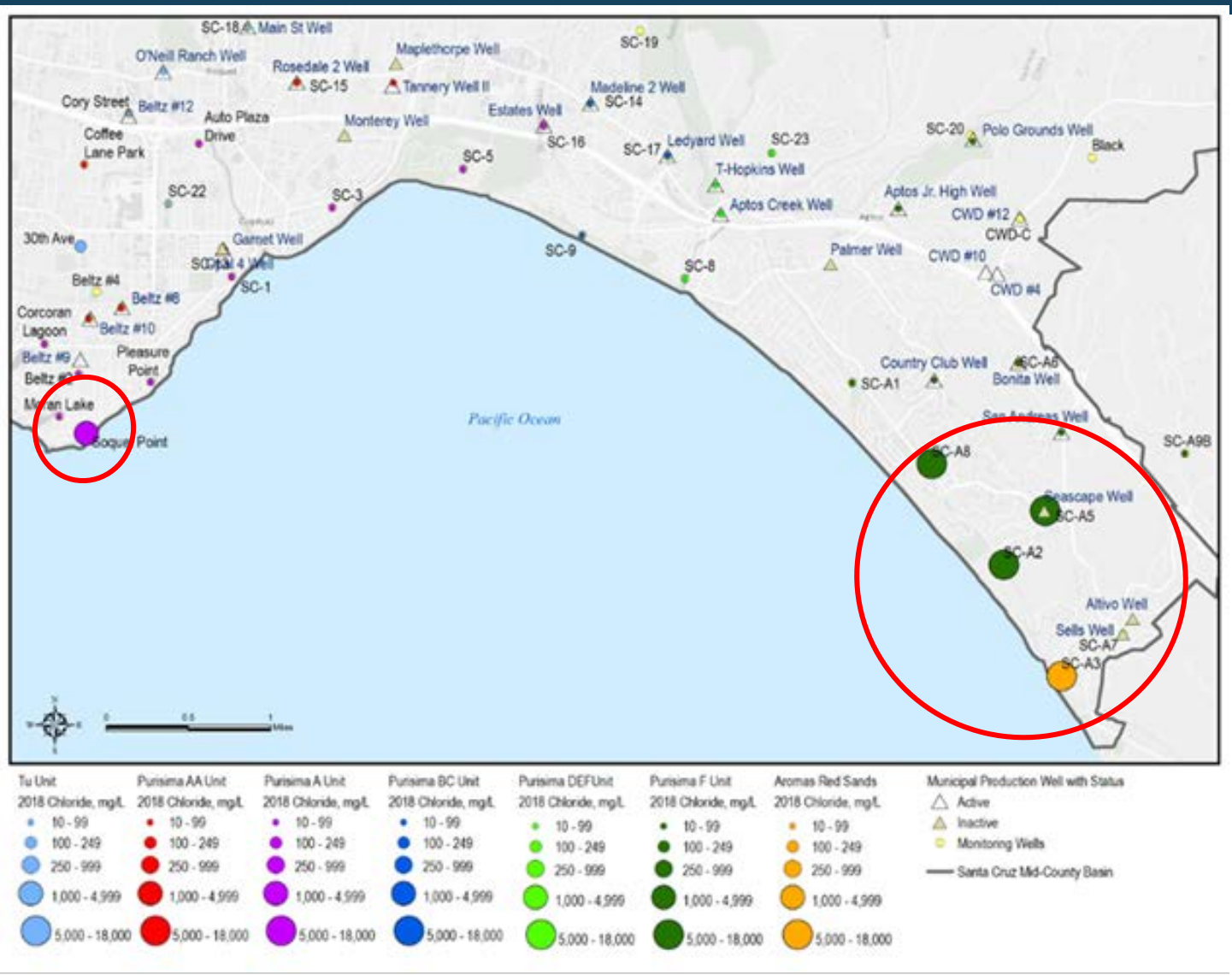
Does not account for return flow



Coastal Elevations Compared with Historical Basin Pumping



Seawater Intrusion



Projected Future Conditions

- 2.3 feet of sea level rise by 2070
- Average temp increase of 2.4 F
- Decrease in precipitation of 1.3-3.1 inches/year
- 6% increase in evapotranspiration
- Land use patterns unchanged
- Annual rural population growth of 4.2% pre-2035 and 2.1% post-2035 (actual growth is much lower)
- Projected increases in water use efficiencies result in stable water use projections for municipal pumpers

Sustainability Management Criteria

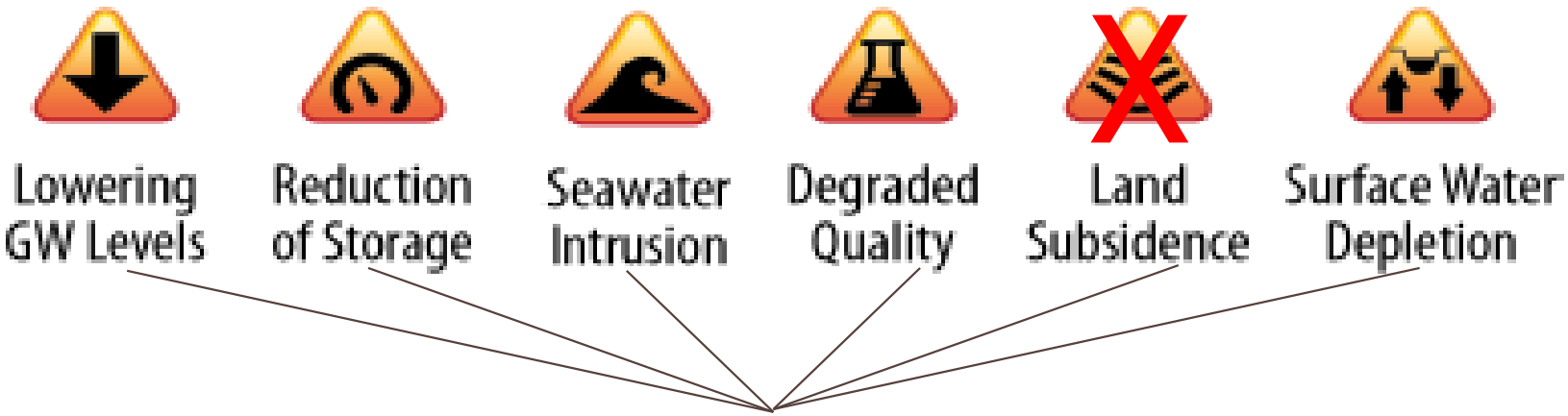
Recommendations from the GSP Advisory Committee

Sustainability Goal

Manage the groundwater Basin to ensure beneficial uses and users have access to a safe and reliable groundwater supply that meets current and future Basin demand without causing undesirable results and:

- Ensures groundwater is available for beneficial uses and a diverse population of beneficial users;
- Protects groundwater supply against seawater intrusion;
- Prevents groundwater overdraft within the Basin and resolves problems resulting from prior overdraft;
- Maintains or enhances groundwater levels for groundwater dependent ecosystems;
- Maintains or enhances groundwater contributions to streamflow;
- Supports reliable groundwater supply and quality to promote public health and welfare;
- Ensures operational flexibility within the Basin by maintaining a drought reserve;
- Accounts for changing groundwater conditions related to projected climate change and sea level rise in Basin planning and management; and,
- Does no harm to neighboring groundwater basins in regional efforts to achieve groundwater sustainability.

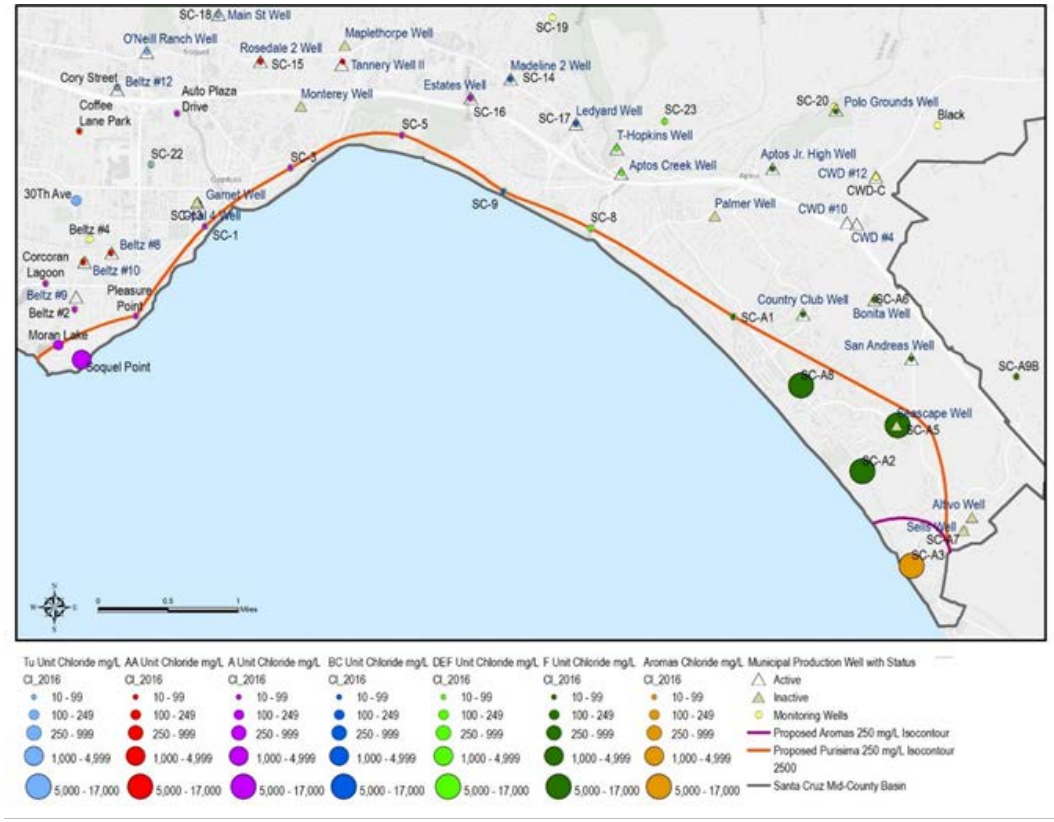
Each of the Six Sustainability Indicators have Three Sustainability Management Criteria Terms



- Minimum Thresholds
- Measurable Objectives
- Undesirable Results

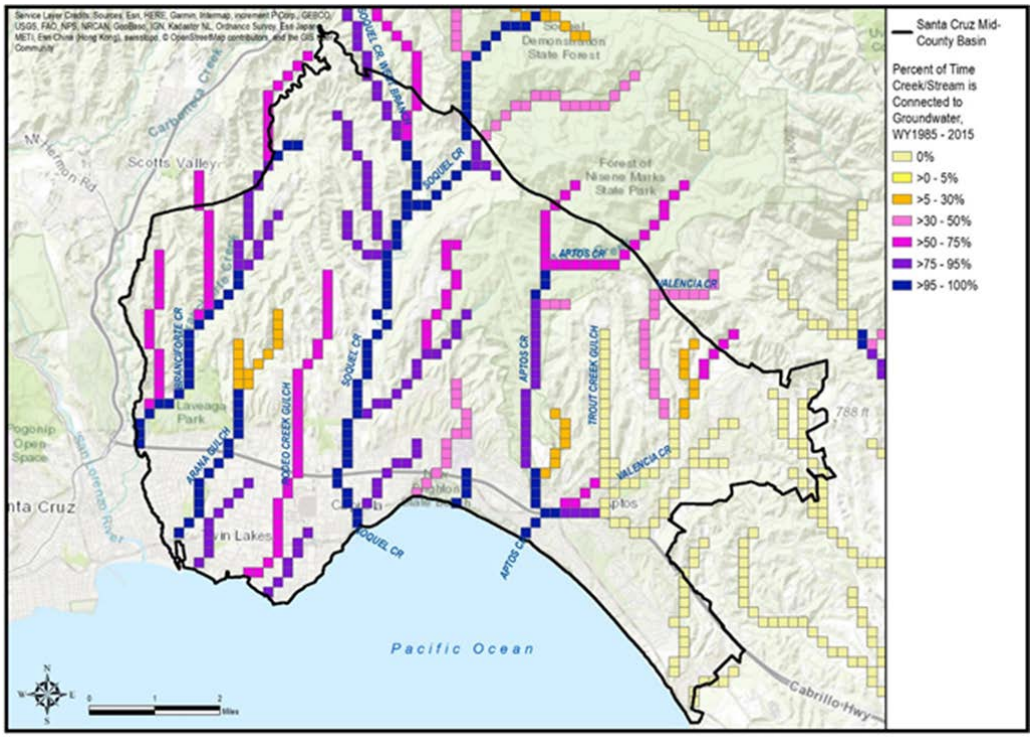
Seawater Intrusion

- Prevent seawater moving farther inland than has been observed from 2013 through 2017, and seek to maintain groundwater levels in coastal monitoring wells at levels that will provide more than 99% probability that further intrusion will not occur.



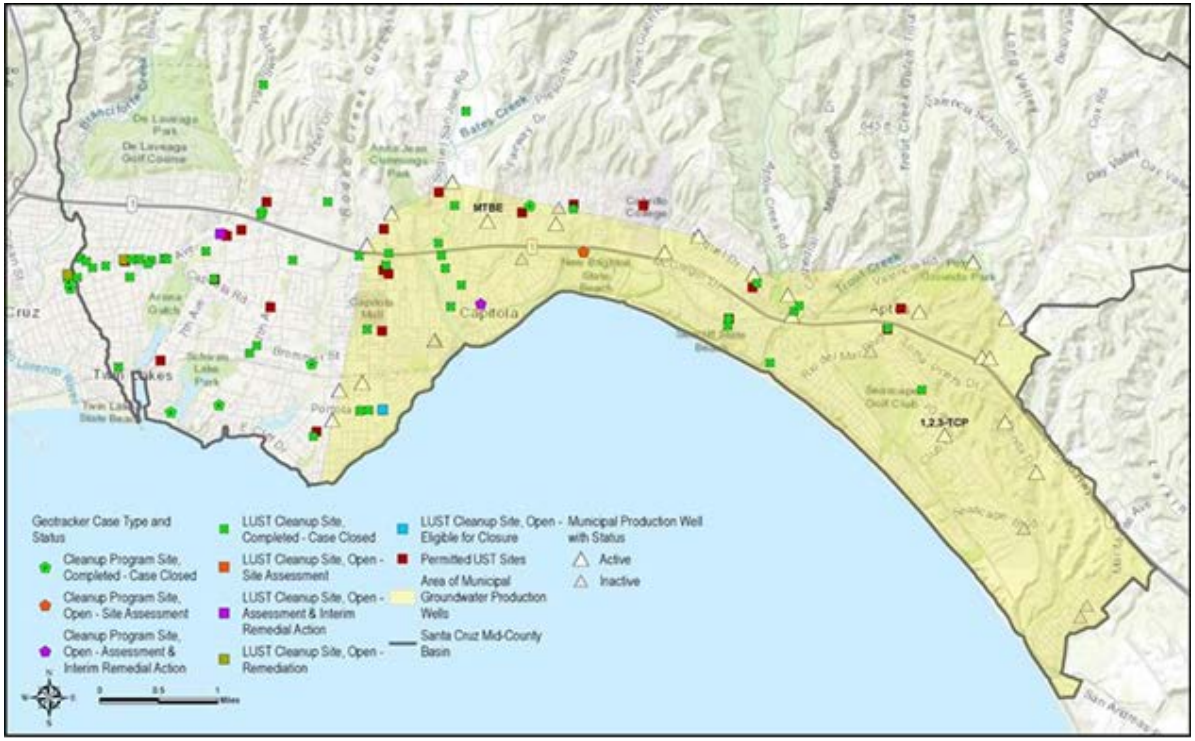
Streamflow Depletion and Groundwater Dependent Ecosystems

- Prevent depletion of surface water due to groundwater extraction, in interconnected streams supporting priority species, so that there is no more depletion than experienced since the start of shallow groundwater level monitoring through 2015.



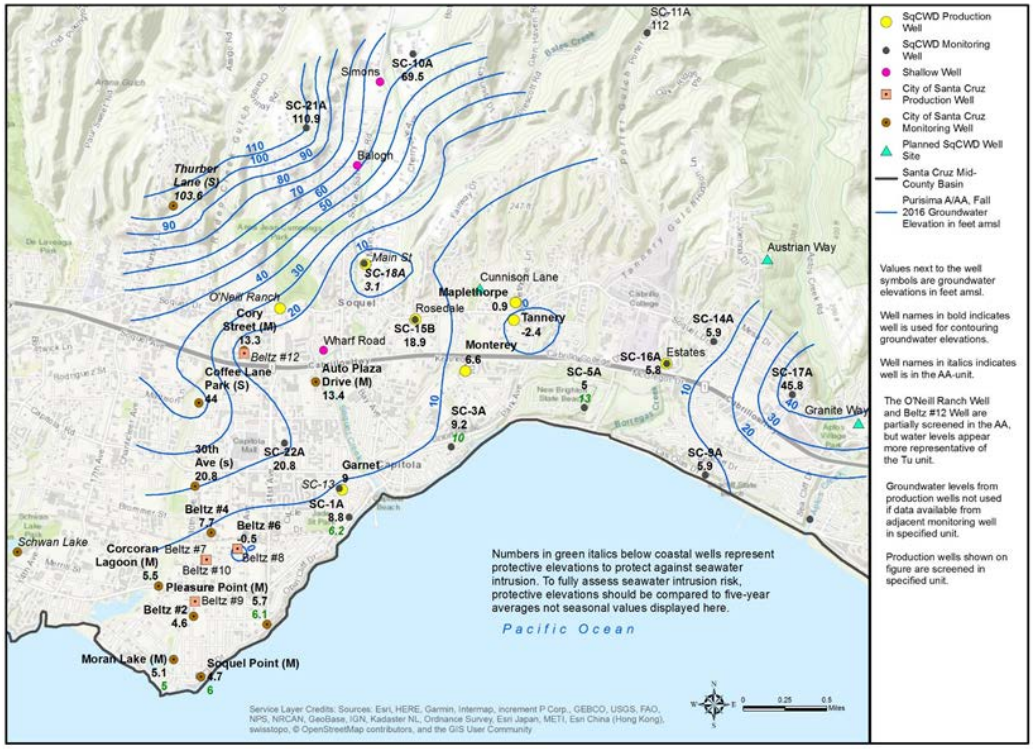
Water Quality

- Maintain groundwater quality so that no representative monitoring well exceeds any state drinking water standard, as a result of groundwater pumping or managed aquifer recharge.



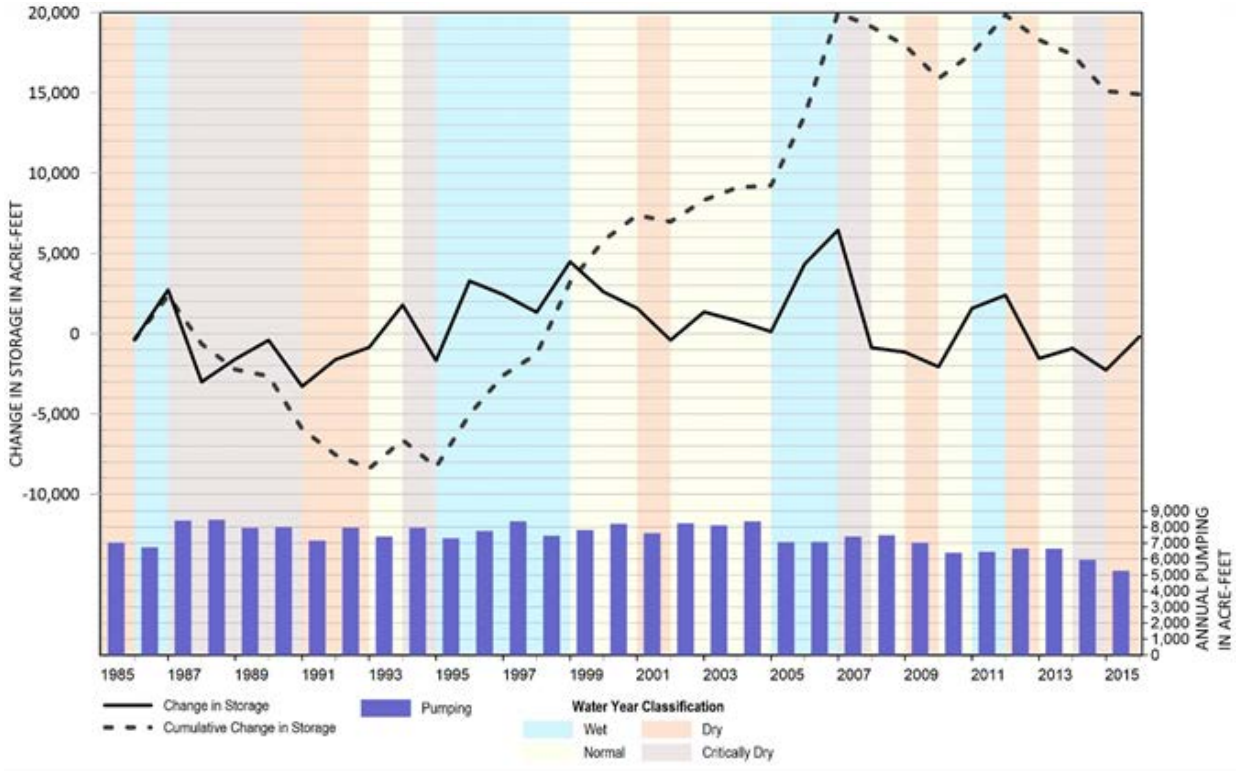
Chronic Lowering of Groundwater Levels

- Do not allow groundwater levels to decline so that a significant number of private, agricultural, industrial, and municipal production wells can no longer provide enough groundwater to supply beneficial uses.



Groundwater Storage

- Maintain net groundwater extraction (pumping minus annual volume of managed aquifer recharge) so that other sustainability indicators do not have undesirable results.



Projects

Project Groups

Description and Benefits of Group 2

Project Grouping

Group 1: Baseline Projects and Management Actions	Currently being implemented and largely considered existing commitments necessary to achieve sustainability

Planned to reach sustainability

Group 2: Projects and Management Actions Evaluated Against the Sustainable Management Criteria	Planned for near-term implementation to reach sustainability

If necessary to achieve sustainability in the future

Group 3: Identified Projects and Management Actions That May be Evaluated in the Future	Implementation will occur if Group 1 and Group 2 projects and management actions fail to reach sustainability

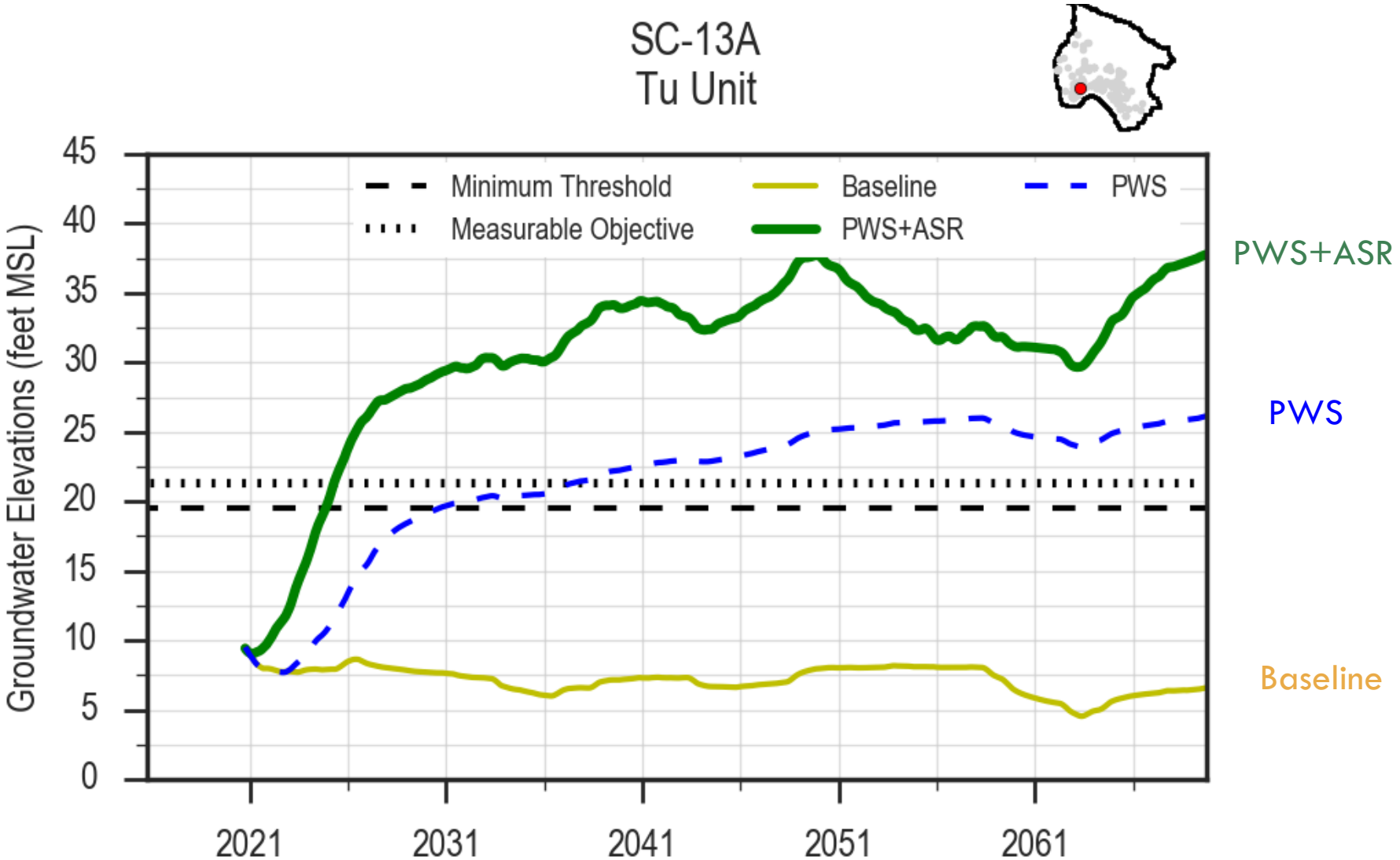
Group 1 Projects

Description	Agency	Anticipated Timeframe[1]
Water Conservation and Demand Management	All	2020-2070
Installation and Redistribution of Municipal Groundwater Pumping	CiSC; SqCWD	2020-2070

Group 2 Projects

Aquifer Storage and Recovery (ASR)	CiSC	2021-2027 development 2021-2070 operations
Surface water Transfer and In Lieu Recharge	CiSC; SqCWD	2020-2025 development 2025-2070 operations
Pure Water Soquel	SqCWD	2020-2022 development 2023-2070 operations
Distributed Storm Water Managed Aquifer Recharge	SCCo; SqCWD	Timing is project specific;

Example of Modeling Results



Plan Implementation

- Annual Monitoring
- Annual Reporting
- Adaptive Management
- Costs

Monitoring

- Ongoing monitoring will be required to track each of the sustainability indicators
- If monitoring indicates that the Basin is unsustainable, adaptive management will be required.
- Monitoring data will be kept in one Data System

Sustainability Indicator	Metric	Proxy
Chronic Lowering of Groundwater Levels	Groundwater elevation	-
Reduction of Groundwater Storage	Volume of groundwater extracted	-
Seawater Intrusion	Chloride concentration	Groundwater elevation
Degraded Groundwater Quality	Concentration	-
Depletion of Interconnected Surface Water	Volume or rate of streamflow	Groundwater elevation

Reporting

- Water extraction data is recommended for non de-minimus users who are estimated to pump:
  - 5 AFY or more anywhere in the Basin
  - 2 AFY or more in priority areas by the coast and near interconnected streams
- Reporting to the Department of Water Resources is required annually
- GSP updates every 5 years.

Costs

- Projects and Management Actions to reach sustainability will be implemented and paid for by MGA member agencies
  - MGA costs for GSP implementation including monitoring, administration, ongoing modelling, and data management are estimated at $12 million over the next 20 years.
  - Current Basin management funding comes from MGA member agencies and grants.
  - Private pumpers causing impacts to the Basin may be required to contribute toward Basin sustainability at a later date.

Public and Stakeholder Involvement

in Plan development

Outreach Efforts

Topic	Detail
Public Meetings	•19 stakeholder meetings and information sessions •2-hour community drop-in sessions every other month •20 GSP Advisory committee meetings •34 MGA and predecessor meetings
Postcard Mailings and letters	•5 rounds of postcards and letters to different interest groups •One Brochure to Private Well Owners
Survey	•Two Surveys, one is open now!
Email List-Serve	•Monthly E-newsletter to approximately 650 unique email addresses

Outreach Efforts Cont.

Road Signs	4 message boards placed at prominent thoroughfares
Surface Water-Groundwater Working Group	4 meetings consisting of GSP Advisory Committee participants, resource agencies, local planning agencies, and environmental groups.
Tabling and Presentations	Connecting the Drops, Water Harvest Festival, presentations and conferences
Website	midcountygroundwater.org
Miscellaneous	Newspaper articles/editorials, social media through partner agencies, handouts, tour, tabling events

Comment Period

Process for review and adoption and ongoing involvement

Groundwater Sustainability Plan (GSP) Release, Review, & Approval

Key Dates

July 20th and 22nd: GSP Open Houses

July 18th – Sept 19th: GSP Comment period

August 28th: Q&A Session with Staff

Sept 19th: Public Hearing, Comment Period Closes, MGA Board provides input to staff

Nov 21st: Final GSP presented to MGA for adoption

Late November: GSP Submittal to DWR

January 31, 2020: Last date to submit GSP

How to Comment

- Comment cards available at every upcoming event
- Comments can be emailed any time to GSP2019Comments@midcountygroundwater.org
- Oral comments will be taken at the September 19th Public Hearing.
- Comments received will be read and considered in the development of the final Plan.
- Comments will not necessarily receive an individual response, though a summary document of responses to general comments received will be produced.

Open House

- There are four tables set up to discuss the following topics in detail:
  - Basin setting and the MGA makeup
  - Private Wells
  - Sustainable Management Criteria
  - Projects and Management Actions
- Staff are happy to answer your questions!

SANTA CRUZ MID-COUNTY
GROUNDWATER AGENCY

THANK YOU!

www.midcountygroundwater.org