



DRAFT WORKPRODUCT



Borrego Valley Groundwater Basin Borrego Springs Subbasin

Chapters 1-5 Draft Groundwater Sustainability Plan Key Concept Slides

Advisory Committee Meeting

January 31, 2019

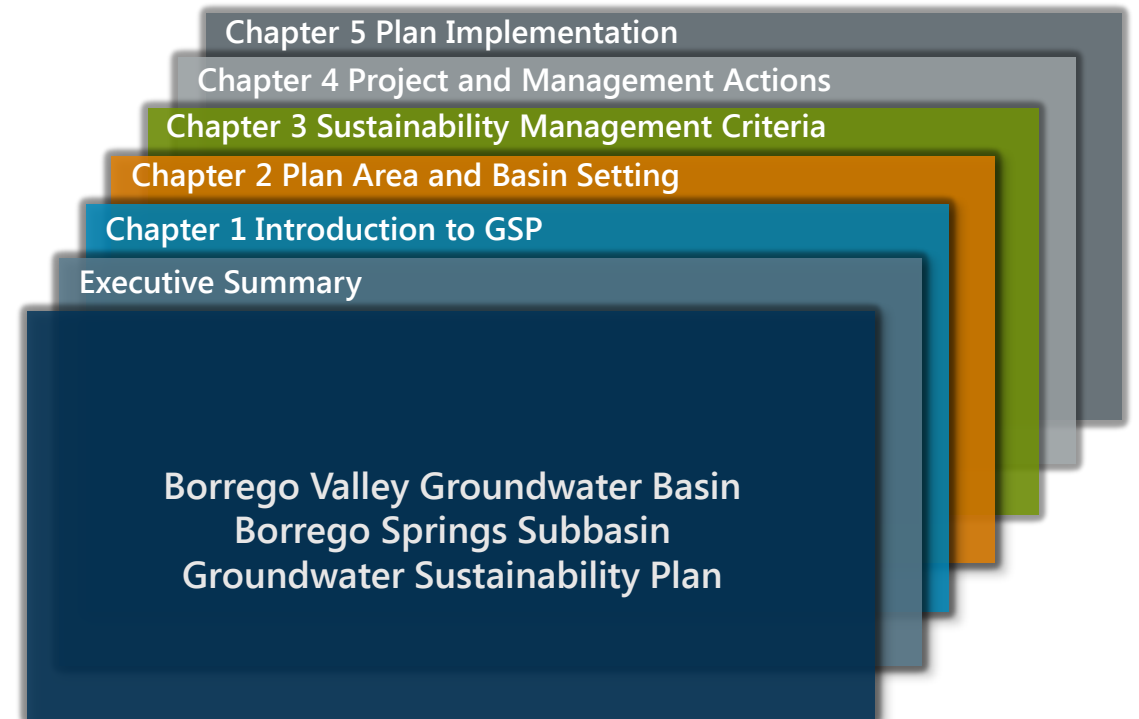




GSP Organization

The Groundwater Sustainability Plan is organized as follows:

- ES Executive Summary
- 01 Chapter 1
Introduction to GSP
- 02 Chapter 2
Plan Area and Basin Setting
- 03 Chapter 3
Sustainable Management Criteria
- 04 Chapter 4
Projects and Management Actions
- 05 Chapter 5
Plan Implementation



Chapter 1: Introduction to GSP

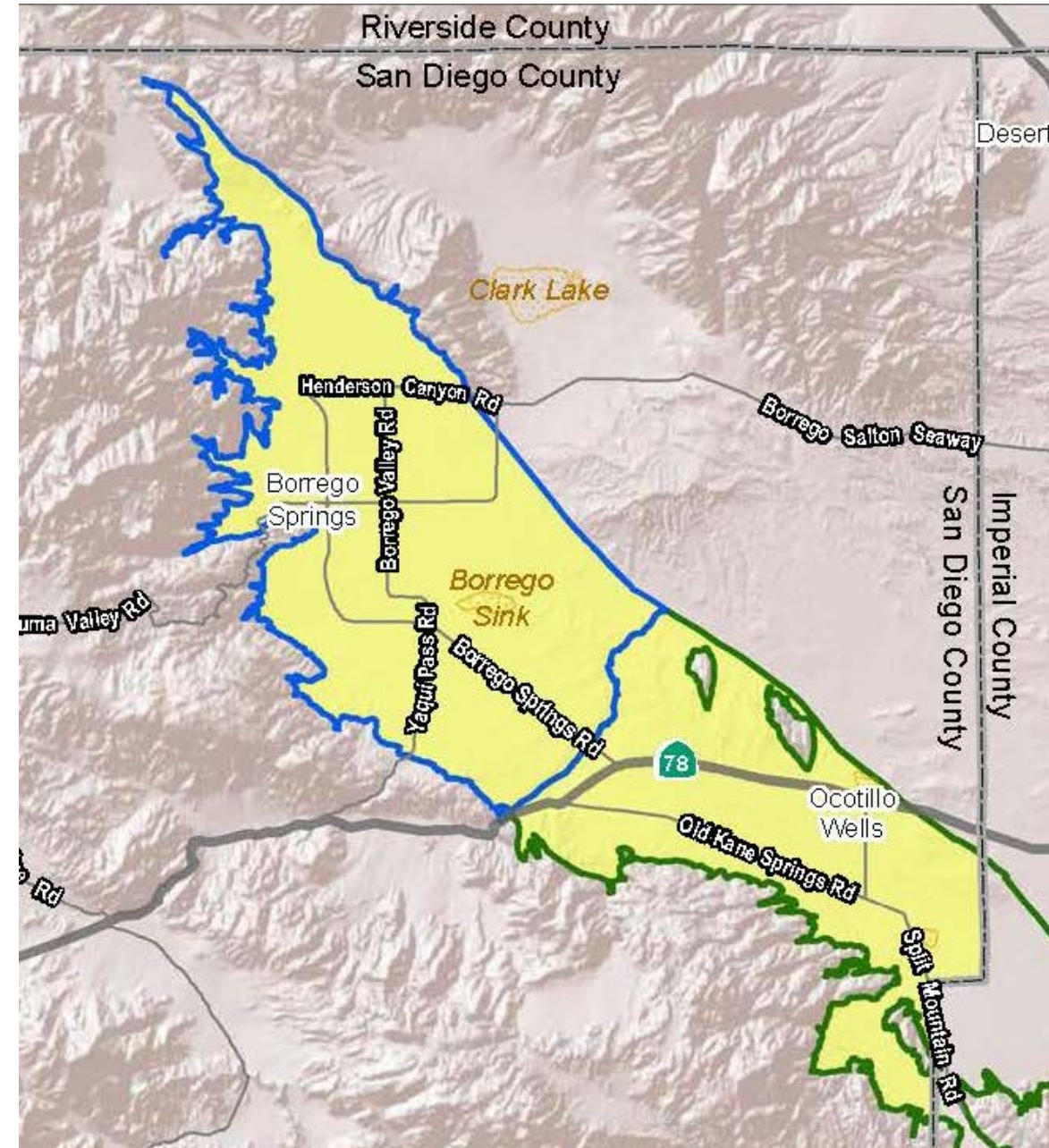
Chapter 1 describes the intent of SGMA, the purpose of the GSP, the GSA structure, and SGMA Legal Authority.

Purpose of GSP: Achieve groundwater sustainability by 2040

GSA: County of San Diego and Borrego Water District, co-equal partnership in management of the basin

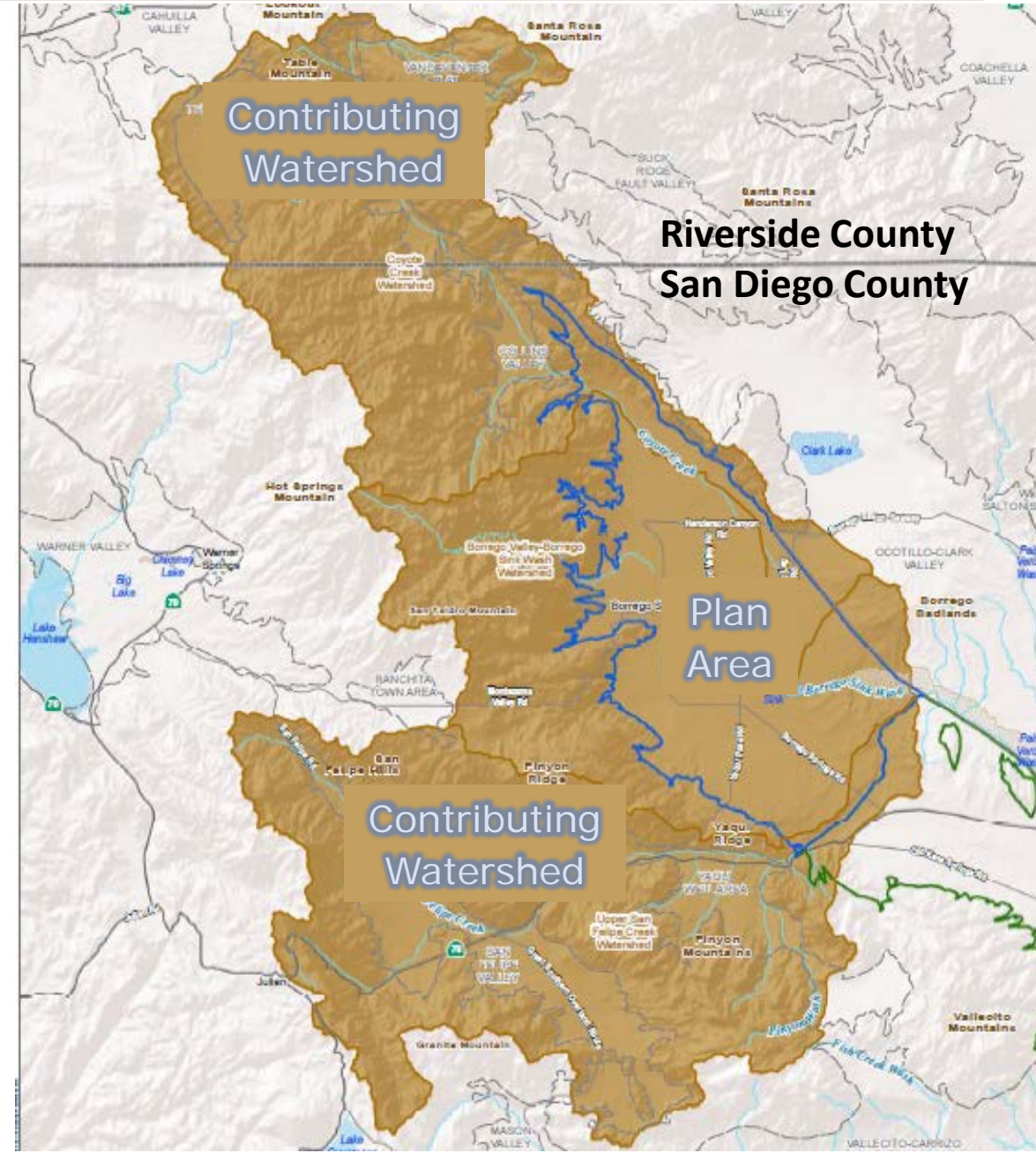
GSP Advisory Committee: Borrego Water Coalition (4 members), State Park, Sponsor Group, Stewardship Council, BWD, Farm Bureau

SGMA Legal Authority: Governor Brown signed SGMA into law 9/16/2014, effective 1/1/2015



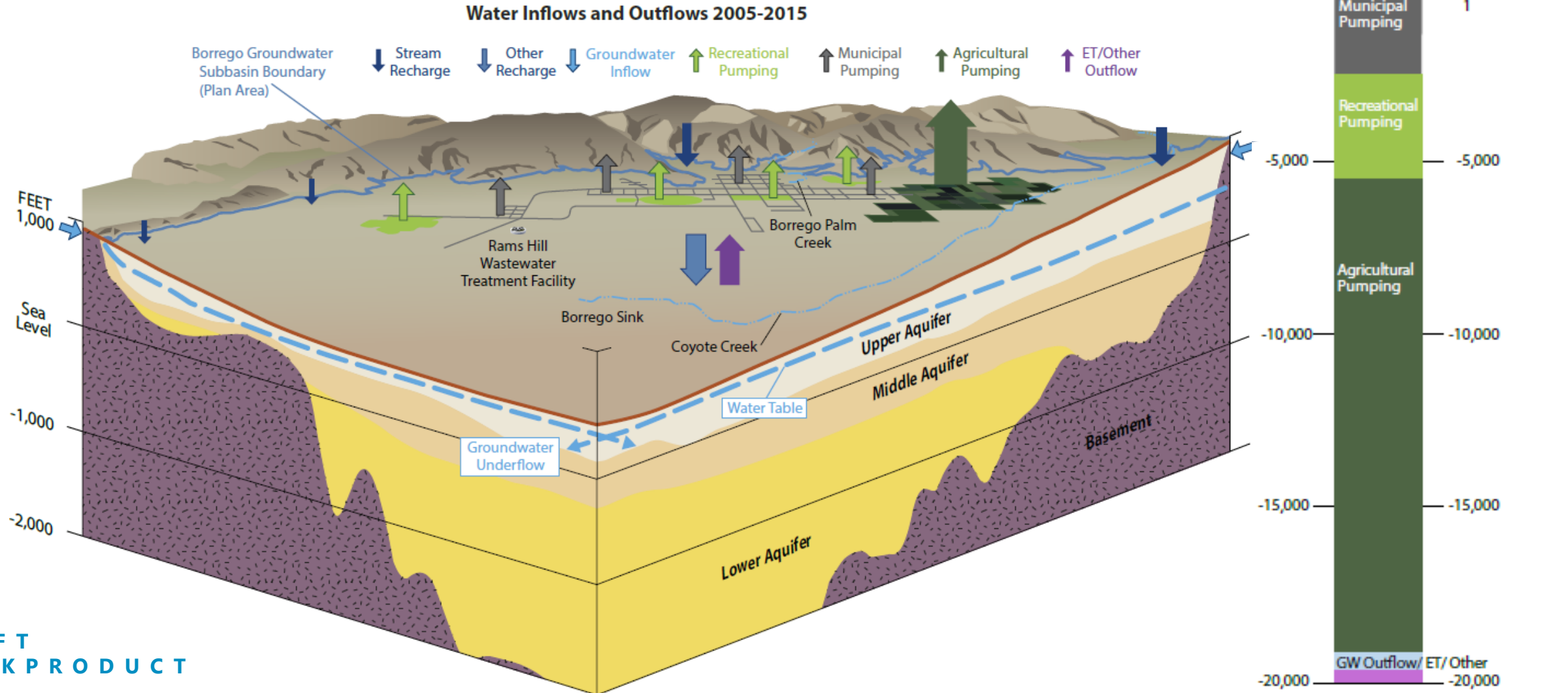
Chapter 2: Description of Plan Area

Description of Plan Area: Chapter 2 includes detail on the Plan Area defined as the Borrego Springs Subbasin and its contributing watersheds. It includes jurisdictional areas, existing water resource monitoring and management programs, land use, and additional components.



Chapter 2: Basin Setting: Hydrogeologic Conceptual Model

A **Hydrogeologic Conceptual Model** has been developed which provides a general understanding of the physical setting, characteristics, and processes that govern groundwater occurrence and movement within the basin. It aids in development of the water budget, analytical and numerical model, and monitoring network.



Chapter 2: Basin Setting: Hydrogeologic Conceptual Model DRAFT WORK PRODUCT

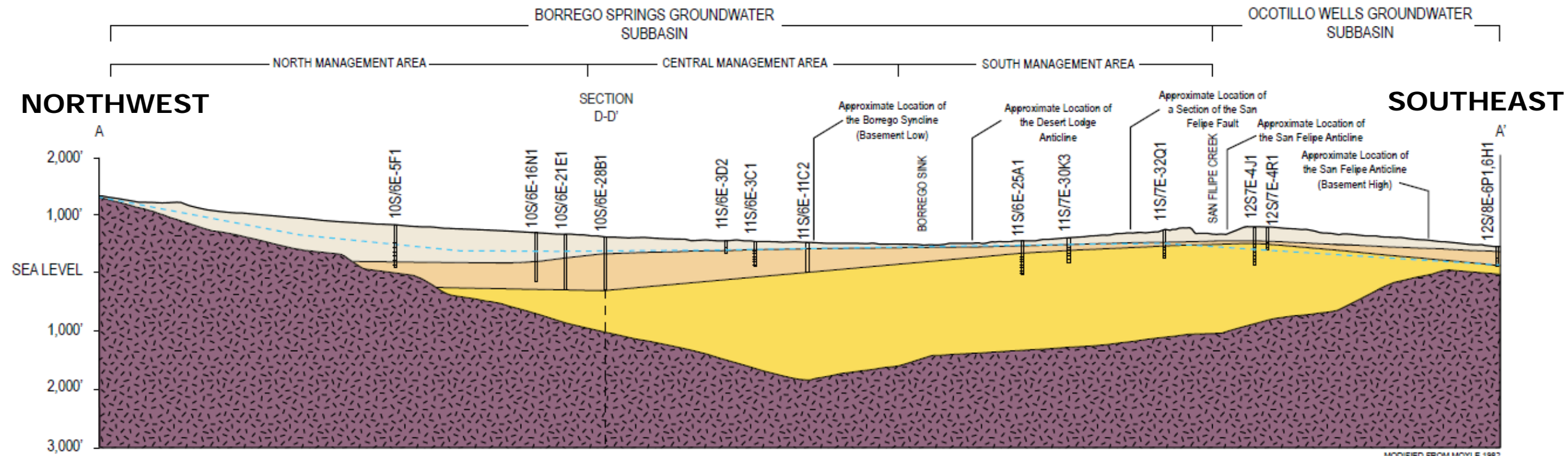
There are three aquifers:

UPPER AQUIFER: Coarse unconsolidated sediments, highest yielding wells up to 2,000 gpm

MIDDLE AQUIFER: Moderately consolidated gravel to silty sediments

LOWER AQUIFER: Partly consolidated gravel, sand, silt/clay, lower yielding wells than middle/upper aquifers

BEDROCK



Cross Section – Northwest to Southeast Across Borrego Springs Groundwater Subbasin

Chapter 2: Groundwater Elevation Monitoring Network

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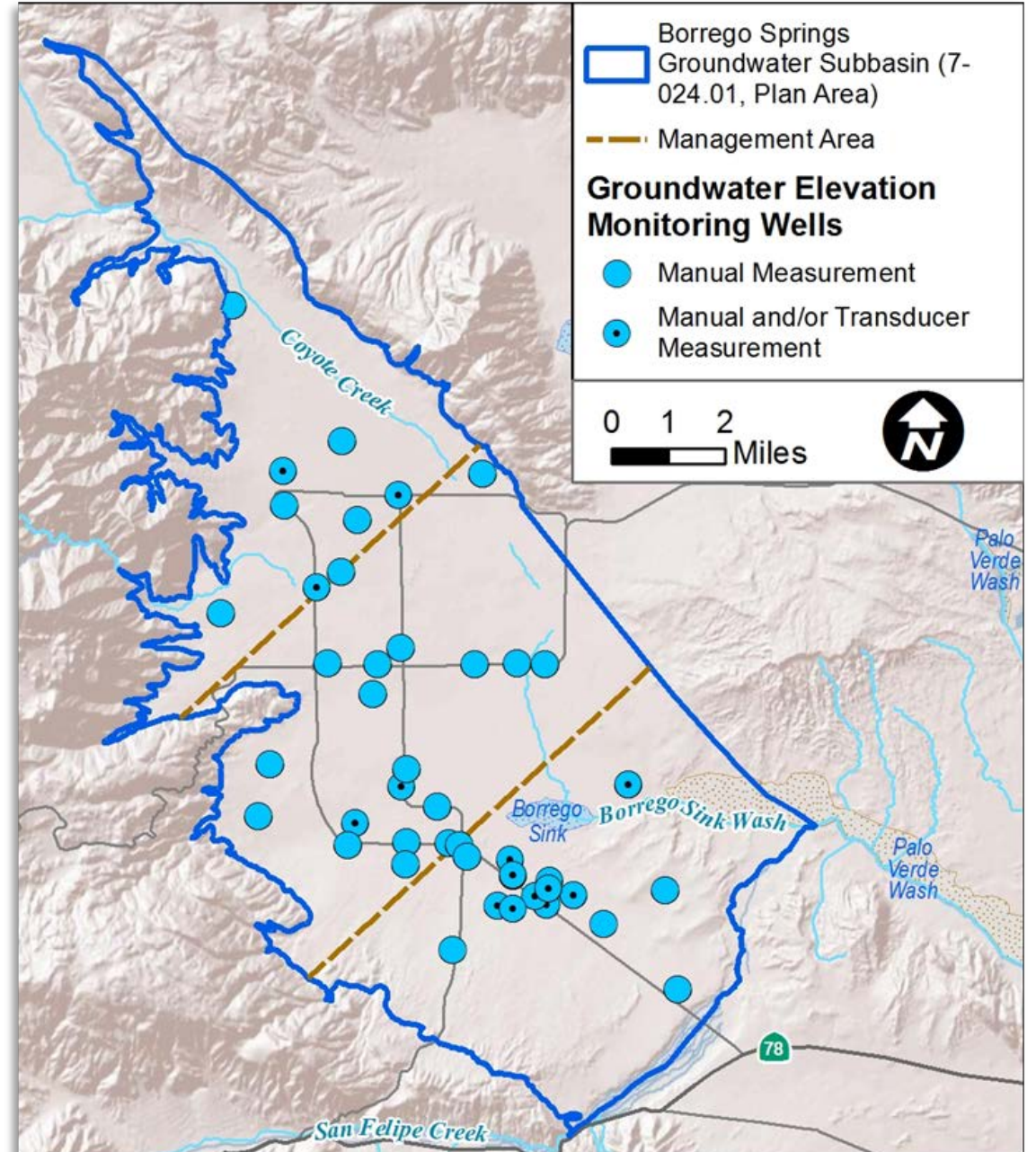
Number of Wells in Network: 46 (as of October 2018)

North Management Area: 9 wells

Central Management Area: 19 wells

South Management Area: 18 wells

The monitoring network will be refined to fill identified data gaps throughout GSP implementation.



Chapter 2: Groundwater Quality Monitoring Network

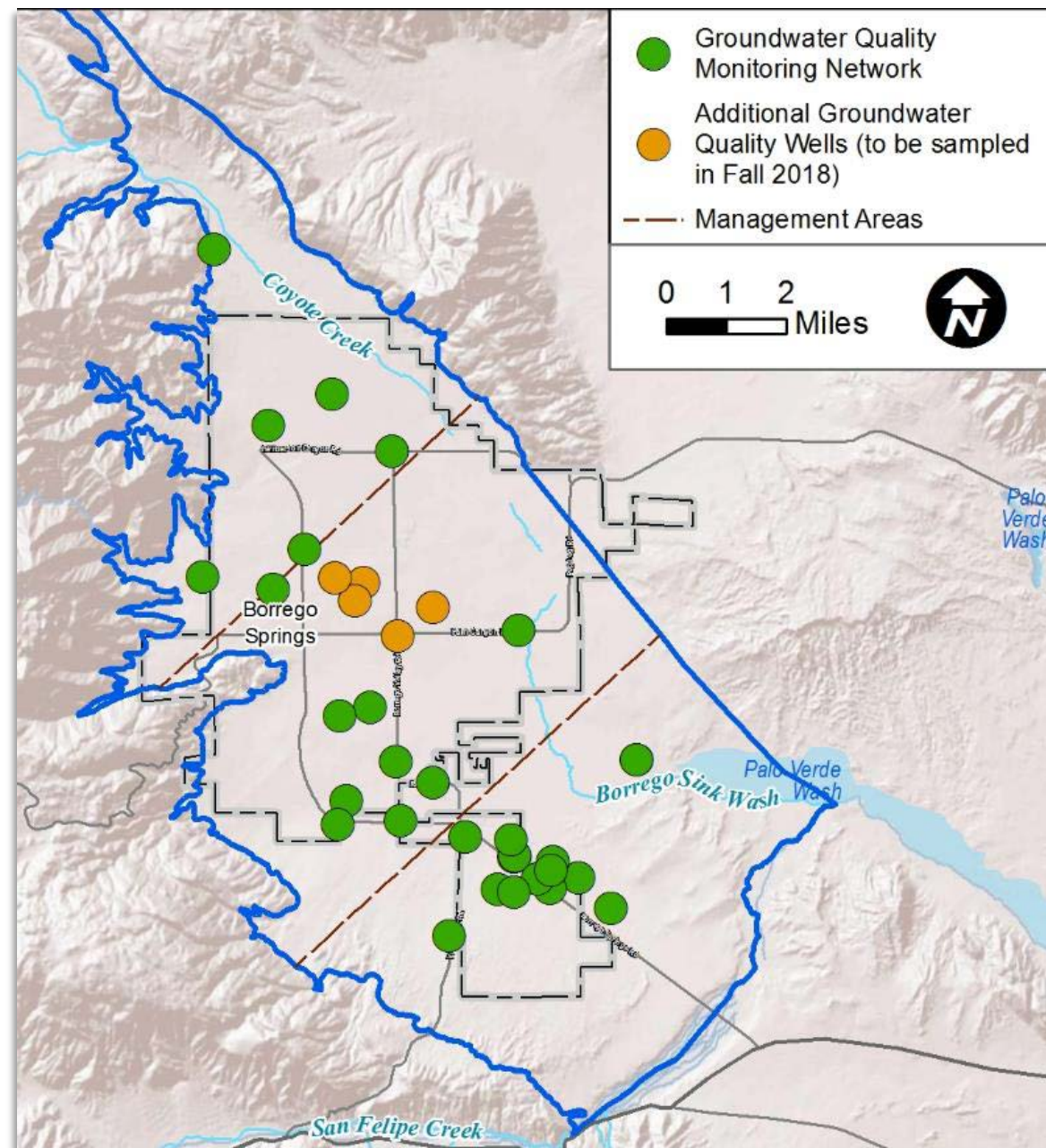
Number of Wells in Network: 35 (as of October 2018)

North Management Area: 6 wells

Central Management Area: 14 wells

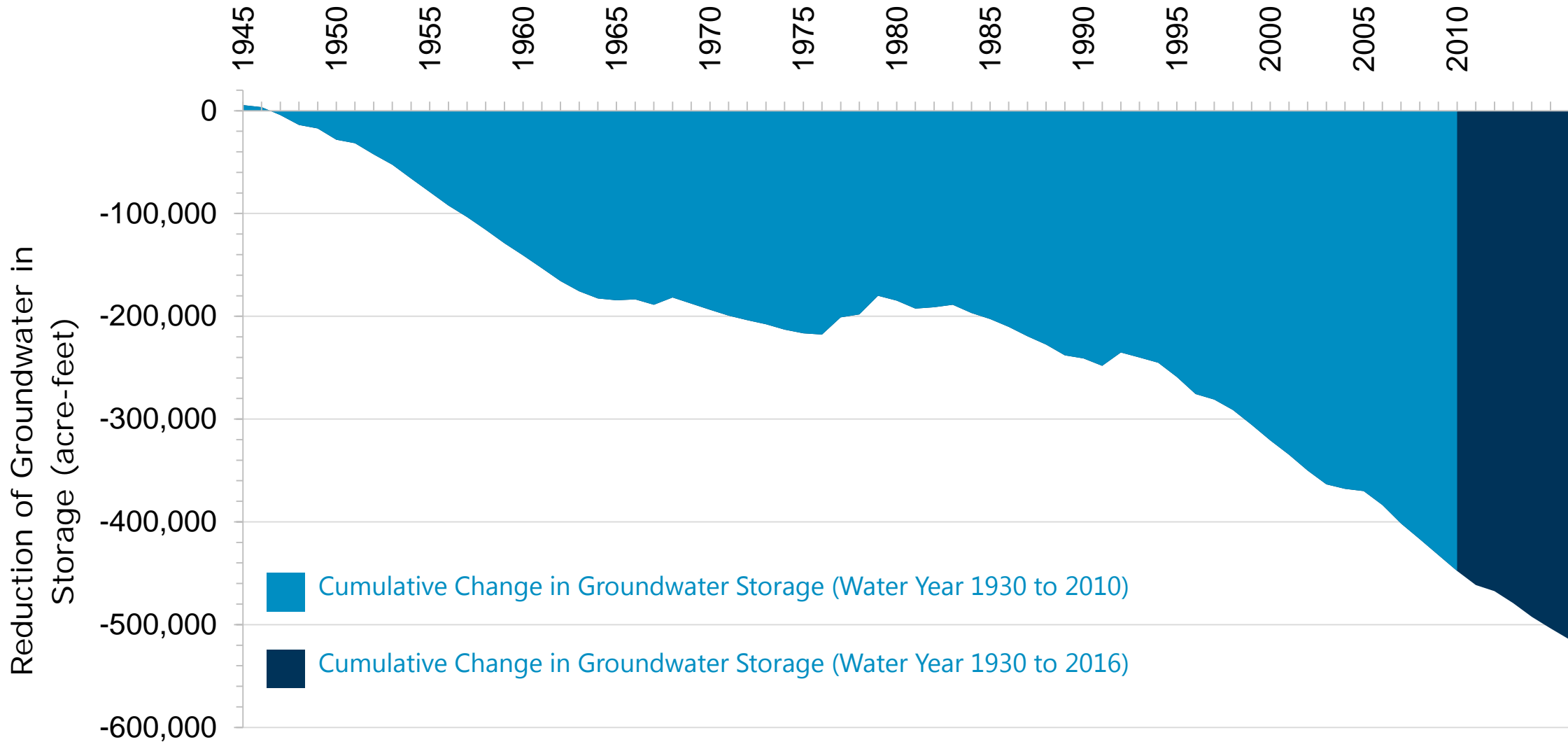
South Management Area: 15 wells

The monitoring network will be refined to fill identified data gaps throughout GSP implementation.



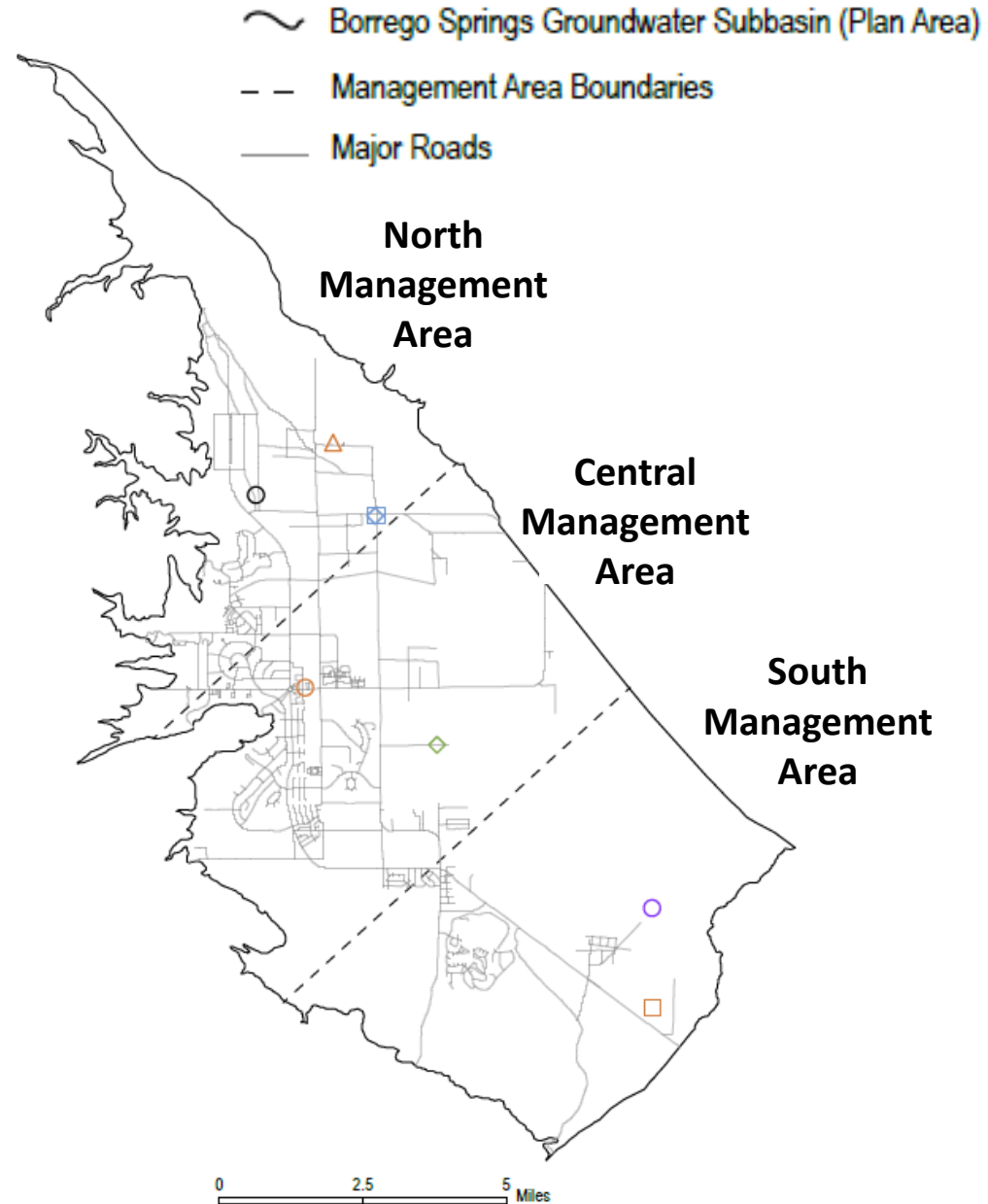
Chapter 2: Water Budget/Model Results

From 1945-2016, ~520,000 acre-feet of water was estimated to have been removed from storage. The sustainable yield is estimated to be ~5,700 acre-feet/year.



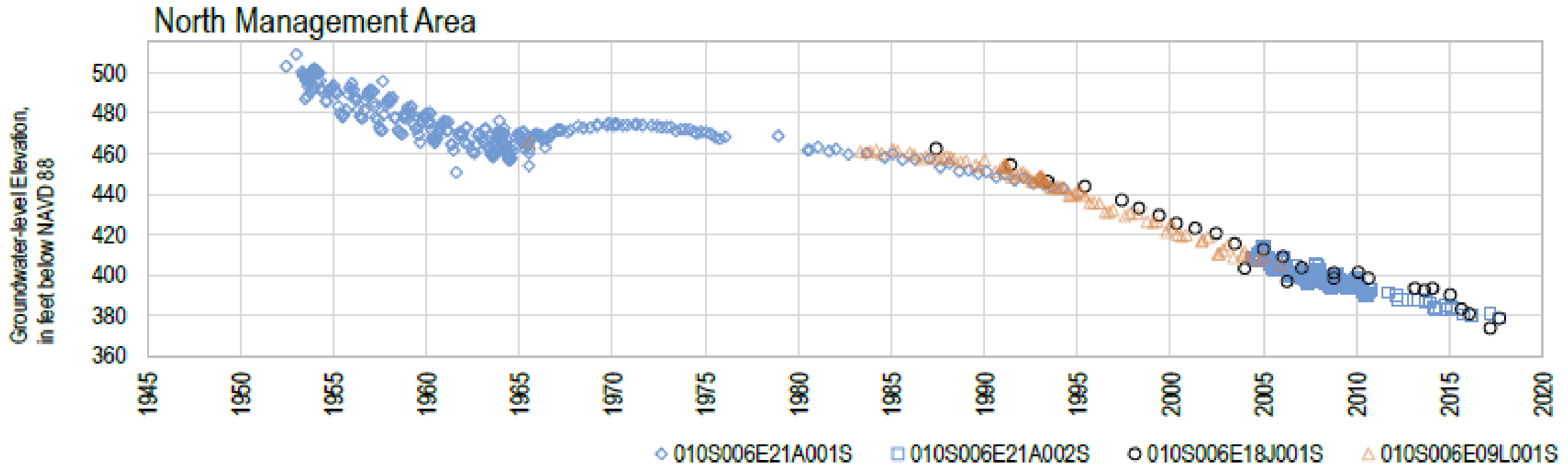
Chapter 2: Management Areas

SGMA allows the use of management areas to sustainably manage the Basin. The GSP includes three management areas.



Chapter 2: North Management Area Groundwater Levels

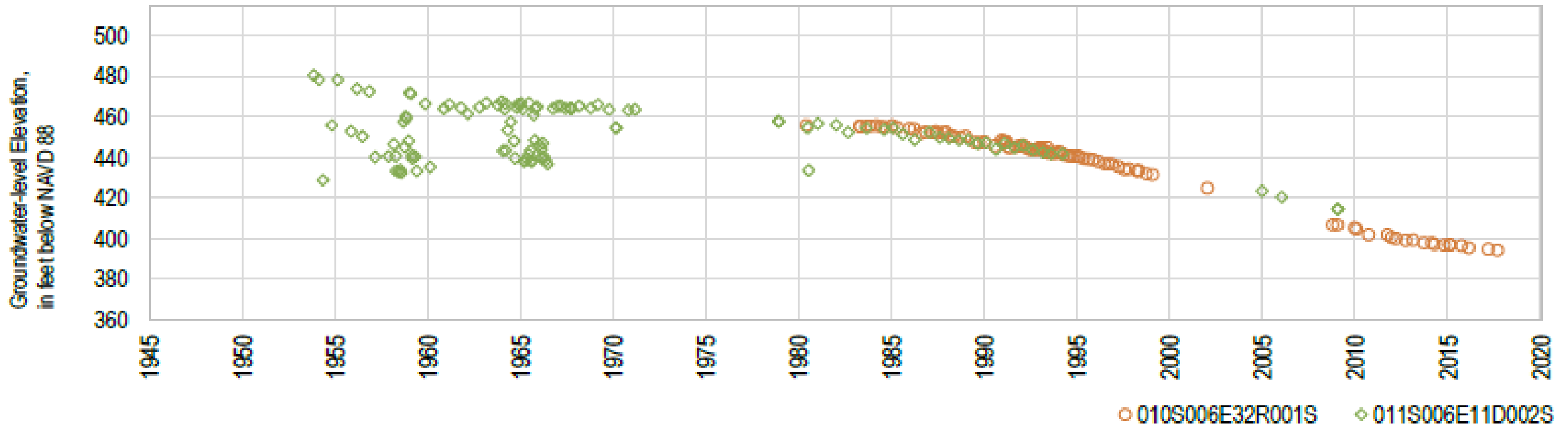
From 1953 to 2017, up to 125 feet of decline (average of 1.95 feet/year)



Chapter 2: Central Management Area Groundwater Levels

From 1953 to 2017, about 85 feet of decline (average of 1.33 feet/year)

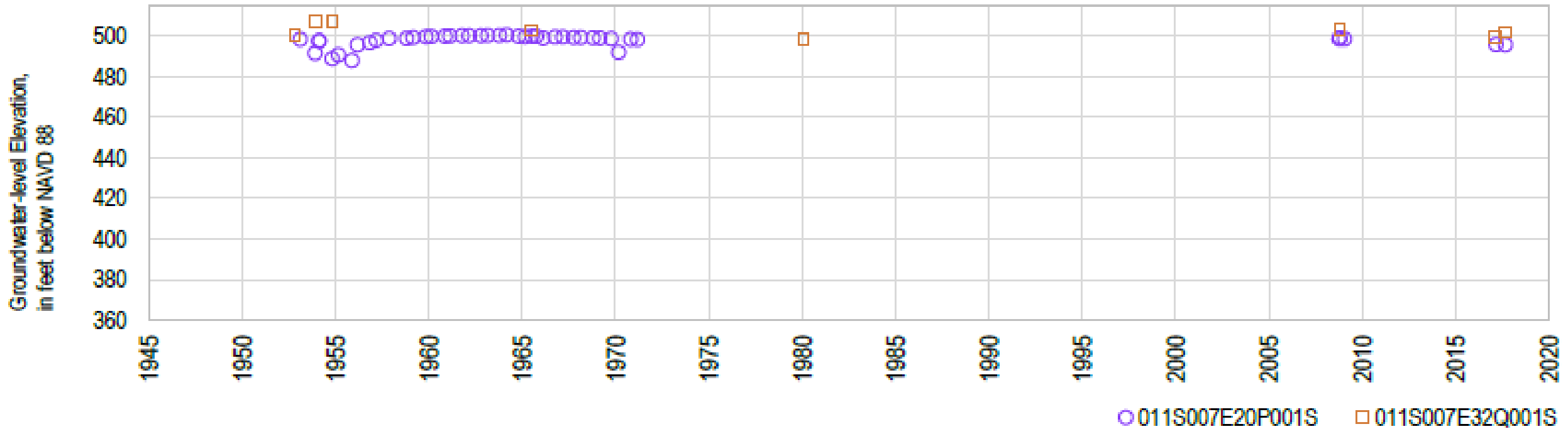
Central Management Area



Chapter 2: South Management Area Groundwater Levels

From 1953 to 2017, the southeastern portion of the basin where pumping is limited remained relatively the same (+/- about 10 feet).

South Management Area



Overarching Sustainability Goal (Mission Statement): Maintain a viable water supply for current and future beneficial uses and users of groundwater within the Plan Area.

This will be achieved by:

1. Identifying measures to reach sustainable yield by 2040
2. Maintaining water quality suitable for current and future beneficial uses

Chapter 3: Chronic Lowering of Groundwater Levels

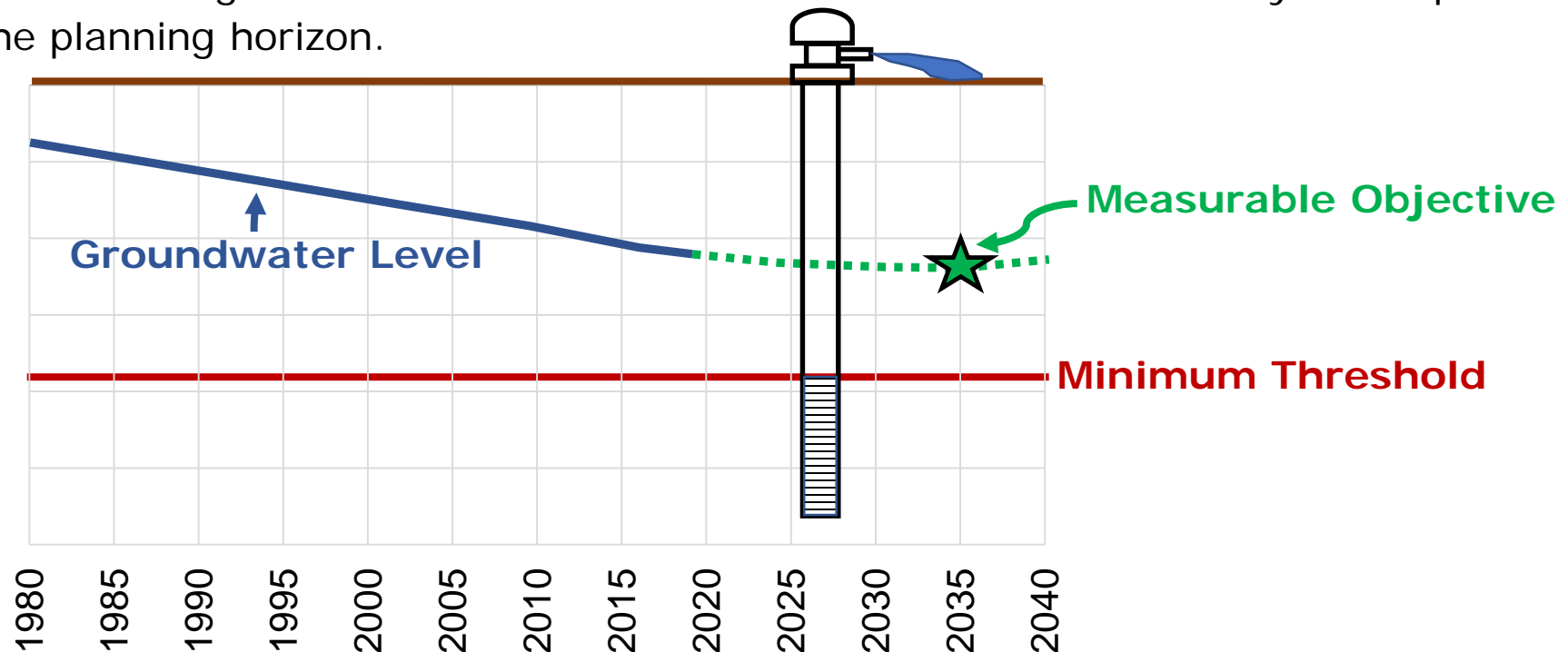
GSA Sustainability Goals:

- Groundwater levels stabilize or improve
- Maintain groundwater above saturated screened intervals of key municipal wells

Undesirable Results: if water levels drop to levels no longer able to support overlying beneficial use(s)

Measurable Objective: Maintain groundwater levels within modeled groundwater levels from the Borrego Valley Hydrogeologic Model. This is based on reaching sustainable yield within 20 years and includes required climate change factors.

Minimum Threshold: Maintain groundwater above saturated screened intervals of key municipal wells to be used throughout the planning horizon.



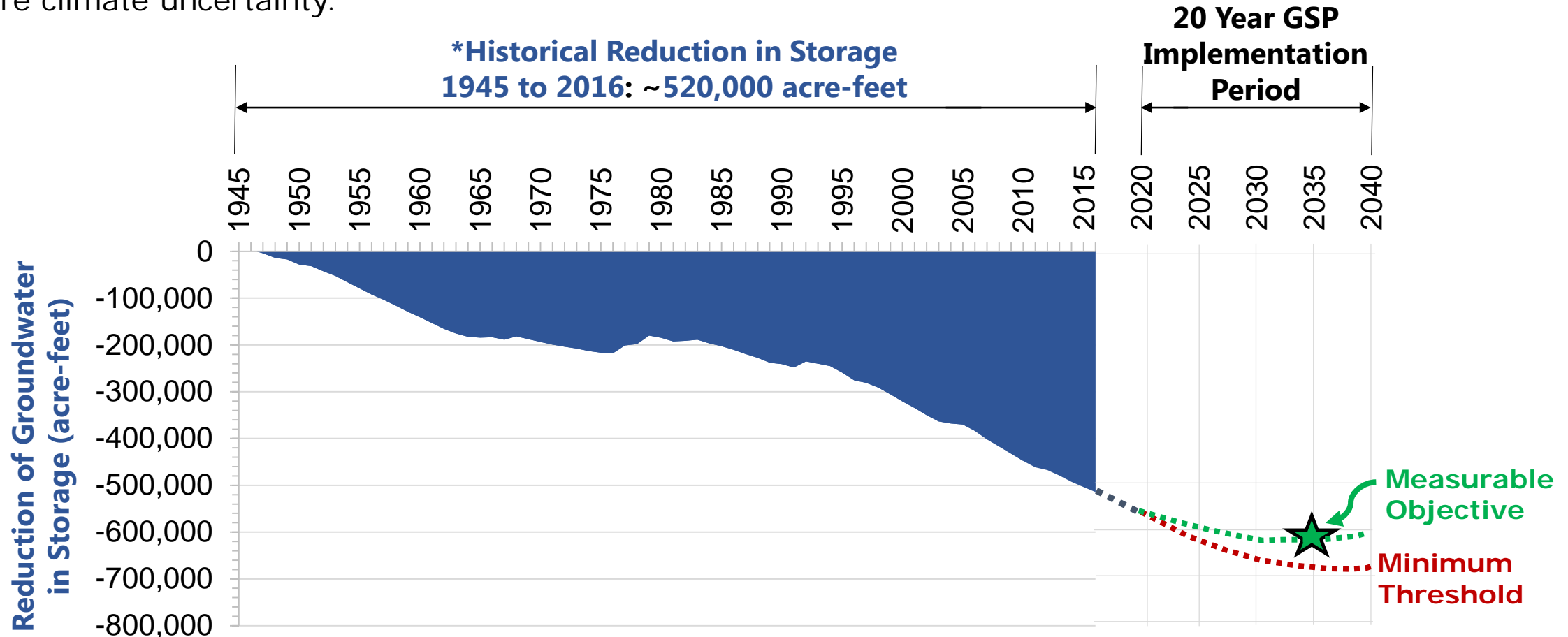
Chapter 3: Reduction of Groundwater in Storage

GSA Sustainability Goal: Long-term use less than or equal to sustainable yield (~5,700 acre-feet/year)

Undesirable Results: Reduction in storage is at a level no longer able to support overlying beneficial use(s)

Measurable Objective: ~76,600 acre-feet additional reduction in storage simulated using the Borrego Valley Hydrogeologic Model.

Minimum Threshold: ~152,000 acre-feet additional reduction. Provides operational flexibility taking into account future climate uncertainty.



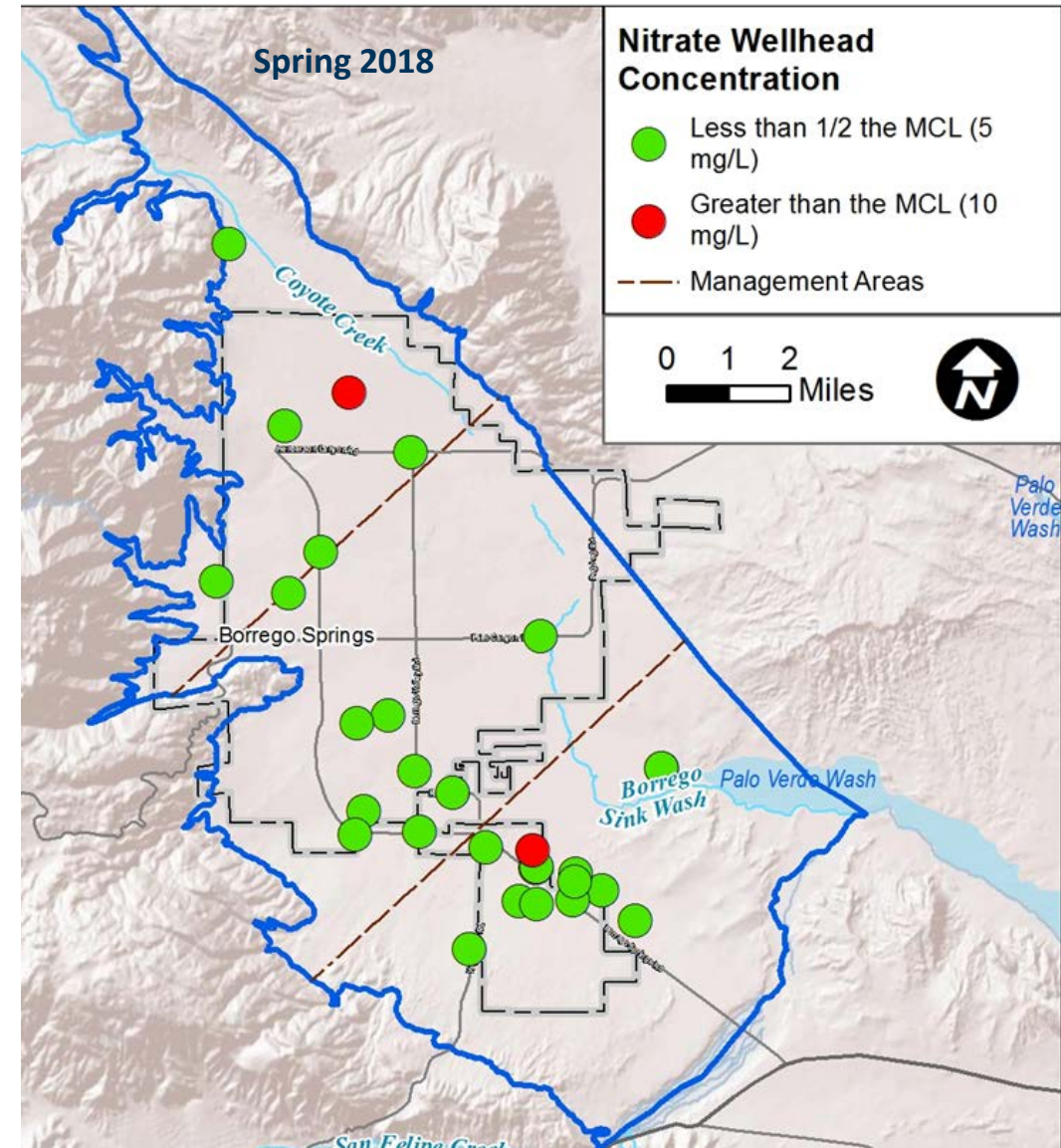
Chapter 3: Degraded Water Quality

GSA Sustainability Goal: For municipal and domestic wells, generally exhibits stable or improving trend for identified constituents of concern: arsenic, nitrate, sulfate, & total dissolved solids), or meets State of California Title 22 drinking water standards

Undesirable Results: Degraded water quality no longer able to support overlying beneficial use(s)

Measurable Objective: For municipal and domestic wells, generally exhibits stable or improving trend for identified constituents of concern. For irrigation wells, generally suitable for agricultural use.

Minimum Threshold: For municipal and domestic wells, meets California Title 22 drinking water standards. For irrigation wells, generally suitable for agricultural use.



Note: The one well in the southern management area denoted as red (exceeds the MCL for nitrate) is a monitoring well adjacent to a wastewater treatment plant.

Chapter 4: Projects and Management Actions

The following are project and management actions proposed to achieve the sustainability goal of the basin:

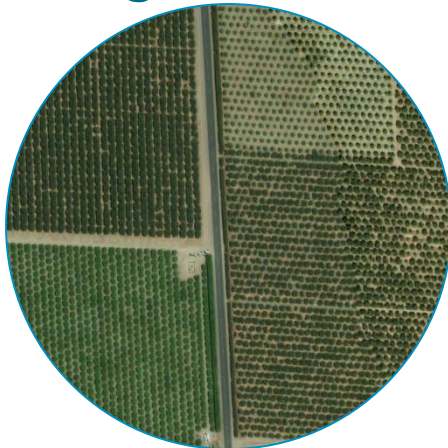
Project and Management Action #1 – Water Trading Program

- The Program will enable permanent transfer and potentially long-term or short-term lease of Baseline Pumping Allocations
- The Program would replace the existing Borrego Water District Water Credits Program.

Project and Management Action #2 – Water Conservation

The GSP Water Conservation Program would consist of separate components to conserve water for the three primary sectors:

Agriculture



Municipal



Golf Courses





Chapter 4: Projects and Management Actions

Project and Management Action #3 – Pumping Reduction Program

Goal is to reduce Subbasin pumping to the estimated sustainable yield.

Project and Management Action #4 – Voluntary Fallowing of Agricultural Land

The voluntary Fallowing Program will develop the method to convert existing irrigated agriculture to low water use open space, public land, or other development.

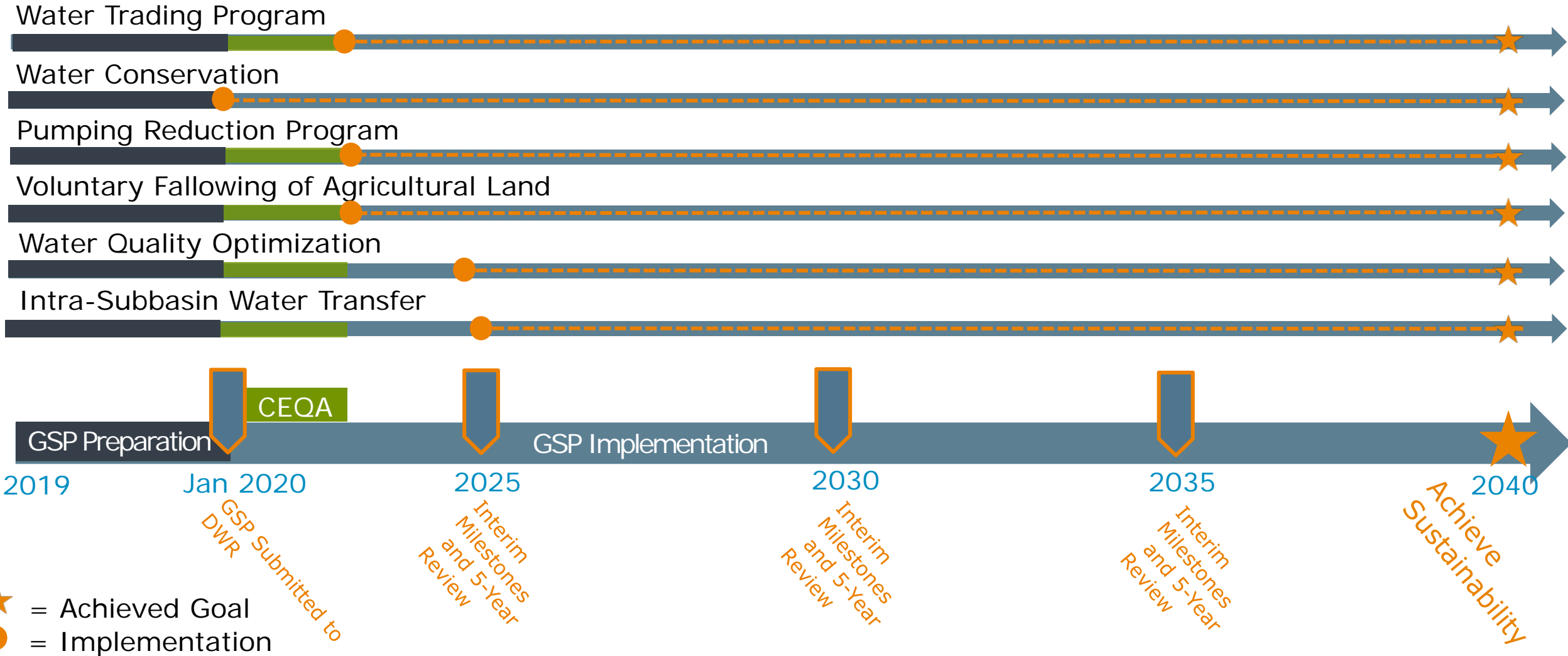
Project and Management Action #5 – Water Quality Optimization

Both direct treatment and indirect options have been considered to optimize groundwater quality and its use.

Project and Management Action #6 – Intra-Subbasin Water Transfers

The purpose of Intra-Subbasin Transfer Program is to mitigate existing and future reductions in groundwater storage and groundwater quality impairment by establishing conveyance of water from higher to lower production alternative areas in the Subbasin.

Anticipated Timeline



Estimate of Implementation Costs

2020 Sample Cost Per Acre-Foot: ±\$40

Assumptions:

- 19,000 acre-feet of pumping
- Based on proportional rate structure; actual apportionment costs to each pumper may vary
- Doesn't include development of projects and management actions

Note: Cost per acre-foot to cover GSA expenses is expected to continue to increase through 2040 as required revenue is spread over less groundwater extraction as a result of pumping ramp down.

Chapter 5: Plan Implementation

Annual Reporting is required to be submitted to the Department of Water Resources through the 20 Year implementation period.

The annual report will include:

- General Information
- Description and Graphical Representations of Groundwater Information
 - Semi-Annual Groundwater Elevation Data
 - Semi-Annual Groundwater Quality Data
 - Groundwater Extraction Per Sector/Total Water Use
 - Changes in Groundwater Storage
- Plan Implementation Progress

Chapter 5: Plan Implementation

Five year evaluation reports are required to be submitted to the Department of Water Resources through the 20 year implementation period.

The five year evaluation will include:

- Current Groundwater Conditions
- Status of Implementation of Projects or Management Actions
- Plan Elements
- Basin Evaluation including Water Balance Review
- Monitoring Network
- Pumping Allowance
- New Information
- Relevant Actions
- Enforcement and Legal Actions
- Groundwater Sustainability Plan Amendments
- Summary of Coordination

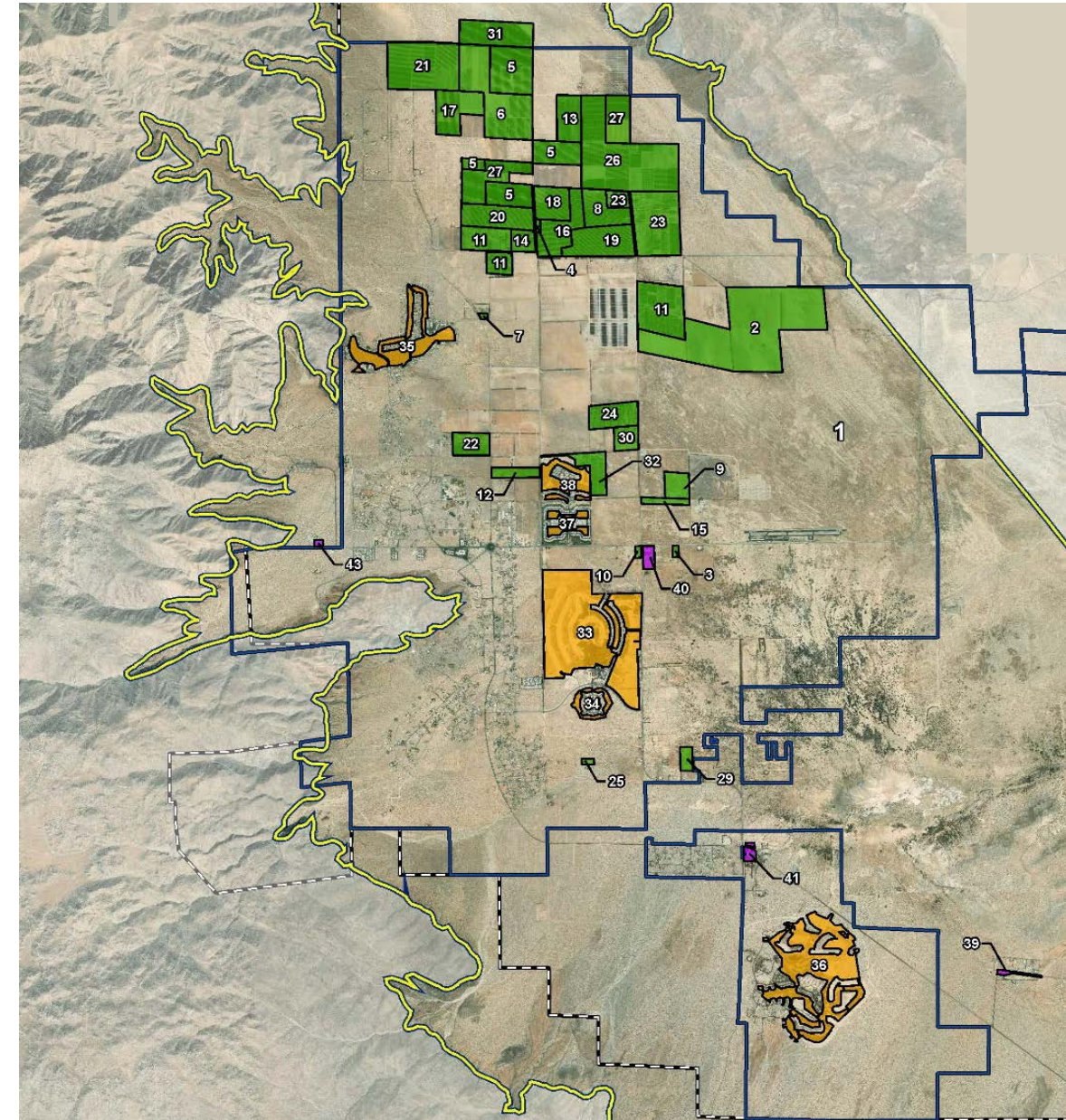
The GSP appendices include:

- DWR Preparation Checklist for GSP Submittal
- GSA Formation and Interagency Agreements
- Stakeholder Engagement
- Technical Reports and Hydrographs
- GSP Monitoring Network Documents
- Baseline Pumping Allocation Methodology
- GSP Comments and Responses to Comments

GSP Appendices: Baseline Pumping Methodology

The baseline pumping allocation appendix provides the approach used to assign baseline pumping allocation to each groundwater pumper in the subbasin. The allocation is the amount of water a pumper is allowed to use prior to any reductions required by SGMA.

Sector	Draft Maximum Annual Production (Acre Feet)
Total Subbasin Water Use	23,512
Total Subbasin Water Use (without water credits issued by Borrego Water District)	21,912



GSP Appendices: Baseline Pumping Methodology

Groundwater pumpers by sector include:

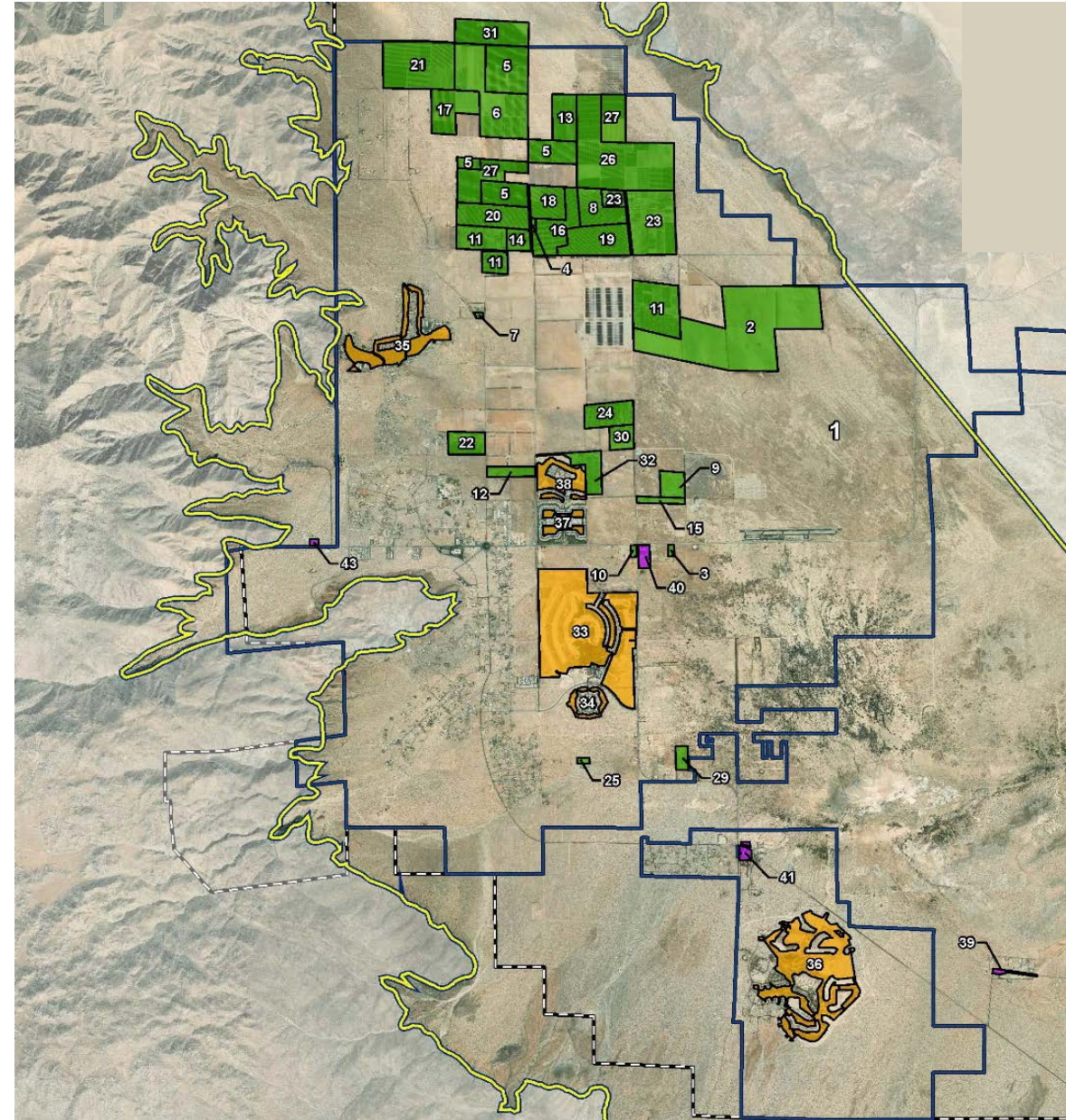
Municipal Pumpers: 1 (Borrego Water District)

Agricultural Pumpers: 30

Golf Course Pumpers: 6

Other Pumpers: 4 (State Park, Air Ranch, Borrego Elementary, and La Casa Del Zoro)

De Minimis Pumpers (less than 2 acre-feet/year): 52



Key Definitions

For a list of definitions of SGMA terms used in this presentation, please visit the following website:

https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Sustainable_Management_Criteria_2017-11-06.pdf

Definitions can be found on Pages 34 and 35.

Groundwater Sustainability Plan Public Review

The Groundwater Sustainability Plan (GSP) is required to be adopted by the GSA by January 31, 2020. SGMA does not require any public review period prior to adoption. The GSA, however, has added a 60-day public review period to ensure stakeholders and other interested parties have an opportunity to review and comment on the GSP prior to adoption.

Public review is anticipated to commence in March 2019 (date subject to revision). The draft GSP will be available for review at the following locations:

- Internet: <https://www.sandiegocounty.gov/content/sdc/pds/SGMA/borrego-valley.html>
- Hard Copy (for on-site review only):
 - County of San Diego, Planning & Development Services, 5510 Overland Avenue, First Floor, San Diego, California
 - Borrego Water District, 806 Palm Canyon Drive, Borrego Springs, CA
 - Borrego Springs Library, 2580 Country Club Road, Borrego Springs, CA

A final date for comments to be received will be provided by the GSA at the start of the public review period. Comments on the draft GSP should reference the project name and sent via e-mail or US Mail:

- E-mail: PDS.LUEGGroundWater@sdcounty.ca.gov
- US Mail: County of San Diego
Planning & Development Services
C/O: Jim Bennett
5510 Overland Avenue, Suite 310
San Diego, CA 92123