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# Borrego Valley Groundwater Basin Borrego Springs Subbasin

## **Chapters 1-3 Draft Groundwater Sustainability Plan Key Concept Slides from 10/4/2018 Advisory Committee Meeting**

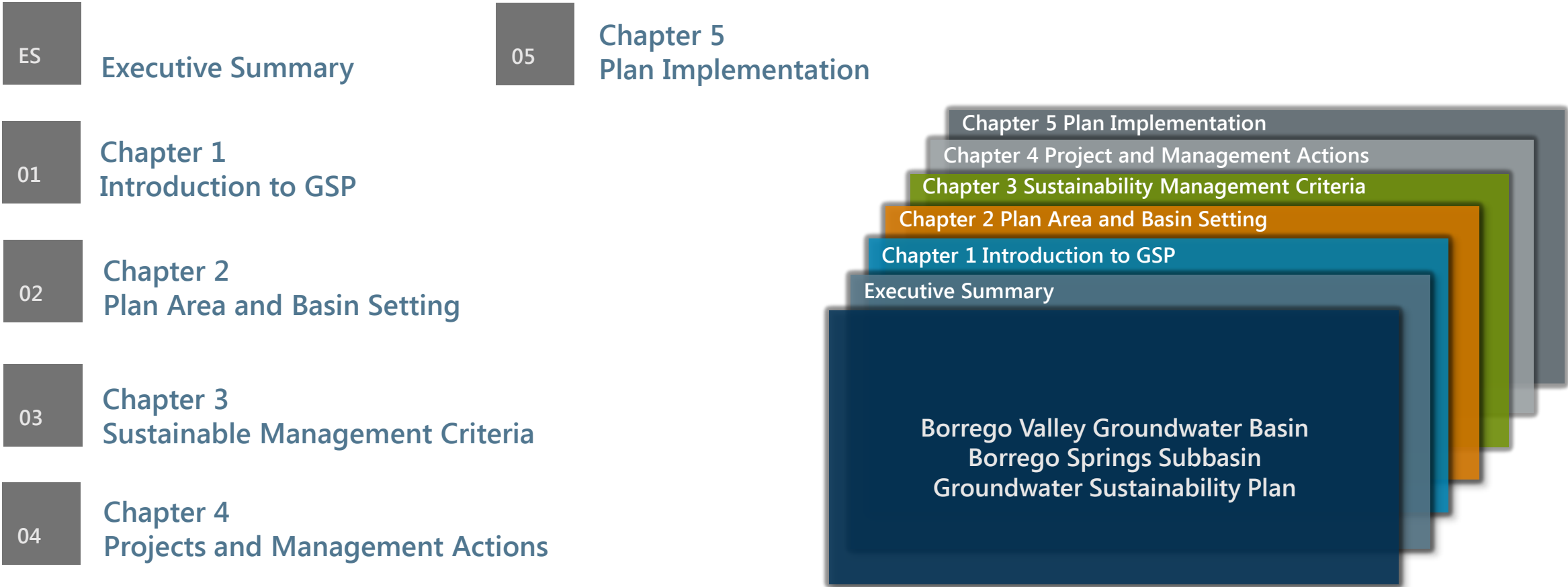
**Advisory Committee Meeting**

**November 29, 2018**





The Groundwater Sustainability Plan is organized as follows:



# Chapter 1: Introduction to GSP

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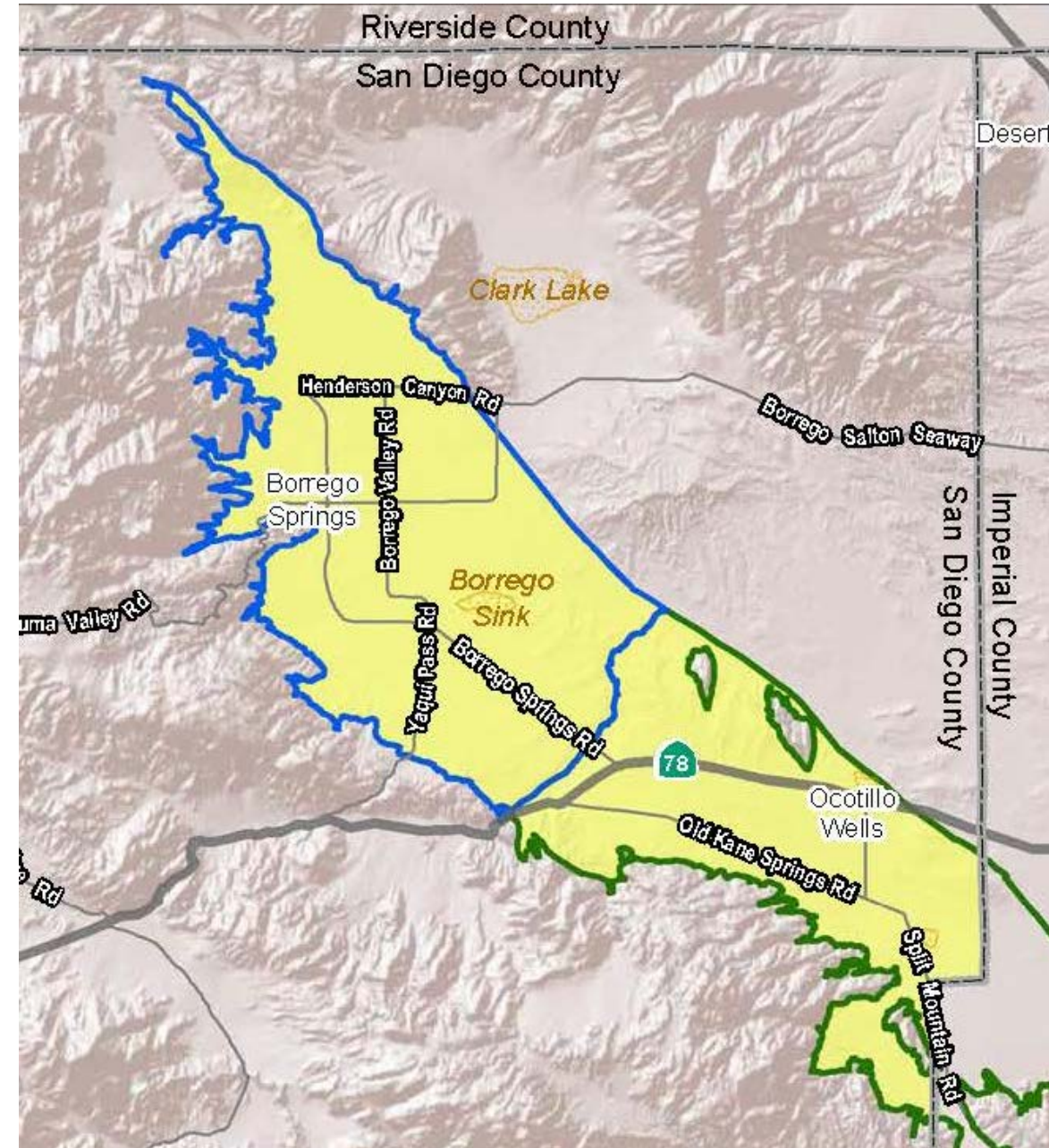
Chapter 1 describes the intent of SGMA, the purpose of the GSP, the GSA structure, and SGMA Legal Authority.

**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

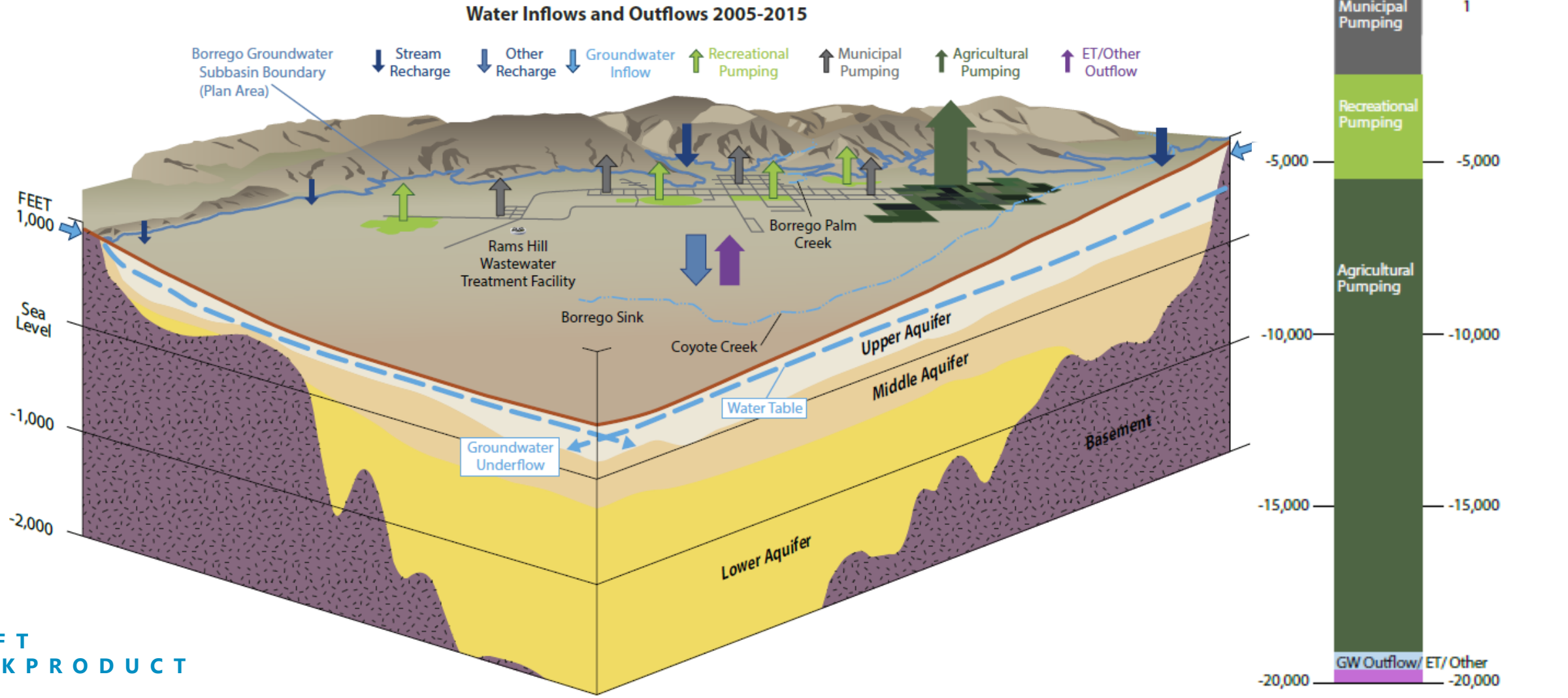






# Chapter 2: Basin Setting: Hydrogeologic Conceptual Model

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

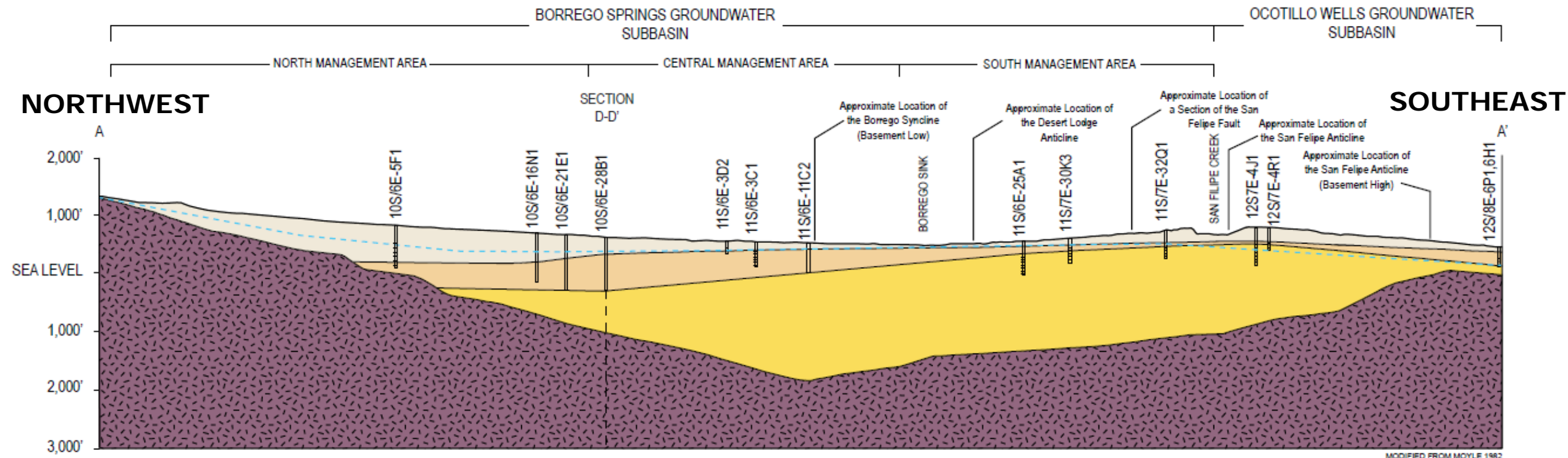
There are three aquifers:

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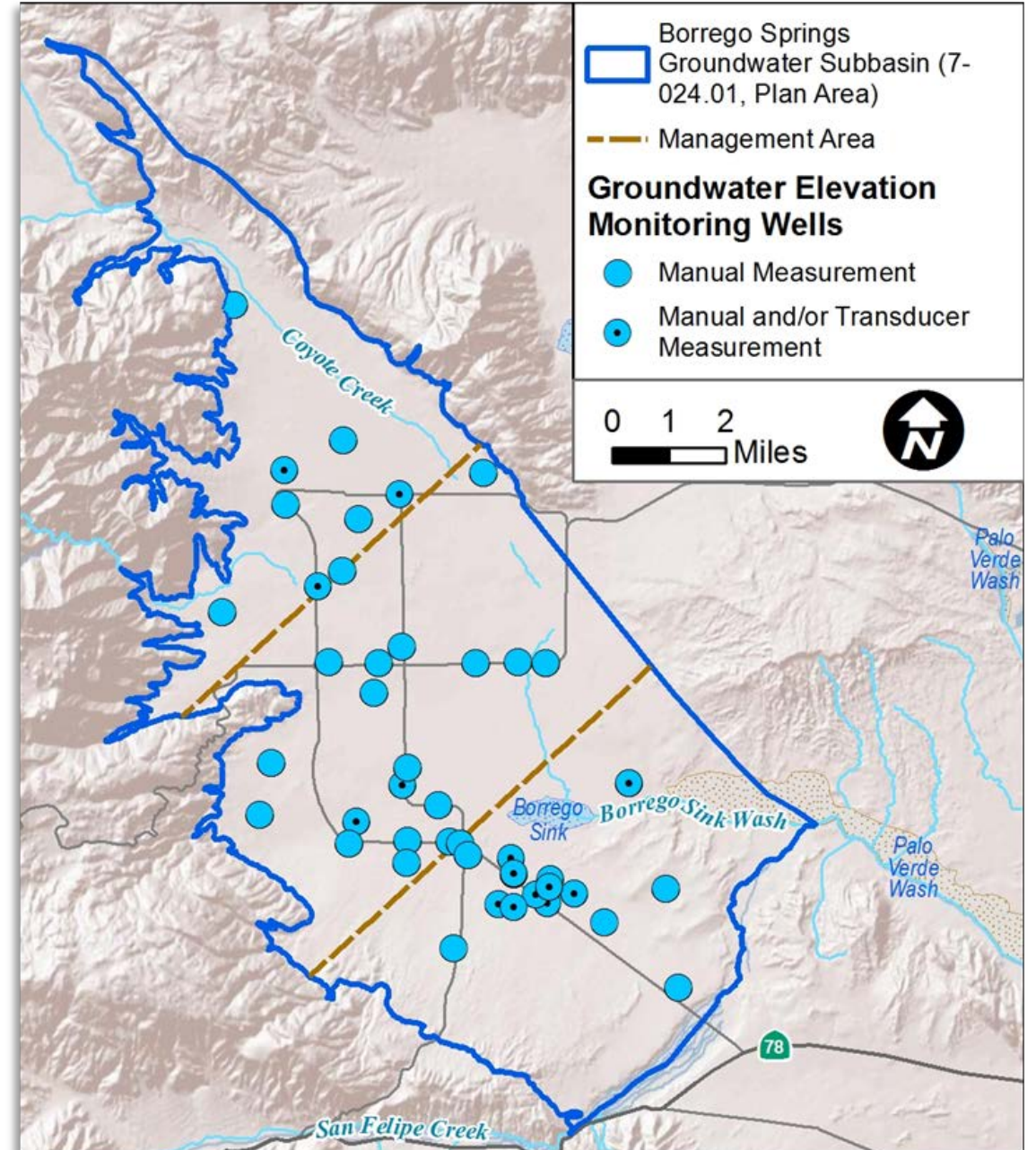
**Number of Wells in Network: 46 (as of October 2018)**

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

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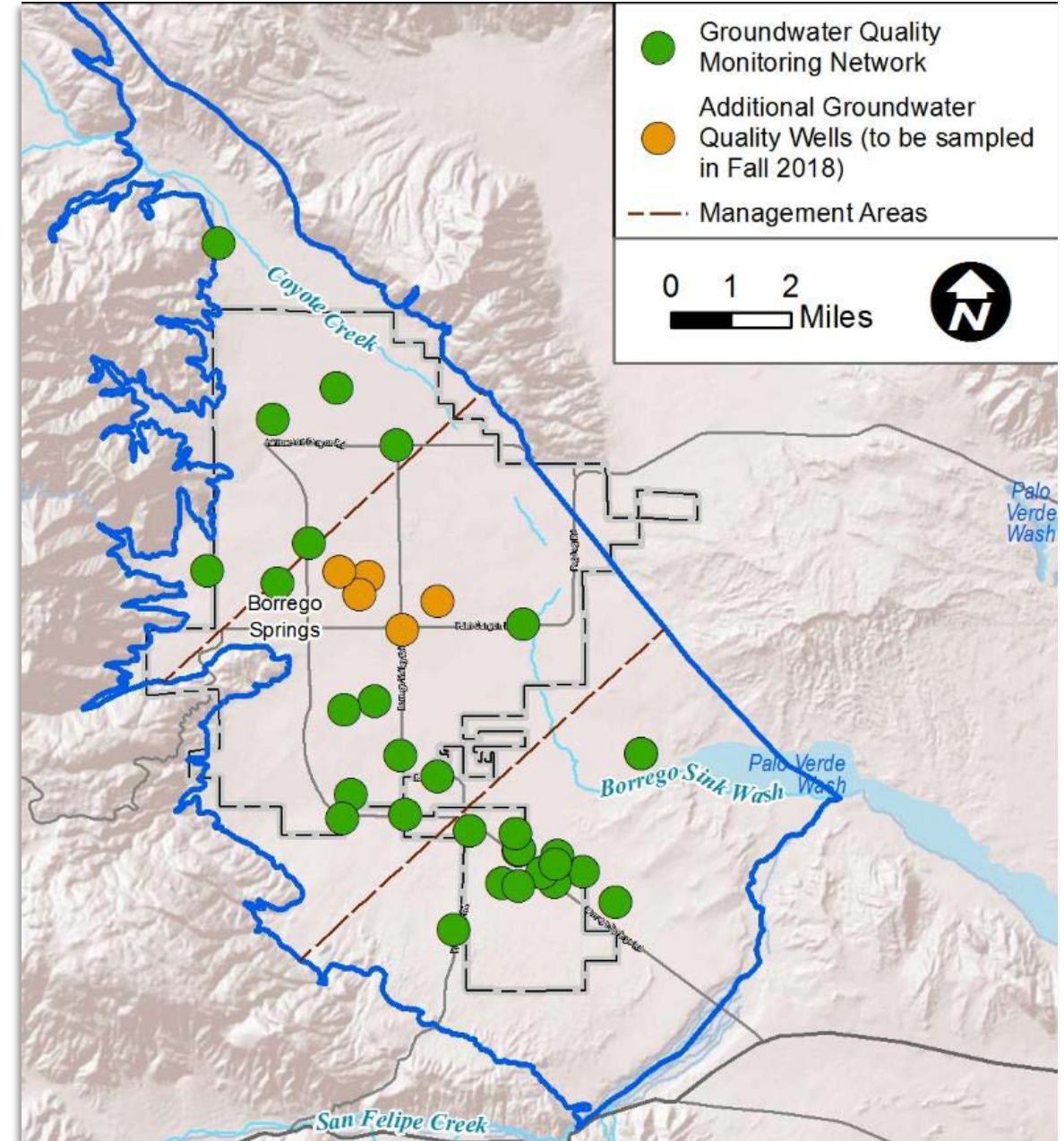
**Number of Wells in Network: 35 (as of October 2018)**

North Management Area: 6 wells

Central Management Area: 14 wells

South Management Area: 15 wells

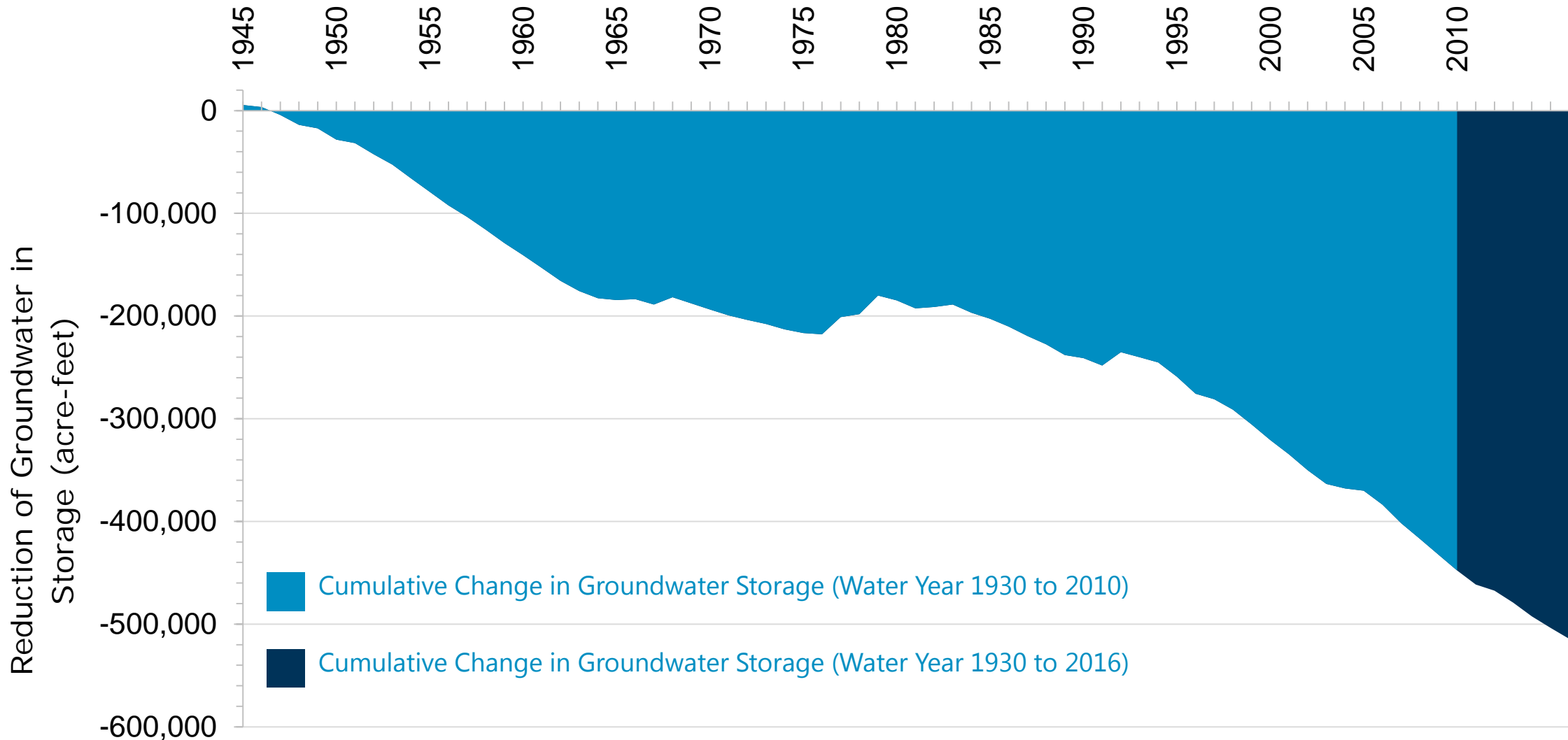
The monitoring network will be refined to fill identified data gaps throughout GSP implementation.





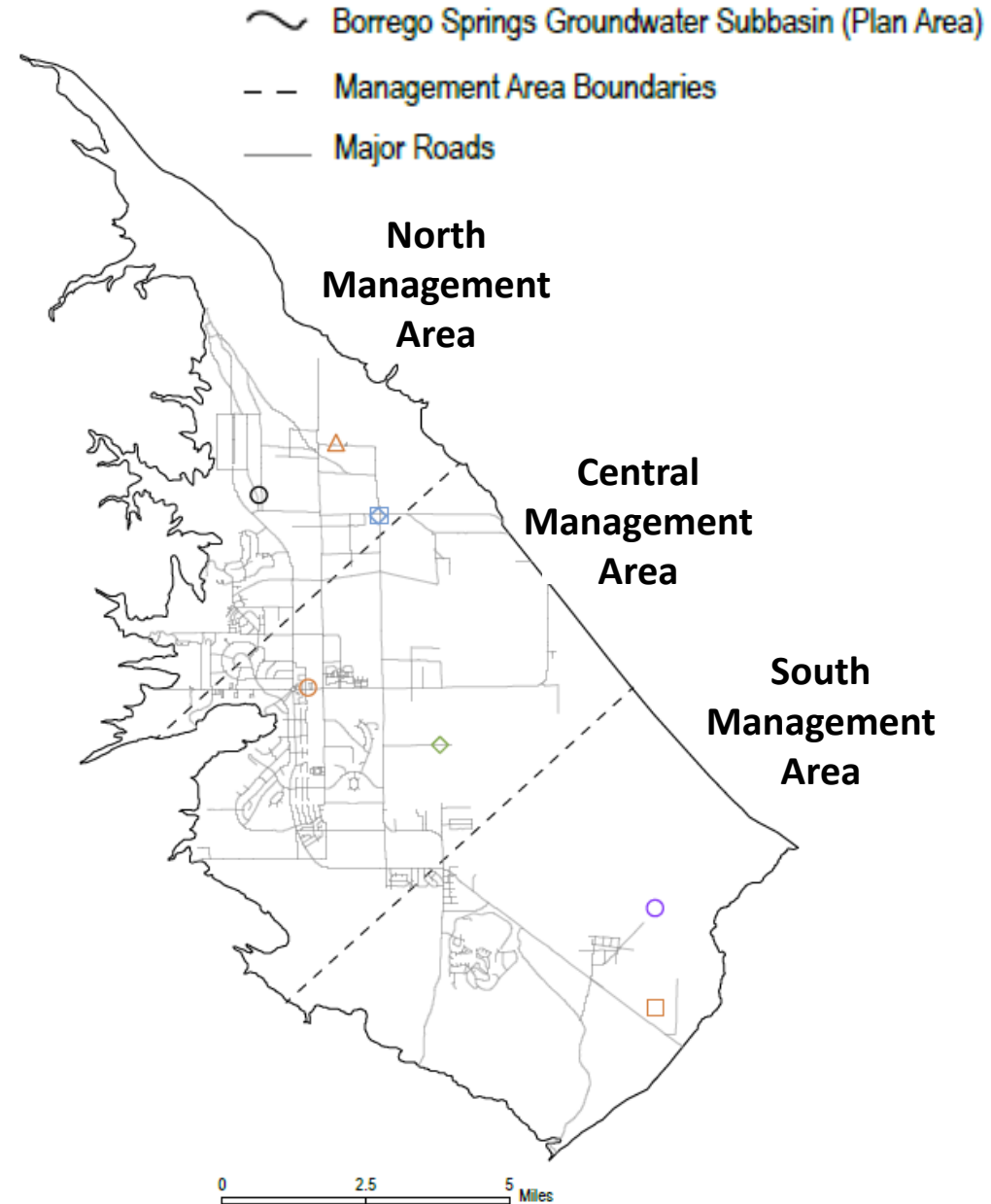
## Chapter 2: Water Budget/Model Results

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

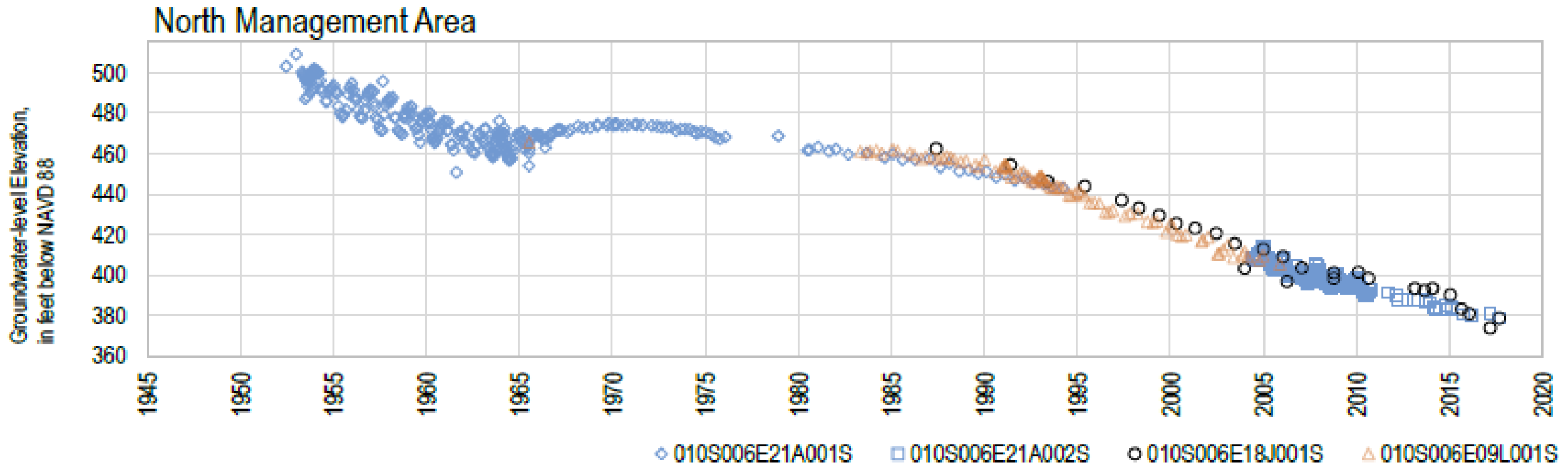
SGMA allows the use of management areas to sustainably manage the Basin. The GSP includes three management areas.



# Chapter 2: North Management Area Groundwater Levels

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



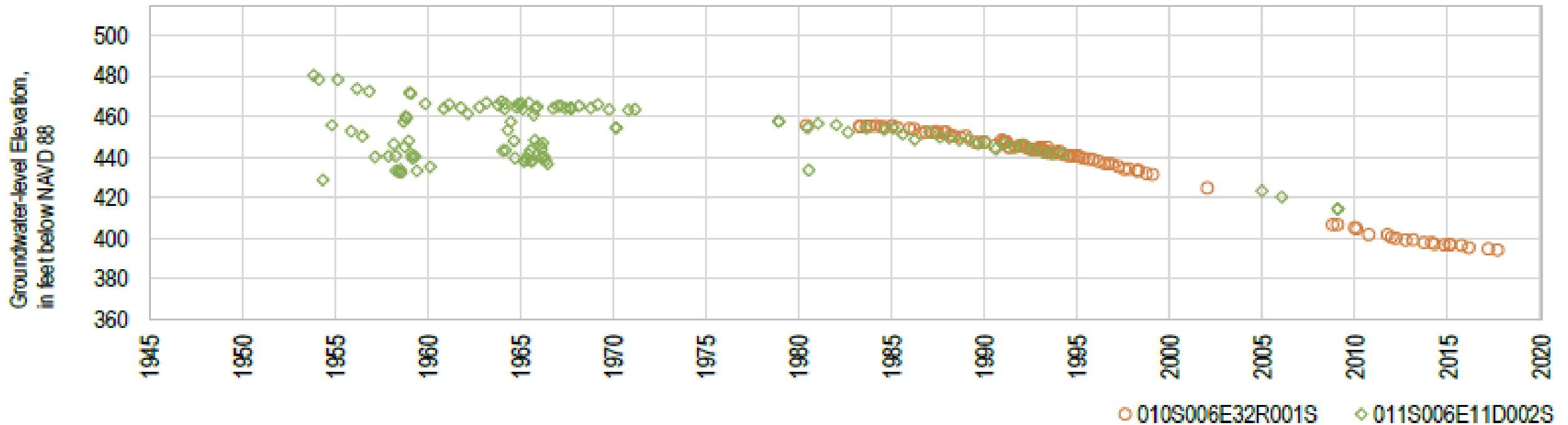


# Chapter 2: Central Management Area Groundwater Levels

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

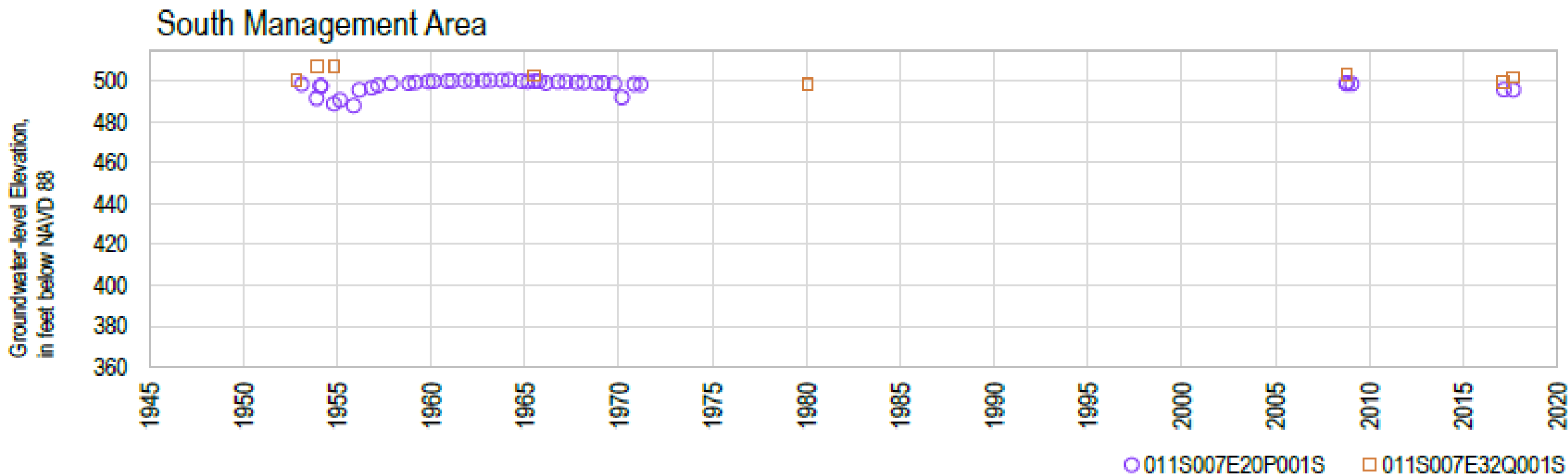
## Central Management Area



# Chapter 2: South Management Area Groundwater Levels

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



# Chapter 3: Overarching Goal

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**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

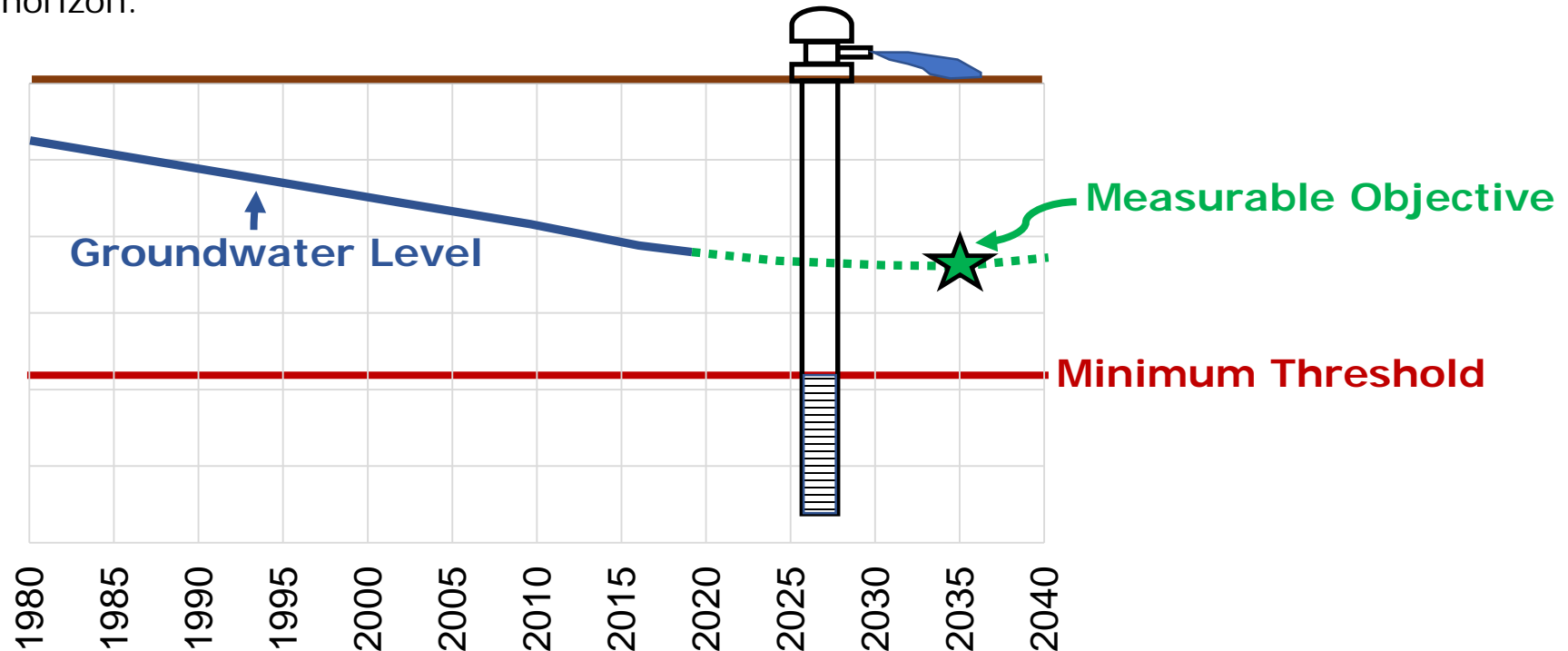
## GSA Sustainability Goals:

- 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.



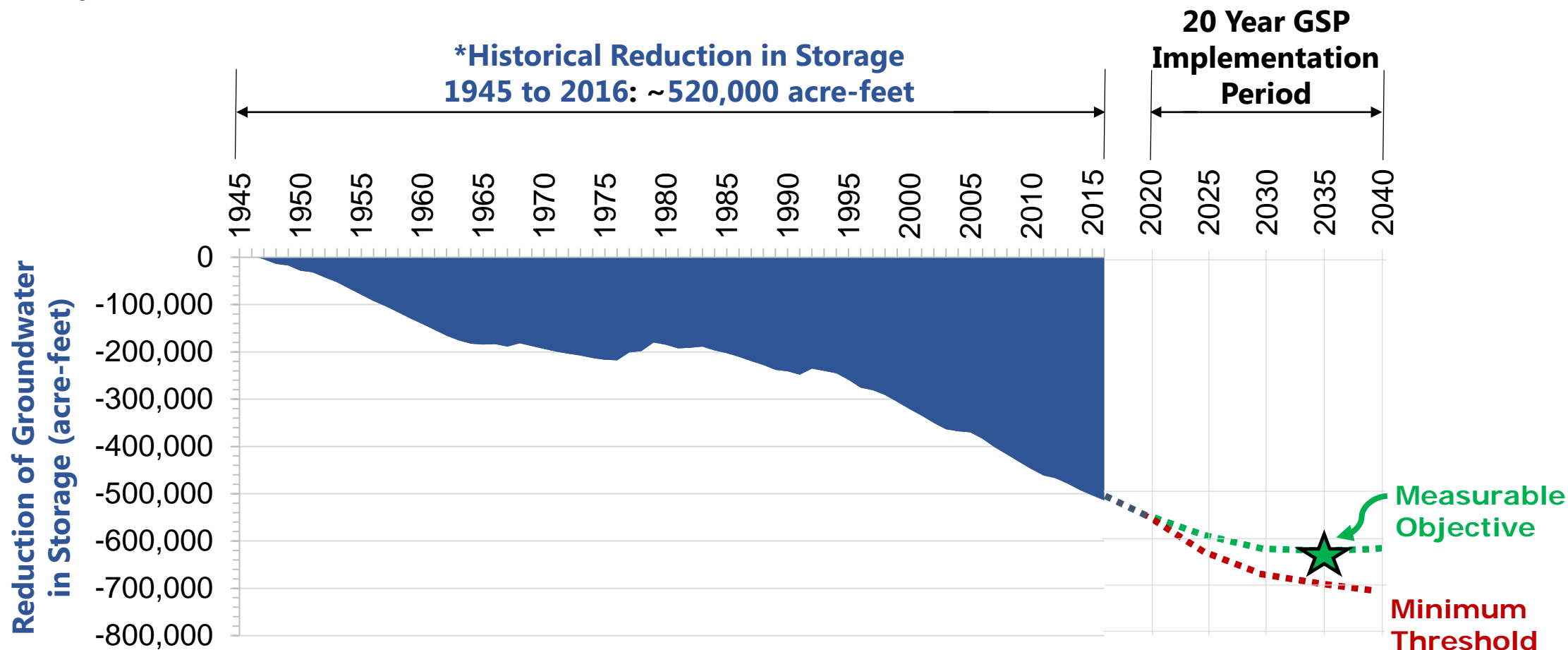
# Chapter 3: Reduction of Groundwater in Storage

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

**Undesirable Results:** Reduction in groundwater 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.



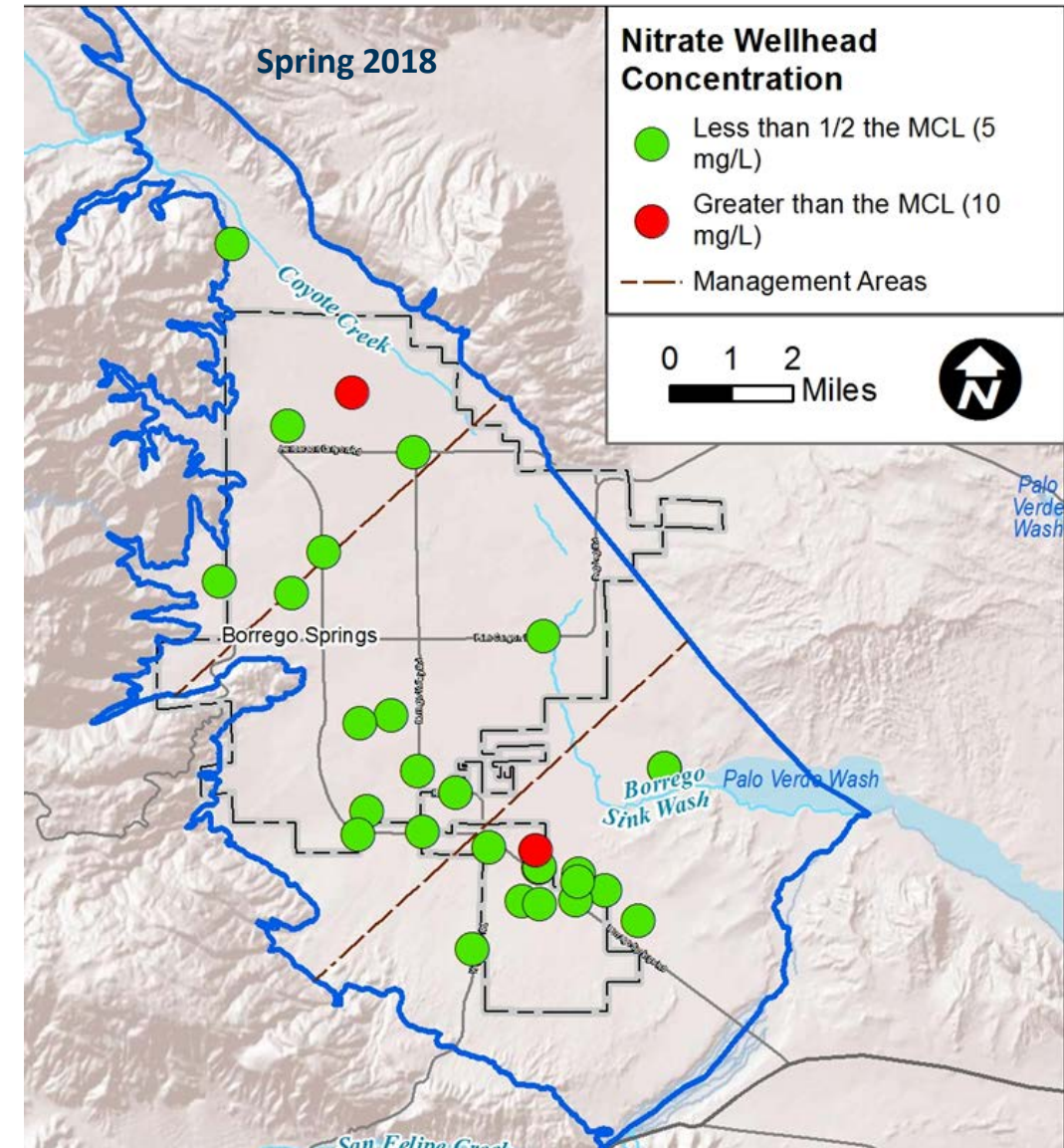
# Chapter 3: Degraded Water Quality

**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

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Key concept slides to be developed and provided at an upcoming Advisory Committee meeting.

# Chapter 5: Plan Implementation

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Key concept slides to be developed and provided at an upcoming Advisory Committee meeting.

# Key Definitions

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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](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.