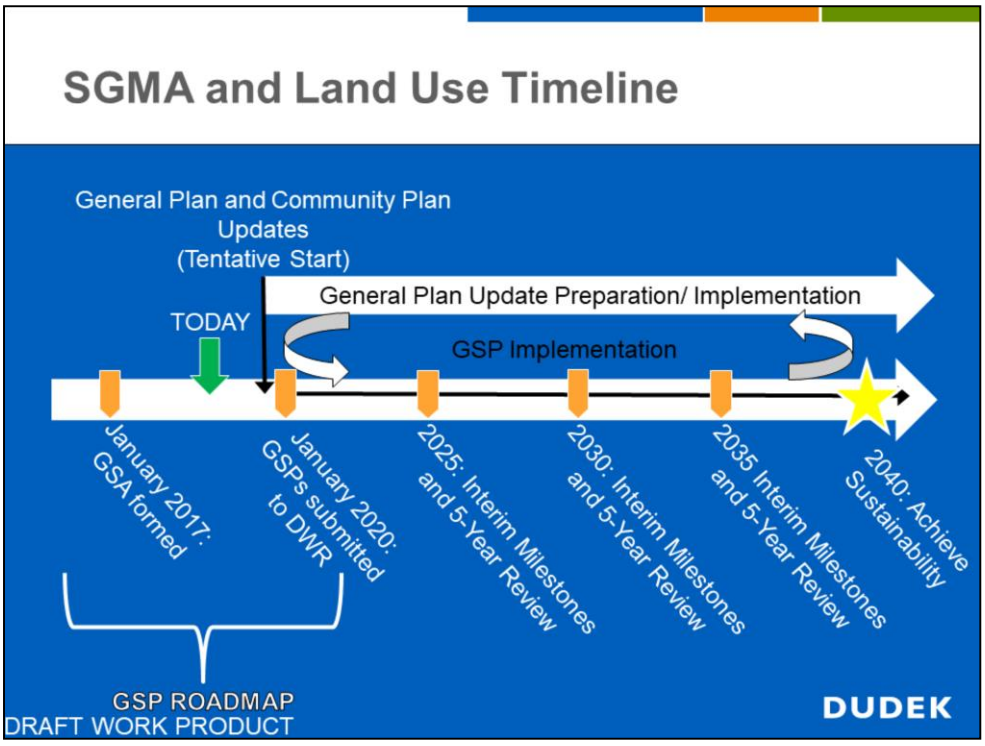
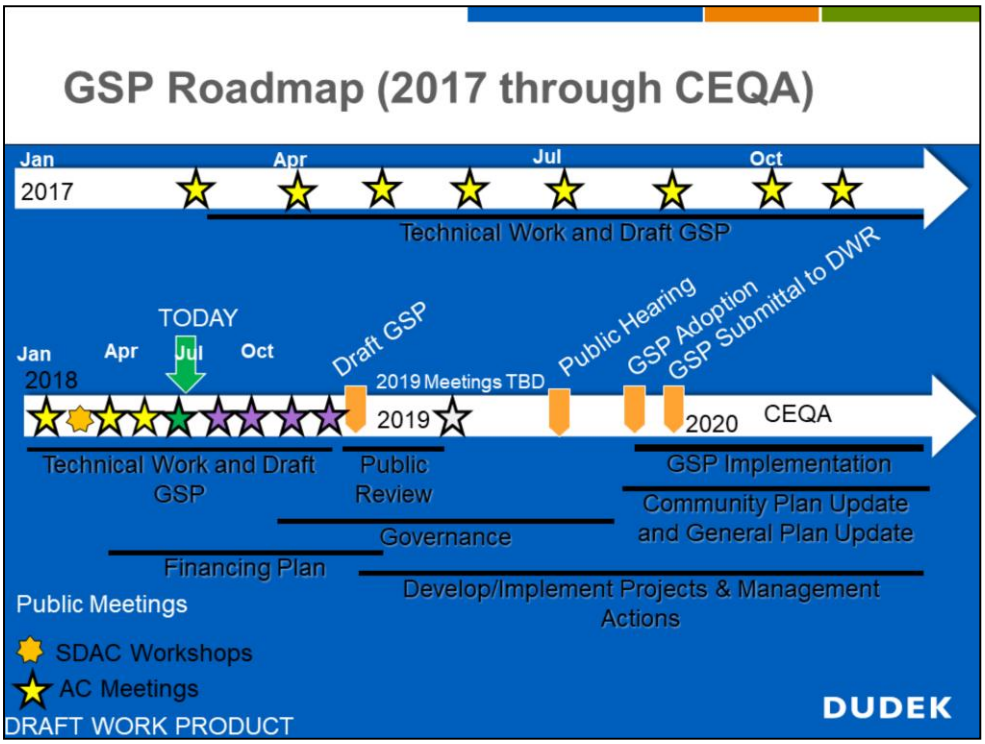
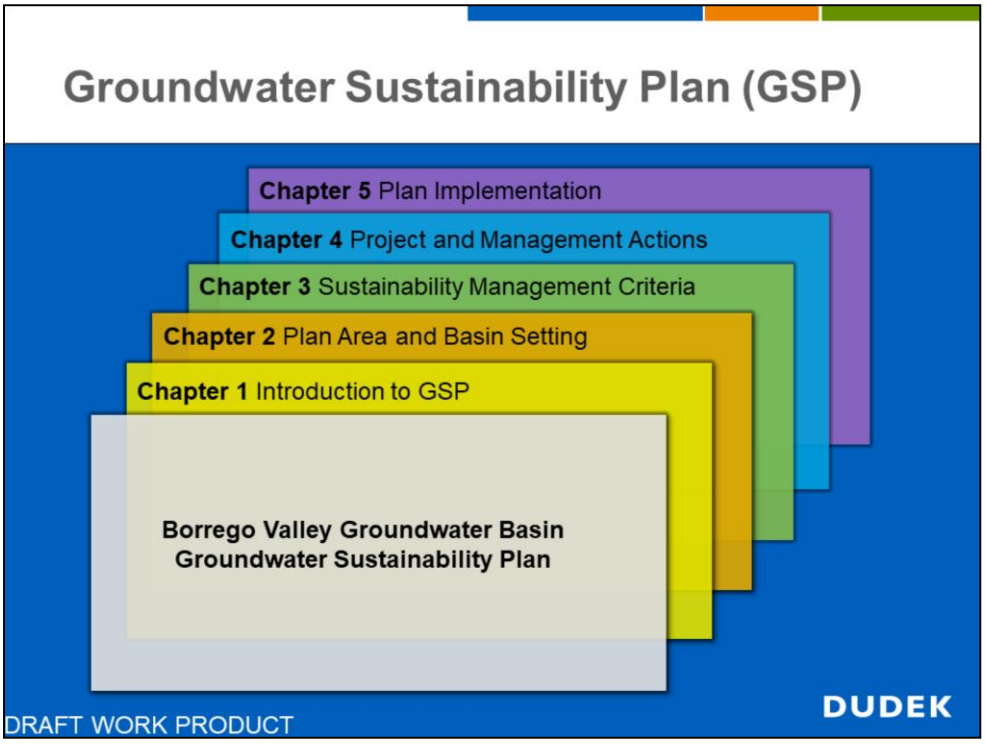
Review of Groundwater Sustainability Plan (GSP) Development Progress Over Last Year including Updated GSP Schedule, California Environmental Quality Act (CEQA), Community Plan Update and General Plan Update Process as it Applies to SGMA, and GSP Implementation.



As of this month, July 2018, we are approaching completing an internal draft of the Groundwater Sustainability Plan (GSP) approximately 19 months after the County of San Diego and Borrego Water District formed a Groundwater Sustainability Agency (GSA). Work completed to date represents the foundation for completing the draft GSP, Public Review, final GSP, GSP adoption and submittal to Department of Water Resources (DWR) and GSP implementation. The Sustainable Groundwater Management Act (SGMA) requires basins achieve sustainability by 2040 or sooner. Every 5 years SGMA requires basins show progress toward sustainability goals. Additionally. SGMA requires annual reporting during plan implementation. The General Plan and Community Plan Updates are tentatively scheduled to start prior to January 2020. The GSP and General Plan are both living documents that are separate processes to develop and update but are interrelated. Both documents will be periodically updated throughout GSP implementation. The next slide is focused on the period from 2017 though 2020 (GSP Roadmap).



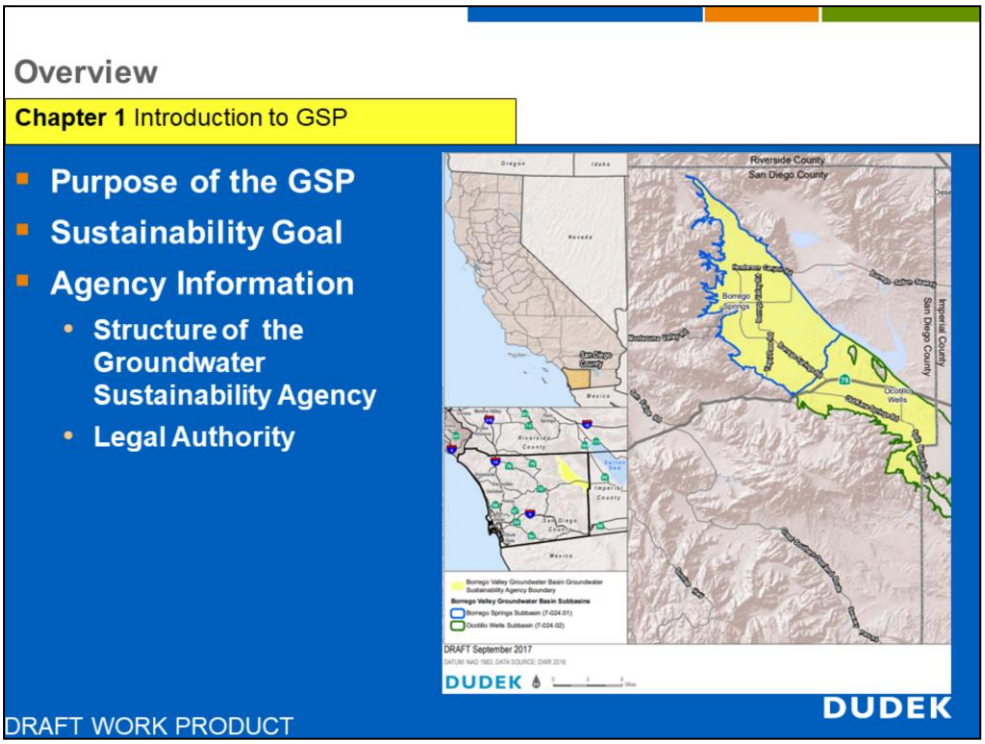
As of this month, July 2018, the GSA has convened 12 Advisory Committee (AC) Meetings and 1 Severely Disadvantaged Community (SDAC) SocioEconomic Workshop. Four additional AC meetings are scheduled for the remainder of 2018 prior to release of the Draft Groundwater Sustainability Plan (GSP) later this year. Based on comments received from multiple AC members, the Core Team is considering extending the Draft GSP Public Review Period from 45 days to the requested 60 days. This change will likely result in a delay to the County Board of Supervisors meeting to review and adopt the GSP as there is a SGMA mandated minimum 90 day notice required prior to plan adoption. The number and date of AC meetings to be held in 2019 have yet to be determined. The Core Team expects the there likely will be AC meetings to present and discuss on the Financing Plan, Governance, Development of Projects & Management Actions, and GSP implementation. The Community Plan Update and General Plan Update will be a parallel but linked process to GSP implementation that is tentatively planned to start in late 2019.



As part of the GSP Roadmap, we are providing introductory to the Groundwater Sustainability Plan (GSP) document. The GSP is comprised of five chapters:

1. Introduction to GSP
2. Plan Area and Basin Setting
3. Sustainability Management Criteria
4. Projects and Management Actions
5. Plan Implementation

Over the next four AC meetings, the Core team will be presenting on the Draft GSP. The following slides provide a brief introduction and overview of the GSP by chapter.

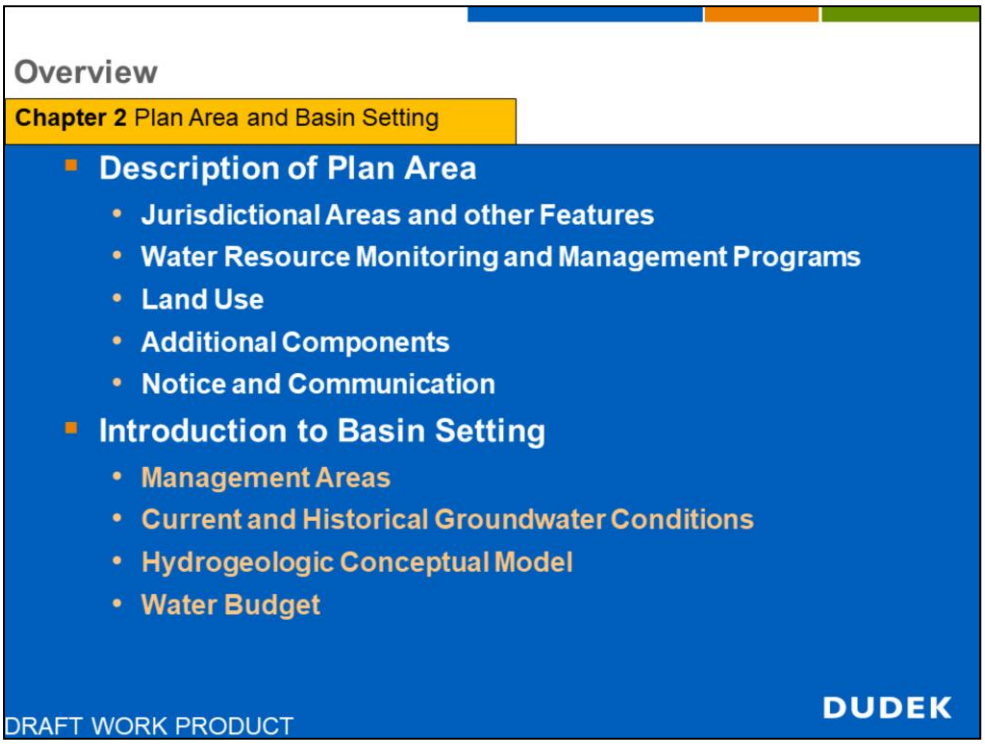


Purpose: Is to "manage and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results".

Sustainability Goal: This GSP is intended to meet the overarching sustainability goal of SGMA to operate the Borrego Springs Subbasin within sustainable yield without causing an undesirable result. GSAs must achieve their sustainability goal within a maximum 20 years of GSP implementation.

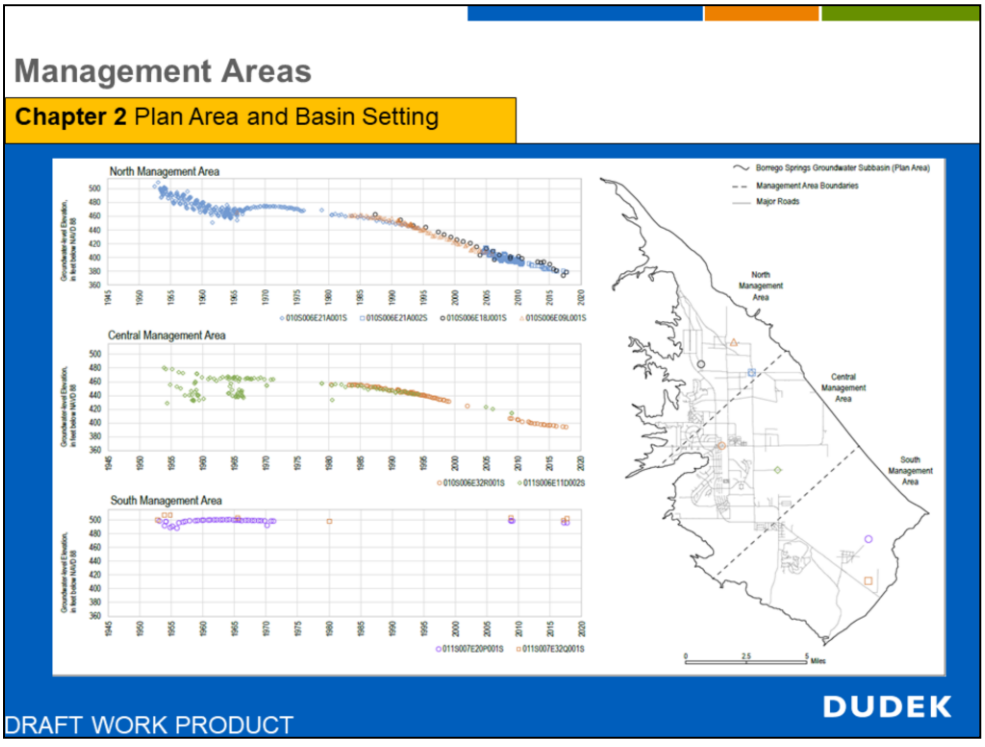
Formation of a Groundwater Sustainability Agency: The GSA is comprised of the County and the District, which have designated a Borrego Basin Plan Core Team (Core Team) and an Advisory Committee (AC) made up of stakeholders.

Legal Authority: On September 16, 2014, Governor Jerry Brown signed into law Senate Bills 1168 and 1319 and Assembly Bill 1739 as part of SGMA legislation, which provides local groundwater agencies the authority and the technical and financial assistance necessary to sustainably manage groundwater.

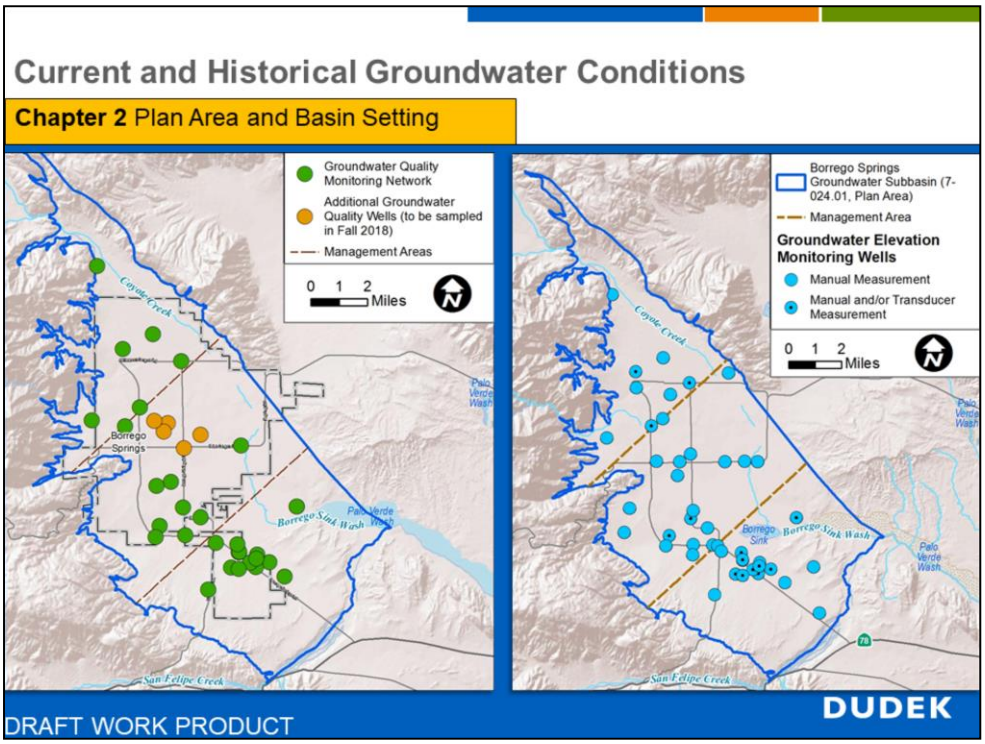


Chapter 2 provides detailed information on the Plan Area and Basin Setting. This chapter presents all the technical information developed for the Subbasin based on previous studies, data compilation, and current and ongoing work from the Subbasin monitoring network. For todays presentation, we will only be highlighting the items in orange text. Chapter 2 in its entirety will be covered n detailed at upcoming AC meetings.

Management Areas: These Subbasin management areas are proposed to contextualize baseline conditions, monitor the status of groundwater quality, and measure progress toward achieving sustainability goals pertaining to groundwater quality.



The depth, elevation and quality of groundwater resources in the Plan Area appears to vary geographically from north to south and with depth in the aquifer based on present and historical data. As shown in the upper hydrograph, groundwater levels between 1953 and 2017 declined by as much as 125 feet in the northern part of the Plan Area equivalent to an average rate of 1.95 feet per year. As shown in the middle hydrograph, groundwater-level declines have occurred in the west-central part of the basin with the magnitude of the groundwater level decline is smaller, dropping by about 85 feet between 1953 and 2017, or an average rate of 1.33 ft/year. In the southeastern part of the valley where less groundwater has been pumped, the groundwater-level has remained about the same in the historical record, remaining at an elevation of about 500 amsl (+/- 10 feet). Given the physical characteristics of the Subbasin, the aquifers intersected by groundwater well screens, differing groundwater-quality characteristics, and the overlying groundwater end-uses and demands, three management areas are proposed for the Subbasin: the north management area (NMA), central management area (CMA), and south management area (SMA). These Subbasin management areas are proposed to contextualize baseline conditions, monitor the status of groundwater quality, and measure progress toward achieving sustainability goals pertaining to groundwater quality.



These slides depict the number of wells and their location for the existing groundwater quality monitoring network on the left slide and the groundwater elevation network on the right slide. There are currently 30 wells monitored in the groundwater quality network:

North Management Area (NMA): 6 wells

Central Management Area (CMA):9 wells

South Management Area (SMA):15 wells

In the fall 2018, an additional 5 private wells have been identified to add to the groundwater quality monitoring network (orange dots depicted in the left slide. The 5 private wells are located in the CMA).

The groundwater level network currently consist of 46 wells as depicted on the left slide:

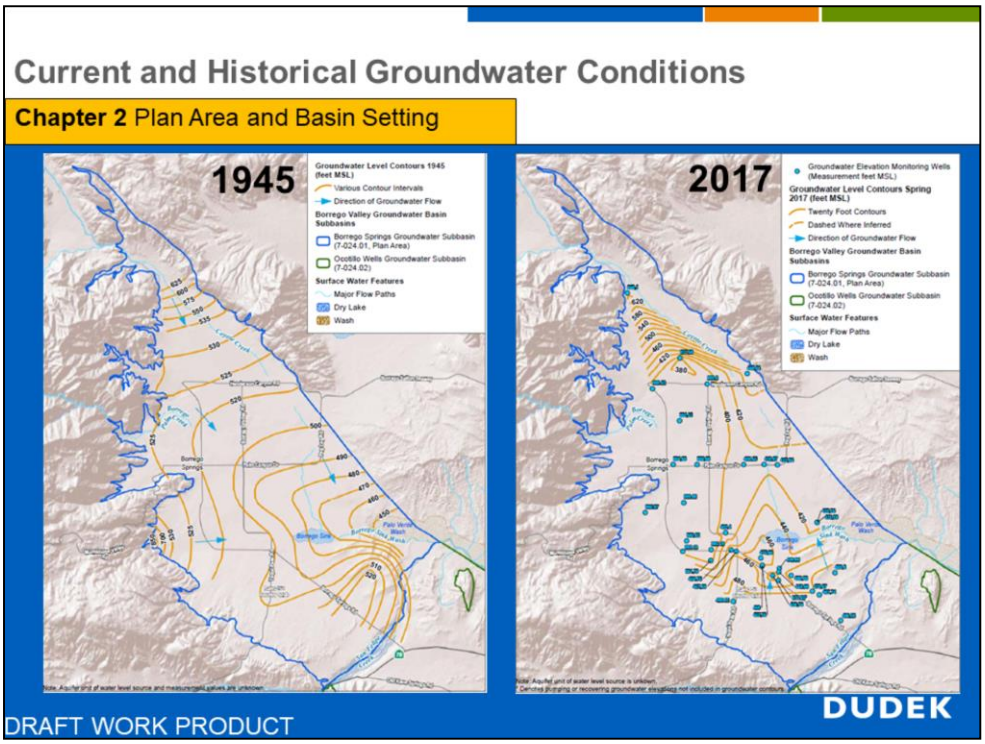
Number of wells with transducers: 17 (black dot overlying blue dot)

North Management Area (NMA): 9 wells

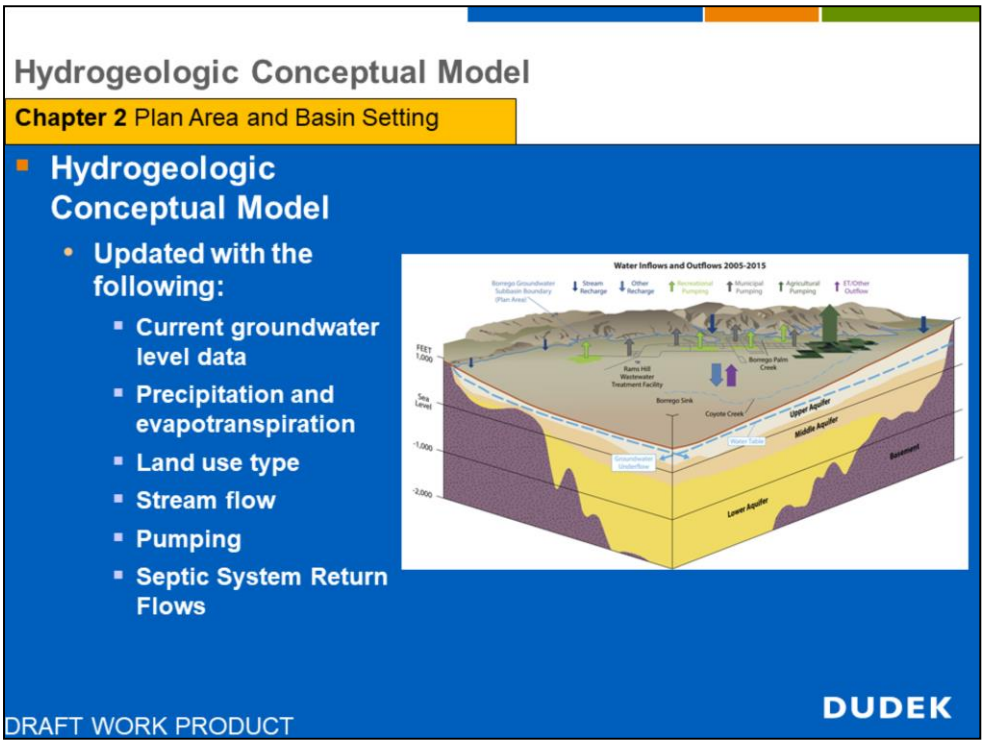
Central Management Area (CMA): 19 wells

South Management Area (SMA): 18

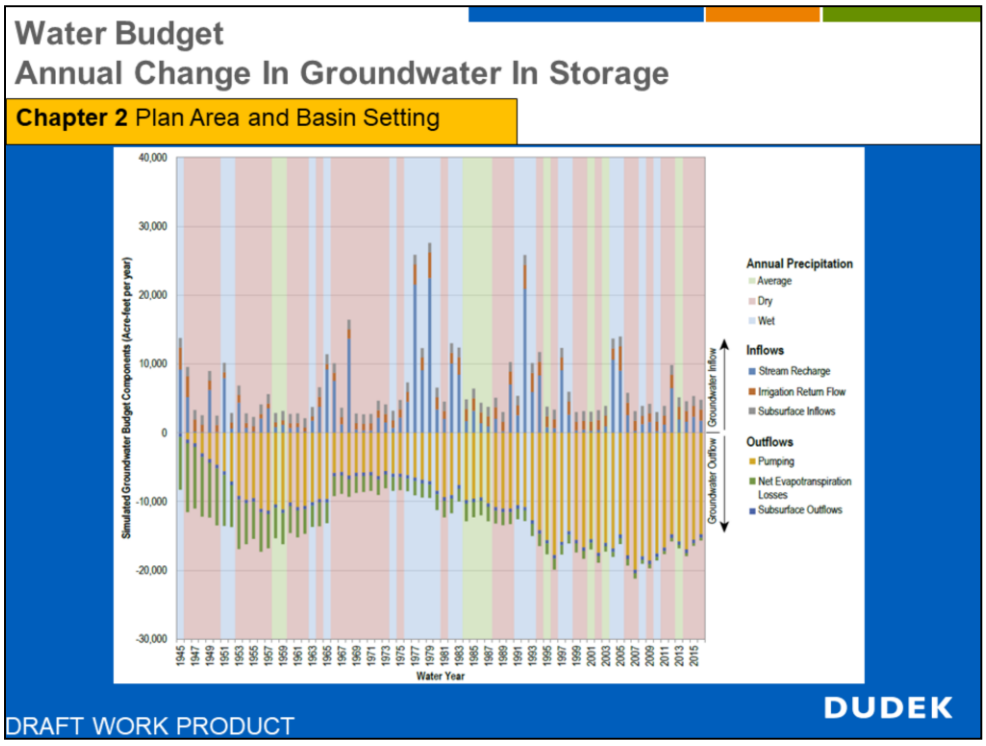
The monitoring network will be continually refined to fill identified data gaps and collected additional data on the Subbasin. This will occur throughout GSP implementation.



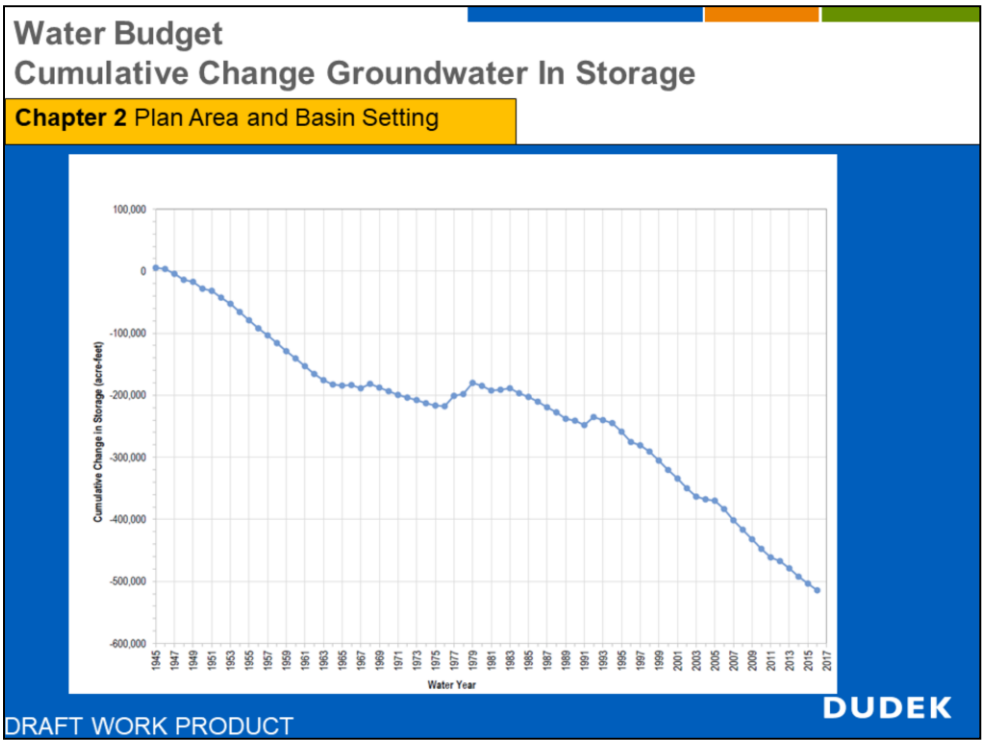
Historical groundwater levels in the Borrego Springs Subbasin are shown in the left figure for 1945. In 1945, prior to development in the Plan Area, the direction of groundwater flow was predominantly from the northwest to the southeast. Groundwater elevations ranged from more than 600 feet amsl near Coyote Creek in the northwestern part of Borrego Valley to about 460 feet amsl in the southeastern part. The lowest groundwater-level elevations occurred east of the Borrego Sink, an area of natural drainage in the middle of the valley that is currently dry most of the time. Current groundwater levels in the Borrego Springs Subbasin were measured in the spring 2017, and are shown on the figure to the right. Measured groundwater elevations in Spring of 2017 ranged from a high of 648.1 feet amsl in the northern part of the Subbasin [Horse Camp Well] to a low of 380.8 feet amsl near the intersection of Henderson Canyon Road and Borrego Springs [MW-1]), which marks the southern edge of the primary agriculture area in the valley. Two pumping-related depressions were evident in the data collected, one centered on the agricultural areas north of Henderson Canyon Road, and possibly another centered around a cluster of wells north of the Ram's Hill Golf Course.



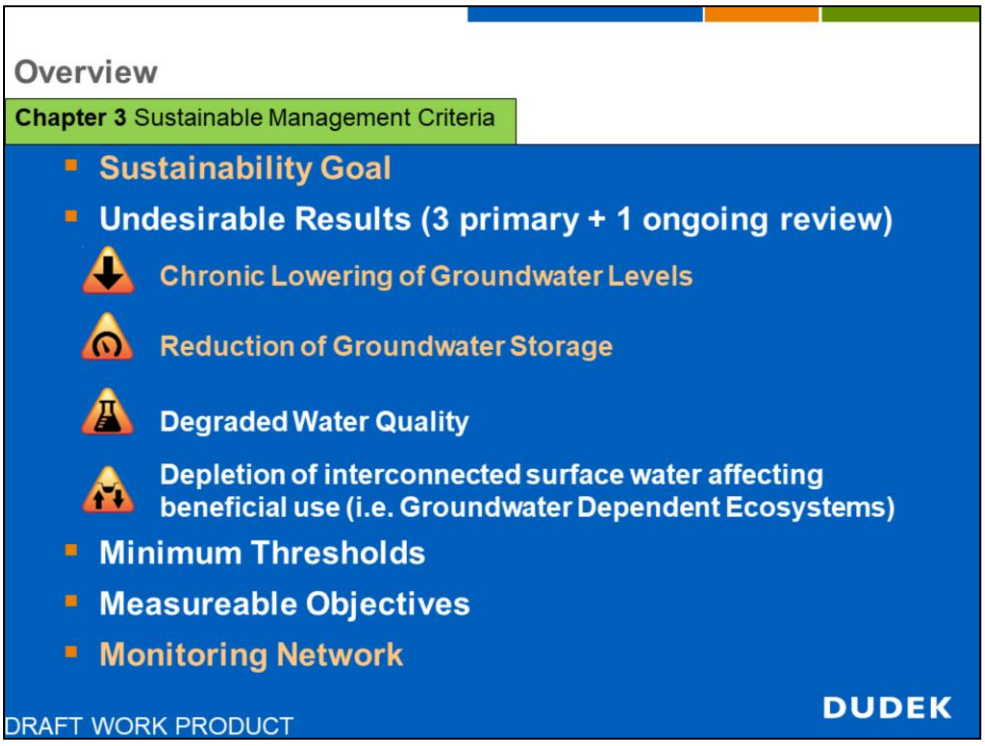
The hydrogeologic conceptual model (HCM) provides the framework for the development of water budgets, analytical and numerical models, and monitoring networks. Additionally, the HCM serves as a tool for stakeholder outreach and communication, and assists with the identification of data gaps. A HCM differs from a mathematical (analytical or numerical) model in that it does not compute specific quantities of water flowing through or moving into or out of a basin, but rather provides a general understanding of the physical setting, characteristics, and processes that govern groundwater occurrence and movement within the basin. The graphic presents the HCM developed for the Plan Area, which depicts basin boundaries, stratigraphy, land use, and a conceptual depiction of inflows and outflows from the Borrego Springs Subbasin. The HCM has been updated with current groundwater level data, climate data, land use data, stream flow data, extraction data and septic system return flows.



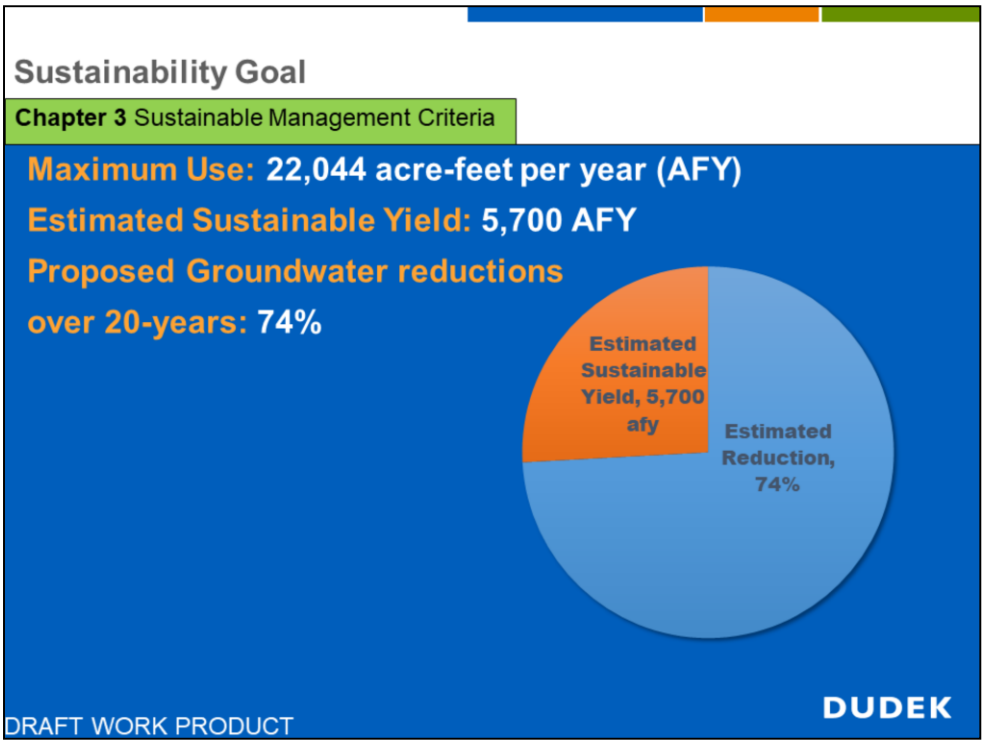
The water budget for the basin provides an accounting and assessment of the average annual volume of groundwater and surface water entering and leaving the basin. It includes information on the historical and current water budget conditions, as well as the change in the volume of water stored. The water budget provides detail sufficient to build local understanding of how historical changes to supply, demand, hydrology, population, land use, and climatic conditions have affected the applicable sustainability indicators in the basin. This information is used to predict how these same variables may affect or guide future management actions. Building a coordinated understanding of the interrelationship between changing water budget components and aquifer response will allow the GSA to effectively identify future management actions and projects most likely to achieve and maintain the sustainability goal for the basin. Annual change in storage estimated using the USGS groundwater numerical model, and is shown in the above figure. For the period of model simulation, including the model update (1945 through 2016), the annual change in storage ranged from a decrease in storage of approximately 18,000 AF in 2006 to an increase in storage of approximately 18,100 AF in 1978 (wet year). On average, the Subbasin lost approximately 7,300 AFY from storage for the period between 1945 and 2016. When considering the average over the last 10 years only, the average loss increases to 13,137 AFY. Refinement to the water budget will occur during GSP implementation based on actual metered data and other inflow/outflow components. For instance, the maximum pumping in the numerical model is 20,000 AFY in 2007, which is less than the current estimated baseline pumping allocation of 22,044 AFY.



Based on the numeric model results, water was removed from storage in 63 of the 71 water years simulated, with water generally being added to storage in years in which the frequency, intensity and/or duration of runoff events were sufficient to initiate substantial stream recharge (e.g., water years 1967, 1977, 1979 and 1992). As a result, a cumulative amount of approximately 520,000 acre-feet of water was removed from storage over the 71 year period of model simulation (1945-2016).

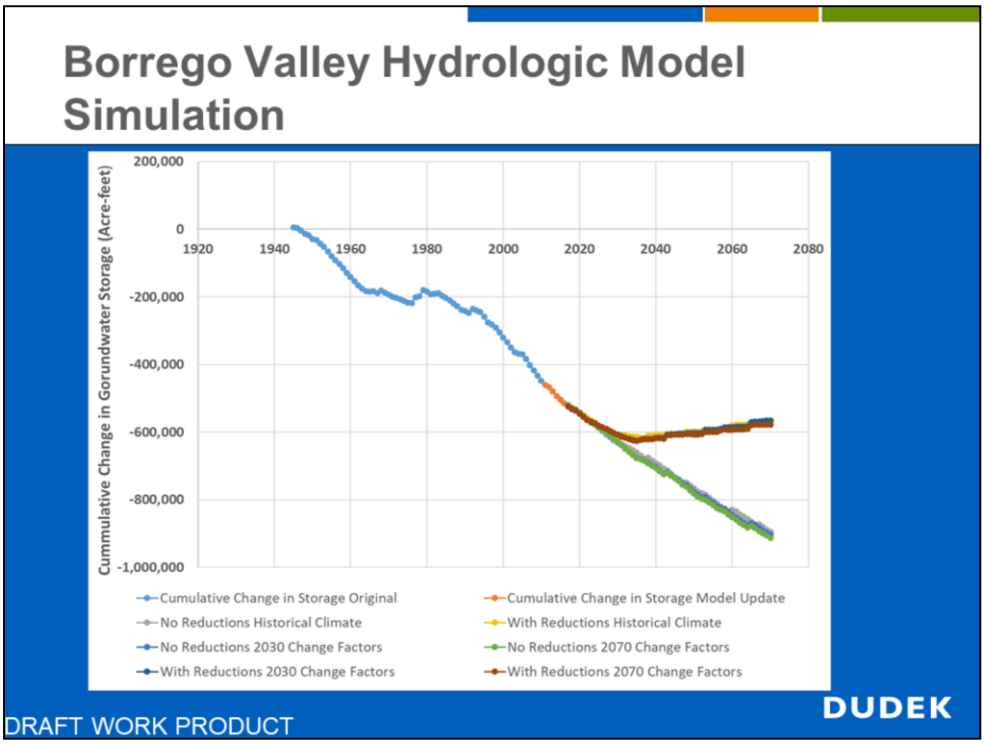


Chapter 3 presents the Sustainable Management Criteria for the Subbasin. Currently the GSA is evaluating three primary undesirable results: chronic lowering of groundwater levels, reduction of groundwater storage and degraded water quality. Depletion of interconnected surface water affecting beneficial use (i.e. Groundwater Dependent Ecosystems) is ongoing additional review and will be further analyzed as part of the California Environmental Quality Act (CEQA) review process for Projects and Management Actions implemented under the GSP.



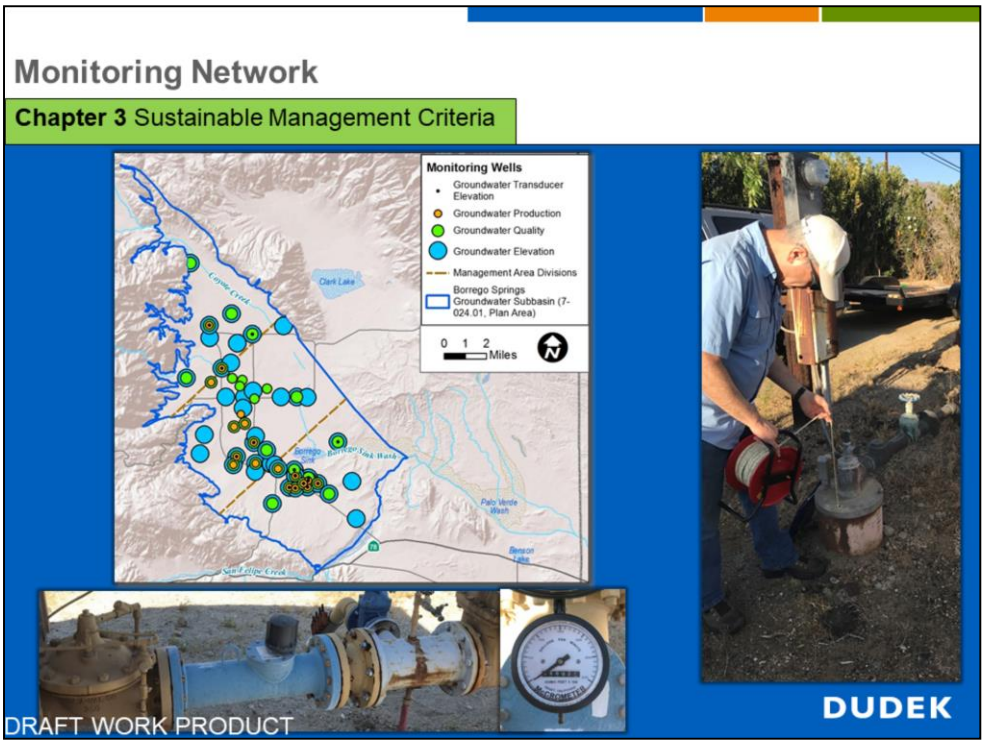
The GSP is intended to meet the overarching sustainability goal of SGMA to operate the Subbasin within sustainable yield without causing an undesirable result. GSAs must achieve their sustainability goal within a maximum 20 years of GSP implementation. Using the Baseline Pumping Allocation of 22,044 acre-feet per year (AFY) and the planning level estimate sustainable yield of 5,700 AFY a pumping reduction of about 74% is required. It should be noted that current groundwater extraction from the Subbasin is likely less than the Baseline Pumping Allocation because the allocation includes water credits sites that amount to 1,600 AFY (water credits issued) or 7.3 percent of the Baseline Pumping Allocation.[1]

[1.] Conversion of water credits to Baseline Pumping Allocation is undergoing further analysis and the conversion rate has yet to be determined.



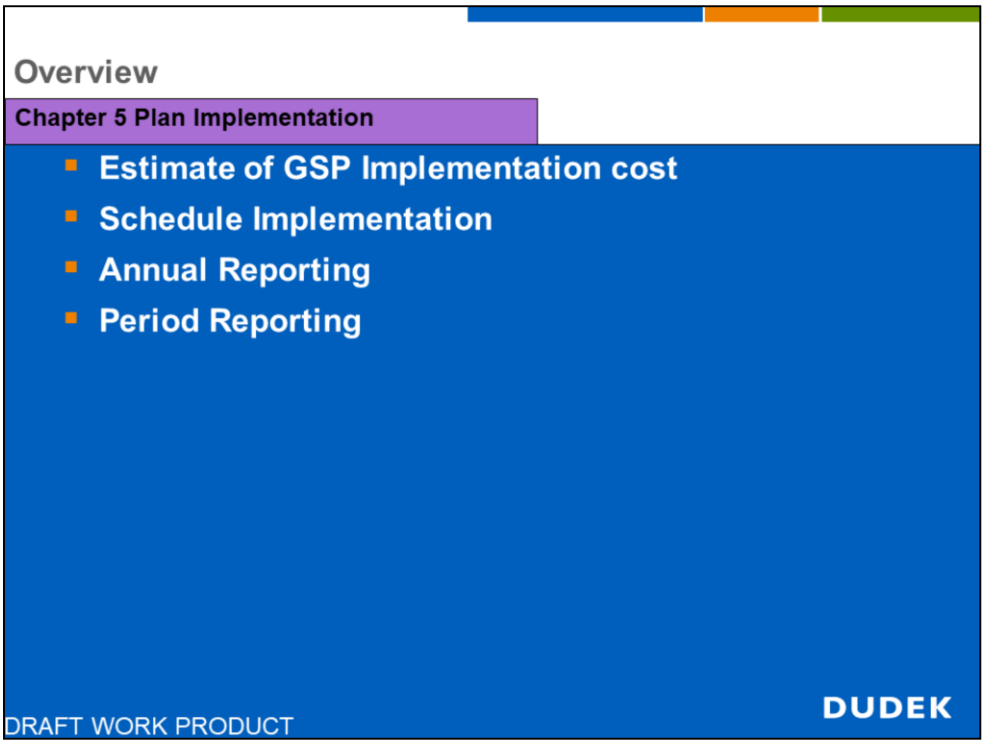
Preliminary Model Runs Addressing Future Climate and Pumping Reductions: This chart shows the cumulative change in storage for the entire Borrego Basin for several model runs. The cumulative change in storage from the original USGS model run (1945 through 2010) is shown on the figure in blue and labeled as “Cumulative Change in Storage Original”. The cumulative change in storage for the model update (2011 through 2016) is shown in red and labeled “”Cumulative Change in Storage Model Update”. In addition, the model was run to address six different future scenarios. Future scenarios can be divided into two groups: 1) pumping remains the same as current levels (labeled “No Reductions”), and 2) A linear or fixed reduction in pumping from current levels to a target of 5,700 AFY between 2020 and 2040 (labeled “With Reductions”). Due to model limitations, the actual pumping from 2040 through 2070 averages approximately 5,500 AFY, 200 AFY less than the target of 5,700 AFY. Three potential climate scenarios were run for each of the scenarios: 1) Historical climate from 1960 through 2010 was repeated for the period 2020 through 2070 (labeled “Historical Climate”, 2) DWR change factors for projected climate conditions in 2030 were applied to the historical period from 1960 through 2010 following the procedures outlined in the DWR climate guidance for GSPs (labeled “2030 change factors”), and 3) DWR change factors for projected climate conditions in 2070 were

applied to the historical period from 1960 through 2010 following the procedures outlined in the DWR climate guidance for GSPs (labeled “2070 change factors”). Results indicate that 5,700 AFY appears to be a reasonable target for sustainability, and that changes in climate have a small impact on storage in the basin when compared to changes in pumping and historical variability in 20-year recharge.



The monitoring network is critical to measure objectives set by the GSP. Wells will be monitored for groundwater levels, quality and production. The figure depicts the current monitoring network. Once the GSP is adopted, all non de minimis extractors will be required to register their wells and report production data. The monitoring network will be continually refined over GSP implementation to fill identified data gaps. The GSA is also working with the DWR to secure funding for drilling and completing monitoring wells.

Chapter 4 provides an overview of the projects and management actions proposed to achieve Subbasin sustainability. It should be emphasized that while SGMA specifically exempts the GSP from California Environmental Quality Act (CEQA) review, Projects and Management Actions implemented by the GSA are not CEQA exempt and will require additional environmental review to implement. The five primary projects and management actions that the GSA is evaluating include: 1) Water Trading Program, 2) Water Conservation and Efficiency Program, 3) Modification to Land Use Designations, 4) Agriculture Land Fallowing Program and 5) Groundwater Quality Program. Introductory information pertaining to each project and management actions has been presented at previous AC meetings. Costs to develop and refine the Projects and Management Actions are presented in Chapter 5 of the GSP.



Chapter 5 includes an estimated cost to implement the GSP including administrative costs, annual reporting, periodic updates, monitoring protocols, and projects and management actions. Potential funding sources and mechanisms are presented along with a tentative schedule for implementing the Plan's primary components. In addition, annual reporting and five-year update procedures are described. Detailed costs have been prepared for further refinement and development of the specific Projects and Management Actions. Probable costs have been developed for projects and management actions at a unit level (e.g. cost per acre for land fallowing) but require refinement as the Projects and Management Actions are further developed.


Questions and Discussion