

Draft GSP Overview

Santa Ynez Basin - EMA

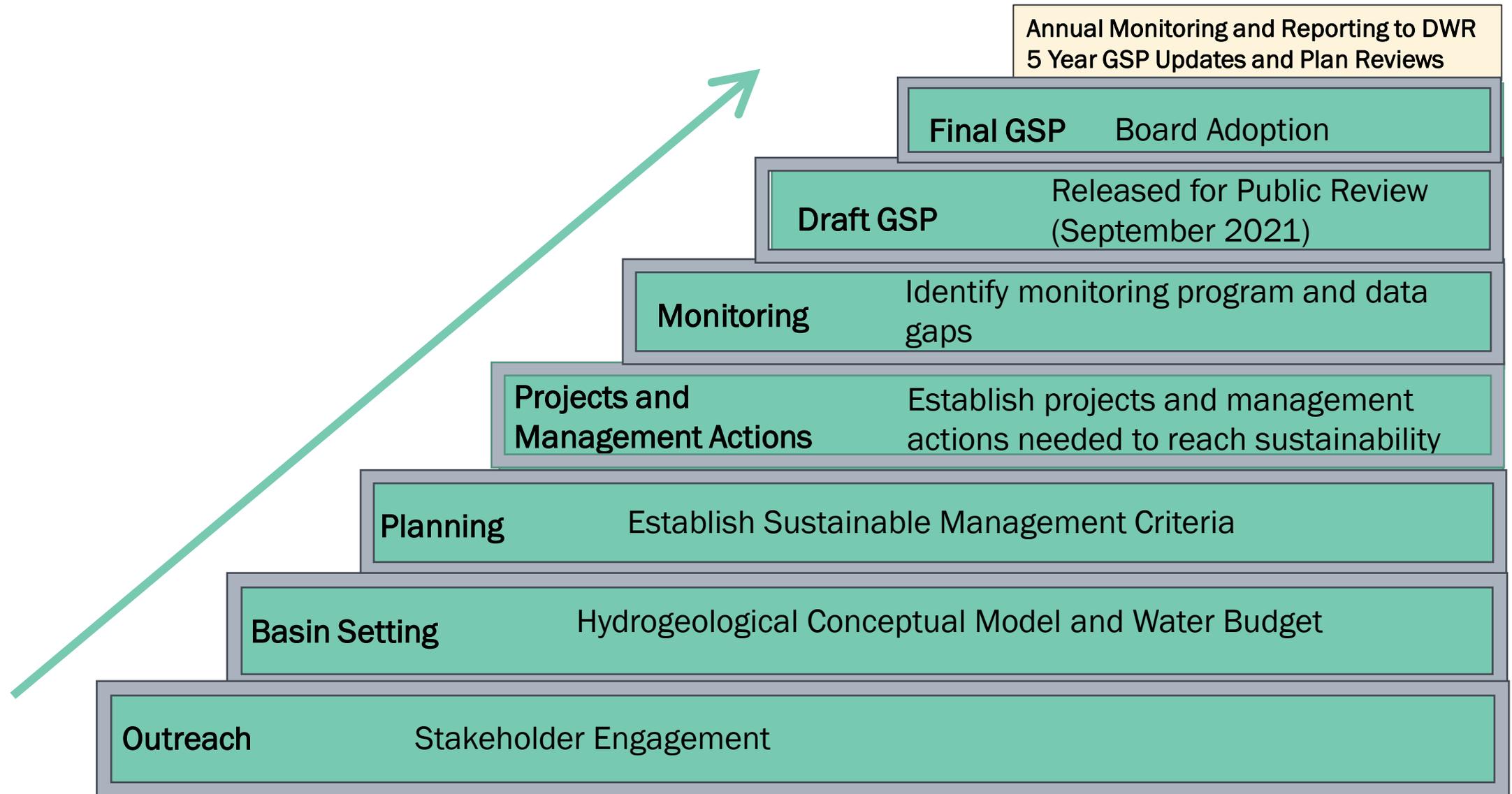
Presented by: Jeff Barry/GSI

August 26, 2021

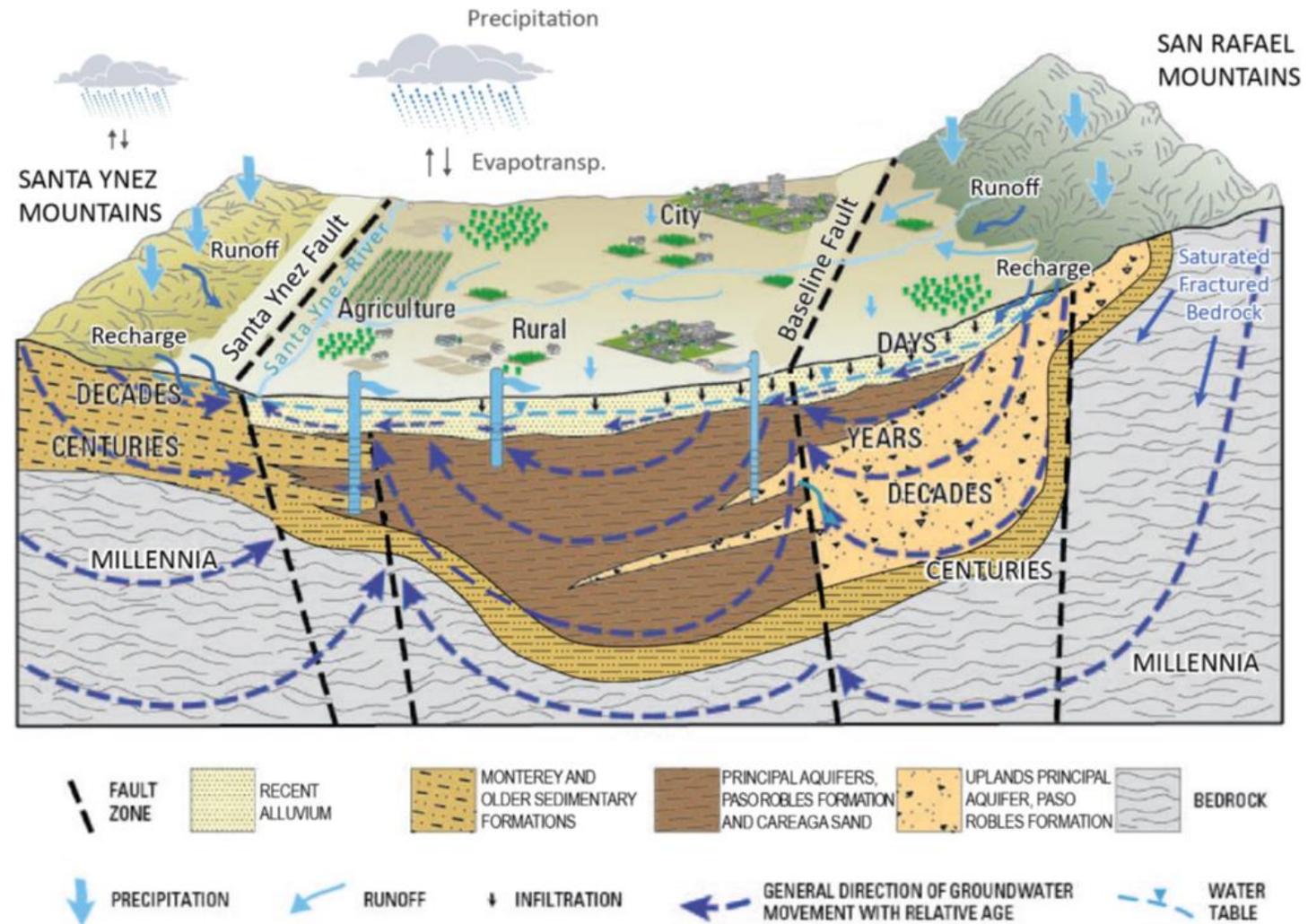


Where Are We Now in the Process?

Activities Leading to an Accepted GSP



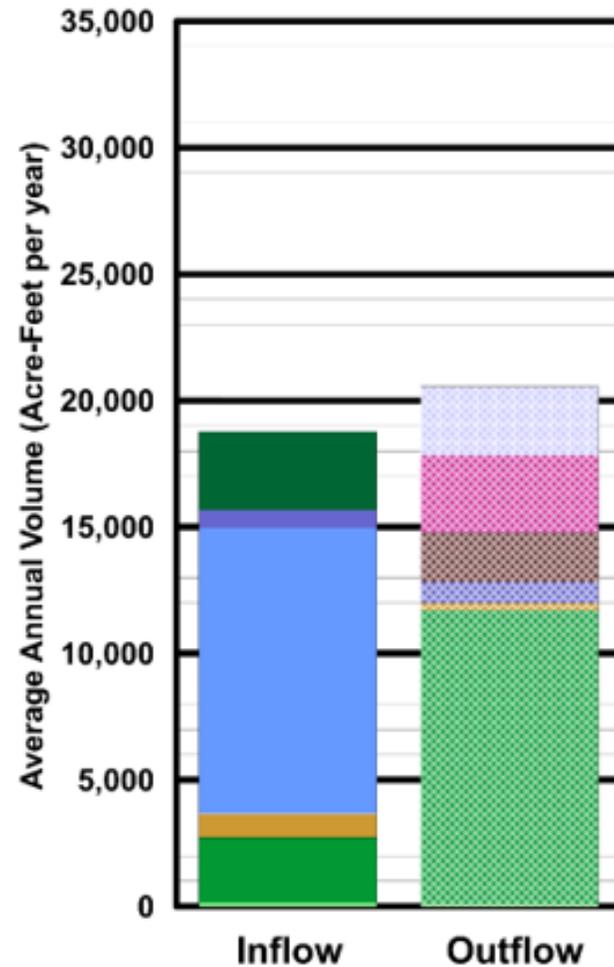
What We Have Learned During Development of the GSP



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- Significant and unreasonable effects caused by groundwater pumping have not been observed.
 - Groundwater levels have fluctuated in response to wet and dry periods.
 - Drought is causing water levels to decline in many areas of the EMA.
 - The well impact analysis indicates that a number of wells have water levels below the top of screen.
 - Historical and projected future water budgets show that some depletion of groundwater in storage has occurred and may continue with limited expansion in irrigated agriculture and urban growth into the future. This will be addressed in GSP implementation.

Historical Water Budget

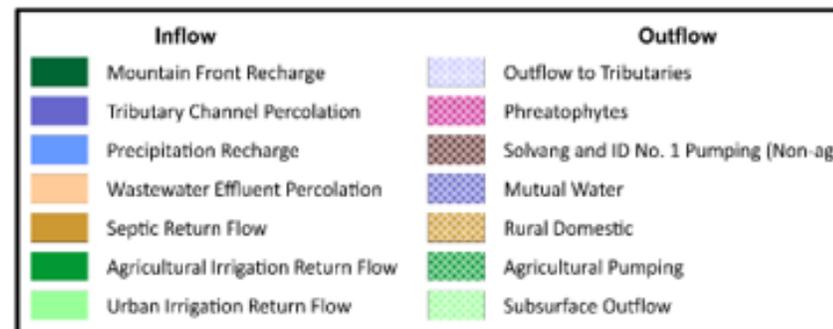


Groundwater Budget 1982 - 2018

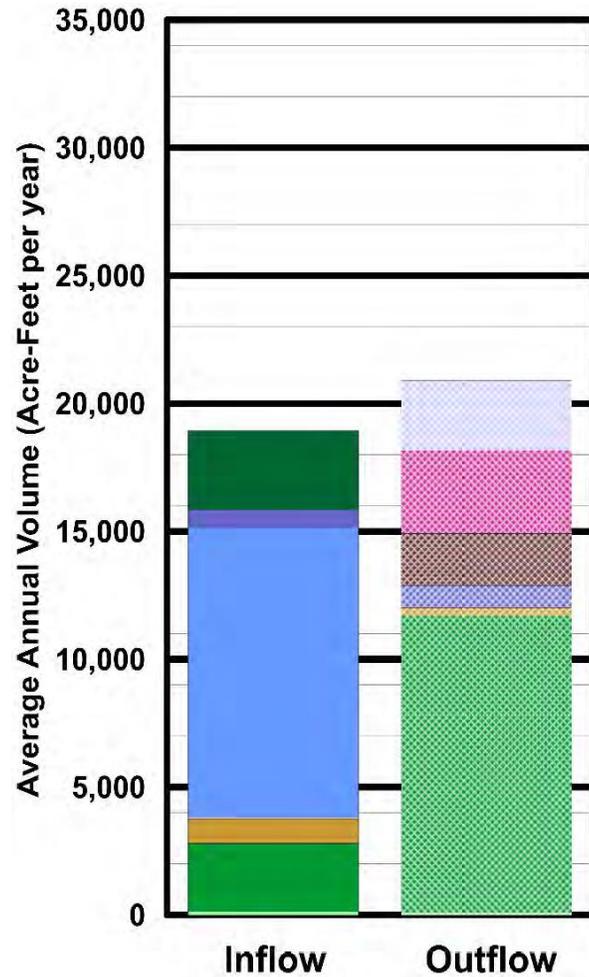
Average Annual Inflow: **18,770 AFY**
 Average Annual Outflow: **20,600 AFY**

Average Annual Change in Storage

-1,800 AFY



Future Water Budget with Climate Change

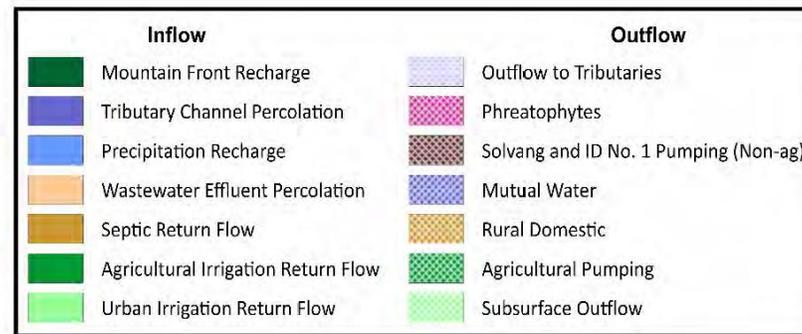


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Average Annual Inflow: **18,940 AFY**
 Average Annual Outflow: **21,000 AFY**

Average Annual Change in Storage

-2,060 AFY



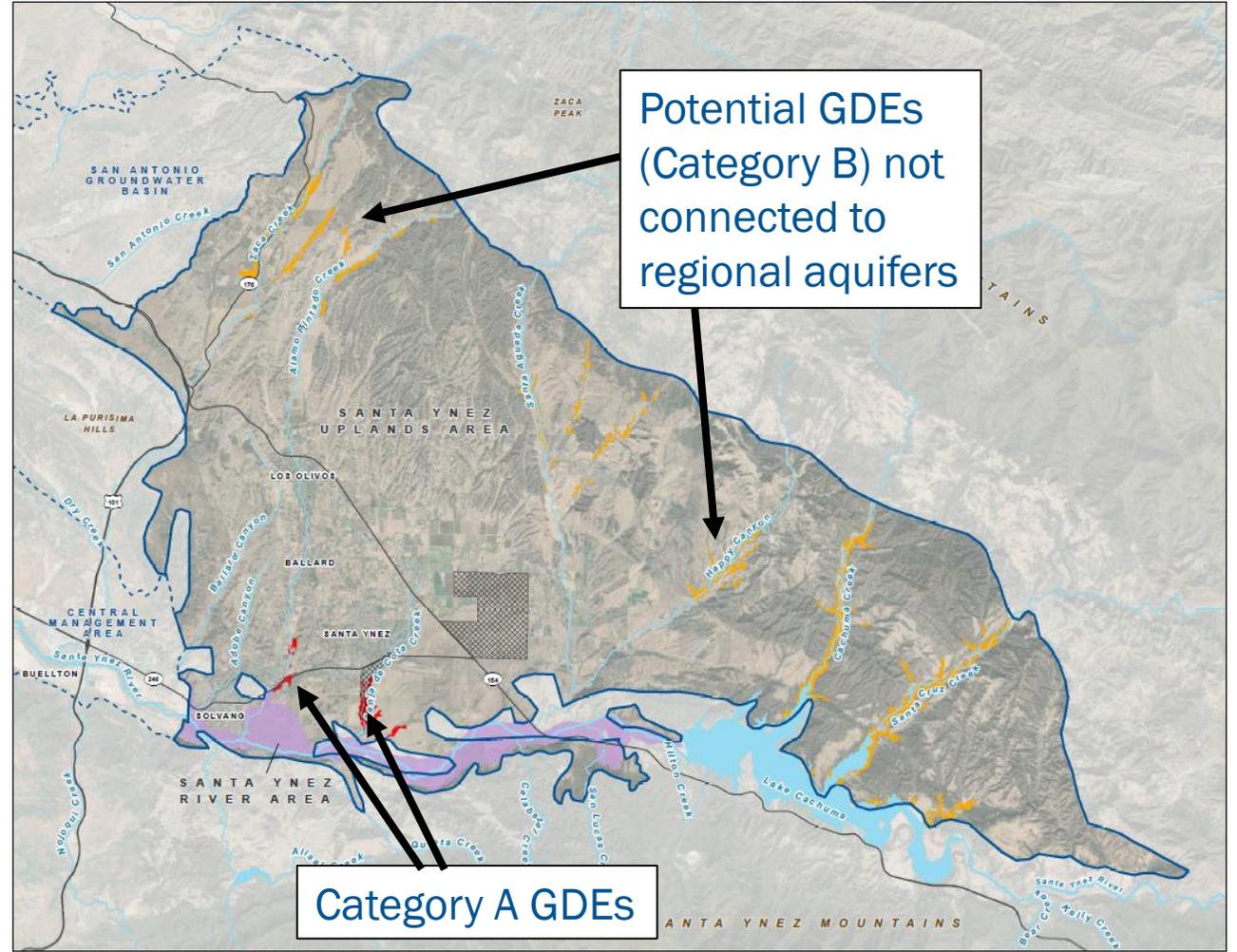
What We Have Learned During Development of the GSP (Cont.)

- Groundwater quality is acceptable for all beneficial uses.
- Land surface elevation changes are occurring (up and down) for a number of reasons including tectonics. No evidence that groundwater pumping is causing subsidence. No damage to infrastructure or land uses has been reported.
- Significant or unreasonable depletion of interconnected surface water has not occurred and is not expected in the future.

What We Have Learned During Development of the GSP (Cont.)

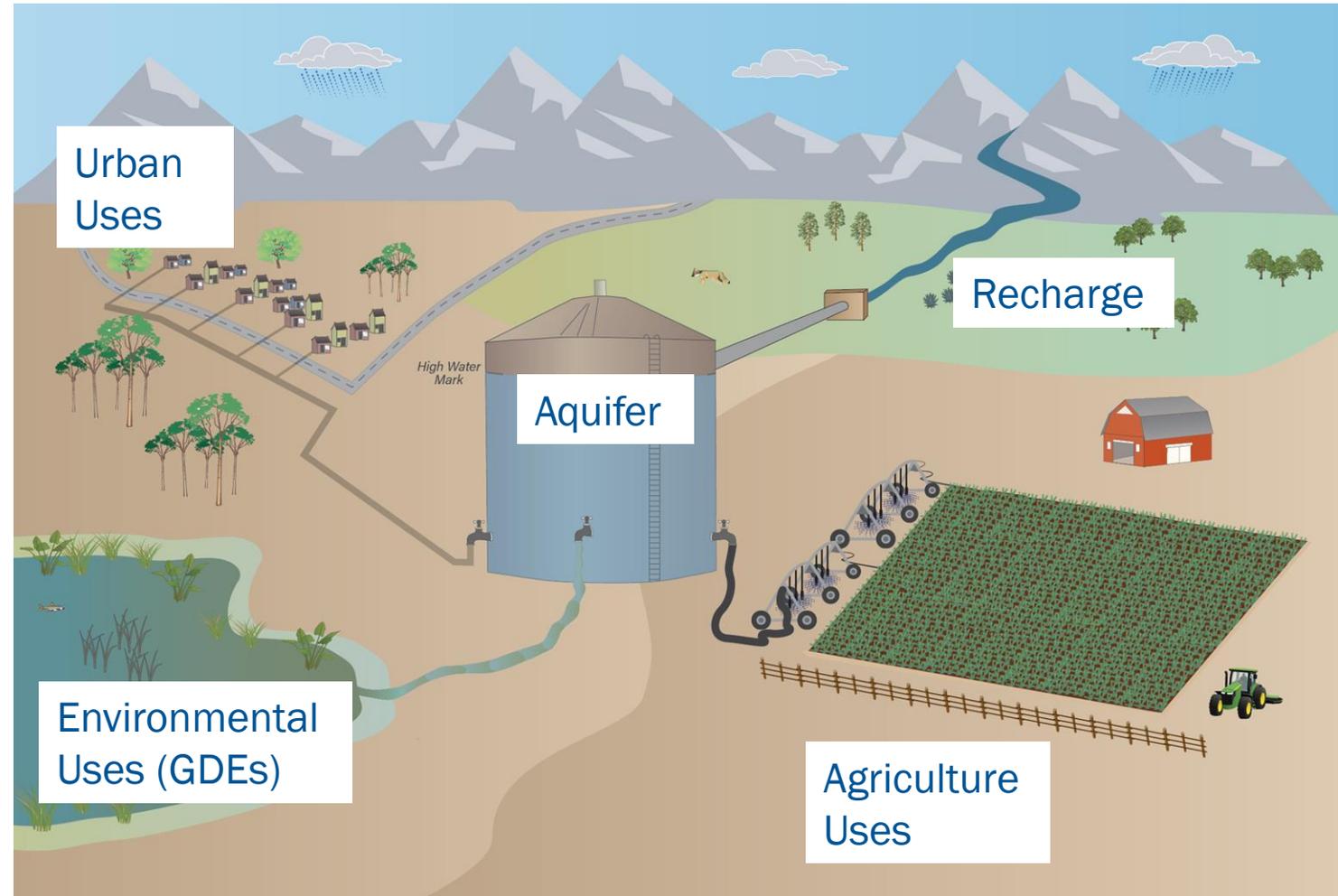
Groundwater Dependent Ecosystems

- Identified potential GDEs using online datasets from DWR
- Further defined GDEs based on depth to groundwater < 30 feet
- GDEs (Category A) identified on the lower end of Alamo Pintado and Zanja de Cota Creeks where groundwater discharges to surface water



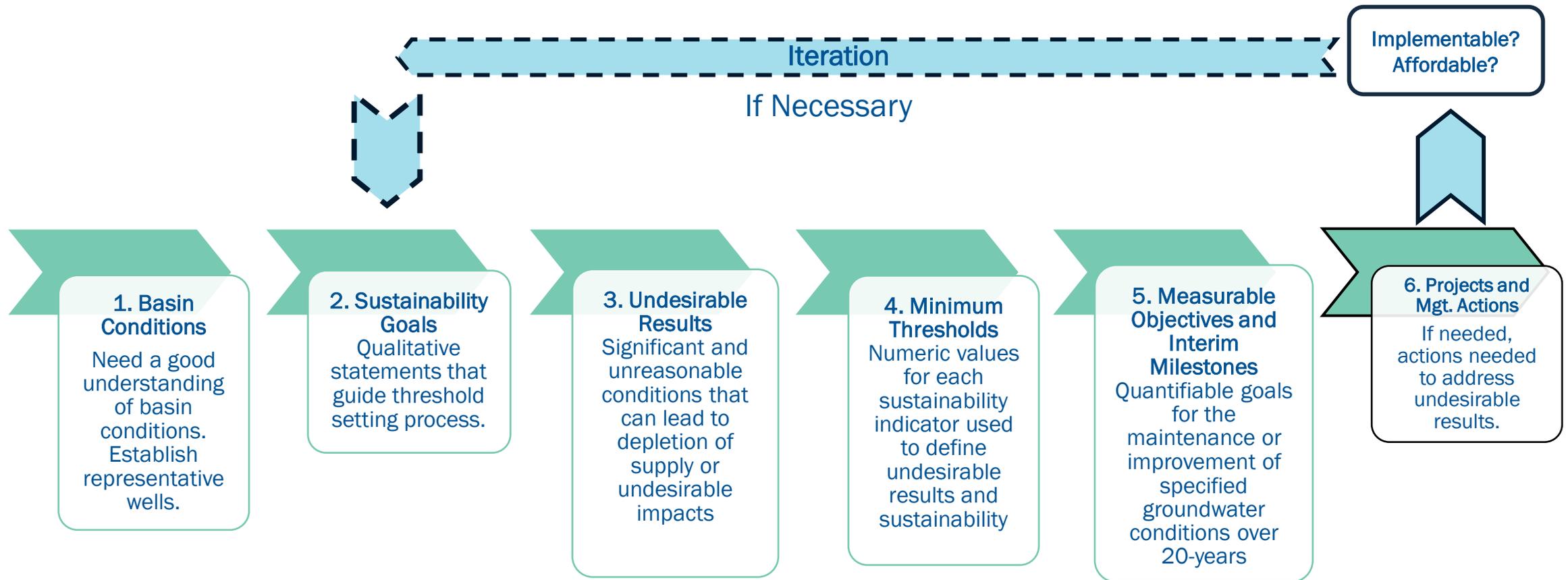
What We Have Learned During Development of the GSP (cont.)

- Sustainable yield is approximately 12,870 AFY



How are we Going to Measure Sustainability in the Future?

Sustainable Management Criteria (SMC) Development Process



Sustainable Management Criteria

- Groundwater levels and storage
 - Minimum Thresholds*
 - Paso Robles Formation: 15 feet below Spring 2018 water levels
 - Careaga Sand: 12 feet below Spring 2018 water levels
 - Measurable Objective
 - Average groundwater levels in representative wells prior to the drought beginning in WY 2012

* Measured at 50 percent of representative monitoring wells in two consecutive years of average or above average rainfall measured at the Los Alamos Fire Station weather station (20-year moving average)

Robust Monitoring is Essential to Sustainability

- The water level monitoring network consists of 37 wells.
- 24 are representative wells (15 Paso Formation, 9 Careaga Sand) – monitored for water levels twice per year.
- Water levels in GDE areas monitored in 2 shallow monitoring wells installed in Alamo Pintado and Zanja de Cota Creek area – monitored monthly during dry season.
- Groundwater quality monitoring conducted by ID-1, City of Solvang, and mutual water companies at supply wells (SWRCB required frequency). Sampling of selected (35 at this time) domestic wells and agricultural wells will be done as part of the irrigated lands reporting program.
- Monitoring for subsidence consists of satellite data (inSAR) reviewed annually.

Draft Management Actions and Projects

- **Group 1** – Management actions initiated upon adoption of GSP
- **Group 2** – Management actions if desired or needed based on progress toward sustainability
- **Group 3** – Projects if desired or needed that could be implemented at any time

Group 1 – Initiate w/in 1-Year of GSP Submittal

GROUP 1 MANAGEMENT ACTIONS	GROUP LEVEL	REQUIRED PERMITS	PUMPING REDUCTION OUTCOME RELIABILITY	ESTIMATED COST	BENEFIT : COST RATIO
Address Data Gaps					
Expand Monitoring Well Network in the EMA to Increase Spatial Coverage and Well Density	1	Santa Barbara County (if a new well)	N/A	\$20,000 to \$200,000	Moderate - High
Perform Video Surveys in Representative Wells That Currently Do Not Have Adequate Construction Records to Confirm Well Construction	1	None	N/A	\$25,000 to \$75,000	High
Install Shallow Piezometers in Alamo Pintado Creek and Zanja de Cota Creek GDE Areas	1	Santa Barbara County, CDFW	N/A	\$75,000 to \$125,000	High
Review/Update Water Usage Factors and Crop Acreages and Update Water Budget	1	None	N/A	\$20,000 to \$30,000	High
Survey and Investigate Potential GDEs in the EMA	1	None	N/A	\$20,000 to \$40,000	High
Groundwater Pumping Fee Program	1	Proposition 26 / 218 or Local Ballot Initiative	Moderately Reliable	\$100,000 to \$200,000	Moderate - High
Well Registration and Well Meter Installation Programs	1	None	Moderately Reliable	\$75,000 to \$150,000	Moderate - High
Water Use Efficiency Programs	1	None	Moderately Reliable	\$50,000 to \$125,000	Moderate - High

Group 2 – Management Actions if Desired or Needed

GROUP 2 MANAGEMENT ACTIONS	GROUP LEVEL	REQUIRED PERMITS	PUMPING REDUCTION OUTCOME RELIABILITY	ESTIMATED IMPLEMENTATION COST	BENEFIT : COST RATIO
Groundwater BPA Program	2	None	Highly Reliable	\$75,000 to \$150,000	Moderate - High
Groundwater Extraction Credit (GEC) Marketing and Trading Program	2	None	Highly Reliable	\$150,000 to \$200,000	Moderate - High
Agricultural Crop Fallowing Programs	2	None	Highly Reliable	\$75,000 to \$150,000	Moderate - High

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Group 3 – Projects if Desired or Needed

GROUP 3 PROJECTS	GROUP LEVEL	REQUIRED PERMITS	PUMPING REDUCTION OUTCOME RELIABILITY	ESTIMATED IMPLEMENTATION COST	BENEFIT : COST RATIO
DSW-MAR Basins (In-Channel and Off-Stream Basins)	3	Santa Barbara County, USACE, DWR, CDFW, CEQA	Highly Variable	>\$1,000,000	Low - Moderate
WWTF Recycled Water & Reuse In-Lieu of Groundwater Pumping or Indirect Potable Reuse (City of Solvang, LOCSO, SYCSD, Santa Ynez Band of Chumash Indians)	3	Santa Barbara County, RWQCB, DWR, CEQA	Moderately Reliable	>\$5,000,000	Low
EMA GSA to Become Funding Partner to Santa Barbara County Precipitation Enhancement Program	3	Santa Barbara County, CEQA	Highly Variable	>\$200,000	Moderate
Conjunctive Use - MAR Projects Using Imported (SWP and SYR) Water	3	Santa Barbara County, RWQCB, DWR, CDFW, CEQA	Moderately Reliable	>\$1,000,000	Low - Moderate
In-Lieu Recharge Projects to Deliver Unused and Surplus Imported Water to Offset Groundwater Extractions	3	Santa Barbara County, RWQCB, DWR, CEQA	Moderately Reliable	>\$1,000,000	Low - Moderate
Aquifer Storage and Recovery Projects	3	Santa Barbara County, RWQCB, DWR, CEQA	Moderately Reliable	>\$1,000,000	Low - Moderate

Next Steps

- Public Draft GSP Released for Review - September 2021
- CAG Meeting – during public review period
- GSA Committee Meeting to Discuss GSP – October 7, 2021
- Final Draft GSP Released - November 2021
- Board Adoption - December 2021 or January 2022
- Due to DWR January 31, 2022

• Questions/Discussion