

San Benito County Water District  
Groundwater Sustainability Agency

# Technical Advisory Committee

April 28, 2021 2:00-4:30

Join Zoom Meeting

**Zoom Meeting:** <https://zoom.us/j/91324876696?pwd=Q1lSVmdVUVVYtZdmL0drTVRJaVIZUT09>

Meeting ID: 913 2487 6696

Passcode: 462781

Or dial by your location: +1 669 900 9128

# Agenda

1. Roll call
2. Simulation of Future Scenarios
  - Climate change
  - Growth and land use change
3. Projects and Management Actions
4. Implementation
5. Discussion
6. Next steps and upcoming meetings

# Simulation of Future Scenarios

SGMA requires two specific future scenarios:

- Climate change
- Growth

Scenario simulations must be 50 years long

- WY 1922-2007 simulated in two parts, 86 years total
- Corresponds to DWR CVP supply modeling period
- Average annual water budgets calculated for 50-year subset

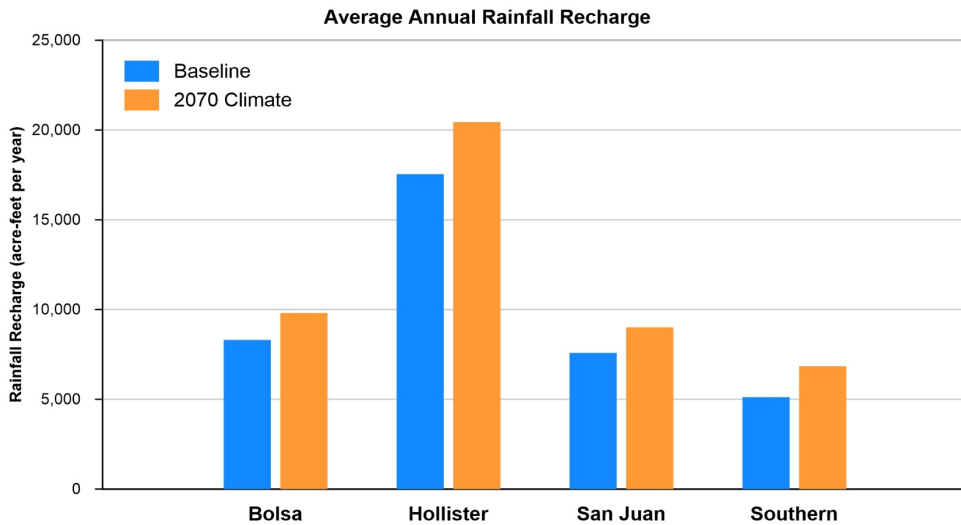
# Climate Change Scenario

DWR prepared multipliers to convert historical precipitation and reference evapotranspiration (ET<sub>o</sub>) to future conditions

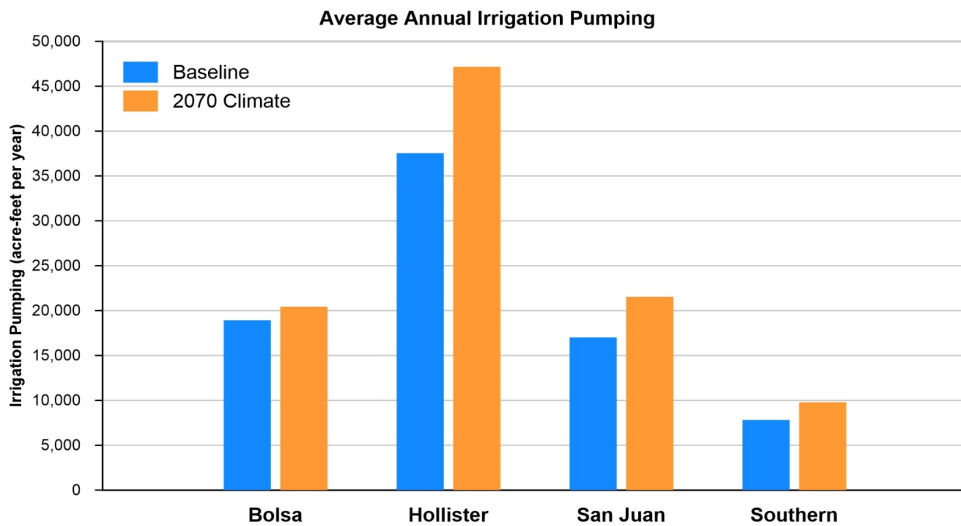
- Statewide grid of cells 4 km<sup>2</sup>, each with unique multipliers
- 2030 and **2070** climate multipliers; monthly; 1922-2003
- Multipliers used in rainfall-runoff-recharge model
- 2070 climate expected to be **warmer** and **wetter**

CVP availability in 2070: smaller!

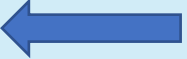




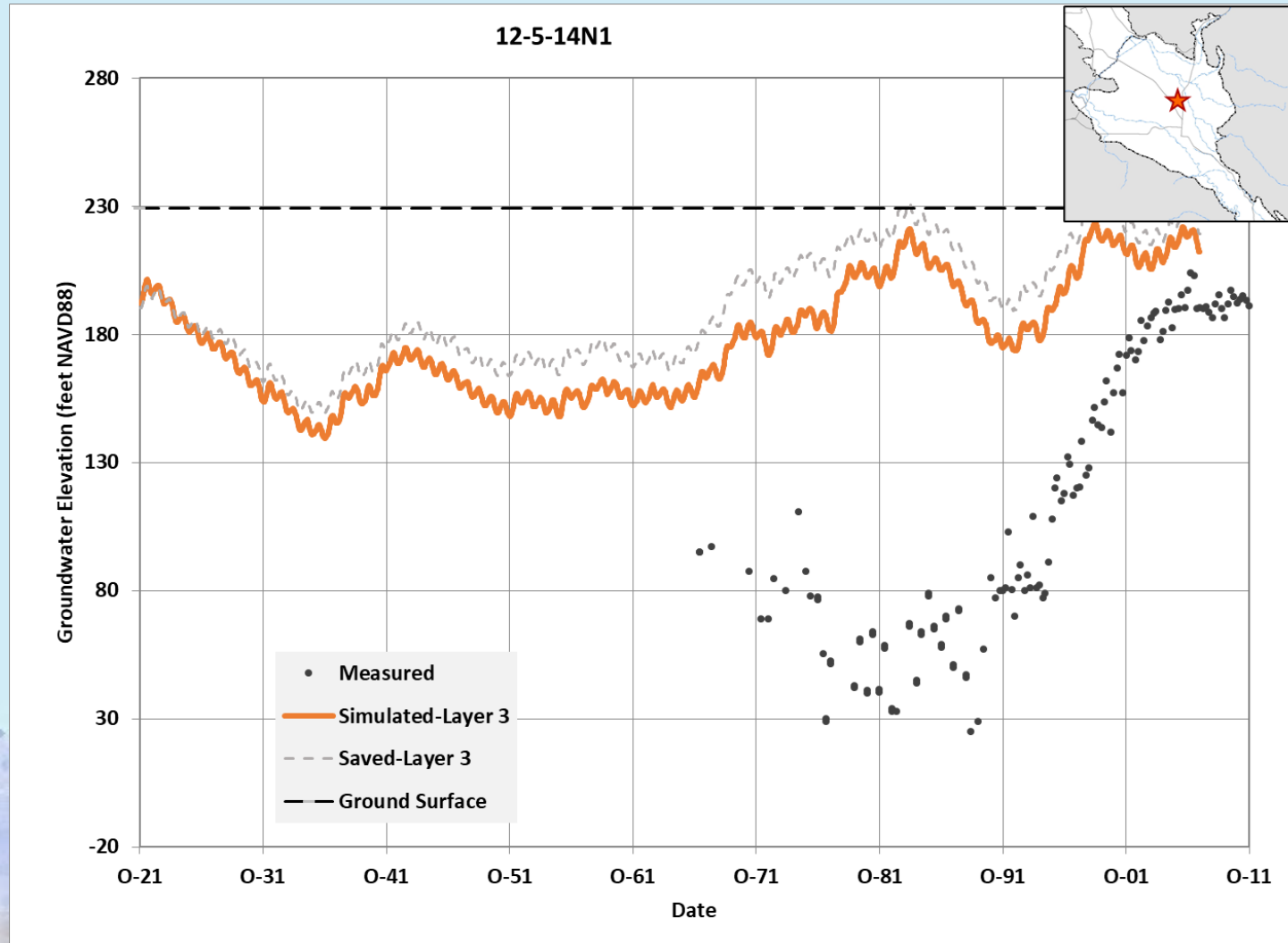
Wetter climate increases recharge in winter



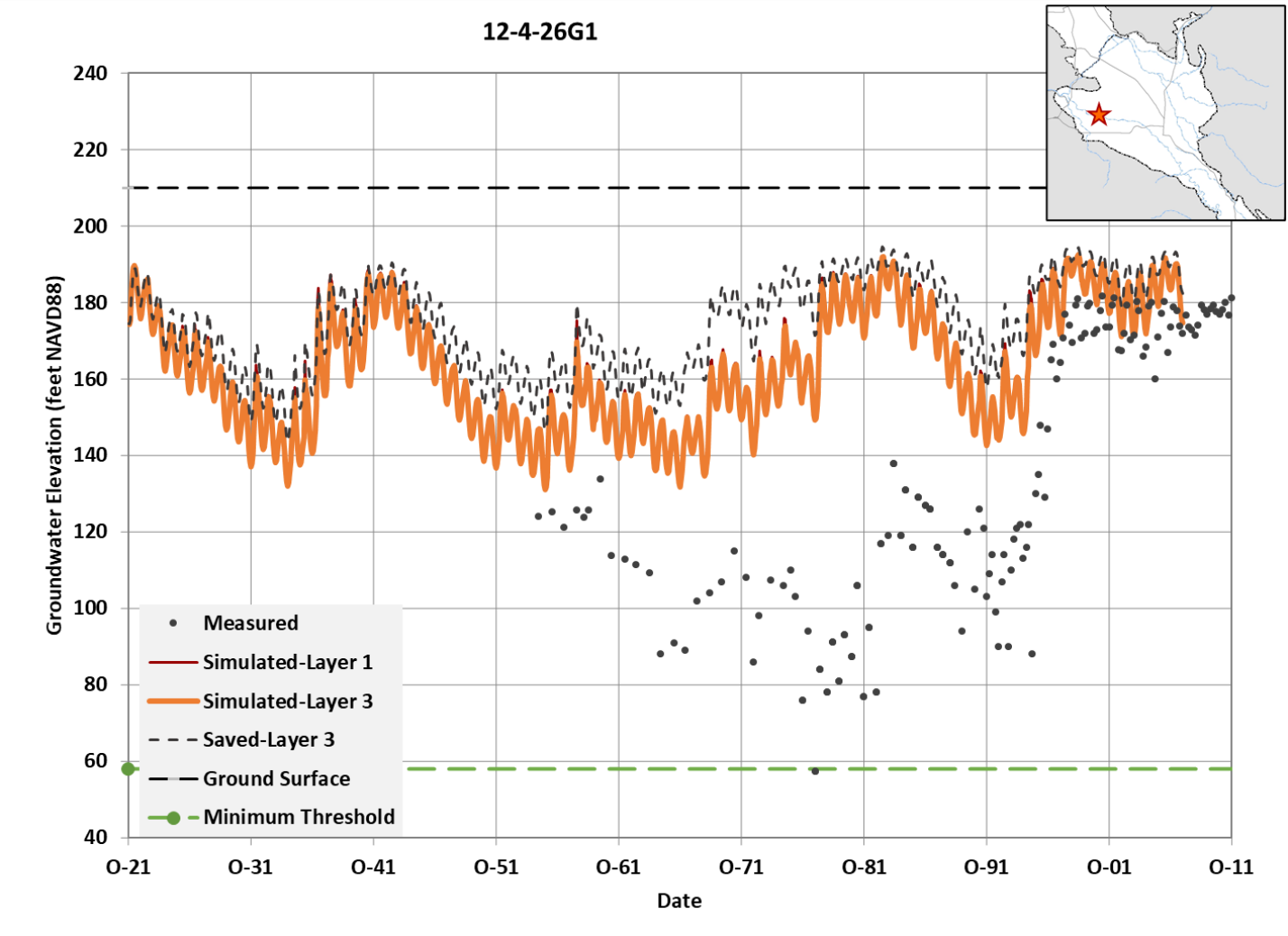
Warmer climate increases ETo and irrigation demand in summer



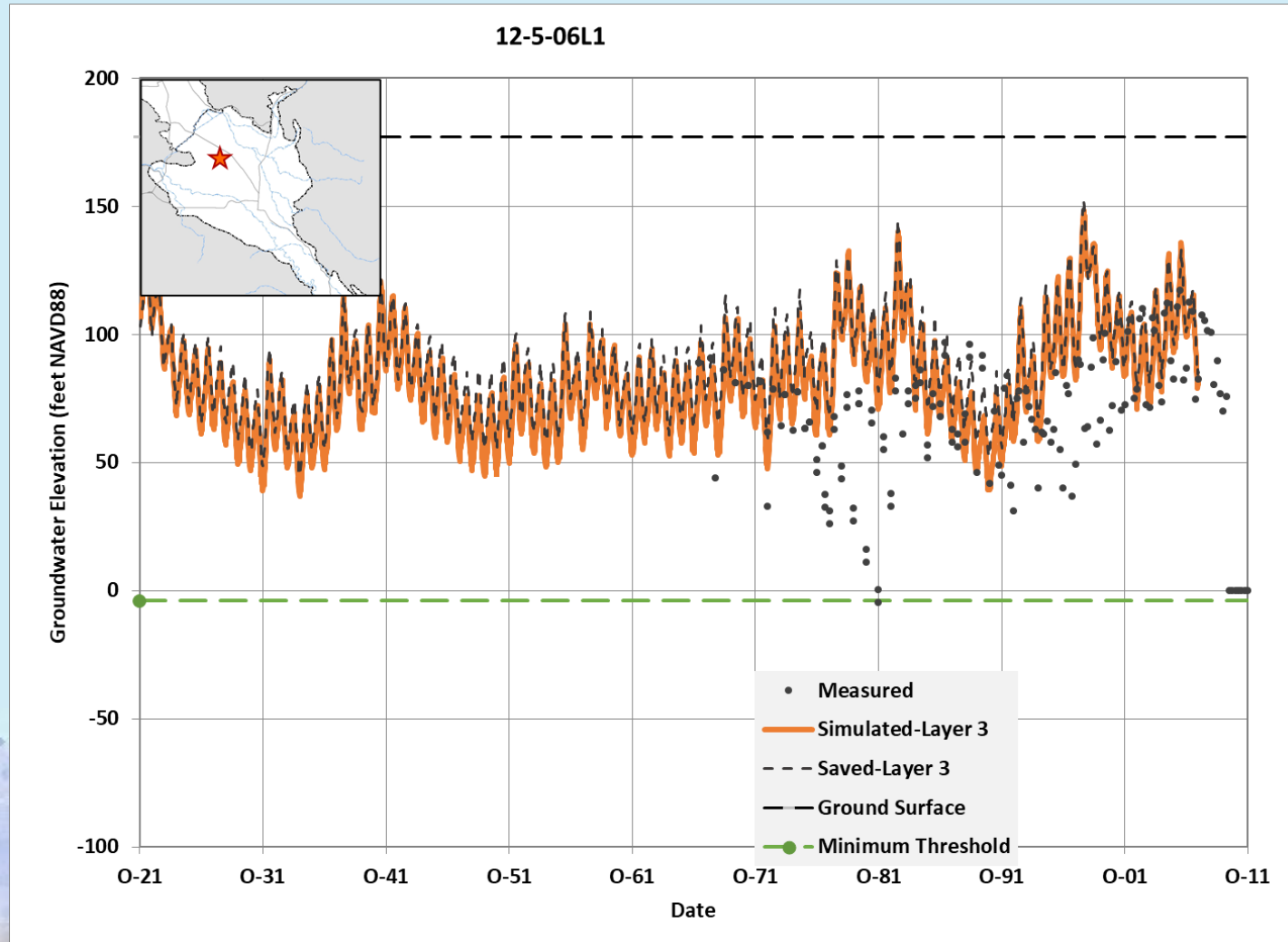
# Climate Change Results



# Climate Change Results

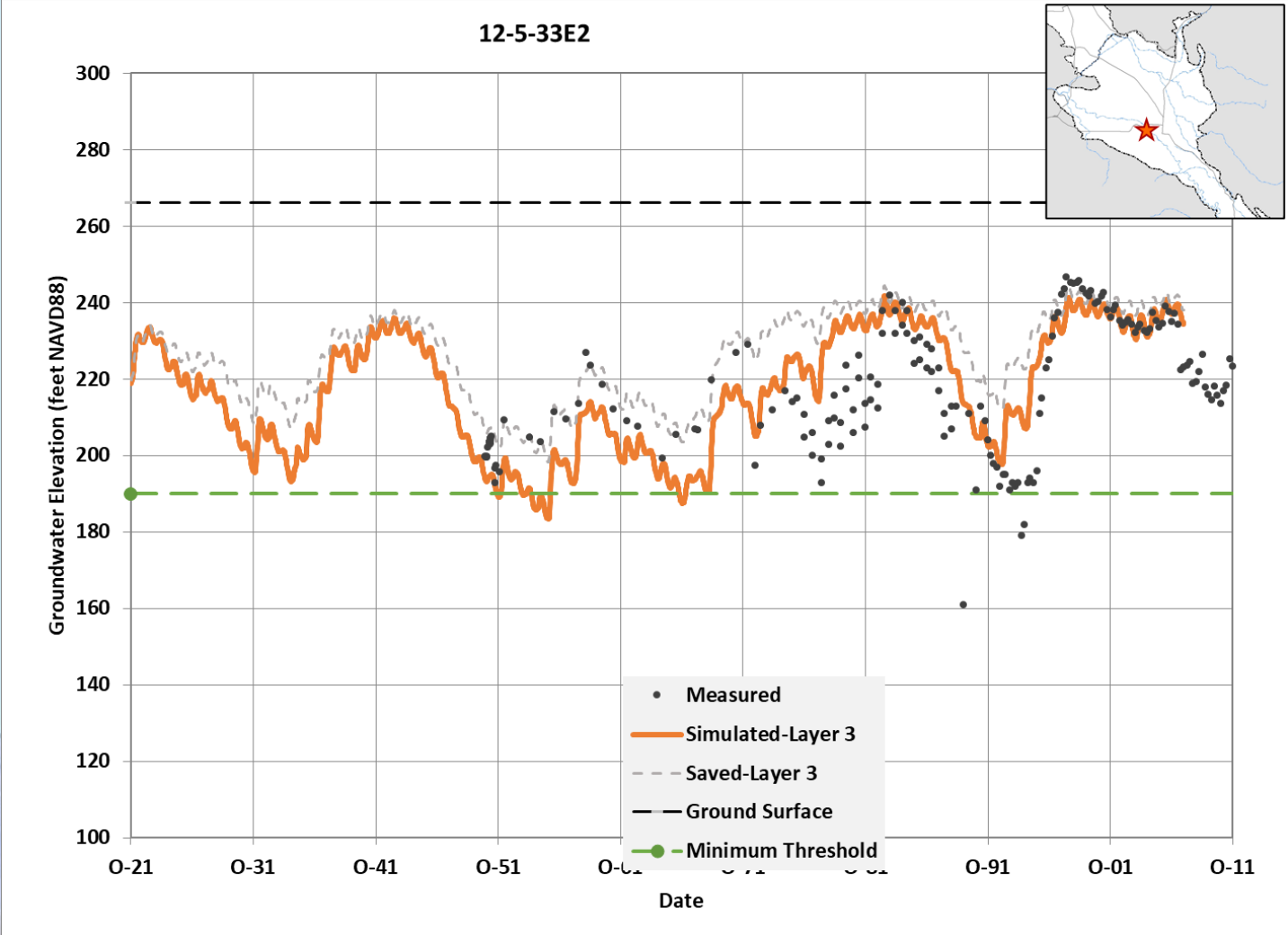


# Climate Change Results





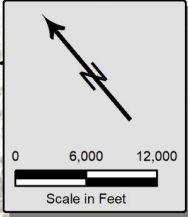
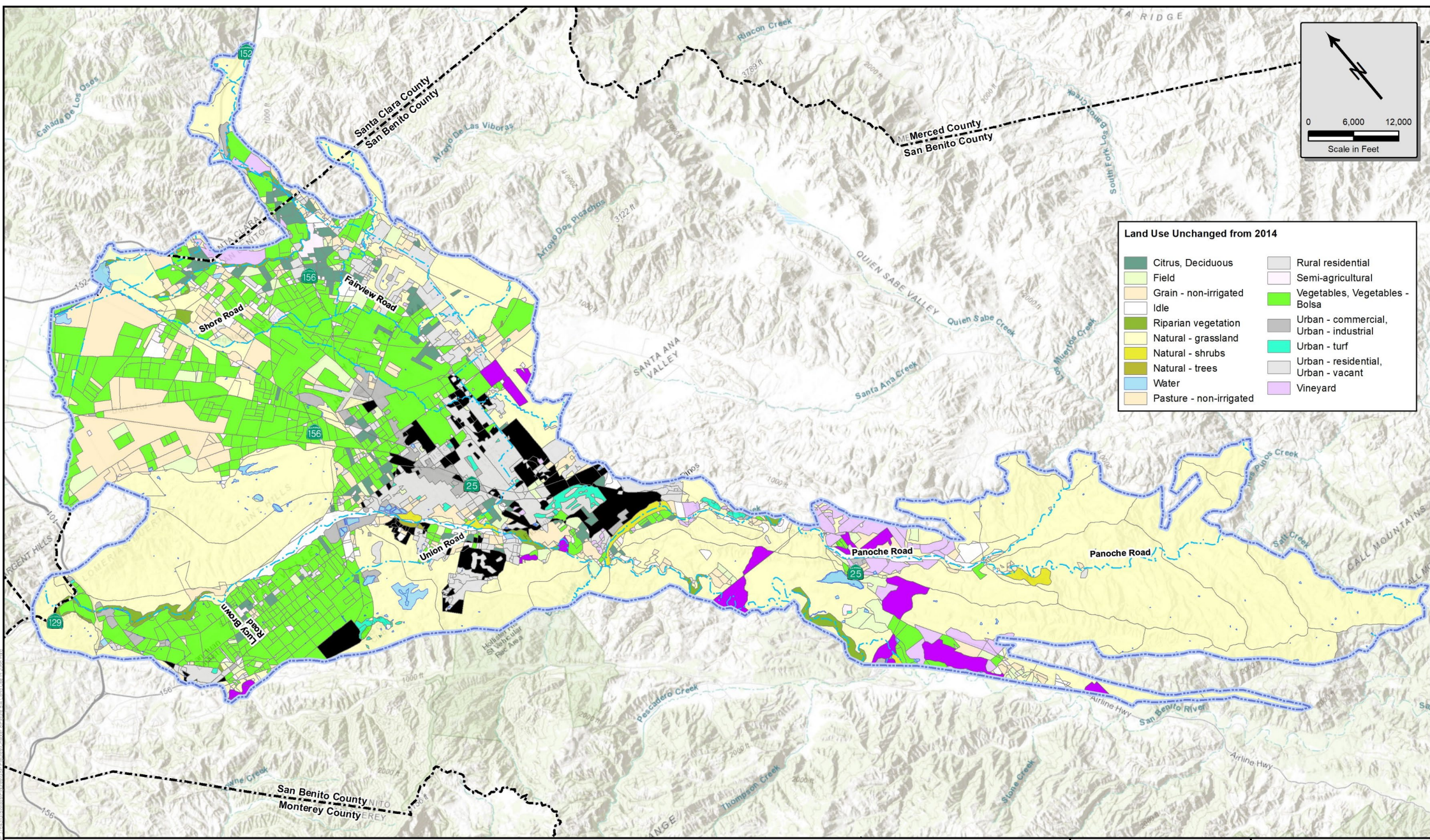
# Climate Change Results



# Future Growth Scenario

- Represented conditions in 2068 (50 years from now)
- Hollister area urban water roughly doubled, to 20,148 AFY
- Urbanization near Hollister increased by 75% (mostly infill; mostly on non-irrigated land)
- Vintage and San Juan Oaks explicitly included.
- Vineyard acreage increased by 75%, almost all in Southern MA
- Increased wastewater flows sent to existing percolation ponds





**Land Use Unchanged from 2014**

Citrus, Deciduous	Rural residential
Field	Semi-agricultural
Grain - non-irrigated	Vegetables, Vegetables - Bolsa
Idle	Urban - commercial, Urban - industrial
Riparian vegetation	Urban - turf
Natural - grassland	Urban - residential, Urban - vacant
Natural - shrubs	Vineyard
Natural - trees	
Water	
Pasture - non-irrigated	

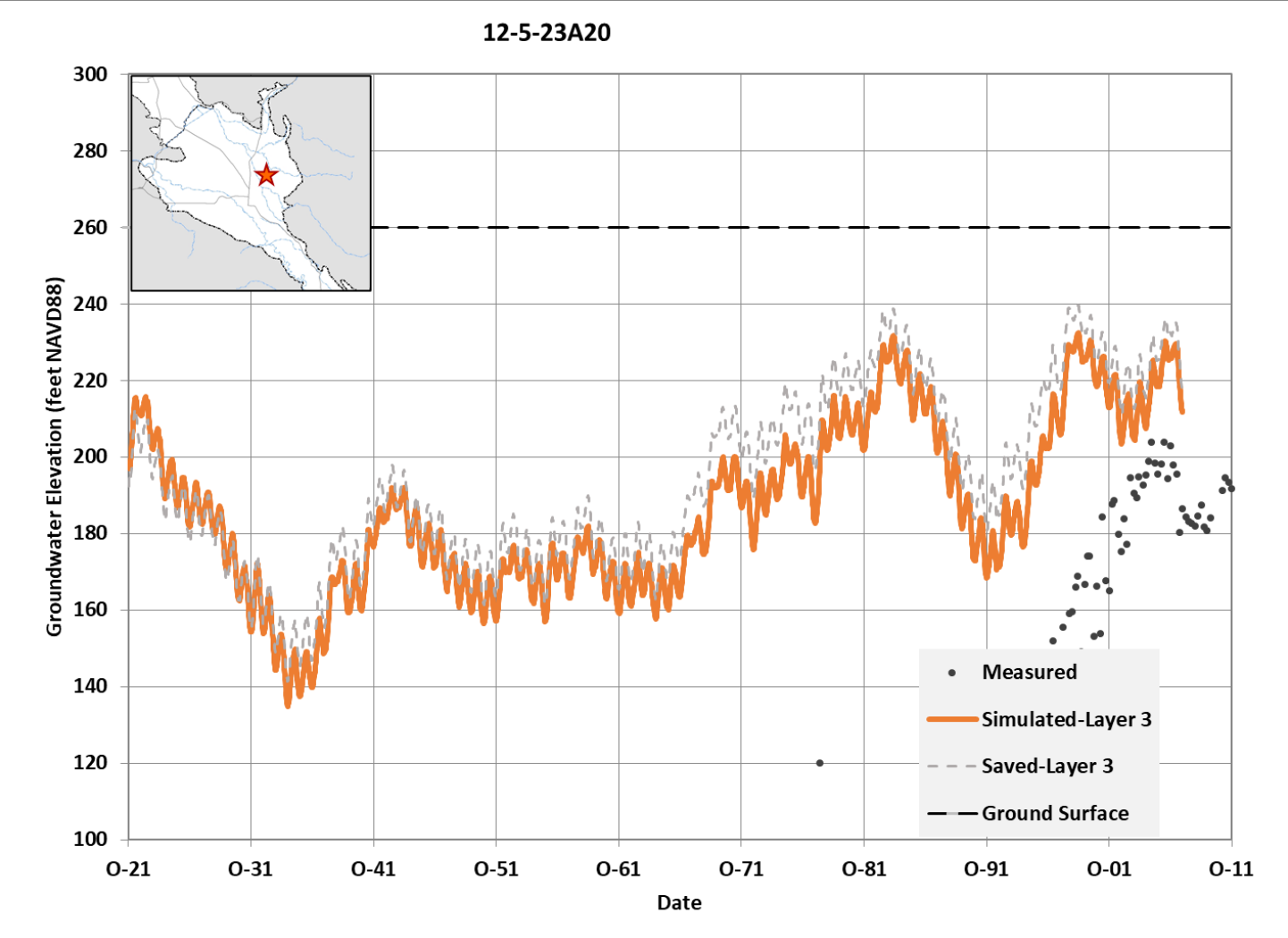
**New 2068 Land Use**

North San Benito Basin	Commercial, Industrial or Residential
San Benito County	Vineyard

**Figure 8-4**  
**Land Use in 2068**

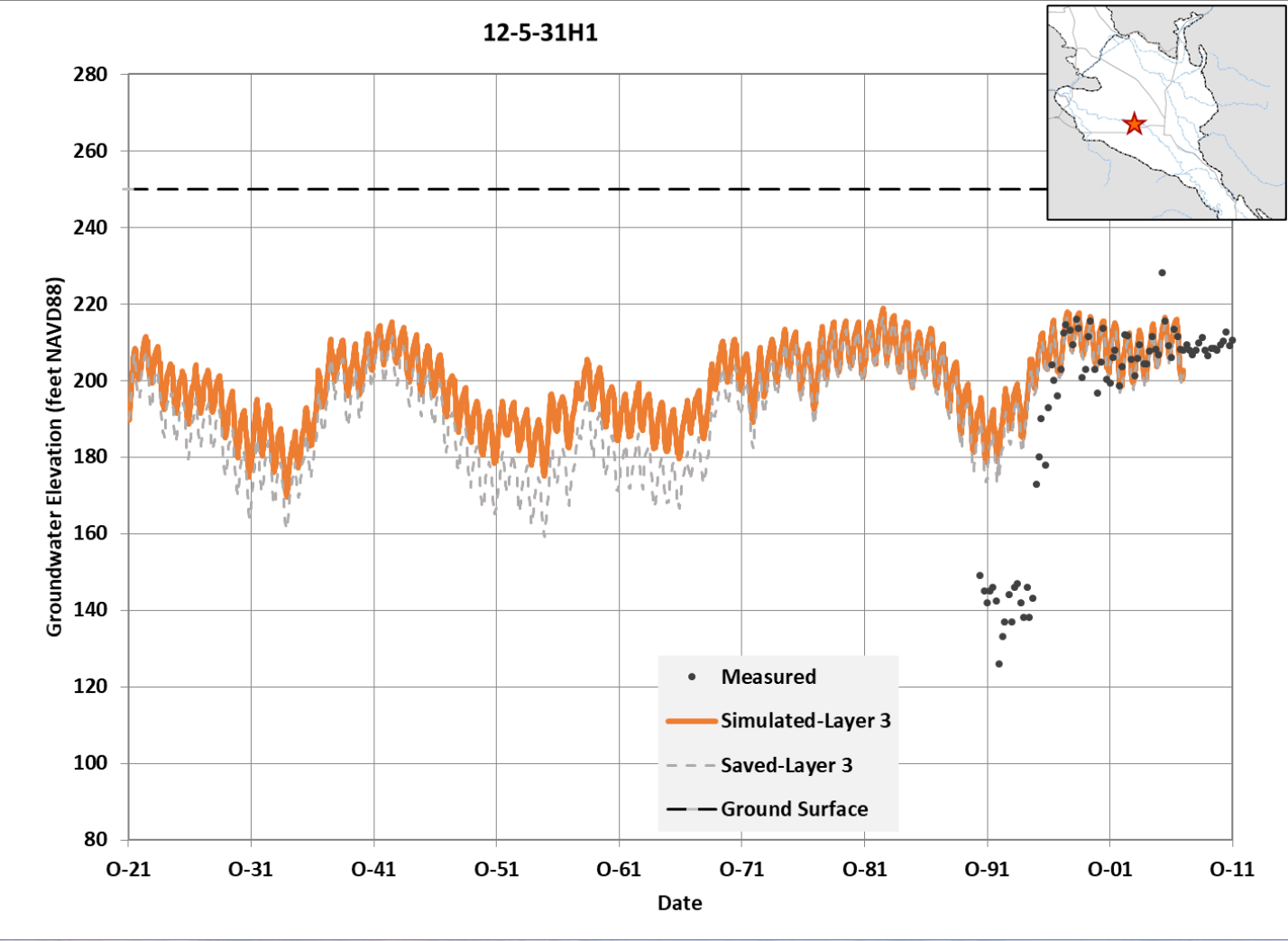


# Future Growth Results

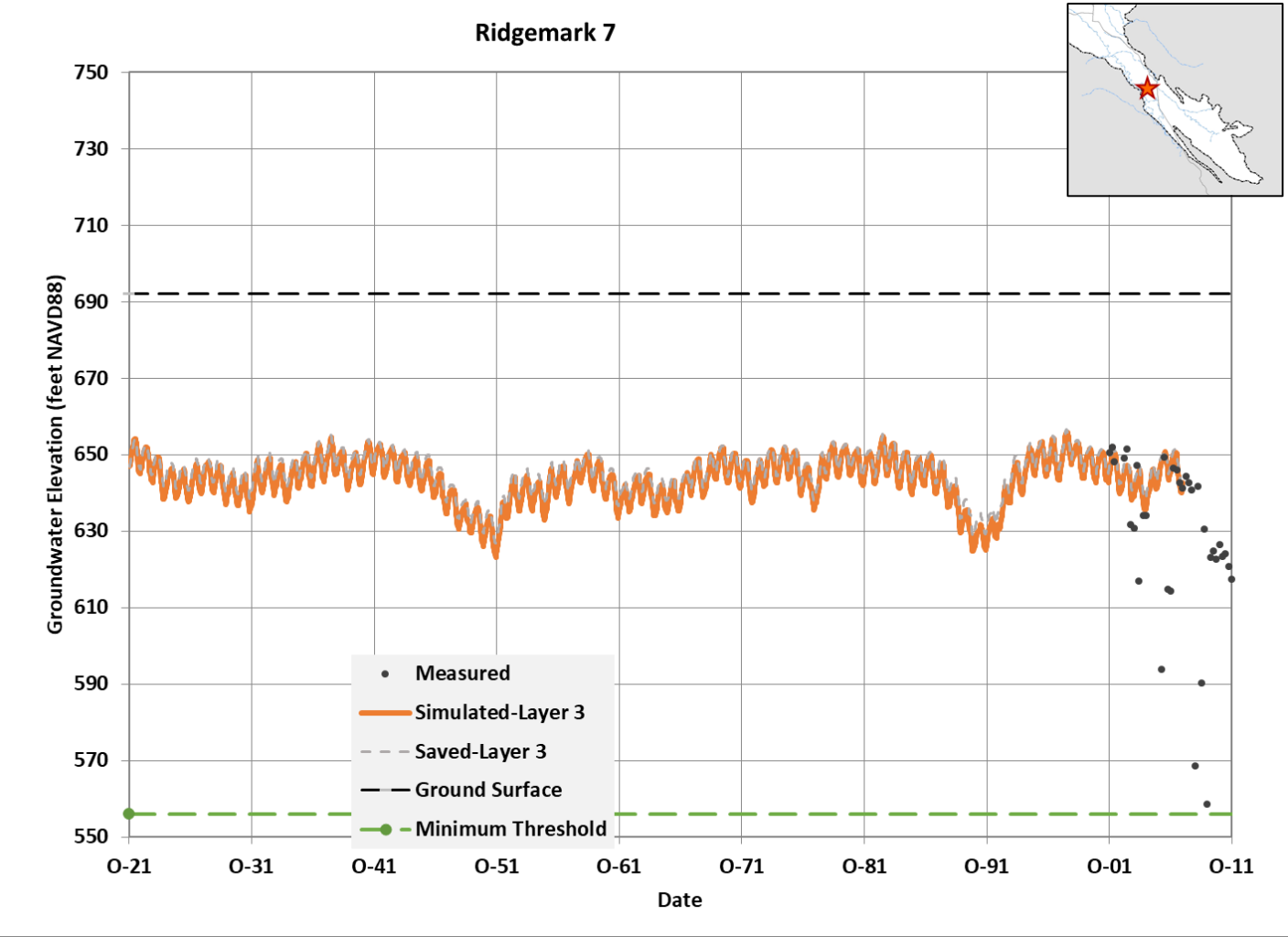




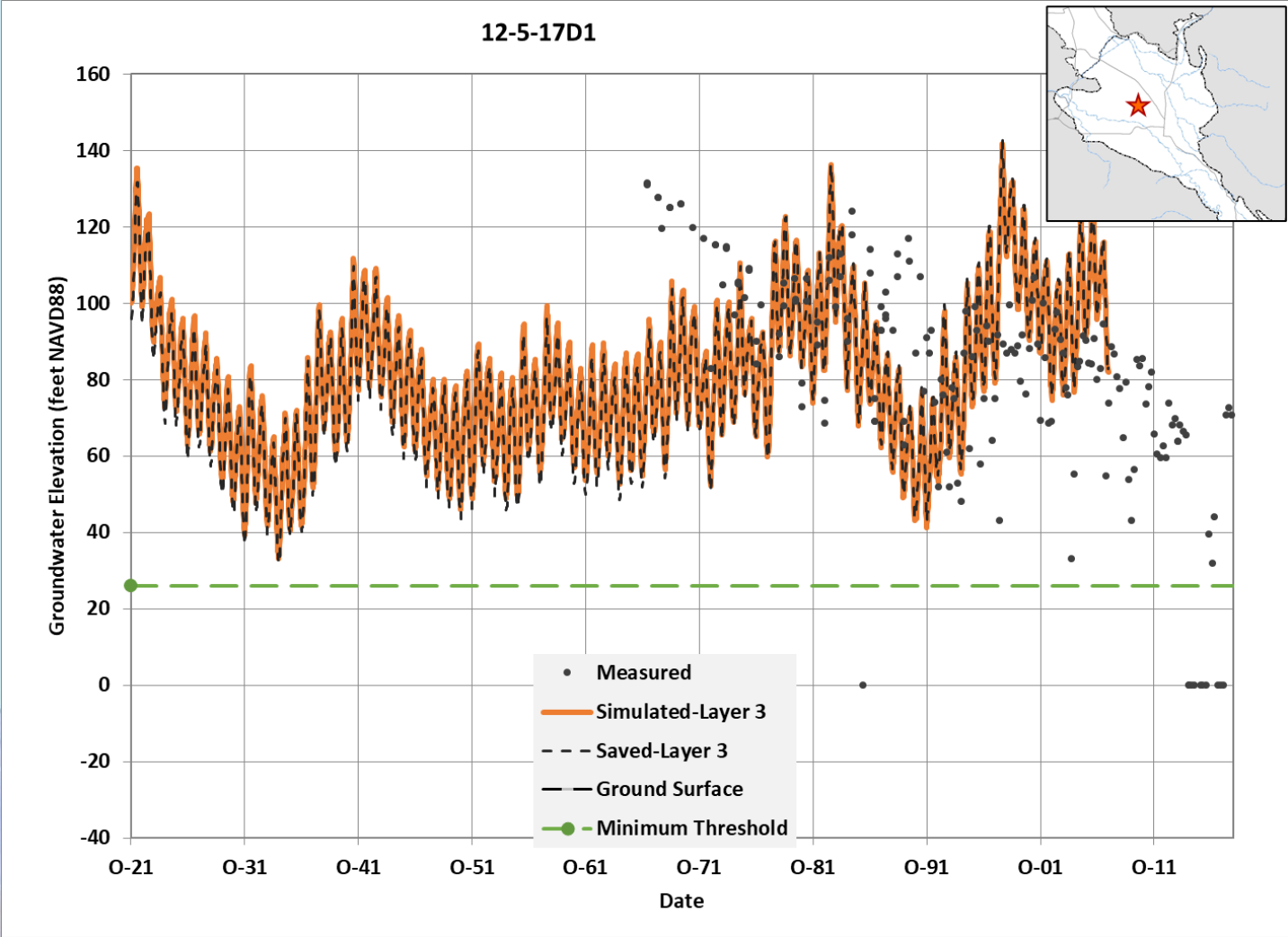
# Future Growth Results



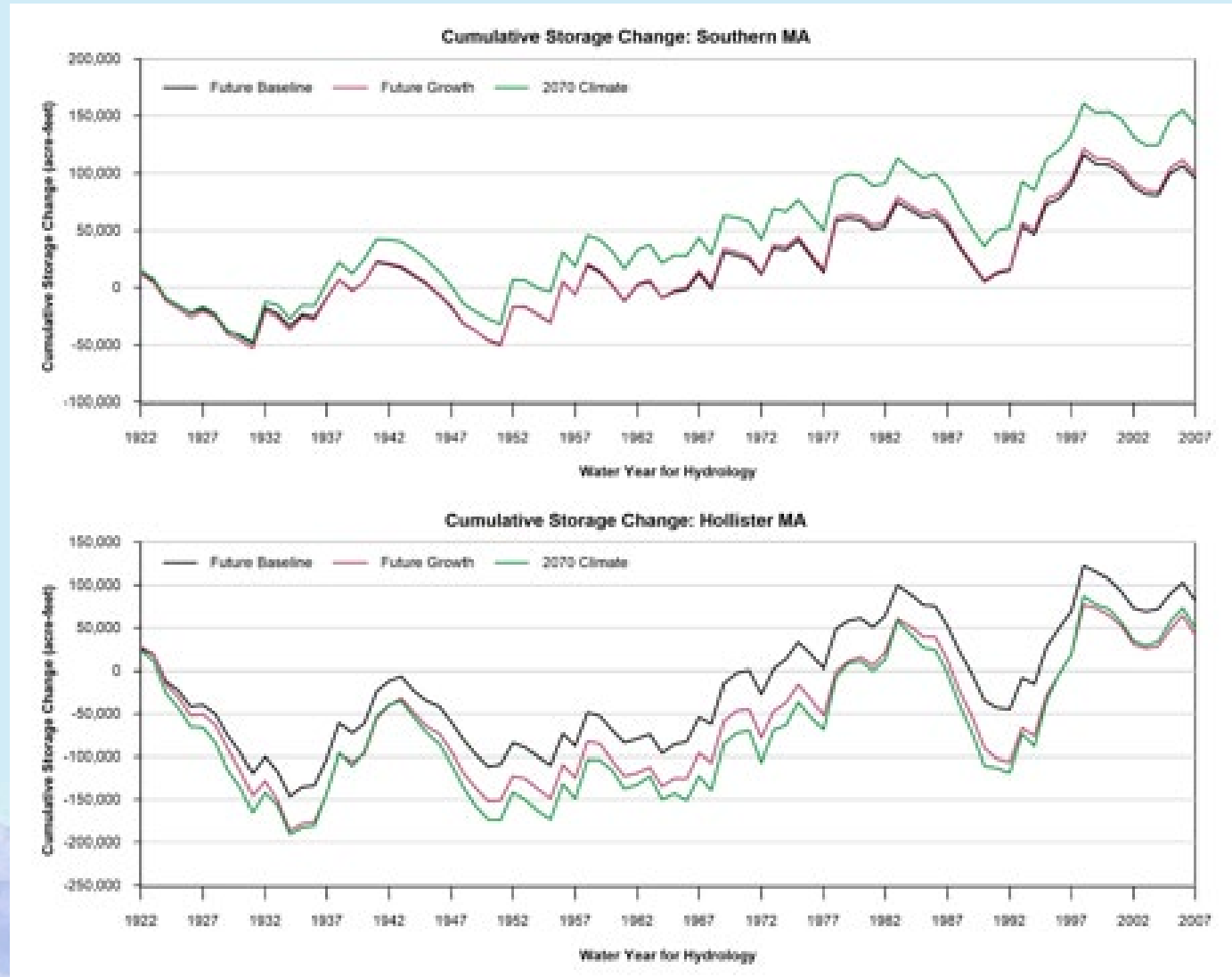
# Future Growth Results



# Future Growth Results



# Cumulative Storage Change 1 of 2

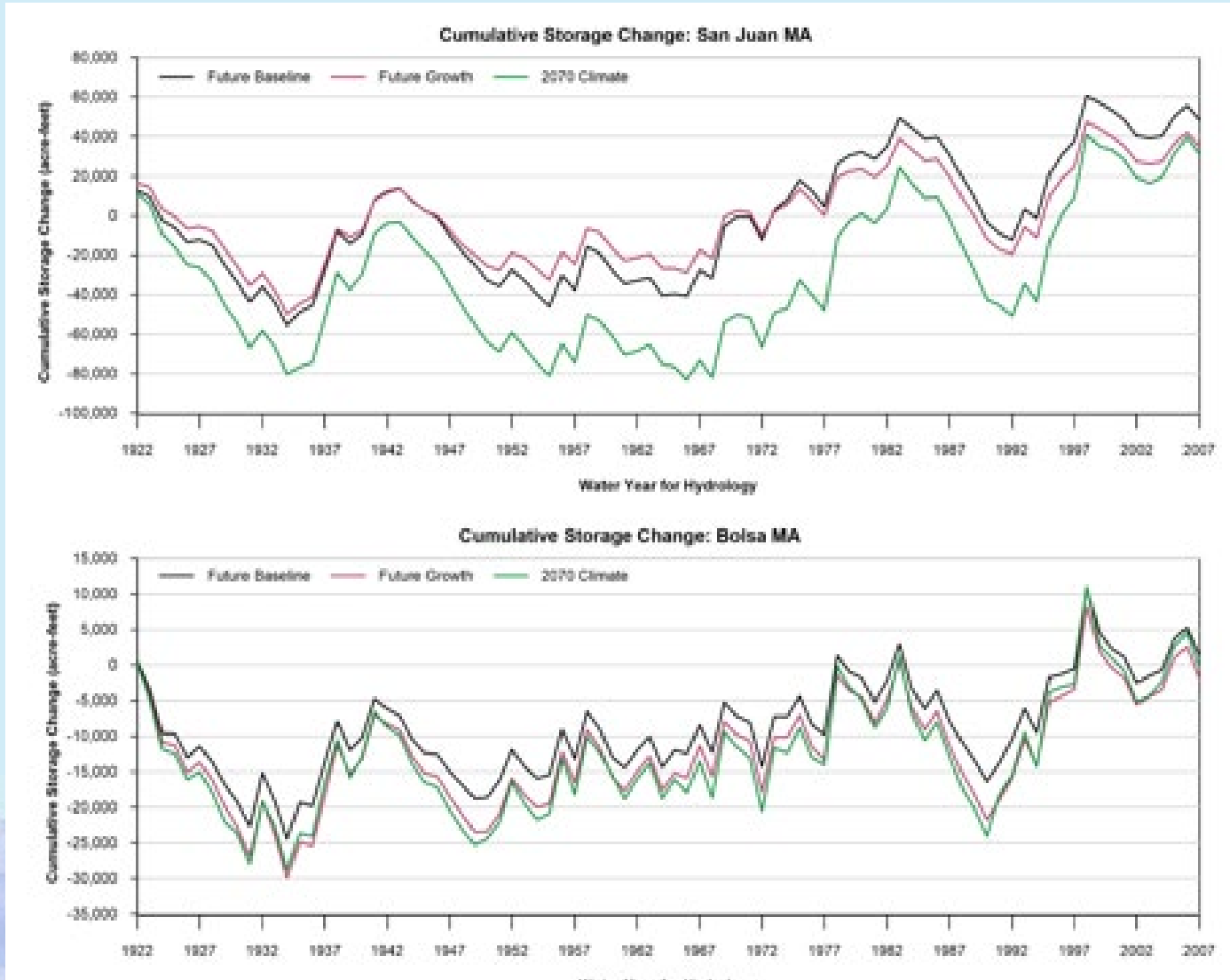


Southern MA

Hollister MA



# Cumulative Storage Change 2 of 2



San Juan MA

Bolsa MA

# Findings

- In the Hollister, San Juan and Bolsa MAs, climate change caused lower water levels between wet periods, but the declines did not become larger over time.
- In the Southern MA, climate change increased storage and water levels.
- Growth lowered water levels in the Hollister and Bolsa MAs, raised them in the San Juan MA, and had little effect in the Southern MA.
- The effects of climate change and growth would be additive.
- Results were not alarming, but in a few places, lowered water levels might reach minimum thresholds

# Projects and Management Actions

Recap from February 24 Meeting

- *Projects* increase supply or decrease demand
- *Management Actions* provide the framework
- Organized into 4 project and 6 management action categories
- Each being described according to GSP Regulations

Coming next are final sections for your review:

Did we miss anything?

# Projects: Sustainability Benefits

## Sustainability Goal:

- to provide a long-term, reliable and efficient groundwater supply for agricultural, domestic, and municipal and industrial uses
- to provide reliable storage for water supply resilience during droughts and shortages
- to protect groundwater quality
- to prevent subsidence
- to support beneficial uses of interconnected surface waters, and
- to support integrated and cooperative water resource management.



# Projects: Sustainability Benefits

Sustainability Criteria  Projects and Management Actions	Groundwater Levels	Groundwater Storage	Subsidence	Groundwater Quality	Connected Surface Water
<b>Develop Surface Water Storage (Pacheco Expansion)</b>	X	X			X
<b>Expand Managed Aquifer Recharge</b>	X	X	X	X	X
<b>Enhance Conjunctive Use</b>	X	X	X	X	X
HUA Water/ Wastewater Plan					
San Juan Bautista Regional Solution					
North County Project					
Zone 3 Operations Planning Tool					
<b>Enhance Water Conservation</b>	X	X	X		X

# Projects improve water balance and quality

## Develop Surface Water Storage

- Pacheco Reservoir Expansion Project
- New local reservoir?

## Expand Managed Aquifer Recharge

- “Round 3” MAR project

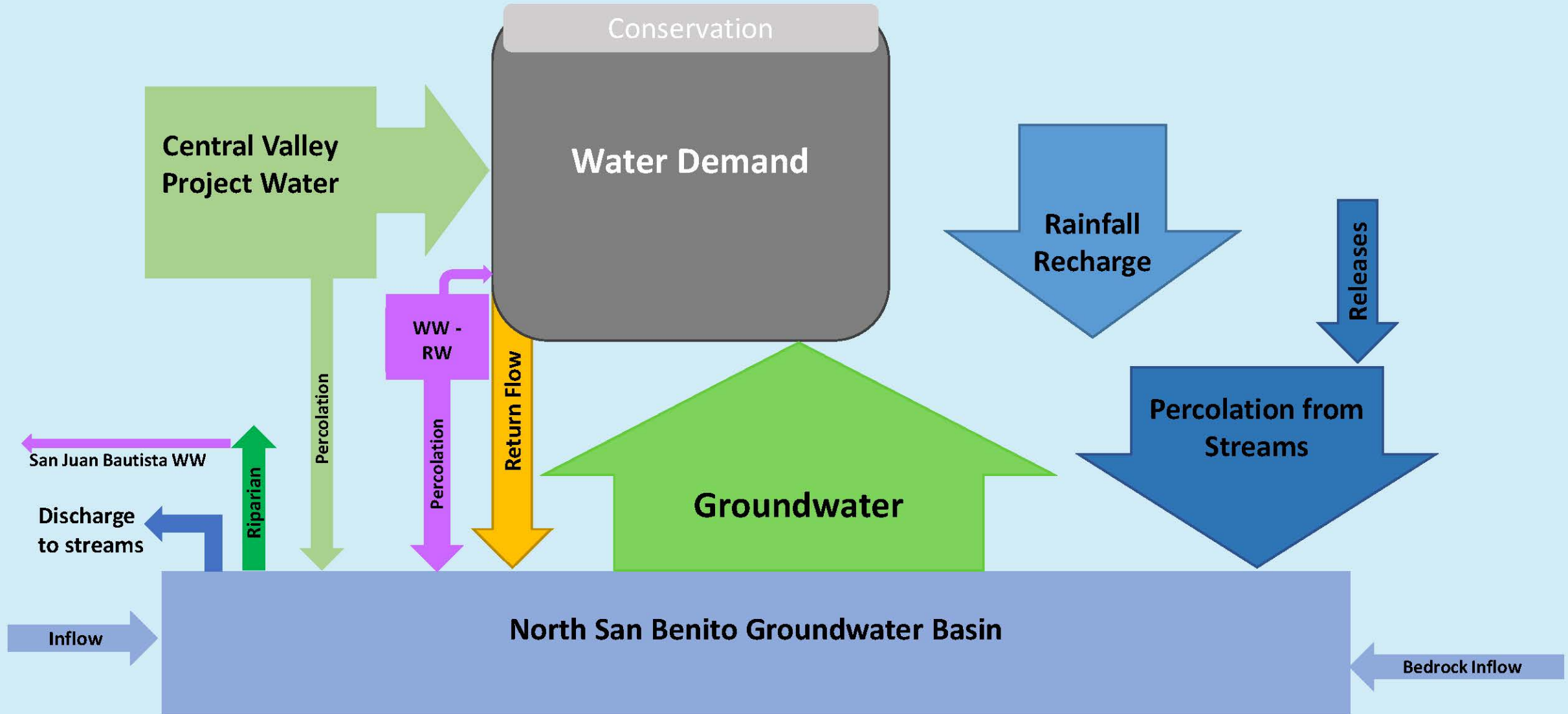
## Enhance Conjunctive Use

- Hollister Urban Area Water / WW Plan
- San Juan Bautista Regional Solution
- North County Project
- Zone 3 Operations Planning Tool

## Enhance Conservation

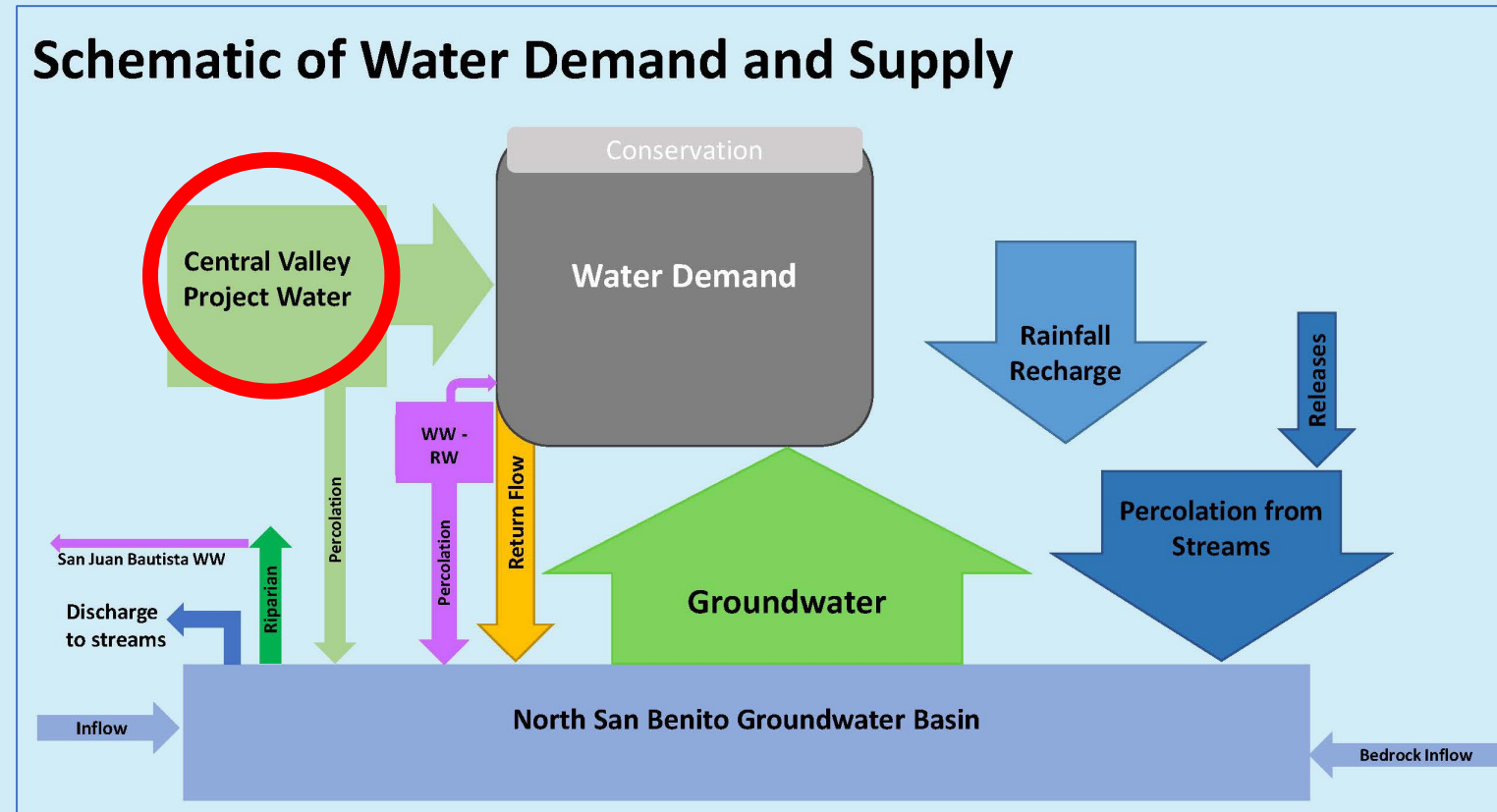
- Urban
- Agricultural

# Schematic of Water Demand and Supply



# Pacheco Reservoir Expansion Project

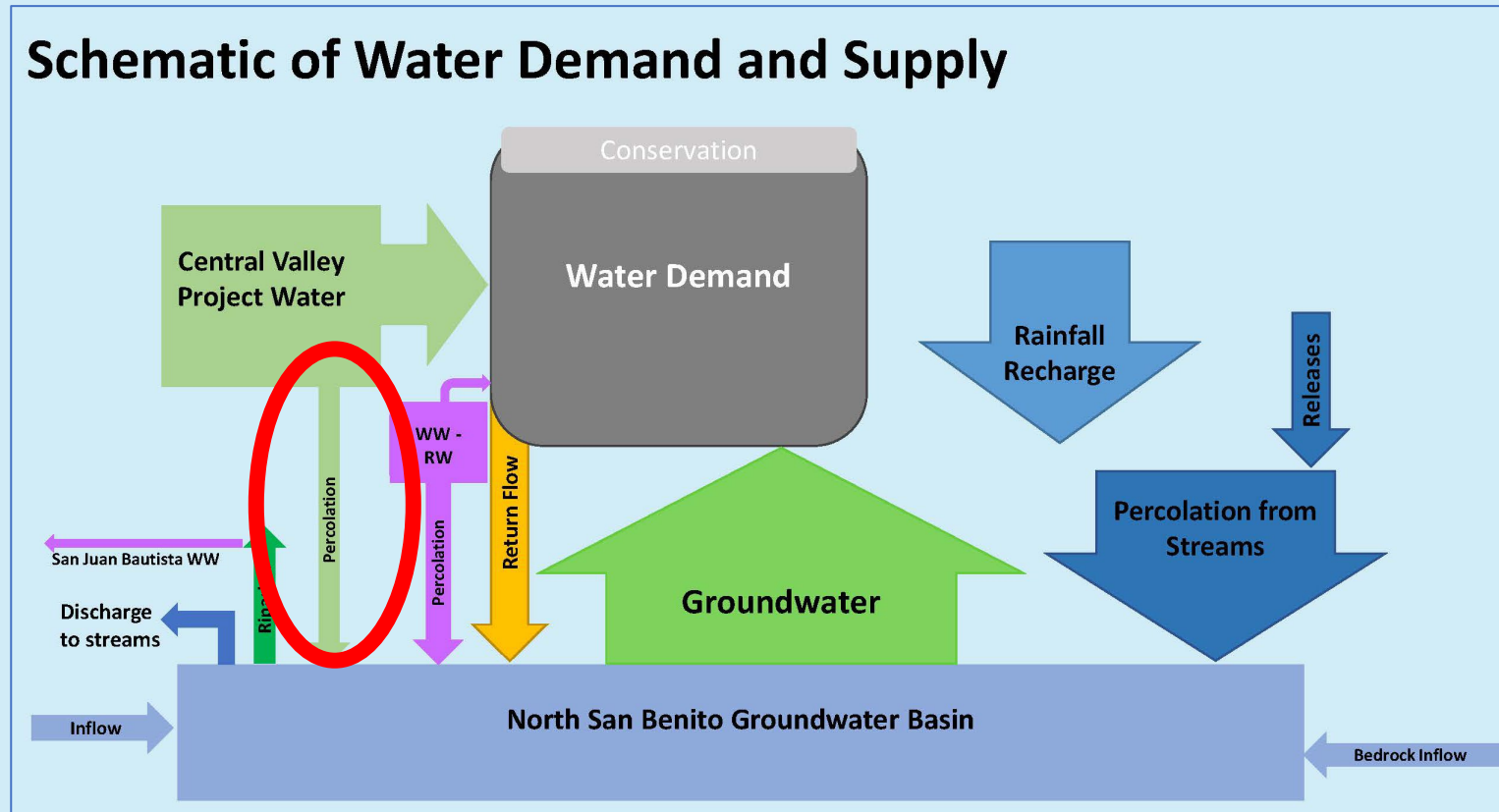
- Collaborative effort SCVWD, SBCWD, PPWD
- Would provide 135,000 AF additional surface water storage for CVP and local surface water
- Downstream benefits along Pacheco Creek
- In planning now, with construction to begin 2024 and benefits after about 2032
- Cost \$2.5 billion





# Managed Aquifer Recharge

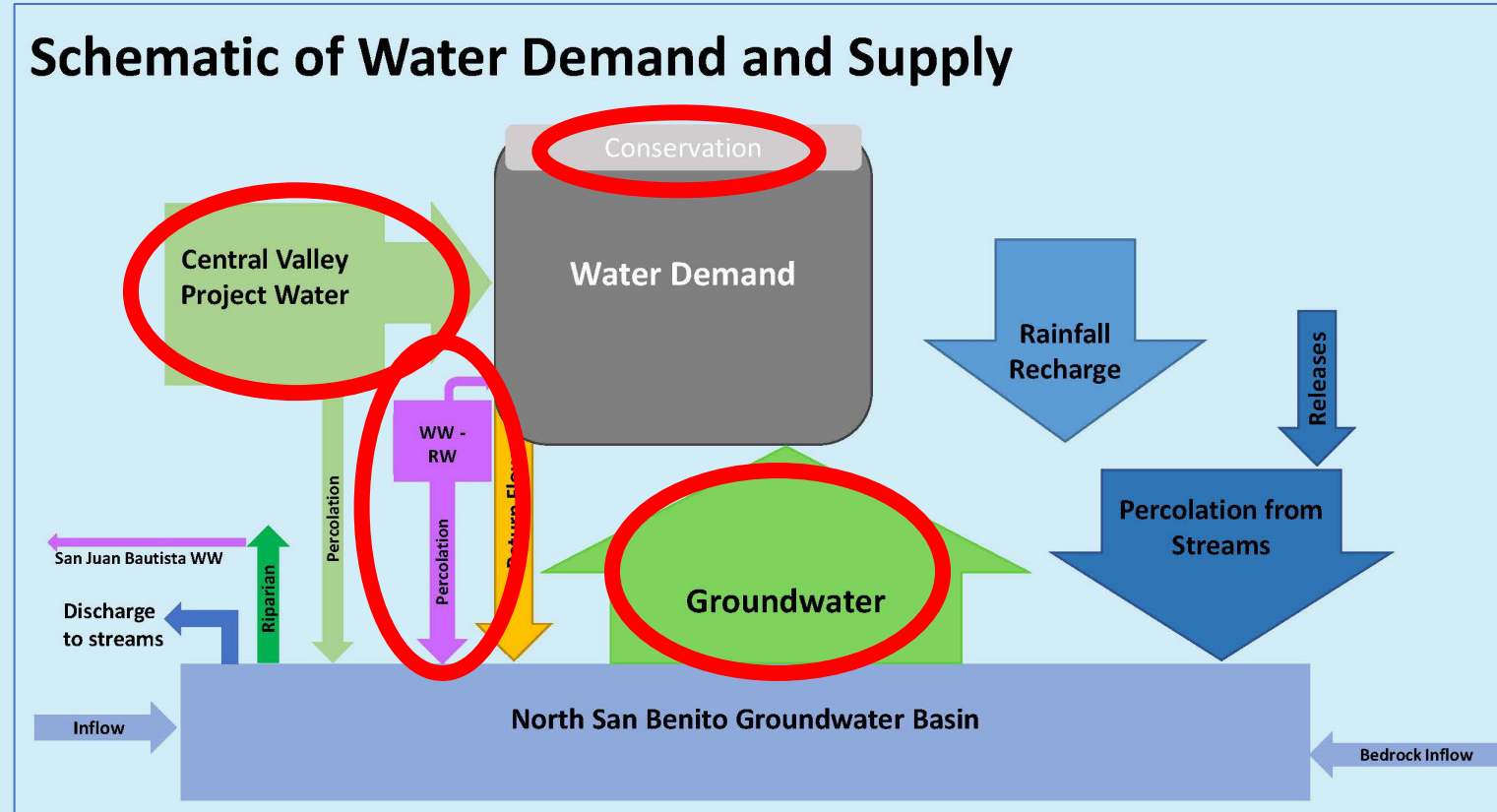
- Being planned now-Round 3 MAR study for this GSP
- Focusing on injection/ASR wells
- Would increase recharge by 6,000 AFY with storage in Hollister MA
- Benefits of long-term storage for drought and improved water quality
- Pilot project next year?
- Cost \$45 million?



# Conjunctive Use Projects

## 1. Hollister Urban Area Water and Wastewater Planning Project

- Multi-agency effort since 2004
- HUA water treatment plants
- Wastewater treatment upgrades
- Recycled water expansion
- Other infrastructure improvements
- Water transfers/banking
- Water conservation
- Water quality protection

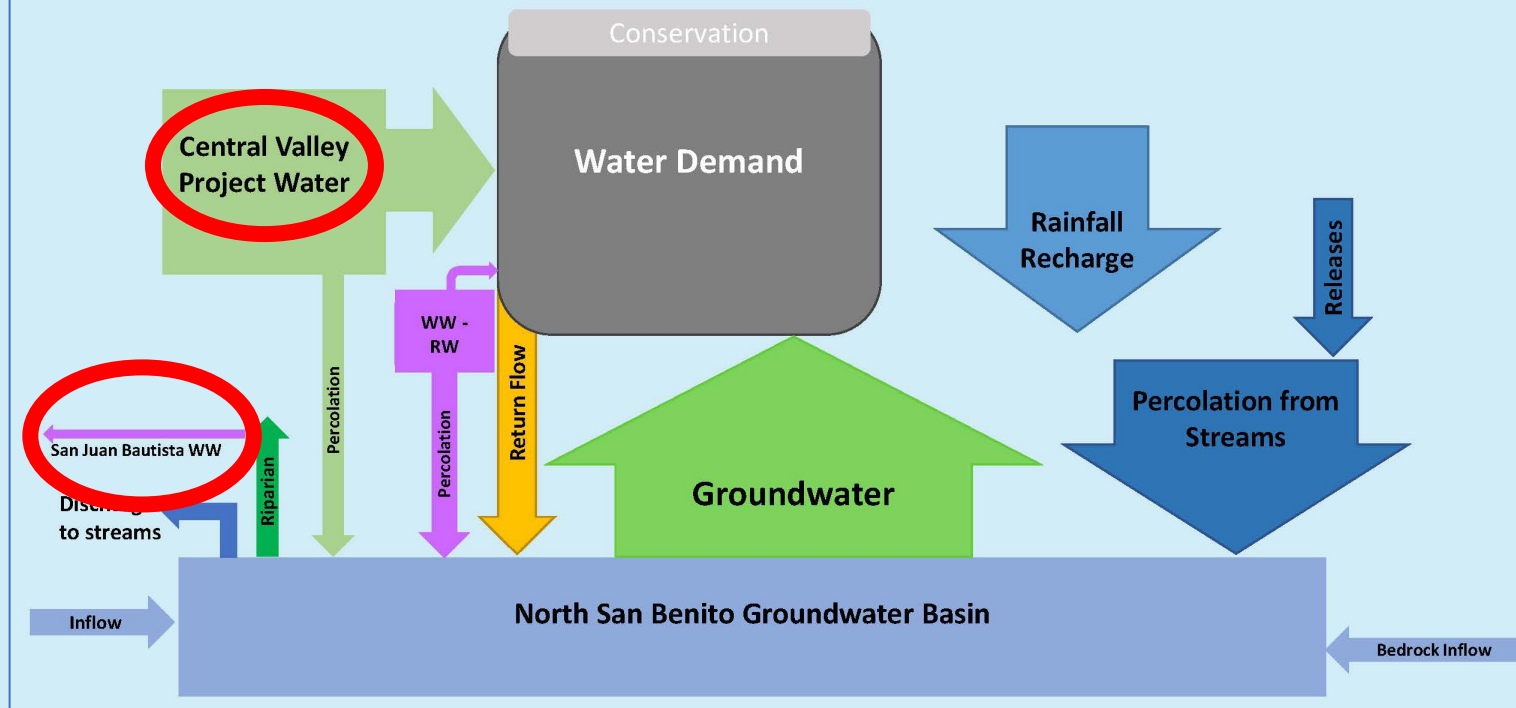


# Conjunctive Use Projects

## 2. City of San Juan Bautista Regional Water and Wastewater Solution

- Now being planned
- Would provide CVP to SJB
- Would reduce salt loading to SJB wastewater and convey wastewater to City of Hollister
- Reliable and good quality water for SJB
- Supports more water recycling
- Downstream benefits

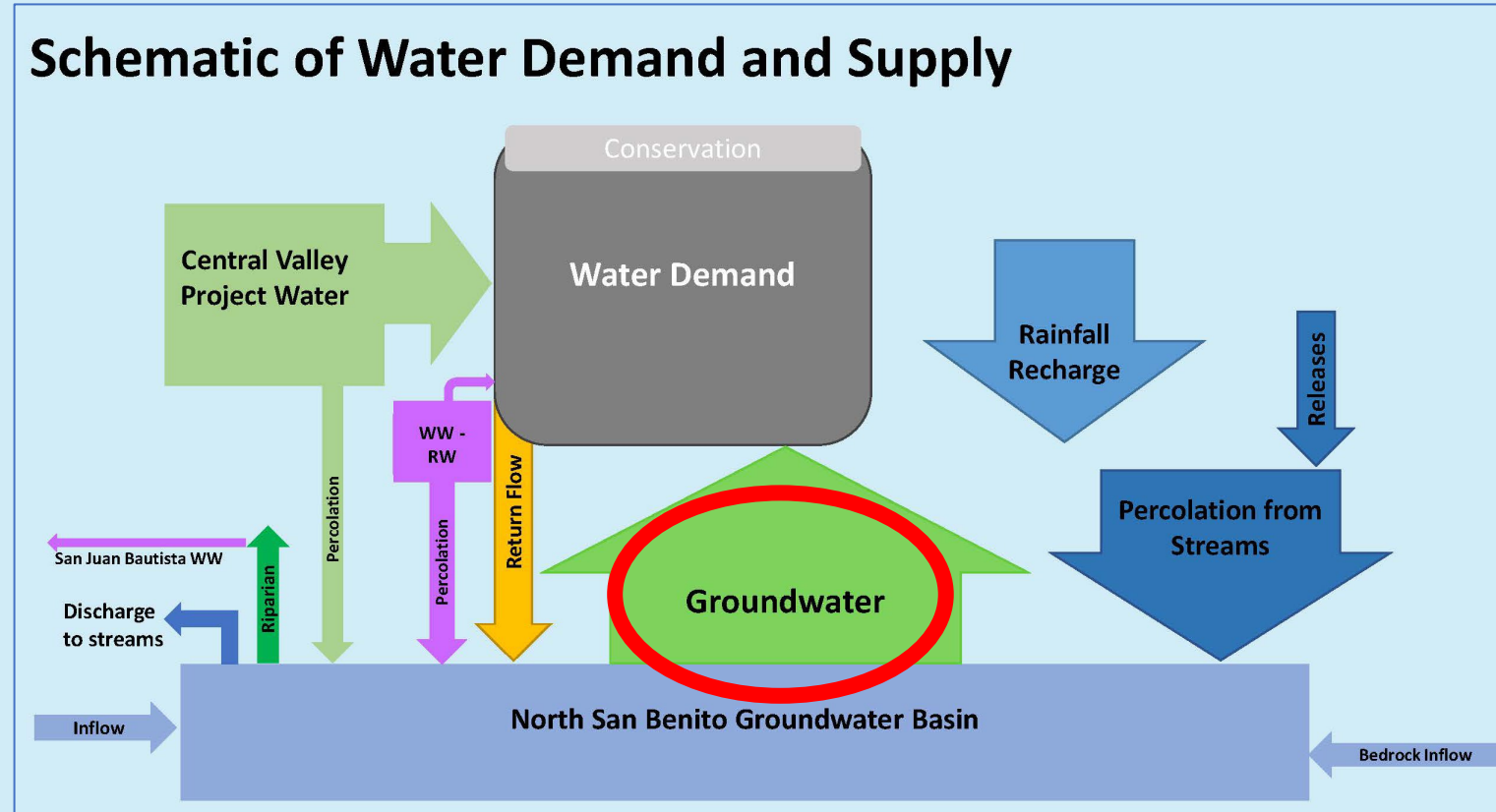
### Schematic of Water Demand and Supply



# Conjunctive Use

## 3. North County Project

- Planning new production wells
- Would provide relatively good quality water supply
- Possibility for ASR capabilities, merging with MAR project

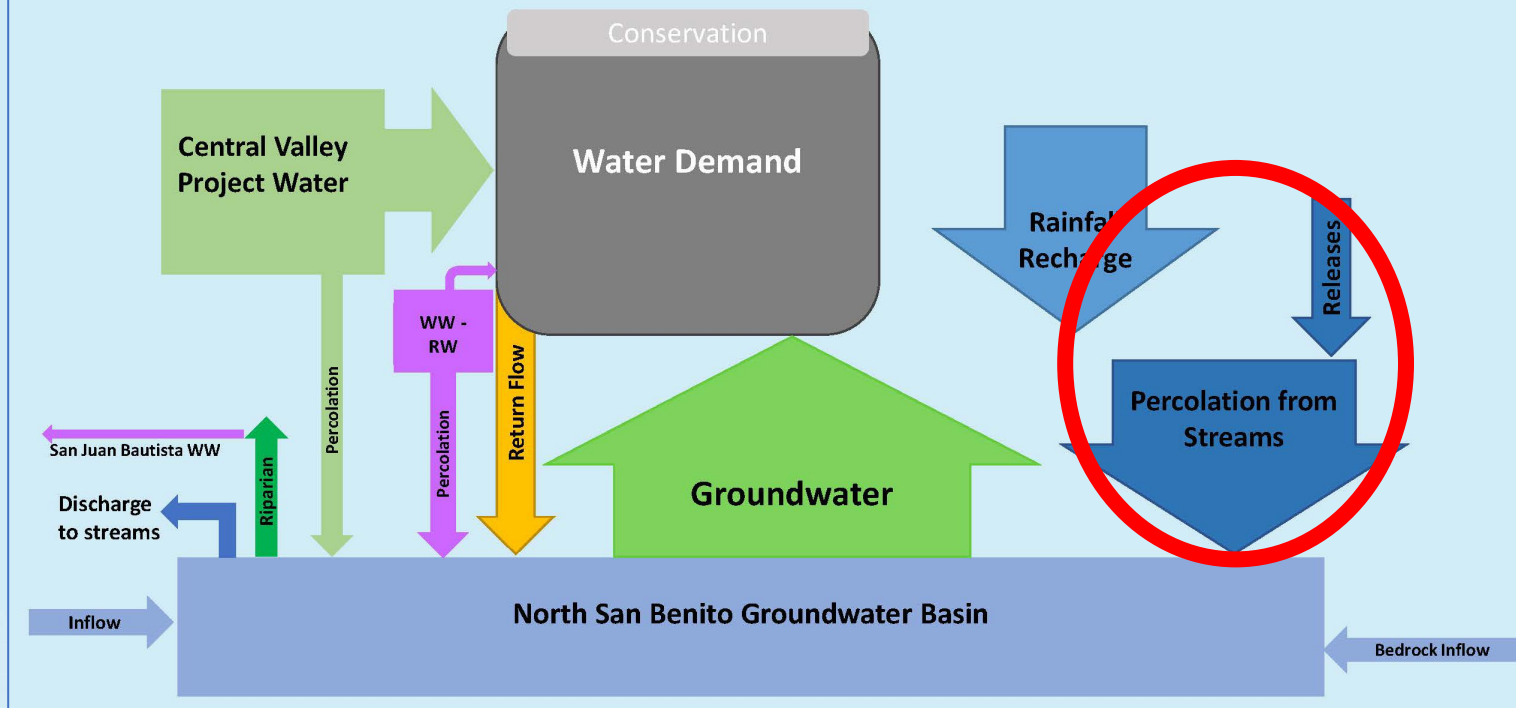




# Conjunctive Use

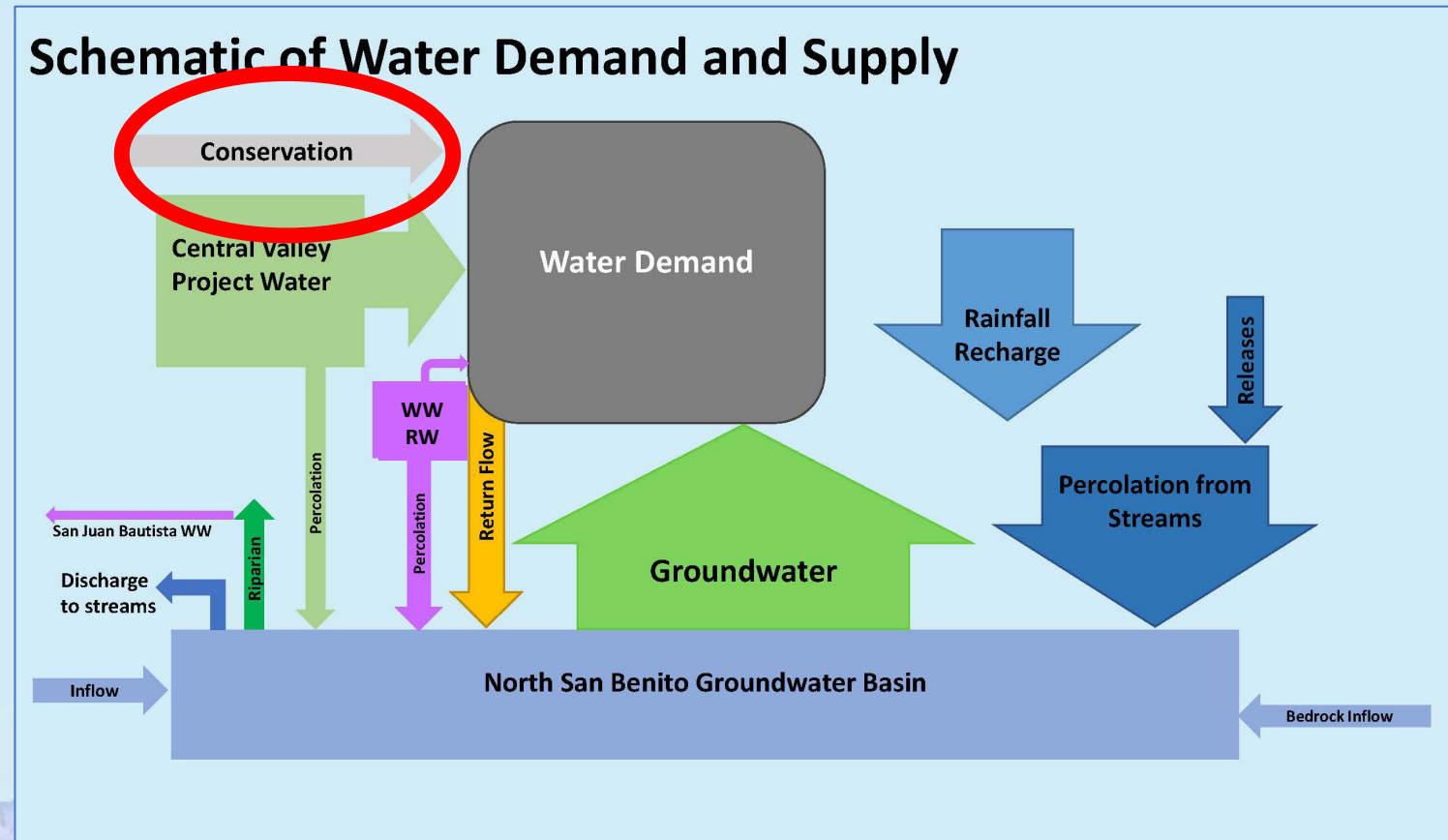
4. Zone 3 Operations Planning Tool
- Developed as cost-sharing for the GSP
  - Modeling tool optimizes reservoir releases for percolation
  - Benefits to Southern MA and to Hollister and San Juan MAs downstream

## Schematic of Water Demand and Supply



# Water Conservation

- Ongoing work that addresses Water Demand
  - Water Resources Association of San Benito County
  - Through Urban Water Management Plans and Ag Water Management Plans
  - Successful- no rebound from recent drought
  - Future demand hardening?



# Management Actions: Benefits

Sustainability Criteria  Projects and Management Actions	Groundwater Levels	Groundwater Storage	Subsidence	Groundwater Quality	Connected Surface Water
<b>Improve Monitoring Program and DMS</b>	X	X	X	X	X
Develop Response Plans	X			X	
Enhance Water Quality Improvement Programs				X	
Reduce Potential Impacts to GDEs					X
Provide Long-term Basin-wide Funding Mechanism	X	X	X	X	X
Provide Administration, Monitoring and Reporting	X	X	X	X	X

# Management Actions supporting GSP implementation and documentation

## Improve Monitoring Program and DMS

- Measure extraction (*Remote sensing pilot program underway*)
- Refine network and DMS
- Improve quality monitoring
- Enhance surface water gaging



# Management Actions: Benefits

Sustainability Criteria  Projects and Management Actions	Groundwater Levels	Groundwater Storage	Subsidence	Groundwater Quality	Connected Surface Water
Improve Monitoring Program and DMS	X	X	X	X	X
<b>Develop Response Plans</b>	X			X	
<b>Enhance Water Quality Improvement Programs</b>				X	
<b>Reduce Potential Impacts to GDEs</b>					X
Provide Long-term Basin-wide Funding Mechanism	X	X	X	X	X
Provide Administration, Monitoring and Reporting	X	X	X	X	X



# Management Actions for specific issues

## Develop Response Plans

- Early warning for levels
- Response to quality problems

## Water Quality Improvement

- Cooperation with agencies, e.g., on regulating water softeners and OWTS
- Additional analyses
- Update SNMP

## Reduce Potential Impacts to GDEs

- Install shallow monitoring wells (*Round 3 underway*)
- Steelhead passage study

# Management Actions: Benefits

Projects and Management Actions	Groundwater Levels	Groundwater Storage	Subsidence	Groundwater Quality	Connected Surface Water
Improve Monitoring Program and DMS	X	X	X	X	X
Develop Response Plans	X			X	
Enhance Water Quality Improvement Programs				X	
Reduce Potential Impacts to GDEs					X
<b>Provide Long-term Basin-wide Funding Mechanism</b>	X	X	X	X	X
<b>Provide Administration, Monitoring and Reporting</b>	X	X	X	X	X

# Management Actions supporting GSP administration

## Provide Basin-wide Funding Mechanism

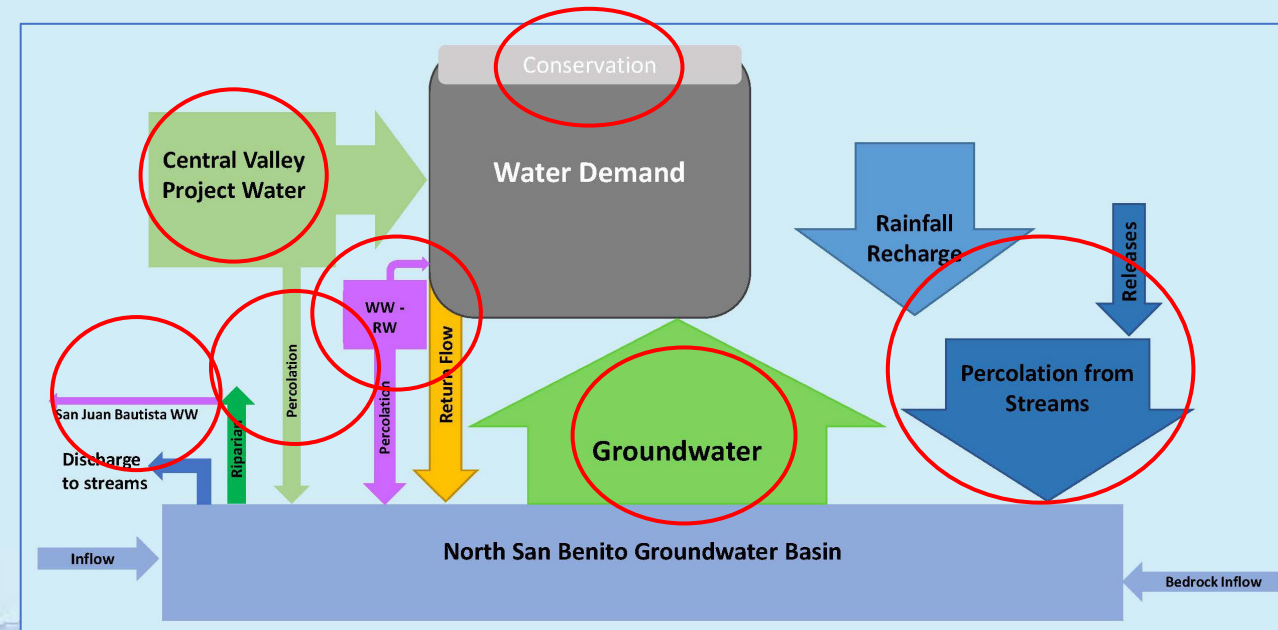
- GW Management Fee (now in development)
- GW Extraction Fee

## Provide GSP Administration, Monitoring and Reporting

- Ongoing monitoring
- Annual reporting and 5-year updates
- GSP administration
- Public outreach / agency coordination / TAC

# Project Implementation

- Timeline provided out to 2045
- Most Projects and Management Actions have been ongoing
  - Round 3 MAR
  - Remote sensing pilot project
- Adaptive management





# Management Action Implementation

Involves important inter-dependencies

- Recommended monitoring program improvements support all projects and actions
- Measurement of agricultural groundwater extraction is needed for required water balance analyses and reporting and as a basis for basin-wide funding
- Basin-wide funding mechanisms are needed to support monitoring, annual reporting, and administration





What questions or comments do you have?



# Next Steps

## **Admin Draft Chapters coming next week**

- Projects and Management Actions
- Implementation Plan
- Two-week review, comments due May 17

## **Next TAC meeting**

Administrative Draft GSP

Overview of GSP process to 2022

# Stay tuned

SBCWD Board of Director's Meeting	Tonight April 28, 2021 5:00pm
Public Workshop: Draft GSP	TBA July 2021
Next TAC Meeting: Admin Draft GSP	TBA May 2021

