

2022 Indio Subbasin Water Management Plan Update: SGMA Alternative Plan

Coachella Water Authority
December 15, 2021



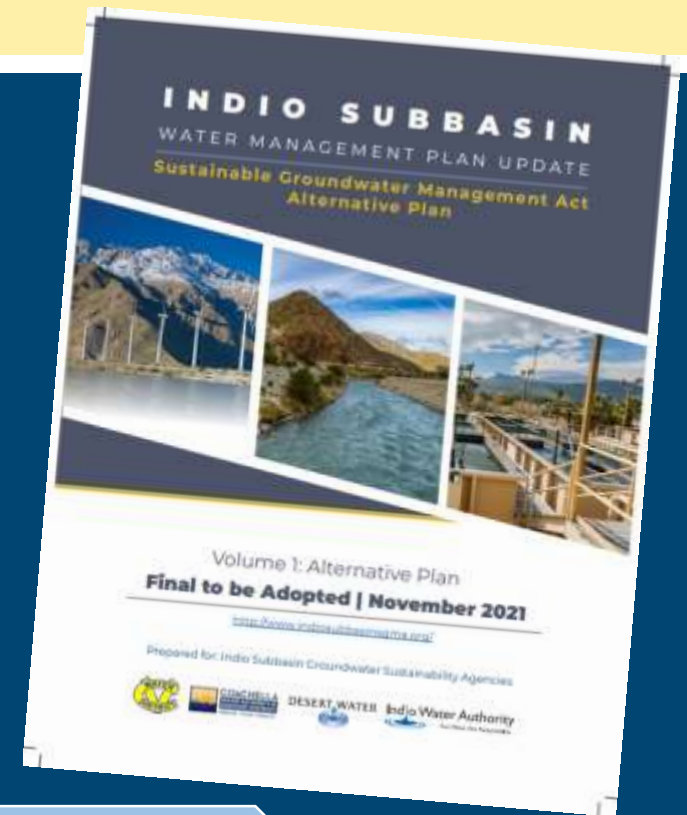
What is the Sustainable Groundwater Management Act (SGMA)?

Landmark legislation in 2014

- Provides a framework for sustainable management of groundwater basins
- Promotes *local* management
 - With local Groundwater Sustainability Agencies (GSAs)
 - Preparing a Groundwater Sustainability Plan (GSP) or Alternative Plan
- Sets regulatory deadlines for submitting plans, reporting progress, and achieving sustainable management
- Offers State assistance
 - Funding, data, and technical support

Introducing the 2022 Plan Update

- Builds on *2010 Coachella Valley Water Management Plan Update* submitted in 2016 and approved by DWR as an “Alternative Plan” to a Groundwater Sustainability Plan
- Five-Year Updates are required by SGMA
- This is the first Five-Year Update



How Did We Engage People?



7 Public Workshops



7 SGMA Tribal Workgroups



Website with Monthly Updates



Regular Email Announcements and Updates



Where is the Plan Area?

- GSAs are CVWD, CWA, DWA, and IWA
- Plan encompasses entire Indio Subbasin and areas that are or may be supplied with Subbasin groundwater:
 - Municipal, agricultural, golf, domestic and other demands
- Includes multiple jurisdictions with land use planning authority:
 - Cities, counties, tribal governments, state and federal agencies



All Six Sustainability Criteria Are Addressed



Chronic lowering of groundwater levels



Reduction of groundwater storage



Land subsidence



Degraded water quality



Seawater intrusion



Depletions of connected surface water with impacts on beneficial uses including Groundwater Dependent Ecosystems (GDEs)

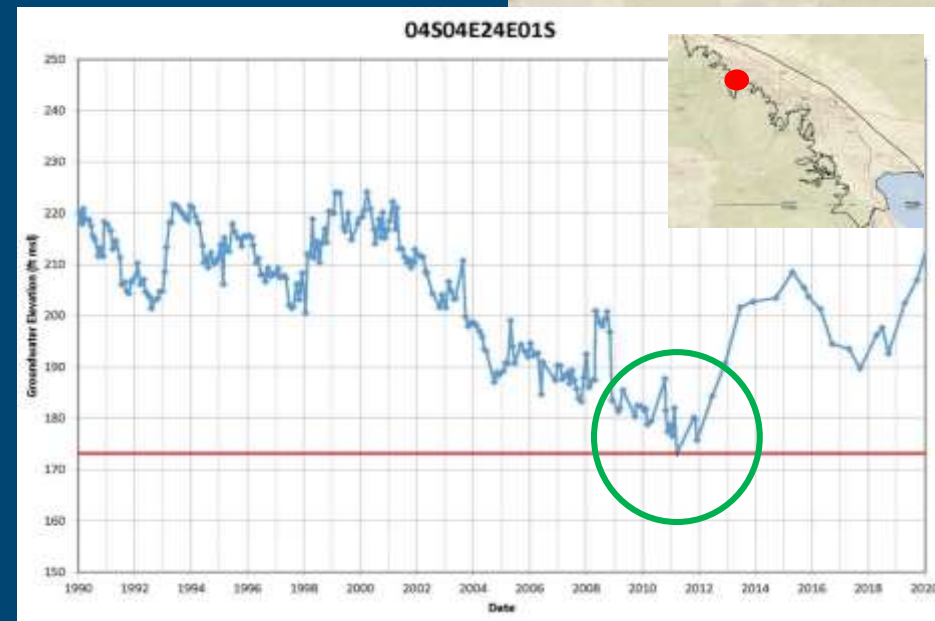
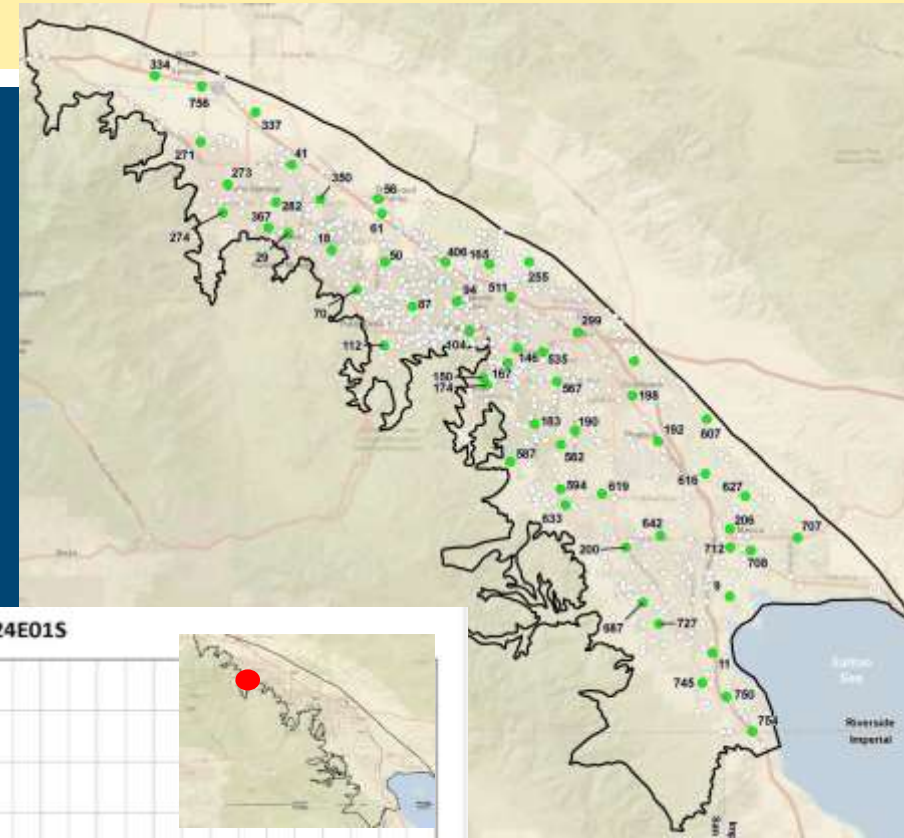


Thresholds Set for Groundwater Levels

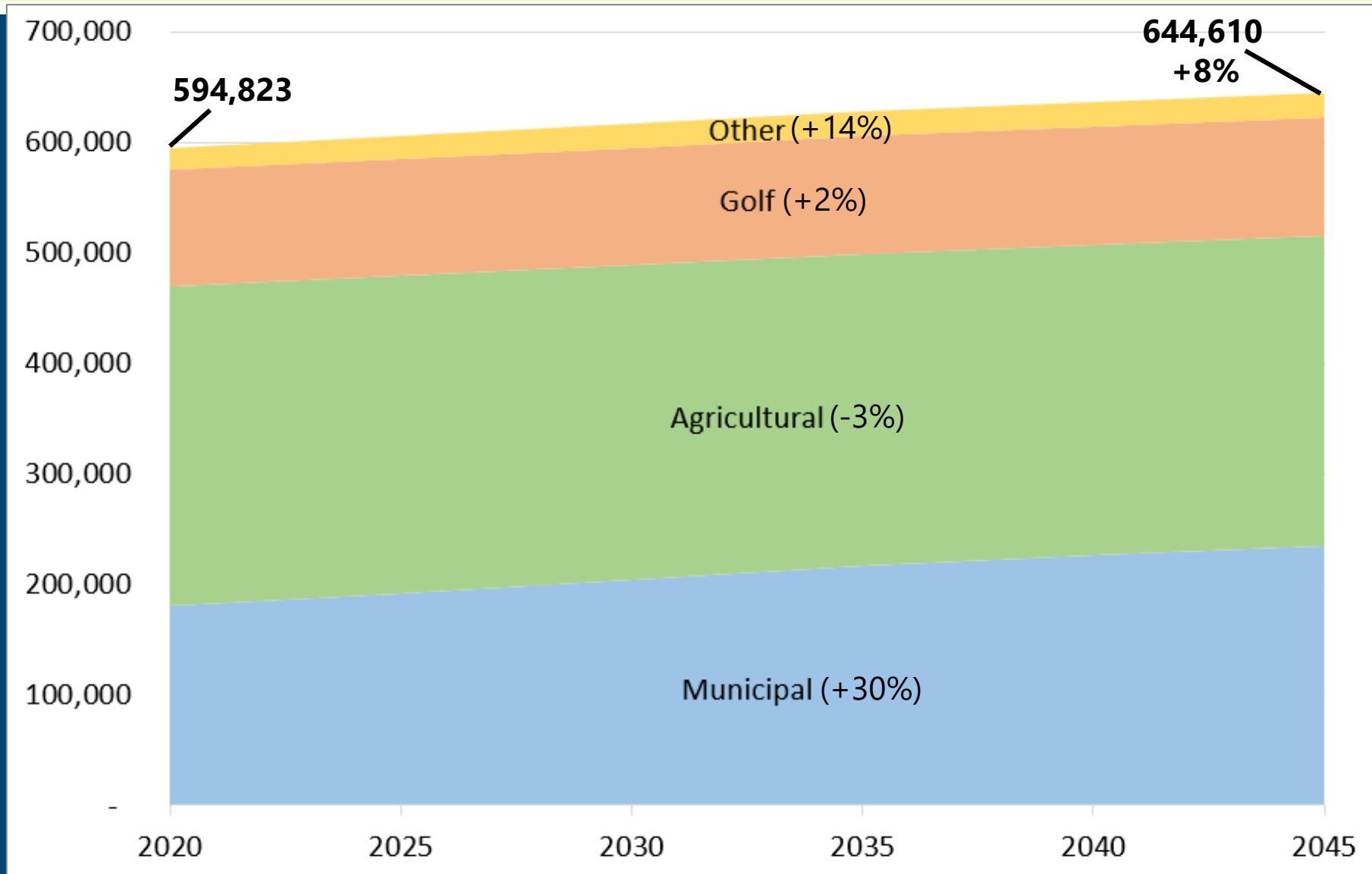
Historical lows as measured at Key Wells:

An undesirable result occurs when the Minimum Threshold is crossed in five consecutive low-season monitoring events in 25% of key wells across the Subbasin

GSA's will monitor levels, respond as needed, and provide annual reporting



Total Projected Demand (AFY)



Supply Portfolio for Indio Subbasin

Groundwater

- Natural Infiltration
- Net Groundwater Inflow

SWP Exchange Water

- Table A Amount
- Yuba Accord
- Delta Conveyance Facility
- Lake Perris Seepage
- Sites Reservoir

Colorado River Water

- QSA Base Entitlement
- IID/CVWD Transfers
- MWD SWP Transfer
- Minus Conveyance Losses

Recycled Water

- Based on Municipal Wastewater Flow Projections

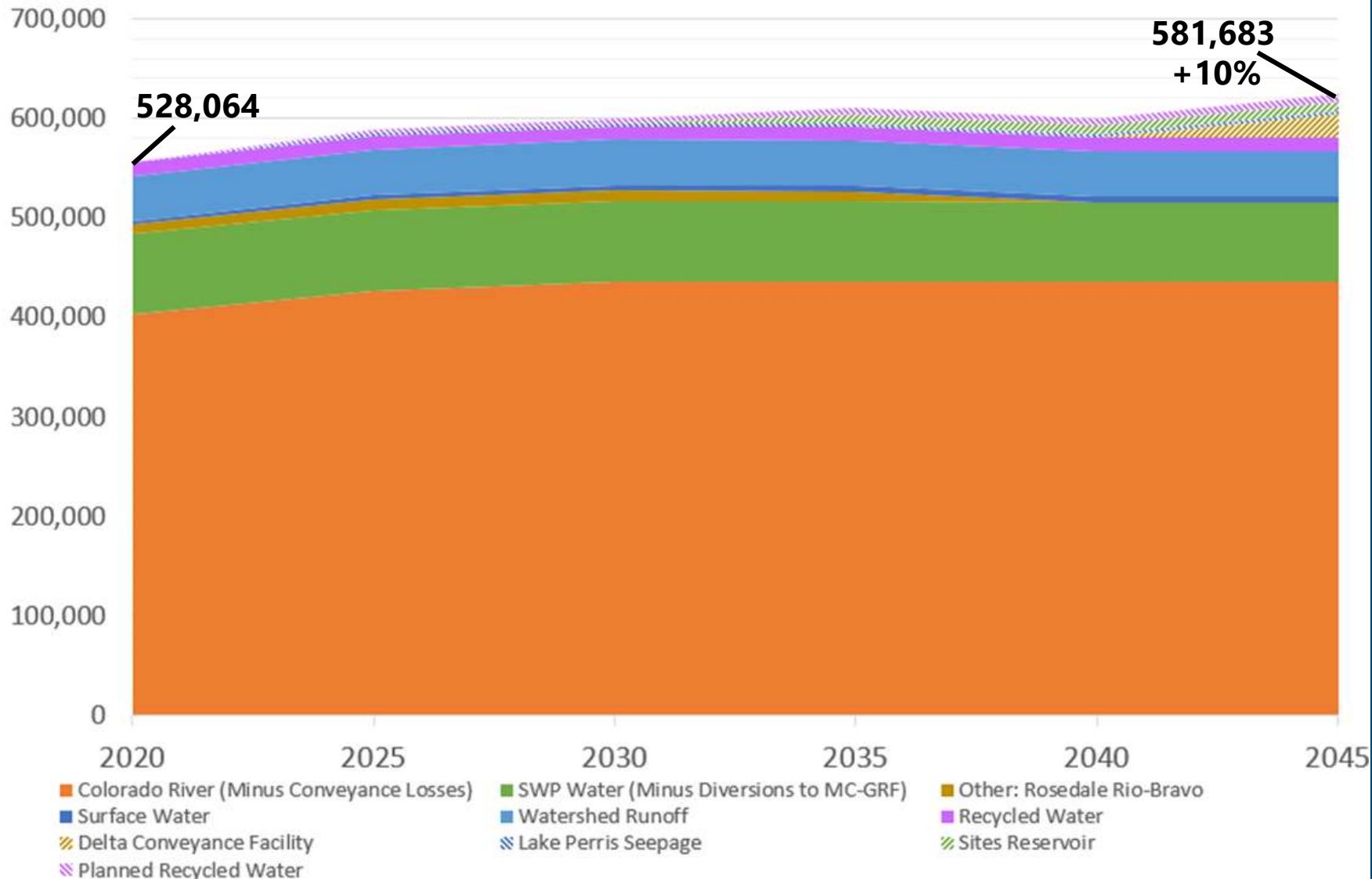
Surface Water

- Snow, Falls & Chino Creek
- Whitewater River

Other Supplies

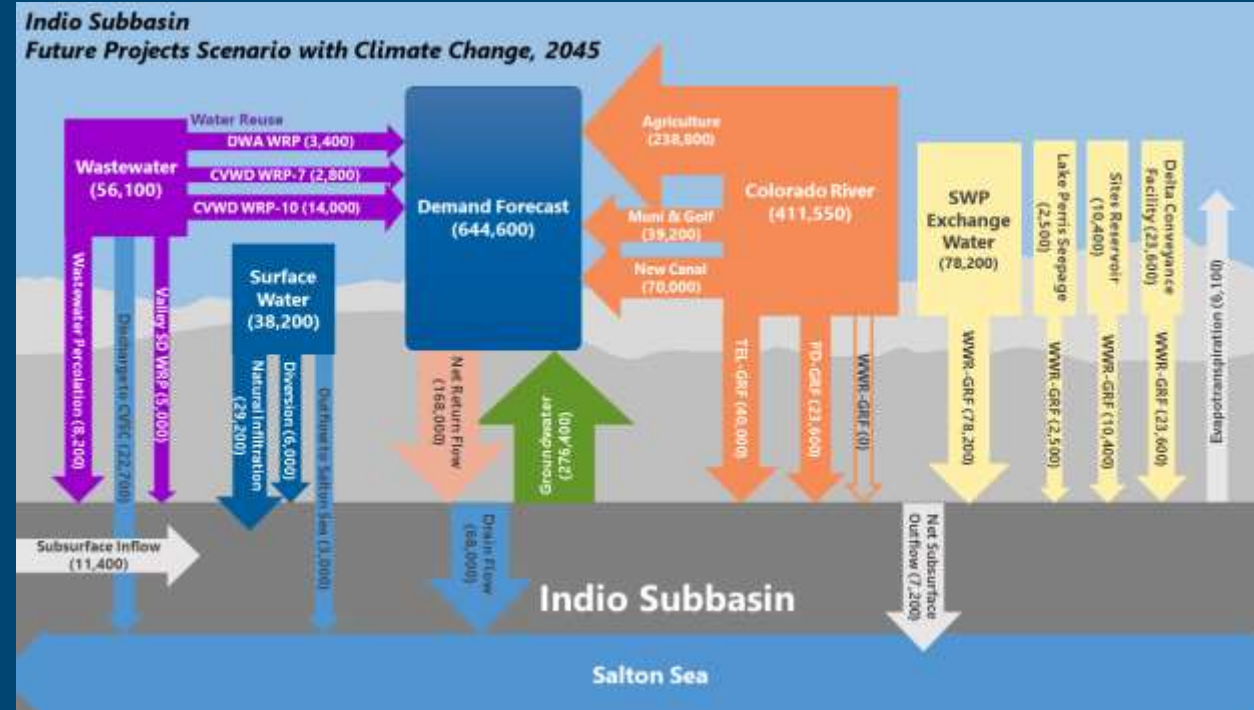
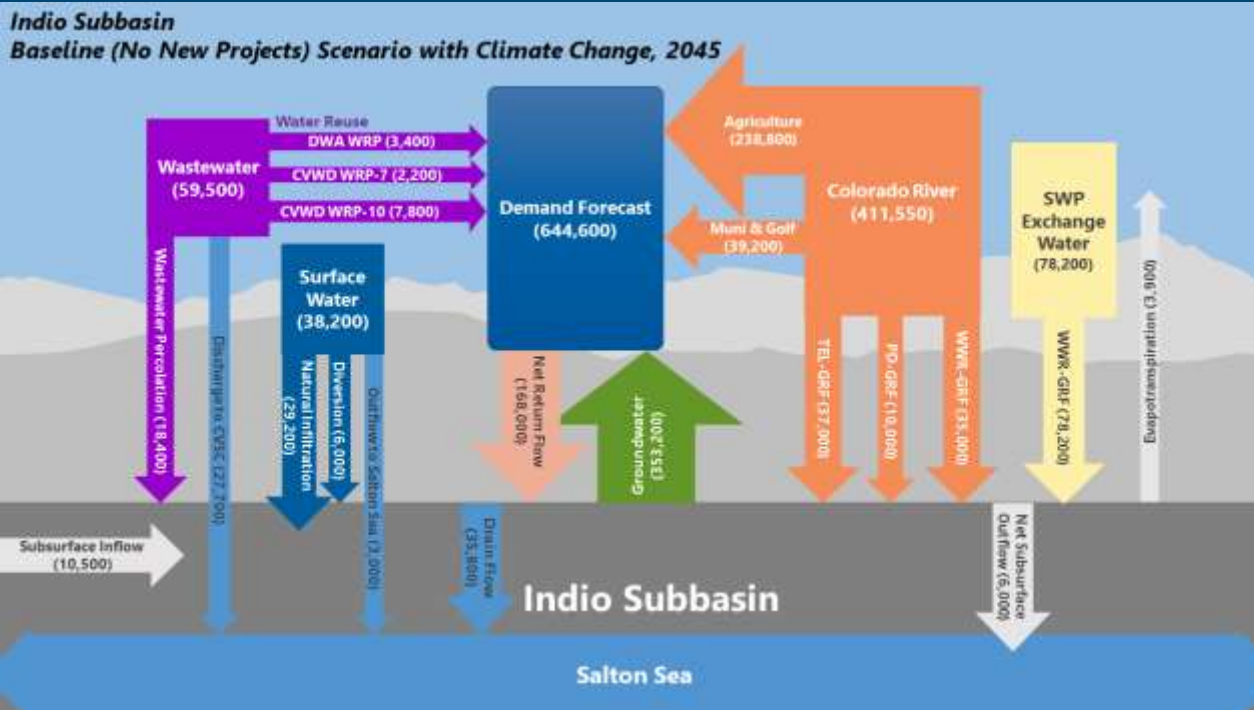
- Rosedale Rio-Bravo

Supply Forecast – Projected Future Supplies with Climate Change (AFY)

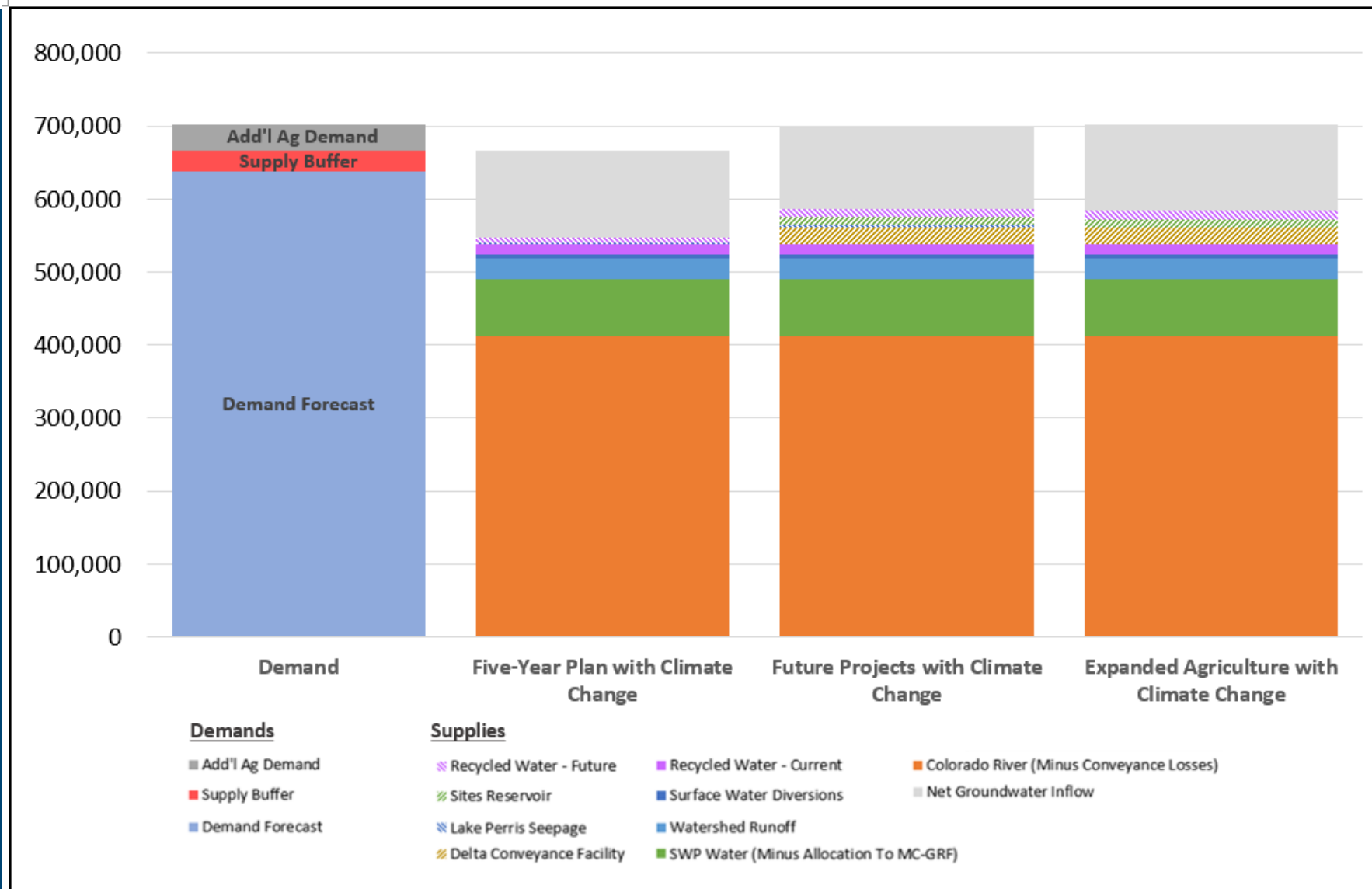


Climate change assumptions used for planning reduce available water supplies from local and imported supplies by up to 40,000 AFY

Plan Scenarios Reflect Varying Water Supplies and PMAs

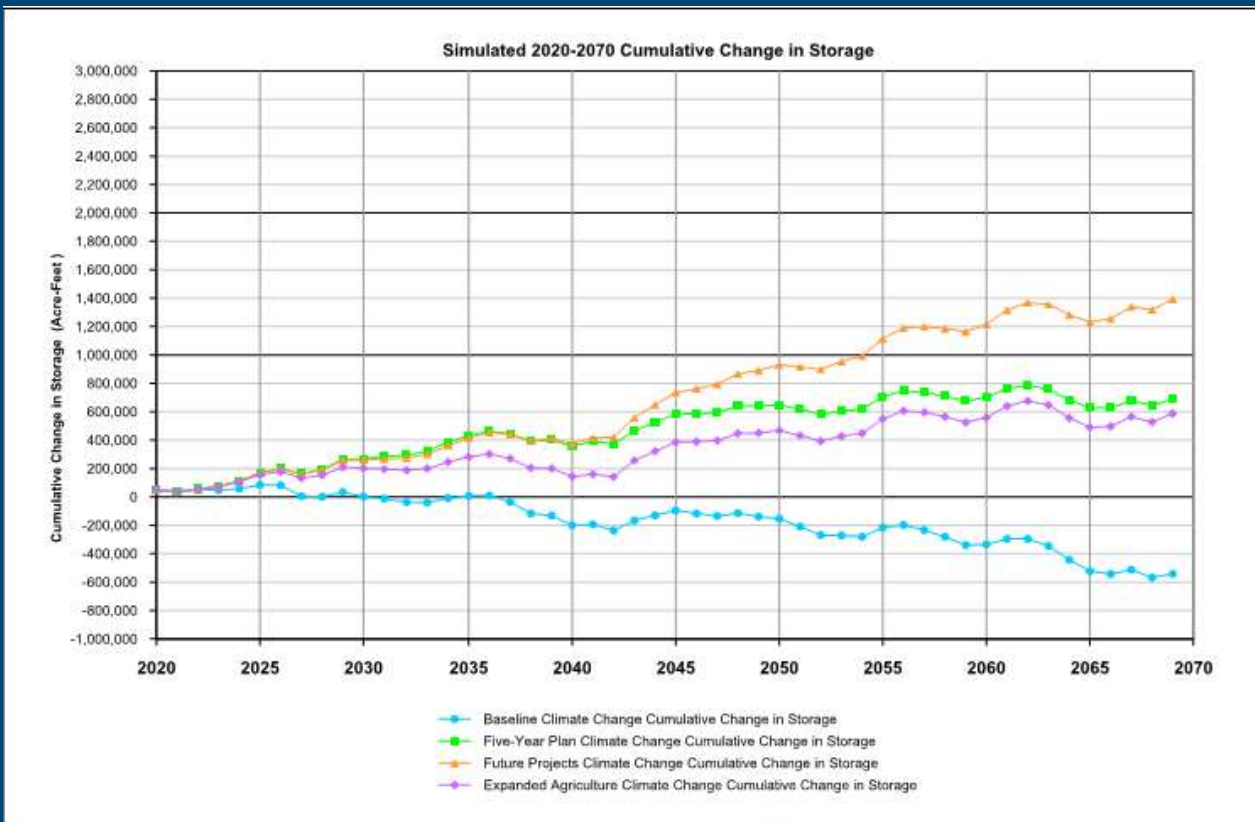


All "With Project" Scenarios Have Adequate Supply to Meet Projected Demands (AFY)

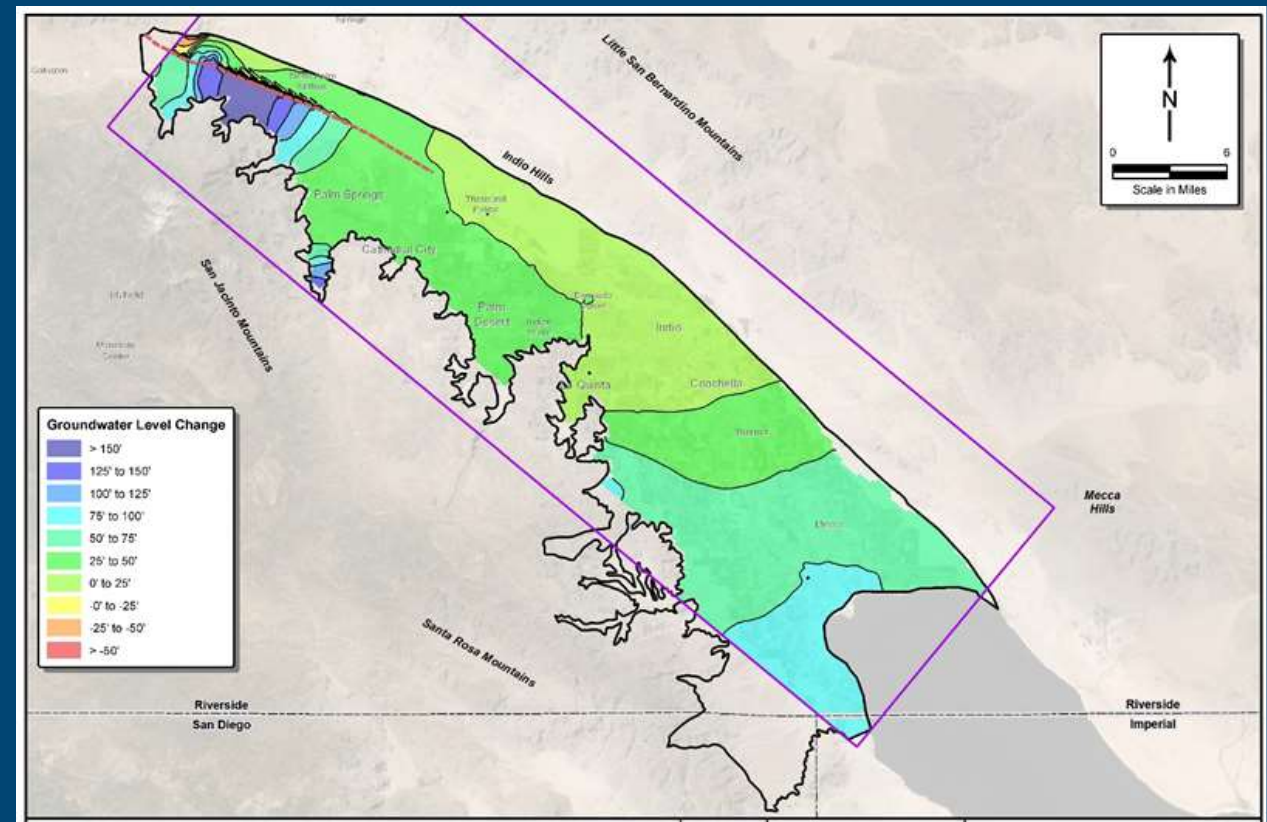


Groundwater Sustainability Achieved with Implementation of PMAs

Simulated 2020-2070 Cumulative Change in Storage



Simulated 2009-2045 Change in Groundwater Levels



Adaptive Management and Annual Reporting

- The GSAs are using adaptive management for continuous improvements in management planning and implementation
- Annual Reporting will keep everyone informed:
 - ❖ Groundwater elevations
 - ❖ Groundwater extraction
 - ❖ Surface water
 - ❖ Total water use
 - ❖ Change in storage
 - ❖ Plan implementation/progress



The Plan Update demonstrates that the GSAs can meet the established Plan goal *“to reliably meet current and future water demands in a cost-effective and sustainable manner”*.

As they have been doing over the last 20 years, GSAs will monitor trends in demand and supply availability and implement PMAs as needed.





BACKUP SLIDES

Plan Update – Goal and Objectives

Plan Goal: *To reliably meet current and future water demands in a cost-effective and sustainable manner.*

Plan Objectives:

1. Meet current and future municipal water demands with 10 percent supply buffer
2. Avoid chronic groundwater overdraft
3. Manage and protect water quality
4. Collaborate with tribes, state and federal agencies on shared objectives
5. Manage future costs
6. Minimize adverse environmental impacts
7. Reduce vulnerability to climate change and drought impacts



Suitable Proxy for Storage and Subsidence

Groundwater levels, storage, and subsidence are correlated.

The groundwater level Minimum Thresholds are defined to avoid significant and unreasonable undesirable results:



Loss of yield from existing production wells due to chronic level decline



Reduction of groundwater storage



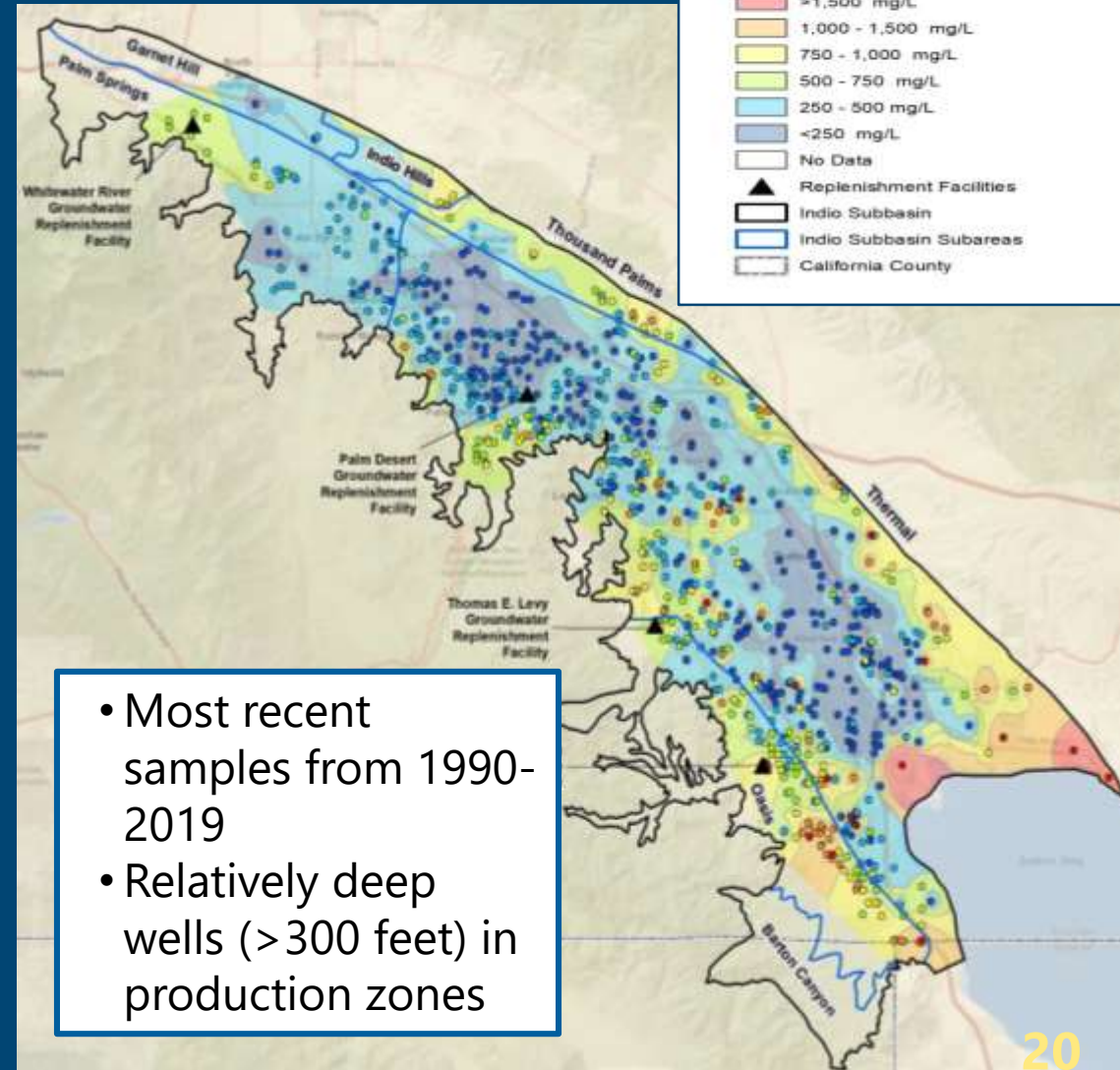
Reduction in the viability of water conveyance, flood control, other infrastructure, and structures due to land subsidence



Groundwater Quality

Plan Update provides comprehensive assessment of groundwater quality

- Maps for eight constituents
- Cross-sections for TDS, NO₃, Arsenic, Cr-6 to show vertical variation
- Time concentration plots for TDS and nitrate
- Discussion of significance, source(s), distribution factors





Plan Supports Salinity Studies and SNMP

- Groundwater quality database compilation and assessment
- Planning for installation of additional monitoring wells
- Update and improvement of numerical flow model that can be basis for salt and nutrient balance studies
- Planning for study of relationships among groundwater levels, groundwater quality, and drain flows
- Coordination with the CV-SNMP update beginning in 2022



Sampling the drain flows to Salton Sea



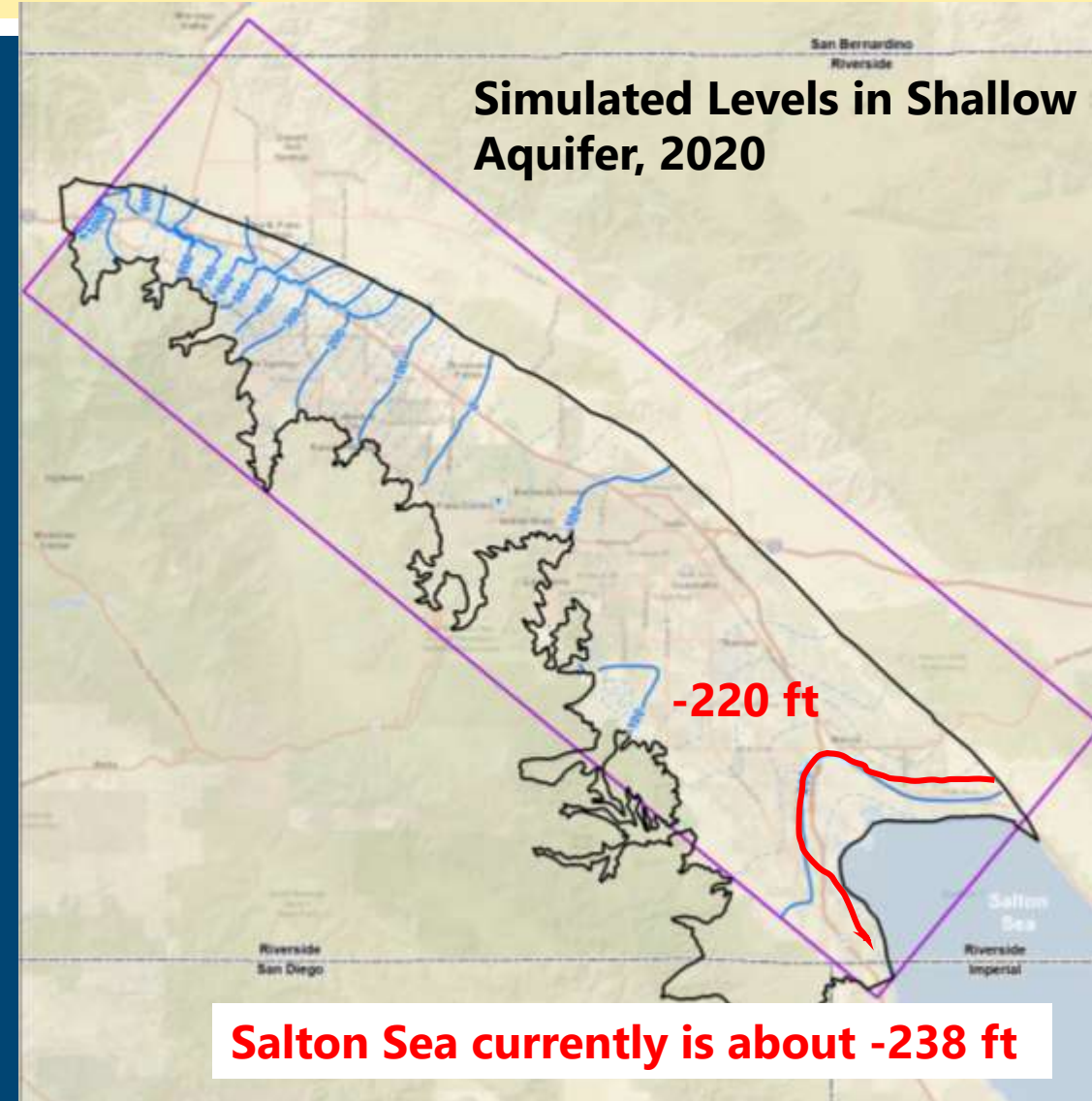
Seawater Intrusion and the Salton Sea

Salton Sea is distinguished by:

- salinity about twice that of the ocean and increasing
- surface water levels decreasing and a shoreline retreating

Seawater intrusion is tracked closely by the GSAs:

- Dedicated monitoring wells for sampling and level measurements
- Subbasin groundwater level monitoring and water budget modeling to assess groundwater flow





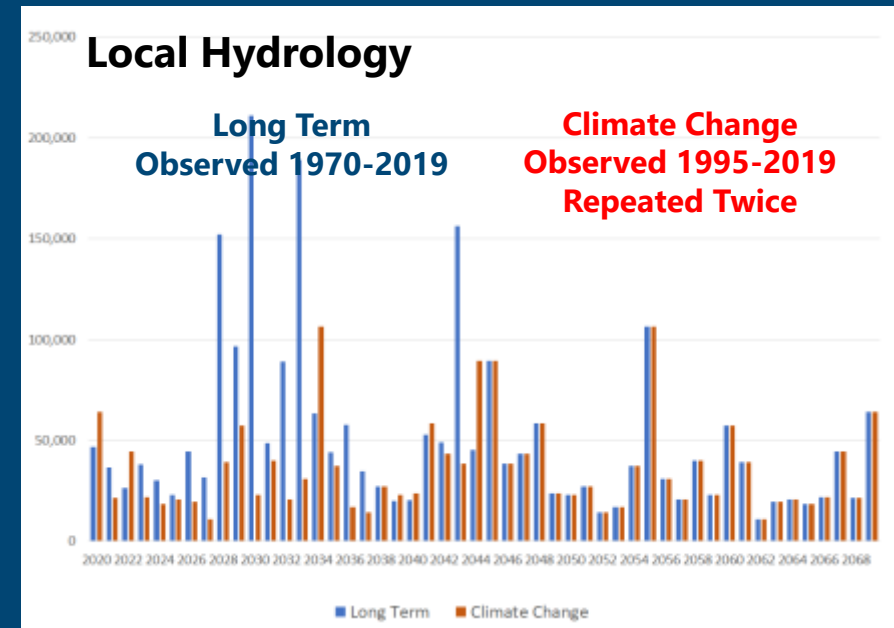
Interconnected Surface Water and Groundwater Dependent Ecosystems (GDEs)

- Probable GDEs (5%) occur in canyons and may rely partially on surface water or snowmelt
- Probable Non-GDEs (89%) include agricultural fields and drainages, uplands, and dry washes
- Playa Wetlands (6%) are dependent on agricultural drain flows and occur along Salton Sea exposed seabed



Climate Change – Assumptions

- Scenarios use recent (drier) patterns
- For local inflow:
 - ❖ Baseline uses long term-hydrology – modeling repeats historical conditions (1970-2019) for future 50-years
 - Estimated natural infiltration 43,000 AFY
 - ❖ Climate change scenarios use recent 25-year period (1995-2019) which includes multiple droughts – modeling repeats drier pattern twice for 50-years
 - Estimated natural infiltration 29,200 AFY



Climate Change – Assumptions

- Scenarios use recent (drier) patterns
- For imported water:
 - ❖ State Water Project:
 - Deliveries of SWP water have been impacted by legal, environmental, and drought conditions
 - SWP deliveries = 45% over last 14 years
 - Under future climate, DWR projects SWP deliveries will be reduced by additional 1.5%
 - ❖ Colorado River:
 - If Lake Mead reservoir levels decline, CVWD will participate in California's contribution under the Lower Basin Drought Contingency Plan
 - Assumes reduction in QSA water for direct delivery and replenishment by 14,000–24,000 AFY



Projects & Management Actions – Selected

Water Conservation

- 1: Urban Water Conservation
- 2: Golf Water Conservation
- 3: Agricultural Water Conservation

Water Supply Development

- 4: Increased Surface Water Diversion
- 5: Delta Conveyance Facility
- 6: Lake Perris Seepage
- 7: Sites Reservoir
- 8: Future Supplemental Water Acquisitions
- 9: EVRA Potable Reuse

Source Substitution & Replenishment

- 10: Mid-Valley Pipeline Direct Customers
- 11: East Golf Expansion
- 12: Oasis Distribution System
- 13: WRP-10 Recycled Water Delivery
- 14: WRP-10 Tertiary Expansion
- 15: Canal Water Pump Station Upgrade
- 16: WRP-7 Recycled Water Delivery
- 17: WRP-4 Tertiary Expansion & Delivery
- 18: DWA WRP Recycled Water Delivery
- 19: PD-GRF Phase 2 Expansion
- 20: TEL-GRF Expansion
- 21: WWR-GRF Operation

Water Quality Protection

- 22: Eliminate Wastewater Percolation
- 23: Wellhead Treatment
- 24: Small Water System Consolidations
- 25: Septic to Sewer Conversions
- 26: CV-SNMP GW Monitoring Program Workplan
- 27: CV-SNMP Development Workplan
- 28: Colorado River Salinity Forum
- 29: Source Water Protection

Plan Scenarios – Assumptions

No New Projects = Baseline

Baseline w/ Climate Change

Five-Year w/Climate Change

Future Projects w/Climate Change

Expanded Ag w/Climate Change

- Baseline assumes no new projects
- Not realistic because additional projects already planned
- Provides a comparison of future conditions with and without climate change/drought
- Simulations of additional scenarios with 5-year (near-term) projects, future projects, and expanded agriculture
- Additional scenarios include climate change/drought