Water Sustainability in Coachella Valley

Rosalyn Prickett

Sr Water Resources Planner

Woodard & Curran

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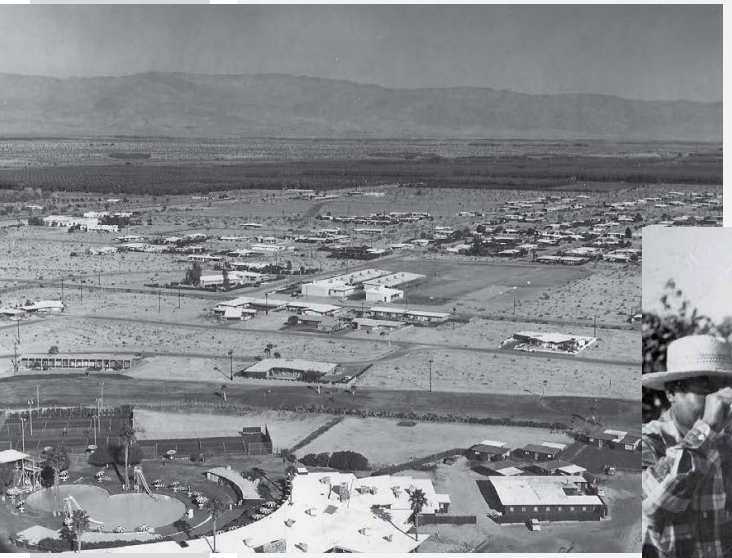
Long History of Active Local Water Management

- History of the Valley is one of agricultural and urban growth, accompanied by increasing water demands and periods of groundwater overdraft



Reliable Water Supply Takes Many Sources

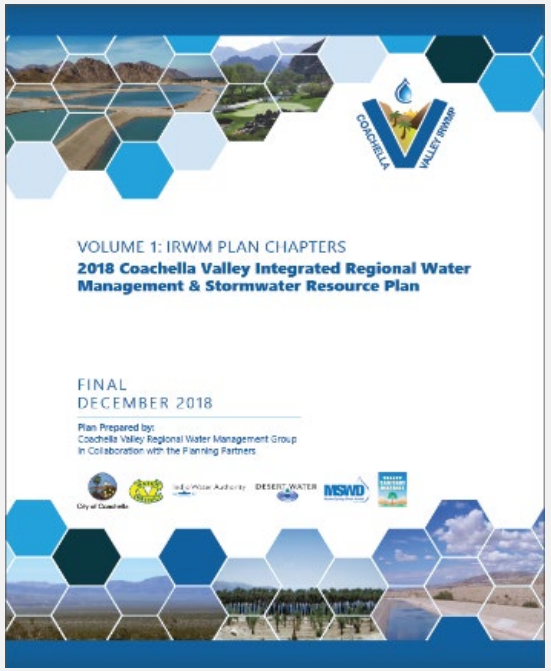
- Capture and recharge of Whitewater River stormflows began in 1918
- Coachella Canal completed in 1949, bringing Colorado River water to support agriculture in East Valley
- CVWD and DWA contract for State Water Project (SWP) water in 1963, beginning construction of several replenishment basins
- Mid-Valley Pipeline constructed in 2009 to deliver Canal water and recycled water

Coachella Canal Construction

Whitewater River Spreading Grounds

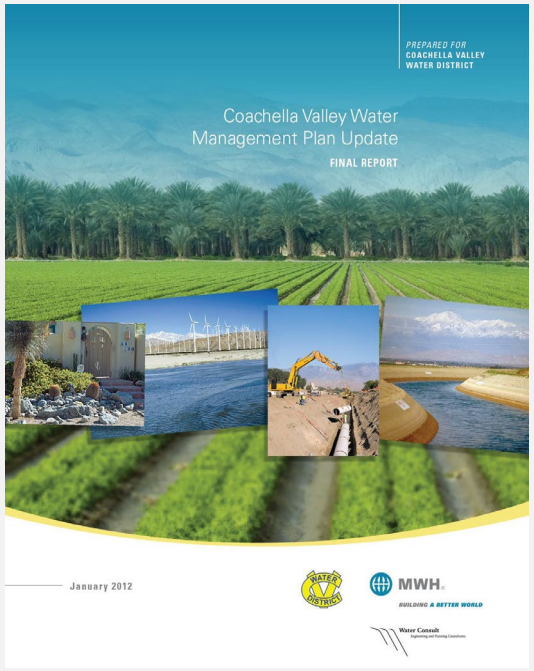
Mid-Valley Pipeline

Water Resources Planning in the Valley



Coachella Valley Integrated Regional Water Management / Stormwater Resource Plan

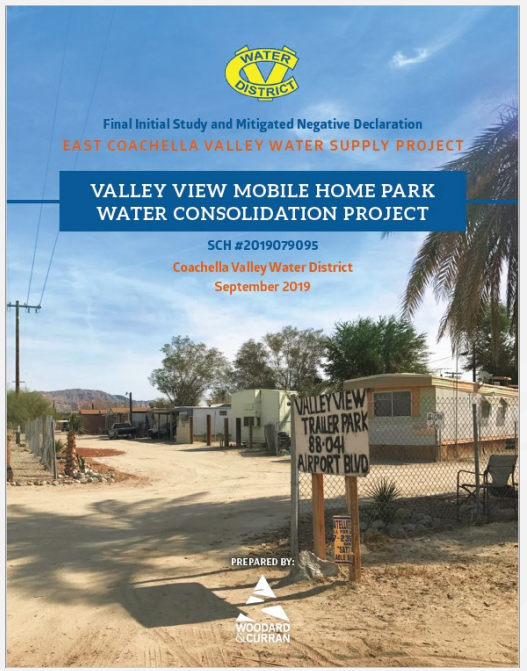
Initiated in 2010 to document critical water supply, wastewater, and storm/flood control needs and multi-benefit solutions



Coachella Valley Water Management Plan = Indio Subbasin Alternative Plan

Initiated in 1994 to ensure adequate supplies were available to meet future water demands

Currently working on 2022 Indio Subbasin Alternative Plan Update



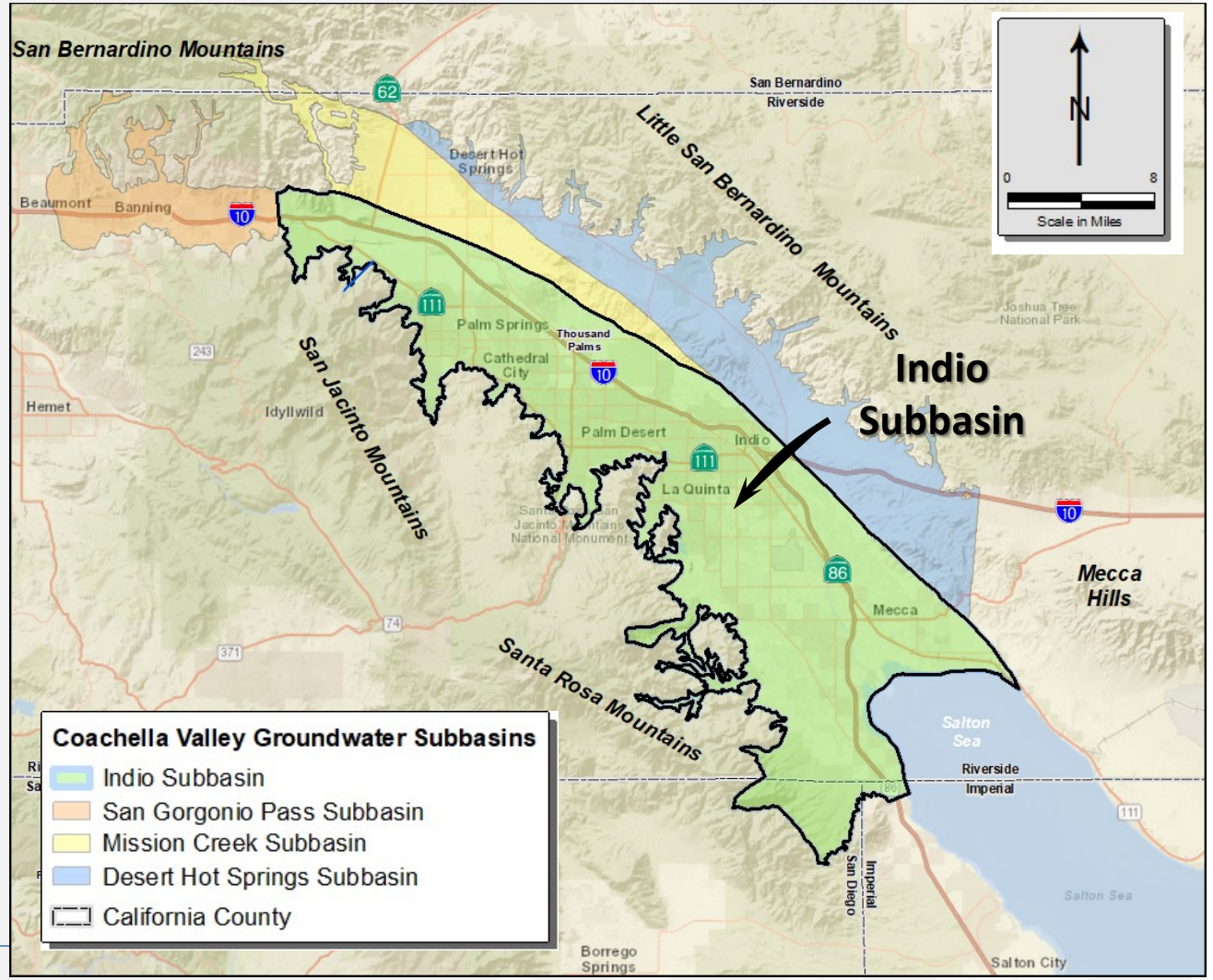
East Coachella Valley Water Supply Project

Initiated in 2017 to prioritize consolidation of small water systems into CVWD's potable water system

Sustainable Groundwater Management Act (SGMA)

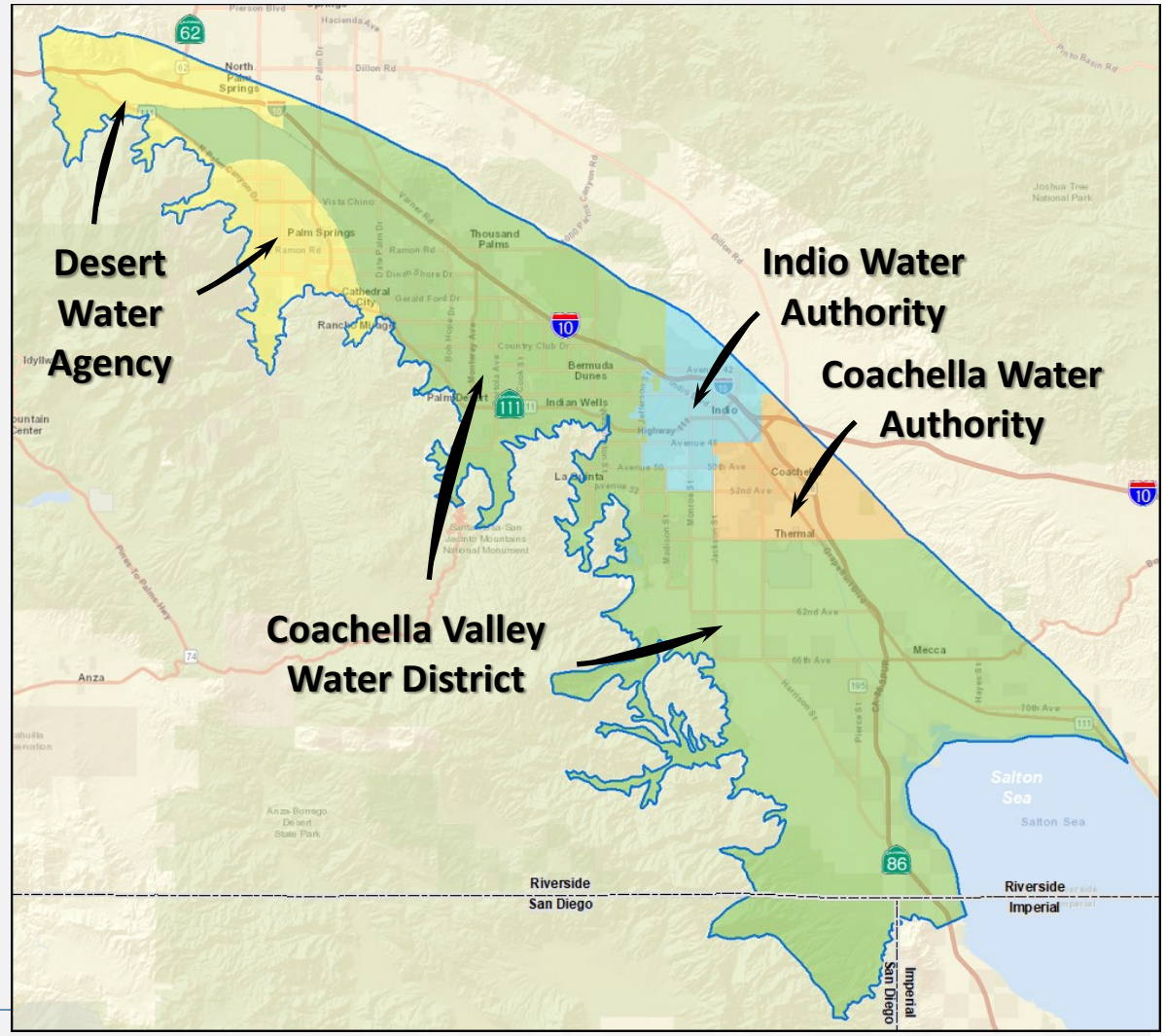
Landmark legislation in 2014

- Provides a framework for sustainable management of groundwater basins
- Promotes local management
- Defines Indio Subbasin and Mission Creek Subbasin as medium priority
  - Requires the Subbasins to be sustainably managed within 20 years
- Sets regulatory deadlines for submitting plans, reporting progress, and achieving sustainable management



Roles/Responsibilities of Groundwater Sustainability Agencies (GSAs)

- Each GSA has responsibility and authority for groundwater management within their respective boundaries
- Historical and ongoing cooperation
  - Memorandum of Understanding
  - Joint submission of Alternative Plan
  - Collaboration on Annual Reports and 5-Year Plan Updates



What is Sustainable Management?

Management and use of groundwater in a manner that can be maintained without causing undesirable results:

- **Chronic lowering of Groundwater Levels**
- **Reduction of Groundwater Storage**
- **Land Subsidence**
- **Seawater Intrusion**
- **Groundwater Quality Degradation**
- **Depletion of Interconnected Surface Water**

CVWMP / Alternative Plan Goals

Eliminate groundwater overdraft

Maximize conjunctive use opportunities

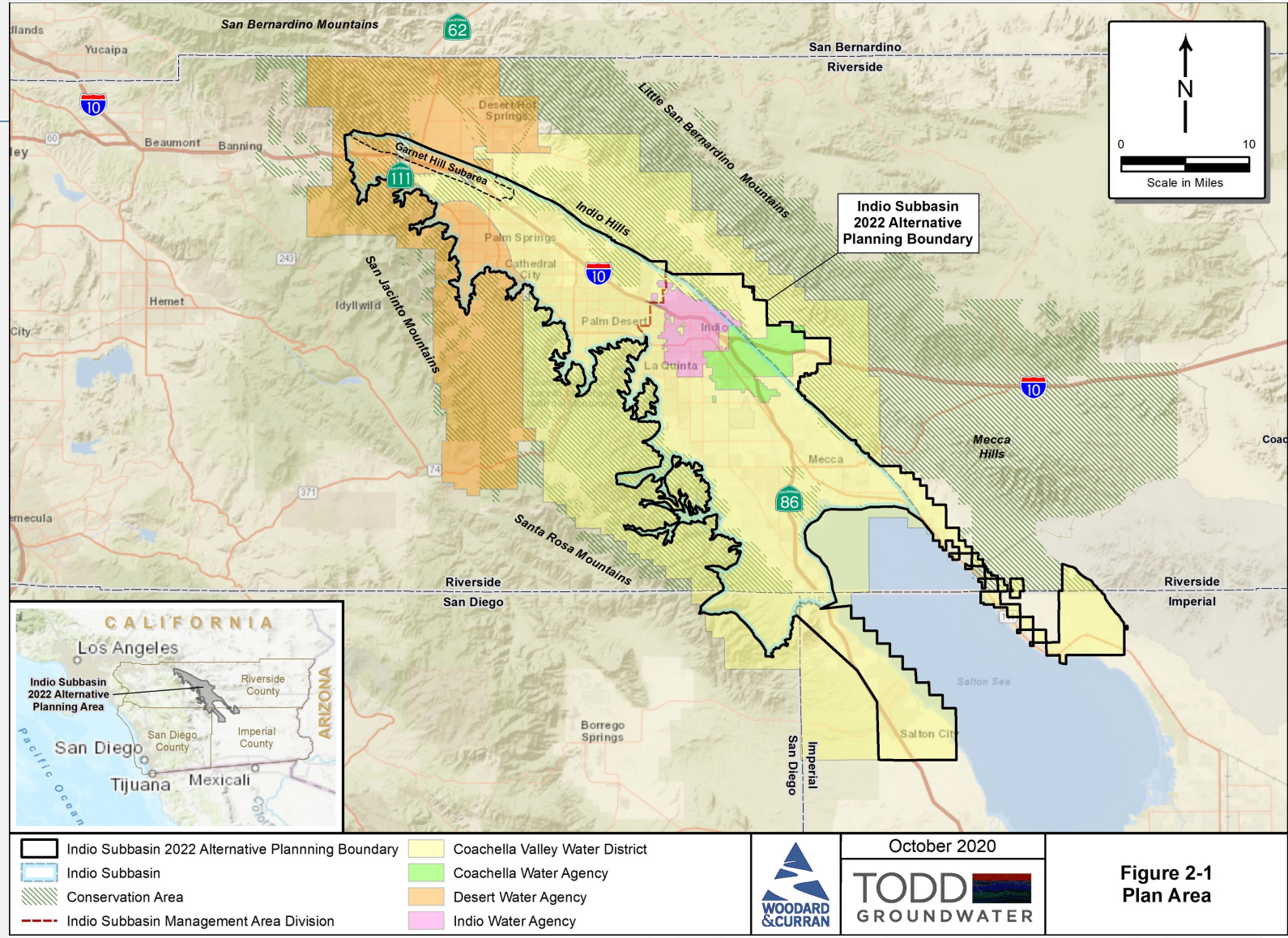
Minimize adverse economic impacts to water users

Minimize environmental impacts

Plan Area

Planning Boundary

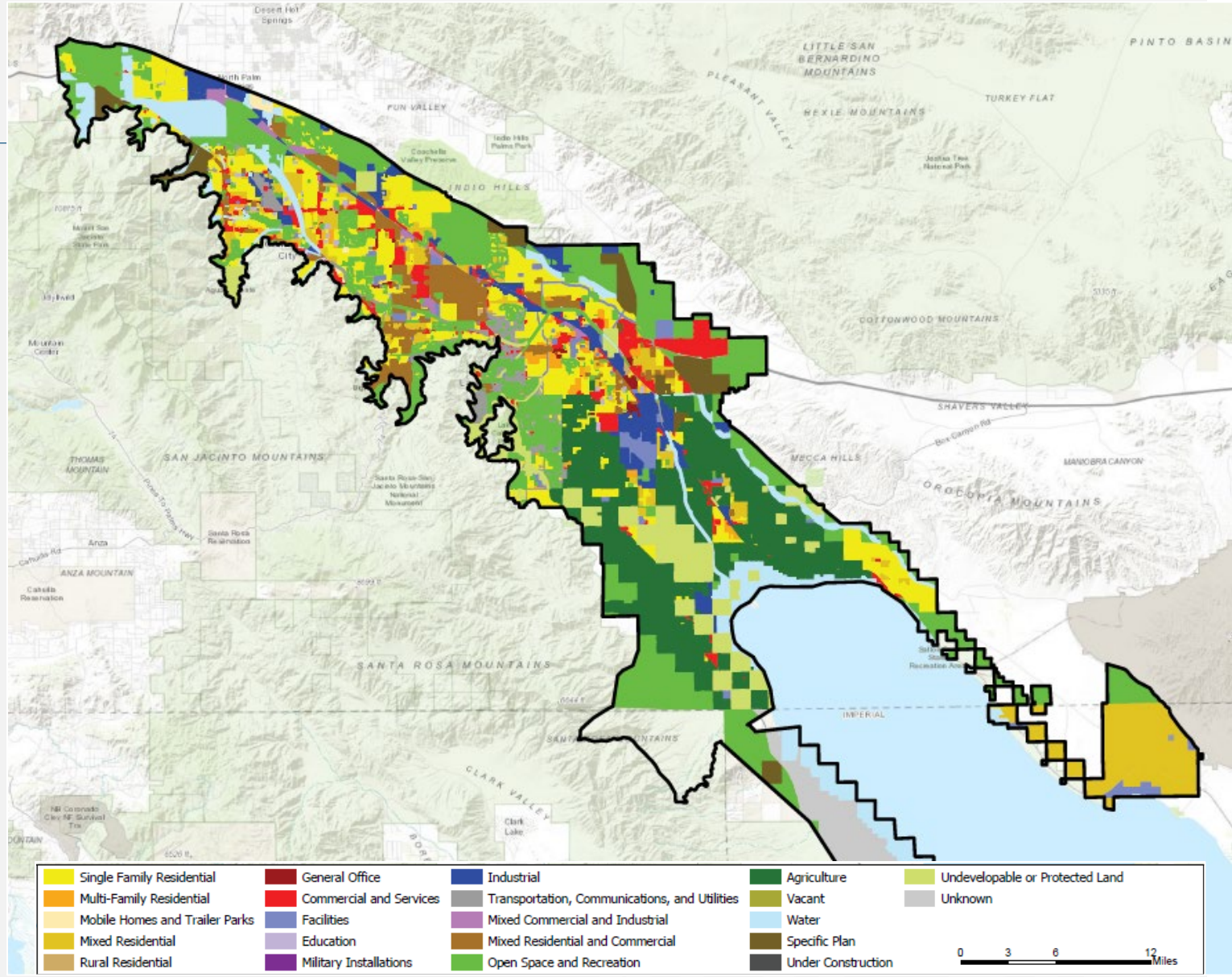
- All of Indio Subbasin
- Extends east to include potential sphere of influence for IWA and CWA
- Extends south to include portions of CVWD service area in the northeast and northwest shores of the Salton Sea



Plan Area

Land Use

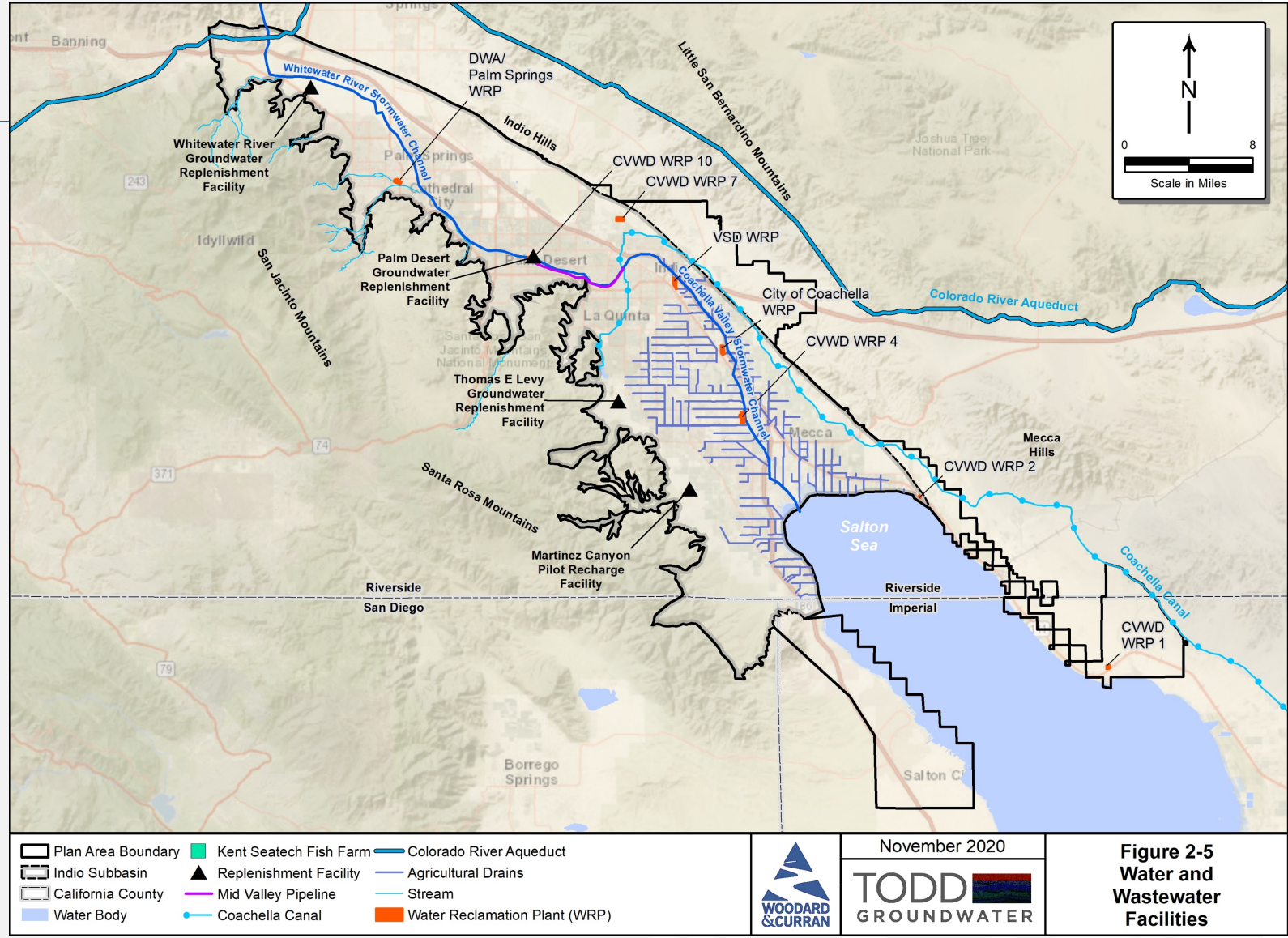
- General Plan Land Use - Buildout
- Southern California Association of Governments (SCAG)
- 2020 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)



Plan Area

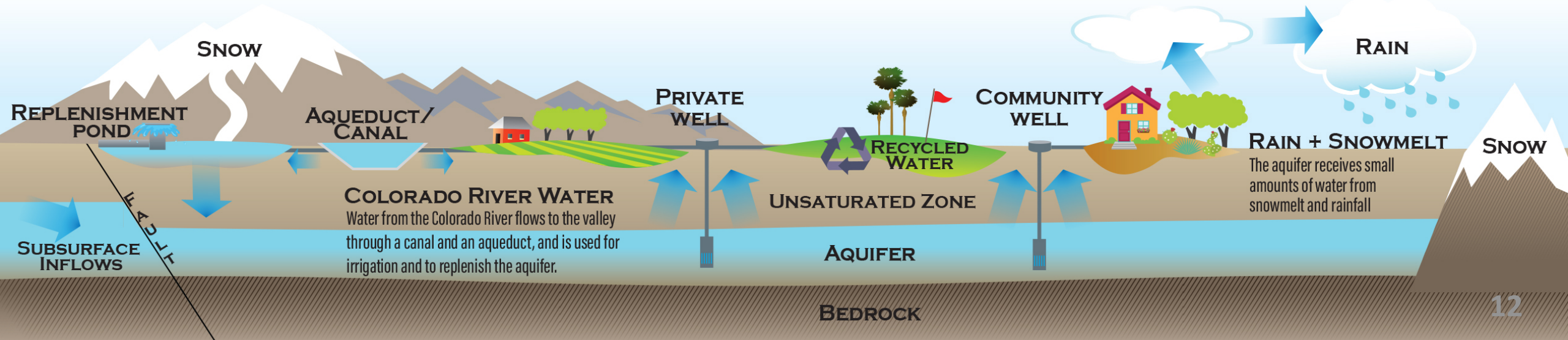
Water Management

- Major water supply conveyance
- Water sources and treatment facilities



Hydrogeologic Conceptual Model

- Provides framework for understanding the movement of surface water and groundwater in the Indio Subbasin
- Provides context to identify major water budget components
- Provides basis for development of numerical groundwater model
- Helps to identify data gaps



Subbasin Inflows and Outflows

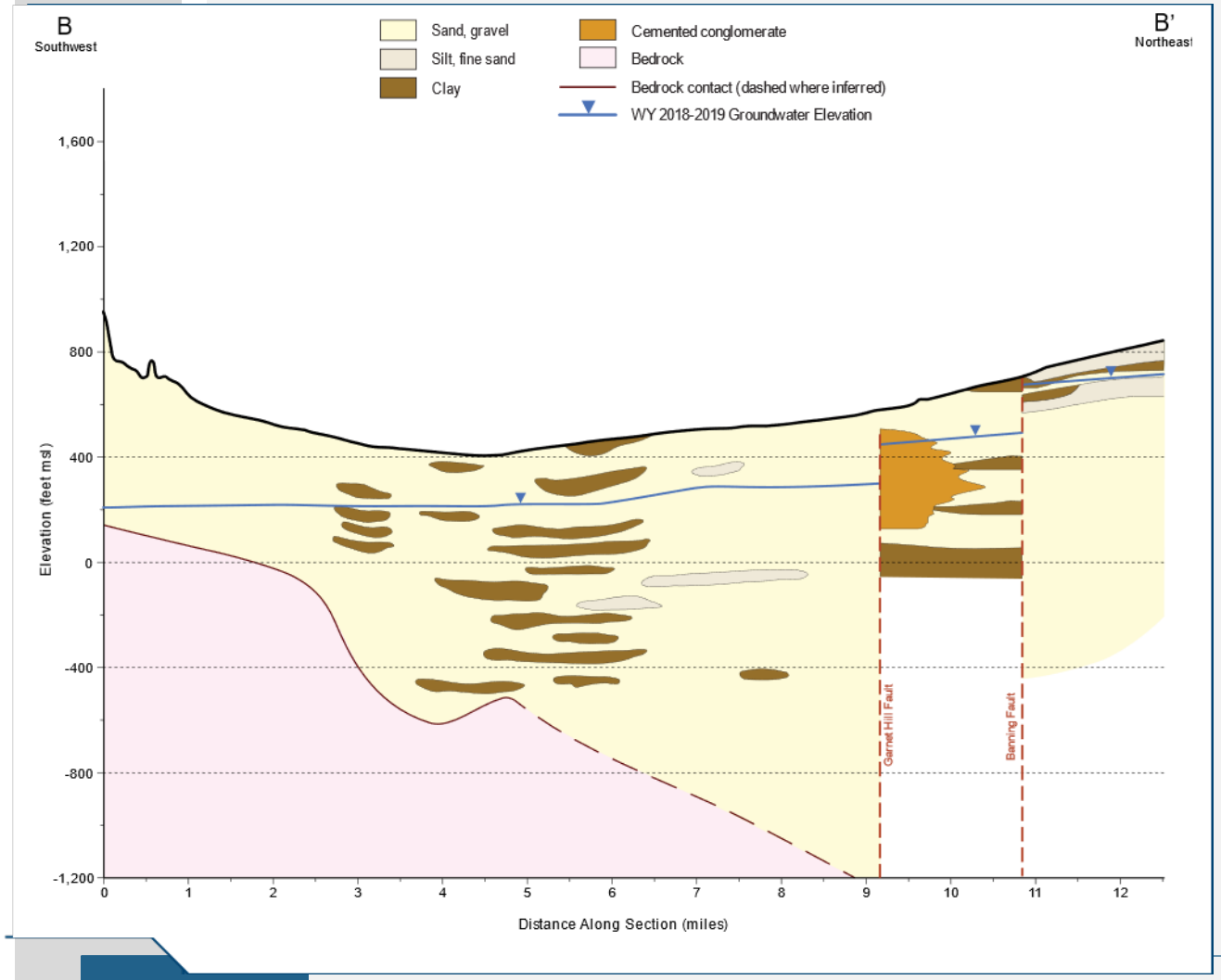
Groundwater Inflows

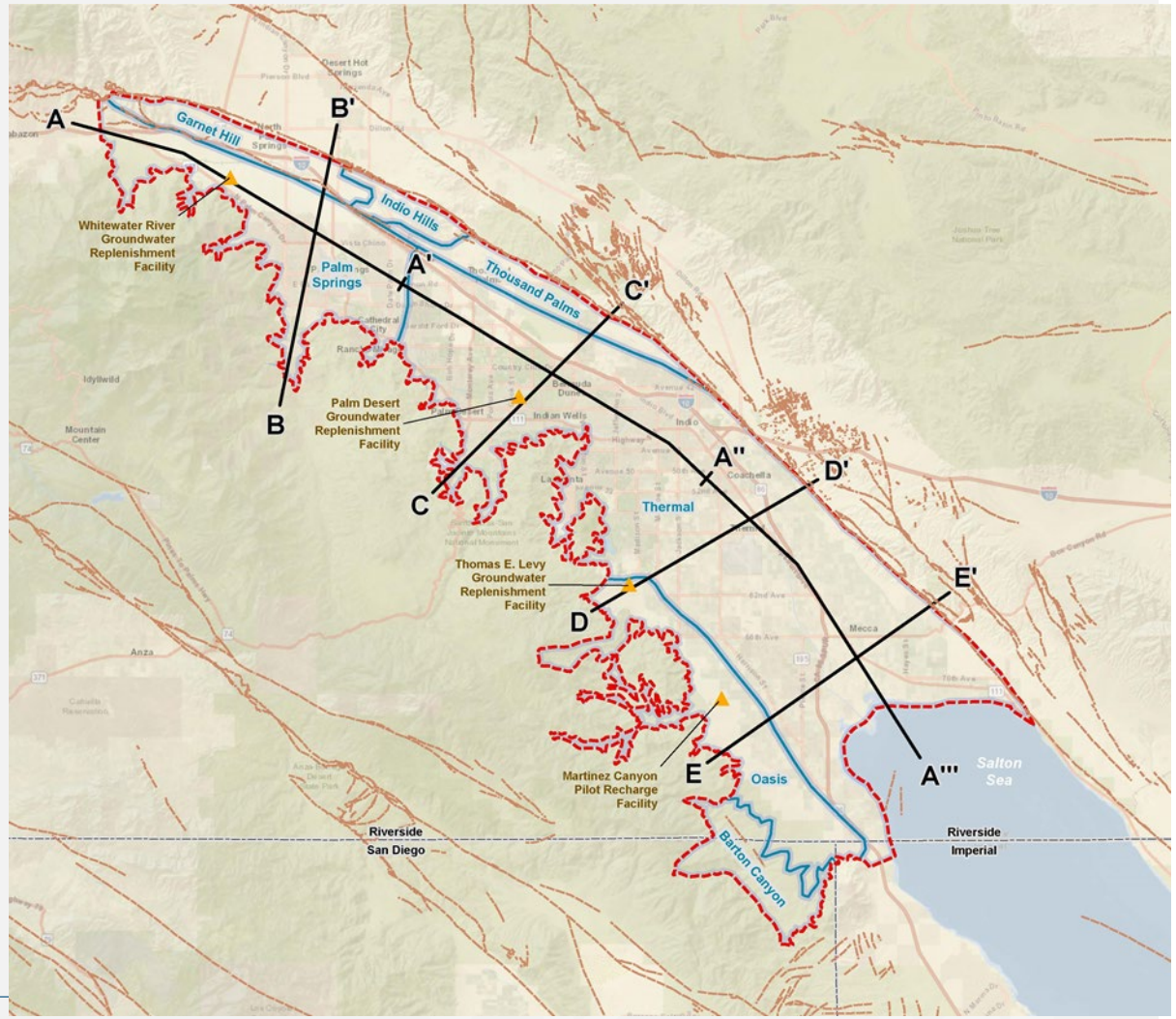
- Infiltration of watershed runoff
- Subsurface inflows
- Artificial recharge of imported water (replenishment)
- Wastewater percolation
- Return flows from municipal, agriculture, golf courses, etc.

Groundwater Outflows

- Groundwater pumping
- Subsurface outflows
- Drain flows to Salton Sea
- Evapotranspiration (ET)

Subbasin Cross Sections





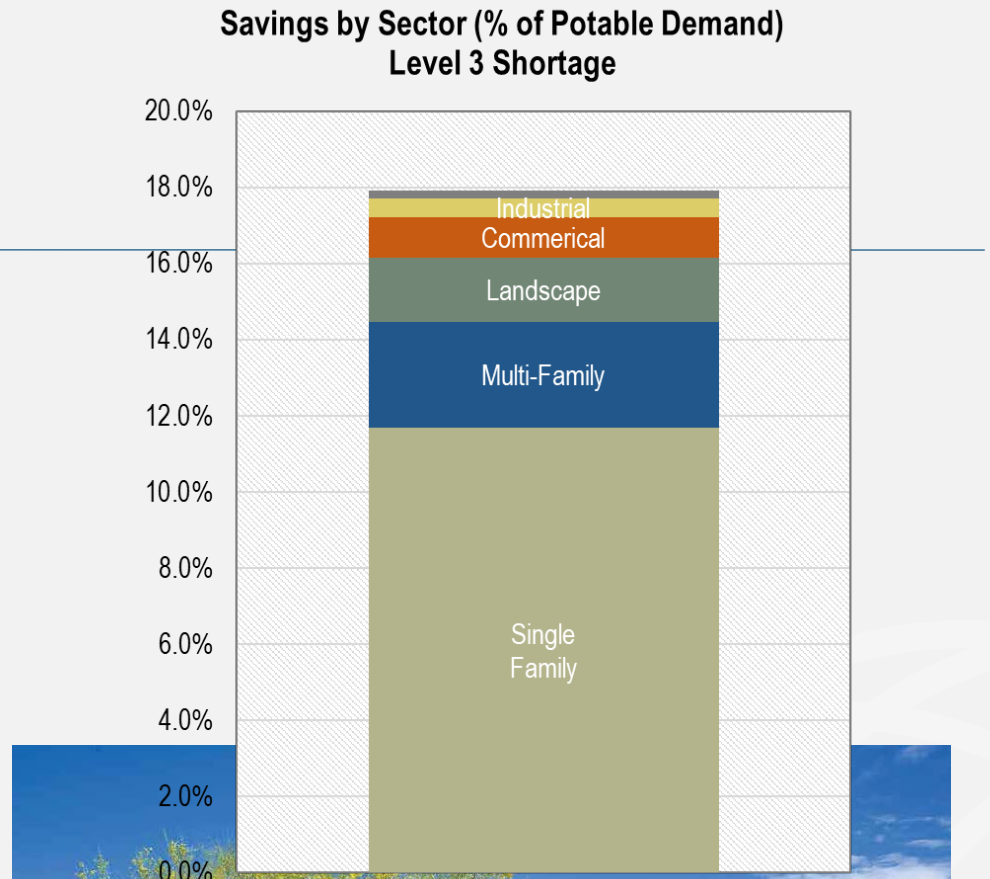
Municipal Demands – Forecast Process

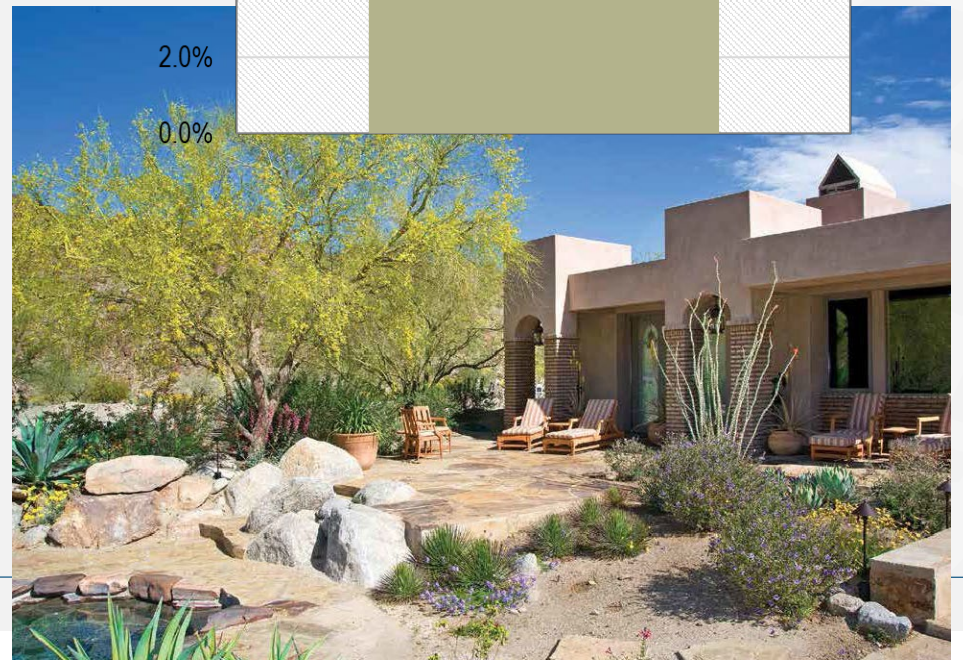
1. Regional Growth Forecast	2. Land Use Inventories	3. Unit Demand Factors	4. Projected Water Loss	5. Adjustment Factors
Using SCAG 2020 growth projections for households, population, and employment	Allocating growth to residential and non-residential based on SCAG land use mapping	Using 5-year (2015-2019) averages from customer billing data to develop unit demand factors	Developing water loss estimates based on validated Water Loss Audit reports	Developing conservation savings estimates for indoor and outdoor (new development only) water use

Municipal Demands

Water Conservation

- Municipal conservation
  - Indoor use rebate programs
  - Landscaping rebate programs
  - Education/workshops
- Golf course conservation
  - Education
  - Recycled water
  - Collaborative tools
  - Desert landscaping rebate
- Agricultural conservation
  - Education
  - Flood to drip rebate
  - Soil/irrigation management training

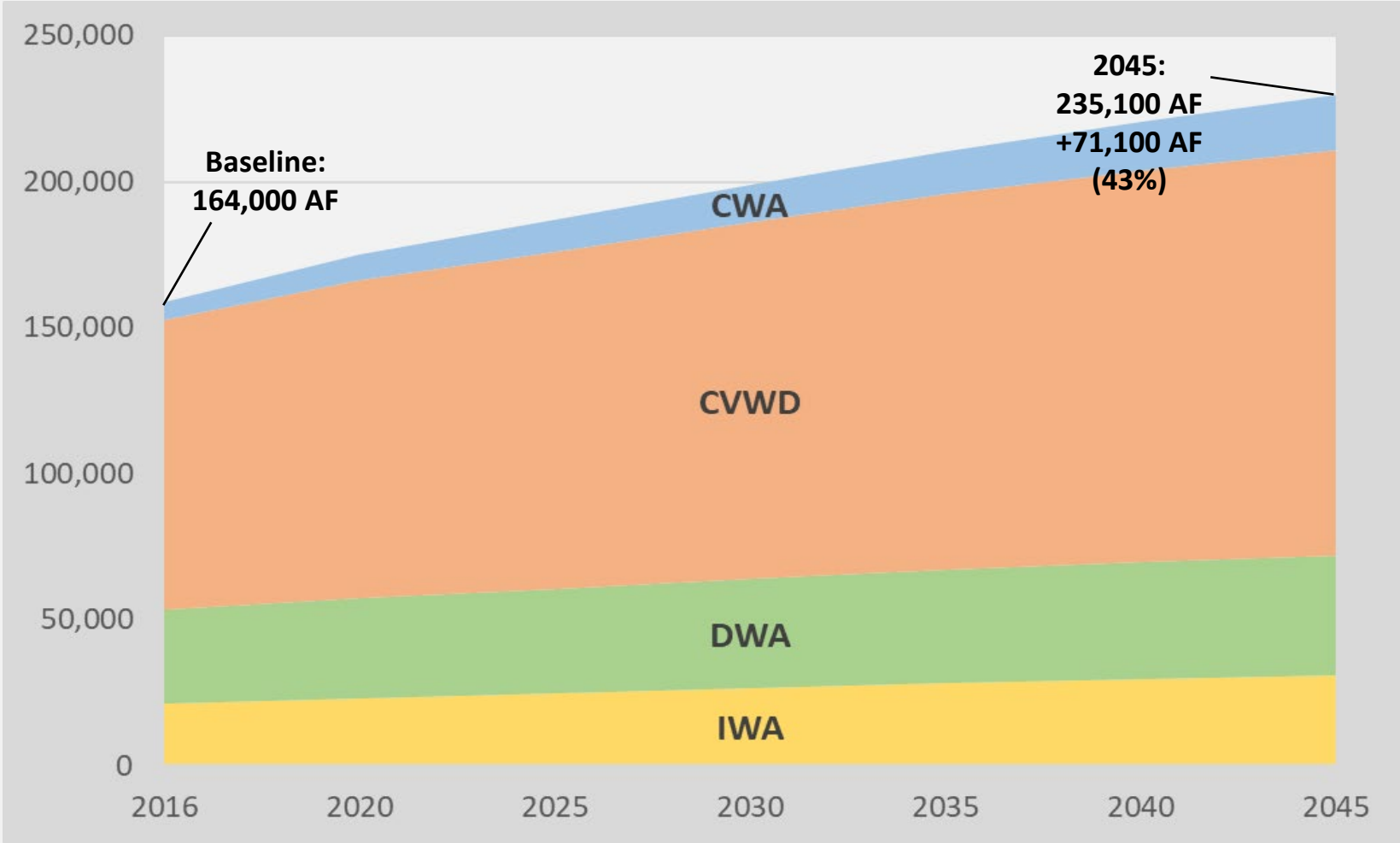




Municipal Demands

Projected GSA Demands

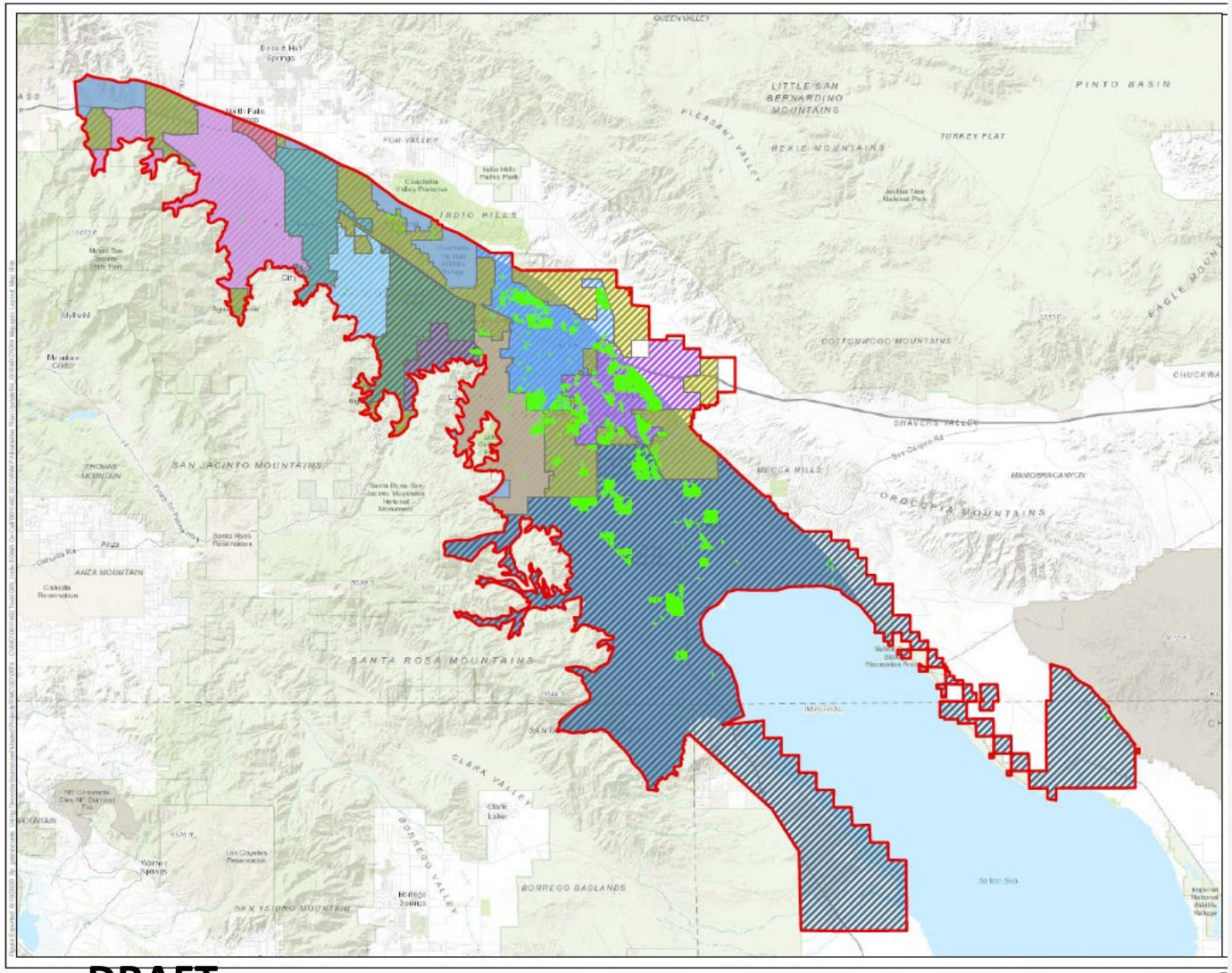
- **CWA:** 6,500 AFY increasing to 18,700 AFY (190%)
- **CVWD:** 98,900 AFY increasing to 138,800 AFY (39%)
- **DWA:** 32,200 AFY increasing to 41,000 AFY (28%)
- **IWA:** 21,400 AFY increasing to 31,000 AFY (45%)



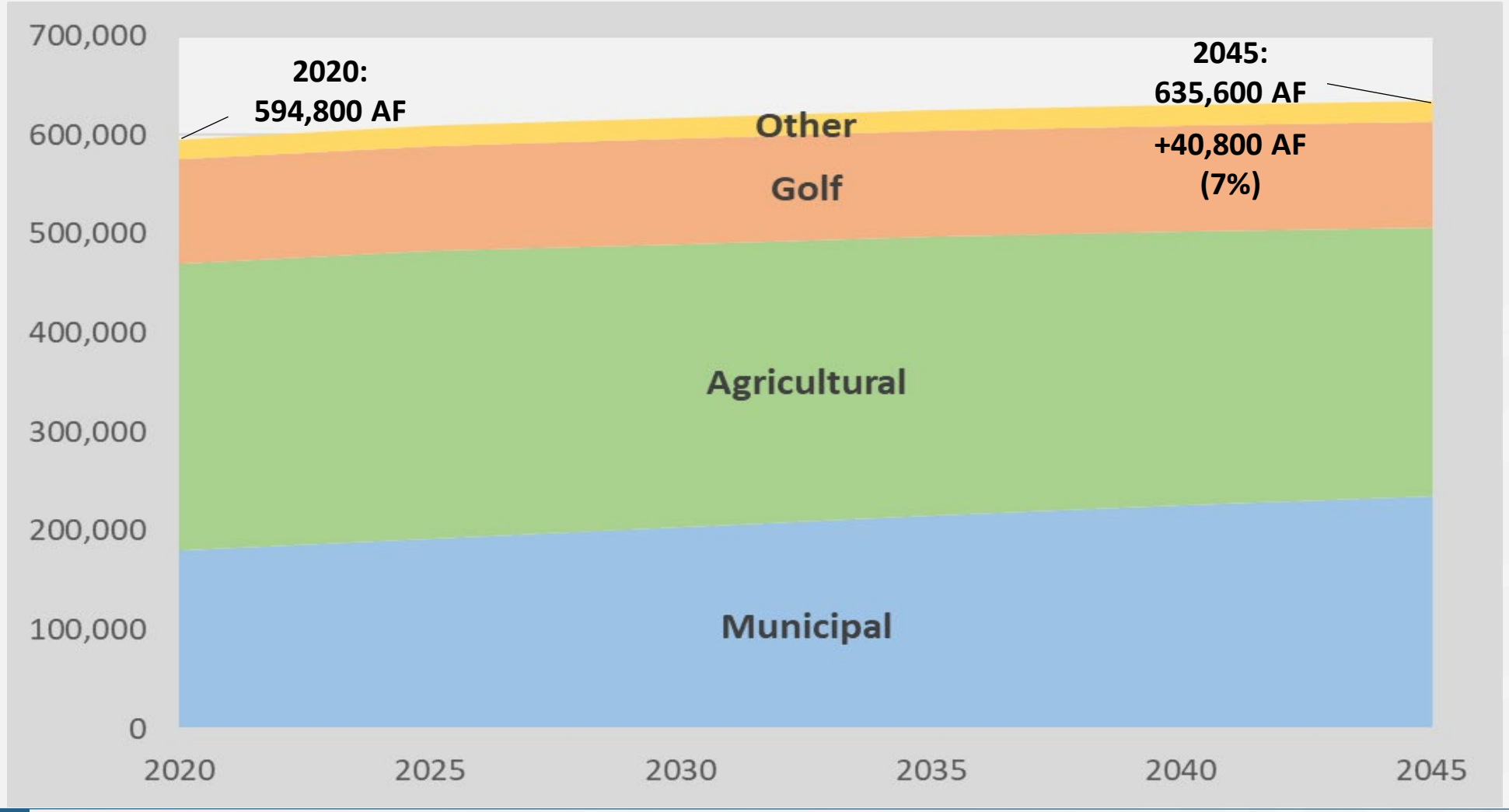
Agricultural Demands

Projected Agricultural Demands

- Projected urbanization of 14,300 acres
  - 7,000 acres of urbanization projected to occur on existing cropped lands
- Addition of 950 acres new agriculture on existing idle lands
- Forecast:
  - Decrease in agricultural water use from 295,150 AFY to 271,300 AFY by 2045

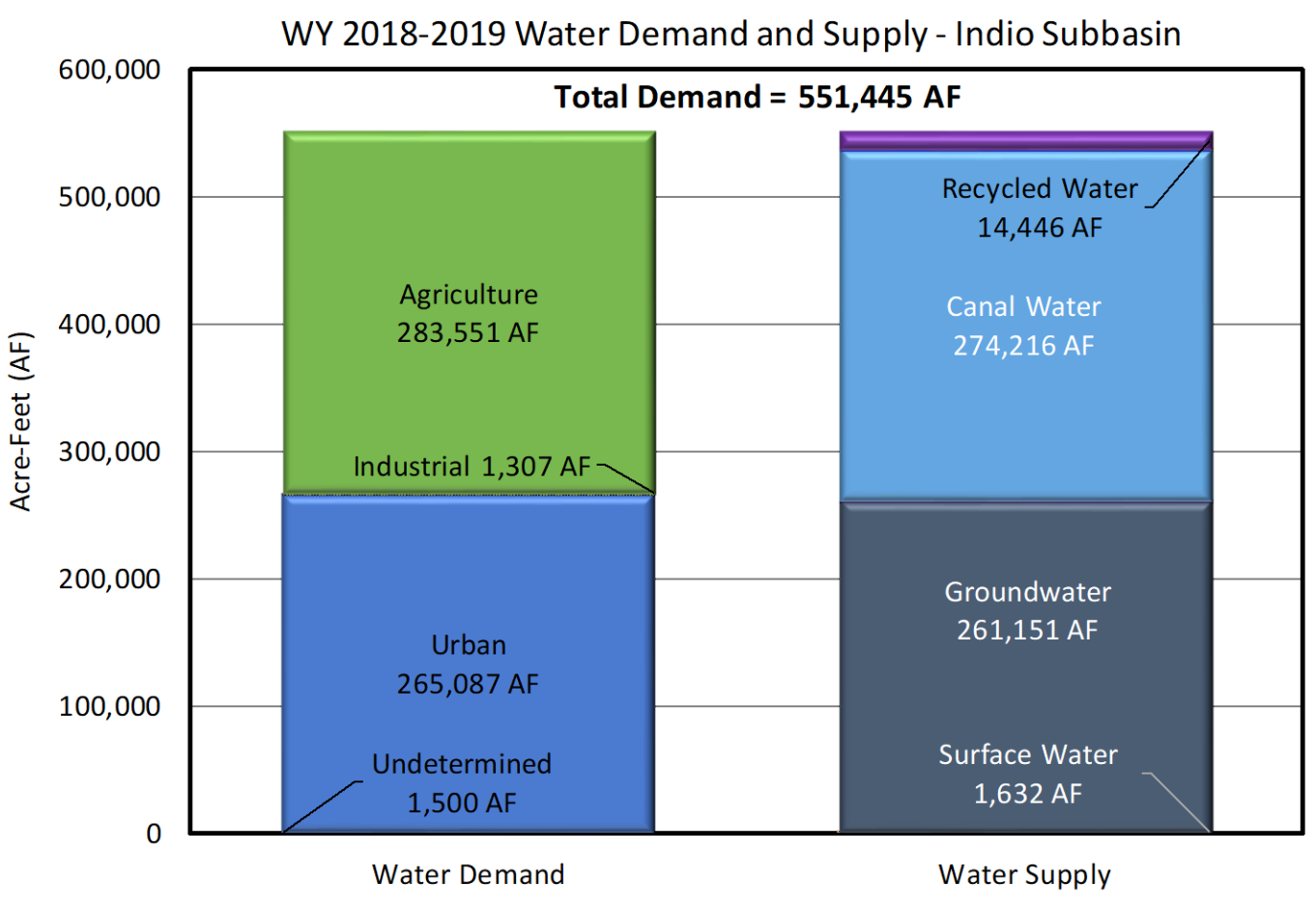


Total Water Demand Forecast (AFY)

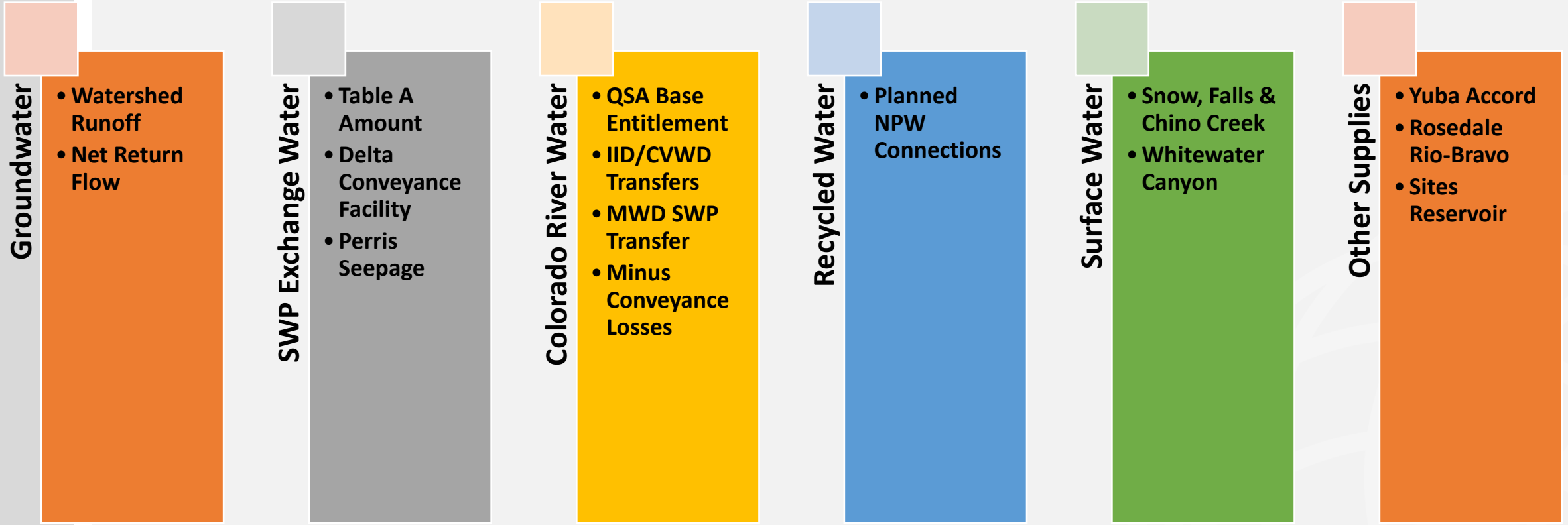


Match Local Water Demands with Supplies

- WY 2018-2019 water demand: 551,445 acre-feet
- Coachella Canal water and groundwater make up most of the water supply
- Average natural recharge is only ~59,000 acre-feet / year (11% of total water supply)
- Management actions are key to avoiding overdraft…

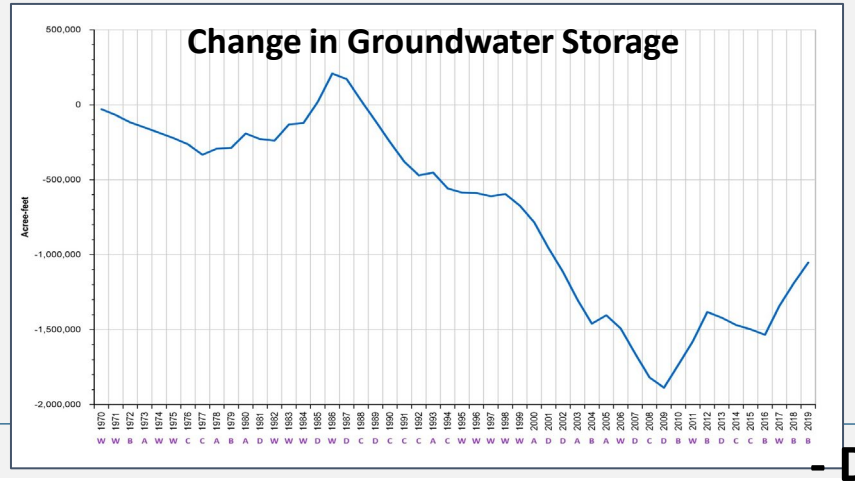


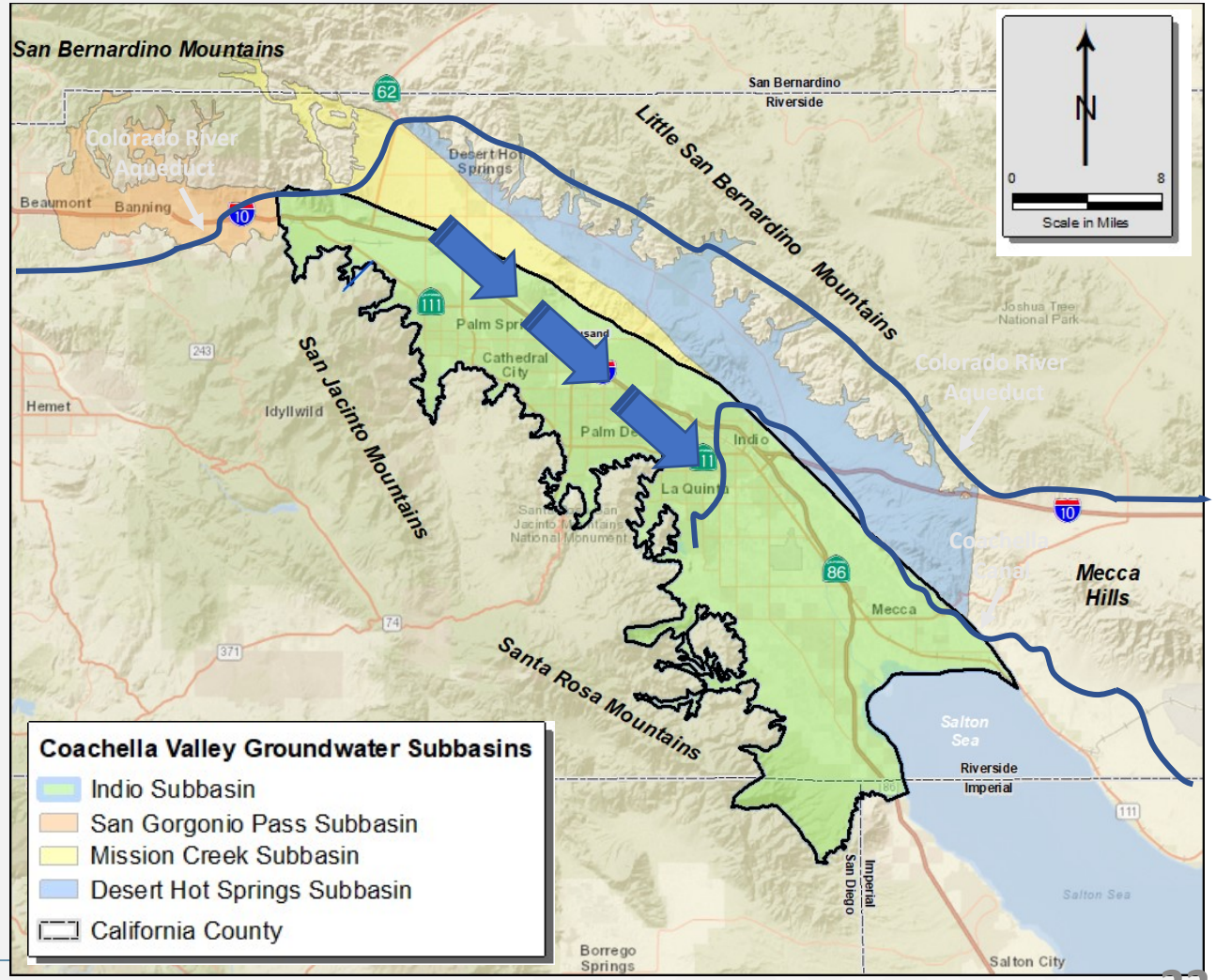
Supply Portfolio for Indio Subbasin



Groundwater

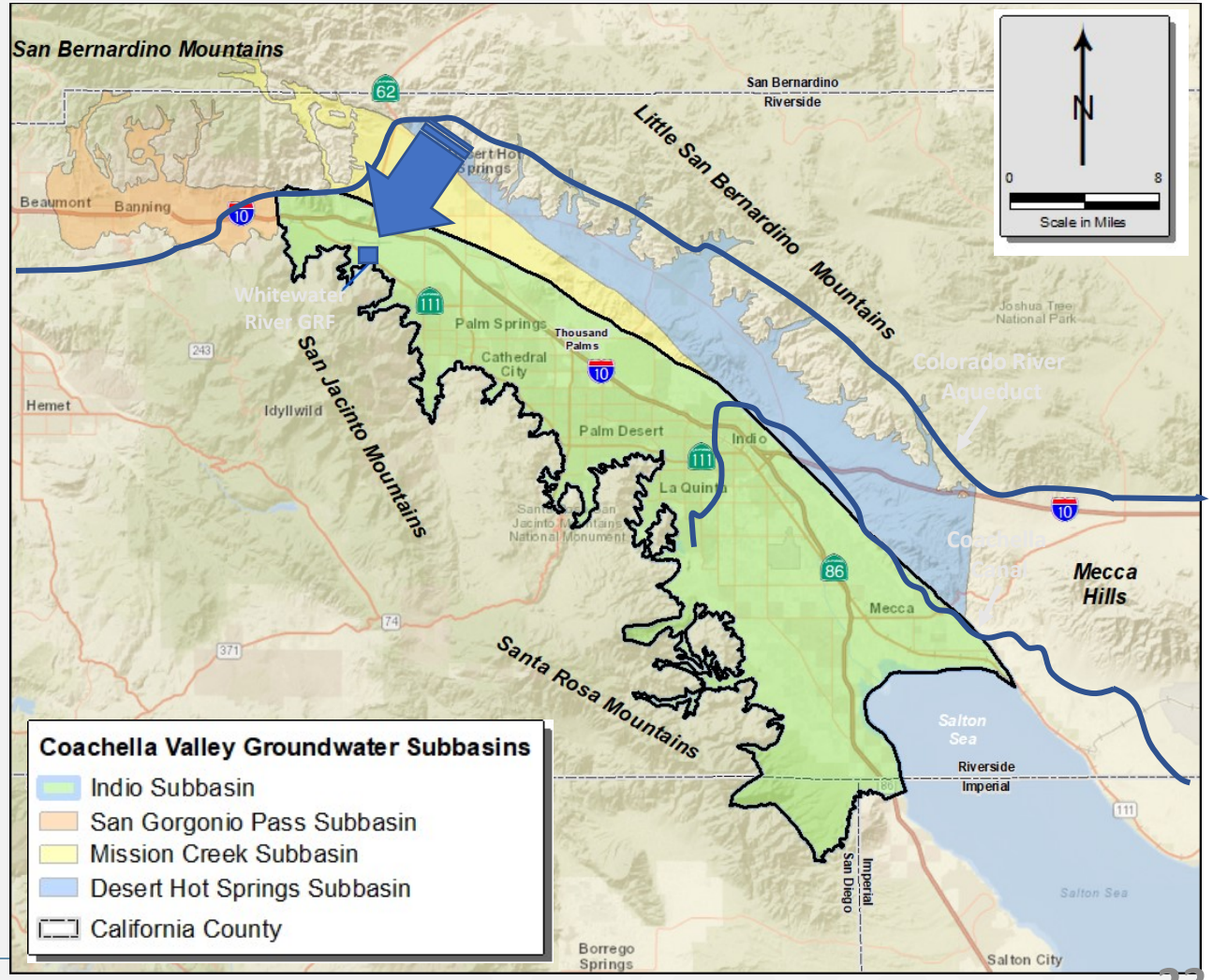
- Indio Subbasin provides groundwater storage capacity
  - Total groundwater in storage has increased since 2009
  - Goal is long-term sustainability
- Water budget is *work in progress* with groundwater model





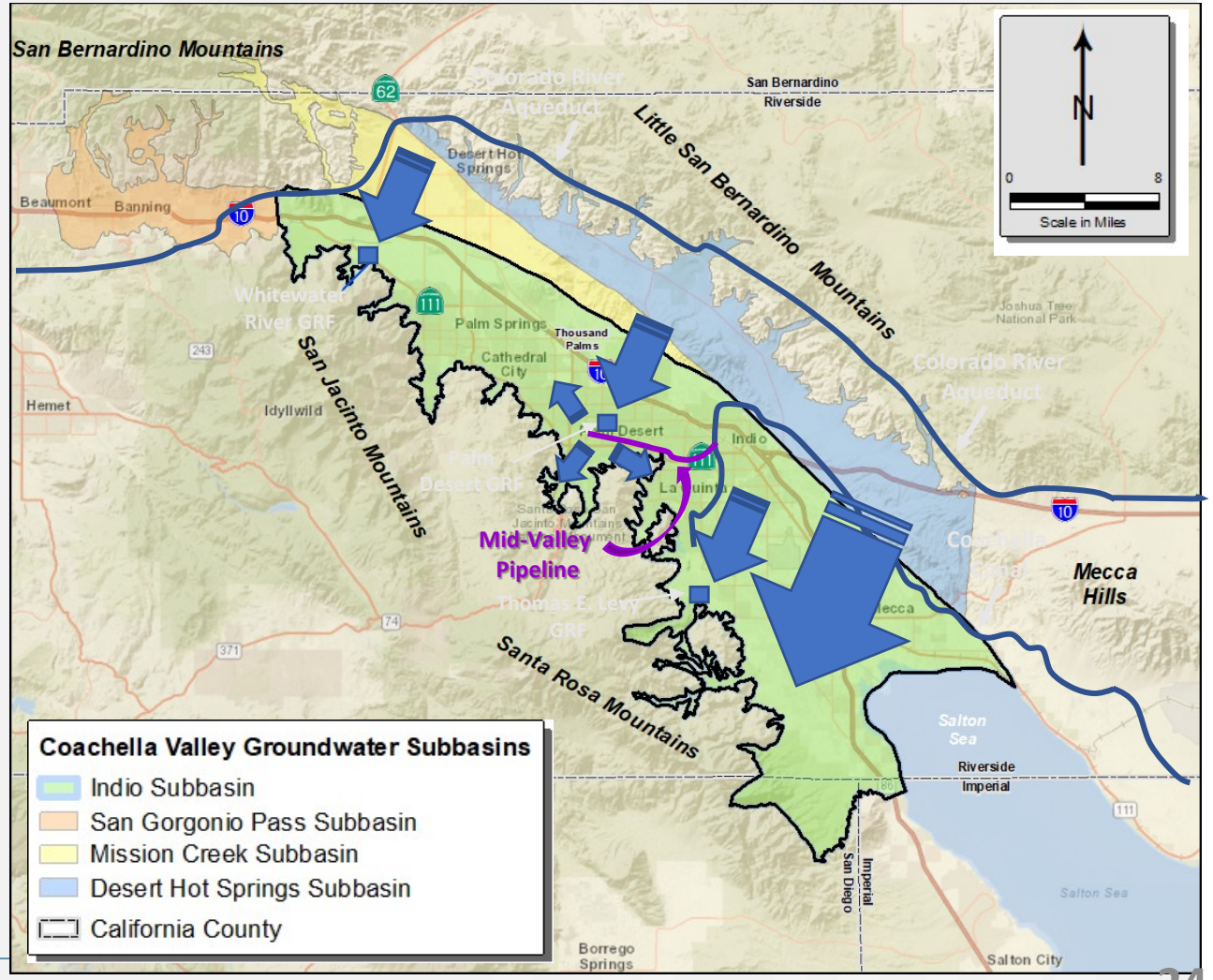
State Water Project (SWP) Water

- SWP Table A amount, plus transfers
  - SWP water exchanged with MWD for Colorado River water
  - Annually variable due to Northern California hydrology
  - Can include Advanced Delivery
- Forecast:
  - SWP Table A amount, assuming reliability of 58% annually and decreasing to 52% (96,600 AFY)
  - If Delta Conveyance Facility is constructed, reliability will improve (26,500 AFY)



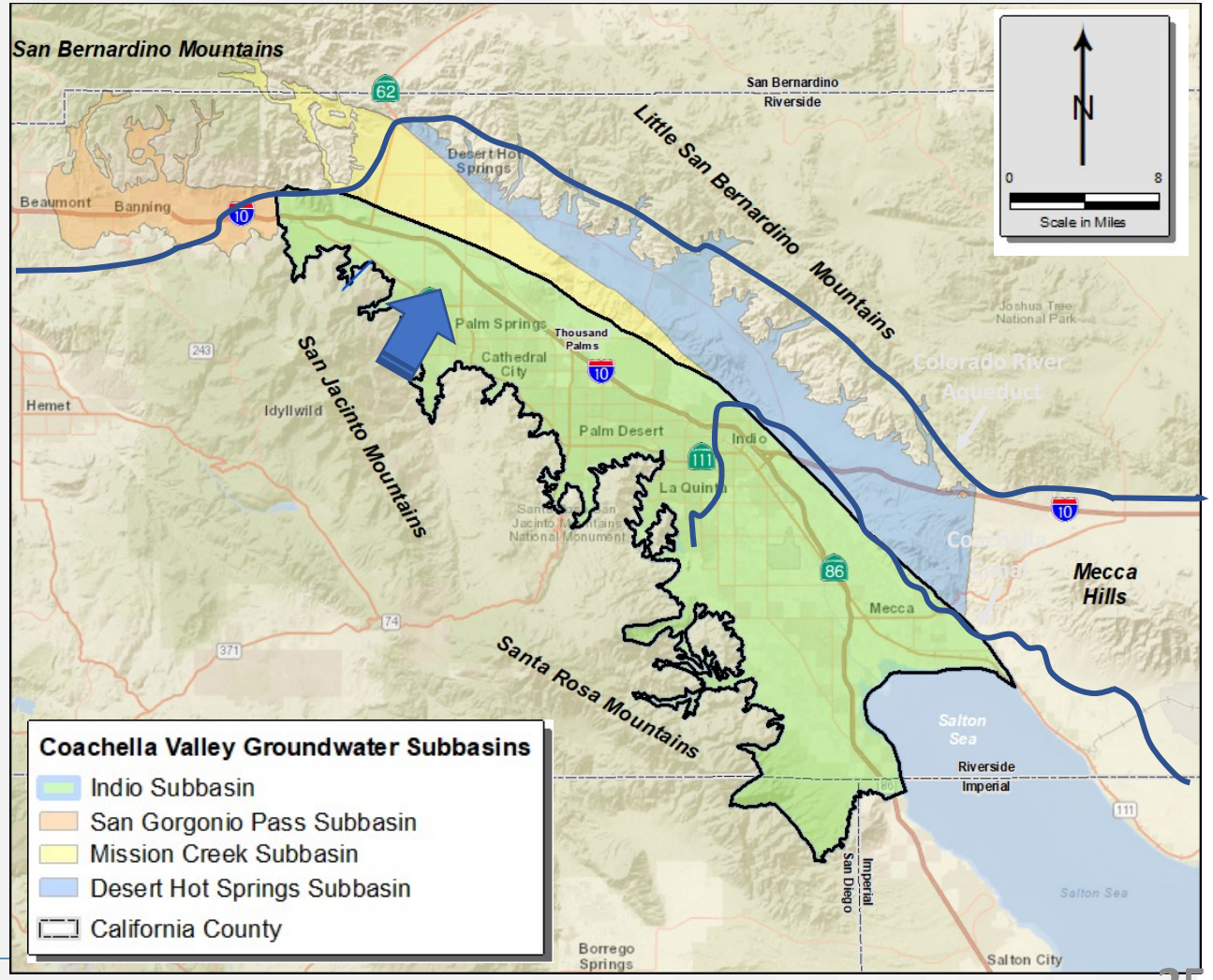
Colorado River Water

- 2003 QSA Entitlement, including MWD Transfer
  - QSA water delivered via Coachella Canal
  - MWD Transfer can be delivered by Canal or Aqueduct
- Forecast:
  - 2003 QSA Entitlement, minus conveyance and transfer losses (436,000 AFY)



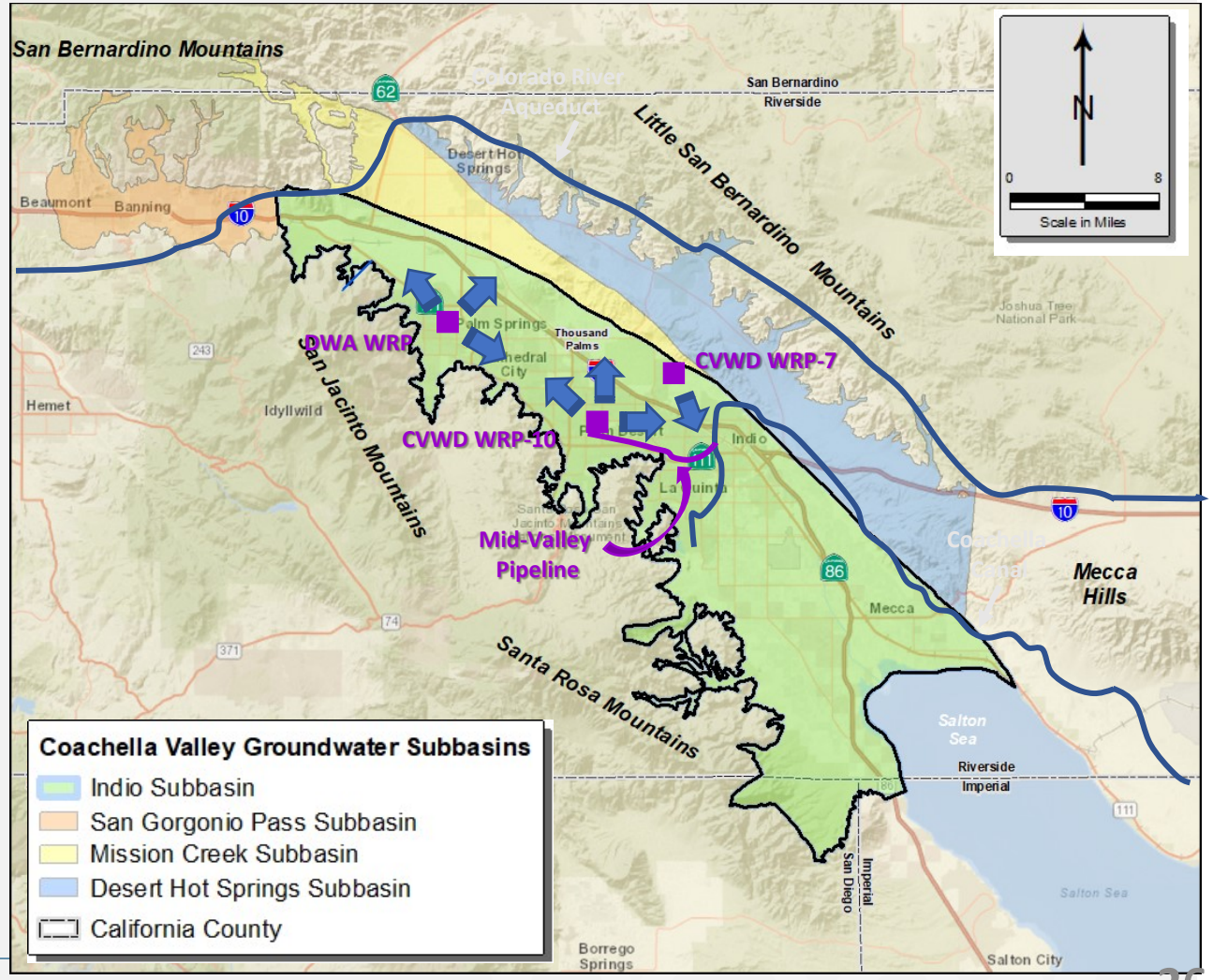
Surface Water

- Diversions at Snow, Falls, and Chino Creeks in San Jacinto Mountains and Whitewater River Canyon
- Forecast:
  - Continued delivery of 2,630 AFY increasing to 6,000 AFY



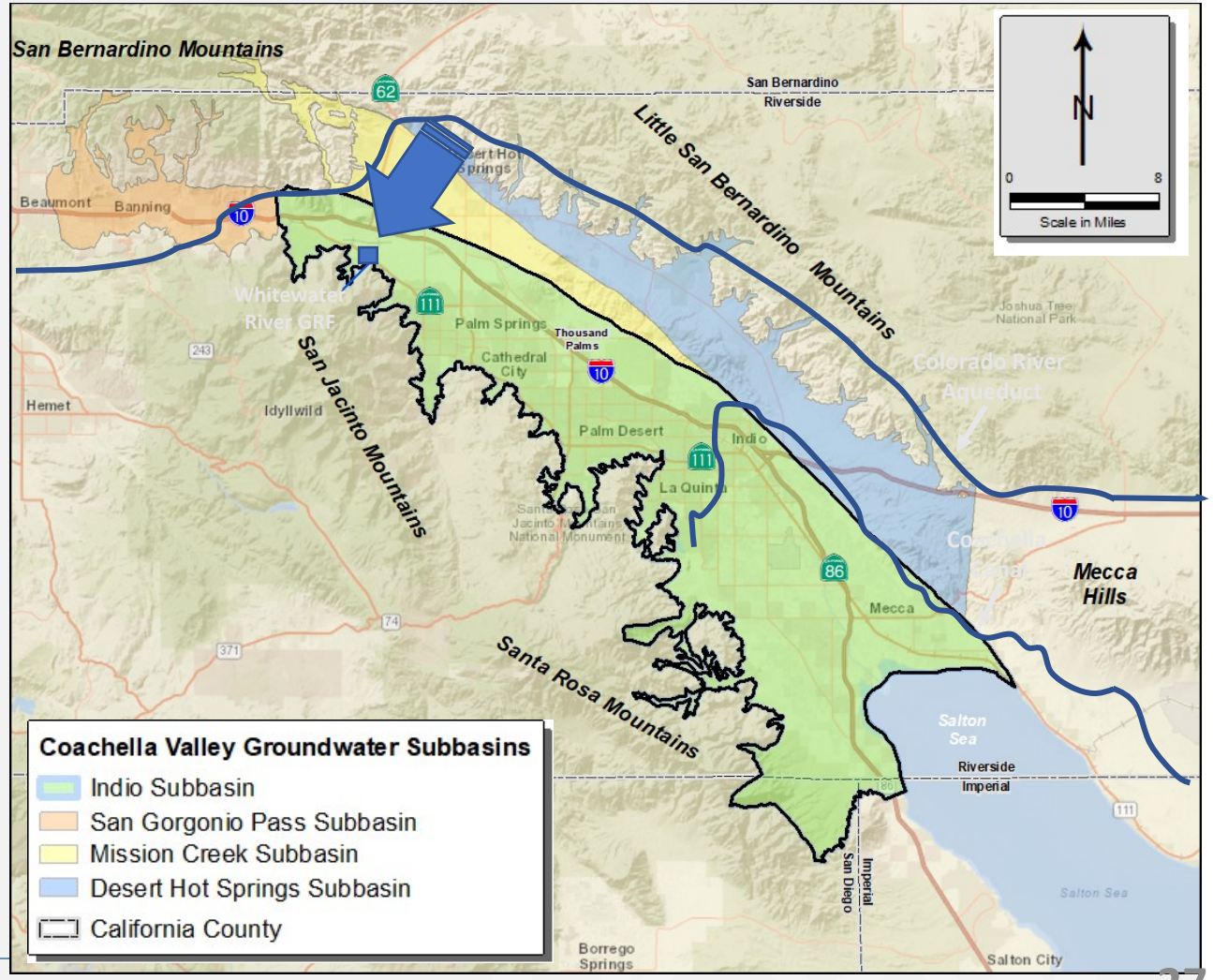
Recycled Water

- Produced at CVWD WRP-7 and WRP-10, and DWA WRP
  - Existing wastewater flow = 19,400 AFY
  - Tertiary capacity at existing WRPs = 30,800 AFY
  - Currently recycling 35% (14,600 AFY) of available supply
- Forecast:
  - Potential additional supply if *all* connections built = 20,900 AFY

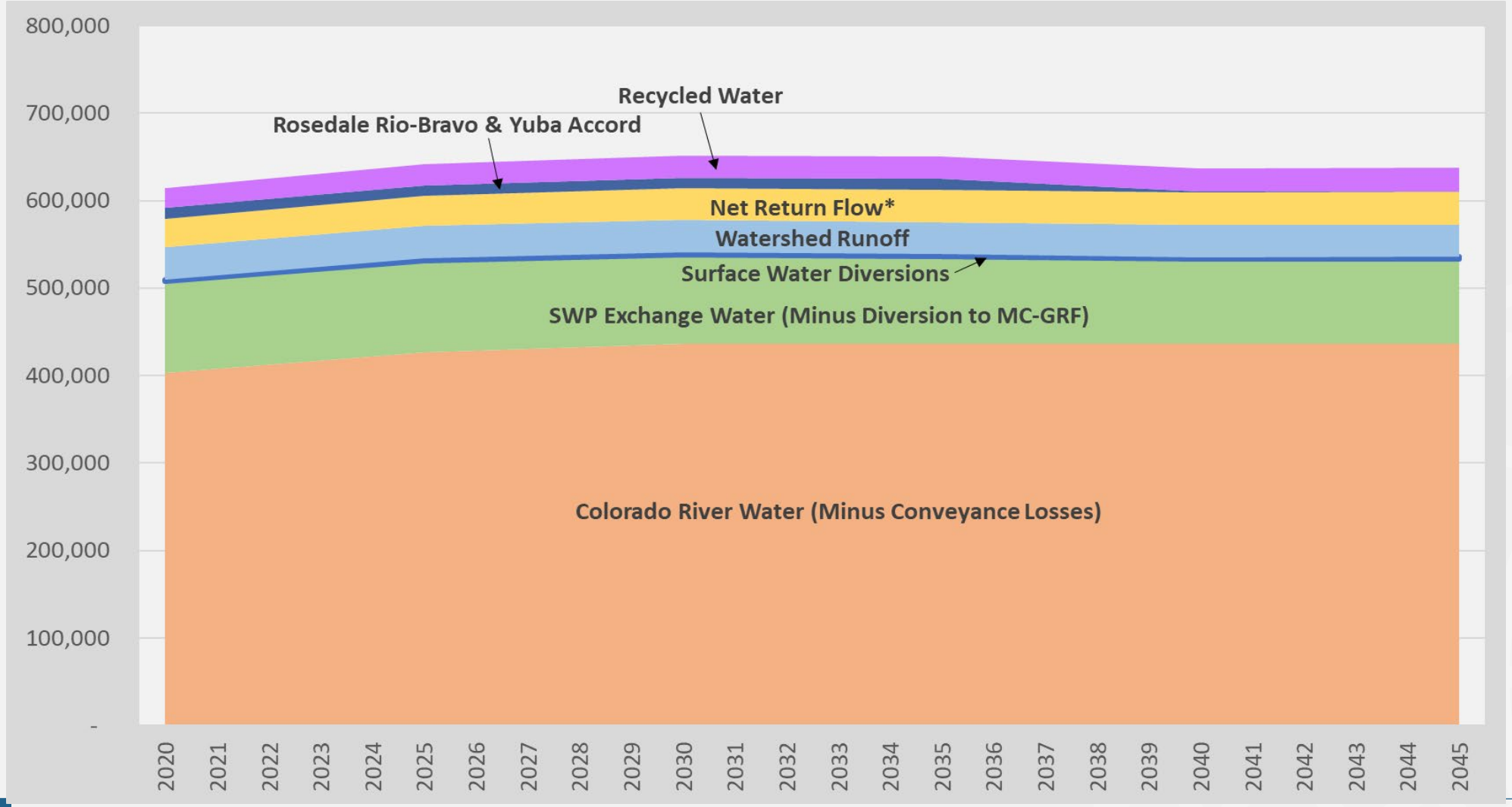


Other Supplies

- Yuba Accord and Rosedale Rio-Bravo transfers
- Construction of Sites Reservoir will provide additional supply
- Forecast:
  - Existing transfer agreements
  - If Sites Reservoir is constructed, additional supply will be available (14,000 AFY)



Forecast – Available Supplies



** Estimated at this time; will be refined by groundwater model*

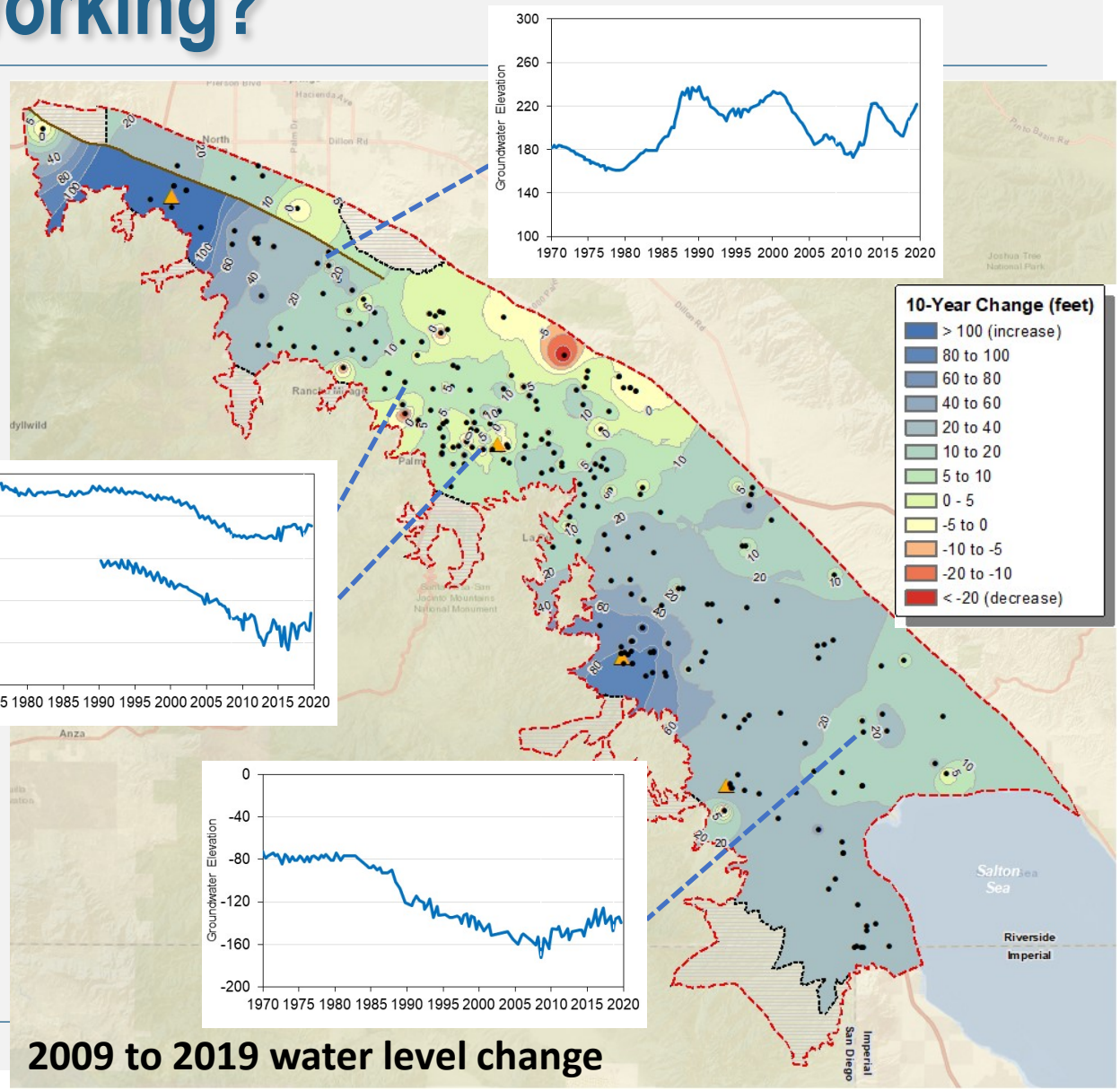
- DRAFT -

Combination of Management Actions is Needed

- Stormwater and imported water for groundwater replenishment:
  - Whitewater River (West Valley)
  - Thomas E. Levy (East Valley)
  - Palm Desert (Mid-Valley)
- Non-potable (Canal and recycled) water for irrigation, reduces groundwater pumping
- Conservation reduces water demand

Is the Alternative Plan Working?

- CVWMP / Alternative Plan has resulted in significant groundwater storage increases across the Indio Subbasin
- Over the last 10 years, groundwater levels have increased regionally
- More work is planned and needed to ensure continued success of the Plan



2009 to 2019 water level change

Plan Update – Questions to be Answered

- What new factors/conditions could affect future water demand and supplies?
- Are there any new projects or management actions to consider?
- What goals and criteria are appropriate to define groundwater sustainability?

Get Involved – Next Workshop

March 3, 2021
2:00 – 4:00 PM

GoToMeeting

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You can also dial in using your phone.
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Feel free to contact me:

Rosalyn Prickett
Woodard & Curran
rprickett@woodardcurran.com
(858) 875-7420