2022 Indio Subbasin Alternative Plan Update

Workshop #3

November 19, 2020

WATER CV DISTRICT

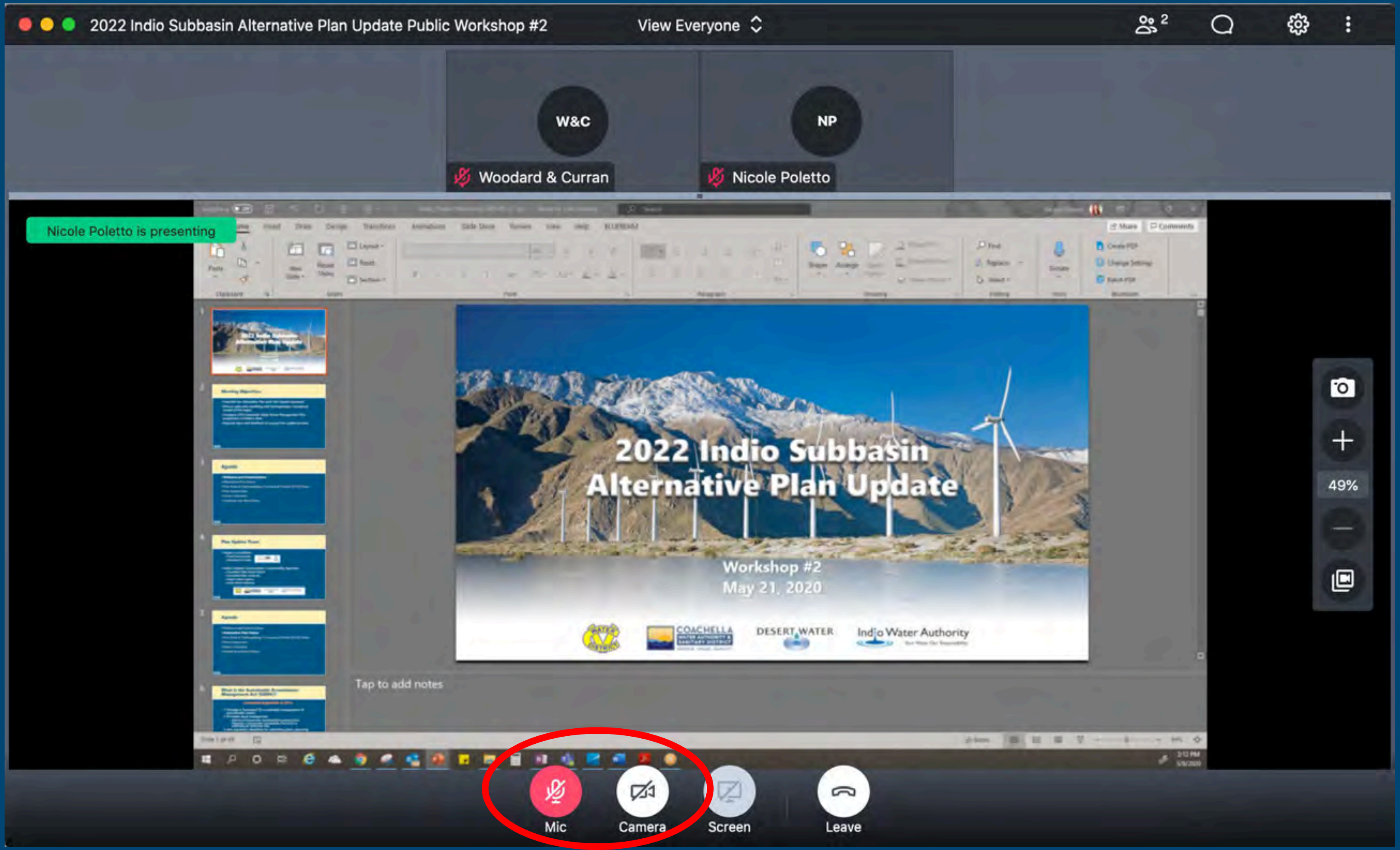
COACHELLA WATER AUTHORITY & SANITARY DISTRICT SERVICE. VALUE. QUALITY.

DESERT WATER

Indio Water Authority Your Water. Our Responsibility.

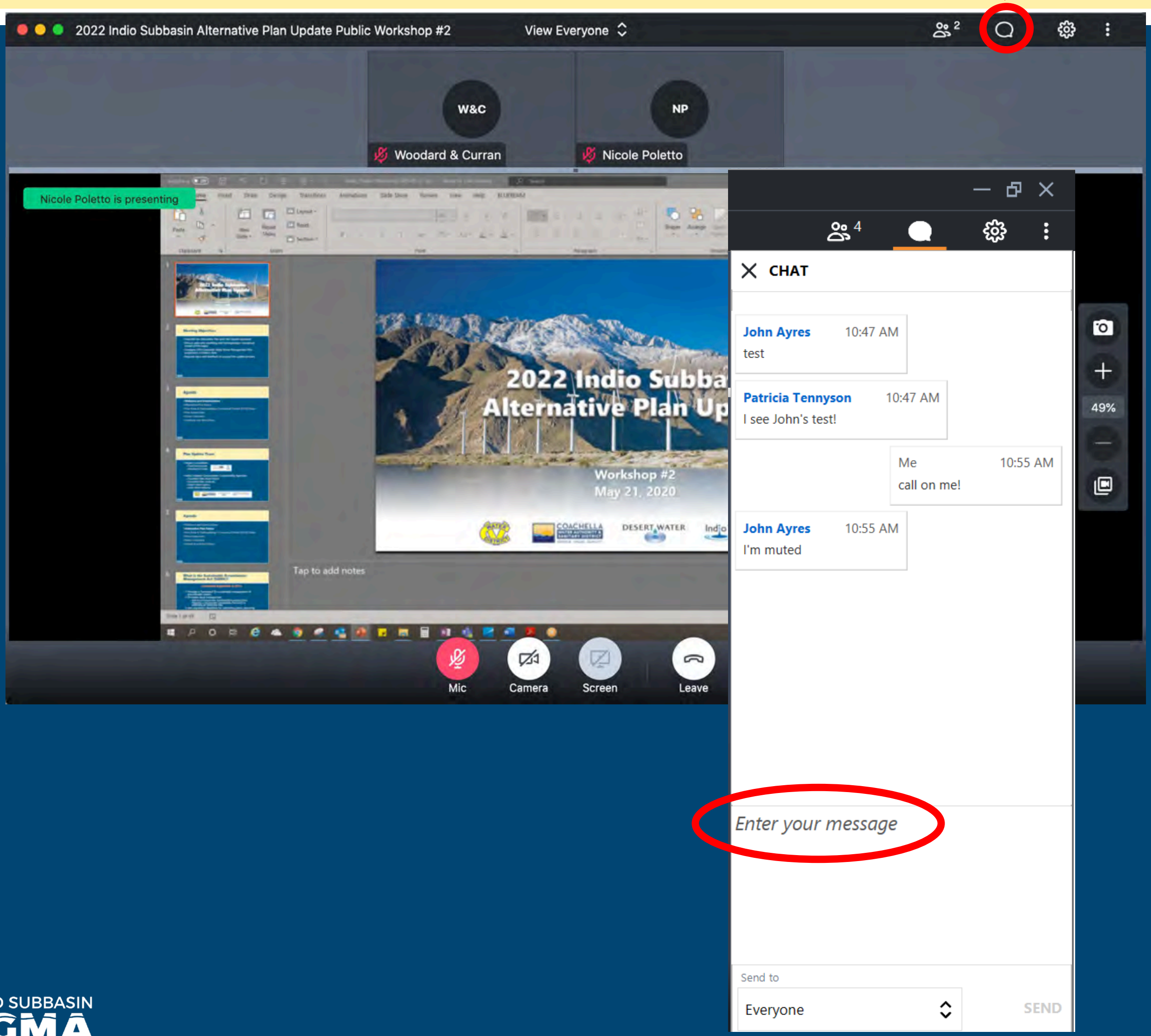
GoToMeeting – Quick How To

- Your screen should look like this:



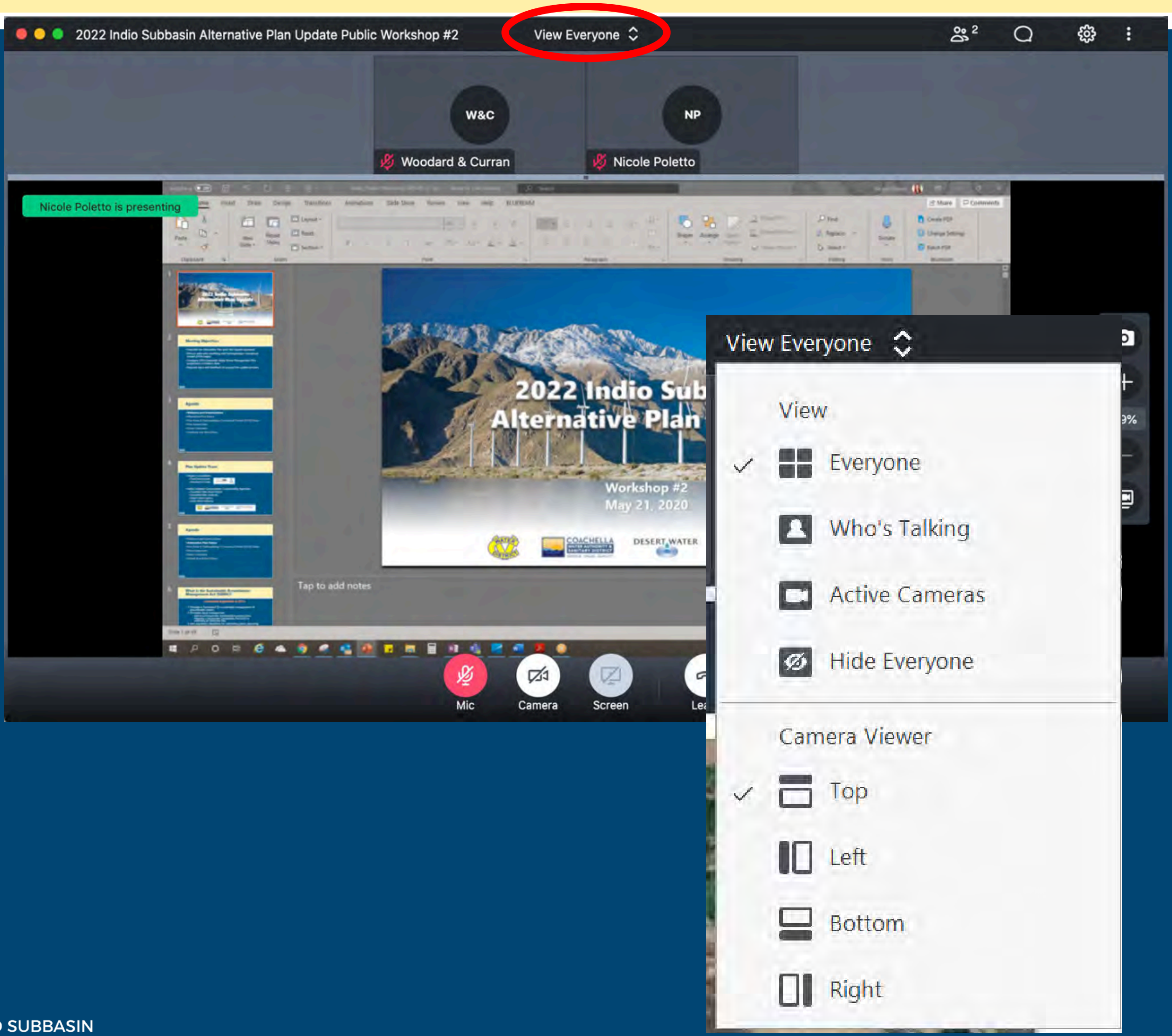
- Turn on/off your Mic (mute) and Camera (video) using the controls along the bottom
- During the meeting, you may need to wiggle your mouse to make the controls appear
- For Callers: use *6 to unmute on the phone

GoToMeeting – How to Ask a Question



- Our organizer will mute everyone at the beginning of the meeting
- Let us know you have a question by clicking the **Chat** icon in the top right
  - Click on *Enter your message*, type your message and hit SEND
- Once we receive your Chat, we will call on you and answer your question
- For Callers: when ask for your questions or comments, use *6 to unmute

GoToMeeting – How to See Everyone



- To change your display options, select the **View** menu in the top center
  - Select View-Everyone to display all attendees in the meetings
  - Select Camera Viewer-Top to display participant images along the top of your screen
- The grey divider can be raised or lowered, which will change the screen size

Meeting Objectives

- Provide overview and status of the Alternative Plan Update
- Discuss the Plan Area, Hydrogeologic Conceptual Model, and Groundwater Model status
- Present water demands and potentially available water supplies through year 2045
- Request input and feedback to support the Plan Update

Agenda

- **Welcome and Introductions**
- Alternative Plan Status
- Plan Area
- Hydrogeologic Conceptual Model (HCM)
- Groundwater Model Status
- Demand Forecast
- Supply Analysis
- Next Steps
- Public Comment
- Get Involved

Plan Update Team

- Project Consultants
  - Todd Groundwater
  - Woodard & Curran

- Indio Subbasin Groundwater Sustainability Agencies
  - Coachella Valley Water District
  - Coachella Water Authority
  - Desert Water Agency
  - Indio Water Authority

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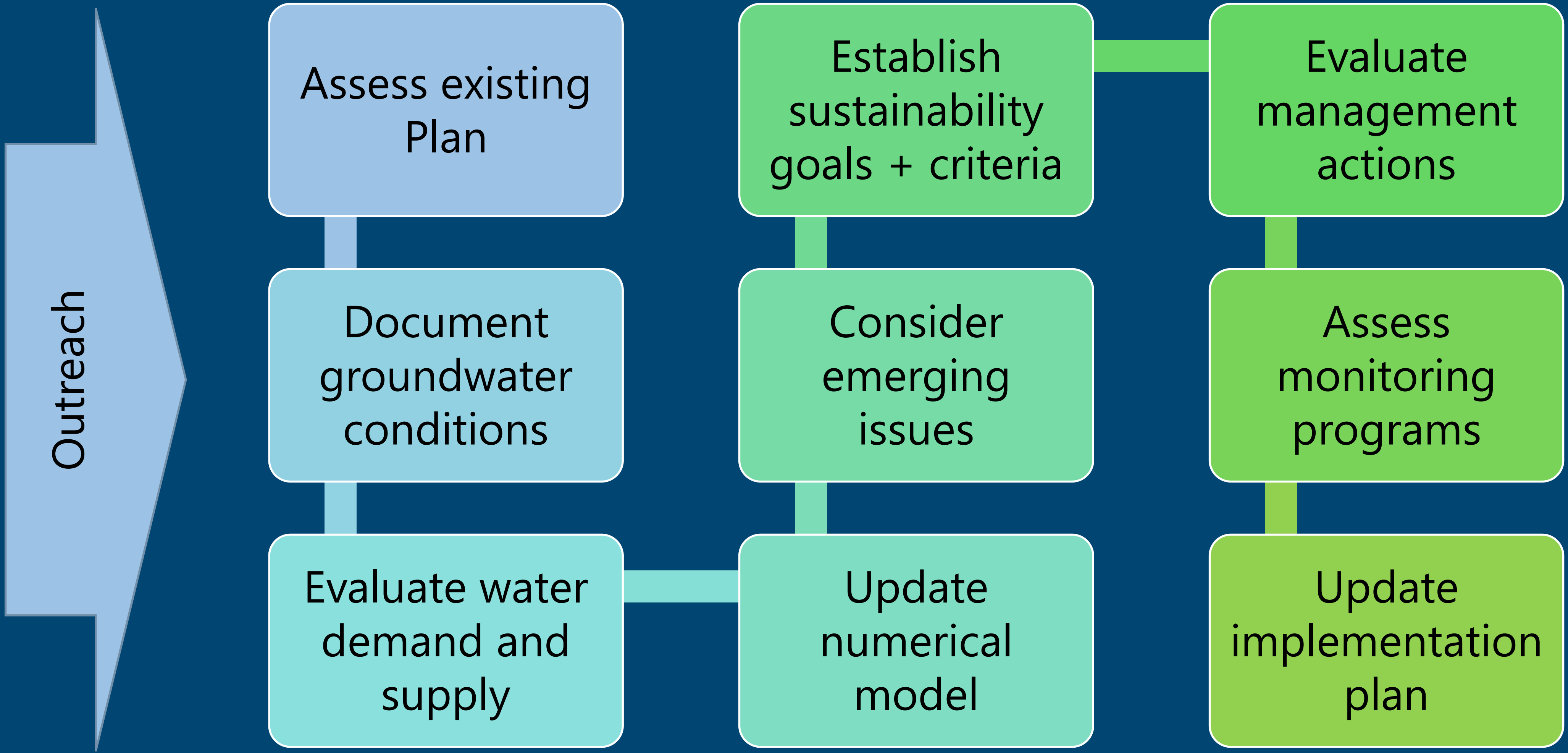
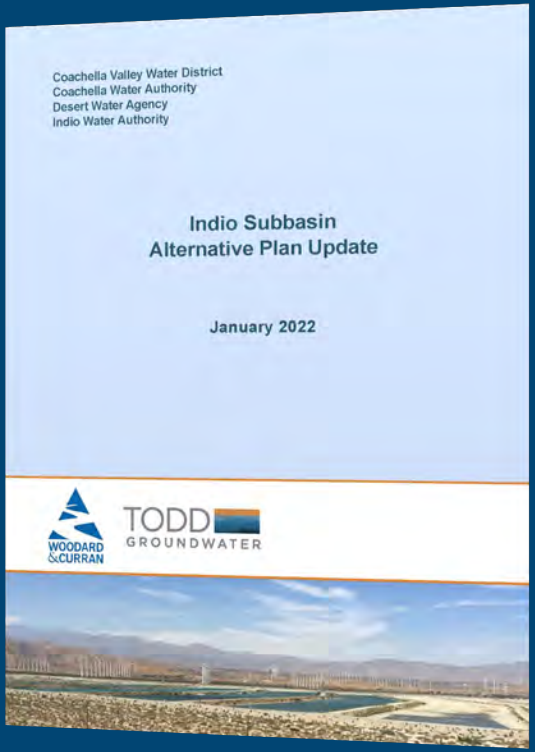
Status of Alternative Plan Update



Status of Alternative Plan Update

Outline of 2022 Alternative Plan Update presents a progression of work

1. Introduction
2. Plan Area
3. Hydrogeologic Conceptual Model
4. Groundwater Conditions
5. Water Demand Projections
6. Existing Water Supplies
7. Water Budgets and Plan Scenarios
8. Emerging Issues
9. Sustainable Management Criteria
10. Monitoring Program
11. Projects and Management Actions
12. Implementation Plan


Coachella Valley Water District
Coachella Water Authority
Desert Water Agency
Indio Water Authority

Indio Subbasin
Alternative Plan Update

January 2022

WOODARD & CURRAN
TODD GROUNDWATER

Agenda

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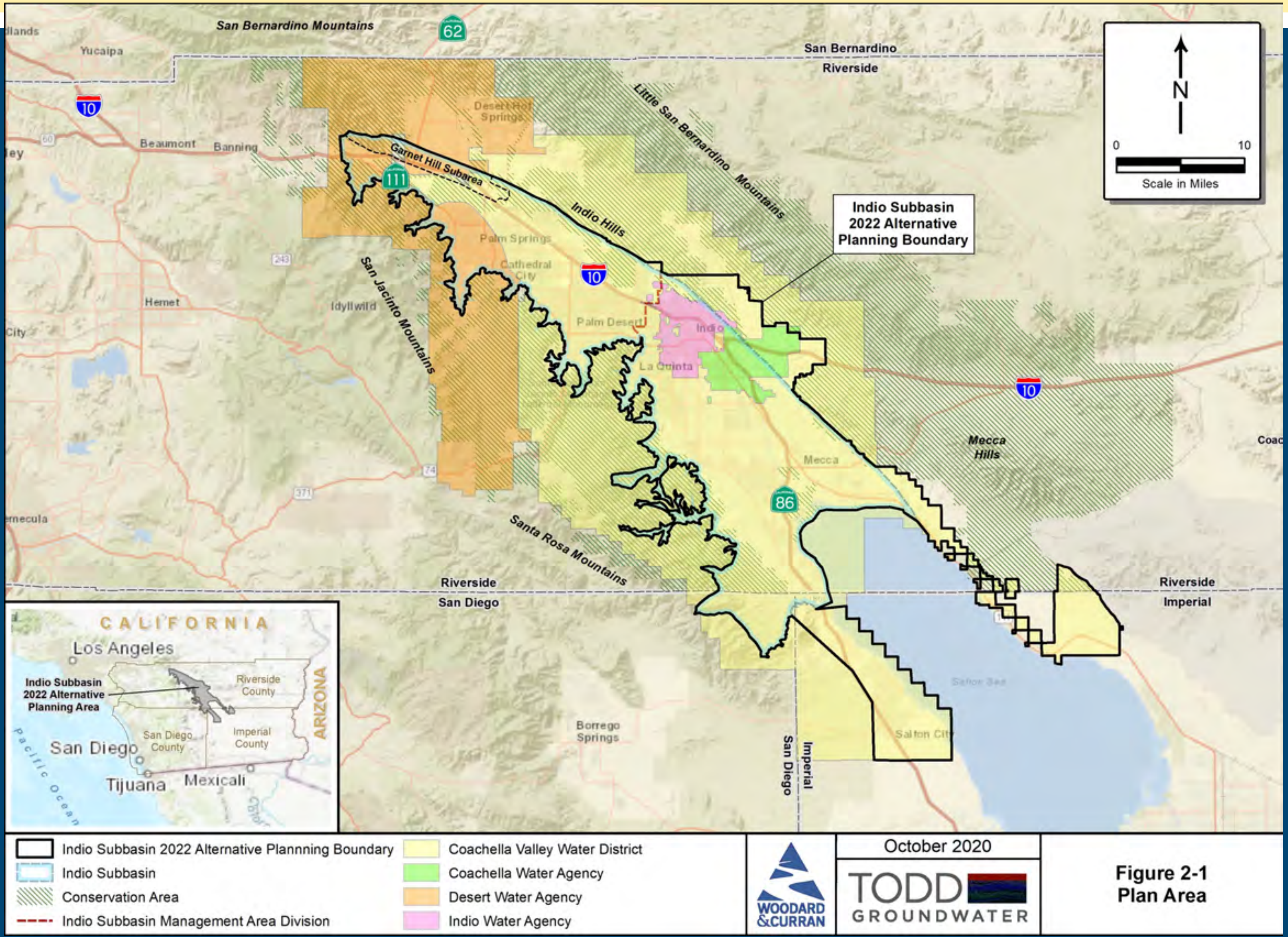
Plan Area

Defined as the Indio Subbasin and areas that are-or are likely to be-supplied groundwater from the subbasin

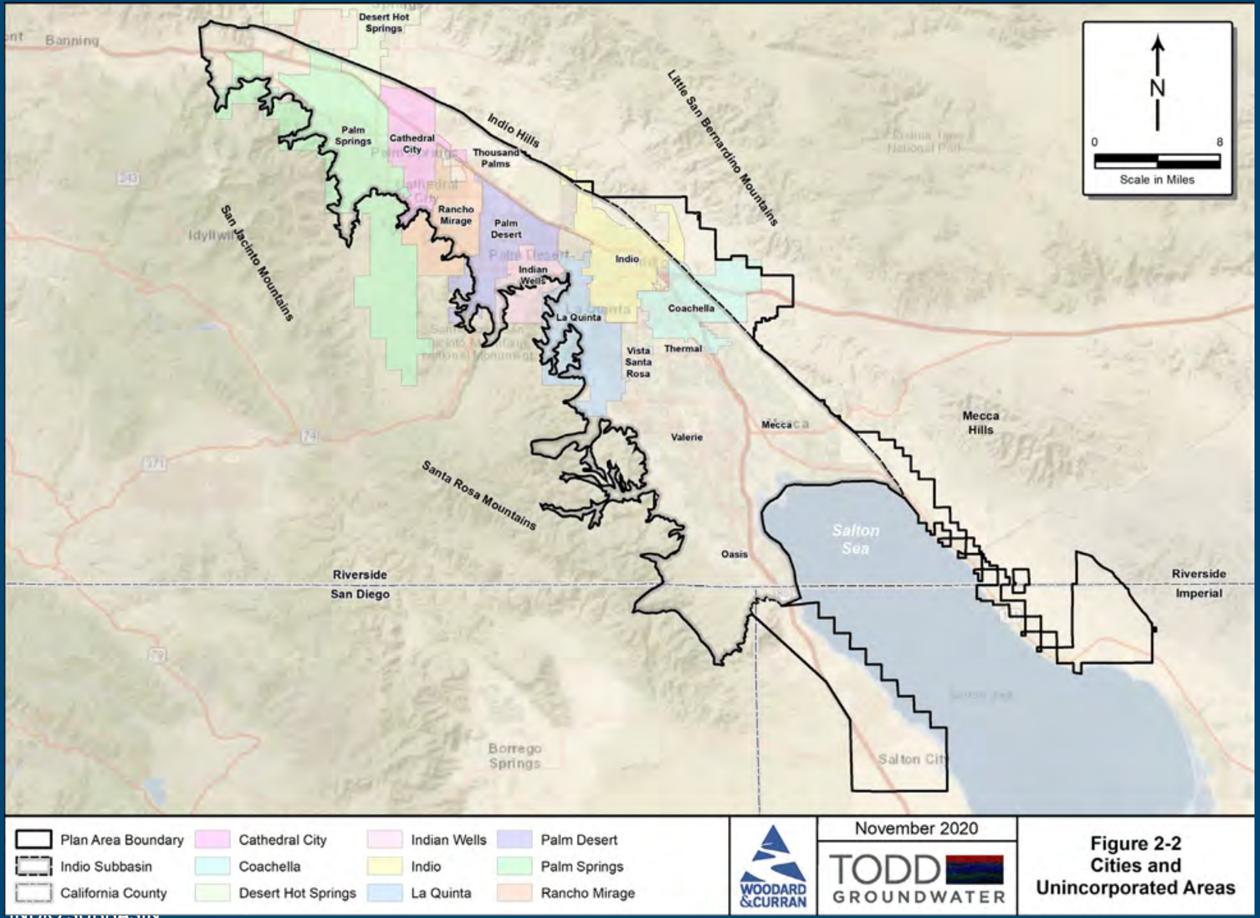
GSAs are

- CVWD
- CWA
- DWA
- IWA

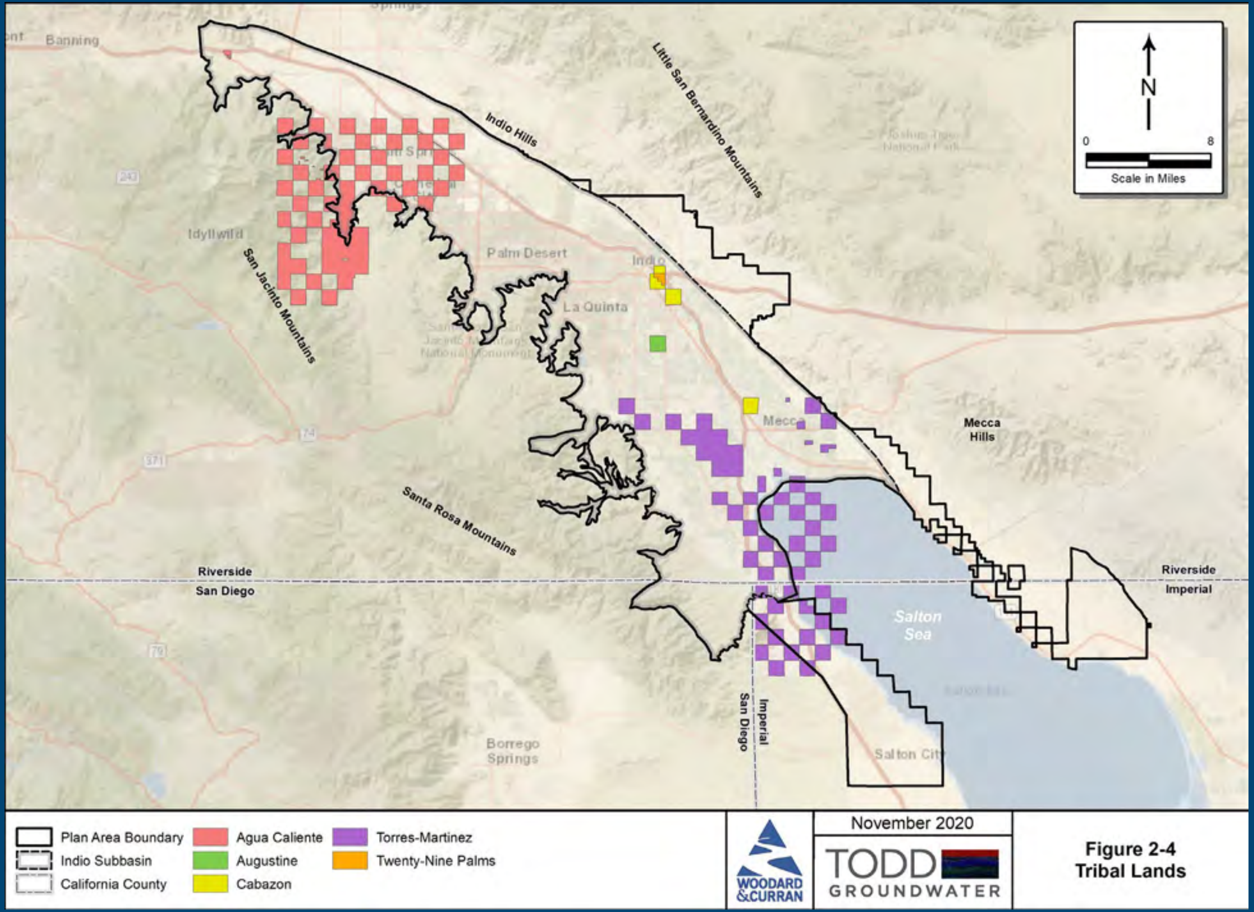


Agencies with Water Management and/or Land Use Planning Roles

Cities and counties



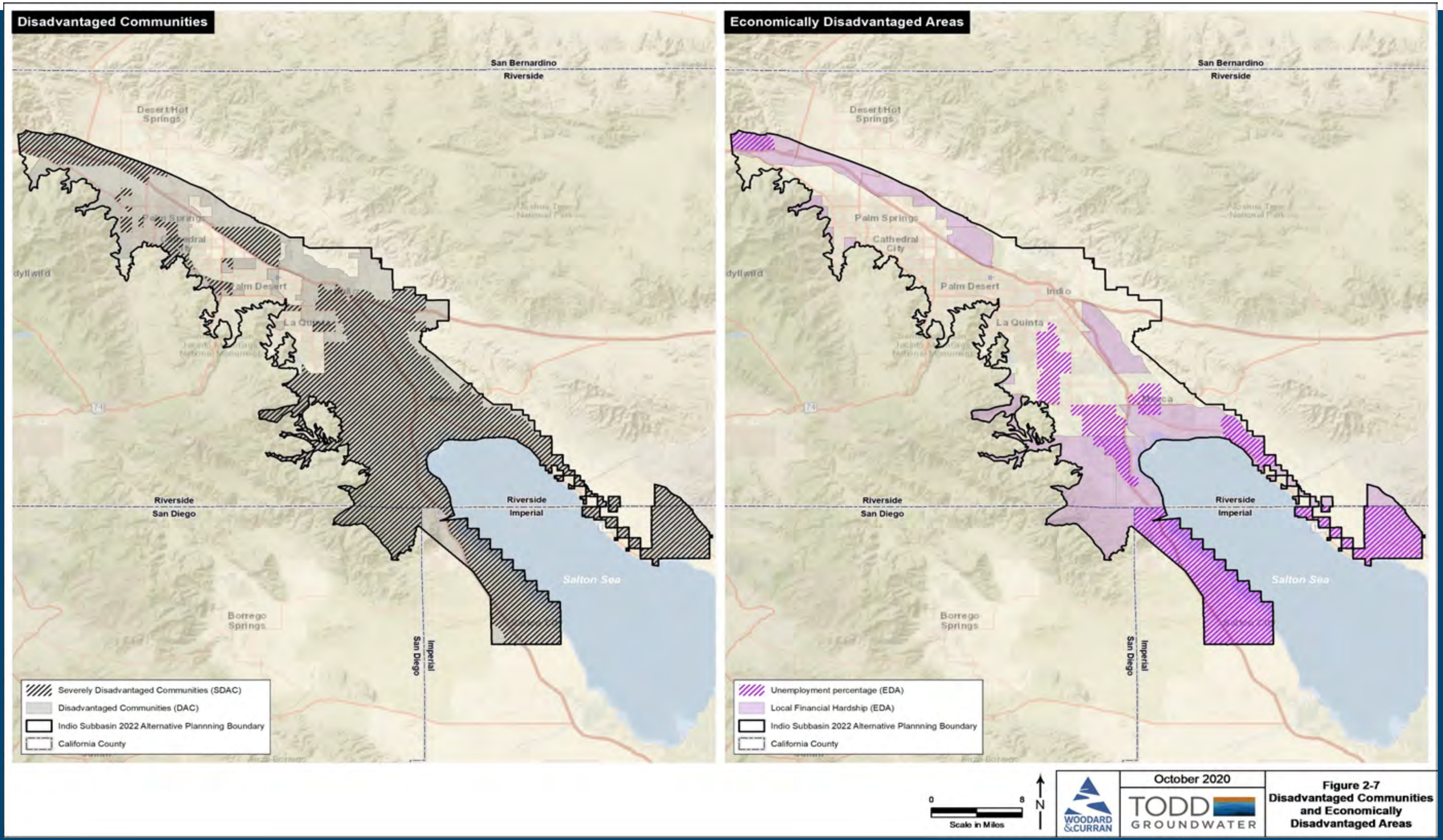
Tribal lands



Disadvantaged Communities

Outreach and engagement are described:

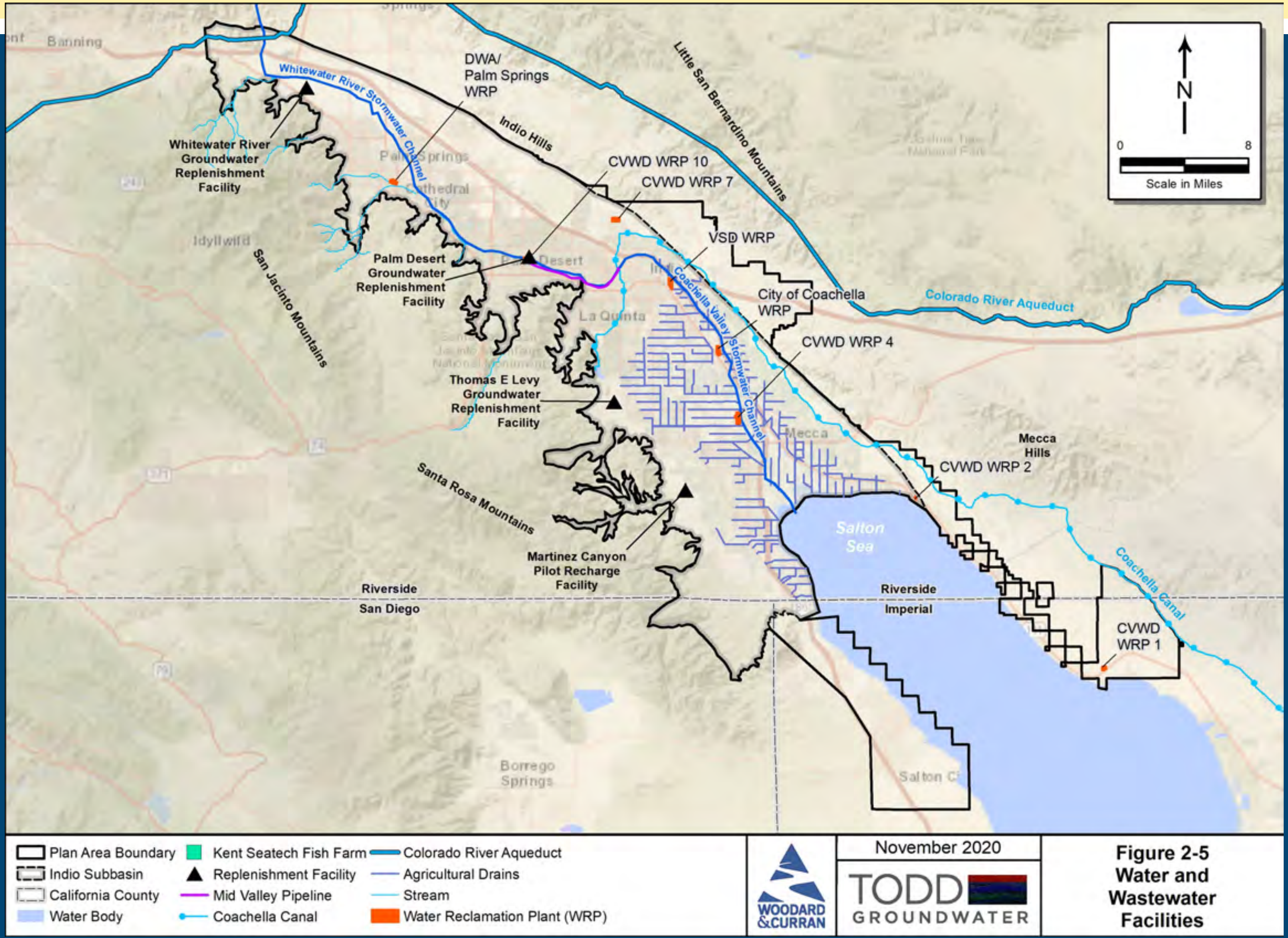
- DAC outreach program (IRWM)
- DAC Infrastructure Task Force



Water Management Within Subbasin

Water management

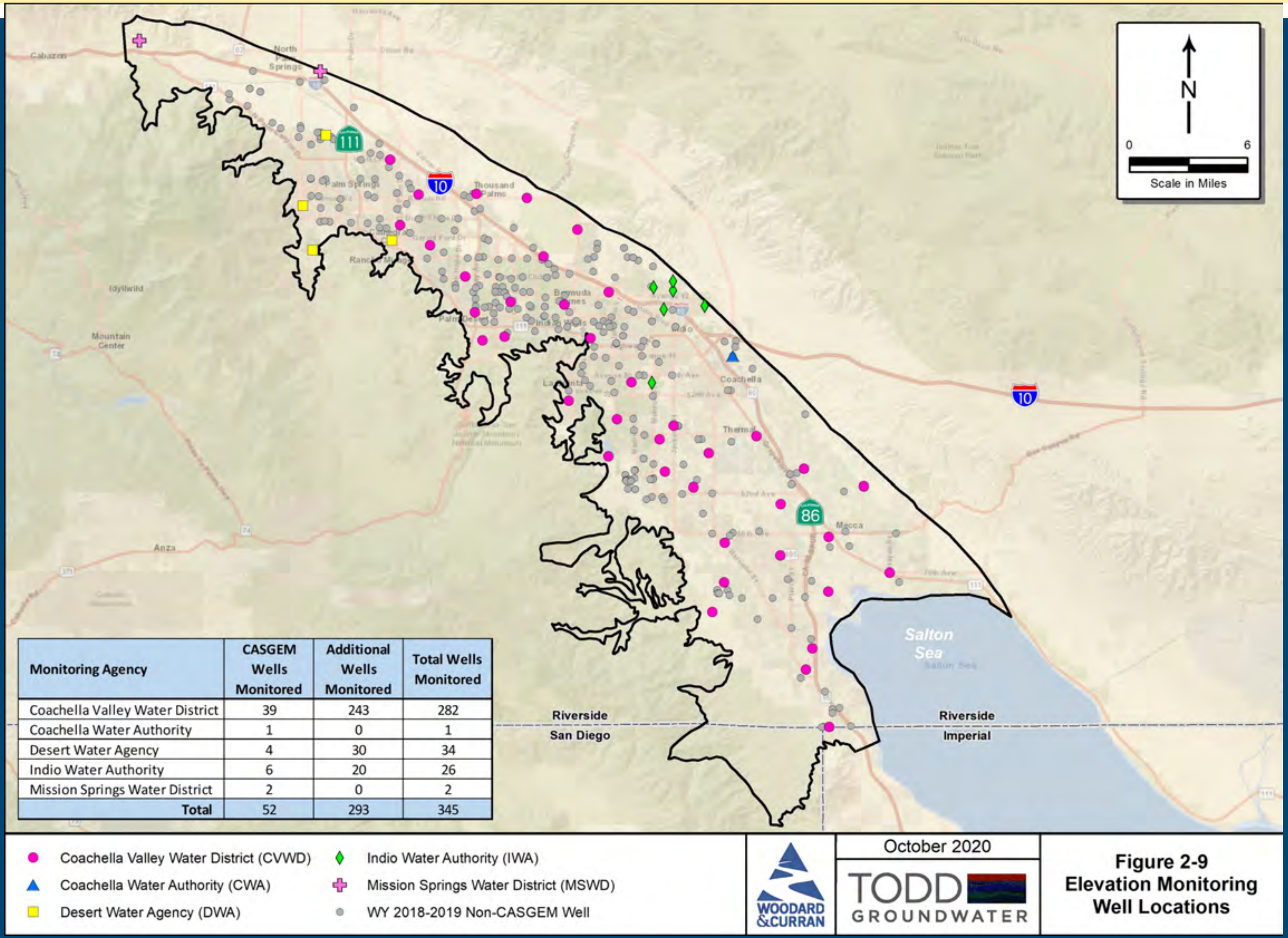
- Major facilities
- Water sources



Water Resource Monitoring Networks and Programs

Networks and programs are introduced:

- Climate
- Streamflow
- Subsidence
- Groundwater elevations
- Surface water and groundwater quality
- Groundwater pumping
- Drain flows



Monitoring Agency	CASGEM Wells Monitored	Additional Wells Monitored	Total Wells Monitored
Coachella Valley Water District	39	243	282
Coachella Water Authority	1	0	1
Desert Water Agency	4	30	34
Indio Water Authority	6	20	26
Mission Springs Water District	2	0	2
Total	52	293	345

Figure 2-9
Elevation Monitoring Well Locations

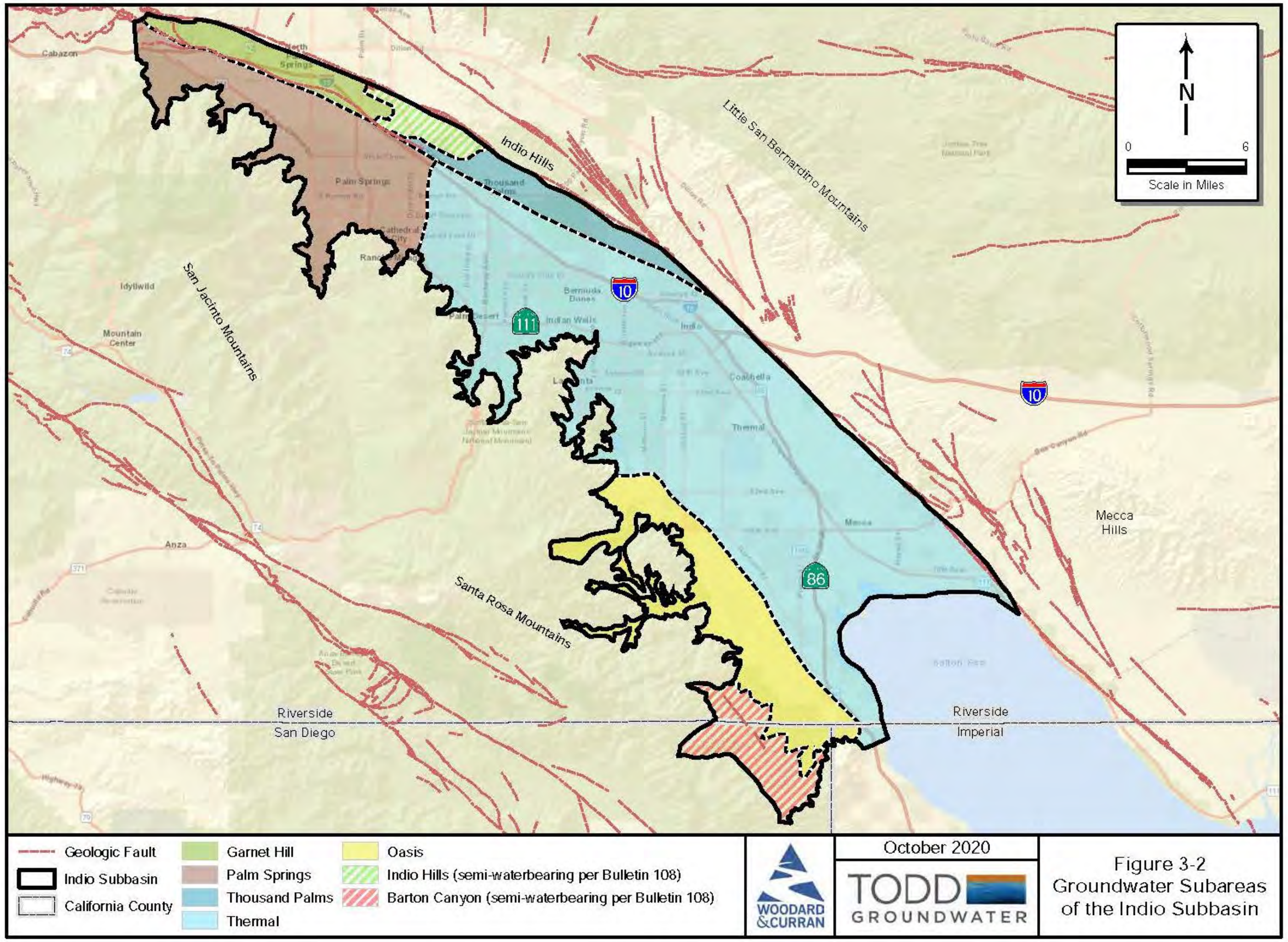
Plan Area
Discussion Questions

- Are there other items to describe or introduce?

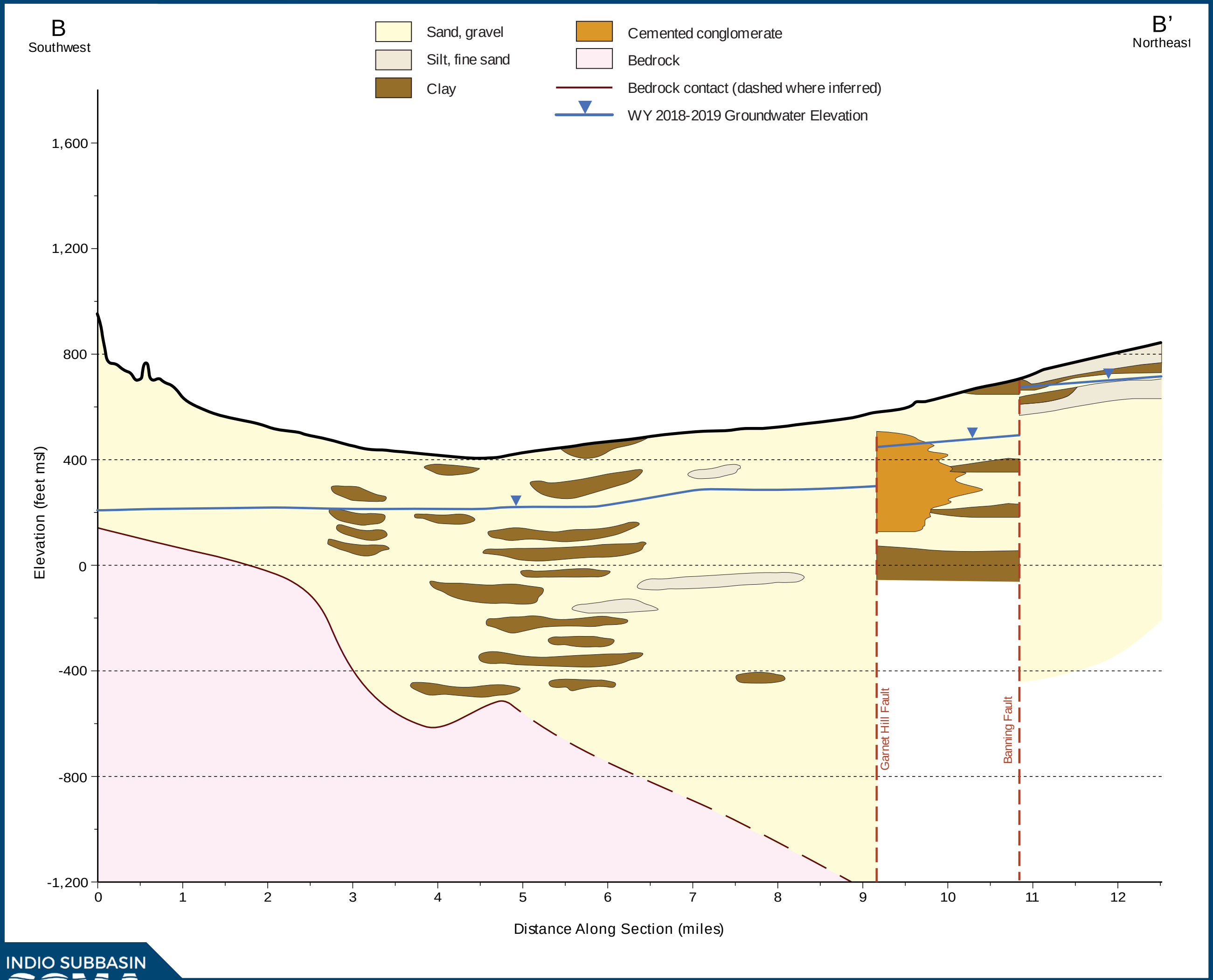
Hydrogeologic Conceptual Model

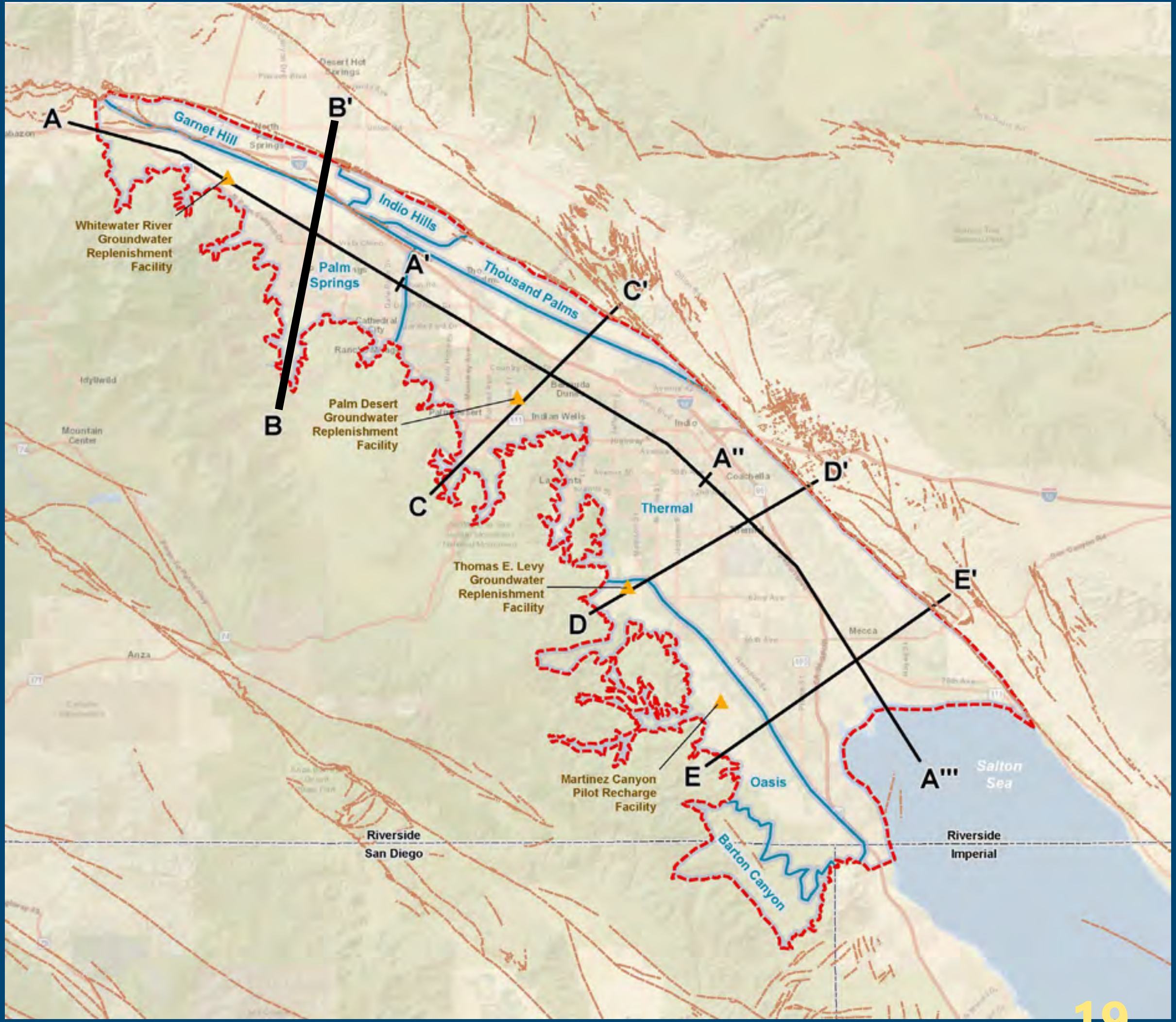
Establishes the physical framework:

- Geologic setting of subareas
- Faults
- Hydrogeologic cross-sections
- Recharge and discharge areas, inflows and outflows



Cross Sections Show Geology, Wells, Faults, and Groundwater Levels





Inflows/Outflows and Recharge/Discharge Areas

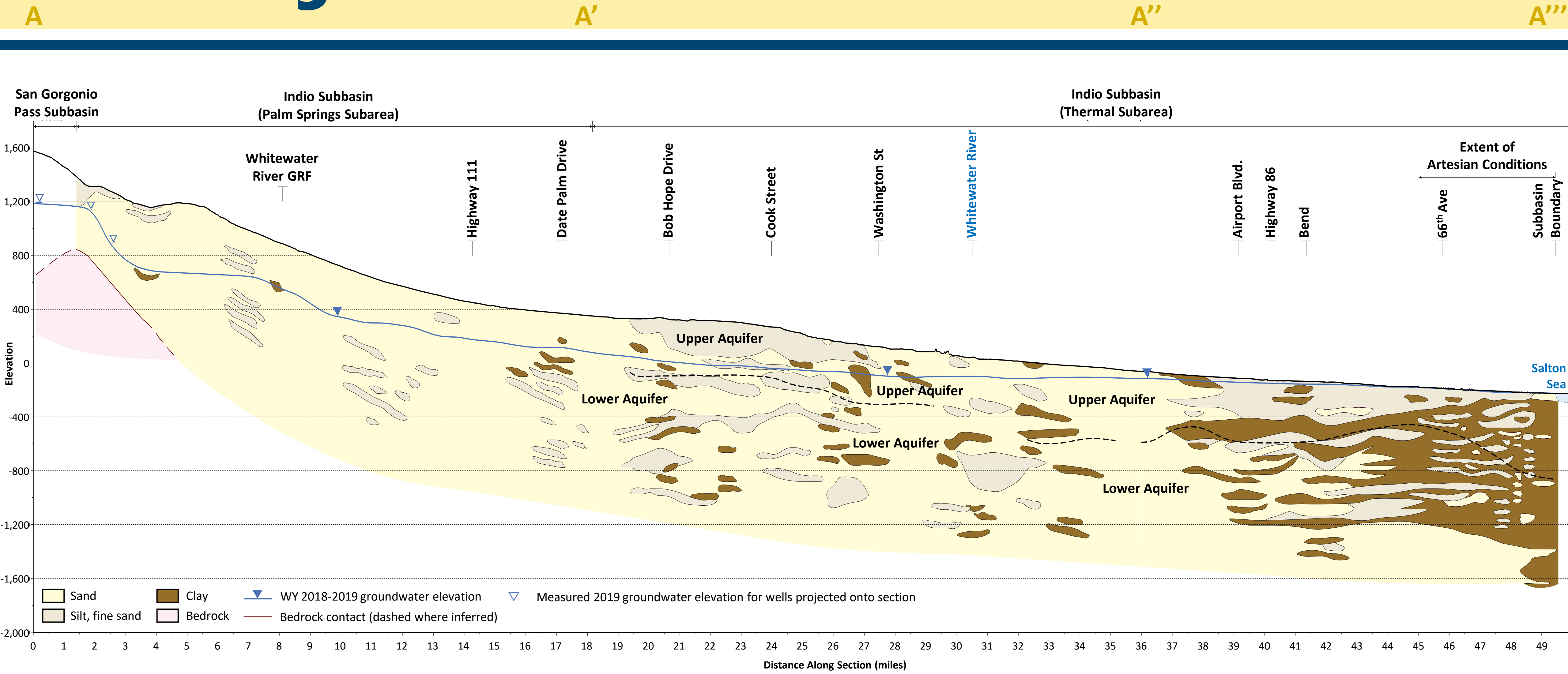
Groundwater inflows

- Infiltration of natural inflows, mountain-front and stream channel recharge
- Subsurface inflows
- Artificial recharge of imported water (replenishment)
- Wastewater percolation
- Return flows from municipal/domestic use, agriculture, golf courses, etc.

Groundwater outflows

- Groundwater pumping
- Subsurface and drain flows to Salton Sea
- Evapotranspiration (ET)

Physical Setting and How Groundwater Flows Through It



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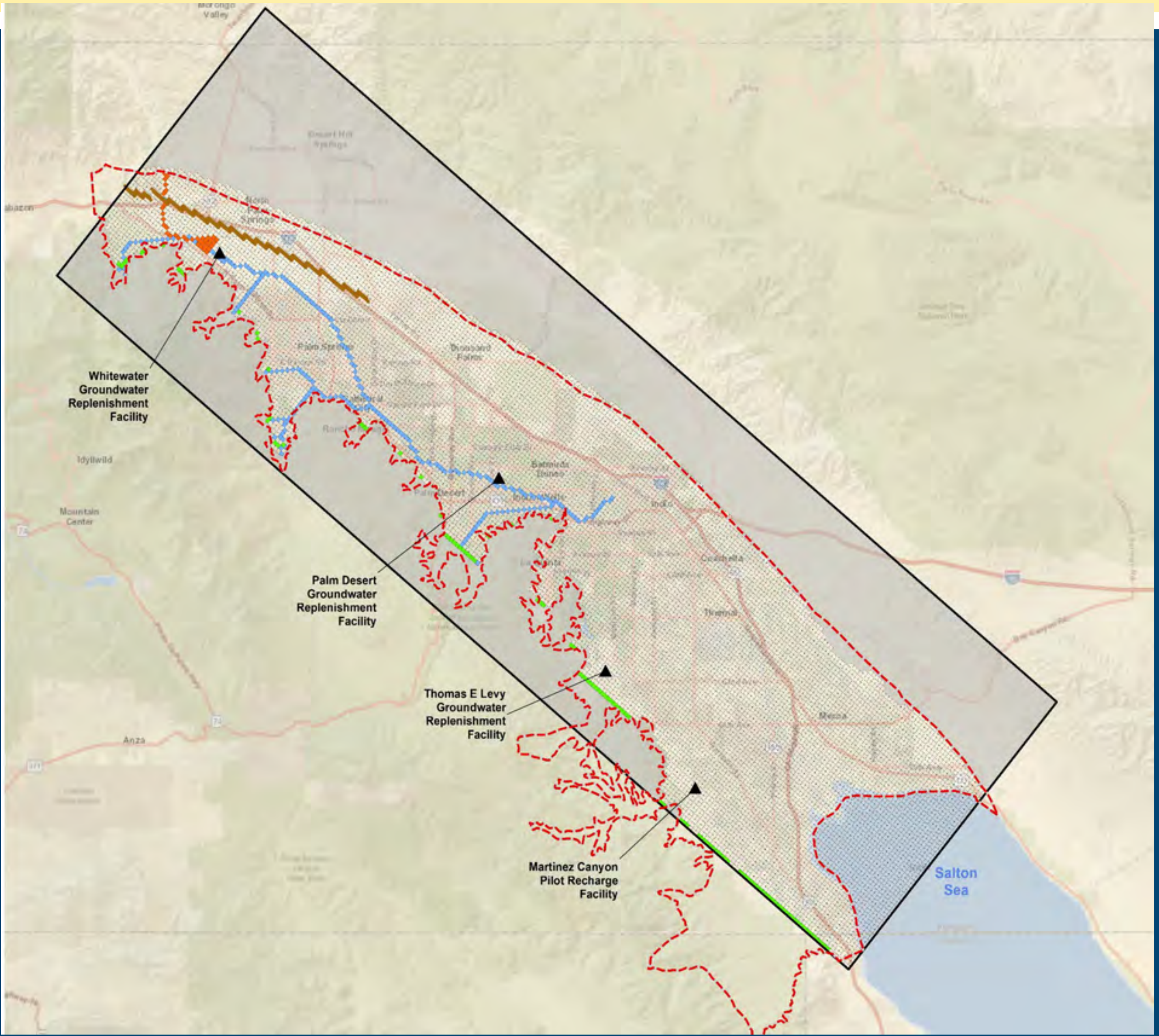
What is the Groundwater Model?

- Numerical simulation of the Subbasin
- Quantifies inflows and outflows
- Confirms our conceptual model
- Provides a tool that can simulate future conditions

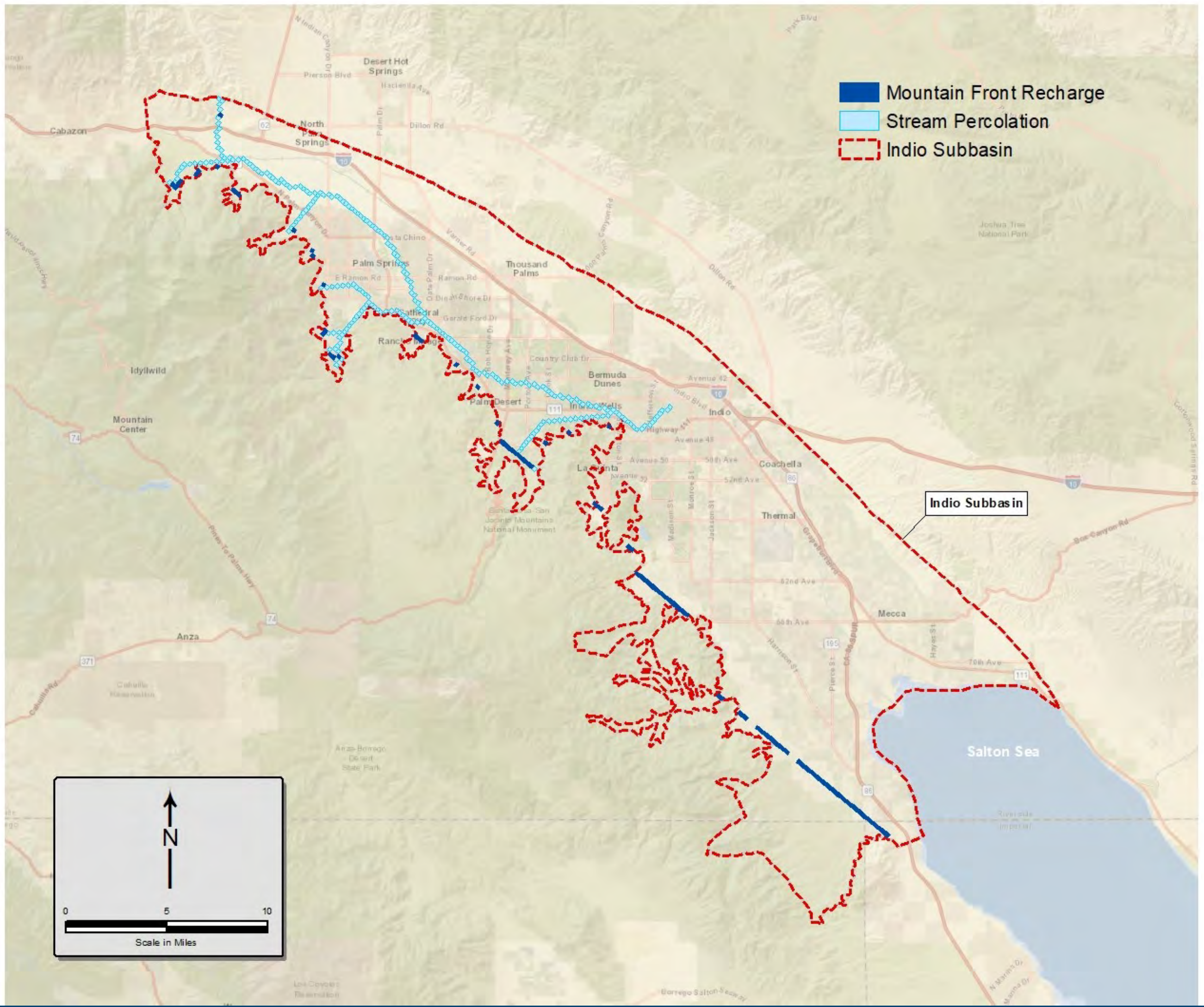


Model Update

- Documents 2010 CVWMP model version
- Updates pumping data for all wells
- Updates subsurface inflow and Salton Sea elevations
- Develops recharge estimates for 2010-2019
  - Improved methods of calculating recharge
  - Utilized newly available data
  - Refined spatial distribution for return flows from golf courses, agriculture, and municipal use

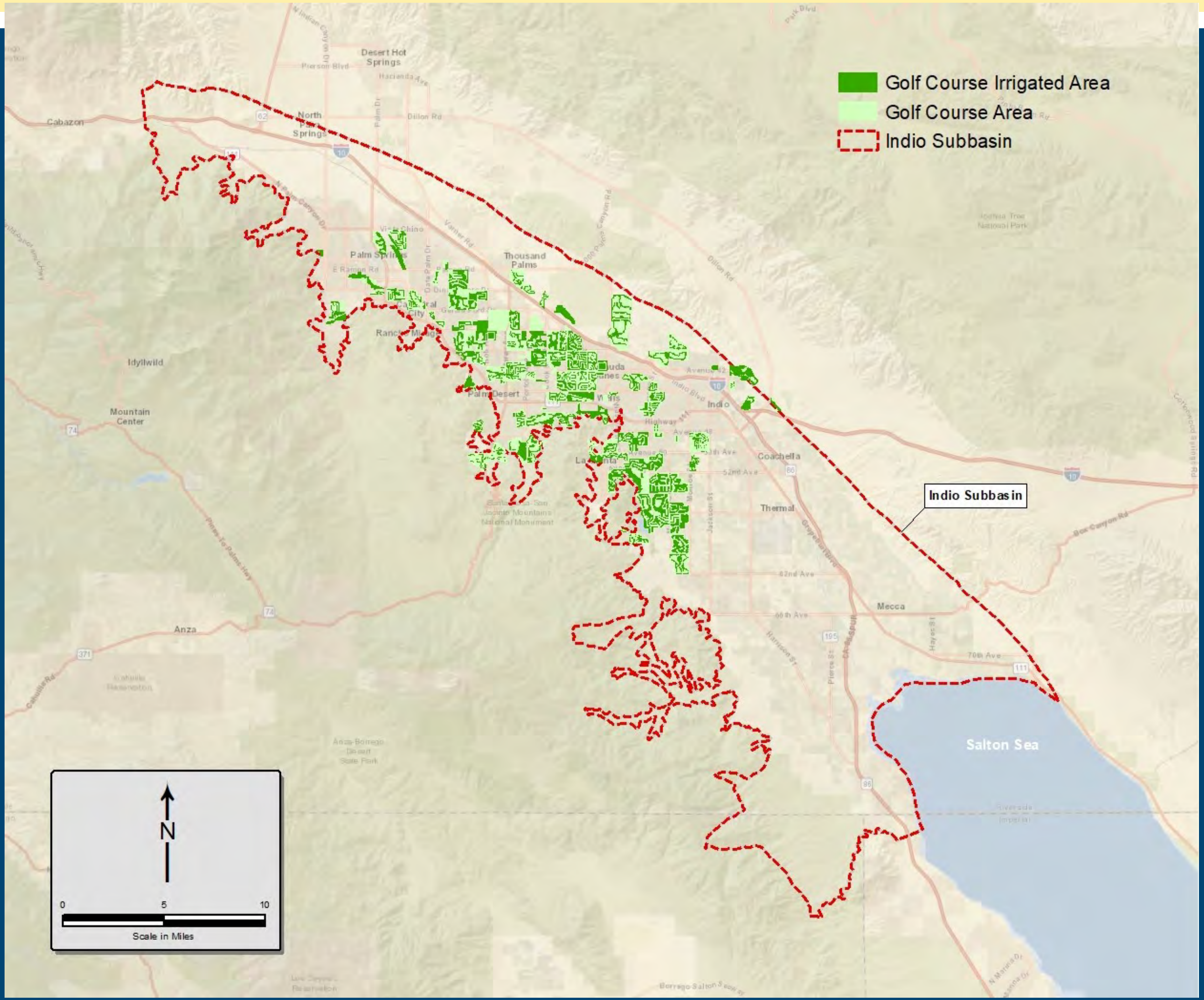
Mountain Front and Stream Recharge

- Updated from previous model
- Routes water through the watershed
- Matches gauge data along Whitewater River at Indio



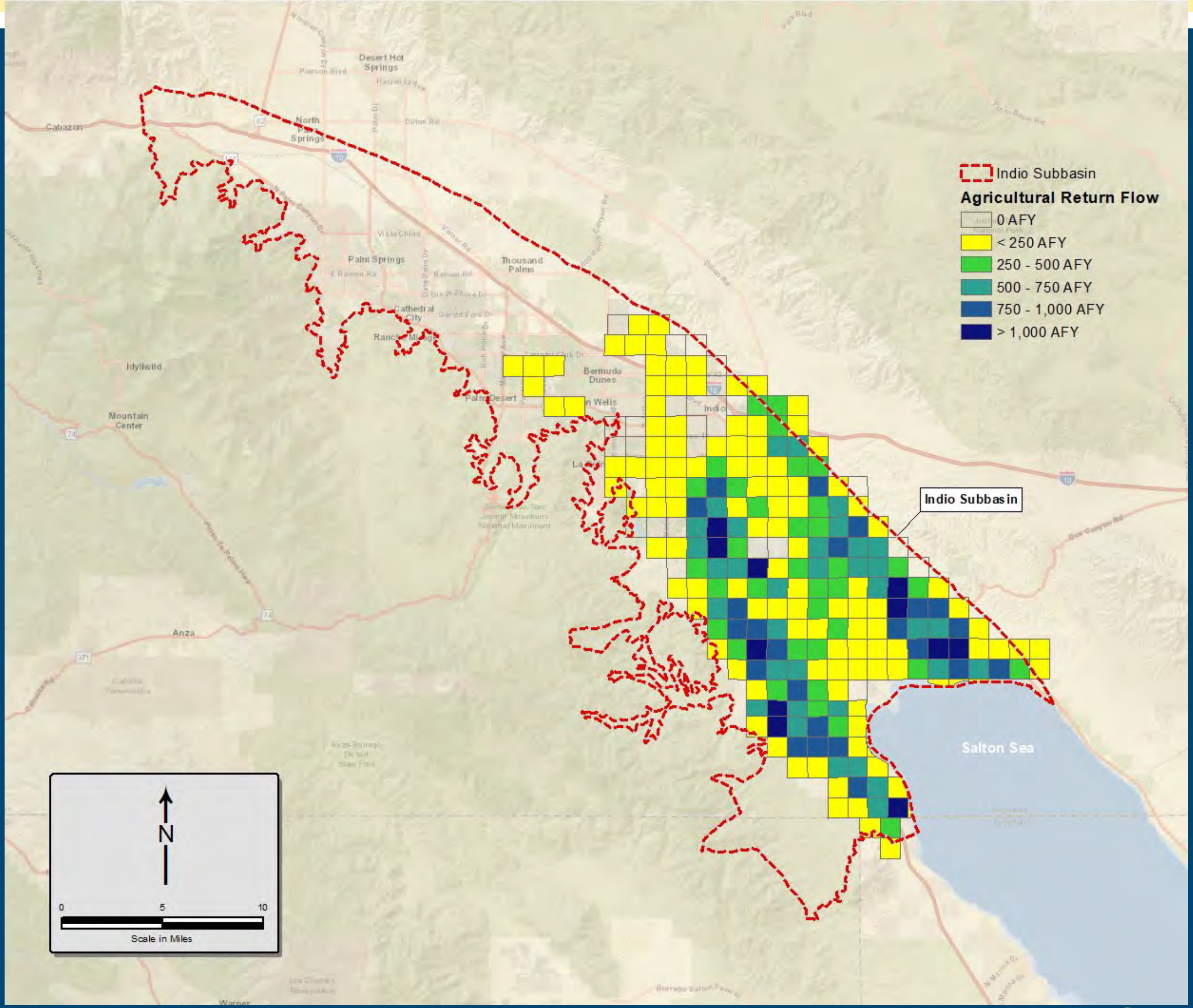
Golf Course Return Flow

- Inventory of Golf Courses
- Identified sources of supply
- Comparison of supply and demand
- Similar to past estimates but varies irrigation efficiency spatially based on actual use



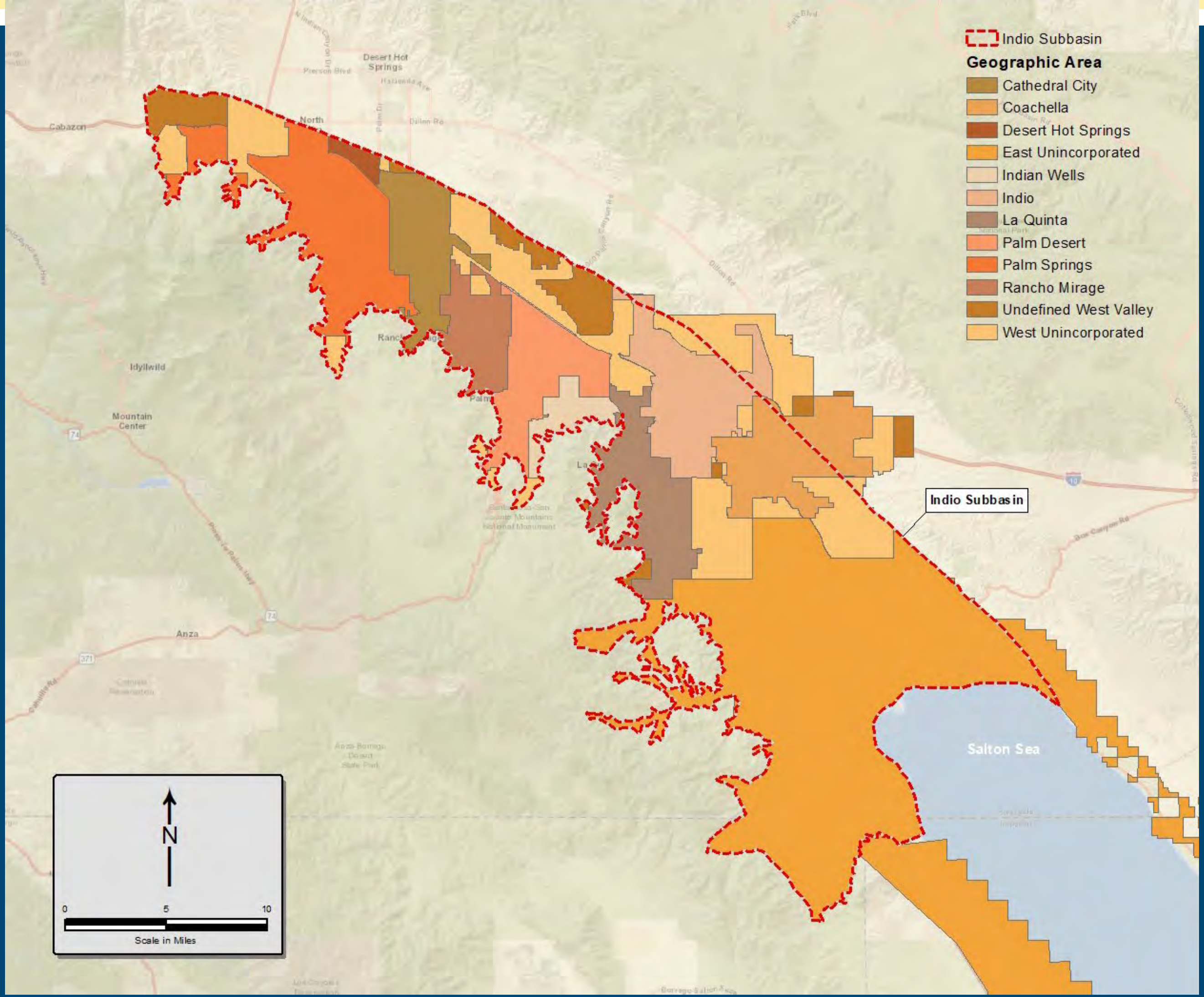
Agricultural Return Flow

- Trimester Crop Census
  - Reviewed cropped patterns with CVWD staff
- Total supply
  - Canal
  - Pumping
- Compared supply and demand to determine annual irrigation efficiency
- Applied irrigation efficiency to section demand to estimate return flow



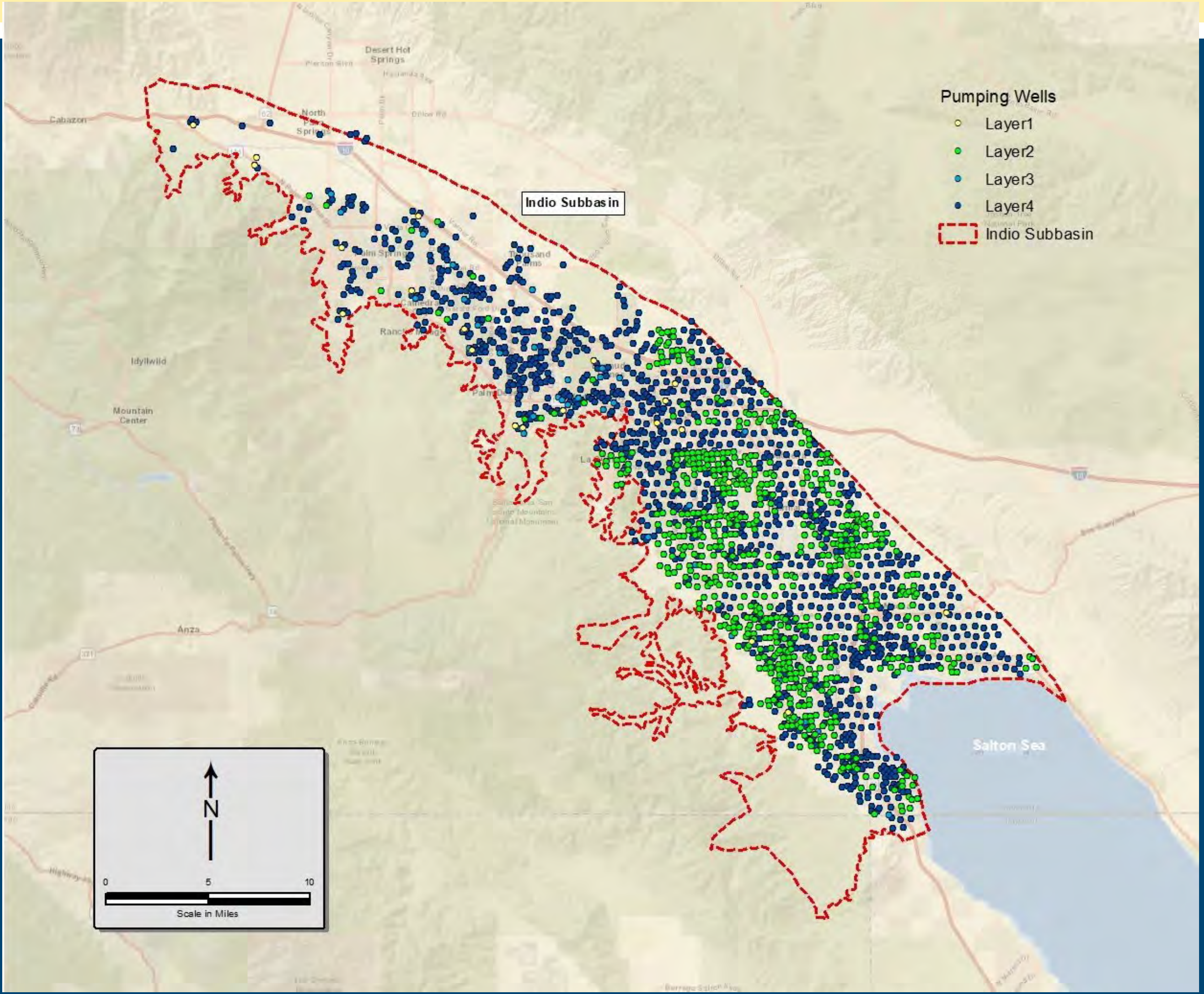
Municipal Return Flow

- Based on water demand factors for the GSAs
- Varied spatially to reflect differences in local outdoor uses and areas with septic systems



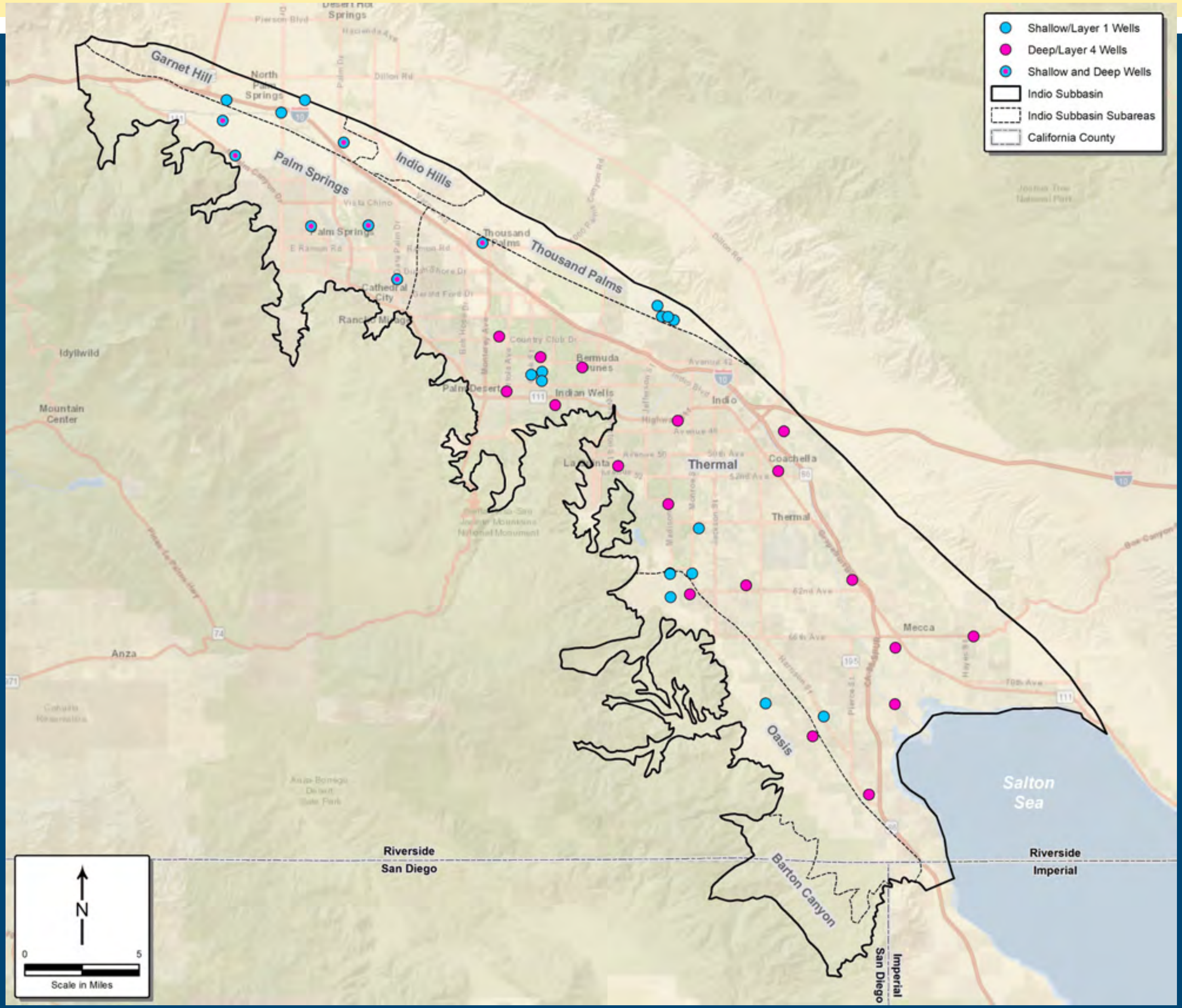
Pumping

- Updated model to include pumping data
- Defined wells by depth
- Annual totals



Observation Wells for Model Calibration

- Confirming the model simulates reality
- Comparing simulated and observed values
- Coordinating with neighboring basins to ensure consistency



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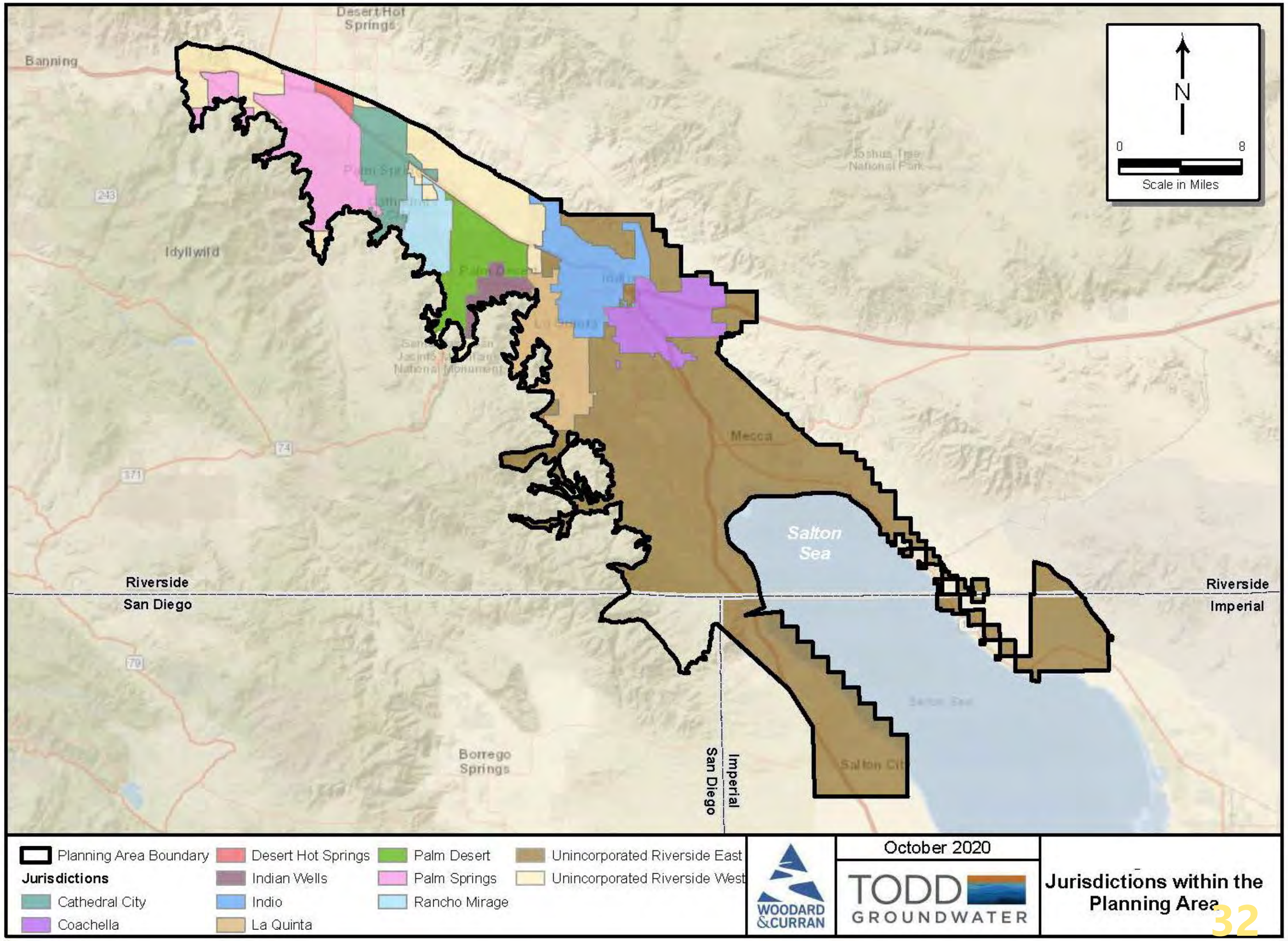
Demand Forecast

- Forecast is based on 11 geographic units
- Land use and water use patterns are considered
- Coordination and data sharing w/Mission Creek Planning Team



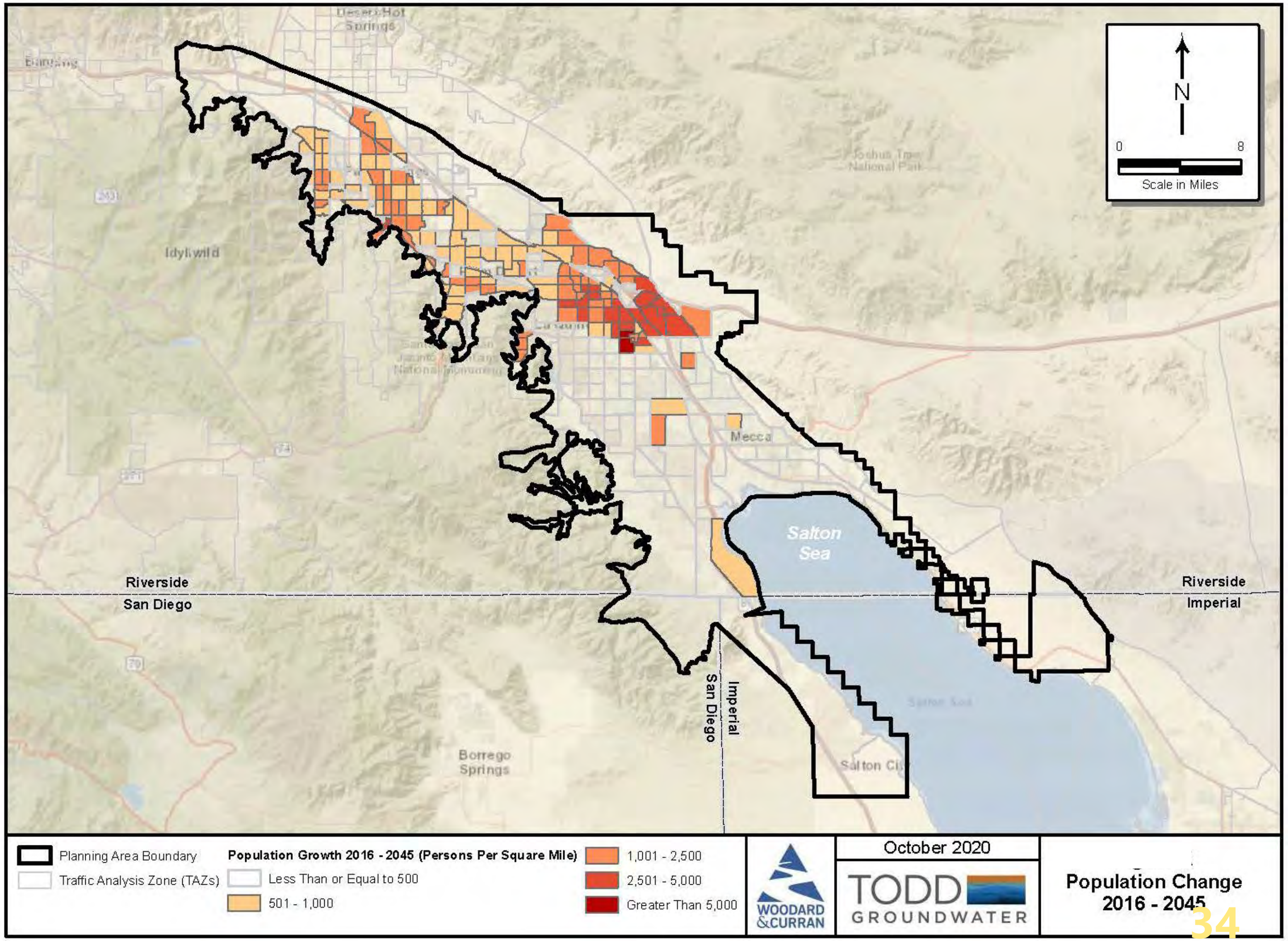
Municipal Demands – Forecast Process

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
SCAG Growth Forecast

Plan Area Totals:

- **Population:** 402,400 increasing to 617,400 (53%)
- **Households**: 143,000 increasing to 238,100 (66%)
- **Employees**: 177,400 increasing to 246,183 (39%)

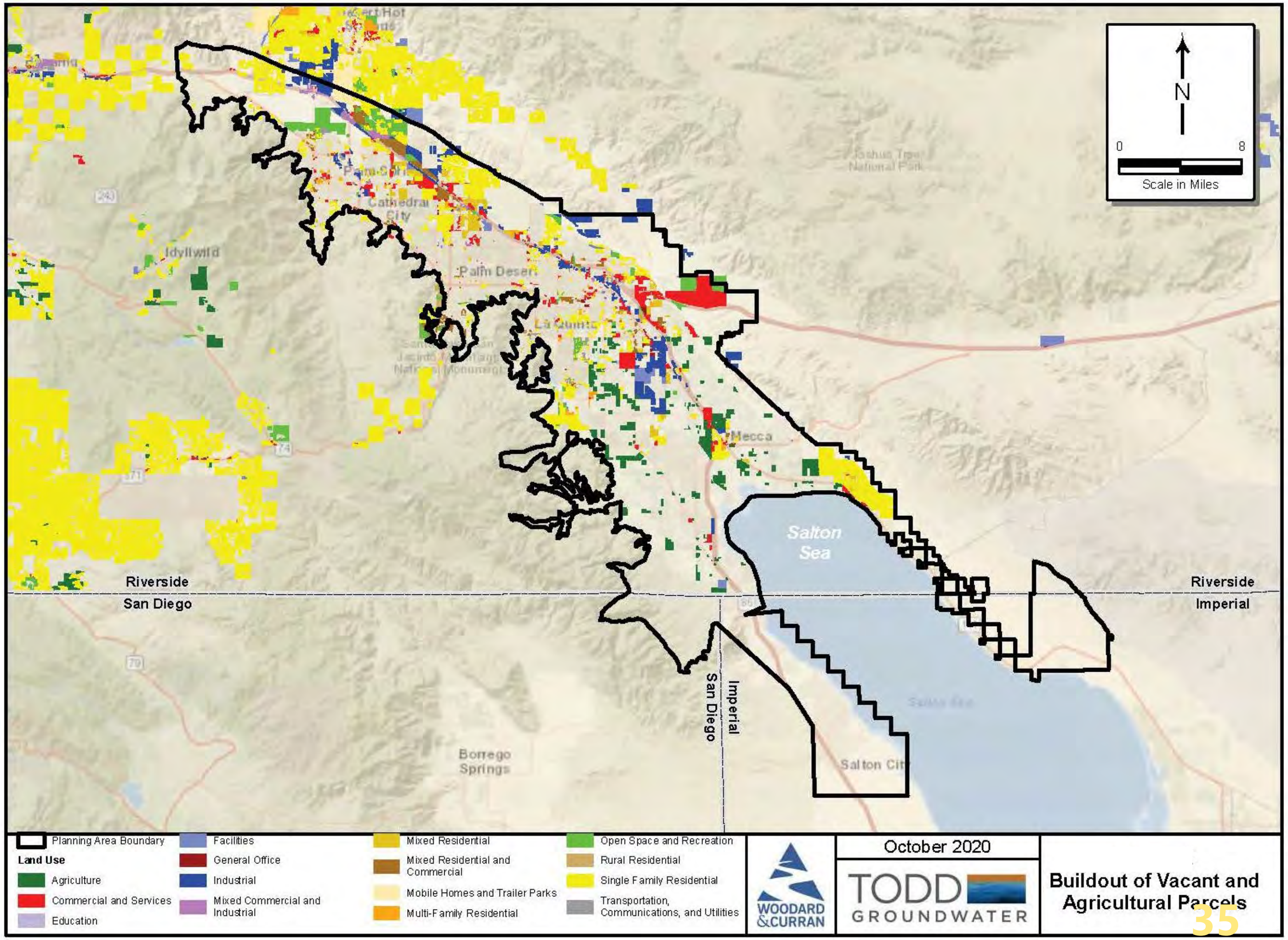


Municipal Demands
Land Use Inventory

- Based on General Plan land uses and limited to buildout
- Final mix of housing similar to existing housing mix

Plan Area Totals:

- **Single Family**: 143,100 increasing to 232,300 (62%)
- **Multi-Family**: 57,100 increasing to 93,100 (63%)



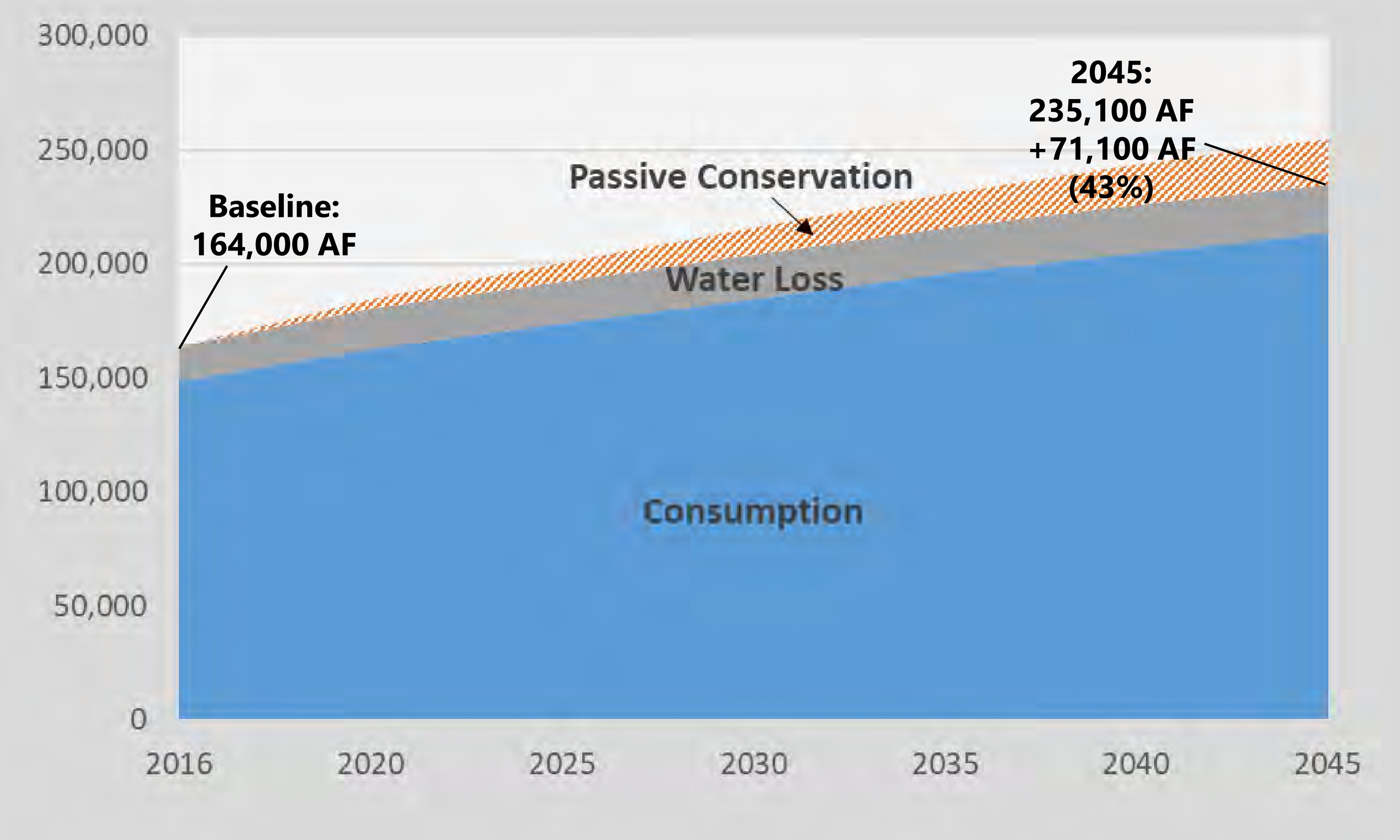
2015-2019 Average Unit Demand Factors

(Gallons per Housing Unit *or* Employee per Day)

Billing Category	Growth Factor	CWA	CVWD	DWA	IWA
Single Family Residential	Single Family Housing Units	489	494	572	473
Multi Family Residential	Multiple Family Housing Units	239	170	103	192
Commercial, Industrial, Institutional	Employees	76	54	238	90
Landscape	Housing Units & Employees	52	220	80	155
Other	Housing Units & Employees	1	8	0	0

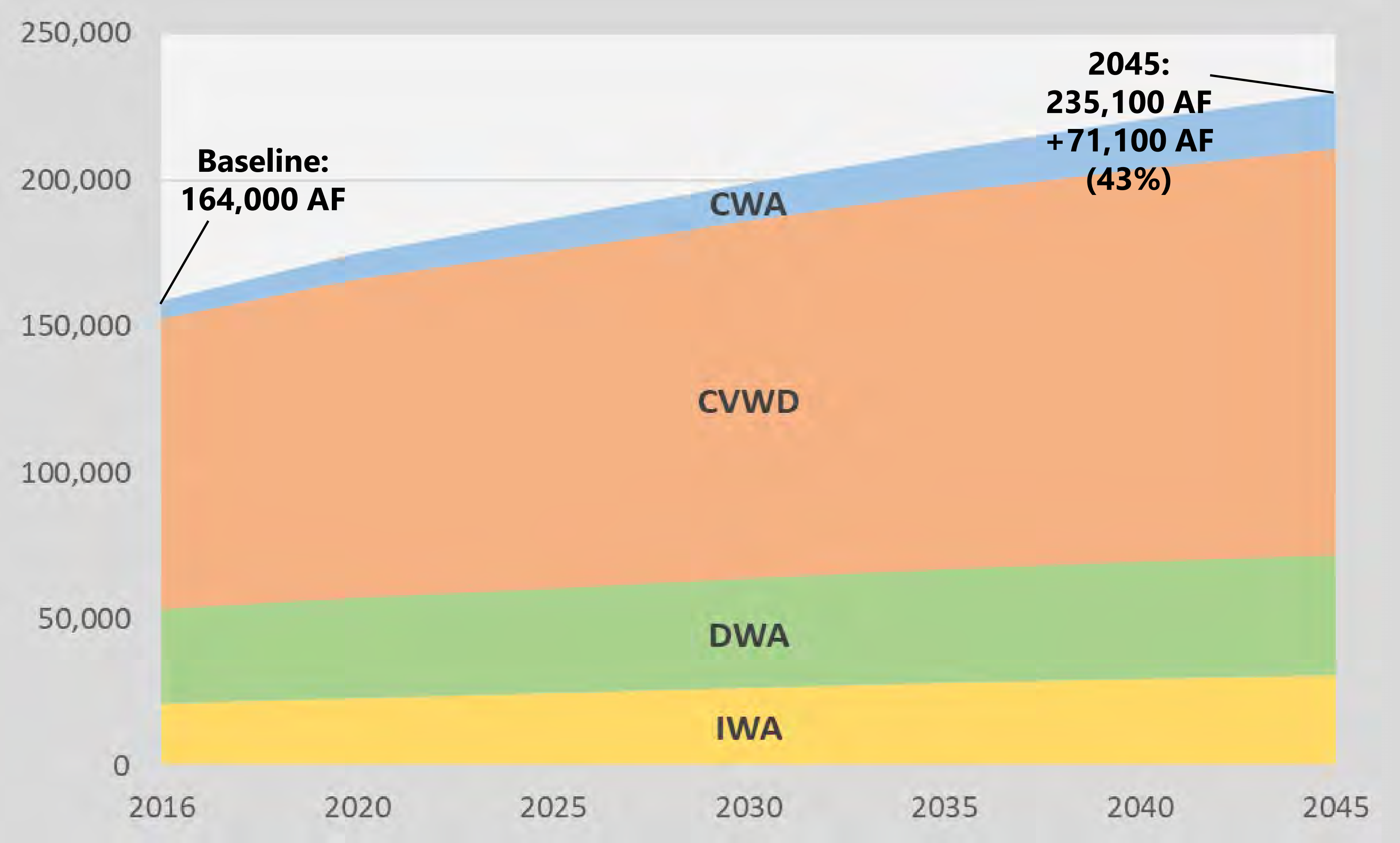
Municipal Demands
Conservation and Water Loss

- Passive Conservation
  - Indoor (Existing and New): Washers, Showerheads, Toilets, Clothes Washers, Dish Washers, Urinals
  - Outdoor (New Development): Reductions from MWELO
- Water Loss
  - Based on Audited Water Loss reports
  - Estimated at 10%



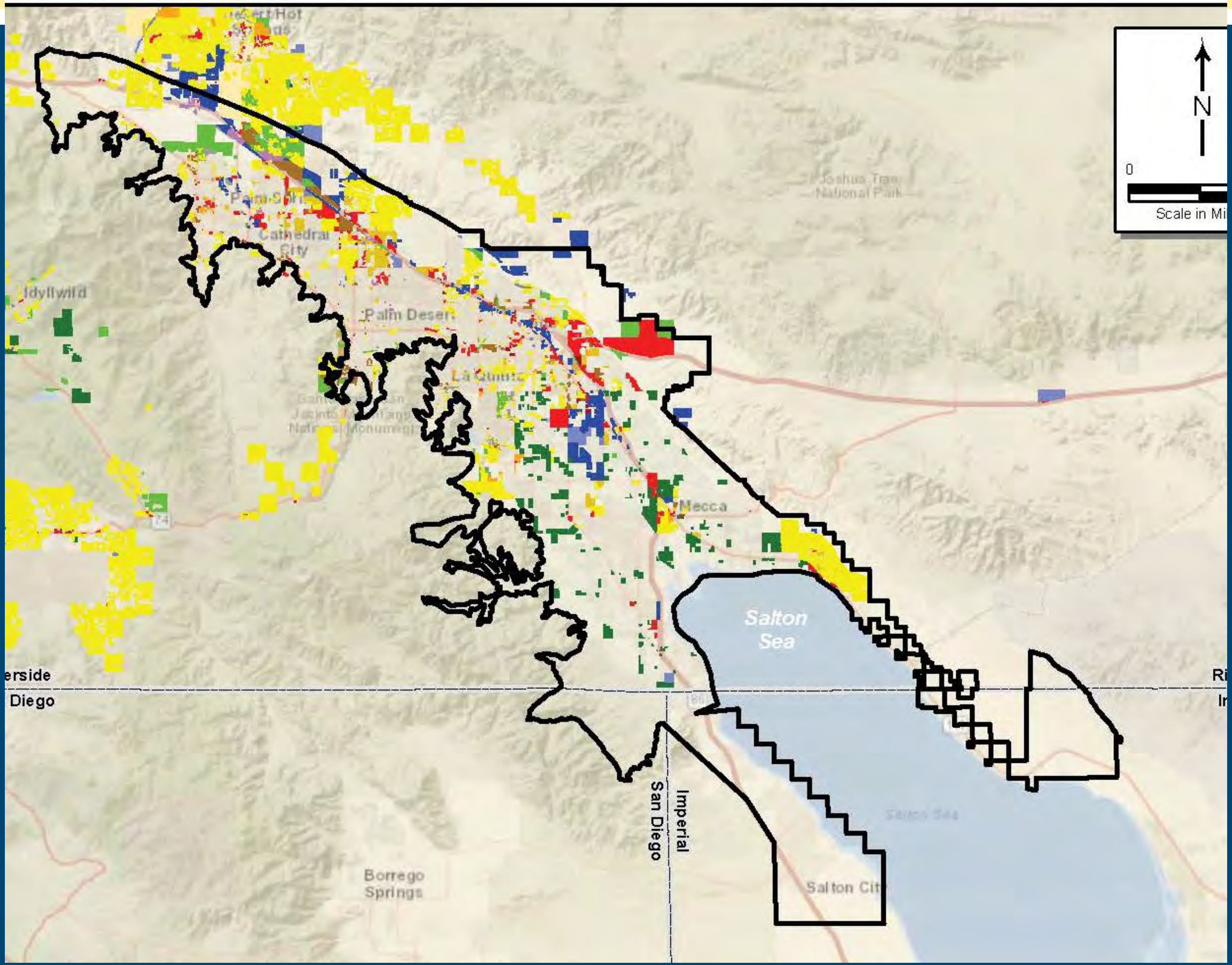
Projected GSA Demands

- **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%)



Municipal Demands
Discussion Questions

- What industries are changing?
- How is residential seasonality changing over time?



Agricultural Demands – Forecast Process

1. Regional Growth Forecast

Considering SCAG 2020 growth projections for households, population, and employment

2. Land Use Inventories

Identifying idle and agricultural lands for conversion based on SCAG land use mapping

3. Unit Demand Factors

Using 5-year (2015-2019) averages from agricultural pumping and Canal delivery data to develop unit demand factors

Agricultural Demands

Agricultural Land Conversion

- Baseline Demand:
  - 5-year average (2015-2019) = 295,150 AFY
- Crop Census:
  - Using to estimate total cropped acres and develop demand factors
  - Considers trimester cropping practices

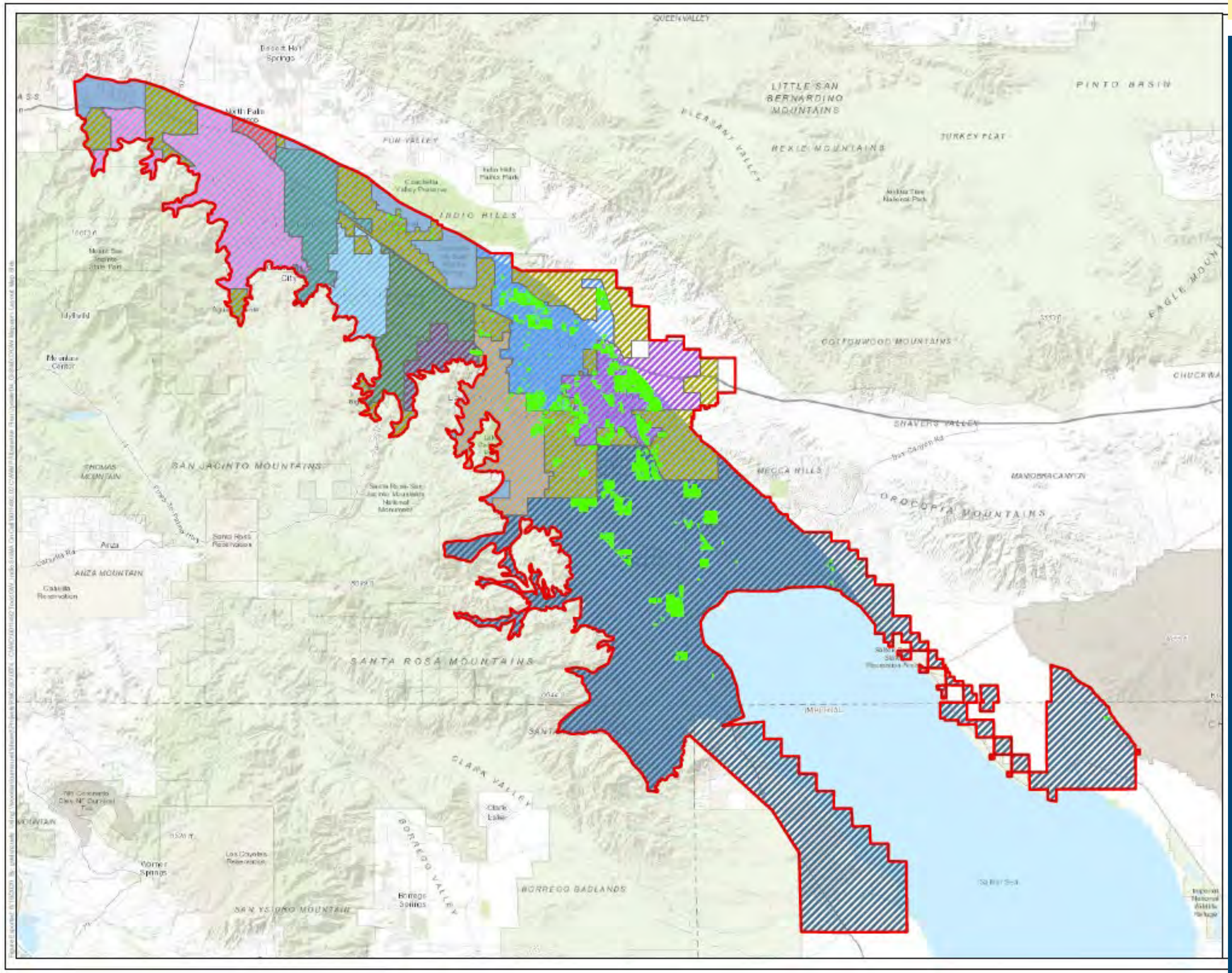
Photo credit: Coachella Valley Irrigated Lands Coalition

Agricultural Demands
2015-2019 Average Unit Demand Factors
(Acre-Feet per Acre)

Geographic Units	Agricultural Lands (Acres)	Agricultural Demand (AFY)	Demand Factor (AF/Acre)
Cathedral City	-	-	-
Coachella	4,064	18,150	4.5
Indian Wells	43	312	7.3
Indio	904	3,894	4.3
La Quinta	328	2,368	7.2
Palm Desert	76	559	7.3
Palm Springs	-	-	-
Rancho Mirage	-	-	-
Unincorporated West	10,660	62,817	5.9
Unincorporated East	38,357	207,050	5.4
Plan Area Total	**54,432**	**295,150**	

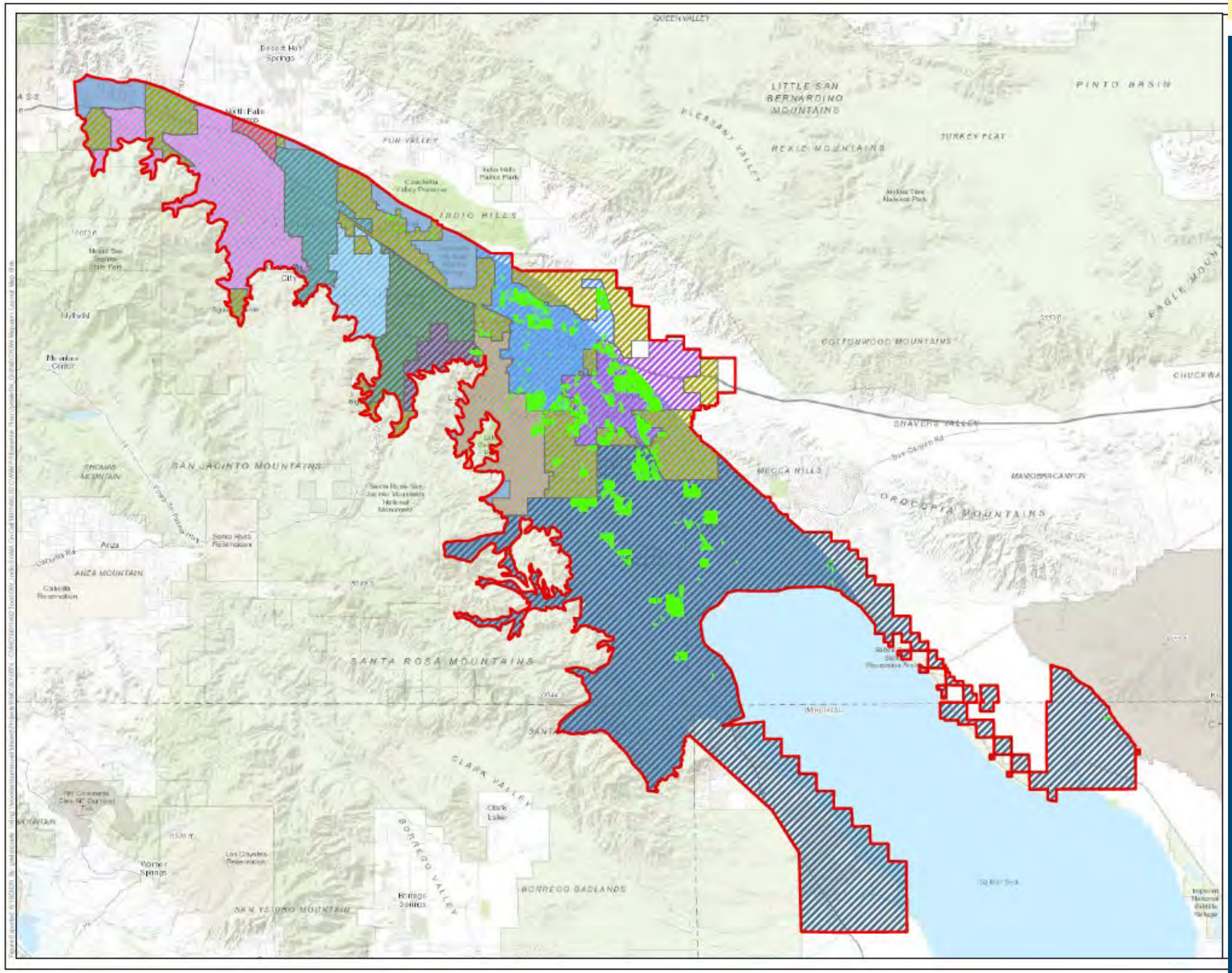
Projected Agricultural Demands

- 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



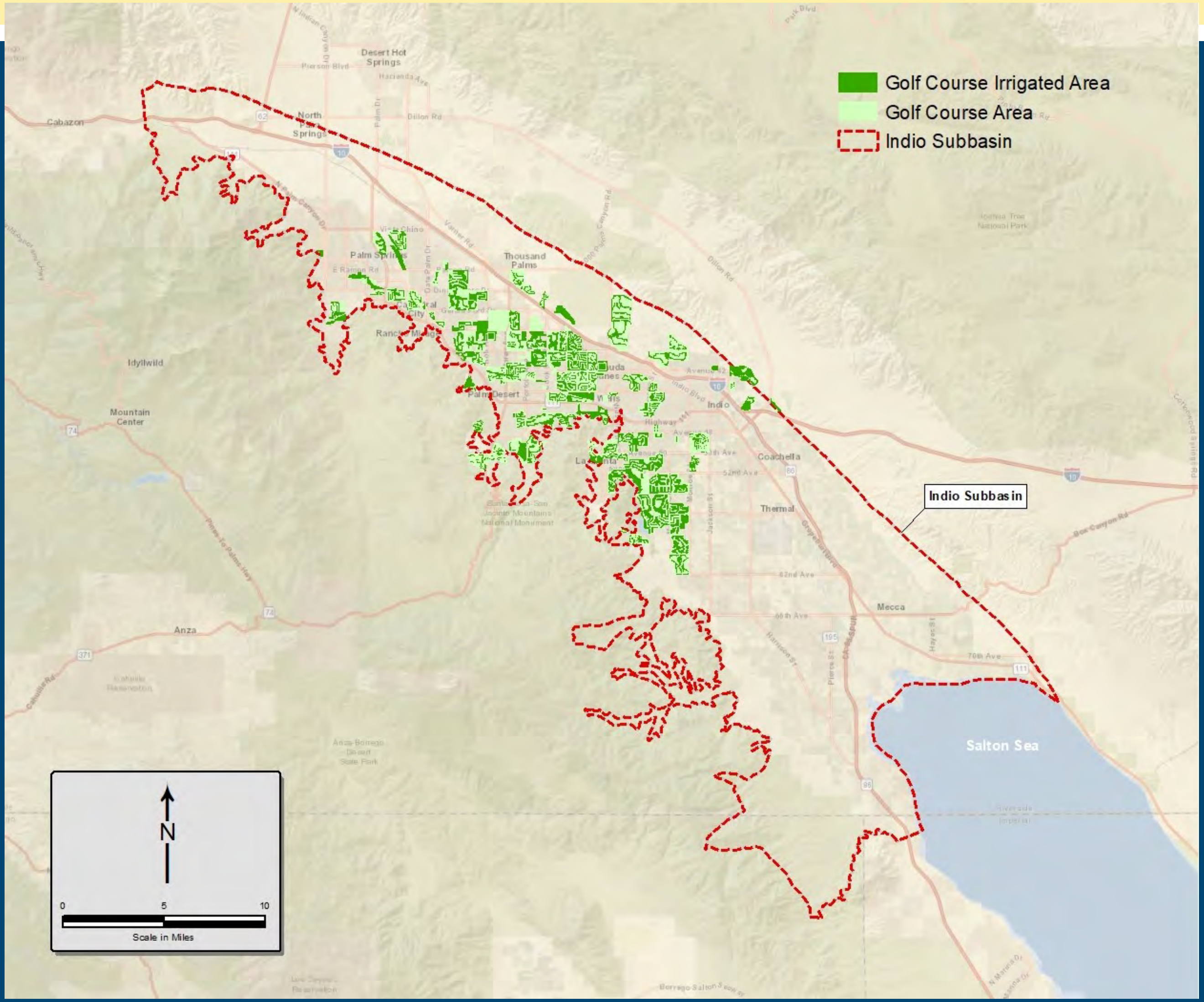
Agricultural Demands
Discussion Questions

- Is agriculture stable, growing, or shrinking over the next 20 years?
- What are current trends in local agriculture?
- What crops are changing?
- Where?



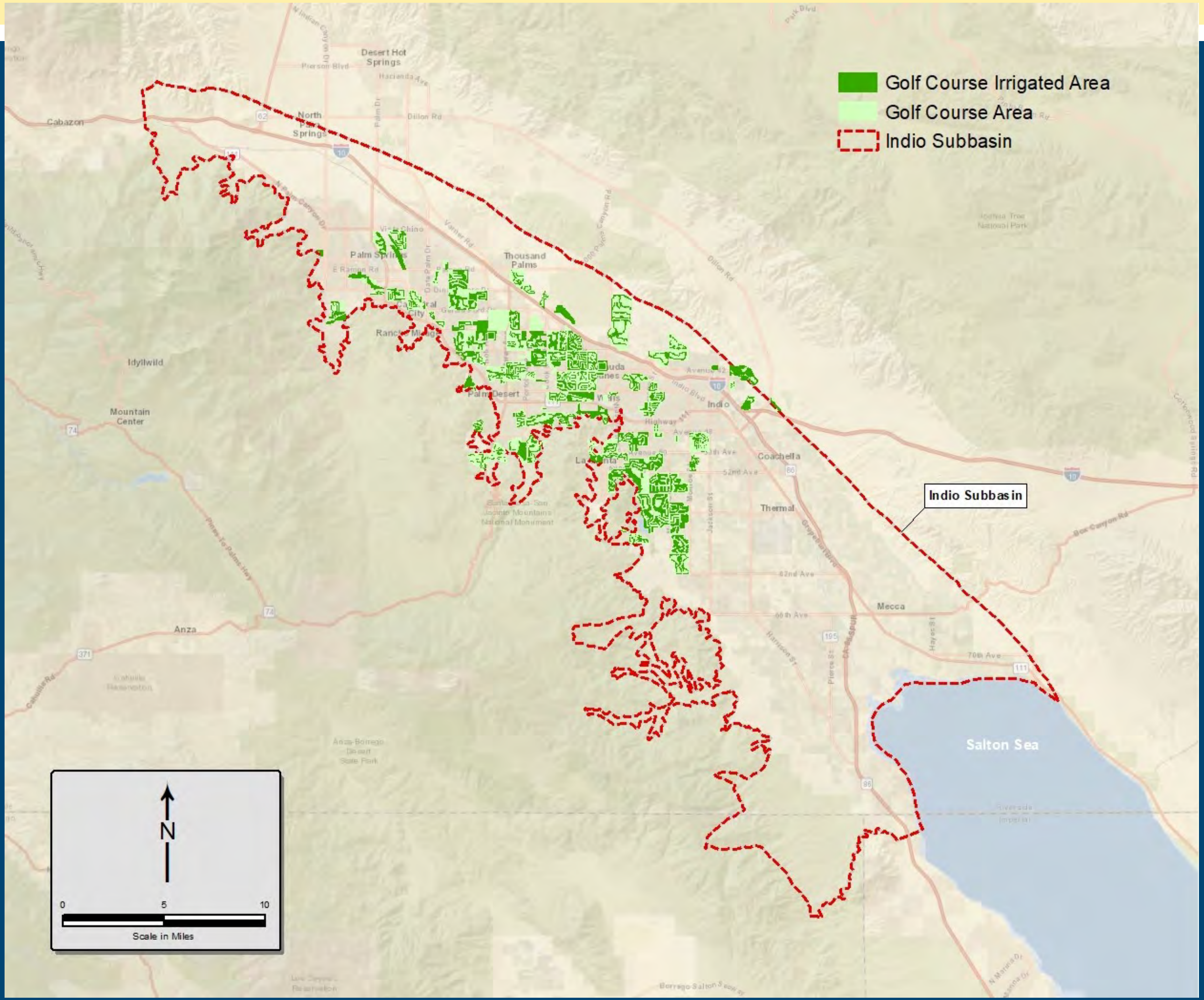
Golf Demands – Forecast

- Baseline Demand:
  - 5-year average (2015-2019) = 105,300 AFY
- Conservation:
  - Future golf courses – Comply with CVWD Ordinance No. 1302.4
- Forecast:
  - Assumes 3 new golf courses through 2045 (+2,300 AFY)



Discussion Questions

- Are you aware of any new or planned golf courses?
- What are current trends in golf?



Other Demands – Forecast

- Baseline Demand:
  - 5-year average (2015-2019) = 18,900 AFY
  - Includes fish farms, duck clubs, surf parks, polo/turf, and environmental water
- Forecast:
  - 4 new users added 2025 - 2035 (+2,700 AFY)

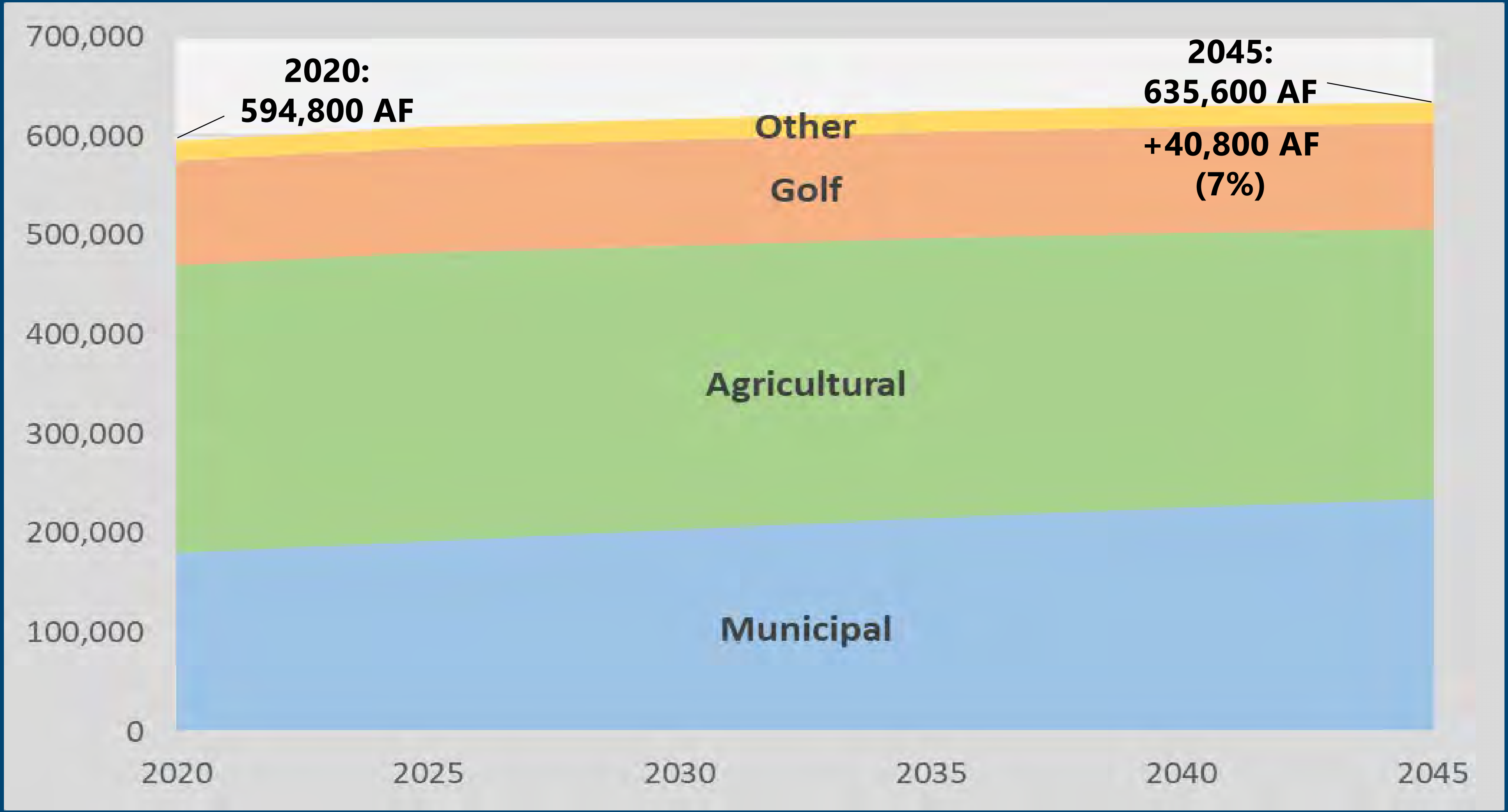
Photo credit: Salta Sea Authority

Discussion Questions

- Are there any other water demands we should consider?
- Have all potential users been included in the forecast?

Photo credit: Salton Sea Authority

Total Water Demand Forecast (AFY)



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Supply Portfolio for Indio Subbasin

Groundwater
- Watershed Runoff
- Net Return Flow

SWP Exchange Water
- Table A Amount
- Delta Conveyance Facility
- Perris Seepage

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

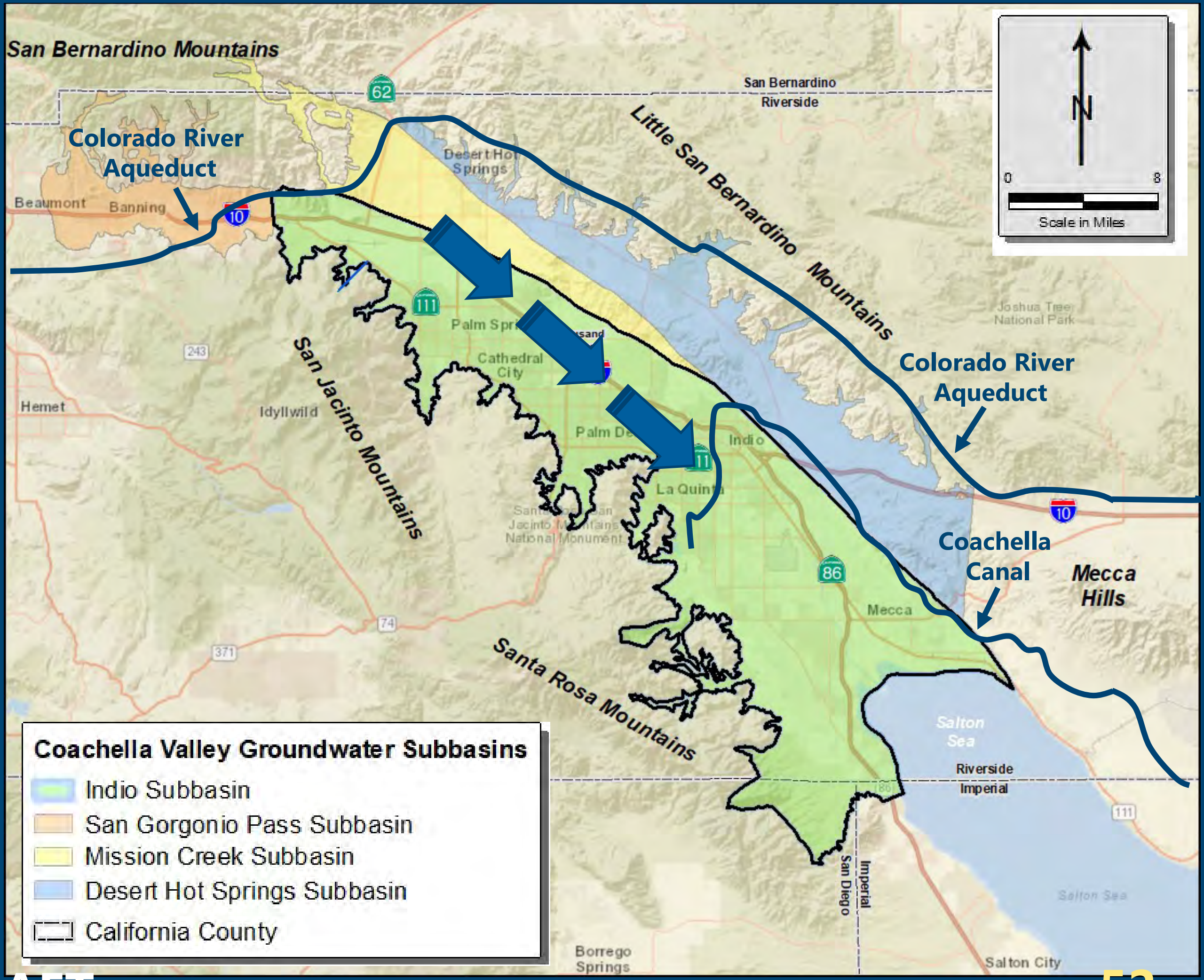
Recycled Water
- Based on Municipal Wastewater Flow Projections

Surface Water
- Snow, Falls & Chino Creek
- Whitewater Canyon

Other Supplies
- Yuba Accord
- Rosedale Rio-Bravo
- Sites Reservoir

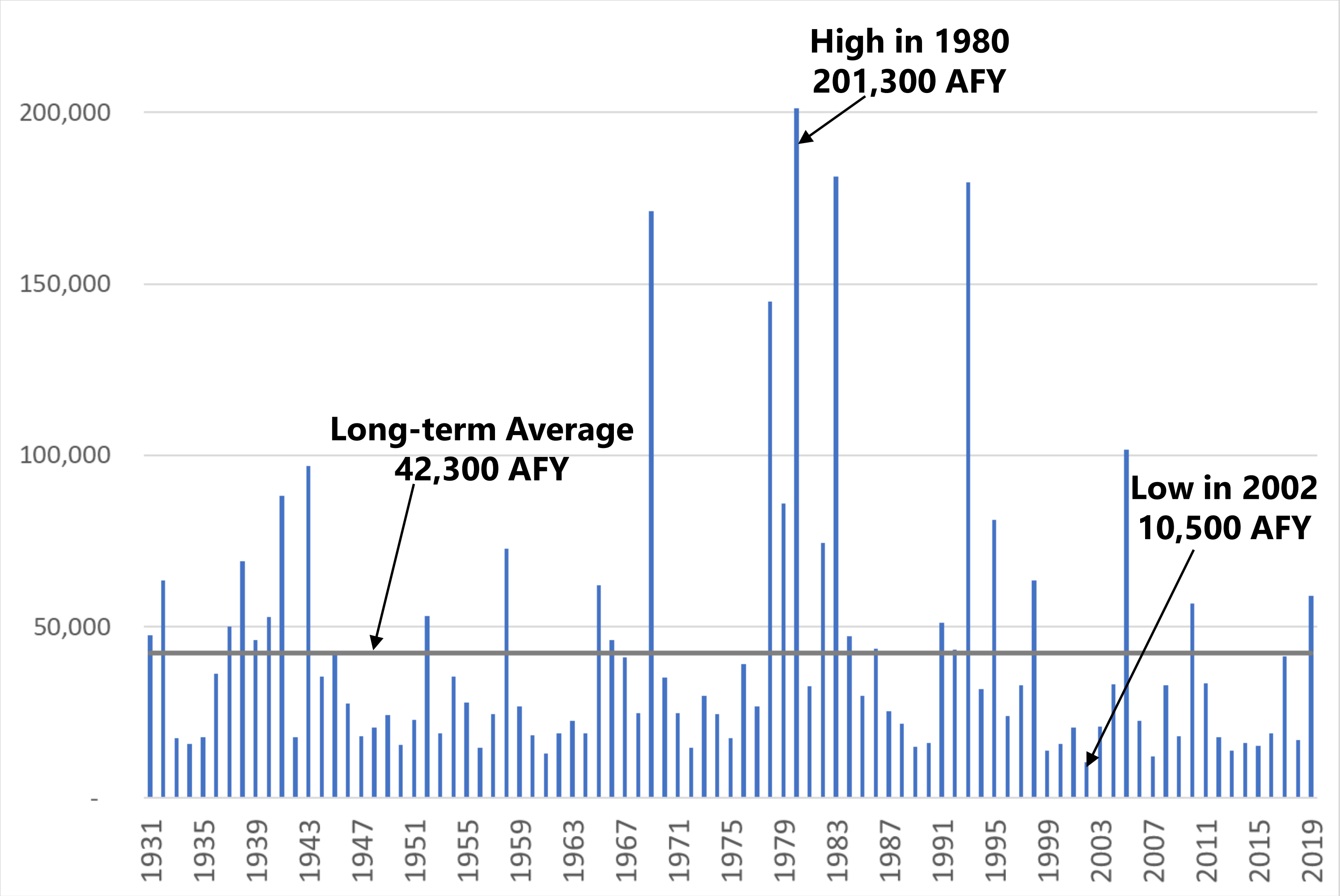
Groundwater

- 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* to be evaluated with model
  - **Inflows**: natural recharge, subsurface inflows, return flows of applied water
  - **Outflows**: subsurface outflows, drain flows, evapotranspiration



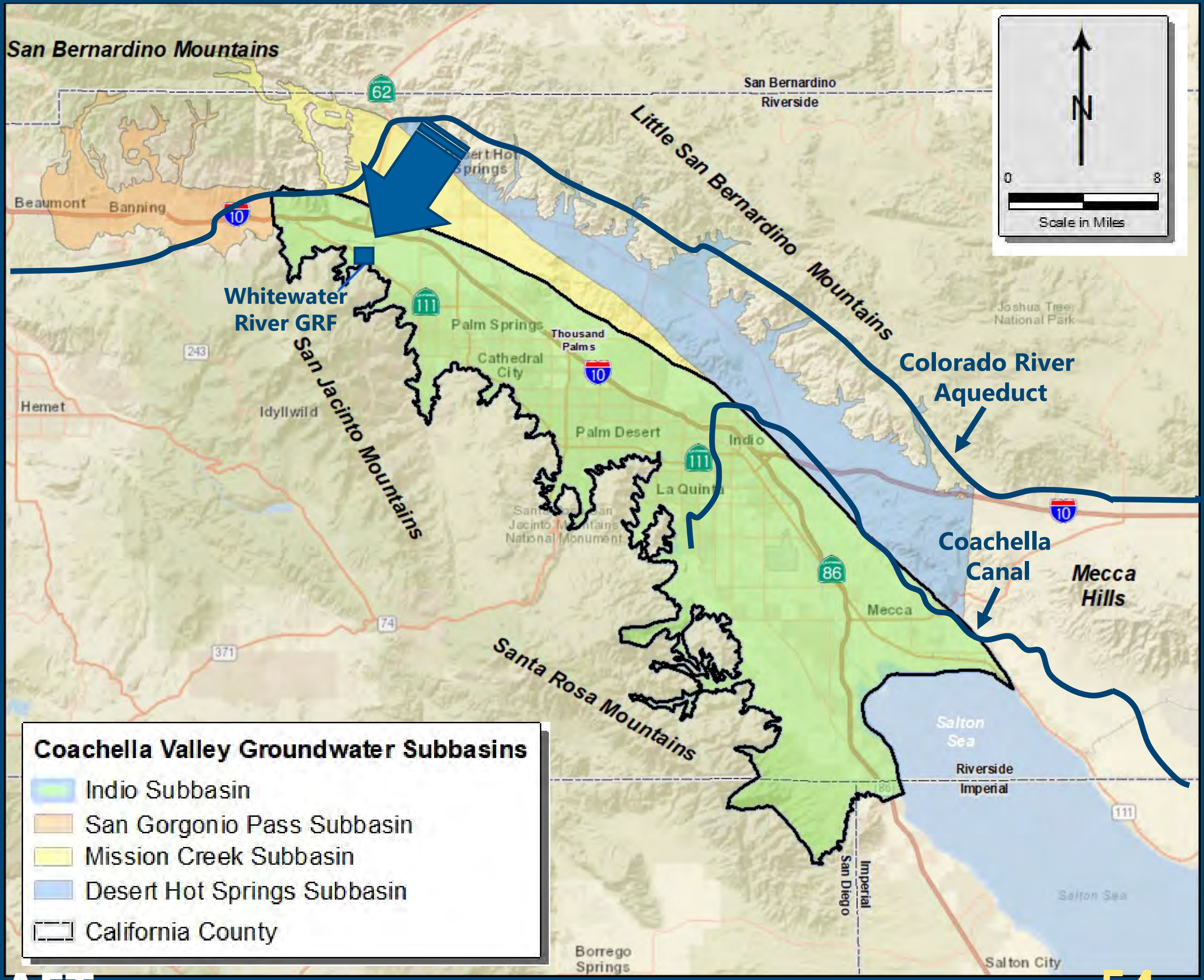
Watershed Runoff

- 1931-2009 average = 44,000 AFY
- 1931-2019 average = 42,300 AFY



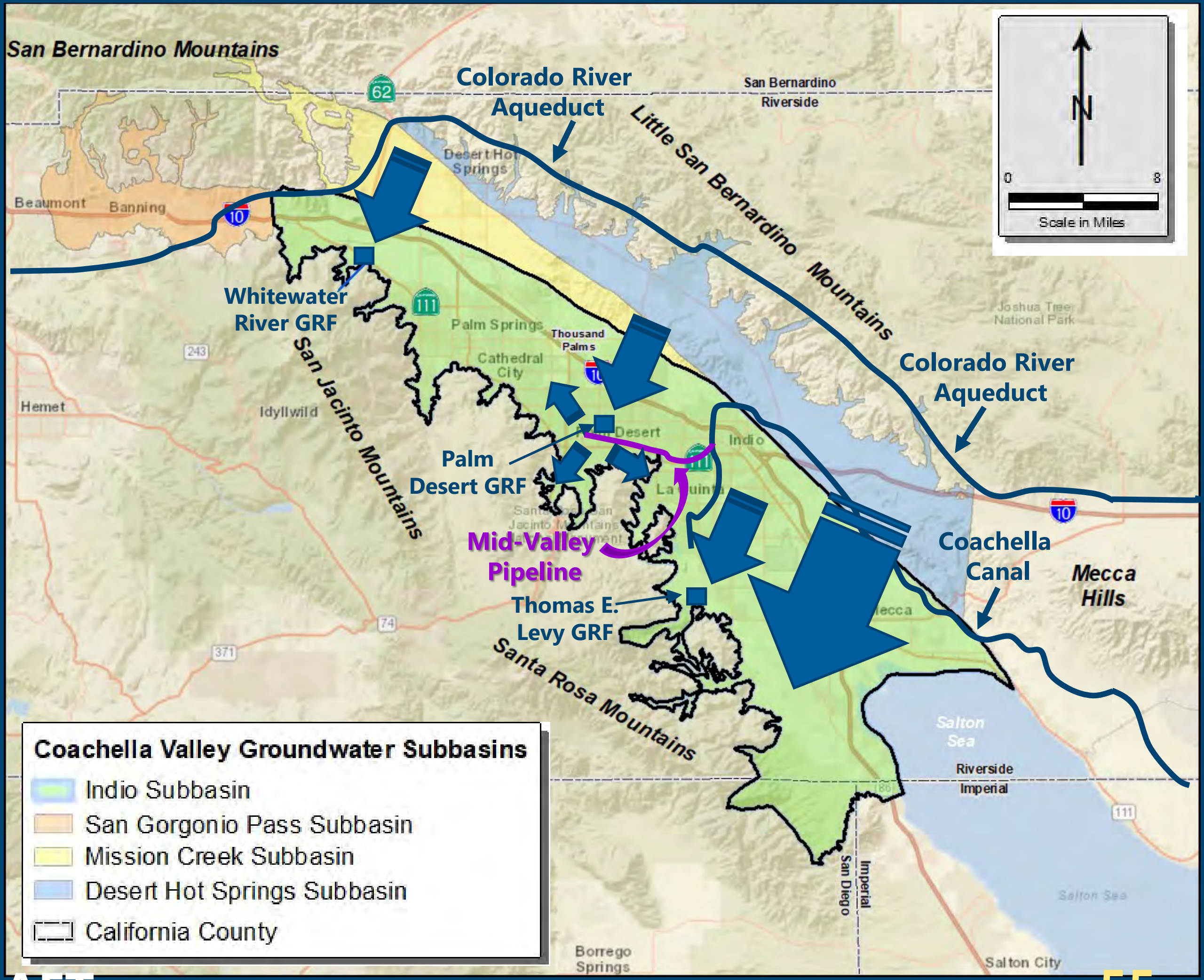
State Water Project (SWP) Water

- 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 and additional Table A and Article 21 water will be available (26,500 AFY)



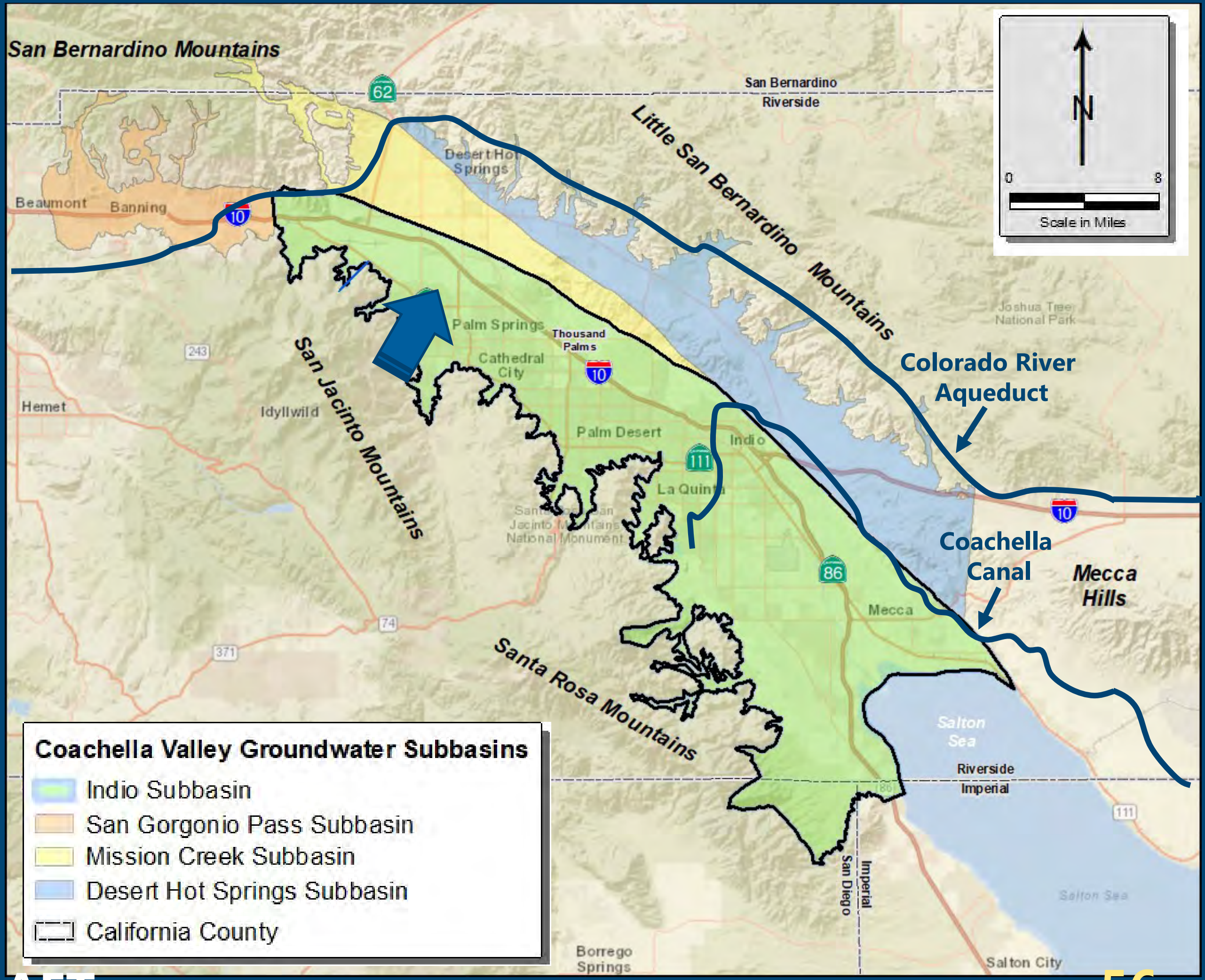
Colorado River Water

- 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)



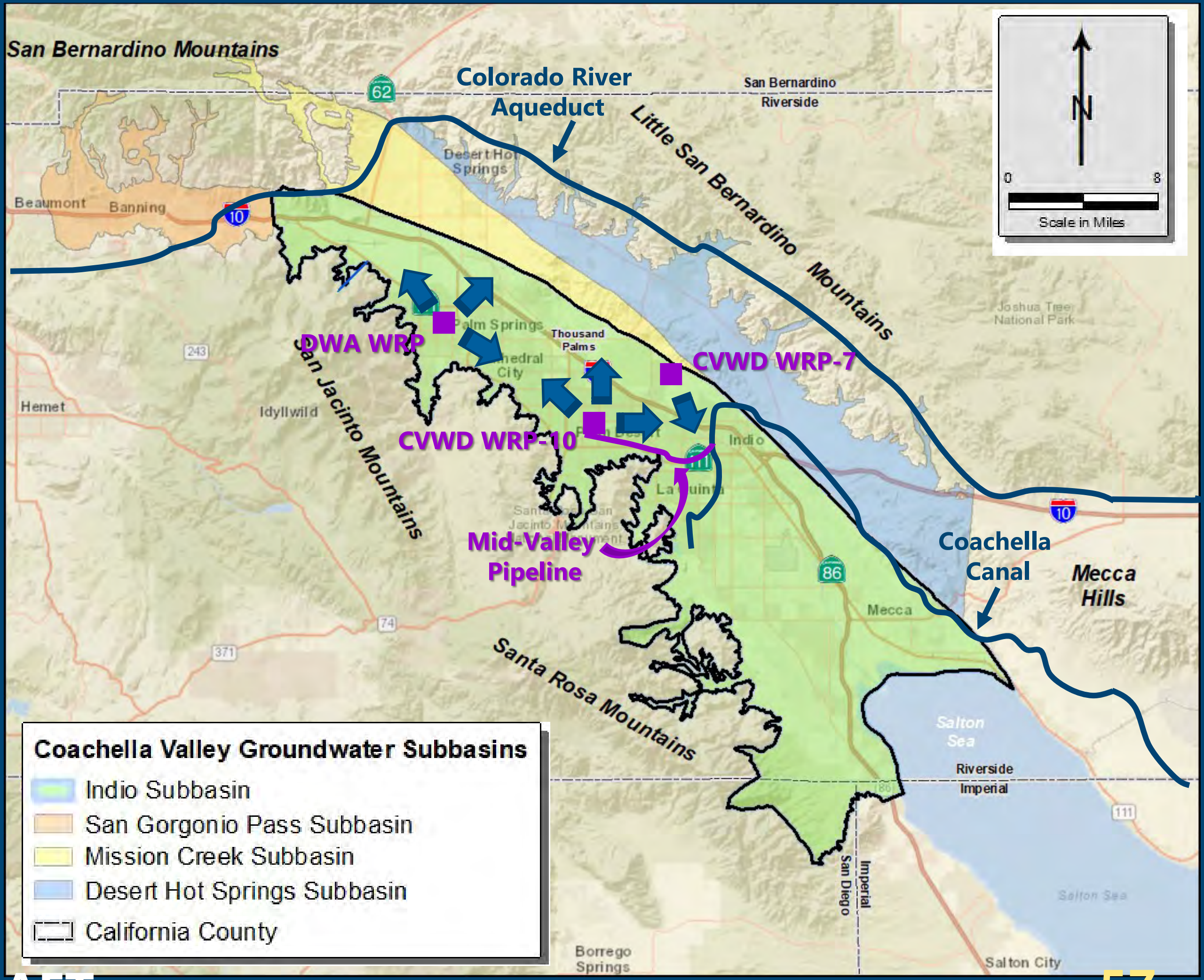
Surface Water

- 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



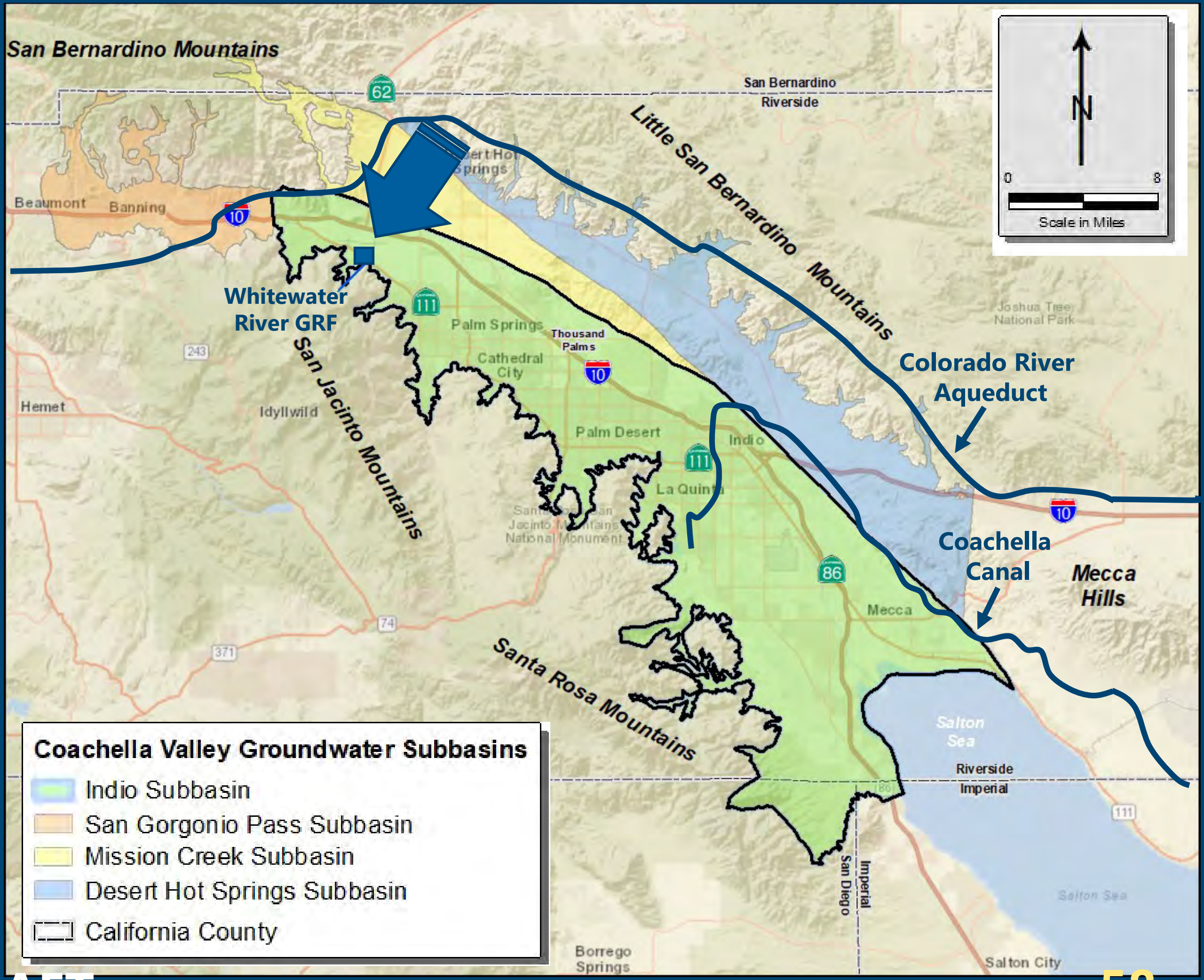
Recycled Water

- 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:
  - Available wastewater at 3 WRPs up to design capacity is recycled
  - Potential additional supply if *all* wastewater reused = 32,500 AFY

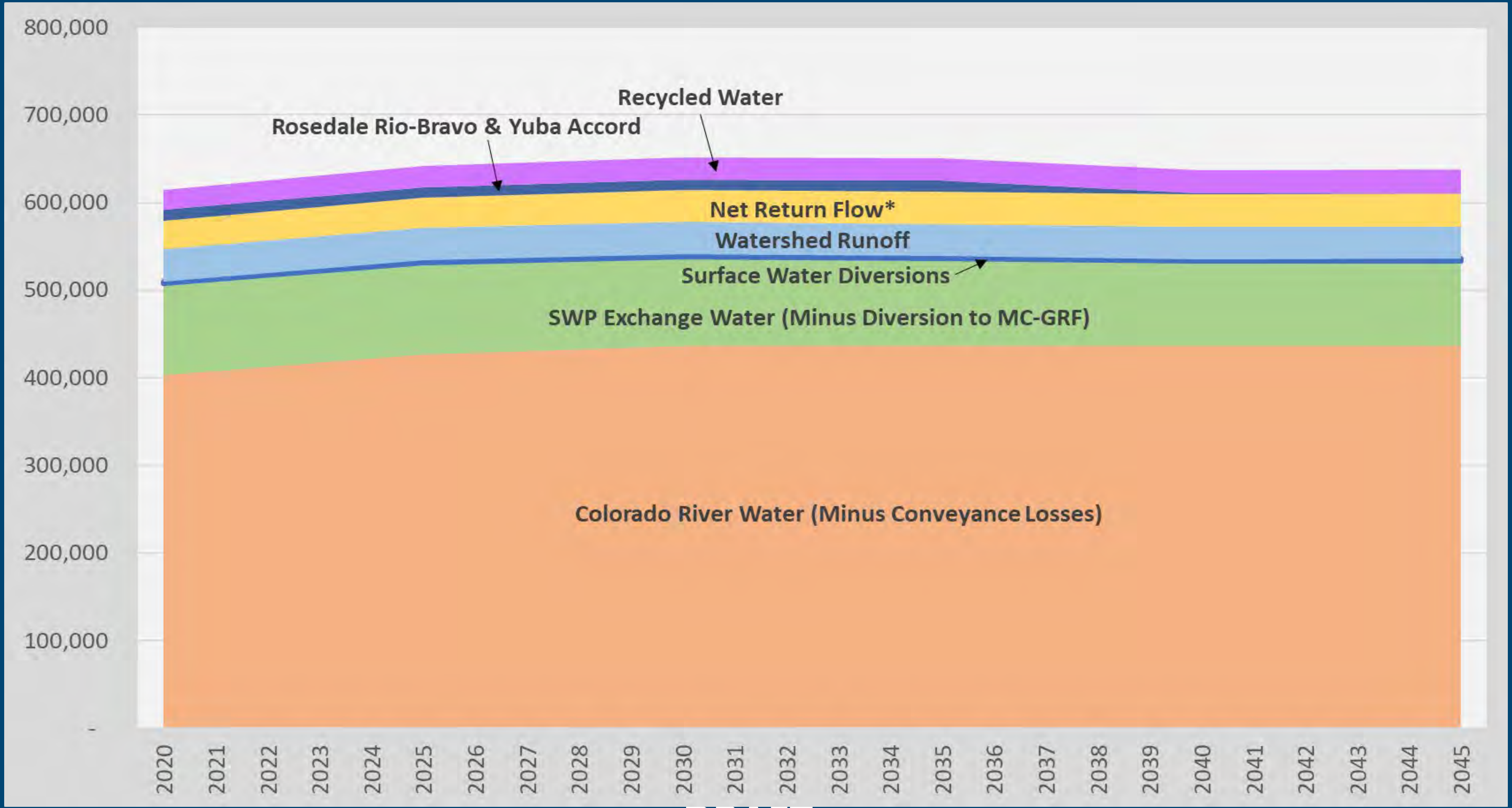


Other Supplies

- 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)



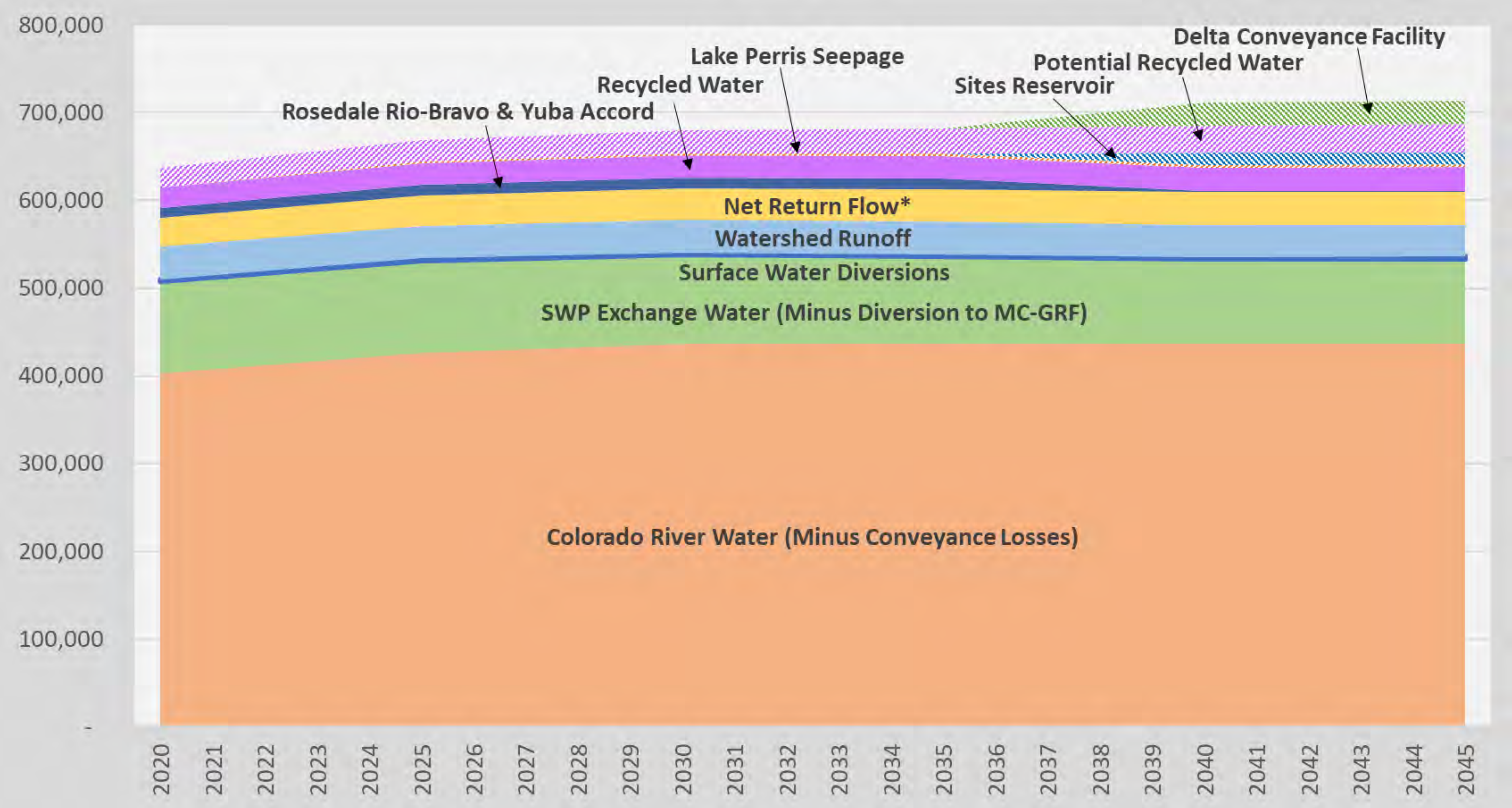
Forecast – Existing Supplies



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

- DRAFT -

Forecast – Water Supply for the Future



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

- DRAFT -

Agenda

- Welcome and Introductions
- Alternative Plan Status
- Plan Area & Hydrogeologic Conceptual Model (HCM)
- Groundwater Model Update
- Demand Forecast
- Supply Analysis
- **Next Steps**
- Public Comment
- Get Involved

Next Steps

- December 2020 – February 2021
  - Document groundwater dependent ecosystems
  - Complete update of groundwater model
  - Quantify Indio Subbasin water budget
  - Identify projects and management actions
  - Develop proposed sustainability criteria
  - Identify emerging issues

What Are Emerging Issues?

SGMA defines six "undesirable results" to be addressed

- Chronic lowering of groundwater levels
- Reduction of groundwater storage
- Seawater intrusion
- Degraded water quality
- Land subsidence
- Depletions of surface water with impacts on beneficial uses

This Alternative Plan Update

- Reviews and updates emerging issues identified in 2010
- Identifies new emerging issues
  - Water supply for community water systems
  - PFAs (Per- and polyfluoroalkyl substances, emerging contaminants)
  - ?
  - ?

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Public Comment

Input and feedback are welcomed

For Callers – you may need to press *6 to unmute

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- **Get Involved**

Get Involved – Visit our Website

www.IndioSubbasinSGMA.org

Get Involved – Visit our Website

Sign up for email invites, updates, and data/report releases at

www.IndioSubbasinSGMA.org

Stay Connected

Sign up to be on our mailing list for updates about the Indio Subbasin SGMA process.

Name *

Please enter your name *

Email *

Please enter your email *

Submit

We will never share your information with anyone.

Get Involved – Next Workshop

February 2021

2:00 – 4:00 PM

Location: TBD

For additional information, please contact:

Rosalyn Prickett

IndioSubbasinSGMA@woodardcurran.com

(858) 875-7420