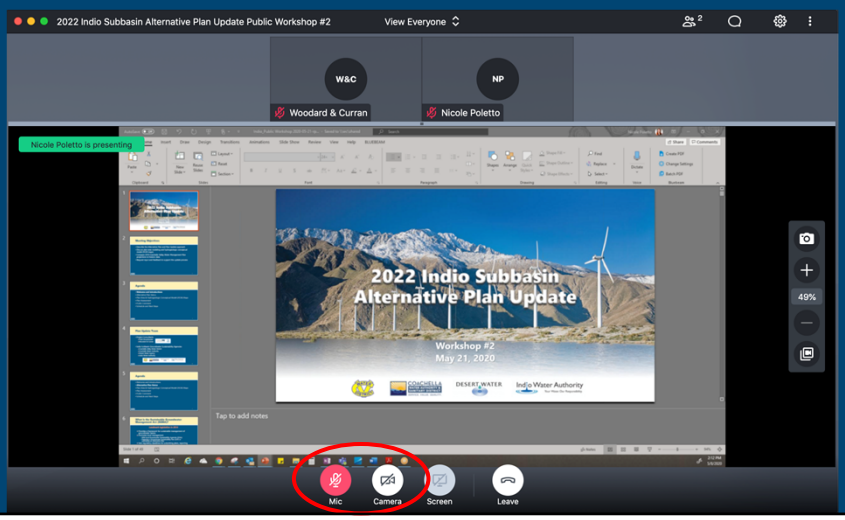
1

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

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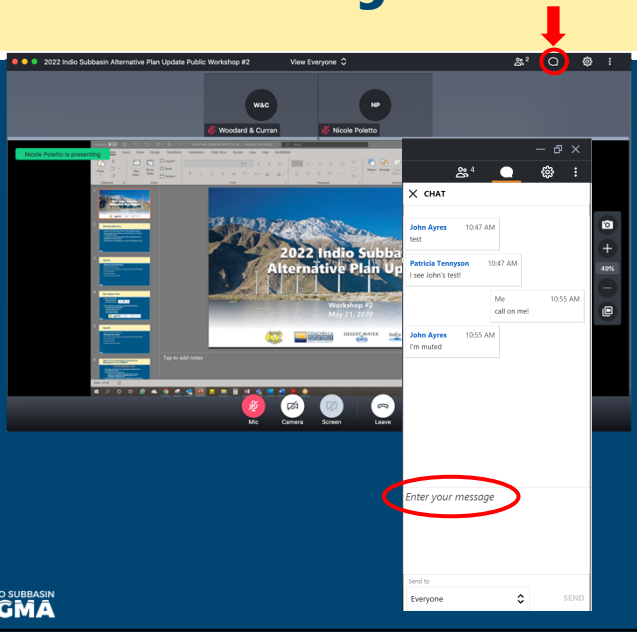
GoToMeeting – How to Ask a Question



- Let us know you have a question by clicking the **Chat** icon in the top right
- Click on *Enter your message*, type your message in the Chat and hit SEND
- Our organizer will mute everyone at the beginning of the meeting
- Once we receive your Chat and can pause to answer your question:
  - Our meeting organizer will unmute you to relay your question or comment
  - Please also check your phone/computer to make sure you're not muted there too
- Phone only: we will unmute all callers and ask for your questions or comments

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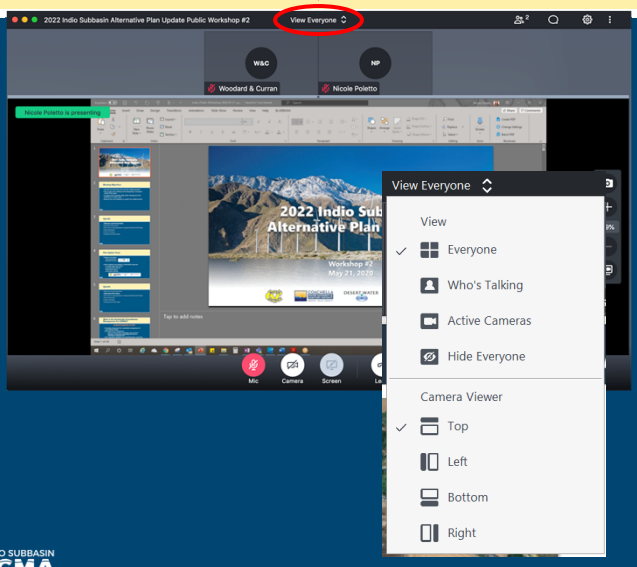
3

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

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Meeting Objectives

- Overview and status of the Alternative Plan Update
- Discuss the Plan Area, Hydrogeologic Conceptual Model (HCM), and Groundwater Model
- Compare 2010 *Coachella Valley Water Management Plan* projections to historic data
- Request input and feedback to support the Plan Update

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Agenda

- **Welcome and Introductions**
- Alternative Plan Status
- Plan Area
- Hydrogeologic Conceptual Model (HCM)
- 2010 Plan Assessment
- Groundwater Model Assessment & Approach
- Public Comment
- Schedule and Next Steps

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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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Agenda

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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)
  - Prepare 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

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

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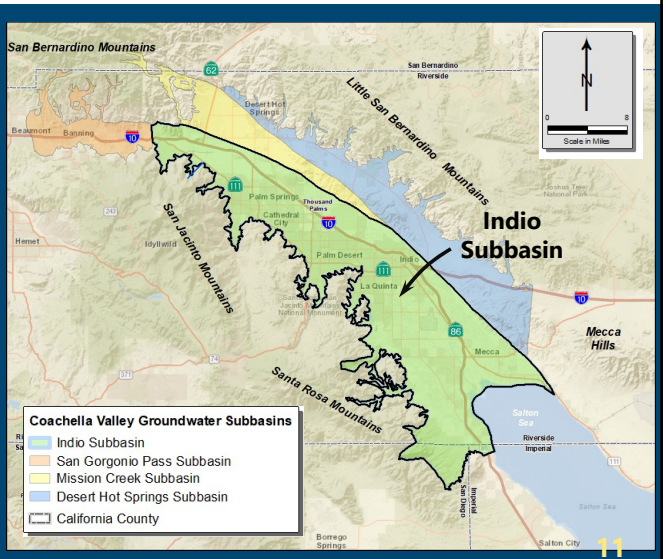
How does SGMA Apply to the Indio Subbasin?

- Defines Indio Subbasin as medium priority, thus subject to SGMA
- Recognizes existing *2010 Coachella Valley Water Management Plan (CVWMP)*, approved as an Alternative Plan
- Recommends that GSAs quantify sustainability criteria and additional elements in Plan Update
- Requires the Indio Subbasin to be sustainably managed within 20 years



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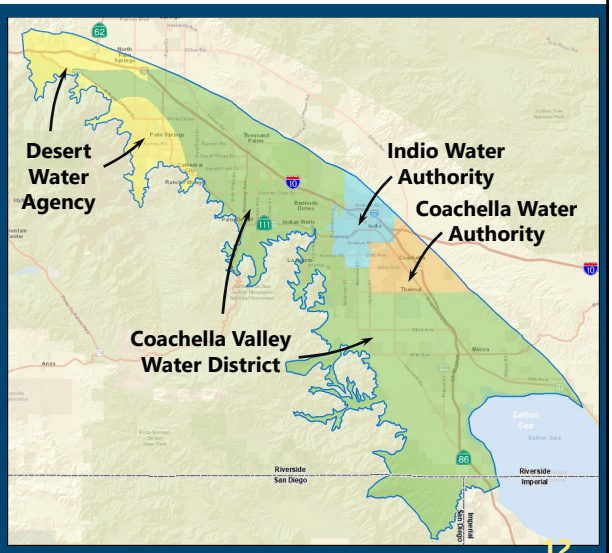
What are the Roles/Responsibilities of GSAs?

- 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



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What is the Alternative Plan?

- *2010 CVWMP = Indio Subbasin Alternative Plan*
  - Builds on existing plans and long history of active local water management
  - Assessed future growth and land use changes
  - Estimated future water demand and supplies
  - Identified management actions needed to meet current and future water demands in a cost effective and reliable manner
  - Established data collection and monitoring programs to track groundwater conditions and Plan performance
  - Fulfills SGMA requirement for an Alternative to a Groundwater Sustainability Plan (GSP)
  - Next update due by January 1, 2022

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Plan Update – Tasks

1. Assess existing Plan
2. Update and process datasets
3. Document current groundwater conditions
4. Estimate future water demand and supplies
5. Evaluate management actions and update implementation plan
6. Simulate groundwater response to future conditions
7. Establish quantifiable sustainability goals and criteria
8. Assess data collection/monitoring programs
9. Develop and implement stakeholder and public outreach

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Your Participation and Input are Important

- Our goals are to:
  - Enhance public understanding about water resources in the Indio Subbasin
  - Keep you – the public and stakeholders – informed about the Plan Update process
  - Engage diverse interested parties and stakeholders
  - Make sure we incorporate best available information
  - Respond to your concerns

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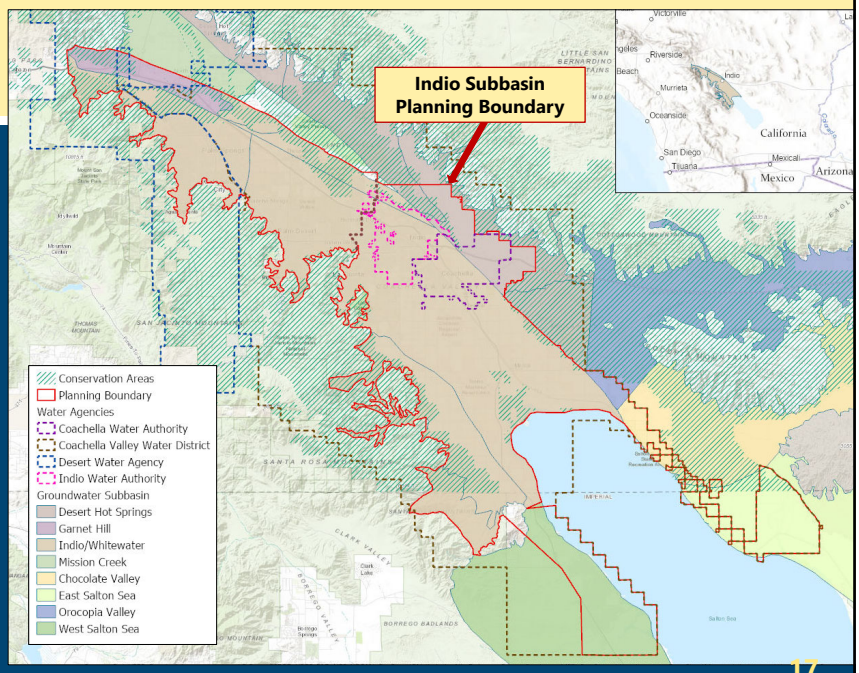
Plan Area

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



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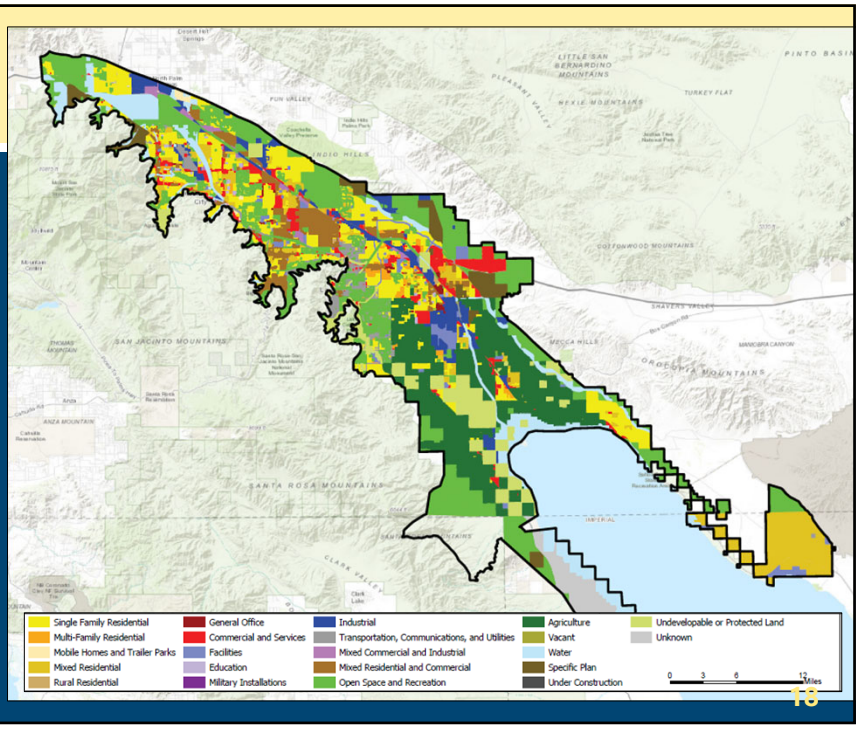
Plan Area

Land Use

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



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Agenda

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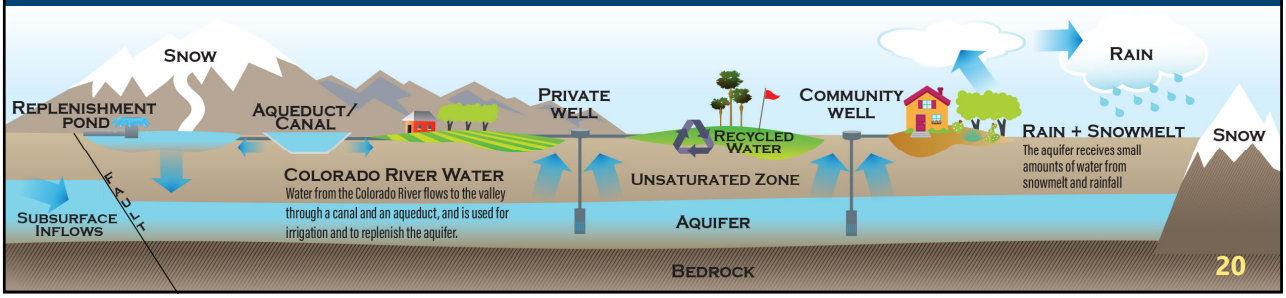
Hydrogeologic Conceptual Model

- 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



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Hydrogeologic Conceptual Model

HCM Components:

1. Hydrogeologic Cross Sections
2. Surface Water and Natural Recharge
3. Groundwater Production
4. Groundwater Levels
5. Groundwater Quality
6. Land Subsidence
7. Groundwater Dependent Ecosystems

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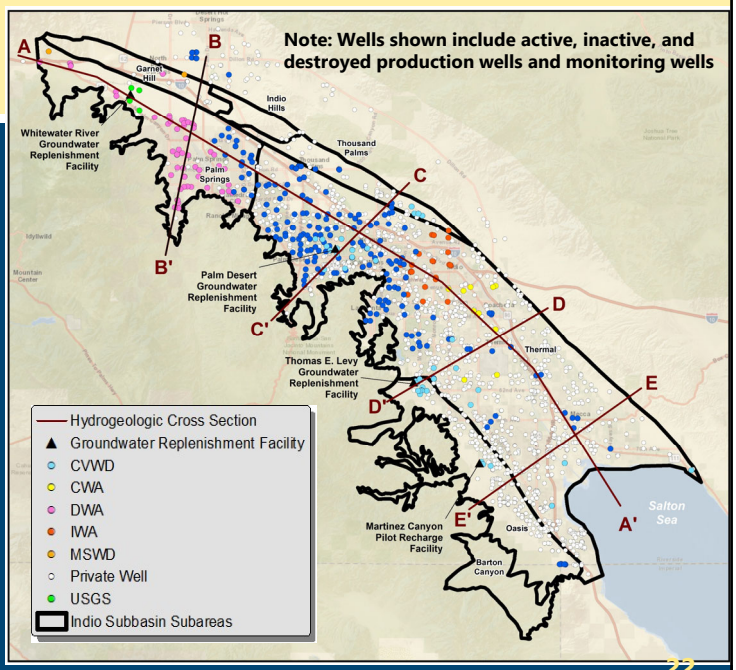
Hydrogeologic Cross Sections

- Illustrates basin geometry and subsurface conditions
  - Major aquifers and aquitard units
  - Effects of faults
  - Groundwater levels
  - Production well screen intervals
- Five cross sections (in-progress)
  - Covers five main Indio subareas
  - Oriented parallel and perpendicular to flow
  - Crosses major subbasin boundaries and faults
  - Includes groundwater replenishment areas



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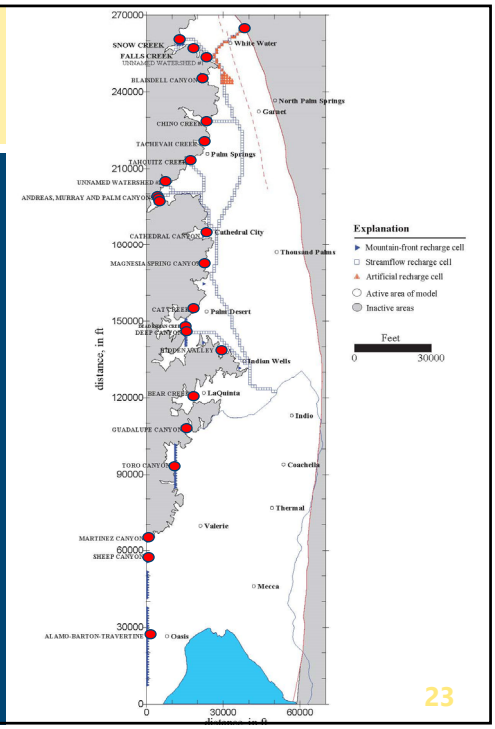
Surface Water and Natural Recharge

- 24 tributary mountain watersheds generate runoff that recharges the Indio Subbasin
  - Streamflow recharge
  - Mountain-front recharge
- Update runoff/recharge estimates (in-progress)
  - Precipitation data from 18 weather stations
  - Streamflow data from 20 USGS gage stations
- Develop map showing watersheds and stream locations entering Indio Subbasin (in-progress)



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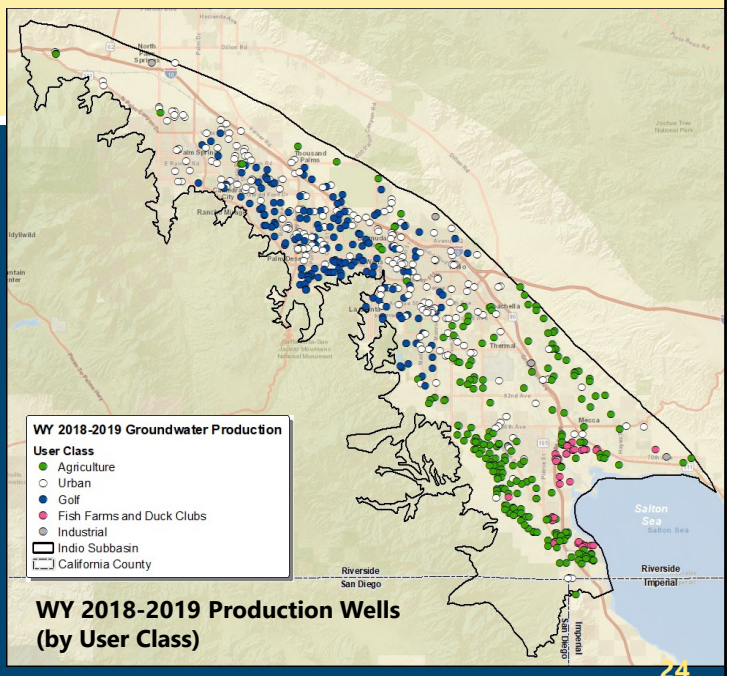
Groundwater Production

- Annual Groundwater Production Mapping
  - Reported production by well
  - Currently estimated production
    - Tribal pumping
    - Minimal pumpers
  - Maps showing wells by user type (in-progress)



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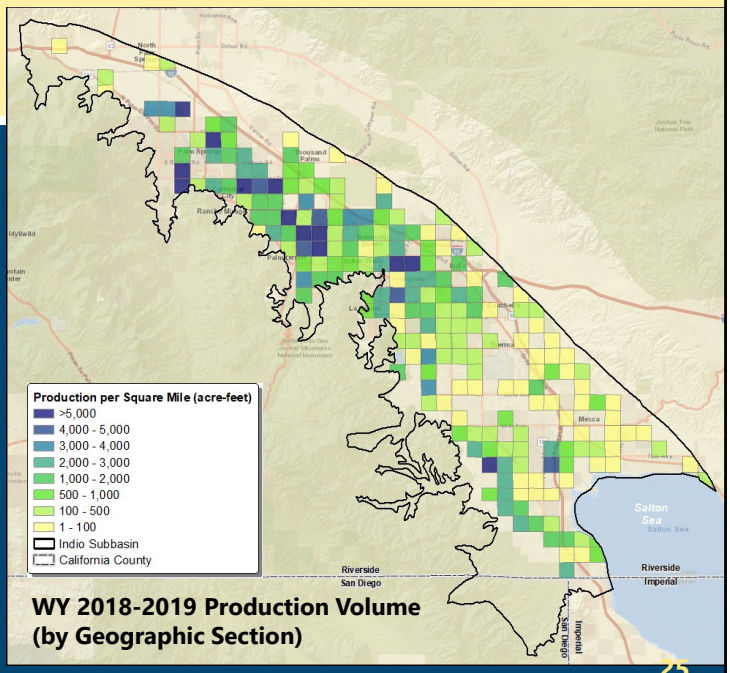
Groundwater Production

- Annual Groundwater Production Mapping
  - Annual production maps aggregated by geographic section



WY 2018-2019 Production Volume (by Geographic Section)

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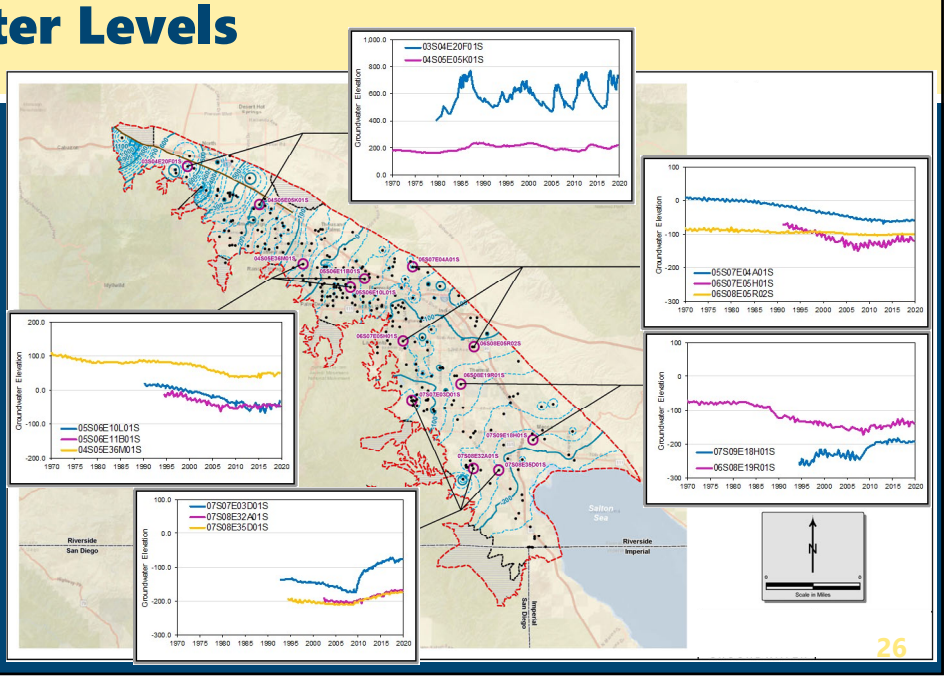
Groundwater Levels

- Groundwater level maps
  - Supports assessment of updated model
  - Provides basis for evaluating sustainability criteria
- Mapping to include wells distributed across the subbasin
- Hydrograph maps (in-progress)



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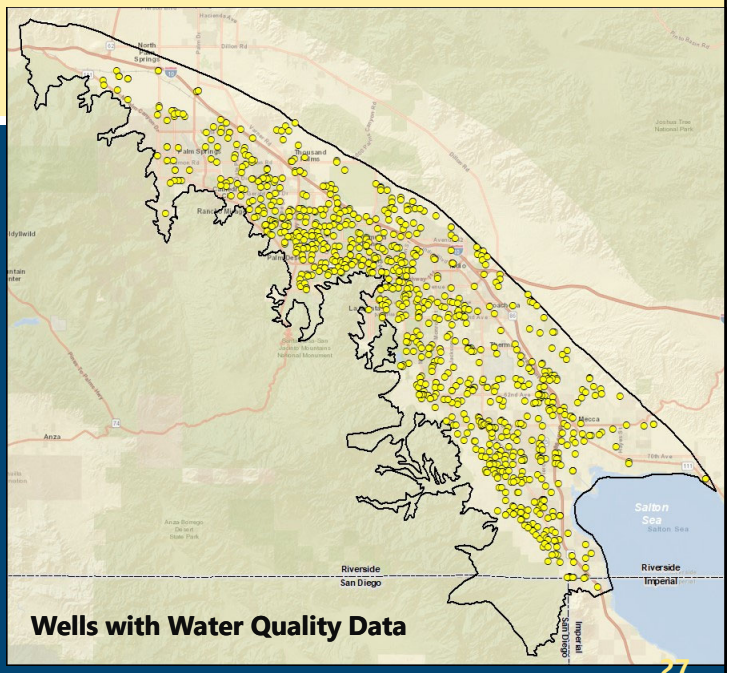
Groundwater Quality

- Constituents of Concern
  - Total Dissolved Solids
  - Nitrate
  - Arsenic
  - Chromium
  - Uranium
  - Perchlorate
  - Fluoride
  - Dibromochloropropane



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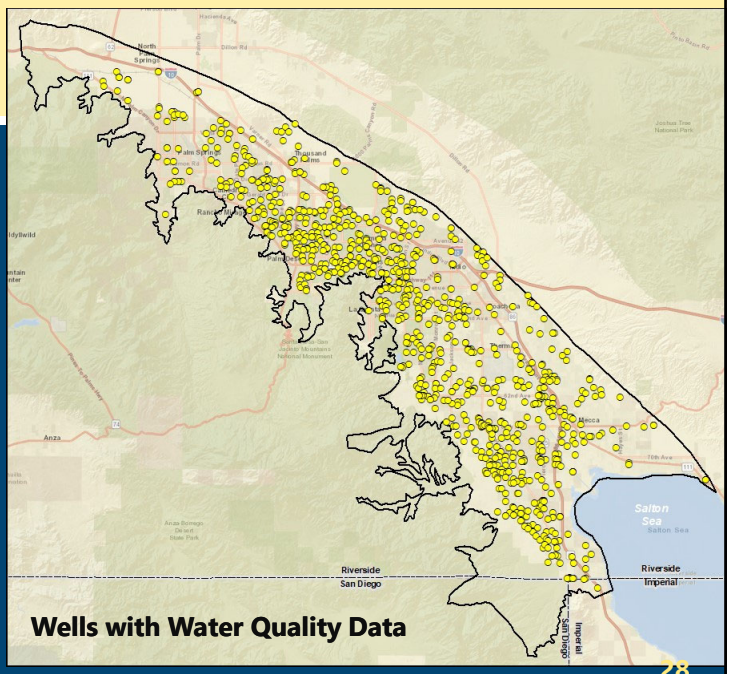
Groundwater Quality

- Organizing and reviewing data (in-progress)
- Period of record: 1970 to 2019
- ~950 wells with water quality
- ~300,000 individual records



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Land Subsidence

- Land Subsidence
  - Cooperative agreement between USGS and CVWD since 1996
  - Series of papers published (1997, 2001, 2007, and 2014)
    - Evaluating land subsidence from 1930 to 2010
  - Latest USGS report evaluating subsidence from 1995 to 2017 to be published later this year

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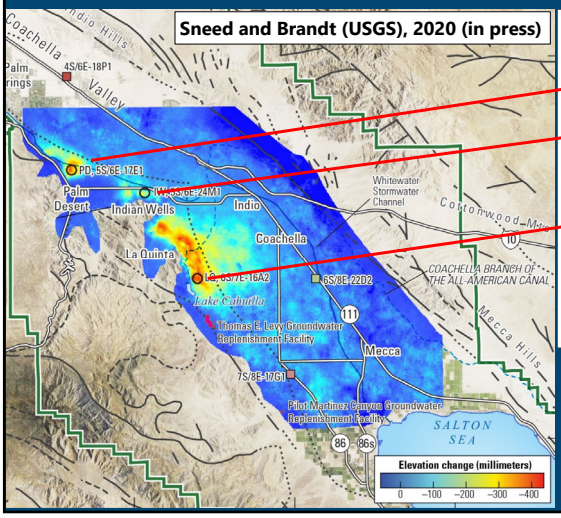
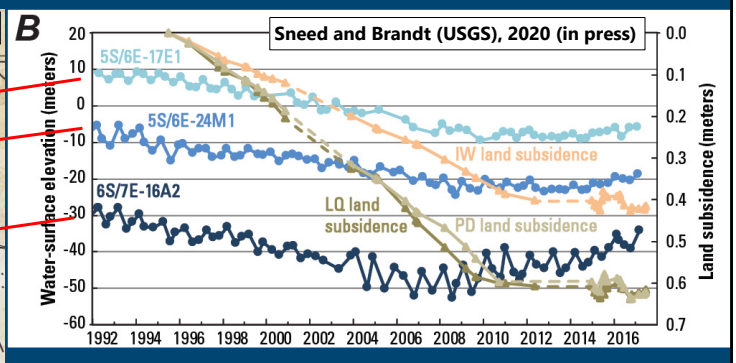
Land Subsidence

Land Surface Elevation Change (1995-2017)



Groundwater levels / Land Subsidence Monitoring



- Subsidence up to 2.0 feet from 1995 to 2010
- Water level stabilization since 2010 has stopped or decreased the rate of subsidence significantly and even resulted in uplift in some areas

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Groundwater Dependent Ecosystems

- Groundwater Dependent Ecosystems (GDEs)
  - Desktop evaluation (in-progress)
    - Assessment of Natural Communities Commonly Associated with Groundwater (NCCAG) data
    - Review of Coachella Valley Multi Species Habitat Conservation Plan
    - Assessment of Threatened & Endangered (T&E) species in Indio Subbasin
  - Biological field assessment
  - GDE summary report

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Plan Assessment

- Comparing *2010 CVWMP* projections to historical demand and supply data through CY2019 (in-progress)
- Processing data for:
  - Groundwater
  - State Water Project (SWP) exchange water
  - Colorado River (Canal) water
  - Surface water
  - Recycled water
- Revising projection assumptions to ensure they match current conditions and agreements (in-progress)

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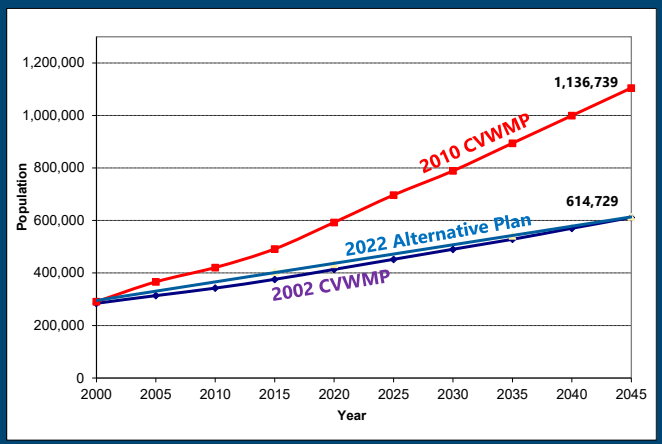
Population Growth

- 2002 CVWMP used Southern California Association of Governments (SCAG) 1998 data
- 2010 CVWMP used SCAG 2006 data
  - Based on rapid growth in Coachella Valley from 2000-2006
- Alternative Plan to use SCAG 2020 data
  - Forecast is closer to 2002 Plan projections

Population Projections



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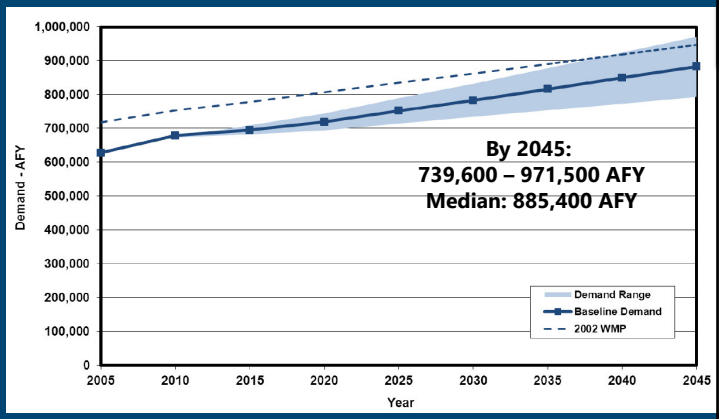
Water Demands

2010 Plan Assumptions:

- Urban growth occurs 50/50 on agricultural and vacant parcels
  - 371 gallons per capita per day (gpcd)
- Golf courses increase with population
  - 700-1,200 AFY/course
- Agricultural acreage declines as land is converted to urban uses
  - 6.28 AFY/acre
- Demands served by a portfolio of water supplies and conservation

2010 CVWMP Demand Projection



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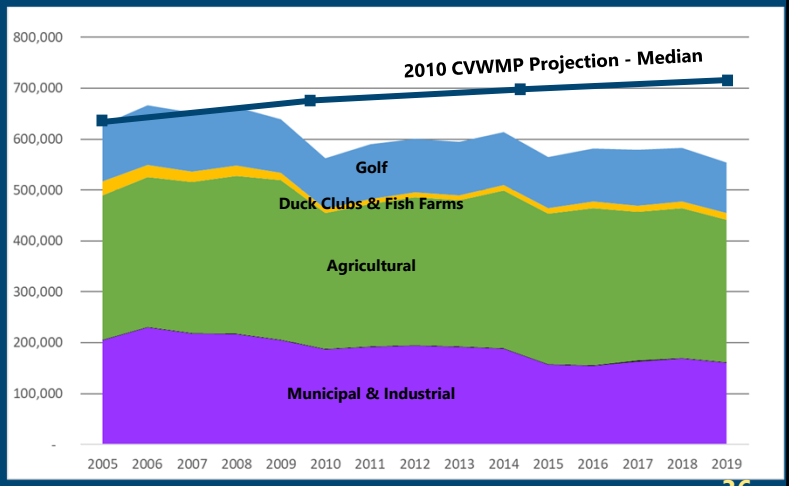
Water Demands

- 2010 CVWMP projected a great deal of urbanization
  - Growth was not realized, and demand is below the projection
- Recent Statewide droughts have affected water use and encouraged conservation
  - 2007-2009
  - 2011-2015
- SBx7-7 (2009) mandated that water suppliers decrease per capita water usage 20% by 2020

2005-2019 Water Use



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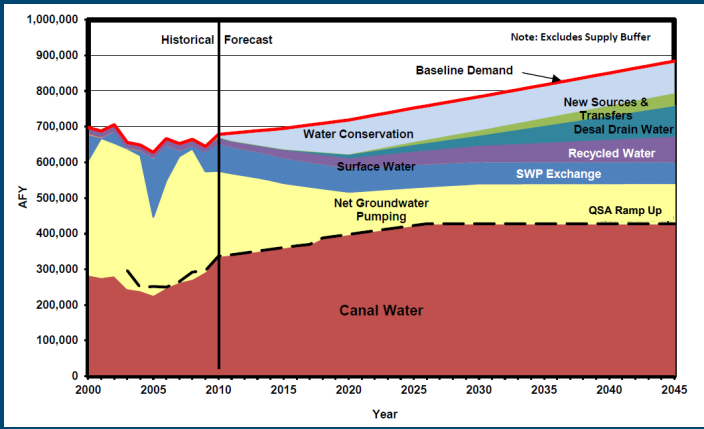
Water Supply

- Water conservation
- Groundwater — **Groundwater replenishment**
- State Water Project (SWP) water
- Colorado River water
- Surface water
- Recycled water

- Projected:
  - Desalinated water from shallow semi-perched aquifer

2010 CVWMP Supply Projection



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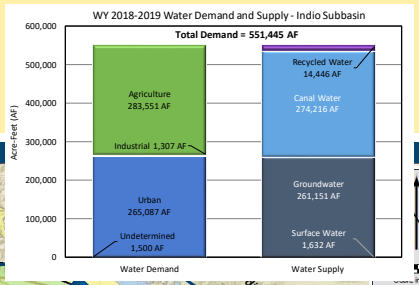
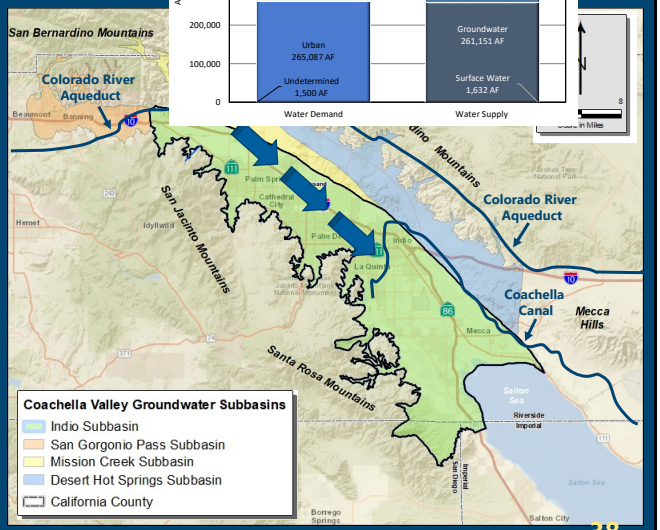
Groundwater

- Natural recharge of stream runoff and subsurface flow
  - Long-term average for natural recharge is ~59,000 AFY (11% of WY 2019 water supply)
- Replenishment water and source substitution are key to avoiding overdraft
- 2010 CVWMP Assumption:
  - 57,400 AFY of natural inflow (excludes direct use of surface water)





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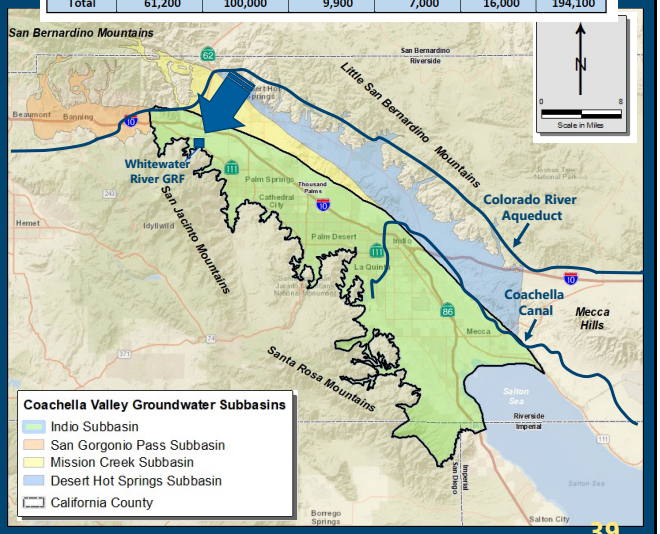
State Water Project (SWP) Water

State Water Project Table A Amounts

Agency	Original SWP Table A (AFY)	Metropolitan Transfer (AFY)	Tulare Lake Basin Transfer #1 (AFY)	Tulare Lake Basin Transfer #2 (AFY)	Berrenda Transfer (AFY)	Total (AFY)
CVWD	23,100	88,100	9,900	5,250	12,000	138,350
DWA	38,100	11,900	-	1,750	4,000	55,750
Total	**61,200**	**100,000**	**9,900**	**7,000**	**16,000**	**194,100**

- SWP water exchanged with MWD for Colorado River water
- Includes Table A Allocation and supplemental water
- Annually variable due to Northern California hydrology, which affects annual SWP supply and allocation
- Can include Advanced Delivery, which is accounted for in the region's SWP delivery balance
- Delivered:
  - Recharged at Whitewater River GRF
- 2010 Plan Assumptions:
  - Receive 60% decreasing to 50% by 2045 for Table A Allocation



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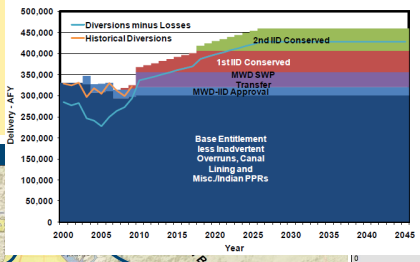
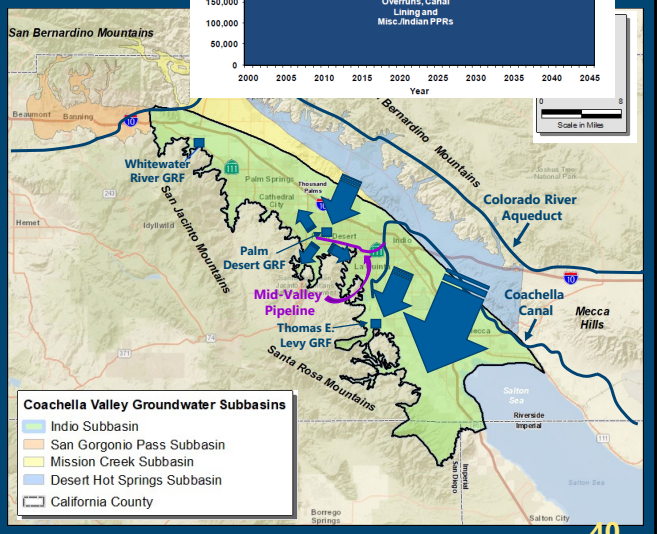
Colorado River Water

- QSA Entitlement
  - Base Allotment – 330,000 AFY
  - With Acquisitions/Reductions– Ramps Up to 424,000 AFY by 2026
  - MWD Table A Transfer – 35,000 AFY
- Delivered:
  - Direct delivery to agriculture, golf, and urban users
  - Recharged at Thomas E. Levy GRF and Palm Desert GRF
  - MWD Table A Transfer can be delivered at Whitewater GRF or Coachella Canal
- 2010 Plan Assumptions:
  - Full allocation minus conveyance losses of 31,000 AFY





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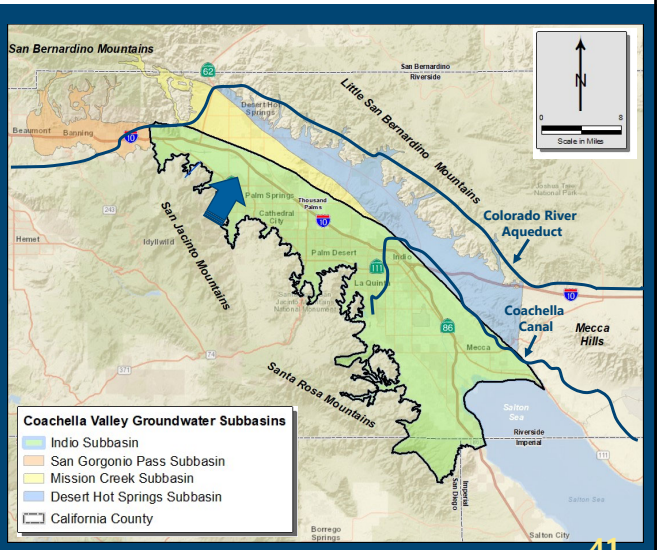
Surface Water Supply

- Diversion of surface water at Snow, Falls, and Chino Creeks in San Jacinto Mountains and Whitewater River Canyon
- Delivered:
  - Direct delivery to agriculture, golf, and urban users
- 2010 Plan Assumptions:
  - 3,400 AFY direct use through 2045
  - 95% of remaining surface flow assumed to naturally recharge



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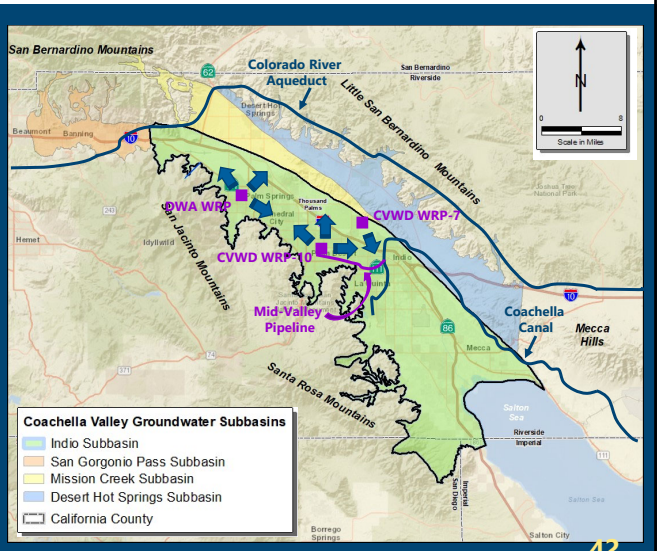
Recycled Water Supply

- Recycled water is produced at CVWD WRP-7 and WRP-10, and DWA WRP
- Reliable local supply
  - 41,065 AFY wastewater treated, of which 14,446 AFY was recycled in WY 2019
- Delivered:
  - Direct delivery to golf and urban users
- 2010 Plan Assumptions:
  - Use of recycled water up to 41,900 AFY – 63,000 AFY by 2045



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2010 CVWMP Groundwater Model Approach

- Original groundwater model developed in the late 1990s
  - Historical calibration period (1936-1996)
  - Data through 1999 included for 2002 CVWMP
- 2010 CVWMP groundwater model update
  - Historical period (1997-2008) – actual data incorporated
  - Future period (2009-2075) – projections
- Currently reviewing 2010 CVWMP groundwater model
  - Source data files, analysis methods, and file structure for model inputs
  - Model performance from 1997-2008 (historical period)
  - Model performance from 2009-2019 after actual data are incorporated for this period
- Goal is to update the 2010 CVWMP model to…
  - Estimate current and future water budgets
  - Evaluate benefits of proposed management actions
  - Support identification of appropriate sustainability criteria

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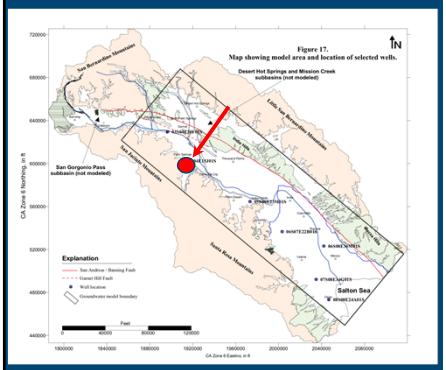
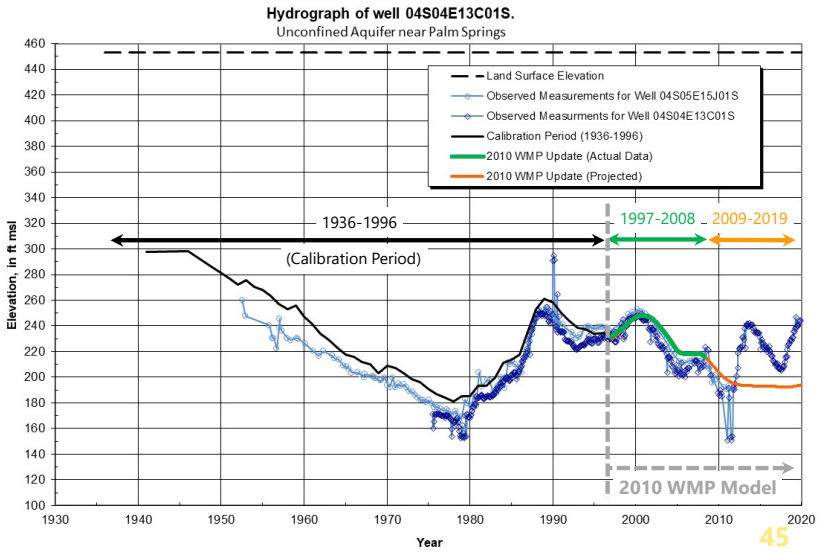
2010 CVWMP Model Assessment

- Ex: West Valley Well





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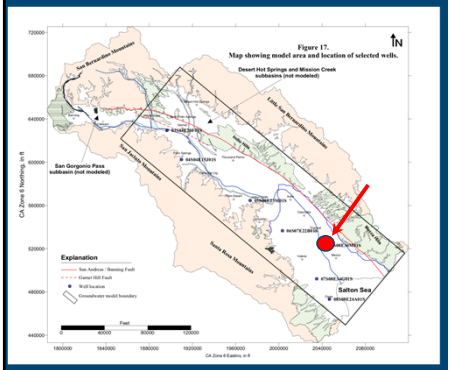
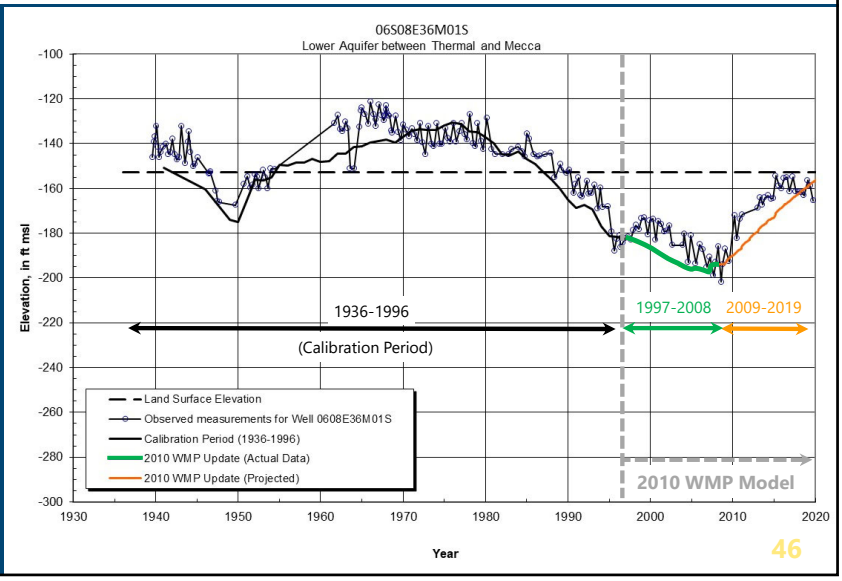
2010 CVWMP Model Assessment

- Ex: East Valley Well





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Groundwater Model Update Approach

- Develop model inputs for 2009 to 2019
- Run Updated Model (1997 to 2019)
  - Evaluate model performance
  - Extract historical water budget
- Recommend and implement improvements to model
- Prepare and append future (2020-2075) model inputs to evaluate alternative management scenarios

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Agenda

- Welcome and Introductions
- Alternative Plan Status
- Plan Area
- Hydrogeologic Conceptual Model (HCM)
- 2010 Plan Assessment
- Groundwater Model Assessment & Approach
- **Public Comment**
- Schedule and Next Steps

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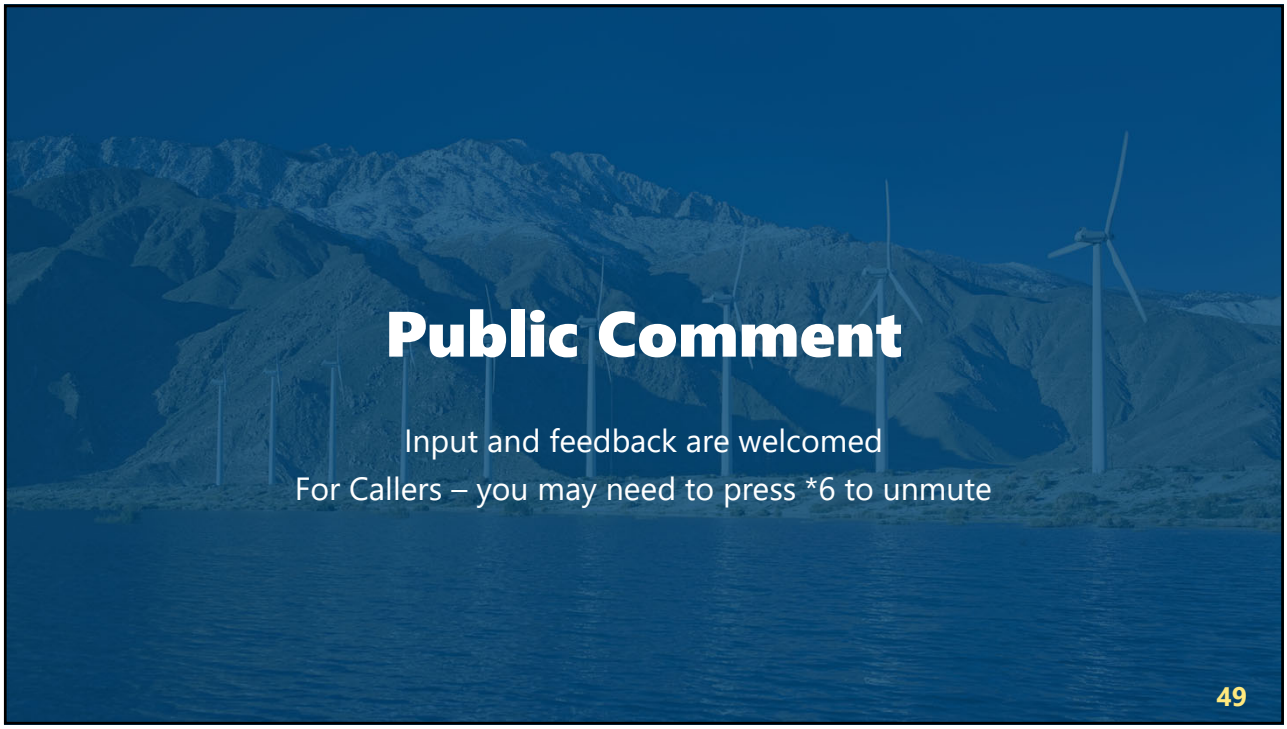

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Agenda

- Welcome and Introductions
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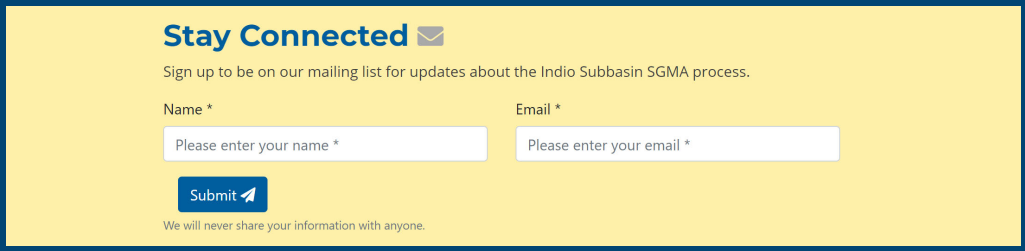

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Next Steps

- June – August 2020
  - Complete Plan Area and HCM analysis
  - Continue update of groundwater model
  - Complete urban and agricultural demand forecast
  - Complete analysis of historical supply and Plan Assessment

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Schedule

August 27, 2020

2:00 – 4:00 PM

Location: TBD

For additional information, please contact:

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