

# 2022 Mission Creek Subbasin Alternative Plan Update

WORKSHOP #4  
OCTOBER 27, 2021

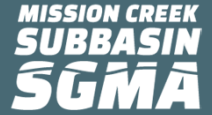


# Agenda

- Introductions
- Alternative Plan Update overview
- Recap of public workshops 1, 2, and 3
- Sustainable management criteria
- Groundwater model forecast scenarios
- Projects and management actions
- Plan evaluation
- Public comment
- Next steps

# Introductions

# Alternative Plan Update Team



## MCSB Management Committee

Coachella Valley Water District (CVWD)

Desert Water Agency (DWA)

Mission Springs Water District (MSWD)

## Consultants

Wood Environment & Infrastructure Solutions, Inc.

Richard Rees, P.G., C.Hg.

David Bean, P.G., C.Hg.

Kennedy Jenks Consultants

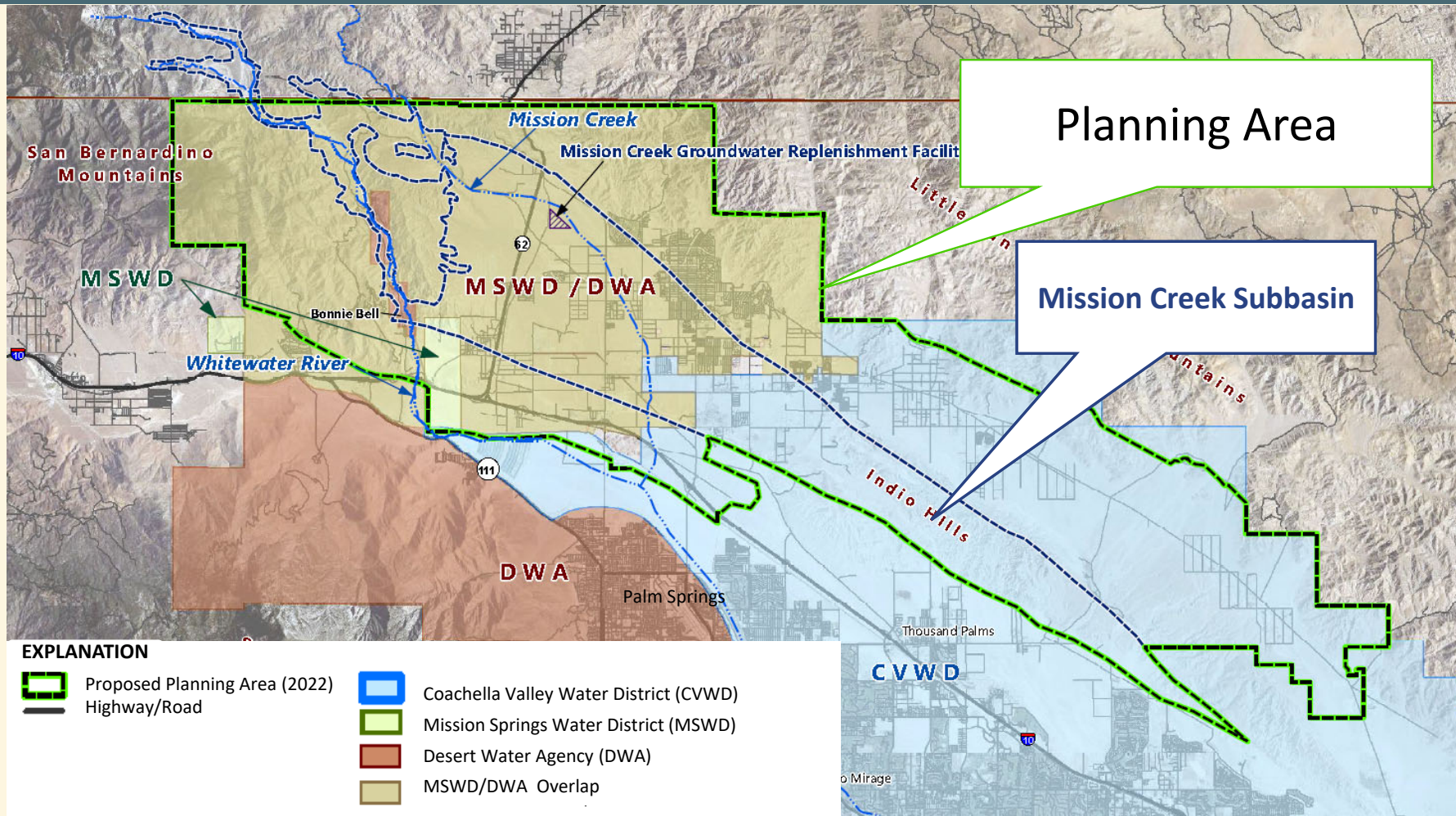
Sachi Itagaki, P.E.

Rachel Druffel-Rodriguez, P.E.





# Management Committee Agencies



# The Virtual Experience: Comments

The screenshot shows a Microsoft Teams meeting window. On the left is a sidebar with icons for Activity, Chat, Teams, Calendar, Calls, Files, and Help. The main area displays a circular profile picture of a woman and the text "Waiting for others to join...". Below this is a toolbar with icons for time (00:29), mute, video, screen share, hand raise, chat, participants, and end call. A blue arrow points from a text box to the chat icon in the toolbar. Another blue arrow points from the chat icon to the "Meeting chat" panel on the right. This panel shows a notification "Melanie Rivera joined the meeting." and a text input field with the placeholder "Type a new message". A third blue arrow points from a text box to this input field.

Click on speech bubble icon to open "Chat" for comments and questions

Waiting for others to join...

Meeting chat

Melanie Rivera joined the meeting.

Type comments or questions here

Type a new message

# The Virtual Experience: Polls

The screenshot displays the Microsoft Teams interface during a meeting. On the left is a navigation pane with icons for Activity, Chat, Teams, Calendar, Calls, Files, and Apps. The main area shows a circular profile picture of a woman and the text "Waiting for others to join...". A search bar at the top says "Search or type a command". At the bottom is a toolbar with icons for time (14:11), mute, video, screen share, chat, and end call. On the right, a "Meeting chat" pane is open, showing a message from "Melanie Rivera" that says "joined the meeting." Below this is a message from "8:54 AM" containing a long URL: [https://forms.office.com/Pages/ResponsePage.aspx?id=EA5B4LC8yUeqVGPcvTp6MqUQcFHhOU1GpR6uPC\\_O4iJUQ1kyUVpKNFdEMTRJWDI3TUVPM0hWVzBHTy4u](https://forms.office.com/Pages/ResponsePage.aspx?id=EA5B4LC8yUeqVGPcvTp6MqUQcFHhOU1GpR6uPC_O4iJUQ1kyUVpKNFdEMTRJWDI3TUVPM0hWVzBHTy4u). A blue callout box with the text "Sometimes, there will be a link to a poll. Click on the link" has an arrow pointing to the URL in the chat.

Sometimes, there will be a link to a poll. Click on the link

Meeting chat

Melanie Rivera joined the meeting.

8:54 AM  
[https://forms.office.com/Pages/ResponsePage.aspx?id=EA5B4LC8yUeqVGPcvTp6MqUQcFHhOU1GpR6uPC\\_O4iJUQ1kyUVpKNFdEMTRJWDI3TUVPM0hWVzBHTy4u](https://forms.office.com/Pages/ResponsePage.aspx?id=EA5B4LC8yUeqVGPcvTp6MqUQcFHhOU1GpR6uPC_O4iJUQ1kyUVpKNFdEMTRJWDI3TUVPM0hWVzBHTy4u)  
See less

14:11

Type a new message

# The Virtual Experience: Polls

The screenshot shows a web browser window with a Microsoft Forms poll. The browser's address bar displays the URL: `forms.office.com/Pages/ResponsePage.aspx?id=EA5B4LC8yUeqVGPcvTp6MqUQcFHhOU1GpR6uPC_O4iJUQ1kyUVpKNFdEMTRJWDI3TUVPM0hWVzBHTy4u`. The poll title is "I represent:". Below the title, the question "1. I represent:" is followed by a list of radio button options: "General Public", "Planning Agency", "Water Agency", "Business", "Community non-profit", "Tribe", "Consultant", and "Other". The "Other" option is accompanied by a text input field. A green callout box on the left contains the text "Fill out the poll and click 'Submit'" with a blue arrow pointing to a green "Submit" button at the bottom of the form. At the very bottom of the page, a small footer reads "Never give out your password. Report abuse".

I represent:

1. I represent:

- ☐ General Public
- ☐ Planning Agency
- ☐ Water Agency
- ☐ Business
- ☐ Community non-profit
- ☐ Tribe
- ☐ Consultant
- ☐ Other

Submit

Never give out your password. [Report abuse](#)

## Go to “Comments” Box for Poll Link

### I represent:

1. General public
2. Planning agency
3. Water agency
4. Business
5. Community non-profit
6. Tribe
7. Consultant
8. Other

## POLL 2

**Did you attend Public Workshop #1?**

☐ Yes

☐ No

**Did you attend Public Workshop #2?**

☐ Yes

☐ No

**Did you attend Public Workshop #3?**

☐ Yes

☐ No

# Alternative Plan Overview

# What is SGMA?



## **SGMA: Sustainable Groundwater Management Act**

- Signed into law in September 2014
- Provides framework for sustainable groundwater management over 20 years
- Supports local management via Groundwater Sustainability Agencies (GSAs)

## **SGMA Requirements**

- GSAs must submit plans (Groundwater Sustainability Plan (GSP) or Alternative Plan) and annual reports to the California Department of Water Resources (DWR), and demonstrate progress towards achieving sustainable management
- GSP or Alternative Plan updates due every 5 years
- MCSB Alternative Plan submitted to DWR in December 2016 and approved by DWR in July 2019
- First Mission Creek Subbasin (MCSB) Alternative Plan update due by January 1, 2022



# What is a GSA?

- **GSA:** Groundwater Sustainability Agency
- Consists of one or more local governmental agencies that implement the provisions of SGMA
- Formation of a GSA is required in high- and medium-priority basins
- MCSB has been designated a medium-priority basin

- **Basin Priority is Based On:**



Total  
Population



Population  
Growth



# of Public  
Wells



# of Total  
Wells



Irrigated  
Acreage



Groundwater  
Reliance



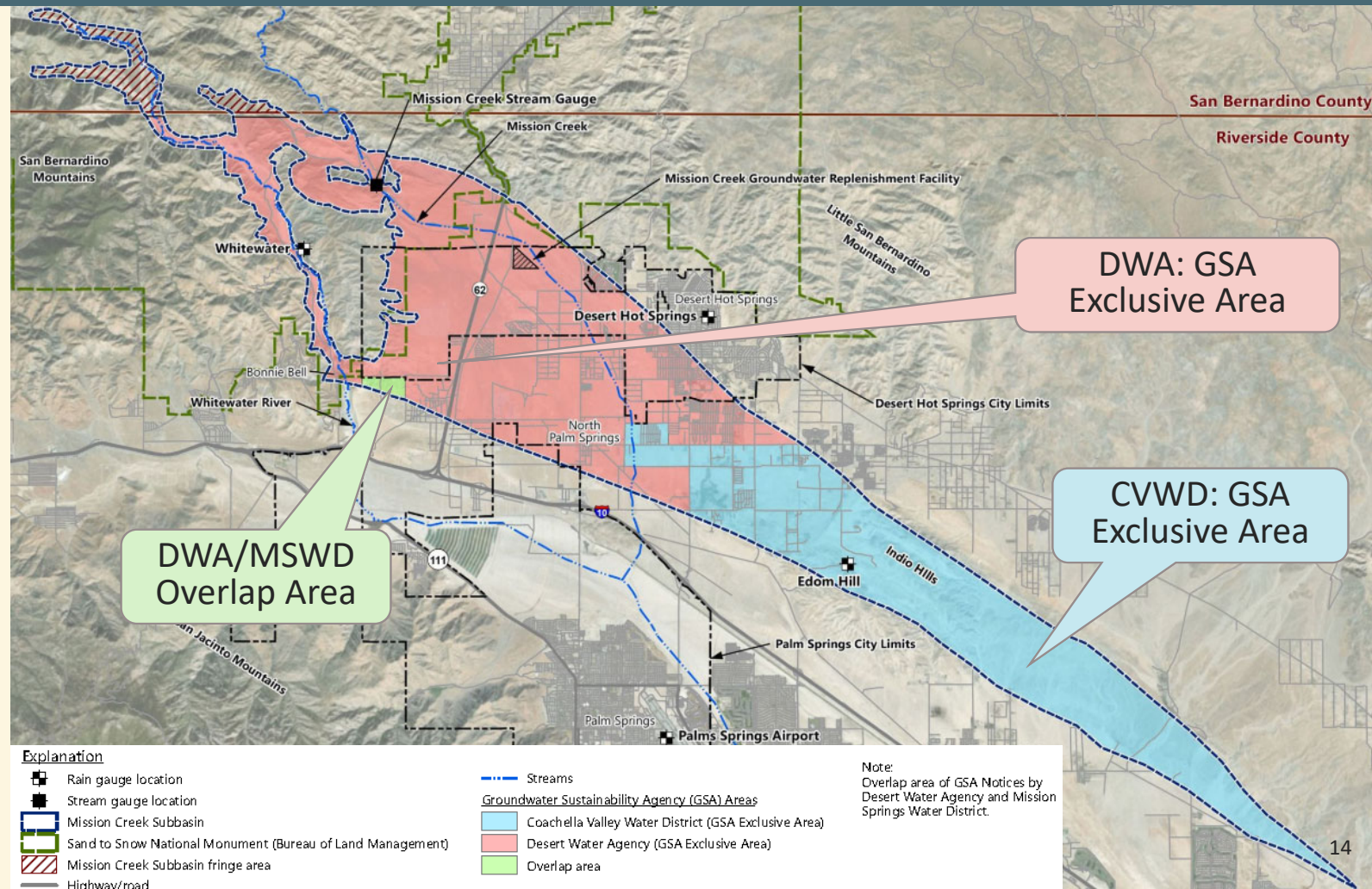
Groundwater  
Impacts



Other Adverse  
Impacts

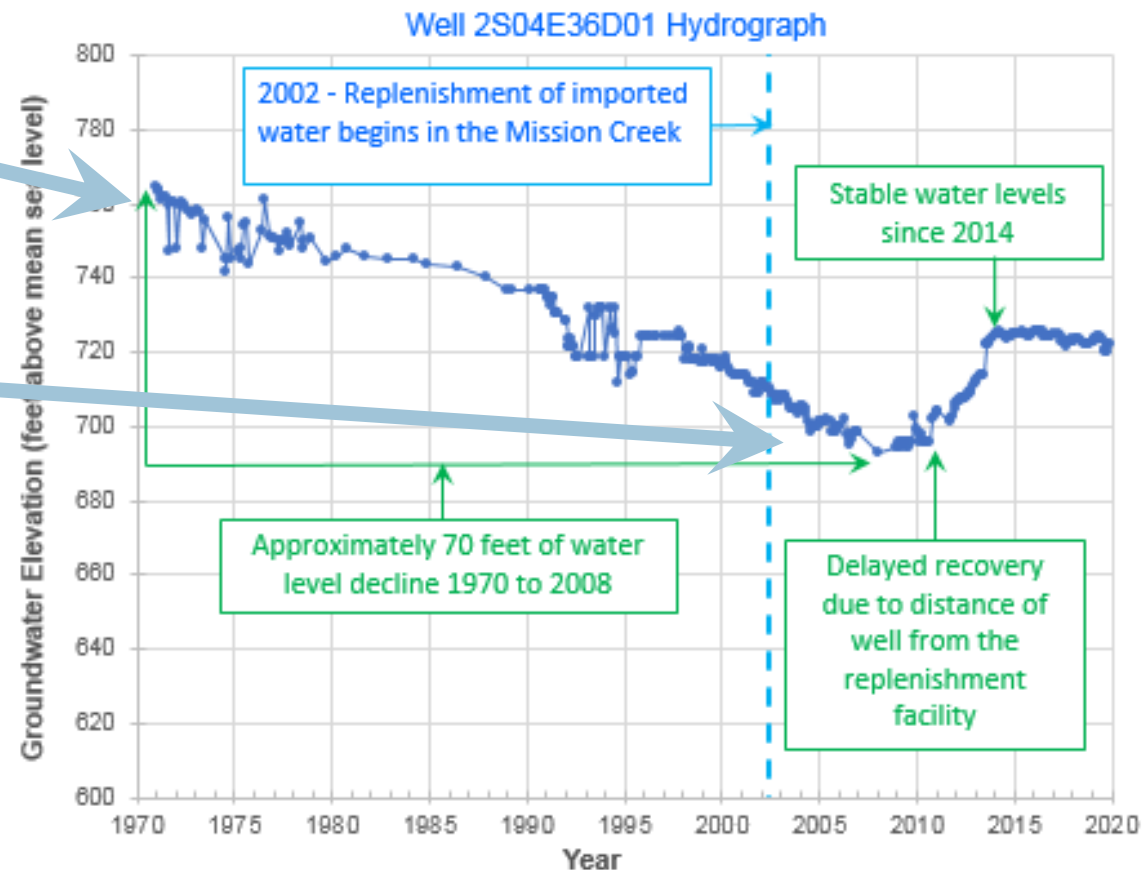
# GSAs in the Mission Creek Subbasin (MCSB)

- GSAs include CVWD and DWA
- Management Committee includes CVWD, DWA, and MSWD



# Public Workshop #1 – Historical Groundwater Level Decline

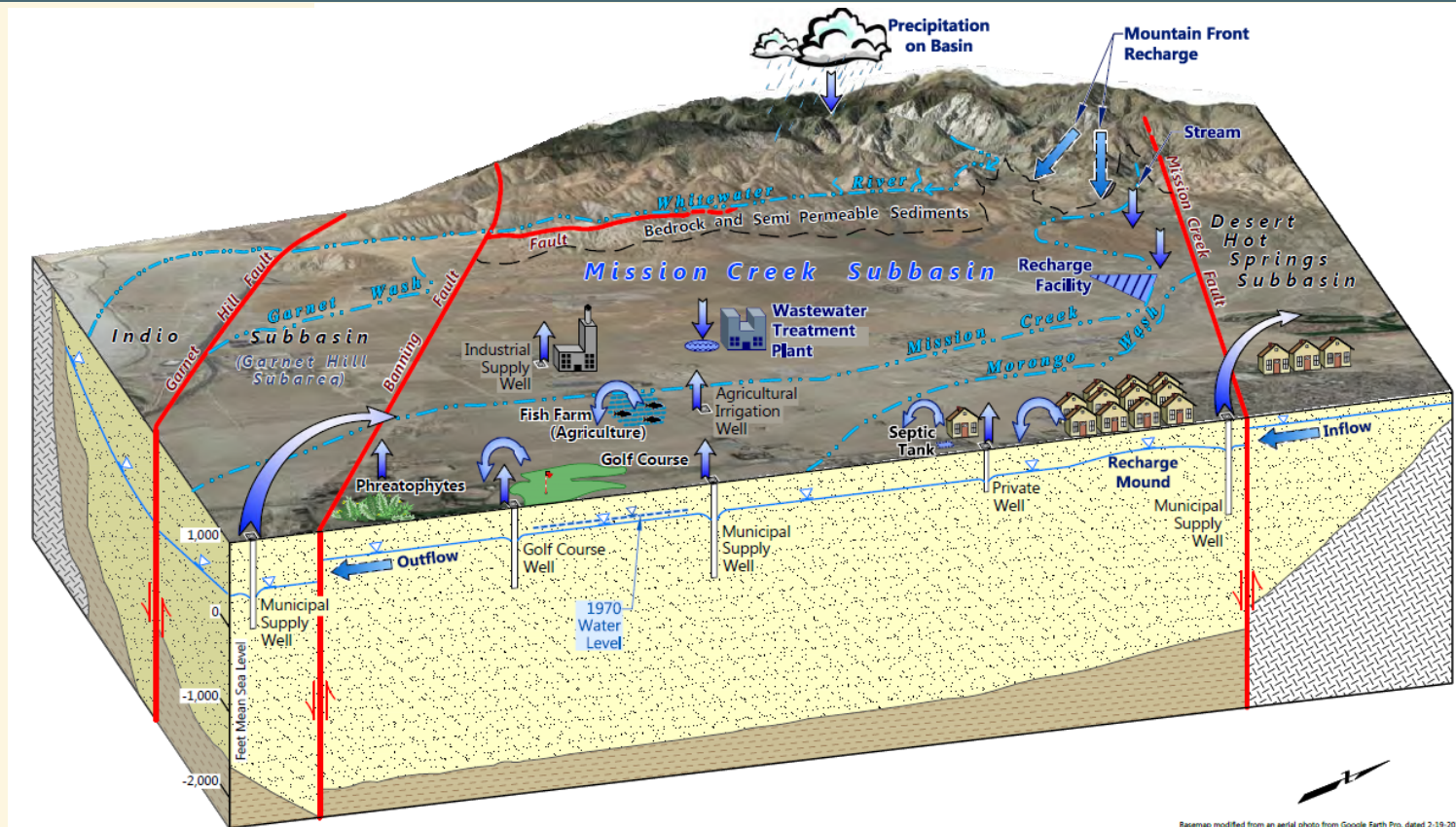
- Groundwater levels steadily declined in the MCSB as water use increased with population
- Recharge of imported water and reduced demand through conservation has reversed this trend



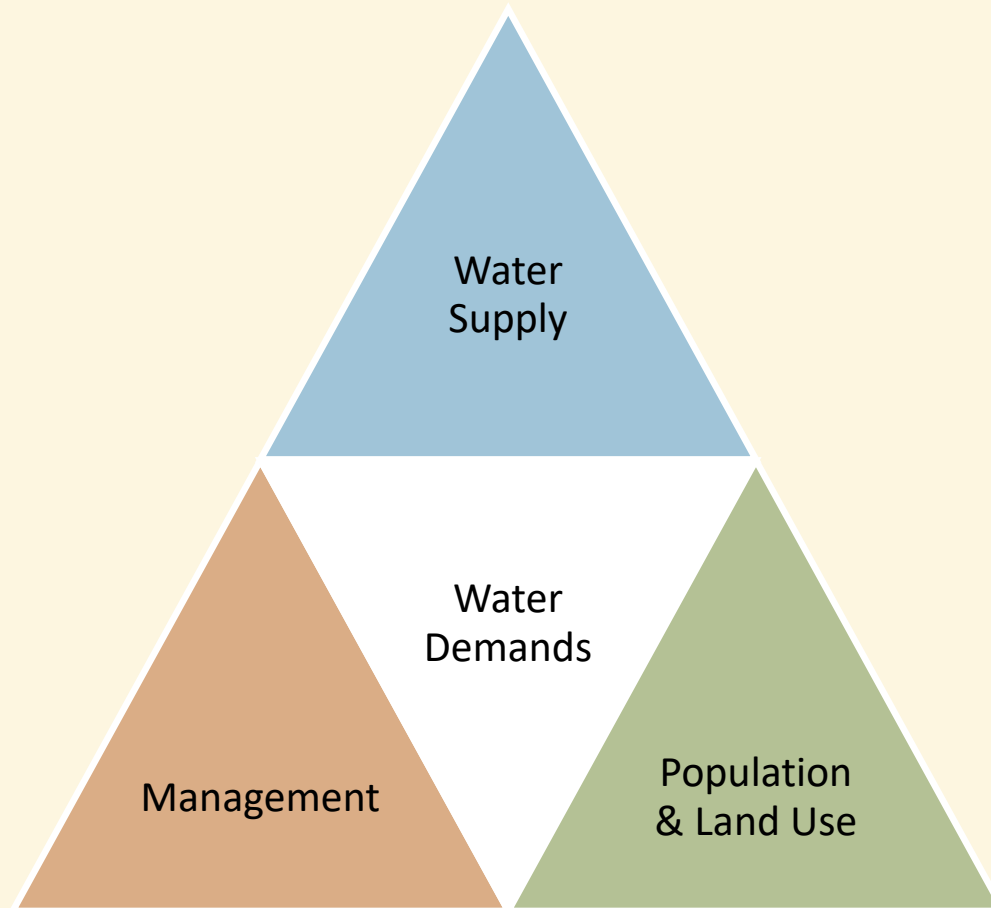


# Public Workshop #2 – Hydrogeologic Conceptual Model

- Hydrogeologic Conceptual Model (HCM) overview
- Recharge sources are highly variable
- Most pumping in the Planning Area occurs in MCSB

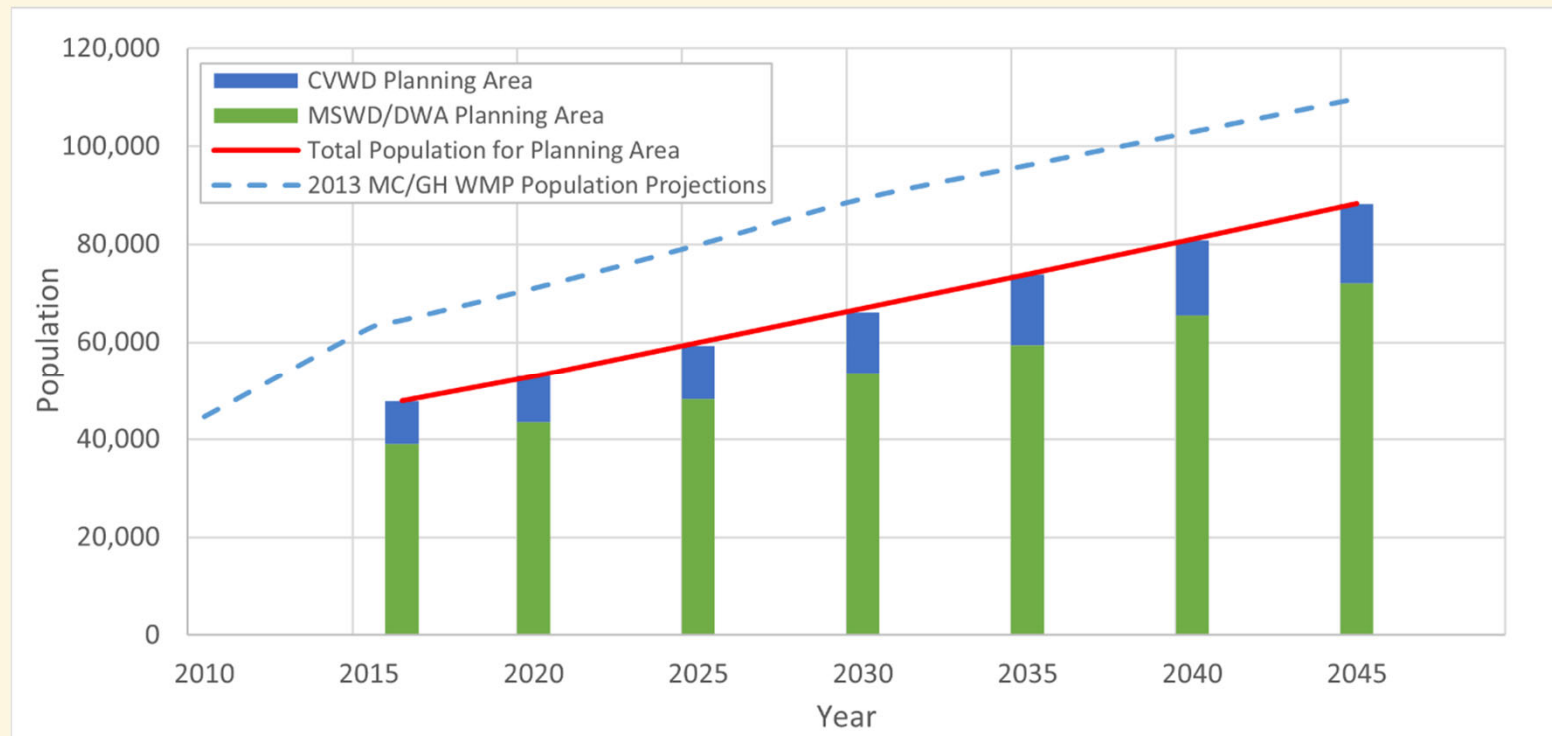


# Public Workshop #3 - Future Groundwater Conditions Depend On:

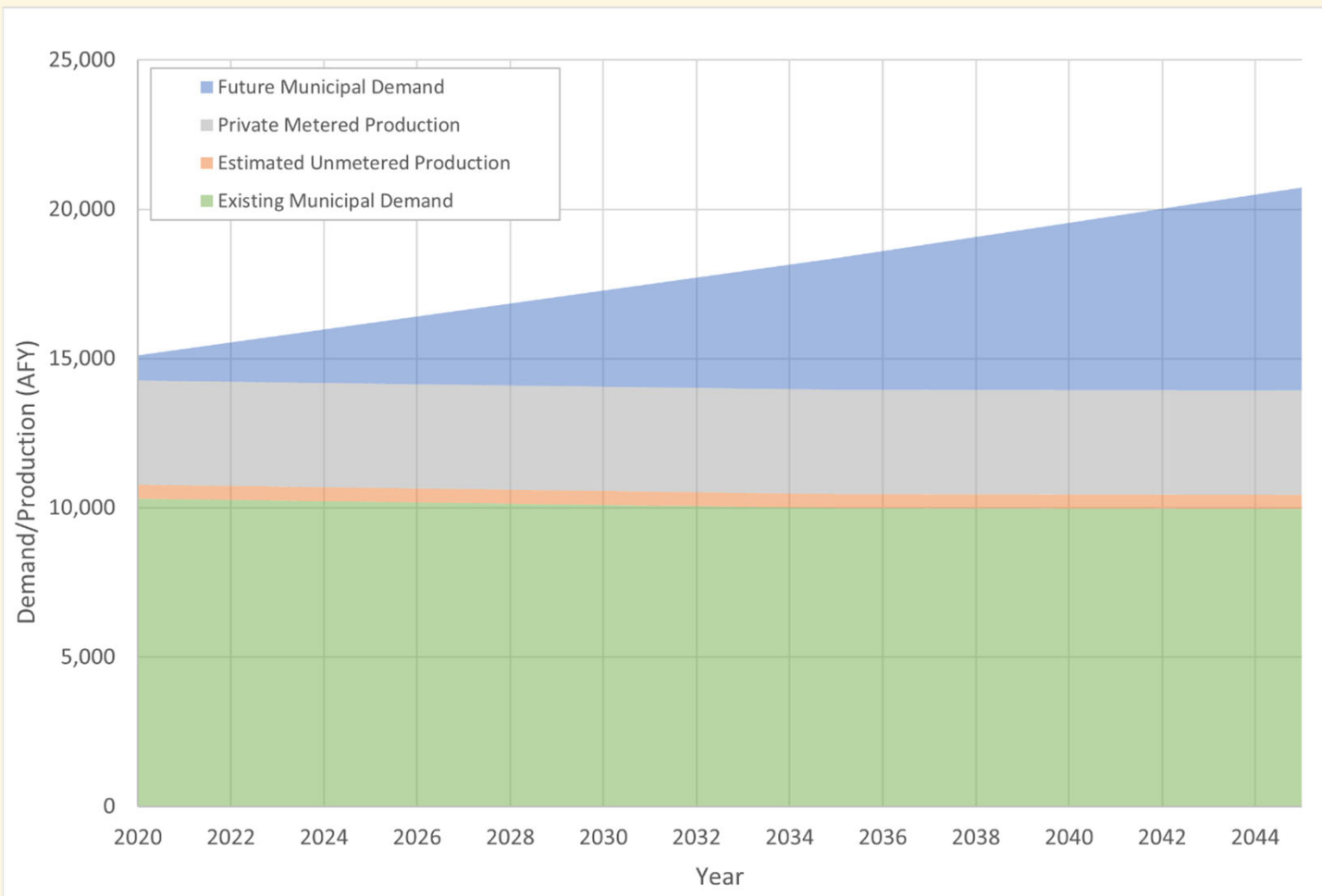


## Public Workshop #2 - Population Projections

- 2013 WMP projections anticipated higher short-term growth than actually occurred
- 2013 WMP projections were nearly 20% higher than actual 2016 estimates prepared by Southern California Association of Governments

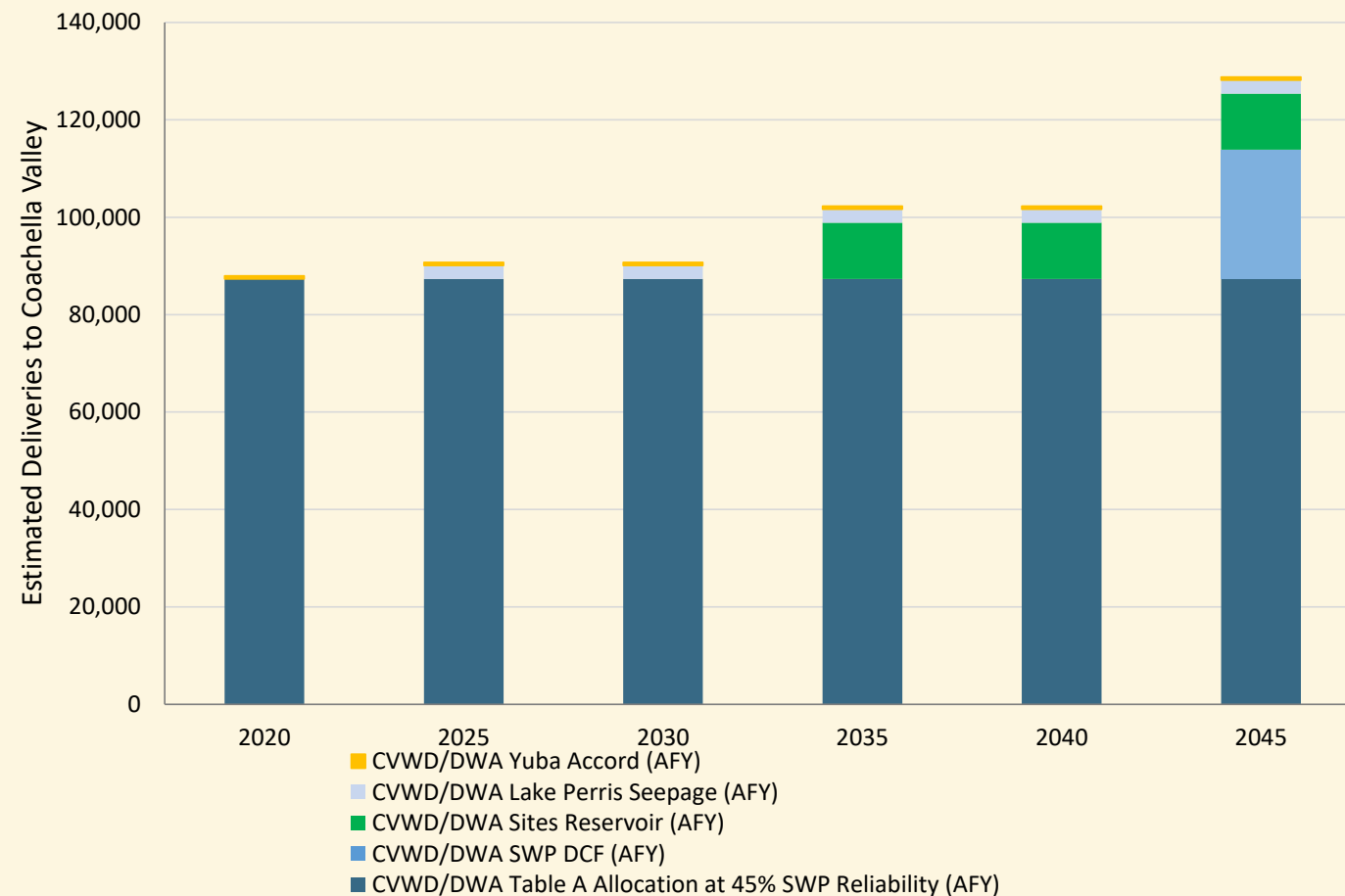


# Public Workshop #3 -Projected Total Municipal Demand with Passive Conservation



- Total projected demand is estimated as
  - 15,123 AFY (in 2020)
  - 20,792 AFY (in 2045)
- For an increase of 5,669 AFY or approximately 37% from 2020-2045.

# Public Workshop #3 - Projected State Water Project (SWP) Deliveries to the Coachella Valley

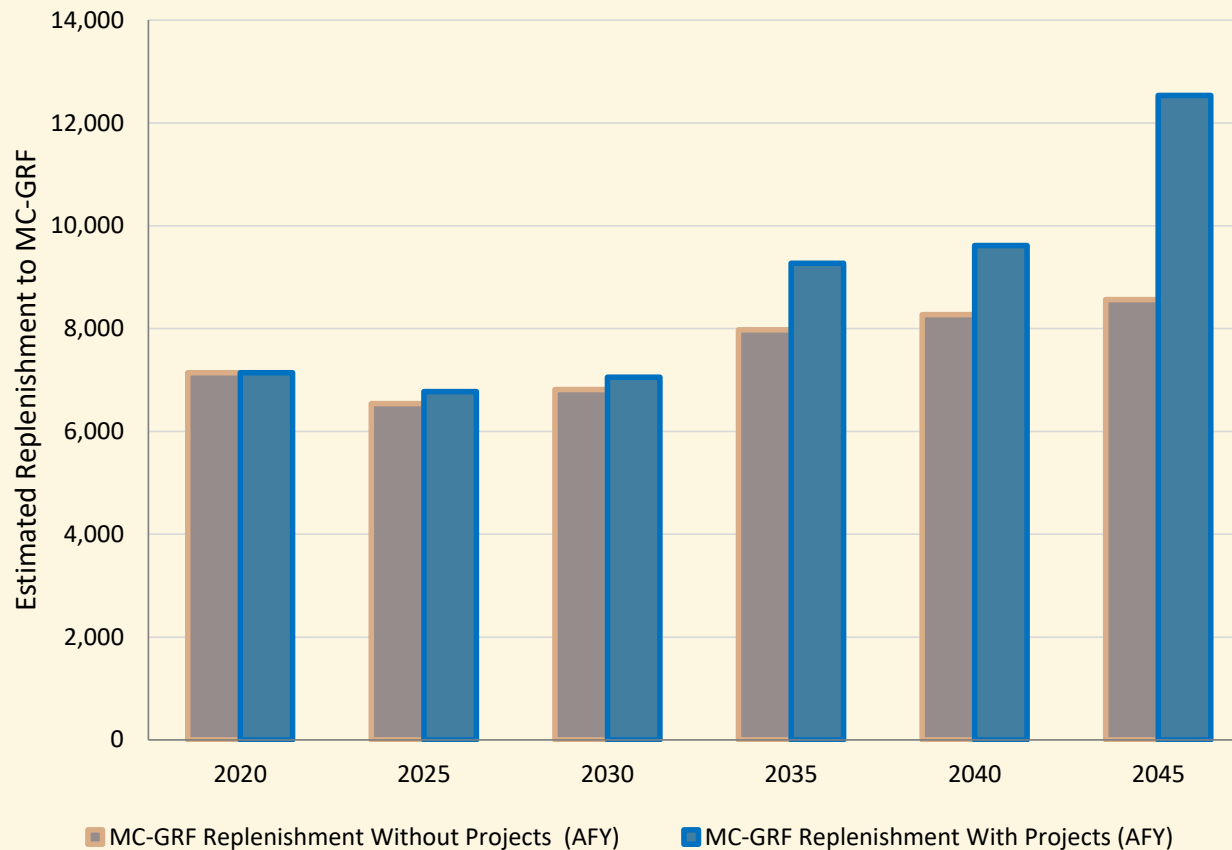


## Estimated Average Annual SWP Deliveries

- Table A at 45% Reliability or 87,345 AFY
- Yuba Accord at 651 AFY
- Lake Perris Seepage at 2,753 AFY in 2023
- Sites Reservoir at 11,550 AFY in 2035
- Delta Conveyance Facility at 26,550 AFY in 2045



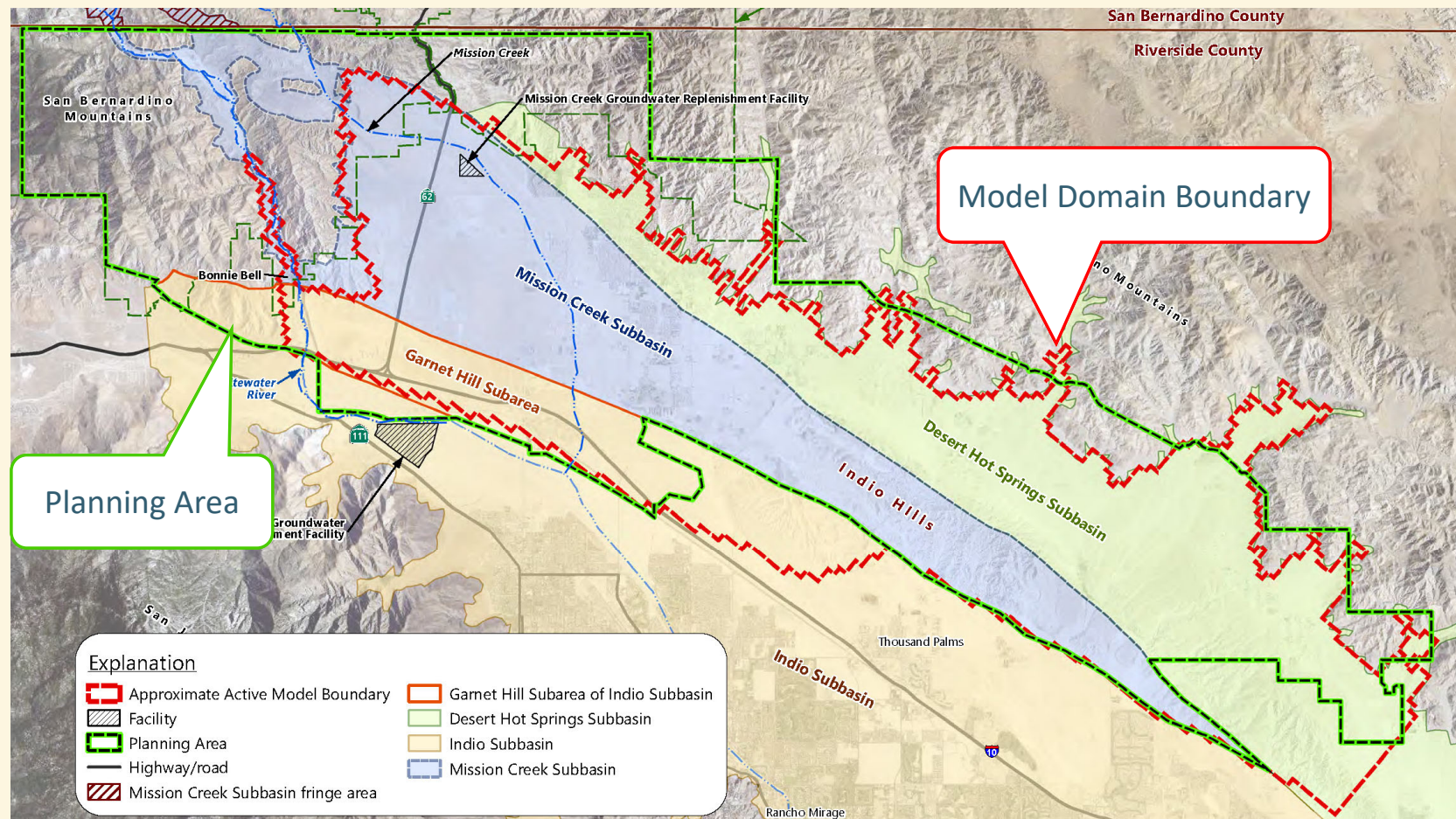
# Public Workshop #3 - Projected SWP Deliveries to the Mission Creek Groundwater Replenishment Facility



- SWP supplies are split between West Whitewater River and Mission Creek (MC) Management Areas proportional to groundwater pumping
- The portion coming to MC increases from 8% in 2020 to 10% by 2045
- By 2045, the projects are projected to provide 5,393 AFY of additional water to MC

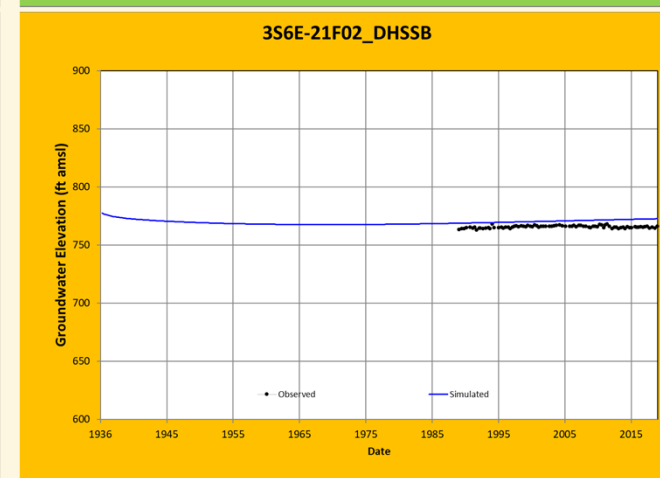
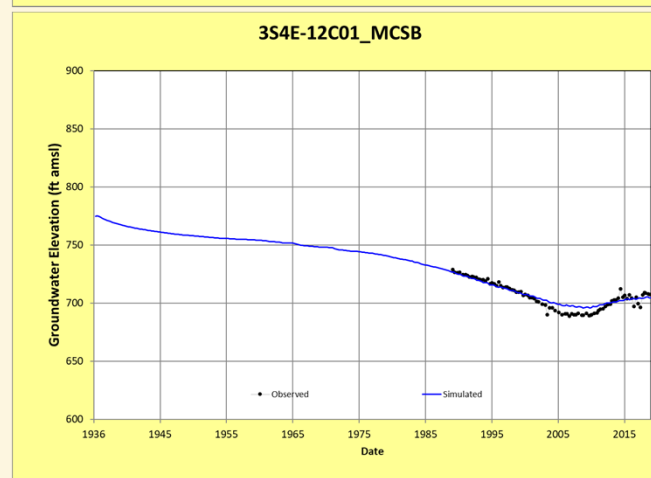
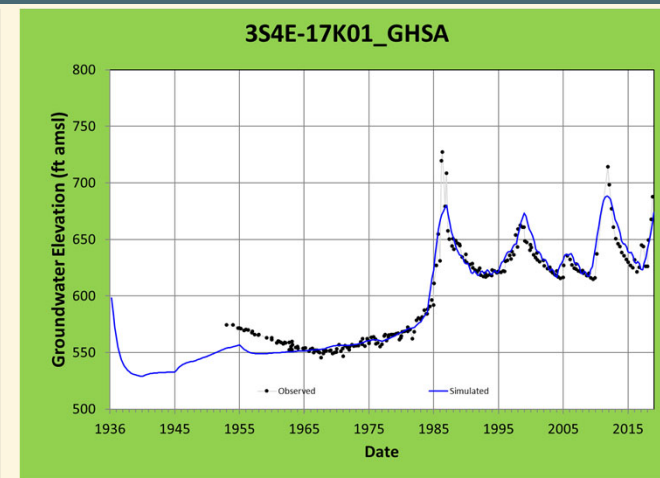
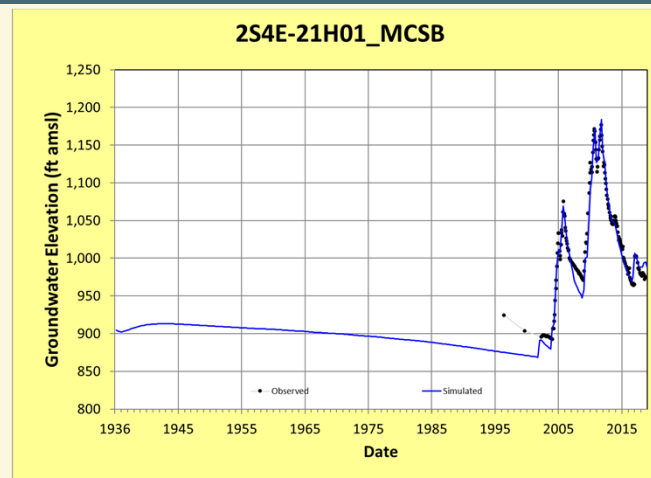
# Public Workshop #3 - Groundwater Model Update

- Planning Area is focused on current and potential future groundwater use
- Model domain is the focus area for the computer simulation of groundwater



# Public Workshop #3 - Groundwater Model Update Calibration

- The model is a computer simulation of groundwater levels over time and space using the inputs and variables
- Calibration is the process of matching the computer simulation with measured water levels
- A perfect match is not expected, and faults are difficult to simulate
- The model is considered “well calibrated” by modeling standards



# Sustainable Management Criteria

- **Undesirable Results** – Significant and unreasonable impacts caused by groundwater use – defined locally and may be based on one monitoring site, multiple monitoring sites, or the entire basin
- **Sustainability Goal** – No undesirable results
- **Measurable Objectives (MOs)** – Level which maintains Sustainability Goal
- **Minimum Thresholds (MTs)** – Level intended to prevent undesirable results

## Groundwater Conditions May Result in the Following Undesirable Results



Groundwater Level Declines



Groundwater Storage Reductions



Land Subsidence



Interconnected Surface Water  
Depletions

Not applicable in Mission Creek  
Subbasin



Seawater Intrusion

Not applicable in Mission Creek  
Subbasin



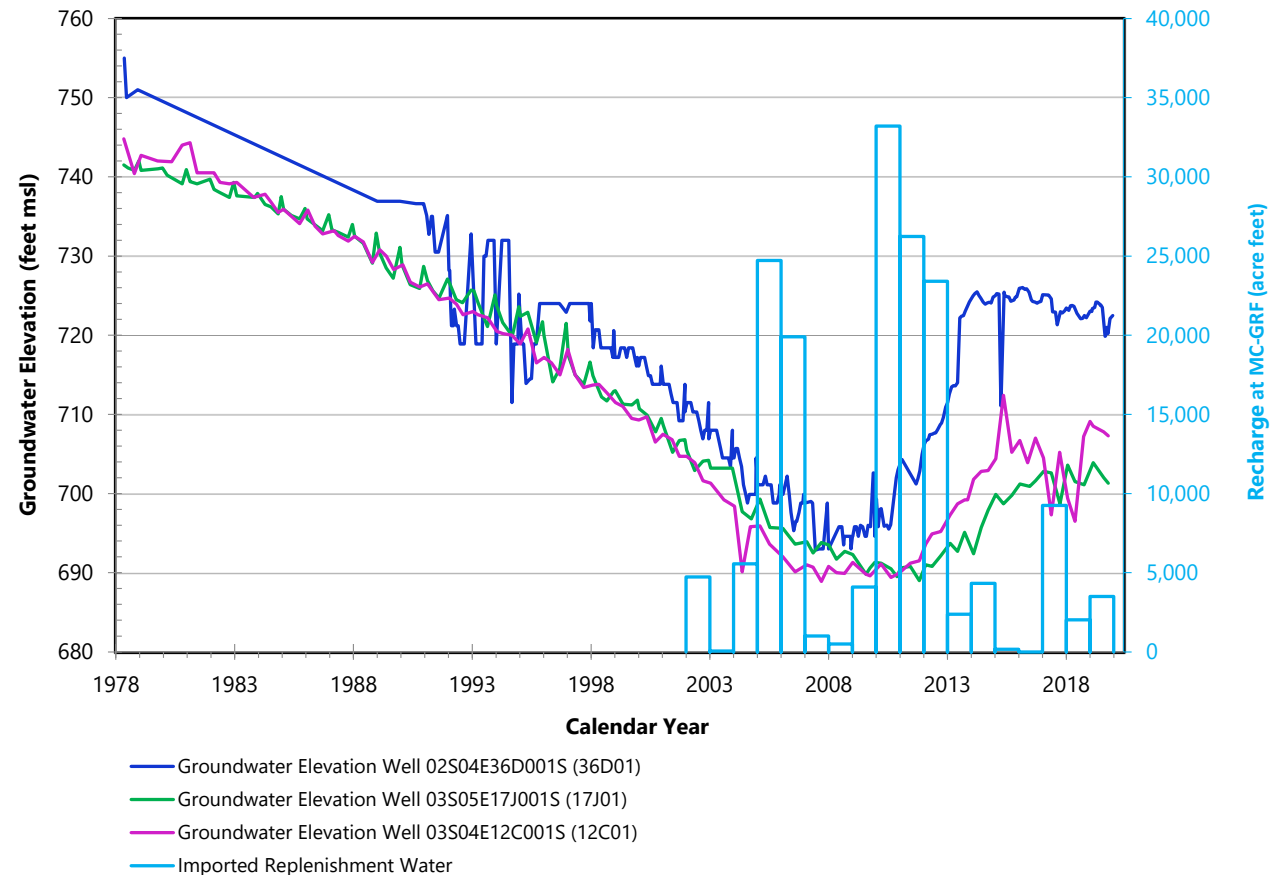
Water Quality Degradation

# Groundwater Levels



# Groundwater Levels

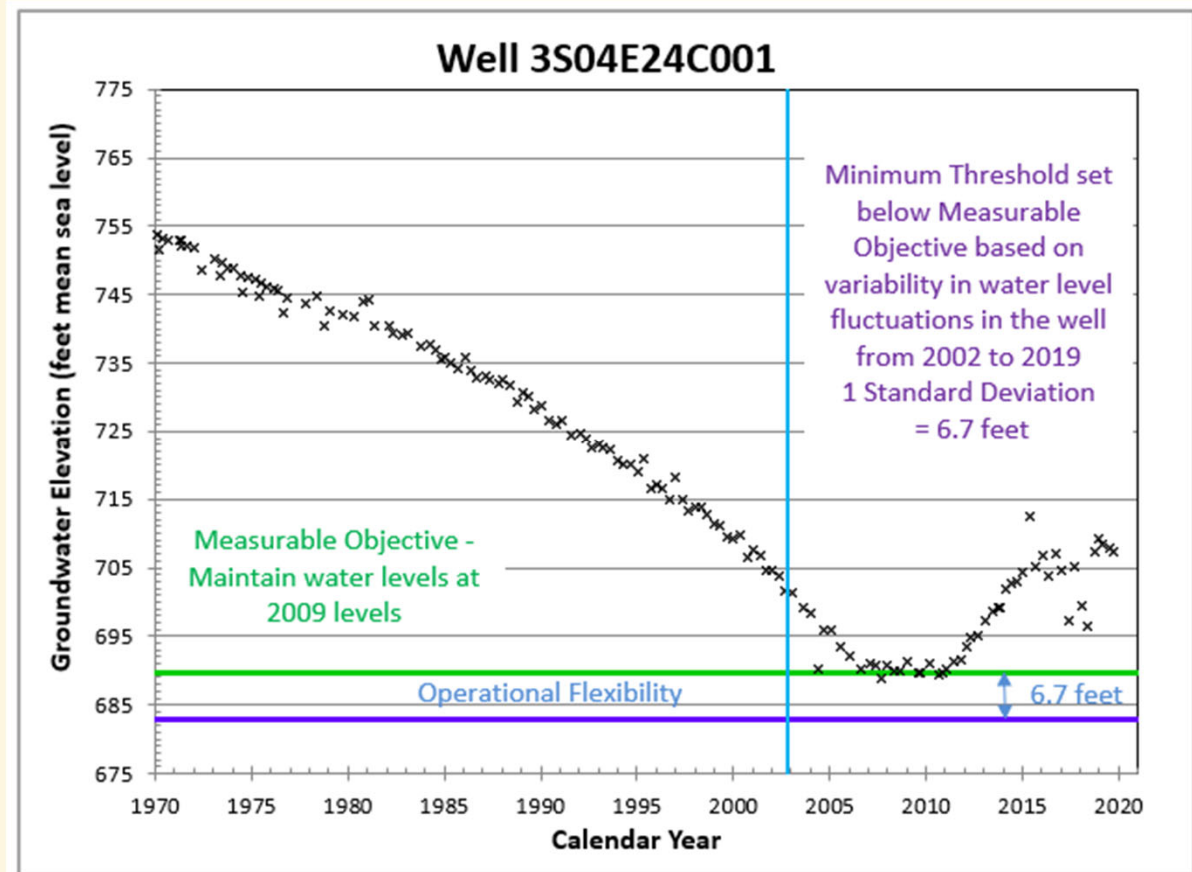
- Groundwater level declines and groundwater storage reductions occurred in the MCSB
- Recharge at the MC-GRF beginning in 2002 resulted in rising water levels and increased groundwater storage in the MCSB
- No undesirable results (e.g., dry wells) were observed when water levels and groundwater storage were at a low point in 2009





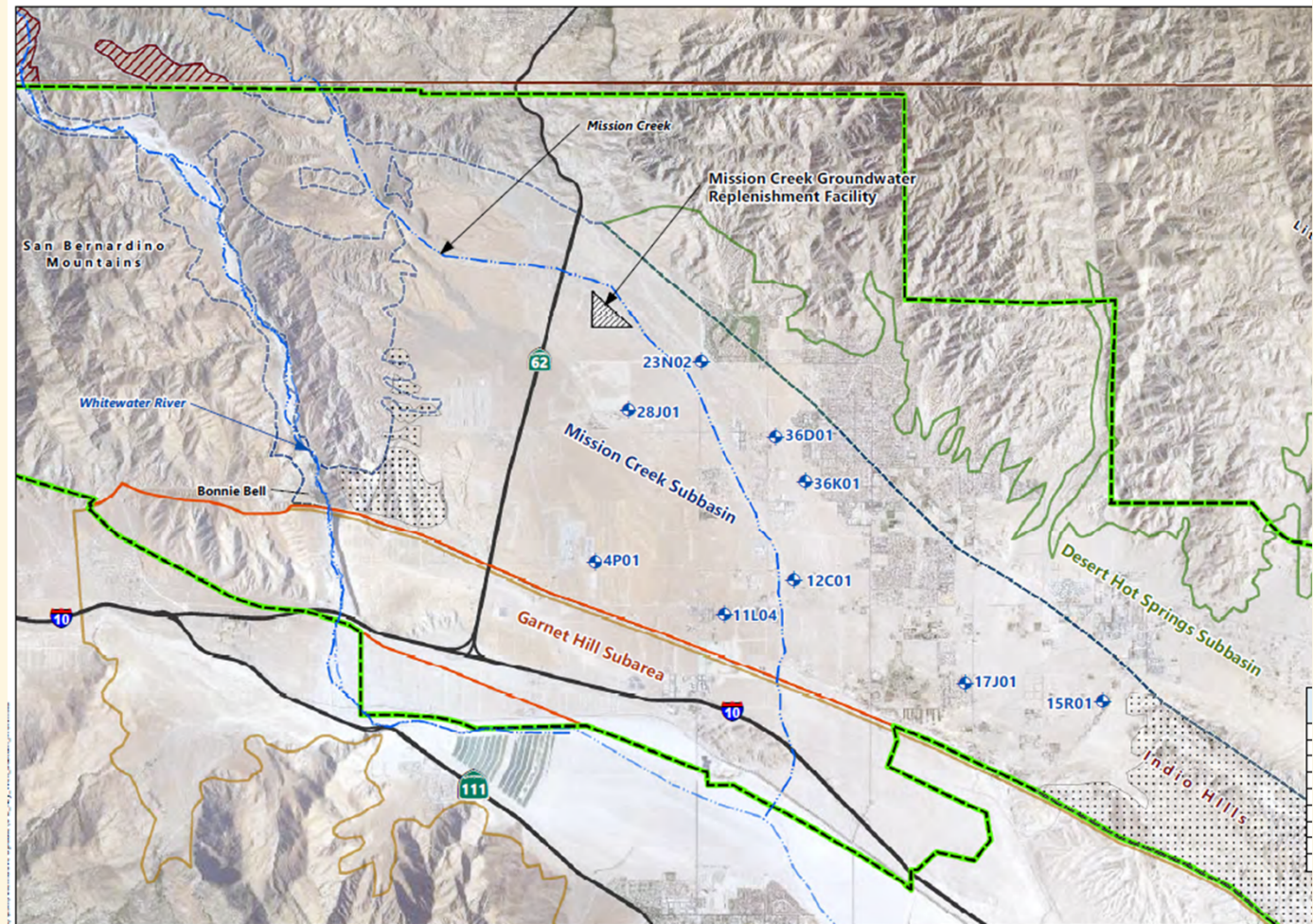
# Groundwater Levels

- No undesirable results have been identified in the MCSB other than historical water level declines and storage reductions that have since been reversed
- Measurable Objective - maintain groundwater levels at 2009 levels
- Minimum Threshold - set at levels that will not impact well pumping operation but will allow for flexibility. Minimum Thresholds average about 8 feet below Measurable Objective
- Temporary and localized exceptions - allow for water levels to drop below the Minimum Threshold temporarily in some wells
- Undesirable results when four Key Wells each exceed their Minimum Threshold for three consecutive years



# Groundwater Levels

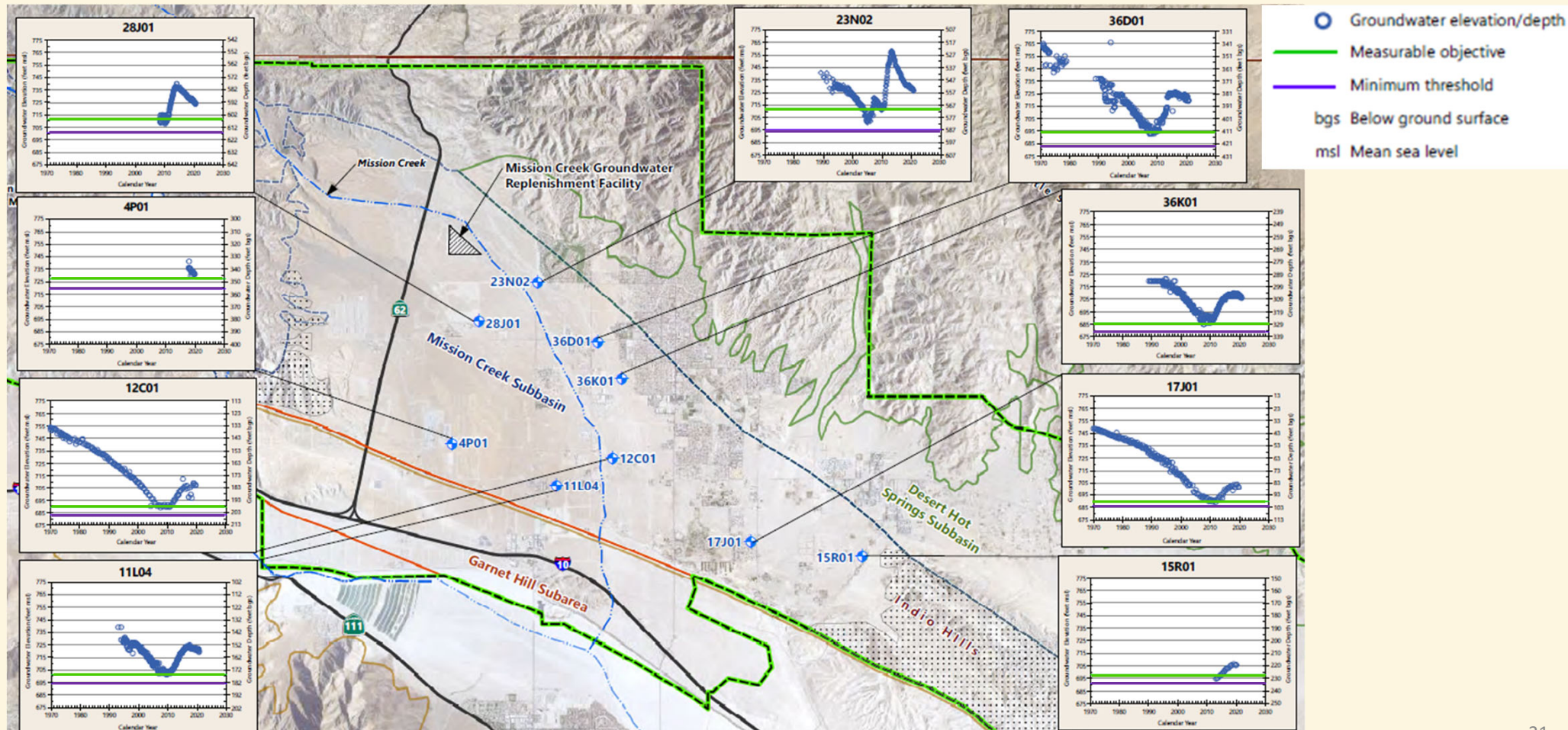
- Nine “Key” Wells selected as representative monitoring sites in the MCSB.
- Generally long historical record
- Spatially distributed within the basin





# Groundwater Levels, Measurable Objectives, and Minimum Thresholds

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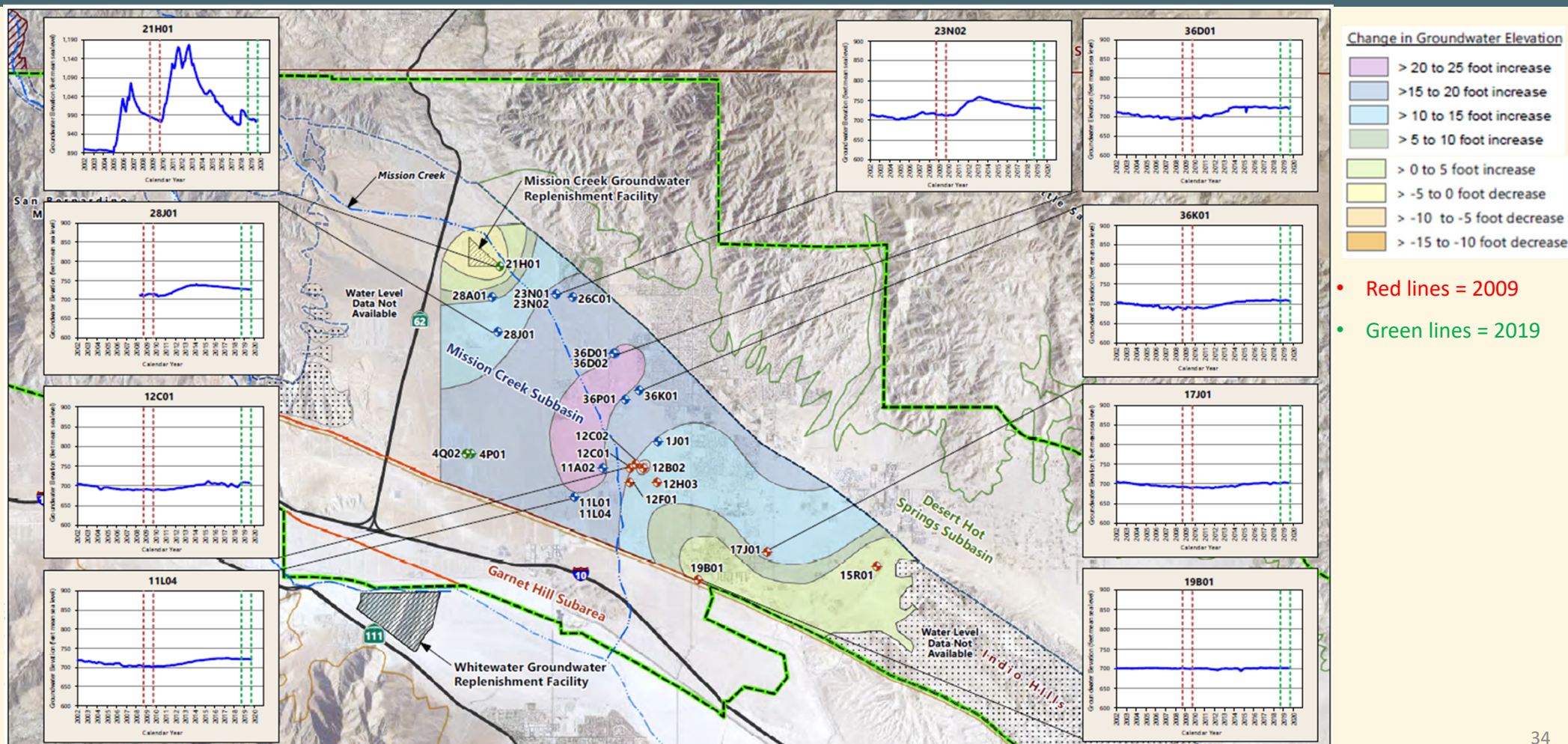
# Groundwater Storage

- Groundwater storage is directly related to groundwater levels in the MCSB
- Groundwater levels for wells representative of the MCSB (Key Wells) are used as a proxy for storage
- Measurable Objective – Set equal to the subbasin groundwater storage in 2009
- Measured values – Comparison of average annual groundwater levels each year to the average groundwater level Measurable Objectives in the nine Key Wells
- Minimum Threshold – Set to the average of groundwater level Minimum Thresholds in the nine Key Wells
- Measured values – Comparison of average annual groundwater levels each year to the average groundwater level Minimum Thresholds in the nine Key Wells
- Undesirable Result – The average groundwater level in the Key Wells falls below the average Minimum Threshold for three consecutive years



# Change in Groundwater Storage 2009 to 2019 Using Water Levels as a Proxy for Storage

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SGMA**



- Red lines = 2009
- Green lines = 2019

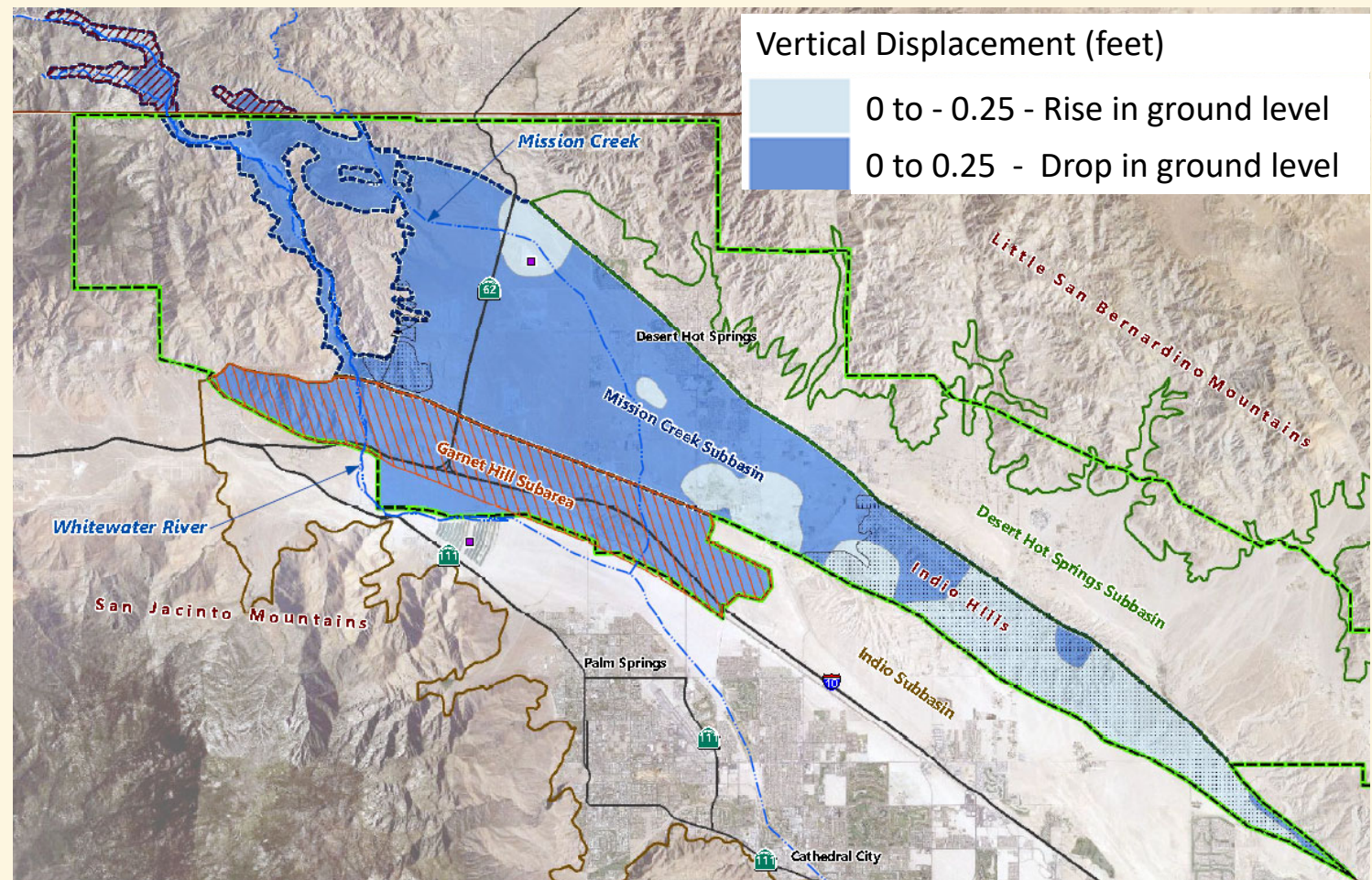
# Subsidence

- No evidence of permanent subsidence (for example, rising well casings, broken pipes, or ground fissuring) has been observed in the MCSB
- Recent statewide monitoring by DWR has not indicated subsidence in the MCSB - 2015 to 2019
- The Management Committee has contracted with the United States Geological Survey to evaluate the potential for subsidence in the MCSB. This study will be completed by 2025
- In the interim, the potential for subsidence will be monitored through review of California Department of Water Resources ground level vertical displacement data (InSAR data) and using groundwater level Minimum Thresholds as a proxy for subsidence potential



# Ground Level Vertical Displacement 2015 to 2019

- Interferometric Synthetic Aperture Radar(InSAR) data from DWR
- Slide shows very little ground level displacement (0.25 feet) over the four-year period
- Non-permanent elastic changes in ground level may occur from water level changes and are not an undesirable result
- Active faulting in the area may play a role
- Water levels can be used as a proxy for subsidence monitoring because subsidence may occur if groundwater levels drop below their historical levels



# Water Quality Degradation

- Uranium, which occurs naturally in local groundwater, has been identified as a constituent of concern due to two wells that exceeded the SWRCB Primary Maximum Contaminant Level (MCL) for drinking water in the MCSB. These wells are no longer used.
- Nitrate concentrations are well below MCLs in the MCSB, however, ongoing potential sources (septic systems, fertilizer application) are present
- Total Dissolved Solids (TDS) have been increasing in parts of the MCSB
  - TDS has three Secondary MCLs, or Consumer Acceptance Contaminant Level Ranges, set by the SWRCB: a recommended 500 mg/L level, an upper 1,000 mg/L level, and a short-term 1,500 mg/L limit for rare circumstances
  - TDS has been measured between the recommended Secondary MCL and upper level SMCL in four wells in the MCSB
  - TDS is being evaluated on a regional scale as part of the Coachella Valley Salt and Nutrient Management Plan (CV-SNMP). The workplan for the CV-SNMP was approved in October of this year. The work is scheduled for completion by the end of 2026

# Water Quality Degradation

- Measurable Objective – For constituents of concern with Primary MCLs (uranium and nitrate), set to California MCLs for drinking water
- Minimum Threshold – Set the same as the Measurable Objective
- Undesirable Result is any unnatural exceedance of any constituent above Primary MCLs in drinking water supply wells. The Agencies will investigate the cause of the exceedance.
- Water quality data from the Agencies and publicly available sources will be reviewed annually as part of the SGMA Annual Report

# Water Management Forecast Scenarios

# Water Management Forecast Scenarios

- Six water management forecast scenarios were evaluated using the groundwater model:
  - 1) Baseline
  - 2) Baseline with Climate Change
  - 3) Near-Term Projects
  - 4) Near-Term Projects with Climate Change
  - 5) Future Projects
  - 6) Future Projects with Climate Change
- The consulting team and the Management Committee considered the Climate Change scenarios reasonable and conservative, and these are the focus of the water management forecasting (scenarios 2, 4, and 6)
- The Baseline Scenario without Climate Change (scenario 1) was used to demonstrate the effects of the Climate Change assumptions



# Baseline Forecast Scenario Assumptions

- Local hydrology (precipitation, runoff, and recharge) assumed to be the same as period 1970 to 2019 with the exception of 1993, which was very anomalous wet year that is unlikely to repeat in the next 50 years
- Reduction in SWP Table A deliveries (45% of Contract) based on actual deliveries since the 2007 Wanger decision on Delta export pumping and due to climate change impacts
- Increase in SWP Table A deliveries for the MCSB (from approximately 8% to 10% of total) due to higher demand growth relative to the West Whitewater River Subbasin Management Area of Indio Subbasin
- Conversion of several areas with Septic systems to Sewer system
- Construction of the Regional Water Reclamation Facility (RWRF) in Garnet Hill Subarea
- Conveyance of a portion of the wastewater from MCSB to the RWRF and assumed this wastewater is not conveyed back to the MCSB
- No new supplies or increased reliability of SWP Table A for recharge
- Demand and SWP Table A recharge is held steady after 2045



### **Baseline Scenario with Climate Change is the same as the Baseline Scenario with the following differences:**

- Local hydrology (precipitation, runoff, and recharge) based on continuation of a 25-year period of below normal precipitation from 1995 through 2019 for two cycles (50 years total)
- Mountain Front Recharge (MFR) without climate change assumptions averages about 21,400 AFY and MFR with climate change assumptions averages about 12,700 AFY, an average decrease of about 8,700 AFY
- DWR estimated decrease of SWP Table A deliveries of 1.5% by 2045 due to climate change

## **Near-Term Projects with Climate Change is the same as the Baseline with Climate Change Scenario with the following differences:**

- Lake Perris Seepage Recovery Project begins in 2023 increasing SWP Recharge
- Recycled Water Reuse in MCSB begins in 2028, bringing treated wastewater conveyed to the Garnet Hill Subarea back to the MCSB for recharge or non-potable reuse

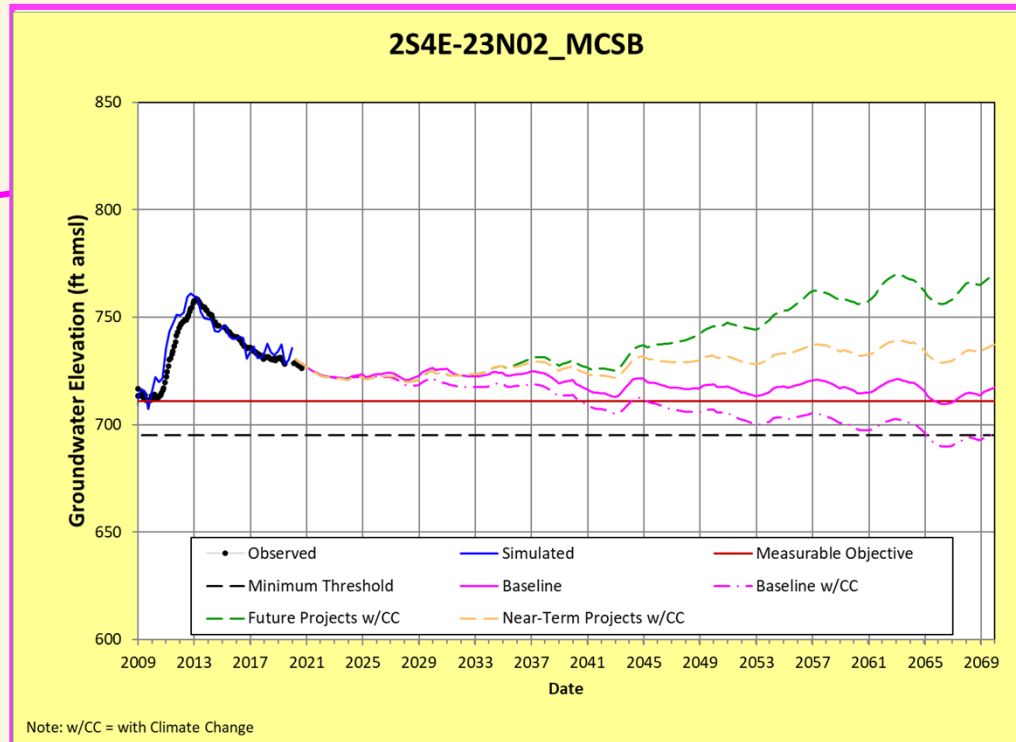
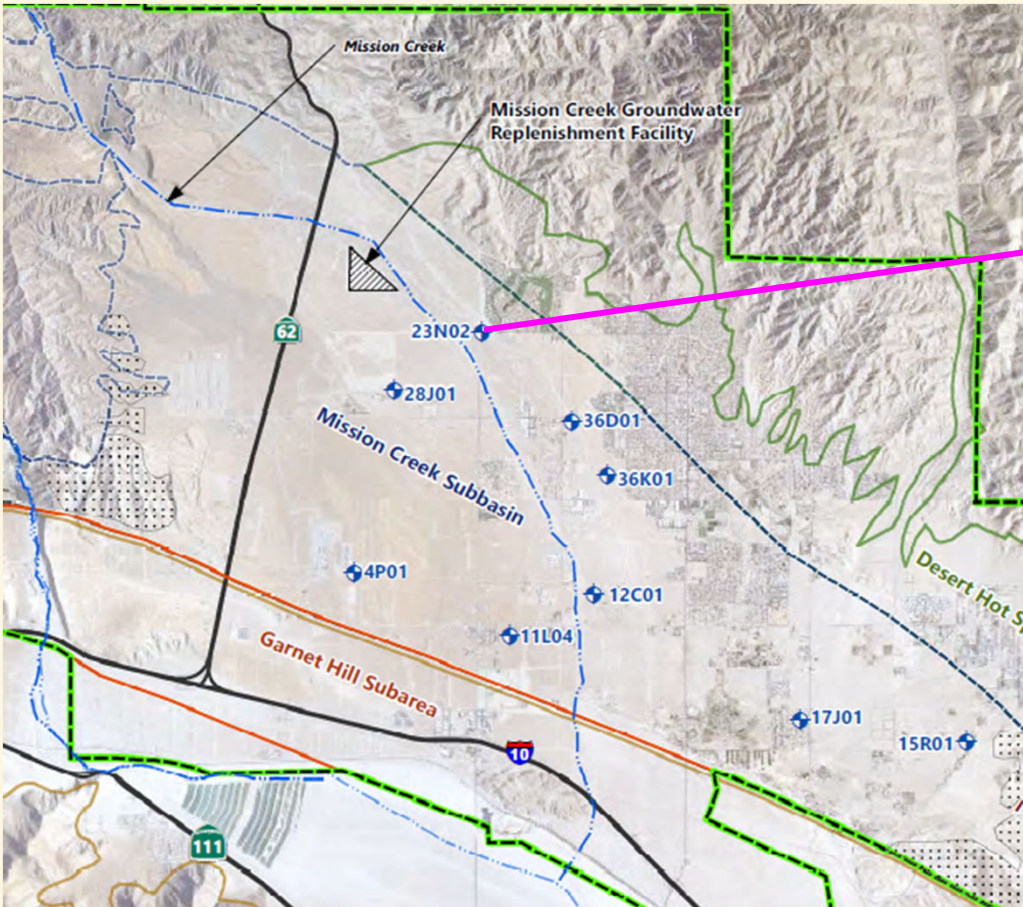
# Future Projects with Climate Change Forecast Scenario Assumptions



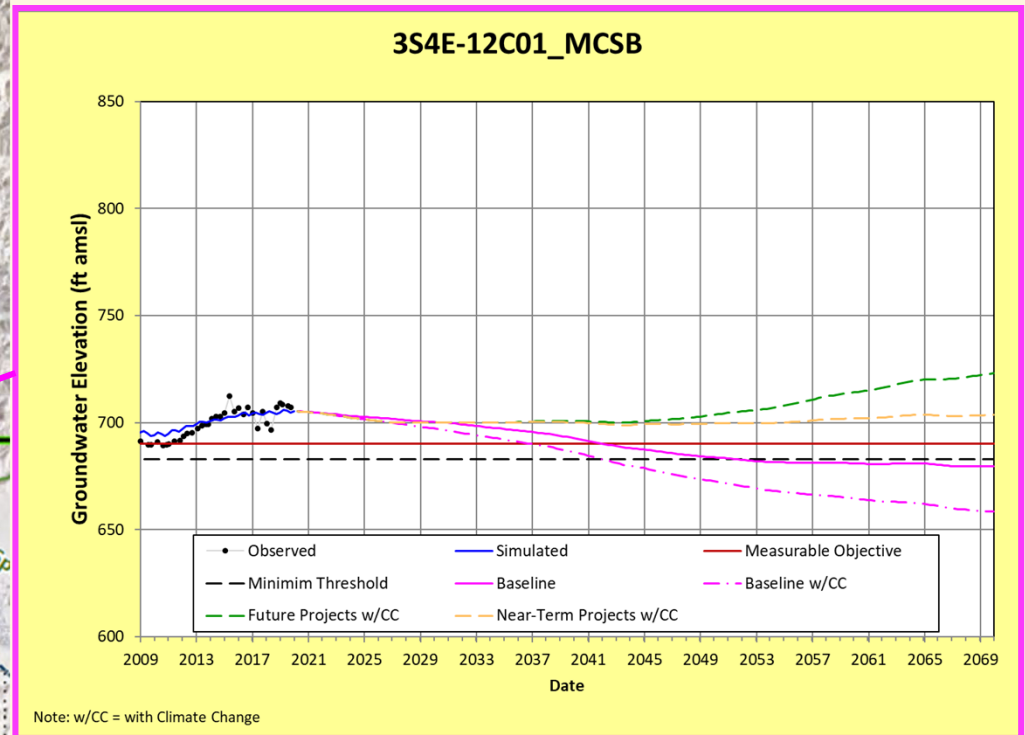
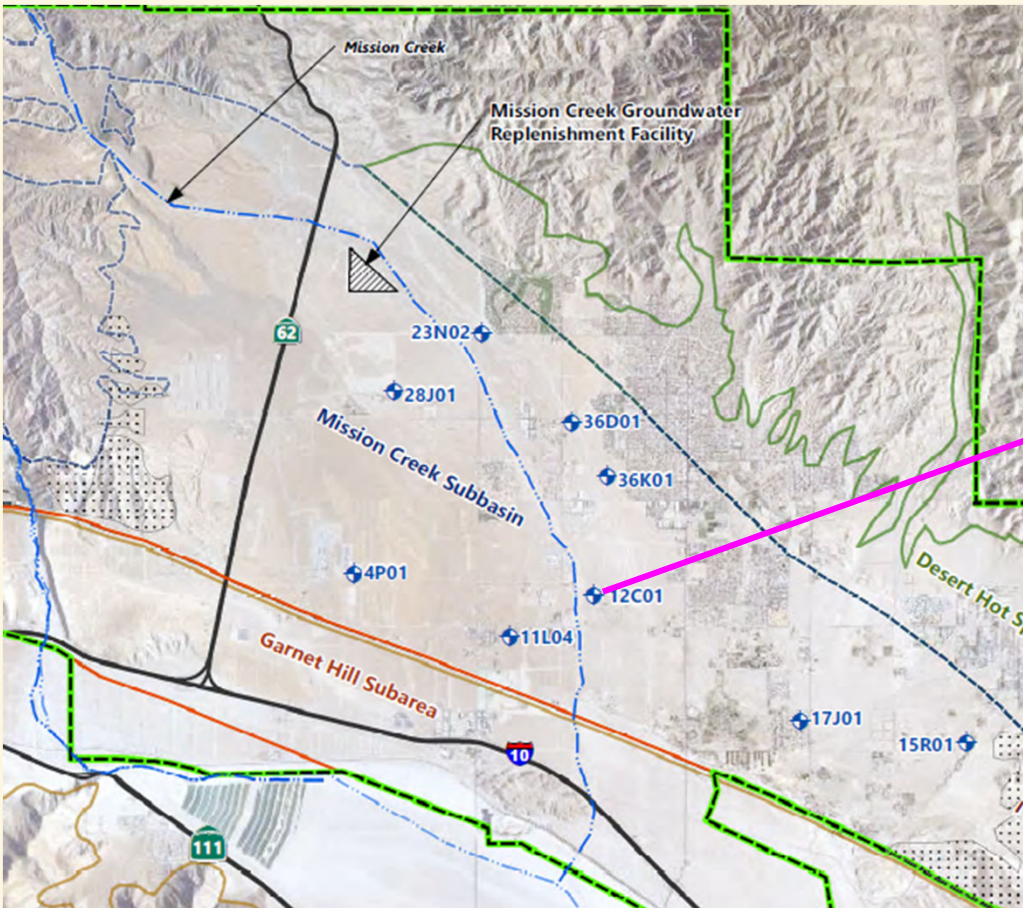
## **Future Projects with Climate Change is the same as the Near-Term Projects with Climate Change Scenario with the following differences:**

- Sites Reservoir Project brings additional SWP water for recharge beginning in 2035
- Delta Conveyance Project increases the reliability of SWP water for recharge beginning in 2045

# Simulated Forecast— Hydrograph 23N02

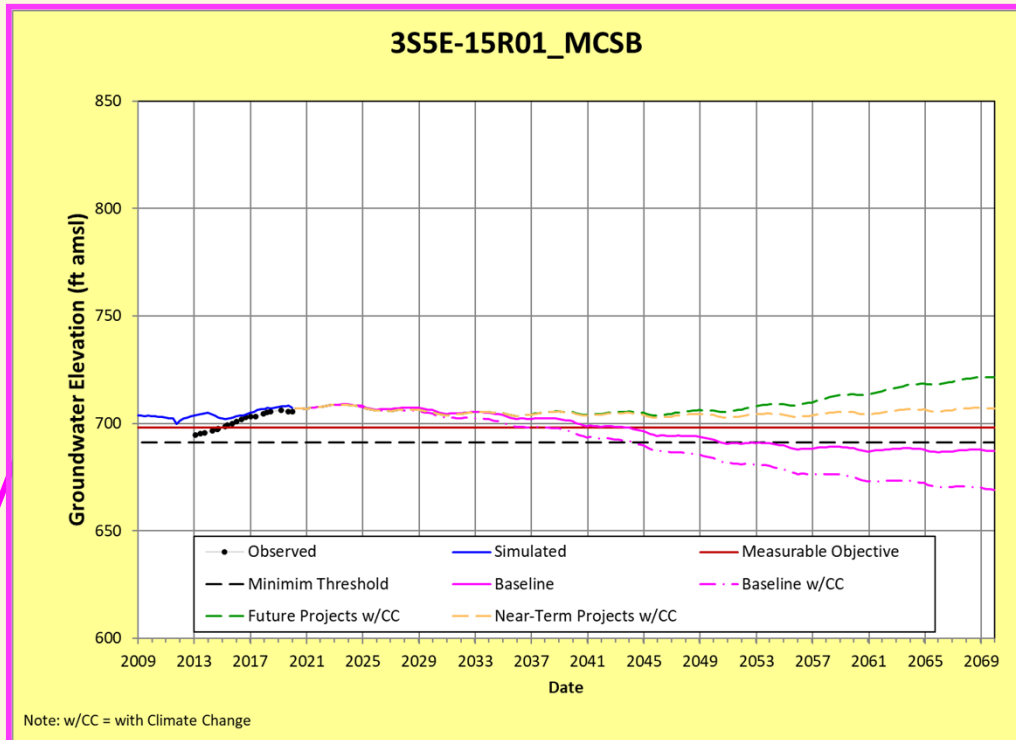
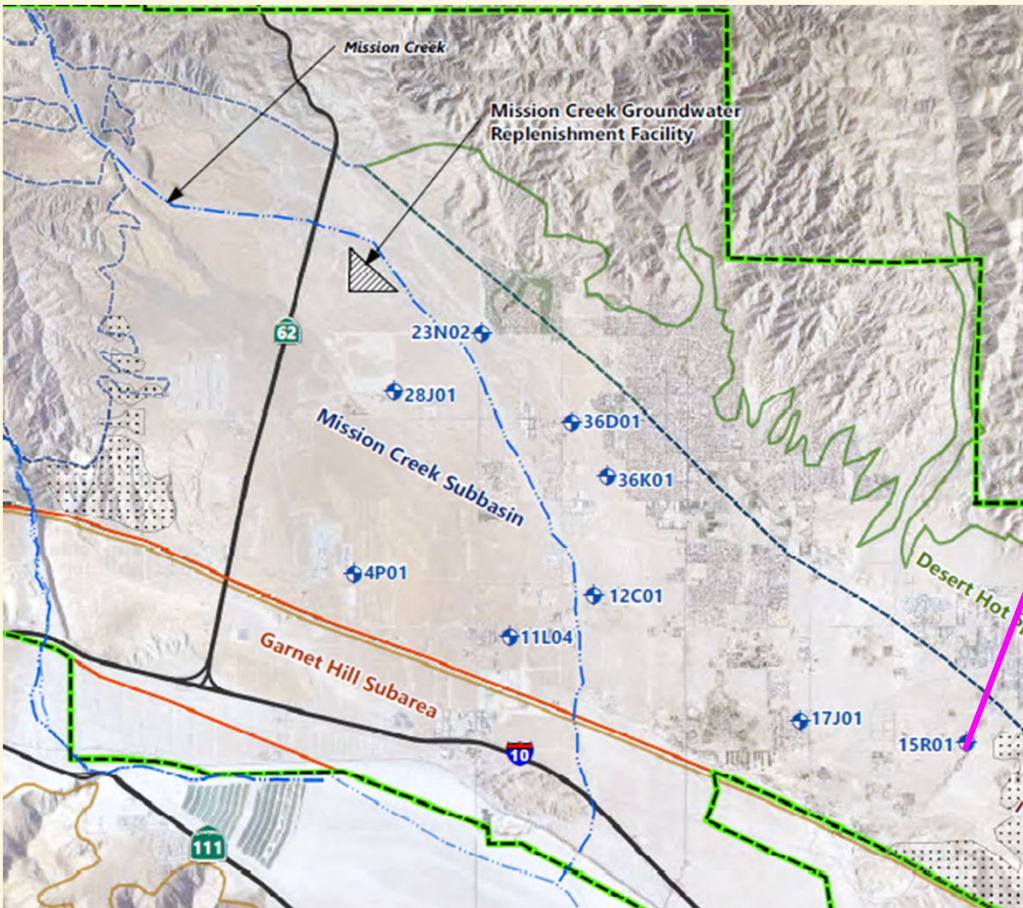


# Baseline Forecast Results – Hydrograph 12C01

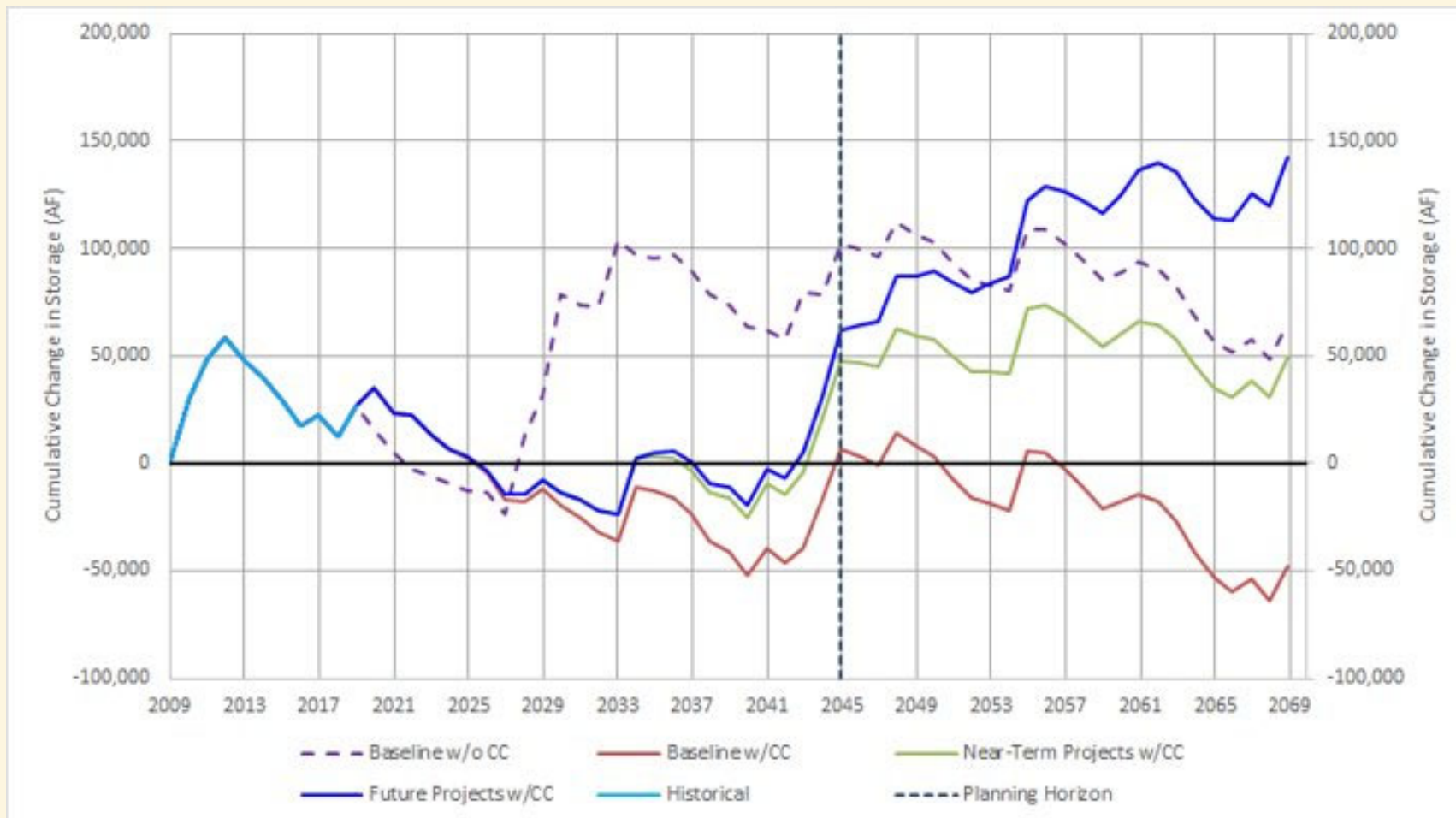




# Baseline Forecast Results – Hydrograph 15R01



# Simulated Cumulative Change in Storage





# Projects and Management Actions

# Adaptive Management

- Flexibility is needed to adapt to new conditions
- Adaptive management is a process to recognize new conditions and make changes



## **Five Categories of Projects and Management Actions:**

- Water conservation (conservation education and studies)
- Water supply (Recycled Water, Delta Conveyance Facility, Sites Reservoir, and Lake Perris Seepage Recovery)
- Water quality protection (CV-SNMP activities, septic to sewer programs)
- SGMA implementation (annual report, five-year update)
- Well management (well construction and destruction management, well inventory)

# Plan Evaluation

# Summary and Plan Evaluation

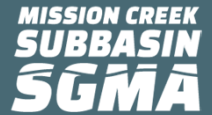
- Groundwater management has maintained groundwater levels above 2009 levels in the MCSB for more than a decade
- Population growth will result in additional water supply needs though the planning period (2045)
- CVWD and DWA are participating in State programs to improve SWP reliability and secure additional supplies
- Measurable Objectives and Minimal Thresholds have been established for sustainable management criteria and will be monitored in Key Wells in the MCSB
- Forecast scenarios of planned water management in the MCSB shows groundwater level sustainability is maintained through the planning period (2045) even under the conservative climate change assumption
- The Management Committee will continue adaptive management and adjust to changing conditions as needed to maintain groundwater sustainability in the MCSB

Questions?

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SUBBASIN  
**SGMA**



# Next Steps for Alternative Plan Update



- Public draft of the report was uploaded on October 18, 2021
- Public comments will be accepted until 5 pm on Thursday, November 18, 2021
- Send comments to the email address below:

[MissionCreekSubbasinSGMA@KennedyJenks.com](mailto:MissionCreekSubbasinSGMA@KennedyJenks.com)

- The Agencies will provide responses to public comments with the final Plan Update
- The Agencies will each host a public hearing and consider adopting the Alternative Plan Update. Tentative dates for the public hearings:
  - Coachella Valley Water District – December 7
  - Desert Water Agency - December 7
  - Mission Springs Water District – December 20

## Next Steps for Alternative Plan Update

- After adoption, the Agencies will submit the Alternative Plan Update to DWR for Review and approval by January 1, 2022
- DWR to review the Alternative Plan Update for up to 20 days and then post the document to the DWR SGMA Portal Website:

<https://sgma.water.ca.gov/portal/>

- DWR will take public comments for 60 days after posting

## POLL 3 – Public Comment on the Plan



### **We encourage public comment on the Alternative Plan Update**

- Have you had a chance to review the draft Alternative Plan Update?
  - ☐ Yes
  - ☐ No
- Do you intend to provide comments?
  - ☐ Yes
  - ☐ No

# Public Outreach

# Your Participation is Crucial



- **Goals for Outreach:**
  - Enhance public understanding
  - Inform public of Plan Update process
  - Engage stakeholders in the Planning Area
  - Respond to public concerns
- **Communication and Engagement Plan:**
  - Outlines public outreach goals in more detail
  - Available at [www.MissionCreekSubbasinSGMA.org](http://www.MissionCreekSubbasinSGMA.org)
- **For additional information, please contact:**
  - Sachi Itagaki at (650) 852-2817
  - [MissionCreekSubbasinSGMA@KennedyJenks.com](mailto:MissionCreekSubbasinSGMA@KennedyJenks.com)

- **Website:** [www.missioncreeksubbasinsgma.org](http://www.missioncreeksubbasinsgma.org)
- **Email address:** [MissionCreekSubbasinSGMA@KennedyJenks.com](mailto:MissionCreekSubbasinSGMA@KennedyJenks.com)

## Stay Connected

Name \*

Email \*



# Public Comment

# The Virtual Experience: Raising Hand

The screenshot displays the Microsoft Teams meeting interface. On the left is a vertical sidebar with icons for Activity, Chat, Teams, Calendar, Calls, Files, and a menu of more options. The main area shows a circular profile picture of a woman with the text "Waiting for others to join..." below it. At the top, there is a search bar with the placeholder text "Search or type a command". On the right, a "Meeting chat" panel shows a notification: "Melanie Rivera joined the meeting." Below the main area is a toolbar with icons for time (00:29), mute, video, screen share, a hand icon, chat, participants, and end meeting. A blue arrow points from a text box to the hand icon. The text box contains the instruction: "Raise your hand" by clicking on hand icon. At the bottom right, there is a text input field labeled "Type a new message" and a row of icons for attachments, emojis, and other chat features.

Search or type a command

Activity  
Chat  
Teams  
Calendar  
Calls  
Files  
...

Waiting for others to join...

00:29

“Raise your hand” by clicking on hand icon

Meeting chat

Melanie Rivera joined the meeting.

Type a new message

# Open Discussion

Thanks for joining us!