



West San Jacinto Groundwater Sustainability Agency (GSA) Development of the West San Jacinto Groundwater Sustainability Plan (GSP) – July 14, 2020

Rachel Gray
July 14, 2020

Introduction

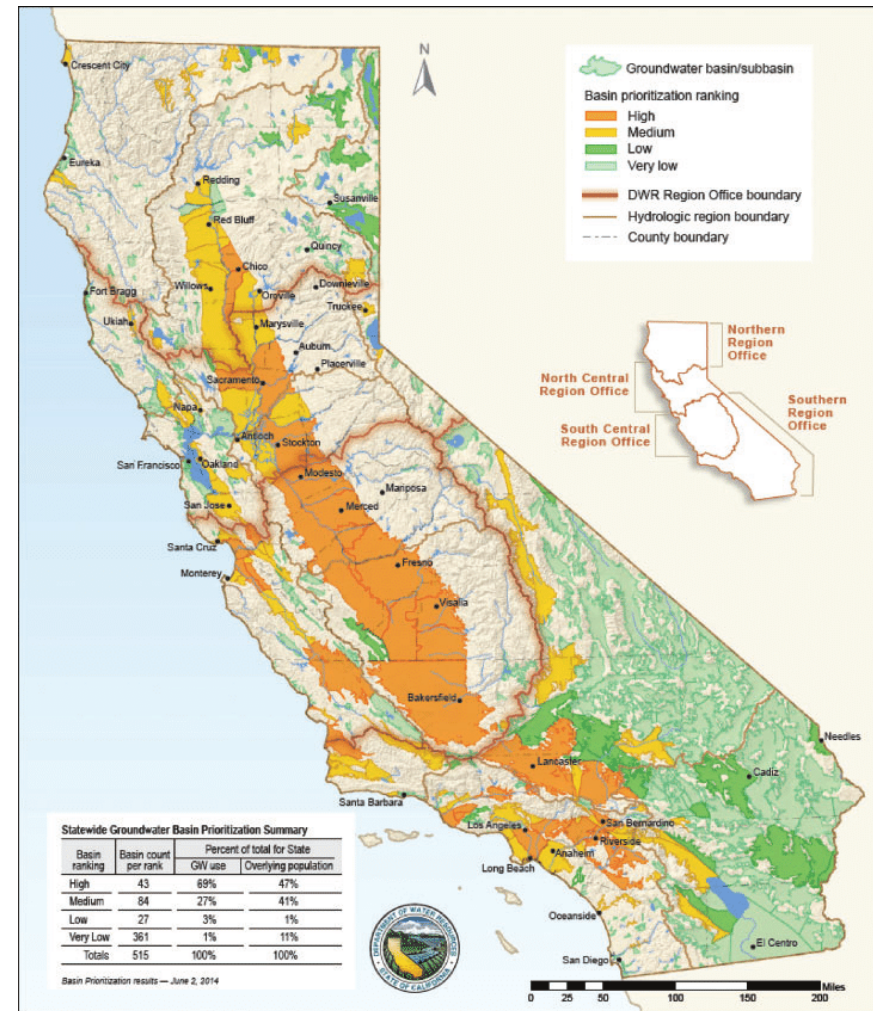
- Project Overview
 - What is the Sustainable Groundwater Management Act?
 - What is a Groundwater Sustainability Plan?
- Update on the Groundwater Sustainability Plan Development
 - Historical, Current, and Projected Baseline Water Budgets for the West San Jacinto GSA Area
 - Representative Monitoring Points
 - Minimum Thresholds for Groundwater Levels
 - Timeline and Next Steps
- SGMA Webpage
- Feedback
- Questions and Answers



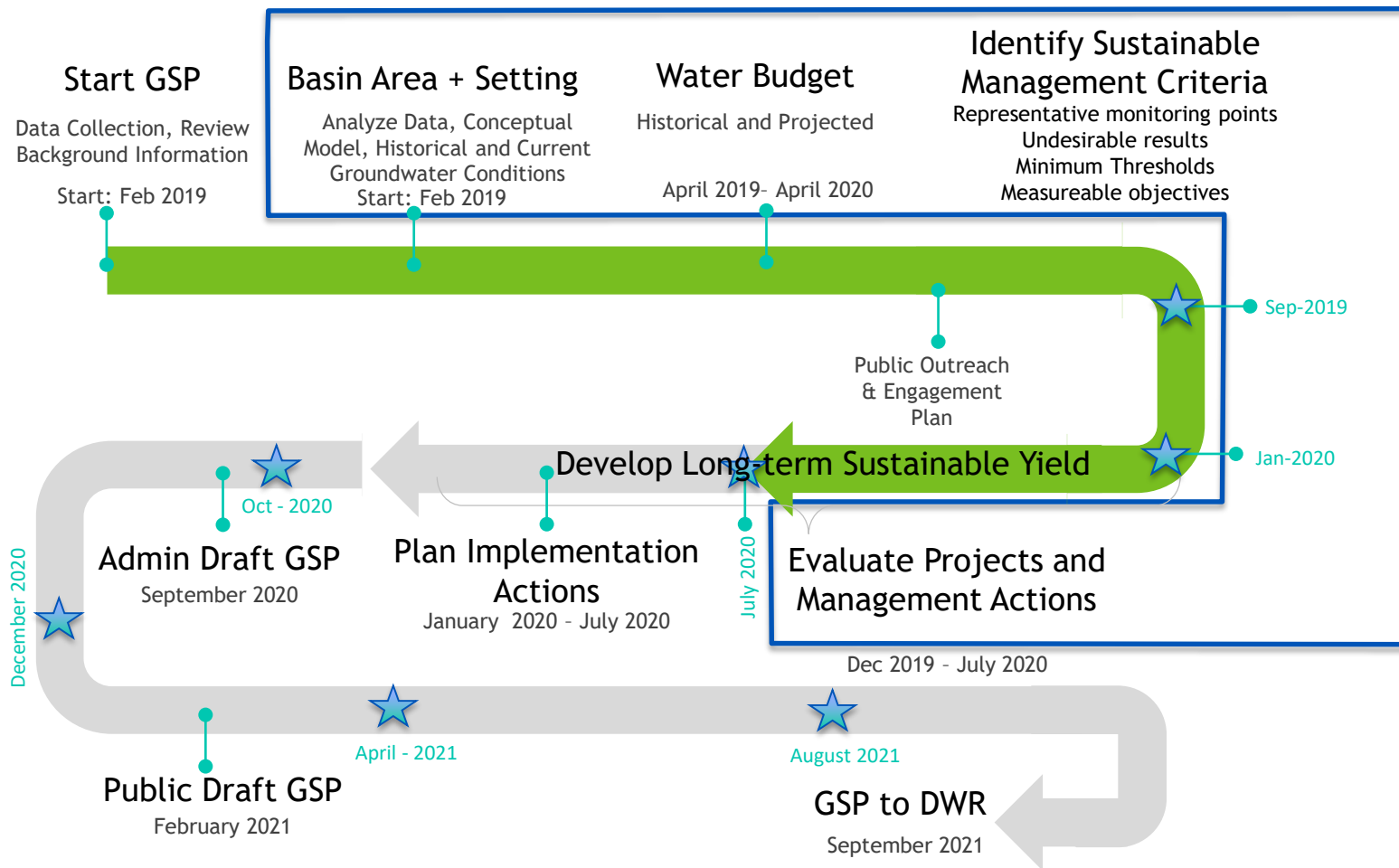
Project Overview

What is the Sustainable Groundwater Management Act?

- Signed September 16, 2014
- Effective January 1, 2015
- Requires:
 - Formation of groundwater sustainability agencies (GSAs) for high and medium priority groundwater basins
 - Preparation of groundwater sustainability plans (GSPs) by 2022
 - Achieve sustainability within 20 years of plan adoption
- “A central tenet of these bills is the recognition that groundwater management is best accomplished locally.”
 - Governor Edmund G. Brown Jr.



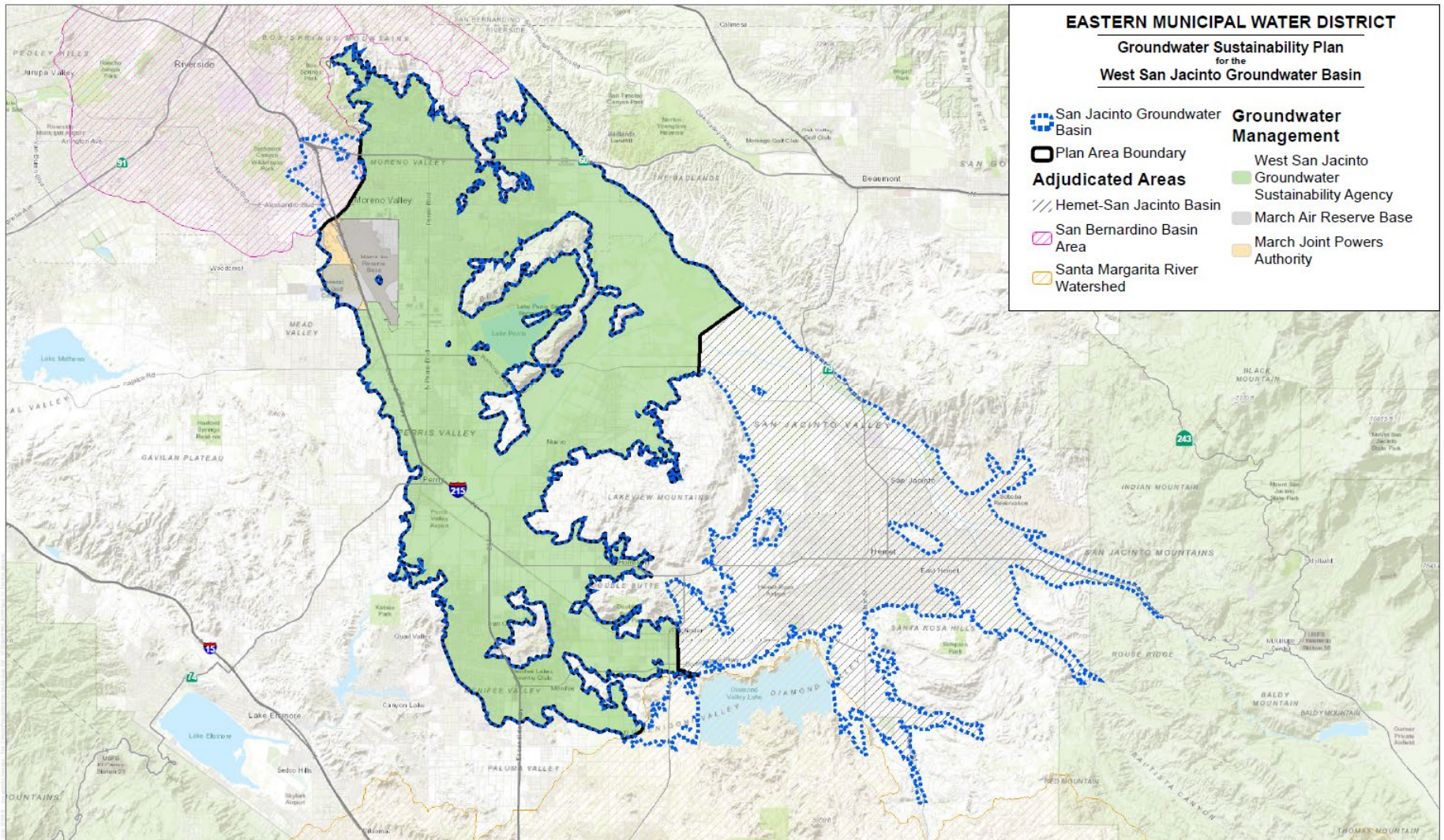
GSP Development Process





Update on the Groundwater Sustainability Plan Development

West San Jacinto Groundwater Basin (WSJGB)



Importance of the Monitoring Network

- From the SGMA Emergency Regulations (23 CCR § 354.34. Monitoring Networks):
 - “Each [GSA] shall develop a monitoring network capable of collecting sufficient data to demonstrate short-term, seasonal, and long-term trends in groundwater and related surface water conditions”
- From DWR’s Monitoring Network BMP:
 - “Monitoring is a fundamental component necessary to measure progress toward the achievement of any management goal”
 - “SGMA requires GSAs to establish and track” groundwater conditions “for each of the sustainability indicators”
 - “Groundwater monitoring is a fundamental component of SGMA as each GSP must include a sufficient network that provides data”

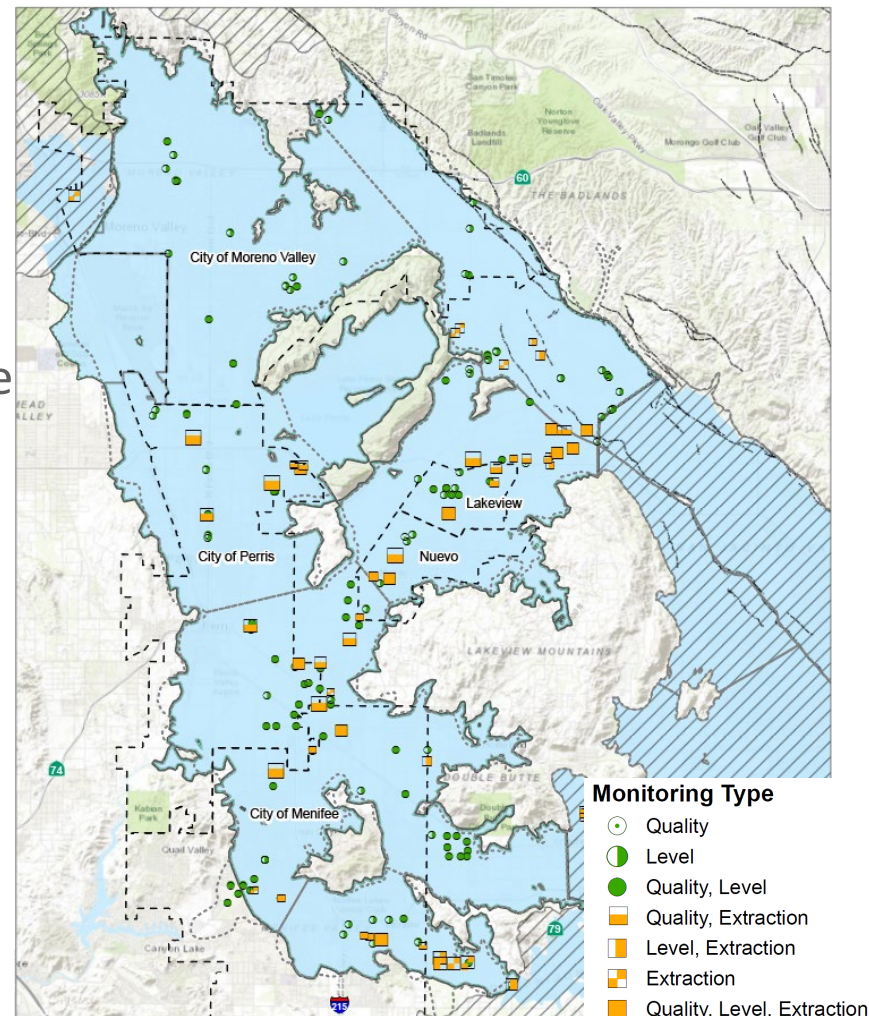
Monitoring Well Network Evaluation

2018 Monitoring Well Network:

- 175 Total Wells

Network Density:

- GSA shall determine the density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends
- Current density: 1.1 wells/mile²
- Recommended minimum density: 0.04 well/mile² (4 well/100 mile²)



Value of Representative Monitoring Points

- 23 CCR § 354.36:
 - “Each [GSA] may designate a subset of monitoring sites as representative of conditions in the basin or an area of the basin”
 - Representative monitoring sites may be designated by the [GSA] as the point at which sustainability indicators are monitored and for which quantitative values for minimum thresholds, measurable objective, and interim milestones are defined

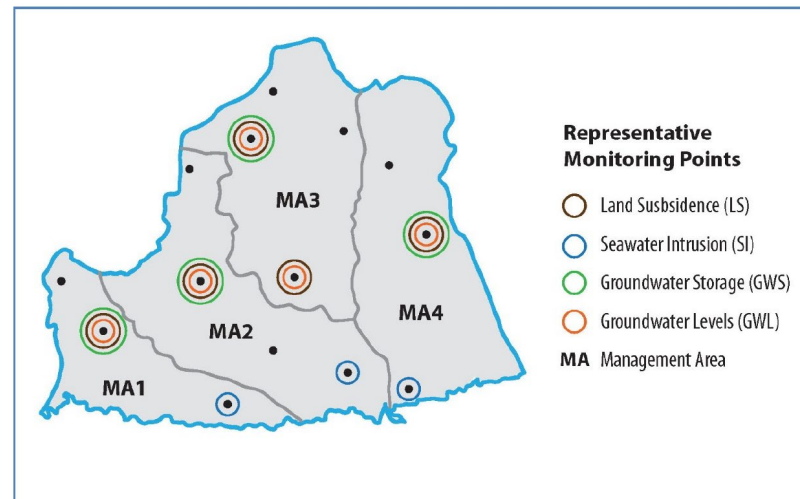
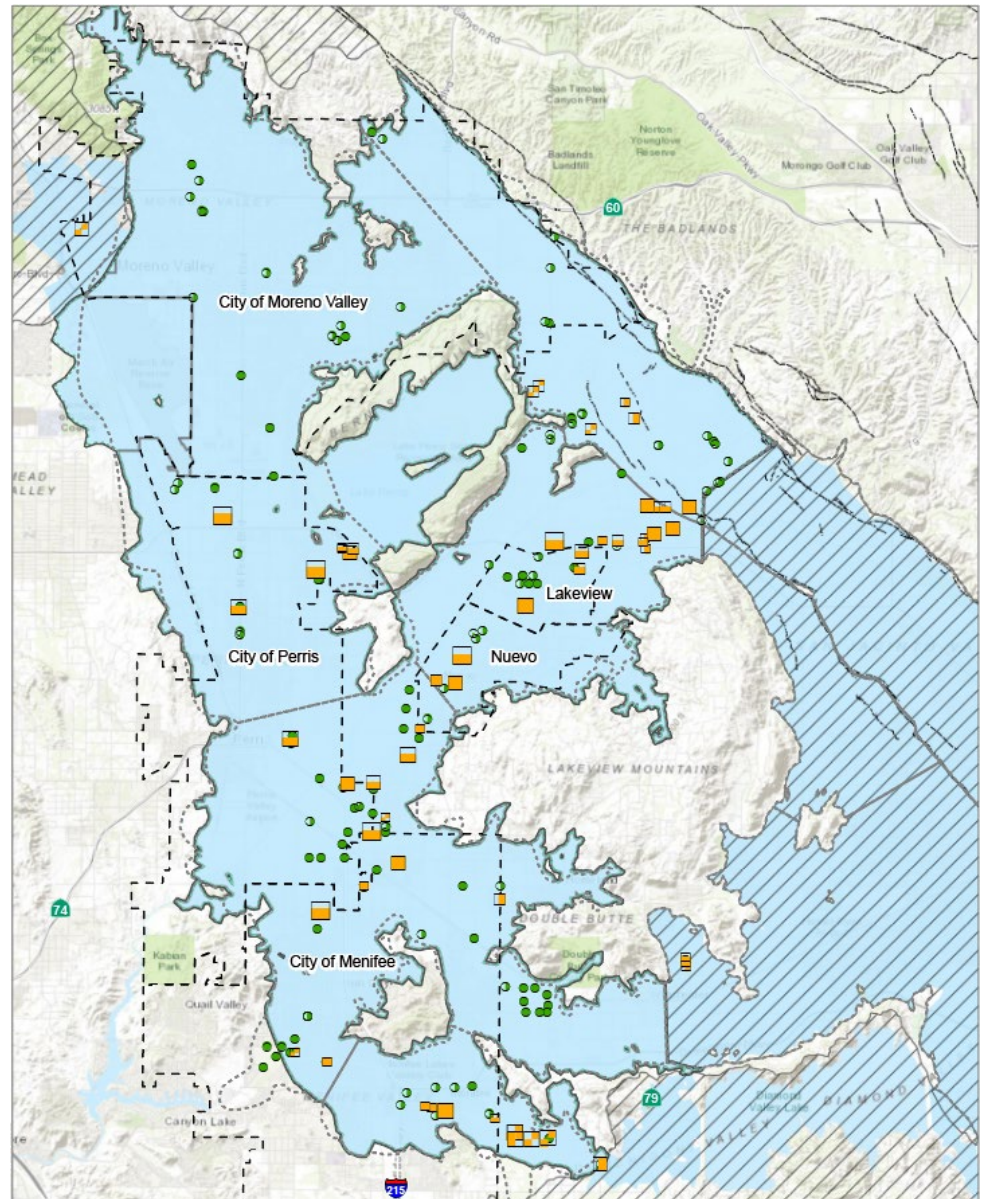


Figure 3: Representative Monitoring Points

DWR 2016. Monitoring Networks and Identification of Data Gaps BMP

Value of Representative Monitoring Points

- Select sufficient number of representative monitoring points (RMPs) to characterize groundwater conditions in areas of groundwater production throughout the Plan Area
 - Select Sustainable Management Criteria for these points only
 - Minimum Thresholds
 - Measurable Objectives
- Maintain focus on production zones within the Plan Area, rather than management zones for water quality
- **Maintain overall monitoring network to understand basin conditions, EMWD operational requirements, and EMWD non-SGMA regulatory requirements**

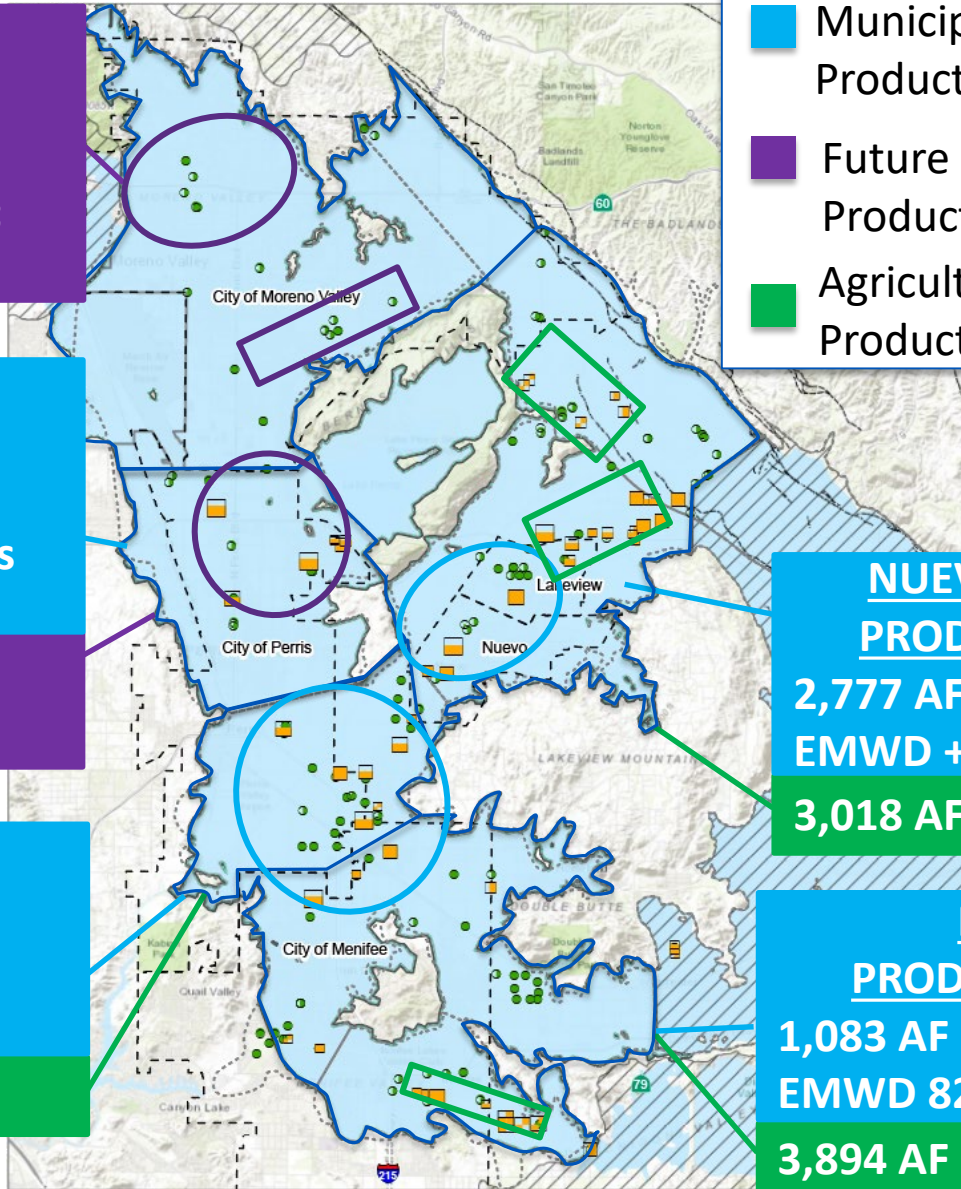


Production Areas

**MORENO VALLEY
PRODUCTION AREA**
 4,400 – 6,500 AF
 (EMWD 65/66, CCN 1-4;
 East Well and Santiago)

**NORTH PERRIS
PRODUCTION AREA**
 1,947 AF
 EMWD + Liberty Utilities
 (Park Water)
 1,050-1,550 AF (EMWD
 204)

**SOUTH PERRIS
PRODUCTION AREA**
 7,502 AF
 Excluding 75/78
 185 AF



**■ Municipal Calendar Year
Production 2019**

**■ Future Municipal
Production**

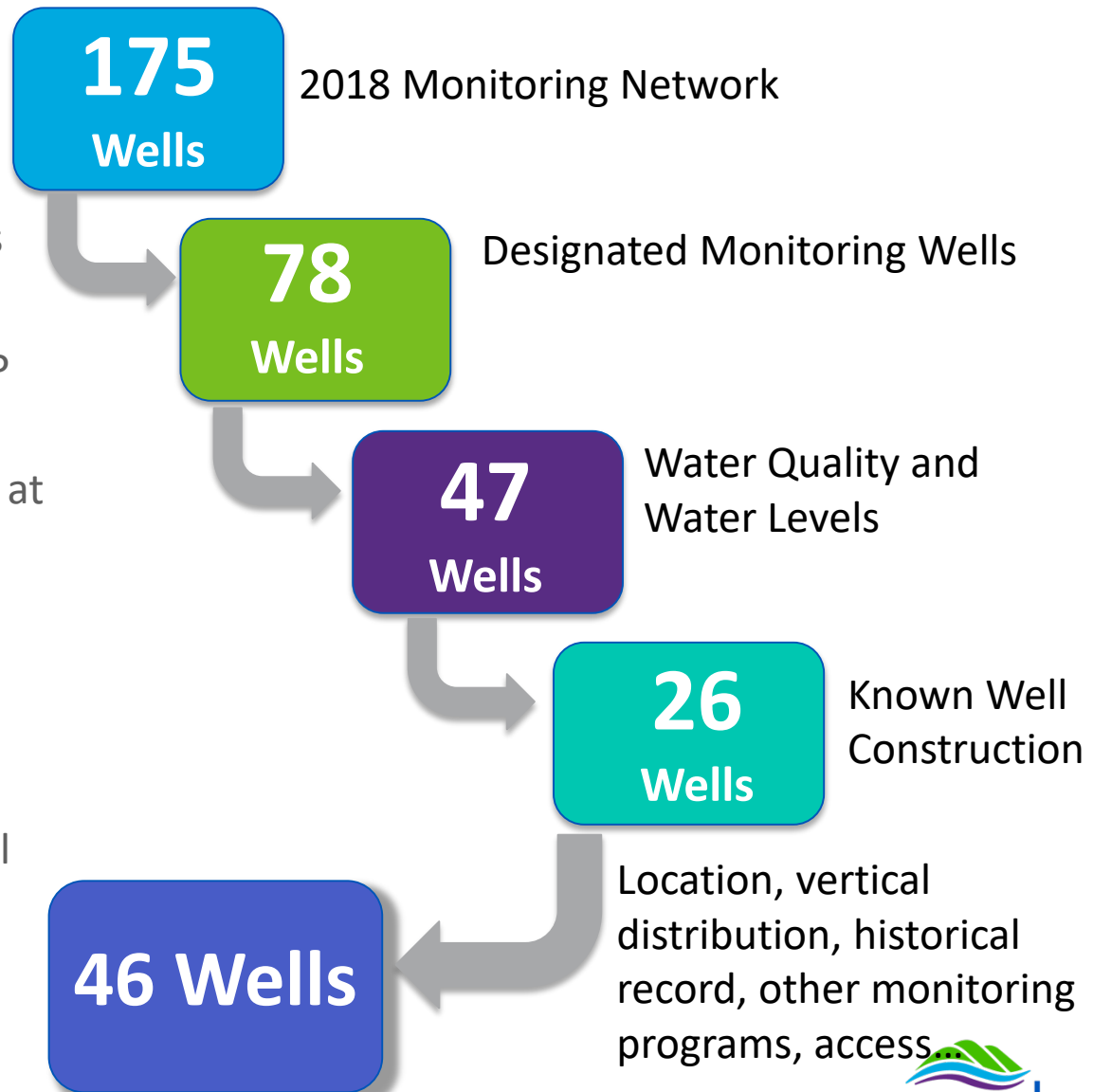
**■ Agricultural / Private
Production 2019**

**NUEVO/LAKEVIEW
PRODUCTION AREA**
 2,777 AF
 EMWD + NWC
 3,018 AF

**MENIFEE
PRODUCTION AREA**
 1,083 AF
 EMWD 82
 3,894 AF

Evaluation Criteria for RMP Selection

- Primary designation as a monitoring well
- Ability to collect both water quality and water level samples
- Known well construction
- Geographic location of the RMP within the Plan Area
- Length of historical data record at the RMP
- Inclusion of RMP in additional monitoring programs
- Vertical distribution of well screen intervals for each RMP
- Long-term accessibility and well ownership considerations



Site Ranking

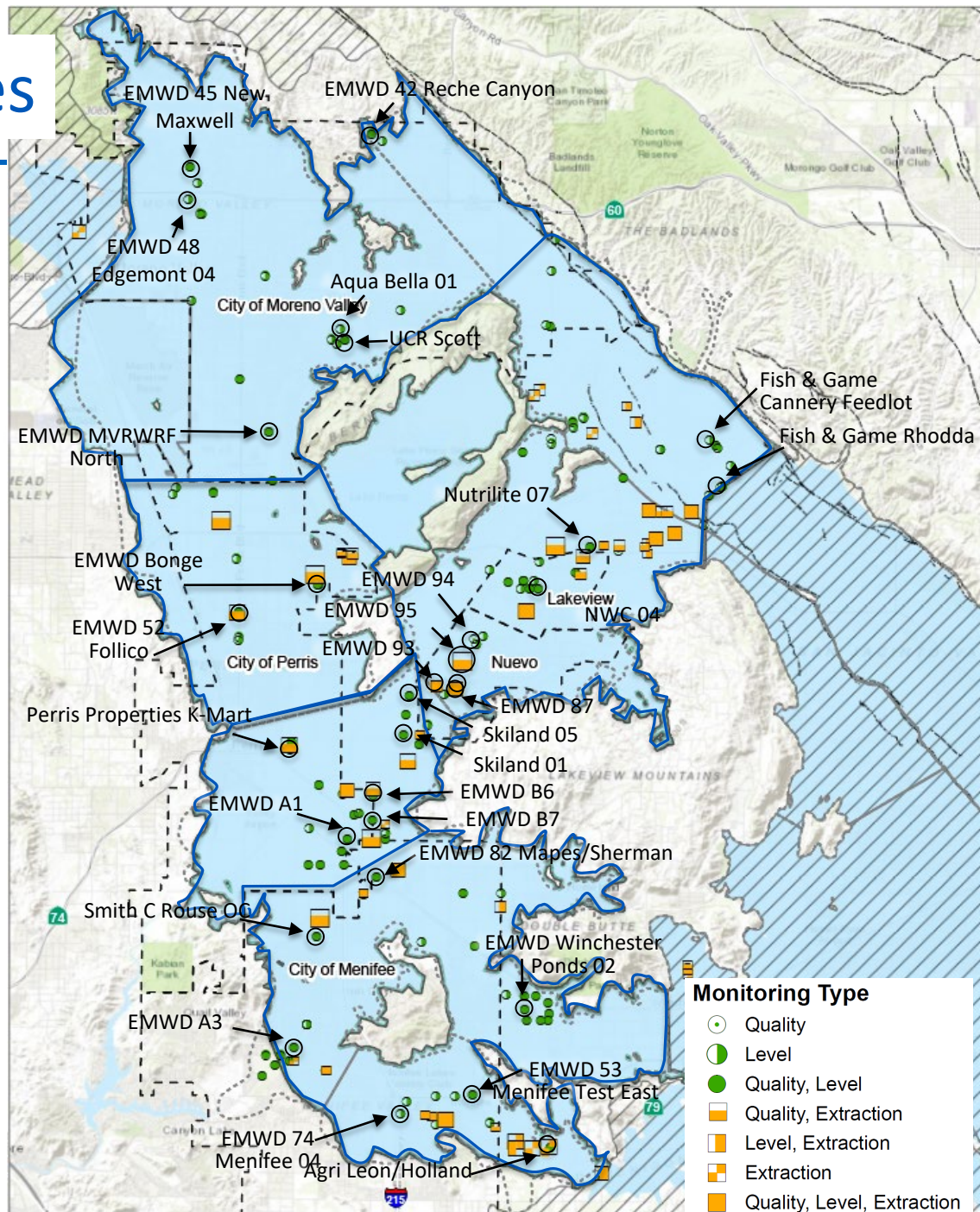
■ Potential Sites Ranked Using Initial Screening Criteria:

- Active Extraction Well?
 - No: 1 point
- Monitoring Type
 - Quality *and* level: 2 points
 - Quality *or* Level: 1 point
- Perforations
 - 1 point if representative
- EMWD Well?
 - Yes: 1 point
- Basin Plan Well?
 - Yes: 1 point
- Perris II MRP Well?
 - Yes: 1 point
- Perris II MRP Sentinel Well?
 - Yes: 1 point

Casing Name	Active Extraction?	Monitoring Type?	Perforations?	Representative EMWD Perforations?	EMWD Well	Basin Plan Well	Perris II Well?	Sentinel Well?	Rank
			290-310; 555-						
EMWD A1	No	Quality, Level	575	Yes	Yes	Yes	Yes	No	8
EMWD Skiland 05	No	Quality, Level	313-567	Yes	Yes	Yes	Yes	No	8
Nutrilite 07	No	Quality, Level	390-697	Yes	No	No	Yes	Yes	7
EMWD 74 Menifee 04	No	Quality, Level	220-640	Yes	Yes	Yes	No	No	7
EMWD A3	No	Quality, Level	560-580	Yes	Yes	No	Yes	No	7
EMWD Skiland 01	No	Quality, Level	360-720	Yes	Yes	No	Yes	No	7
EMWD 52 Follico	No	Quality, Level	290-665	Yes	Yes	No	No	No	6
EMWD B6	No	Quality, Level	230-250	Yes	Yes	Yes	Yes	No	6
NWC 04	No	Quality, Level	104-518	Yes	No	No	Yes	No	6
EMWD 45 New Maxwell	No	Quality, Level	360-430	Yes	Yes	No	No	No	6
Perris Properties Kmart	No	Quality, Level	170-430	Yes	No	No	Yes	No	6
Fish & Game Cannery Feedlot	No	Quality, Level	350-720	Yes	No	Yes	No	No	6
			185-380;420-						
EMWD 94	Yes	Quality	580	Yes	Yes	No	Yes	No	5
EMWD Winchester Ponds 02	No	Quality, Level	52-75	Yes	Yes	Yes	No	No	5
EMWD B7	No	Quality, Level	230-250	Yes	Yes	No	Yes	No	5
			200-360;380-						
EMWD 95 13th St.	Yes	Quality, Extraction	420	Yes	Yes	No	Yes	No	5
EMWD 87 Nuevo/Olivas	Yes	Quality, Level	150-380	Yes	Yes	No	Yes	No	5
			200-264;274-						
EMWD 93 Nuevo/Menifee	Yes	Extraction	330	Yes	Yes	No	Yes	No	5
EMWD 53 Menifee Test East	No	Quality, Level	NA	NA	Yes	No	Yes	No	5
Agri Leon/Holland	Yes	Quality, Level	150-509	Yes	No	Yes	No	No	5
EMWD 48 Edgemont 04	No	Quality, Level	NA	NA	Yes	Yes	No	No	5
EMWD 42 Reche Canyon	No	Quality, Level	NA	NA	Yes	Yes	No	No	5
			Unknown						
			perfs; may be						
			as deep as						
UCR Scott	No	Quality, Level	600 ft.	NA	No	No	No	No	4
			246-360;380-						
Aqua Bella 01	No	Level	735;735-755	Yes	No	No	No	No	4
EMWD MVRWRF North	No	Quality, Level	70-110	No	Yes	No	No	No	4
Smith C Nuevo/Olivas	No	Quality, Level	NA	NA	No	Yes	No	No	4
EMWD 51 Bonge West	No	Quality, Level	NA	NA	Yes	No	No	No	4
Smith C Rouse OC	No	Quality, Level	NA	NA	No	No	Yes	No	4
Smith C Jackson	No	Quality, Level	NA	NA	No	No	Yes	No	4
Fish & Game Rhodda	No	Level	700-1187	Yes	No	No	No	No	4
DeVuyst Alfaifa OC	No	Level	NA	NA	No	No	Yes	No	3
Fish & Game South	No	Quality, Level	NA	NA	No	No	No	No	3
Fish & Game West	No	Quality, Level	NA	NA	No	No	No	No	3
Cactus II Feeder MW-1	No	Level	24-28	No	No	No	No	No	3
Cactus II Feeder MW-2	No	Level	19-23	No	No	No	No	No	3
Southern CA Edison	No	Quality, Level	NA	NA	No	No	No	No	3
Fish & Game Bouris	Yes	Quality, Level	NA	NA	No	Yes	No	No	3
Fish & Game Fence	No	Quality, Level	NA	NA	No	No	No	No	3
			200-240;320-						
Marvo Holsteins East (List)	Yes	Extraction	520;560-900	Yes	No	No	No	No	3
USGS Sun City Golf Course Blue	No	Level	155-160	No	No	No	No	No	2
USGS Sun City Golf Course	No	Level	237-242	No	No	No	No	No	2
USGS Sun City Golf Course Red	No	Level	425-430	No	No	No	No	No	2
USGS Sun City Golf Course	No	Level	365-370	No	No	No	No	No	2
Nutrilite 08	Yes	Quality, Extraction	NA	NA	No	No	Yes	No	2
Nutrilite 02	Yes	Quality, Extraction	NA	NA	No	No	Yes	No	2
USGS Gilman Springs/Virginia	No	Level	NA	NA	No	No	No	No	2

Higher Ranked Sites

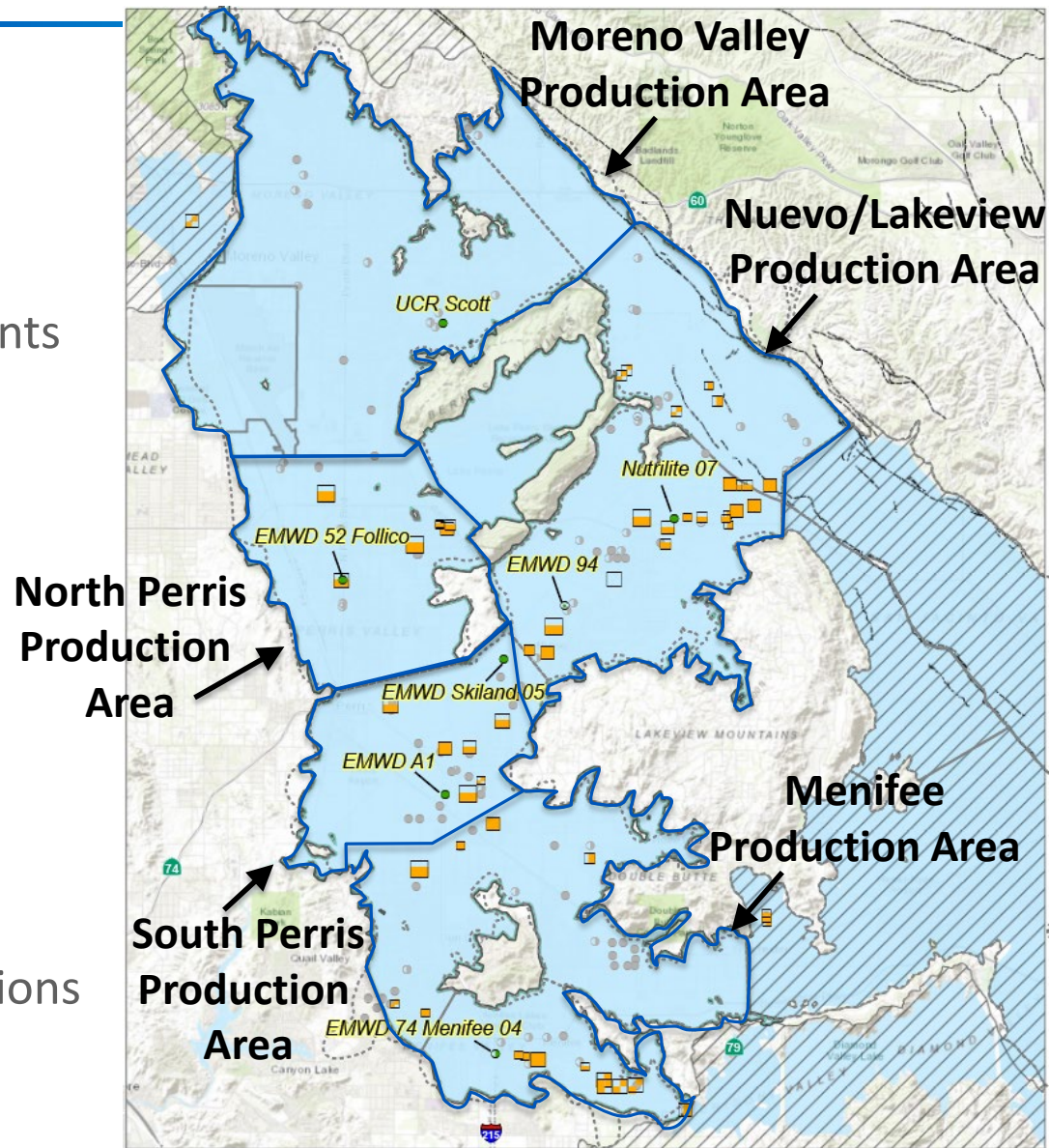
- Eliminate wells scoring 3 or lower in ranking system
- Review remaining potential sites with EMWD staff
- Focus
 - Wells near active or planned production
 - Wells with representative water levels
 - Wells with representative perforation intervals



Recommended Wells

- Review water level hydrographs within each production area to select potential representative monitoring points
- 7 representative monitoring points
 - Nutrilite 07
 - EMWD 94
 - EMWD Skiland 05
 - EMWD A1
 - EMWD 74 Menifee 04
 - EMWD 52 Follico
 - UCR Scott*

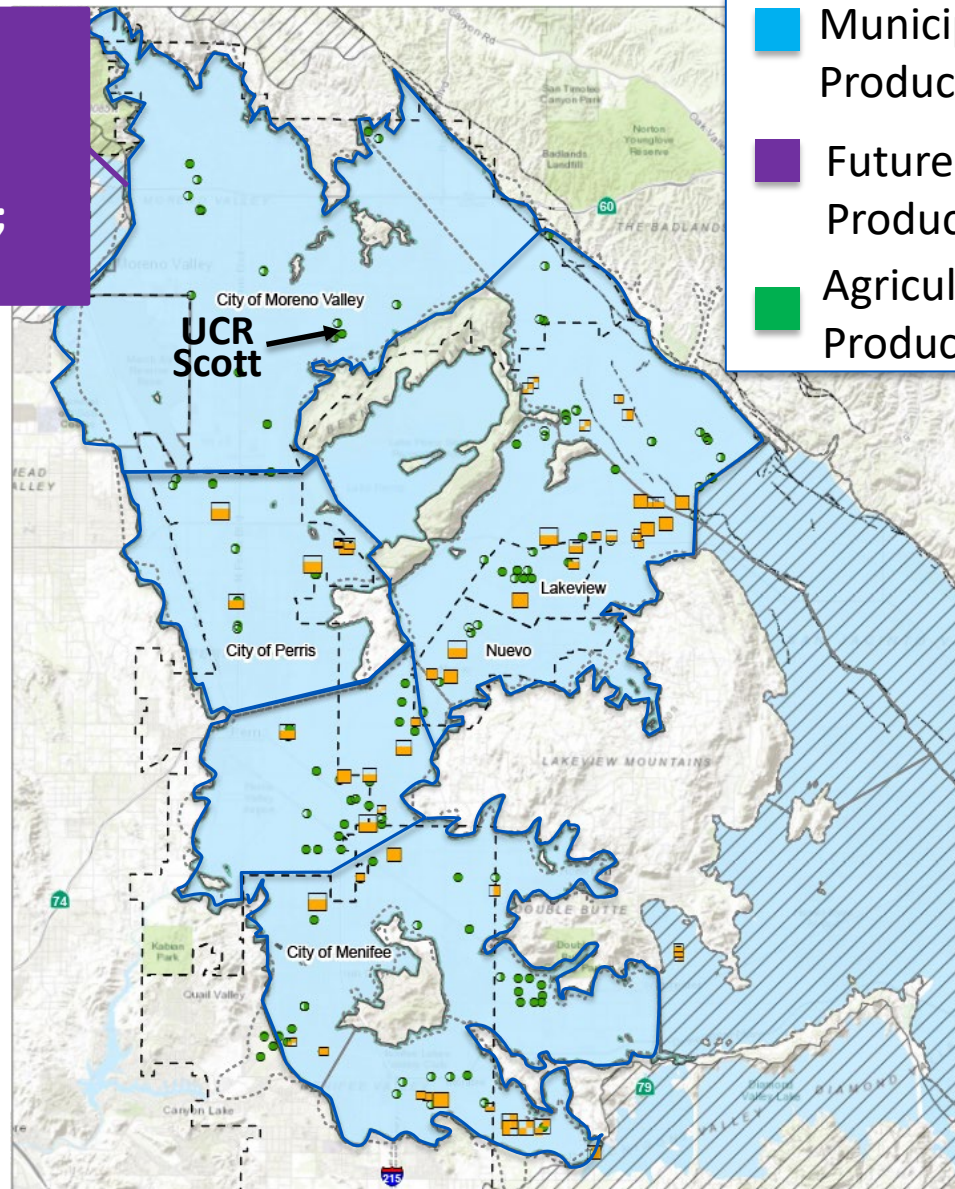
* Pending video log to determine well perforations



Production Areas

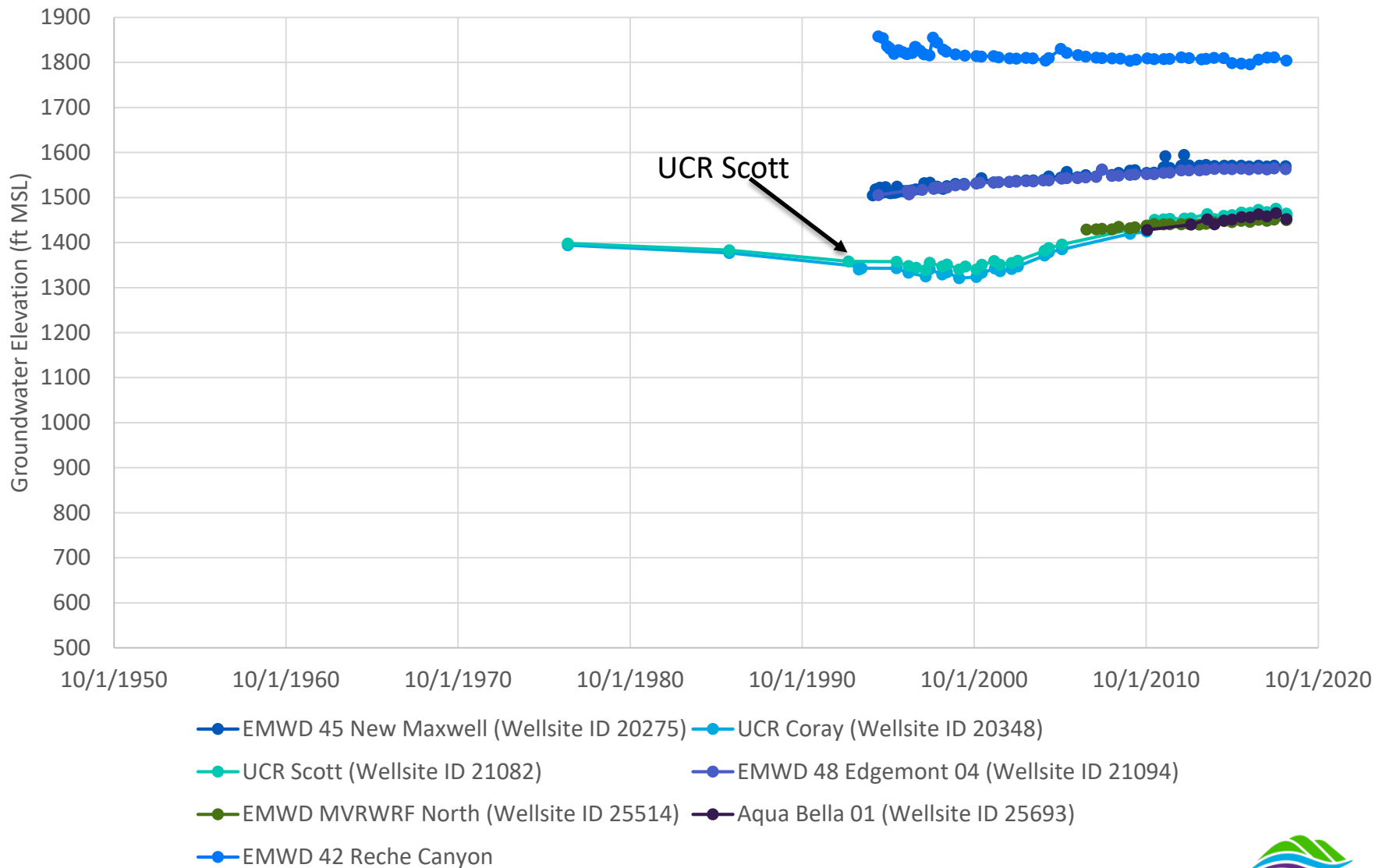
MORENO VALLEY PRODUCTION AREA

4,400 – 6,500 AF
(EMWD 65/66, CCN 1-4;
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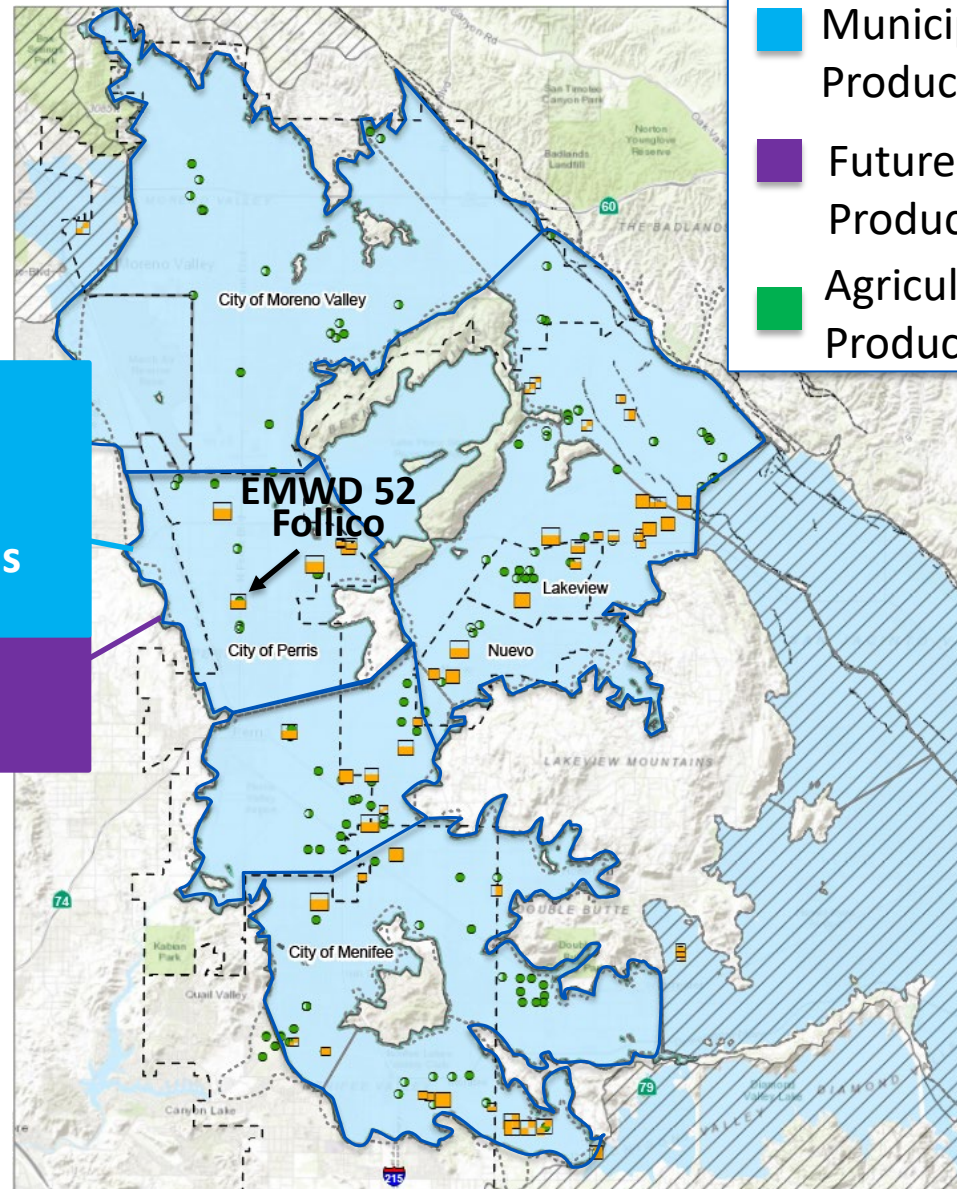


-  Municipal Calendar Year Production 2019
-  Future Municipal Production
-  Agricultural / Private Production 2019

Water Levels: Moreno Valley Production Area



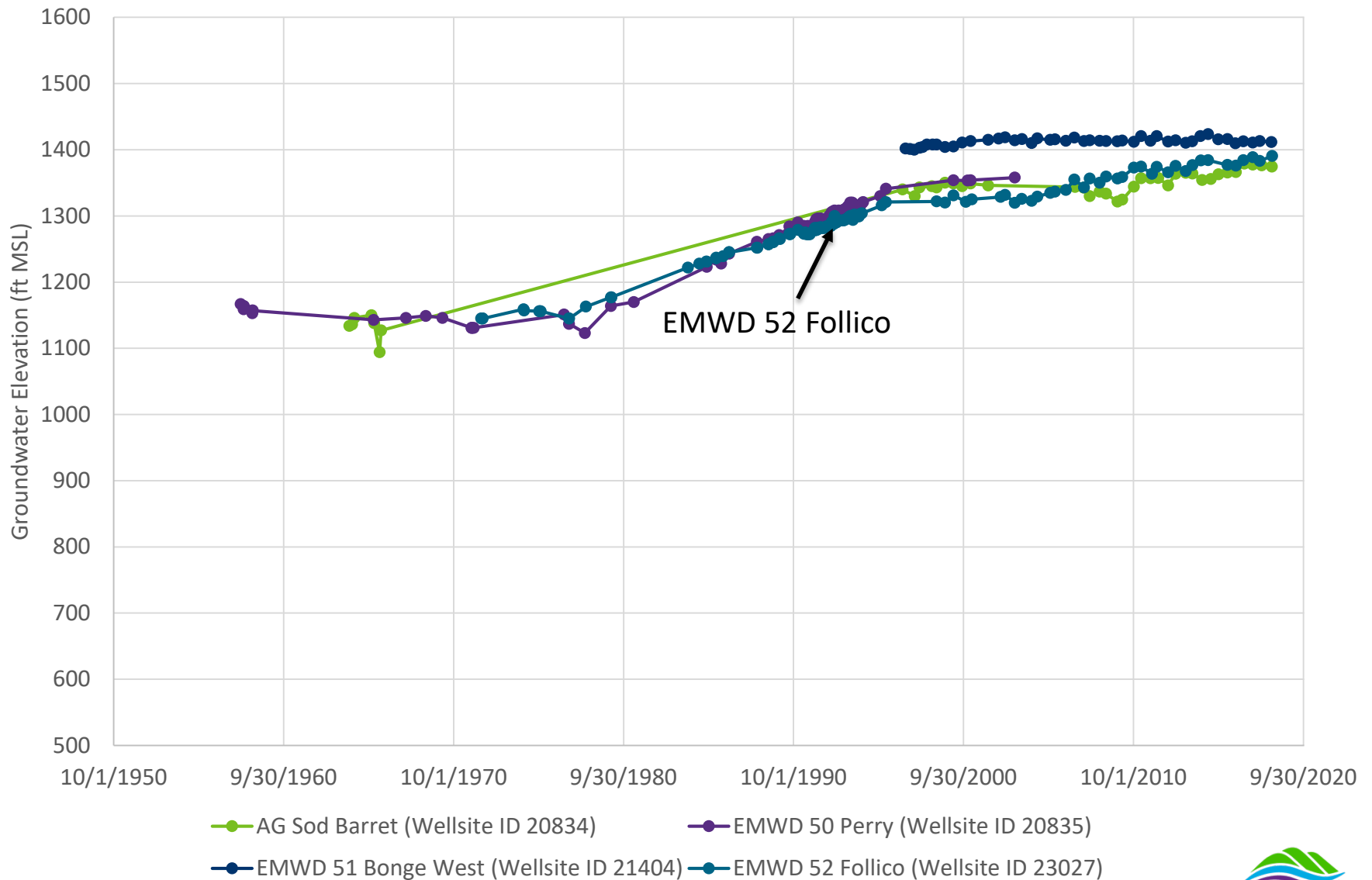
Production Areas



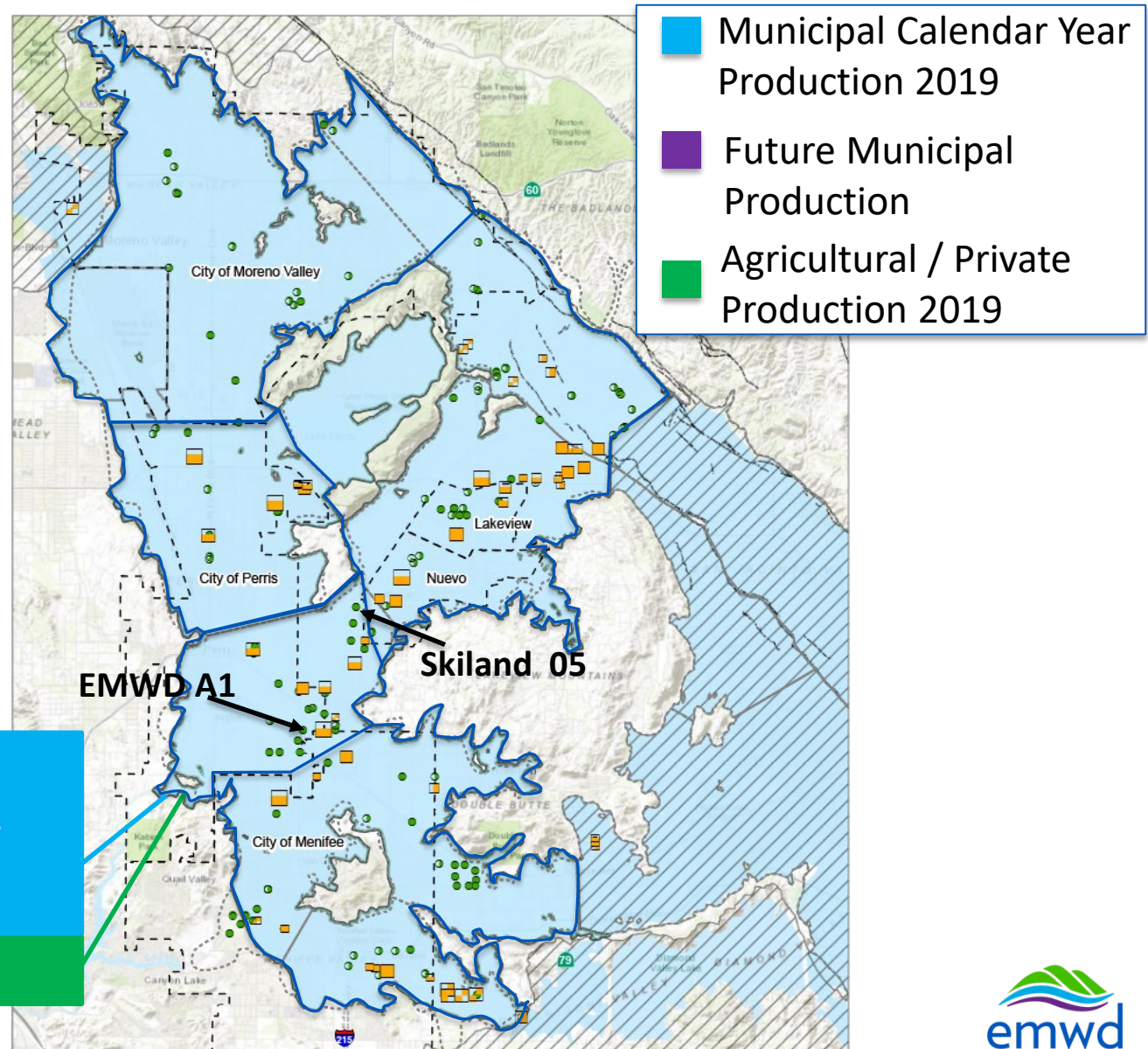
-  Municipal Calendar Year Production 2019
-  Future Municipal Production
-  Agricultural / Private Production 2019

NORTH PERRIS
PRODUCTION AREA
1,947 AF
EMWD + Liberty Utilities
(Park Water)
1,050-1,550 AF (EMWD
204)

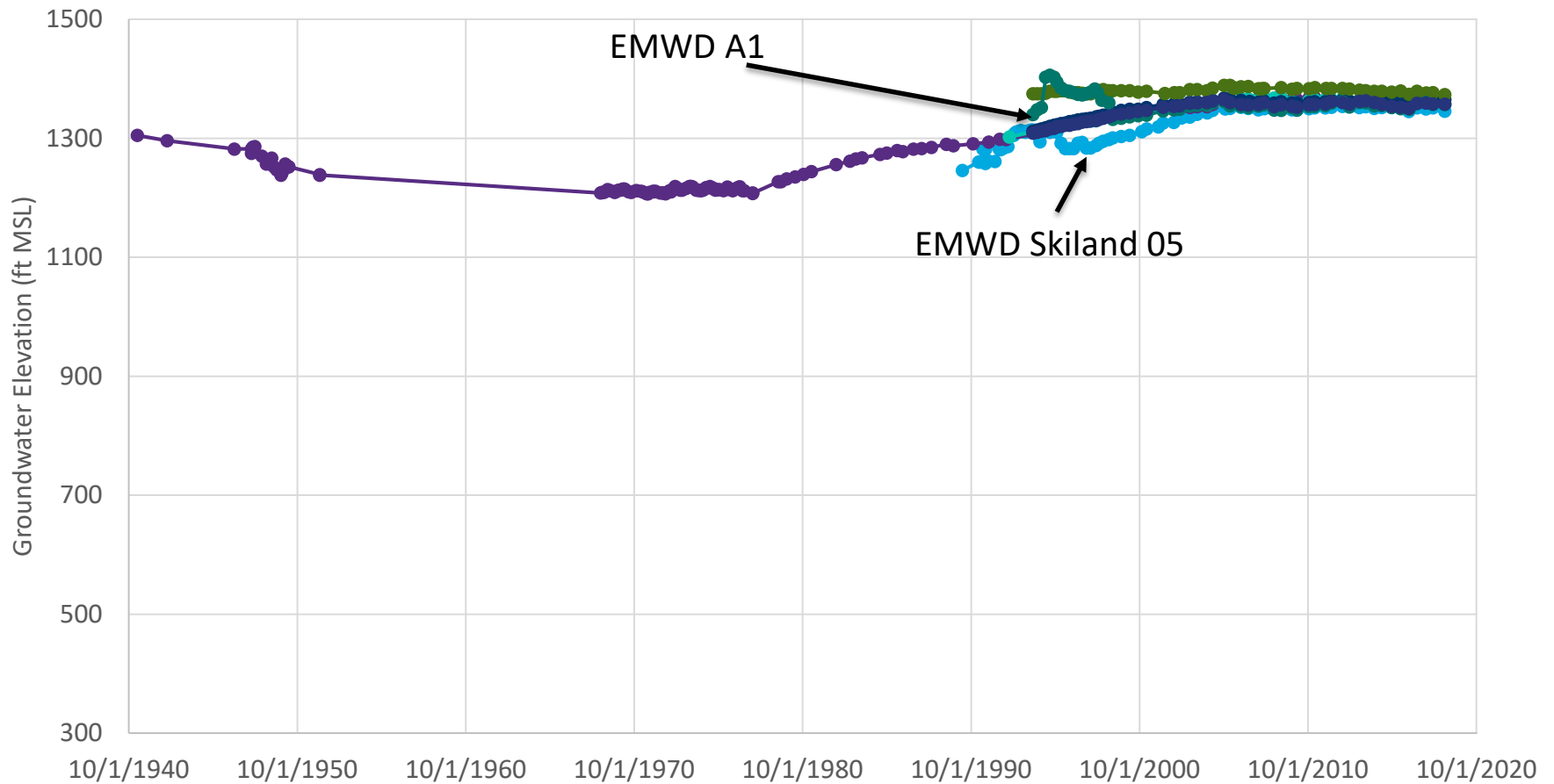
Water Levels: North Perris Production Area



Production Areas



Water Levels: South Perris Production Area



EMWD Skiland 05 (Wellsite ID 21436)

Perris Properties Kmart (Wellsite ID 21456)

EMWD A3 (Wellsite ID 21782)

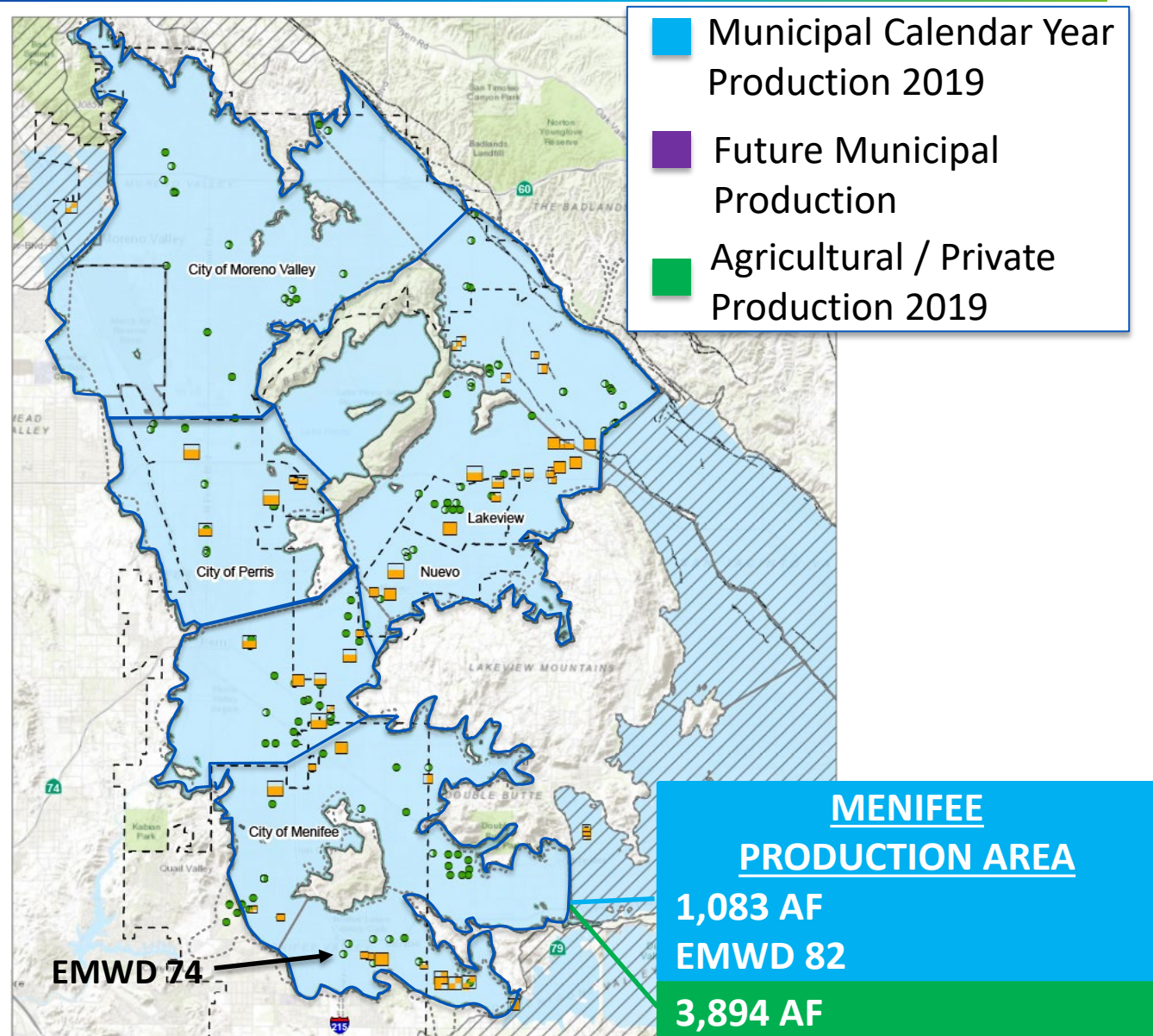
EMWD B7 (Wellsite ID 22763)

City of Perris Bob Long Memorial Park (Wellsite ID 21444)

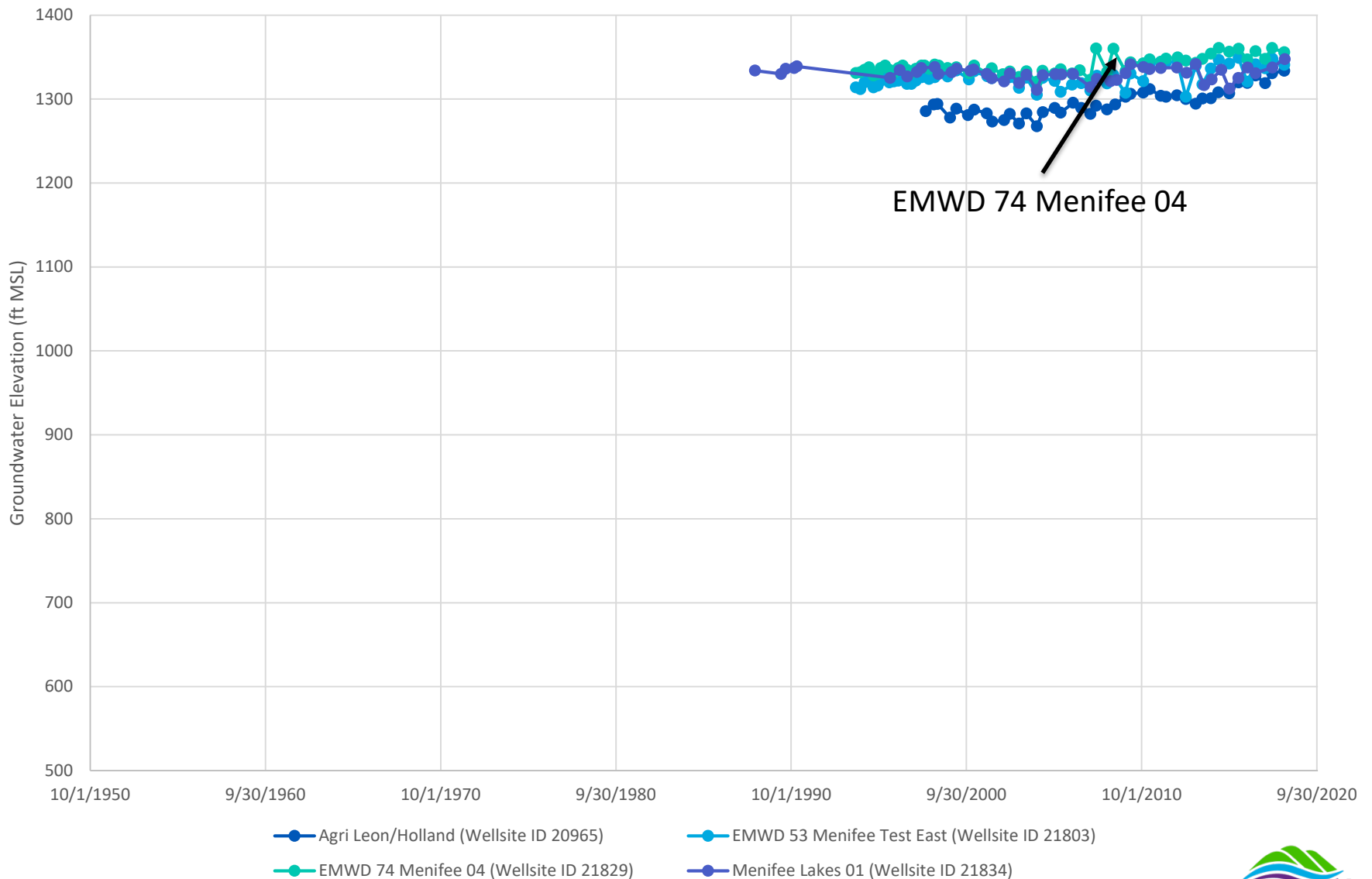
EMWD A1 (Wellsite ID 21714)

EMWD B6 (Wellsite ID 22759)

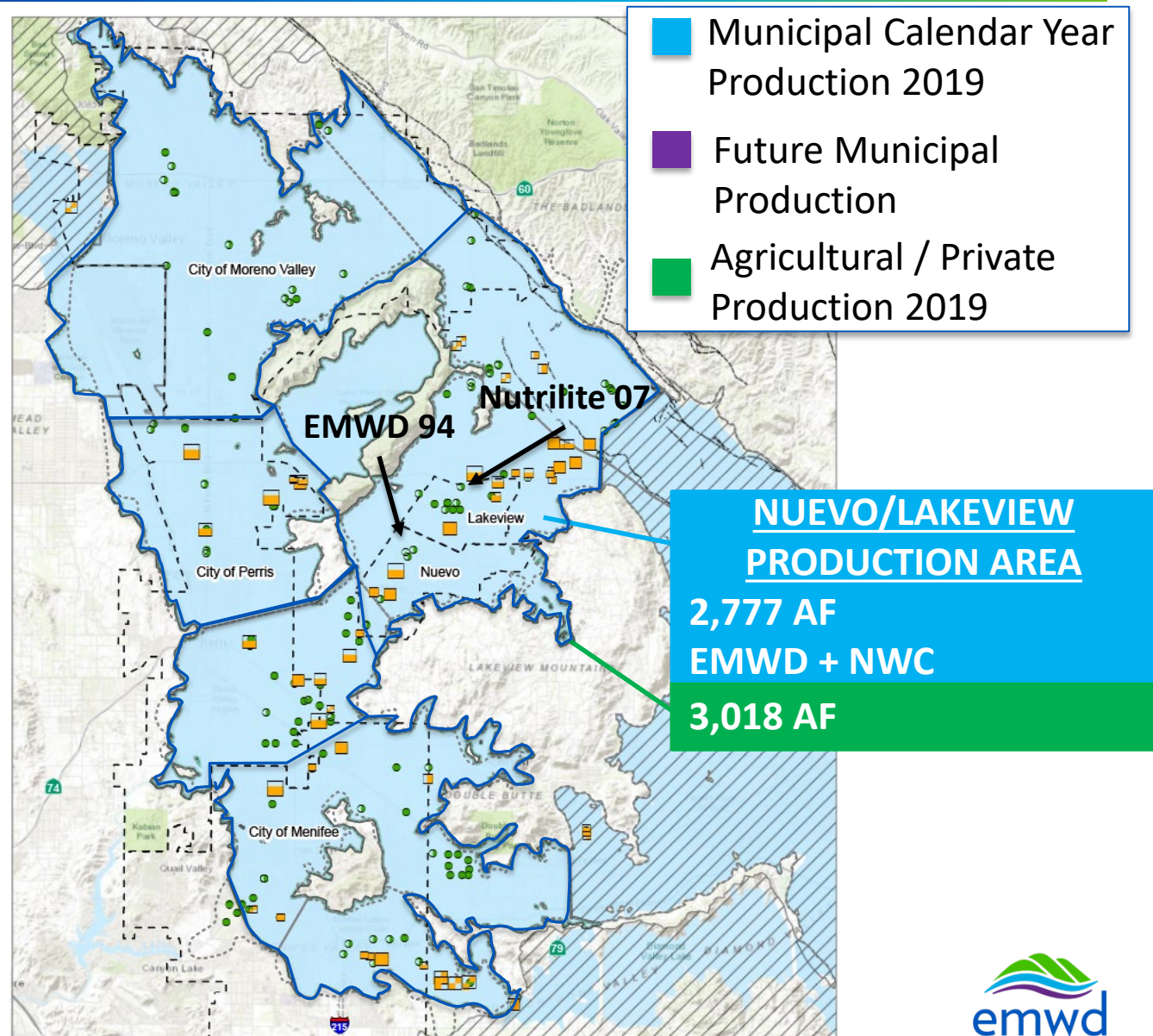
Production Areas



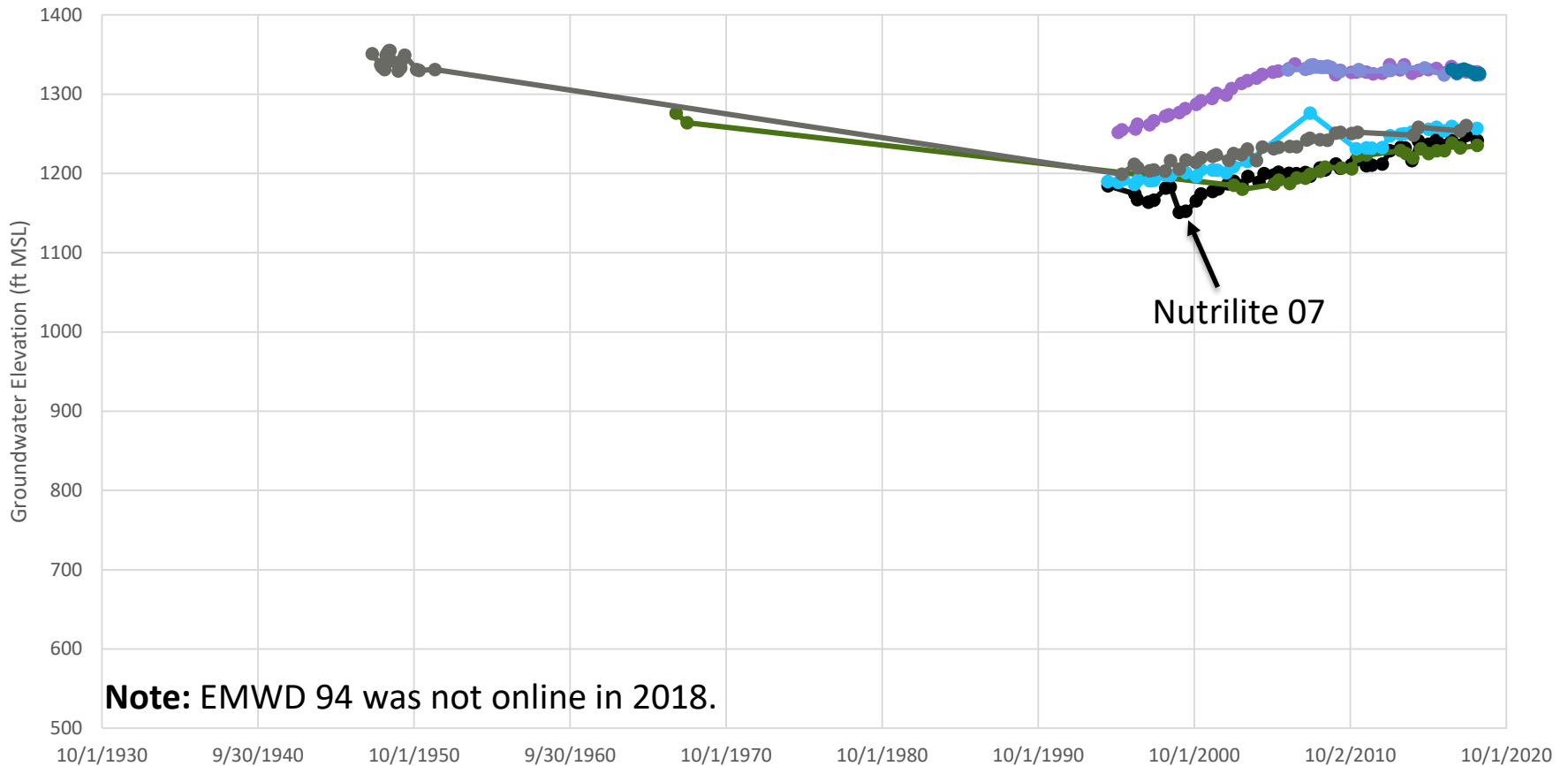
Water Levels: Menifee Production Area



Production Areas



Water Levels: Nuevo/Lakeview Area



● Nutrilite 07 (Wellsite ID 20798)

● Offinga Dairy North (Wellsite ID 20802)

● NWC 04 (Wellsite ID 20818)

● NWC Archibek aka Piester Well (Wellsite ID 21367)

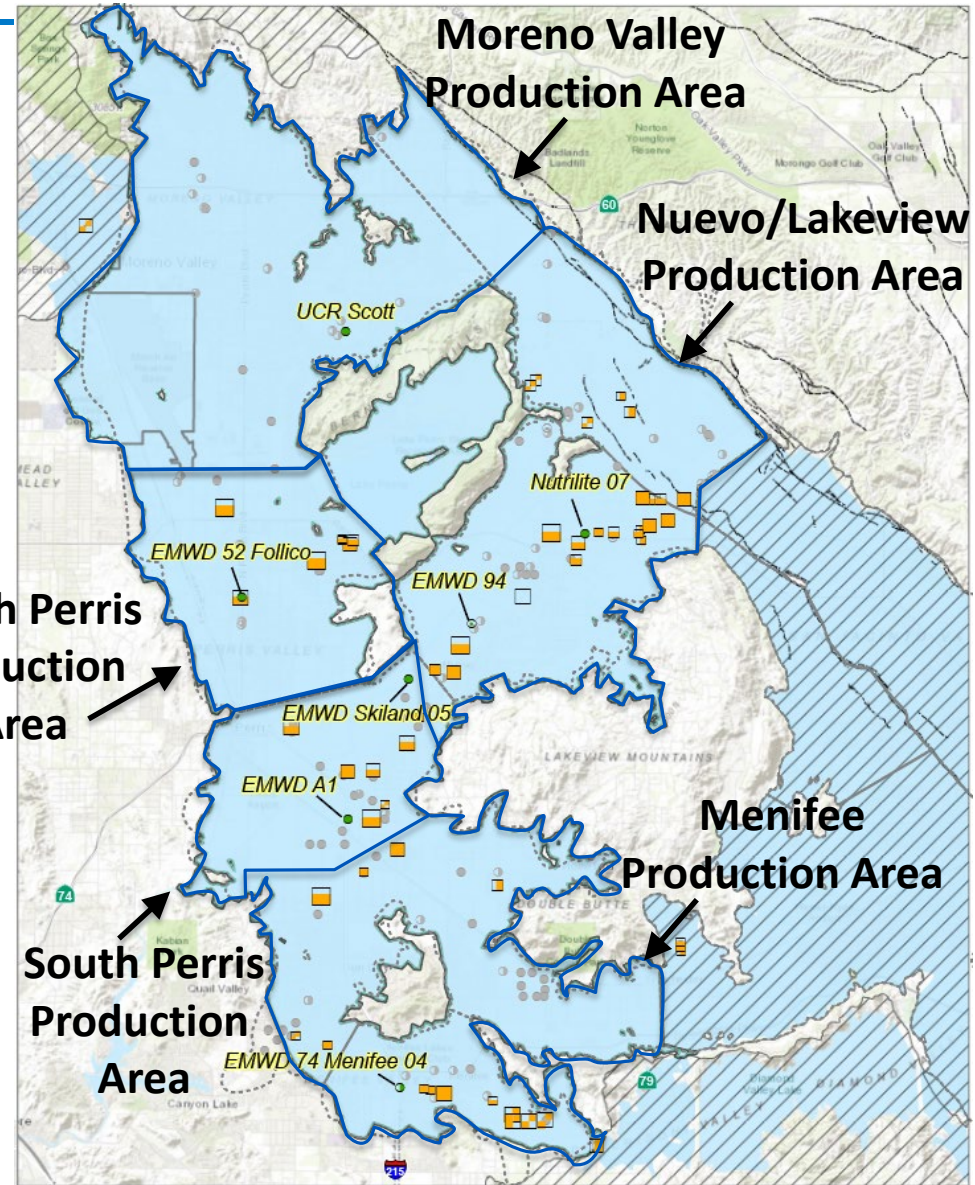
● Smith C Nuevo/Olivas (Wellsite ID 21434)

● EMWD 87 Nuevo/Olivas (Wellsite ID 25420)

● EMWD 93 Nuevo/Meniffee (Wellsite ID 25779)

Recommended Wells

- 7 currently recommended representative monitoring points
 - Nutrilite 07
 - EMWD 94
 - EMWD Skiland 05
 - EMWD A1
 - EMWD 74 Menifee 04
 - EMWD 52 Follico
 - UCR Scott*
- * Pending video log to determine well perforations
- Add monitoring well (or wells) for Perris North project once they have been drilled and water levels are determined to be representative of aquifer conditions



Minimum Thresholds Under SGMA

- From the SGMA Emergency Regulations:
 - “Each Agency in its Plan shall establish minimum thresholds that quantify groundwater conditions for each applicable sustainability indicator at each monitoring site or representative monitoring site established pursuant to Section 354.36 (Representative Monitoring)” (23 CCR § 354.28. Minimum Thresholds)
 - “Minimum thresholds’ refers to a numeric value for each sustainability indicator used to define undesirable results.” (23 CCR § 351(t))

SUSTAINABILITY INDICATORS: TODAY’S FOCUS



Groundwater elevation



Groundwater in storage

To Be Discussed:



Groundwater quality



Interconnected surface water and groundwater



Land Subsidence



Seawater Intrusion – not applicable

Minimum Thresholds Under SGMA

- The San Jacinto GSP is required to (23 CCR § 354.28):
 - Describe the information and criteria relied upon to justify the minimum threshold (MT) for each sustainability indicator
 - Today’s focus is groundwater elevation and groundwater in storage
 - Justify the value for the MT
 - Use information described in the basin setting
 - Data qualified by uncertainty in understanding the basin setting
 - Models qualified by uncertainty in the understanding of the basin setting
 - Describe how the MTs have been selected to *avoid undesirable results*

Undesirable Results Under SGMA

SUSTAINABILITY INDICATORS



APPLY SUSTAINABLE MANAGEMENT CRITERIA

- Review data
- Consider beneficial uses and users of groundwater
- Review specific metrics for each sustainability indicator

IS THE BASIN EXPERIENCING UNDESIRABLE RESULTS?

EMWD Next Steps

- At **any single** representative monitoring site are any minimum thresholds being exceeded?

YES

- Does **any combination of minimum threshold exceedances** constitute a locally-defined significant and unreasonable effect?

NO

No Undesirable Results

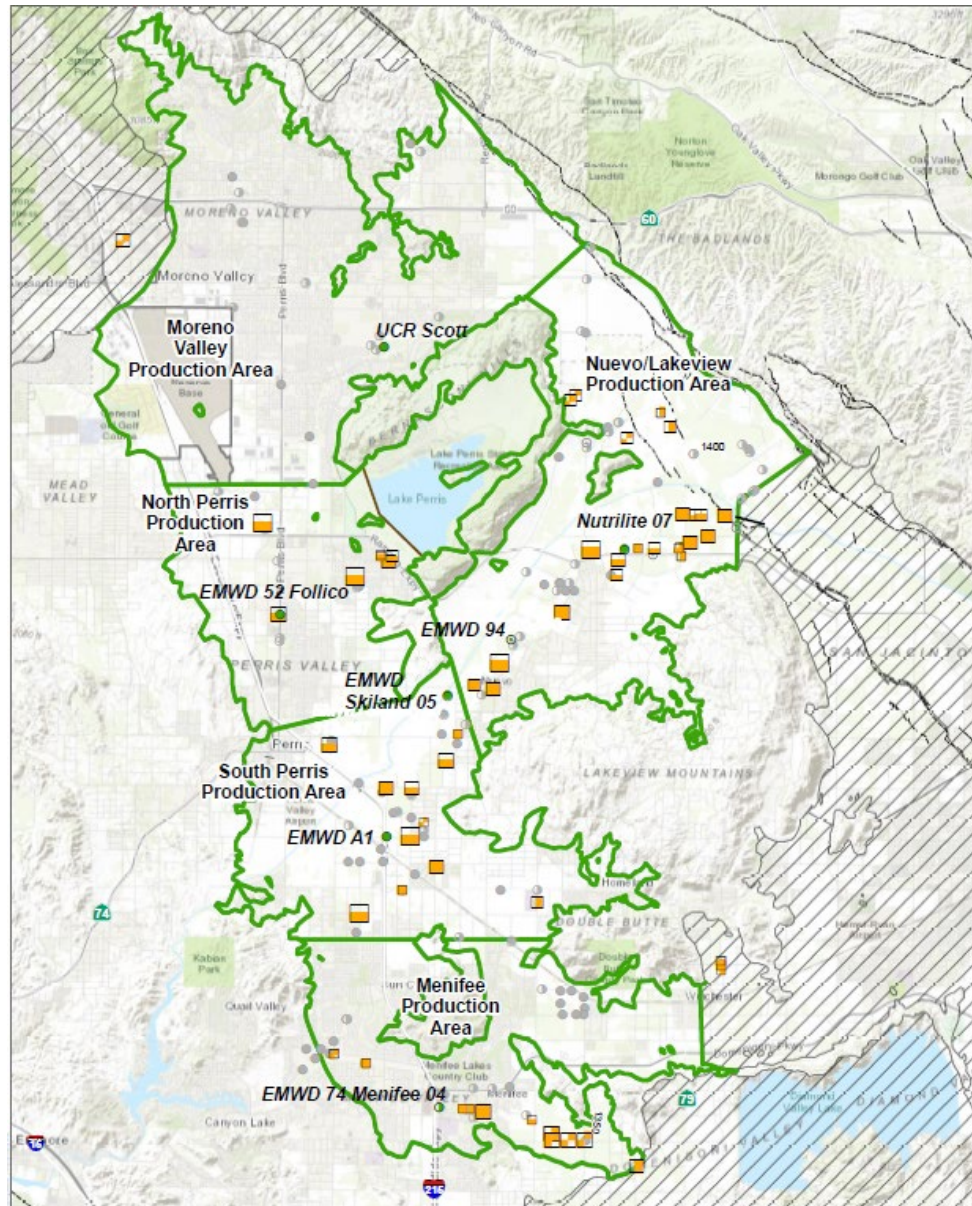
NO

YES

Undesirable Results

Representative Monitoring Wells in the Plan Area

- Menifee
 - EMWD 74 Menifee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott

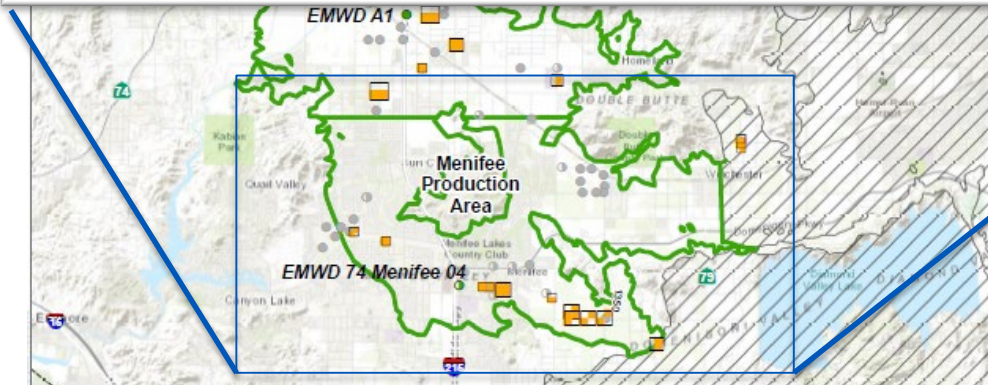
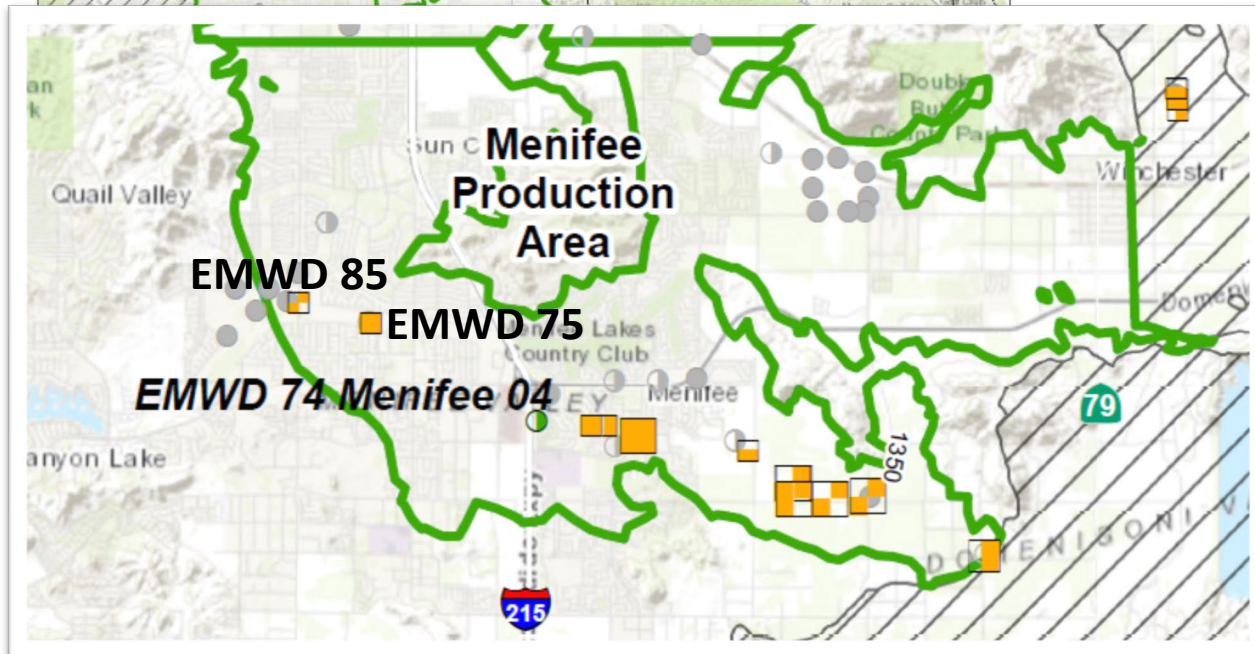


Evaluation Criteria for Proposed MTs

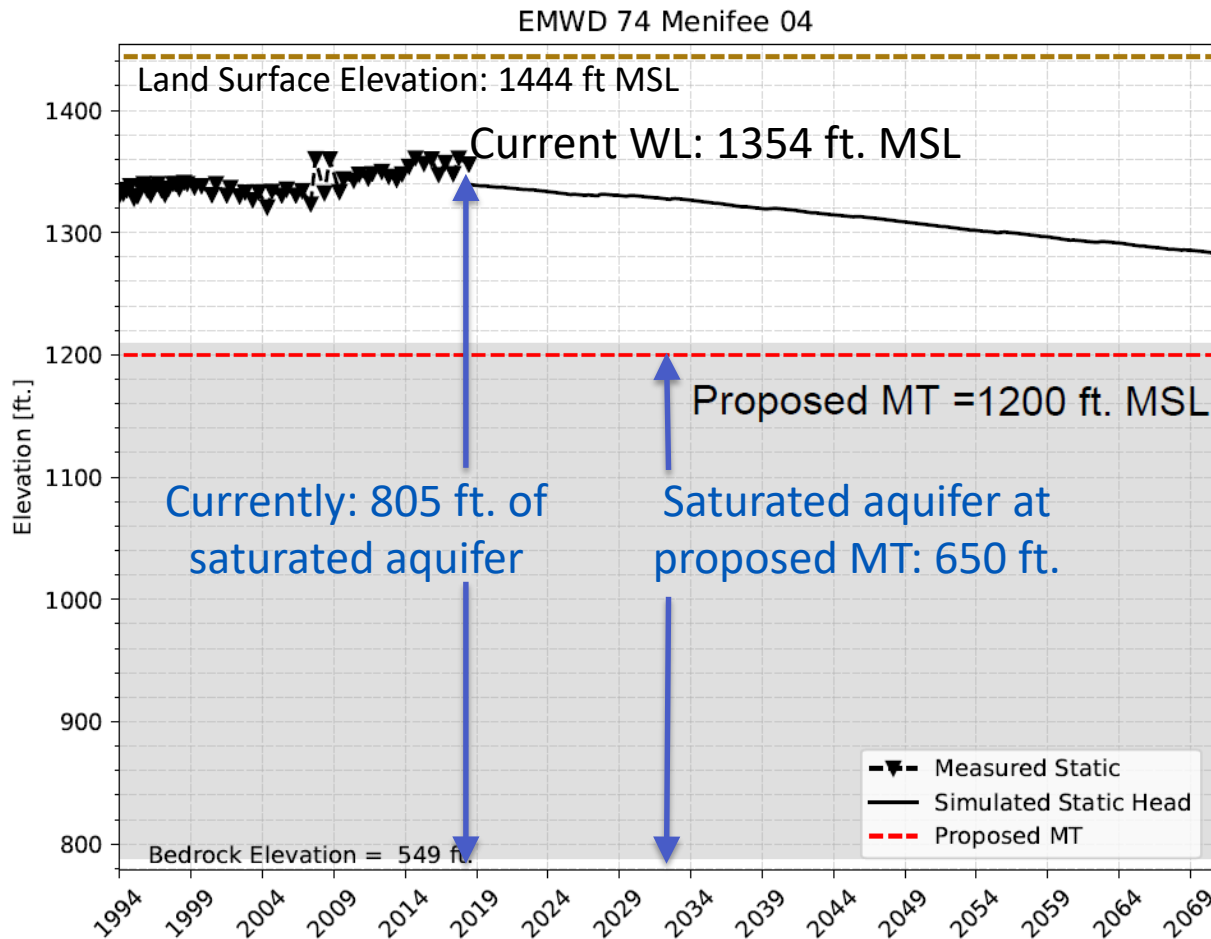
- Hydrogeologic considerations:
 - Trends in historical groundwater elevations
 - Local saturated thickness of the aquifer
 - Basin-wide saturated thickness of the aquifer
- EMWD and Stakeholder Operational Considerations:
 - Static groundwater elevations relative to screen intervals at nearby production wells
 - Pumping groundwater elevations at nearby production wells
 - Ability to meet operational demands
 - Ability to lower pump intakes if necessary
 - Ability/ willingness to deepen wells if necessary
- Consideration of modeled potential future groundwater elevations

Menifee Production Area

- Menifee
 - EMWD 74 Menifee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott



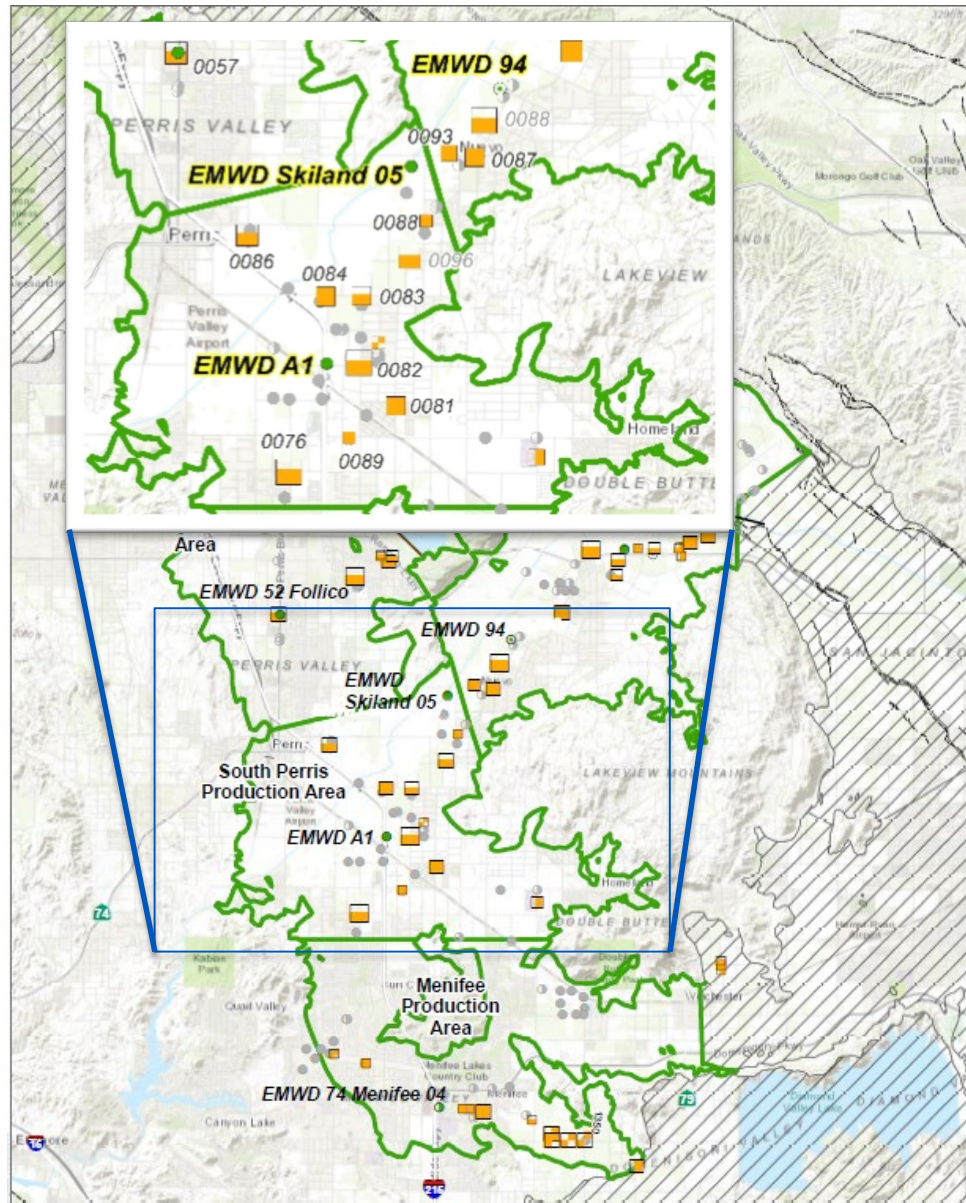
Proposed MT at EMWD 74



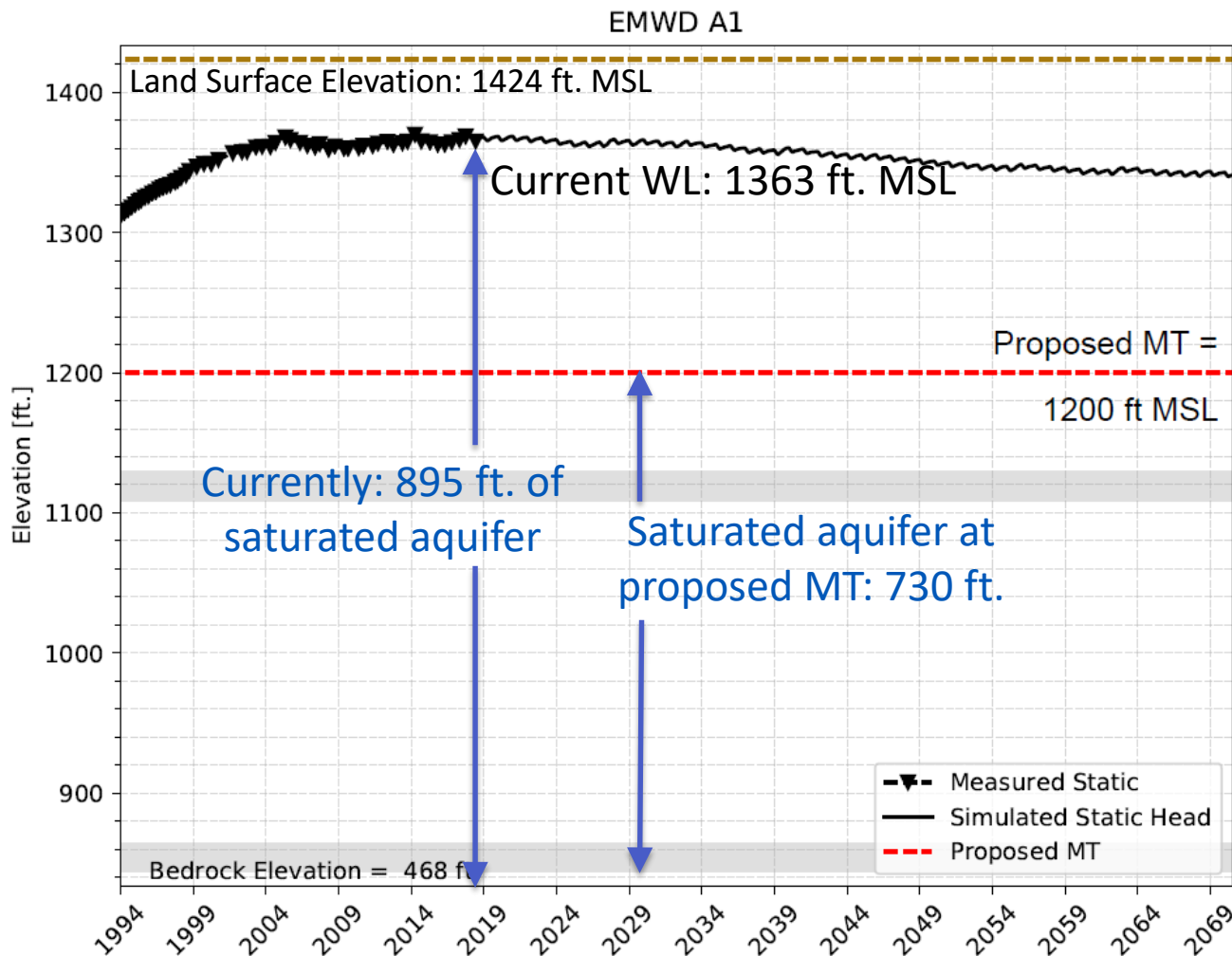
- Proposed minimum threshold = 1200 ft. MSL.
- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 60% in the Menifee Production Area

South Perris Production Area

- Menifee
 - EMWD 74 Menifee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris:
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott

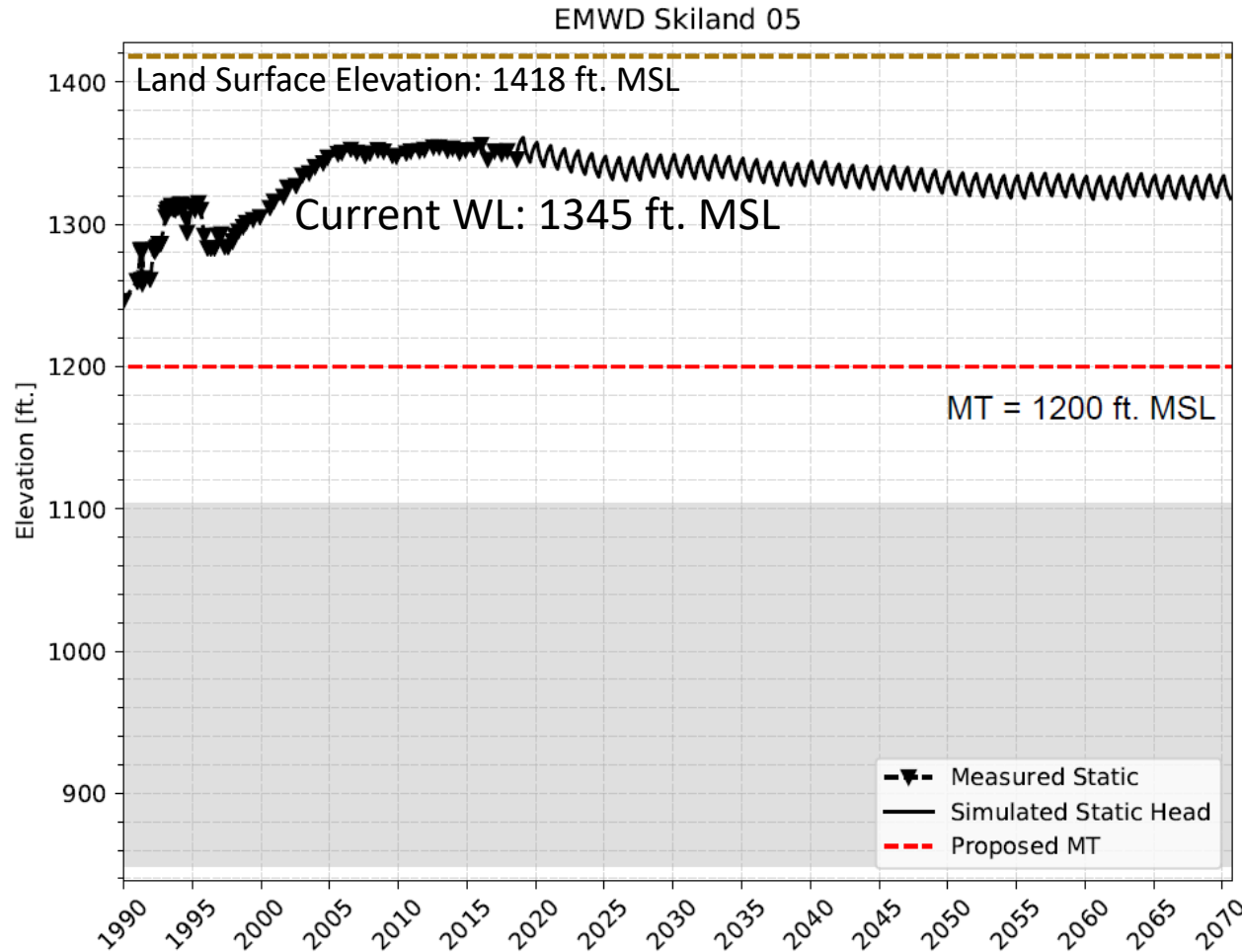


Proposed MT at EMWD A1



- Proposed minimum threshold = 1200 ft. MSL.
- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 70%

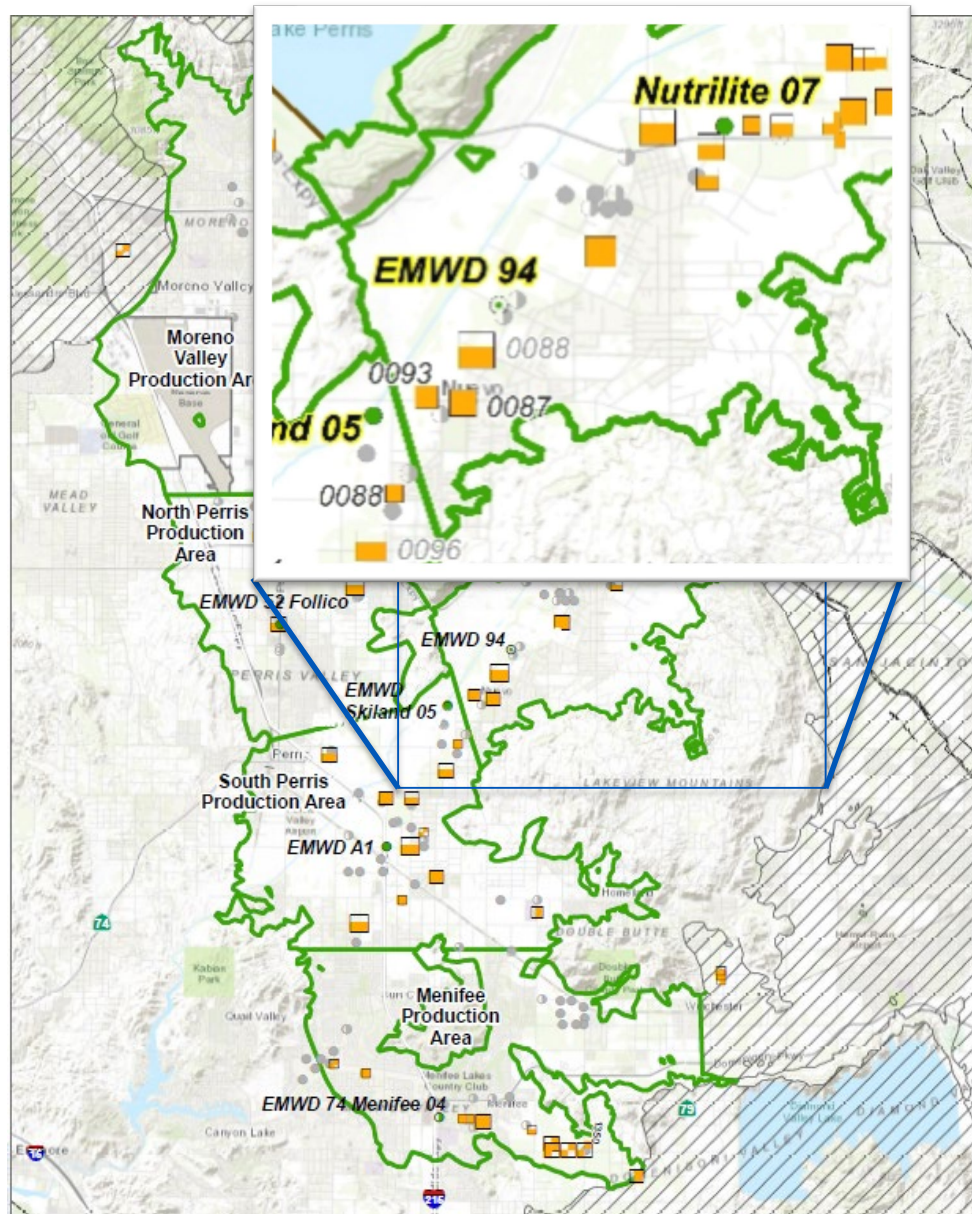
Representative Monitoring Well Skiland 05



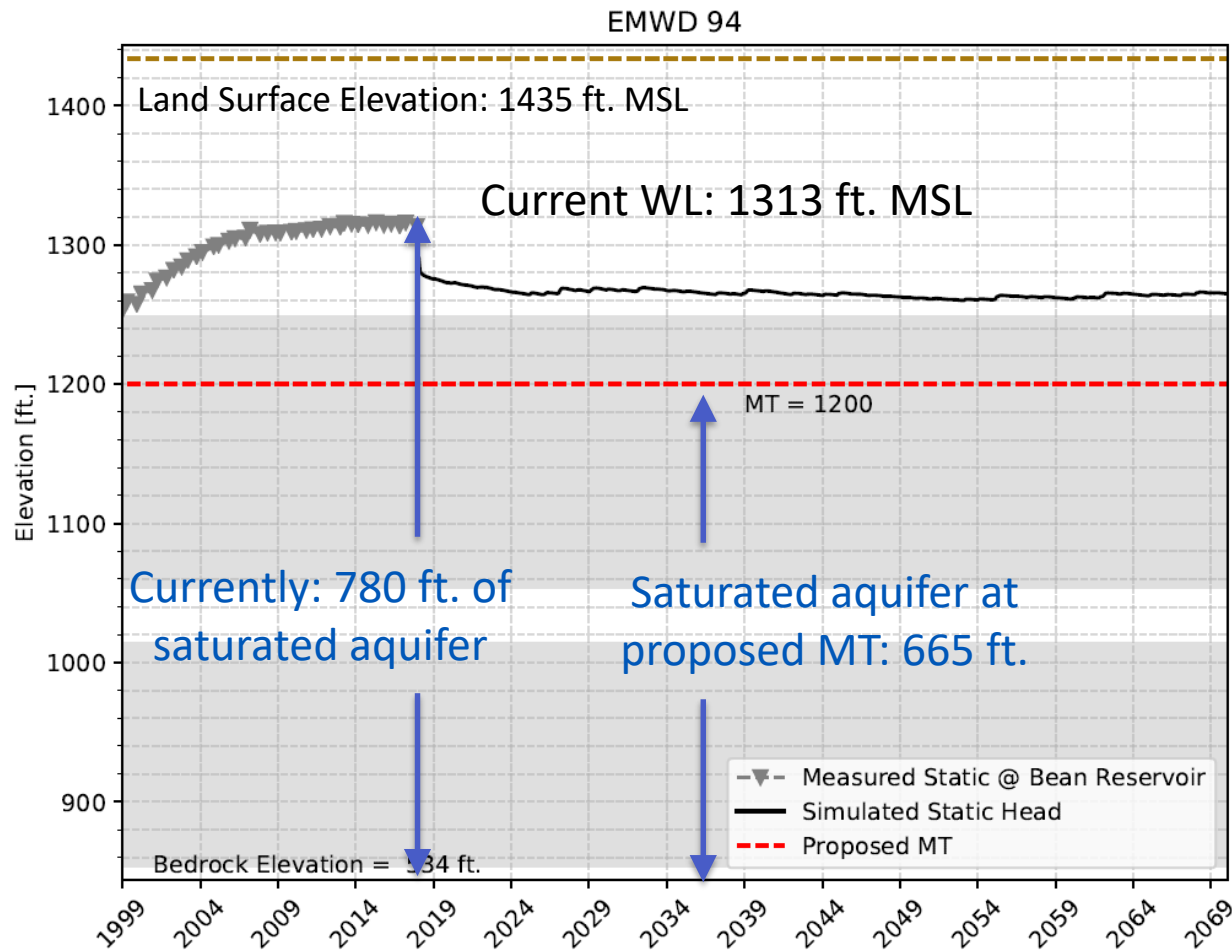
- Proposed minimum threshold = 1200 ft. MSL.
- Protects EMWD operational flexibility
- Limits long-term decline in groundwater elevation and storage
- Maintains average aquifer saturation > 70% in the South Perris Production Area

Nuevo/Lakeview Production Area

- Meniffee
 - EMWD 74 Meniffee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris:
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott



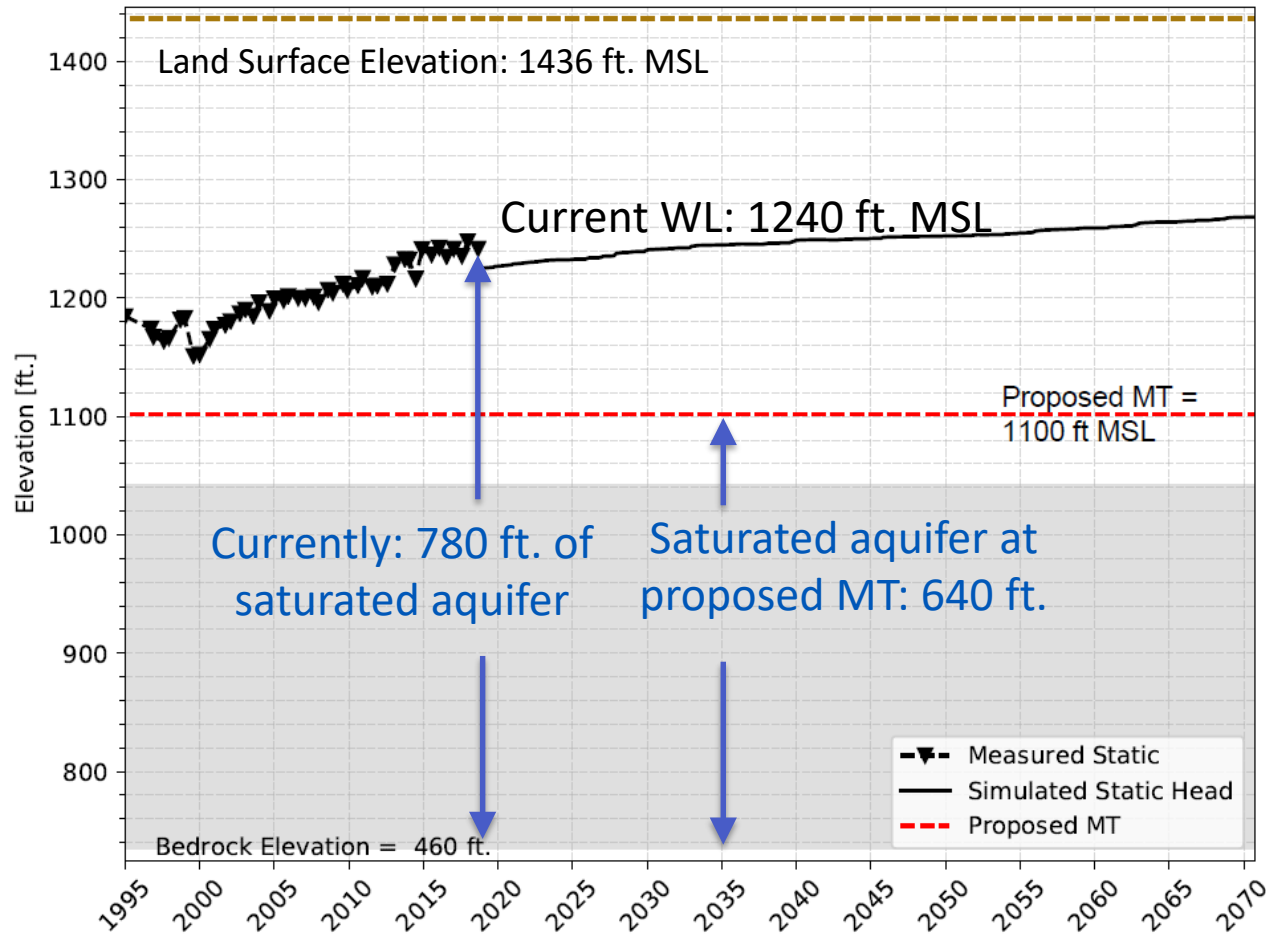
Representative Well EMWD 94



- EMWD 94 is a production well
- Current WL is from nearby well
- Future WLs anticipated to decline initially and then stabilize
- Proposed Minimum Threshold – 1200 ft MSL
- > 70% aquifer saturation

Representative Monitoring Well Nutrilite 07

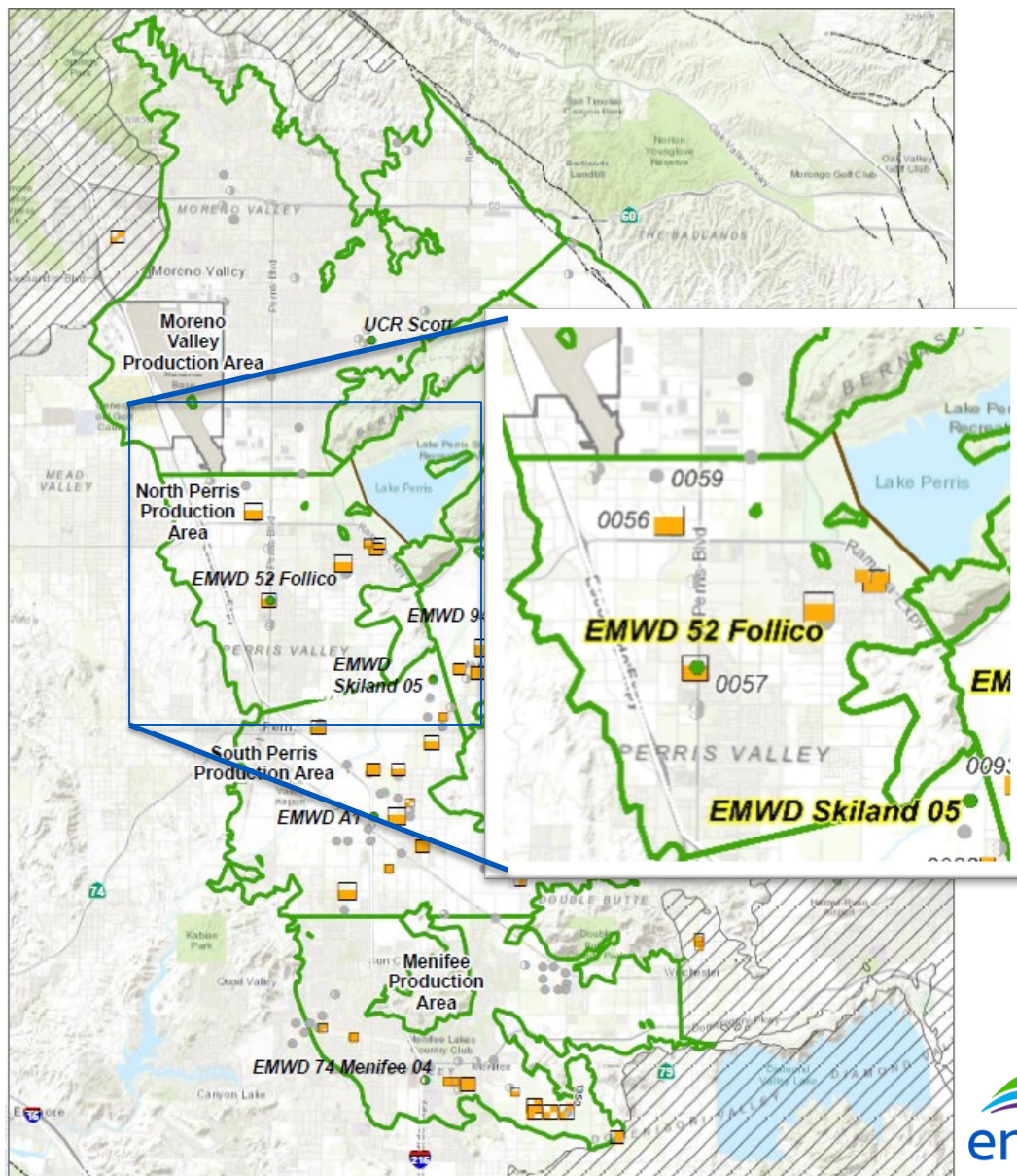
Nutrilite 07



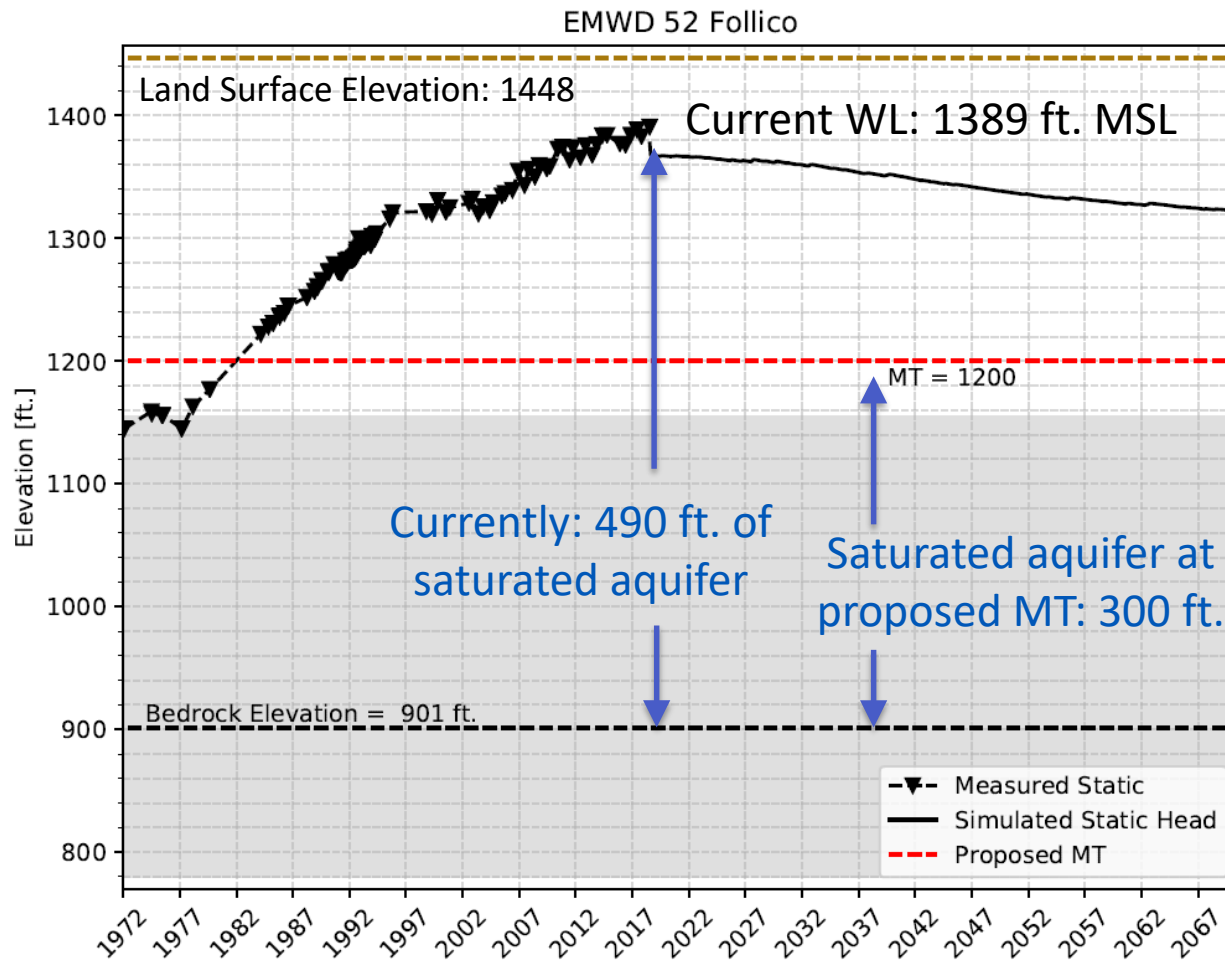
- Nutrilite 07 is a monitoring well
- Future groundwater elevations not well characterized
- Historical water levels have been as low as 1150 ft MSL
- Proposed MT = 1100 ft MSL
 - 140 feet lower than current WL
- >70% aquifer saturation

North Perris Production Area

- Menifee
 - EMWD 74 Menifee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris:
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott



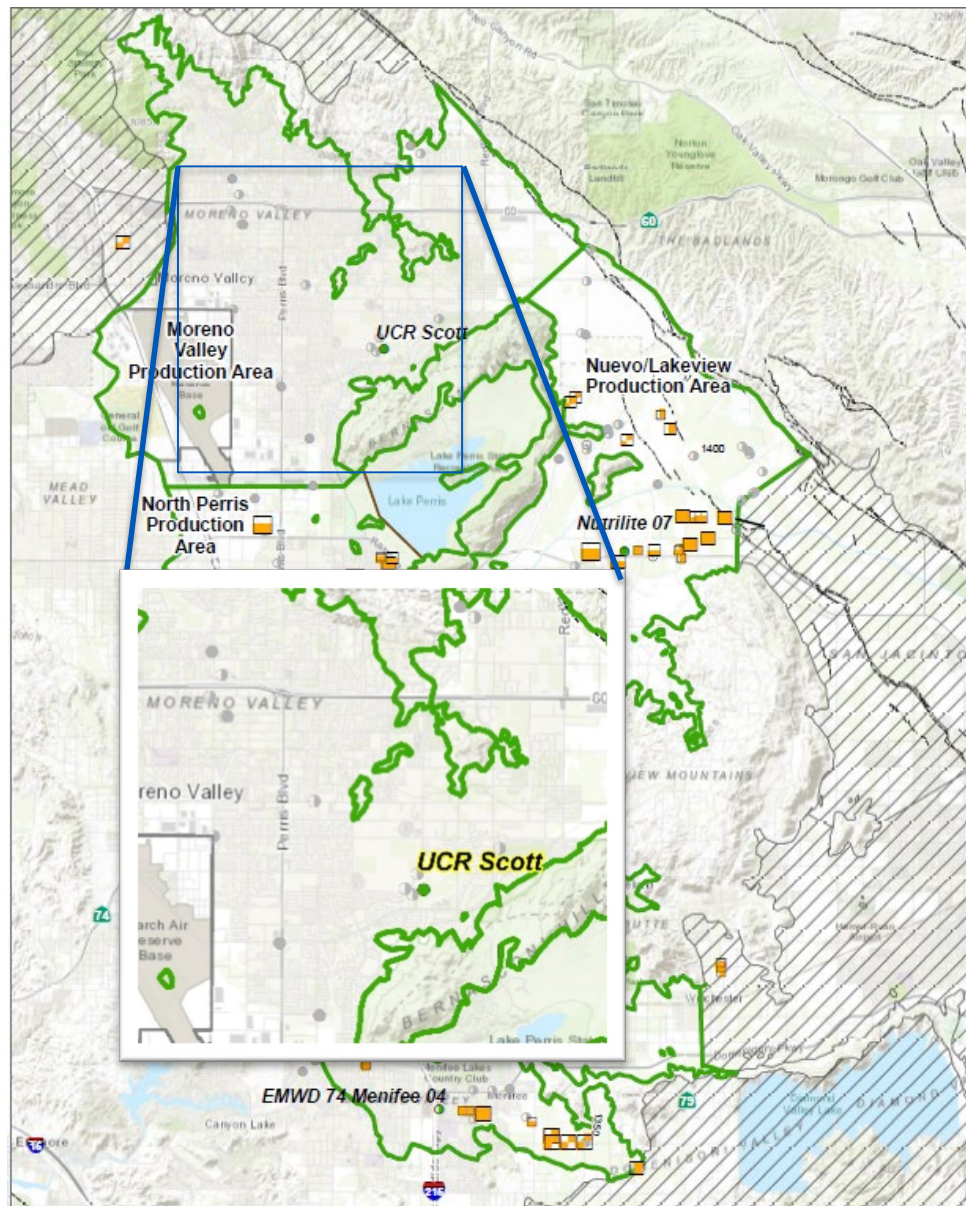
Representative Monitoring Well EMWD 52



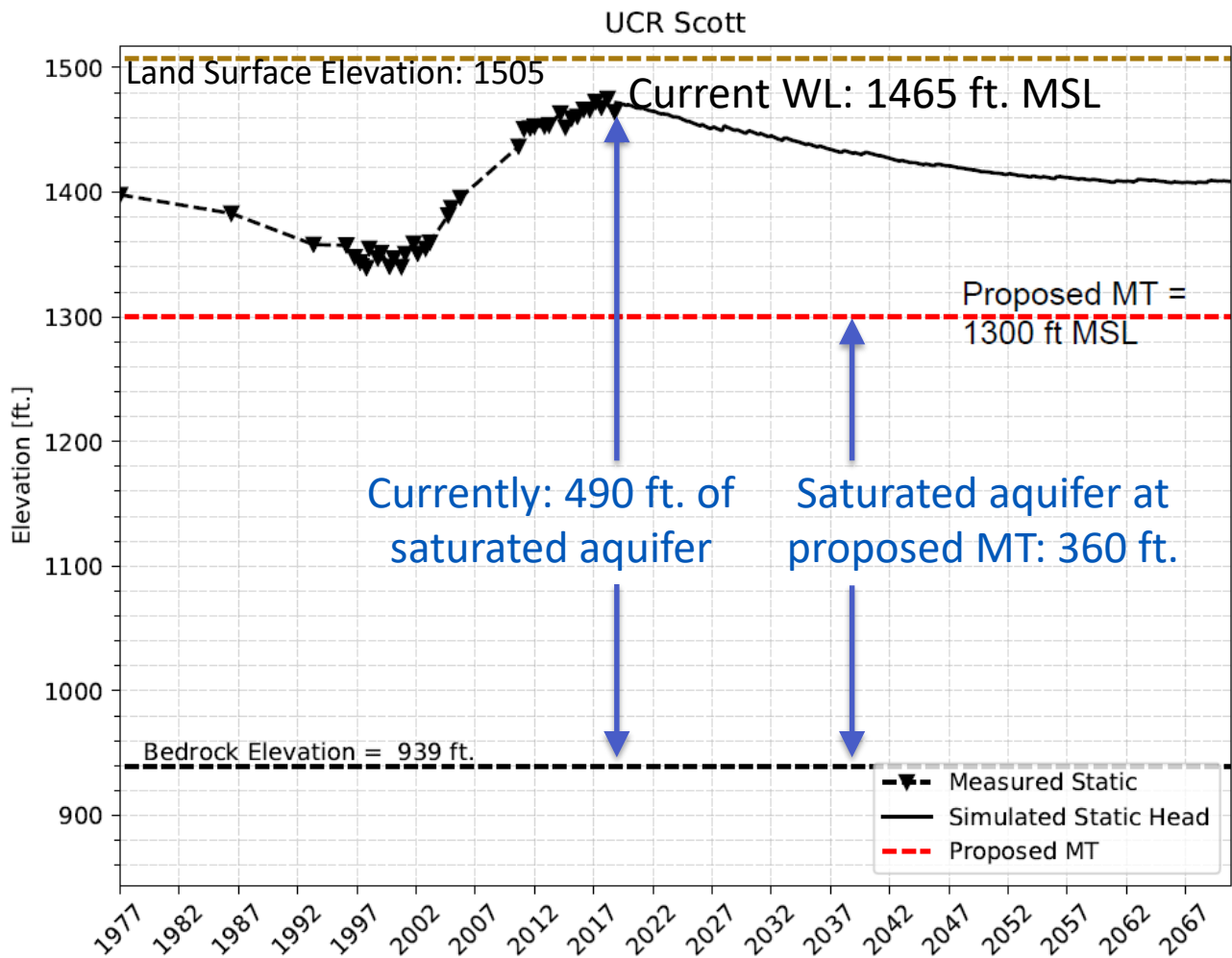
- EMWD 52 is a monitoring well
- Future WLs anticipated to decline
- Proposed Minimum Threshold – 1200 ft. MSL
- Preserves >60% aquifer saturation in North Perris Production Area

Moreno Valley Production Area

- Menifee
 - EMWD 74 Menifee 04
- South Perris
 - EMWD Skiland 05
 - EMWD A1
- Nuevo/Lakeview
 - EMWD 94
 - Nutrilite 07
- North Perris:
 - EMWD 52 Follico
- Moreno Valley
 - UCR Scott



Representative Monitoring Well UCR Scott



- Proposed MT lower than historical low water level
- Preserves saturation of >60% at UCR Scott

Summary

- Followed DWR guidance to propose *water level and groundwater in storage* minimum thresholds at each representative monitoring point
 - Reviewed:
 - Historical data
 - Impacts to other sustainability indicators (subsidence, water quality, groundwater dependent ecosystems)
 - Potential impacts to existing EMWD wells
 - Potential future water levels based on planned future operations

Summary

- Followed DWR guidance to propose *water level and groundwater in storage* minimum thresholds at each representative monitoring point

RMP	Proposed MT (ft MSL)	Operational Flexibility (ft)	Aquifer Saturation % at Proposed MT	MT At or Above Historical Low WL?
EMWD 74	1200	154	>60%	NO
EMWD A1	1200	163	>70%	NO
EMWD Skiland 05	1200	145	>70%	NO
EMWD 94	1200	113	>70%	NO
Nutrilitite 07	1100	140	>70%	NO
EMWD 52	1200	190	>60%	YES
UCR Scott	1300	165	Varies From North to South (<10% to >60%)	NO

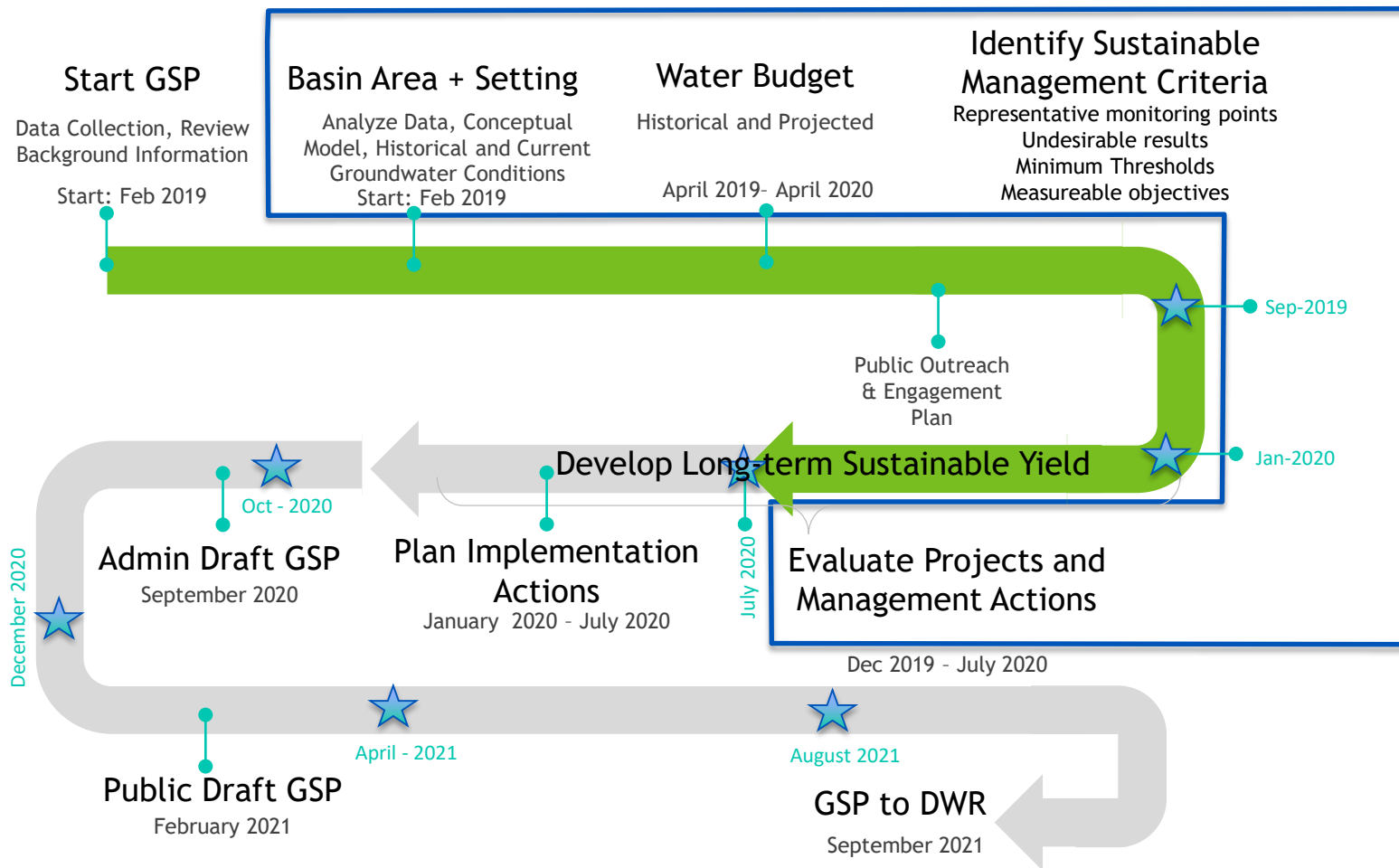
Next Steps

- Incorporate feedback from this group
- Develop measurable objectives
 - Based on EMWD operational objectives



Timeline and Next Steps

GSP Development Process



Next Steps

- EMWD and consultant team will continue to work together to:
 - Conduct additional groundwater budget analysis
 - Evaluate the future water budget
 - Evaluate the water budget of the east side of the San Jacinto Groundwater Basin
 - Continue to define sustainable management criteria
 - Measurable objectives
 - Evaluate potential projects and management actions
- Next stakeholder advisory group meeting scheduled for October 2020



Questions