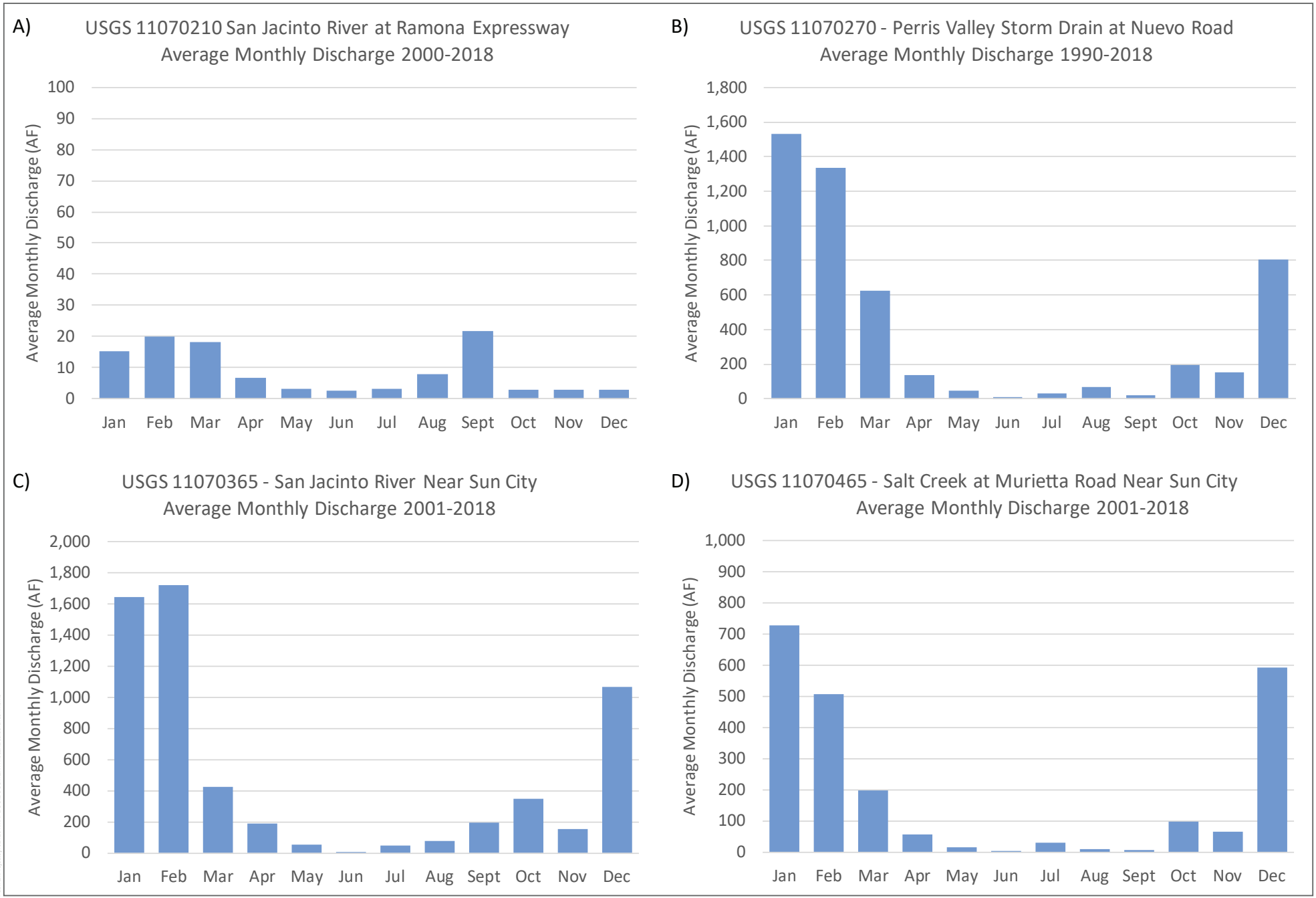
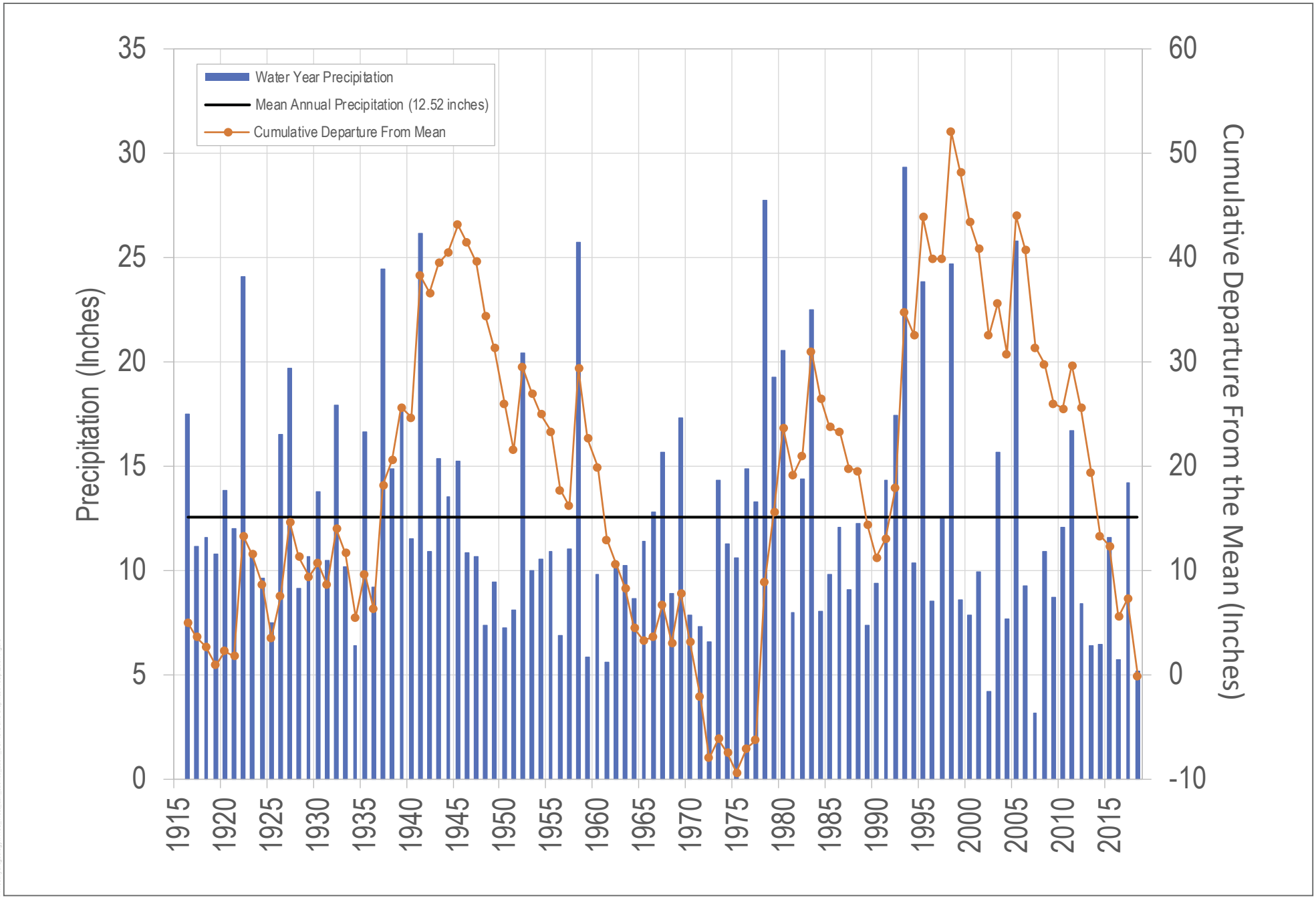


FIGURE 2-12

Monthly Average Streamflow in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



Source: Riverside County Flood Control and Water Conservation District

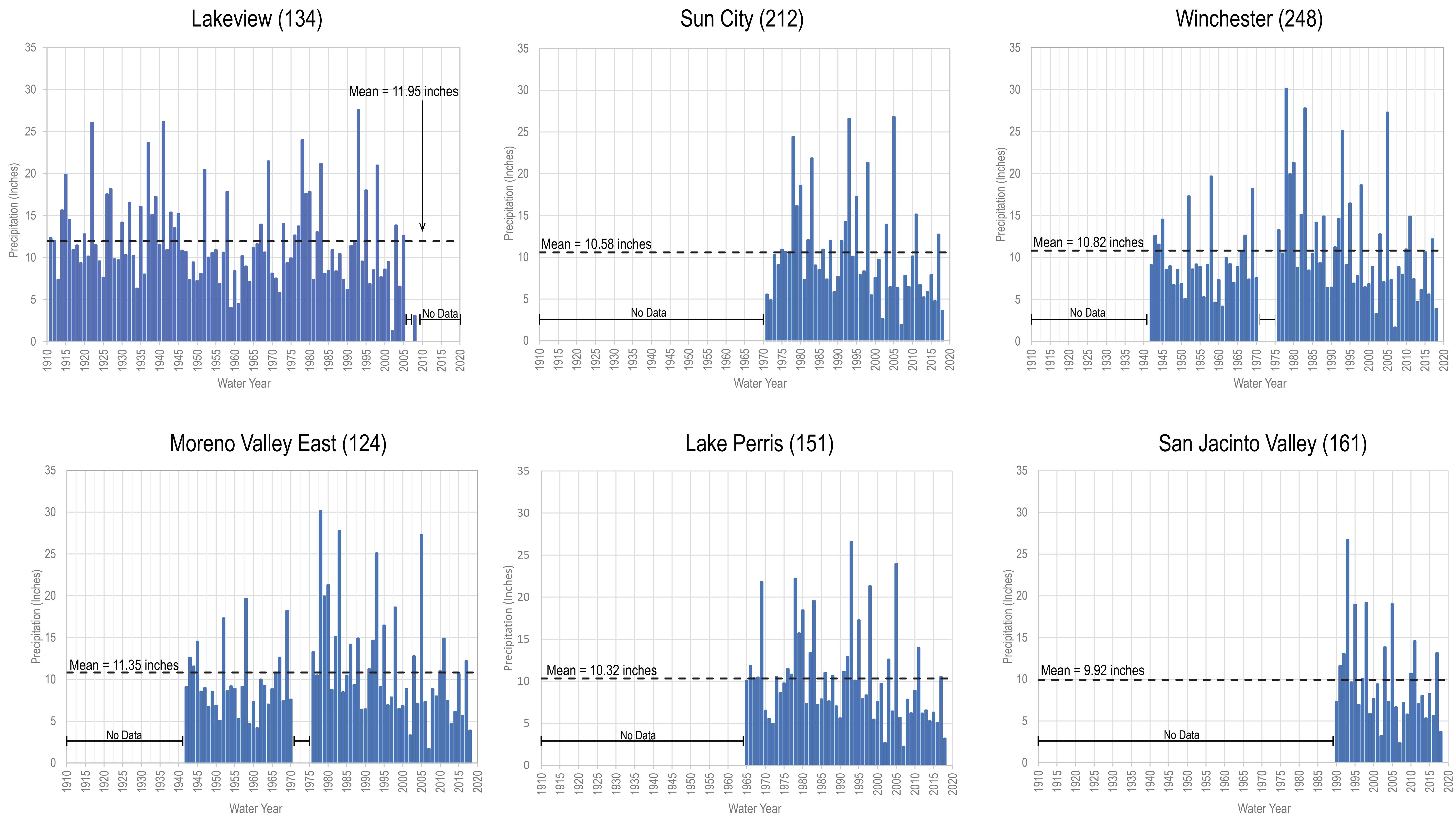
FIGURE 2-13

Water Year Precipitation and Cumulative Departure From the Mean Precipitation at Station #186 - San Jacinto

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

INTENTIONALLY LEFT BLANK



SOURCE: Riverside County Flood Control and Water Conservation District

emwd EASTERN MUNICIPAL WATER DISTRICT

FIGURE 2-14

Water Year Precipitation

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

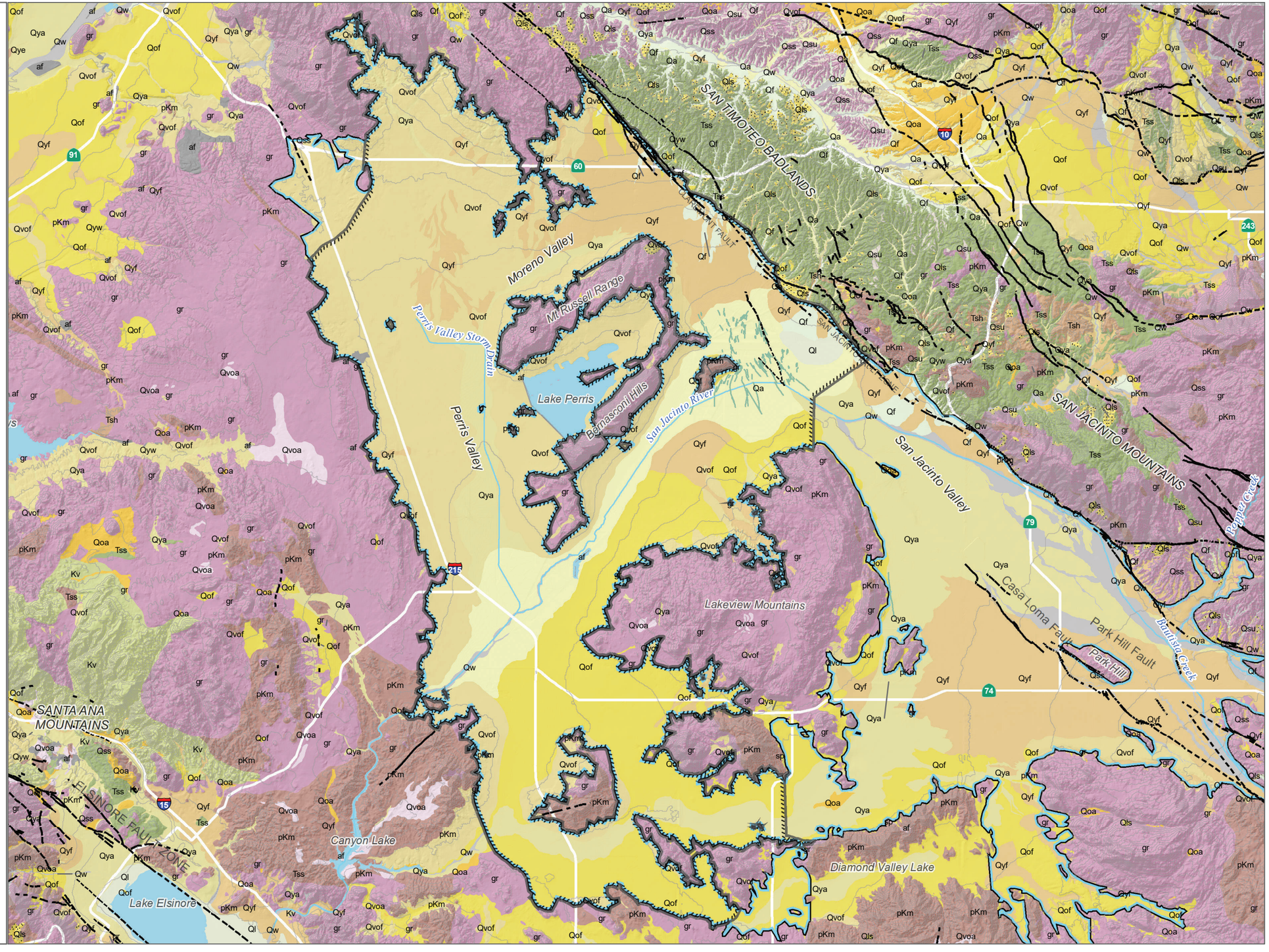
EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin Groundwater Sustainability Plan

- San Jacinto Groundwater Basin
- Plan Area Boundary
- Elevation Contour Lines (30 ft intervals)
- Fault, identity and existence certain, location accurate
- Fault, identity and existence certain, location approximate
- Fault, identity and existence certain, location concealed
- Fault, identity and existence certain, location inferred
- Fault, identity or existence questionable, location concealed
- Fault, identity or existence questionable, location inferred
- Fissure
- River
- Water

Geologic Units

- af - Artificial Fill
- Qls - Landslide Deposits; may include debris flows and older landslides
- Qsu - Undifferentiated Surficial Deposits; includes colluvium, slope wash, talus deposits, and other surface deposits of all ages
- Qw - Alluvial Wash Deposits
- Qf - Alluvial Fan Deposits
- Qa - Alluvial Valley Deposits
- Ql - Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qe - Eolian and Dune Deposits
- Qyw - Young Alluvial Wash Deposits
- Qyf - Young Alluvial Fan Deposits
- Qya - Young Alluvial Valley Deposits
- Qye - Young Eolian and Dune Deposits
- Qow - Old Alluvial Wash Deposits
- Qof - Old Alluvial Fan Deposits
- Qoa - Old Alluvial Valley Deposits
- Qoe - Old Eolian and Dune Deposits
- Qvof - Very Old Alluvial Fan Deposits
- Qvoa - Very Old Alluvial Valley Deposits
- Qvol - Very Old Lacustrine, Playa and Estuarine (Paralic) Deposits
- Qss - Coarse-grained formations of Pleistocene age and younger; primarily sandstone and conglomerate
- Tss - Coarse-grained Tertiary age formations of sedimentary origin
- Tv - Tertiary age formations of volcanic origin
- Tsh - Fine-grained Tertiary age formations of sedimentary origin
- gr - Granitic and other intrusive crystalline rocks of all ages
- Kss - Coarse-grained Cretaceous age formations of sedimentary origin
- Kv - Cretaceous age formations of volcanic origin
- Ksh - Fine-grained Cretaceous age formations of sedimentary origin
- pKm - Cretaceous and Pre-Cretaceous metamorphic formations of sedimentary and volcanic origin
- sp - Serpentinite of all ages



SOURCE: California Department of Conservation, US Geological Survey

emwd EASTERN MUNICIPAL WATER DISTRICT

0 2 4 Miles

FIGURE 2-15

Topography, Geology, and Faults

San Jacinto Groundwater Basin Groundwater Sustainability Plan

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Plan Area
San Jacinto Groundwater Basin
Depth to Bedrock (ft. bgs)

Depth to Bedrock (ft. bgs)
4100
3000
2000
1000
0

SOURCE: Data provided by EMWD

emwd EASTERN MUNICIPAL WATER DISTRICT

0 5,000 10,000 Feet

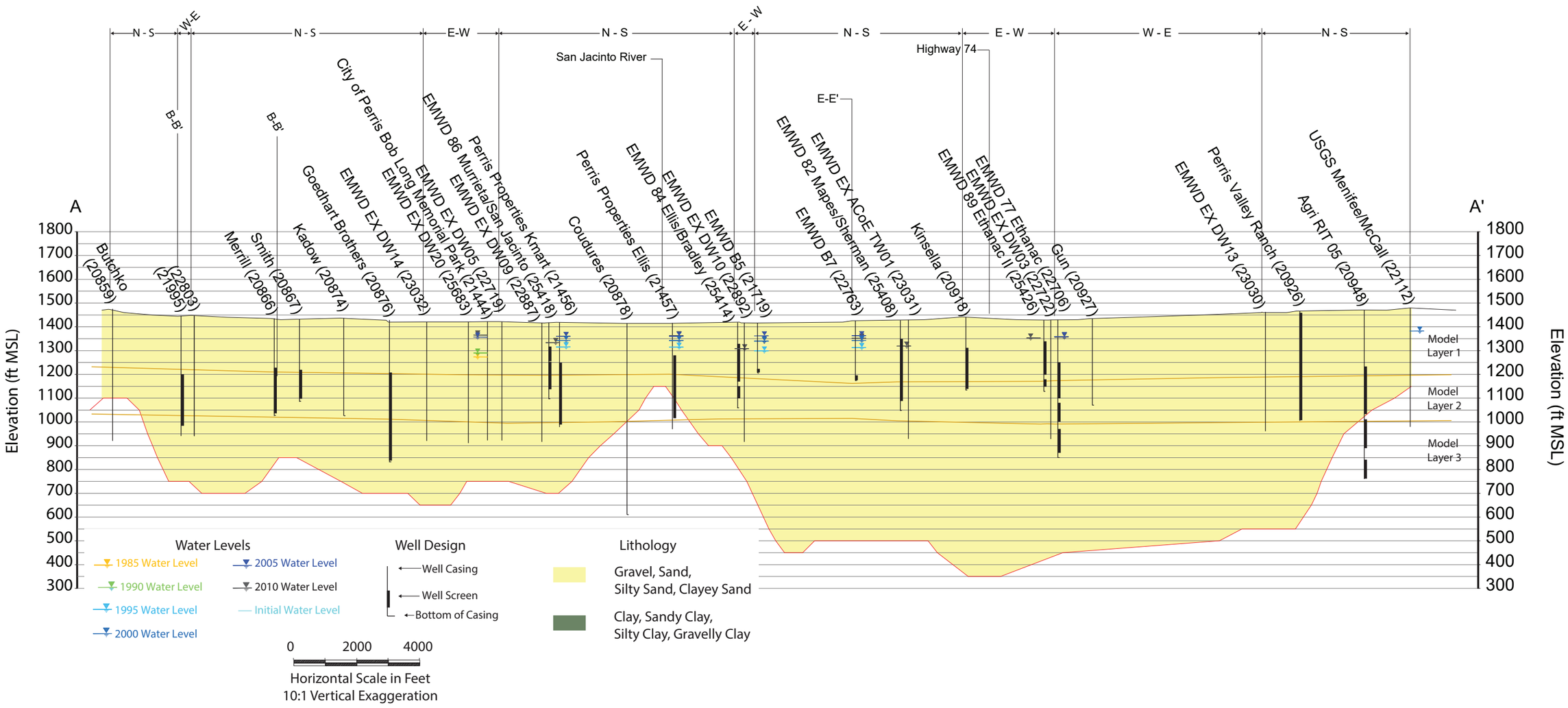
FIGURE 2-16

Depth to Bedrock

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

North **South**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

emwd EASTERN MUNICIPAL WATER DISTRICT

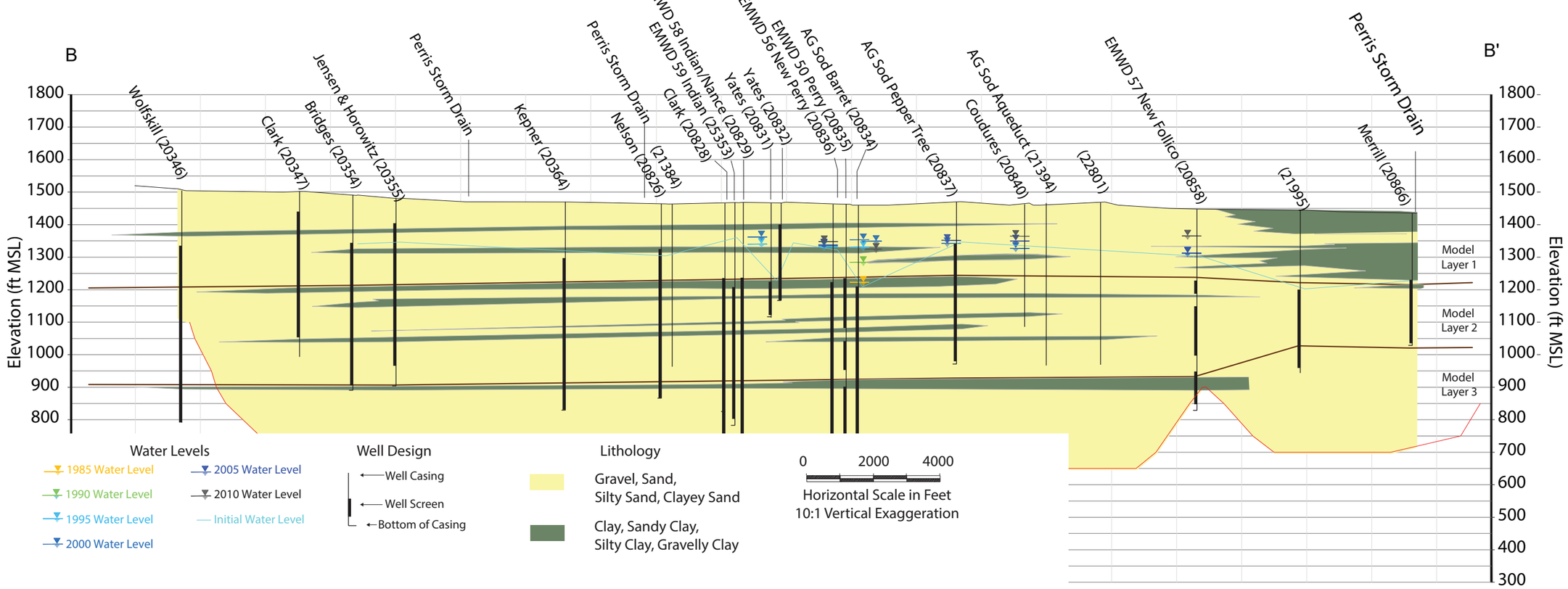
FIGURE 2-17

Cross Section A-A'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

North **South**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

emwd EASTERN MUNICIPAL WATER DISTRICT

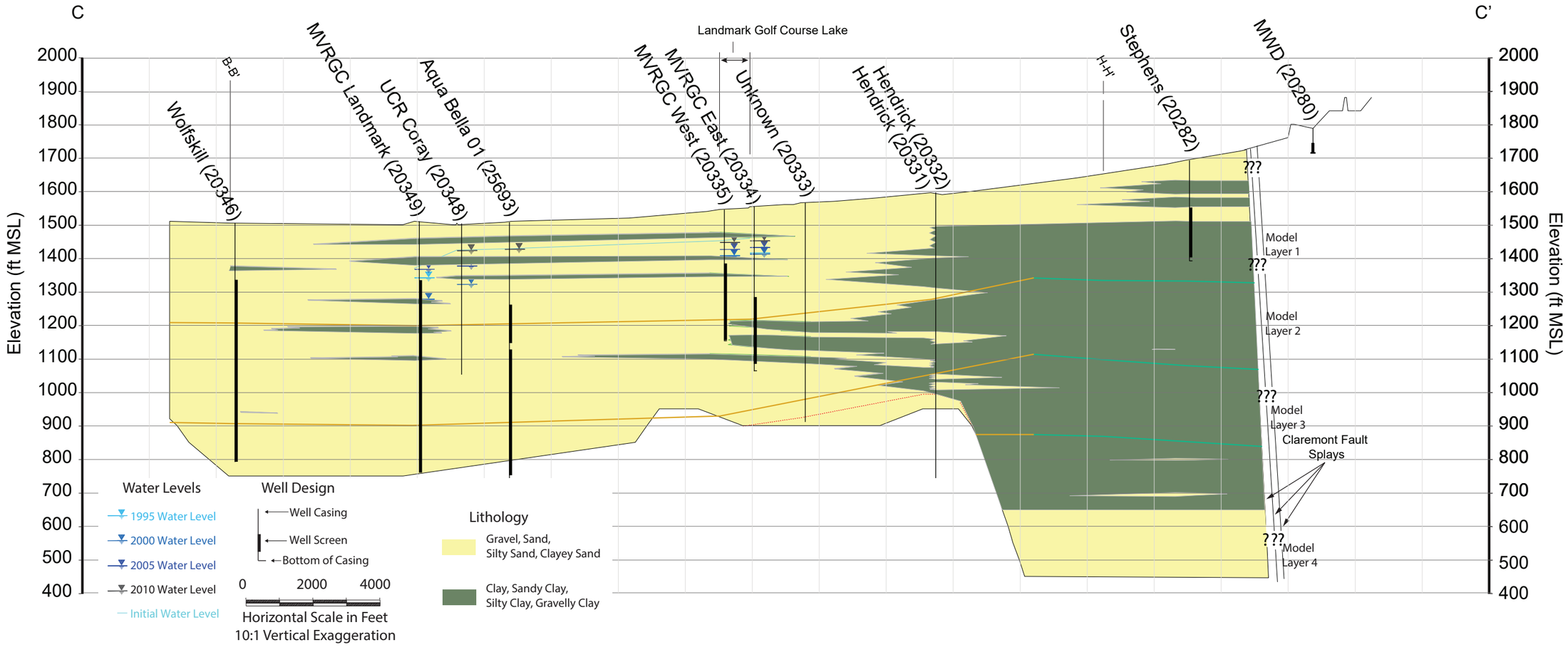
FIGURE 2-18

Cross Section B-B'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Southwest **Northeast**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

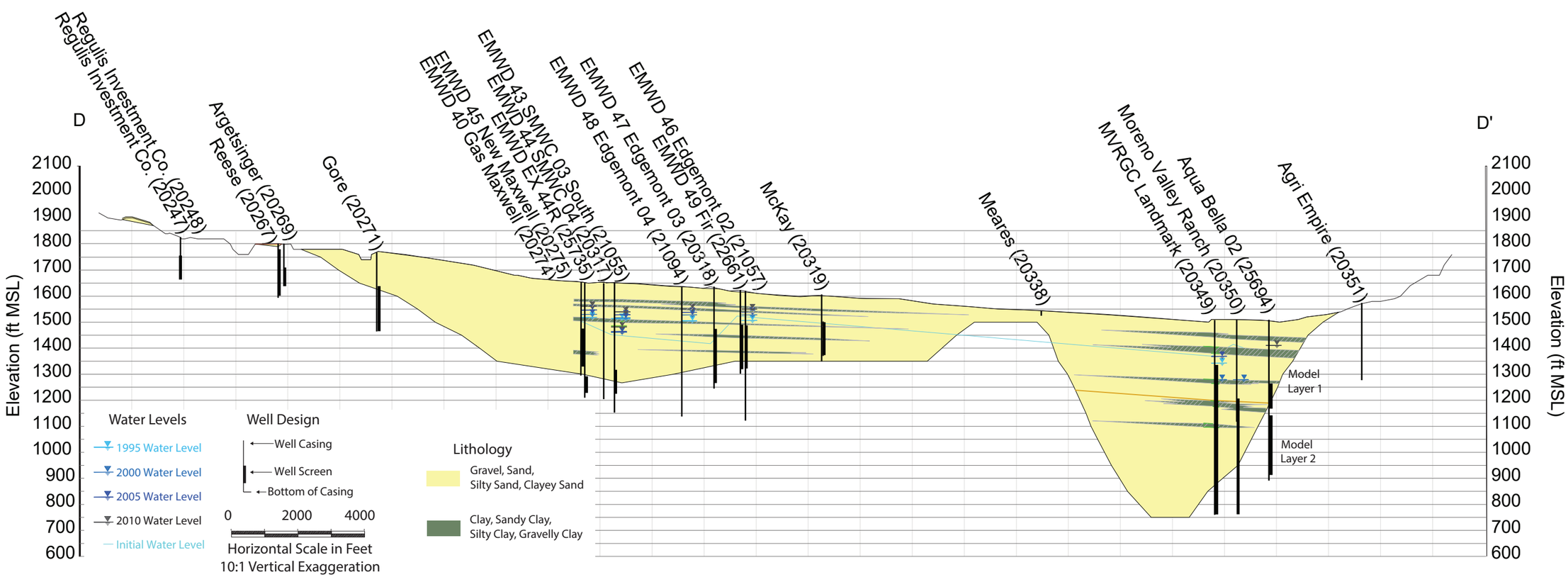
FIGURE 2-19

Cross Section C-C'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Northwest **Southeast**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

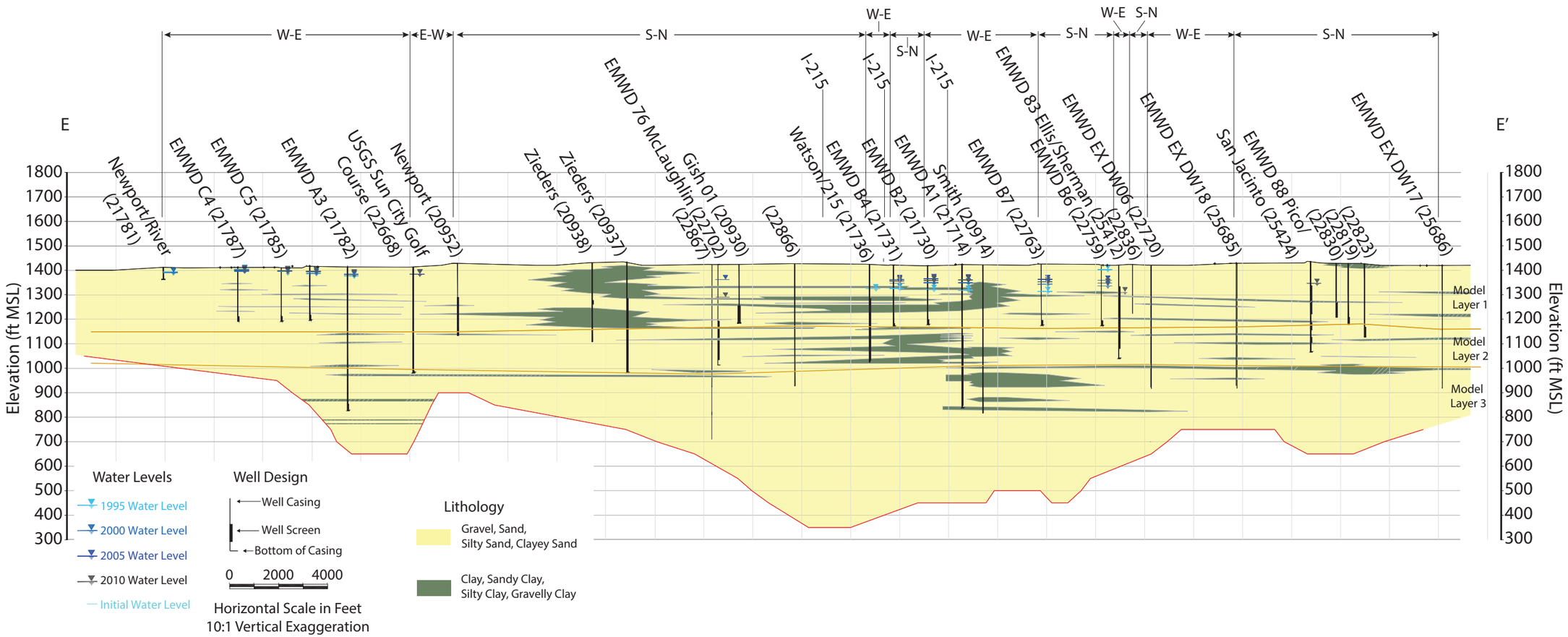
FIGURE 2-20

Cross Section D-D'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Southwest **Northeast**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

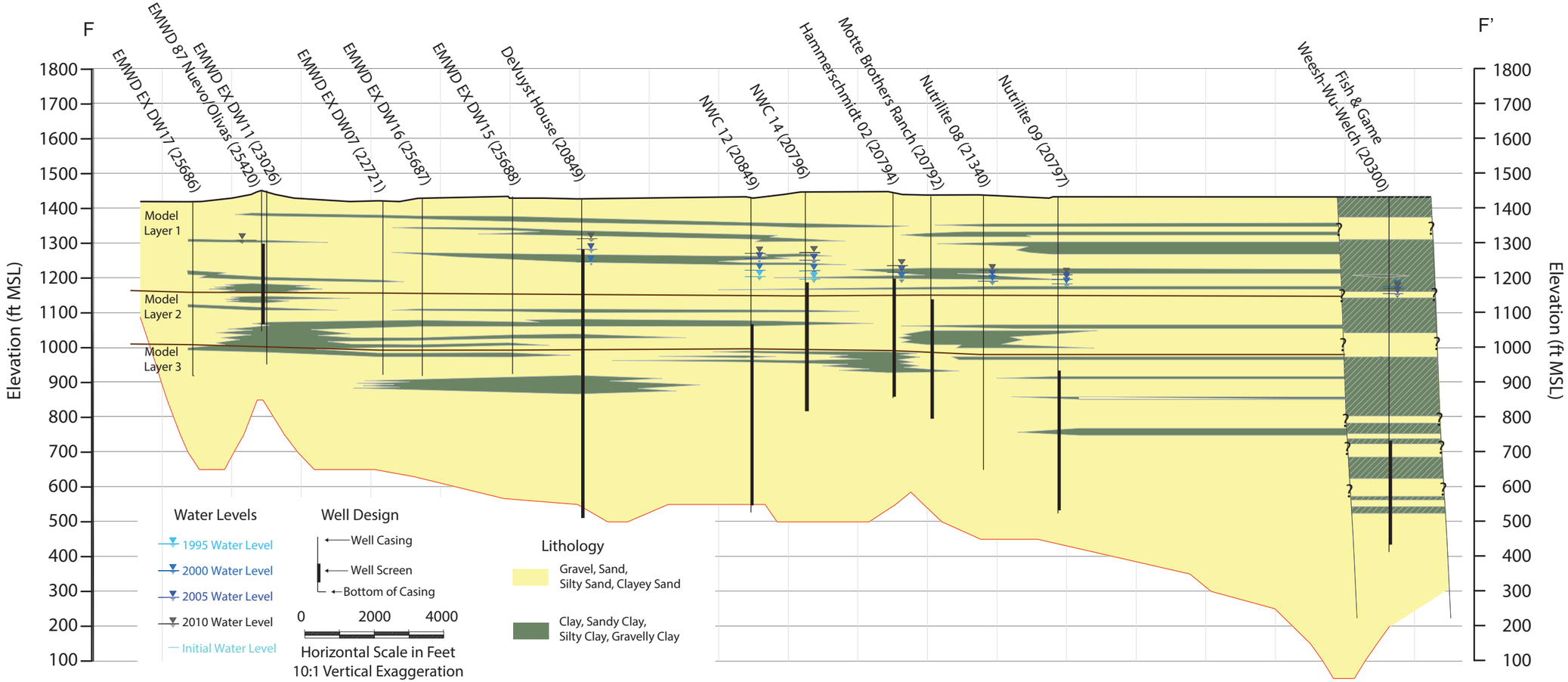
FIGURE 2-21

Cross Section E-E'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Southwest **Northeast**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

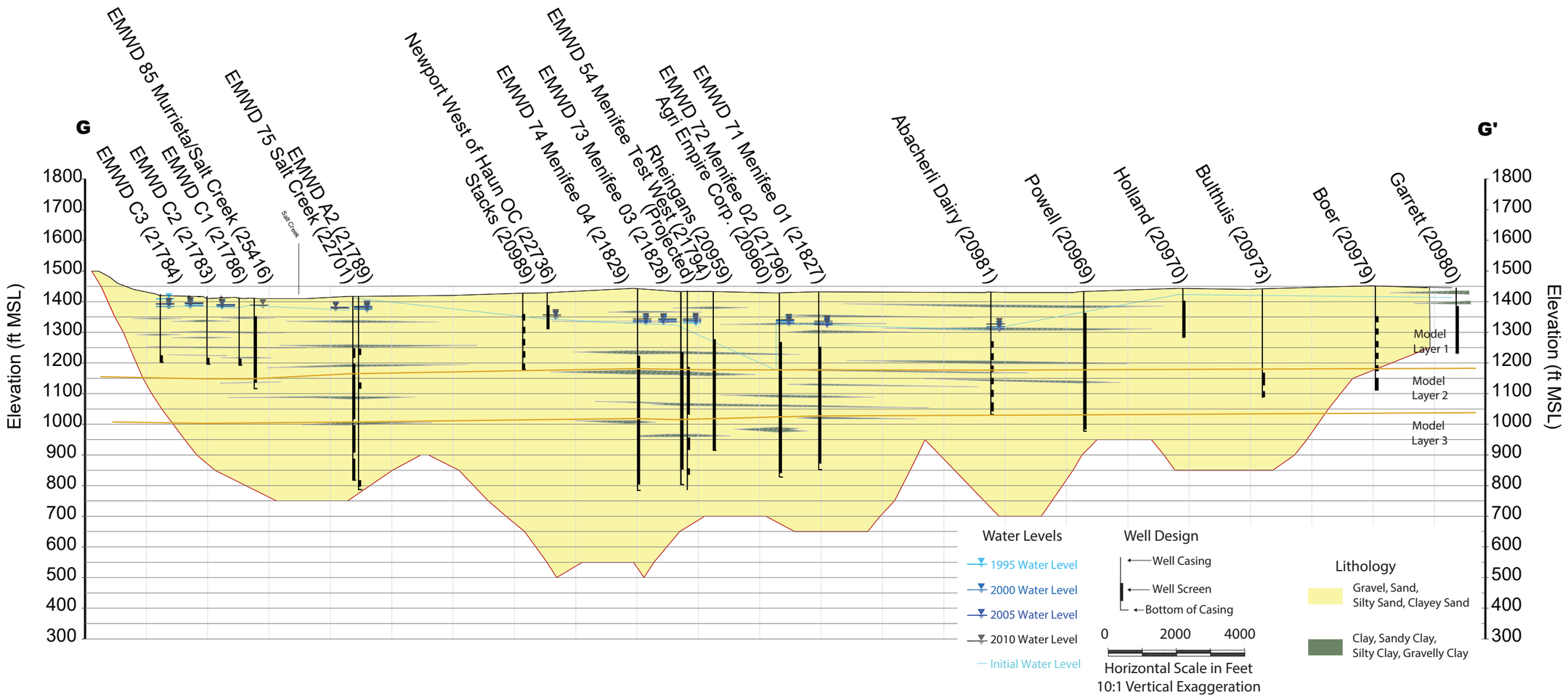
FIGURE 2-22

Cross Section F-F'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Northwest **Southeast**



SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

FIGURE 2-23

Cross Section G-G'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Northwest **Southeast**

H H'

Montgomery (20239)
Montes (20240)
Miner (20244)
Kerr Stock Farm (20314)
Moreno Highlands/Alta Dena Dairy 03 (20283)
Moreno Highlands (20286) Alta Dena Dairy 02 (20287)
Fish & Game Walker Duck Club (20293)
Mystic Duck Club (20294)
21 Gun Club (20301)
Fish & Game Rhodda (21324)
Lauda Beebower Lauda (20565)
Agri 0.7 Miles East of Bridge St (20567)

Model Layer 1
Model Layer 2
Model Layer 3
Model Layer 4

Elevation (ft MSL)

2300 2200 2100 2000 1900 1800 1700 1600 1500 1400 1300 1200 1100 1000 900 800 700 600 500 400 300 200 100 0 -100

Water Levels
- 1995 Water Level
- 2000 Water Level
- 2005 Water Level
- 2010 Water Level
- Initial Water Level

Well Design
- Well Casing
- Well Screen
- Bottom of Casing

0 2000 4000
Horizontal Scale in Feet
10:1 Vertical Exaggeration

Lithology
- Gravel, Sand, Silty Sand, Clayey Sand
- Clay, Sandy Clay, Silty Clay, Gravelly Clay

SOURCE: EMWD 2016b - San Jacinto Groundwater Flow Model Update 2014 (SJFM-2014) Model Development and Scenarios

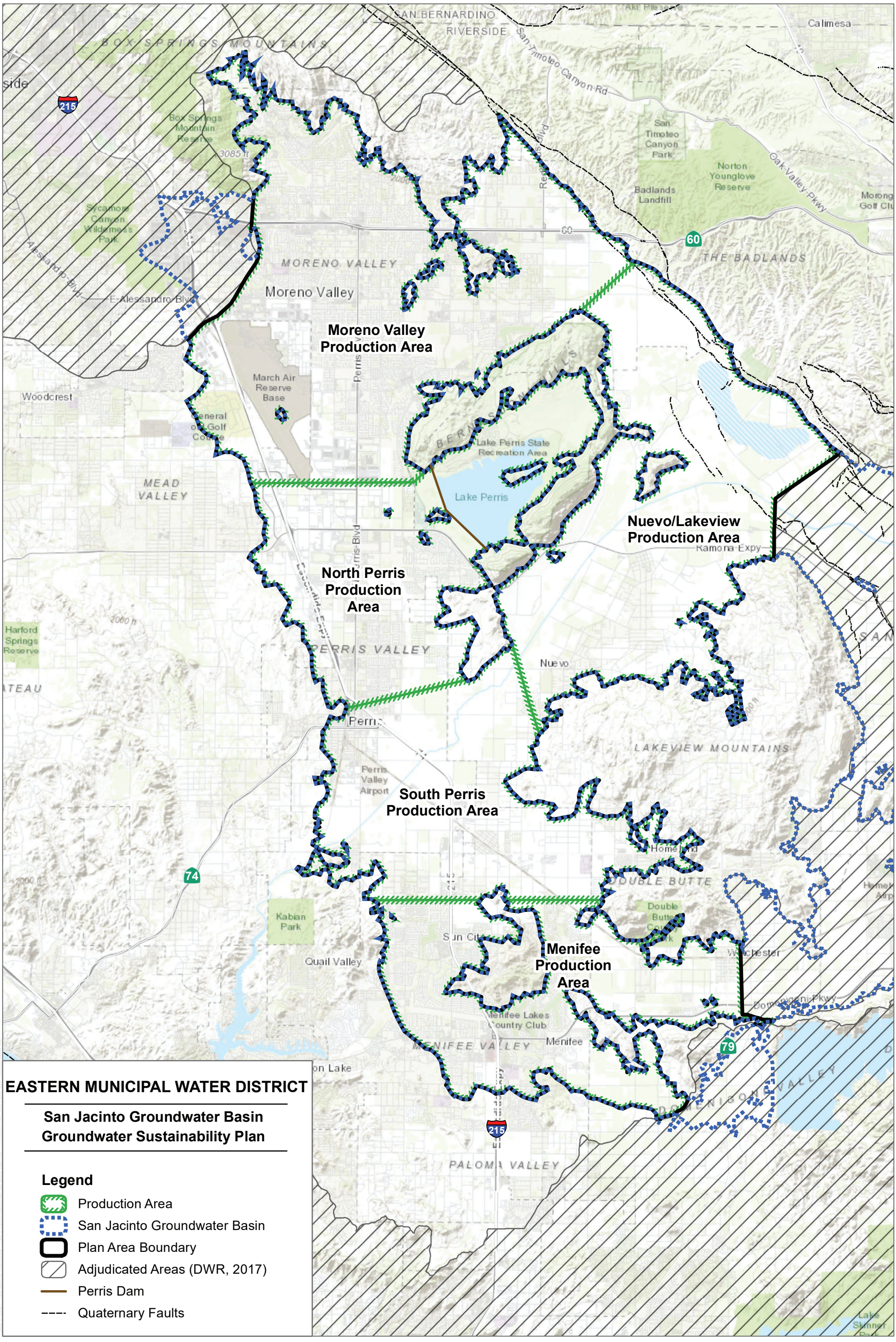
emwd EASTERN MUNICIPAL WATER DISTRICT

FIGURE 2-24

Cross Section H-H'

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: Data provided by EMWD

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 2-25

Groundwater Production Areas in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

- Plan Area
- San Jacinto Groundwater Basin
- Production Areas
- 1 square mile grid
- Extraction Well

Extraction Wells per Sq. Mile

- 0
- 1
- 2
- 3
- 4
- 5

Moreno Valley Production Area

Nuevo/Lakeview Production Area

North Perris Production Area

South Perris Production Area

Menifee Production Area

SOURCE: Esri, EMWD

0 5,000 10,000 Feet

FIGURE 2-26

Groundwater Extraction Well Density in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin

Groundwater Sustainability Plan

Legend

- Plan Area Boundary
- San Jacinto Groundwater Basin
- Flood Basin
- Reclaimed Ponds
- Urban Area

Surface Texture with Ksat ≥ 28 µm/s

- Coarse sandy loam
- Cobbly coarse sandy loam
- Cobbly loamy fine sand
- Cobbly sandy loam
- Fine sandy loam
- Gravelly coarse sand
- Loam
- Loamy fine sand
- Loamy sand
- Sandy loam

SOURCE: USDA Soil Survey; Esri; EMWD; California DWR; Division of Research, Innovation and System Information (DRISI) of Caltrans; Tax Area Services Section (TASS) of the State of California Board of Equalization.

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 2-27

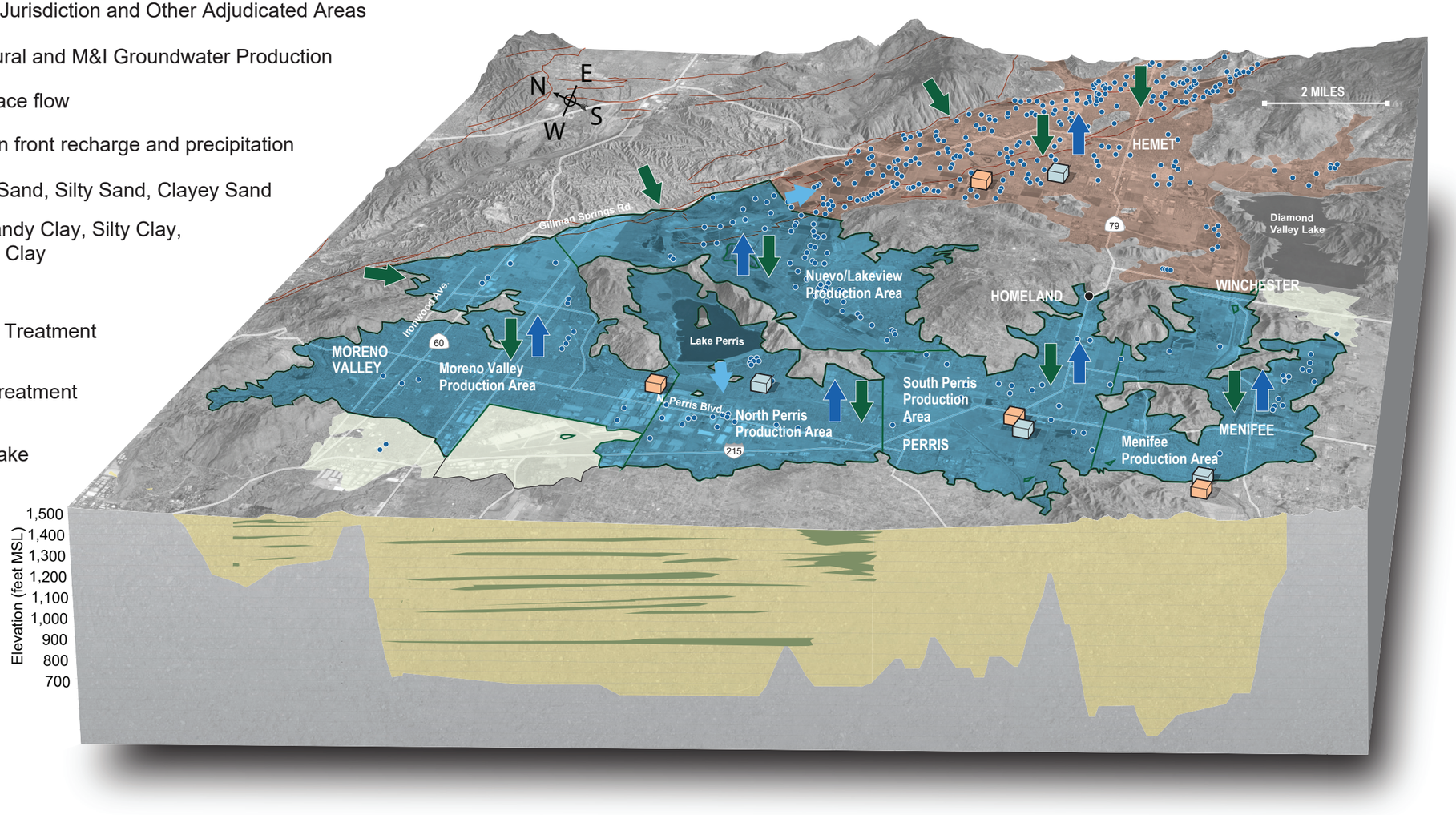
Recharge Map

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

Legend

- Plan Area
- Production Areas
- West San Jacinto GSA Area
- Hemet/San Jacinto Groundwater Management Area
- Federal Jurisdiction and Other Adjudicated Areas
- Agricultural and M&I Groundwater Production
- Subsurface flow
- Mountain front recharge and precipitation
- Gravel, Sand, Silty Sand, Clayey Sand
- Clay, Sandy Clay, Silty Clay, Gravelly Clay
- Wells
- Sewage Treatment Plant
- Water Treatment Plant
- Earthquake Fault



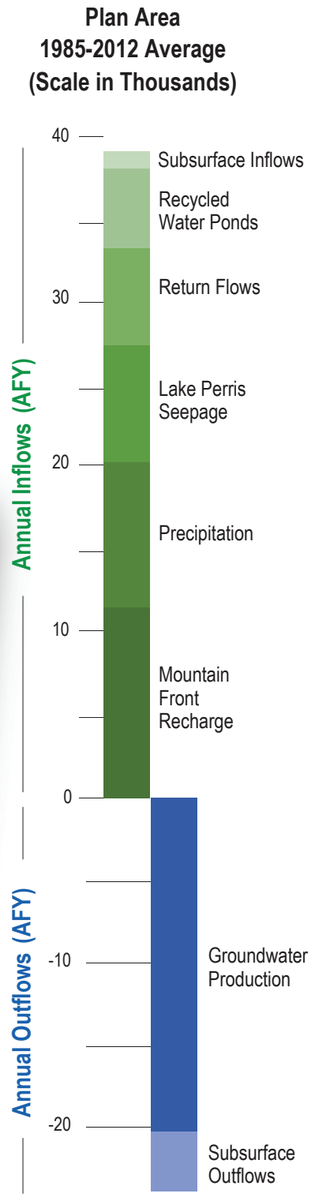


FIGURE 2-28

Hydrogeological Conceptual Model

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- Plan Area
- San Jacinto Groundwater Basin
- Production Area
- Hydrograph Wells

EMWD 42 Reche Canyon
EMWD 45 New Maxwell
EMWD 46 Edgemont 02
Casing ID 12007
USGS Gilman Springs/Virginia
MVRGC West
Casing ID 12091
UCR Coray
UCR Scott
Fish & Game Abandoned
Fish & Game Feedlot Domestic
Casing ID 12398
EMWD 50 Perry
EMWD 55 Perris II
EMWD 52 Follico
NWC 12
Motte East
Nutrilite 07
Casing ID 12343
EMWD Skiland 05
City of Perris Bob Long Memorial Park
Smith C Nuevo/Olivas
Casing ID 12467
Casing ID 12463
EMWD A1
Agri 74/Briggs
EMWD A3
EMWD 54 Menifee Test West
EMWD 74 Menifee 04
EMWD 72 Menifee 02
Casing ID 12852
Agri Leon/Holland

SOURCE: EMWD

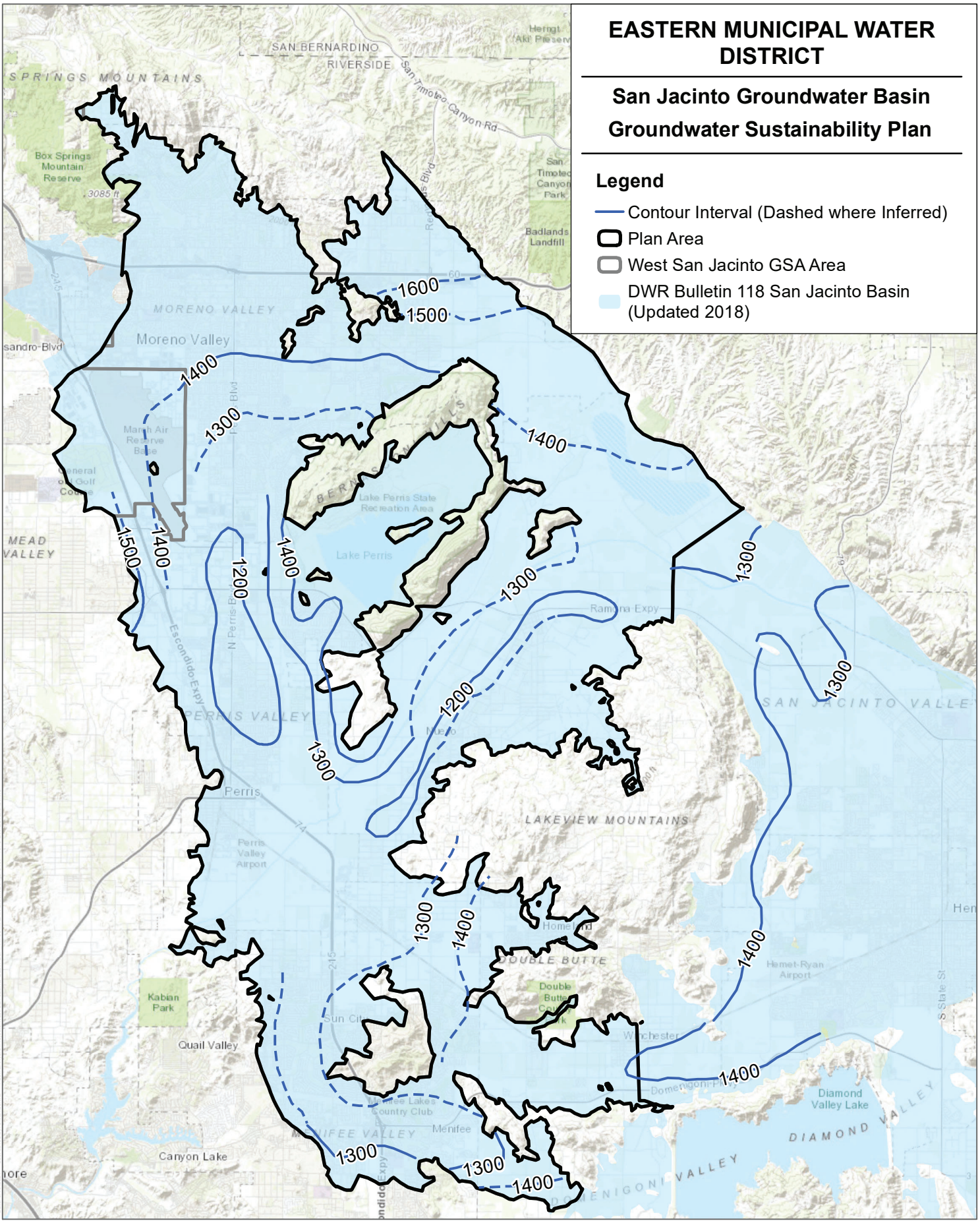
0 1 2 Miles

FIGURE 2-29

Map of Hydrograph Well Locations

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



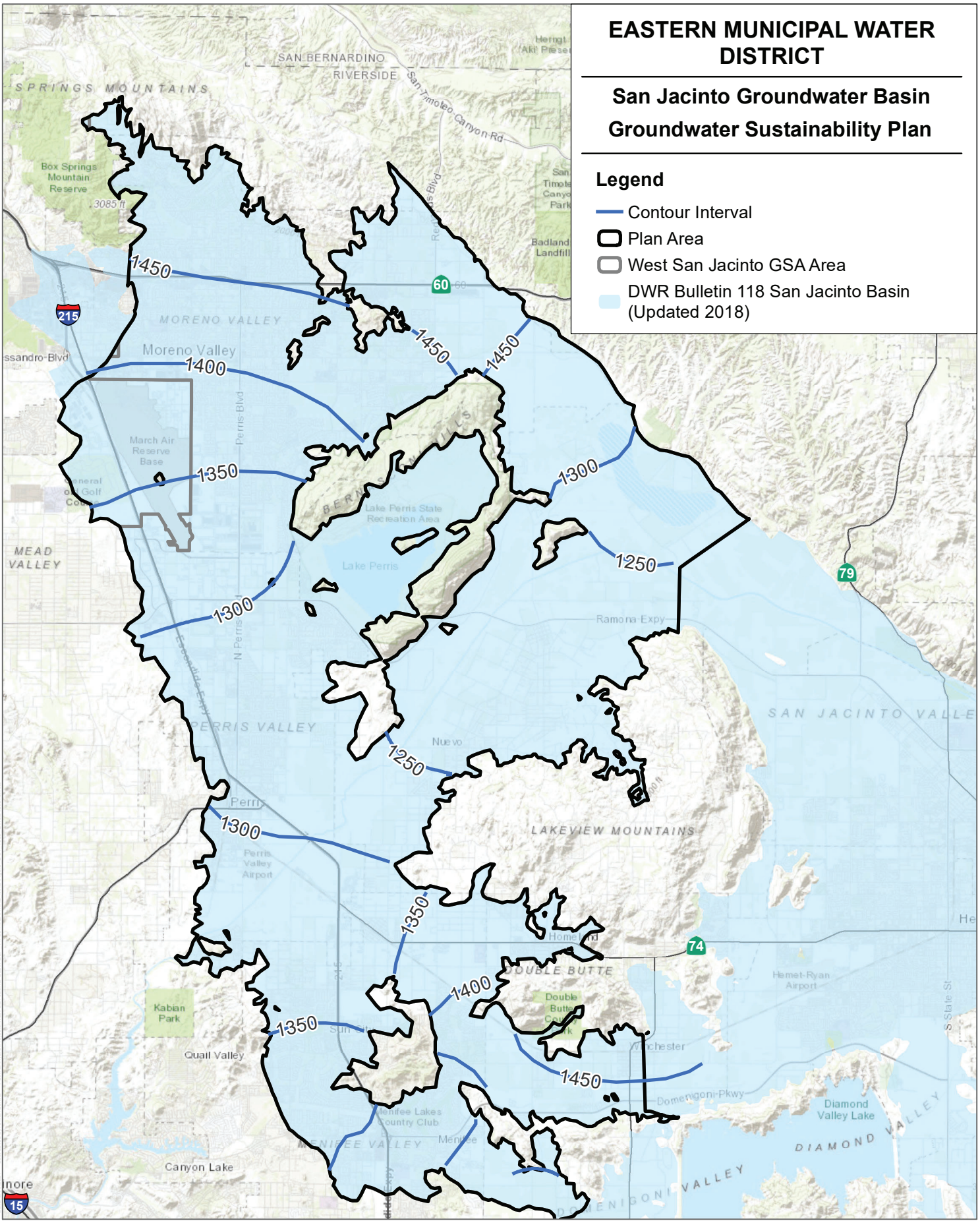
SOURCE: ERSI, Eastern Municipal Water District, California Department of Water Resource, EMWD 1995 Groundwater Management Plan

FIGURE 2-30

Representative Groundwater Elevations in 1974

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



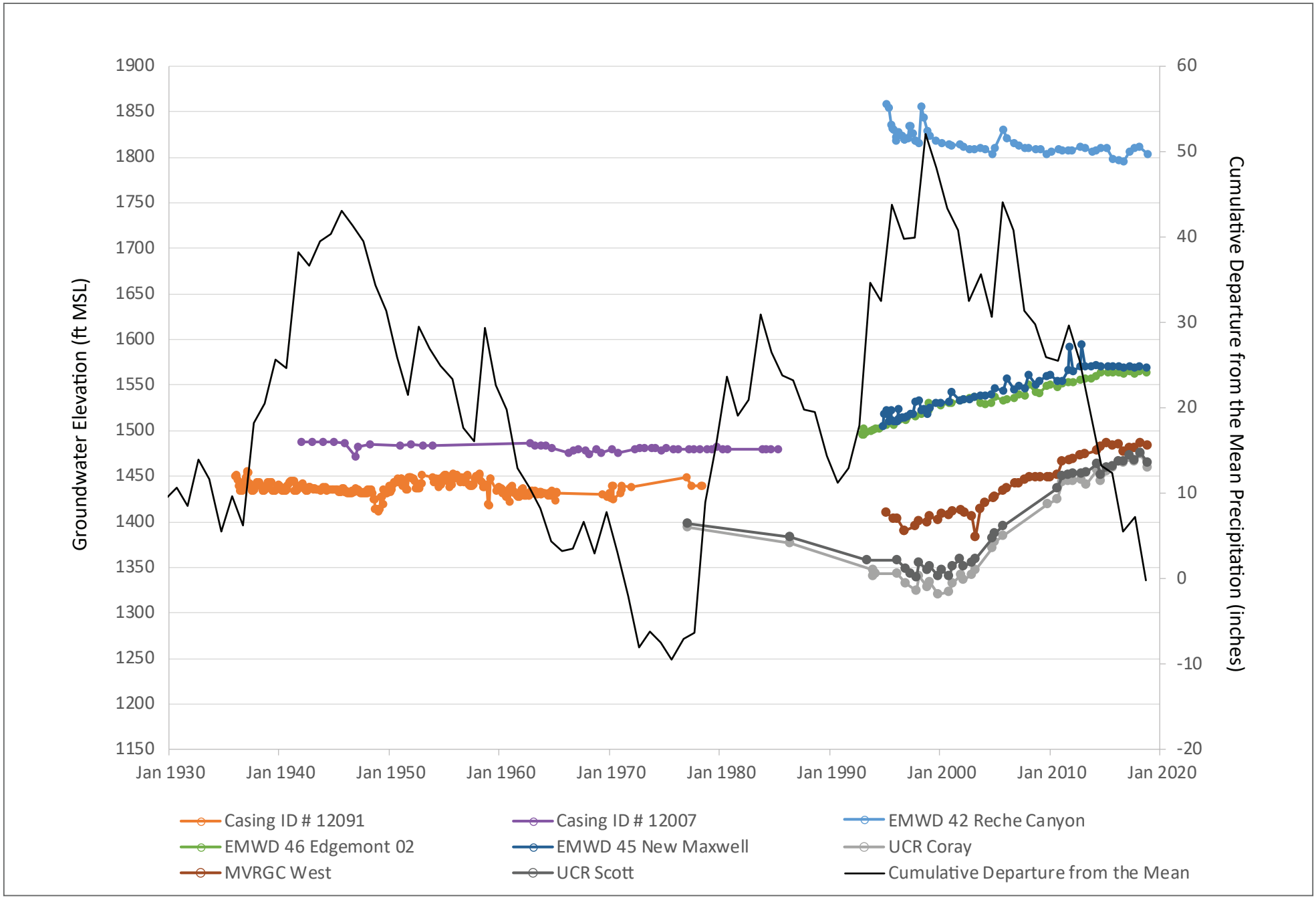
SOURCE: ERSI, Eastern Municipal Water District, California Department of Water Resource, EMWD 1995 Groundwater Management Plan

FIGURE 2-31

Representative Groundwater Elevations in 1993

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



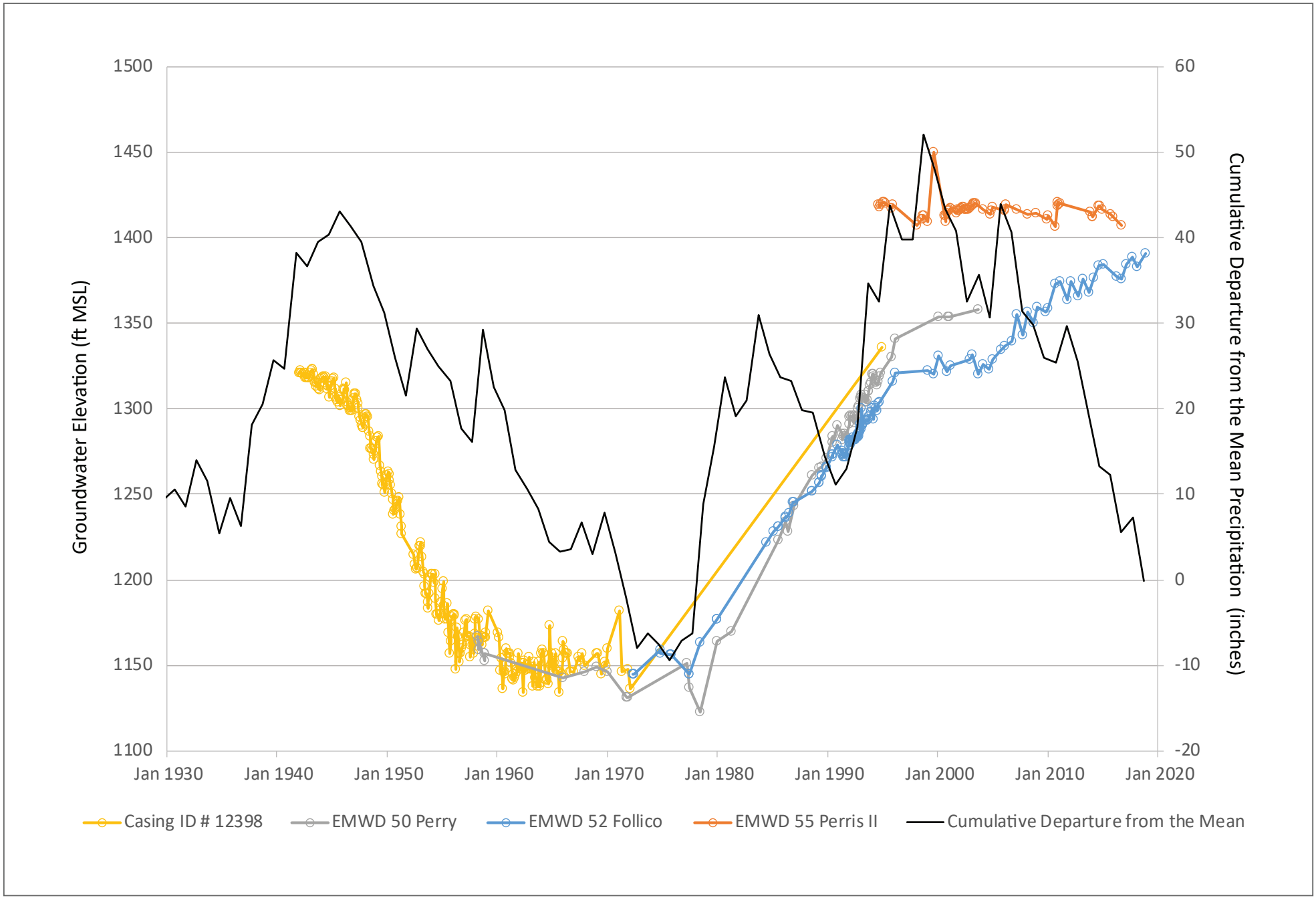
SOURCE: EMWD

FIGURE 2-32

Groundwater Elevation Hydrographs in the Moreno Valley Groundwater Production Area

Groundwater Sustainability Plan for the San Jacinto Basin

INTENTIONALLY LEFT BLANK



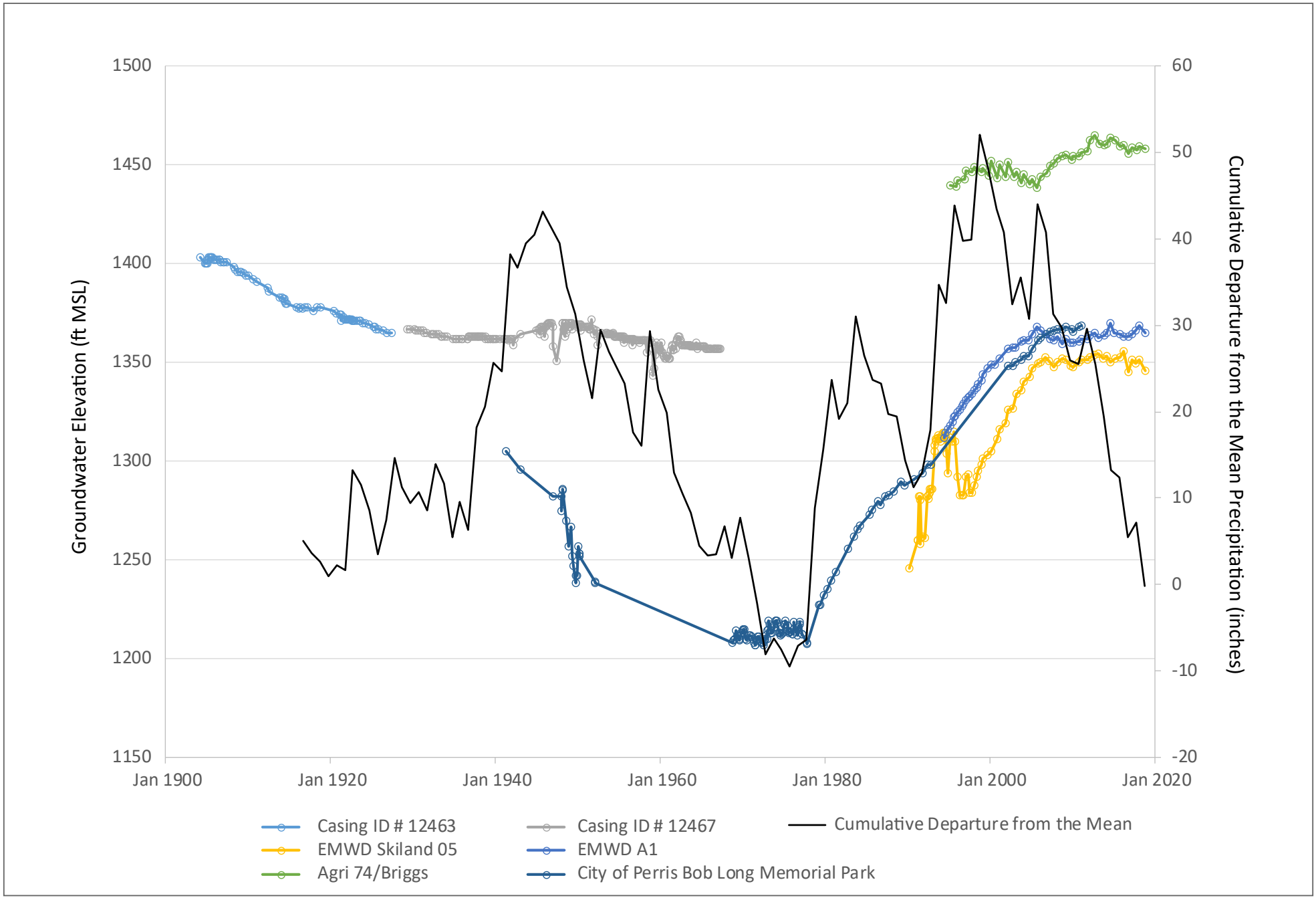
SOURCE: EMWD

FIGURE 2-33

Groundwater Elevation Hydrographs in the North Perris Groundwater Production Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



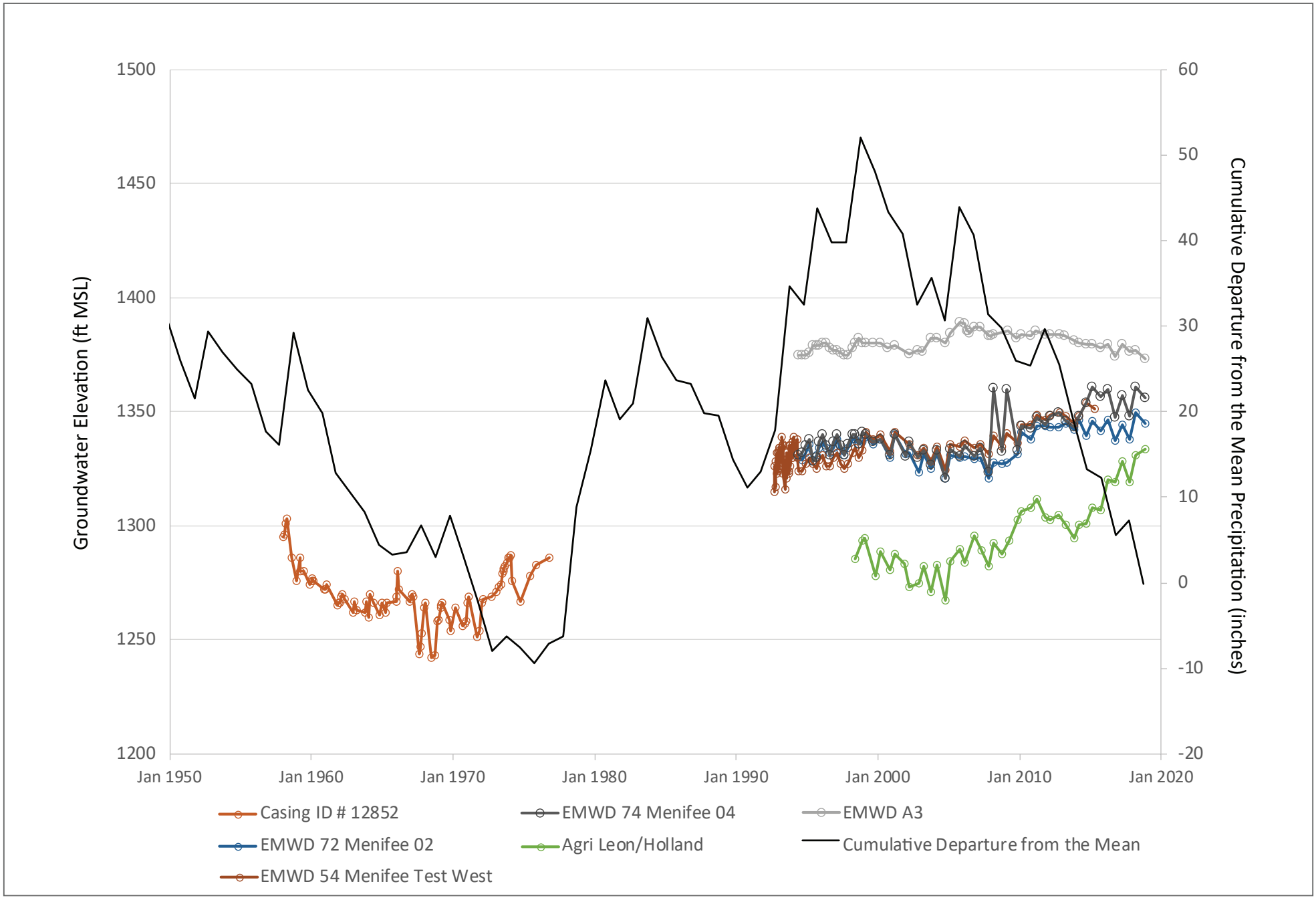
SOURCE: EMWD

FIGURE 2-34

Groundwater Elevation Hydrographs in the South Perris Groundwater Production Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



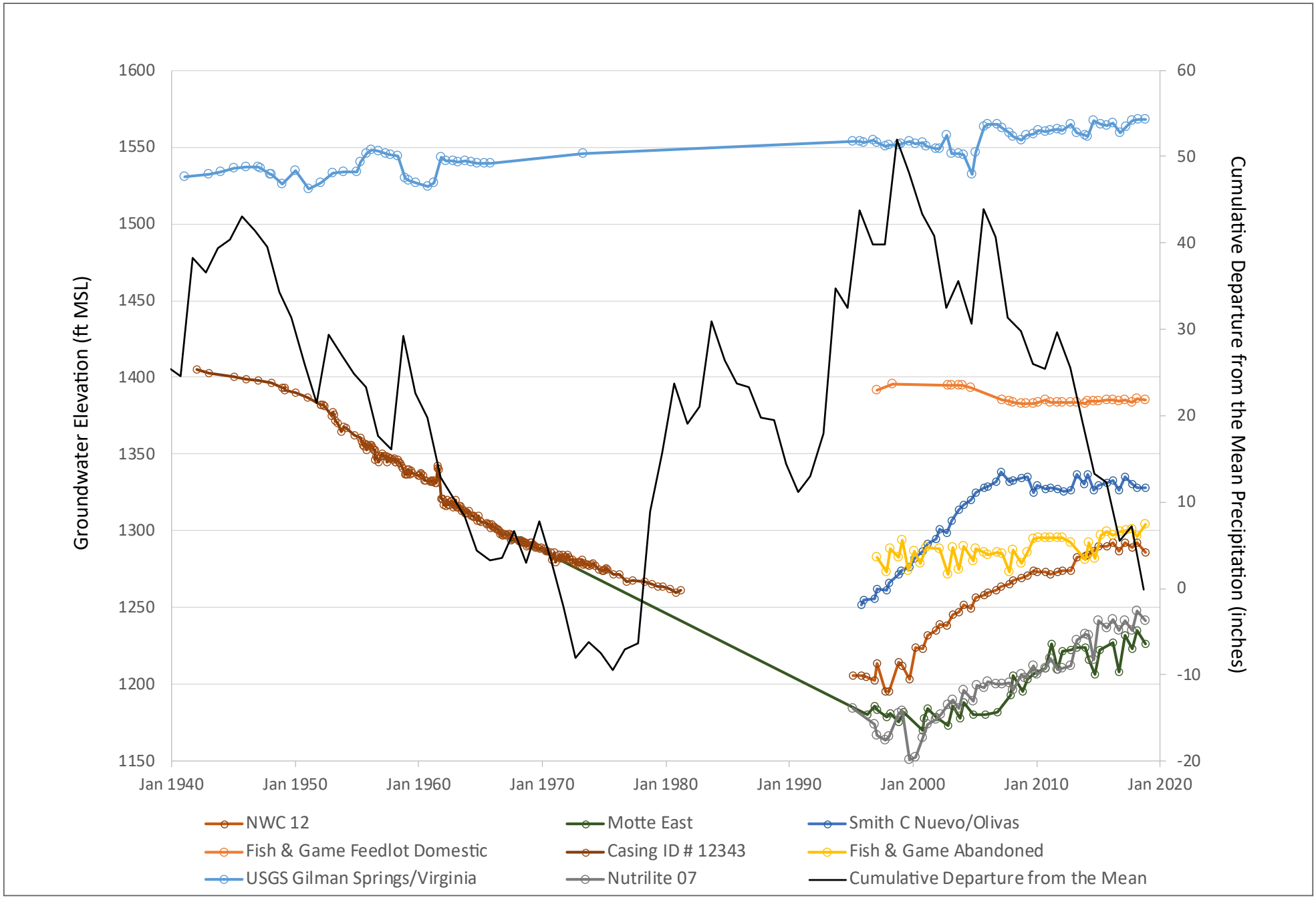
SOURCE: EMWD

FIGURE 2-35

Groundwater Elevation Hydrographs in the Menifee Groundwater Production Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: EMWD

FIGURE 2-36

Groundwater Elevation Hydrographs in the Nuevo/Lakeview Groundwater Production Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

Groundwater Elevation [ft. msl]

- 1193 - 1200
- 1201 - 1250
- 1251 - 1300
- 1301 - 1350
- 1351 - 1400
- 1401 - 1450
- 1451 - 1500
- 1551 - 1600
- 1651 - 1700
- 1801 - 1850

Contour Interval (Dashed where Inferred)

Plan Area Boundary

West San Jacinto GSA Boundary

DWR Bulletin 118 San Jacinto Basin (Updated 2018)

Production Area

Adjudicated Areas (DWR, 2017)

Quaternary Faults

SOURCE: Data provided by EMWD - contoured using Triangulated Linear Interpolation Scheme, Esri, California Department of Water Resources

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 2-37

Spring 2018 Groundwater Elevations

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

Groundwater Elevation [ft. msl]

- 1201 - 1250
- 1251 - 1300
- 1301 - 1350
- 1351 - 1400
- 1401 - 1450
- 1451 - 1500
- 1501 - 1550
- 1551 - 1600
- 1801 - 1850

Contour Interval (Dashed where Inferred)

Plan Area Boundary

West San Jacinto GSA Boundary

DWR Bulletin 118 San Jacinto Basin (Updated 2018)

Production Area

Adjudicated Areas (DWR, 2017)

Quaternary Faults

SOURCE: Data provided by EMWD - contoured using Triangulated Linear Interpolation Scheme, Esri, California Department of Water Resources

emwd EASTERN MUNICIPAL WATER DISTRICT

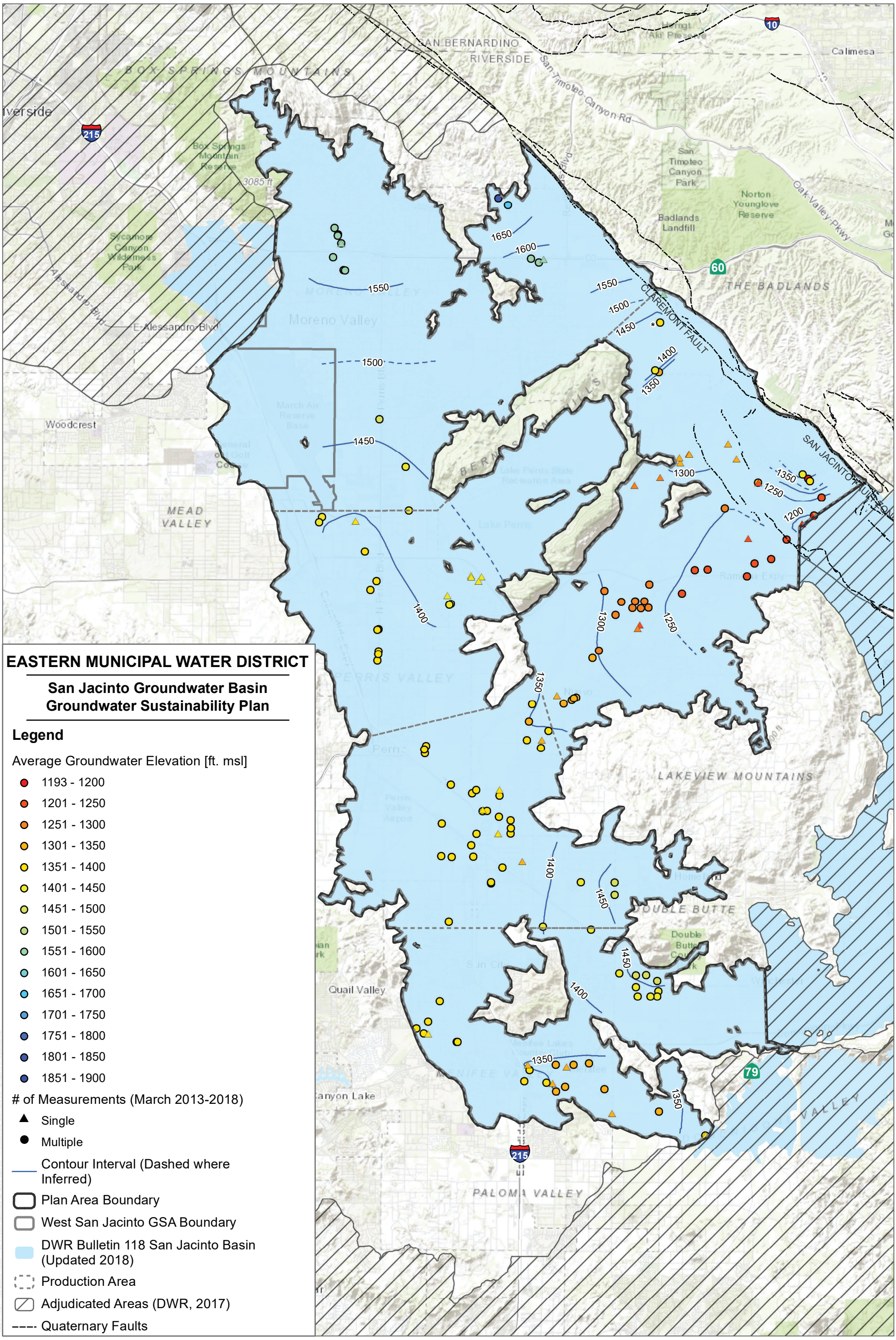
0 1 2 Miles

FIGURE 2-38

Fall 2018 Groundwater Elevations

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin Groundwater Sustainability Plan

Legend

Average Groundwater Elevation [ft. msl]

- 1193 - 1200
- 1201 - 1250
- 1251 - 1300
- 1301 - 1350
- 1351 - 1400
- 1401 - 1450
- 1451 - 1500
- 1501 - 1550
- 1551 - 1600
- 1601 - 1650
- 1651 - 1700
- 1701 - 1750
- 1751 - 1800
- 1801 - 1850
- 1851 - 1900

# of Measurements (March 2013-2018)

- Single
- Multiple
- Contour Interval (Dashed where Inferred)
- Plan Area Boundary
- West San Jacinto GSA Boundary
- DWR Bulletin 118 San Jacinto Basin (Updated 2018)
- Production Area
- Adjudicated Areas (DWR, 2017)
- Quaternary Faults

SOURCE: Data provided by EMWD - contoured using Triangulated Linear Interpolation Scheme, Esri, California Department of Water Resources

emwd EASTERN MUNICIPAL WATER DISTRICT

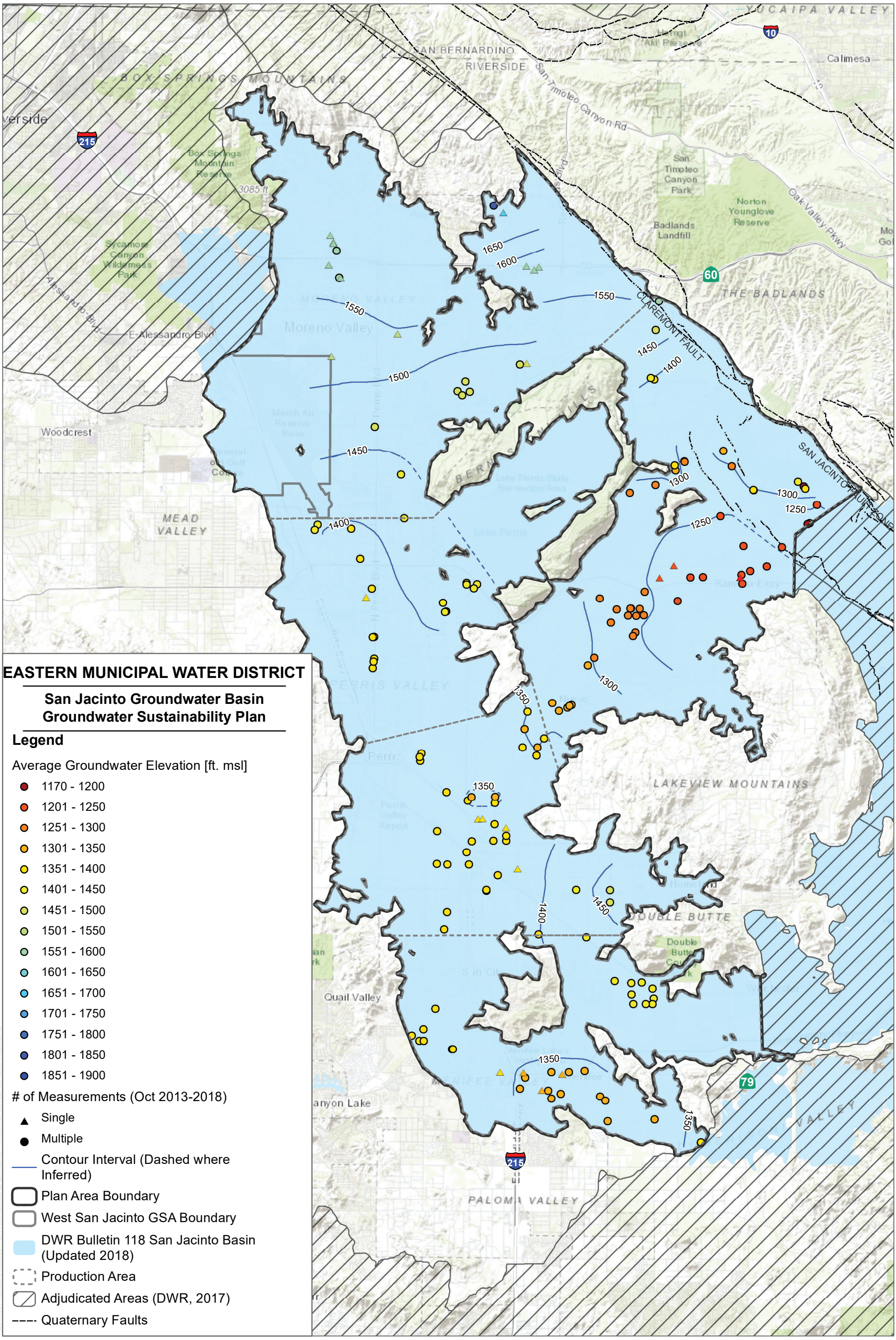
0 1 2 Miles

FIGURE 2-39

Spring 2013-2018 Average Groundwater Elevations

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: Data provided by EMWD - contoured using Triangulated Linear Interpolation Scheme, Esri, California Department of Water Resources

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 2-40

Fall 2013-2018 Average Groundwater Elevations

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- SFJM (2014) Model Domain Inside San Jacinto Basin
- SJFM (2014) Model Domain Outside San Jacinto Basin
- San Jacinto Basin Outside SJFM (2014) Domain
- Plan Area

Adjudicated Areas

- Hemet-San Jacinto Basin
- San Bernardino Basin Area
- Santa Margarita River Watershed

SOURCE: EMWD, Esri

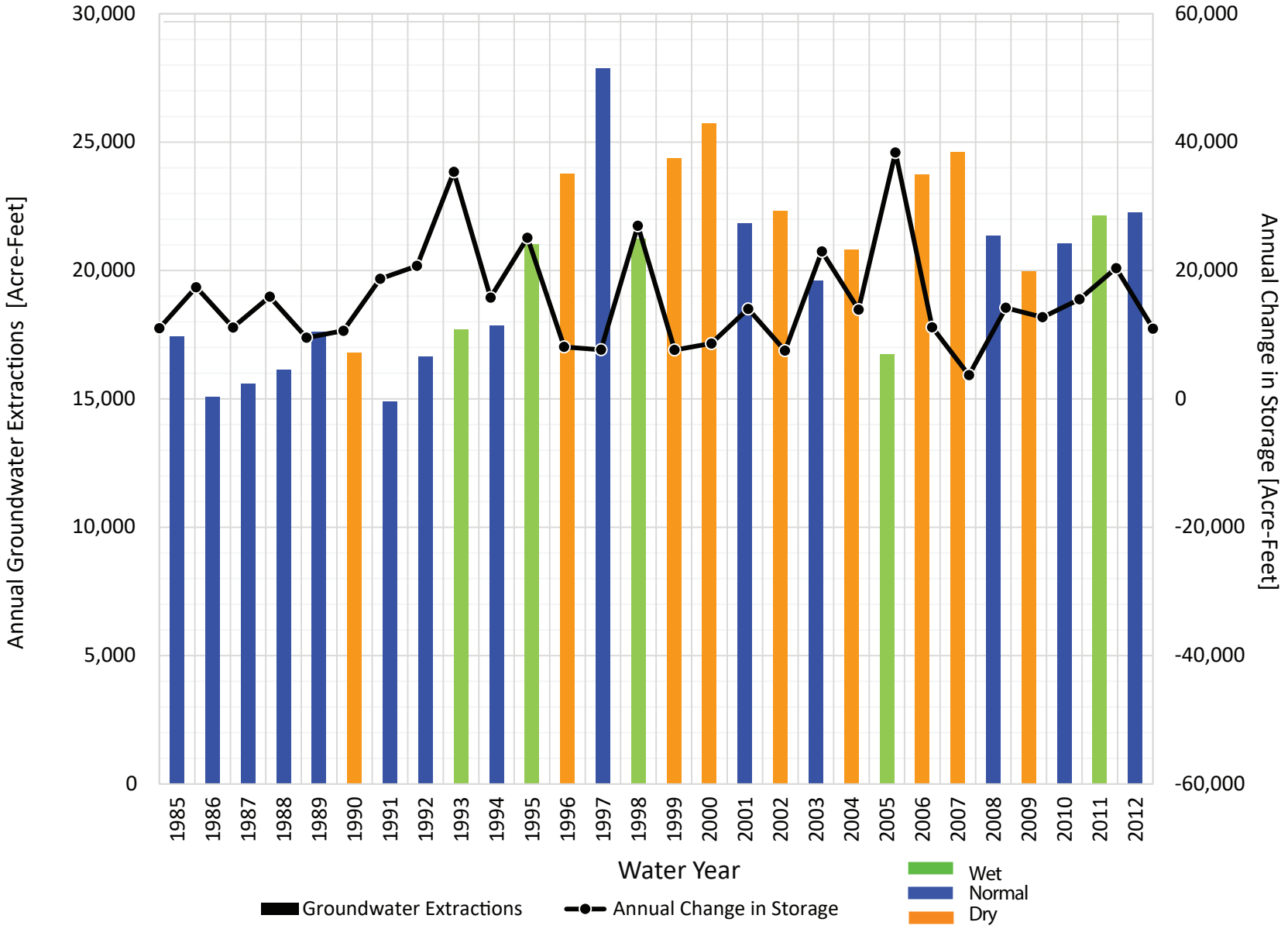
0 1.5 3 Miles

FIGURE 2-41

San Jacinto Groundwater Flow Model (SJFM-2014) Extent

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



Notes:

(1) Water year is October 1 to September 30
(e.g. water year 2012 is Oct. 1, 2011 to Sept. 30, 2012)
(2) Water Year Type is based on Lake Perris Rain Gauge (Gauge ID: 151) Precipitation
(3) Dry Water Year Type: Measured Precipitation < 6.5 inches per water year
(4) Normal Water Year Type: 6.5 inches< Measured Precipitation < 11.5 inches per water year
(5) Wet Water Year Type: 11.5 inches per water year < Measured Precipitation

SOURCE: San Jacinto Flow Model (2014)

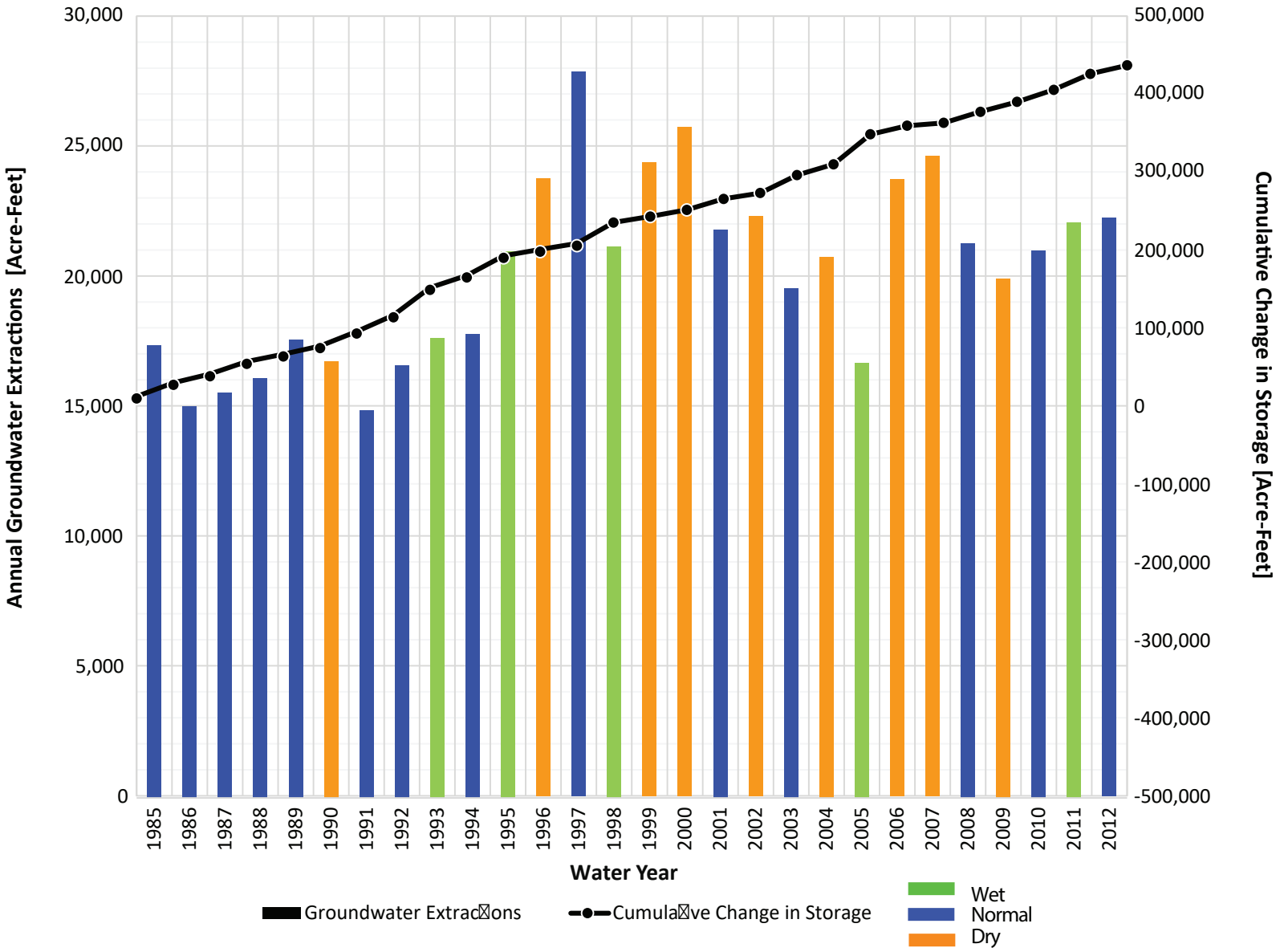
FIGURE 2-42

Historical Annual Change in Groundwater in Storage in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

INTENTIONALLY LEFT BLANK



Notes:

(1) Water year is October 1 to September 30
(e.g. water year 2012 is Oct. 1, 2011 to Sept. 30, 2012)
(2) Water Year Type is based on Lake Perris Rain Gauge (Gauge ID: 151) Precipitation
(3) Dry Water Year Type: Measured Precipitation < 6.5 inches per water year
(4) Normal Water Year Type: 6.5 inches< Measured Precipitation < 11.5 inches per water year
(5) Wet Water Year Type: 11.5 inches per water year < Measured Precipitation

SOURCE: San Jacinto Flow Model (2014)

FIGURE 2-43

Historical Cumulative Change in Groundwater in Storage in the Plan Area

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area Boundary
- Adjudicated Areas (DWR, 2017)
- 2017 Brackish Groundwater Extent
- Estimated Extent of Nitrate Areas of Concern
- Estimated Extent of Comingled Nitrate and VOC Areas of Concern
- Estimated Extent of Comingled Nitrate, VOC, and Perchlorate Area of Concern

Comingled VOC and Nitrate Plumes

Lake Perris

Canyon Lake

Lake Elsinore

Diamond Valley Lake

SOURCE: EMWD

0 1 2 Miles

FIGURE 2-44

Non-point Source Contaminant Extent

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- Plan Area
- San Jacinto Groundwater Basin

Envirostor Sites

- Active
- Certified / O+M / Land Use Restrictions
- Inactive
- No Further Action
- Agency Referral

Geotracker Sites

- Cleanup Program Site
- LUST Cleanup Site
- Land Disposal Site
- Military Cleanup Site

Potential Media of Concern

- Undefined / Under Investigation
- Groundwater / Aquifer Concerns
- Soil / Surface Water
- Case Closed

SOURCE: Geotracker

0 1 2 Miles

FIGURE 2-45

Contaminant Release Sites

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

San Jacinto Groundwater Basin

Plan Area

Groundwater Management Zone

UCR Scott
544 mg/L — Minimum Concentration measured (2013 - 2018)
580 mg/L — Maximum Concentration measured (2013 - 2018)
Maximum Concentration (2013 - 2018)

TDS Concentratrions (mg/L) (2013-2018)

- 352 - 500
- 501 - 1000
- 1001 - 1500
- 1501 - 2000
- 2001 - 5000
- 5001 - 7500
- 7501 - 10000
- 10001 - 15000

EMWD 45 New Maxwell 220 mg/L 352 mg/L
EMWD 43 SMWC 03 South 460 mg/L 660 mg/L
EMWD 48 Edgemont 04 680 mg/L 760 mg/L
EMWD 46 Edgemont 02 700 mg/L 916 mg/L
EMWD 42 Reche Canyon 350 mg/L 384 mg/L
Lantz West 500 mg/L 500 mg/L
Lantz East 430 mg/L 430 mg/L
UCR Scott 544 mg/L 580 mg/L
EMWD Perris/Iris 2100 mg/L 2160 mg/L
Fish and Game New Domestic 540 mg/L 630 mg/L
EMWD MVRWRF North 1700 mg/L 1900 mg/L
Fish and Game West 268 mg/L 360 mg/L
Fish and Game Fence 870 mg/L 950 mg/L
Fish and Game Walker Duck Club 1100 mg/L 1100 mg/L
Fish and Game Cannery Feedlot 416 mg/L 710 mg/L
EMWD MVRWRF South 610 mg/L 730 mg/L
Fish and Game South 660 mg/L 720 mg/L
EMWD 59 Indian 660 mg/L 780 mg/L
McCanna Ranch 01 330 mg/L 400 mg/L
Bootsma South 530 mg/L 594 mg/L
Nutrilite 09 790 mg/L 790 mg/L
Nutrilite 07 438 mg/L 860 mg/L
List Bridge St. Farms 648 mg/L 648 mg/L
EMWD 56 New Perry 850 mg/L 980 mg/L
McCanna Ranch 02 360 mg/L 430 mg/L
McCanna Ranch 03 370 mg/L 420 mg/L
NWC 13 2200 mg/L 3300 mg/L
AG Sod Aqueduct 1700 mg/L 1800 mg/L
EMWD 55 Perris II 530 mg/L 546 mg/L
EMWD 51 Bonge East 950 mg/L 1000 mg/L
McAnally Farms 430 mg/L 480 mg/L
EMWD 57 New Follico 970 mg/L 1300 mg/L
NWC 12 270 mg/L 580 mg/L
NWC 04 990 mg/L 2000 mg/L
Nutrilite 02 500 mg/L 606 mg/L
EMWD 51 Bonge West 830 mg/L 1000 mg/L
EMWD 52 Follico 370 mg/L 436 mg/L
EMWD 94 1010 mg/L 1010 mg/L
NWC 06 760 mg/L 870 mg/L
EMWD Skiland 05 1100 mg/L 1500 mg/L
Smith C Nuevo/Olivas 1000 mg/L 1170 mg/L
Perris Properties San Jacinto 930 mg/L 1100 mg/L
EMWD Skiland 02 2400 mg/L 15000 mg/L
Piester Pico 1480 mg/L 2200 mg/L
Perris Properties Kmart 1000 mg/L 1600 mg/L
EMWD Skiland 01 690 mg/L 6600 mg/L
Fish and Game Bouris 710 mg/L 770 mg/L
Perris Properties Ellis 2700 mg/L 4200 mg/L
EMWD B6 1990 mg/L 2800 mg/L
EMWD 96 Santa Rosa 1630 mg/L 2360 mg/L
EMWD B1 3100 mg/L 15000 mg/L
Smith C Mapes 230 mg/L 696 mg/L
Southern CA Edison 300 mg/L 510 mg/L
EMWD B3 1600 mg/L 2000 mg/L
Agri Matthews 580 mg/L 760 mg/L
EMWD 76 McLaughlin 1510 mg/L 2400 mg/L
Smith C Rouse OC 1630 mg/L 2500 mg/L
EMWD Winchester Ponds 04 830 mg/L 2500 mg/L
EMWD Winchester Ponds 05 660 mg/L 830 mg/L
EMWD Winchester Ponds 03 1000 mg/L 1500 mg/L
EMWD Winchester Ponds 06 710 mg/L 780 mg/L
EMWD A3 7000 mg/L 11700 mg/L
EMWD C2 900 mg/L 1500 mg/L
EMWD Winchester Ponds 02 1400 mg/L 3300 mg/L
EMWD Winchester Ponds 01 4910 mg/L 6700 mg/L
EMWD 72 Menifee 02 1900 mg/L 2300 mg/L
EMWD C1 790 mg/L 960 mg/L
EMWD 53 Menifee Test East 150 mg/L 2290 mg/L
Agri Leon/Holland 830 mg/L 1200 mg/L
EMWD 74 Menifee 04 1200 mg/L 1400 mg/L
Wilderness Lakes 2800 mg/L 2950 mg/L
Menifee Lakes 01 890 mg/L 1800 mg/L

1. EMWD 64 Hemlock/Davis 680 mg/L 680 mg/L
2. McCanna Ranch 04 380 mg/L 450 mg/L
3. EMWD 86 Murrieta/San Jacinto 1400 mg/L 2200 mg/L
4. EMWD 84 Ellis/Bradley 812 mg/L 3100 mg/L
5. EMWD B7 1100 mg/L 1400 mg/L
6. EMWD Trumble MW-1 770 mg/L 1100 mg/L
7. EMWD Trumble MW-2 920 mg/L 920 mg/L
8. EMWD A1 2700 mg/L 4380 mg/L
9. Schvaneveldt, Blaine 2600 mg/L 2600 mg/L
10. EMWD B2 1200 mg/L 1500 mg/L
11. EMWD 82 Mapes/Sherman 1140 mg/L 1900 mg/L
12. EMWD B4 1100 mg/L 1800 mg/L
13. Smith C Jackson 970 mg/L 1130 mg/L
14. EMWD 73 Menifee 03 2000 mg/L 2500 mg/L
15. EMWD 75 Salt Creek 1700 mg/L 2000 mg/L
16. Newport West of Haun OC 2000 mg/L 2000 mg/L
17. Menifee Lakes 03 1100 mg/L 1700 mg/L
18. Menifee Lakes 02 970 mg/L 970 mg/L
19. EMWD 71 Menifee 01 2000 mg/L 2500 mg/L
20. EMWD 85 Murrieta/Salt Creek 1100 mg/L 1100 mg/L
21. Cal Trans ROW Nursery 940 mg/L 2100 mg/L
22. EMWD 88 Pico/San Jacinto 1300 mg/L 2000 mg/L
23. EMWD 83 Ellis/Sherman 1000 mg/L 3000 mg/L
24. EMWD B5 3140 mg/L 4700 mg/L
25. EMWD B8 Perris RWRF Open Casing 1800 mg/L 2300 mg/L
26. EMWD 81 Antelope/Watson 482 mg/L 1240 mg/L
27. EMWD 89 Ethanac II 730 mg/L 1000 mg/L
28. EMWD Winchester Ponds 08 1300 mg/L 3200 mg/L
29. Bouris Newport East of Menifee 2800 mg/L 2900 mg/L
30. EMWD Winchester Ponds 07 920 mg/L 1300 mg/L
31. Motte East 520 mg/L 700 mg/L
32. Motte West 470 mg/L 490 mg/L
33. Offinga Dairy North 530 mg/L 530 mg/L
34. Goyenetche Dairy (Ferriera) 540 mg/L 610 mg/L
35. Bootsma, John 410 mg/L 526 mg/L
36. Bootsma/Ferriera 646 mg/L 646 mg/L
37. Nutrilite 04 490 mg/L 550 mg/L
38. Nutrilite 08 806 mg/L 970 mg/L
39. NWC 15 490 mg/L 570 mg/L
40. NWC 11 2700 mg/L 3300 mg/L
41. NWC 14 2300 mg/L 3300 mg/L
42. NWC Archibek aka Piester Well 730 mg/L 1100 mg/L
43. EMWD 95 13th St. 932 mg/L 1570 mg/L
44. EMWD 87 Nuevo/Olivas 1230 mg/L 3000 mg/L
45. EMWD 93 Nuevo/Menifee 840 mg/L 1500 mg/L
46. Troost/Bootsma 600 mg/L 634 mg/L
47. Offinga Dairy South 420 mg/L 480 mg/L
48. Marvo Holsteins 590 mg/L 640 mg/L
49. Fish and Game Mystic Lake OC 290 mg/L 3100 mg/L
50. Marvo Holsteins East (List) 630 mg/L 666 mg/L

SOURCE: Data provided by EMWD

0 5,000 10,000 Feet

FIGURE 2-46

TDS Concentrations (2013-2018)

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area
- Groundwater Management Zone
- UCR Scott — 18 mg/L (Minimum Concentration measured (2013 - 2018)) — 18 mg/L (Maximum Concentration measured (2013 - 2018)) — Maximum Concentration (2013 - 2018)

Nitrate Concentration (mg/L) (2013-2018)

- 0.00 - 10.00
- 10.01 - 25.00
- 25.01 - 50.00
- 50.01 - 75.00
- 75.01 - 100.00
- 100.01 - 300.00

EMWD 42 Reche Canyon 35 mg/L 37 mg/L
EMWD 45 New Maxwell 0.4 mg/L 0.9 mg/L
EMWD 43 SMWC 03 South 0.9 mg/L 42 mg/L
EMWD 48 Edgemont 04 83 mg/L 90 mg/L
EMWD 46 Edgemont 02 92 mg/L 100 mg/L
Lantz West 72 mg/L 72 mg/L
Lantz East 58 mg/L 58 mg/L
Fish and Game Bouris 0.4 mg/L 0.9 mg/L
UCR Scott 18 mg/L 18 mg/L
EMWD Perris/Iris 230 mg/L 240 mg/L
Fish and Game Walker Duck Club 0.9 mg/L 0.9 mg/L
Fish and Game Fence 0.4 mg/L 0.9 mg/L
Fish and Game Mystic Lake OC 0.4 mg/L 0.9 mg/L
EMWD MVRWRF North 56 mg/L 88 mg/L
Fish and Game New Domestic 6.2 mg/L 23 mg/L
Fish and Game Cannery Feedlot 0.4 mg/L 0.9 mg/L
EMWD MVRWRF South 2.9 mg/L 25 mg/L
Fish and Game West 17 mg/L 51 mg/L
Fish and Game South 0.4 mg/L 0.9 mg/L
EMWD 59 Indian 23 mg/L 26 mg/L
Bootsma South 0.4 mg/L 0.9 mg/L
McCanna Ranch 01 1.1 mg/L 1.7 mg/L
Nutrilite 09 50 mg/L 50 mg/L
Nutrilite 07 0.9 mg/L 1.9 mg/L
List Bridge St. Farms 0 mg/L 0 mg/L
EMWD 56 New Perry 5.9 mg/L 23 mg/L
McCanna Ranch 02 1.3 mg/L 1.9 mg/L
McCanna Ranch 03 4.8 mg/L 7 mg/L
NWC 13 0.45 mg/L 1.6 mg/L
AG Sod Aqueduct 50 mg/L 54 mg/L
EMWD 51 Bonge East 54 mg/L 68 mg/L
EMWD 55 Perris II 18 mg/L 18 mg/L
McAnally Farms 30 mg/L 31 mg/L
EMWD 57 New Follico 28 mg/L 34 mg/L
EMWD 94 0 mg/L 0 mg/L
NWC 12 0.4 mg/L 1.8 mg/L
NWC 04 7.8 mg/L 38 mg/L
Nutrilite 02 0.4 mg/L 79 mg/L
EMWD 52 Follico 0.4 mg/L 0.4 mg/L
NWC 06 55 mg/L 76 mg/L
EMWD Skiland 05 0.4 mg/L 1.8 mg/L
NWC Archibek aka Piester Well 30 mg/L 42 mg/L
Perris Properties San Jacinto 17 mg/L 40 mg/L
EMWD Skiland 02 2.7 mg/L 13 mg/L
Smith C Nuevo/Olivas 26 mg/L 83 mg/L
Piester Pico 0.4 mg/L 48 mg/L
Perris Properties Kmart 41 mg/L 150 mg/L
EMWD Skiland 01 8.2 mg/L 13 mg/L
Perris Properties Ellis 11 mg/L 46 mg/L
EMWD 96 Santa Rosa 0 mg/L 0 mg/L
EMWD B6 19 mg/L 21 mg/L
EMWD B1 8.8 mg/L 18 mg/L
Smith C Mapes 2.2 mg/L 7.6 mg/L
EMWD B3 36 mg/L 44 mg/L
Southern CA Edison 14 mg/L 37 mg/L
EMWD 76 McLaughlin 32 mg/L 42 mg/L
Smith C Jackson 20 mg/L 32 mg/L
Agri Matthews 46 mg/L 61 mg/L
EMWD Winchester Ponds 04 0.4 mg/L 30 mg/L
EMWD 89 Ethanac II 20 mg/L 33 mg/L
EMWD Winchester Ponds 05 3.7 mg/L 8.8 mg/L
Smith C Rouse OC 13 mg/L 21 mg/L
EMWD Winchester Ponds 03 11 mg/L 120 mg/L
EMWD Winchester Ponds 06 1.6 mg/L 8.5 mg/L
EMWD A3 0.9 mg/L 4.3 mg/L
EMWD C2 9.4 mg/L 14 mg/L
EMWD Winchester Ponds 02 1.8 mg/L 14 mg/L
EMWD Winchester Ponds 01 40 mg/L 49 mg/L
EMWD 75 Salt Creek 7.2 mg/L 12 mg/L
EMWD 72 Menifee 02 20 mg/L 20 mg/L
EMWD C1 4 mg/L 7.7 mg/L
Wilderness Lakes 30 mg/L 30 mg/L
Agri Leon/Holland 17 mg/L 62 mg/L
EMWD 74 Menifee 04 9 mg/L 27 mg/L
Menifee Lakes 01 16 mg/L 43 mg/L

1. EMWD 64 Hemlock/Davis 77 mg/L 77 mg/L
2. EMWD 51 Bonge West 57 mg/L 73 mg/L
3. McCanna Ranch 04 6.5 mg/L 7.3 mg/L
4. EMWD 86 Murrieta/San Jacinto 36 mg/L 43 mg/L
5. EMWD 84 Ellis/Bradley 17 mg/L 28 mg/L
6. EMWD 83 Ellis/Sherman 27 mg/L 33 mg/L
7. EMWD B5 16 mg/L 18 mg/L
8. EMWD B7 20 mg/L 27 mg/L
9. EMWD Trumble MW-1 28 mg/L 50 mg/L
10. EMWD Trumble MW-2 41 mg/L 41 mg/L
11. EMWD A1 0.9 mg/L 5.7 mg/L
12. Schvaneveldt, Blaine 19 mg/L 19 mg/L
13. EMWD B2 24 mg/L 28 mg/L
14. EMWD B8 Perris RWRF Open Casing 39 mg/L 51 mg/L
15. EMWD B4 22 mg/L 41 mg/L
16. EMWD 81 Antelope/Watson 45 mg/L 53 mg/L
17. EMWD 85 Murrieta/Salt Creek 8.4 mg/L 12 mg/L
18. Menifee Lakes 03 18 mg/L 43 mg/L
19. Newport West of Haun OC 0.9 mg/L 0.9 mg/L
20. EMWD 73 Menifee 03 22 mg/L 35 mg/L
21. Menifee Lakes 02 25 mg/L 25 mg/L
22. EMWD 53 Menifee Test East 0.4 mg/L 43 mg/L
23. EMWD 71 Menifee 01 26 mg/L 26 mg/L
24. Bouris Newport East of Menifee 0.4 mg/L 0.9 mg/L
25. Troost/Bootsma 0.4 mg/L 0.4 mg/L
26. Motte West 1.6 mg/L 4.1 mg/L
27. Offinga Dairy South 6.3 mg/L 17 mg/L
28. Offinga Dairy North 0.4 mg/L 0.4 mg/L
29. Bootsma, John 3.3 mg/L 5.7 mg/L
30. Bootsma/Ferriera 0 mg/L 0 mg/L
31. Goyenetche Dairy (Ferriera) 12 mg/L 32 mg/L
32. Nutrilite 04 25 mg/L 35 mg/L
33. NWC 15 39 mg/L 76 mg/L
34. Nutrilite 08 0.9 mg/L 0.9 mg/L
35. NWC 14 0.4 mg/L 0.9 mg/L
36. NWC 11 5.8 mg/L 7.6 mg/L
37. EMWD 95 13th St. 9.9 mg/L 9.9 mg/L
38. EMWD 87 Nuevo/Olivas 28 mg/L 51 mg/L
39. EMWD 93 Nuevo/Menifee 5.9 mg/L 7.5 mg/L
40. Cal Trans ROW Nursery 9 mg/L 26 mg/L
41. EMWD 88 Pico/San Jacinto 30 mg/L 47 mg/L
42. EMWD 82 Mapes/Sherman 21 mg/L 27 mg/L
43. EMWD Winchester Ponds 07 7.9 mg/L 23 mg/L
44. EMWD Winchester Ponds 08 7.3 mg/L 33 mg/L
45. Marvo Holsteins East (List) 0.4 mg/L 0.9 mg/L
46. Marvo Holsteins 0.4 mg/L 0.9 mg/L
47. Motte East 0.4 mg/L 39 mg/L

SOURCE: Data provided by EMWD

emwd EASTERN MUNICIPAL WATER DISTRICT

0 5,000 10,000 Feet

FIGURE 2-47

Nitrate Concentrations (2013-2018)

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area

TRE Altamira InSAR Vertical Displacement 6\13\2015 to 9\19\2019 (feet)

- < -0.12
- -0.12 - -0.1
- -0.10 - -0.08
- -0.08 - -0.06
- -0.06 - -0.04
- -0.04 - -0.02
- -0.02 - 0
- 0 - 0.02
- 0.02 - 0.04
- 0.04 - 0.06

SOURCE: DWR, EMWD, Esri, TRE Altamira

0 1 2 Miles

FIGURE 2-48

Land Subsidence

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

Groundwater Sustainability Plan

San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

Legend

March 2018 Well Measurements

Depth to Water (ft)

- 0.1 - 10.0
- 10.1 - 20.0
- 20.1 - 30.0
- 30.1 - 40.0
- 40.1 - 50.0
- 50.1 - 100.0
- 100.1 - 600.0
- 30 foot contour

NCCAG GDE Indicators

- Vegetation
- Wetlands

Depth to Water (March 2019 model)

- 0
- 0.1 - 10
- 10.1 - 20
- 20.1 - 30
- 30.1 - 40
- 40.1 - 60
- 60.1 - 80
- 80.1 - 100
- 100.1 - 150
- 150.1 - 200
- Plan Area
- Adjudicated Areas (DWR, 2017)
- DWR Bulletin 118 San Jacinto Basin (Updated 2018)

SOURCE: SJFM-2014, Data provided by EMWD

DUDEK 0 1 2 Miles

FIGURE 2-49

Depth To Water March 2018

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

Groundwater Sustainability Plan

San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

Legend

Nov 2018 Well Measurements

Depth to Water (ft)

- 3.3 - 10.0
- 10.1 - 20.0
- 20.1 - 30.0
- 30.1 - 40.0
- 40.1 - 50.0
- 50.1 - 100.0
- 100.1 - 200.0
- 30 foot contour

NCCAG GDE Indicators

- Vegetation
- Wetlands

Depth to Water (October 2019 model)

- 0
- 0.1 - 10
- 10.1 - 20
- 20.1 - 30
- 30.1 - 40
- 40.1 - 60
- 60.1 - 80
- 80.1 - 100
- 100.1 - 150
- 150.1 - 200
- Plan Area
- Adjudicated Areas (DWR, 2017)
- DWR Bulletin 118 San Jacinto Basin (Updated 2018)

SOURCE: SJFM-2014, Data provided by EMWD

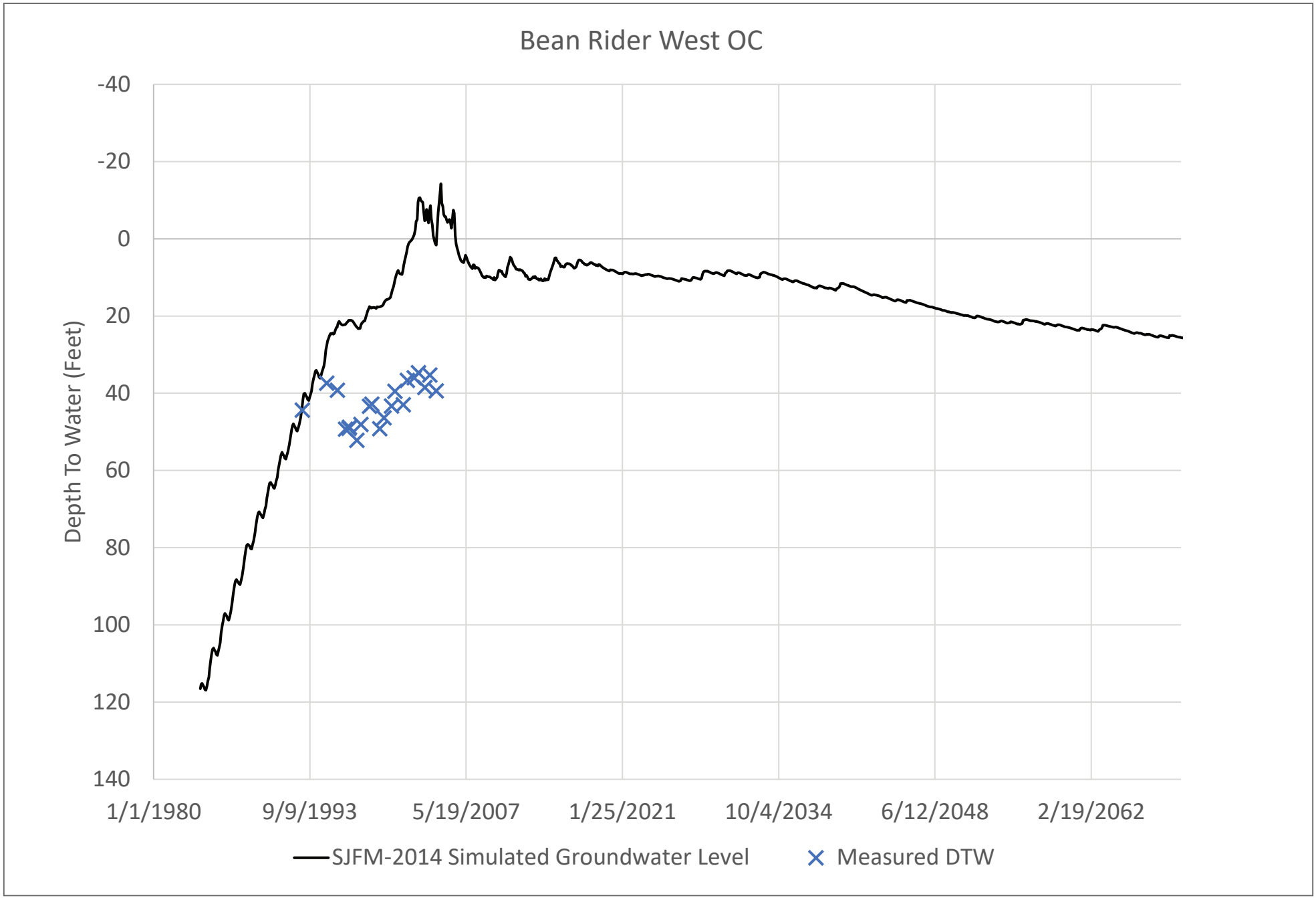
DUDEK 0 1 2 Miles

FIGURE 2-50

Depth To Water November 2018

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: EMWD

FIGURE 2-51

Simulated and Observed Depth to Water at Bean Rider West OC

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

- San Jacinto Groundwater Basin
- Plan Area

Adjudicated Areas

- Hemet-San Jacinto Basin
- San Bernardino Basin Area
- Santa Margarita River Watershed

- Private Wells
- US Air Force, Former MARB; DOD100277100
- US Army Camp Haan (Former), Site Y; T0606545483
- Vegetation GDEs
- Potential Vegetation GDEs
- Potential Wetland GDE

Potential Wetland GDE

X0

DOD100277100

T0606545483

Notes:

- Highlights region of the Plan Area containing vegetation GDEs
- Highlights regions of the Plan Area containing potential vegetation GDEs
- Highlights location of the potential wetland GDE

SOURCE: EMWD, Esri

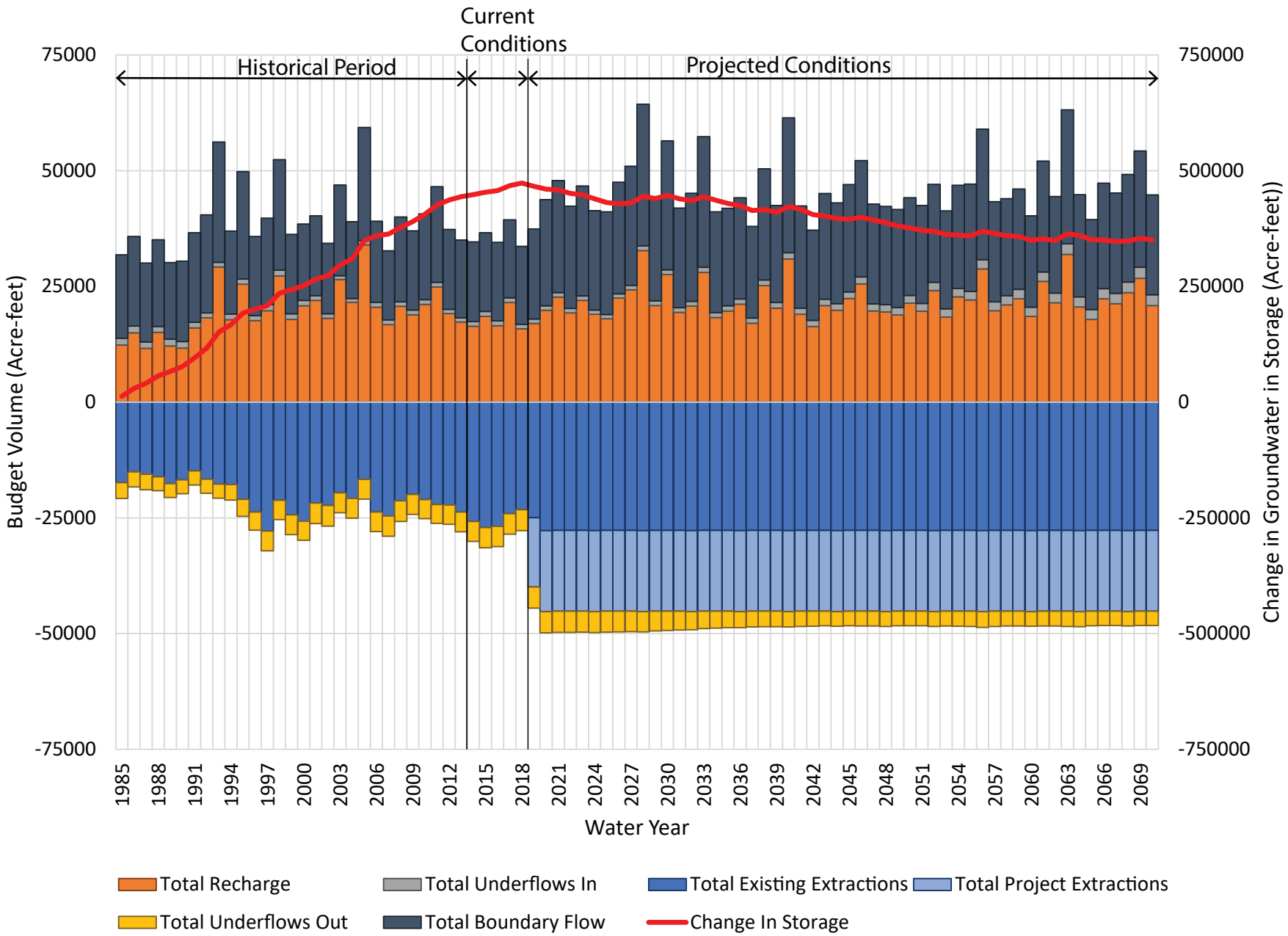
0 1 2 Miles

FIGURE 2-52

Groundwater Dependent Ecosystems in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: San Jacinto Flow Model (2014)

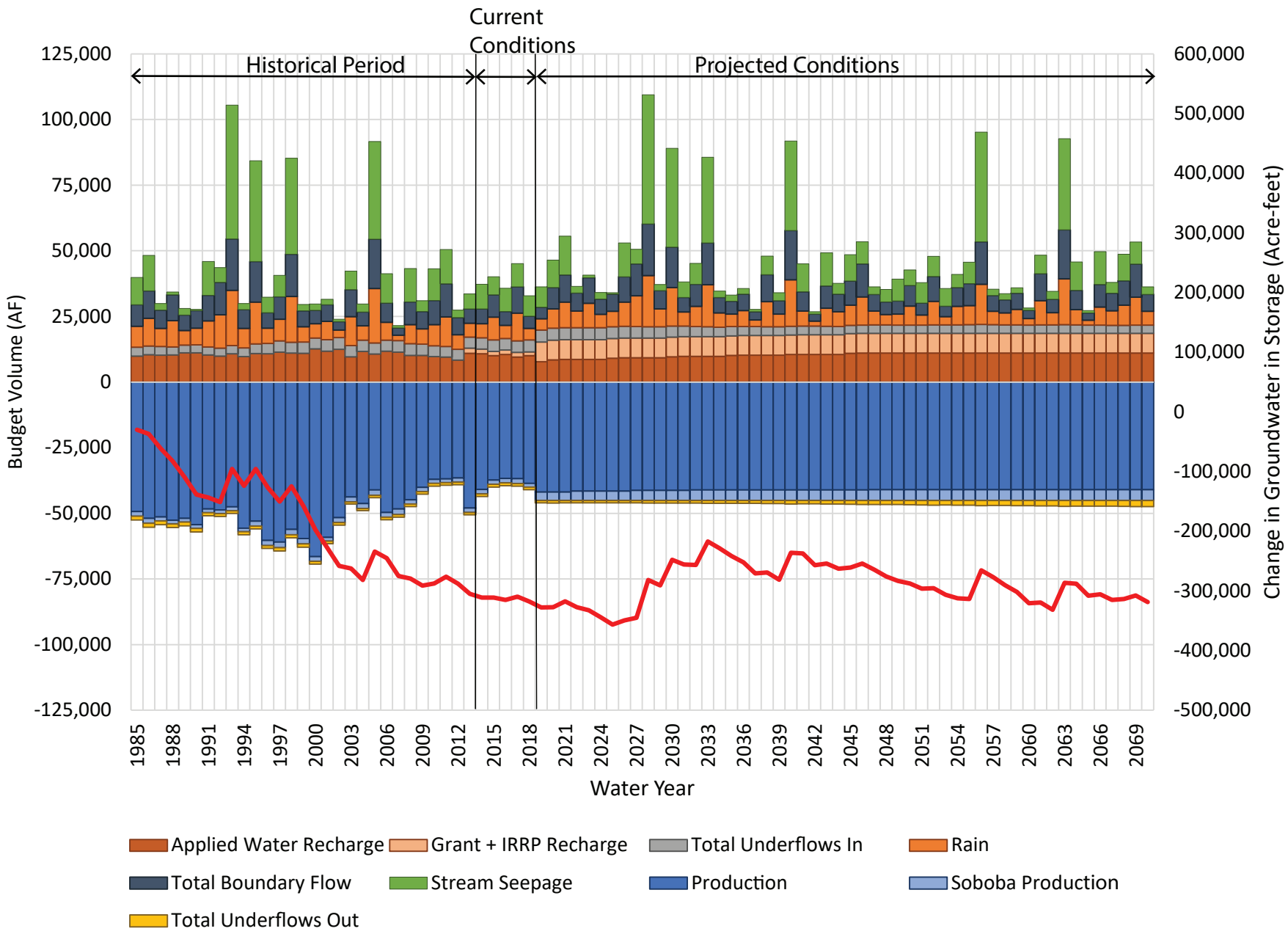
FIGURE 2-53

Water Budget for Historical, Current, and Projected Future Baseline Conditions in the Plan Area

Groundwater Sustainability Planf or the San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

INTENTIONALLY LEFT BLANK



SOURCE: San Jacinto Flow Model (2014)

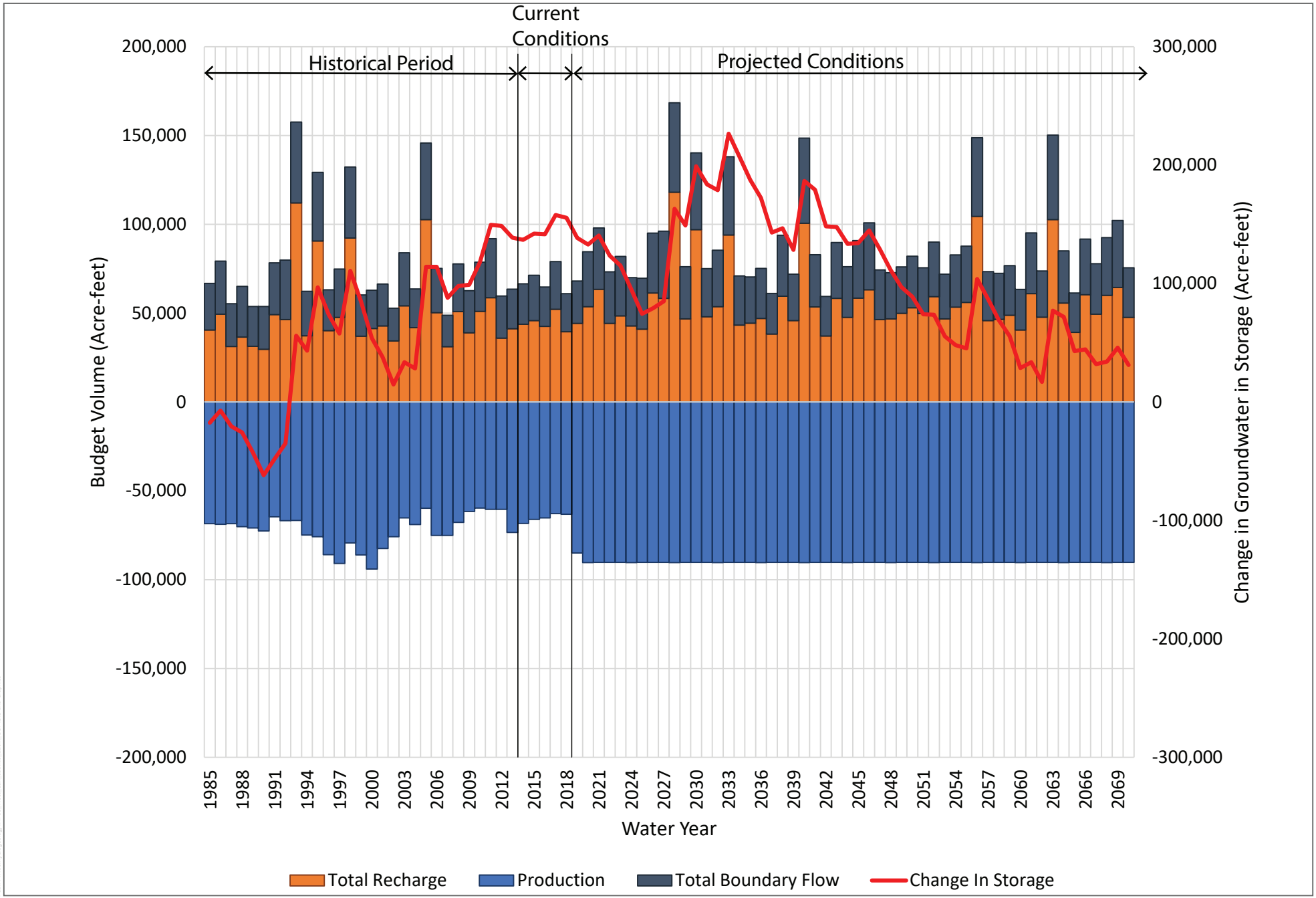
FIGURE 2-54

Water Budget for Historical, Current, and Projected Future Baseline Conditions in the Hemet-San Jacinto Management Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

INTENTIONALLY LEFT BLANK



SOURCE: San Jacinto Flow Model (2014)

FIGURE 2-55

Water Budget for Historical, Current, and Projected Future Baseline Conditions in the San Jacinto Groundwater Basin

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

emwd EASTERN MUNICIPAL WATER DISTRICT

INTENTIONALLY LEFT BLANK

CHAPTER 3
SUSTAINABLE MANAGEMENT CRITERIA

3.1 SUSTAINABILITY GOAL

The sustainability goal for the Plan Area[1] is to manage groundwater resources in a way that facilitates long-term sustainable use of groundwater in the San Jacinto Groundwater Basin. Long-term sustainable management includes:

- Maintaining sufficient groundwater in storage to allow for ongoing groundwater production that meets the operational demands of groundwater users in the Plan Area.
- Protecting beneficial uses such as municipal and domestic supplies of fresh groundwater resources in the Lakeview and Perris North Groundwater Management Zones (GMZs) to the extent feasible, by minimizing the northward and eastward migration of brackish groundwater from the Perris South GMZ.
- Avoiding subsidence related to groundwater production that substantially interferes with surface land uses.
- Ensuring that groundwater production does not result in significant and unreasonable loss of groundwater dependent ecosystems (GDEs).

The sustainability goal for the Plan Area was developed using historical data that included groundwater elevations, groundwater in storage, and groundwater quality. These data are discussed in detail in Chapter 2 of this GSP. Over the past 30 years groundwater in storage has been increasing in the Plan Area (see Section 2.5.3.2 Change in Annual Volume of Groundwater in Storage) and water levels have been rising (see Section 2.4.1 Groundwater Elevation Data). The lack of long-term overdraft, and observed storage increase over the last 30 years, indicates that EMWD has been managing Plan Area sustainably under its Groundwater Management Plan since 1995 (EMWD 1995).

EMWD has worked with the Santa Ana Regional Water Quality Control Board (RWQCB) to address areas in which TDS and nitrate concentrations exceed the Basin Plan Objectives, by extracting brackish groundwater and treating it at the Perris and Menifee desalters. EMWD is expanding its existing desalters and constructing additional desalter facilities that will both improve the water quality in the Plan Area in areas where high TDS groundwater could migrate into areas with potable groundwater (See Chapter 2).

[1] The sustainability goal and sustainability management criteria defined in this chapter apply only to the Plan Area, which is the non-adjudicated part of the SJGB, because the remaining areas of the SJGB, or Basin, are under the oversight of a Court appointed watermaster.

In 2017 the EMWD Board of Directors became the Groundwater Sustainability Agency (GSA) for the Plan Area. Acting as the West San Jacinto GSA, the EMWD Board of Directors has the ability, authority, and responsibility to continue to ensure long-term sustainable management of the groundwater resources within its jurisdiction. This authority includes monitoring and adjusting groundwater production from all wells, not just EMWD wells in the Plan Area. The undesirable results, minimum thresholds, and measurable objectives discussed in this Chapter (see Sections 3.2 Undesirable Results through 3.4 Measurable Objectives) are intended to provide the metrics by which EMWD will decide if pumping adjustments are necessary. EMWD will continue to work with stakeholders and regulatory agencies to further improve groundwater conditions within the Plan Area throughout the 50-year GSP planning and implementation horizon.

3.2 UNDESIRABLE RESULTS

Under the Sustainable Groundwater Management Act (SGMA), undesirable results occur when the effects caused by groundwater conditions occurring throughout the Plan Area cause significant and unreasonable impacts to any of six sustainability indicators. The definition of significant and unreasonable for each of the six indicators is determined by the GSA using the processes and criteria described in this GSP. The GSA is required to characterize undesirable results for each indicator, unless "undesirable results to one or more sustainability indicators are not present and are not likely to occur in the basin," (23 CCR 354.26 (d)). Of the six sustainability indicators, seawater intrusion does not apply to the Plan Area (or the SJGB) because, at its closest point, the Pacific Ocean is over 30 miles west of the Plan Area. General undesirable results in the Plan Area would be:

- Chronic Lowering of Groundwater Levels
- Significant and Unreasonable Reduction of Groundwater in Storage
- Significant and Unreasonable Degradation of Water Quality
- Significant and Unreasonable Land Subsidence resulting from groundwater withdrawal
- Significant and Unreasonable Reduction of Interconnected Surface Water and Groundwater

Undesirable results could occur within the Plan Area if groundwater production exceeds the sustainable yield. Projected groundwater production is anticipated to be approximately 45,100 AFY in the Plan Area. At this rate of production, incorporating additional assumptions about future underflows to the Hemet-San Jacinto Management Area, return flows, mountain front recharge, seepage from Lake Perris, and precipitation recharge, groundwater in storage is projected to decline by approximately 2,400 AFY in the future (see Section 2.5.6.3 Projected Water Budget). At the projected rate of decline, groundwater in storage and groundwater elevations in the Plan Area are not anticipated to reach the minimum thresholds discussed in Section 3.3 and undesirable results are not anticipated to occur in the Plan Area. However, based on the projected conditions in the Plan Area, the approximate sustainable yield of the Plan Area roughly equals the planned

future groundwater extractions of 45,100 AFY. Future extractions that exceed this volume may cause undesirable results.

A description of the undesirable results applicable to the remaining sustainability indicators is provided in Sections 3.2.1 through 3.2.6. Each section describes the cause of groundwater conditions throughout the Plan Area that would lead to undesirable results and the potential effects of undesirable results on the beneficial uses and users of groundwater in the Plan Area.

The criteria used to define groundwater conditions at which undesirable results occur is described in Section 3.2.7. These criteria are based on a quantitative combination of minimum threshold exceedances for each sustainability indicator.

3.2.1 Chronic Lowering of Groundwater Levels

Chronic lowering of groundwater levels indicating a depletion of groundwater supply is an undesirable result applicable to the Plan Area. The primary cause of groundwater conditions that would lead to chronic lowering of groundwater levels is groundwater production in excess of natural and artificial recharge over a period that contains both wet and dry water years.

Chronic lowering of groundwater levels is also associated with a reduction of groundwater in storage that may be significant and unreasonable, and may also contribute to subsidence. Under projected operations, groundwater in storage is expected to decrease in the Plan Area over the 50-year planning and implementation horizon for this GSP (see Section 2.5.6 Quantification of Current, Historical, and Projected Water Budget). Reductions in groundwater storage are desirable to mitigate the effects of rising groundwater levels and for the operation of water quality management projects that mitigate water quality degradation in the Plan Area. Land subsidence may occur in the Plan Area if water levels drop below historical low water levels for a sufficient time to allow for the collapse of pore-structures and settling of clay rich sediments, which are prone to subsidence (see Section 3.2.4 Land Subsidence). The Plan Area has a low risk for future land subsidence resulting from groundwater withdrawals (DWR 2014). There are few clay layers in the areas of groundwater production, and groundwater elevations are not anticipated to fall below historical low groundwater elevations over the planning and implementation timeframe.

Chronic lowering of groundwater levels may impact projects and beneficial uses of groundwater in the Plan Area. Chronic lowering of groundwater levels in the Moreno Valley Production Area may impact operations of the Perris North Basin Groundwater Contamination Prevention and Remediation Program, which aims to contain and remediate a series of co-mingled plumes (EMWD 2019a). In the South Perris and Moreno Valley Production Areas, chronic lowering of groundwater levels may impact operations of the Perris South Desalination Project, which is designed to limit northward and eastward migration of the brackish groundwater plume into regions of the potable aquifer. The Perris South Desalination Project also supplements water

supplies in the SJGB as a whole by treating and serving brackish groundwater within the Plan Area and is part of a regional effort to manage groundwater salinity throughout the Santa Ana River watershed (RWQCB 2019).

The entirety of the Plan Area lies within the service area of EMWD, WMWD, Nuevo Water Company, the City of Perris, or the Box Spring Mutual Water Company (see Section 2.1.1.2 Water Agencies Relevant to the Plan Area), and the groundwater quality in much of the Plan Area is currently treated before delivered for consumption (see Section 2.4.4 Groundwater Quality). Therefore, chronic lowering of groundwater levels in the Plan Area could cause undesirable results if groundwater levels drop to elevations below which:

- Water quality degradation management projects' effectiveness is impaired
- The volume of groundwater available is insufficient for agricultural and municipal/ industrial supplies
- Subsidence that substantially interferes with land use is induced

However, in addition to the municipal/ industrial and agricultural wells in the Plan Area, there are several domestic wells identified in DWR's well completion report database (Figure 3-1; DWR 2021). If these wells are active and are producing potable groundwater, domestic well users may also be impacted by groundwater elevation declines. During GSP implementation, the status of these wells will be confirmed and domestic well users that are impacted by groundwater elevation declines will have the option to connect to the appropriate potable water supplier in their area.

Production well construction information, production history, and historical water levels from municipal / industrial and agricultural wells indicate that chronic lowering of groundwater levels indicating a depletion of groundwater supply would occur when the average aquifer saturation[2] within the Plan Area falls below 65% of the potential aquifer saturation. At this saturation, the pump would have to be lowered in 11 of 18 (61%) of EMWD's current wells in the Plan Area. While there is room to lower the pump in these wells, there is added cost associated with lowering the pumps and further characterization of the water quality in the deeper parts of the aquifer may be required. Therefore, the criterion used to define undesirable results associated with chronic groundwater level declines is groundwater elevations that correspond to an average aquifer saturation below 65% throughout the Plan Area. Groundwater elevations that correspond to an aquifer saturation of 65% are lower than historical low water levels. Groundwater elevations that drop below historical low water levels may be required in certain areas to maintain operational flexibility for water quality management projects, protect potable aquifer, and ensure ongoing beneficial use of groundwater for agricultural and municipal/ industrial supplies.

[2] Aquifer saturation is defined as the saturated aquifer thickness divided by the total aquifer thickness.

3.2.2 Significant and Unreasonable Reduction of Groundwater Storage

Significant and unreasonable reduction of groundwater in storage is an undesirable result applicable to the Plan Area. Reduction of groundwater in storage is related to chronic lowering of groundwater levels (Section 3.2.1 Chronic Lowering of Groundwater Levels). The primary cause of a reduction of groundwater in storage is groundwater production in excess of natural and artificial recharge during a period containing both wet and dry water years. Significant and unreasonable reduction of groundwater in storage would impact beneficial uses and users of groundwater in the Plan Area by limiting the volume of groundwater available for domestic, agricultural and municipal/ industrial supplies, as well as limiting the operational capacity and flexibility of water quality management projects.

Groundwater elevations in the Plan Area will be used to determine whether significant and unreasonable reduction of groundwater storage occurs. Groundwater elevations, and the corresponding volume of groundwater in storage, have historically increased in the Plan Area (see Section 2.4 Historical Groundwater Conditions). The SJFM-2014 groundwater model indicates that groundwater management between 1985 and 2018 has resulted in a groundwater storage increase of approximately 473,000 AF.

Well construction information, production history, and historical water levels indicate that significant and unreasonable reduction of groundwater in storage would occur when the average aquifer saturation within the Plan Area falls below 65% of the potential aquifer saturation. Therefore, the criterion used to define significant and unreasonable results associated with reduction of groundwater storage is groundwater elevations that result in an average aquifer saturation below 65% throughout the Plan Area. Groundwater elevations that correspond to an aquifer saturation of 65% are lower than historical low water levels. However, reduction of groundwater storage beyond that previously experienced in the Plan Area may be required to maintain operational flexibility for water quality management projects, protect potable aquifer, and ensure ongoing beneficial use of groundwater for municipal/industrial and agricultural supplies.

3.2.3 Significant and Unreasonable Degradation of Water Quality

Impacts to groundwater supplies from migration of brackish groundwater into areas of fresh groundwater is an undesirable result applicable to the Plan Area. Migration of brackish groundwater is related to groundwater elevation differences within and between GMZs. Significant and unreasonable migration of brackish groundwater into areas of fresh groundwater would impact beneficial uses and users of groundwater in the Plan Area by reducing the volume of fresh groundwater available for agricultural and municipal/industrial supplies.

Historical agricultural practices and land use in the Plan Area have contributed to concentrations of TDS and nitrate in the Perris North GMZ, Perris South GMZ, Menifee GMZ, and portions of the Lakeview GMZ that exceed the Basin Plan Objectives for those constituents (EMWD 2019b; RWQCB 2019). The current extent of impaired groundwater in these GMZs is generally associated with the 1,000 mg/L TDS iso-concentration contour, which extends from the Menifee GMZ into the Perris South, Perris North, and Lakeview GMZs (Figure 2-44; EMWD 2019b). Groundwater in these GMZs is used for municipal, agricultural, and industrial supplies.

Since 1995, EMWD has managed and operated the Perris South Desalination Project, a system of 15 groundwater extraction wells and two reverse osmosis treatment facilities, in order to remove salts, improve groundwater quality, and manage brackish groundwater migration in the Plan Area. To facilitate additional brackish water management in the Basin, EMWD is currently constructing the Perris II Reverse Osmosis Treatment Facility (ROTF).

Both the Perris South Desalination Project and the Perris II ROTF Project control groundwater elevation differences within and between GMZs by varying production in the network of groundwater wells that supply the desalters. In this way EMWD is able to influence the hydraulic gradient within the area of impaired groundwater and limit, or prevent, further northeastward migration of the brackish water into the Lakeview GMZ. The Perris II ROTF is expected to have a total treatment capacity of 5.4 MGD, providing EMWD the ability to extract and treat larger volumes of brackish groundwater from the Perris South and Menifee GMZs. Design, construction, and implementation of the Perris II ROTF is being developed in coordination with the California State Water Resources Control Board (EMWD 2019b). Because maintaining hydraulic control of the brackish groundwater plume is a critical component of both the Perris South Desalination Project and the Perris II ROTF Project, undesirable results and minimum thresholds related to groundwater elevation take into account the operational flexibility required to avoid undesirable results related to groundwater quality.

In the Perris North GMZ, potable regions of the aquifer may be impacted by the southerly and easterly migration of co-mingled VOC, nitrate, and perchlorate plumes (Figure 2-44). Because there is limited data currently characterizing the source(s) of contamination and migration rates for the co-mingled plumes, undesirable results specific to the migration of contaminated groundwater within the Perris North GMZ are not defined in this GSP. EMWD has begun implementation of the Perris North Basin Groundwater Contamination Prevention and Remediation Project, which is intended to prevent the spread of contamination, accelerate cleanup of the contamination, and preserve potable aquifer supplies by removing and treating contaminants at three well clusters located within the co-mingled plumes (EMWD 2019a). Ongoing field investigations and updated numerical groundwater modeling will better define the extent of the contaminated groundwater, the appropriate remedy, and the quantifiable goals for the project. To the extent possible, the improved understanding of the water quality concerns in the Perris North

GMZ and the goals of the Perris North Basin Groundwater Contamination Prevention and Remediation Project will be incorporated into the future GSP updates. Evaluation of the need to define specific undesirable results related to migration of the co-mingled plumes in the Perris North GMZ will be assessed as part of the 5-year plan review process.

Based on the current understanding of the extent of impaired groundwater and consistent with the Water Quality Control Plan for the Santa Ana River Basin (RWQCB 2019), the criteria used to define undesirable results for degraded water quality is the current location of the 1,000 mg/L TDS iso-concentration contour (EMWD 2019b). Northeasterly migration of the 1,000 mg/L TDS iso-concentration contour within the Lakeview GMZ is an undesirable result associated with degraded water quality.

3.2.4 Significant and Unreasonable Land Subsidence Resulting from Groundwater Withdrawal

Land subsidence resulting from groundwater withdrawal is an undesirable result applicable to the Plan Area. Groundwater levels that are below historical conditions may cause subsidence because groundwater acts to reduce the effective stress needed to maintain pore-structures in the aquifer. As groundwater levels decline, pressure on the aquifer matrix increases, which may cause the pore-structure to collapse, causing the land surface to subside. Land subsidence resulting from groundwater withdrawal that substantially interferes with surface land uses has the potential to impact beneficial uses and users of groundwater in the Plan Area by negatively impacting surface infrastructure including roads, pipelines, and buildings.

Historical records of land subsidence in the Plan Area do not indicate that past groundwater production has caused land subsidence that substantially interfered with surface land uses. Within the Plan Area, groundwater extraction-induced subsidence has historically been localized to the area between the Bernasconi Hills and Mystic Lake. This area is underlain by laterally extensive, thick clay layers (see Section 2.3.1 Geology; EMWD 2011a) and lies within the San Jacinto Valley, a pull-apart valley that formed between strands of the San Jacinto Fault (see Section 2.4.5 Subsidence). Historical subsidence in the area between the Bernasconi Hills and Mystic Lake, which has been attributed to a combination of groundwater extraction and tectonic movement, did not damage infrastructure, or substantially interfere with surface land uses. Current rates of subsidence in this region of the Plan Area are attributed to tectonic activity rather than groundwater withdrawals (see Section 2.4.5 Subsidence). DWR considers the SJGB as a whole to be at low risk for future land subsidence because few areas contain extensive clay layers that are prone to subsidence related to groundwater withdrawal (DWR 2014).

Tectonically induced land subsidence in the Plan Area cannot be prevented, and land subsidence that does not substantially interfere with surface land uses is not an undesirable result. Therefore, the

undesirable result for land subsidence is defined as land subsidence resulting from groundwater withdrawals in the Plan Area that substantially interferes with surface land uses. Water levels will be used as a proxy for direct measurement of land subsidence.

3.2.5 Significant and Unreasonable Seawater Intrusion

The Plan Area lies more than 30 miles inland from the Pacific Ocean and is hydraulically disconnected from surrounding basins. Because operations in the Plan Area do not impact groundwater elevations near the coast, seawater intrusion is not defined as an undesirable result in the Plan Area.

3.2.6 Significant and Unreasonable Reduction of Interconnected Surface Water and Groundwater

There are no surface water bodies in the Plan Area that connect directly to groundwater. Therefore, there is no significant and undesirable reduction of interconnected surface and groundwater in the Plan Area. Loss of interconnected surface water and groundwater due to groundwater withdrawals would be an undesirable applicable to the Plan Area if declines in groundwater levels result in a loss of interconnected surface water and groundwater that result in significant and unreasonable loss of GDEs. Groundwater and surface water are not connected along the stream channels and storm drains that run through the Plan Area (see Section 2.4.6 Groundwater-Surface Water Connections). However, there are three GDEs in the developed areas west of MARB, where groundwater is actively monitored and remediated in an effort to protect potable aquifer supplies, and there are several potential GDEs along the margins of the Plan Area where little is known about groundwater elevations (see Section 2.4.7 Groundwater Dependent Ecosystems; Figure 2-52).

Groundwater level declines have the potential to negatively impact the GDEs west of MARB. However, these GDEs, which cover a combined area of approximately 5.4 acres (<0.01% of the Plan Area), are areas of low ecological value that are at low risk of changing water level conditions relative to the baseline conditions (see Section 2.4.7.1 GDEs). Because the GDEs west of MARB have not been designated as critical habitat, potential conversion of these areas from the current vegetation type to a prior vegetation type in the event that groundwater elevations decline is not considered to be a significant and unreasonable loss of GDE habitat in the Plan Area.

In addition to the three positively identified GDEs in the Plan Area, there are several potential GDEs for which groundwater levels are not known. The potential GDEs are located on the margins of the Plan Area, and are not near existing or currently planned groundwater extraction wells. Therefore, it is not anticipated that groundwater elevations in the vicinity of these potential GDEs will be impacted by groundwater production. Additionally, groundwater elevations elsewhere in the Plan Area are typically greater than 30 feet bgs. Therefore, it is likely that the vegetation communities that compose these potential GDEs rely on infiltrating surface water, rather than groundwater.

Because the potential loss of a total of 5.4 acres of degraded habitat in the Plan Area is not considered to result in a significant and unreasonable loss of GDEs and the remaining potential GDEs in the Plan Area are not adjacent to current or planned groundwater production zones, specific undesirable results related to interconnected surface water and groundwater are not defined in this GSP. However, in the event that future groundwater production is planned within a mile of a potential GDE, additional investigations should be performed to identify whether the potential GDE relies on groundwater, and whether the planned production may negatively impact the potential GDE.

3.2.7 Defining Undesirable Results

Groundwater conditions in the Plan Area are currently monitored with a network of 165 wells (see Section 3.5.2 Description of Existing Monitoring Network). Eleven of these wells were selected as representative monitoring points (RMPs) for the Plan Area (see Section 3.5.6 Representative Monitoring). Although groundwater elevation and groundwater quality measurements will continue to be collected from the broader monitoring network, minimum thresholds used to assess whether the Plan Area is experiencing undesirable results were only selected at the 11 RMPs. Undesirable results in the Plan Area will be identified by comparing groundwater elevation and groundwater quality measurements from these 11 RMPs to the respective minimum threshold for the applicable sustainability indicator (Table 3-1). Undesirable results related to chronic declines in groundwater elevation, significant and unreasonable loss of groundwater in storage, and significant and unreasonable land subsidence resulting from groundwater withdrawal will be determined using seven of the 11 RMPs (Table 3-1). Undesirable results related to significant and unreasonable degradation of water quality will be determined using five of the 11 RMPs (Table 3-1). The Nutrilite 07 RMP is the only RMP for which a minimum threshold was defined for both groundwater elevation and groundwater quality.

Table 3-1
Representative Monitoring Points in the Plan Area

RMP Casing Name	Location [a]	Screen Interval (s) (ft bgs)	Sustainability Indicator(s) [b] Monitored
EMWD 74	Menifee Production Area	220-640	Levels, Subsidence, Storage
EMWD A1	South Perris Production Area	290-575	Levels, Subsidence, Storage
EMWD Skiland 05	South Perris Production Area	313-567	Levels, Subsidence, Storage
EMWD 52	North Perris Production Area	290-665	Levels, Subsidence, Storage
UCR Scott	Moreno Valley Production Area	*Unknown*	Levels, Subsidence, Storage
EMWD 94	Nuevo/Lakeview Production Area	185-380;420-580	Levels, Subsidence, Storage
Nutrilite 07	Nuevo/Lakeview Production Area; Lakeview GMZ	390-697	Levels, Subsidence, Storage, Quality

Table 3-1
Representative Monitoring Points in the Plan Area

RMP Casing Name	Location [a]	Screen Interval (s) (ft bgs)	Sustainability Indicator(s) [b] Monitored
Nutrilite 02[c]	Lakeview GMZ	*Unknown*	Quality
Nutrilite 04 [c]	Lakeview GMZ	170-186;198-220;262-275;282-292;310-342;372-480	Quality
Nutrilite 08 [c]	Lakeview GMZ	*Unknown*	Quality
Bootsma, John	Lakeview GMZ	350-650	Quality

[a] Location is defined by production area for wells that are used to monitor water levels, and by groundwater management zone for wells that are used to monitor groundwater quality.
[b] Levels = Chronic Decline in Groundwater Levels, Subsidence = Land Subsidence resulting from groundwater withdrawals, Storage = Reduction of Groundwater Storage, Quality = Degradation of Water Quality
[c] Nutrilite 02, 04, and 08 are monitored as Sentinel Wells as part of the Perris II Reverse Osmosis Treatment Facility monitoring and reporting program

3.2.7.1 Groundwater Elevation Undesirable Results

Groundwater elevations measured at wells EMWD 74, EMWD A1, EMWD Skiland 05, EMWD 52, UCR Scott, EMWD 94, and Nutrilite 07 will be used to assess whether an undesirable result associated with chronic lowering of groundwater levels ("Levels", Table 3-1), significant and unreasonable reduction of groundwater storage ("Storage", Table 3-1), and land subsidence related to groundwater withdrawals that substantially interferes with surface land uses ("Subsidence", Table 3-1) has occurred in the Plan Area (Figure 3-2). These seven wells were chosen based on their proximity to areas of active groundwater production, well construction, and records of measurement (see Section 3.5.6 Representative Monitoring). Historical groundwater elevations at these wells are representative of groundwater conditions in each of the production areas and reflect the increase of groundwater levels and storage experienced throughout the Plan Area between 1985 and 2018 (Figures 2-32 through 2-36).

Because groundwater levels are locally impacted by agricultural production, municipal/ industrial extractions, and operations of water quality management projects, a groundwater level minimum threshold exceedance at a single well is not considered undesirable. In addition, because groundwater levels in the Plan Area respond to changing production patterns and periods of elevated groundwater recharge, minimum threshold exceedances during a single monitoring event would not be indicative of undesirable results in the Plan Area.

If groundwater elevations decline below the minimum thresholds in multiple production areas within the Plan Area, beneficial uses and users of groundwater could be impacted by no longer having access to groundwater using existing infrastructure. It should be noted, however, that

existing groundwater quality in the Plan Area currently requires treatment prior to consumption, and characterization of the groundwater quality in the deeper portions of the aquifer may be required. In order to prevent groundwater elevations from declining below the minimum thresholds throughout the Plan Area, and in order to quantitatively determine the point at which undesirable results for chronic lowering of groundwater levels, significant and unreasonable reduction of groundwater in storage, and land subsidence resulting from groundwater withdrawals that substantially interferes with surface land uses occur, the Plan Area is anticipated to experience undesirable results if groundwater elevations are below the minimum threshold at three out of the seven water level representative monitoring points for two consecutive spring monitoring events.

3.2.7.2 Groundwater Quality Undesirable Results

Groundwater quality will be measured at five representative monitoring points to characterize undesirable results associated with degradation of water quality ("Quality", Table 3-1). These five wells are located in the Lakeview Groundwater Management Zone (GMZ), on the eastern side of the 1,000 mg/L TDS iso-concentration contour (Figure 3-3).

Nutrilite 07, Nutrilite 02, and Nutrilite 08 are sentinel wells for the Perris II ROTF monitoring and reporting program (EMWD 2019b). To supplement monitoring at these sentinel wells, wells Nutrilite 04 and John Bootsma were also selected as RMPs for water quality for this GSP. These wells are located to the northeast of the 1,000 mg/L TDS iso-concentration contour in the Lakeview GMZ.

Since the early 1990s, the TDS concentration in groundwater samples collected from these wells has ranged from approximately 410 mg/L at the John Bootsma well to 970 mg/L at Nutrilite 08 (Figure 3-4). TDS concentrations are close to or below the Basin Plan Objective of 520 mg/L at wells Nutrilite 04, Nutrilite 07 and John Bootsma (Figure 3-4; EMWD 2019b). TDS concentrations exceed the Basin Plan Objective of 520 mg/L at wells Nutrilite 02 and Nutrilite 08 (Figure 3-4). Groundwater quality at these wells has followed similar trends as the three Sentinel wells and provide additional characterization of representative water quality in the principal aquifer underlying the Lakeview GMZ.

The Plan Area would be experiencing undesirable results related to significant and unreasonable degradation of water quality if the concentration of TDS exceeds 1,000 mg/L at three of the five water quality representative monitoring points for two consecutive annual water quality sampling events.

3.3 MINIMUM THRESHOLDS

This section describes the minimum thresholds established for chronic lowering of groundwater levels, significant and unreasonable reduction of groundwater in storage, degraded water quality, and land subsidence related to groundwater withdrawals that substantially interferes with surface land uses.

Minimum thresholds for seawater intrusion and interconnected surface water are not established in this GSP (see Sections 3.2.5 Seawater Intrusion and 3.2.6 Interconnected Surface Water).

Table 3-2
Minimum Thresholds

RMP	Chronic Decline in Groundwater Levels (ft MSL)	Reduction of Groundwater Storage (ft MSL)	Land Subsidence (ft MSL)	Degradation of Water Quality (TDS – mg/L)
EMWD 74	1200	1200	1200	NA
EMWD A1	1200	1200	1200	NA
EMWD Skiland 05	1200	1200	1200	NA
EMWD 94	1200	1200	1200	NA
Nutrilite 07	1100	1100	1100	1000
EMWD 52	1200	1200	1200	NA
UCR Scott	1300	1300	1300	NA
Nutrilite 02	NA	NA	NA	1000
Nutrilite 04	NA	NA	NA	1000
Nutrilite 08	NA	NA	NA	1000
Bootsma, John	NA	NA	NA	1000

Interconnected surface water-groundwater and seawater intrusion minimum thresholds are not established because they are not undesirable results applicable to the Plan Area.

The minimum thresholds discussed below are groundwater elevations and TDS concentrations that avoid undesirable results (Table 3-2). As discussed in Section 3.2.7 Defining Undesirable Results, undesirable results are defined as:

- Groundwater elevations that result in the average aquifer saturation declining below 65% of the total potential aquifer saturation in the Plan Area.
- TDS concentrations that exceed 1,000 mg/L east of the current 1,000 mg/L TDS iso-concentration contour in the Lakeview GMZ.

Groundwater level minimum thresholds were established based on historical groundwater elevation data, well construction information, future project operations, and an analysis of projected groundwater levels based on simulation results from the SJFM-2014 groundwater model. Projected groundwater levels were simulated over the 52-year period from water year 2019 to 2070 and incorporate the impact of future climate change scenarios (see Section 2.5.6.3 Projected Water Budget).

Water quality minimum thresholds were established based on drinking water standards, the basin plan objective historical groundwater quality data, and the current extent of brackish water in the Plan Area (EMWD 2019b).

The data reviewed and analyzed during determination of minimum thresholds for chronic declines in groundwater levels, significant and unreasonable reduction of groundwater in storage, land subsidence related to groundwater withdrawal that substantially interferes with surface land uses, and degradation of water quality are discussed in Sections 3.3.1 through 3.3.4.

3.3.1 Chronic Lowering of Groundwater Levels

Minimum threshold groundwater elevations established at the seven RMPs coincide with the water levels at which 65% of the aquifer remains saturated within the Plan Area (Table 3-2). The water level minimum thresholds provide operational flexibility for projects in the Plan Area that aim to mitigate water quality degradation while ensuring ongoing beneficial use of groundwater by maintaining the volume of groundwater available for domestic, municipal, industrial, and agricultural supplies. By definition, the minimum threshold groundwater elevations will prevent chronic lowering of groundwater levels because they provide a lower limit on groundwater elevation declines within the Plan Area.

Projected water levels calculated using the SJFM-2014 indicate that future operations of the Plan Area will result in groundwater level declines in the Moreno Valley Production Area, North Perris Production Area, South Perris Production Area, and Menifee Production Area (Figures 3-5 through 3-11). Under the Future Baseline, and the Future Baseline with Climate Change (2030 and 2070 change factors) scenarios, the SJFM-2014 predicts that groundwater elevations in the RMPs will decline at rates that range from 0.3 feet per year (Figure 3-8) to approximately 2.2 feet per year (Figure 3-5). Groundwater elevations are projected to remain above historical low conditions in all the Production Areas, except the Menifee Production Area. Although projected groundwater elevations in the Menifee Production Area may be as much as 75 ft lower than the historical low water level, they remain above the established minimum thresholds throughout the future simulations at all seven of the water level RMPs, including those in Menifee (Figure 3-5). Therefore, chronic lowering of groundwater levels is not anticipated to occur within the Plan Area.

Over the 50-year planning and implementation horizon, the groundwater elevation minimum thresholds allow for groundwater extractions that exceed historical levels while protecting against long-term aquifer supply depletion. Projected extractions in the Plan Area exceed historical extraction rates by approximately 24,800 to 25,900 AFY, depending on climate conditions. Approximately 4,100 AFY of this increase is from the Lake Perris Seepage Recovery Project, 9,900 AFY of the increase is from the combination of the Perris North Basin Groundwater Contamination Prevention and Remediation Program, expansion of the Perris South Desalination Project, and ongoing operations of the EGETS wells at MARB, and the remaining 10,800 AFY is from projected increases in groundwater production at existing wells (Table 2-34; Section 2.5.6 Quantification of Current, Historical, and Projected Water Budget).

Groundwater elevations measured at each of the RMPs will be reported to DWR in the annual reports that will follow the submittal of this GSP. As funding becomes available, it is recommended that each of these wells be instrumented with a pressure transducer capable of recording daily groundwater levels. The groundwater elevation in each well will be compared to the minimum threshold to determine whether the Plan Area is experiencing undesirable results associated with chronic declines of groundwater levels.

3.3.2 Significant and Unreasonable Reduction of Groundwater Storage

Minimum threshold groundwater elevations established at the seven RMPs coincide with the water levels at which 65% of the aquifer remains saturated within the Plan Area (Table 3-3). Reduction of aquifer saturation below 65% of the total potential aquifer saturation in the Plan Area would be an undesirable result. The same data and criteria used to evaluate undesirable results associated with chronic lowering of groundwater levels were used to define significant and unreasonable reduction of groundwater storage.

Table 3-3
Aquifer Saturation at Proposed Water Level Minimum Thresholds

Water Level RMP	Production Area	Proposed MT (ft MSL)	Aquifer Saturation at Proposed MT (%)	MT Above or Below Historical Low WL
EMWD 74	Menifee	1200	>60%	Below
EMWD A1	South Perris	1200	>70%	Below
EMWD Skiland 05	South Perris	1200	>70%	Below
EMWD 94	Nuevo/Lakeview	1200	>70%	Below
Nutrilite 07	Nuevo/Lakeview	1100	>70%	Below
EMWD 52	North Perris	1200	>60%	At Historical Low
UCR Scott	Moreno Valley	1300	Varies from North to South (<10% to >60%)	Below

Groundwater elevations that result in an average aquifer saturation of less than 65% throughout the Plan Area are lower than historical low water levels. The operational requirements of water quality management projects, historical groundwater conditions in the Plan Area, and local well construction information were used to evaluate the aquifer saturation at which undesirable results occur. This analysis suggests that maintaining an average aquifer saturation of 65% will protect against long-term aquifer supply depletion and provide necessary operational flexibility for domestic, municipal, industrial, and agricultural groundwater users.

Simulation results of future projected conditions using the SJFM-2014 indicate that groundwater elevations are expected to remain above the water level minimum thresholds throughout the 50-

year planning and implementation horizon (Figures 3-5 through 3-11). Cumulative storage loss over the 50-year projected simulations ranges from approximately 122,000 AF to approximately 278,000 AF, depending on climate conditions (see Section 2.5.6 Quantification of Current, Historical, and Projected Water Budget). For comparison, the cumulative storage gained between 1985 and 2018 was estimated to be approximately 473,000 AF. The maximum projected reduction of groundwater storage of approximately 278,000 AF would leave a surplus of approximately 195,000 AF over 1985 conditions.

Groundwater levels measured at the seven representative monitoring points used to set minimum thresholds for reduction of groundwater in storage will be reported to DWR in the annual reports that will follow the submittal of this GSP. As funding becomes available, it is recommended that each of these wells be instrumented with a pressure transducer capable of recording daily groundwater levels. The groundwater elevation in each well will be compared to the minimum threshold assigned in Table 3-2 to determine whether the Plan Area is experiencing undesirable results.

3.3.3 Significant and Unreasonable Degradation of Water Quality

Water quality standards vary based on end use, i.e., groundwater that has suitable water quality for industrial process water may not be suitable for agricultural and/or landscape irrigation. Similarly, groundwater that has suitable water quality for agricultural and/or landscape irrigation may not be suitable as a source of drinking water. Thus, the degree to which water quality degradation is considered significant and unreasonable depends on multiple factors, including its ultimate use, and the technological and economic feasibility of blending and/or treating it to the appropriate standards. For this GSP, degradation of groundwater quality is considered significant and unreasonable if groundwater that is currently suitable for use becomes unsuitable due to expansion of the 1,000 mg/L iso-concentration contour in the Lakeview GMZ.

The minimum threshold for degraded water quality is a groundwater concentration of 1,000 mg/L TDS at the five-groundwater quality RMPs in the Lakeview GMZ (Table 3-2). A concentration of TDS in the groundwater equal to 1,000 mg/L corresponds to the upper secondary maximum contaminant level for TDS established by the California State Water Resources Control Board. The water quality minimum threshold concentrations in the Lakeview GMZ protect against the degradation of potable aquifer supplies by ensuring that the currently impacted groundwater does not migrate to the northeast and reduce the volume of potable water in the aquifer. TDS concentrations are currently below 700 mg/L at four of the five water quality representative monitoring points, and below 1,000 mg/L at all five RMPs (Figure 3-4).

Groundwater elevation and TDS concentration are not correlated in the Plan Area. Therefore, water level thresholds cannot be used as a proxy for groundwater quality thresholds. However, the water level minimum thresholds were established to provide sufficient operational flexibility for

EMWD's Perris South Desalination Project and Perris II ROTF. These projects are part of a regional effort overseen by the RWQCB to manage groundwater salinity in the Santa Ana River Watershed. The Perris South Desalination Project is also EMWD's primary mechanism to protect beneficial use of groundwater in the Lakeview GMZ.

TDS concentrations in groundwater sampled from the five-groundwater quality representative monitoring points will be reported to DWR in the annual reports that will follow submittal of this GSP. TDS concentrations measured in each well will be compared to the minimum threshold assigned in Table 3-2 to determine whether the Plan Area is experiencing undesirable results associated with degraded water quality.

3.3.4 Significant and Unreasonable Land Subsidence Resulting from Groundwater Withdrawals

Land subsidence related to groundwater withdrawal has not been measured in any part of the Plan Area, except Mystic Lake (see Section 2.4.5 Subsidence). Currently there is little groundwater production in the Mystic Lake area, and groundwater levels are projected to rise in this area in the future. Because subsidence rates related to groundwater withdrawal cannot be directly measured in most of the Plan Area, the minimum thresholds for groundwater elevations are used as a proxy for direct measurements of land subsidence related to groundwater withdrawal in the Plan Area. The minimum threshold groundwater elevations that correspond to an average aquifer saturation in the Plan Area of approximately 65%, are adopted as the minimum thresholds to prevent significant and unreasonable land subsidence resulting from groundwater withdrawal.

The minimum threshold water levels at the seven RMPs used to assess chronic lowering of groundwater levels and significant and unreasonable reduction of groundwater storage are lower than historical low conditions, and therefore introduce the potential for future land subsidence related to groundwater withdrawal. However, fine grained deposits in the subsurface tend to be thin and discontinuous (see Section 2.3.2 Principal Aquifers and Aquitards). As a result, DWR has designated the Plan Area has having a low risk for future land subsidence resulting from groundwater withdrawals (DWR 2014). Because the subsurface geology presents a low risk for future subsidence, and land subsidence related to groundwater withdrawal was not induced when historical water levels were lower than current water levels, the minimum thresholds developed for chronic declines in groundwater and reduction of groundwater in storage were adopted for groundwater related land subsidence as well. The use of groundwater elevation minimum thresholds as a proxy for groundwater related land subsidence will be reviewed with each 5-year GSP evaluation to ensure that they adequately protect the Plan Area from experiencing undesirable results related to groundwater related land subsidence.

As discussed previously, the established water level minimum thresholds are anticipated to maintain beneficial uses of groundwater in the Plan Area by limiting the declines of groundwater storage, protecting domestic, municipal/ industrial and agricultural groundwater supplies, and providing sufficient operational flexibility to water quality management projects in the Basin. Additionally, the current hydrogeological conceptual model for the Plan Area (see Section 2.3 Hydrogeologic Conceptual Model) suggests that these minimum thresholds will prevent significant and unreasonable land subsidence related to groundwater withdrawal.

Groundwater levels measured at the seven RMPs will be reported to DWR in the annual reports that will follow submittal of this GSP. The groundwater elevation in each well will be compared to the minimum threshold assigned in Table 3-2 to determine whether the Plan Area is experiencing undesirable results.

3.3.5 Significant and Unreasonable Seawater Intrusion

Minimum thresholds for seawater intrusion were not established for the Plan Area, which is located over 30 miles from the Pacific Ocean (see Section 3.2.5 Seawater Intrusion).

3.3.6 Significant and Unreasonable Reduction of Interconnected Surface Water and Groundwater

Minimum thresholds for interconnected surface water were not established for the Plan Area because there is no known significant groundwater production within a mile of any of the potential GDEs identified in the Natural Communities Commonly Associated with Groundwater database (see Sections 2.4.7 Groundwater Dependent Ecosystems and 3.2.6 Interconnected Surface Water). If future groundwater production in the Plan Area is planned within 1 mile of the identified potential GDEs, additional characterization of interconnected surface water, and subsequent reassessment of interconnected surface water minimum thresholds, may be required.

3.4 MEASURABLE OBJECTIVES

Measurable objectives are “quantifiable goals for the maintenance and improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal for the basin” (23 CCR §351. Definitions). Based on the sustainability goal (see Section 3.1 Sustainability Goal) and undesirable results (see Section 3.2 Undesirable Results) in the Plan Area, measurable objectives were set for the sustainability indicators relevant to the Plan Area.

Table 3-4
Measurable Objectives in the Plan Area

RMP	Historical Low Groundwater Level (ft MSL)	Date of Historical Low Groundwater Level	Chronic Declines in Groundwater Levels (ft MSL)	Reduction of Groundwater Storage (ft MSL)	Land Subsidence (ft MSL)	Water Quality Degradation (TDS – mg/L)
EMWD 74	1321	10/4/2004	1250	1250	1250	NA
EMWD A1	1312	6/8/1994	1250	1250	1250	NA
EMWD Skiland 05	1246	3/27/1990	1250	1250	1250	NA
EMWD 94	1253	12/16/1999	1250	1250	1250	NA
Nutrilite 07	1151	10/15/1999	1150	1150	1150	520
EMWD 52	1145	7/19/1977	1250	1250	1250	NA
UCR Scott	1339	7/19/1977	1350	1350	1350	NA
Nutrilite 02	NA	NA	NA	NA	NA	520
Nutrilite 04	NA	NA	NA	NA	NA	520
Nutrilite 08	NA	NA	NA	NA	NA	520
Bootsma, John	NA	NA	NA	NA	NA	520

NA – Not applicable
Interconnected surface water-groundwater and seawater intrusion measurable objectives are not established because they are not undesirable results applicable to the Plan Area

Historical water levels, well construction details, projected domestic, municipal/ industrial and agricultural groundwater demands, and projected water level declines were analyzed during the selection of the measurable objectives for chronic declines in groundwater levels, groundwater in storage, and land subsidence related to groundwater withdrawal. The water level measurable objectives, which are 50 feet higher than the water level minimum thresholds, provide a reasonable margin of operational flexibility under adverse conditions, by allowing for changes to groundwater production to occur before the water levels reach an elevation at which undesirable results would occur. The water level measurable objectives are approximately equal to or higher than historical low groundwater levels at five of the seven RMPs in the Plan Area (Figures 3-5 through 3-11).

Groundwater quality measurable objectives were established using the Basin Plan Objective for TDS concentrations in the Lakeview-Hemet North GMZ (EMWD 2019b). The Basin Plan Objective for TDS in the Lakeview-Hemet North GMZ is 520 mg/L, which is based on the historical water quality in the Lakeview-Hemet North GMZ (SAWPA 2017).

A description of the data reviewed and analyzed during determination of the measurable objectives for chronic declines in groundwater levels, reduction of groundwater in storage, land subsidence, and degradation of water quality related to groundwater withdrawal are discussed in Sections 3.4.1 through 3.4.4.

3.4.1 Groundwater Levels

The measurable objectives for groundwater levels are static groundwater elevations (based on March measurements) that maintain an average aquifer saturation in the Plan Area of approximately 70%. These elevations correspond with historical low water levels at EMWD 94, EMWD Skiland 05, and Nutrilite 07 (Table 3-4). Measurable objective groundwater elevations that correspond to an average aquifer saturation of 70% are 70-feet lower and 60-feet lower than historical low water levels measured at EMWD 74 and EMWD A1, respectively.

The groundwater aquifer in the vicinity of wells EMWD 74 and EMWD A1 is impacted by non-point source contamination of TDS, nitrate, and perchlorate (EMWD 2019b). Water levels near EMWD 74 and EMWD A1 may need to fall below historical low groundwater elevations in order to manage the hydraulic gradient and prevent further migration of degraded groundwater (see Section 3.2.3 Degraded Water Quality). Accordingly, water level measurable objectives at these two wells provide operational flexibility for EMWD to manage TDS, nitrate, and perchlorate contamination in the Plan Area.

Current groundwater levels in the Plan Area are an average of 100 feet higher than the established measurable objectives. The SJFM-2014 projects that water levels will remain above the water level measurable objectives throughout the 50-year planning and implementation period at all representative monitoring points except EMWD 74. At EMWD 74, SJFM-2014 predicts that water levels will decline to the measurable objective between 2065 and 2090, depending on climate conditions. It would take approximately another 25-30 years after reaching the measurable objective before water levels would reach the minimum threshold, if operations in the Basin remain unaltered beyond 2070. This 25-30-year period provides sufficient operational flexibility for the ongoing beneficial use of groundwater during adverse conditions without the onset of undesirable results associated with chronic lowering of groundwater levels.

Interim Milestones for Groundwater Levels

Interim milestones for chronic lowering of groundwater levels were not established because water levels in the Plan Area are currently higher than the measurable objective water levels.

3.4.2 Groundwater in Storage

The measurable objectives for groundwater in storage are static water levels that correspond to an average aquifer saturation of 70% in the Plan Area (see Section 3.4.1 Groundwater Levels). Results from the future baseline and future baseline with climate change scenarios performed using the SJFM-2014 indicate the future operations in the Plan Area may result in a reduction of approximately 122,000 to 278,000 AF of groundwater in storage relative to the current conditions in the Plan Area (see Section 2.5.6 Quantification of Current, Historical, and Projected Water Budget). These reductions of

groundwater in storage would leave a surplus of approximately 195,000 to 351,000 AF of groundwater in storage relative to 1985 conditions (see Section 2.5 Water Budget).

The established water level measurable objectives ensure sufficient groundwater supply for ongoing beneficial use in the Plan Area during adverse conditions without experiencing significant and unreasonable loss of groundwater storage.

Interim Milestones for Reduction of Groundwater Storage

Interim milestones for groundwater levels (the indicator for groundwater in storage) were not selected because water levels in the Plan Area are currently higher than the established measurable objective water levels.

3.4.3 Water Quality

The water quality measurable objectives for the Plan Area are based on a TDS concentration of 520 mg/L at each of the five-water quality RMPs. This TDS concentration equals the water quality objective for the Lakeview-Hemet North GMZ established in the Santa Ana River Basin Plan (RWQCB 2019).

Planned path to reach the water quality measurable objective

EMWD currently partners with the Army Corp of Engineers, State Water Resources Control Board, the Metropolitan Water District of Southern California, and the U.S. Bureau of Reclamation to address non-point source contamination in the Perris South and Menifee GMZs through the operation of the Perris South Desalination Project. In addition, EMWD works closely with the State Water Resources Control Board and the Santa Ana Regional Water Quality Control Board throughout operation, and future implementation, of groundwater desalination efforts in the Plan Area. Current operations of the project utilize a network of 15 groundwater extraction wells to remove brackish groundwater from the Basin in an effort to: (1) reduce the areal coverage of TDS concentrations that exceed 1,000 mg/L, (2) prevent migration of contaminated water into the potable aquifer, (3) restore beneficial uses, and (4) expand local water supply reliability. To achieve these goals, EMWD extracts brackish groundwater from across the Perris South and Menifee GMZs and treats the brackish water at the Perris I and Menifee desalination facilities (desalters) located in the City of Menifee. The Perris I and Menifee desalters produce up to 8 MGD of potable water from locally derived brackish groundwater.

EMWD is currently in construction for an expansion to their desalination programs with a third desalination plant, the Perris II ROTF, located in the city of Menifee. The Perris II ROTF is anticipated to expand EMWD's brackish water treatment capacity by 5.4 MGD. The Perris II ROTF will further

enhance EMWD's remedial efforts to address contamination, and migration, of TDS, nitrate, and perchlorate in the Perris South and Menifee GMZ.

EMWD anticipates that operation of the Perris II ROTF will address brackish water contamination along the border of the Perris South GMZ and Lakeview GMZ (EMWD 2019b). Remedial actions in this area directly impact EMWD's ability to reach water quality measurable objectives at the five wells located in the Lakeview GMZ. To address contamination in this region, EMWD aims to produce up to 4,000 AFY of potable water from the Plan Area's brackish water zone by 2023 (EMWD 2019b). Through operation of the Perris II ROTF, EMWD aims to remove up to 734 million pounds of salts from the Plan Area via brine discharge.

EMWD works closely with the State Water Resources Control Board and the Santa Ana Regional Water Quality Control Board throughout operation, and future implementation, of groundwater desalination efforts in the Plan Area. EMWD's desalination efforts are part of a larger, regional effort to manage groundwater salinity and restore beneficial use in the Santa Ana River Basin (RWQCB 2019). Because EMWD's operation of this program is overseen by the Santa Ana RWQCB, separate interim milestones for water quality degradation were not established as part of this GSP.

3.4.4 Land Subsidence

The measurable objectives for land subsidence related to groundwater withdrawal are static groundwater elevations (measured in March) that equal or are greater than the historical low groundwater elevations at five of the seven RMPs. These elevations correspond to an average aquifer saturation of approximately 70% (Section 3.4.1 Chronic Lowering of Groundwater Levels; Table 3-4). Water level measurable objectives that are below historical low groundwater elevations at wells EMWD 74 and EMWD A1 are required to ensure operational flexibility for the Perris South Desalination Project (Section 3.4.1 Chronic Lowering of Groundwater Levels). As previously noted, the Plan Area is designated as a low risk area for future subsidence (DWR 2014). Accordingly, water level objectives below historical lows at EMWD 74 and EMWD A1 are not anticipated to induce subsidence that interferes with land use.

Interim Milestones for Land Subsidence Related to Groundwater Withdrawal

Interim milestones for groundwater related land subsidence were not set because groundwater elevations in the Plan Area are currently higher than the water level measurable objectives.

3.4.5 Seawater Intrusion

Measurable objectives were not established for seawater intrusion because undesirable results associated with seawater intrusion are not applicable to the Basin.

3.4.6 Interconnected Surface Water and Groundwater

Measurable objectives for interconnected surface water and groundwater were not established for the Plan Area because there is no known significant groundwater production within a mile of any of the potential GDEs identified in the Natural Communities Commonly Associated with Groundwater database (see Sections 2.4.7 Groundwater Dependent Ecosystems and 3.2.6 Interconnected Surface Water). If future groundwater production in the Plan Area is planned within one mile of the identified potential GDEs, additional characterization of interconnected surface water, and subsequent reassessment of interconnected surface water measurable objectives, may be required.

3.5 MONITORING NETWORK

3.5.1 Monitoring Network Objectives

The objective of the monitoring network in the Plan Area is to track and monitor parameters that demonstrate groundwater conditions, and associated factors that influence groundwater conditions, in the Plan Area. In order to accomplish this objective, the monitoring network must be capable of:

- Monitoring changes in groundwater conditions
- Monitoring groundwater conditions relative to the sustainable management criteria
- Quantifying annual changes in water budget components

The SJGB has an existing network of wells used to monitor groundwater conditions. This network includes both dedicated monitoring wells and production wells. The current network is capable of representing groundwater conditions in the Plan Area. The network will continue to be used to monitor groundwater conditions to assess long and short-term trends in groundwater elevation and groundwater quality.

3.5.2 Description of Existing Groundwater Network

The existing monitoring network was established by the West San Jacinto Groundwater Basin Groundwater Management Plan (see Section 2.1.2.2 Groundwater Elevations). As of 2019, the monitoring network established by the West San Jacinto Basin Groundwater Management Plan included 174 wells (Figure 3-12 and Table 3-5). Of these, three wells are outside the boundaries of the SJGB, and an additional six wells are outside the Plan Area. Therefore, a total of 165 wells associated with the existing monitoring network for the West San Jacinto Basin Groundwater Management Plan are available for monitoring groundwater conditions within the Plan Area (EMWD 2019c). Additionally, there are 361 monitoring wells at MARB, which are associated with groundwater cleanup efforts overseen by the RWQCB, the U.S. Environmental Protection Agency, and the

California Department of Toxic Substances Control. These wells are not included in the discussion of the monitoring network for the GSP because they are typically shallow wells that do not adequately characterize broader groundwater conditions in the Plan Area (AFCEC 2019).

Table 3-5
Monitoring Network Wells by Location and Measurement Type

	Number of Wells by Measurement Types							
	Extraction	*Extraction-Level*	*Extraction-Level-Quality*	*Extraction-Quality*	*Level*	*Level-Quality*	*Quality*	*Total*
Production Areas								
Menifee	5	2	4	1	12	14	0	38
Moreno Valley	0	0	0	0	8	5	0	13
North Perris	0	0	3	4	8	3	0	18
Nuevo/Lakeview	4	4	5	11	21	12	1	58
South Perris	1	1	8	1	5	22	0	38
Total	**10**	**7**	**20**	**17**	**54**	**56**	**1**	**165**

Historically, the number of wells measured or sampled in any given year has varied due to changes in access to the wells. These changes stem from either physical limitations such as flooding in the vicinity of specific wells, that prevent access or from changes to access agreements for private wells. Because participation by private well owners in the Plan Area is voluntary, EMWD has worked with stakeholders to secure access to private wells. Stakeholders that participate in the program are provided with a copy of the annual report, as well as copies of water quality analyses, water level measurements, and groundwater extractions for their wells. EMWD intends to continue this practice when moving to monitoring under this GSP.

Approximately one-third (38%) of the wells in the monitoring network lack well construction information, such as screen intervals and depths. Since there is only one principal aquifer in the Plan Area, well construction information is not critical for understanding general groundwater conditions. However, as projects are implemented in the Plan Area, new monitoring wells will be constructed, and it may become possible to discern additional data on depth discrete groundwater conditions within the principal aquifer. Table 3-6 describes the maximum depth of the screens of the wells by production areas.

Table 3-6
Maximum Screen Depth of Wells in Monitoring Network

	Wells with No Screening Information	Bottom of Screen in Feet Below Ground Surface (bgs)				
		<100	*100- 300*	*300 - 500*	*500 - 1,000*	*>1,000*
Total	**63**	**9**	**20**	**32**	**37**	**4**
Menifee Production Area	12	7	6	5	8	0
Moreno Valley Production Area	4	2	3	2	2	0
North Perris Production Area	6	0	2	5	5	0
Nuevo/Lakeview Production Area	26	0	0	10	18	4
South Perris Production Area	15	0	9	10	4	0

EMWD regularly assesses the sufficiency of the existing monitoring network (EMWD 2019c). In order to increase precision and efficiency, EMWD initiated a Key Well Program that identifies areas with data gaps (EMWD 2019c). This program also identifies potential parcels on which new monitoring wells could be installed and identifies potential sources of funding to purchase and install transducers in existing wells.

3.5.2.1 Groundwater Monitoring

The Plan Area is divided into five production areas: Menifee, Moreno Valley, North Perris, Nuevo/Lakeview, and South Perris. The density of both monitoring and production wells varies in each production area (Figures 3-13 and 3-14, Figure 2-26). The majority of the wells in the monitoring network have been measured for groundwater level and quality semi-annually over the last 10 years. Of these, many have been measured at a consistent time of year, which allows for more accurate annual comparisons in water level or water quality at specific monitoring sites.

The monitoring network tracks groundwater elevation, groundwater quality, and groundwater extractions. The measurement or measurements taken from each well in the monitoring network depend on the well type, and whether or not the well is incorporated into additional monitoring programs beyond that which was established under the Groundwater Management Plan. The 2019 monitoring network shown in Figure 3-12 is divided into seven categories that describe the measurement or measurements taken at each well: Extraction, Extraction-Level, Extraction-Level-Quality, Extraction-Quality, Level, Level-Quality, and Quality. The majority of the wells are monitoring wells and agricultural/irrigation wells; however, the network also includes desalination, municipal, and domestic extraction wells (Table 3-7).

Table 3-7
Types of Wells in The Existing Monitoring Network

	MONITORING	AGRICULTURAL/ IRRIGATION	DOMESTIC	MUNICIPAL	DESALINATION
All Wells	75	60	4	11	15
Menifee Production Area	22	14	0	0	2
Moreno Valley Production Area	10	2	0	1	0
North Perris Production Area	4	5	1	8	0
Nuevo/Lakeview Production Area	16	33	3	2	4
South Perris Production Area	23	6	0	0	9

Groundwater Elevation

Groundwater levels are measured semi-annually, in the spring and fall, to characterize the differences in seasonal groundwater elevations and to evaluate groundwater gradients, which drive groundwater flow in the Plan Area. Of the 165 wells in the monitoring network, 137 (or 83%) of the wells in the Plan Area were used to demonstrate the groundwater elevation conditions. The coverage of the groundwater level measurements by production area is summarized in Table 3-8.

Table 3-8
Well Distribution and Coverage for Water Level Measurements in the Plan Area

	First Water Level Record	# of Wells Measured in 2019	% of Area Within 1 mile of Water Level Measurement	# of 2019 Wells Regularly Measured Between 2008-2018	# of 2019 Wells Regularly Measured Within the Same Quarter	# of 2019 Wells Measured Seasonally
Menifee	1993	32	84%	31	31	31
Moreno Valley	1977	13	49%	10	9	9
North Perris	1942	14	52%	14	14	14
Nuevo/Lakeview	1941	42	79%	40	41	40
South Perris	1981	36	79%	33	32	32

Based on the density of the monitoring network wells in each production area, the length of the historical record at each well, and the demonstrated use of the monitoring network to ensure sustainable management of the groundwater resources in the Plan Area, the spatial and temporal coverage of the existing monitoring network is sufficient to characterize the groundwater conditions in the Plan Area. The current network will be used to demonstrate continued sustainable use of the groundwater resources in a way that is consistent with the sustainability goal.

Groundwater Quality

Groundwater quality sampling is performed annually. Samples are collected after a three well volume purge using a dedicated pump or mobile pump. The samples are collected using standardized procedures established by EMWD and tested for a variety of constituents to track water quality parameters such as cations, anions, nitrogen, metals, alkalinity, pH, TDS, and more (EMWD 2019c). Groundwater quality samples were measured in 57% of the wells in the Plan Area and 45% of the non-extraction wells (Table 3-9).

Table 3-9
Well Distribution and Coverage for Water Quality Measurements in the Plan Area

	First Water Quality Record	# of Wells Measured in 2019	% of Area Within 1 Mile of Water Quality Measurement	# of 2019 Wells Measured between 2008-2018	# of 2019 Wells Measured Within the Same Quarter
Menifee	1989	18	50%	16	6
Moreno Valley	1968	5	25%	4	0
North Perris	1959	10	48%	9	7
Nuevo/Lakeview	1965	29	61%	12	5
South Perris	1955	31	74%	25	10

Groundwater Extraction

Groundwater extractions in the Plan Area have been monitored by EMWD as part of the West San Jacinto Groundwater Management Plan since 1996 (EMWD 1995). In 2018, 57 major extraction wells, or approximately 33% of the wells in the monitoring network, were monitored for groundwater extractions. Of these wells, 43 had meters in 2018. Extraction wells that produce greater than 25 AFY are included in the estimate of the total extraction from the Plan Area, whether they have meters or not. Extractions from wells without meters are estimated by EMWD based on property acreage, crop type, and livestock count (EMWD 2019c). Additionally, private well owners who produce more than 25 AFY of groundwater are asked to submit an Annual Notice of Recordation to EMWD. These notices are used by EMWD to identify differences between estimated and reported groundwater production at private wells.

3.5.2.2 Surface Monitoring Conditions

In addition to monitoring groundwater conditions in the Plan Area, EMWD uses surface water flow and precipitation data collected by other agencies, including the USGS and the Riverside County Flood Control and Water Conservation District (RCFCWCD), to monitor the parameters that influence recharge to the Plan Area groundwater.

Surface Flow

The USGS manages four stream gauges within the Plan Area (Figure 2-5). Two stream gauges are located on the San Jacinto River, a third is located on the Perris Valley Storm Drain, and the fourth is located on Salt Creek (see Section 2.2.2 Surface Water and Drainage Features). These stream gauges record daily average flow rates as well as peak flowrates during storm events. Groundwater elevations in the vicinity of the San Jacinto River, Perris Valley Storm Drain, and Salt Creek, suggest that the surface water drainages are disconnected from the underlying aquifer (see Section 2.4.6 Groundwater-Surface Water Connections). Recharge to the aquifer through the channel beds occurs only in wetter than average precipitation years, during brief periods of flow along the drainages. The stream gauges, which are located on every major drainage within the Plan Area, provide adequate spatial coverage for monitoring streamflow conditions that may influence groundwater recharge.

In addition to providing adequate spatial coverage, the stream gauge monitoring network also provides adequate temporal coverage to determine the short-term, seasonal, and long-term surface flow conditions in the SJGB. Current stream gauges in the Plan Area record daily average flow rates. Daily flow records can be used to characterize short-term and seasonal flow conditions in the Plan Area. Additionally, within the SJGB as a whole, daily stream flow measurements on the San Jacinto River have been recorded since 1951. Within the Plan Area, the streamflow record at USGS Gauge 11070270 on the Perris Storm Drain begins in 1990 and the record at USGS Gauge 11070210 on the San Jacinto River begins in 2000 (see Section 2.2.2 Surface Water and Drainage Features). The 20 to 30-year long record from these gauges is adequate to determine long-term trends in surface water conditions in the Plan Area.

Precipitation

The precipitation monitoring program currently utilizes five precipitation stations within the Plan Area managed by the Riverside County Flood Control and Water Conservation District (see Section 2.2.3 Historical, Current, and Projected Climate). Precipitation is recorded at these stations daily, which provides adequate temporal resolution to evaluate short-term and seasonal impacts of precipitation on groundwater conditions in the Plan Area.

Of the currently active precipitation stations in the Plan Area, the Lake Perris Station has the longest continuous record of precipitation, with measurements dating back to 1965 (Figure 2-14). The length of this record is adequate to determine long-term trends in precipitation within the Plan Area. Additionally, the Lake Perris record can be compared to the record of precipitation measured at the San Jacinto Station, which begins in 1916 (Figure 2-13), to assess trends in precipitation throughout the SJGB over the past 100 years.

3.5.3 Monitoring Network Relationship to Sustainability Indicators

The existing groundwater network will be used to monitor and document changes in groundwater conditions related to the four sustainability indicators relevant to the Plan Area. This network includes the wells that have been designated as RMPs for reporting purposes to DWR. Minimum thresholds and measurable objectives were established for the RMPs. An assessment of groundwater conditions and the potential for undesirable results will be based on the conditions measured at the RMPs. The broader groundwater monitoring network, including the RMPs, will be used to document conditions in the Plan Area and provide support for recommendations and findings based on the conditions recorded at the RMPs.

3.5.3.1 Chronic Lowering of Groundwater Levels

The groundwater monitoring network must accomplish the following to adequately monitor conditions related to chronic lowering of groundwater levels:

- Track short-term, seasonal, and long-term trends in groundwater elevation.
- Demonstrate groundwater elevations in mid-March and mid-October for the aquifer system.
- Record groundwater elevations at RMPs for which minimum thresholds and measurable objectives have been identified.

Spatial Coverage

The groundwater elevation monitoring well density in the Plan Area is approximately 1 well per square mile (Figure 3-13). The distribution of the monitoring wells is not even across the Plan area, with the highest density of wells occurring in Nuevo/Lakeview and South Perris Production Areas. The South Perris Production Area has 36 groundwater level monitoring wells in a 25 square mile area. However, 14 of these monitoring wells are located in the center of the production area within a 2 square mile area (Figure 3-13). The Nuevo/Lakeview Production Area has one cluster of seven wells within one square mile while the remaining 34 square miles have between four to zero monitoring wells per square mile (Figure 3-13). The Moreno Valley Production Area has the lowest density of groundwater level monitoring wells, with 13 wells in 46 square miles (Figure 3-13).

DWR guidelines recommend a well network with a density of one observation per 16 square miles (DWR 2016a). The monitoring well density recommended by CASGEM Groundwater Elevation Monitoring Guidelines ranges from one to 10 wells per 100 square miles (DWR 2010). The density of monitoring wells in the Plan Area exceeds the guidance and provides adequate spatial coverage to assess whether the Plan Area is experiencing chronic lowering of groundwater levels.

Temporal Coverage

Groundwater elevation data will be collected from the network of groundwater wells to provide groundwater elevation conditions in the spring and fall of each year. Further discussion of the monitoring schedule is provided in Section 3.5.4, Monitoring Network Implementation.

3.5.3.2 Reduction of Groundwater Storage

The groundwater monitoring network must accomplish the following to monitor conditions related to significant and unreasonable reduction of groundwater storage:

- Track short-term, seasonal, and long-term trends in groundwater in storage.
- Calculate year-over-year (mid-March to mid-March) change in storage.
- Provide data from which lateral hydraulic gradients within the aquifer can be calculated.

The requirements for documenting reduction in groundwater storage are similar to those for chronic lowering of groundwater levels (see Section 3.5.3.1), because these two sustainability indicators are related through groundwater elevations.

The spatial and temporal density of groundwater elevation data necessary to document groundwater storage changes in the Plan Area is the same as that necessary to document groundwater elevation changes. The current network of wells is capable of documenting changes to both sustainability indicators.

3.5.3.3 Degraded Water Quality

The groundwater monitoring network must accomplish the following to adequately monitor conditions related to degradation of water quality in the Plan Area:

- Track short-term, seasonal, and long-term trends in the hydraulic gradient.
- Track long-term trends in groundwater quality for a wide range of constituents.
- Measure TDS concentrations at the five RMPs for which minimum thresholds and measurable objectives have been identified.

Spatial Coverage

The network of wells used to assess groundwater quality in the Plan Area includes public and private wells, many of which are monitored as part of EMWD's efforts to improve groundwater quality. The existing network will be used to assess groundwater quality degradation related to groundwater production as part of this GSP. The primary area of concern for groundwater quality

degradation relating to groundwater production in the Plan Area is in the Lakeview GMZ, where ongoing northeastward migration of the 1,000 mg/L iso-concentration contour was defined as an undesirable result (see Section 3.2.3 Degraded Water Quality). The approximate density of water quality monitoring wells is two wells for every three-square miles (Figure 3-14). The density of the monitoring points is not even across the Plan Area, with the highest density of water quality monitoring wells in Lakeview GMZ and the lowest density of water quality monitoring wells in the San Jacinto Lower Pressure GMZ. Lakeview GMZ has approximately three wells for every two square miles and San Jacinto Lower Pressure GMZ has approximately one well for every four-square miles. The spatial density of the existing monitoring network is sufficient to document changes in groundwater quality in the Lakeview GMZ, and throughout the rest of the Plan Area.

Temporal Coverage

Groundwater quality samples have been collected annually from wells in the existing monitoring network since 1995. Annual groundwater quality sampling provides an adequate temporal coverage to assess trends in groundwater quality.

3.5.3.4 Land Subsidence

The groundwater monitoring network must be able to track long-term trends in groundwater elevation in order to adequately monitor conditions related to land subsidence that results from groundwater withdrawals. Groundwater elevations are being used as a proxy for land subsidence related to groundwater withdrawals in the Plan Area, because land subsidence that results from groundwater withdrawals is directly related to groundwater elevations (see Section 3.2.4 Land Subsidence). Because projected future groundwater elevations are expected to remain above historical low groundwater elevations throughout the majority of the Plan Area with the exception of the Menifee Production Area (see Section 3.3.1 Chronic Lowering of Groundwater Levels), and because fine grained sediments prone to subsidence tend to occur in thin discontinuous layers in the subsurface of the Plan Area, direct monitoring of subsidence rates is not currently required in the Plan Area. Instead, the network of groundwater monitoring wells discussed in Sections 3.5.2 will be used as a proxy to determine if groundwater conditions throughout the Plan Area may induce land subsidence related to groundwater production.

3.5.3.5 Depletions of Interconnected Surface Water

Surface waters within the Plan Area are not connected to groundwater (see Section 2.4.6 Groundwater-Surface Water Connections), and no known groundwater production occurs within one mile of the potential GDEs identified in the NCCAG database. Therefore, specific sustainability criteria for interconnected surface water have not been defined in this GSP and no specific monitoring for depletion of interconnected surface water is required. However, surface water flows will continue to be monitored as described in Section 3.5.2.2 Surface Monitoring Conditions.

3.5.4 Monitoring Network Implementation

3.5.4.1 Groundwater Elevation Monitoring Schedule

Following the guidance provided by DWR (DWR 2016a), groundwater elevation measurements will be collected from all accessible wells in the monitoring network two times per year in order to capture the spring high and fall low groundwater levels. Spring groundwater levels will be collected during the month of March and fall groundwater levels will be collected during the month of October. By conducting the groundwater sampling for each seasonal event within a single month time period, the water level data can be used to generate groundwater elevation contours and assess the hydraulic gradient in the aquifer. Data collection over longer time periods are less useful for analyzing the hydraulic gradient and groundwater elevation contours that are intended to represent a discrete period of time.

3.5.4.2 Groundwater Storage Monitoring Schedule

Groundwater storage is directly linked to groundwater elevation. Therefore, the groundwater elevation monitoring network and schedule will be used to monitor changes in groundwater storage.

3.5.4.3 Water Quality Monitoring Schedule

EMWD will continue to conduct groundwater quality sampling throughout the Plan Area. Groundwater quality samples will be collected annually for all accessible wells identified in the monitoring network as water quality sampling wells. In 2018, groundwater samples were collected from 105 wells in the monitoring network. Currently, EMWD staff collect water quality samples throughout the calendar year, making sure each well is sampled at least once within a given calendar year. However, staff availability and well access do not necessarily result in a sample collected from each well every 12 months. EMWD is reviewing the potential to make practicable changes to groundwater quality collection that would shift groundwater quality sampling to occurring on a water year basis, rather than a calendar year basis, and prioritizing sample collection from wells in which groundwater samples have not been collected within the previous 12 month period.

3.5.4.4 Groundwater Extraction Monitoring Schedule

Groundwater extraction rates are monitored monthly at all extraction wells within the Plan Area. EMWD wells are continuously monitored by meters that report the data automatically and daily manually read meters. EMWD also has agreements with some, though not all, private well owners in the Plan Area to have EMWD staff read meters on private property on a monthly basis. The private wells with meters are read by EMWD staff within the first week of the month. These extraction rates are recorded in EMWD's data management system within a few weeks after collection. For wells without meters, or wells for which EMWD does not have permission to record

groundwater production meter readings, EMWD has historically estimated extraction rates based on land use, crop type, and/or quantity of acres or livestock, and private well owners have provided a record of groundwater production to EMWD in the spring of each year for the previous calendar year extractions. EMWD provides labor and materials to install meters on extraction wells currently identified as producing more than 25 AFY when the well owner allows EMWD to monitor the well. Future monitoring efforts will expand the well metering program to include wells that produce greater than 2 AFY. EMWD will work with private and municipal well owners to schedule meter installation and establish meter reading procedures for wells that EMWD has received permission from the well owner. Well owners who do not provide permission for EMWD staff to read production meters will be required to provide EMWD with documentation of the annual production from the well, on a water-year basis. Until meters are installed, EMWD will continue with the current groundwater extraction monitoring schedule and is analyzing the process required to transition from a calendar year reporting program to a water year reporting program.

3.5.5 Monitoring Protocols

Protocols for groundwater level measurements and water quality samples are identified in the *Monitoring Protocols, Standards, and Sites Best Management Practices* BMP published by DWR (DWR 2016b). Currently, EMWD measures groundwater elevations twice a year using the measurement protocols outlined in the *Water Level Monitoring Plan for the San Jacinto Groundwater Basin* (EMWD 2011b). These protocols are similar to those suggested in the *Monitoring Protocols, Standards, and Sites Best Management Practices* BMP, and EMWD will adopt the best practices of each document for future monitoring events.

Consistent with the *Monitoring Protocols, Standards, and Sites Best Management Practices* BMP, depth to groundwater measurements are currently taken from surveyed reference points at the top of the well casing or sounding tube and are measured to a minimum accuracy of 0.1 foot. Currently depth to groundwater measurements are collected over a period of several months. Moving forward, efforts will be made to minimize the timeframe over which depth to groundwater measurements are collected such that the spring groundwater levels will be collected during the month of March, and the fall depth to groundwater measurements are collected during the month of October. The *Monitoring Protocols, Standards, and Sites Best Management Practices* BMP recommends depth to groundwater measurement be collected within as short a time as possible (DWR 2016b).

Some wells in the monitoring network are also extraction wells. For these wells, the pump will be turned off for 24 hours prior to taking a depth to groundwater measurement in order to obtain a static water level. If operational constraints prevent shutting the pump off for 24 hours during the sampling window of March or October, a depth to water measurement will not be collected at that well during the sampling event. The groundwater levels are measured manually with an electric sounding tape that is decontaminated after measuring each well. Some wells in the monitoring

network are instrumented with pressure transducers for higher temporal resolution sampling. The depth to groundwater data is entered into EMWD's database after undergoing a quality assurance and quality control review conducted by EMWD staff.

EMWD collects groundwater quality samples in accordance with EMWD's standard operating procedures. Samples are collected, using either a mobile or dedicated pump after depth to groundwater has been recorded, and a minimum of three (3) well volumes of water have been purged from the well. Groundwater quality samples are collected in dedicated bottles and are transported to EMWD's on-site state-certified laboratory. Typical samples are analyzed for 25 different constituents, including nitrate as nitrogen, and TDS. EMWD will continue to use the existing groundwater quality monitoring protocols when collecting groundwater quality samples as part of the reporting requirements for this GSP.

3.5.6 Representative Monitoring

Representative monitoring points (RMPs) for the Plan Area were selected from the wider network of monitoring wells established by EMWD and used to document groundwater conditions as part of the Groundwater Management Plan for the West San Jacinto Basin (EMWD 2019c). The broader network of wells that have been used to monitor conditions in the Plan Area are a mix of dedicated monitoring wells, groundwater production wells used for water supply, and groundwater extraction wells whose primary use is to improve the water quality of the Plan Area.

The criteria used for selection of the RMPs were:

- Primary designation as a monitoring well
- Length of historical data record at the RMP
- Inclusion of RMP in additional monitoring programs
- Geographic location of the RMP within the Plan Area
- Vertical distribution of well screen intervals for each RMP
- Long-term accessibility and well ownership considerations.

Using the criteria listed above, seven groundwater elevation RMPs and five groundwater quality RMPs were selected from the wells in the monitoring network (Figures 3-2 and 3-3; Table 3-1). Groundwater elevation RMPs are located in each of the groundwater production zones in order to capture groundwater conditions throughout the Plan Area. Groundwater quality RMPs are located in the Lakeview GMZ, in order to assess whether the current extent of 1,000 mg/L TDS iso-concentration contour is migrating to the north and east (see Section 3.2.3 Degraded Water Quality).

The RMPs were selected to ensure that the conditions measured at each site reflect the general conditions in the area. Historical groundwater elevations were reviewed in selecting the groundwater level RMPs (Figures 2-32 through 2-36) and historical groundwater quality data were reviewed when selecting the groundwater quality RMPs (Figure 3-4).

3.5.6.1 Groundwater Elevation RMPs

Seven wells: EMWD 74, EMWD 52, EMWD A1, EMWD Skiland 05, EMWD 94, Nutrilite 07, and UCR Scott, were selected to be RMPs for groundwater elevations in the Plan Area. With the exception of well EMWD 94, in which groundwater elevations were first measured in 2020, both absolute groundwater elevations and groundwater elevation trends at the seven groundwater elevation RMPs are representative of the groundwater elevations and trends in each of the groundwater production areas (Figures 2-32 through 2-36).

Groundwater elevation is related to groundwater in storage through the SJFM-2014 (EMWD 2016). Therefore, use of groundwater elevation as a proxy for groundwater in storage is adequate to assess groundwater conditions in the Plan Area. Groundwater elevation is also used as a proxy for land subsidence induced by groundwater production. Land subsidence in the Plan Area has the potential to occur both as a result of tectonic forcing and as a result of groundwater withdrawal (see Section 2.4.5 Subsidence). As a result, measuring groundwater elevations is a better proxy for land subsidence induced by groundwater withdrawals than measuring total land subsidence, because the tectonic and groundwater elevation components of the total subsidence measurement cannot be separated from each other.

In addition to the existing wells identified as RMPs for groundwater elevation, EMWD will construct several dedicated groundwater monitoring wells as part of the Perris North Basin Groundwater Contamination Prevention and Remediation Project (EMWD 2018). After construction, these wells will be incorporated into the broader groundwater elevation monitoring network. Data from these wells will be analyzed annually and one or more of these wells may be incorporated as a groundwater elevation RMP for the GSP in the future. Any well that is added to the current groundwater elevation RMPs must have a record of sufficient length to establish that groundwater conditions at that well are representative of groundwater conditions measured at other nearby wells.

EMWD will also evaluate the ongoing representativeness of the current RMPs during the 5-year GSP evaluation and update process. Current RMPs may be removed in the event that groundwater elevations at that RMP are found to no longer represent groundwater conditions in the surrounding aquifer, or if changes are made to access agreements or well construction. In the event that an RMP must be removed from the list, EMWD will undertake a review of potential replacement wells in the vicinity.

3.5.6.2 Groundwater Quality RMPs

Five wells: Nutrilite 07, Nutrilite 02, Nutrilite 04, Nutrilite 08, and John Bootsma, were selected to be RMPs for water quality in the Plan Area. TDS concentrations at the groundwater quality RMPs vary based on proximity to the 1,000 mg/L iso-concentration contour in the Lakeview GMZ (Figures 3-3 and 3-4). These wells are screened throughout the groundwater aquifer and adequately represent TDS concentrations in the area north and east of the 1,000 mg/L iso-concentration contour in the Lakeview GMZ (Table 3-10). This area is not currently experiencing groundwater quality impairment from TDS, and the groundwater quality RMPs were selected to act as sentinel wells that would provide data to assess whether the 1,000 mg/L iso-concentration contour is migrating to the north and east. Three of the groundwater quality RMPs, wells Nutrilite 02, Nutrilite 07, and Nutrilite 08 are also designated sentinel wells in the Perris II ROTF Monitoring and Reporting Plan (EMWD 2019c).

Table 3-10
Well Construction, Maximum TDS Concentration, and Mann-Kendall Trend Analysis at the Water Quality RMPs

RMP	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Maximum TDS Concentration (mg/L)	Maximum TDS Concentration Year	Mann-Kendall Trend
Nutrilite 07	390	700	860	2013	Decreasing
Nutrilite 02	-	-	645	1994	No Trend
Nutrilite 04	170	480	710	1996	Decreasing
Nutrilite 08	-	-	970	2013	Increasing
Bootsma, John	350	650	526	2018	Increasing

As discussed above, the representativeness of the water quality data collected from the current water quality RMPs will be evaluated during the 5-year GSP evaluation and update process. Current RMPs may be removed in the event that groundwater quality data at that RMP are found to no longer represent groundwater quality in the surrounding aquifer, or if changes are made to access agreements. In the event that an RMP must be removed from the list, EMWD will undertake a review of potential replacement wells in the vicinity of the RMP that was removed.

Groundwater quality RMPs may be added in the Perris North GMZ after operation of the Perris North Basin Groundwater Contamination Prevention and Remediation Project has begun. During implementation of the Perris North Basin Groundwater Contamination Prevention and Remediation Project, EMWD will collect data that will refine the current understanding of the lateral extent and migration potential of the co-mingled plumes in this area. These data will also be evaluated in the context of the GSP to determine if additional groundwater quality RMPs are required in the Perris North GMZ.

3.5.7 Monitoring Network Improvements

While the existing monitoring network satisfies the requirements to track groundwater conditions in the Plan Area and verify progress toward the sustainability goals, there are improvements that can be made to improve local spatial coverage.

3.5.7.1 Dedicated Monitoring Wells

The existing monitoring network includes long-screen production and agricultural wells, as well as dedicated monitoring wells. The network could be improved by constructing additional dedicated monitoring wells to supplement the understanding of groundwater quality and groundwater elevations in the aquifer. With additional dedicated monitoring wells, the existing production wells would be used for monitoring groundwater production and composite groundwater quality in the Plan Area.

3.5.7.2 Temporal Data Gaps in Water Level Measurements

The DWR Monitoring Protocol BMP (DWR 2016a) states the following:

> Groundwater elevation data … should approximate conditions at a discrete period in time. Therefore, all groundwater levels in a basin should be collected within as short a time as possible, preferably within a 1 to 2-week period.

The DWR Monitoring Networks BMP (DWR 2016b) states the following:

> Groundwater levels will be collected during the middle of October and March for comparative reporting purposes.

Groundwater elevation monitoring currently occurs over a longer time period than the two-week window recommended by the DWR guidance documents. EMWD will collect seasonal groundwater elevations within a single month, March for the spring, and October for the fall, but staffing constraints currently prohibit collection of groundwater elevations from the entire monitoring network within a two-week period. EMWD will endeavor to collect groundwater elevations from the RMPs within a two-week period in March and October.

Installation of pressure transducers capable of recording daily groundwater conditions in key monitoring wells could alleviate the need for staff to take manual measurements from every well in the monitoring network within a two-week window. Pressure transducers could be downloaded after the two-week window has passed and recorded data from within the two-week window would be incorporated into groundwater elevation maps and calculations of groundwater in storage. In the event that funding becomes available and pressure transducers can be installed in select monitoring wells, the recommended two-week window during which groundwater elevations should be collected is March 9 to 22 for the spring and October 9 to 22 for the fall.

3.5.7.3 Groundwater Extraction Metering

Currently groundwater extraction volumes are metered at 43 of the 57 major production wells in the Plan Area (EMWD 2019c). Groundwater extractions at the remaining wells are estimated by EMWD based on property acreage, crop type, and livestock count (EMWD 2019c). In order to better characterize the aquifer response to groundwater production, EMWD is planning to require meters be installed (or offer to install meters) on all wells that produce greater than 2AFY from the Plan Area.

3.6 REFERENCES CITED

23 CCR (California Code of Regulations) 351 Definitions. In Subchapter 2: Groundwater Sustainability Plans.

23 CCR (California Code of Regulations) 354.26 Undesirable Results. In Subchapter 2: Groundwater Sustainability Plans.

AFCEC (Air Force Civil Engineer Center). 2019a. *Final Fourth Five-Year Review Report. March Air Reserve Base and Former March Air Force Base, California*. Prepared by AECOM Technical Services Inc. July 16, 2019.

DWR (California Department of Water Resources) 2010. *Department of Water Resources Groundwater Elevation Monitoring Guidelines*. December 2010.

DWR (California Department of Water Resources) 2014. *Summary of Recent, Historical, and Estimated Potential for Future Land Subsidence in California*. 2014.

DWR (California Department of Water Resources) 2016a. *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Networks and Identification of Data Gaps*. December 2016.

DWR (California Department of Water Resources) 2016b. *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Protocols, Standards, and Sites.* December 2016.

DWR (California Department of Water Resources) 2021. *Well Completion Report Map Application* Website: https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37. Accessed August 2021.

EMWD (Eastern Municipal Water District) 1995. *Groundwater Management Plan, West San Jacinto Groundwater Basin*. June 8, 1995.

EMWD (Eastern Municipal Water District) 2011a. Results of the Soil Characterization Study at the San Jacinto Wildlife Area in Support of the Use of Recycled Water in the San Jacinto Lower Pressure Management Zone. Prepared by Wildermuth Environmental Inc. April 29, 2011.

EMWD (Eastern Municipal Water District). 2011b. *Water Level Monitoring Plan for the San Jacinto Groundwater Basin for Submittal to California State Department of Water Resources Under the California Statewide Groundwater Elevation (CASGEM) Program*. December 2011.

EMWD (Eastern Municipal Water District). 2016. *San Jacinto Groundwater Flow Model Update – 2014 (SJFM – 2014). Model Development and Scenarios*. Prepared by RMC Water and Environment. June 9, 2016.

EMWD (Eastern Municipal Water District). 2019a. *Perris North Basin Groundwater Prevention and Remediation Plan: Proposition 1 GWGP Implementation Full Proposal*. March 4, 2019.

EMWD (Eastern Municipal Water District) 2019b. *Perris II Reverse Osmosis Treatment Facility (ROTF), Monitoring and Reporting Plan (MRP)*. Prepared by Woodard & Curran. March 28, 2019.

EMWD (Eastern Municipal Water District) 2019c. West San Jacinto Groundwater Management Area 2018 Annual Report. June.

RWQCB (California Regional Water Quality Control Board) 2019. *The Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin*. January 24, 1995, updated June 2019 to include approved amendments.

SAWPA (Santa Ana Watershed Protection Authority) 2017, *Recomputation of Ambient Water Quality in the Santa Ana River Watershed for the Period of 1996 to 2015.* Prepared by Daniel B. Stephens & Associates, Inc. under contract to CDM Smith. September 2017.

SWRCB 2019. *US Army Camp Haan (Former) Site Y, Landfill military cleanup site.* Geotracker. Webpage. Accessed at https://geotracker.waterboards.ca.gov/profile_report?global_id=T0606545483 on October 21, 2019.

SWRCB 2020. *US Air Force Former March Air Force Base, IRP, BRAC military cleanup site.* Geotracker. Webpage. Accessed at https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=DOD100277100 on March 27, 2020.

Treiman, J. A., and Lundberg M 1999. *Compilers, 1999, Fault Number 125b, San Jacinto Fault, San Jacinto Valley section, in Quaternary fault and fold database of the United States Geological Survey website*. Accessed at https://earthquake.usgs.gov/cfusion/qfault/show_report_AB_archive.cfm?fault_id=125&section_id=b on September 25, 2020.

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area

Median Household Income

- DAC
- SDAC

- Representative Monitoring Points
- Domestic Wells with Screened Interval Information
- Domestic Wells Missing Screen Interval

UCR Scott — Well Name
1464.3 — November 2018 Water Level (ft MSL)
1300/1350 — Minimum Threshold/Measurable Objective
1941 - 1789 — Top of Screen - Bottom of Screen (ft MSL)

** Water Level Elevation taken from nearby well Bean Reservoir/12th*

1775 - 1555
1849 - 1689
1870 - 1790
1847 - 1822
1791 - 1771
1867 - 1707
1835 - 1485
1893 - 1726
1862 - 1687
1667 - 1262
1828 - 1663
1708 - 1638
1703 - 1498
1678 - 1558
1785 - 1665
1785 - 1685
1782 - 1602
1637 - 1464
1651 - 1478
1890 - 1690
1760 - 1700
1523 - 1444
1552 - 1402
1457 - 1417
1562 - 1322
UCR Scott 1464.3 1300/1350
1466 - 1424
1210 - 760
1217 - 1017
1068 - 728
1093 - 661
1437 - 1357
1167 - 607
1262 - 942
1421 - 1061
Nutrilite 07 1241.5 1100/1150
Mead Valley
EMWD 52 Follico 1390.8 1200/1250
1333 - 1231
1303 - 1103
Lakeview
EMWD 94 1435.0* 1200/1250
1331 - 1151
1282 - 1022
EMWD Skiland 05 1345.5 1200/1250
1338 - 1268
UCR Scott 1464.3 1300/1350
EMWD A1 1365 1200/1250
Romoland
Homeland
1580 - 1565
1572 - 1540
1588 - 1578
1599 - 1565
1571 - 1554
1583 - 1539
1317 - 1227
1254 - 1184
1372 - 1252
1285 - 1145
1286 - 1226
1379 - 1299
1310 - 1250
1408 - 1348
1489 - 1479
1336 - 1098
Winchester
1366 - 1304
EMWD 74 Menifee 04 1355.8 1200/1250
1359 - 1179
1377 - 1177
1484 - 1464
1271 - 1041
1403 - 1283
1359 - 1259
1295 - 1235
1168 - 1088

SOURCE: California Department of Water Resources, Esri

0 1 2 Miles

FIGURE 3-1

Domestic Wells in the Plan Area

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area
- Production Area

Adjudicated Areas

- Hemet-San Jacinto Basin
- San Bernardino Basin Area
- Santa Margarita River Watershed

2018 Monitoring Network Type

- Quality
- Level
- Quality, Level
- Quality, Extraction
- Level, Extraction
- Extraction
- Quality, Level, Extraction

2018 GW Extractions [AF]

- < 100
- 100 - 250
- 250 - 500
- 500 - 1000
- >1000

Water Level Representative Monitoring Points

Moreno Valley Production Area

North Perris Production Area

South Perris Production Area

Nuevo/Lakeview Production Area

Menifee Production Area

UCR Scott

EMWD 52 Follico

EMWD 94

EMWD Skiland 05

EMWD A1

Nutrilite 07

EMWD 74 Menifee 04

SOURCE: EMWD 2019

FIGURE 3-2

Water Level Representative Monitoring Points

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- San Jacinto Groundwater Basin
- Plan Area
- Groundwater Management Zone

Adjudicated Areas

- Hemet-San Jacinto Basin
- San Bernardino Basin Area
- Santa Margarita River Watershed

- 2018 Water Quality Monitoring Network
- >1,000 mg/L TDS
- Water Quality Representative Monitoring Points

Perris North GMZ

San Jacinto Lower Pressure GMZ

Perris South GMZ

Lakeview GMZ

Menifee GMZ

Nutrilite 04

Nutrilite 07

Bootsma, John

Nutrilite 08

Nutrilite 02

SOURCE: EMWD 2019

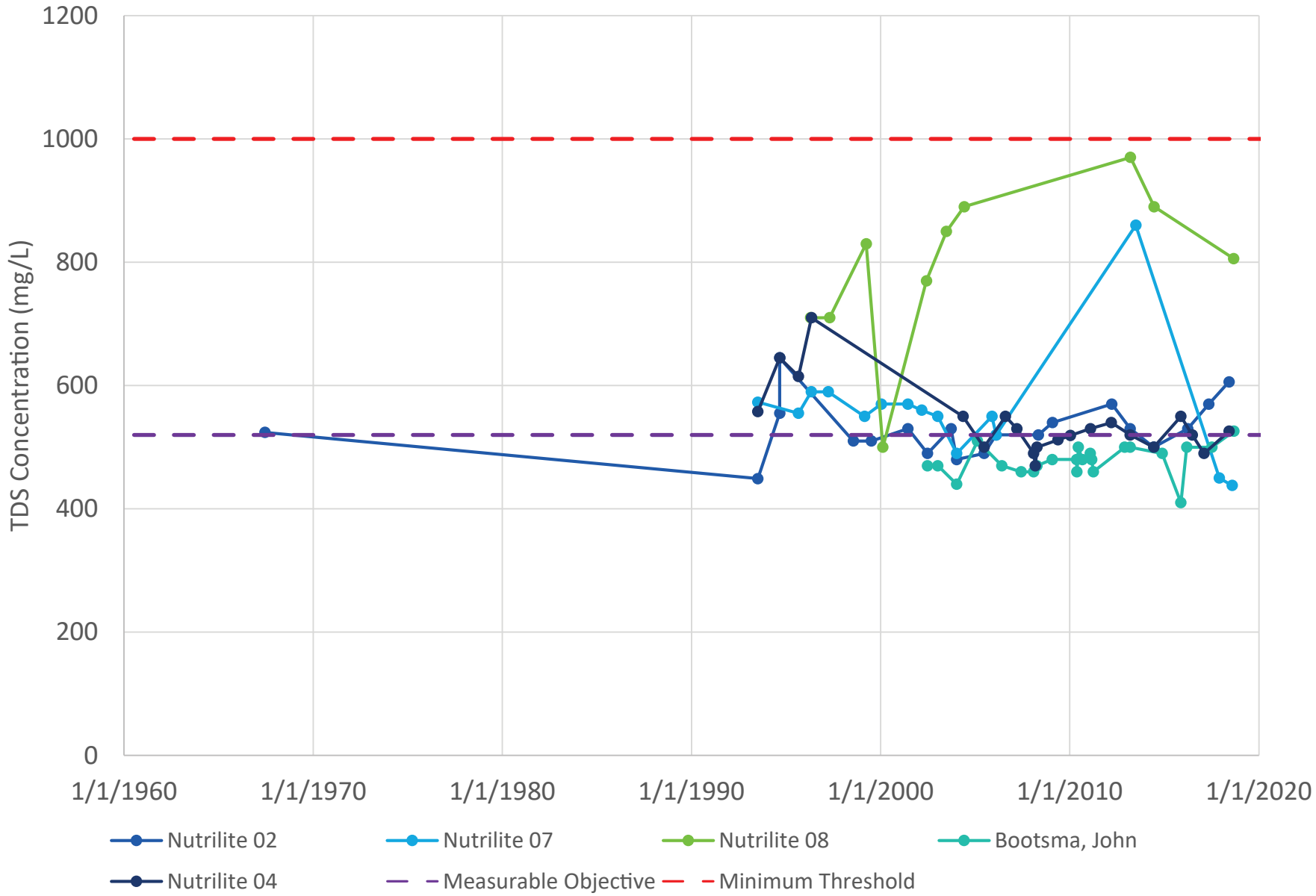
FIGURE 3-3

Water Quality Representative Monitoring Points

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

0 1 2 Miles

INTENTIONALLY LEFT BLANK



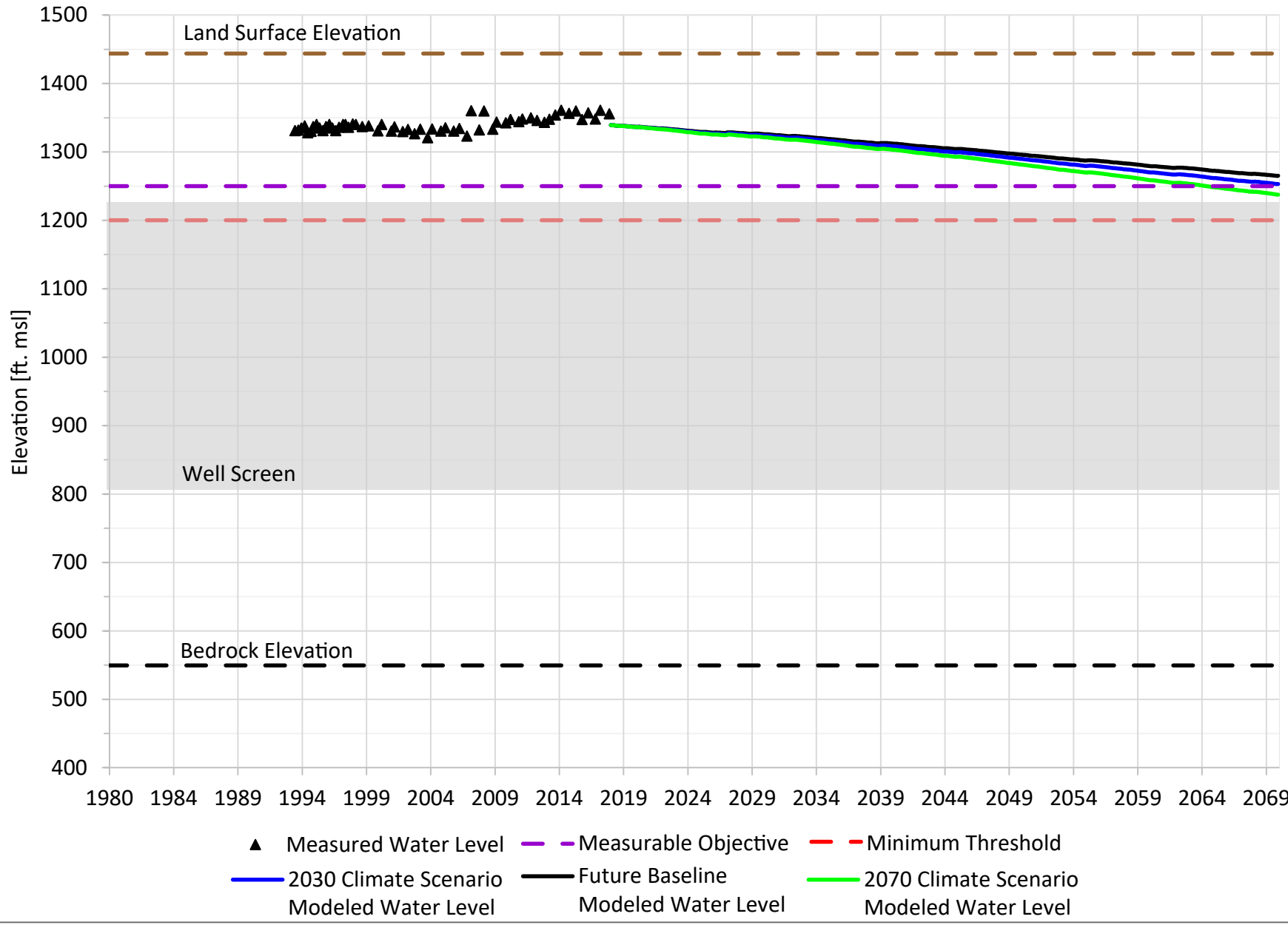
SOURCE: EMWD

FIGURE 3-4

Representative Monitoring Point TDS Water Quality Hydrographs

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



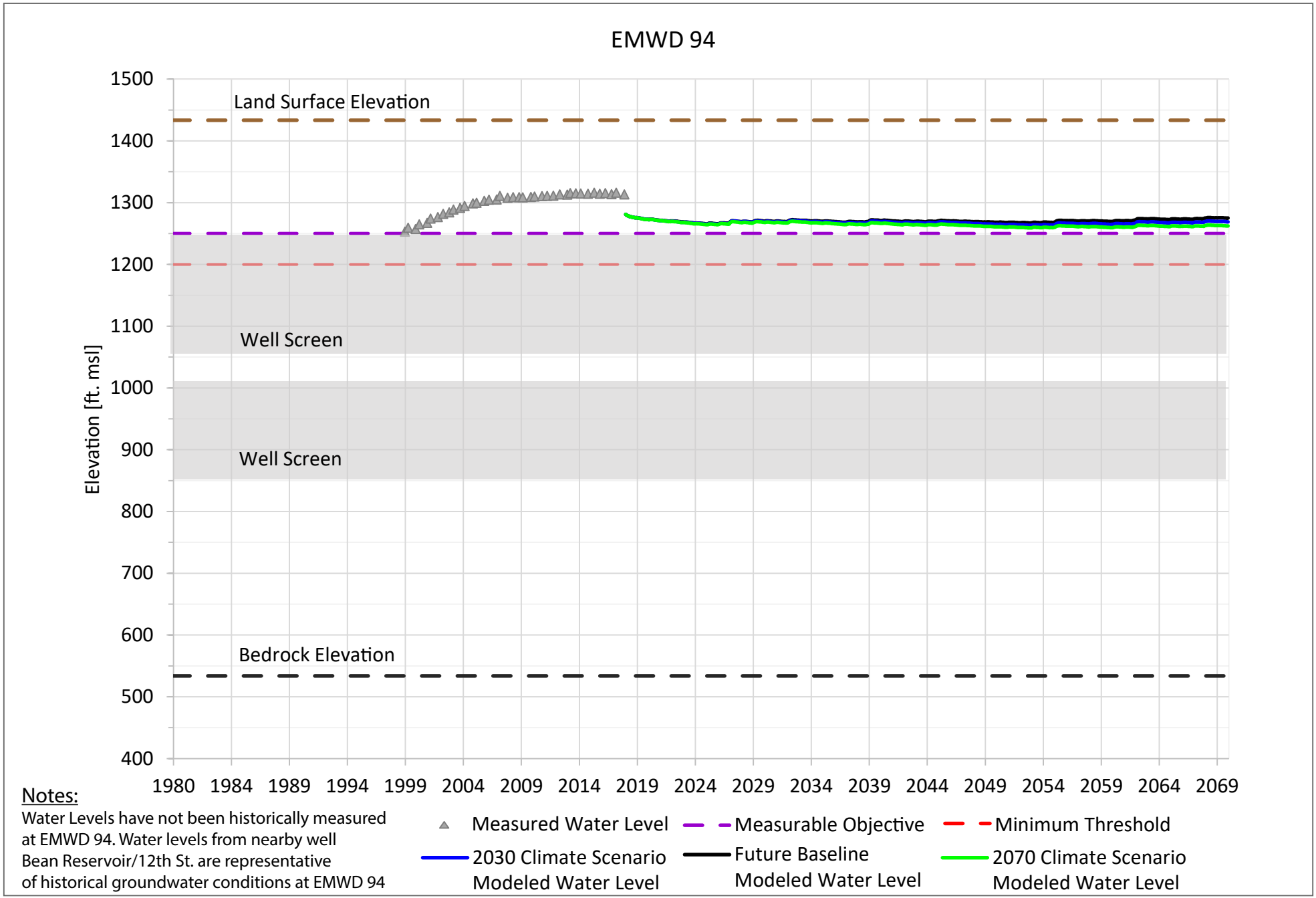
SOURCE: EMWD

FIGURE 3-5

Historical and Projected Water Levels at EMWD 74 Menifee 04

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



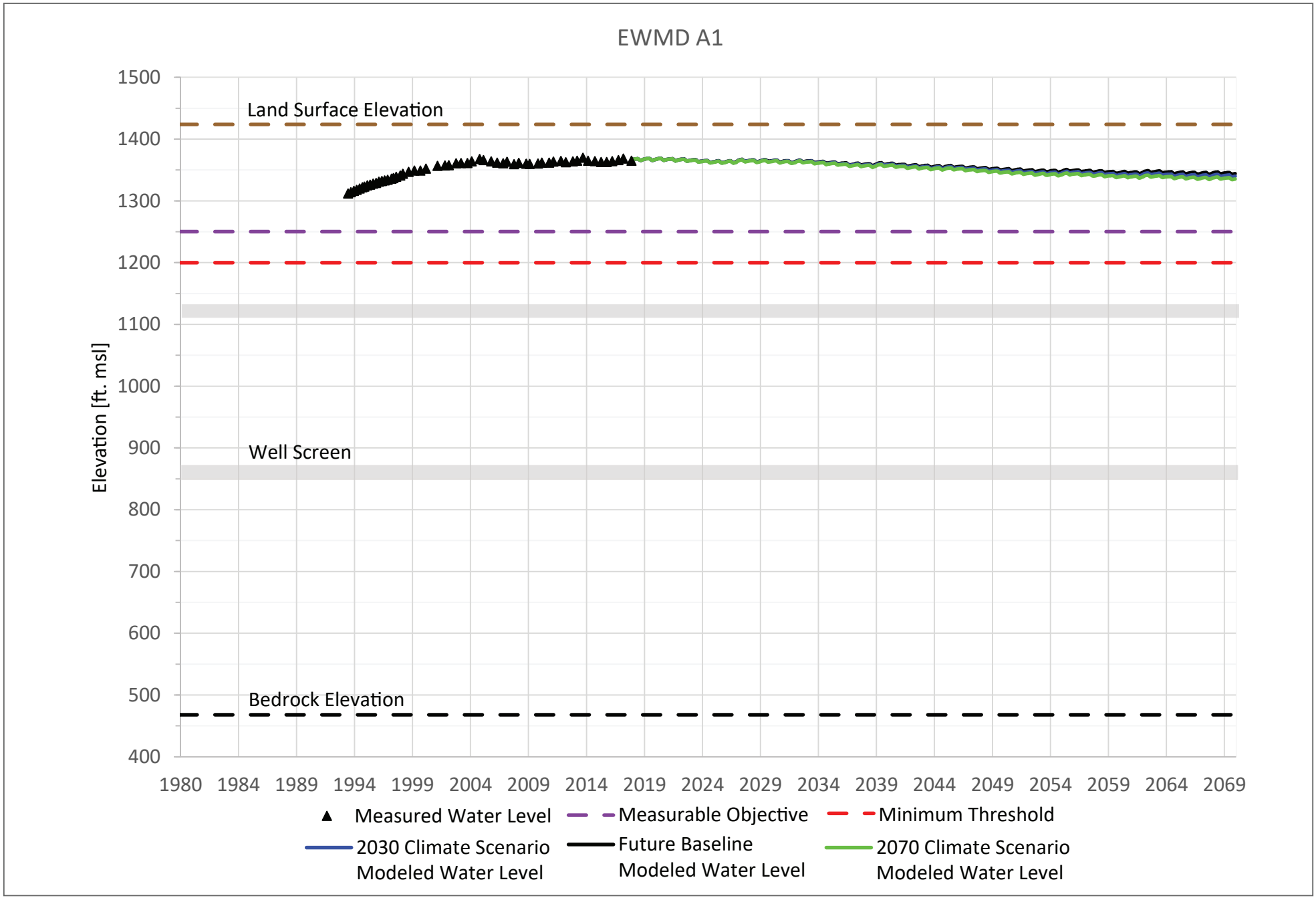
SOURCE: EMWD

FIGURE 3-6

Historical and Projected Water Levels at EMWD 94

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



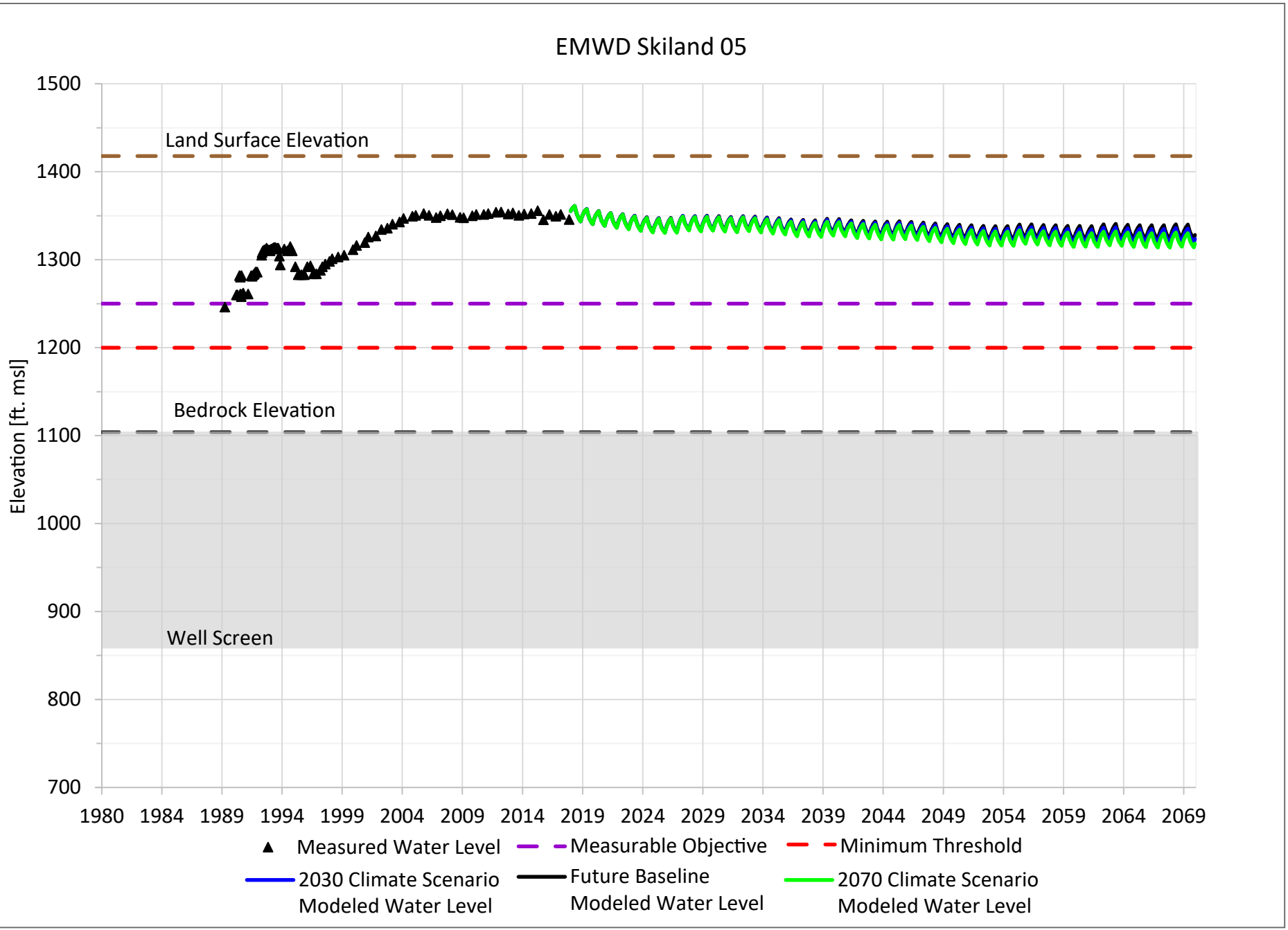
SOURCE: EMWD

FIGURE 3-7

Historical and Projected Water Levels at EMWD A1

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



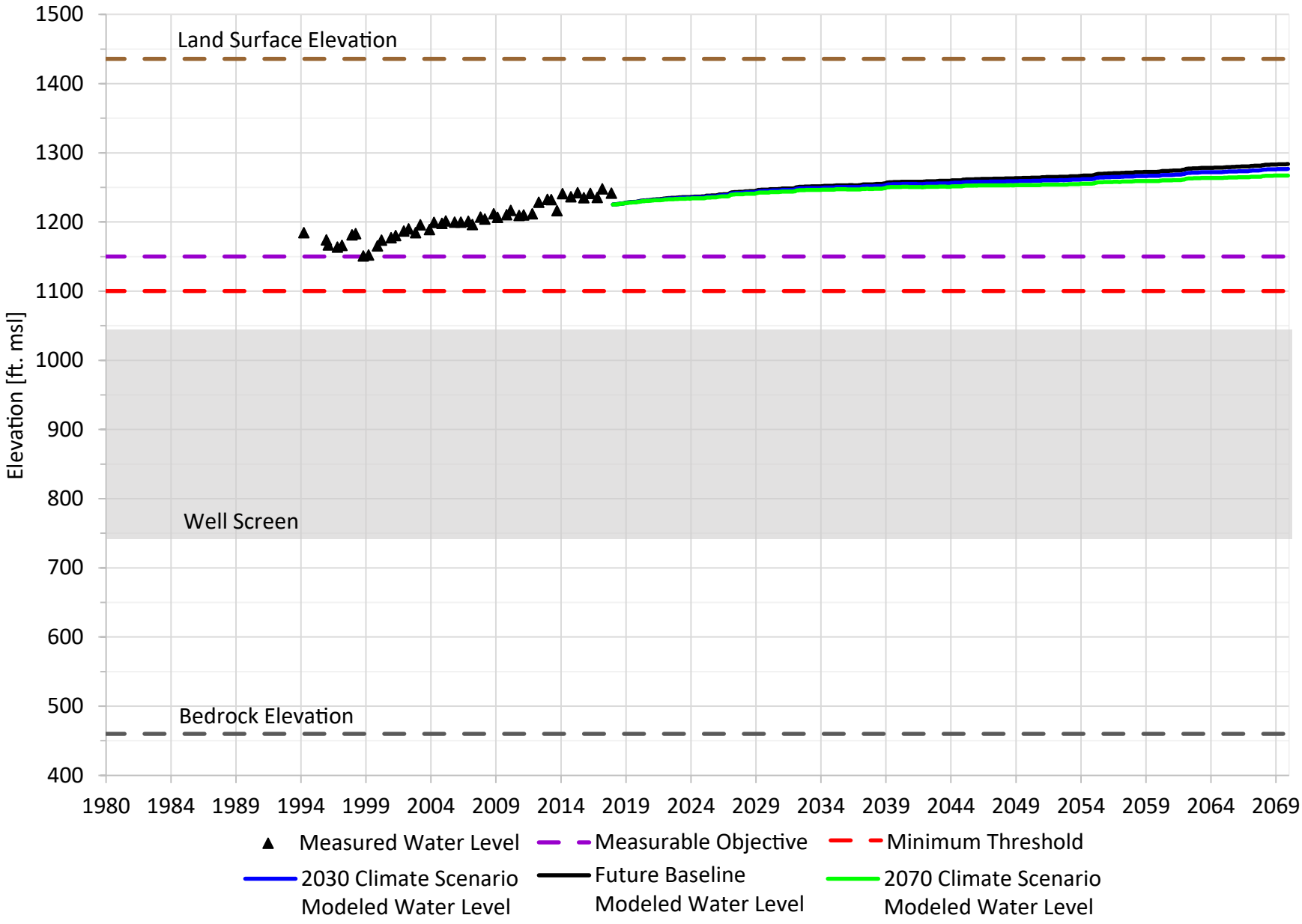
SOURCE: EMWD

FIGURE 3-8

Historical and Projected Water Levels at EMWD Skiland 05

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



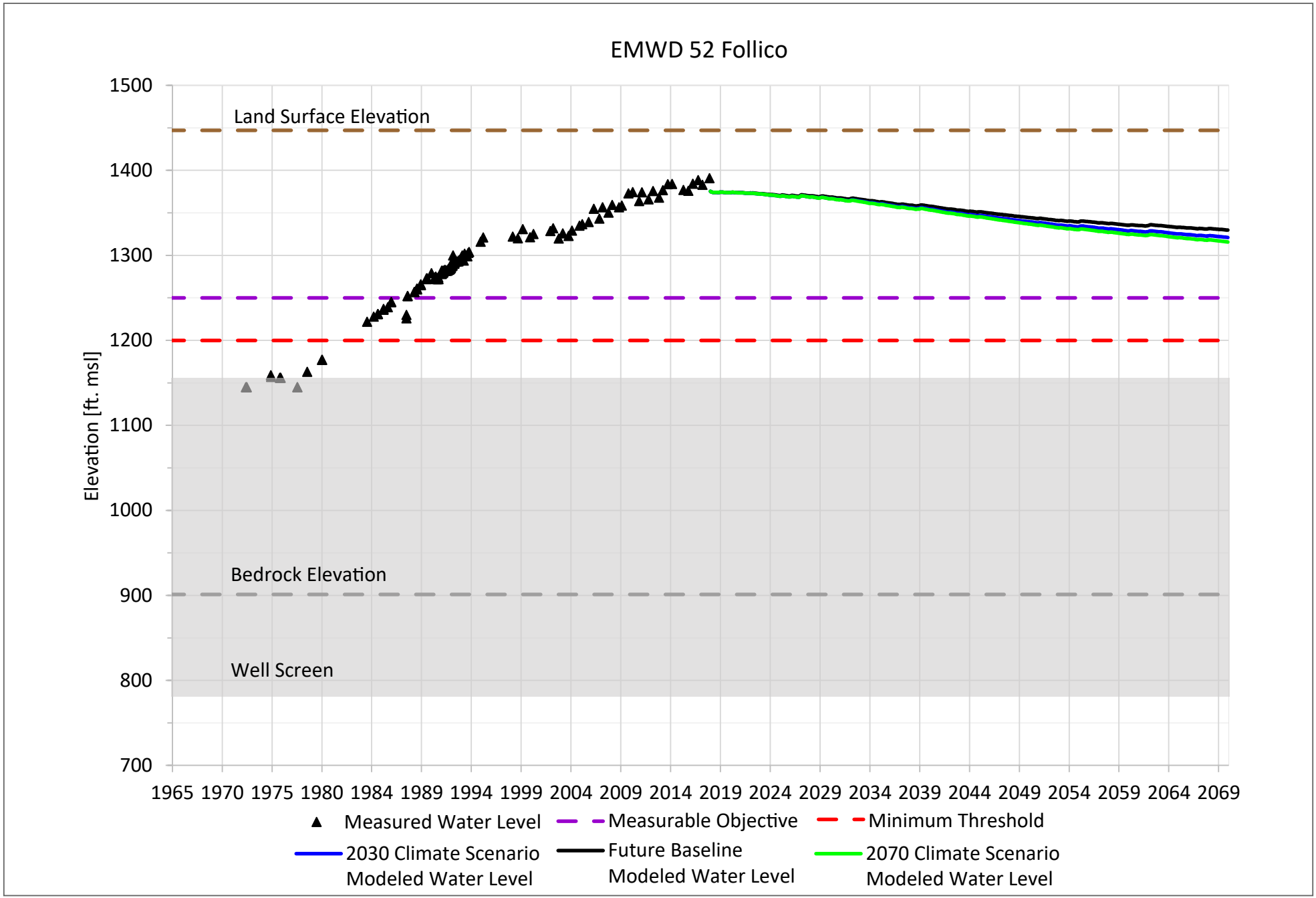
SOURCE: EMWD

FIGURE 3-9

Historical and Projected Water Levels at Nutrilite 07

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



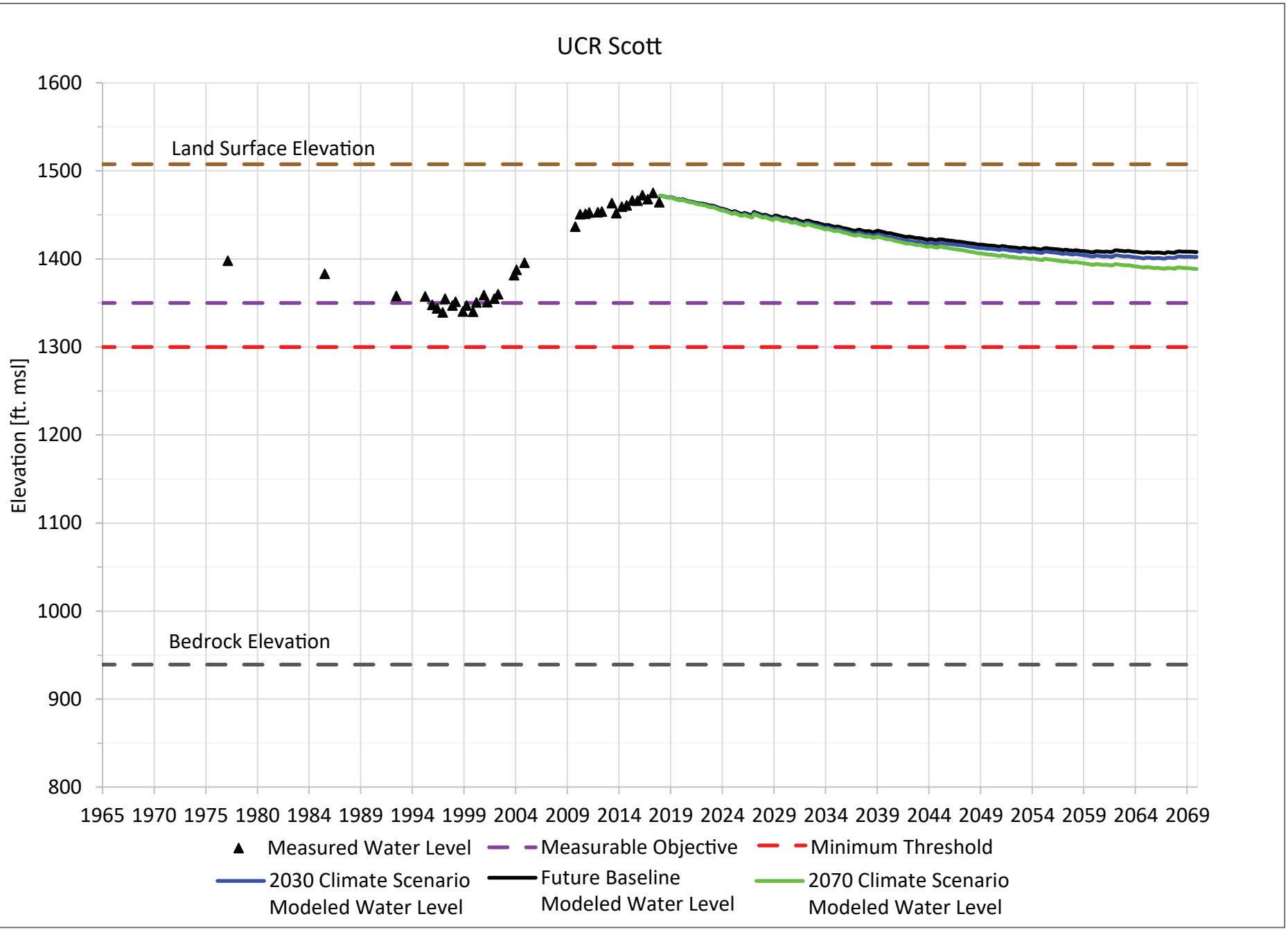
SOURCE: EMWD

FIGURE 3-10

Historical and Projected Water Levels at EMWD 52 Follico

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK



SOURCE: EMWD

FIGURE 3-11

Historical and Projected Water Levels at UCR Scott

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin

Groundwater Sustainability Plan

Legend

- Plan Area
- San Jacinto Groundwater Basin
- Production Area
- MARB wells

EMWD Monitoring Wells 2019

- Level
- Quality
- Level / Quality
- Extraction
- Extraction / Level
- Extraction / Level / Quality
- Extraction / Quality

SOURCE: EMWD

0 1 2 Miles

FIGURE 3-12

Plan Area Groundwater Monitoring Network

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin

Groundwater Sustainability Plan

Legend

- Plan Area
- San Jacinto Groundwater Basin
- Production Areas
- 1 square mile grid
- Groundwater Monitoring Network - Water Level

Water Level Monitoring Well Density

Number of Wells Per Square Mile

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Moreno Valley Production Area

Nuevo/Lakeview Production Area

North Perris Production Area

South Perris Production Area

Menifee Production Area

SOURCE: Esri, EMWD

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 3-13

Groundwater Monitoring Network Density - Water Level

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

EASTERN MUNICIPAL WATER DISTRICT

San Jacinto Groundwater Basin
Groundwater Sustainability Plan

Legend

- Plan Area
- San Jacinto Groundwater Basin
- Groundwater Management Zone
- 1 square mile grid
- Groundwater Monitoring Network - Water Quality

Water Quality Monitoring Well Density
Number of Wells Per Square Mile

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Perris North

San Jacinto Lower Pressure

Lakeview

Perris South

Hemet South

Menifee

Moreno Valley

SOURCE: Esri, EMWD

emwd EASTERN MUNICIPAL WATER DISTRICT

0 1 2 Miles

FIGURE 3-14

Groundwater Monitoring Network Density - Water Quality

Groundwater Sustainability Plan for theSan Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

CHAPTER 4
PROJECTS AND MANAGEMENT ACTIONS

4.0 PROJECTS AND MANAGEMENT ACTIONS TO ACHIEVE SUSTAINABILITY GOAL

The projects and management actions listed in this Chapter document the potential actions that the West San Jacinto GSA could undertake in the event that the current understanding of the hydrogeologic conceptual model of the Plan Area, and the numerical groundwater modeling based on that conceptual model, have not sufficiently captured the long-term groundwater conditions in the Plan Area. Projects and management actions are not necessary to achieve sustainability in the Plan Area, which has experienced rising groundwater levels and increased groundwater in storage over the past 30 years (see Sections 2.4.1 Groundwater Elevation Data and 2.4.2 Estimated Change in Storage). However, projects and management actions may be necessary to respond to changing conditions in the Plan Area. These projects and management actions are the ones discussed in this Chapter.

In order to maintain sustainable use of the groundwater resources in the Plan Area for current and future stakeholders, EMWD has planned and implemented several projects designed to improve groundwater quality. These projects include the Perris South Desalination Project, the Perris II Reverse Osmosis Treatment Facility Project, which expands on the Perris South Desalination Project, and the Perris North Basin Groundwater Contamination Prevention and Remediation Project (EMWD 2019a, EMWD 2019b). Additionally, DWR has planned the Lake Perris Seepage Recovery Project, which is designed to recover 6,000 to 8,000 AFY of deep seepage, via a series of extraction wells downgradient from the Lake Perris Dam. The recovered seepage will be directed to the Colorado River Aqueduct. Some, but not all, of this seepage is currently recovered by a toe drain. The impacts on groundwater elevations and storage from these projects are incorporated in the future baseline scenarios (see Section 2.5.6.3 Projected Water Budget). The future baseline scenarios incorporate all known existing and currently planned groundwater production in the Plan Area.

In the event that changing conditions in the Plan Area necessitate implementation of the projects and management actions listed below, additional groundwater modeling may be needed to evaluate their effectiveness. . The results of the future baseline scenarios suggest that groundwater elevations in the Plan Area will remain above both the measurable objective and minimum threshold at every RMP throughout the 50-year planning and implementation horizon.

4.1 MANAGEMENT ACTION #1 – ADJUST GROUNDWATER PRODUCTION AS-NEEDED TO MEET WATER LEVEL AND/OR WATER QUALITY OBJECTIVES

EMWD's existing and planned groundwater desalter facilities include production wells that are located in two of the five groundwater production areas. This allows EMWD to adjust the volume of groundwater produced in different geographic areas while maintaining the overall flow needed to meet target salt removal goals and anticipated consumer demand. If the concentrations of TDS in the groundwater begin to approach the minimum threshold at three of the five groundwater quality RMPs, EMWD may need to increase groundwater production south and west of the RMPs to reverse the groundwater flow direction and maintain hydraulic control of the TDS plume in the Lakeview GMZ. If groundwater elevations decline at a rate that exceeds the projected rate of decline and water levels begin to approach the minimum thresholds for groundwater elevation at one or more of the RMPs, EMWD can shift production from one groundwater production area to another in order to allow groundwater elevations to recover in the impacted production area. Additionally, if groundwater levels in multiple groundwater production zones are approaching the minimum thresholds at the relevant RMPs, EMWD could reduce its overall groundwater production from the Plan Area, in order to allow groundwater elevations to recover.

4.1.1 Measurable Objective Expected to Benefit

The measurable objectives for groundwater quality, chronic declines in groundwater levels, and groundwater in storage would benefit from implementation of this management action if implementation becomes necessary. Groundwater conditions in the Plan Area are currently above the measurable objectives, and the Plan Area is not currently experiencing undesirable results related to any of the sustainability indicators.

4.1.2 Expected Benefits and Evaluation

Groundwater quality can be maintained or improved by stopping or reversing the northeastward migration of high-TDS groundwater from the Perris South GMZ into the Lakeview GMZ. TDS concentrations at the groundwater quality RMPs would be used to measure the expected benefit to groundwater quality. If TDS concentrations stabilize or decrease at the groundwater quality RMPs, the management action will have adequately prevented further northeastward migration of the high-TDS groundwater.

Groundwater in storage would increase and chronic declines in groundwater elevation would cease or reverse with reduced groundwater production. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize, or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and preventing chronic declines in groundwater.

4.1.3 Circumstances for Implementation

This management action would be implemented if groundwater levels approach the minimum threshold groundwater elevation at one or more groundwater level RMPs.

4.1.4 Public Noticing

Public noticing is not required for this management action, which would be undertaken under EMWD's authority to operate its groundwater production wells and desalter facilities. Stakeholders would not be impacted by this management action, because it does not impose restrictions on private groundwater producers in the Plan Area.

4.1.5 Permitting and Regulatory Process

No additional permitting or regulatory oversight is necessary to implement this management action, which would be undertaken under EMWD's authority to operate its groundwater production wells and desalter facilities.

4.1.6 Implementation Schedule

There is no specific implementation schedule for this management action as future groundwater level projections suggest this management action will not be required. EMWD has the ability to implement this management action within six months of determining that one of the criteria for implementation described in Section 4.1.3 has been met.

4.1.7 Legal Authority

EMWD, as a water purveyor, already has the legal authority necessary to operate groundwater production and desalting facilities in the Plan Area. No additional legal authority is required.

4.1.8 Estimated Costs

This management action could be incurred at no cost to EMWD, or to its customers, if groundwater production is increased or shifted, but the total volume produced remains the same. In the event that groundwater production is reduced overall, additional cost may be incurred if groundwater is replaced by imported water.

4.2 MANAGEMENT ACTION #2 – IMPOSE REPLENISHMENT OR IMPORTED WATER PURCHASE/ PUMPING OFFSET FEE

EMWD is currently the largest groundwater producer in the Plan Area. Since 1985, the combined groundwater extractions from EMWD wells and private wells have not exceeded the sustainable

yield of the Plan Area (see Section 2.5.6 Projected Water Budget). Projected groundwater extractions from both EMWD and private pumpers were incorporated into the future scenarios. These projected extractions are not anticipated to cause undesirable results in the Plan Area. Projected groundwater extractions are, however, anticipated to approximately equal the sustainable yield of the Plan Area. Therefore, new projects that rely on groundwater production, or that increase groundwater production rates from existing wells, would exceed the production rates modeled in the future baseline scenarios and this may result in overdraft of the Plan Area. This increased extraction above the projected extractions in the future baseline scenarios could lead to undesirable results.

In the event that groundwater conditions within the Plan Area warrant additional management by the West San Jacinto GSA, the GSA may impose a replenishment fee, or a water purchase / pumping offset fee for groundwater users in the Plan Area. In the case of the replenishment fee, the fees would be used to develop and support projects that would increase recharge, and therefore increase the sustainable yield in the Plan Area. Alternatively, purchase / pumping offset fees would be used to purchase additional imported water to meet EMWD customer demands, while offsetting EMWD groundwater use. It should be noted that the majority of EMWD groundwater extraction wells are linked to regional efforts to improve groundwater quality and restore beneficial uses of groundwater in the Plan Area. Therefore, while purchasing imported water may be an option to offset some EMWD production, such a program could interfere with EMWD's strategic goals to improve water quality in the Plan Area if groundwater elevations in the Perris South production area increase and poorer quality groundwater migrates into the Lakeview GMZ (see Section 3.2.3).

Both of the potential projects that could be supported by a fee imposed on groundwater production require additional feasibility studies before they could be implemented. Groundwater recharge projects have been successful within the Hemet-San Jacinto Management Area but have not been studied as extensively within the Plan Area. Recharge projects require suitable hydrogeologic conditions, as well as available water, to succeed. Before imposing a replenishment fee, EMWD would undertake the necessary hydrogeologic studies to assess the feasibility of recharge within the Plan Area. EMWD may choose to fund the necessary feasibility studies or it may impose a fee on groundwater extractions to fund the effort.

The feasibility of purchasing imported water in order to offset groundwater production is likely to be impacted by additional demands on imported water from groundwater basins across the State of California. While many GSAs, including the West San Jacinto GSA, are increasing groundwater production in order to develop a more drought-resistant water supply portfolio, several GSAs managing critically over-drafted basins are looking to increase purchases of imported water. The increased demand from these basins is likely to exceed the reduced demand from basins that have not been critically over-drafted. Therefore, EMWD will have to investigate the volume of water

that may be available for purchase, and whether that volume is sufficient to offset the overdraft conditions, before developing a fee structure to support purchase of additional imported water.

4.2.1 Measurable Objective Expected to Benefit

The measurable objectives for chronic declines in groundwater levels and groundwater in storage would benefit from implementation of this management action if implementation becomes necessary. Groundwater conditions in the Plan Area are currently above the measurable objectives, and the Plan Area is not currently experiencing undesirable results related to any of the sustainability indicators.

4.2.2 Expected Benefits and Evaluation

Groundwater in storage would increase and chronic declines in groundwater elevation would cease or reverse with groundwater recharge projects in the Plan Area or purchasing imported water to offset groundwater production. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize or rise at the groundwater level RMPs, the management action will have succeeded in increasing the volume of groundwater in storage and preventing chronic declines in groundwater. Additionally, as long as a groundwater gradient that prevents migration of brackish water into areas of fresh water is maintained, this project has the potential to improve groundwater quality as imported water is used to recharge the Plan Area.

4.2.3 Circumstances for Implementation

This management action would be implemented if groundwater elevations fall below the measurable objective and approach the minimum threshold at three or more groundwater level RMPs as a result of increased production in non-EMWD wells that were not included in the future baseline scenarios. For example, if a new project that relies on groundwater production in excess of the projected extractions for the future baseline scenarios is implemented in the Plan Area, and that project will result in undesirable results in the Plan Area, this management action may be implemented. Similarly, if changes in agricultural cropping, or groundwater use for other non-agricultural purposes result in increased production from the Plan Area beyond those incorporated into the future baseline scenarios, thereby causing overdraft of the Plan Area, this management action may be implemented.

4.2.4 Public Noticing

Imposing a fee for groundwater recharge activities, or for the purchase of additional imported water, would require substantial public input and noticing. The West San Jacinto GSA would need public input to understand the potential impacts of imposing a fee on groundwater extractions, and the West San Jacinto GSA anticipates gathering public input using multiple methods, over multiple

public meetings. Per subdivision (a) of Section 6 of Article XIII D of the California Constitution, the West San Jacinto GSA will conduct a public hearing on the proposed fee no less than 45 days after mailing a notice of the proposed fee to the owners of each parcel upon which the fee is proposed. Published and written notice of the public hearing will be provided as required by the provisions of the Municipal Water District Law of 1911, specifically Sections 71632, 71638, 71638.4 and 71674 of the California Water Code (CWC).

4.2.5 Permitting and Regulatory Process

Imposing a fee for groundwater recharge activities, or for the purchase of additional imported water, would not require any permitting or regulatory oversight, although a replenishment project that stems from this fee would require coordination with the RWQCB. This fee would have to comply with all applicable sections of the CWC and the California Constitution.

4.2.6 Implementation Schedule

There is no specific implementation schedule for this management action because it is only anticipated to be implemented in the event that groundwater production volumes exceeding those accounted for in the future baseline scenarios result in undesirable results in the Plan Area. If this management action is determined to be needed and an implementation schedule developed, then changes or updates to the implementation schedule would be reported to DWR as part of the 5-year GSP evaluation process (CWC § 10733.8).

4.2.7 Legal Authority

The West San Jacinto GSA has the authority to impose fees on the extraction of groundwater in order to fund costs of groundwater management in the Plan Area after it adopts this GSP (CWC §10730.2 (a)). The fees that would be imposed under this management action must be adopted by resolution by the GSA Board of Directors in accordance with subdivisions (a) and (b) of Section 6 of Article XIII D of the California Constitution (CWC §10730.2 (c)).

4.2.8 Estimated Costs

The costs associated with this management action have not yet been estimated. The cost to conduct the initial study and public outreach may be funded by EMWD or require a one-time assessment on groundwater users in the Plan Area. Ongoing administrative costs of this management action would be incorporated into the groundwater fee structure so that the program would be self-supporting.

4.3 MANAGEMENT ACTION #3 – DEVELOP A GROUNDWATER ALLOCATION FOR THE PLAN AREA

Current groundwater production rates are below the anticipated sustainable yield of the Plan Area (see Section 2.5.6 Projected Water Budget). Projected groundwater extractions from both EMWD and private pumpers, however, are anticipated to approximately equal the sustainable yield of the Plan Area. Although these projected extractions are not anticipated to cause undesirable results, new projects that rely on groundwater production, or that increase groundwater production rates from existing wells, would exceed the production rates modeled in the future baseline scenarios. Production at rates higher than those modeled in the future simulations may lead to undesirable results.

In the event that groundwater production rates approximately equal or exceed the estimated sustainable yield of the Plan Area, the Board of Directors for the West San Jacinto GSA may develop a groundwater allocation for the Plan Area. Any groundwater allocation would be developed in conjunction with the stakeholders in the Plan Area, and would be anticipated to incorporate historical groundwater production from existing stakeholders and EMWD. After development of the groundwater allocation, the West San Jacinto GSA would work to develop a fee structure for groundwater production in excess of the allocated amounts. This management action would be developed with stakeholder input after the GSP is adopted.

4.3.1 Measurable Objective Expected to Benefit

The measurable objectives for chronic declines in groundwater levels and groundwater in storage would benefit from implementation of this management action if implementation becomes necessary. Groundwater conditions in the Plan Area are currently above the measurable objectives, and the Plan Area is not currently experiencing undesirable results related to any of the sustainability indicators.

4.3.2 Expected Benefits and Evaluation

Groundwater in storage would increase and chronic declines in groundwater elevation would cease or reverse with reduced groundwater production resulting from implementing a groundwater allocation because there would be a financial disincentive to produce groundwater in excess of the sustainable yield of the basin. Additionally, fees collected for groundwater produced in excess of the sustainable yield could be used to develop and implement groundwater replenishment or using imported water to offset groundwater production. Groundwater in storage will be measured using groundwater elevations as a proxy. If groundwater elevations stabilize or rise at the groundwater level RMPs, the management action will have succeeded in maintaining or increasing the volume of groundwater in storage and preventing chronic declines in groundwater.

4.3.3 Circumstances for Implementation

This management action would be implemented if groundwater production that exceeds the estimated sustainable yield of the Plan Area may cause undesirable results.

4.3.4 Public Noticing

Developing a groundwater allocation would require substantial public input and noticing. The West San Jacinto GSA would require public input to understand the potential impacts of the allocation and the most appropriate method for developing the allocation. The West San Jacinto GSA anticipates gathering public input using multiple methods, over multiple public meetings. Published and written notice of the public hearing will be provided as required by the provisions of the Municipal Water District Law of 1911, specifically Sections 71632, 71638, 71638.4 and 71674 of the California Water Code (CWC).

4.3.5 Permitting and Regulatory Process

Developing a groundwater allocation would not require any permitting or regulatory oversight.

4.3.6 Implementation Schedule

There is no specific implementation schedule for this management action because it would only be developed if groundwater production exceeds the estimated sustainable yield in the Plan Area. If this management action is determined to be needed and an implementation schedule developed, then changes or updates to the implementation schedule will be reported to DWR as part of the 5-year GSP evaluation process (CWC § 10733.8).

4.3.7 Legal Authority

The West San Jacinto GSA has the authority, through action by the Board of Directors, to develop a groundwater allocation after it adopts this GSP (CWC §10726.4 (a)(2)).

4.3.8 Estimated Costs

The costs associated with this management action have not yet been estimated. Ongoing administrative costs of this management action could be incorporated into the groundwater fee structure so that the program would be self-supporting.

4.4 PROJECT #1 – ASSESS FEASIBILITY OF RECYCLED WATER DELIVERY TO PRIVATE PRODUCERS IN THE MENIFEE PRODUCTION AREA

Private wells extract the largest volume of groundwater in the Menifee Production Area. As a result, EMWD has less influence over groundwater elevations in the Menifee Production Area, where it does not have a desalter well, than it does in the other four production areas. If groundwater elevations begin to approach the groundwater level minimum threshold at well EMWD 74, EMWD will assess the feasibility of delivering recycled water to private groundwater producers in the Menifee Production Area, in order to offset their groundwater pumping, and to allow groundwater levels in the aquifer to recover. EMWD has recycled water infrastructure that may allow for recycled water deliveries to private producers but, because groundwater elevations in the Menifee Production Area have been stable or rising over the last 30 years, a feasibility analysis that includes a comprehensive analysis of the engineering required to complete the delivery system, and a cost per acre foot of water has not yet been conducted.

4.4.1 Measurable Objective Expected to Benefit

The measurable objectives for chronic declines in groundwater levels and groundwater in storage may benefit from implementation of this project if implementation becomes necessary. Groundwater conditions in the Plan Area are currently above the measurable objectives, and the Plan Area is not currently experiencing undesirable results related to any of the sustainability indicators.

4.4.2 Expected Benefits and Evaluation

Substituting recycled water for groundwater extractions that have historically been used to support agricultural activities in the Menifee Production Area would allow groundwater levels to recover and groundwater in storage to increase. If recycled water delivery is found to be feasible and an in-lieu delivery system is implemented, increases in groundwater in storage will be measured using groundwater elevations at well EMWD 74 as a proxy. If groundwater elevations stabilize or rise at well EMWD 74, the recycled water delivery project that stemmed from this project will have succeeded in increasing the volume of groundwater in storage and preventing chronic declines in groundwater. Furthermore, recycled water quality has lower concentrations of TDS and nitrate than the groundwater in the Menifee Production Area. Therefore, this project may improve the groundwater quality of the Menifee Production Area.

4.4.3 Circumstances for Implementation

This project would be implemented if groundwater levels approach the minimum threshold groundwater elevation at well EMWD 74.

4.4.4 Public Noticing

Public noticing is not required for this project, which would be undertaken under EMWD's authority to assess projects that may be needed to optimize use of the overall water available to the Plan Area. Stakeholders would not be impacted by this project, because it only authorizes the initiation of a feasibility study. In the event that recycled water delivery is found to be feasible, and is approved by the EMWD Board of Directors, EMWD would comply with all CEQA and public noticing requirements prior to and during project implementation.

4.4.5 Permitting and Regulatory Process

Authorizing a feasibility study to assess the viability of using recycled water to offset groundwater extractions from private production wells in the Menifee Production Area would not require permitting or regulatory oversight. EMWD regularly conducts engineering feasibility studies prior to funding and implementing projects.

4.4.6 Implementation Schedule

There is no tentative implementation schedule for this project because it is not anticipated to be necessary for sustainable management of the groundwater resources in the Plan Area. If declining groundwater elevations in the vicinity of well EMWD 74 necessitate the implementation of this project, then EMWD would endeavor to undertake the feasibility study within one year of identifying the need to evaluate the viability of recycled water deliveries to private groundwater producers in the Menifee Production Area.

4.4.7 Legal Authority

EMWD has the authority to conduct feasibility studies for projects within its service area.

4.4.8 Estimated Costs

The estimated cost to implement the feasibility study and preliminary design for delivery of recycled water to private producers in the Menifee Production Area is approximately $500,000. This estimate does not include construction costs, which would be estimated as part of the feasibility study and preliminary design work.

4.5 PROJECT #2 – CONDUCT ADDITIONAL INVESTIGATIONS AND/ OR TECHNICAL STUDIES

Projected groundwater elevations in the Plan Area are not expected to approach either the measurable objectives, or the minimum thresholds at any of the groundwater level RMPs during the 50-year planning and implementation horizon under the future baseline scenarios (see Section

2.5.6.3 Projected Water Budget). Implementation of the Perris II Reverse Osmosis Treatment Facility Project is expected to prevent the northeastward migration of high concentrations of TDS into the Lakeview GMZ, and TDS concentrations outside of the 1,000 mg/L iso-contour are anticipated to remain below 1,000 mg/L for the 50-year planning and implementation horizon for this GMZ.

As a component of the Perris II Reverse Osmosis Treatment Facility Project, EMWD is also updating SJFM-2014. The update will include aligning the model boundaries with the updated boundaries of the SJGB, revising the bedrock elevation in the model, refining the boundary conditions in the Lake Perris portion of the Plan Area, adjusting the model layer thicknesses in the Perris South GMZ, and recalibrating the SJFM once the model adjustments have been made. The intent of this project is to estimate the long-term groundwater supply available in the Perris South GMZ. Refinements to SJFM-2014 and the resulting updated understanding of water availability will be incorporated into future estimates of the sustainable yield of the Plan Area. These refinements may also indicate that the groundwater quality and groundwater in storage measurable objectives and minimum thresholds included in this GSP need revision in future GSP evaluations.

The projected Plan Area conditions in this GSP are based on the results from the San Jacinto Flow Model, which incorporates the current hydrogeological conceptual understanding of the Plan Area, projects that are known to be under development, or in the beginning stages of implementation, and an assessment of potential future climate conditions in the Plan Area. There is, however, uncertainty inherent in any numerical model projection, because models, by definition, are simplified representations of the physical world. Each input to the numerical model has an associated uncertainty commensurate with the ability of the model to represent the influence of that input on groundwater conditions within the model domain as well as with the accuracy and understanding of the data used to represent that input in the model (see Section 2.5.8 Characterization of Model Sensitivity and Predictive Uncertainty).

Because there is uncertainty in both the projected conditions in the Plan Area generated by the SJFM-2014 and the actual project operations that will occur in the Plan Area, actual future groundwater conditions may differ from the predicted conditions. Future measured groundwater level declines that exceed the projected groundwater declines may indicate that the current understanding of the hydrogeologic conceptual model or the current representation of the influences on groundwater conditions in the numerical groundwater model need to be refined. Similarly, future measured TDS concentrations that approach the minimum thresholds may indicate that the source of water contributing to higher TDS concentrations, or the ability of EMWD to use hydraulic containment to control the northeastward spread of the brackish water plume is poorly constrained. If the management actions listed above fail to control groundwater level declines, or the increases in TDS concentration, EMWD will conduct additional

investigations and/or technical studies to fill in data gaps and improve the understanding of the primary controls on groundwater conditions in the Plan Area.

Groundwater quality can be maintained or improved by stopping or reversing the northeastward migration of the high TDS groundwater into the Lakeview GMZ. EMWD intends to prevent further northeastward migration of the TDS plume using the network of desalter wells to maintain hydraulic control of the brackish groundwater plume. If extractions from the desalter wells are not adequate to maintain hydraulic control, which is defined by TDS concentrations that are approaching or exceed 1,000 mg/L at the groundwater quality RMPs, EMWD will investigate potential modifications, or additions to the engineering infrastructure. Additionally, EMWD will investigate the potential influence of induced groundwater flow from the Mystic Lake area that may contribute to increasing TDS concentrations at the groundwater quality RMPs.

If groundwater elevations fall below the measurable objectives and begin to approach the minimum thresholds at the groundwater level RMPs during the 50-year planning and implementation horizon, EMWD will conduct additional investigations and/or technical studies to fill in data gaps and identify effective measures to prevent undesirable results in the Plan Area.

4.5.1 Measurable Objective Expected to Benefit

The measurable objectives for groundwater quality, chronic declines in groundwater levels, and/or groundwater in storage will benefit from this project if implementation becomes necessary. Groundwater conditions in the Plan Area are currently above the measurable objectives, and the Plan Area is not currently experiencing undesirable results related to any of the sustainability indicators.

4.5.2 Expected Benefits and Evaluation

Identifying the source or sources of groundwater contributing to unanticipated increases in TDS concentrations at the groundwater quality RMPs and evaluating both the need for and effectiveness of additional hydraulic control measured in the Lakeview GMZ, would benefit water quality management in the Plan Area. Additionally, filling in data gaps and identifying new projects and management actions that would improve control of groundwater elevations within the Plan Area would benefit groundwater storage management in the Plan Area.

Evaluation of the effectiveness of this project would be measured after additional infrastructure is constructed or additional management actions are implemented. If TDS concentrations stabilize, or decrease at the groundwater quality RMPs, the newly implemented projects or management actions that were identified as part of this project will have adequately prevented further northeastward migration of the 1,000 mg/L TDS iso-contour. If groundwater elevations, which would be used as a proxy for groundwater in storage, stabilize or rise at the groundwater level

RMPs as a result of additional management actions or infrastructure identified as part of this project, this project will have been successful.

4.5.3 Circumstances for Implementation

This project would be implemented if groundwater levels approach the minimum threshold groundwater elevation at three or more groundwater elevation RMPs, or the concentration of TDS in three or more groundwater quality RMPs approaches 1,000 mg/L, and other projects and management actions have failed to improve the groundwater conditions in the Plan Area.

4.5.4 Public Noticing

Public noticing is not required for this project, which would be undertaken under EMWD's authority to assess projects that may be needed to optimize use of the overall water available to the Plan Area. Stakeholders would not be impacted by this project, because it only authorizes the initiation of additional investigations and/or technical studies. In the event that the investigations and/or technical studies identify projects that are approved by the EMWD Board of Directors, EMWD would comply with all CEQA and public noticing requirements prior to and during project implementation.

4.5.5 Permitting and Regulatory Process

Additional investigations and/or technical studies may require permitting or regulatory oversight, depending on the nature of the investigation or technical study. EMWD will comply with any permitting or regulatory requirements associated with the proposed investigation or technical study.

4.5.6 Implementation Schedule

There is no tentative implementation schedule for this project because it is not anticipated to be necessary for sustainable management of the groundwater resources in the Plan Area. An implementation schedule will be developed in the event that groundwater conditions suggest this project may be necessary. If an implementation schedule is developed, then changes or updates to the implementation schedule will be reported to DWR as part of the 5-year GSP evaluation process.

4.5.7 Legal Authority

EMWD has the authority to conduct investigations and technical studies within its service area.

4.5.8 Estimated Costs

The estimated cost of this project will depend on the type of investigation or technical study required. Cost estimates will be developed in the event that groundwater conditions suggest this

project may be necessary. Changes or updates to the cost estimates and methods for funding will be reported to DWR as part of the 5-year GSP evaluation process.

4.6 PROJECT #3 – CONSTRUCT ADDITIONAL DEDICATED MONITORING WELLS

The current groundwater monitoring network in the Plan Area consists of long-screen groundwater production wells and agricultural wells, as well as dedicated monitoring wells. While it is adequate to characterize the groundwater conditions in the Plan Area, the monitoring network could be improved by installation of additional dedicated monitoring wells. These wells will be designed to capture the groundwater elevations adjacent to existing and planned groundwater production wells and can be placed in areas with less dense spatial coverage to better capture the lateral extent of impacts to the aquifer from groundwater production. Characterization of the water quality in the various hydrostratigraphic units of the groundwater aquifer system can be accomplished using dedicated monitoring wells with targeted well screen intervals. Installation of dedicated monitoring wells is consistent with DWR's monitoring network guidance, which states "wells that are part of the monitoring program should be dedicated groundwater monitoring wells with known construction information" (DWR 2016).

4.6.1 Measurable Objective Expected to Benefit

Although installation of dedicated monitoring wells will not directly benefit any single measurable objective, data from dedicated monitoring wells will provide a clearer understanding of the groundwater conditions in the Plan Area both laterally and vertically. This will allow for improved management which will, in-turn, benefit the measurable objectives for groundwater quality, chronic declines in groundwater levels, and/or groundwater in storage.

4.6.2 Expected Benefits and Evaluation

Filling in data gaps and identifying new projects and management actions that would improve control of groundwater elevations within the Plan Area would benefit groundwater storage management in the Plan Area. Evaluation of the effectiveness of this project would be measured after additional monitoring wells are constructed. If TDS concentrations stabilize, or decrease at the groundwater quality RMPs, the newly implemented projects or management actions that were identified as part of this project will have adequately prevented further northeastward migration of the 1,000 mg/L TDS iso-contour. If groundwater elevations, which would be used as a proxy for groundwater in storage, stabilize or rise at the groundwater level RMPs as a result of additional management actions or infrastructure identified as part of this project, this project will have been successful.

4.6.3 Circumstances for Implementation

This project will be implemented as funding becomes available to construct dedicated monitoring wells.

4.6.4 Public Noticing

Public noticing is not required for this project. Stakeholders would not be impacted by this project because it only authorizes installation of additional monitoring wells.

4.6.5 Permitting and Regulatory Process

Well installation within the Plan Area requires a permit from Riverside County DEH. EMWD will continue to comply with any Riverside County permitting requirements associated with installing dedicated monitoring wells as part of this project.

4.6.6 Implementation Schedule

This project will be implemented as funding becomes available for monitoring well installation. Documentation of the monitoring wells that have been installed under this project will be reported to DWR as part of the annual monitoring reports and / or the 5-year GSP evaluation process.

4.6.7 Legal Authority

EMWD has the authority to install monitoring wells to better understand groundwater conditions within its service area.

4.6.8 Estimated Costs

The estimated cost to install an individual monitoring well in the Plan Area will depend on the thickness of the aquifer and depth of the constructed well. These wells are anticipated to cost between $700,000 and $1,000,000 each to design, permit, and construct.

4.7 PROJECT #4 – DETERMINE THE LOCATION AND STATUS OF DOMESTIC WELLS IN THE PLAN AREA

Although the entirety of the Plan Area lies within the service areas of EMWD, WMWD, Nuevo Water Company, the City of Perris, or Box Springs Mutual Water Company (see Section 2.1.1.2 Water Agencies Relevant to the Plan Area), several domestic wells were identified in DWR's well completion report database (DWR 2021). Groundwater wells that produce 25 AFY or more are included in the current groundwater monitoring network for the Plan Area. As part of this GSP, groundwater wells that produce 2 AFY or more will be added to the groundwater monitoring network. Typical domestic wells use less than 2 AFY and are classified as *de minimis* wells under

SGMA. However, in order to assess whether groundwater elevation declines may impact domestic well users, the location and status of these wells need to be determined. Furthermore, as part of the assessment of the status of any identified domestic wells, groundwater quality sampling will be conducted to assess whether the groundwater produced from the domestic well meets drinking water standards.

4.7.1 Measurable Objective Expected to Benefit

Assessing the location and status of domestic wells within the Plan Area will not directly benefit any single measurable objective. However, understanding the groundwater conditions in the Plan Area and their potential impact to domestic well users will improve overall management of the Plan Area for all beneficial uses and users.

4.7.2 Expected Benefits and Evaluation

Domestic users of groundwater in the Plan Area will benefit from this project because existing domestic well users with potable groundwater supplies will be given the option to connect to their respective water supplier if groundwater conditions in the Plan Area impact the ability of these users to continue to produce potable water. Additionally, domestic well users that are currently consuming water that does not meet drinking water standards will be notified and will also have the option to connect to their local water purveyor. Currently, the number of domestic wells, the groundwater quality produced from those wells, and the status of those wells is not well understood.

4.7.3 Circumstances for Implementation

This project will be implemented as part of the overall implementation of the GSP.

4.7.4 Public Noticing

Public noticing is not required for this project. Stakeholders with domestic wells will benefit from this project, which simply identifies the location, status, and water quality at each of the domestic wells identified in the DWR database.

4.7.5 Permitting and Regulatory Process

This project does not require permitting or regulatory oversight. EMWD will obtain permission from any individual land owner or domestic well user before sampling a well.

4.7.6 Implementation Schedule

This project will be implemented in the first two years after the GSP has been adopted.

4.7.7 Legal Authority

EMWD has the authority to conduct investigations and technical studies within its service area.

4.7.8 Estimated Costs

The estimated costs of this project are not well defined, however the total project cost including desktop investigations of well sites, visits to individual wells, obtaining permission from well-owners, and collecting groundwater samples is likely to be $100,000 to $200,000.

4.8 ADAPTIVE MANAGEMENT

The projects and management actions included in this Chapter are part of a broad portfolio of management strategies that EMWD has successfully employed over its 70-year history to maintain and improve groundwater conditions in the Plan Area and throughout its service area. EMWD has adopted an adaptive management strategy for the Plan Area. Because groundwater levels have been rising, and projects have been implemented to improve water quality in the Plan Area, the decision to pursue or implement the projects and management actions in this Chapter will be based on an evaluation of future groundwater conditions in the Plan Area. This allows for additional data to be collected, which will help reduce uncertainty and inform future decision-making.

Consistent with SGMA, the projects and management actions suggested in this GSP will be evaluated every five years, at a minimum. New projects or management actions may be proposed, and the current projects and management actions may be modified or eliminated during the 5-year evaluation process.

4.9 REFERENCES CITED

California Water Code (CWC) Sections 10720 through 10736. Sustainable Groundwater Management Act and Related Provisions.

DWR (California Department of Water Resources) 2016. *Best Management Practices for the Sustainable Management of Groundwater: Monitoring Networks and Identification of Data Gaps*. December 2016.

DWR (California Department of Water Resources) 2021. *Well Completion Report Map Application* Website: https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37. Accessed August 2021.

EMWD (Eastern Municipal Water District). 1995. *Groundwater Management Plan, West San Jacinto Groundwater Basin*. June 8, 1995.

EMWD (Eastern Municipal Water District) 2019a. Perris North Basin Groundwater Contamination Prevention and Remediation Plan: Proposition 1 GWGP Implementation Full Proposal. March 4, 2019.

EMWD (Eastern Municipal Water District) 2019b. West San Jacinto Groundwater Management Area 2018 Annual Report. June.

CHAPTER 5
PLAN IMPLEMENTATION

5.1 IMPLEMENTATION OF THE GSP

The primary activities associated with implementing the GSP are anticipated to be connected with management and administration associated with managing the Plan Area. Included with these activities are data collection, data validation, and analysis of the data collected. Annual reporting of the data and analysis to DWR will be required. Finally, the GSP will need to be evaluated every five (5) years and the GSA must provide a written assessment of this evaluation to DWR.

Data Collection, Validation, and Analysis

EMWD has historically collected groundwater elevation and quality samples to monitor groundwater conditions in the Plan Area. Stream and precipitation gauges have been maintained and monitored by the Riverside County Flood Control and Water Conservation District and the U.S. Geological Survey (USGS), both of which are public agencies that provide the data to EMWD. The existing monitoring locations, which are discussed in Section 3.5, Monitoring Network, are anticipated to continue to be used for monitoring associated with this GSP. As discussed in Section 3.5, the monitoring schedule may change in order to ensure that groundwater quality samples are collected within a 12-month period at each monitoring well, and that groundwater elevation data are collected within the month of March, for spring groundwater elevations, and the month of October, for fall groundwater elevations.

During the initial 5-year period after the GSP is adopted, EMWD will explore options for filling data gaps identified in this GSP. The primary data gaps identified were temporal gaps in groundwater elevation measurements, which cannot currently be collected within a one-month time period, and extraction data gaps for wells in which extractions are estimated rather than measured. As discussed in Section 3.5.7, Monitoring Network Improvements, pressure transducers could be installed in some of the wells in the monitoring network to reduce the time-window over which groundwater elevations are collected. However, the cost effectiveness of purchasing, installing, and maintaining pressure transducers has not yet been assessed. The cost of this assessment and eventual purchase, installation, and maintenance of the pressure transducers is associated with GSP implementation.

Additionally, in order to reduce the uncertainty in groundwater extractions from the Plan Area, EMWD may install extraction meters on wells from which extractions are currently estimated. Neither the logistics nor the cost-effectiveness of purchasing, installing, and maintaining extraction meters on private wells has been assessed. The cost of assessing these factors, and the potential cost of purchasing, installing, and maintaining extraction meters is associated with GSP implementation.

Annual Report Preparation

Details of the information that will be included in the annual reports are presented in Section 5.3, Annual Reporting. It is currently anticipated that the annual reports will be produced by EMWD staff and the costs associated with these reports will be incorporated in the annual operating budget of EMWD.

Preparation of the 5-Year Evaluation

Every fifth year of GSP implementation and whenever the GSP is amended, the GSA is required to prepare and submit an Agency Evaluation and Assessment Report to DWR together with the annual report for that year. The tasks associated with preparing this report include evaluating any new information that has been made available since the GSP adoption and assessing whether changes to assumptions or descriptions in the GSP are required (See Section 5.5 Periodic Reporting). Additionally, the evaluation will provide an assessment of the pumping and groundwater conditions in the Plan Area. It is currently anticipated that the 5-year evaluation reports will be produced by EMWD staff with the assistance of consultants and that the costs associated with these reports will be incorporated in the annual operating budget of EMWD.

5.2 GSP IMPLEMENTATION SCHEDULE

The West San Jacinto GSA has developed a schedule that outlines the approximate times at which the various monitoring and reporting components of the GSP will be implemented over the next five years (Figure 5-1). This schedule includes projects that have been incorporated into the future baseline model scenario. The actual start dates may vary from those shown in the schedule.

5.3 ESTIMATED GSP IMPLEMENTATION COSTS

The primary costs associated with implementing the GSP are anticipated to be associated with the following activities:

- Data collection, validation, and analysis
- Annual report preparation
- Management, administration, and other associated activities
- Preparation of the 5-year GSP evaluation

The estimated costs for implanting the GSP over the first five-year review cycle are presented in Table 5-1.

Table 5-1
GSP Implementation Planning-Level Cost Estimate

Activity	Estimated Cost	Frequency	Anticipated Cost: 2022-2027
Ongoing GSP Administration, Public Engagement, Maintenance	$30,500.00	Annually	$152,500.00
		Subtotal	*$152,500.00*
Technical Studies	$50,000.00	Periodically	$250,000.00
		Subtotal	*$250,000.00*
Ongoing Groundwater Monitoring Program			
Groundwater Extraction Monitoring	$52,000.00	Annually	$260,000.00
Groundwater Quality Monitoring	$132,000.00	Annually	$660,000.00
Groundwater Level Monitoring	$16,500.00	Annually	$82,500.00
Inactive Well Capping and Sealing Program	$14,500.00	Annually	$72,500.00
		Subtotal	*$1,075,000.00*
GSP Annual Report	$85,000.00	Annually	$425,000.00
		Subtotal	*$425,000.00*
GSP 5-Year Periodic Evaluation			
Report Preparation	$250,000.00	Single	$250,000.00
Refine, update, and recalibrate groundwater model	$250,000.00	Single	$250,000.00
		Subtotal	*$500,000.00*
		Total	**$2,402,500.00**

The costs for implementing the GSP will be incorporated into EWMD's General District budget, and EMWD will cover the costs associated with implementing the GSP.

5.4 ANNUAL REPORTING

EMWD has prepared annual reports for the west side of the San Jacinto Groundwater Basin since 1995, when EMWD adopted the Groundwater Management Plan for the West San Jacinto Groundwater Basin (EMWD 1995). The Groundwater Management Plan for the West San Jacinto Groundwater Basin has been superseded by the adoption of this GSP. Therefore, EMWD, as the GSA for the Plan Area, will submit an annual report for the Plan Area to DWR by April 1 of each year. The Hemet-San Jacinto watermaster submits a separate annual report for the Hemet-San Jacinto Management Area, which is adjudicated.

The annual report for the Plan Area will include the following components for the preceding water year (23 CCR §356.2):

- General information, including an executive summary and a location map depicting the basin, jurisdictional boundaries, and Plan Area covered by the report.
- A detailed description and graphical representation of:
    - Groundwater elevation data from wells identified in the monitoring network,

  - Groundwater extractions for the preceding water year,
  - Change in groundwater in storage,
  - Surface water supply used or available for use, and
  - Total water use.
- A description of progress toward implementing the GSP, including implementation of projects or management actions since the previous annual report.

The description and graphical representation of groundwater elevations will include groundwater elevation contour maps for the Plan Area illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions. Additionally, hydrographs of groundwater elevations and water year type using historical data to the extent available, including from January 1, 2015, to current reporting year, will be included in the annual report. As described in Section 3.5, Monitoring Network, relevant data collected by EMWD, the USGS, and the Riverside County Flood Control and Water Conservation District will be used to prepare the GSP annual reports.

The description and graphical representation of change in groundwater storage will include a graph depicting water year type, based on the precipitation in the Plan Area (see Section 2.5.3.1 Water Year Type Characterization), groundwater use, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the Plan Area based on historical data to the greatest extent available, including from January 1, 2015, to the current reporting year.

5.5 PERIODIC REPORTING

EMWD will evaluate the GSP every five (5) years. This 5-year evaluation will be provided as a written assessment to DWR that will describe whether the Plan implementation, including implementation of projects and management actions, are suitable to maintain sustainable groundwater use in the Plan Area. The evaluation will include the following:

- A description of current groundwater conditions for each applicable sustainability indicator relative to measurable objectives and minimum thresholds.
- A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions.
- Revisions, if any, to the basin setting, the identification of undesirable results, the minimum thresholds, or the measurable objectives.
- An evaluation of the basin setting in light of significant new information or changes in water use, and an explanation of any significant changes.

- A description of the monitoring network within the Plan Area, including whether data gaps exist.
- A description of significant new information that has been made available since GSP adoption, amendment, or the last 5-year assessment.
- A description of relevant actions taken by the West San Jacinto GSA, including a summary of regulations or ordinances related to management of the Plan Area or the GSP.
- Information describing any enforcement or legal actions taken by the West San Jacinto GSA in furtherance of the sustainability goal for the Plan Area.
- A description of completed or proposed GSP amendments.

5.6 REFERENCES

23 CCR (California Code of Regulations) 356.2 Annual Reports. In Subchapter 2: Groundwater Sustainability Plans.

EMWD (Eastern Municipal Water District) 1995. *Groundwater Management Plan, West San Jacinto Groundwater Basin*. June 8, 1995.

INTENTIONALLY LEFT BLANK

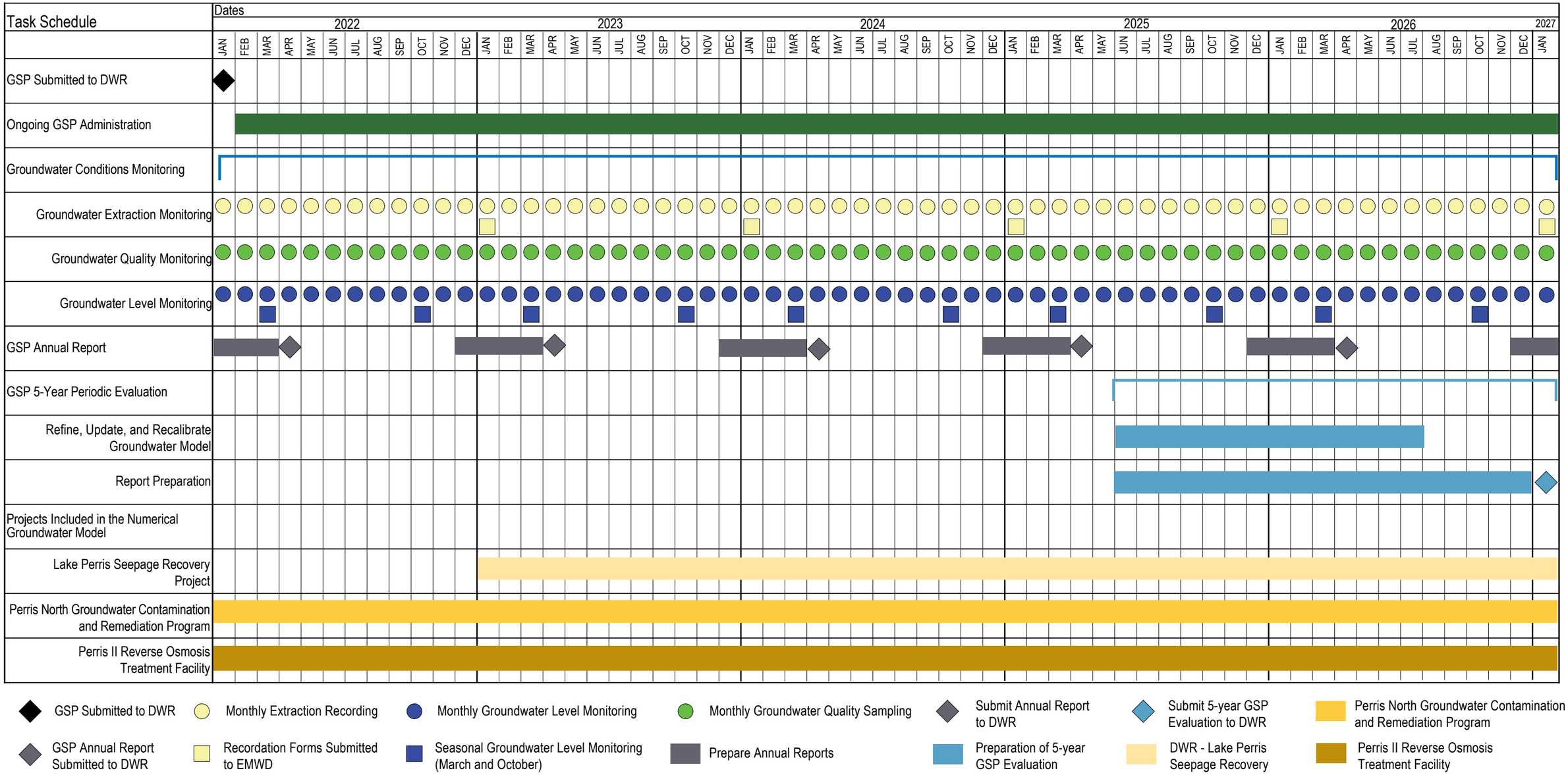


FIGURE 5-1

GSP Implementation Schedule

Groundwater Sustainability Plan for the San Jacinto Groundwater Basin

INTENTIONALLY LEFT BLANK

APPENDIX A

Preparation Checklist for GSP Submittal

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
Article 3. Technical and Reporting Standards				
352.2		Monitoring Protocols	Monitoring protocols adopted by the GSA for data collection and management	Section 3.5.5
			Monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or quality or are caused by groundwater extraction in the basin	Section 3.5.5
Article 5. Plan Contents, Subarticle 1. Administrative Information				
354.4		General Information	Executive Summary	Executive Summary
			List of references and technical studies	Sections 1.5, 2.6, 3.6, 4.9, and 5.6
354.6		Agency Information	GSA mailing address	Section 1.3
			Organization and management structure	Section 1.3.1
			Contact information of Plan Manager	Section 1.3
			Legal authority of GSA	Section 1.3.2
			Estimate of implementation costs	Section 5.3
354.8(a)	10727.2(a)(4)	Map(s)	Area covered by GSP	Section 2.1 / Figure 2-1
			Adjudicated areas, other agencies within the basin, and areas covered by an Alternative	Section 2.1 / Figure 2-1
			Jurisdictional boundaries of federal or State land	Section 2.1.1.1 / Figure 2-2
			Existing land use designations	Section 2.1.3 / Figures 2-8A through 2-8E
			Density of wells per square mile	Figures 2-26, 3-13 and 3-14
354.8(b)		Description of the Plan Area	Summary of jurisdictional areas and other features	Section 2.1
354.8(c)	10727.2(g)	Water Resource Monitoring and Management Programs	Description of water resources monitoring and management programs	Section 2.1.2

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
354.8(d)			Description of how the monitoring networks of those plans will be incorporated into the GSP	Section 3.5.2
354.8(e)			Description of how those plans may limit operational flexibility in the basin	Section 2.1.2.5
			Description of conjunctive use programs	Section 2.1.2.5
354.8(f)	10727.2(g)	Land Use Elements or Topic Categories of Applicable General Plans	Summary of general plans and other land use plans	Sections 2.1.3.2 and 2.1.3.3
			Description of how implementation of the GSP may change water demands or affect achievement of sustainability and how the GSP addresses those effects	Section 2.1.2.4
			Description of how implementation of the GSP may affect the water supply assumptions of relevant land use plans	Section 2.1.2.4
			Summary of the process for permitting new or replacement wells in the basin	Section 2.1.3.3.2
			Information regarding the implementation of land use plans outside the basin that could affect the ability of the Agency to achieve sustainable groundwater management	Section 2.1.3.3.3
354.8(g)	10727.4	Additional GSP Contents	Description of Actions related to:	
			Control of saline water intrusion	Section 2.4.3
			Wellhead protection	Section 2.1.3.2, and Section 2.1.3.3
			Migration of contaminated groundwater	Section 2.1.2.3
			Well abandonment and well destruction program	Section 2.1.3.3
			Replenishment of groundwater extractions	Section 2.5
			Conjunctive use and underground storage	Section 2.1.2.3, Section 2.1.2.5
			Well construction policies	Section 2.1.3.3
			Addressing groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects	Section 2.1.2.3

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			Efficient water management practices	Section 2.1.3.2
			Relationships with State and federal regulatory agencies	Section 2.1.1.1, and Section 2.1.2
			Review of land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity	Section 2.1.3.2
			Impacts on groundwater dependent ecosystems	Section 2.4.6 and Section 2.4.7
354.1		Notice and Communication	Description of beneficial uses and users	Section 2.1.5.1
			List of public meetings	Section 2.1.5.2
			GSP comments and responses	Section 2.1.5.3
			Decision-making process	Section 2.1.5.5 / Appendix F
			Public engagement	Section 2.1.5.2 / Appendix F
			Encouraging active involvement	Section 2.1.5.2 / Appendix F
			Informing the public on GSP implementation progress	Section 2.1.5.2 / Appendix F
Article 5. Plan Contents, Subarticle 2. Basin Setting				
354.14		Hydrogeologic Conceptual Model	Description of the Hydrogeologic Conceptual Model	Section 2.3
			Two scaled cross-sections	Figures 2-17 to 2-24
			Map(s) of physical characteristics: topographic information, surficial geology, soil characteristics, surface water bodies, source and point of delivery for imported water supplies	Figures 2-3, 2-4, 2-15, and 2-27
354.14(c)(4)	10727.2(a)(5)	Map of Recharge Areas	Map delineating existing recharge areas that substantially contribute to the replenishment of the basin, potential recharge areas, and discharge areas	Figure 2-27

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
	10727.2(d)(4)	Recharge Areas	Description of how recharge areas identified in the plan substantially contribute to the replenishment of the basin	Section 2.3.3
354.16	10727.2(a)(1)	Current and Historical Groundwater Conditions	Groundwater elevation data	Section 2.4.1, Figures 2-30 to 2-40
	10727.2(a)(2)		Estimate of groundwater storage	Section 2.4.2, Figures 2-42 and 2-43
			Seawater intrusion conditions	Section 2.4.3
			Groundwater quality issues	Section 2.4.4, Figures 2-44 to 2-47
			Land subsidence conditions	Section 2.4.5, Figure 2-48
			Identification of interconnected surface water systems	Section 2.4.6
			Identification of groundwater-dependent ecosystems	Section 2.4.7, Figure 2-52
354.18	10727.2(a)(3)	Water Budget Information	Description of inflows, outflows, and change in storage	Section 2.5.1, Section 2.5.2, Section 2.5.3
			Quantification of overdraft	Section 2.5.4
			Estimate of sustainable yield	Section 2.5.5
			Quantification of current, historical, and projected water budgets	Section 2.5.6
	10727.2(d)(5)	Surface Water Supply	Description of surface water supply used or available for use for groundwater recharge or in-lieu use	Section 2.5.7
354.2		Management Areas	Reason for creation of each management area	N/A
			Minimum thresholds and measurable objectives for each management area	N/A
			Level of monitoring and analysis	N/A
			Explanation of how management of management areas will not cause	N/A

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			undesirable results outside the management area	
			Description of management areas	N/A
Article 5. Plan Contents, Subarticle 3. Sustainable Management Criteria				
354.24		Sustainability Goal	Description of the sustainability goal	Section 3.1
354.26		Undesirable Results	Description of undesirable results	Section 3.2
			Cause of groundwater conditions that would lead to undesirable results	Sections 3.2.1 through 3.2.6
			Criteria used to define undesirable results for each sustainability indicator	Sections 3.2.1 through 3.2.6
			Potential effects of undesirable results on beneficial uses and users of groundwater	Sections 3.2.1 through 3.2.6
354.28	10727.2(d)(1)	Minimum Thresholds	Description of each minimum threshold and how they were established for each sustainability indicator	Sections 3.3.1 through 3.3.6
	10727.2(d)(2)		Relationship for each sustainability indicator	Sections 3.3.1 through 3.3.6
			Description of how selection of the minimum threshold may affect beneficial uses and users of groundwater	Sections 3.3.1 through 3.3.6
			Standards related to sustainability indicators	Section 3.3.4
			How each minimum threshold will be quantitatively measured	Sections 3.3.1 through 3.3.6
354.3	10727.2(b)(1)	Measureable Objectives	Description of establishment of the measureable objectives for each sustainability indicator	Sections 3.4.1 through 3.4.6
	10727.2(b)(2)		Description of how a reasonable margin of safety was established for each measureable objective	Sections 3.4.1 through 3.4.6
	10727.2(d)(1)		Description of a reasonable path to achieve and maintain the sustainability goal, including a description of interim milestones	Sections 3.4.1 through 3.4.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
	10727.2(d)(2)			
Article 5. Plan Contents, Subarticle 4. Monitoring Networks				
354.34	10727.2(d)(1)	Monitoring Networks	Description of monitoring network	Section 3.5.2
	10727.2(d)(2)		Description of monitoring network objectives	Section 3.5.1
	10727.2(e)		Description of how the monitoring network is designed to: demonstrate groundwater occurrence, flow directions, and hydraulic gradients between principal aquifers and surface water features; estimate the change in annual groundwater in storage; monitor seawater intrusion; determine groundwater quality trends; identify the rate and extent of land subsidence; and calculate depletions of surface water caused by groundwater extractions	Section 3.5.2
	10727.2(f)		Description of how the monitoring network provides adequate coverage of Sustainability Indicators	Section 3.5.2
			Density of monitoring sites and frequency of measurements required to demonstrate short-term, seasonal, and long-term trends	Section 3.5.2
			Scientific rational (or reason) for site selection	Section 3.5.2
			Consistency with data and reporting standards	Sections 3.5.4 and 3.5.5
			Corresponding sustainability indicator, minimum threshold, measureable objective, and interim milestone	Section 3.5.3
			Location and type of each monitoring site within the basin displayed on a map, and reported in tabular format, including information regarding the monitoring site type, frequency of measurement, and the purposes for which the monitoring site is being used	Tables 2-5 through 3-9; Figures 2-26, 3-13 and3-14
			Description of technical standards, data collection methods, and other procedures or protocols to ensure comparable data and methodologies	Sections 3.5.4 and 3.5.5
354.36		Representative Monitoring	Description of representative sites	Section 3.5.6

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			Demonstration of adequacy of using groundwater elevations as proxy for other sustainability indicators	Section 3.5.6
			Adequate evidence demonstrating site reflects general conditions in the area	Section 3.5.6
354.38		Assessment and Improvement of Monitoring Network	Review and evaluation of the monitoring network	Section 3.5.7
			Identification and description of data gaps	Section 3.5.7
			Description of steps to fill data gaps	Section 3.5.7
			Description of monitoring frequency and density of sites	Sections 3.5.2 and 3.5.4
Article 5. Plan Contents, Subarticle 5. Projects and Management Actions				
354.44		Projects and Management Actions	Description of projects and management actions that will help achieve the basin's sustainability goal	Sections 4.1 through 4.7
			Measureable objective that is expected to benefit from each project and management action	Sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, 4.5.1, 4.6.1, and 4.7.1
			Circumstances for implementation	Sections 4.1.3, 4.2.3, 4.3.3, 4.4.3, 4.5.3, 4.6.3, and 4.7.3
			Public noticing	Sections 4.1.4, 4.2.4, 4.3.4, 4.4.4, 4.5.4, 4.6.4, and 4.7.4
			Permitting and regulatory process	Sections 4.1.5, 4.2.5, 4.3.5, 4.4.5, 4.5.5, 4.6.5, and 4.7.5
			Time-table for initiation and completion, and the accrual of expected benefits	Sections 4.1.6, 4.2.6, 4.3.6, 4.4.6, 4.5.6, 4.6.6, and 4.7.6
			Expected benefits and how they will be evaluated	Sections 4.1.2, 4.2.2, 4.3.2, 4.4.2, 4.5.2, 4.6.2, and 4.7.2

GSP Regulations Section	Water Code Section	Requirement	Description	Section(s) or Page Number(s) in the GSP
			How the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included.	N/A
			Legal authority required	Sections 4.1.7, 4.2.7, 4.3.7, 4.4.7, 4.5.7, 4.6.7, and 4.7.7
			Estimated costs and plans to meet those costs	Sections 4.1.8, 4.2.8, 4.3.8, 4.4.8, 4.5.8, 4.6.8, and 4.7.8
			Management of groundwater extractions and recharge	Sections 4.1 and 4.2
354.44(b)(2)	10727.2(d)(3)		Overdraft mitigation projects and management actions	N/A
Article 8. Interagency Agreements				
357.4	10727.6	Coordination Agreements - Shall be submitted to the Department together with the GSPs for the basin and, if approved, shall become part of the GSP for each participating Agency.	Coordination Agreements shall describe the following:	
			A point of contact	N/A
			Responsibilities of each Agency	N/A
			Procedures for the timely exchange of information between Agencies	N/A
			Procedures for resolving conflicts between Agencies	N/A
			How the Agencies have used the same data and methodologies to coordinate GSPs	N/A
			How the GSPs implemented together satisfy the requirements of SGMA	N/A
			Process for submitting all Plans, Plan amendments, supporting information, all monitoring data and other pertinent information, along with annual reports and periodic evaluations	N/A
			A coordinated data management system for the basin	N/A
			Coordination agreements shall identify adjudicated areas within the basin, and any local agencies that have adopted an Alternative that has been accepted by the Department	N/A

APPENDIX B

GSA Formation Documents

June 10, 2019

To Whom It May Concern,

Subject: Stakeholder Advisory Group Meeting, West San Jacinto Groundwater Management Area

Dear Sir/Ma'am:

Eastern Municipal Water District (EMWD) staff will hold a meeting to review and discuss comments for the West San Jacinto Groundwater Management Area 2018 Annual Report (2018 Annual Report), provide an update of the West San Jacinto Groundwater Sustainability Agency (GSA) Groundwater Sustainability Plan (GSP) development and discuss the project status for the Perris II Reverse Osmosis Treatment Facility (ROTF). The 2018 Annual Report summarizes data collected from well owners participating in the Groundwater Monitoring Program within the Management Area. The West San Jacinto GSA is developing a GSP to address management of the sustainability indicators prescribed by the Department of Water Resources. The Perris II ROTF project will discuss compliance with Proposition I funding as well as solicit feedback from the Stakeholder Group. We invite you to attend and appreciate your continued participation for the programs within the West San Jacinto Groundwater Management Area. The date/time and location of the meeting is shown below. Please contact us at your convenience if you have any questions or concerns. My contact information is grayr@emwd.org or 951-928-3777 x4514.

When: **June 26, 2019, at 11:00 a.m.**
Where: **EMWD Board Room, 2270 Trumble Road, Perris, California, 92572**

Sincerely,

Rachel M. Gray
Water Resources Planning Manager

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300
T 951.928.3777 • F 951.928.6177 www.emwd.org

ACTION

Board of Directors
April 17, 2019

SUBJECT:

Approve and Authorize West San Jacinto and Southwest San Timoteo Groundwater Basins Boundary Modifications

BACKGROUND:

The Sustainable Groundwater Management Act (SGMA) was signed into law on September 16, 2014. The intent of SGMA is to promote sustainable management of groundwater basins. SGMA requires that medium and high priority basins be managed by a Groundwater Sustainability Agency (GSA), and grants new and additional groundwater management authorities to GSAs. On December 7, 2016, EMWD's Board approved Resolution 2016-135 to become the GSA for the West San Jacinto Groundwater Basin. On June 7, 2017, EMWD's Board approved Resolution 2017-050 to become the GSA for the Southwest San Timoteo Groundwater Sub-basin.

Groundwater basin boundaries throughout California are established based on the limits of alluvial aquifers, and are described in a publication produced by the Department of Water Resources (DWR) called "Bulletin 118 California's Groundwater" (Bulletin 118). With the passage of SGMA, the basin boundaries described in Bulletin 118 have taken on greater significance. The San Jacinto Groundwater Basin, as defined in Bulletin 118 (Basin No. 8-005), has been identified by DWR as a "high priority" basin, making it subject to more aggressive deadlines in the SGMA regulations. The San Timoteo Groundwater Sub-basin, as defined in Bulletin 118 (Basin No. 8-002.08), has recently been reassigned by DWR as a "very low priority" basin and management action is voluntary based on the SGMA regulations.

SGMA established a process for local agencies to revise the boundaries of an existing Bulletin 118 basin to better represent the local groundwater aquifer and enhance management of the basin. EMWD submitted Bulletin 118 basin boundary modification requests to DWR for both the San Jacinto Groundwater Basin and the San Timoteo Groundwater Sub-basin before the June 30, 2019, deadline. The basin boundary modification requests were based on scientific justification that most accurately defined the sedimentary basin relative to the well-consolidated bedrock within and surrounding the exiting basin boundaries.

DWR finalized the approved basin boundary results on February 11, 2019. The San Timoteo Groundwater Sub-basin boundary modification request was fully approved by DWR. As such, the area encompassing the Southwest San Timoteo GSA has been removed from the sub-basin boundary. The Board is being requested to consider withdrawal of EMWD as the Southwest San Timoteo GSA because this sub-basin is no longer within EMWD's sphere of influence. The San Jacinto Groundwater Basin boundary modification request was approved in all areas except

the area encompassing Lake Perris. As a result of the basin boundary modification approval, the West San Jacinto GSA will be revised to reflect the modifications approved by DWR. The Board is also being requested to consider approval of the revised West San Jacinto GSA area, which excludes adjudicated areas of the basin and March Air Reserve Base.

FINANCIAL IMPACT:

None

STRATEGIC PLANNING GOAL/OBJECTIVE:

Water Supply Diversity and Reliability: Develop and implement a portfolio of projects and management techniques to achieve a reliable and cost-effective balance of water supplies utilizing imported, local and recycled water sources.

ENVIRONMENTAL IMPACT:

None

RECOMMENDATION:

Approve and Amend Resolution 2016-135 to revise the West San Jacinto Groundwater Sustainability Agency Area to be consistent with the basin boundary modification as approved by DWR; and Rescind Resolution 2017-050 and withdraw EMWD as the Southwest San Timoteo Groundwater Sustainability Agency for the San Timoteo Sub-basin.

SUBMITTED BY:

Paul D. Jones II P.E., General Manager 4/4/2019

Joe Mouawad, Assistant General Manager 3/28/2019

Attachment(s):
Presentation

History:
04/11/19 Board Planning Committee RECOMMENDED FOR APPROVAL
04/17/19 Board Meeting

Staff Contact: Rachel Gray

EASTERN MUNICIPAL WATER DISTRICT

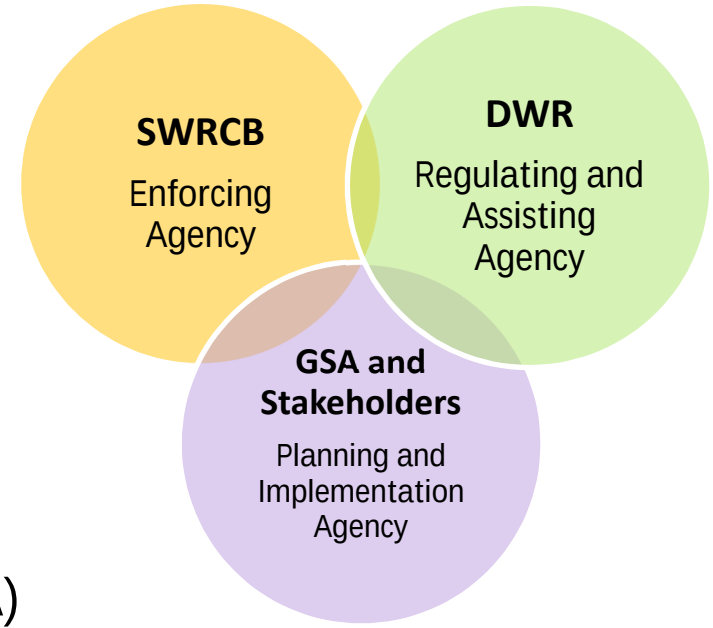
West San Jacinto and Southwest San Timoteo Groundwater Basins Boundary Modifications

Rachel M. Gray

April 11, 2019

Sustainable Groundwater Management Act

- The Sustainable Groundwater Management Act (SGMA) was signed into law on September 16, 2014
  - Purpose of SGMA: Sustainable management of groundwater in a manner that does not cause undesirable results

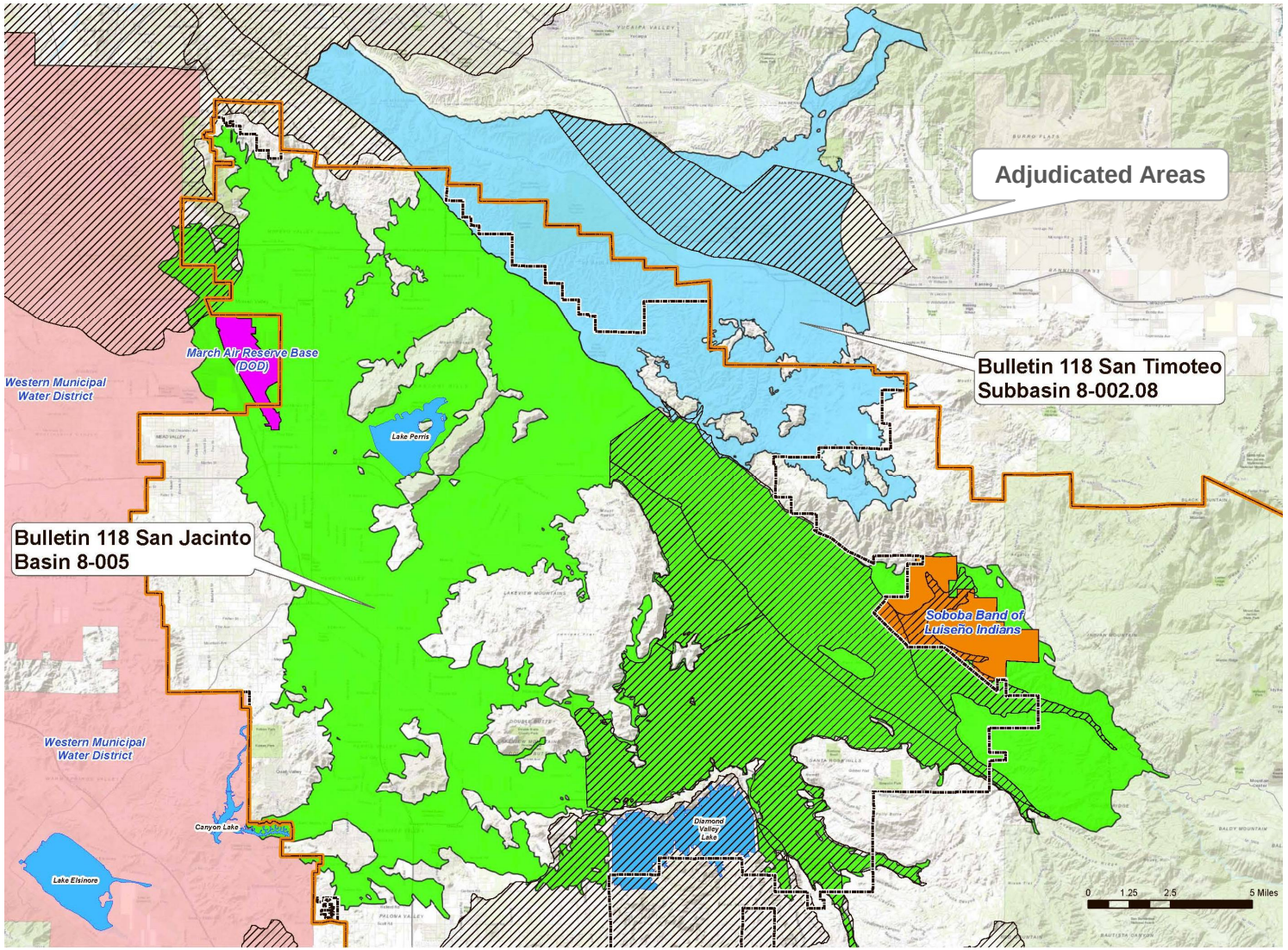


- SGMA grants new and additional groundwater management authorities to Groundwater Sustainability Agencies (GSA)
- On December 7, 2016, EMWD's Board approved Resolution 2016-135 to become the GSA for the West San Jacinto Basin
- On June 7, 2017, EMWD's Board approved Resolution 2017-050 to become the GSA for the Southwest San Timoteo Groundwater Sub-basin

Bulletin 118 and the Sustainable Groundwater Management Act

- Existing groundwater basin boundaries are defined in DWR's Bulletin 118 California's Groundwater
- The San Jacinto Groundwater Basin, as defined in Bulletin 118 (Basin No. 8-005), is a "high priority" basin
- The San Timoteo Groundwater Subbasin, as defined in Bulletin 118 (Basin No. 8-002.08), has recently been assigned as a "very low priority" basin
- SGMA established a process for local agencies to revise the boundaries of an existing Bulletin 118 basin to better represent the local groundwater aquifer
- In June 2018, EMWD submitted Bulletin 118 Boundary modifications for the San Jacinto and San Timoteo Basins

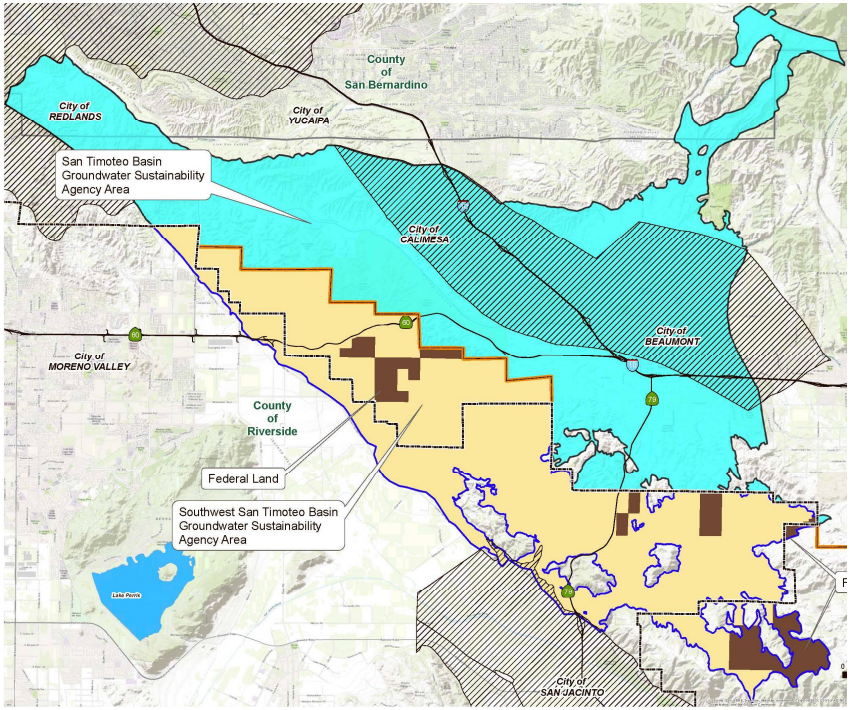
Existing San Jacinto and San Timoteo Bulletin 118 Groundwater Basin Boundaries

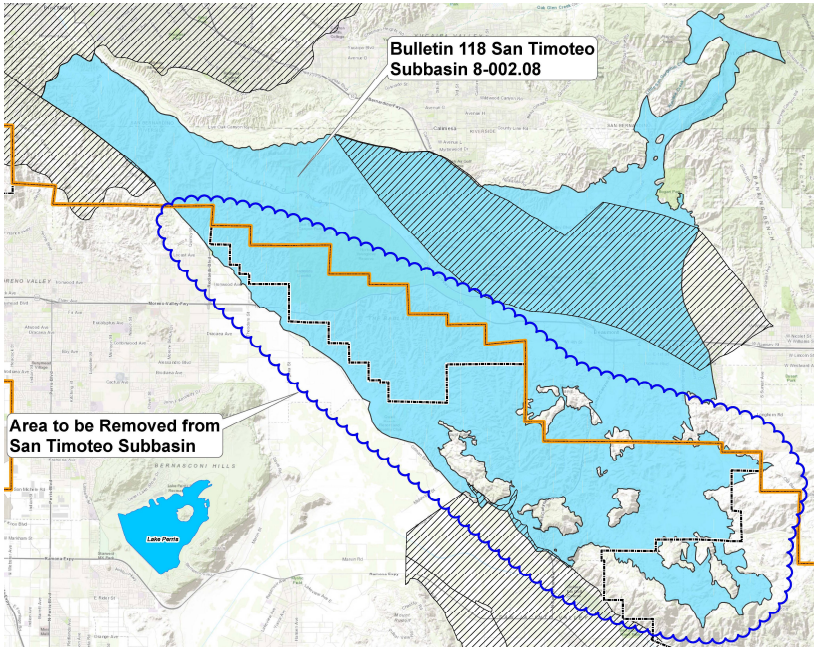


emwd

San Timoteo Groundwater Bulletin 118 Boundary Modification Basin Boundary Adjustment Area

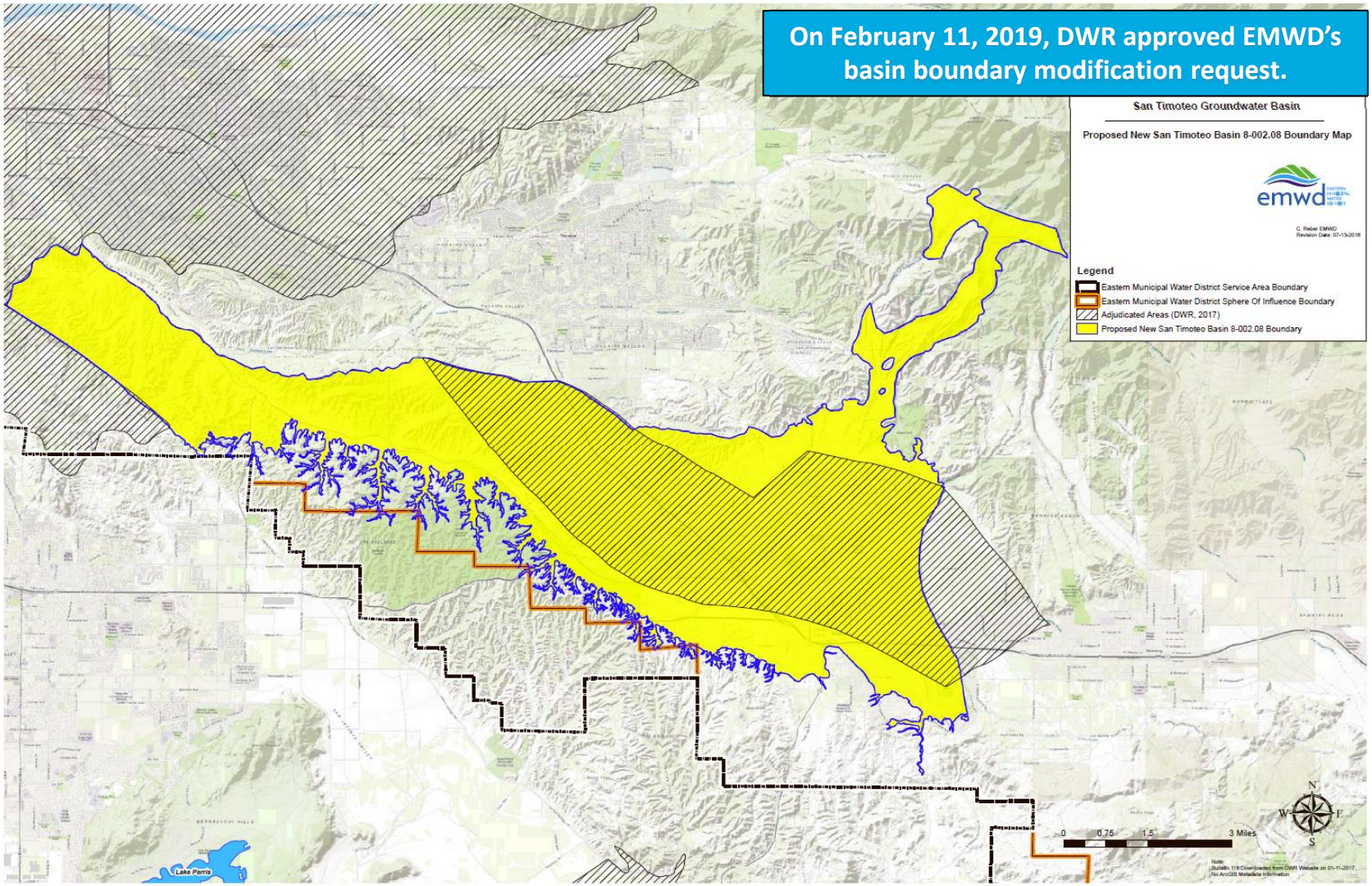
- Given the modified boundary of the Southwest San Timoteo Sub-basin, the basin is no longer within EMWD's sphere of influence and therefore the District can no longer be a GSA





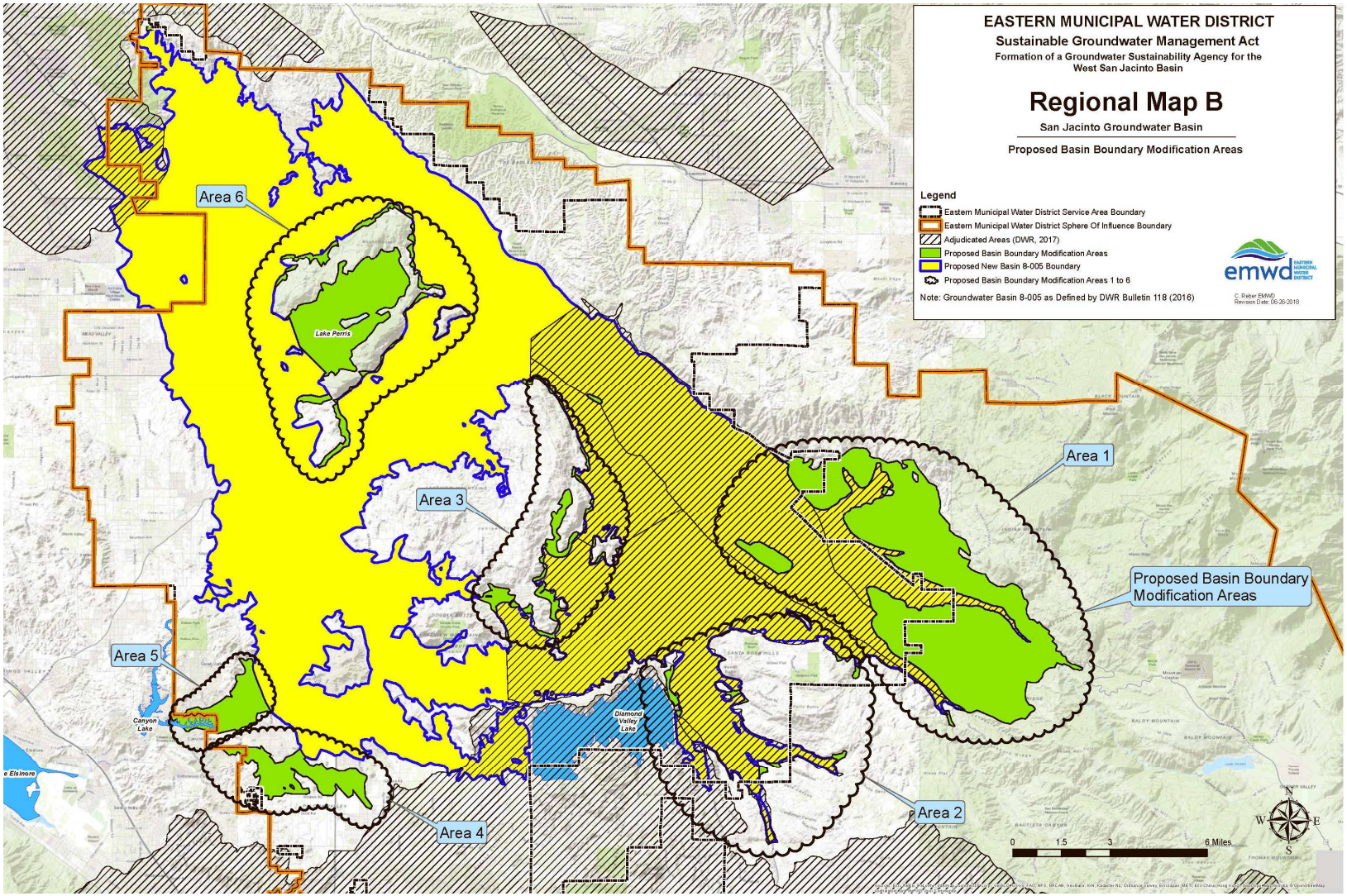
- In addition, preparation of a GSP for the Southwest San Timoteo Sub-basin is not anticipated due to a DWR ranking of "very low priority"

San Timoteo Groundwater Bulletin 118 Boundary Modification
Revised San Timoteo Sub-basin Boundary



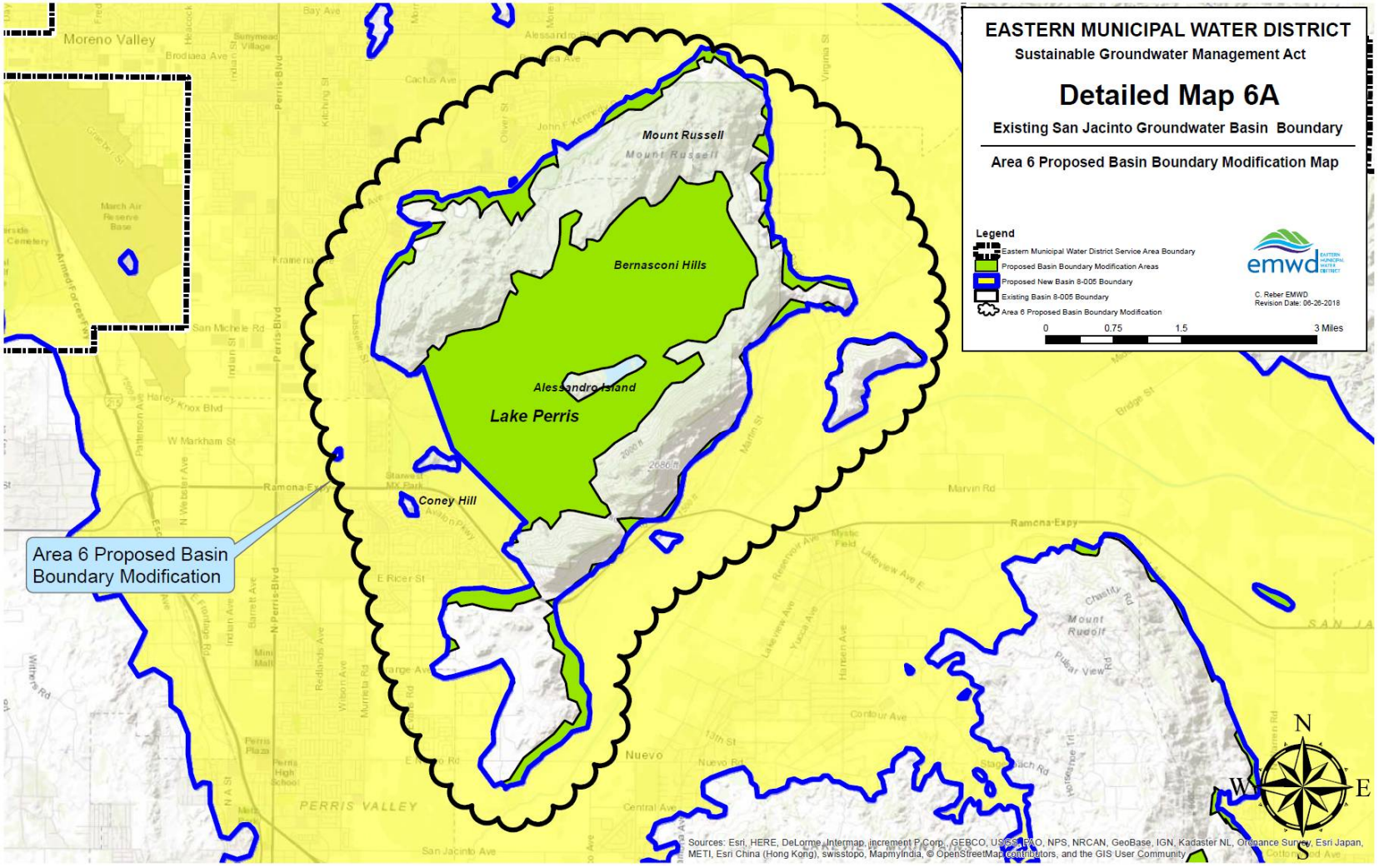
emwd

San Jacinto Groundwater Bulletin 118 Boundary Modification Basin Boundary Adjustment Areas

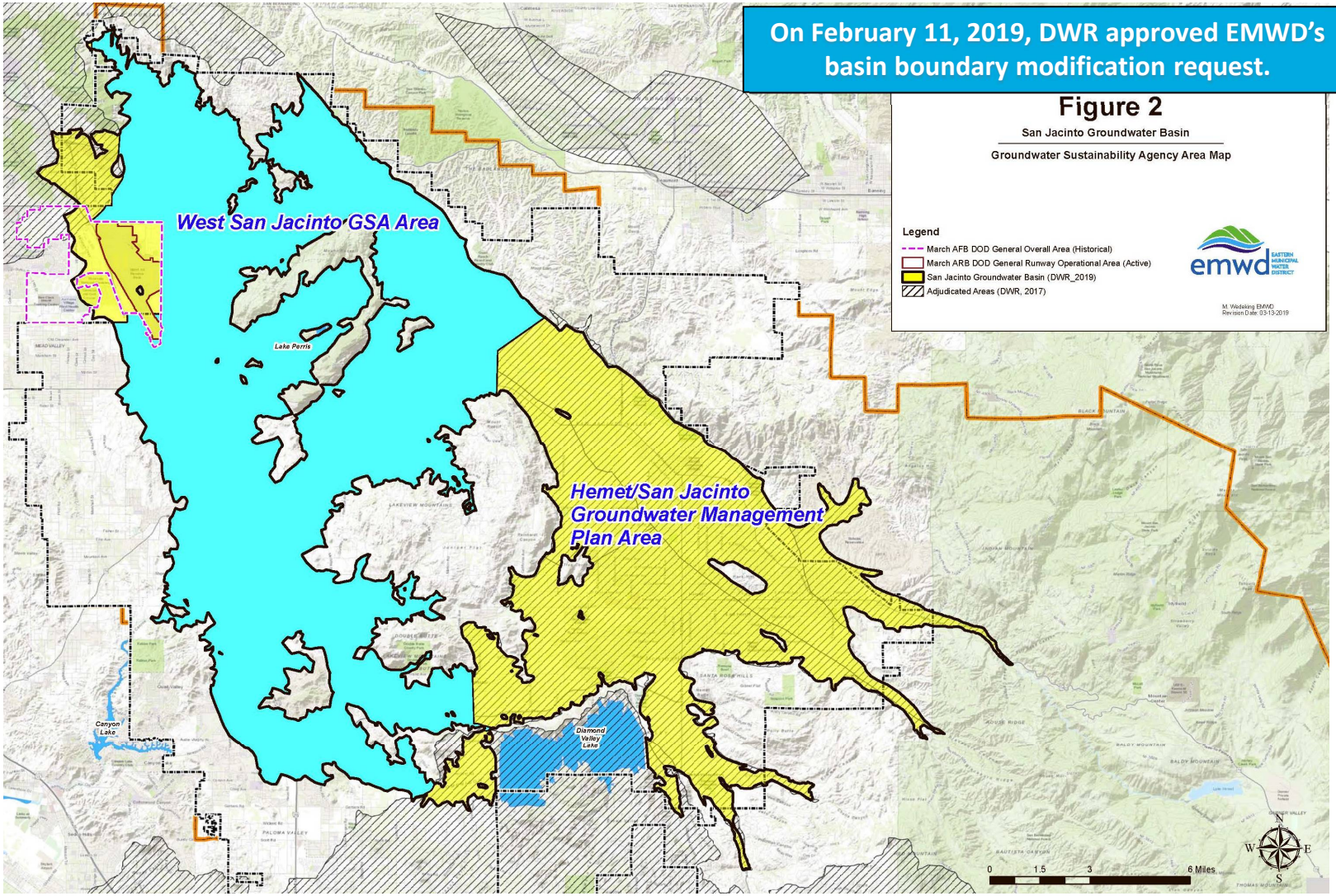


emwd

Area 6 – One Area was Not Approved



San Jacinto Groundwater Bulletin 118 Boundary Modification
Revised San Jacinto Basin Boundary and West San Jacinto GSA Area



emwd

Recommendations

- Amend Resolution 2016-135 to revise the area shown for the West San Jacinto Groundwater Sustainability Agency Area to be consistent with the basin boundary modification as approved by DWR, excluding adjudicated areas and MARB; and

- Rescind Resolution 2017-050 and withdraw EMWD as the Southwest San Timoteo Groundwater Sustainability Agency for the San Timoteo Sub-basin.

Contact Information

Rachel M. Gray
Water Resources Planning Manager
(951) 928-3777 Ext. 4514

Email: grayr@emwd.org

Initial Notification of Potential Basin Boundary Modification Request

PRINT VIEW OF INITIAL NOTIFICATION

1. LOCAL AGENCY INFORMATION

Name:	Eastern Municipal Water District		
Address:	2270 Trumble Road		
City:	Perris	Zip:	92572
Phone(Work):	(951) 928-3777	Phone(Cell):	
Email:	grayr@emwd.org	Fax:	

2. LOCAL AGENCY POINT OF CONTACT INFORMATION

Name:	Rachel Gray		
Address:	2270 Trumble Road		
City:	Perris	Zip:	92572-8300
Phone(Work):	951-928-3777	Phone(Cell):	
Email:	grayr@emwd.org		

3. LINKS TO LOCAL AGENCY'S INTERNET WEBSITE

General information regarding potential basin boundary modification process is posted or will be posted.

https://www.emwd.org/

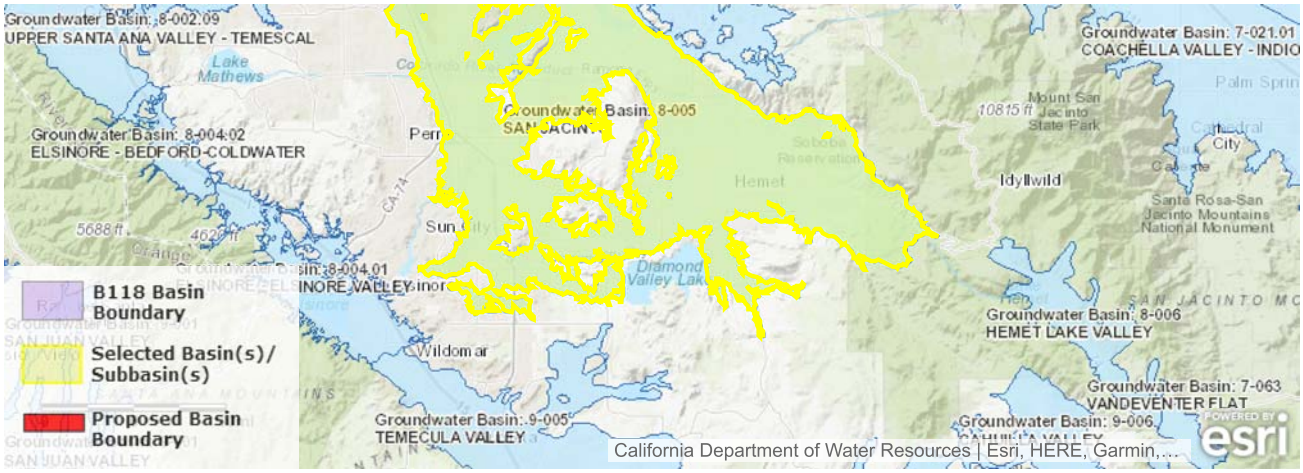
4. BRIEF DESCRIPTION OF POTENTIAL BASIN BOUNDARY MODIFICATION REQUEST

The West San Jacinto Groundwater Sustainability Agency (WSJGSA) for the western portion of the San Jacinto Groundwater Basin is the Eastern Municipal Water District (EMWD). Please be advised that the WSJGSA intends to request modifications of the boundary of the San Jacinto Groundwater Basin, Department of Water Resources (DWR) Bulletin 118 Basin No. 8-005 (Basin). The modification request is to eliminate areas of the existing Basin that lack viability and/or contribution to the local groundwater aquifer system. The modified boundary will cover areas underlain by permeable materials capable of providing significant quantities of groundwater to wells; eliminate areas underlain by the consolidated bedrock described as having very low water-yielding capability; and exclude areas that do not align with the DWR's definition of an alluvial basin. The proposed Basin boundary will coincide with the surface extent of unconsolidated young alluvium, old alluvium, alluvial fan, valley fill deposits, and other geologic formations having well understood and documented groundwater significance as mapped by the California Geological Survey. The proposed modification will not impact the sustainable management of the Basin because the areas identified for removal do not provide a significant source of water nor significant volumes of groundwater and there is no current or planned use for these areas that would constitute a significant contribution to water resources.

5. POTENTIAL BASIN(S)/SUBBASIN(S)

8-005 SAN JACINTO

6. MAP OR DOCUMENT OF POTENTIAL BASIN BOUNDARY MODIFICATION



Uploaded document: n/a

Created on 04/26/2018 at 7:53AM, last modified on 06/19/2018 at 8:05AM and page generated on 06/19/2018 at 8:05AM

RESOLUTION NO. 2018-082

A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT INITIATING A BASIN BOUNDARY MODIFICATION REQUEST FOR THE SAN JACINTO BASIN

WHEREAS, the Sustainable Groundwater Management Act of 2014 established a process for local agencies to request that the California Department of Water Resources revise the boundaries of exiting groundwater basins or subbasins as defined by California Department of Water Resources Bulletin 118, including the establishment of a new subbasin; and

WHEREAS, the Basin Boundary Emergency Regulation was developed through an extensive stakeholder outreach process and was adopted by the California Water Commission on October 21, 2015, and the provisions of which went into effect on November 16, 2015; and

WHEREAS, Eastern Municipal Water District overlies the San Jacinto Basin; and

WHEREAS, the Eastern Municipal Water District became the Groundwater Sustainability Agency over the western portion of the San Jacinto Basin; and

WHEREAS, Eastern Municipal Water District conducted an evaluation of existing mapping and descriptions for the Bulletin 118 San Jacinto Basin boundary and identified scientific justification to modify the boundaries of the San Jacinto Basin to align with the West San Jacinto Groundwater Sustainability Agency boundary and the Management Area of the Hemet-San Jacinto Watermaster on the east side, and wishes to file an application to address those issues for the purpose of facilitating regional groundwater management and planning; and

WHEREAS, the proposed boundary modification is consistent with the provisions of the Sustainable Groundwater Management Act of 2014.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

1. Each of the above recitals is true and correct.

2. That an application be made to the California Department of Water Resources to modify the Bulletin 118 boundary of the San Jacinto Basin.

3. The General Manager, and/or his designee, is hereby authorized and directed to collect the available data and prepare and submit such an application with the California Department of Water Resources.

4. This Resolution shall be effective upon its adoption.

DATED: June 20, 2018

/s/David J. Slawson
David J. Slawson, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on June 20, 2018.

ATTEST:

/s/Tami Martinez
Tami Martinez, Deputy Board Secretary

(SEAL)

STATE OF CALIFORNIA)
)ss.
COUNTY OF RIVERSIDE)

I, TAMI MARTINEZ, Deputy Secretary to the Board of Directors of Eastern Municipal Water District, do hereby certify that the foregoing **Resolution** was duly adopted by the Board of Directors of said District at the Regular Meeting of said Board held on the 20th day of June 2018, and that it was so adopted by the following vote:

AYES:	Directors, Record, Paule, Slawson, Sullivan, and Kuebler
NOES:	None
ABSTAIN:	None
ABSENT:	None

Tami Martinez, Deputy Secretary of the
Eastern Municipal Water District
and to the Board of Directors thereof

STATE OF CALIFORNIA)
)ss.
COUNTY OF RIVERSIDE)

I, TAMI MARTINEZ Deputy Secretary to the Board of Directors of Eastern Municipal Water District, do hereby certify that the above and foregoing is a full, true and correct copy of **Resolution No. 2018-082** of said Board, and that the same has not been amended or repealed.

DATE: June 20, 2018

Tami Martinez, Deputy Secretary of the
Eastern Municipal Water District
and to the Board of Directors thereof

(SEAL)

Groundwater Sustainability Agency Update and Bulletin 118 Boundary Modification

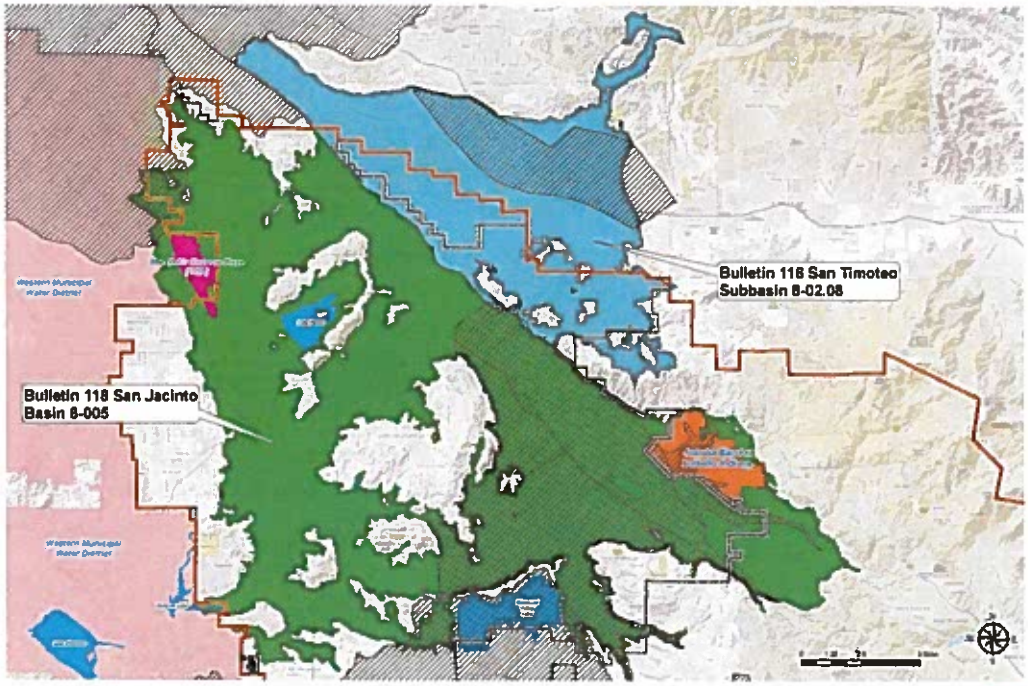
Kelley Gage
Brian Powell, P.E.
June 20, 2018

Sustainable Groundwater Management Act

- The Sustainable Groundwater Management Act (SGMA) was signed into law on September 16, 2014
  - Purpose of SGMA: Sustainable management of groundwater in a manner that does not cause undesirable results

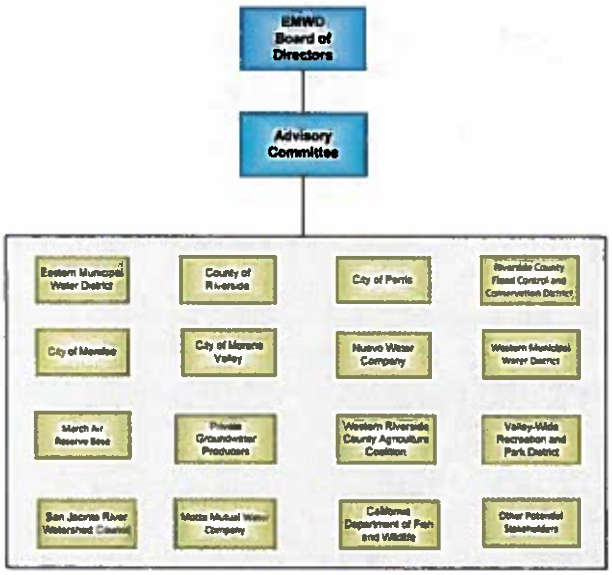
- SGMA grants new and additional groundwater management authorities to Groundwater Sustainability Agencies (GSA)
- Eastern Municipal Water District (EMWD) became the GSA for the West San Jacinto Basin and Southwest San Timoteo Groundwater Basins in 2017

Existing San Jacinto and San Timoteo Bulletin 118 Groundwater Basin Boundaries



emwd

San Jacinto Basin – Stakeholder Involvement

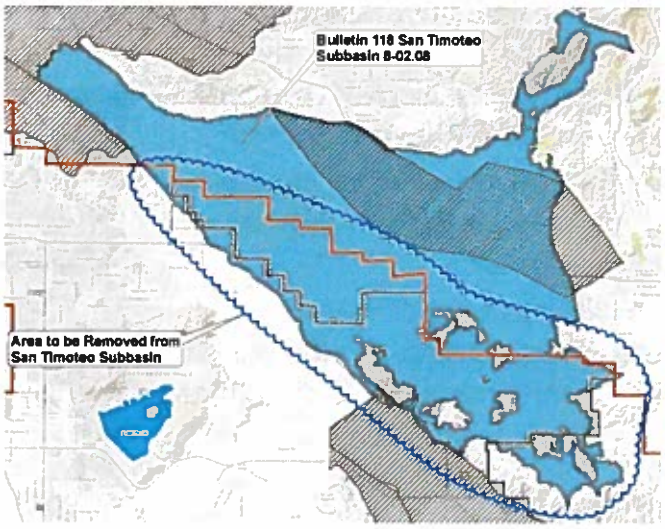


- As required by SGMA, EMWD invited stakeholders to a workshop to discuss EMWD's proposed Bulletin 118 Boundary Modification and GSP preparation for the West San Jacinto Basin
- Stakeholders to the West San Jacinto GSA area and to the Watermaster area were invited to a workshop that was held on May 31, 2018
- Three stakeholders and one staff member from DWR attended
- All supported EMWD's proposed actions

emwd

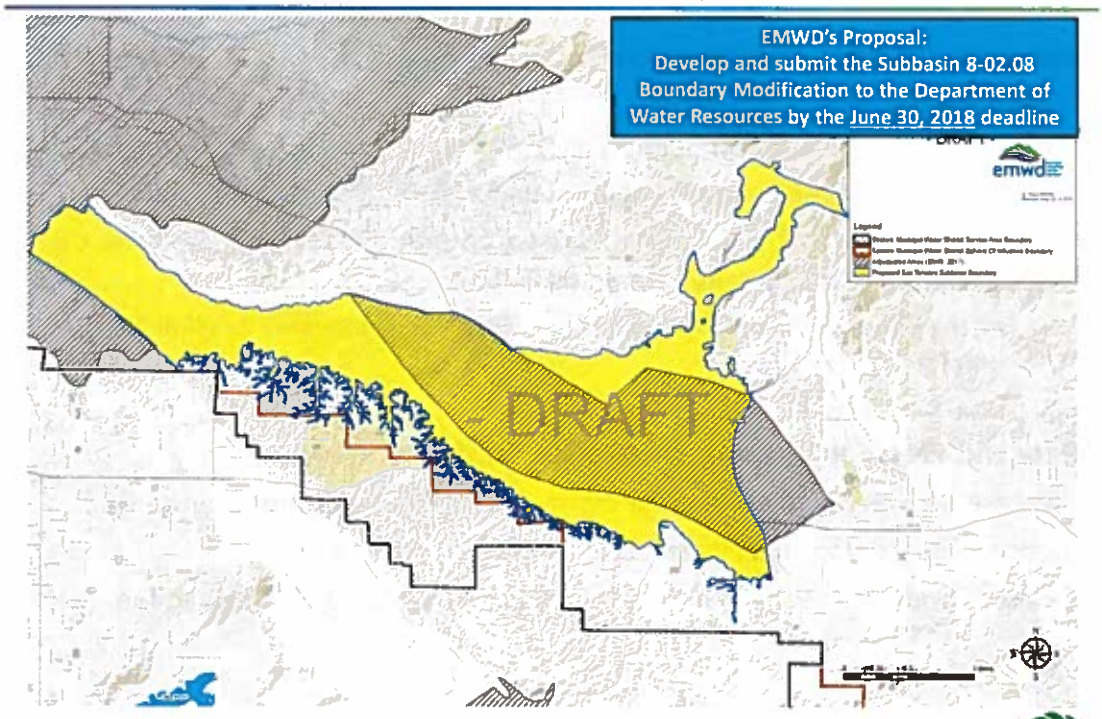
Southwest San Timoteo Groundwater Basin Bulletin 118 Proposed Boundary Modifications

- Proposed Southwest San Timoteo Subbasin boundary modifications will provide better alignment with aquifer
- Coordination on boundary modifications with subbasin stakeholders and DWR on-going
- Revised boundary may result in EMWD no longer being GSA in the San Timoteo Subbasin
- Preparation of a GSP for the San Timoteo Subbasin is not anticipated due to "very low priority" ranking



emwd

San Timoteo Groundwater Bulletin 118 Boundary Modification Proposed San Timoteo Subbasin Boundary



emwd

Recommendation

Adopt the proposed Resolutions which authorize the General Manager, and/or his designee, to prepare the necessary data, conduct investigations, and file such applications with the California Department of Water Resources to modify the boundaries of the San Jacinto Basin and San Timoteo Subbasin as defined in Bulletin 118.

emwd

emwd

Contact Information

Kelley Gage
Senior Director of Water Resources Planning
(951) 928-3777 Ext. 4561

Email: gagek@emwd.org

Brian Powell, P.E.
Director of Groundwater Management and Facilities Planning
(951) 928-3777 Ext. 4278

Email: powellb@emwd.org

EASTERN MUNICIPAL WATER DISTRICT

January 3, 2017

Mr. Mark Nordberg, GSA Project Manager
Senior Engineering Geologist
California Department of Water Resources
901 P Street, Room 213A
P.O. Box 942836
Sacramento, CA 94236

Subject: Notice of Intent to Become a Groundwater Sustainability Agency for the Western Portion of the San Jacinto Groundwater Basin within the Sphere of Influence of Eastern Municipal Water District Located in Western Riverside County

Dear Mr. Nordberg:

Pursuant to Water Code Section 10723.8, the Eastern Municipal Water District (District), hereby notifies the California Department of Water Resources (DWR) of its intent to become the Groundwater Sustainability Agency (GSA) for the western portion of the San Jacinto Groundwater Basin, DWR Sub-Basin No. 8-005 as identified and defined in Bulletin 118, within the sphere of influence of the District located in western Riverside County (See Exhibit A). All applicable information required by Water Code Section 10723.8(a) is provided in this notification.

The District is a municipal water district formed in 1950 and operated under the provisions of Section 3 of the Municipal Water District Act of 1911, and has the authority to exercise powers related to groundwater management. The District is located in western Riverside County, and depends on the unadjudicated portion of the groundwater basin underlying the District's service area to help meet the water needs of its customers.

The District has been actively managing groundwater in this area for the last 21 years. As part of a voluntary Assembly Bill 3030 (AB3030) effort passed in 1992, and in accordance with Water Code Sections 10750-10756, the District adopted the West San Jacinto Groundwater Basin

2270 Trumble Road • P.O. Box 8300 • Perris, CA 92572-8300
T 951.928.3777 • F 951.928.6177 emwd.org

Groundwater Management Plan (Plan) in 1995. This Plan has been supported extensively throughout the management area and will serve as the foundation for the development and implementation of the Groundwater Sustainability Plan (GSP).

In accordance with Water Code Section 10723.2, the District conducted an extensive public outreach effort to ensure that the interests of all beneficial uses and users of groundwater would be considered in the formation of the GSA and development and implementation of the GSP. A list of all potential stakeholders was developed and used to conduct several one-on-one meetings with integral entities within the proposed GSA area to inform and build consensus for the District's intent to form a GSA for the western portion of the San Jacinto Groundwater Basin. In addition, the District held a public workshop concerning the formation of the GSA on September 27, 2016. Courtesy notices of this public workshop were mailed to:

- Box Springs Mutual Water Company
- California Department of Fish and Wildlife
- California Department of Water Resources
- City of Canyon Lake
- City of Menifee
- City of Moreno Valley
- City of Perris
- County of Riverside
- Edgemont Community Services District
- Elsinore Valley Municipal Water District
- Highland Fairview Properties
- Lake Elsinore and San Jacinto Watersheds Authority
- March Air Reserve Base, Department of Defense
- March Joint Powers Commission
- Mead Valley Municipal Advisory Council
- Metropolitan Water District of Southern California
- Motte Mutual Water Company
- Nuevo Water Company
- Private Groundwater Producers
- Regional Water Quality Control Board, Santa Ana Region
- Riverside County Flood Control and Conservation District
- San Jacinto River Watershed Council
- Santa Ana River Watermaster
- Santa Ana Watershed Project Authority
- Santa Margarita River Watermaster
- United States Army Corps of Engineers
- Valley Wide Recreation and Park District
- West San Jacinto Advisory Committee
- Western Municipal Water District
- Western Riverside County Agricultural Coalition

As part of the public workshop, the District provided an overview of the Sustainable Groundwater Management Act (SGMA) of 2014 to all of the workshop participants, which included information on the District's intent to become the GSA for the western portion of the San Jacinto Groundwater Basin. As part of this process, the District developed and distributed

a proposed governance structure to the stakeholders for the GSA (See Exhibit B). To ensure it is actively collaborating with the communities and interested parties it serves, the District will form an Advisory Community that will make recommendations to the District's publicly-elected Board of Directors, acting as the GSA. The Advisory Committee will include all interested stakeholders within the defined GSA area. The District has also received Letters of Support for its effort to be the GSA from stakeholders within the area (See Exhibit C).

The District caused notice of its election to serve as a GSA to be published in the Press-Enterprise newspaper on October 30, 2016, and November 20, 2016 (See Exhibit D), in accordance with Water Code Section 10723(b) and Government Code Section 6066. The Press-Enterprise is a newspaper widely circulated throughout the proposed GSA management area.

On December 7, 2016, the District's Board of Directors held a public hearing concerning the formation of the GSA and unanimously approved Resolution No. 2016-135 (See Exhibit E), which directed District Staff to complete and submit this Notice of Intent to DWR. Additionally, no new bylaws, ordinances, or other authorities were adopted in conjunction with the establishment of the GSA.

Pursuant to Water Code Section 10723.8(a)(4) the District will consider the interests of all beneficial users of groundwater, as well as those responsible for implementing GSP's. The Advisory Committee, as described above and the District has committed to promptly establish, was carefully designed with stakeholder input to ensure that those parties listed in Water Code Section 10723.2 have an active, long-term role in development and operation of the GSA as well as implementation of the GSP. In addition, the District has communicated with all parties interested in the sustainable management of groundwater in the groundwater basin, and will continue to solicit feedback from those parties as the GSP is developed (See Exhibit F).

The District's, and other interested stakeholder's, roles and responsibilities will be further defined in the GSP. The District welcomes feedback during this process from the state and any of the agencies or organizations listed herein. If DWR requires anything further prior to the acceptance of this notification of the District's election to serve as the GSA for the western portion of the San Jacinto Groundwater Basin, please contact Mike Nusser, Water Resources Planning Manager, at (951) 928-3777 x4514, or nusserm@emwd.org.

Sincerely,

Paul D. Jones II
General Manager

MDN:mdn

Attachments:
Exhibit A – Map of GSA Area
Exhibit B – GSA Governance Structure
Exhibit C – Letters of Support from Stakeholders
Exhibit D – Notices of Public Hearing
Exhibit E – Resolution
Exhibit F – List of Uses and Users of Groundwater

c: Joe Mouawad, EMWD
Kelley Gage, EMWD
Michael Nusser, EMWD

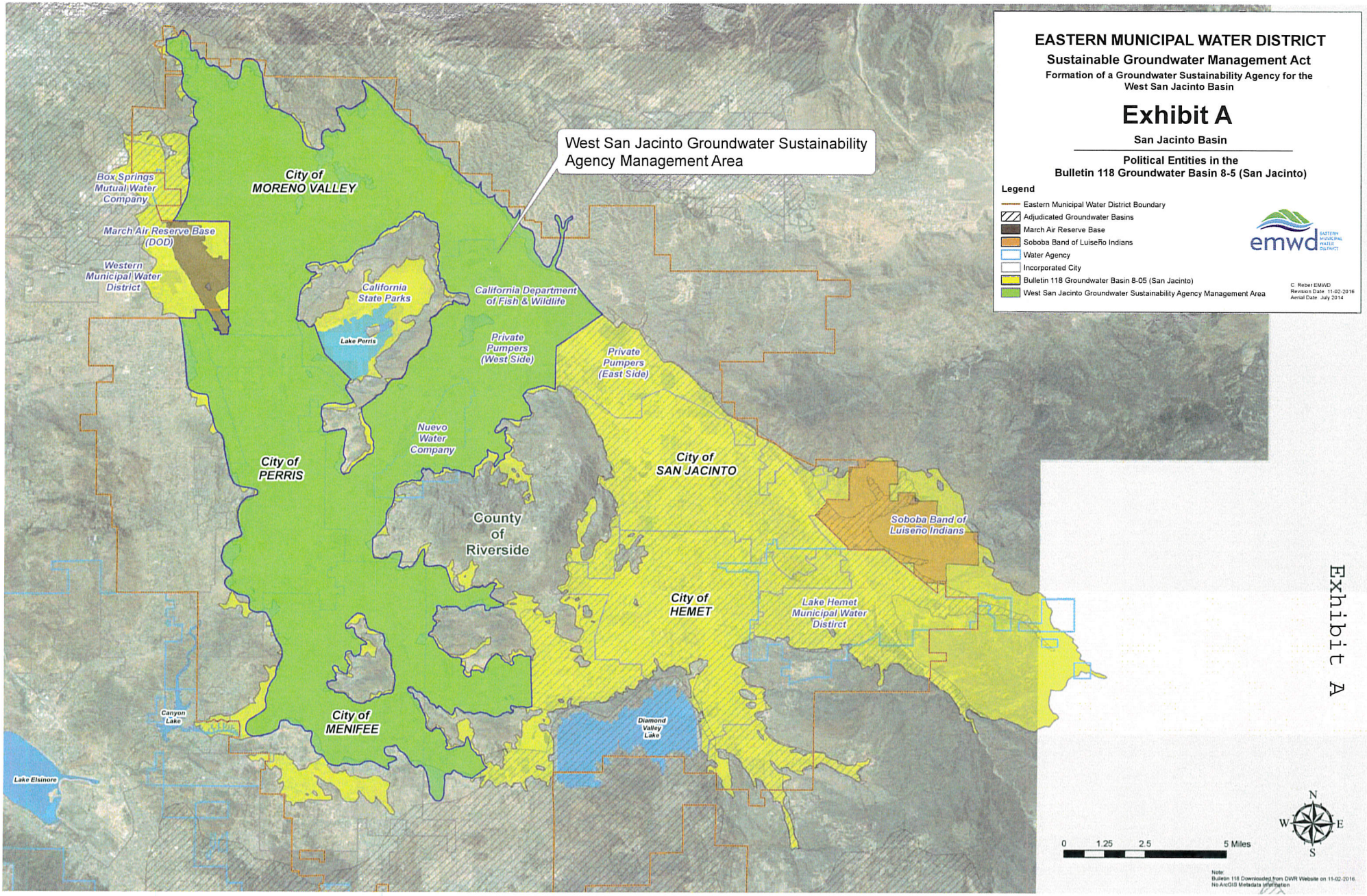
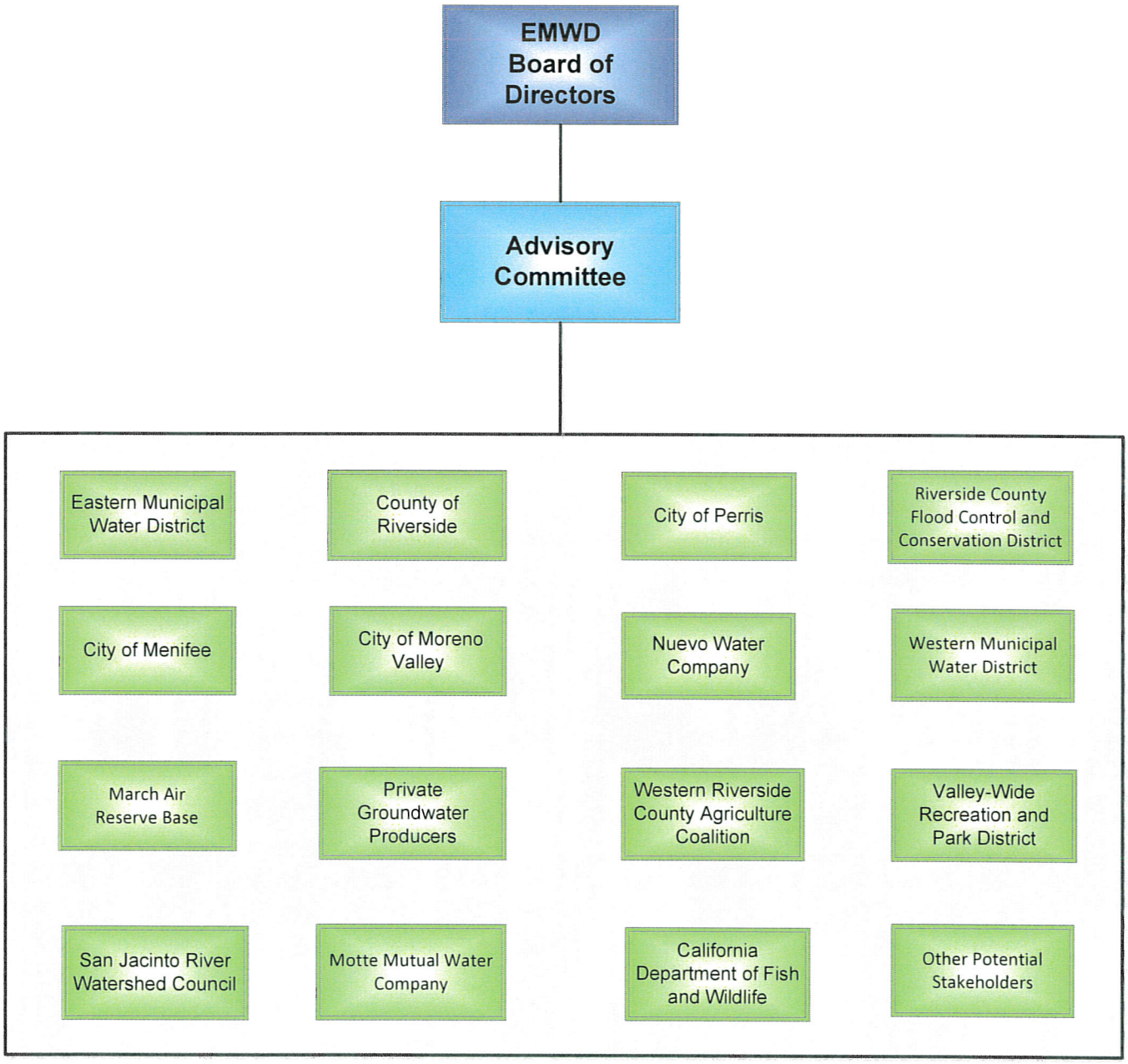

EASTERN MUNICIPAL WATER DISTRICT
Sustainable Groundwater Management Act
Formation of a Groundwater Sustainability Agency for the West San Jacinto Basin
Exhibit A
San Jacinto Basin
Political Entities in the Bulletin 118 Groundwater Basin 8-5 (San Jacinto)
Legend
Eastern Municipal Water District Boundary
Adjudicated Groundwater Basins
March Air Reserve Base
Soboba Band of Luiseño Indians
Water Agency
Incorporated City
Bulletin 118 Groundwater Basin 8-05 (San Jacinto)
West San Jacinto Groundwater Sustainability Agency Management Area
emwd
© Reber EMWD
Revision Date: 11-02-2016
Aerial Date: July 2014
West San Jacinto Groundwater Sustainability Agency Management Area
City of MORENO VALLEY
Box Springs Mutual Water Company
March Air Reserve Base (DOD)
Western Municipal Water District
California State Parks
Lake Perris
California Department of Fish & Wildlife
Private Pumpers (West Side)
Private Pumpers (East Side)
Nuevo Water Company
City of PERRIS
City of SAN JACINTO
Soboba Band of Luiseño Indians
County of Riverside
City of HEMET
Lake Hemet Municipal Water District
City of MENIFEE
Canyon Lake
Diamond Valley Lake
Lake Elsinore
N
W
E
S
0
1.25
2.5
5 Miles
Note:
Bulletin 118 Downloaded from DWR Website on 11-02-2016.
No ArcGIS Metadata Information

Exhibit A

Eastern Municipal Water District

Sustainable Groundwater Management Act

Proposed Governance Structure
West San Jacinto Groundwater Sustainability Agency



-DRAFT-
Date: September 19, 2016

Note:
Private Groundwater Producers will elect a primary and an alternate representative to the Advisory Committee

Exhibit C

MOTTE MUTUAL WATER

Motte Mutual Water
445 South D Street
Perris, CA 92570

November 3, 2016

Paul D. Jones II, P.E.
General Manager
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

Dear Mr. Jones:

Motte Mutual Water had the pleasure of meeting with your agency on the Sustainable Groundwater Management Act (SGMA). After hearing the presentation and getting the opportunity to have our questions answered, Motte Mutual Water is in support of Eastern Municipal Water District (EMWD) forming and acting as the Groundwater Sustainability Agency (GSA) for the West San Jacinto Groundwater Basin Management Area in full compliance with the requirements of SGMA.

Water Code Section 10723(a) requires that "Any local agency or combination of local agencies overlaying a groundwater basin may elect to be a groundwater sustainability agency for that basin." And that a GSA "shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include [] all of the following: (a) Holders of overlying groundwater rights. [] (b) Municipal well operators. (c) Public water systems. (d) Local land use planning agencies. (e) Environmental users of groundwater. [] (g) The federal government []. []" (§ 10723.2)

The above statutory mandate makes it clear that Motte Mutual Water's interests will be considered in the development and operation of the GSA. We approve of the proposed governance structure of forming an Advisory Committee to the GSA Board. We understand that the proposed Advisory Committee will be comprised of the interested parties and stakeholders within the West San Jacinto Groundwater Basin Management Area and we look forward to participating on the committee. We also acknowledge that EMWD was instrumental in developing the Groundwater Management Plan in compliance with AB3030 and has been implementing the Plan since 1995. As such, EMWD is the most qualified agency to form and act as the GSA.

We appreciate your leadership in bringing the various organizations and parties together for this important effort.

Sincerely,

Mike Naggar
Manager, Motte Mutual Water

Exhibit C

HIGHLAND FAIRVIEW
14225 Corporate Way
Moreno Valley, CA 92553
Tel: 951.867.5327

November 2, 2016 *(Sent via email)*

Paul D. Jones II, P.E.
General Manager
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

Dear Mr. Jones:

After having the opportunity to hear your agency's presentation on the Sustainable Groundwater Management Act (SGMA) and answering the questions we had, Highland Fairview is in support of Eastern Municipal Water District (EMWD) forming and acting as the Groundwater Sustainability Agency (GSA) for the West San Jacinto Groundwater Basin Management Area in full compliance with the requirements of SGMA.

Water Code Section 10723(a) requires that "Any local agency or combination of local agencies overlaying a groundwater basin may elect to be a groundwater sustainability agency for that basin." And that a GSA "shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include all of the following: (a) Holders of overlying groundwater rights. (b) Municipal well operators. (c) Public water systems. (d) Local land use planning agencies. (e) Environmental users of groundwater. (g) The federal government." (§ 10723.2)

The above statutory mandate makes it clear that Highland Fairview's interests will be considered in the development and operation of the GSA. We approve of the proposed governance structure of forming an Advisory Committee to the GSA Board. We understand that the proposed Advisory Committee will be comprised of the interested parties and stakeholders within the West San Jacinto Groundwater Basin Management Area and we look forward to participating on the committee. We also acknowledge that EMWD was instrumental in developing the Groundwater Management Plan in compliance with AB3030 and has been implementing the Plan since 1995. As such, EMWD is the most qualified agency to form and act as the GSA.

We appreciate your leadership in bringing the various organizations and parties together for this important effort.

Sincerely,

Brian R. Hixson, P.E.
Vice President of Land Development

Exhibit C

WESTERN MUNICIPAL WATER DISTRICT

Securing Your Water Supply

November 10, 2016

Paul D. Jones II, P.E.
General Manager
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

Dear Mr. Jones: Paul,

Upon hearing your agency's presentation on the Sustainable Groundwater Management Act (SGMA) and having our questions answered, Western Municipal Water District is in support of Eastern Municipal Water District (EMWD) forming and acting as the Groundwater Sustainability Agency (GSA) for the West San Jacinto Groundwater Basin Management Area in full compliance with the requirements of SGMA.

Water Code Section 10723(a) requires that, "Any local agency or combination of local agencies overlaying a groundwater basin may elect to be a groundwater sustainability agency for that basin." And that a GSA, "shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include all of the following: (a) holders of overlying groundwater rights; (b) municipal well operators; (c) public water systems; (d) local land use planning agencies; (e) environmental users of groundwater; and (g) the federal government." (Refer to § 10723.2.)

The above statutory mandate makes it clear that Western Municipal Water District's interests will be considered in the development and operation of the GSA. We approve of the proposed governance structure of forming an Advisory Committee to the GSA Board. We understand that the proposed Advisory Committee will be comprised of the interested parties and stakeholders within the West San Jacinto Groundwater Basin Management Area and we look forward to participating on the committee. We also acknowledge that EMWD was instrumental in developing the Groundwater Management Plan (the Plan) in compliance with AB3030 and has implemented the Plan since 1995. As such, EMWD is the most qualified agency to form and act as the GSA.

We appreciate your leadership in bringing the various organizations and parties together for this important effort.

Sincerely,

JOHN V. ROSSI
General Manager

BLOGS

FROM PAGE 1

Valley Lake. "It's totally worth the drive once you get here."

DenOuden, who writes about healthy travel and being active, admitted she had low expectations for the community, but she was pleased to find hiking and biking trails.

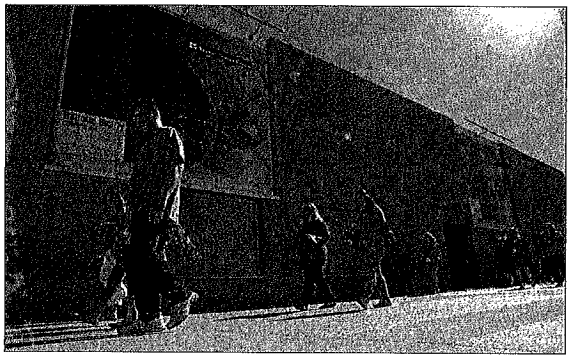
The visit Oct. 19-22 was the bloggers' second. A third is planned around the Ramona Pageant in April.

Trips are made at no cost to the city. The bloggers paid their travel expenses, and merchants and restaurants picked up the costs for lodging and food.

The bloggers had to apply for the trip and were picked based on the size of their readership. The only requirement was that they write at least two articles.

But there are no barriers on what they write. Although the tour doesn't include the more unsavory parts of the community, the bloggers can be honest about their experiences.

"I just want authentic experiences and reviews," said Leslie McLellan, who organized the event.



STAN LIM, STAFF PHOTOGRAPHER

Bloggers end their tour of Hemet's Western Science Center, one of many locales they visited.

Travel and food blogger Deb Thompson of Michigan said if she isn't honest, she will lose readers, and she and the other bloggers depend on a large audience so they can sell advertisements on their sites.

Bringing in travel writers is nothing new for communities like Temecula and Riverside, which actively market their tourist locales like Old Town Temecula, the Temecula Valley Wine Country and the Mission Inn.

The San Jacinto Valley has limited experience in the field. The impetus for these trips started when Lake Arrowhead-based McLellan met Thompson at a conference.

McLellan, who is paid by Hemet as a tourism consultant, invited Thompson to the area. That ended up being a five-week trip, and Thompson has been back three times since.

Thompson said she likes the valley's weather and affordability.

"The cost of visiting this region of Southern California is very reasonable," she said. "My dollars are going to go a lot farther."

She spoke of Hemet being a hub, as it's located about an hour from many popular attractions including the beach, the mountains, Palm Springs, San Diego and Los Angeles.

And there's another plus, bloggers say.

"People are always surprised how warm and caring the community is," Thompson said. "The people always draw me back."

Hemet City Councilwoman Linda Krupa is a member of a loose-knit tourism committee with McLellan, San Jacinto Mayor Andrew Kotyuk, former Hemet Councilwoman Lori VanArsdale and Hemet-San Jacinto Valley Chamber of Commerce President Michael Carle.

Krupa said having the bloggers spread the word about the area results in increased tourism.

"It's an economic development engine that drives people to the valley."

She said there is anecdotal evidence that people have visited the community after reading travel blogs as the city has increased its efforts to market itself on social media and through the website **visitsanjacinto valley.com**.

"People say there's no return on investment when you do social media; that's not true," McLellan said. "There was about $65,000 worth of publicity the last time."

CONTACT THE WRITER:
951-368-9066 or
cshultz@scng.com

SCHOOL

FROM PAGE 1

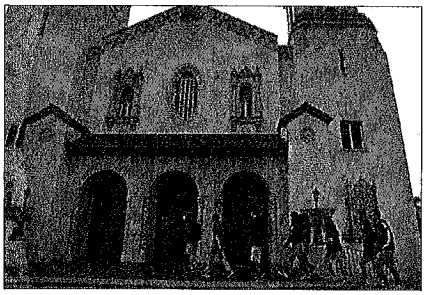
said Dayanerra Rodriguez, a 14-year-old freshman. "There's no person here who doesn't have a friend. You always feel included."

'SENSE OF RESPECT'

Principal Matthew Luttringer, who went to Notre Dame, said the school's identity goes beyond its crucifixes, statues, religious services and theology classes.

"When you come on to our campus and take away everything that's Catholic, you would still know we're a Catholic school by the way the kids treat each other and treat the teachers," Luttringer said. "There's a sense of respect, a sense of pride, giving of each other and giving to the community."

Notre Dame opened in September 1956 as an all-boys school with 16 freshmen taught by priests who lived in the rectory that is now the administration office. Over the years, the campus doubled from two to four classroom buildings, along with the addition of a library and a gym. It became a co-ed campus in 1972.



KURT MILLER, STAFF PHOTOGRAPHER

Notre Dame High School students make their way to Mass at St. Catherine of Alexandria Catholic Church, across the street from campus in Riverside.

Enrollment fell about 20 percent during the Great Recession. Since then it has slowly inched up and held steady at about 500 students for the past two or three years, Beatty said.

Recent upgrades include technology, science and fine-arts labs, along with new roofs and air-conditioning systems. The gym and locker room got a $5 million renovation.

In 2013, Notre Dame became what Luttringer calls "an iPad school." Apple tablets replaced textbooks, saving students money and expanding learning, he said.

The school is moving to a classroom environment that blends online and traditional lessons. A block schedule allows 85-minute class periods four days a week, providing time for lectures, individualized instruction and group projects, Luttringer said.

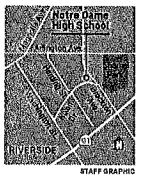
Notre Dame has class sizes of 18 students per teacher, making it easier for struggling students to get help.

"It's a small-school environment, so you don't have to worry about not getting enough attention from the teacher," said David Puma, a 17-year-old senior who plays basketball and runs track and cross country.

ACADEMIES INTRODUCED

This year, the school began offering four academies: medical sciences; arts and innovation; global citizenship; and science, technology, engineering, arts and math.

Biology students recently took a trip to the UC Riverside genetics lab, where they learned about DNA sequencing, Beatty said.



STAFF GRAPHIC

ABOUT THE SCHOOL

Name: Notre Dame High School
Opened: 1956
Principal: Matthew Luttringer
Enrollment: 505 students
Tuition: $7,500 a year
Details: Catholic campus offers 28 Advanced Placement and honors courses, 15 athletic teams and at least 14 clubs; 100 percent of students graduate and 96 percent attend a four-year university
Address: 7065 Brockton Ave., Riverside
Phone: 951-275-5896
Website: **notredameriverside.org**

"The idea is to parallel our classroom content with experiences that bring that content to life," he said.

One of Luttringer's goals is to make Notre Dame, which has annual tuition of $7,500, affordable for more families. About 1 in 5 students receives financial aid, he said.

"Every Catholic child in this city should have the opportunity to go to a Catholic high school if they want," he said. "I would like to see it so it's funded from others and not just the parents."

The school is increasing marketing efforts and hopes to get additional financial support to build enrollment and expand its presence in the community, Luttringer said.

Mariella Gallegos, a 17-year-old senior, appreciates the sacrifice her parents make to send her to Notre Dame.

"I feel like I've grown more as a person and as a student to be ready for the future that comes after high school," said Gallegos, who plans to study immigration law in college.

CONTACT THE WRITER:
951-368-9292 or
stwell@scng.com
Twitter: @pe_swell

COURTESY OF BANK OF AMERICA

A student at Highgrove Elementary School in the Riverside area receives a bag of healthy treats.

Kids get healthy food at produce market

STAFF REPORT

Students had their choice of healthy snacks Wednesday at the Kids Produce Market at Highgrove Elementary School.

The farmers market-style event at the Riverside-area school – put on by Feeding America – provided healthy produce to more than 800 low-income students and their families, according to a news release from the program.

Wednesday's event also promoted the group's Give A Meal program and its partnership with Bank of America.

For every dollar donated to the program, the bank will donate $2.

Information: **bankofamerica.com/give**

Homeless ex-Marine, his family get new home

Rental is part of a program that helps vets find permanent residence.

By JOE NELSON
STAFF WRITER

For former Marine Darrin Snyder and his family, home used to be the Wal-Mart parking lot, free campsites, cheap motels or anywhere else they could park their minivan and cargo trailer and stay the night.

Snyder, who traveled with his family to San Bernardino County from Virginia Beach in August in search of work as a recreational therapist with the California Department of Corrections and Rehabilitation, wanted more for his family, but he never expected what he got Thursday: a spacious, five-bedroom, three-bath house in a quiet Victorville neighborhood, near La Mesa and Topaz roads.

"I think this is pretty awesome. Every time I look at all of this, I think it's a dream," said Snyder, 49, inside his new home Thursday. He was surrounded by representatives from the San Bernardino nonprofit Knowledge & Education for Your Success, which goes by the acronym KEYS. The nonprofit assists homeless or poverty-stricken families in finding homes.

Snyder is among the dozens of veterans recently placed in permanent housing by KEYS and its affiliate partners, including San Bernardino County Department of Behavioral Health and the Loma Linda Veterans Affairs hospital. It is part of an ongoing effort to house all the county's homeless veterans and their families.

The Snyder family's new home has a spacious backyard, a fireplace in the upstairs master bedroom and an intercom system that allows family members to communicate with one another from any room in the house.

Snyder, who served in the Marines from 1985 to 1988 and uses a wheelchair because of myriad ailments, including a herniated disk, two blown knees and diabetes, said the VA will be installing a stairlift in his new home so he can have access to the upstairs master bedroom. Until then, he plans to occupy the downstairs bedroom.

Also, the San Bernardino nonprofit Rolling Start, which provides resources and advocacy for disabled people, will have a wheelchair ramp built to access the house, Snyder said.

KEYS program manager Julie Burnette said the Snyder family is on a one-year lease, with an option to renew. KEYS picked up the tab for the security deposit and first month's rent of $1,500, and then the need to continue assisting the Snyders financially will be assessed on a monthly basis.

Snyder is in the process of securing a job as a recreational therapist at Corcoran state prison's substance abuse treatment facility. He plans to commute to the prison, camp out in his 6-by-10 cargo trailer during the workweek and spend the weekends at his Victorville residence.

"I still get to come back to this place," Snyder said with a grin.

Snyder's daughters were just as elated as he was about their new home.

"Motel hopping absolutely sucks. I hope to never be in that situation ever again," said his oldest daughter, Carrie "Allie" Snyder, 22, holding her infant daughter Peyton outside their new home Thursday.

She said living in transition the past four months was an eye-opening experience.

"It definitely gives you a whole new perspective and empathy for people living on the streets," Allie said.

Snyder's youngest daughter, Katie, said KEYS and its partner agencies went above and beyond what she and her family anticipated.

"They went way out of their way," said Katie Snyder, 20, noting that Heroes Warehouse Inc. in Fontana donated a couch, refrigerator, three queen size beds, a desk and three floor-to-ceiling bookshelves.

The Snyder family moved into the home just in time to enjoy the holidays. Although the Snyders plan to have Thanksgiving dinner at their church, they intend to enjoy Christmas at home.

"He's excited because he gets to decorate this year," Katie Snyder said of her father.

Darrin Snyder said he's going to use the $500 Visa gift card he just received for participating in the Detroit Marathon last month for Christmas presents. He said he has participated in many marathons, representing the Achilles Freedom Team for Wounded Veterans, which funded his trip to Detroit last month.

"Peyton's going to have a great Christmas this year," he said of his granddaughter.

SARAH ALVARADO, CONTRIBUTING PHOTOGRAPHER

Marine veteran Darrin Snyder shares a moment in his new Victorville home Thursday with granddaughter Peyton as daughters Allie and Katie look on.

THE PRESS-ENTERPRISE
A Southern California News Group Newspaper

1825 Chicago Ave., Suite 100, Riverside, CA 92507

HOW TO REACH US

Main office	951-684-1200	Opinion Page	909-483-9313
Classified Ads	951-368-9200	Features	951-368-9551
Display Ads	951-368-9240	Photo	951-368-9414
Back Issues	951-368-9377	Sports	951-368-9523
Newsroom	951-368-9460	Business News	951-368-9419

Customer Service 951-368-9000
www.pe.com/subscribe
For missed delivery, call between 7 a.m.-10 a.m. Monday-Friday or 8 a.m.-11 a.m. Sunday. Customer service hours, Monday-Friday, 7 a.m. - 4 p.m.

SOUTHERN CALIFORNIA NEWS GROUP

RON HASSE, Publisher and CEO, rhasse@scng.com, 714-796-6790
FRANK PINE, Executive Editor, fpine@scng.com, 909-483-9360
TOM KELLY, Vice President, Sales, tkelly@scng.com, 818-713-3110
DAN SCOFIELD, Chief Financial Officer, dscofield@scng.com, 714-796-6791
BRIAN CALLE, Opinion Editor, bcalle@scng.com, 714-796-7823
JON MERENDINO, Vice President, Operations, jmerendino@scng.com, 909-359-6720

SENIOR MANAGEMENT

JIM MAURER, Vice President/General Manager, jmaurer@sgvtribnewspapers.com, 909-483-9307
KIM QUIMARIN, Senior Editor, kquimarin@scng.com, 951-368-9473

NEWSROOM CONTACTS

VANESSA FRANKO, Assistant Managing Editor/Features and Sports, vfranko@scng.com, 951-368-9575
JENNIFER IYER, Night Metro Editor, jiyer@scng.com, 714-796-9282
MARK ACOSTA, Metro Editor, Riverside, macosta@scng.com, 951-368-9362
ERIC VILCHIS, Photo Editor, evilchis@scng.com, 951-368-9474
LIAM TRUCHARD, Assistant Metro Editor, Southwest and East Riverside County, ltruchard@scng.com, 951-368-9695
ROGER RUVOLO, Assistant Managing Editor, Business, rruvolo@scng.com, 951-368-9479
MICHAEL WATANABE, Assistant Metro Editor, Community, mwatanabe@scng.com, 951-368-9351
JOHN BENDER, Politics and Topics Editor, jbender@scng.com, 951-368-9445
NIKIE JOHNSON, Breaking News Editor, njohnson@scng.com, 951-368-9556
JEFF PARENTI, Sports Editor, jparenti@scng.com, 951-368-9523
TIMOTHY GUY, Digital News Editor, tguy@scng.com, 951-368-9342

HOME DELIVERY RATES: Daily Print/Digital Access: $43.25/month. Weekend delivery/Digital Access (Thursday-Sunday): $24.75/month. Sunday only delivery/Digital Access: $21.5C/month. Digital Access only: $21.5C/month. All introductory discounts automatically renew to standard invoice rate or auto-pay rate as applicable unless otherwise notified. The Publisher reserves the right to change subscription rates during the term of any subscription. All home delivery subscriptions will include the Thanksgiving edition, which will be charged at an additional $3.CC. In addition, all home delivery subscriptions will include no more than three (3) other Special Editions annually, which will be charged to the subscriber's account at $3.CC each. To opt-out of all Special Editions, including Thanksgiving, please call subscriber services. If you do not opt-out, this will result in shortening the length of your B.L.L.N.G Term. This subscription is a CONTINUOUS subscription for as long as the service is offered. You will be billed at the interval you have selected, which shall be your Billing Term. You may cancel by calling Customer Service at the number listed above. You must cancel before the end of your Billing Term in order to avoid charges to your subscription. No unused portion of Billing Term will be refunded. No credit is offered for vacation service interruptions. Future prices are subject to change. Print only options: Daily, $26/month. Weekend delivery (Thursday-Sunday): $14.86/month or Sunday only delivery: $12/month. Vol. 13C, No. 325

To share a news tip or report an error, call 951-368-9460

$100 REWARD OFFERED BY RIVERSIDE COUNTY DEPT. OF PUBLIC SOCIAL SERVICES*

WELFARE FRAUD OFFENDERS CONVICTED

Dockets of the Riverside County Court system show the following persons were convicted of Welfare Fraud on the dates specified:

CONVICTIONS/DOCKETS RECEIVED TO BE PUBLISHED SUNDAY November 20th, 2016

RAFAELA ELIAS
CONVICTED: 09/07/2016

RAQUEL ROMERO
CONVICTED: 09/13/2016

JAZMINE MARIE MORALES
CONVICTED: 09/14/2016

BRIDGET BECERRA
CONVICTED: 09/21/2016

BRITTANI DIANA QUINN
CONVICTED: 09/21/2016

RICARDO LUNA JUAREZ
AKA: RICARDO LUNAJUAREZ
CONVICTED: 09/22/2016

JESSICA ELAINE SCOTT
AKA: JESSICA ELAINE ROSTEN
AKA: JESSICA ELAINE LOMELI
AKA: JESSICA ELAINE GUERRERO
CONVICTED: 09/19/2016

*$100 REWARD offered by the Riverside County Department of Public Social Services for information leading to the conviction on welfare fraud charges. To report suspected fraud, call (951) 358-3278. Eligibility for reward is determined by a review committee. (Department of Public Social Services and District Attorney - employees and family members are not eligible). Fraud amount must be $1000 or more.

To report toll free on the State fraud hotline, call 1-800-344-8477. No reward on State hotline calls.

NOTICE OF PUBLIC HEARING

emwd EASTERN MUNICIPAL WATER DISTRICT

FORMATION OF GROUNDWATER SUSTAINABILITY AGENCY FOR WEST SAN JACINTO GROUNDWATER BASIN

Notice is hereby given that the Board of Directors of Eastern Municipal Water District (EMWD) will conduct a public hearing on December 7, 2016, at 9 a.m. at 2270 Trumble Road, Perris California, to hear comments from the public regarding EMWD's proposed application to be the Groundwater Sustainability Agency (GSA) for the western portion of the San Jacinto Groundwater Basin, which generally encompasses the areas of Moreno Valley, Perris, Menifee and surrounding unincorporated areas.

After the public hearing, EMWD's Board of Directors is anticipated to take a formal action to submit a notice of intent to the California Department of Water Resources to become the GSA for the aforementioned area. The notice of intent shall be posted pursuant to California Water Code Section 10723.8 and will include a description of the proposed boundaries of the portions of the San Jacinto Basin for which EMWD intends to manage as the GSA in accordance with the Sustainable Groundwater Management Act of 2014.

Said hearing will be conducted pursuant to Water Code Section 10723(b).

Written comments may be submitted to Sheila Zelaya, Board Secretary, by the close of business on December 6, 2016. Please email comments to zelayas@emwd.org and written comments by mail to the following location:

Eastern Municipal Water District
Attention: Sheila Zelaya, Board Secretary
P.O. Box 8300
Perris, CA 92572-8300

Should you have questions, contact Kevin Pearson via email pearsonk@emwd.org or by phone (951) 928-3777 ext. 4219.

Exhibit E

RESOLUTION NO. 2016-135

A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT ELECTING TO BECOME THE GROUNDWATER SUSTAINABILITY AGENCY FOR A WESTERN PORTION OF THE SAN JACINTO BASIN WITHIN THE BOUNDARIES AND SPHERE OF INFLUENCE FOR EASTERN MUNICIPAL WATER DISTRICT

WHEREAS, in September 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law, with an effective date of January 1, 2015, and codified at California Water Code, Section 10720 et seq; and

WHEREAS, the legislative intent of SGMA is to, among other goals, provide for sustainable management of groundwater basins and sub-basins defined by the California Department of Water Resources (DWR), to enhance local management of groundwater, to establish minimum standards for sustainable groundwater management, and to provide specified local agencies with the authority and technical and financial assistance necessary to sustainably manage groundwater; and

WHEREAS, Water Code Section 10723(a) authorizes a local agency with water supply, water management or local land use responsibilities, or a combination of local agencies, overlaying a groundwater basin to elect to become a Groundwater Sustainability Agency (GSA) under SGMA; and

WHEREAS, groundwater management of high and medium priority basins as designated by DWR is now required; and

WHEREAS, the service area of Eastern Municipal Water District (EMWD) overlies portions of the San Jacinto Basin (DWR Bulletin 118, Basin No. 8-005) which are unadjudicated and designated as a high priority basin by DWR; and

WHEREAS, California Water Code Section 10723.8 requires that a local agency electing to serve as a GSA notify DWR within 30 days of the local agency's election to become a GSA authorized to undertake sustainable groundwater management within a basin; and

WHEREAS, California Water Code Section 10723.8 mandates that 90 days following the posting by DWR of the local agency's notice of election to become a GSA, that entity shall presume to be the exclusive GSA for the area within the basin the agency is managing as described in the notice, provided that no other GSA formation notice covering the same area has been submitted to DWR; and

WHEREAS, in accordance with Water Code Section 10723(b) and Government Code Section 6066, a notice of public hearing was published in a newspaper of general circulation

regarding EMWD's intent to become a GSA for a portion of the San Jacinto Basin, as described in the notice; and

WHEREAS, becoming a GSA supports EMWD's ongoing efforts to conduct groundwater management within the region and to ensure groundwater and drinking water sustainability within the area served by EMWD;

NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

1. EMWD hereby elects to be the GSA for the geographical area depicted on the map attached to this Resolution as Exhibit A, covering that portion of the unadjudicated San Jacinto Basin underlying (or within) the jurisdictional boundaries of EMWD.

2. EMWD staff is directed to submit to DWR, within 30 days of the approval of this Resolution, a map of the basin area EMWD intends to manage under SGMA, a copy of this Resolution, a list of interested parties developed pursuant to Section 10723.2 of the Act with an explanation of how their interests will be considered in the development and implementation of the agency's groundwater sustainability plan, and any other supporting documentation required by SGMA to support EMWD's formation of a GSA.

3. This Resolution shall be effective upon its adoption.

DATED: December 7, 2016

Randy A. Record, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on December 7, 2016.

ATTEST:

Sheila Zelaya, Board Secretary

(SEAL)

Western Portion of the San Jacinto Basin

Initial List of Uses and Users of Groundwater for the West San Jacinto Groundwater Sustainability Agency

As required by the Sustainable Groundwater Management Act (SGMA) of 2014, Eastern Municipal Water Disttrict (District) will consider all beneficial uses and users of groundwater, as well as those responsible for implementing Groundwater Sustainability Plans (GSPs). An initial list of interested parties is provided in accordance with California Water Code section 10723.2 and 10723.8(a)(4). This list will continue to be updated during implementation of the District's GSP for the western portion of the San Jacinto Groundwater Basin.

- Holders of overlying groundwater rights:
  - Agricultural users: There are many agricultural wells within the GSA, most of whom have an existing relationship with the District. The District will communicate with landowners to assure that they understand their on-going opportunity to participate in the development of a GSP for the area.
  - Domestic well owners: There are some domestic wells within the GSA, however, the District anticipates that many will fall under SGMA's exclusions for de minimum extractors. As with agricultural users, the District will communicate with these landowners to assure that they understand their on-going opportunity to participate in development of a GSP for this area.
- Municipal Well Operators
  - Eastern Municipal Water District
  - Western Municipal Water District
- Public Water Systems
  - City of Perris
  - Motte Mutual Water Company
  - Nuevo Water Company
- Local Land Use Planning Agencies
  - Riverside County
  - Riverside County Flood Control and Conservation District
  - City of Moreno Valley
  - City of Perris
  - City of Menifee
  - Other Water and Irrigation Districts outside the GSA boundaries: The District provided courtesy notice of their intention to serve as the GSA to the City of Canyon Lake, Elsinore Valley Municipal Water District, Santa Margarita River Watermaster, and Hemet-San Jacinto Watermaster, and will continue to communicate with and solicit feedback from these neighboring agencies as the GSP is developed.
- Environmental Users of Groundwater
  - California Department of Fish and Wildlife:

- Surface Water Users, If there is a hydrological connection between surface and groundwater bodies:
    - N/A
- The Federal Government, including, but not limited to, the Military and Managers of Federal Lands:
    - March Air Reserve Base, Department of Defense
    - March Joint Powers Authority
- California Native American Tribes:
    - N/A
- Disadvantaged Communities, including, but not limited to, those served by private domestic wells or small community water systems:
    - The District actively works with these communities through their Public and Governmental Affairs, and Grant and Loans, Departments. The District will continue to coordinate with all Disadvantaged Communities with the GSA Boundary.
- Entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the GSA:
    - Eastern Municipal Water District participates in the California Statewide Groundwater Elevation Monitoring Program for the entire San Jacinto Groundwater Basin.

West San Jacinto Groundwater Sustainability Agency process to develop the Groundwater Sustainability Plan

The Eastern Municipal Water District (EMWD) became the Groundwater Sustainability Agency (GSA) for the western portion of the San Jacinto Groundwater Basin (8-005), referred to the West San Jacinto GSA, and is comprised of the EMWD Board of Directors. The San Jacinto Groundwater Basin (Basin) is a high priority basin, but is not critically overdrafted, as designated by the Department of Water Resources (DWR). The West San Jacinto GSA is responsible for developing a Groundwater Sustainability Plan (GSP) that meets the requirements of the Sustainable Groundwater Management Act and GSP regulations by the January 31, 2022 submittal deadline. The West San Jacinto GSA plans on hiring a consultant by the end of 2018 to develop the GSP.

Development of the GSP is anticipated to begin in 2019. The development of the GSP will include a Stakeholder Outreach Plan to include private and public water users and stakeholders in the GSA Area as well as in adjoining areas. Coordination effort will involve collaboration with the Hemet-San Jacinto Watermaster and stakeholders in adjoining basins. In order to achieve sustainability within the Basin, the West San Jacinto GSA recognizes that a collaborative effort is required to foster cooperation towards achieving groundwater sustainability. The planning process that will be utilized in the development of the GSP includes extensive stakeholder engagement to help ensure that the GSP reflects the groundwater-related needs of the entire Basin and encourages increased coordination with state and federal agencies.

Stakeholders will have the opportunity to participate in public stakeholder meetings to review materials included in draft sections of the GSP. This collaborative approach will enhance communication and transparency and provide input to the West San Jacinto GSA during the development of the GSP. In addition, stakeholders will have a variety of opportunities to discover and establish mutually beneficial partnerships through participation in meetings and conversations.

Interested parties may contact EMWD and participate in the development and implementation of the GSP by contacting Rachel Gray, Water Resources Planning Manager, at 951-928-3777 Ext 4514 or grayr@emwd.org.

RESOLUTION NO. 2016-034

A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT INITIATING A BASIN BOUNDARY MODIFICATION REQUEST

WHEREAS, the Sustainable Groundwater Management Act of 2014 established a process for local agencies to request that the California Department of Water Resources revise the boundaries of existing groundwater basins or subbasins as defined by California Department of Water Resources Bulletin 118, including the establishment of a new subbasin; and

WHEREAS, the Basin Boundary Emergency Regulation was developed through an extensive stakeholder outreach process and was adopted by the California Water Commission on October 21, 2015 and the provisions of which went into effect on November 16, 2015; and

WHEREAS, Eastern Municipal Water District overlies the San Jacinto Basin; and

WHEREAS, through a request of private pumpers in the basin, Eastern Municipal Water District conducted an evaluation of existing mapping and descriptions for the Bulletin 118 San Jacinto Basin boundary and identified administrative mapping and jurisdictional issues relating to the Domenigoni subbasin portion of the San Jacinto Basin, and wishes to file an application at the request of the private pumpers to address those issues for the purpose of facilitating regional groundwater management and planning; and

WHEREAS, the proposed boundary modification is consistent with the provisions of the Sustainable Groundwater Management Act of 2014,

NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

1. Each of the above recitals is true and correct.

2. That an application be made to the California Department of Water Resources to modify the boundary of the San Jacinto Basin.

3. The General Manager, and/or his designee, is hereby authorized and directed to collect the available data and prepare and submit, in cooperation with the private pumpers, such an application with the California Department of Water Resources.

4. This Resolution shall be effective upon its adoption.

DATED: March 16, 2016

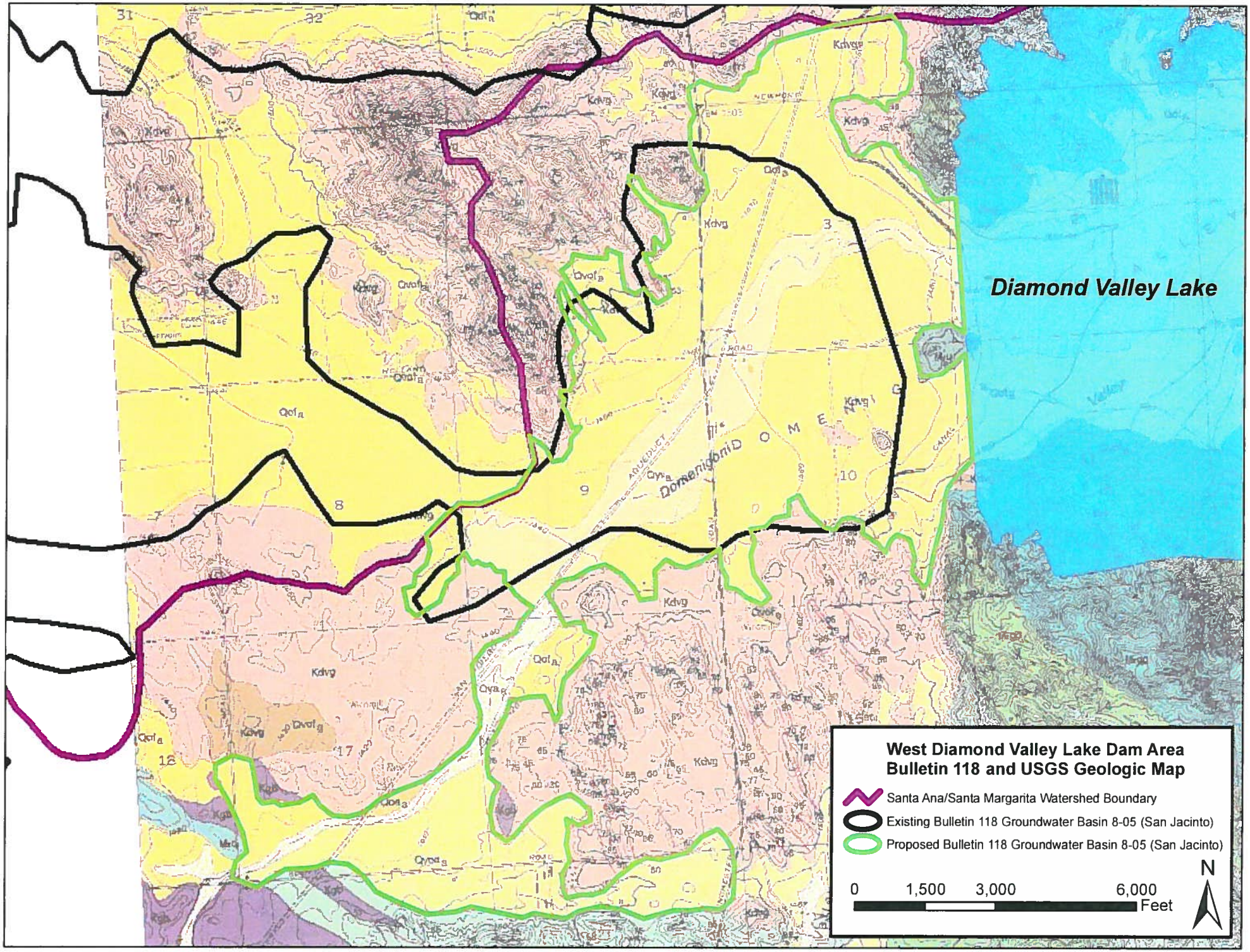
Randy A. Record, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on March 16, 2016.

ATTEST:

Sheila Zelaya, Board Secretary

(SEAL)


Diamond Valley Lake
Domenigoni D O M E
West Diamond Valley Lake Dam Area
Bulletin 118 and USGS Geologic Map
Santa Ana/Santa Margarita Watershed Boundary
Existing Bulletin 118 Groundwater Basin 8-05 (San Jacinto)
Proposed Bulletin 118 Groundwater Basin 8-05 (San Jacinto)
0
1,500
3,000
6,000
Feet
N

PRINT VIEW OF INITIAL NOTIFICATION

1. LOCAL AGENCY INFORMATION

Name:	Eastern Municipal Water District		
Address:	2270 Trumble Road		
City:	Perris	Zip:	92572
Phone(Work):	(951) 928-3777	Phone(Cell):	
Email:	grayr@emwd.org	Fax:	

2. LOCAL AGENCY POINT OF CONTACT INFORMATION

Name:	Michael Nusser		
Address:	2270 Trumble Road		
City:	Perris	Zip:	92572
Phone(Work):	(951) 928-3777 x4514	Phone(Cell):	
Email:	nusserm@emwd.org		

Current Contact: Rachel Gray

Current Contact: grayr@emwd.org

3. LINKS TO LOCAL AGENCY'S INTERNET WEBSITE

General information regarding potential basin boundary modification process is posted or will be posted.

http://www.emwd.org

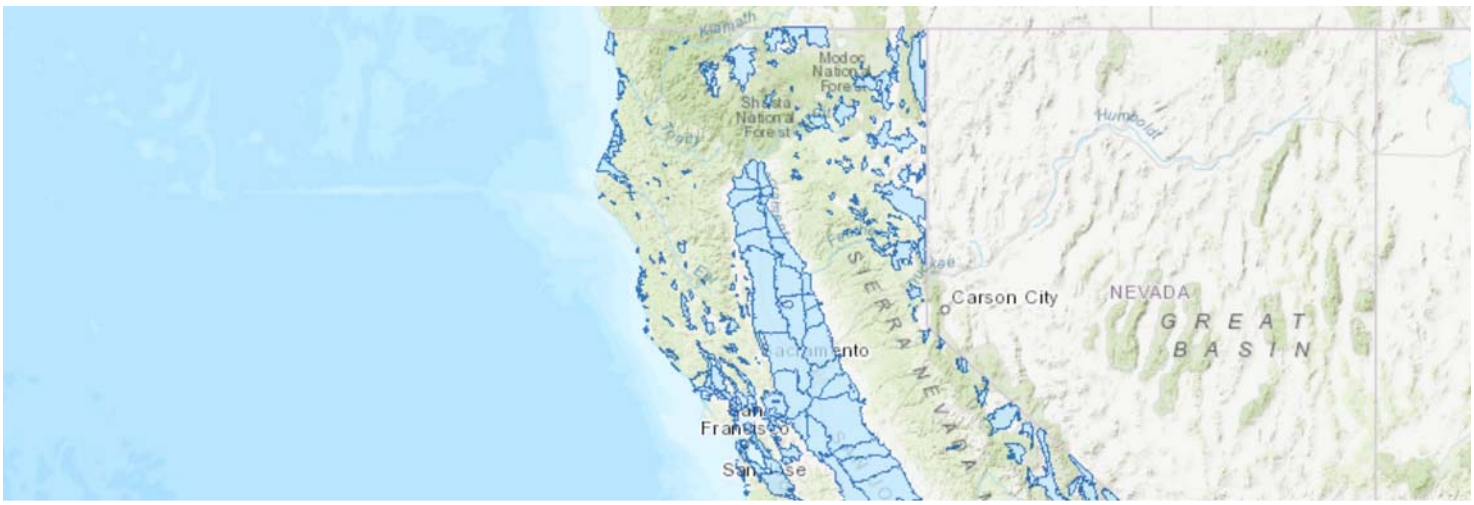
4. BRIEF DESCRIPTION OF POTENTIAL BASIN BOUNDARY MODIFICATION REQUEST

Extend the boundary in the southwestern portion of the basin just west of Diamond Valley Lake to include additional alluvial area.

5. POTENTIAL BASIN(S)/SUBBASIN(S)

8-005 SAN JACINTO

6. MAP OR DOCUMENT OF POTENTIAL BASIN BOUNDARY MODIFICATION



Uploaded document: GSA_Map_1_TOPO_20160302_PowerPoint.pdf

Created on 03/08/2016 at 7:51AM, last modified on 07/06/2017 at 11:20AM and page generated on 05/29/2019 at 12:01PM

BLOGS

FROM PAGE 1

Valley Lake. "It's totally worth the drive once you get here."

DenOuden, who writes about healthy travel and being active, admitted she had low expectations for the community, but she was pleased to find hiking and biking trails.

The visit Oct. 19-22 was the bloggers' second. A third is planned around the Ramona Pageant in April.

Trips are made at no cost to the city. The bloggers paid their travel expenses, and merchants and restaurants picked up the costs for lodging and food.

The bloggers had to apply for the trip and were picked based on the size of their readership. The only requirement was that they write at least two articles.

But there are no barriers on what they write. Although the tour doesn't include the more unsavory parts of the community, the bloggers can be honest about their experiences.

"I just want authentic experiences and reviews," said Leslie McLellan, who organized the event.

STAN LIM, STAFF PHOTOGRAPHER

Bloggers end their tour of Hemet's Western Science Center, one of many locales they visited.

Travel and food blogger Deb Thompson of Michigan said if she isn't honest, she will lose readers, and she and the other bloggers depend on a large audience so they can sell advertisements on their sites.

Bringing in travel writers is nothing new for communities like Temecula and Riverside, which actively market their tourist locales like Old Town Temecula, the Temecula Valley Wine Country and the Mission Inn.

The San Jacinto Valley has limited experience in the field. The impetus for these trips started when Lake Arrowhead-based McLellan met Thompson at a conference.

McLellan, who is paid by Hemet as a tourism consultant, invited Thompson to the area. That ended up being a five-week trip, and Thompson has been back three times since.

Thompson said she touts the valley's weather and affordability.

"The cost of visiting this region of Southern California is very reasonable," she said. "My dollars are going to go a lot farther."

She spoke of Hemet being a hub, as it's located about an hour from many popular attractions including the beach, the mountains, Palm Springs, San Diego and Los Angeles.

And there's another plus, bloggers say.

"People are always surprised how warm and caring the community is," Thompson said. "The people always draw me back."

Hemet City Councilwoman Linda Krupa is a member of a loose-knit tourism committee with McLellan, San Jacinto Mayor Andrew Kotyuk, former Hemet Councilwoman Lori VanArsdale and Hemet-San Jacinto Valley Chamber of Commerce President Michael Carle.

Krupa said having the bloggers spread the word about the area results in increased tourism.

"It's an economic development engine that drives people to the valley."

She said there is anecdotal evidence that people have visited the community after reading travel blogs as the city has increased its efforts to market itself on social media and through the website **visitsanjacintovalley.com**.

"People say there's no return on investment when you do social media; that's not true," McLellan said. "There was about $65,000 worth of publicity the last time."

CONTACT THE WRITER:
951-368-9086 or
cshultz@scng.com

SCHOOL

FROM PAGE 1

said Dayanerra Rodriguez, a 14-year-old freshman. "There's no person here who doesn't have a friend. You always feel included."

'SENSE OF RESPECT'

Principal Matthew Luttringer, who went to Notre Dame, said the school's identity goes beyond its crucifixes, statues, religious services and theology classes.

"When you come on to our campus and take away everything that's Catholic, you would still know we're a Catholic school by the way the kids treat each other and treat the teachers," Luttringer said. "There's a sense of respect, a sense of pride, giving of each other and giving to the community."

Notre Dame opened in September 1956 as an all-boys school with 15 freshmen taught by priests who lived in the rectory that is now the administration office. Over the years, the campus doubled from two to four classroom buildings, along with the addition of a library and a gym. It became a co-ed campus in 1972.

KURT MILLER, STAFF PHOTOGRAPHER

Notre Dame High School students make their way to Mass at St. Catherine of Alexandria Catholic Church, across the street from campus in Riverside.

Enrollment fell about 20 percent during the Great Recession. Since then it has slowly inched up and held steady at about 500 students for the past two or three years, Beatty said.

Recent upgrades include technology, science and fine-arts labs, along with new roofs and air-conditioning systems. The gym and locker room got a $5 million renovation.

In 2013, Notre Dame became what Luttringer calls "an iPad school." Apple tablets replaced textbooks, saving students money and expanding learning, he said.

The school is moving to a classroom environment that blends online and traditional lessons. A block schedule allows 85-minute class periods four days a week, providing time for lectures, individualized instruction and group projects, Luttringer said.

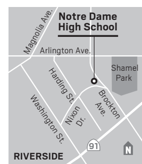
Notre Dame has class sizes of 18 students per teacher, making it easier for struggling students to get help.

"It's a small-school environment, so you don't have to worry about not getting enough attention from the teacher," said David Puma, a 17-year-old senior who plays basketball and runs track and cross country.

ACADEMIES INTRODUCED

This year, the school began offering four academies: medical sciences; arts and innovation; global citizenship; and science, technology, engineering, arts and math.

Biology students recently took a trip to the UC Riverside genetics lab, where they learned about DNA sequencing, Beatty said.



STAFF GRAPHIC

ABOUT THE SCHOOL

Name: Notre Dame High School
Opened: 1956
Principal: Matthew Luttringer
Enrollment: 505 students
Tuition: $7,500 a year
Details: Catholic campus offers 28 Advanced Placement and honors courses, 15 athletic teams and at least 14 clubs; 100 percent of students graduate and 96 percent attend a four-year university
Address: 7085 Brockton Ave., Riverside
Phone: 951-275-5896
Website: **notredameriverside.org**

"The idea is to parallel our classroom content with experiences that bring that content to life," he said.

One of Luttringer's goals is to make Notre Dame, which has annual tuition of $7,500, affordable for more families. About 1 in 5 students receives financial aid, he said.

"Every Catholic child in this city should have the opportunity to go to a Catholic high school if they want," he said. "I would like to see it so it's funded from others and not just the parents."

The school is increasing marketing efforts and hopes to get additional financial support to build enrollment and expand its presence in the community, Luttringer said.

Mariella Gallegos, a 17-year-old senior, appreciates the sacrifice her parents make to send her to Notre Dame.

"I feel like I've grown more as a person and as a student to be ready for the future that comes after high school," said Gallegos, who plans to study immigration law in college.

CONTACT THE WRITER:
951-368-9292 or
stwall@scng.com
Twitter: @pe_swall

emwd EASTERN MUNICIPAL WATER DISTRICT

NOTICE OF PUBLIC HEARING

FORMATION OF GROUNDWATER SUSTAINABILITY AGENCY FOR WEST SAN JACINTO GROUNDWATER BASIN

Notice is hereby given that the Board of Directors of Eastern Municipal Water District (EMWD) will conduct a public hearing on December 7, 2016, at 9 a.m. at 2270 Trumble Road, Perris California, to hear comments from the public regarding EMWD's proposed application to be the Groundwater Sustainability Agency (GSA) for the western portion of the San Jacinto Groundwater Basin, which generally encompasses the areas of Moreno Valley, Perris, Menifee and surrounding unincorporated areas.

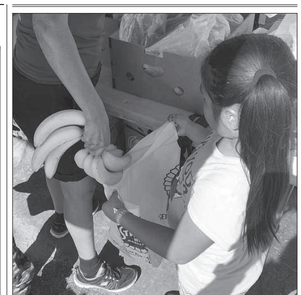
After the public hearing, EMWD's Board of Directors is anticipated to take a formal action to submit a notice of intent to the California Department of Water Resources to become the GSA for the aforementioned area. The notice of intent shall be posted pursuant to California Water Code Section 10723.8 and will include a description of the proposed boundaries of the portions of the San Jacinto Basin for which EMWD intends to manage as the GSA in accordance with the Sustainable Groundwater Management Act of 2014.

Said hearing will be conducted pursuant to Water Code Section 10723(b).

Written comments may be submitted to Sheila Zelaya, Board Secretary, by the close of business on December 6, 2016. Please email comments to zelayas@emwd.org and written comments by mail to the following location:

Eastern Municipal Water District
Attention: Sheila Zelaya, Board Secretary
P.O. Box 8300
Perris, CA 92572-8300

Should you have questions, contact Kevin Pearson via email pearsonk@emwd.org or by phone (951) 928-3777 ext. 4219.



COURTESY OF BANK OF AMERICA

A student at Highgrove Elementary School in the Riverside area receives a bag of healthy treats.

Kids get healthy food at produce market

STAFF REPORT

Students had their choice of healthy snacks Wednesday at the Kids Produce Market at Highgrove Elementary School.

The farmers market-style event at the Riverside-area school – put on by Feeding America – provided healthy produce to more than 800 low-income students and their families, according to a news release from the program.

Wednesday's event also promoted the group's Give A Meal program and its partnership with Bank of America.

For every dollar donated to the program, the bank will donate $2.

Information: **bankofamerica.com/give**

Homeless ex-Marine, his family get new home

Rental is part of a program that helps vets find permanent residence.

By **JOE NELSON**
STAFF WRITER

For former Marine **Darrin Snyder** and his family, home used to be the Wal-Mart parking lot, free campsites, cheap motels or anywhere else they could park their minivan and cargo trailer and stay the night.

Snyder, who traveled with his family to San Bernardino County from Virginia Beach in August in search of work as a recreational therapist with the California Department of Corrections and Rehabilitation, wanted more for his family, but he never expected what he got Thursday: a spacious, five-bedroom, three-bath house in a quiet Victorville neighborhood, near La Mesa and Topaz roads.

"I think this is pretty awesome. Every time I look at all of this, I think it's a dream," said Snyder, 49, inside his new home Thursday. He was surrounded by representatives from the San Bernardino nonprofit Knowledge & Education for Your Success, which goes by the acronym KEYS. The nonprofit assists homeless or poverty-stricken families in finding homes.

Snyder is among the dozens of veterans recently placed in permanent housing by KEYS and its affiliate partners, including San Bernardino County Department of Behavioral Health and the Loma Linda Veterans Affairs hospital. It is part of an ongoing effort to house all the county's homeless veterans and their families.

The Snyder family's new home has a spacious backyard, a fireplace in the upstairs master bedroom and an intercom system that allows family members to communicate with one another from any room in the house.

Snyder, who served in the Marines from 1985 to 1988 and uses a wheelchair because of myriad ailments, including a herniated disk, two blown knees and diabetes, said the VA will be installing a stairlift in his new home so he can have access to the upstairs master bedroom. Until then, he plans to occupy the downstairs bedroom.

Also, the San Bernardino nonprofit Rolling Start, which provides resources and advocacy for disabled people, will have a wheelchair ramp built to access the house, Snyder said.

KEYS program manager Julie Burnette said the Snyder family is on a one-year lease, with an option to renew. KEYS picked up the tab for the security deposit and first month's rent of $1,500, and then the need to continue assisting the Snyders financially will be assessed on a monthly basis.

Snyder is in the process of securing a job as a recreational therapist at Corcoran state prison's substance abuse treatment facility. He plans to commute to the prison, camp out in his 6-by-10 cargo trailer during the workweek and spend the weekends at his Victorville residence.

"I still get to come back to this place," Snyder said with a grin.

Snyder's daughters were just as elated as he was about their new home.

"Motel hopping absolutely sucks. I hope to never be in that situation ever again," said his oldest daughter, Carrie "Allie" Snyder, 22, holding her infant daughter Peyton outside their new home Thursday.

She said living in transition the past four months was an eye-opening experience.

"It definitely gives you a whole new perspective and empathy for people living on the streets," Allie said.

Snyder's youngest daughter, Katie, said KEYS and its partner agencies went above and beyond what she and her family anticipated.

"They went way out of their way," said Katie Snyder, 20, noting that Heroes Warehouse Inc. in Fontana donated a couch, refrigerator, three queen size beds, a desk and three floor-to-ceiling bookshelves.

The Snyder family moved into the home just in time to enjoy the holidays. Although the Snyders plan to have Thanksgiving dinner at their church, they intend to enjoy Christmas at home.

"He's excited because he gets to decorate this year," Katie Snyder said of her father.

Darrin Snyder said he's going to use the $500 Visa gift card he just received for participating in the Detroit Marathon last month for Christmas presents. He said he has participated in many marathons, representing the Achilles Freedom Team for Wounded Veterans, which funded his trip to Detroit last month.

"Peyton's going to have a great Christmas this year," he said of his granddaughter.

SARAH ALVARADO, CONTRIBUTING PHOTOGRAPHER
Marine veteran Darrin Snyder shares a moment in his new Victorville home Thursday with granddaughter Peyton as daughters Allie and Katie look on.

THE PRESS-ENTERPRISE
A Southern California News Group Newspaper
1825 Chicago Ave., Suite 100, Riverside, CA 92507

HOW TO REACH US

Main office	951-684-1200	**Opinion Page**	909-483-9313
Classified Ads	951-368-9200	**Features**	951-368-9551
Display Ads	951-368-9240	**Photo**	951-368-9414
Back Issues	951-368-9377	**Sports**	951-368-9523
Newsroom	951-368-9460	**Business News**	951-368-9419

Customer Service 951-368-9000
www.pe.com/subscribe
For missed delivery, call between 7 a.m.-10 a.m. Monday-Friday or 8 a.m.-11 a.m. Sunday. **Customer service hours,** Monday-Friday, 7 a.m. - 4 p.m.

HOME DELIVERY RATES: Daily Print/Digital Access: $43.25/month, Weekend delivery/Digital Access (Thursday-Sunday): $24.75/month, Sunday only delivery/Digital Access: $21.50/month. Digital Access only: $21.50/month. All introductory discounts automatically renew to standard invoice rate or auto-pay rate as applicable unless otherwise notified. The Publisher reserves the right to change subscription rates during the term of any subscription. All home delivery subscriptions will include the Thanksgiving edition, which will be charged at an additional $3.00. In addition, all home delivery subscriptions will include no more than three (3) other Special Editions annually, which will be charged to the subscriber's account at $3.00 each. To opt-out of all Special Editions, including Thanksgiving, please call subscriber services. If you do not opt-out, this will result in shortening the length of your BILLING Term. This subscription is a CONTINUOUS subscription for as long as the service is offered. You will be billed at the interval you have selected, which shall be your Billing Term. You may cancel by calling Customer Service at the number listed above. You must cancel before the end of your Billing Term in order to avoid charges to your subscription. No unused portion of Billing Term will be refunded. No credit is offered for vacation service interruptions. Future prices are subject to change. Print only options: Daily: $26/month, Weekend delivery (Thursday-Sunday): $14.86/month or Sunday only delivery: $12/month. Vol. 130, No. 325

To share a news tip or report an error, call 951-368-9460

$100 REWARD OFFERED BY RIVERSIDE COUNTY DEPT. OF PUBLIC SOCIAL SERVICES*

WELFARE FRAUD OFFENDERS CONVICTED

Dockets of the Riverside County Court system show the following persons were convicted of Welfare Fraud on the dates specified:

CONVICTIONS/DOCKETS RECEIVED
TO BE PUBLISHED SUNDAY November 20th, 2016

RAFAELA ELIAS
CONVICTED: 09/07/2016

JAZMINE MARIE MORALES
CONVICTED: 09/14/2016

BRITTANI DIANA QUINN
CONVICTED: 09/21/2016

JESSICA ELAINE SCOTT
AKA: JESSICA ELAINE ROSTEN
AKA: JESSICA ELAINE LOMELI
AKA: JESSICA ELAINE GUERRERO
CONVICTED: 09/19/2016

RAQUEL ROMERO
CONVICTED: 09/13/2016

BRIDGET BECERRA
CONVICTED: 09/21/2016

RICARDO LUNA JUAREZ
AKA: RICARDO LUNAJUAREZ
CONVICTED: 09/22/2016

***$100 REWARD** offered by the Riverside County Department of Public Social Services for information leading to the conviction on welfare fraud charges. **To report suspected fraud, call (951) 358-3278**. Eligibility for reward is determined by a review committee. (Department of Public Social Services and District Attorney - employees and family members are not eligible). Fraud amount must be $1000 or more.

To report toll free on the State fraud hotline, call 1-800-344-8477. No reward on State hotline calls.

emwd EASTERN MUNICIPAL WATER DISTRICT

NOTICE OF PUBLIC HEARING

FORMATION OF GROUNDWATER SUSTAINABILITY AGENCY FOR WEST SAN JACINTO GROUNDWATER BASIN

Notice is hereby given that the Board of Directors of Eastern Municipal Water District (EMWD) will conduct a public hearing on December 7, 2016, at 9 a.m. at 2270 Trumble Road, Perris California, to hear comments from the public regarding EMWD's proposed application to be the Groundwater Sustainability Agency (GSA) for the western portion of the San Jacinto Groundwater Basin, which generally encompasses the areas of Moreno Valley, Perris, Menifee and surrounding unincorporated areas.

After the public hearing, EMWD's Board of Directors is anticipated to take a formal action to submit a notice of intent to the California Department of Water Resources to become the GSA for the aforementioned area. The notice of intent shall be posted pursuant to California Water Code Section 10723.8 and will include a description of the proposed boundaries of the portions of the San Jacinto Basin for which EMWD intends to manage as the GSA in accordance with the Sustainable Groundwater Management Act of 2014.

Said hearing will be conducted pursuant to Water Code Section 10723(b).

Written comments may be submitted to Sheila Zelaya, Board Secretary, by the close of business on December 6, 2016. Please email comments to zelayas@emwd.org and written comments by mail to the following location:

Eastern Municipal Water District
Attention: Sheila Zelaya, Board Secretary
P.O. Box 8300
Perris, CA 92572-8300

Should you have questions, contact Kevin Pearson via email pearsonk@emwd.org or by phone (951) 928-3777 ext. 4219.

ACTION

Board of Directors
December 7, 2016

SUBJECT:

Adopt a Proposed Resolution Authorizing an Application to the California Department of Water Resources to Establish Eastern Municipal Water District as the Groundwater Sustainability Agency for the Western Portion of the San Jacinto Basin

BACKGROUND:

In 2014, California lawmakers passed the Sustainable Groundwater Management Act (SGMA), which mandates that all groundwater basins within the state be managed to ensure long-term water supply reliability. Under SGMA, each high and medium priority basin, as identified by the California Department of Water Resources (DWR), must have a Groundwater Sustainability Agency (GSA) that will be responsible for groundwater monitoring and the development of a Groundwater Sustainability Plan (GSP) to ensure long-term groundwater sustainability and prevent overdraft.

The San Jacinto Basin is designated by DWR as a high priority basin and is therefore required to be managed by a GSA. High priority designations may be the result of pumping activities, water quality, and/or the reliance on the basin for drinking water supplies. In the case of the San Jacinto Basin, there is an elevated level of salinity within the basin that presents water quality issues and is the reason for the state designating it as high priority.

To reach compliance with this statewide mandate, staff recommends that Eastern Municipal Water District (EMWD) Board of Directors adopt a Resolution to become the GSA over the West San Jacinto Groundwater Basin Management Area. This area generally encompasses the cities of Moreno Valley, Perris, Menifee, and the surrounding unincorporated areas. Federal properties, including March Air Reserve Base, are exempt from SGMA.

EMWD's responsibilities as the GSA would be to oversee monitoring of wells, measure and assist in managing groundwater production, conduct studies, provide annual reports to DWR, and implement projects and programs to meet groundwater management goals and avoid long-term overdraft to achieve sustainability. EMWD is already performing these services at its own cost, and will continue to do so as the GSA. The GSA must also develop and implement the GSP, which must contain measurable objectives for the basin that will lead toward long-term sustainability and avoid undesirable results, such as seawater/brackish water intrusion, degraded water quality, subsidence, long-term overdraft, and reductions in groundwater storage.

To ensure that it is actively collaborating with the communities it serves, EMWD will form an advisory committee that will make recommendations to EMWD's Board of Directors, acting as

the GSA. The advisory committee will include other government agencies and water producers within the defined GSA area. Also, EMWD has conducted an extensive outreach effort to inform all stakeholders in and around the West San Jacinto Groundwater Basin Management Area of EMWD's intent to form a GSA for the area, and how their interests will be included as part of the advisory committee. EMWD has received several letters of support to become the GSA and they are attached as an exhibit to this report.

FINANCIAL IMPACT:

None

STRATEGIC PLANNING GOAL/OBJECTIVE:

Water Supply Diversity and Reliability: Develop and implement a portfolio of projects and management techniques to achieve a reliable and cost-effective balance of water supplies utilizing imported, local and recycled water sources.

ENVIRONMENTAL IMPACT:

This item is not a project as defined in the California Environment Quality Act Code of Regulations, Title 14, Chapter 3, Section 15378.

RECOMMENDATION:

Adopt a Resolution which authorizes the General Manager, and/or his designee, to prepare the necessary data, conduct investigations, and file such application with the California Department of Water Resources to establish Eastern Municipal Water District as the Groundwater Sustainability Agency for the western portion of the San Jacinto Basin in accordance with the Sustainable Groundwater Management Act of 2014.

SUBMITTED BY:

Paul D. Jones II P.E., General Manager 11/18/2016

Charles Bachmann, Assistant General Manager 11/14/2016

Attachment(s):
Exhibit A - Resolution
Exhibit B - Map
Exhibit C - Presentation
Exhibit D - Letters of Support

History:

11/23/16 Board Operations and Engineering Committee RECOMMENDED FOR APPROVAL
12/07/16 Board Meeting

Staff Contact: Michael Nusser

RESOLUTION NO. 2016-135

A RESOLUTION OF THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT ELECTING TO BECOME THE GROUNDWATER SUSTAINABILITY AGENCY FOR A WESTERN PORTION OF THE SAN JACINTO BASIN WITHIN THE BOUNDARIES AND SPHERE OF INFLUENCE FOR EASTERN MUNICIPAL WATER DISTRICT

WHEREAS, in September 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law, with an effective date of January 1, 2015, and codified at California Water Code, Section 10720 et seq; and

WHEREAS, the legislative intent of SGMA is to, among other goals, provide for sustainable management of groundwater basins and sub-basins defined by the California Department of Water Resources (DWR), to enhance local management of groundwater, to establish minimum standards for sustainable groundwater management, and to provide specified local agencies with the authority and technical and financial assistance necessary to sustainably manage groundwater; and

WHEREAS, Water Code Section 10723(a) authorizes a local agency with water supply, water management or local land use responsibilities, or a combination of local agencies, overlaying a groundwater basin to elect to become a Groundwater Sustainability Agency (GSA) under SGMA; and

WHEREAS, groundwater management of high and medium priority basins as designated by DWR is now required; and

WHEREAS, the service area of Eastern Municipal Water District (EMWD) overlies portions of the San Jacinto Basin (DWR Bulletin 118, Basin No. 8-005) which are unadjudicated and designated as a high priority basin by DWR; and

WHEREAS, California Water Code Section 10723.8 requires that a local agency electing to serve as a GSA notify DWR within 30 days of the local agency's election to become a GSA authorized to undertake sustainable groundwater management within a basin; and

WHEREAS, California Water Code Section 10723.8 mandates that 90 days following the posting by DWR of the local agency's notice of election to become a GSA, that entity shall presume to be the exclusive GSA for the area within the basin the agency is managing as described in the notice, provided that no other GSA formation notice covering the same area has been submitted to DWR; and

WHEREAS, in accordance with Water Code Section 10723(b) and Government Code Section 6066, a notice of public hearing was published in a newspaper of general circulation

regarding EMWD's intent to become a GSA for a portion of the San Jacinto Basin, as described in the notice; and

WHEREAS, becoming a GSA supports EMWD's ongoing efforts to conduct groundwater management within the region and to ensure groundwater and drinking water sustainability within the area served by EMWD;

NOW, THEREFORE, THE BOARD OF DIRECTORS OF EASTERN MUNICIPAL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE AND ORDER AS FOLLOWS:

1. EMWD hereby elects to be the GSA for the geographical area depicted on the map attached to this Resolution as Exhibit A, covering that portion of the unadjudicated San Jacinto Basin underlying (or within) the jurisdictional boundaries of EMWD.

2. EMWD staff is directed to submit to DWR, within 30 days of the approval of this Resolution, a map of the basin area EMWD intends to manage under SGMA, a copy of this Resolution, a list of interested parties developed pursuant to Section 10723.2 of the Act with an explanation of how their interests will be considered in the development and implementation of the agency's groundwater sustainability plan, and any other supporting documentation required by SGMA to support EMWD's formation of a GSA.

3. This Resolution shall be effective upon its adoption.

DATED: December 7, 2016

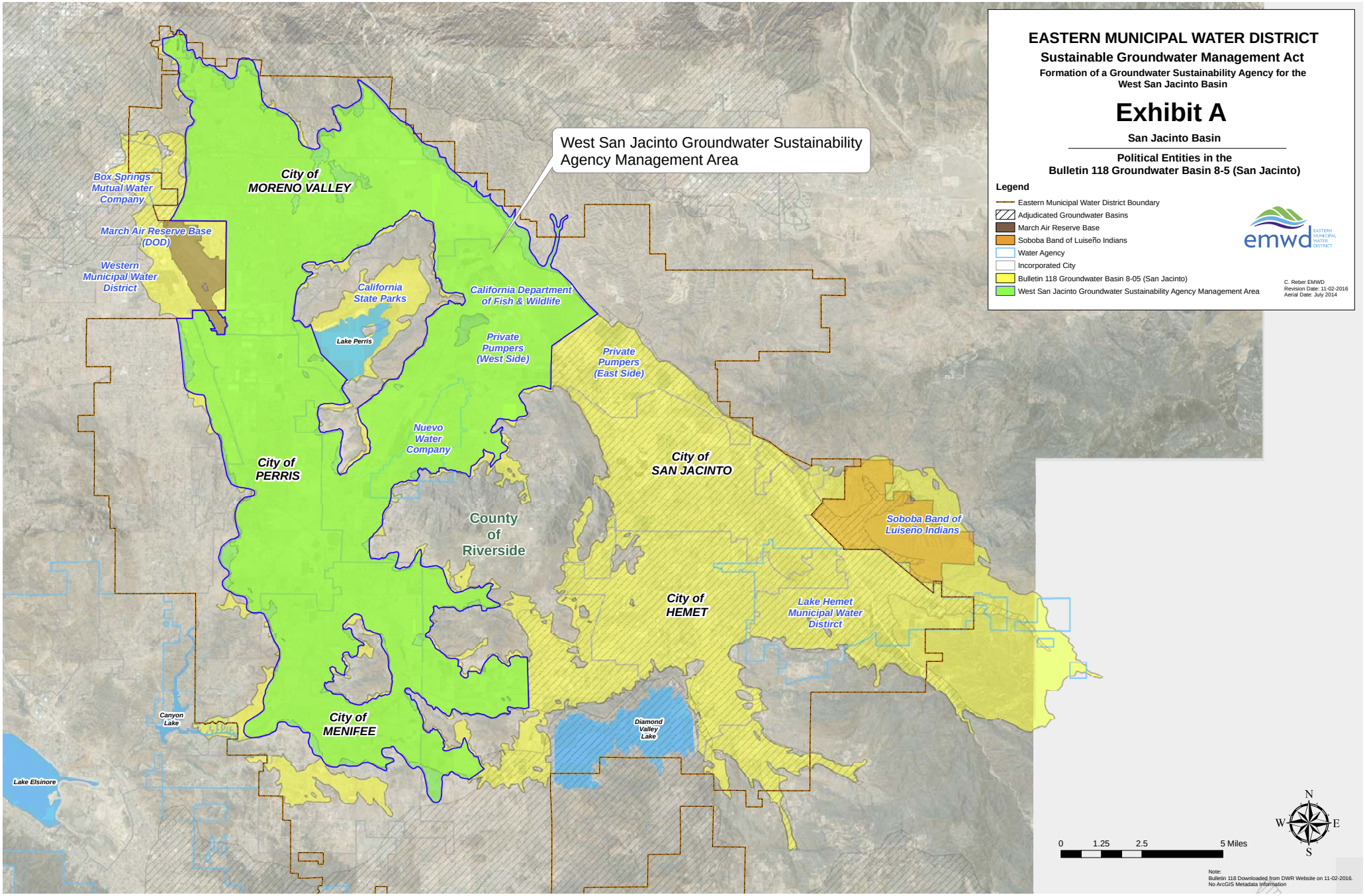
Randy A. Record, President

I hereby certify that the foregoing is a full, true and correct copy of the Resolution adopted by the Board of Directors of the Eastern Municipal Water District at its meeting held on December 7, 2016.

ATTEST:

Sheila Zelaya, Board Secretary

(SEAL)


West San Jacinto Groundwater Sustainability Agency Management Area
City of MORENO VALLEY
Box Springs Mutual Water Company
March Air Reserve Base (DOD)
Western Municipal Water District
California State Parks
Lake Perris
California Department of Fish & Wildlife
Private Pumpers (West Side)
Private Pumpers (East Side)
Nuevo Water Company
City of PERRIS
City of SAN JACINTO
Soboba Band of Luiseño Indians
County of Riverside
City of HEMET
Lake Hemet Municipal Water Distirct
City of MENIFEE
Canyon Lake
Diamond Valley Lake
Lake Elsinore
EASTERN MUNICIPAL WATER DISTRICT
Sustainable Groundwater Management Act
Formation of a Groundwater Sustainability Agency for the West San Jacinto Basin
Exhibit A
San Jacinto Basin
Political Entities in the Bulletin 118 Groundwater Basin 8-5 (San Jacinto)
Legend
Eastern Municipal Water District Boundary
Adjudicated Groundwater Basins
March Air Reserve Base
Soboba Band of Luiseño Indians
Water Agency
Incorporated City
Bulletin 118 Groundwater Basin 8-05 (San Jacinto)
West San Jacinto Groundwater Sustainability Agency Management Area
emwd
EASTERN MUNICIPAL WATER DISTRICT
C. Reber EMWD
Revision Date: 11-02-2016
Aerial Date: July 2014
0 1.25 2.5 5 Miles
N
W E
S
Note:
Bulletin 118 Downloaded from DWR Website on 11-02-2016.
No ArcGIS Metadata Information

Sustainable Groundwater Management Act

Public Hearing - Groundwater Sustainability Agency Formation

Michael D. Nusser
December 7, 2016

Overview of California Groundwater Management

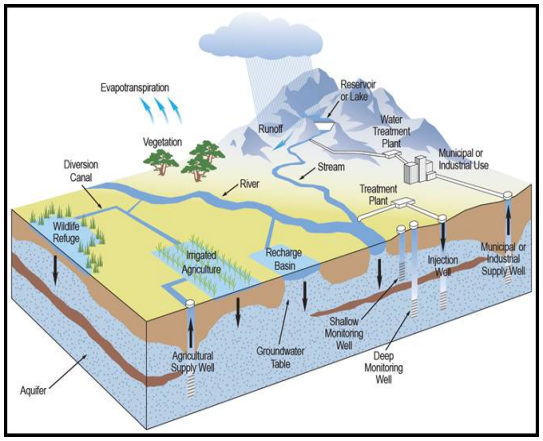
- The lack of adequate rainfall and surface water supplies is forcing many water users to increase groundwater production
- Many groundwater basins within the state are experiencing water levels at their lowest levels ever and are in severe overdraft
- This decline has prompted state legislators to create legislation that leads to the sustainable management of California's 431 groundwater basins

Sustainable Groundwater Management Act

Sustainable Groundwater Management Act (SGMA) was signed into law on September 16, 2014

Sustainable Groundwater Management Act

Under SGMA, groundwater management is no longer voluntary



- SGMA grants new and additional groundwater management authorities to Groundwater Sustainability Agencies (GSA)
- GSAs must develop and implement Groundwater Sustainability Plans (GSPs) that must contain measurable objectives for the groundwater basin that will reach sustainability goals
- State will now review whether local GSPs achieve sustainability
- State intervention in groundwater basin management is now possible if local agencies are not making adequate progress towards sustainability

Sustainable Groundwater Management Act

Forming a Groundwater Sustainability Agency is mandatory under SGMA (Water Code §10735.2)

- Basins that do not have a Groundwater Sustainability Agency formed by June 30, 2017, will be considered "probationary" by the State
- Local agencies have 180 days to remedy the deficiency (i.e., form a GSA)
- If not corrected, the State will intervene and develop and adopt an interim groundwater plan for the basin
  - State would establish its own reporting requirements
  - Collection of fees to implement the plan

emwd

Critical Dates for the Sustainable Groundwater Management Act

✓ Jan 2016	• Regulations finalized for basin boundary adjustments
✓ June 2016	• Regulations finalized for evaluating and implementing Groundwater Sustainability Plans
→ June 2017	• Local Groundwater Sustainability Agencies for high and medium priority basins must be formed
Jan 2020	• Groundwater Sustainability Plans must be complete and approved by DWR
2040	• Basins must achieve sustainability goals