
MARINA COAST WATER DISTRICT STAKEHOLDER COMMITTEE MEETING #2 MONTEREY SUBBASIN

17 NOVEMBER 2020

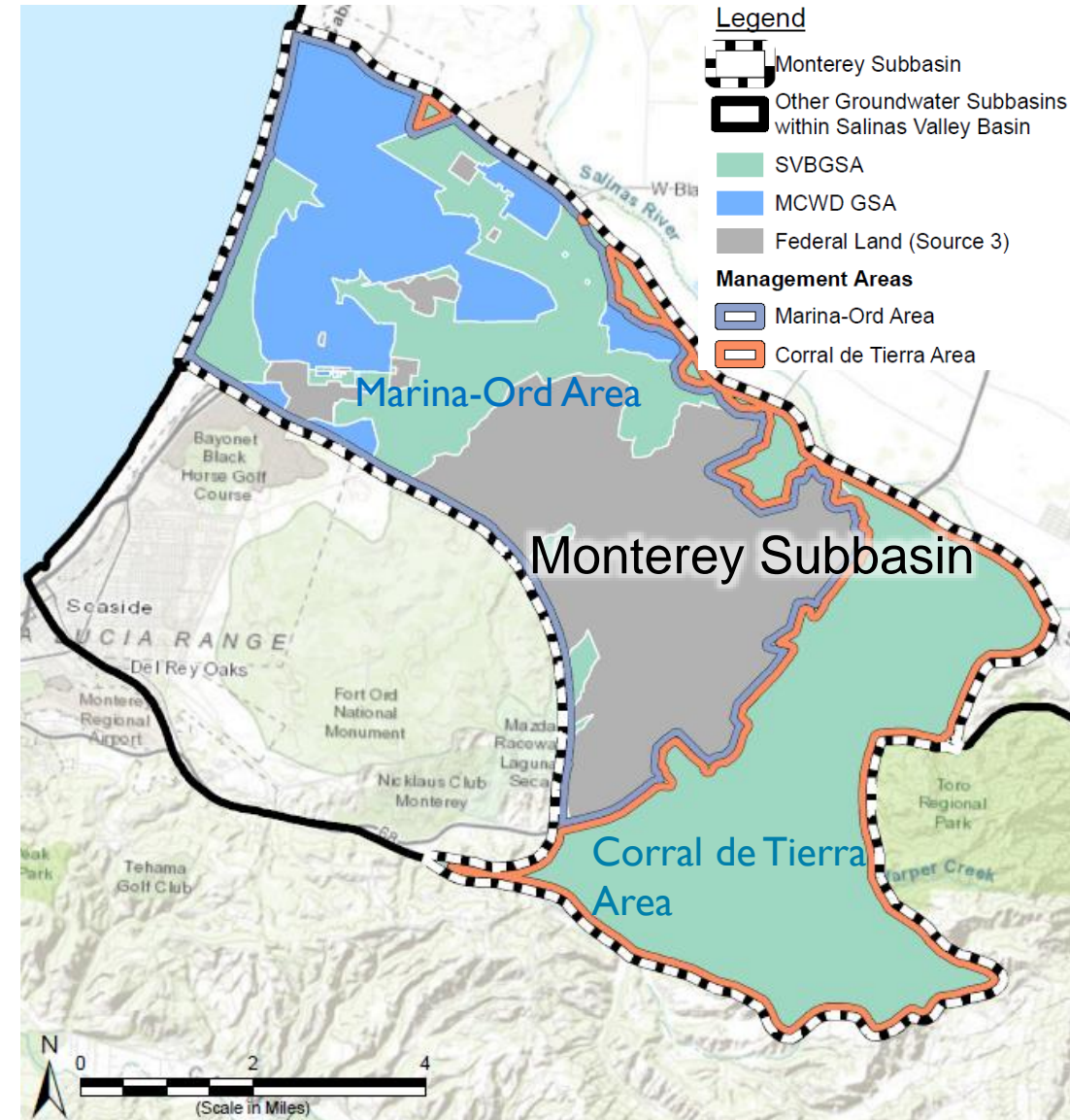
PRESENTATION OUTLINE

- Monterey Subbasin Groundwater Sustainability Plan (GSP) and Stakeholder Engagement Overview
- Comments and Questions for GSP Chapters 1 through 4
- Preview of GSP Chapters 5 and 8
- Next Steps

GSP AND STAKEHOLDER ENGAGEMENT OVERVIEW

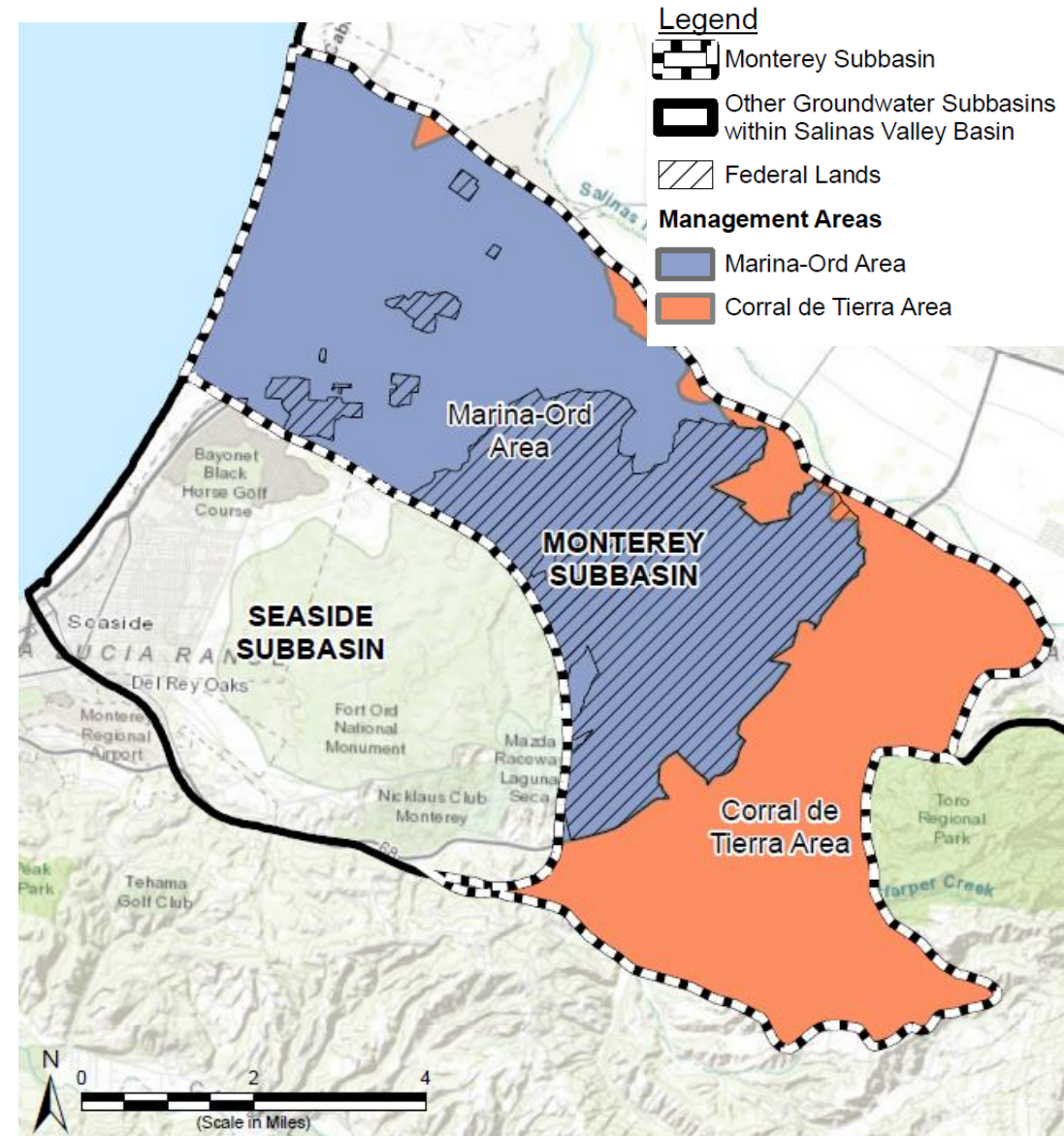
MONTEREY SUBBASIN GSP BEING DEVELOPED BY MCWD GSA AND SVBGSA

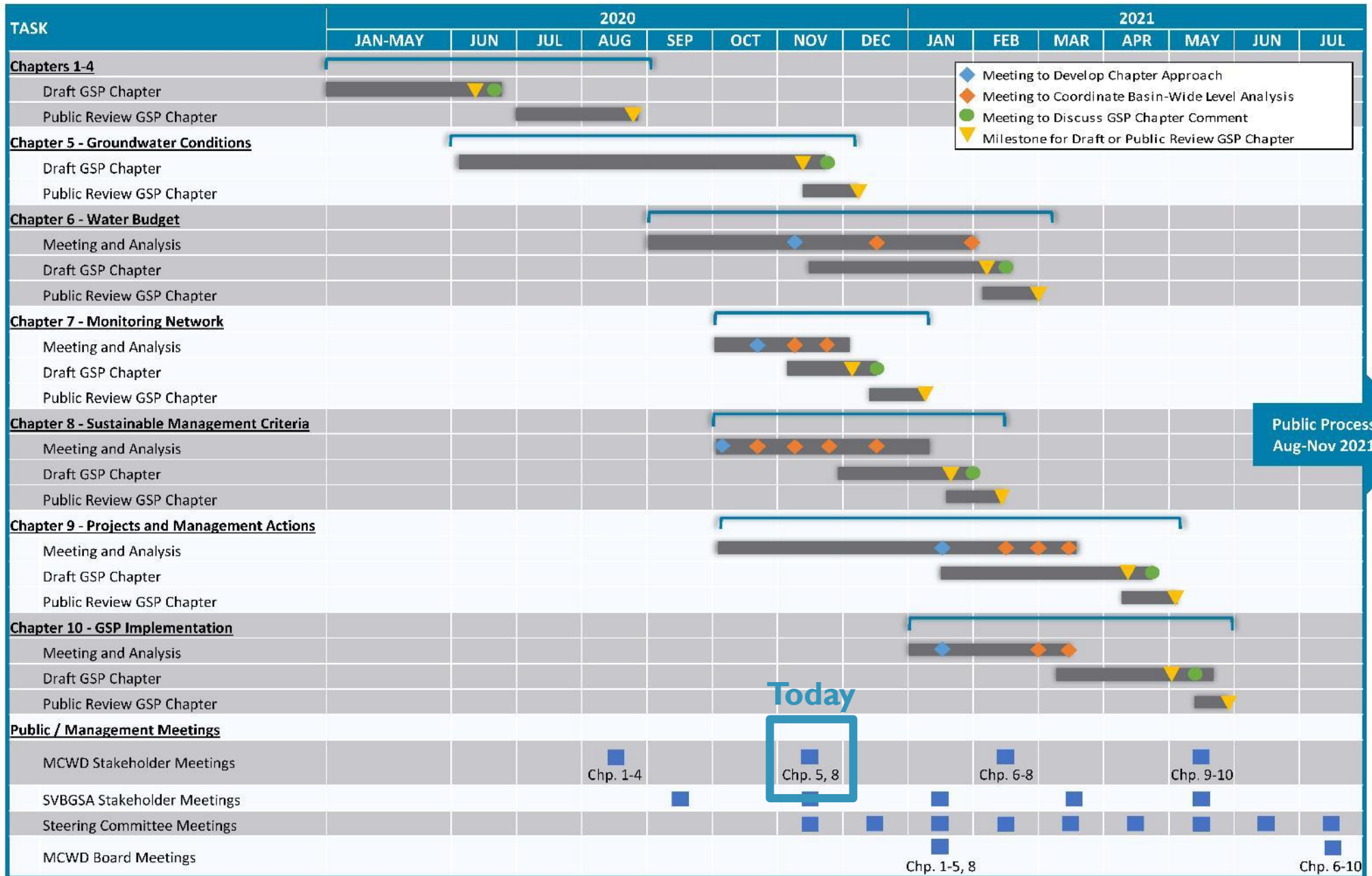
- One GSP covering the entire basin to be adopted by two GSAs
- GSP developed pursuant to Framework agreement between MCWD and SVBGSA
- GSP development subdivided by Management Area:
 - MCWD: Marina-Ord Area
 - SVBGSA: Corral de Tierra Area
- Federal lands to be included under a GSA; revised maps to be submitted to DWR



MANAGEMENT AREAS

- Based on jurisdictional and hydrogeological differences
- Boundaries pending finalization
- Marina-Ord Area includes:
 - MCWD's service area, Sphere of Influence, and Future Planning areas (currently no water use, but will be served by MCWD upon development)
 - Includes Federal lands (not subject to SGMA)
- Corral de Tierra includes:
 - Remainder of the Subbasin
 - Primarily communities along and southeast of Hwy 68





- ◆ Meeting to Develop Chapter Approach
- ◆ Meeting to Coordinate Basin-Wide Level Analysis
- Meeting to Discuss GSP Chapter Comment
- ▼ Milestone for Draft or Public Review GSP Chapter

Public Process
Aug-Nov 2021

Today
Chp. 5, 8



Chp. 1-4

Chp. 6-8

Chp. 9-10

Chp. 1-5, 8

Chp. 6-10

MCWD GSP DEVELOPMENT SCHEDULE

Stakeholder Meeting Dates	Draft Chapters Presentation and Release Schedule
August 2020	Chapter 1: Introduction Chapter 2: Plan Area Chapter 3: Stakeholder Engagement Chapter 4: Hydrogeologic Conceptual Model
Nov 2020	Chapter 5: Groundwater Conditions Chapter 8: Sustainable Management Criteria
Feb 2021	Chapter 6: Water Budget Chapter 7: Monitoring Network Chapter 8: Sustainable Management Criteria
May 2021	Chapter 9: Projects and Management Actions Chapter 10: Implementation

OPPORTUNITIES FOR STAKEHOLDER ENGAGEMENT DURING GSP DEVELOPMENT

- Stakeholder Committee Meetings
 - Quarterly meetings; open to public
 - Presentation of draft contents and discussion of planning topics
 - Draft chapters will be made available following the meeting
- MCWD GSA Board Meeting Updates
 - Interim GSP update to MCWD Board scheduled in January and July 2021
- MCWD GSA website
 - Posting of draft chapters
 - Submit comments, opinions, and recommendations, comment letters online (select GSA Feedback Form under GSA dropdown at www.mcwd.org or visit <https://form.jotform.com/202364609327051>)

SVBGSA STAKEHOLDER ENGAGEMENT DURING GSP DEVELOPMENT

- SVBGSA Subcommittee meetings being held independently for Corral de Tierra
 - (see svbgsa.org for schedule)
- SVBGSA holding educational workshops on groundwater topics

SVBGSA PUBLIC WORKSHOPS

All past workshops can be viewed at svbgsa.org/meetings/

	Workshops (all subbasins)
July-2020	Brown Act and Conflict of Interest Training
July-2020	Sustainable Management Criteria
August-2020	Water Law
August-2020	Watershed Overview
September-2020	GSP Web Map
October-2020	Small Drinking Water Systems Townhall
November-2020	Pumping Allocations- November 18th: 2:00-4:00
December-2020	Models: SVIHM & SVOM
January-2021	Funding Mechanisms
February-2021	Chapter 2
March-2021	Integrated Sustainability Plan Workshop



QUESTIONS AND COMMENTS FOR GSP CHAPTERS 1-4

COMMENTS RECEIVED ON CHAPTERS 1-4

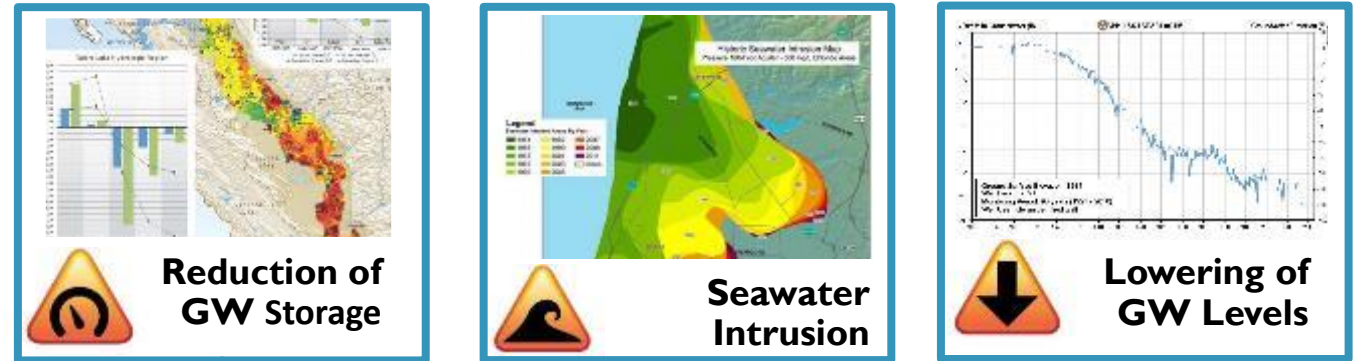
- Draft chapter posted on MCWD website dated August 26
- Additional MCWD-SVBGSA revisions ongoing
 - MCWD reviewing and incorporating SVBGSA comments for the Marina-Ord area, and vice versa
- Received stakeholder comments across multiple platforms
 - Both GSA's stakeholder meetings and website comment forms
- MCWD and SVBGSA will combine stakeholder comments and coordinate response

QUESTIONS AND COMMENTS?

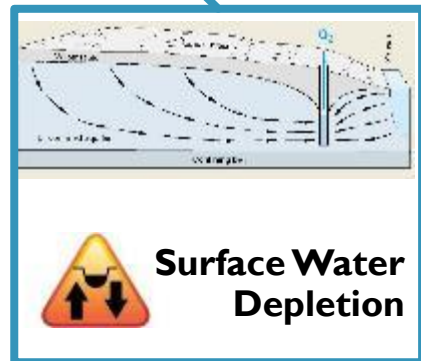
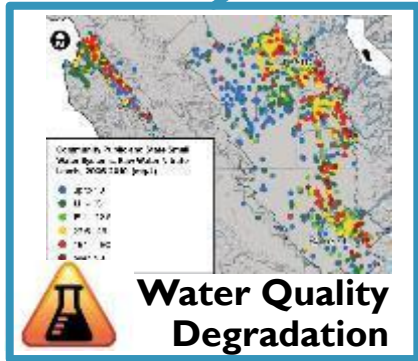
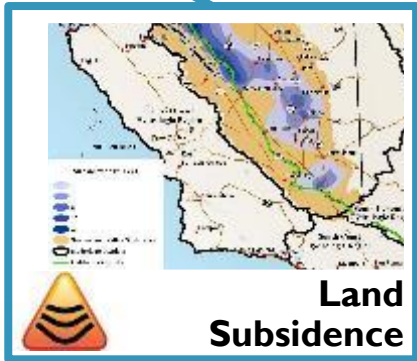


PREVIEW OF GSP CHAPTERS 5 AND 8

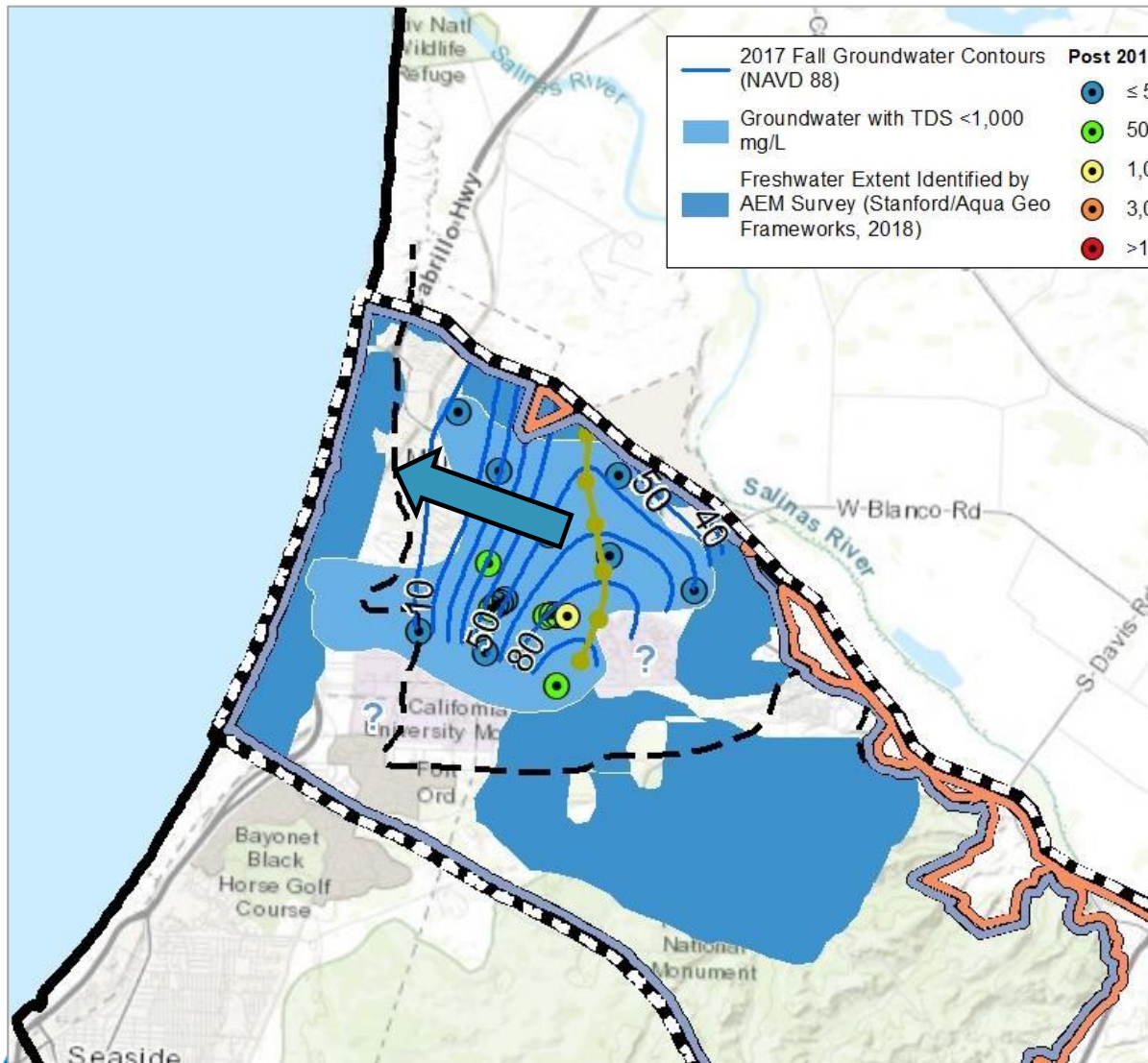
CHAPTERS 5 & 8 – GROUNDWATER CONDITIONS & SUSTAINABLE MANAGEMENT CRITERIA



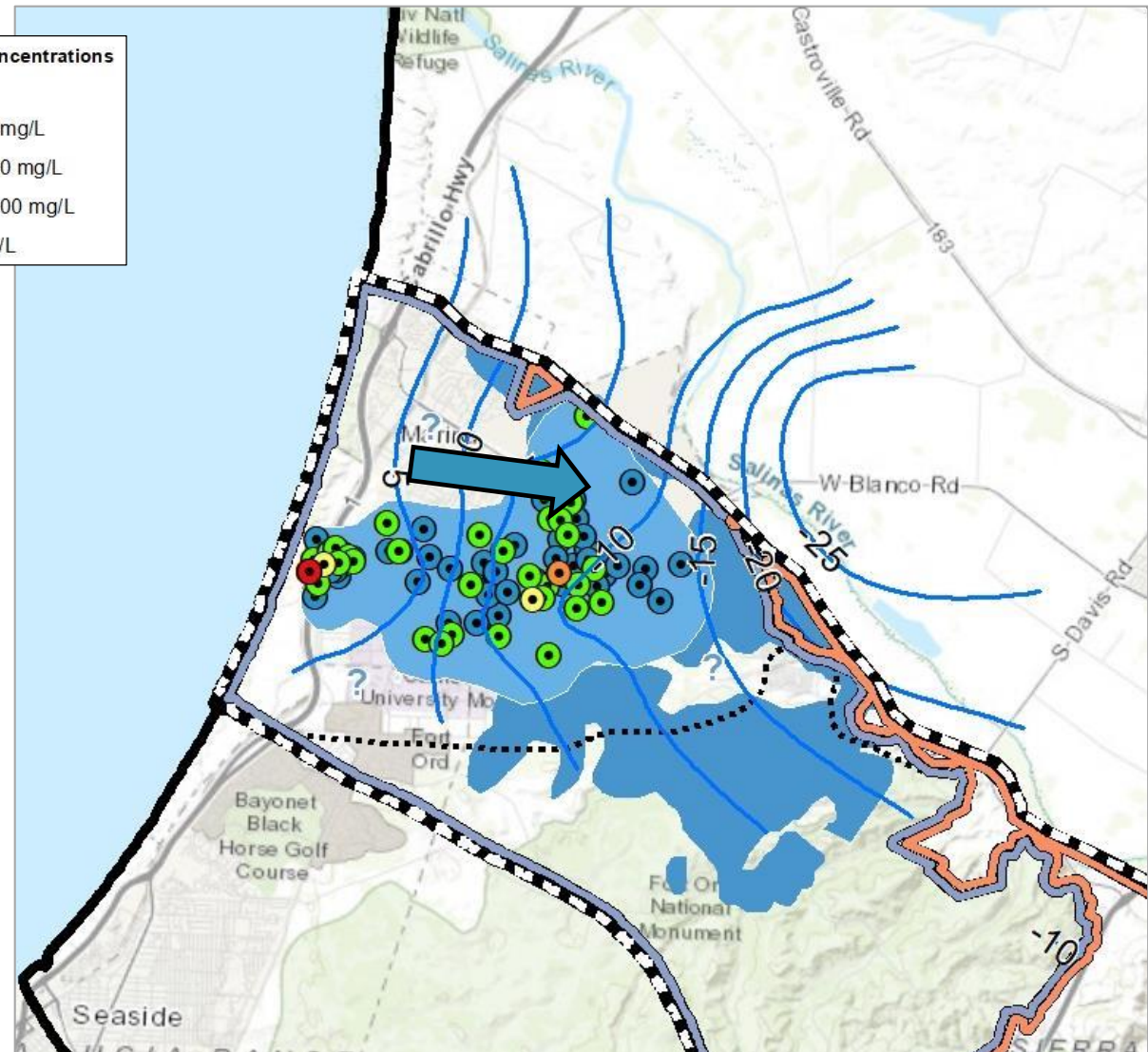
Primary Issues in Monterey Subbasin



GROUNDWATER ELEVATIONS/SEAWATER INTRUSION (MARINA-ORD AREA)

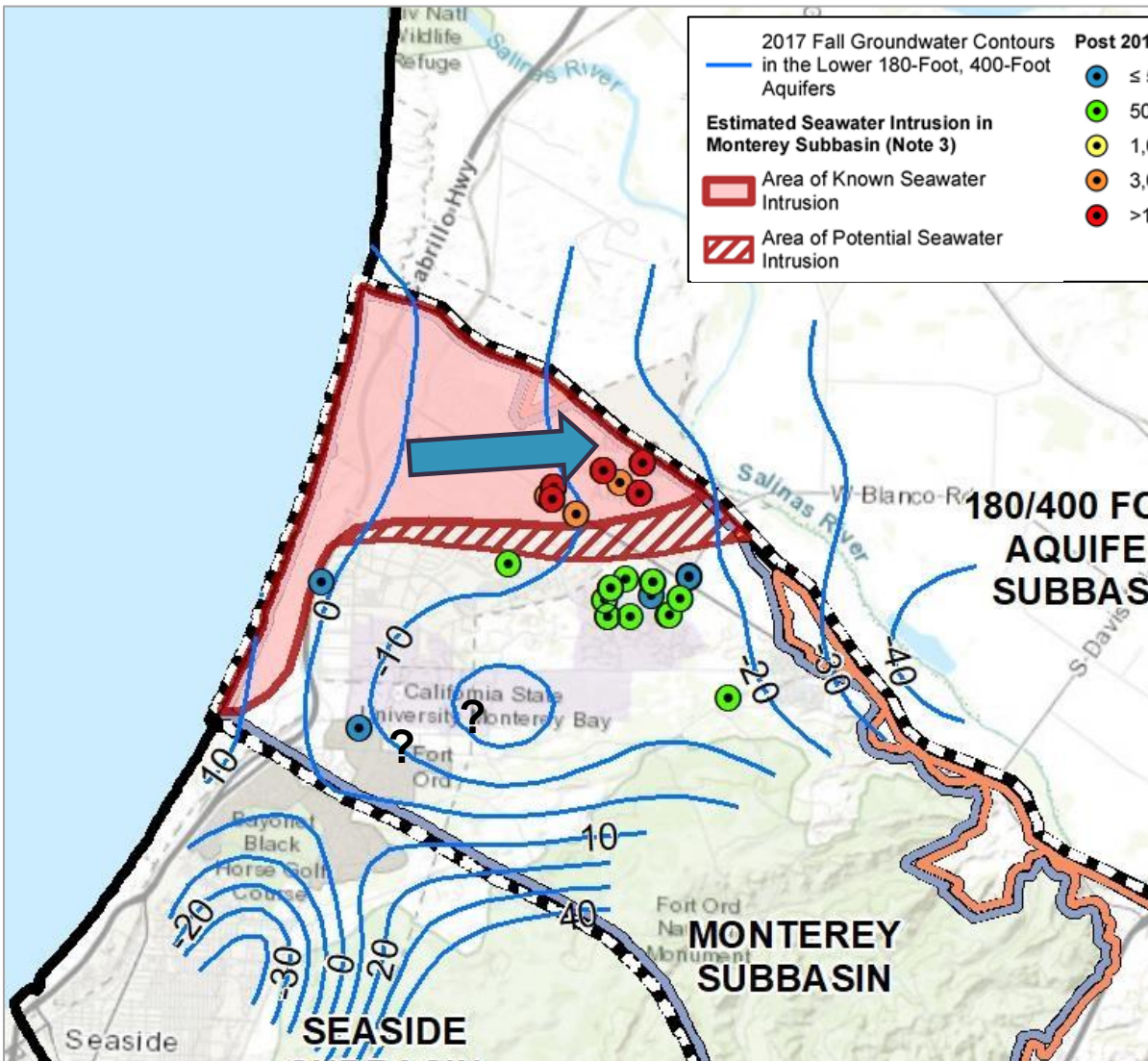


Dune Sand Aquifer

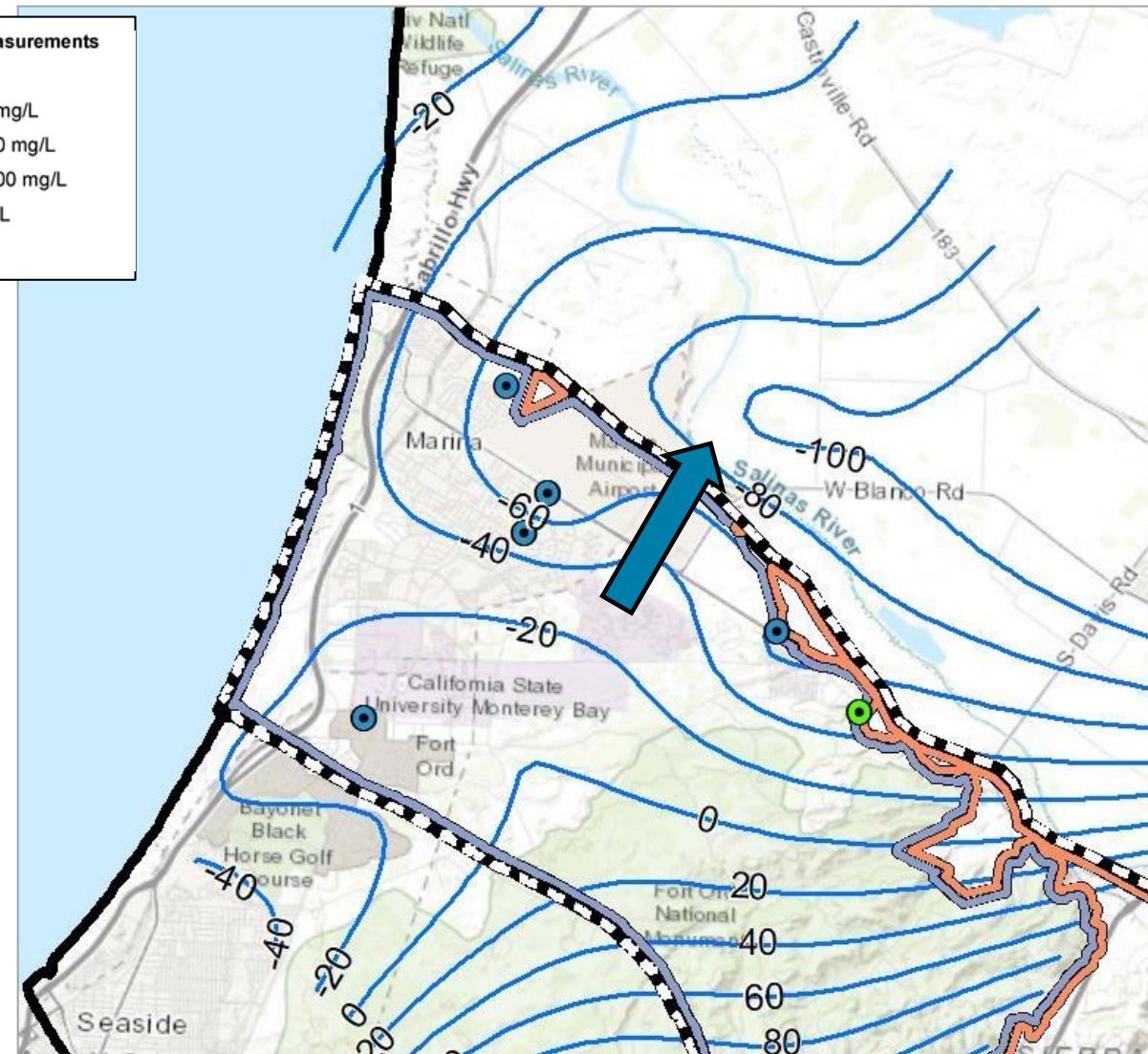


Upper 180-Foot Aquifer

GROUNDWATER ELEVATIONS/SEAWATER INTRUSION (MARINA ORD AREA)

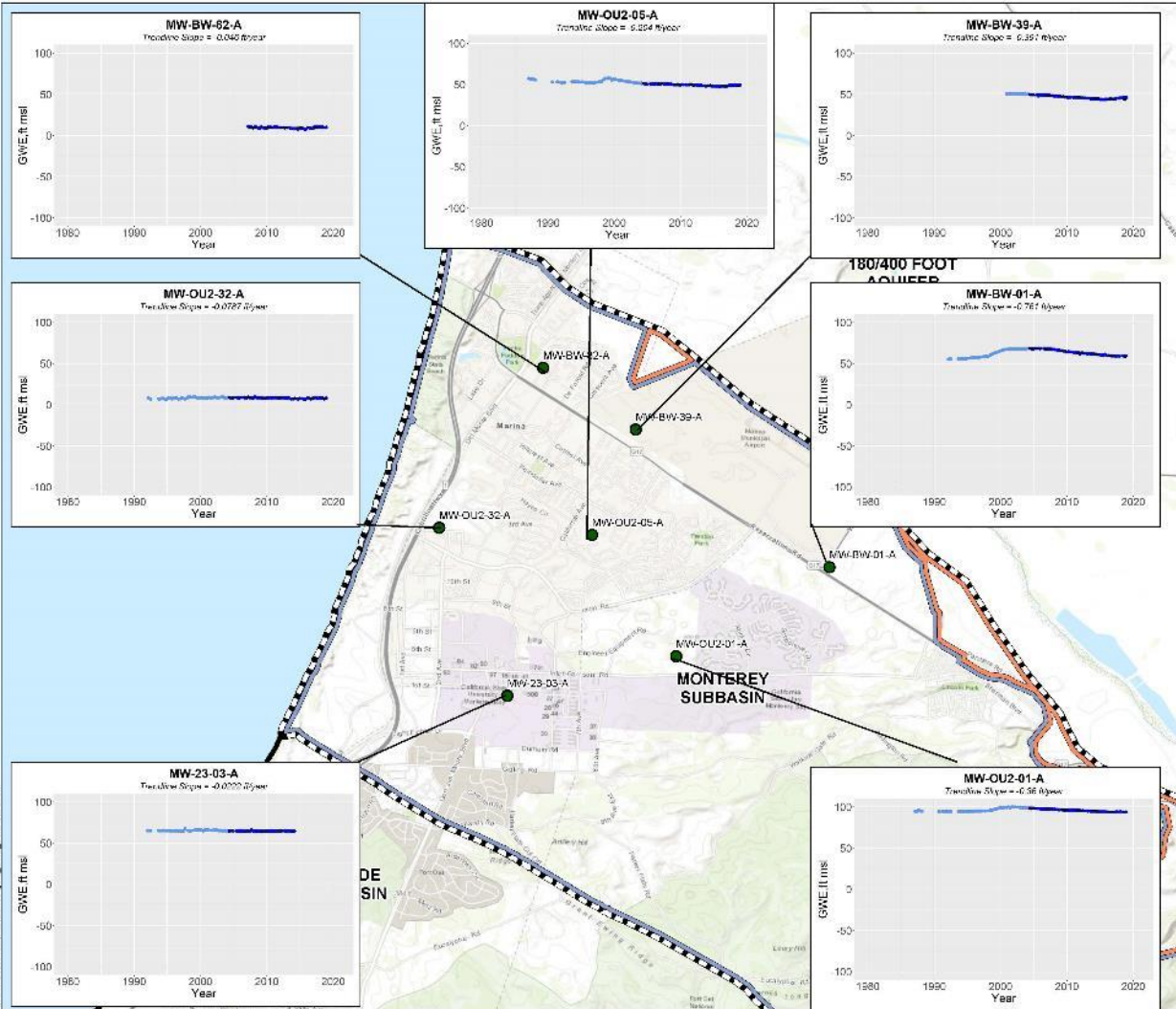


400-Foot Aquifer

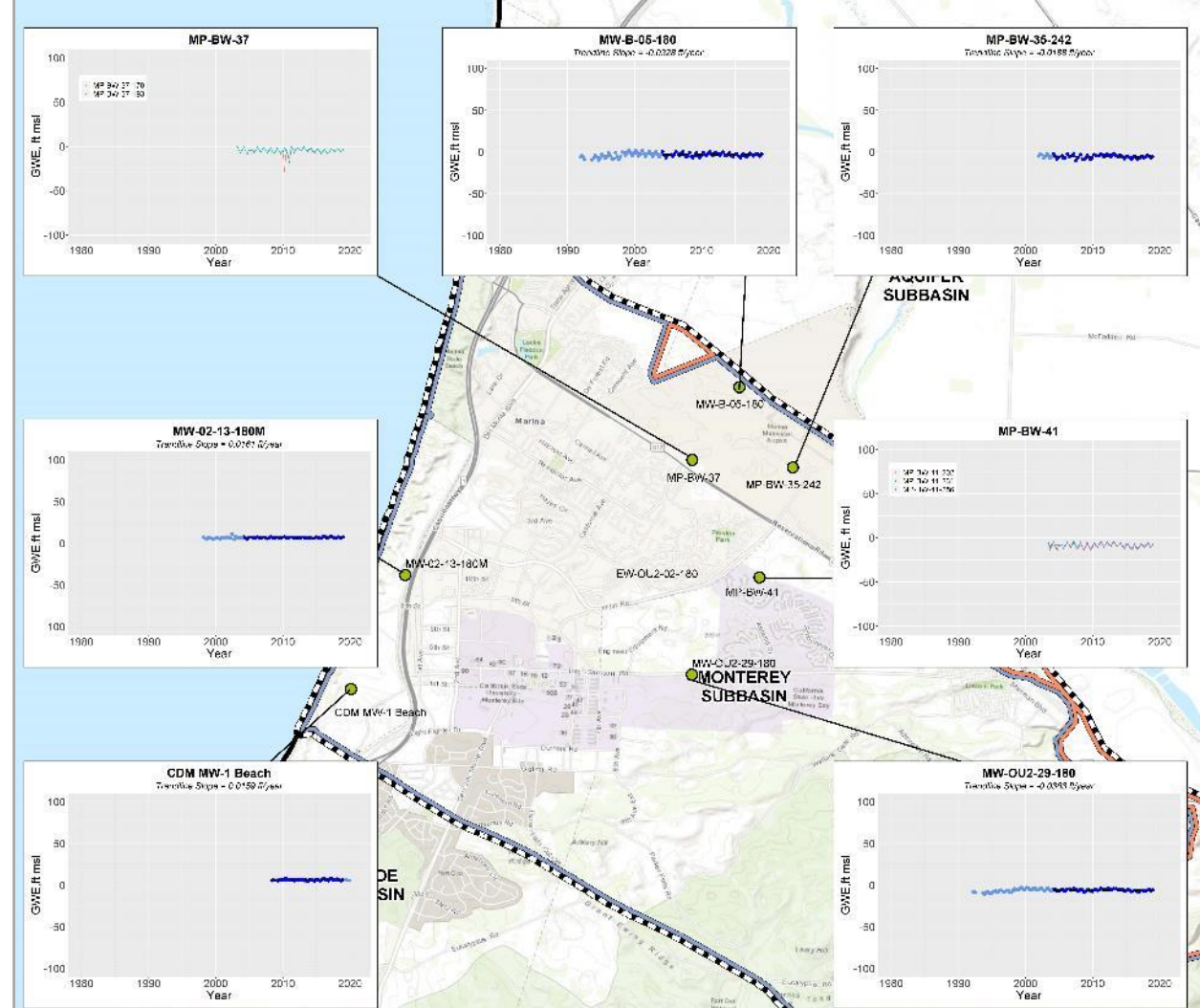


Deep Aquifer

GROUNDWATER ELEVATION TRENDS

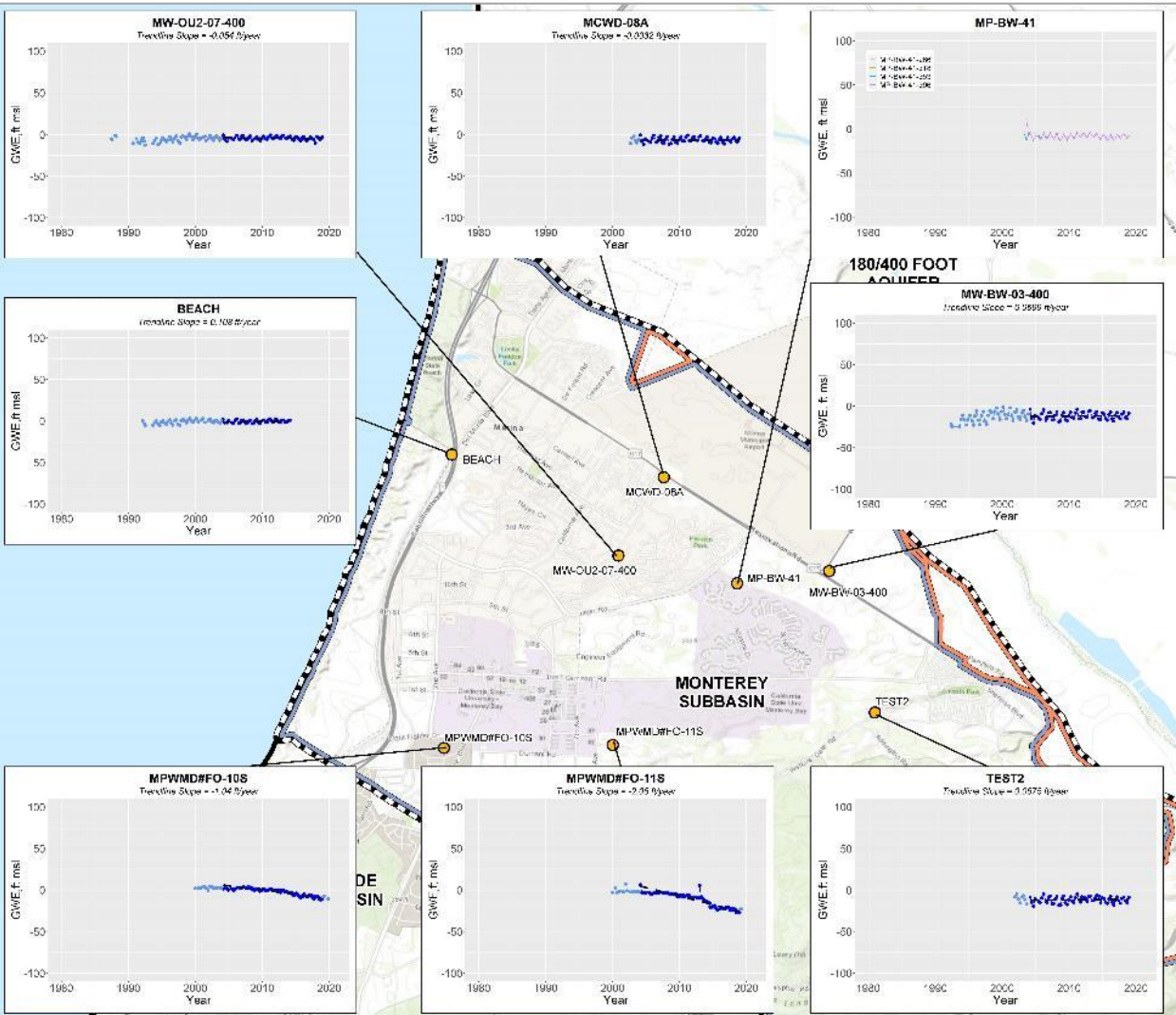


Dune Sand Aquifer

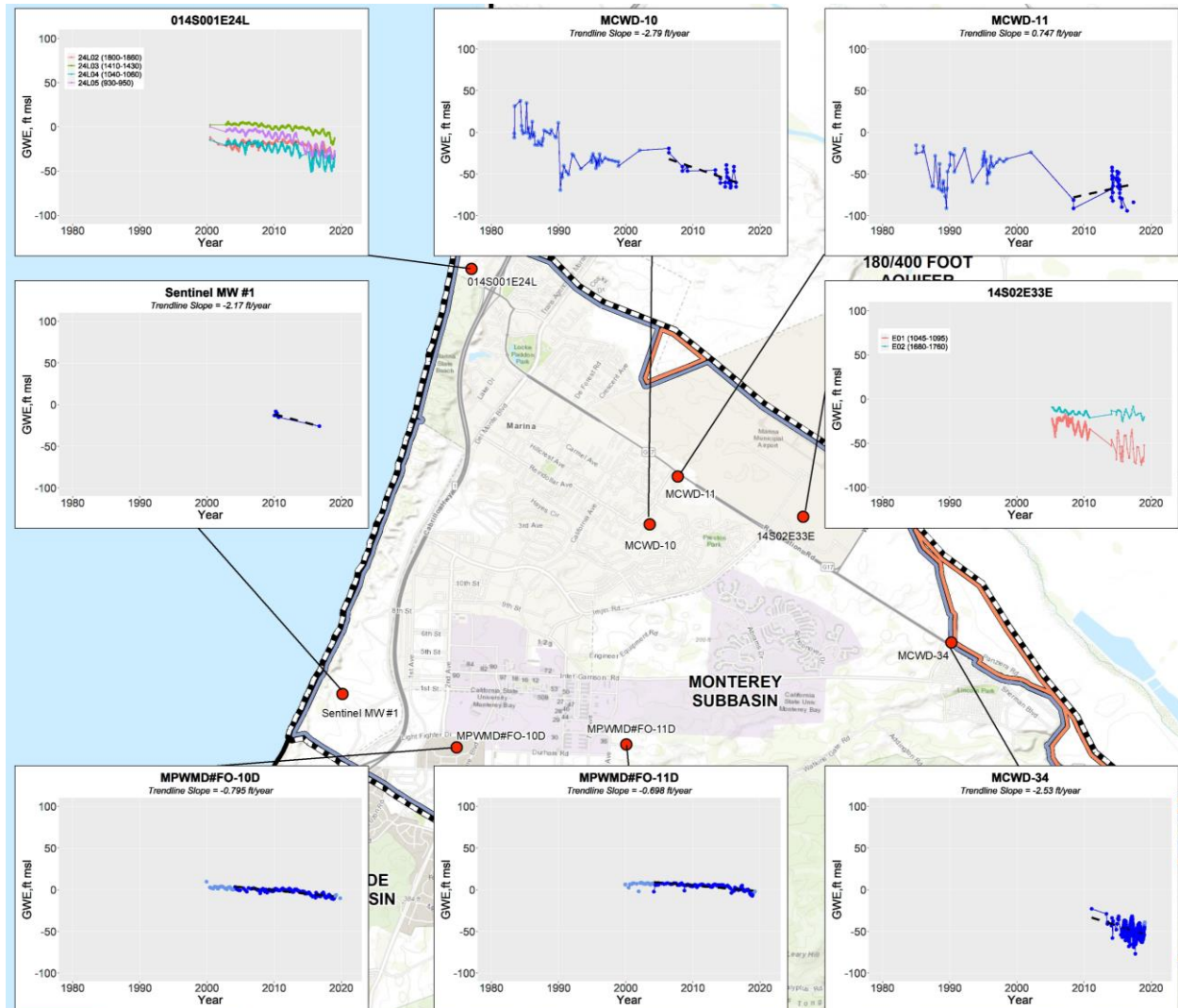


Upper 180-Foot Aquifer

GROUNDWATER ELEVATION TRENDS

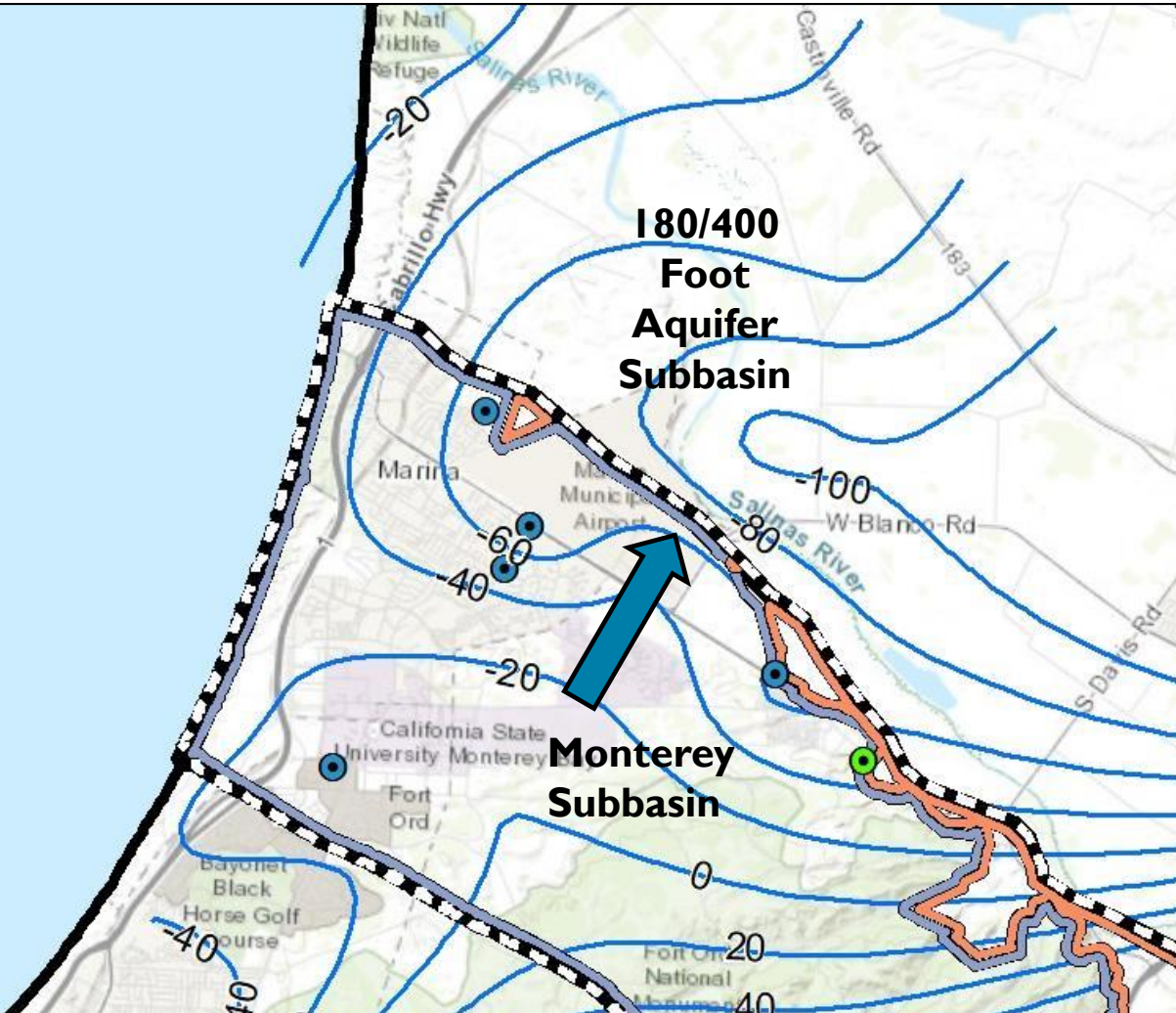


400-Foot Aquifer

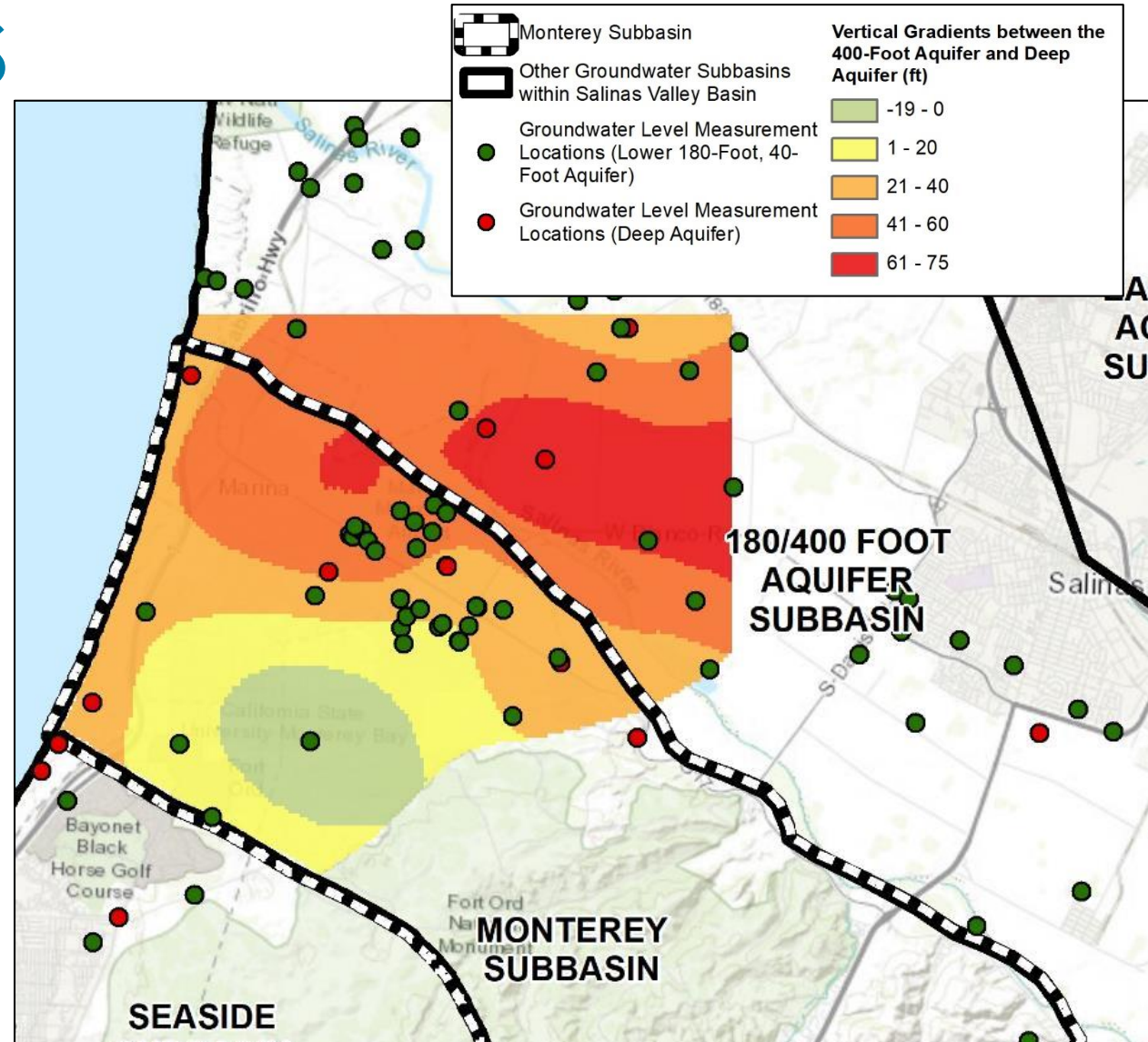


Deep Aquifer

DEEP AQUIFER GRADIENTS



**Lateral Groundwater Gradients
Deep Aquifer**



**Vertical Gradients Between
400-Foot and Deep Aquifers**

	Monterey Subbasin	Vertical Gradients between the 400-Foot Aquifer and Deep Aquifer (ft)	
	Other Groundwater Subbasins within Salinas Valley Basin		
	Groundwater Level Measurement Locations (Lower 180-Foot, 40-Foot Aquifer)		-19 - 0
	Groundwater Level Measurement Locations (Deep Aquifer)		1 - 20
			21 - 40
			41 - 60
			61 - 75

DEEP AQUIFER PRODUCTION INCREASING SINCE 2008

MCWRA-MCWD 1996 ANNEXATION AGREEMENT¹

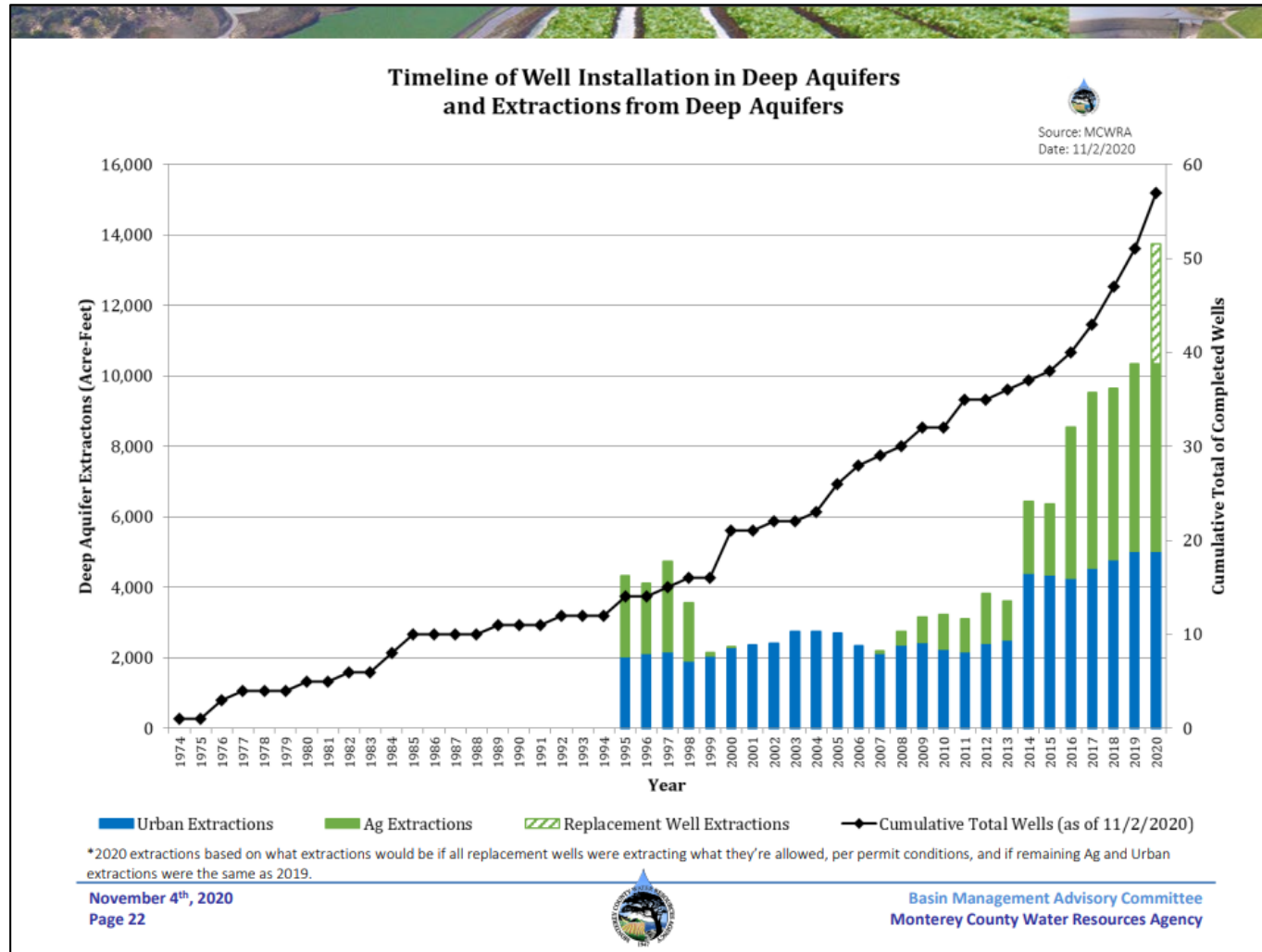
Section 5.3 Management of the 900-Foot Aquifer

“The Parties agree that the ‘900-foot’ aquifer should be managed to provide safe, sustained use of the water resource, and to preserve to MCWD the continued availability of water from the ‘900-foot’ aquifer.”

Section 5.9 Annexation Fee

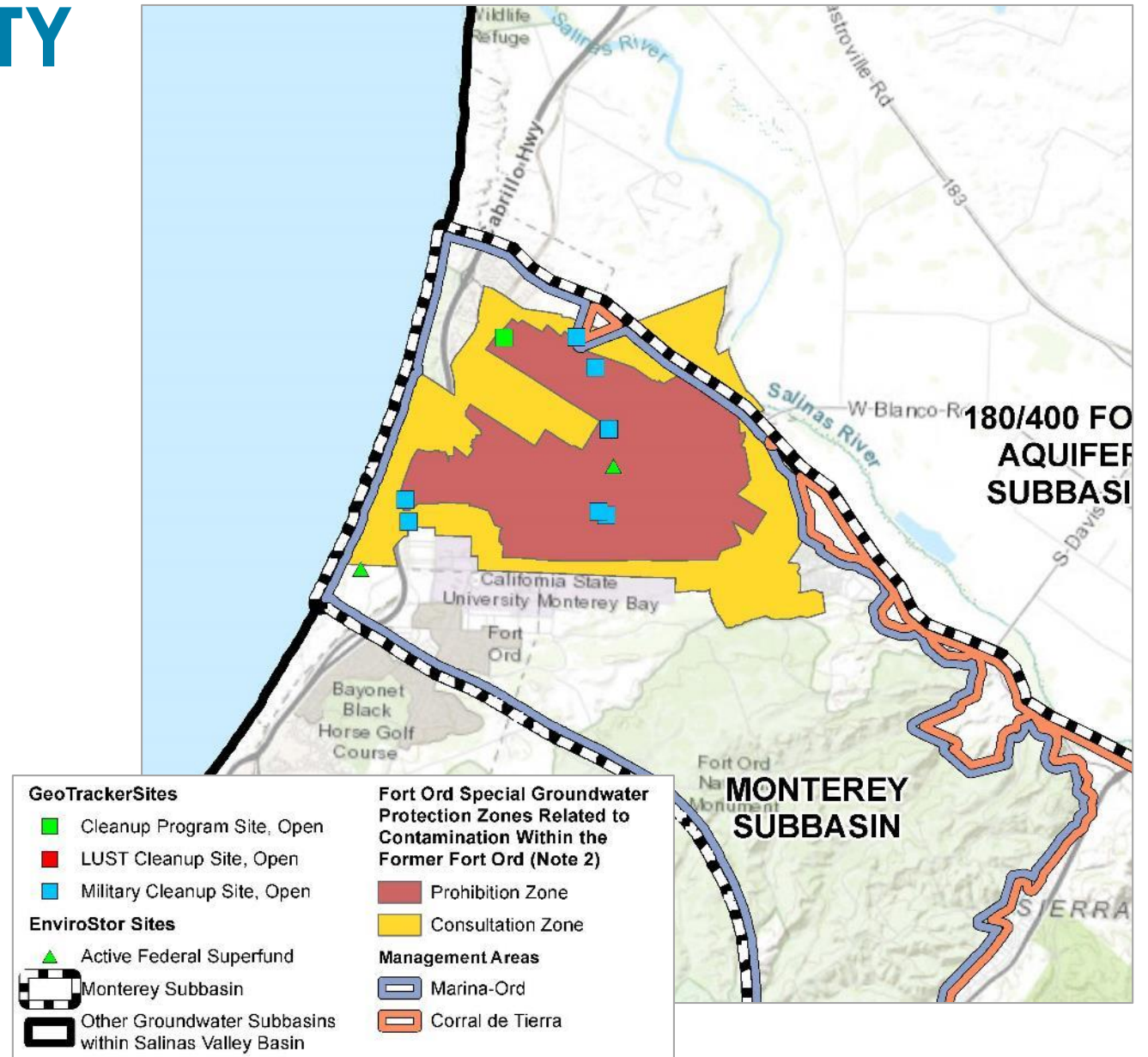
Annexation fees paid by MCWD “shall also be used for management protection of the ‘900-ft’ aquifer.”

1. MCWRA; MCWD, 1996. Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands.



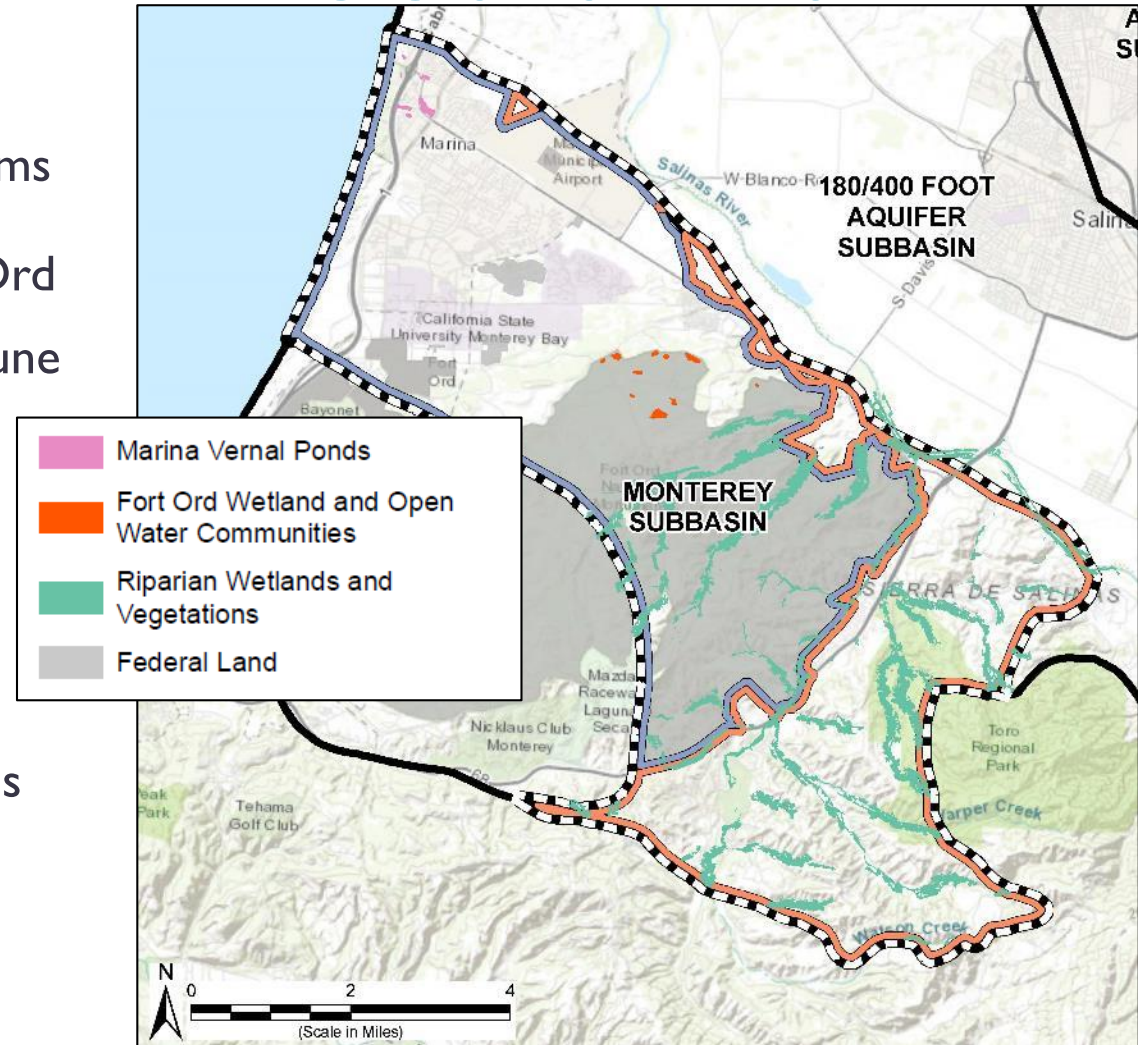
GROUNDWATER QUALITY

- Marina-Ord Area
 - Fort Ord legacy contamination
 - Under Jurisdiction of U.S. Army with oversight by RWQCB & U.S. EPA
- Corral de Tierra Area
 - Naturally occurring constituents



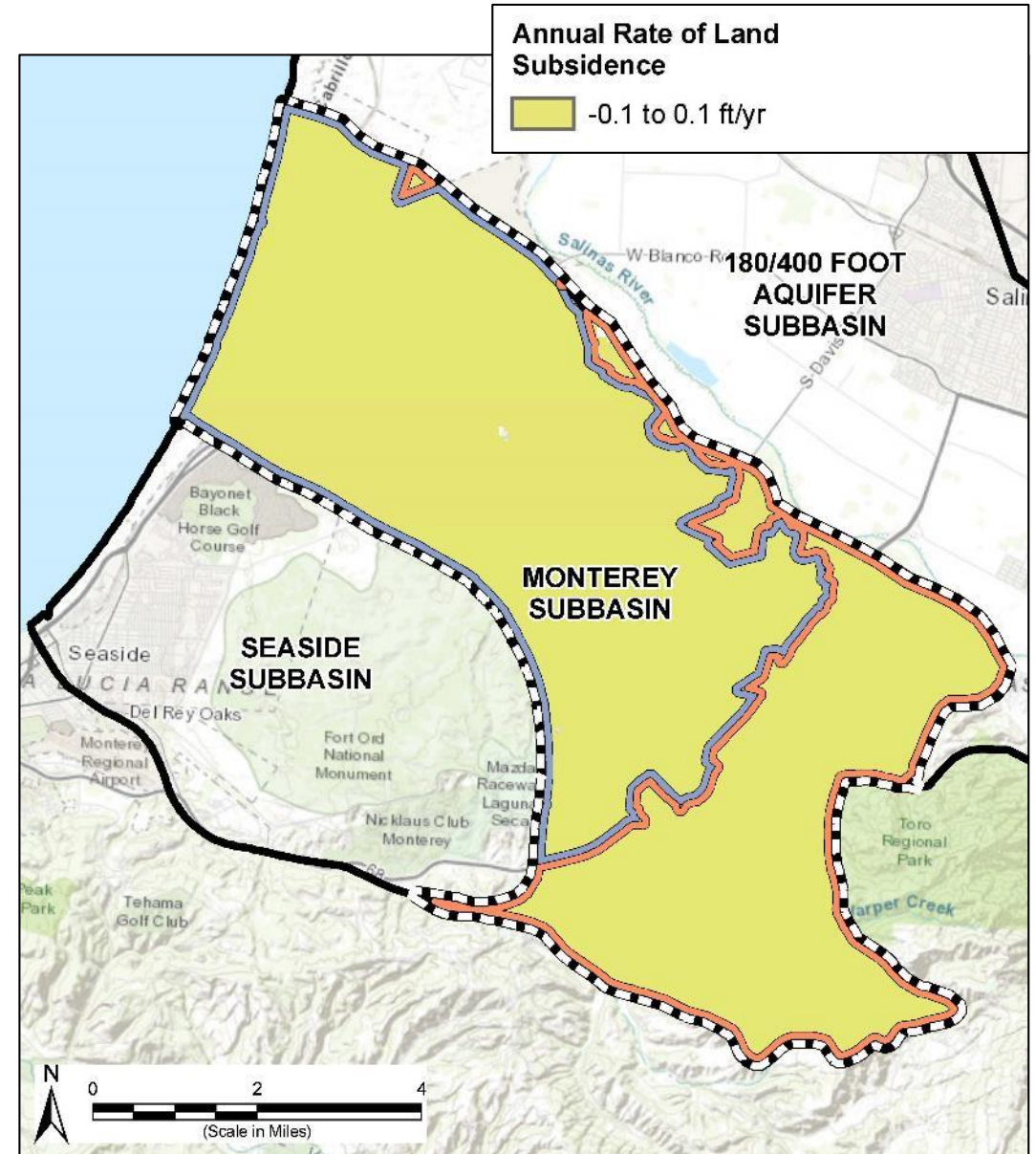
INTER-CONNECTED SURFACE WATER & GROUNDWATER DEPENDENT ECOSYSTEMS

- Marina-Ord Area
 - Potential groundwater dependent ecosystems (GDEs) and inter-connected surface water (ISW) at vernal ponds in Marina and Fort Ord
 - Currently no groundwater extraction in Dune Sand Aquifer
- Corral de Tierra Area
 - Potential GDEs and ISW anticipated to be along Lower El Toro Creek based on groundwater elevations
 - To be verified by shallow groundwater levels and modeling



LAND SUBSIDENCE

- Not subsidence observed in basin



CRITICAL DRIVERS TO AVOID UNDESIRABLE RESULTS

(BASIS FOR DEVELOPMENT OF MINIMUM THRESHOLDS)

Marina-Ord Area

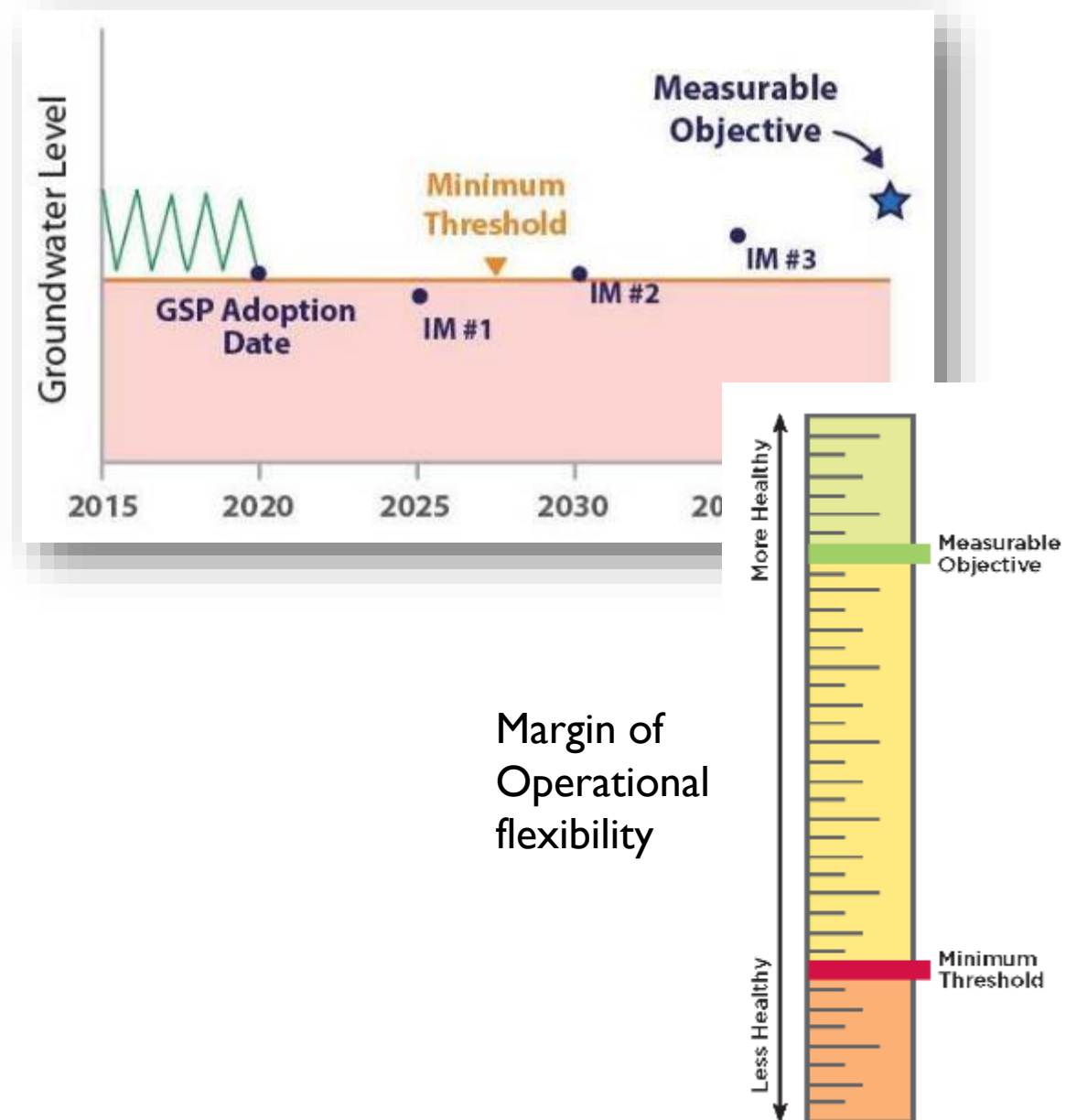
- Limit further advancement of Seawater Intrusion
- Stabilize Groundwater Levels in the Deep Aquifer (*at 2015 levels or equivalent to 180/400 Foot Subbasin Minimum Thresholds*)
- Make sure that Projects do not:
 - Cause shallow Groundwater Levels to decline in vicinity of groundwater dependent ecosystems
 - Cause legacy Fort Ord Contamination to migrate further

Corral de Tierra Area

- Stabilize Groundwater Levels to
 - Protect domestic and small water system supply wells
 - Maintain current (reasonable) levels of Surface water depletion
- Pump within the sustainable yield

SUSTAINABILITY CRITERIA⁽¹⁾

- **Sustainability indicators** (SIs) are the six effects that, when **significant and unreasonable**, become undesirable results
- **Minimum thresholds** (MTs) are the quantitative values representing groundwater conditions at a representative monitoring site that, when exceeded, may cause an undesirable result(s)
- **Measurable Objectives** (MOs) are quantitative goals that reflect the basin's desired groundwater conditions and allow the GSA to achieve the sustainability goal within 20 years



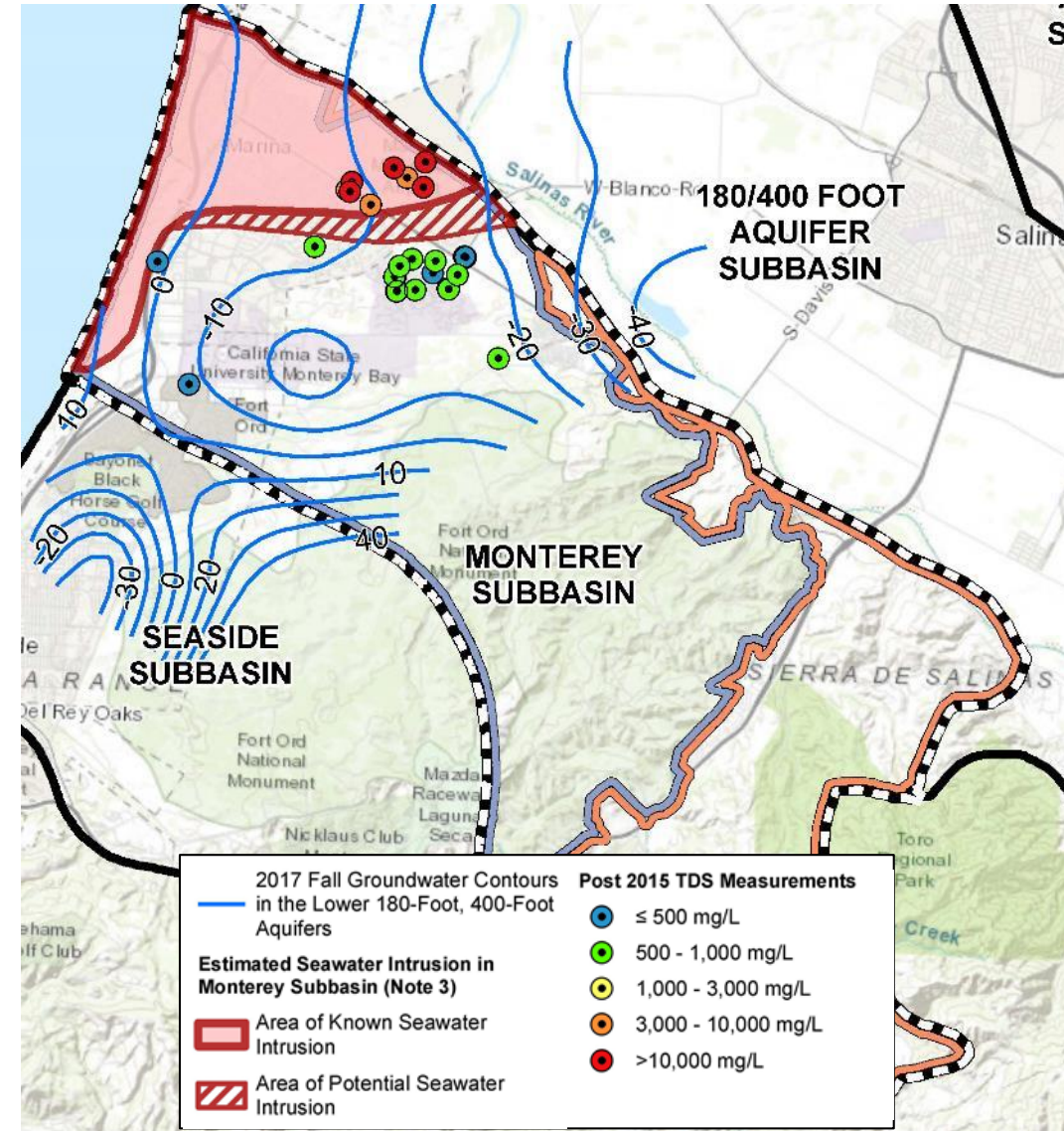
SMCS DEVELOPMENT PROCESS

- MCWD and SVBGSA Technical Committee worked out preliminary SMCs
- Consultation with MCWD stakeholders (today)
- Preparation and release of draft SMC chapter (Jan 2021)
- Two sets of SMCs may be developed for some indicators
 - Focus of this meeting is input on basin-wide / Marina-Ord Area SMCs
 - Discussion on additional basin-wide / Corral de Tierra SMCs occurred during November 6 SVBGSA Planning Committee Meeting

PROPOSED SMCs FOR SEAWATER INTRUSION

(GENERALLY CONSISTENT WITH 180/400 FOOT SUBBASIN, WHERE APPLICABLE)

- **400 Foot Aquifer (includes Lower 180 Foot Aquifer)**
 - *Minimum Threshold:* Seawater intrusion extent at 2015 location
 - *Measurable Objective:* Seawater intrusion extent at Highway 1
- **Dune Sand Aquifer, 180 Foot Aquifer, Deep Aquifer**
 - *Minimum Threshold :* Seawater intrusion extent at Highway 1
 - *Measurable Objective:* Seawater intrusion extent at Highway 1



PROPOSED SMCs FOR GROUNDWATER LEVELS

MARINA-ORD AREA

- **Dune Sand**
 - Driven by Interconnected Surface Water Minimum MT/MO
- **180/400-Foot Aquifers**
 - Driven by Seawater Intrusion MT/MO
- **Deep Aquifer (consistent with 180/400 Foot Subbasin)**
 - Minimum Threshold (MT): 1-foot above 2015 or MT water levels established in 180/400 Subbasin adjacent to Monterey Subbasin boundary, whichever is lower
 - Measurable Objective (MO): 2003 levels or MT water levels established the 180/400 Subbasin adjacent to the Monterey Subbasin boundary, whichever is lower

CORRAL DE TIERRA AREA

- Set groundwater elevation at 2015 levels in both 400-Foot and Deep Aquifers

OTHER SMCS

IN MARINA-ORD & CORRAL DE TIERRA AREA

- Depletion of Inter-Connected Surface Water
 - Marina-Ord area MT/MO: Set at 2015 groundwater levels to maintain good condition at Marina ponds
 - Corral de Tierra area MT/MO: Set at [YEAR TBD] groundwater levels in the vicinity of the lower El Toro Creek
- Degradation of Groundwater Quality
 - No COCs identified under GSA authority
 - Monitoring to verify projects do not impact groundwater quality
- Land Subsidence (not observed in Monterey Subbasin)
 - MT/MO: No more than 0.1 feet per year based on InSAR Data
- Reduction in Groundwater Storage (TBD)

NEXT STEPS

NEXT STEPS

- Release draft Chapter 5 early Dec 2020
- Stakeholder Meeting #3
 - Chapter 6 – Water Budget
 - Chapter 7 – Monitoring Network
 - Chapter 8 – Sustainable Management Criteria

GROUNDWATER MODELING PROGRESS

- Salinas Valley Integrated Hydrologic Model (SVIHM) and Salinas Valley Operational Model (SVOM) under preparation by USGS
 - SVIHM not yet released
 - Model approved for use by SVBGSA Board
- MCWD preparing Monterey Basin specific model
 - Pursuant to Prop 68 grant and in coordination with SVBGSA
- SVBGSA to prepare dual density model to assess Salinas Valley Basin-wide seawater intrusion projects
 - Pursuant to Prop 68 grant and in coordination with MCWD
- Monterey Subbasin model and dual-density model are anticipated to eventually be coordinated with SVHIM