

**AGENDA**  
**WATER RESOURCES COMMITTEE**  
**Tuesday, November 1, 2022, at 9:00 a.m.**  
**UNITED WATER CONSERVATION DISTRICT**  
**Boardroom, 1701 N. Lombard Street, Oxnard CA 93030**

**OPEN SESSION:**

**1. Public Comment**

The public may address the Water Resources Committee on any matter on the agenda or within the jurisdiction of the Committee. All comments are subject to a five-minute time limit.

**2. Approval of Minutes - Motion**

The Committee will review and consider approving the minutes from the Water Resources Committee meeting of September 6, 2022.

**3. Modeling of Projects for OPV Basins Sustainability, Part 1—Modeling Approach and Forecasted Water Supplies (15 minutes: Dr. Sercu)**

Staff will deliver a presentation that describes the water supply projects proposed by United and other OPV basin stakeholders and summarizes the general modeling approach, as well as forecasted changes in water deliveries and pumping for the Oxnard and Pleasant Valley basins.

**4. Modeling of Projects for OPV Basins Sustainability, Part 2—Effects on Groundwater Conditions (30 minutes: Mr. Lindquist)**

Staff will deliver a presentation that summarizes groundwater flow paths and elevations forecasted to result from implementation of water supply projects proposed by United and other OPV basin stakeholders and compares those results to updated modeling of the “Reduction with Projects” scenario as described in the GSPs for the Oxnard, Pleasant Valley, and Western Las Posas Valley basins.

**5. Installation of New Monitoring Wells in the Fillmore Basin (15 minutes: Mr. Elliot)**

Staff will report on progress related to the construction of three shallow monitoring wells near the Fillmore Fish Hatchery, and a deep nested monitoring well near the downstream end of the Fillmore basin, as funded by a DWR grant to the Fillmore and Piru Basins GSA.

**6. Water Resources Department and GSA Activities Update (15 minutes, Mr. Detmer)**

Staff will provide an update to the Committee on recent Water Resources Department activities and provide an update on GSA activities and schedules for the Fillmore and Piru Basins, Mound Basin and Fox Canyon Groundwater Management Agency (Oxnard, Pleasant Valley and Las Posas Valley basins).



## FUTURE AGENDA ITEMS

## ADJOURNMENT

### Directors:

Daniel C. Naumann, Chair  
Lynn E. Maulhardt  
Gordon Kimball

### Staff:

Mauricio E. Guardado, Jr.	Dr. Maryam Bral
Dan Detmer	Eric Elliott
Dr. Zachary Hanson	Kathleen Kuepper
John Lindquist	Murray McEachron
Dr. Bram Sercu	Dr. Jason Sun

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Approved: \_\_\_\_\_

A handwritten signature in blue ink, appearing to read 'M. Guardado'.

Mauricio E. Guardado, Jr., General Manager

A handwritten signature in blue ink, appearing to read 'M. Bral'.

Dr. Maryam Bral, Chief Engineer

Posted: (date) October 27, 2022

(time) 2:30 p.m.

(attest) Eva Ibarra

At: UWCD Headquarters, 1701 N. Lombard Street, Oxnard, CA 93030

Posted: (date) October 27, 2022

(time) 2:40 p.m.

(attest) Eva Ibarra

At: [www.unitedwater.com](http://www.unitedwater.com)



Board of Directors  
Bruce E. Dandy, President  
Sheldon G. Berger, Vice President  
Lynn E. Maulhardt, Secretary/Treasurer  
Mohammed A. Hasan  
Gordon Kimball  
Michael W. Mobley  
Daniel C. Naumann

General Manager  
Mauricio E. Guardado, Jr.

Legal Counsel  
David D. Boyer

**MINUTES**  
**WATER RESOURCES COMMITTEE**  
**Tuesday, September 6, 2022, at 9 a.m.**  
**UNITED WATER CONSERVATION DISTRICT**  
**Boardroom, 1701 N. Lombard Street, Oxnard CA 93030**

**Committee Members Present:**

Chair Daniel Naumann  
Director Lynn Maulhardt

**Committee Members Absent:**

Director Gordon Kimball

**Staff Present:**

Mauricio Guardado, Jr., general manager  
Dr. Maryam Bral, chief engineer  
Dan Detmer, water resources manager  
Dr. Zachary Hanson, hydrogeologist  
Kathleen Kuepper, hydrogeologist  
John Lindquist, supervising hydrogeologist  
Josh Perez, chief human resources officer  
Zachary Plummer, technology systems manager  
Dr. Bram Sercu, senior hydrologist  
Dr. Jason Sun, principal hydrogeologist – modeler  
Vanessa Vasquez, administrative assistant  
Brian Zahn, chief financial officer

**Public Present:** (see attached)

Jennifer Tribo, City of Ventura  
Martin Gramckow, Marathon Land

**OPEN SESSION:** 9:00 a.m.

Chair Naumann called the Water Resources Committee Meeting to order at 9:00 a.m.

**1. Public Comment**

Chair Naumann asked if there were any public comments for the Water Resources Committee.  
None were offered.



## **2. Approval of Minutes - Motion**

Motion to approve the May 31, 2022, Water Resources Committee meeting minutes, Director Maulhardt; Second, Director Naumann. Voice vote: two ayes (Maulhardt and Naumann); none opposed; one absent (Kimball). Motion carries 2/0/1.

## **3. Summary of Solute Transport Model Development and Application**

Dr. Jason Sun detailed the conversion of the Coastal Plain Model to MODFLOW USG-Transport model, followed by calibration to chloride concentration detected in the Southern Oxnard basin. Preliminary modeling results of various Extraction Barrier and Brackish Water Treatment (EBB Water) Project pumping rates were presented.

Director Maulhardt asked Dr. Sun if the picture shown was correct for the Dudek modeling approach for coastal seawater intrusion. Water Resources Manager Dan Detmer explained the difference between the model results reported by Dudek for the Oxnard Basin GSP versus the more recent modeling conducted by Dr. Sun for United. Director Maulhardt said he was pleased with the clarity that the slides provided.

Chair Naumann asked if Dr. Sun was providing a ten-year review? Dr. Sun said it is a review from 1985 through 2019 and explained the clock shown on the video.

Mr. Martin Gramckow asked about the water budget for the Oxnard Basin and the flux rate for seawater intrusion. Mr. Gramckow, Dr. Sun, and Mr. Detmer engaged in a brief discussion about past and present water budget estimates and the evolving understanding of seawater intrusion.

## **4. Baseline Water Quality Sampling for EBB Water Project**

Hydrogeologist Kathleen Kuepper provided an update to the Committee and presented preliminary water quality results from the EBB Water comprehensive baseline groundwater sampling.

Chair Naumann said he is happy to see positive results from the report presented. Chair Naumann asked what concentrations of constituents are of concern? Mrs. Kuepper showed the slide indicating the primary and secondary maximum contaminant levels (MCLs) specified by the State for drinking water.

## **5. CA Water Boards Prop 1 Round 3 grant proposal**

Mr. Detmer provided an update on recent work towards completion of a full grant proposal for support for Phase 1 implementation of the Extraction Barrier and Brackish Water Treatment (EBB Water) Project.



Director Maulhardt and Chair Naumann said the graphics on a slide showing flow of water were unclear due to the similarity of the blue colors used, and requested the colors

be changed to improve clarity of the chart. Mr. Detmer said he would change colors for clarity going forward.

Chair Naumann said he liked the information provided and wanted to know if there is anything Directors can do to support the project. Mr. Detmer said United and the Navy (a project partner) continue to develop visual aids that will improve public and regulatory agency understanding of the project's goals and methods. He also thanked the Directors for their support.

#### **6. Extraction Barrier Brackish Water Phase 1 Project Progress and Upcoming Work**

Dr. Bral provided an update on recent work towards developing the EBB Water Project, including coordination with the U.S. Navy on land and access agreements, completion of a full Prop 1 grant proposal for support for Phase 1, the issuance of RFPs for design and permitting work, and discussions with Calleguas MWD for potential discharge to its Salinity Management Pipeline.

Director Maulhardt said the presentation includes all elements and everything is being tied together as a whole. General Manager Mauricio Guardado agreed.

Director Maulhardt and Chair Naumann requested that Board presentation for projects be specific and to the point without too many details regarding graphics, tasks, and other details.

#### **7. Water Resources Department Update**

Mr. Detmer stated that due to time constraints, did the Committee have any questions on monthly reports submitted with regard to Agenda Item 7. The Committee had no questions or comments.

#### **8. Groundwater Sustainability Agencies Update**

Mr. Detmer stated that due to time constraints, did the Committee have any questions on monthly reports submitted with regard to Agenda Item 8. The Committee had no questions or comments.

Mr. Guardado quickly mentioned activities of interest taking place outside the District.

#### **FUTURE AGENDA ITEMS**

Committee members offered no suggestions.



**ADJOURNMENT**

Chair Naumann adjourned the meeting at 10:33 am.

I certify that the above is a true and correct copy of the minutes of the Water Resources Committee Meeting of September 6, 2022.

**ATTEST:** \_\_\_\_\_  
Daniel Naumann, Chair



# 3. SUMMARY OF SOLUTE TRANSPORT MODEL DEVELOPMENT AND APPLICATION

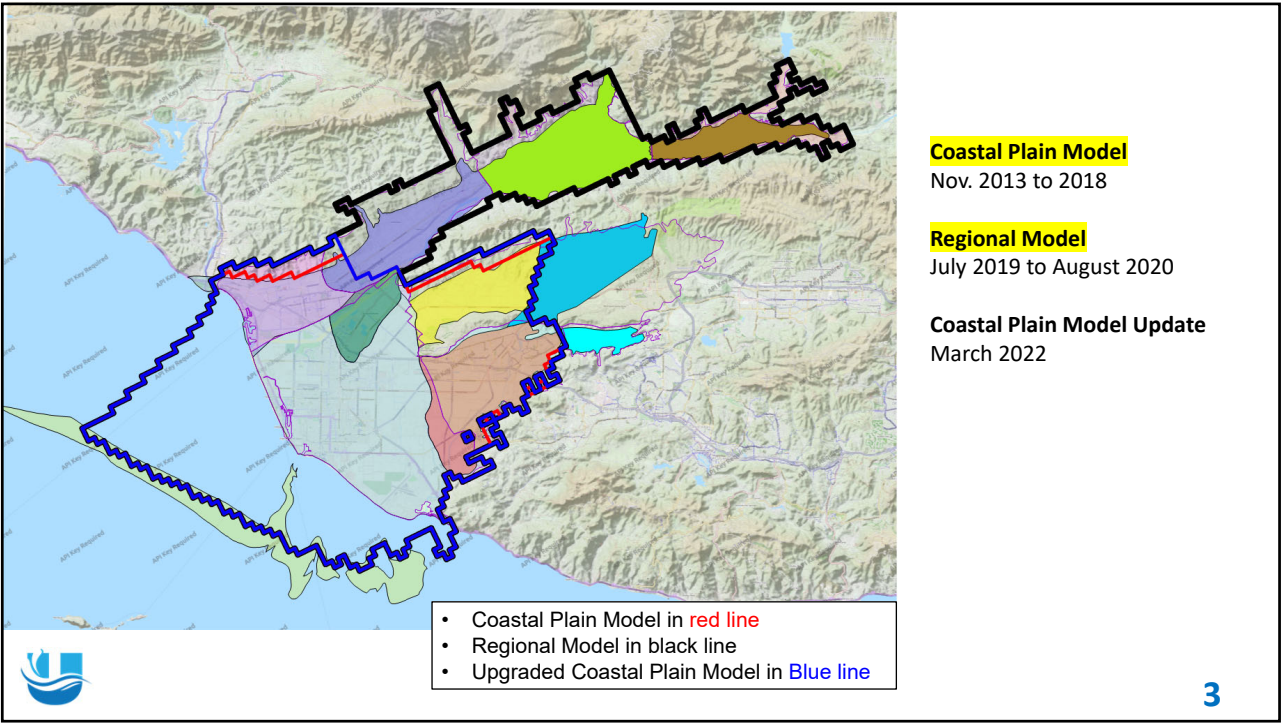
Presented by Jason Sun, Ph.D., P.E, Principal Hydrogeologist/Modeler  
Water Resources Committee Meeting  
September 6, 2022



## Groundwater Model Refresher







## UWCD GROUNDWATER MODELS

Coastal Plain Model	Regional Model	Coastal Plain Model Upgrade
Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)
GSPs for FCGMA	GSPs for Fillmore, Piru and Mound	
Monthly	Daily	Monthly
1985-2015	1985-2019	1985-2019
Jun-2018	Aug-2020	Mar-2022





## Directions After FCGMA GSPs

- The seawater intrusion is limiting the sustainable yield in Oxnard Plain
- New sources of water
- Pumping management/optimization
- .....



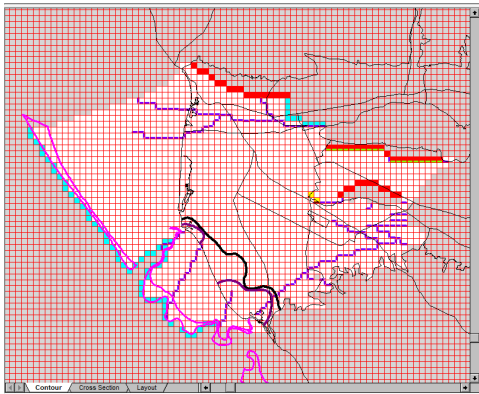
## UWCD GROUNDWATER MODELS

Coastal Plain Model	Regional Model	Coastal Plain Model Upgrade	USG Model
Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)	Flow + <b>Transport</b> + <b>Density</b>
GSPs for FCGMA	GSPs for Fillmore, Piru and Mound		Brackish water
Monthly	<b>Daily</b>	Monthly	Monthly
1985-2015	1985-2019	<b>1985-2019</b>	1985-2019
Jun-2018	Aug-2020	Mar-2022	Completed/Ongoing



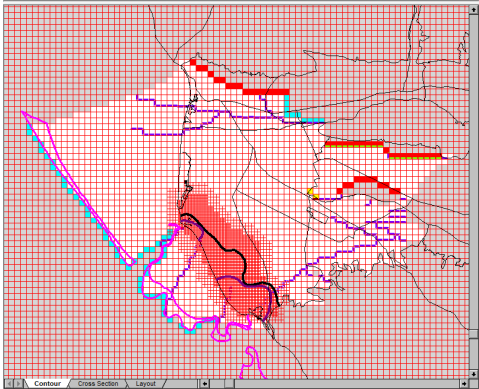
# Numerical Conversion

- Incorporate model layer refinement
- Model grid refinement from 2000 ft to 500 ft



Uniform grid size: 2000 ft

**MODFLOW-NWT**

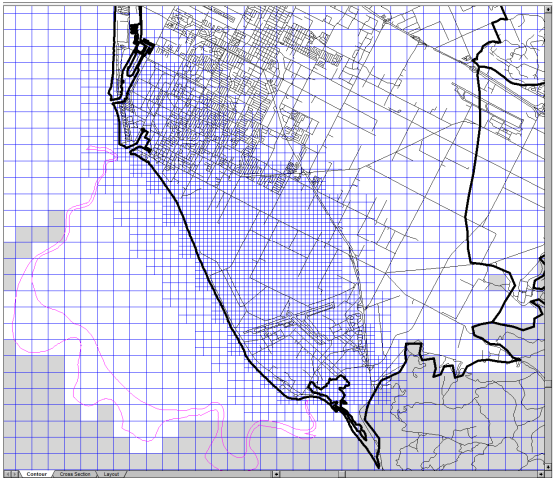
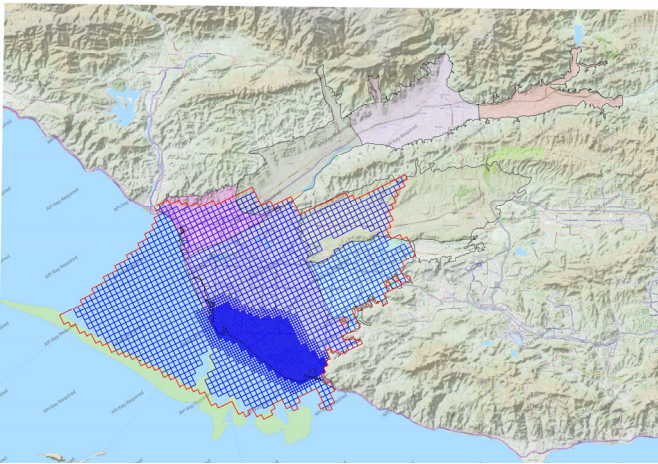


Grid sizes: 2000 ft, 1000 ft, 500 ft

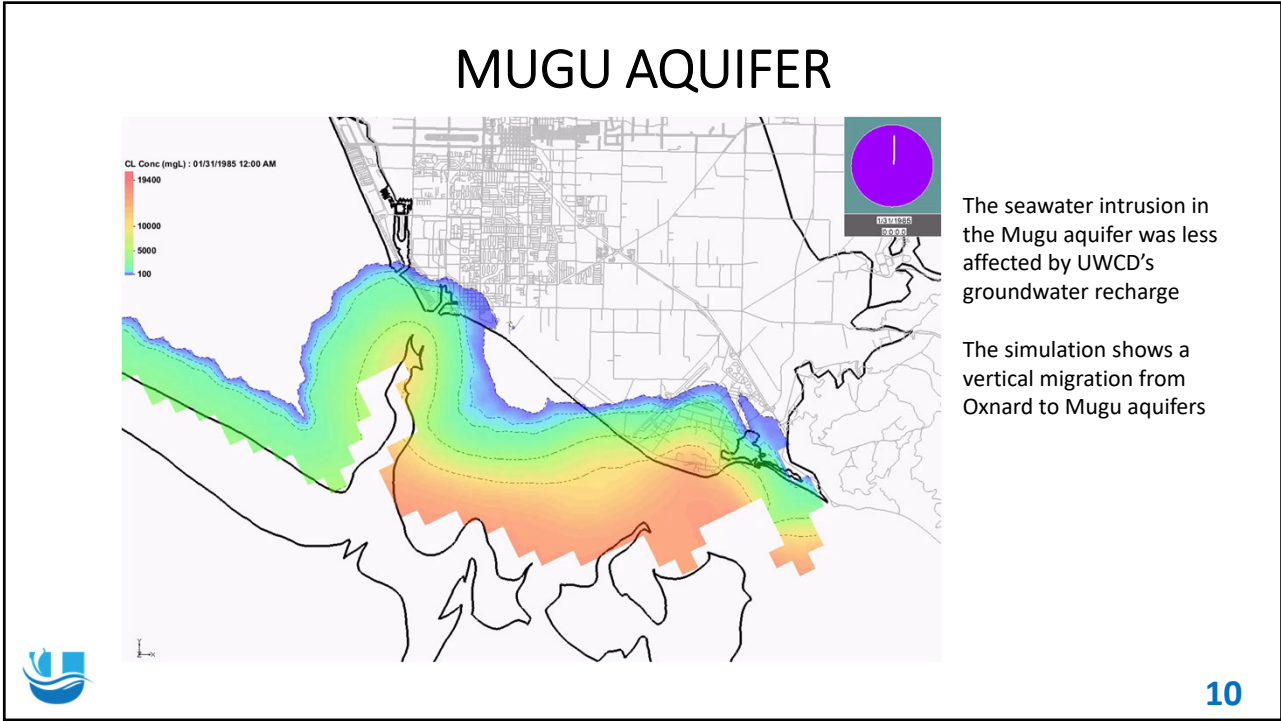
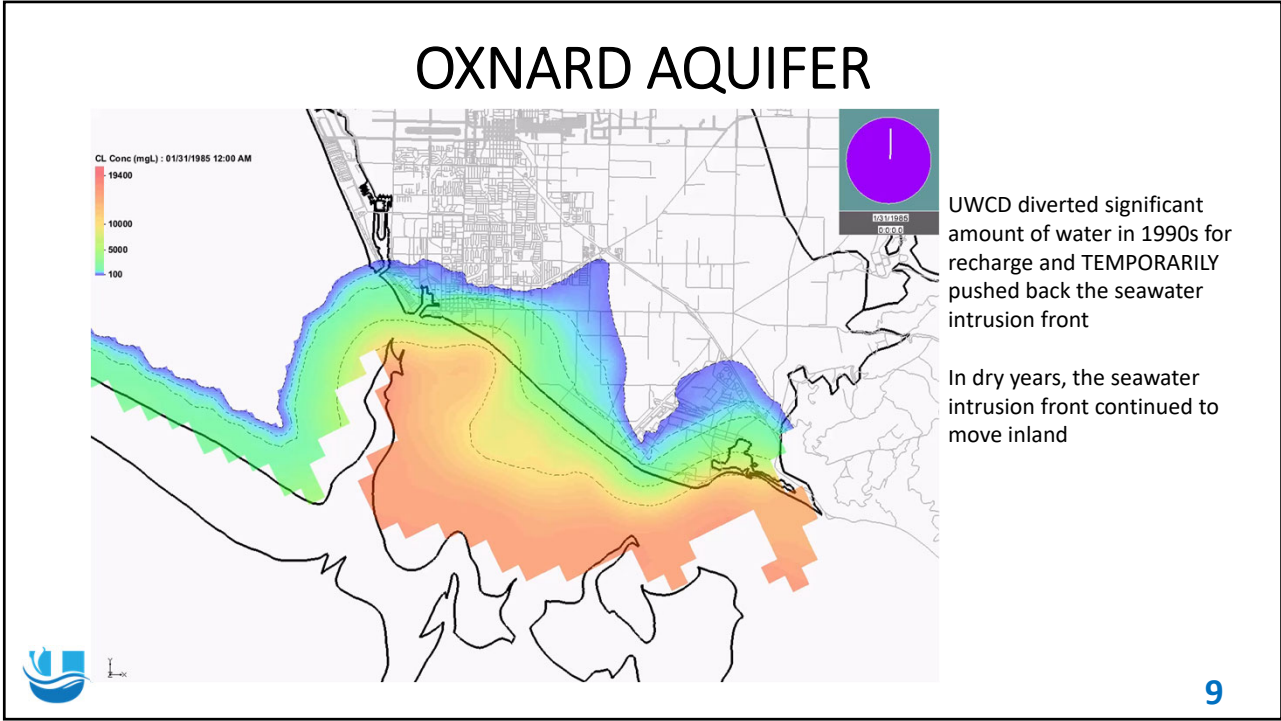
**MODFLOW-USG-Transport**

7

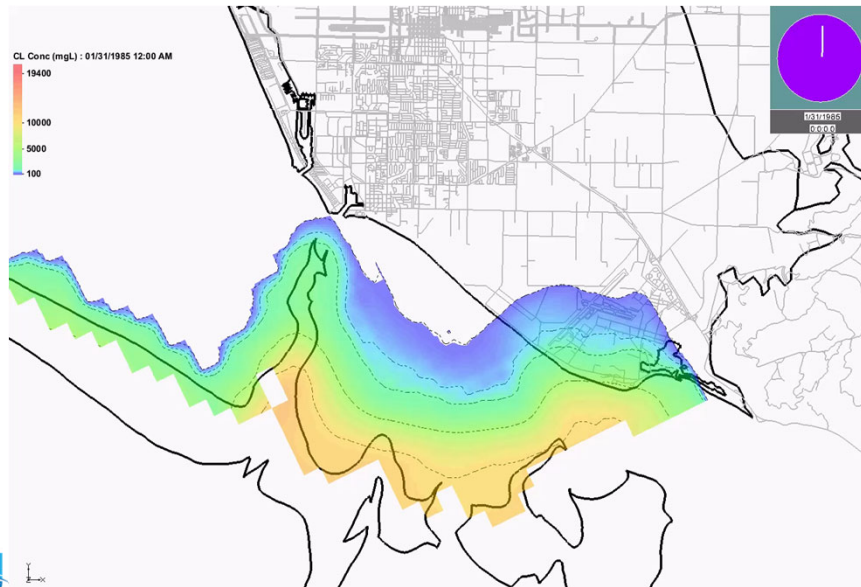
**USG** MODEL IS AN **UNSTRUCTURED GRID** (2000, 1000, 500 FT)  
MODEL BASED ON THE COASTAL PLAIN MODEL



8



## UPPER FOX CANYON AQUIFER



The seawater intrusion in the Mugu canyon area is from downward flow from the Mugu aquifer

The seawater intrusion in other area enters through the submarine outcrop



11

## EXTRACTION BARRIER AND BRACKISH (EBB) WATER TREATMENT PROJECT

- UWCD was awarded Water Boards Proposition 1 Grant to improve mapping of geology and improve groundwater models in order to evaluate the proposed EBB Water project
- UWCD completed the Prop 1 Round 2 Feasibility Study in December 2021, and concluded the project is feasible
- UWCD was invited to apply for a Prop 1 Round 3 implementation grant, and submitted the Round 3 proposal in July 2022



12

EBB Water Simulation Assumptions (Feasibility Study)

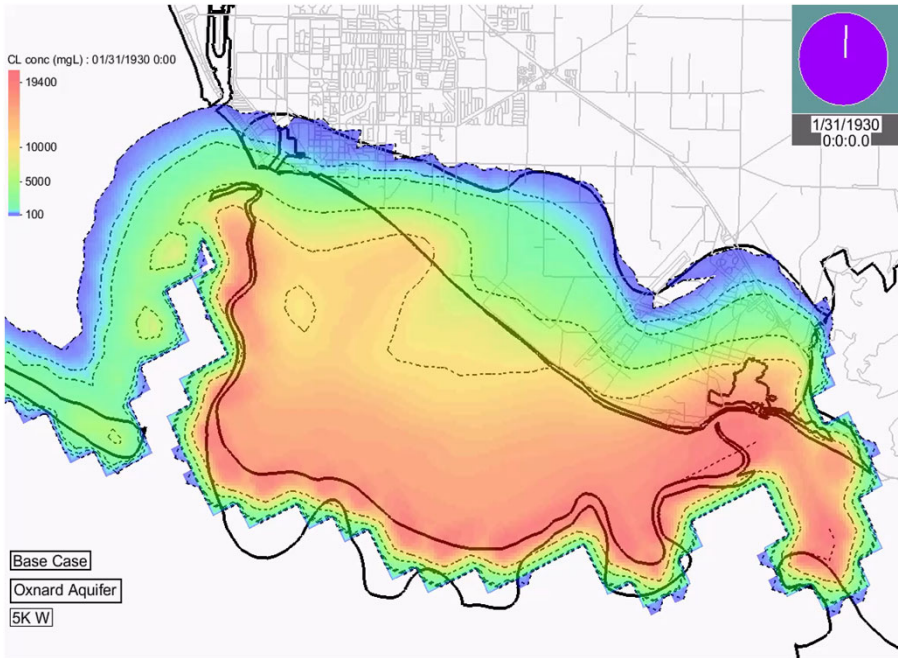
- The extraction barrier wells are assumed to operate for 50 years
- The product water from the treatment plant is assumed to be 50% of the extracted water
- Project extraction rates from 3,500 to 20,000 AFY
- FCGMA GSP simulation run based on no pumping cutback (base case) is used for simulations
- 1930-1969 hydrology with 2070 climate factor adjustment is used

Scenario	Extraction rate (AFY)	Treated water for usage (AFY)	Treated water usage (AFY)			Oxnard well number	Mugu well number	Oxnard Extraction (AFY)	Mugu Extraction (AFY)
			Navy	PTP	PV				
No Action	0	0	0	0	0	0	0	0	0
Phase 1	3500	0	0	0	0	5	2	2500	1000
5K W	5000	0	0	0	0	6	4	3000	2000
5K T	5000	2500	1500	500	500	6	4	3000	2000
10K	10000	5000	1500	1750	1750	12	10	6000	4000
15K	15000	7500	1500	3000	3000	16	12	10000	5000
20K	20000	10000	1500	4250	4250	20	20	14000	6000



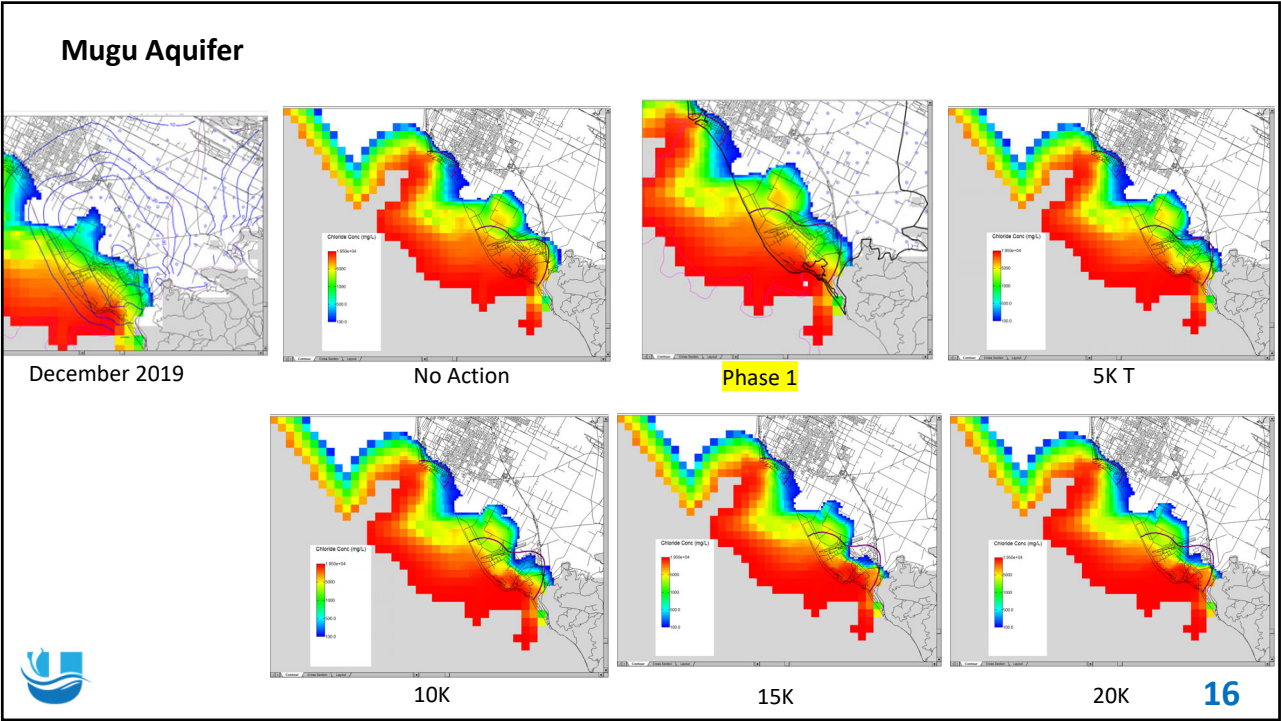
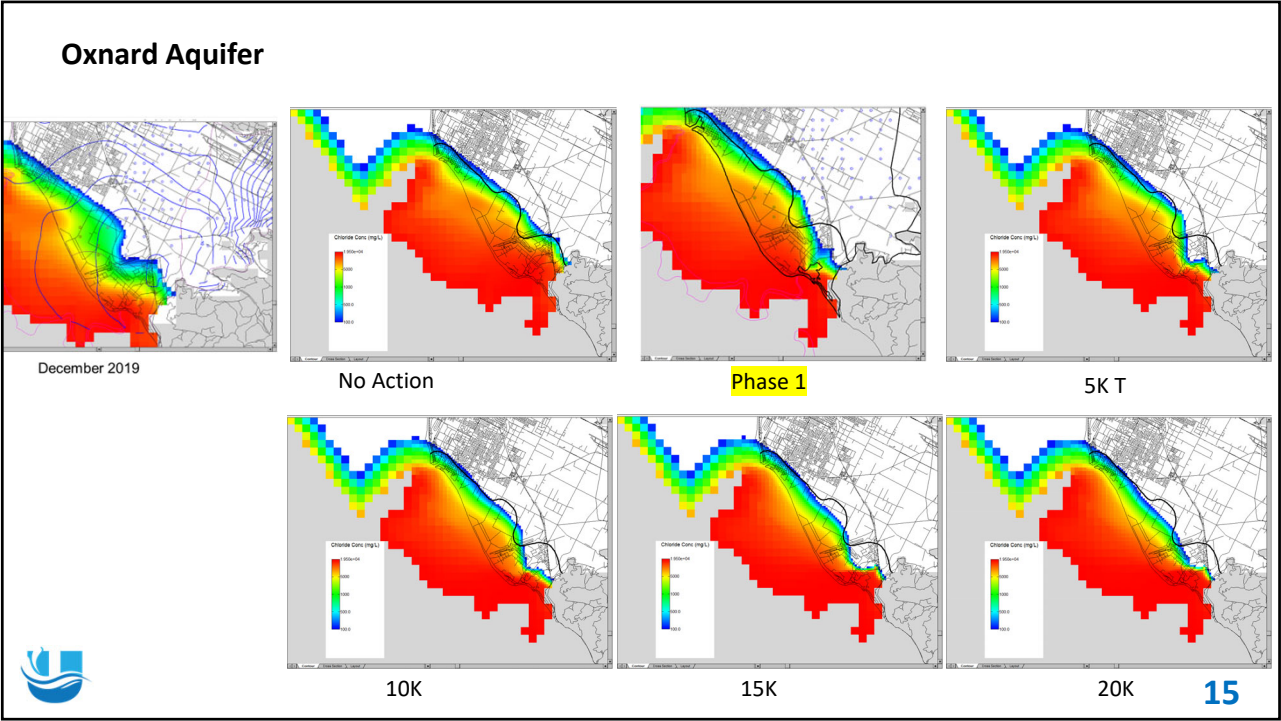
13

Extraction Barriers at 5,000 AFY  
3,000 AFY in Oxnard aquifer  
Simulated chloride concentration in Oxnard aquifer in 50 years



14







## EBB Water Publications

- UWCD, Technical Memorandum. Geological Model Refinements Near Naval Base Ventura County Point Mugu. September 2021
- UWCD, Technical Memorandum. Oxnard Coastal Plain Model: MODFLOW-USG. October 2021
- UWCD, Extraction Barrier and Brackish Water Treatment Project Feasibility Study: Groundwater Modeling. December 2021
- UWCD, Phase 1 Extraction Barrier and Brackish Water Treatment Project Feasibility Study: Groundwater Modeling. July 2022



17

## Perched Aquifer Model (PAM)

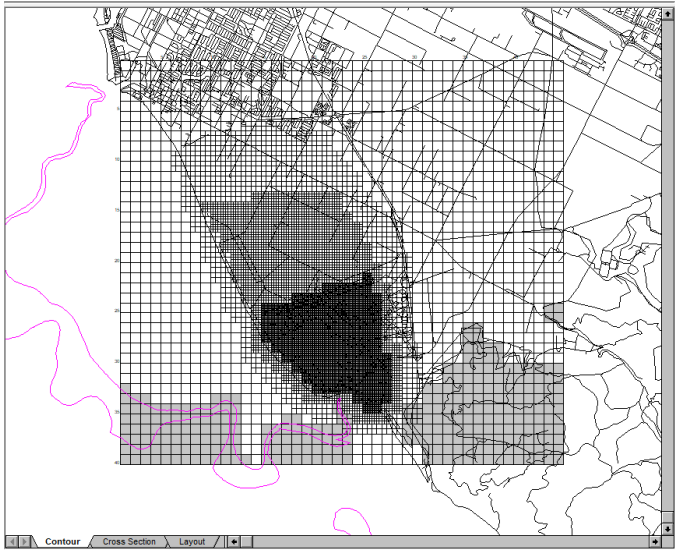
- The seawater intrusion (in confined aquifers) has been simulated with the MODFLOW-USG based Coastal Plain Model in the Prop 1 Grant project
- To better analyze the vertical leakage from the Semi-perched aquifer down to Oxnard aquifer, and shallow groundwater flow in the unconfined aquifer, a “zoom-in” model focused on the Semi-perched aquifer is needed.
- The PAM Model is built based on the MODFLOW-USG based Coastal Plain Model



18

UWCD GROUNDWATER MODELS

Coastal Plain Model	Regional Model	Coastal Plain Model Upgrade	USG Model	PAM
Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)	Flow (MODFLOW-NWT)	Flow + Transport + Density	Flow + Transport + Density
GSPs for FCGMA	GSPs for Fillmore, Piru and Mound		Brackish water	Brackish water
Monthly	Daily	Monthly	Monthly	Monthly
1985-2015	1985-2019	1985-2019	1985-2019	1985-2019
Jun-2018	Aug-2020	Mar-2022	Completed/Ongoing	In the Works

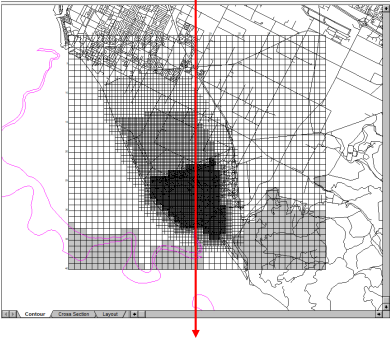


Perched Aquifer Model (PAM)

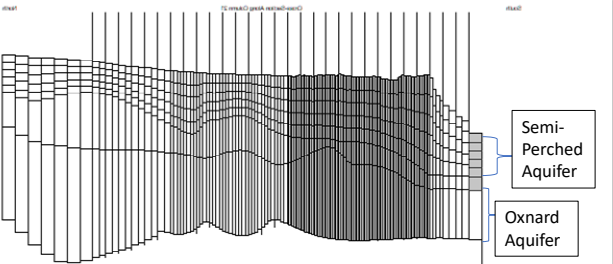
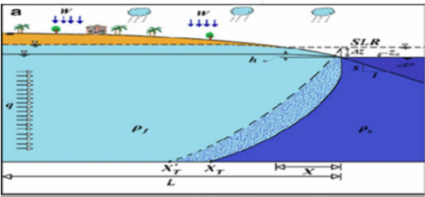
- MODFLOW-USG
- 7 model layers:
  - Semi-perched aquifer: Layers 1 to 5
  - Aquitard : Layer 6
  - Oxnard aquifer: Layer 7
- Grid sizes: 125, 250, 500, and 1000 ft
- Monthly time step


### Saltwater Wedge in Aquifer

**Goal:**  
To evaluate the potential for **vertical migration of contaminants** from the shallow Semi-perched aquifer to Oxnard aquifer due to EBB Water project pumping



Cross section below along the red line






21

### Ongoing Modeling Works

- Complete the Perched Aquifer Model (PAM)
- Add subsidence simulation
- Analyze project options for basin optimization
- Support City of Ventura on IPR project

2022											
January	February	March	April	May	June	July	August	September	October	November	December
EBB Water Phase 1 Study and Tech Memo											
			Local geological data, WL, and chloride conc data collection for PAM								
					Perched Aquifer Model (PAM)						
				Subsidence							
Projects and Basin Optimization											
IPR project for City of Ventura											



22

# Questions/Comments



## 4. BASELINE WATER QUALITY SAMPLING FOR EBB WATER PROJECT

Presented by Kathleen Kuepper, PG  
Water Resources Committee Meeting  
September 6, 2022



### OUTLINE

#### **EBB Water Project Baseline Sampling Event**

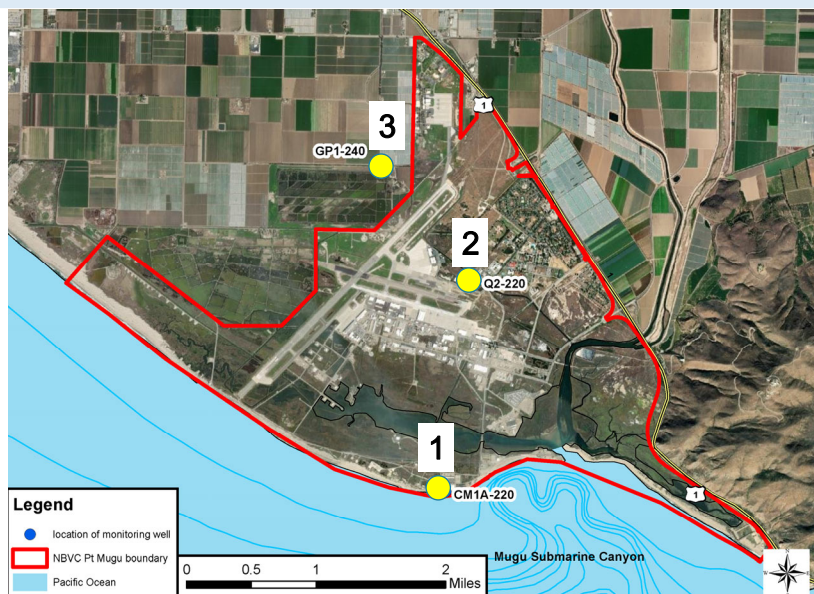
1. Sampling locations and project area
2. Sampling methods and event details
3. Preliminary water quality results
  - a. Inorganic Constituents and General Parameters
  - b. Organic Constituents and Other Contaminants
  - c. Constituent of Special Interest – PFAS
  - d. Radionuclides
  - e. Microbial Indicators

## SAMPLING LOCATIONS AND PROJECT AREA

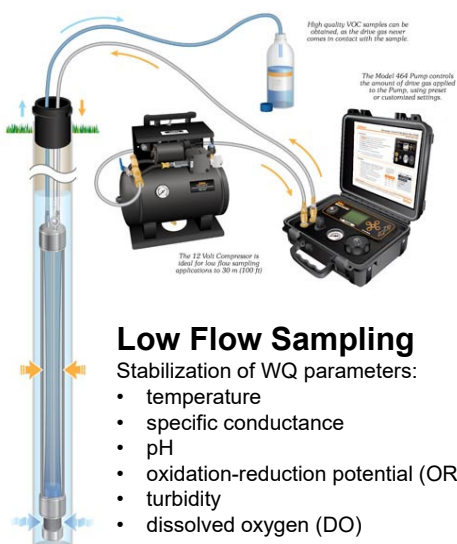
**Project Location:**  
NBVC Point Mugu

**Purpose:** Establish background levels for expanded list of constituents

**Sampling Target Depth:**  
Monitoring wells screened in Oxnard aquifer (180-240 feet below ground surface)



## SAMPLING METHODS AND EVENT DETAILS



### Low Flow Sampling

Stabilization of WQ parameters:

- temperature
- specific conductance
- pH
- oxidation-reduction potential (ORP)
- turbidity
- dissolved oxygen (DO)



Sampled over 300 hundred constituents





## PRELIMINARY WATER QUALITY RESULTS

### Inorganic Constituents and General Parameters



Constituent	#3 Well Result	#2 Well Result	#1 Well Result	Units	MCL (Secondary)
Total Dissolved Solids	820	2,100	31,000	mg/l	1,000
Specific Conductance	1,200	2,900	45,000	µS/cm	1,600
Chloride	40	680	19,000	mg/l	500
Sulfate	380	330	2,200	mg/l	500
Apparent Color	25	15	100	ACU	15
Odor	17	ND	ND	TON	3
Aluminum	1,900	460	ND	µg/l	200
Turbidity	34	6.8	85	NTU	5
Methylene blue active substances (MBAS)	ND	ND	0.81	mg/l	0.5



## PRELIMINARY WATER QUALITY RESULTS

### Organic Constituents and Other Contaminants



No samples detected organic contaminants

- Volatile organic compounds (VOCs)
- Pesticides
- Polychlorinated biphenyls (PCBs)
- Non-Volatile Synthetic Organic Contaminants (SOCs)
- Explosives
- Disinfectant Byproducts (DBPs)



Constituent	#3 Well Result	#2 Well Result	#1 Well Result	Units
Total Organic Carbon	0.79	0.63	ND	mg/l
Dissolved Organic Carbon	0.2	0.54	ND	mg/l



## PRELIMINARY WATER QUALITY RESULTS

### Constituent of Special Interest: Per- and polyfluoroalkyl substances (PFAS)



Constituent	#3 Well Result	#2 Well Result	#1 Well Result	Units	Notification Limit
Perfluorobutanesulfonic acid (PFBS)	ND	ND	ND	ug/L	0.5
Perfluorooctanesulfonic acid (PFOS)	ND	ND	ND	ug/L	0.0065
Perfluorooctanoic acid (PFOA)	ND	ND	ND	ug/L	0.0051

ND=Analyte not detected at or above the minimum reporting limit.



## PRELIMINARY WATER QUALITY RESULTS

### Radionuclides



Constituent	#3 Well Result	#2 Well Result	#1 Well Result	Units	MCL (Primary)
Gross Alpha	ND	2.62	ND	pCi/L	15
Gross Beta	5.33	7.61	ND	pCi/L	50 pCi/L (trigger) 4 millirem/yr
Uranium	0.7	1.5	ND	pCi/L	20
Radium 226	ND	ND	ND	pCi/L	
Radium 228	ND	ND	ND	pCi/L	
Radium 226, 228 Combined	ND	ND	ND	pCi/L	5
Strontium 90	ND	ND	ND	pCi/L	8
Tritium	ND	ND	ND	pCi/L	20,000

ND=Analyte not detected at or above the minimum reporting limit.

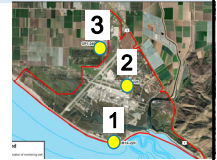


## PRELIMINARY WATER QUALITY RESULTS

### Microbial Indicators

Constituent	#3 Well Result	#2 Well Result	#1 Well Result	Units
Total Coliform Bacteria	ND	11	4.1	MPN/100 mL
Enterococci	ND	ND	ND	MPN/100 mL
E. Coli Bacteria	ND	ND	ND	MPN/100 mL
Fecal Coliform Bacteria	ND	ND	ND	MPN/100 mL

ND=Analyte not detected at or above the minimum reporting limit.

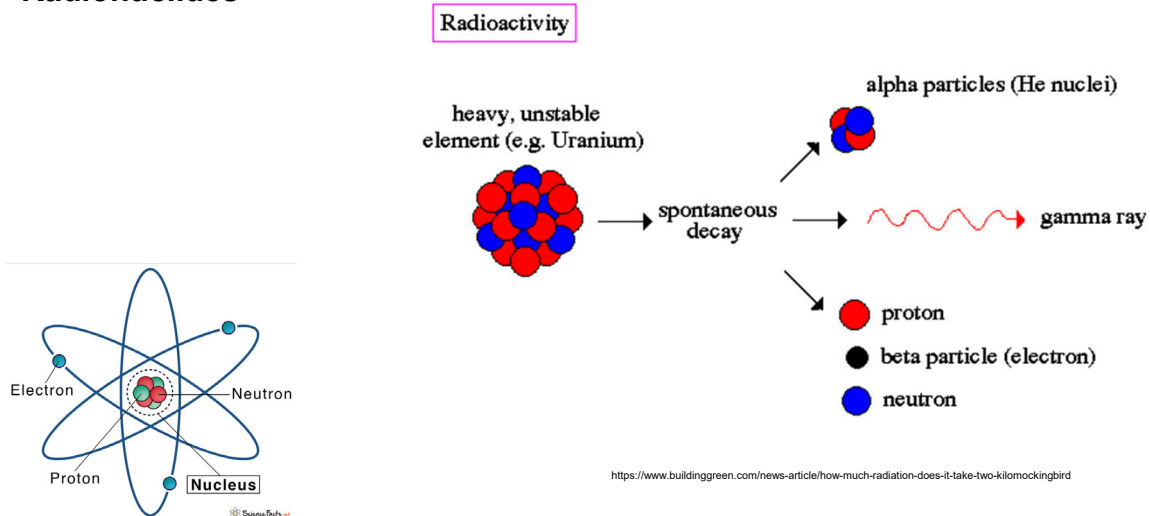


# QUESTIONS?




## PRELIMINARY WATER QUALITY RESULTS

### Radionuclides



**5. CA Water Boards Prop  
1 Round 3 Grant Proposal**

**United Water**  
CONSERVATION DISTRICT

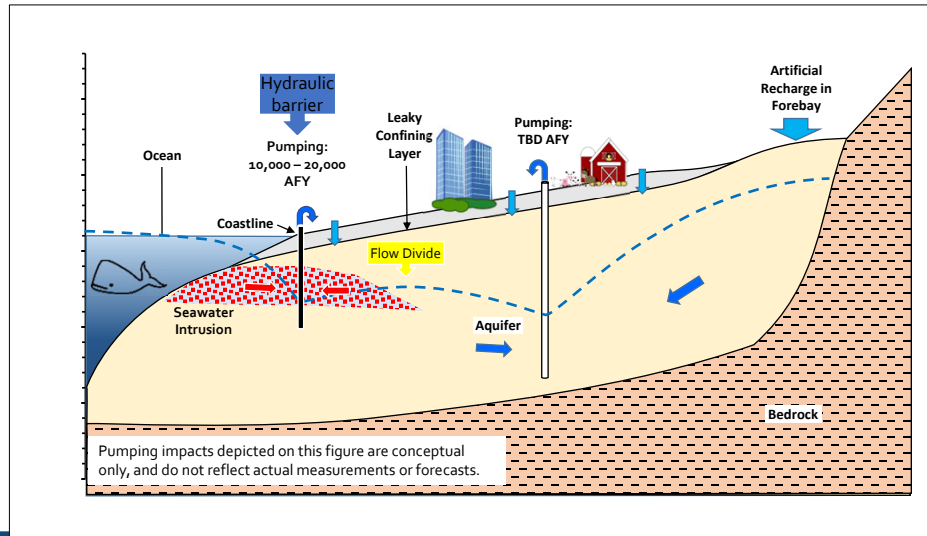


### Extraction Barrier Project Area



## Extraction Barrier Concept

Benefits- remove saline water from drinking water aquifers, no water intake structures

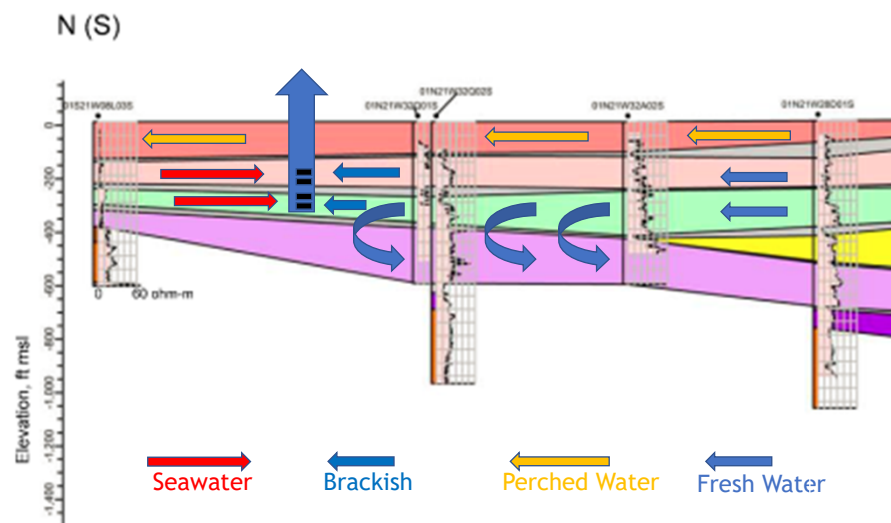


3

## Optimal Conceptual Flow with Project Section N-N' Detail

Model pumping rates in Oxnard aquifer that avoid significant vertical flow down from perched aquifer

Model Mugu aquifer pumping rates to draw, over time, fresh water over area of mergence with lower aquifers



4



## Water Board Support

- United submitted full Prop 1 Round 2 Planning Grant proposal in March 2019, prelim award notice in October, grant agreement executed in June 2021.
- The Round 2 grant funded improved modeling tools and project feasibility study, completed in December 2021.
- Technical Advisory Committee (TAC) helped review the work and advise on critical regulatory elements (FCGMA, DDW, Regional WQ Board, Water Boards, U.S. Navy).
- Feasibility study concluded that project was indeed feasible.

5

## Prop 1 Round 3 Implementation Grant

- Concept proposal submitted in September 2021
- In April 2022 United was invited to submit a full proposal
- Full proposal was completed and submitted in July 2022

*Phase 1 of the EBB Water project is being designed to implement an extraction barrier of modest scale and to answer some remaining questions related to project permitting, engineering, operation and scale.*

6

## Phase 1B Extraction Barrier

- Currently no UAS extraction wells exist in the project area, we need production wells to better assess:
  - Degree of connection between aquifers
  - Potential flow between aquifers, especially between the Semi-perched aquifer and the underlying Oxnard aquifer
  - Aquifer properties in the greater project area
  - Water quality representative of the full aquifer thickness
  - Stability of water quality parameters over time
- Additional monitoring wells are also planned for the Semi-perched and confined aquifers (SGM Grant, DWR via FCGMA)

7



## Phase 1B Project

Five Oxnard aquifer wells  
Two Mugu aquifer wells  
No treatment of extracted groundwater

Intended discharge location is at or near  
Laguna Road bridge (west arm of Mugu Lagoon)  
Alternative discharge is to Calleguas SMP

Target production is 3,500 AFY  
(2,170 gpm, 3.1 mgd, 4.8 cfs).

8

## Project Phasing

### Phase 1A (Exploration Phase)

- Feasibility Study (2019 SWRCB Prop 1 Round 2 Planning Grant)
- Design, CEQA, Permits
- Fieldwork (land and environmental surveying, geotech exploration)

### Phase 1B (Implementation Phase)

- Monitoring Wells (2022 DWR SGM Grant)
- Extraction Wells, Pipelines, and Point of Groundwater Discharge (2022 SWRCB Prop 1 Round 3 Implementation Grant - *award pending*)

### Phase 2 (Build-out Phase)

- Expanded extraction well field and monitoring wells
- Water treatment and brine disposal
- Treated water distribution to Navy and Oxnard Plain

9

## Continued Regulatory Engagement

- FCGMA, GSA for the Oxnard basin, regulates pumping in the basin and will also likely require monitoring and contingency plans for project operations
- Division of Drinking Water wants to confirm source water for eventual drinking water facility if free of organic contaminants and surface water influence
- Regional Water Quality Control Board
  - Regulates discharge from Phase 1 operations and brine
  - Helps regulate contaminant sites on NBVC Point Mugu
  - Interest in basin salt balance for TMDLs and Salt and Nutrient Management Plans
- Also potential for CA Coastal Commission and State Lands Commission involvement

10

## Grant Funding

- Concept proposal (2021 September) was for new monitoring wells and up to four production wells. Total budget was \$8.45 million with up to 50% grant match.
  - \$4.1 million for production wells
  - \$1.1 million for monitoring wells
  - \$1.7 million for well infrastructure and discharge
  - \$1.2 million for design and permitting
  - Other related project and administrative costs
- United's engineers and hydrogeologists later concluded that a larger Phase 1 project is preferred

11

## Final Proposal July 2022

- United's final proposal was for a larger project, totaling \$18.6 million for construction of 7 extraction wells and control systems, discharge pipes, and funding for related design, permitting, sampling and reporting activities
- The Prop 1 Round 3 funding request was for \$8.4 million, or 46% of the estimated project cost
- Water Boards staff indicated that funding requests can be larger than what was in the concept proposals, but offered no assurance that funding will be increased
- Intent is to build and operate this initial phase of the EBB Water project before major additional investments are made for well field expansion, water treatment facilities and water distribution

12

## 6. Extraction Barrier and Brackish Water Phase 1 Project Progress and Upcoming Work

Water Resources Committee Meeting  
September 6, 2022



1

### Phase 1 Project

#### **Phase 1A** **Exploration and Development Phase**

- Field Exploration Activities (Planning, Design and Permitting Efforts)
- [District's Right-of-Access through License Agreement 1A \(2022-2025\)](#)

#### **Phase 1B** **Implementation Phase**

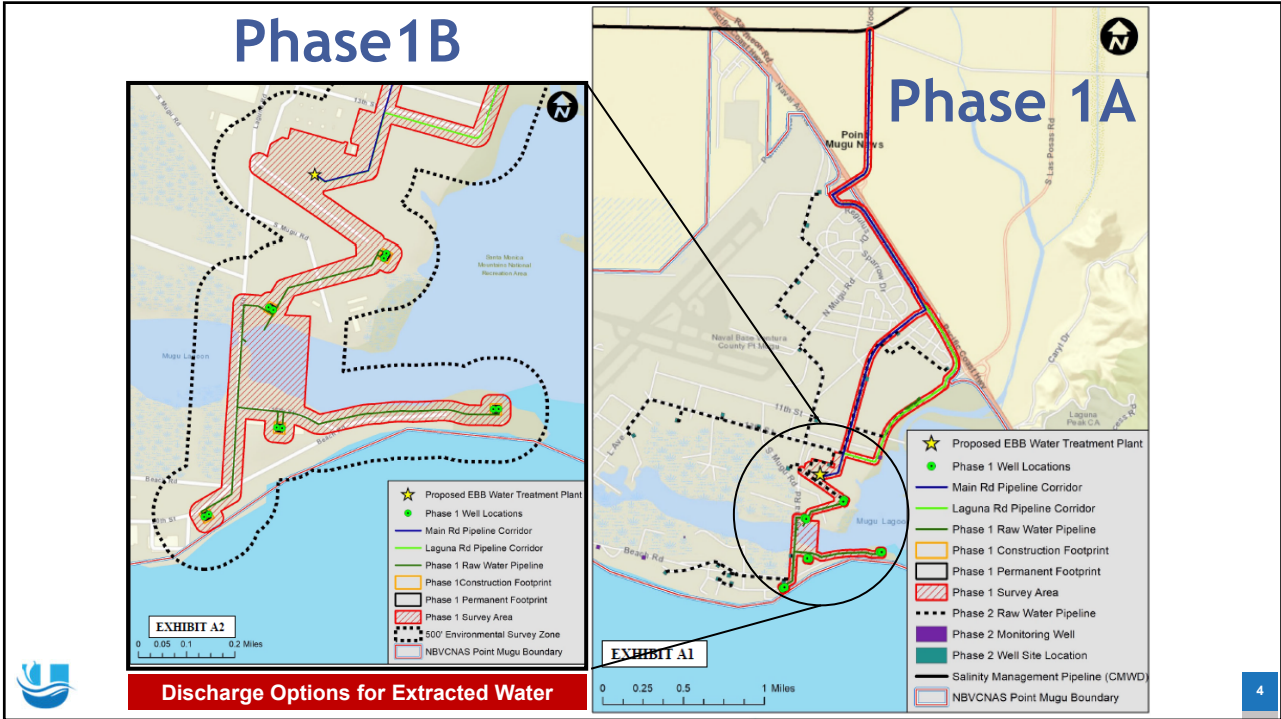
- Construction of Seven (7) Groundwater Extraction Wells, Installation of up to Six (6) Monitoring Well Clusters, and Discharge of Extracted Water



2

# Phase 1 A Scope of Work

- ❑ **Task 1 – Site Access**
  - Right of Access (District's Staff, Consultants and Contractors) through Multi-day Defense Biometric Identification System (DBIS)
- ❑ **Task 2 – Land Surveying**
  - Topographic Mapping (LiDAR, Aerial Surveys, Bathymetric Surveys, others)
  - Collection of Above and Below Ground Utility Features
  - Potholing and Utility Markings
- ❑ **Task 3 – Geotechnical Exploration**
  - Exploration Borings
  - Soil Sampling and Test Pits Excavation
- ❑ **Task 4 – Environmental Surveying**
  - Environmental Surveying in the 500-ft Environmental Survey Zone
  - Information Gathering to Support Permitting Efforts (CEQA and NEPA) for Future Phases
  - Site-specific Biological Surveys
  - Wetland Delineation/Confirmation
  - Cultural and Paleontological Pedestrian Field Surveys
  - Additional Surveys, as needed

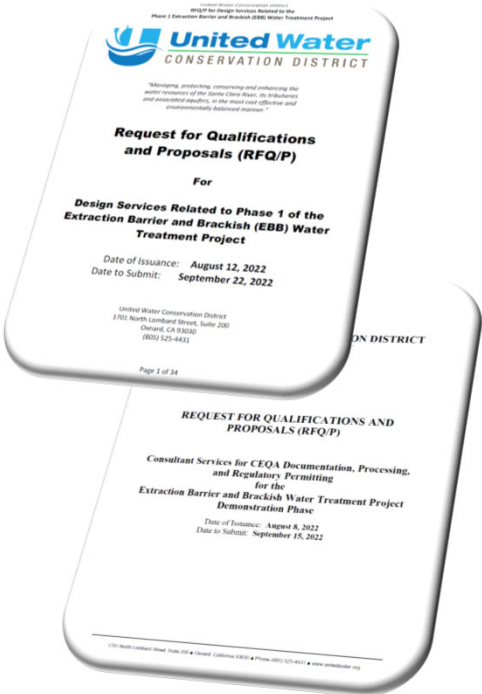




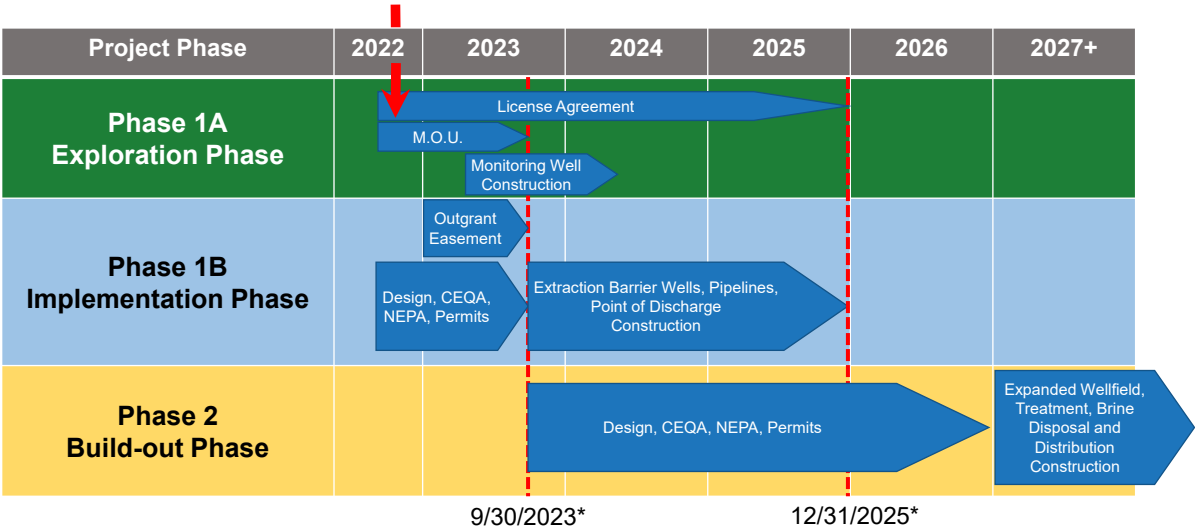
# Phase 1 Project

## Requests for Qualifications/ Proposals:

- ☐ CEQA and Permitting Services
  - Released on Aug 8
  - Proposals due on Sept 15
- ☐ Design Services
  - Released on Aug 12
  - Proposals due on Sept 22



# Project Timeline



\* As set by SWRCB Prop 1 GWGP Round 3 Grant (pending award announcement)

# Phase 1 Project Estimated Budget

Project Activity	Phase 1A	Phase 1B
	FY22-23	FY23-24, FY 24-25, FY25-26
Project Administration	\$288,000	\$1,667,000
Planning/ Design/ Engineering	\$1,165,000	\$1,442,000
Env. Documentations/ Permits	\$600,000	\$1,261,000
Construction/ Implementation	-	\$14,195,000
Total (Estimate)	\$2,053,000	\$18,565,000*

- \* SWRCB Prop 1 R3 Grant funding request is \$8.44 million.
- \* Installation costs of monitoring well clusters is not included in the project cost.
- \* SGM grant award of \$1.3 million partially covers the cost of monitoring well clusters.





### **Staff Report**

**To:** Water Resources Committee

**Through:** Mauricio E. Guardado, Jr., General Manager

**From:** Maryam Bral, Chief Engineer  
Dan Detmer, Water Resources Manager

**Date:** October 20, 2022 (November 1, 2022 meeting)

**Agenda Item:** 6. Monthly Water Resources Department Report and update on activities of local Groundwater Sustainability Agencies (GSAs)  
**Information Item**

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#### **Staff Recommendation:**

The Committee will receive a summary report on various Water Resources Department activities for the month of October 2022, including a summary of the monthly activities of the three local Groundwater Sustainability Agencies (Fox Canyon Groundwater Management Agency, Fillmore and Piru Basins GSA, and Mound Basin GSA), for which District board members serve as member directors, and the Santa Paula basin (adjudicated) Technical Advisory Committee, for which District staff serve as members. Staff may also report on state-wide issues related to the implementation of the Sustainable Groundwater Management Act (SGMA) of 2014.

#### **Staff Activities**

In addition to the Department's routine, ongoing groundwater monitoring and reporting programs and its support of Groundwater Sustainability Agencies (summarized below), notable efforts and activities conducted by staff during the past month included the following:

- Groundwater Modeling:
    - Staff continue to develop a break-out Perched Aquifer Model (PAM) for groundwater flow in the unconfined Semi-perched aquifer in the EBB Water Project study area. The break-out model will allow higher resolution (both horizontally and vertically) forecasting of groundwater flow paths and the inland extent of the natural seawater density wedge at the base of the aquifer near the coastline.
    - Staff are applying MODFLOW's "Subsidence package" to the District's existing groundwater flow model of the OPV basins to forecast potential occurrence and magnitude of land subsidence during the model calibration period (1985-2019) and under future assumed pumping scenarios and basin conditions.
-

**Agenda Item: 6. Monthly Water Resources Department Report and update on Activities of local Groundwater Sustainability Agencies (GSAs)**  
**Information Item**

Page 2

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- Staff continue to model the potential effectiveness of various pumping-optimization projects and strategies in the Oxnard and Pleasant Valley (OPV) basins to mitigate seawater intrusion and help in achieving sustainable yield.
- Staff are assisting the Environmental Services and Engineering Departments in evaluating fish passage design modifications under consideration for United's Habitat Conservation Plan (HCP), including assisting with planning of physical modeling efforts at the Bureau of Reclamation's facility in Denver and at the University of Iowa.
- Staff are assisting the Engineering Department in evaluating the feasibility and water resources impacts of releasing water from Lake Piru during the winter season and lowering reservoir levels as Interim Risk Reduction Measure prior to the beginning of the construction of the outlet works.
- Staff continue to assist with planning and coordination for the purchase and release of Table A water and supplemental State Water Project (SWP) water acquired from other SWP contractors.
- Staff continue to collaborate with the Engineering Department to develop, design, and implement a portfolio of new or improved water-supply projects within the District's service area. The collaborative effort is currently focused on refining the conceptual design of water-supply projects and new conveyance systems so that they produce the best value in terms of sustainable yield for the groundwater basins in United's service area.
  - Staff continue to support selection of site locations and design specifications for extraction and monitoring wells to be included as Phase 1 of the EBB Water project.
  - Staff submitted a proposal for a Prop 1, Round 3, grant to develop Phase 1B of the EBB Water project on July 15. United proposed construction of extraction wells and control systems, and discharge pipes and related design, permitting, sampling and reporting to build the initial phase of the EBB Water project before additional investments are made for water treatment and distribution. The Phase 1B project grant proposal cost is estimated at \$18.6 million and the requested funding is \$8.4 million or 46% of the estimated project cost.
  - Staff completed an internal-review draft open-file report (OFR) describing the methods and results for a modeling effort to optimize sustainability and environmental benefits of water-supply and conveyance infrastructure projects currently being designed and/or implemented by United and other project proponents. The combination of projects to be evaluated was initially proposed by the FCGMA's OPV Stakeholders *ad hoc* Projects Committee and was updated with information or suggestions provided by the FCGMA, the OPV Stakeholders group, and project proponents (including United's Engineering Department) as the evaluation proceeded. Senior staff are currently reviewing this draft OFR.
  - Staff completed an internal-review draft OFR summarizing the development and effects of past and current efforts to define and achieve safe or sustainable yield in the OPV basins, to understand how those efforts might be integrated with future projects

**Agenda Item: 6. Monthly Water Resources Department Report and update on Activities of local Groundwater Sustainability Agencies (GSAs)**  
**Information Item**

Page 3

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and regulations intended to improve groundwater conditions in the basins. Senior staff are currently reviewing this draft OFR.

**Outreach and Educational Activities**

- Supervising Hydrogeologist John Lindquist attended a meeting of the Oxnard Union High School District's "Ag/Natural Resources/Energy & Utilities Advisory Committee" on September 27.
- Staff attended a free webinar hosted by DWR on October 17 regarding development of strategies to respond to future drought/flood cycles in California.
- Staff attended a free webinar hosted by DWR on October 27 regarding the planned 2023 California Water Plan Update.

**Fox Canyon Groundwater Management Agency (FCGMA)**

Staff continue to monitor and, where appropriate, participate in the FCGMA's groundwater sustainability planning and implementation efforts in the Oxnard, Pleasant Valley, and Las Posas Valley basins. United staff continue to meet periodically with FCGMA staff and other stakeholders to develop analyses of benefits and impacts of water-supply projects and different variations of those projects in support of developing a sustainable, resilient water-supply portfolio for the service areas of both agencies.

A sub-agreement between United and the FCGMA regarding terms and conditions for the Sustainable Groundwater Management (SGM) Grant (a CA Department of Water Resources [DWR] grant for critically-over drafted basins and administered by the FCGMA) has been finalized. This sub-agreement includes funding of approximately \$6.48 million for the following United projects: Ferro-Rose Artificial Recharge conveyance construction, PTP Recycled Water Connection - Laguna Road pipeline construction, and Extraction Barrier and Brackish (EBB) Water project monitoring-well installation and sampling.

United staff also attended and, where appropriate, contributed to, FCGMA Board and Committee meetings, as follows:

*Board of Directors meetings* – The FCGMA Board held a regular meeting September 28. Notable topics included:

- The FCGMA mission statement was reviewed for potential revision or update. After discussion, the Board requested the Executive Committee to develop recommendations for revising the mission statement for future consideration by the Board.
- The Board adopted Resolution No. 2022-05, which will increase the FCGMA's groundwater sustainability fees from \$14.00 to \$29.00 per acre-foot (AF) beginning October 1, 2022, bringing total FCGMA extraction fees to \$55.00 per AF.
- The next regular FCGMA Board meeting is scheduled for October 26, at 1:30 pm.

**Agenda Item: 6. Monthly Water Resources Department Report and update on Activities of local Groundwater Sustainability Agencies (GSAs)**  
**Information Item**

Page 4

---

*Operations Committee meetings* – An Operations Committee special meeting was held on October 6. The primary focus of the meeting was to begin development of criteria to rank and prioritize water-supply and infrastructure projects for funding and inclusion in the OPV groundwater sustainability plans. The Committee directed staff to revise the draft checklist of project ranking criteria in response to stakeholder and Committee member comments and return for further discussion on November 7.

*Executive Committee meetings* – None were held last month.

*Fiscal Committee meetings* – None were held last month.

*OPV Variance Review Committee meeting* – None were held last month.

*Ad Hoc OPV Projects Committee meetings* – None were held last month.

**Fillmore and Piru Basins Groundwater Sustainability Agency (FPBGSA)**

Staff continue to participate in FPBGSA activities supporting SGMA compliance and GSP preparation for the Fillmore and Piru basins, as follows:

*Board of Directors meetings* – The FPBGSA held a special board meeting on September 29. Notable topics included:

- The Board received a presentation from Santa Clarita Valley Sanitation District regarding its Chloride Compliance Project at the Saugus and Valencia Water Reclamation Plants. The presentation included information regarding the ultraviolet and advanced water treatment facilities being constructed at the Plants for chloride removal. The likely time schedule for startup of these facilities is spring 2023.
- A presentation from Daniel B. Stephens and Associates reviewing the Projects and Management Actions that were included in the Fillmore and Piru Basins GSPs. Discussion included consideration of what potential projects might be included in the upcoming DWR SGM Grant Program's SGMA Implementation Round 2 grant solicitation.
- The Member Directors confirmed Carole Fornoff as the Piru Basin Pumpers Stakeholder Director, as nominated by the Piru Basin Pumpers Association.

The next regular FPBGSA Board meeting is scheduled for October 20, at 5:00 pm. The meeting will be held after the submission of this staff report, and therefore a summary will be included in next month's staff report. Notable agenda items include:

- The Board will receive a presentation from Legal counsel, Daniel B. Stephens and Associates, and staff regarding the development of the Agency's Well Permitting Review Process.
- The Board will receive a presentation from Daniel B. Stephens and Associates on the Agency's proposed Projects and Management Actions from the Fillmore and Piru Basins Groundwater Sustainability Plans and on the proposed projects, studies, and programs for inclusion in a Sustainable Groundwater Management Grant Program grant application.



**Agenda Item: 6. Monthly Water Resources Department Report and update on Activities of local Groundwater Sustainability Agencies (GSAs)**  
**Information Item**

Page 5

---

*GSP implementation* – Staff helped coordinate land access agreements with area landowners in opportune locations for new monitoring wells funded by a DWR sustainable groundwater planning grant. In recent months staff put out a request for proposal for well drilling services, organized a site visit with three potential contractors in attendance, and following consideration of bids the Board awarded the Groundwater Monitoring Wells Project construction to BC2 Environmental, LLC, for a total of \$441,485 and authorized the execution of the construction agreement. Construction activities began on September 26 for the shallow monitoring wells at Cienega Spring Restoration Project and East Grove Sites and remained underway in late October.

*Data Resources* - A web-based data management and mapping system that includes well construction information and available water level and water quality records for wells within the Piru and Fillmore basins remains available on the agency website, as are numerous technical references relating to the basins and development of the GSPs. Staff recently shared spring water level records with agency consultant DBS&A for formatting and upload to the agency website and to DWR.

**Mound Basin Groundwater Sustainability Agency (MBGSA)**

Staff continue to participate in MBGSA activities supporting SGMA compliance and GSP implementation for the Mound basin, as follows:

*Board of Directors meetings* – The MBGSA Board held a special meeting on October 6. The focus of the meeting was Resolution 2022-08, the Groundwater Well Consistency Policy for Replacement Groundwater Wells and Well Alterations. The Resolution was adopted by the Board, requiring an applicant submitting a permit application for the construction of a replacement well, or the alteration of an existing well within the Agency’s boundaries, to complete the Groundwater Well Construction Acknowledgement form.

The MBGSA held a regular Board meeting on October 20. Notable topics included:

- The Board received the year-end budget report for fiscal year 2021-2022.
- The Board reviewed the proposed 2023 Regular Board Meeting Schedule for potential revision or update. After discussion, the Board decided to revise the schedule and asked for additional time to develop a schedule that was agreeable to all Directors.
- The Board approved Intera, Inc. Work Order No. 10 for preparation of the GSP water year 2021/2022 annual report for an amount not to exceed \$35,456 and \$3,500 in contingency to be authorized at the discretion of the Executive Director (\$38,956 total authorization).

*GSP implementation* – Staff provide the MBGSA’s Executive Director and consultants various groundwater level and quality data periodically, as requested. Staff are also monitoring pressure transducers to monitor groundwater levels at selected wells in support of data collection efforts being conducted in support of the Mound Basin GSP.

**Agenda Item: 6. Monthly Water Resources Department Report and update on Activities of local Groundwater Sustainability Agencies (GSAs)**  
**Information Item**

Page 6

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**Santa Paula Basin Technical Advisory Committee (TAC)**

Staff continue to participate in the Santa Paula basin TAC in support of the Santa Paula Basin Judgment and in conformance with SGMA reporting requirements for adjudicated basins, as follows:

- Staff are preparing a draft version of the Santa Paula Basin Annual Report for 2021.