UPPER VENTURA RIVER GROUNDWATER AGENCY MINUTES OF REGULAR MEETING FEBRUARY 11, 2021

The Board meeting was held via teleconference, in accordance with California Executive Order N-25-20. Directors present were Bruce Kuebler, Larry Rose, Emily Ayala, Susan Rungren, Angelo Spandrio, Glenn Shephard, and Chair Diana Engle (arrived at 1:11 pm). Also present: Executive Director Bryan Bondy, Agency Counsel Keith Lemieux and administrative assistant Maureen Tucker.

ON-LINE OR TELECONFERENCE:

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https://zoom.us/j/92914179188?pwd=bHMyb1VQL3V4L21VTExXOWJYbURtdz09 Meeting ID: 929 1417 9188

Passcode: 214624

1) CALL TO ORDER

Vice Chair Kuebler called the meeting to order at 1:03 p.m.

Executive Director Bondy noted that Chair Engle will be approximately 10 minutes late.

2) PLEDGE OF ALLEGIANCE

Vice Chair Kuebler led the Pledge of Allegiance.

3) ROLL CALL

Executive Director Bondy called roll.

Directors present: Bruce Kuebler, Larry Rose, Susan Rungren, Angelo Spandrio, Glenn

Shephard, Emily Ayala

Directors absent: Diana Engle

Public: Burt Handy and Steve Slack

4) APPROVAL OF AGENDA

Vice Chair Kuebler asked if there are any proposed changes to the agenda. No changes were requested.

Director Rose moved to approve the agenda. Director Ayala seconded the motion.

Roll Call Vote: B. Kuebler – Y L. Rose – Y E. Ayala - Y

S. Rungren – Y G. Shephard – Y A. Spandrio – Y

Absent: D. Engle

Noes: None.

5) PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA

Vice Chair Kuebler asked if there were any public comments on items not appearing on the agenda. No public comments were offered.

6) CONSENT CALENDAR

- a. Approve Minutes from January 14, 2021 Regular Board Meeting
- b. Approve Financial Report for January 2021
- c. Fiscal Year 2019-2020 Financial Statement Audit

Director Rose moved to approve the consent calendar. Director Rungren seconded the motion.

Roll Call Vote: B. Kuebler – Y L. Rose – Y E. Ayala - Y

S. Rungren – Y G. Shephard – Y A. Spandrio – Y

Absent: D. Engle

Noes: None.

7) DIRECTORS ANNOUNCEMENTS

- a. Directors may provide oral reports on items not appearing on the agenda.
- b. Directors shall report time spent on cost-sharing eligible activities for the 2017 Proposition 1 Sustainable Groundwater Management Planning (SGWP) Grant.

Director Kuebler: He attended a recent adjudication status conference. The judge was critical of the State agencies for slow progress on their studies. No time to report.

Director Rungren: Ventura Water's water and wastewater rates study will be presented at the Water Commission meeting. No time.

Director Rose: He worked on access for monitoring wells (1 hour). He would like to update the Executive Director after the meeting.

Director Shephard: No report and no time.

Director Spandrio: No report and no time.

Director Ayala: Thanked her fellow directors for reappointment. Time: 1 ½ hours on stakeholder outreach and 1 hour on monitoring well access.

Director Engle arrived at 1:11 p.m. and stated that Meiners Oaks Water District is recruiting for a new general manager. No time.

8) EXECUTIVE DIRECTOR'S REPORT

Executive Director Bondy briefly reviewed the written staff report with the Board. He noted that grant invoice no. 6 payment was received on February 9, after the Board meeting packet was published. He thanked Director Kuebler for making the bank deposit.

Chair Engle asked for Director comments.

Director Ayala mentioned that a well owner expressed concerns about paying extraction fees at the beginning of the billing period. She suggested that the invoices be made more generic to help avoid this issue. The Board briefly discussed the matter. Executive Director Bondy said staff could make the change on the next batch of invoices.

Chair Engle asked for public comments. None were offered.

Executive Director Bryan Bondy reminded the Directors to complete their Form 700s.

9) ADMINISTRATIVE ITEMS

a. Fiscal Year 2021/2021 2nd Quarter Budget Report and Mid-Year Budget Modifications

Executive Director Bondy reviewed the staff report and recommended approval of the mid-year budget modifications. He added that the Ad Hoc Budget Committee favorably review the budget report and budget modifications.

Chair Engle asked for Director questions or comments. None were offered.

Director Spandrio moved to receive and file the second quarter budget report and approve the proposed mid-year budget modifications. Motion seconded by Director Shephard.

Chair Engle asked for public comments. None were offered.

Roll Call Vote: B. Kuebler – Y D. Engle – Y L. Rose – Y E. Ayala - Y S. Rungren – Y G. Shephard – Y A. Spandrio – Y

Noes: None.

Absent: None

b. Rincon Consultants Work Order No. 4 for CEQA Review of Monitoring Sites Included in the Wildlife Conservation Board Grant

Executive Director Bondy briefly reviewed the written staff report with the Board and recommended approval of the work order.

Chair Engle asked if the work order is included in the budget. Executive Director Bondy explained that this was part of the budget modification in the prior item.

Director Rungren moved to authorize the Executive Director to execute Rincon Consultants Work Order No. 4 for an amount not-to-exceed \$7,545 for a streamlined CEQA analysis and preparation of a NOE, including up to \$2,455 for potential unanticipated costs, to be authorized at the discretion of the Executive Director. Motion seconded by Director Rose.

No public comments.

 $Roll\ Call\ Vote: \qquad B.\ Kuebler-Y \quad D.\ Engle-Y \qquad L.\ Rose-Y \qquad E.\ Ayala-Y$

S. Rungren – Y G. Shephard – Y A. Spandrio – Y

Noes: None.

Absent: None

10) GSP ITEMS

a. Groundwater Sustainability Plan Update (Grant Category (d); Task 11: GSP Development and Preparation)

Executive Director Bondy briefly reviewed the written staff report with the Board and added that he is coordinating with Ojai Valley News for an article ahead of GSP Workshop No. 2. He also reminded the Directors that they must register for the workshop if they plan to attend.

Chair Engle asked for Director questions or comments.

Director Kuebler asked if the Department of Fish and Wildlife and Water Board are on the interested parties list. Executive Director Bondy replied yes and added that he has periodic coordination calls with staff from those agencies.

Director Engle asked if groundwater level monitoring would continue even though the monitoring period funded by the GSP grant has concluded. Executive Director Bondy said the Agency has budgeted for ongoing monitoring in its long-range budget.

Chair Engle asked for public comments. None were offered.

No motion.

b. Well Monitoring Network Annual Data Deliverable for Water Year 2019/2020 (Grant Category (b); Task 1)

Executive Director Bondy briefly summarized the staff report and recommended receiving and filing the Well Monitoring Network Annual Data Deliverable for Water Year 2019/2020. He added that this is last deliverable for the data gaps portion of the GSP grant.

Chair Engle asked for Director questions or comments. None were offered.

Chair Engle asked for public comments.

Burt Handy said there are several monitoring wells located at the Ojai "burn dump" site located near Highway 150 and the Ventura River. He wondered if those monitoring wells could be used. Executive Director Bondy said that site is overseen by the County of Ventura and wondered if Director Shephard could check with his staff. Directors Shephard said he could inquire.

Director Ayala moved to receive and file the annual data logger report, seconded by Director Rose.

Roll Call Vote: B. Kuebler – Y D. Engle – Y L. Rose – Y E. Ayala - Y S. Rungren – Y G. Shephard – Y A. Spandrio – Y

Noes: None.

Absent: None.

c. Rincon Consultants Work Order No. 1 Proposed Budget Increase (Grant Category (a): Grant Administration)

Executive Director Bondy briefly summarized the staff report and recommended approval of the work order budget increase for Rincon Consultants to assist with GSP development.

Chair Engle asked for Director questions or comments.

Director Ayala asked why Kear Groundwater is no longer being used to help prepare the GSP. Executive Director Bondy explained that there have been work performance issues and Kear Groundwater does not have the biological expertise needed to support certain aspects of the GSP.

Chair Engle noted that she is familiar with Rincon Consultants and said they have staff who work on TMDL monitoring in the Basin. Director Shephard added that the Rincon Consultants has assisted the County with several projects. Executive Director Bondy added that Rincon Consultants helps Casitas MWD with permitting issues.

Chair Engle asked if the requested budget increase will be sufficient. Executive Director Bondy replied that he is hopeful that it will be and noted that he is working closely with Rincon Consultants staff to stay focused.

Director Kuebler asked when chapters of the GSP would be release for review. Executive Director Bondy replied that the basin setting section was released in mid-2020 for review and has been available on the website. He added that the staff reports on GSP topics and the recently

published water quality white paper should be considered draft GSP content, as these documents will relied upon to prepare various GSP sections.

Chair Engle asked for public comments. None were offered.

Director Kuebler moved to authorize the Executive Director to increase the non-to-exceed budget for Rincon Consultants Work Order No. 1 to \$77,500. Motion seconded by Director Ayala.

Roll Call Vote: B. Kuebler -Y D. Engle -Y L. Rose -Y E. Ayala -Y

S. Rungren – Y G. Shephard – Y A. Spandrio - Y

Noes: None.

Absent: None.

d. Groundwater Model Update (Grant Category (d); Task 11; GSP Development and Preparation)

Executive Director Bondy introduced the item and provided an overview describing what numerical groundwater models are, why a numerical model was developed for the GSP, and the overall process for developing a numerical model. He then turned the presentation over to Abhishek Singh of Intera, Inc. who described the development of the UVRGA numerical model, including model construction and calibration. Executive Director closed the presentation by discussing next steps for the numerical model and GSP development. (Note: The presentation slides are attached to the minutes)

Director Engle complemented staff and Intera on an outstanding presentation and asked whether septic leachate was considered as a source of recharge. Mr. Singh confirmed that septic flows are included in the model.

Chair Engle asked for Director comments.

Director Shephard stated that he concurred with Chair Engle and added that he especially appreciated the closing slide concerning next steps.

Director Kuebler thanked staff and Intera, Inc. for an excellent presentation. He asked whether the model calculates the velocity of groundwater flow. Executive Director Bondy said that velocities can be calculated from the model output, but that volumetric flow rates, groundwater levels, and groundwater - surface water interaction are what will be looked at for the GSP.

Director Ayala thanked staff and Intera Inc. for the presentation. She asked about irrigation demand variability throughout a given year. Mr. Singh explained that the model accounts for variable irrigation demand throughout the year. Director Ayala asked about the Matilija Dam removal and the resulting sediment load. Executive Director Bondy stated that effects of dam removal will be considered in the GSP implementation period as dam removal planning moves toward implementation.

Director Rose asked about faulting. Executive Director Bondy explained that the impact of faults is primarily on alluvium thickness.

Director Rungren thanked staff and Intera Inc. for the presentation. No questions.

Director Spandrio said the presentation was very informative. No questions.

Chair Engle asked for public comments.

Burt Handy asked how rain gauge data are factored into the model. Mr. Singh explained that data from the local rain gauges were used to help develop the recharge portion of the model.

COMMITTEE REPORTS

a. Ad Hoc Stakeholder Engagement Committee

Director Rose stated there is nothing to report at this time.

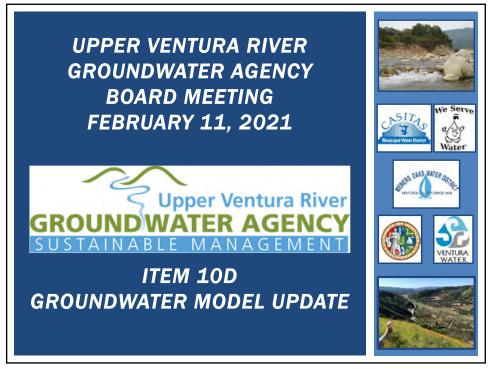
11) FUTURE AGENDA ITEMS

No items were identified.

12)	ADJOURNMENT -	The meeting	was adjourned	l at 3:55 p.m

Action:							_
Motion:			Second: _				
B.Kuebler	D.Engle	A.Spandrio	S.Rungren	G.Shephard	E.Avala	L.Rose	

Item 6a Attachment 3/2/2021



1

ITEM PURPOSE

- 1. Explain what models are and how they support planning
- 2. Describe UVRGA model construction and calibration results
- 3. Describe next steps for modeling to support GSP development

WHAT IS A NUMERICAL FLOW MODEL?

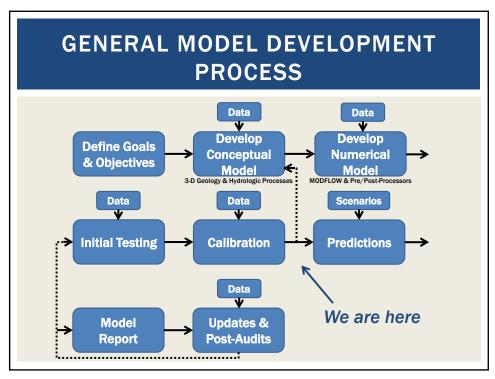
- Mathematical representation of the groundwater (GW) and surface water (SW) flow system
- Solves groundwater flow equation (GW level) and computes flows throughout the SW and GW systems
- A model is an approximation of the real system – only as good as the data upon which the model is based on

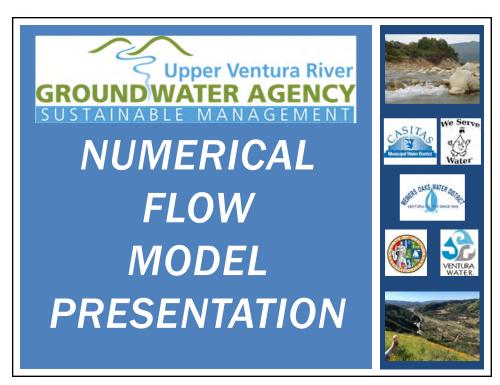


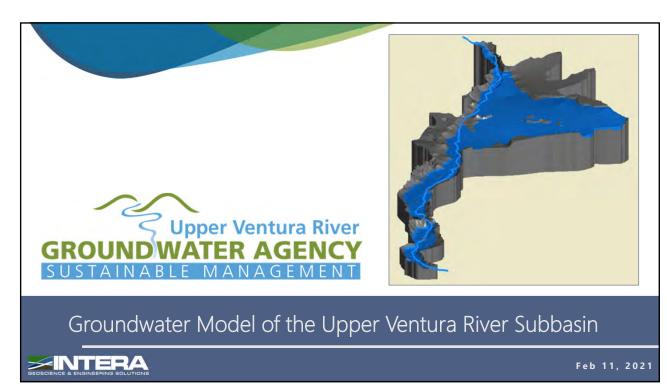
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WHY DEVELOP A NUMERICAL FLOW MODEL?

- ■To make predictions and test unknowns:
 - Develop estimates of future groundwater conditions based on different assumptions
 - Estimate benefits of different projects or management actions (if needed)
 - Test hypotheses in areas with limited or no data
- ■To comply with SGMA
 - **SGMA** requires model or "equally effective tool" for:
 - Water budgets
 - Quantification of interconnected surface water depletion



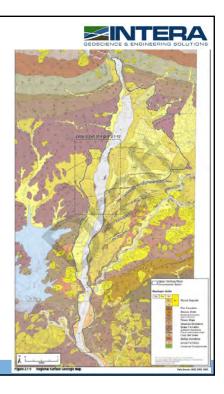




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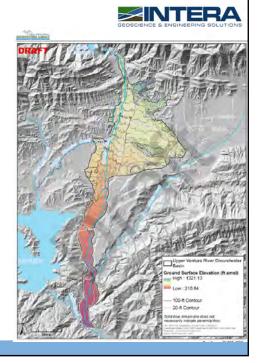
1 Hydrogeologic Conceptual Model

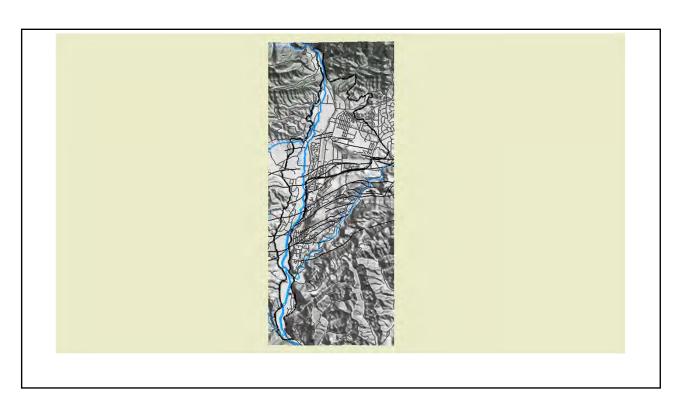
- Basin consists of fluvial-origin alluvium derived from weathering/erosion from surrounding mountain
- Younger alluvium deposited within the river floodplain
- Older alluvium underlies young alluvium (in some areas) and tends to be less permeable
- Bedrock consists of older marine deposits, underlies and bounds much of the river floodplain
 - Key driver of groundwater/surface-water interactions
- Oldest alluvial units (Ojai Conglomerate) present in much of Mira Monte Area.
 - Very low permeability and behaves more like bedrock.
- UVRGA basin boundary (modified in 2016) includes mapped (older and younger) alluvium units



2 Hydrogeologic Conceptual Model

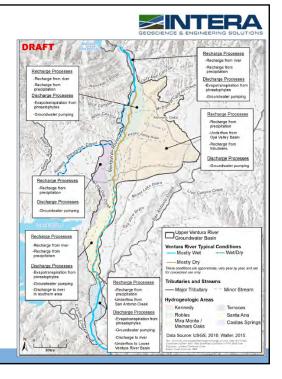
- Basin characterized by highly variable topography and stratigraphy
- Structure and hydrostratigraphy based on SWRCB surfaces
- Topography based on 10 ft Lidar data
- Refined stratigraphy based on review of well-boring logs, well construction records, surface geology maps, and published cross-sections





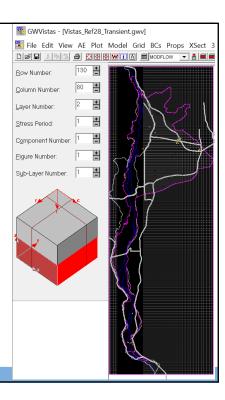
4 Key Recharge/Discharge Processes

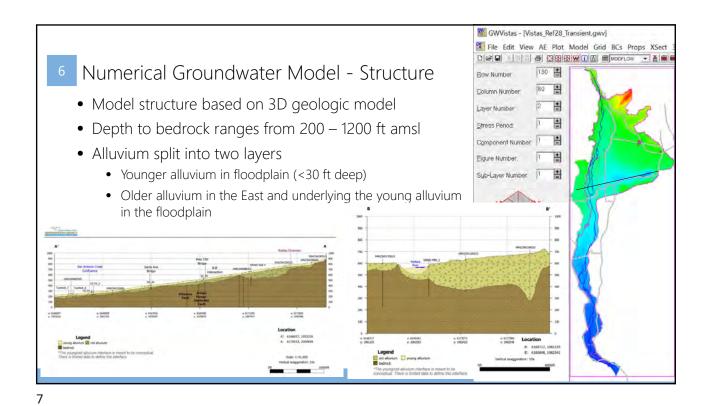
- Primary inflow/outflow processes:
 - Flow to/from river
 - Precipitation-based recharge
 - Agricultural and M&I return flows
 - Pumping
 - Evapotranspiration
 - Underflows
- Spatial and temporal variability



Numerical Groundwater Model

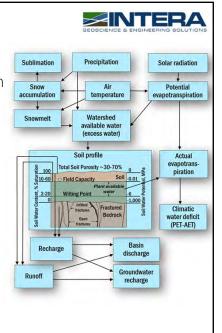
- Finite-Difference Groundwater Model developed in USGS code MODFLOW-NWT (Niswonger et al., 2011)
- Model simulates conditions from 2005 2019
 - Daily stress-periods: Nov Mar; Monthly: Apr Oct
- Model grid ranges from 50x100 to 100x100 ft
 - 505 rows, 213 columns, 2 layers
 - 215,130 total model grid cells
 - 46,180 active model grid cells
- Simulates groundwater/surface-water interaction using MODFLOW SFR (Prudic et al., 2004) module
- Model development and calibration consistent with ASTM standards (D5447, D5609, D5981)





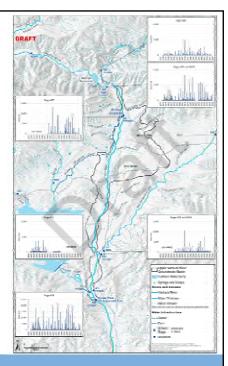
Numerical Groundwater Model - Recharge Monthly net recharge from precipitation calculated from

- Monthly net recharge from precipitation calculated from California Basin Characterization Model (BCM) developed by USGS (Flints et al, 2013)
 - Regional-scale model incorporates rainfall, run-off, evapotranspiration in the surficial system
- Agricultural and M&I return flows estimated based on available data on water use



8 Numerical Groundwater Model - Streamflow

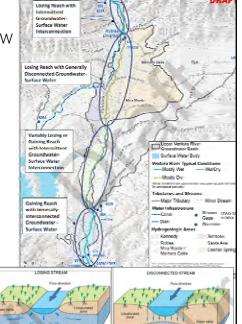
- River channel geometry based on areal imagery and Lidar data
 - Refined available NHD flowlines
 - Includes secondary braids
- Model routes gaged surface-flows from 602 (Matilija Creek) and 604 (North Fork Matilijia Creek)
- Robles Diversions based on daily data from CMWD
- Includes gaged tributary flows from San Antonio Creek and Coyote Creek
- Ungaged tributary flows estimated based on precipitation and size/characteristics of contributing catchment
- Outflow south of the Foster Park gage



C

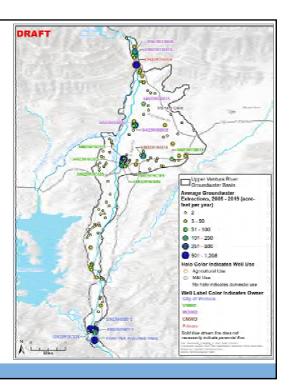
9 Numerical Groundwater Model - Streamflow

- River divided into 43 segments, with multiple reaches (total of 1462 reaches)
- SFR package routes surface-water along River channel
- Dynamically calculates GW/SW flows based on flow, stage, and width in River and groundwater table at model grid
- River can get disconnected from the watertable or dry up based on flow conditions and groundwater table
- Gaining/losing/intermittent reaches simulated by the model



Numerical Groundwater ModelPumping

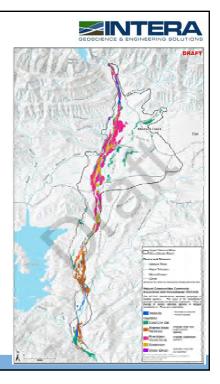
- Model simulates all known groundwater pumping and subsurface intakes between 2005 – 2019
- Data for pumping based on:
 - M&I pumping based on reports and data received from City of Ventura, VRWD, CMWD, and MOWD
 - Ag pumping based on estimates provided by UVRGA Executive Director and Adhoc Committee
- Subsurface dam modeled as a 'hydraulic flow barrier'
- Subsurface intake modeled as series of wells along lateral intake



11

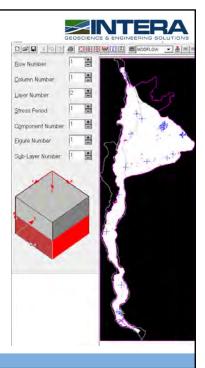
Numerical Groundwater Model

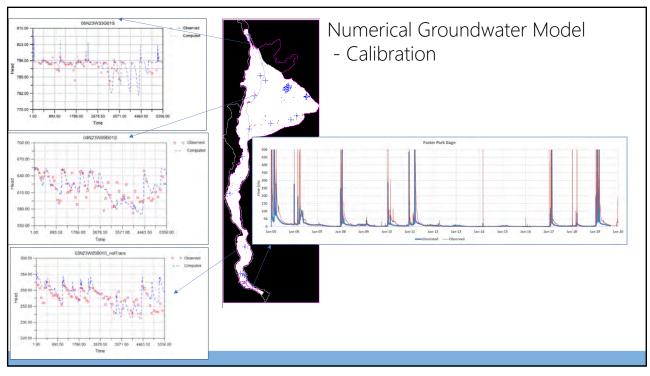
- Evapotranspiration
- Groundwater ET by riparian phreatophytes within the River floodplain modeled using the evapotranspiration (EVT) module
- Based on TNC GDE dataset
- Worked with Rincon to develop spatial distributed ET parameters based on type and density of vegetation
- Incorporated time-varying Arundo coverages provided by Rincon
- ET rates incorporate data from two CMWD ET stations



Numerical Groundwater Model

- Calibration
- Model calibrated to historical conditions (2005 2019)
- Groundwater model calibrated by varying aquifer hydraulic conductivities and storage properties to match observed groundwater levels
 - Root Mean Square Error = 2% of Range of Observations
 - Well within industry standard of 10%
- Surface-water flows calibrated by varying riverbed depth/conductance as well as groundwater parameters (conductivities and storage)
 - Match simulated and observed flows at Foster Park gauge and Robles Diversion gage
 - Match gaining/losing/intermittent reaches in different parts of the river







14 Model Use and Limitations

- Groundwater:
 - Model well calibrated to trends in groundwater elevations
 - Can be reliably used to estimate future trends in water levels, storage, and pumping impacts
 - Eastern area has limited area and complex structure additional data would improve predictive capabilities
- Surface-water
 - Model matches low flows during summer/fall (within 1 cfs uncertainty)
 - Simulated spring baseflows lower than measured
 - Error/data-gaps in gage records impact model calibration
- Depth to bedrock is a key driver for groundwater levels and SW/GW interactions additional geophysical/seismic data would help improve understanding
- Additional GW monitoring (near the river) and SW gages will reduce model uncertainty

15



15 Next Steps

- Finalize calibration and compile historical water budget information for GSP historical and "current" water budget requirements
- 50-year simulations for GSP future water budget projection requirements
- Simulations to evaluate depletion of interconnected surface water depletion sustainability indicator
- Model documentation TM for GSP



