



## Meeting Summary and Agenda

### East Contra Costa GSP Working Group and Communications Committee Meeting

**When:** Wednesday November 10, 2020, 10:00 a.m. to 11:30 a.m.

**Where:** Zoom Meeting: Meeting ID: 910 3755 0703, Passcode: 439246

**Attendees:** Antonio Martinez, Barb Dalgish, Bill Brewster, Debbie Cannon, Eric Brennan, Mike Davies, Nacho Mendoza, Nick Janes, Paul Seger, Priyanka Swadi, Ryan Hernandez, Vicki Kretsinger

#### ACTION ITEMS November 2020

ITEM	OWNER	DUE
1. Review Section 4 and return comments to LSCE	Tracy, Jill, Rick/Nick, Eric	Nov. 13th
2. Prepare an announcement that Section 4 is available for public comment. This will be run in the newspaper, send to 100 on the interested parties list, GSAs will post on their websites.	Ryan	ASAP
3. Investigate status of Byron Airport development status and email the group with the information.	Ryan	November
4. What does ECC need to do to continue FSS into next year. Reapply or request a continuation?	Debbie/Lisa	November

#### Meeting Summary

1. The GSP Schedule and GSP Sections Status were reviewed (see attached PowerPoint Presentation).
  - a. Section 3: Ryan will prepare an announcement that Section 4 is available for public comment, it will run in the local newspaper, sent to 100 emails on the interested parties list, and GSAs will post on their websites.
  - b. Section 4: GSA comments are due back to LSCE by November 13<sup>th</sup>.
2. Priyank provide a demonstration of the online visualization tool. The group provided comments on how to improve the site.:
  - a. Add text “Land Surface”, add well depth and well construction information.
  - b. Add narrative that explains the changes in the water levels over time (e.g., ECCID had no development 1959-1984, reduced irrigation in late 1980s)
  - c. For Representative Monitoring Wells (a select set) show the sustainability criteria on the graph (minimum threshold and measurable objective)
3. Barb described the groundwater/surface water flow model (see attached PowerPoint Presentation) for the ECC Subbasin and water budget components. The water budget components for the years 1997 to 2018 show that the subbasin change in storage is near zero, very stable through both wet and dry periods. Water budget components were also displayed by GSA. In addition to results from the model, supporting evidence for a stable subbasin are stable groundwater levels and lack of subsidence.
  - a. Barb asked for input on future changes to land use or water use through 2040. Paul mentioned:
    - i. Future development: Byron Airport may be developed and use groundwater in the future (Ryan will look into the status of this project).
    - ii. New Wetlands: Franks Track Futures and Knightsen Marsh may provide new wetlands in the future.

- Purpose:**

- ## Agenda

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#	Item	Presenter
3.	<b>Grants:</b> <ul style="list-style-type: none"> <li>Status of Prop 1 and 68 Grant funds. COB received payment for PR7. PR8: Submitted to DWR October 27<sup>th</sup>, 2020</li> </ul>	<b>Eric Debbie</b>
4.	<b>Other Project Updates</b> <ul style="list-style-type: none"> <li>DWR updates</li> <li>Next GSP Working Group Conference Call— Wed. December 9<sup>th</sup> 10-11:30am</li> </ul>	<b>Bill Brewster</b>

**ACTION ITEMS October 2020**

ITEM	OWNER	DUE
1. Review Section 4	GSAs	Nov. 6th
2. Check County Recorder's Office for grant deed encumbrance for DWR access to monitoring wells (BD-1,2,3) on RD 800.	Ryan	When office opens
3. A) Prepare FAQ sheet for review by GSAs (add to website) B) Send spreadsheet for GSA GSP activities quarterly.	Lisa Lisa	A: B: Jan, Ap, Jul, Oct.
4. New Monitoring Well Installation (part of Prop 68 grant available 7/1/2021) a. Review property owner contact b. LSCE will work with Antioch and TODB to locate favorable monitoring well locations How will new monitoring wells be maintained and monitored? MW maintenance and ongoing monitoring are not covered by grant funds.	Ryan/ LSCE Antioch/ TODB	Spring/Summer 2021



# East Contra Costa Subbasin GSP Development

Project Status, Online Visualization, Groundwater Model, Monitoring Networks



Working Group Meeting

Priyanka Swadi, Barb Dalgish, and  
Debbie Cannon  
LSCE

November 10, 2020

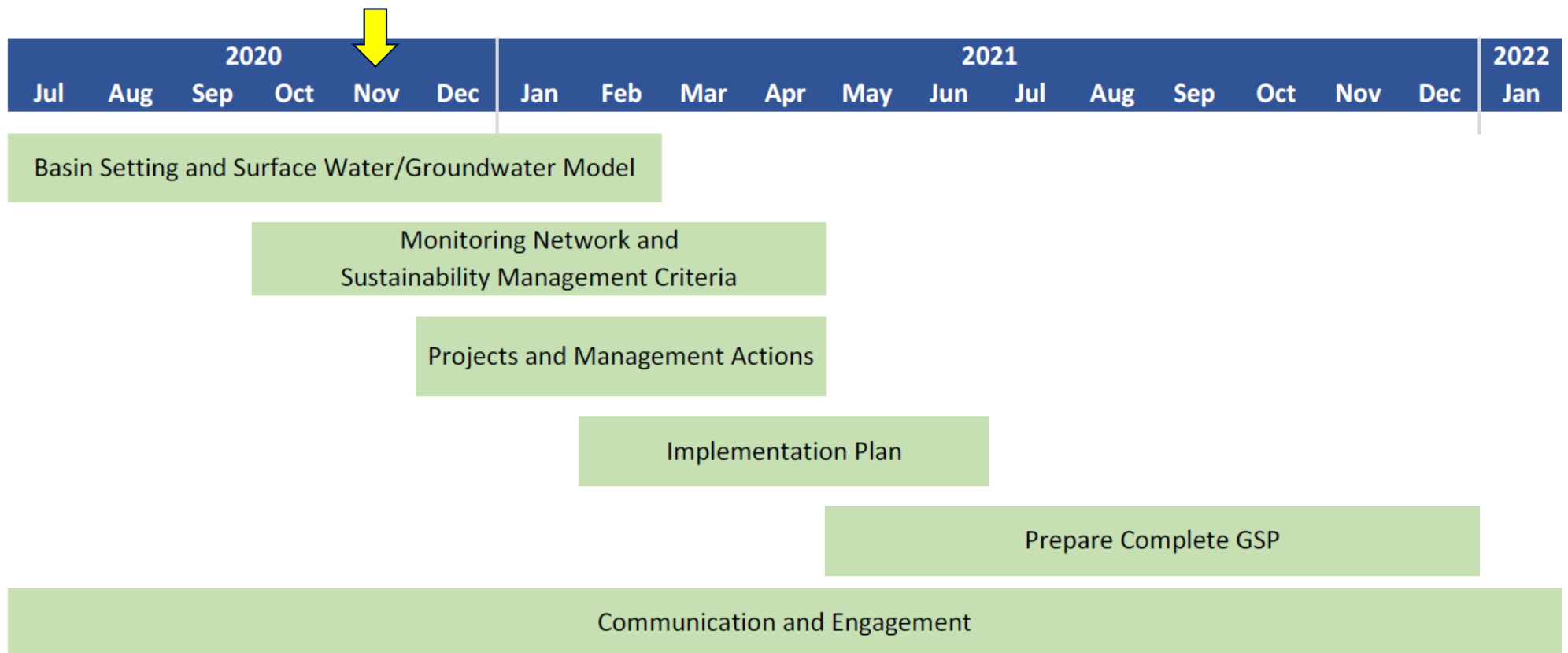


# Presentation Outline

- **Project Status - Debbie**
- **Online Visualization Tool – Priyanka Swadi**
- **Groundwater Model and Water Budgets – Barb Dalgish**
- **Grant Update - Eric**
- **DWR Update - Bill**



# Project Status: GSP Schedule



# Project Status: GSP Section Status

GSP Section	To GSAs for review	Post to ECC Website	Public Comment Period
1. Introduction to East Contra Costa GSP			
2. Plan Area		April 2020	April to July 2020
3. Basin Setting		October 2020	10/30/2020 to 12/30/2020
4. Historical, Current, and Projected Water Supply	Oct. 12-Nov. 6		
5. Water Budget	Dec. 2020	December 2020	12/2020 to 2/15/2021
6. Monitoring Network, Data Management System and Reporting			
7. Sustainable Management Criteria	Feb 2021	March 2021	3/2021 to 4/15/2021
8. Projects and Management Actions			
9. Plan Implementation			
10. References	April 2021	May 2020	5/15/2021 to 6/30/2021

# East Contra Costa Subbasin GSP-Online Visualization Tool

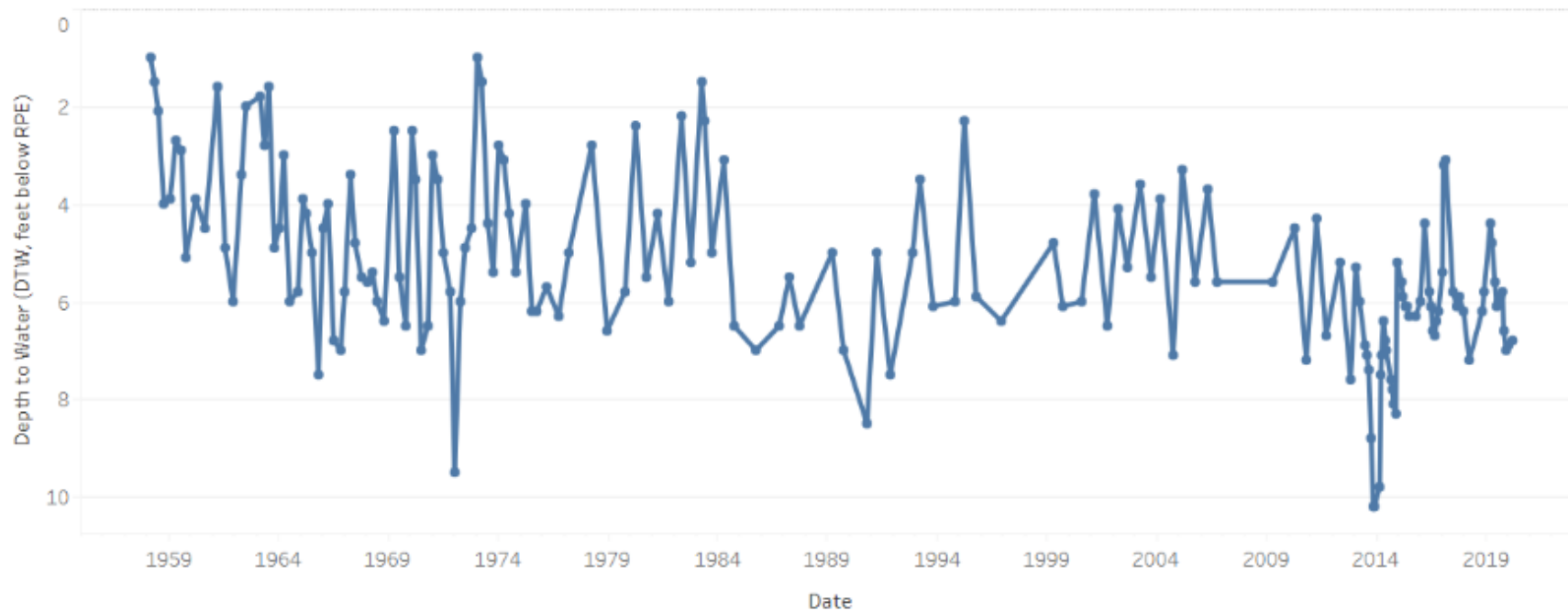
## Well Map



Date	DTW	RPE
2/28/1963 12:00:00 AM	1.80	13.30
5/16/1963 12:00:00 AM	2.80	13.30
7/24/1963 12:00:00 AM	1.60	13.30
10/25/1963 12:00:00 AM	4.90	13.30
1/17/1964 12:00:00 AM	4.50	13.30
3/29/1964 12:00:00 AM	3.00	13.30
7/5/1964 12:00:00 AM	6.00	13.30
11/19/1964 12:00:00 AM	5.80	13.30
2/11/1965 12:00:00 AM	3.90	13.30
4/5/1965 12:00:00 AM	4.20	13.30
7/13/1965 12:00:00 AM	5.00	13.30
10/28/1965 12:00:00 AM	7.50	13.30
1/13/1966 12:00:00 AM	4.50	13.30
4/2/1966 12:00:00 AM	1.80	13.30

WellName: 5-33

Reference Point Elevation (RPE) = 13.30 ft







# East Contra Costa Subbasin GSP Model and Water Budget

Nov 10, 2020 GSP Working Group Meeting

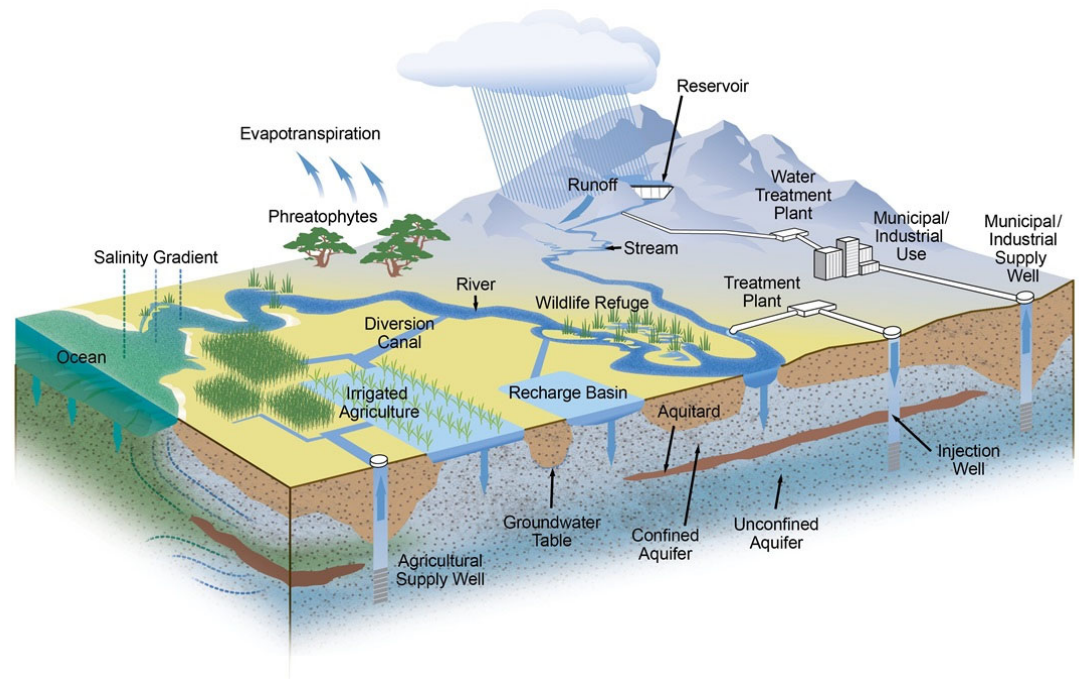
Barb Dalgish

Luhdorff & Scalmanini, Consulting Engineers



# ECC GSP Groundwater Model Topics

- Need for Groundwater Flow Model
- How to improve existing model data
- Water Budget Components
- Future Scenarios
- Management Actions/Projects



# Why do we need a Groundwater Flow Model for our Area?

## GSP Requirement Support

Management and  
Policy Decisions

Future Groundwater  
Response

Assist monitoring  
network and  
management actions

- Promote sustainable groundwater management and policy decisions based on knowledge of the past and present behavior of the surface and groundwater system.
- Determine the likely response to future changes and management actions, and the understanding of the uncertainty in those responses.
- Models can be used to estimate and reasonably bound future groundwater conditions to support decision-making about monitoring networks and management actions
- No single “true” model exists



# Why do we need a Groundwater Flow Model for our Area?

## GSP Requirement Support

Sustainability  
Indicators

Climate Change

Undesirable results &  
Sustainability Goal

- Constructing and calibrating the model improves the understanding of the processes that influence sustainability indicators.
- Model can simulate the change in climate conditions over the 50-year *planning and implementation horizon* required under SGMA
- Use the model to demonstrate that GSP implementation will avoid all undesirable results and the sustainability goal has been met

# How do we improve existing model data?

## Existing Groundwater Models

CVHM

C2VSim

Existing Models are  
Insufficient for ECC  
area

- USGS published the Central Valley Hydrologic Model in 2009, but the simulation ends in September 2003
- DWR published their valley-wide model, C2VSim, which ends its simulation period in September 2009
- DWR published a beta version of a refined C2VSim model in 2019, that simulated up to September 2015
- None of these models are current
- None of these models simulate important surface water features in the ECC area
- None of them have calibration points sufficient to our area



# How do we improve existing model data?

## Regional Model vs Local Model

Better Spatial  
Refinement

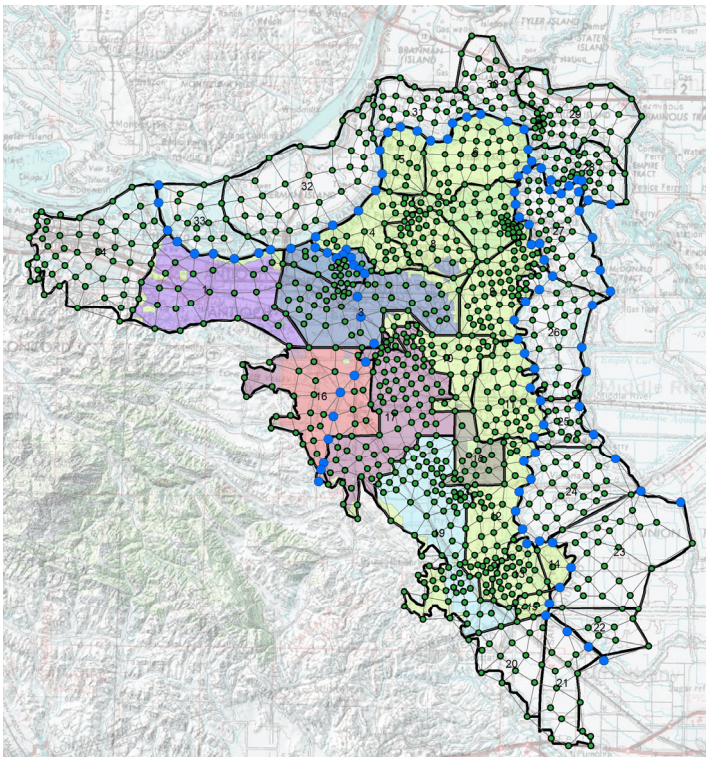
Appropriate Model  
Domain

More Surface Water  
Features

- Refine our local model with smaller grid spacing
  - C2VSimFG avg grid size 410 acres
  - CVHM grid size 640 acres (1-square mile grid)
  - ECC GSP Model avg grid size 170 acres
- Extend our model domain to include parts of neighboring subbasins (north, east, and south)
  - Help estimate sub-basin interflow
- Include important surface water features
  - San Joaquin River (the only river in C2VSim/CVHM)
  - Old River
  - Middle River
  - Marsh Creek
  - Delta Features

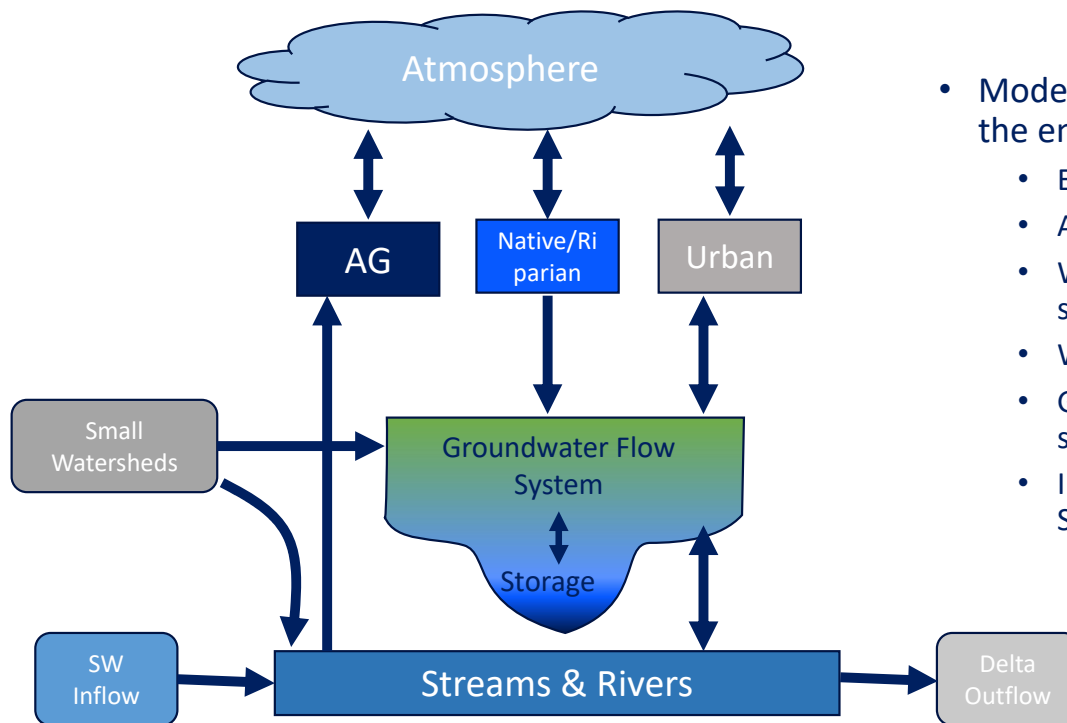
# How do we improve existing model data?

## Local Model Features



- Local pumping amounts
- Local surface water delivery amounts
- Water Balance Subregions within the basin
- Improvements to vertical model layering to match Hydrogeologic Conceptual Model (HCM)
- Improved calibration well network and surface water gages
- Calibration – groundwater level agreement

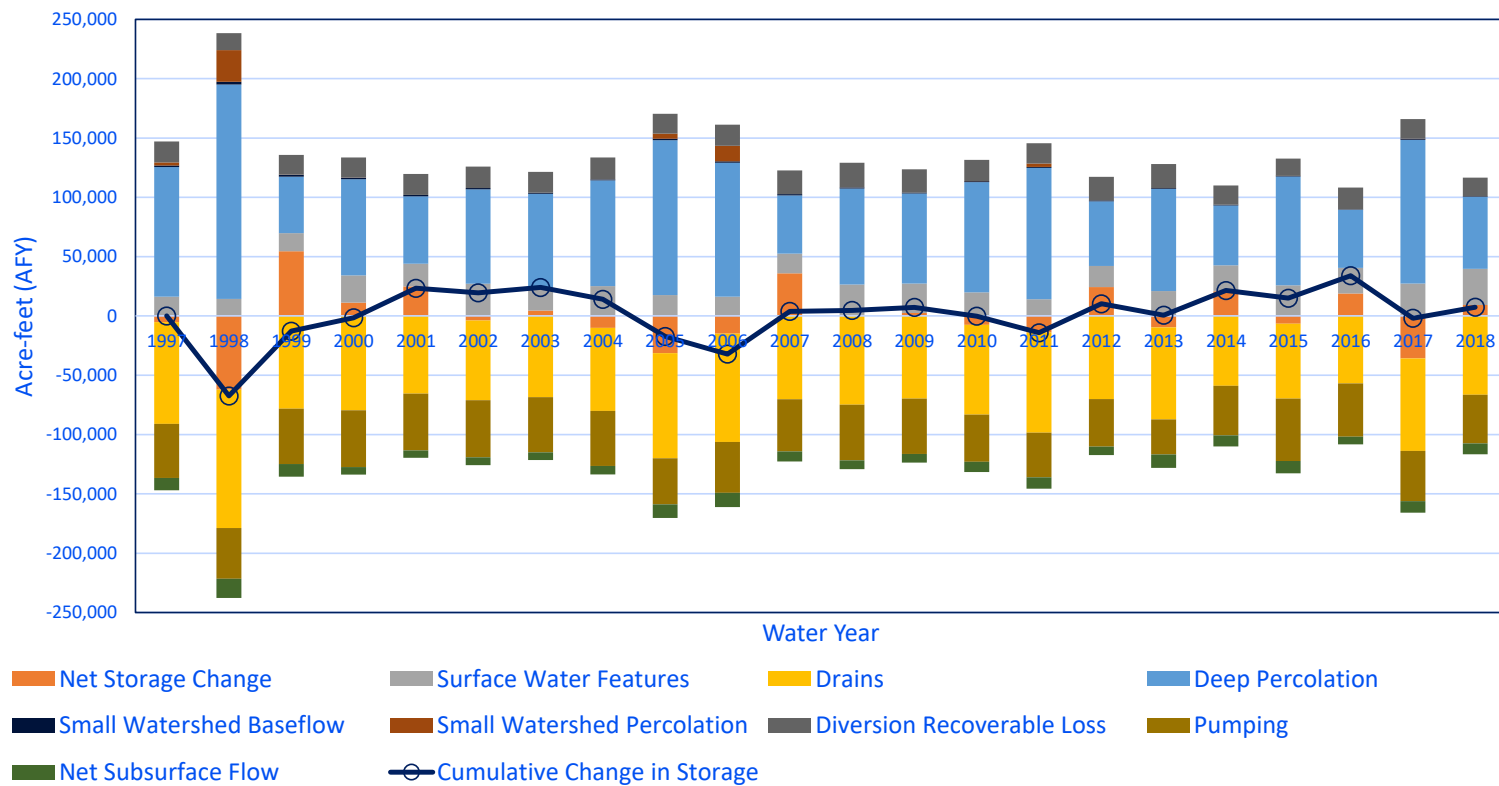
# Water Budget Components



- Model output for each Water Balance Subregion and for the entire ECC Subbasin
  - Evapotranspiration
  - Agricultural and Urban Water Use
  - Water Supply (precip, diversions, groundwater pumping, storage)
  - Water Use (recharge, runoff, evapotranspiration, storage)
  - Groundwater storage & cumulative change in groundwater storage
  - Inflows & Outflows (Recharge, Boundary Flows, Streams, Storage, Pumping)

# Water Budget Components Entire Subbasin

ECC Subbasin Water Budget (Water Years 1997-2018)





# Water Budget Components by GSA

## Inflows

- Deep Percolation
- Surface Water Leakage
- Small Watersheds (Coast Range Mtn front recharge)
- Diversion Recoverable Loss

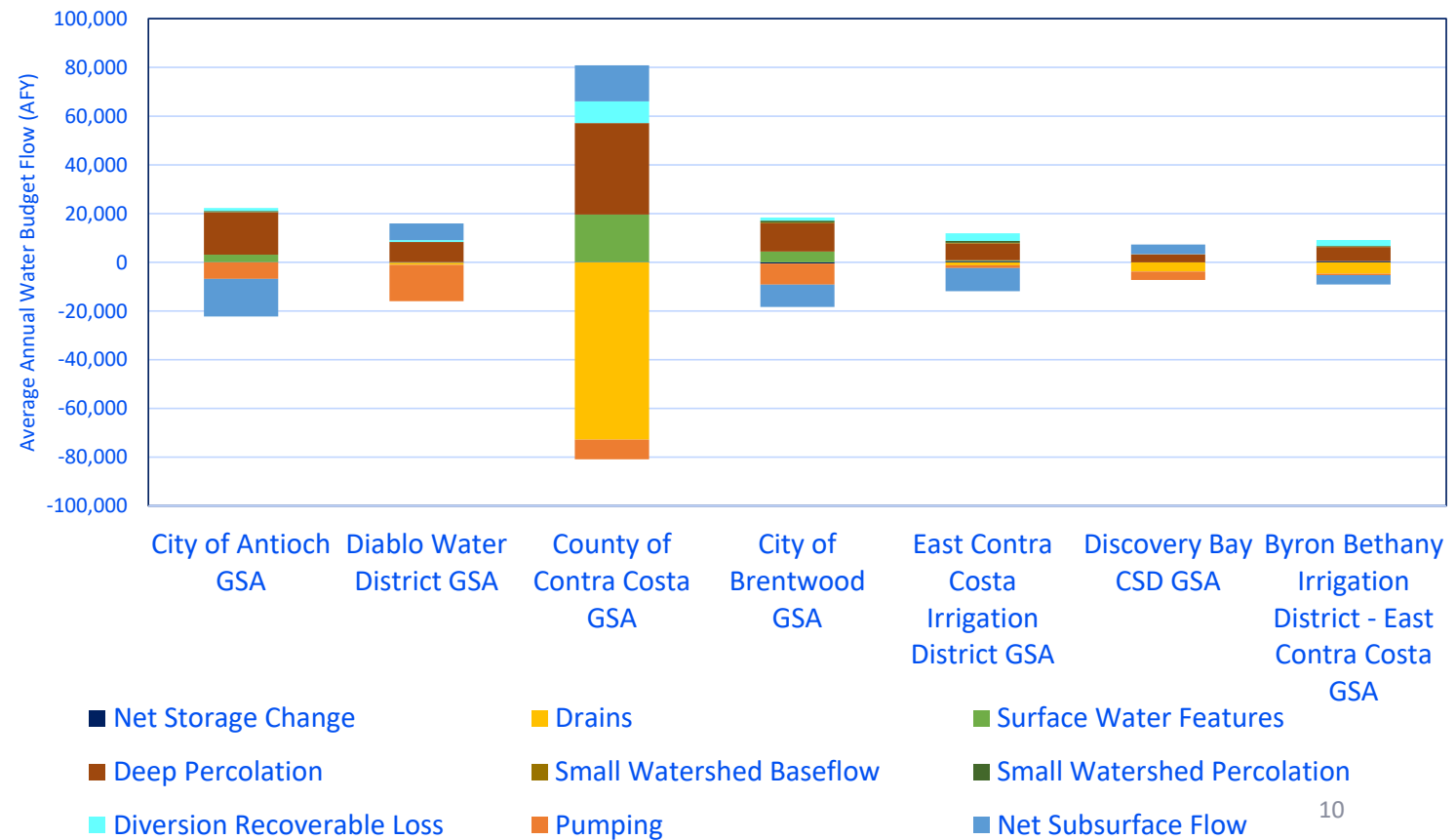
## Outflows

- Drains
- Pumping

## Inflow or Outflow

- Storage
- Subsurface Flow

Average Water Budget Components During the Simulation Period (WY 1997-2018)





## Predictive Future Model Scenarios

50-year future

Climate Change

Management  
Actions/Projects

- DWR produced SGMA Guidance document
  - Provides adjustment data for different climate change scenarios
  - Pick a historic simulation period and apply the adjustments over a 50-year period
    - Change factors for precipitation and reference ET gridded over the entire state
  - Near-future 2030 central tendency scenario
  - Three scenarios for far-future 2070: 1) central tendency, 2) drier with extreme warming, 3) wetter with moderate warming
- Sea Level Rise Scenario
- Local Management Actions/Projects expected to happen

# Management Actions/Projects

50-year horizon

Management  
Actions/Projects

- GSA/Stakeholder Input
- Expected projects or management actions?
- Anticipated land use/water demand changes?
  - SW Deliveries
  - Land Use changes (e.g. shift to more permanent crops)
  - UWMPs and population growth
  - Other?

Three GSP Project Concepts  
for Preliminary Consideration:

- 1) In-lieu recharge project
- 2) Direct recharge
- 3) Modifications to flood control management to enhance natural recharge





Questions?

