



**EASTERN SAN JOAQUIN  
GROUNDWATER AUTHORITY**

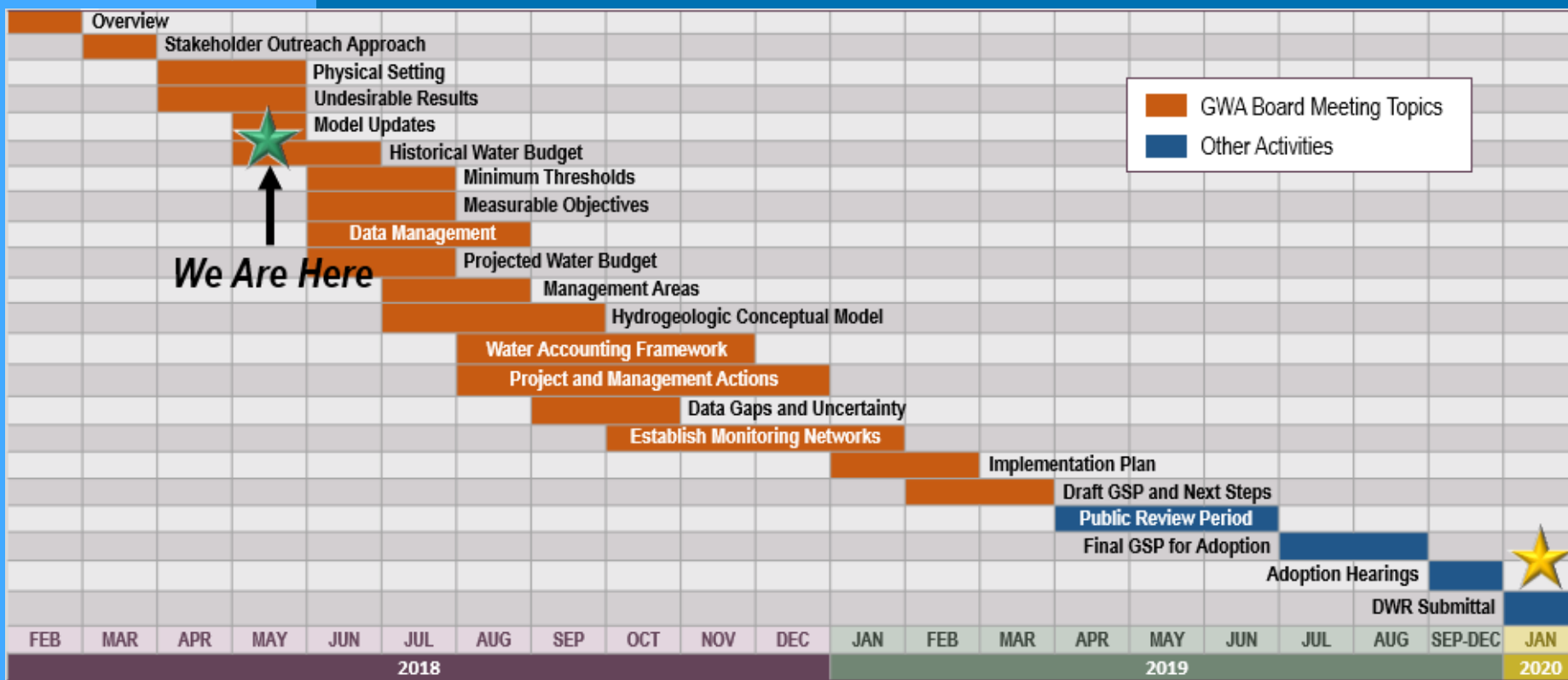
# **GWA Board Meeting May 9, 2018**

# Agenda



- Roadmap Update and Project Schedule
- Outreach Update – report out on Stakeholder Committee formation process extension
- Model Update & Historical Water Budget
- DWR Technical Support Services – Action Item
- DWR Update

# Roadmap Update & Project Schedule





# Outreach Update



# How to Get Involved



•Apply to participate on Stakeholder Committee by May 11, 2018 – application available on [esjgroundwater.org](http://esjgroundwater.org)

Attend first Stakeholder Committee meeting as an observer (anticipated May/June 2018)

Plan to participate in first public meeting (anticipated June/July 2018)

Attend ESJ GWA Board meetings

# Ways to Stay Informed



- Website:

- Visit [esjgroundwater.org](http://esjgroundwater.org)

- Sign up for electronic updates at [ESJgroundwater@sjgov.org](mailto:ESJgroundwater@sjgov.org)

- Watch for information from GSA, Advisory Committee and Stakeholder Committee members (members to receive content toolkits for use, if desired, in May)

Attend open-forum meetings

Request a community meeting (e.g. Kiwanis)

# Content Toolkit (May)



- Announcement article for use on websites and in communications materials (newsletters, electronic communications, etc.)
- Social media calendar (Facebook and Twitter content to share announcement, direct people to ESJ GWA website and notifications about meetings)
- Public meeting newsletter file for distribution (anticipated end of May/early June)

# Formation: Timeline and Approach



April

Application emailed to over 100 NGOs

Application shared with 143 public agencies for notification and sharing with other stakeholders

Application mailed to 433 community water systems

May

Interested parties complete and submit applications by May 11

The consulting team will review applicants and form recommendation

Provide update to JPA

May - June

Notify applicants of the selected Stakeholder Committee

Develop and finalize charter for Stakeholder Committee

Stakeholder Committee members sign charter

Hold first meeting (target late May/June)



# Applicants as of 4/30/18



- Catholic Charities of the Diocese of Stockton
- 2Q Farming
- Calaveras County Resource Conservation District
- The Hartmann Law Firm/Advisory Water Commission
- San Joaquin Audubon
- Sierra Club
- San Joaquin Farm Bureau Federation
- Trincherro Family Estates and Sutter Home Winery

# SGMA-Driven Stakeholder Committee Structure



Sec. 10723.2 Consider the interests of beneficial uses and users of groundwater in the region.

Sec. 10727.8 (a) Encourage active involvement of diverse social, cultural and economic elements of the population.

# Stakeholder Committee Structure



*10-15 members representing diverse categories of interest*

<b>Groundwater Users</b> <i>Those outside of the JPA/GSAs</i>	<b>Community/ Neighborhood</b>	<b>Agricultural</b>
Private users, domestic users, community water systems, schools, hospitals	General public, citizen groups, community groups/leaders	Irrigation districts, resource conservation districts, farmers/farm bureaus

# Stakeholder Committee Structure Continued



Environmental	Flood Management	Native American
Federal/state agencies (fish & wildlife), wetland managers, environmental groups	Integrated water management perspectives	Tribal government

# Stakeholder Committee Structure Continued



Disadvantaged Communities	Institutional	Business
<i>(Application distributed to organizations that represent DACs)</i>	Commercial, industrial, local trade association or groups	Economic development groups, chambers of commerce, business groups

# Selection Criteria



- Represent category/categories of interest
- Demonstrated commitment to community service, civic leadership or prior experience serving on similar task force or advisory committee
- Understanding of water issues
- Interest in learning about and providing comments on the GSP
- Willingness to commit to approximately monthly meetings
- Share information with their respective organizations and bring forth questions/comments back to the project team



# Model Update & Historical Water Budget

# Sustainable Groundwater Management Act Readiness Project

## ESJ Water Resources Model (ESJWRM) Development & Application for SGMA



May 9, 2018



# Model Development Goals

- To Develop a robust and defensible analytical tool that supports:
  - Understanding the state of the GW Basin over a reasonable recent historical period
  - Development of GSP for the Basin
  - Evaluation of plans, projects, and actions to bring the Basin into sustainable condition
  - Individual irrigation and water districts in development of AWMPs
  - Individual municipal entities in development of their UWMP
  - SJ County in land and water use planning

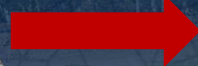
# Open and Transparent Model Development Process

## Stakeholder Technical Participation

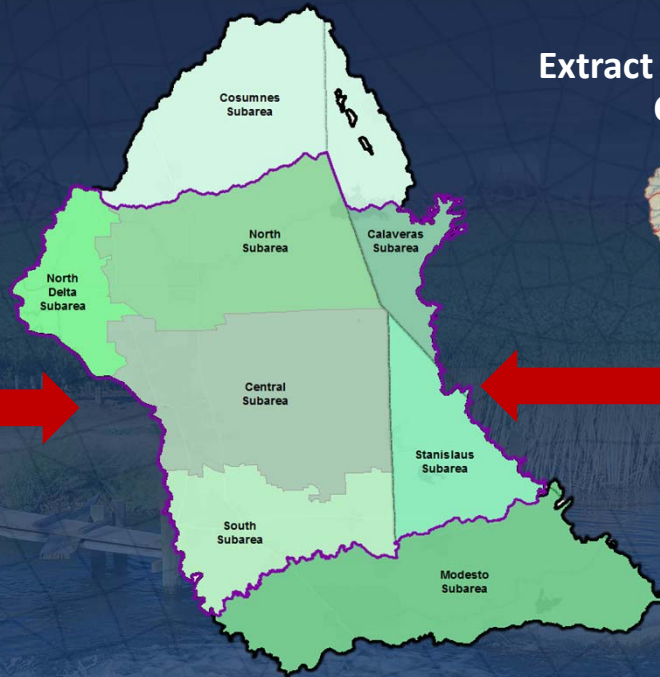
- Cal Water
- Calaveras County Water District
- Central Delta
- DWR North Central District
- Escalon, City of
- Lathrop, City of
- Linden County Water District
- Lockeford Community Services District
- Lodi, City of
- Manteca, City of
- North San Joaquin Water Conservation District
- Oakdale Irrigation District
- Ripon, City of
- San Joaquin County
- South San Joaquin Irrigation District
- Stanislaus County
- Stockton, City of
- Stockton East Water District
- Woodbridge Irrigation District

# ESJWRM is developed based on DWR's integrated hydrologic modeling platform and local/statewide datasets\*

Migration of Existing  
DYNFLOW Data



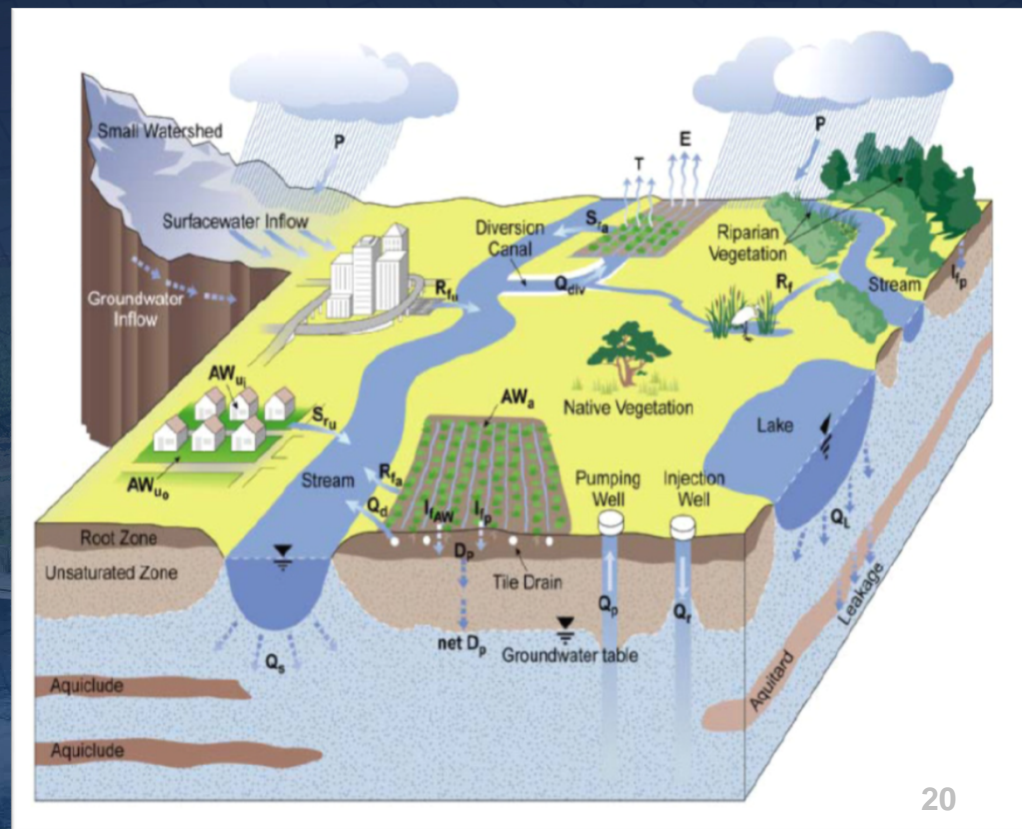
Extract Information from  
C2VSim-FG



\*Recommendation to the ESJ GBA Board by the Ad Hoc Technical Committee on August 5, 2016

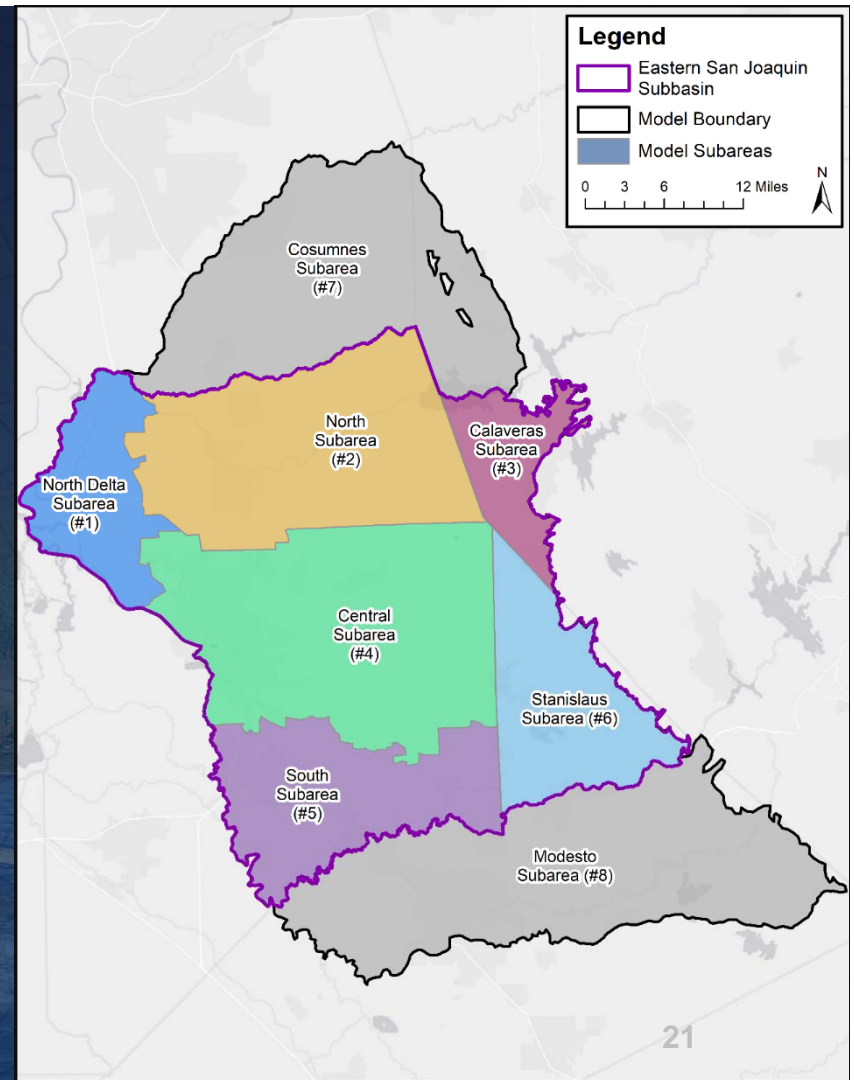
# Integrated Hydrologic Processes

- Land Surface Processes
- Groundwater Flow
- Streamflow
- Physical Systems Integration
- Water Budgets



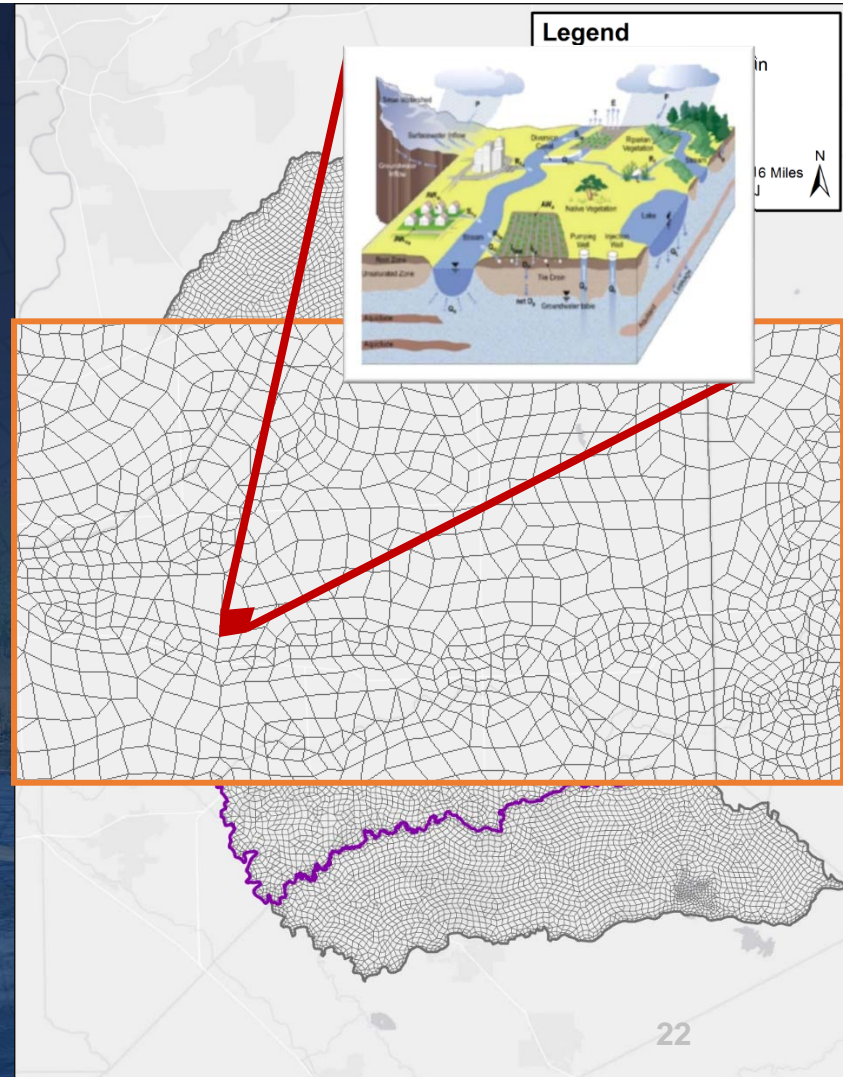
# Eastern San Joaquin Groundwater Subbasin

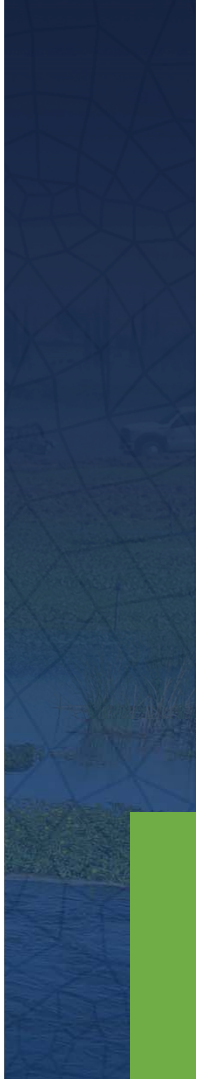
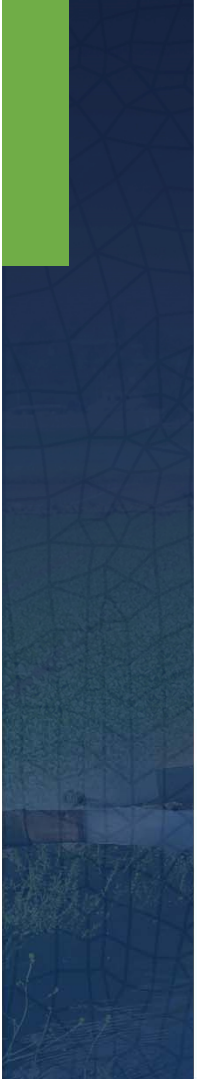
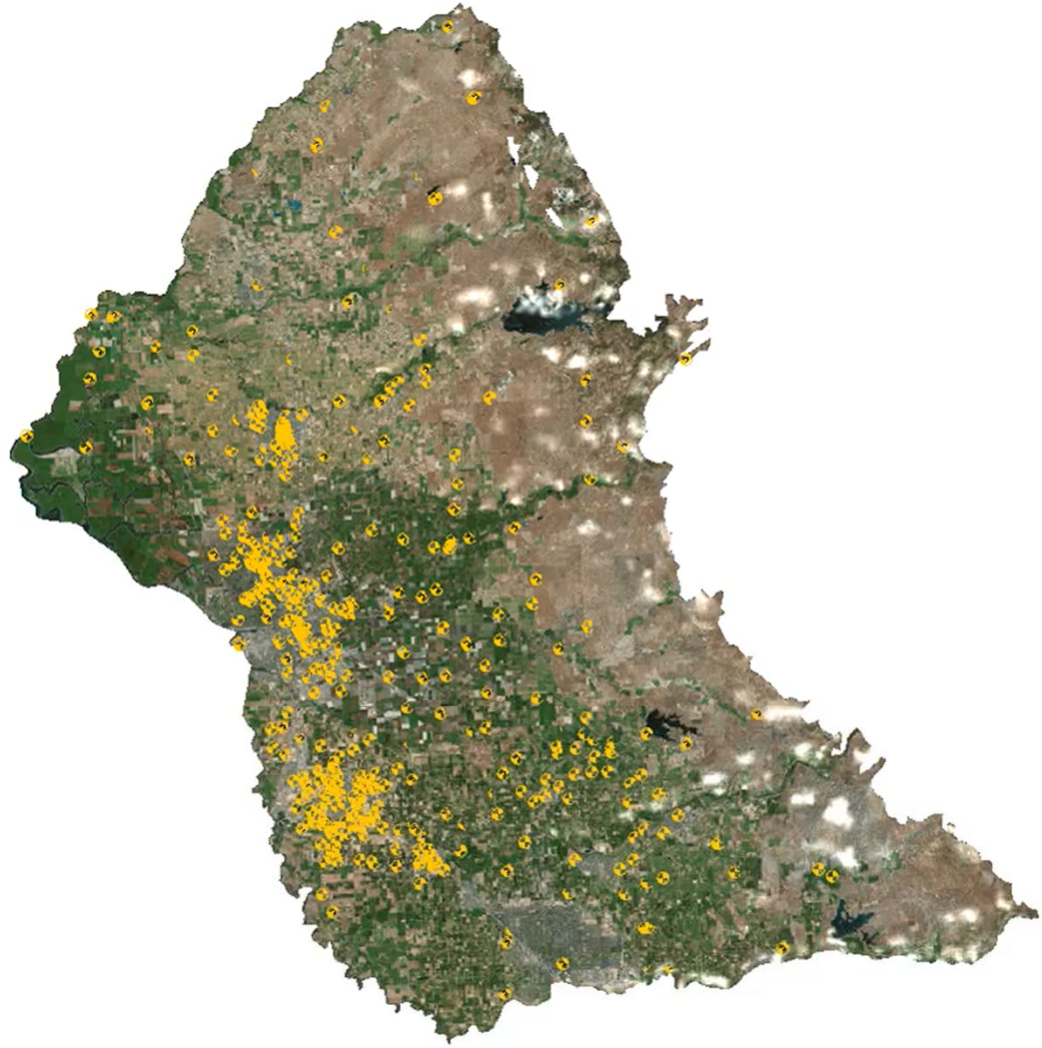
- 6 Neighboring groundwater subbasins
  - Cosumnes
  - South American
  - Solano
  - Tracy
  - Delta-Mendota
  - Modesto
- 17 GSAs
- 20 Data Subregions
- 8 Reporting Subareas



# Final ESJWRM Grid: Elements and Node Configuration

- Hydrologic and hydrogeologic computations are performed at each element level
- Model Grid
  - 16,054 elements
    - Average Area: 76.5 acres
  - 15,302 nodes
    - Node Spacing:
      - Across Model Area: 0.37 mile
      - Along the Rivers/Water Courses: 0.28 miles



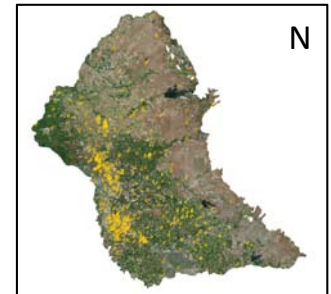
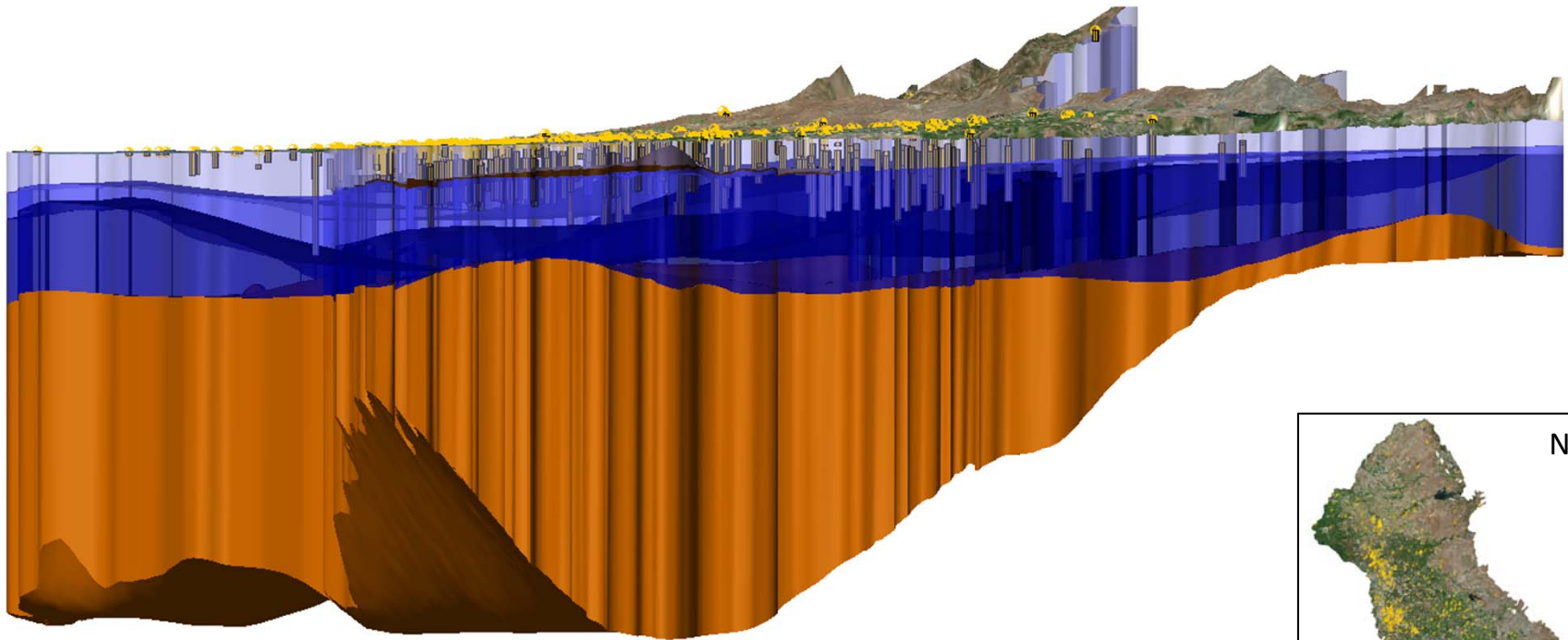


- Layer 1
- Corcoran
- Layer 2
- Layer 3
- Layer 4

Unit: feet

GSE: -2.6

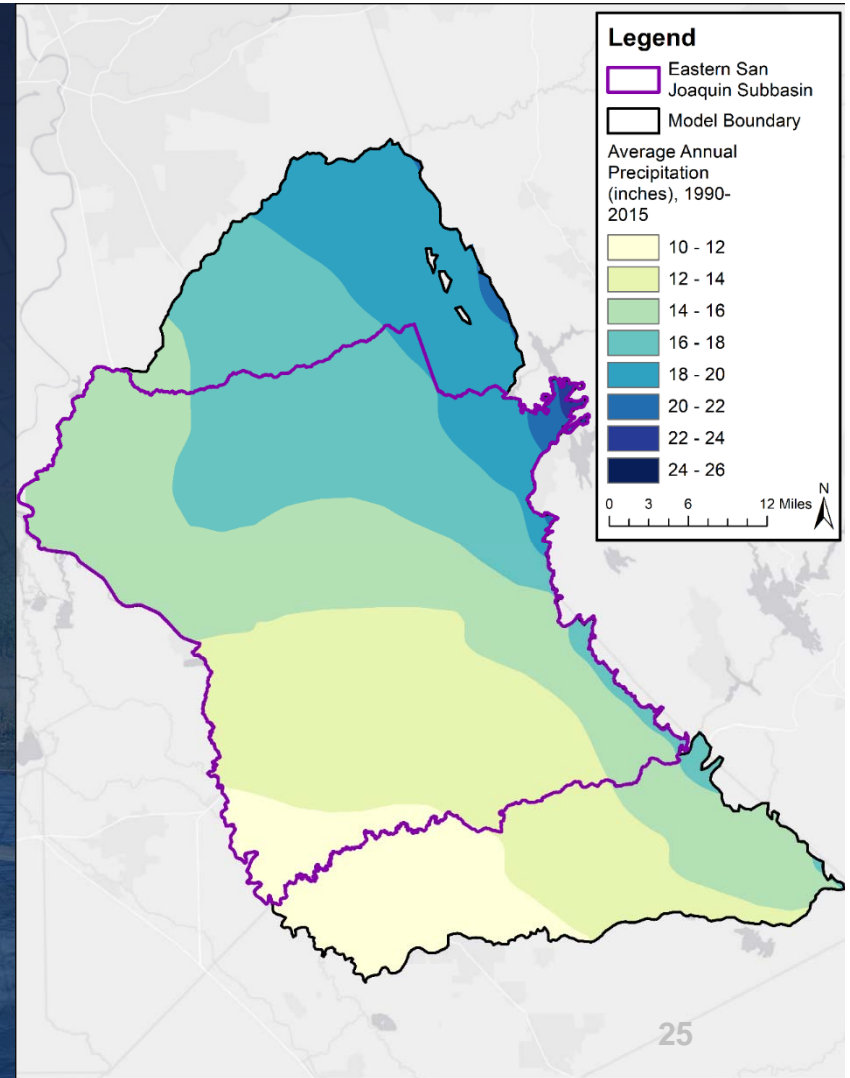
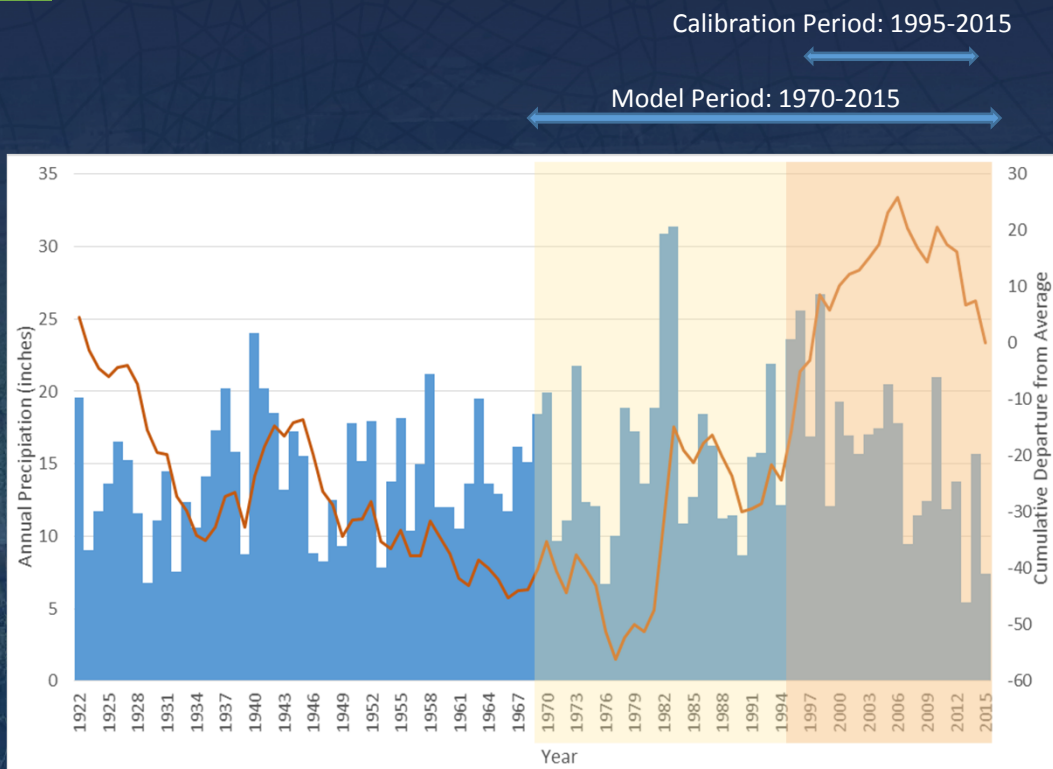
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24

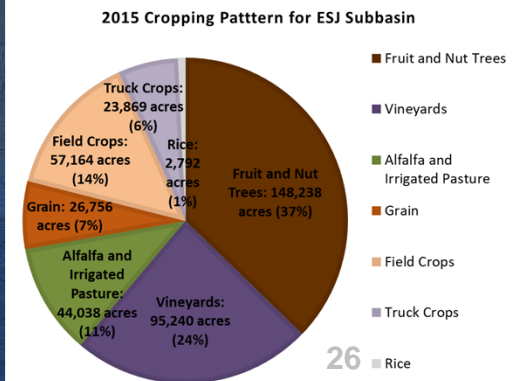
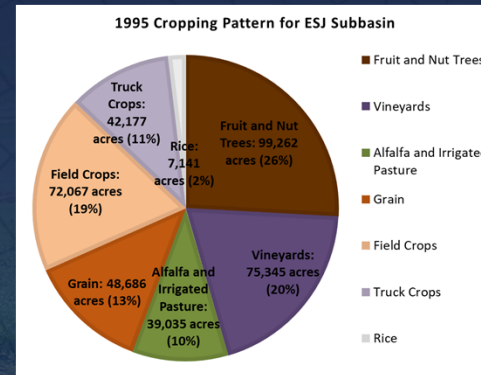
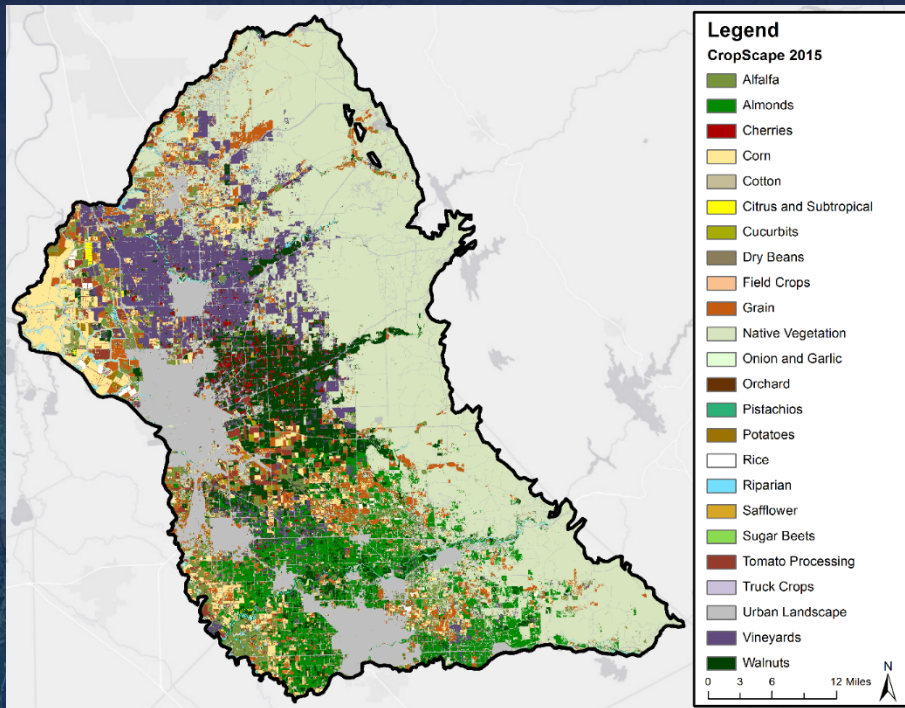


# Model Contains a Long-Term Hydrology (1970-2015)



\*Source: PRISM (Parameter elevation Regression on Independent Slopes Model)

# Model Includes Crop Acreage for 1995 to 2015

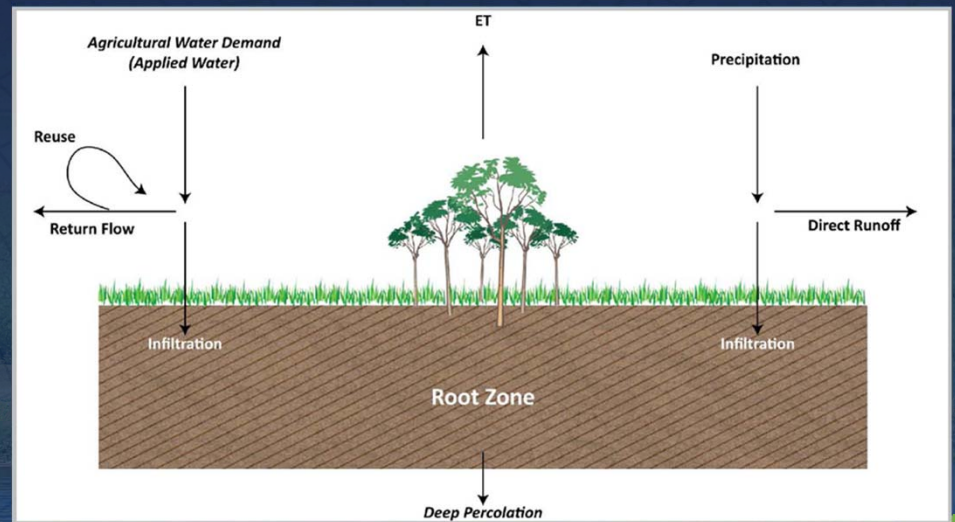


26 ■ Rice

# Model Calculates Agricultural Water Demand

## Monthly Estimates based on:

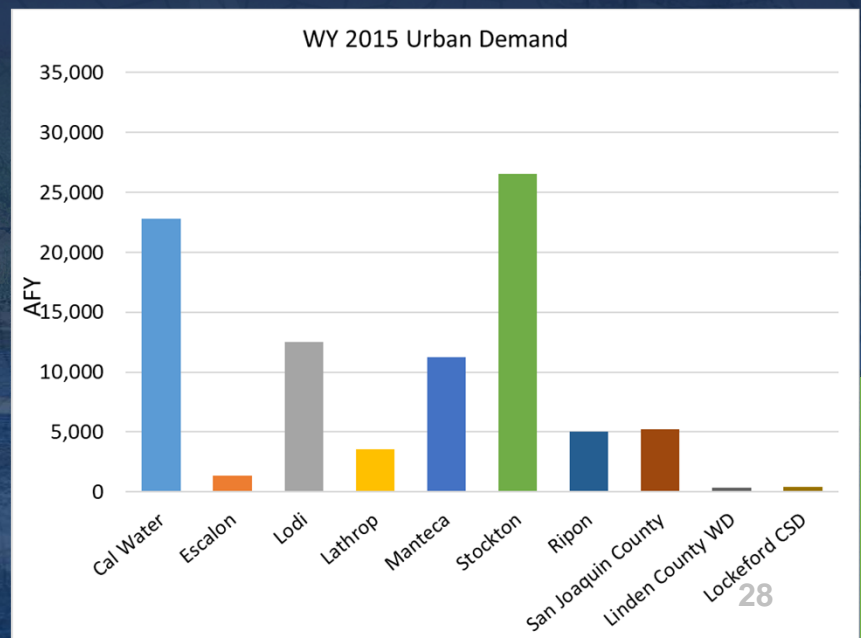
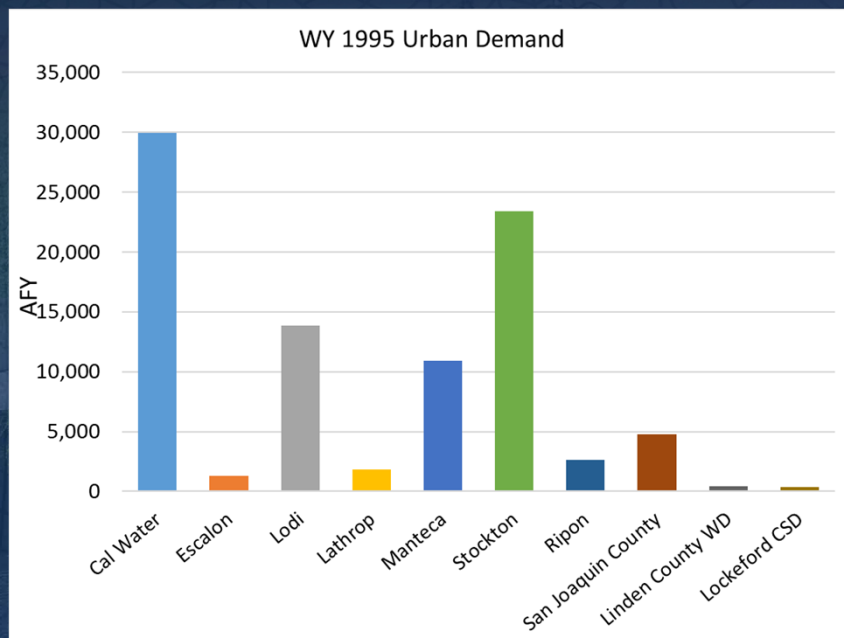
- Crop Acreage
- Soil Conditions
- Hydrology and Climate Patterns
- Irrigation Practices
- Crop Actual ET



# Model Calculates Urban Water Demand

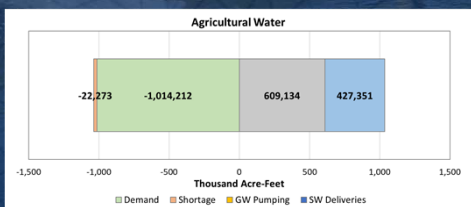
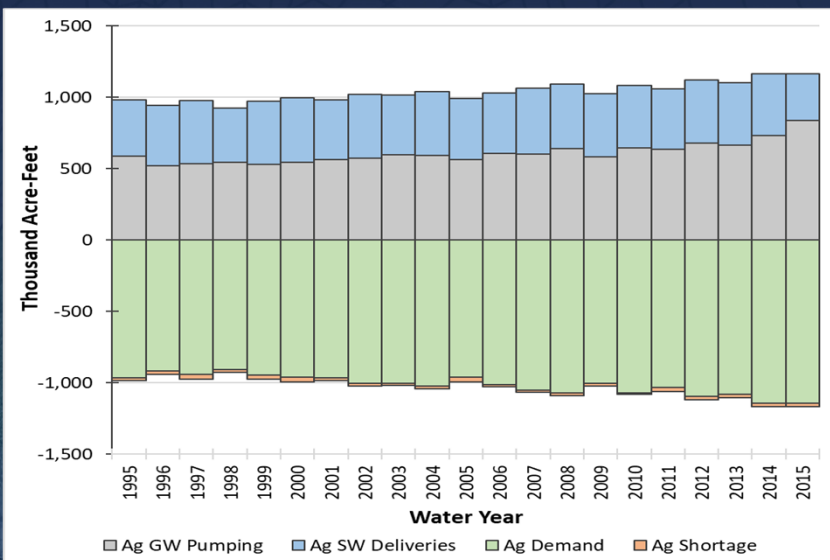
## Monthly Estimates based on:

- Population
- GPCD

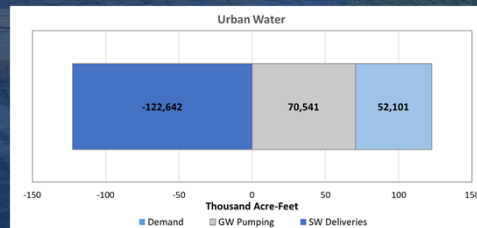
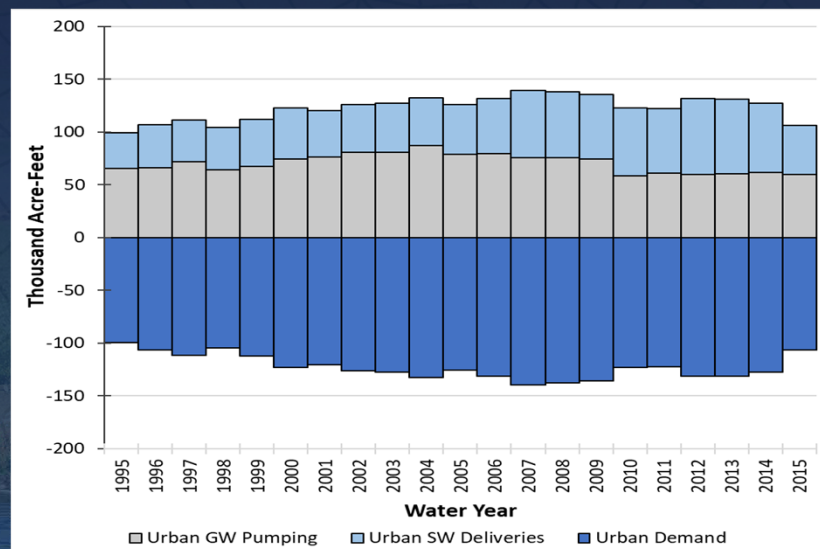


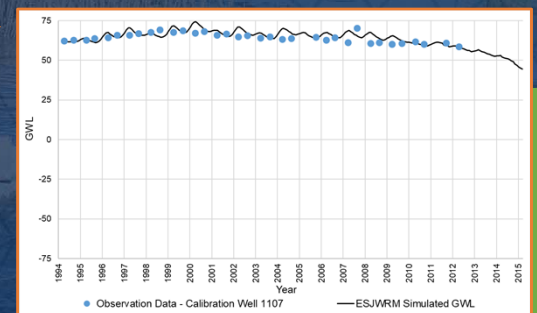
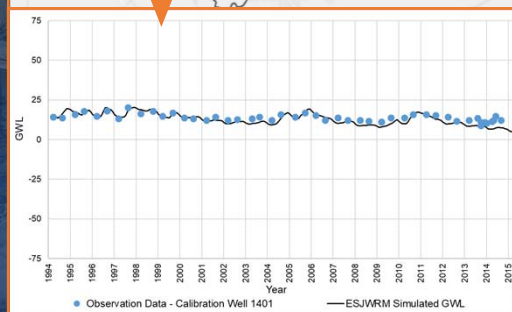
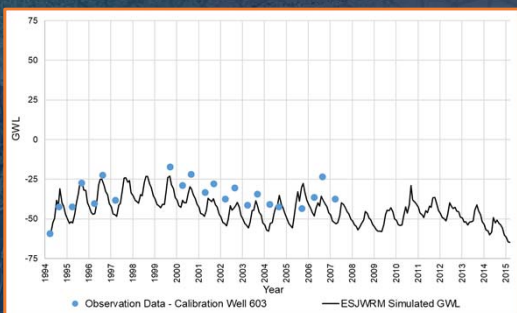
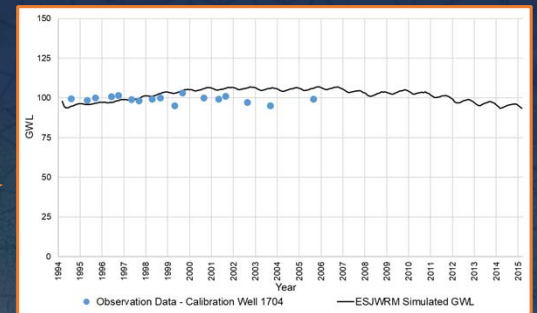
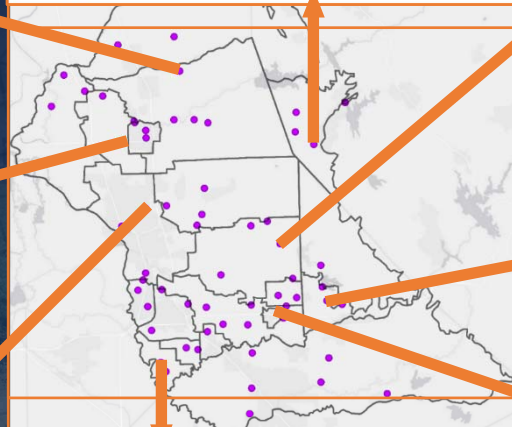
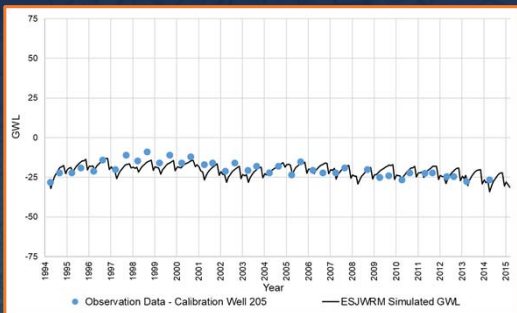
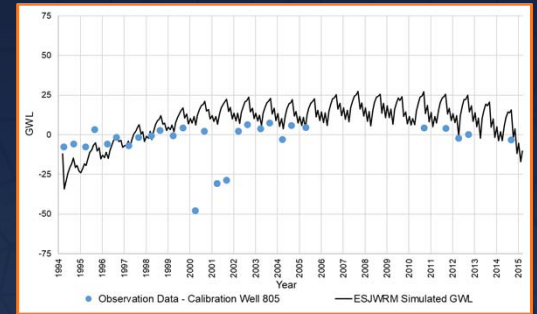
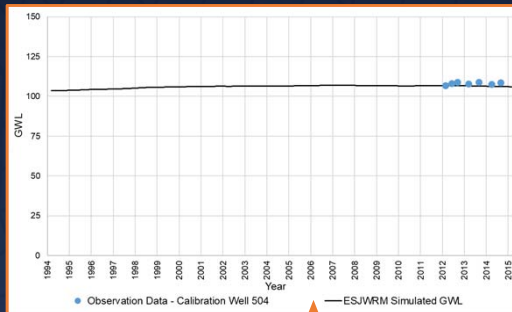
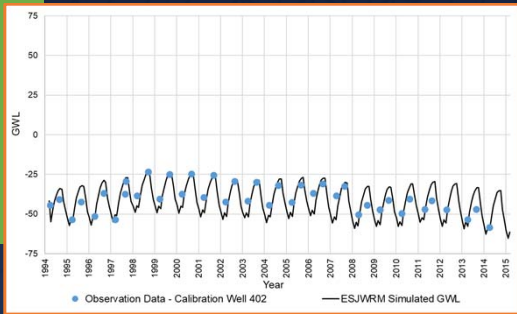
# Land & Water Use Budget

## Agricultural Water Use

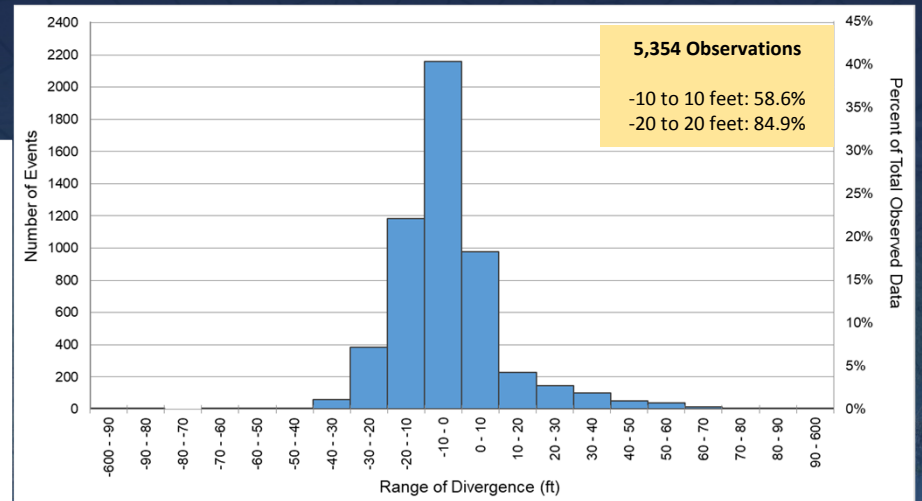
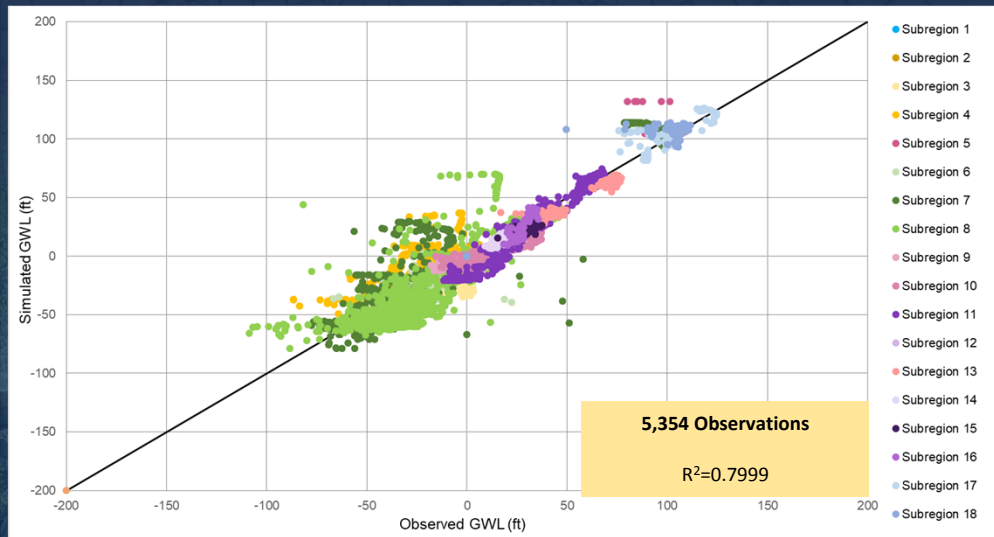


## Urban Water Use



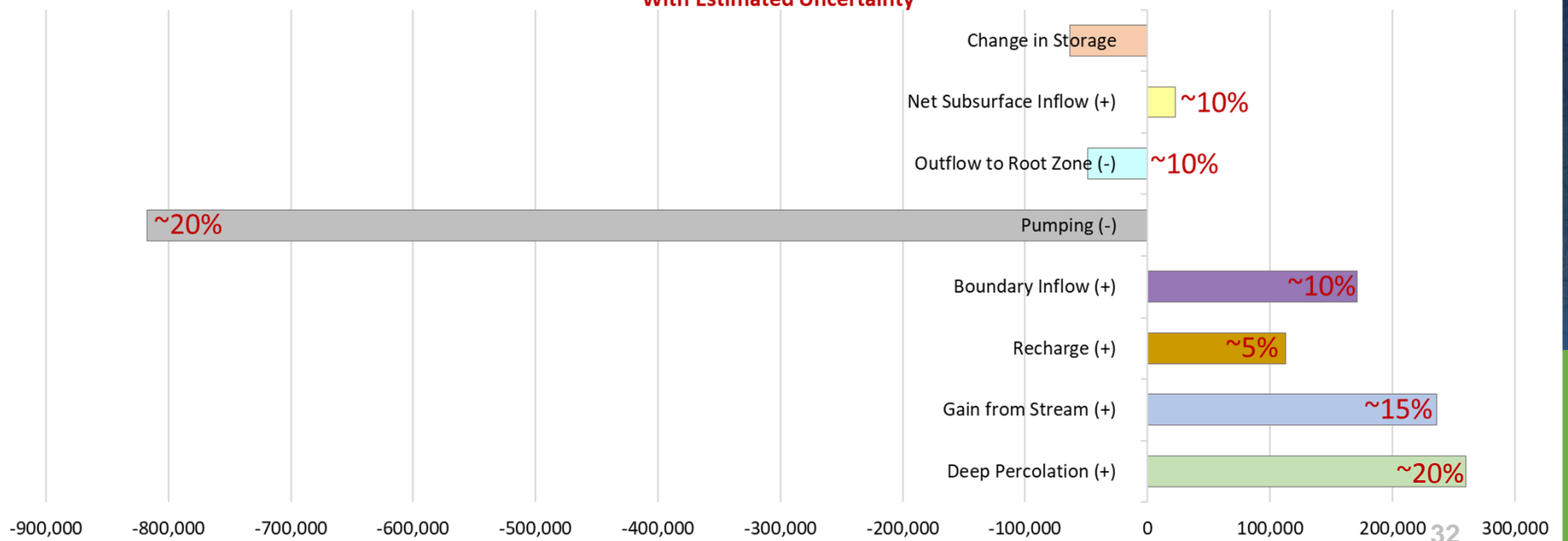


# GW Level Calibration Quality



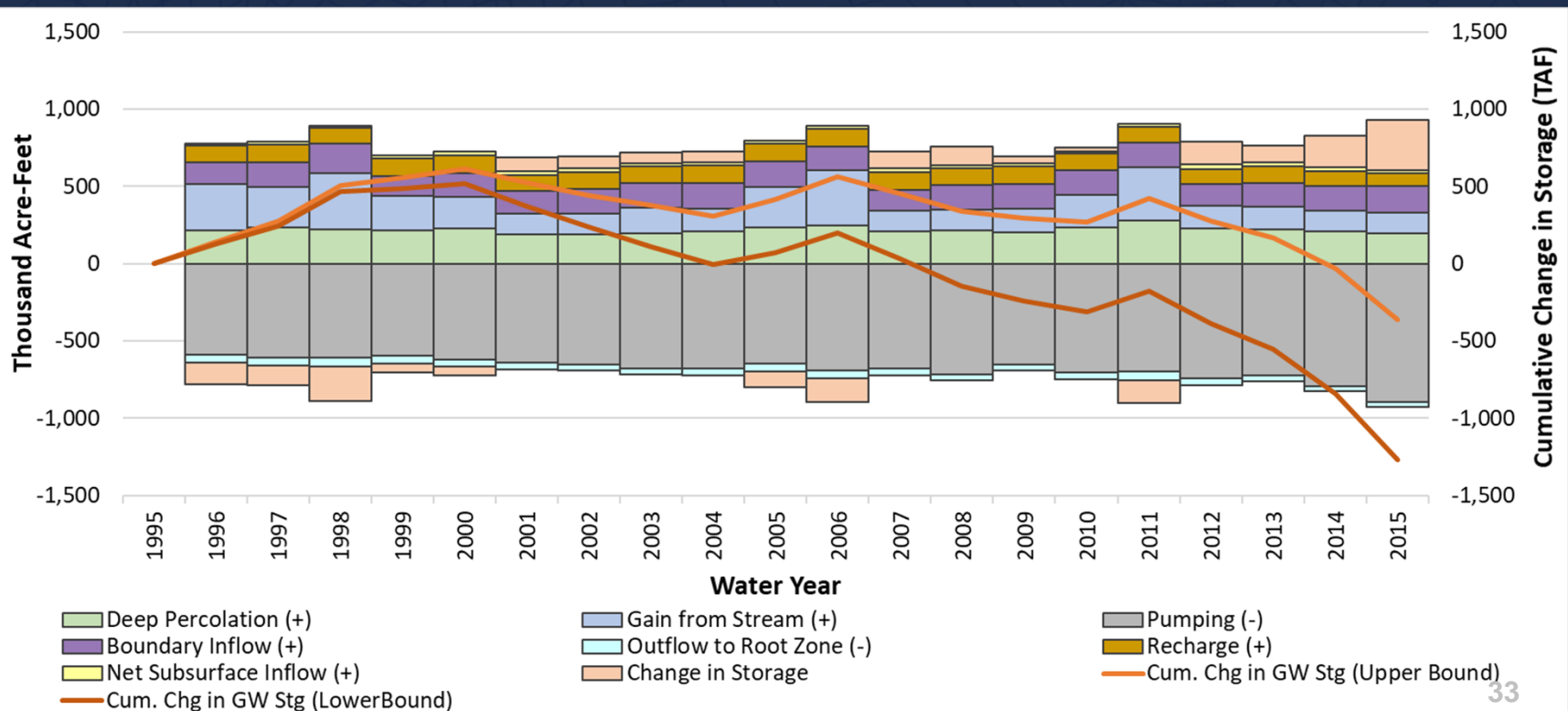
# ESJ Subbasin Estimated Average Annual GW Budget Historical Conditions

Eastern San Joaquin Subbasin Average Annual Estimated GW Budget  
(Historical Conditions: 1995-2015)  
With Estimated Uncertainty





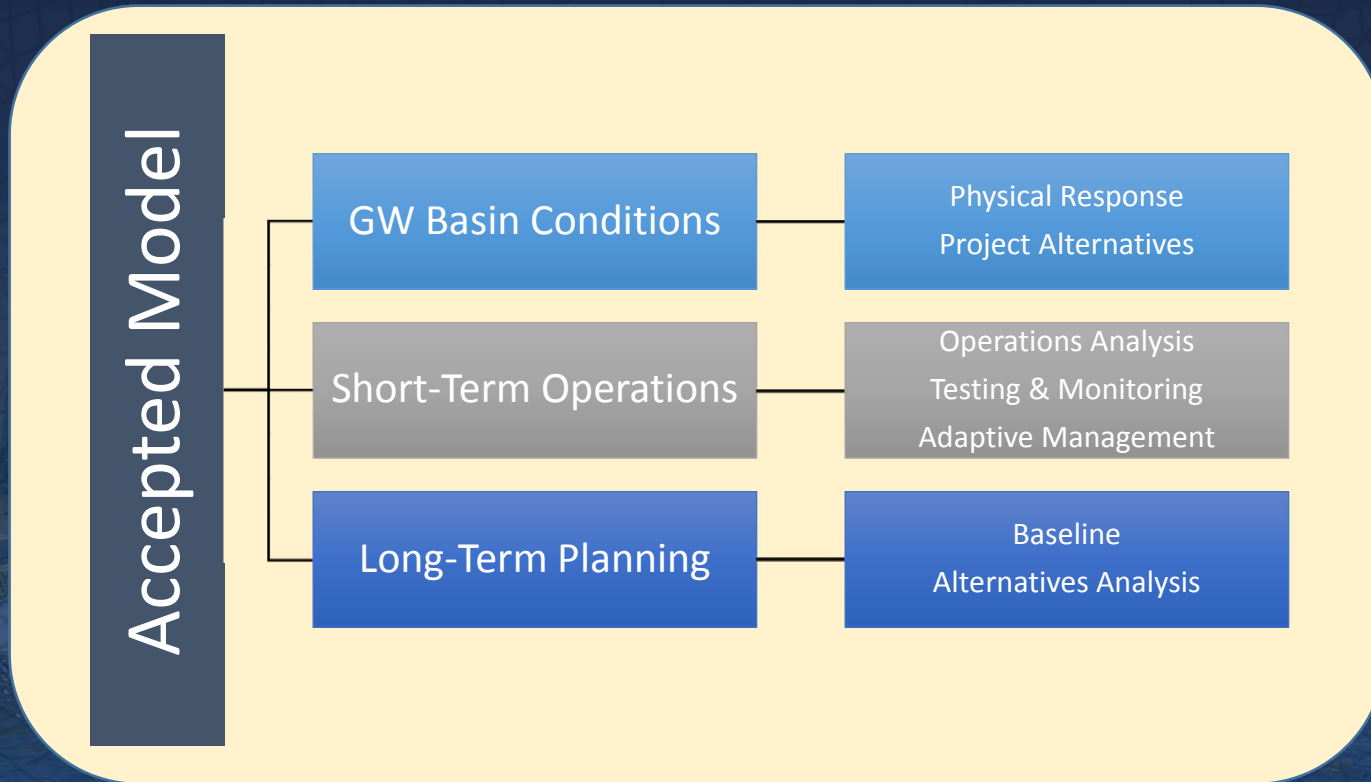
# ESJ Subbasin Estimated Average Annual GW Budget Historical Conditions





# Model Use and Application to SGMA

# Model Applications Next Steps ...



# Model Can Help Address SGMA Related Questions

- What is the current status of the GW Basin?
- What are the potential effects of Basin Boundary adjustments on GW Management?
- What are the metrics and thresholds for sustainability in the basin?
  - GW Storage / Levels
  - GW Quality
  - Stream-aquifer interaction
  - Land Subsidence
- What is the time frame to achieve sustainability?
- What are the measures to attain sustainability?
  - Demand-side
  - Supply-side
  - Combined measures
- What are the economic implications of sustainability?

## Action Item

- The GWA Board approves the use of the groundwater model in support of the development of the Groundwater Sustainability Plan (GSP).



# DWR Related Items

# DWR Technical Support Services Funding Update



- Designate a Basin Coordinator in May BOD
  - Recommendation from the Advisory Committee
- Draft application initiated with DWR
- Develop priority projects for potential funding
  - “Most challenging technical needs of the basin”
    - Monitoring wells – data gaps

# Schedule Recap



## JUNE BOARD TOPICS

- Minimum Thresholds, Measurable Objectives
- Project Water Budget
- Data Management



