



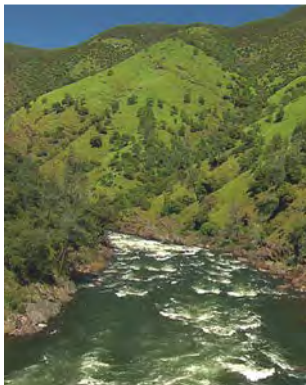
VIRTUAL COMMUNITY MEETING ON GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT


July 8, 2020

Funding for this project has been provided in full or in part from the Water Quality, Supply, and Infrastructure Improvement Act of 2014 and through an agreement with the State Department of Water Resources.



PROTOCOLS FOR ONLINE MEETINGS



- Please **mute yourself** unless you are speaking
- Facilitator may mute you at different points, please don't take it personally
- Cameras are optional, though always lovely to see faces
- We are recording this session 
- Please type questions into chat window and/or raise hand
- Pair your phone with your computer
 - **#participant ID#** at anytime if you are already called in



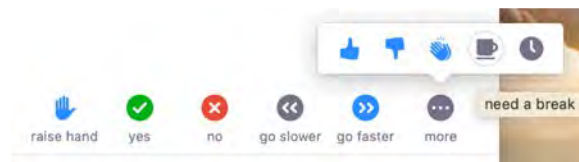
PARTICIPANT TOOLS & NON-VERBAL REACTIONS



At Bottom of Video Screen:



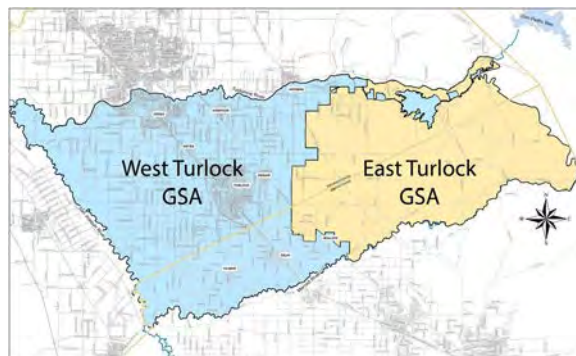
Via Participant Pop-out Box:



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AGENDA

- Real Talk: Common 'Unanswered' Questions
- Is there a GPS for the GSP?
- Technical Tools
- Moving Forward
- Open Q&A Session (30+ mins)



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POLL: WHICH CATEGORY BEST FITS YOU IN THIS GROUNDWATER BASIN?

Select all that apply

- Farmer / Rancher
- Municipal Water Customer
- Commercial / Industrial Water User
- Private Domestic Well User
- Tribal Government / Organization
- Non-governmental Organization
- Government Agency
- Academia
- Other Interested Party

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REAL TALK: COMMON “UNANSWERED” QUESTIONS



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COMMON UNANSWERED QUESTIONS



GROUNDWATER PUMPING

- Will I get to pump GW for the next “X” years?
- If yes, can I pump at the same rate I am pumping today?
- If no, can I expect 10, 15, 20, 25% reductions?



6

COMMON UNANSWERED QUESTIONS



GROUNDWATER REDUCTIONS

- What can be done to assure no or minimal reductions?
- How much will it cost to assure no or minimal reductions?



7

COMMON UNANSWERED QUESTIONS



FUNDING

- How are the current GSAs and GSP being funded?



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CHAT BOX:

WHAT OTHER QUESTIONS DO YOU HAVE?
WHAT ELSE ARE YOU HOPING TO LEARN?



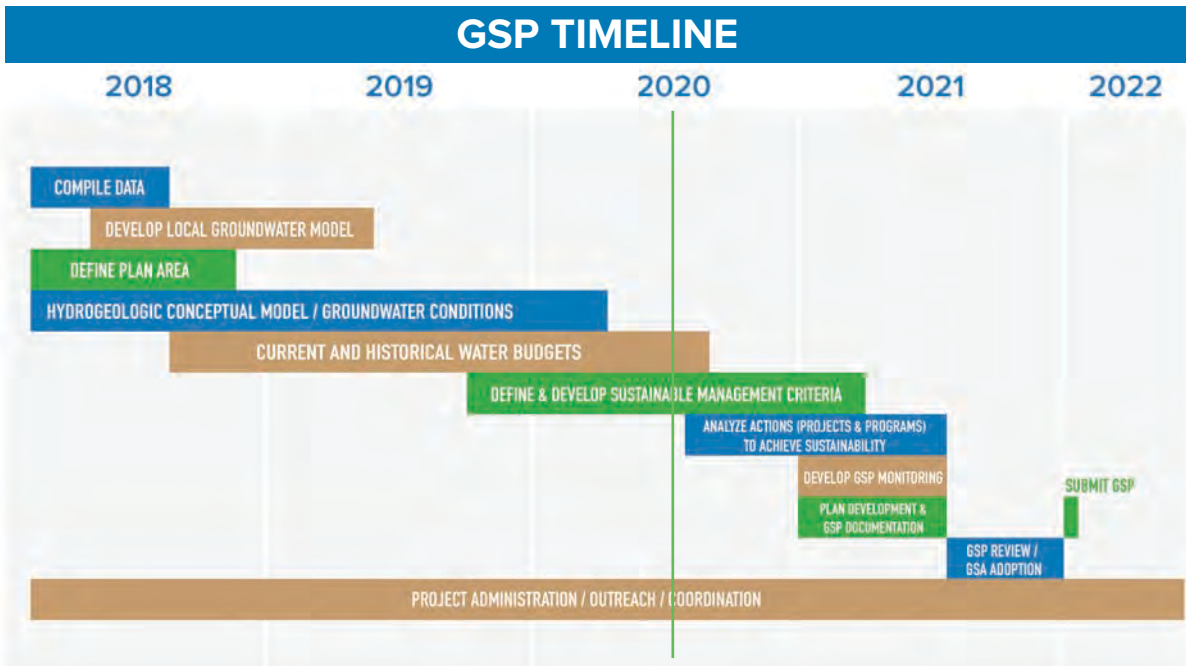
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IS THERE A GPS FOR THE GSP?

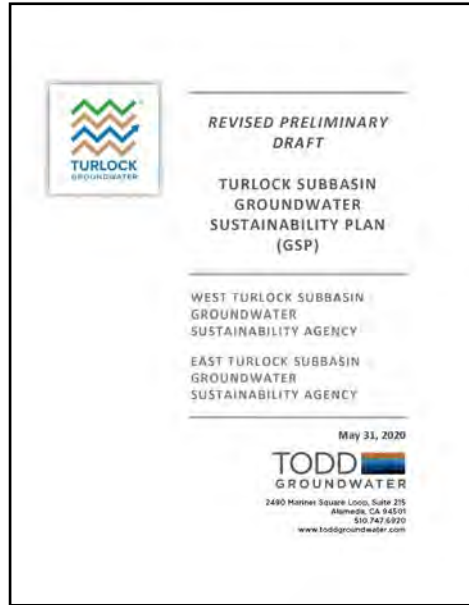


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Revised Preliminary DRAFT
Turlock Subbasin GSP
WTSOSA / ETSOSA 1-3 May 31, 2020
TODD GROUNDWATER

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Revised Preliminary DRAFT
Turlock Subbasin GSP
WTSOSA / ETSOSA 1-4 May 31, 2020
TODD GROUNDWATER

SUSTAINABILITY = NONE OF THESE



Chronic Lowering of Water Levels



Reduction of Groundwater Storage



Degradation of Water Quality



Land Subsidence Affecting Land Use



Depletion of Interconnected Surface Water Affecting Beneficial Use

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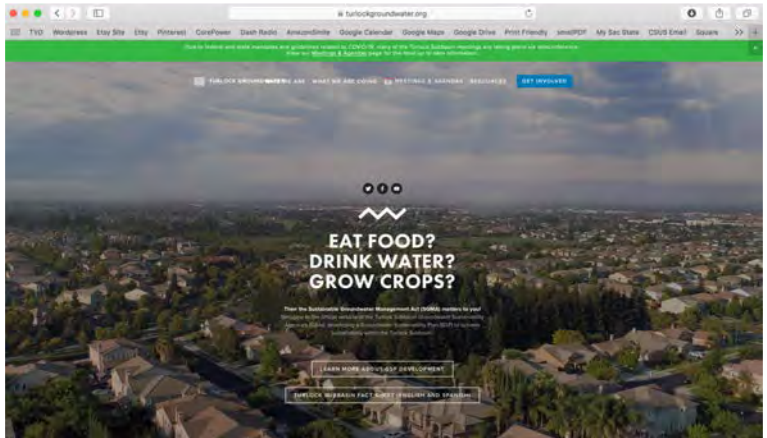
POLL:

WHAT IS YOUR BIGGEST CONCERN WITH SGMA IMPLEMENTATION?

- Possibility of reduction of Ag pumping
- Possibility of my well going dry
- Possibility of degraded water quality
- Possibility of increased costs
- Demand management
- Not enough people are involved/concerned/represented
- General concerns about environment/ecosystem
- Concerned with future distribution/allocation of groundwater

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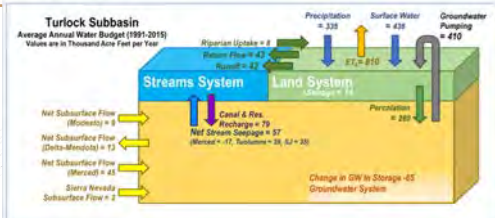
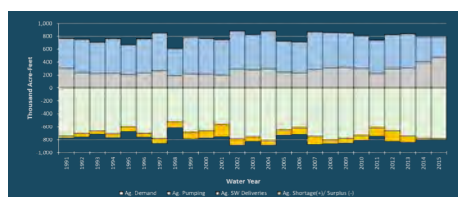
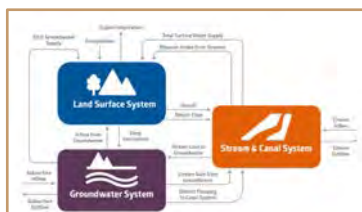
NAVIGATING THE TURLOCKGROUNDWATER.ORG WEBSITE



TECHNICAL TOOLS: MODELING & WATER BUDGET



PREVIEW OF “TECHNICAL TOOLS” SLIDES



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GSP CONTENTS



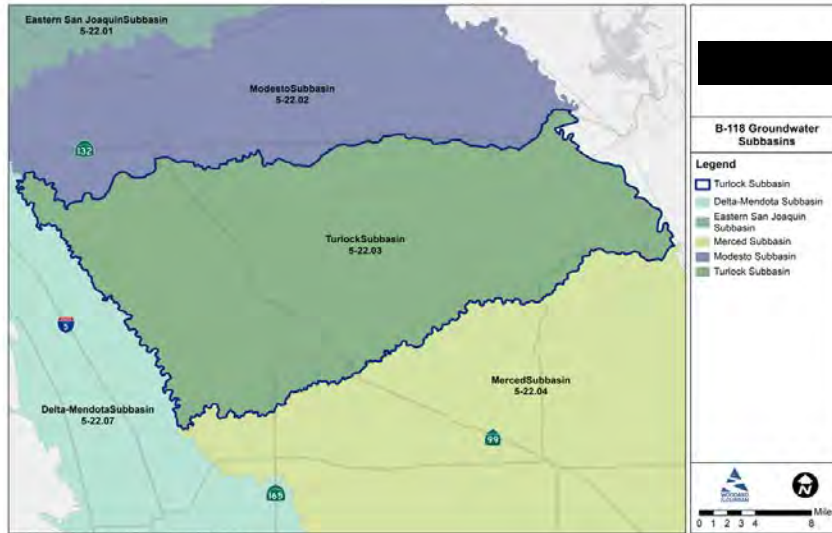
Technical Components

- Data Compilation / Data Management System
- Institutional Setting: Water Supply / Plan Area
- Hydrogeologic Conceptual Model / Groundwater Model ★
- Water Budget [Current and Historical] ★
- Policy Components
- Sustainability Goals and Criteria
- Management & Plan Components
- Management Scenarios / Projected Water Budget
- Monitoring Networks / Plan Development



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MODEL STUDY AREA

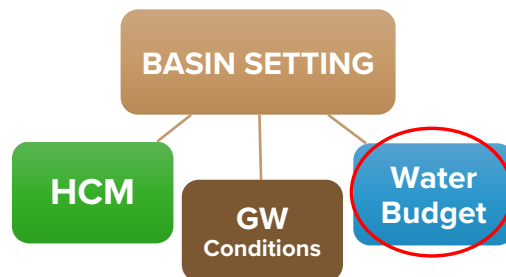


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COMPONENTS FOR BASIN SETTING



- Hydrogeologic Conceptual Model (HCM) – *Physical Setting*
- Groundwater Conditions – *Current and Historical*
- **Water Budget Analysis**
 - Historical and Current periods
 - **Uses Groundwater Model**
 - *Revisions are complete*



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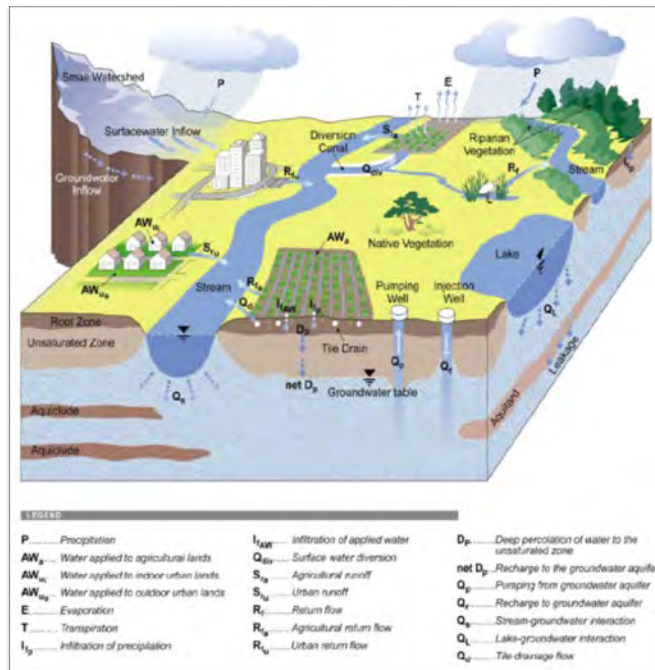
TURLOCK SUBBASIN AG. AGENCIES & FINE GRID



- **Entirely encompasses:**
 - Turlock ID
 - Eastside WD
 - Ballico-Cortez WD
- **Partially encompasses:**
 - Merced ID
 - Stevenson WD

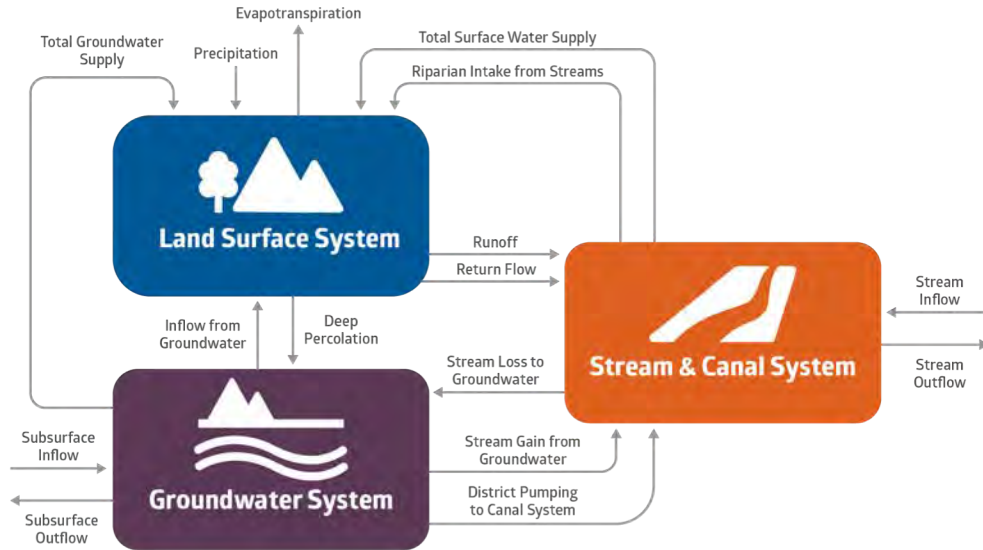
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CONCEPTUAL WATER BUDGET



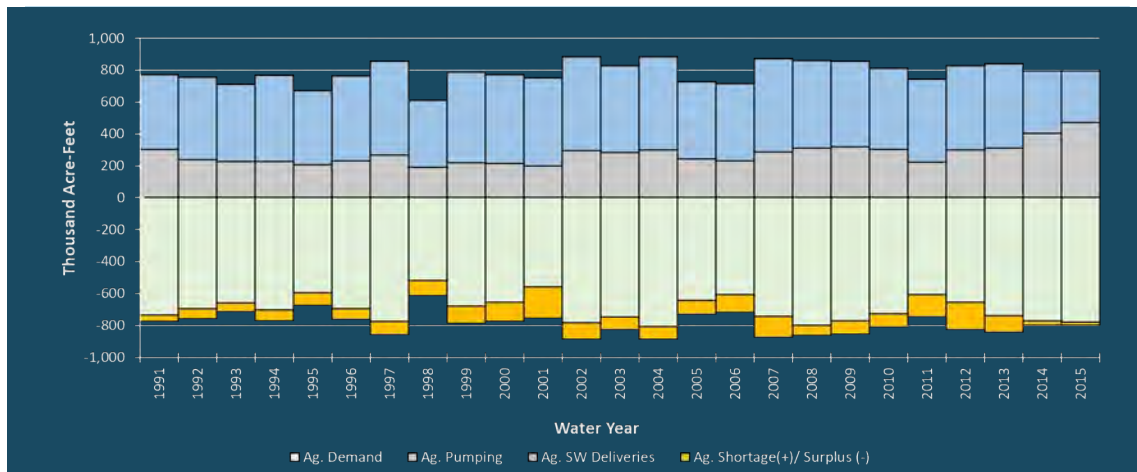
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DIFFERENT COMPONENTS CONTRIBUTE TO THE WATER BUDGET & GROUNDWATER MODEL



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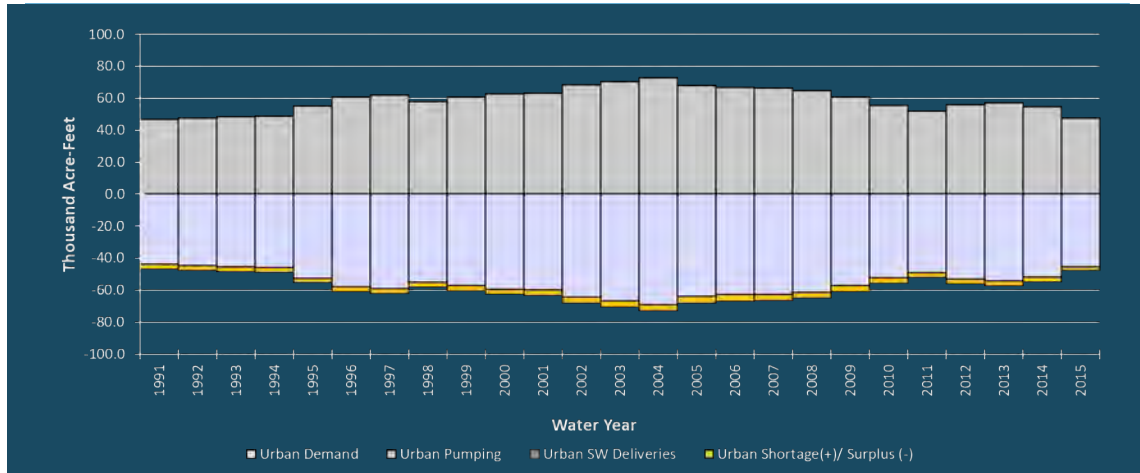
TURLOCK SUBBASIN: AGRICULTURAL



Shortage (+) : Amount of applied water that is not available to meet estimated water demand
Surplus (-) : Amount of applied water in excess of estimated water demand

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TURLOCK SUBBASIN: URBAN

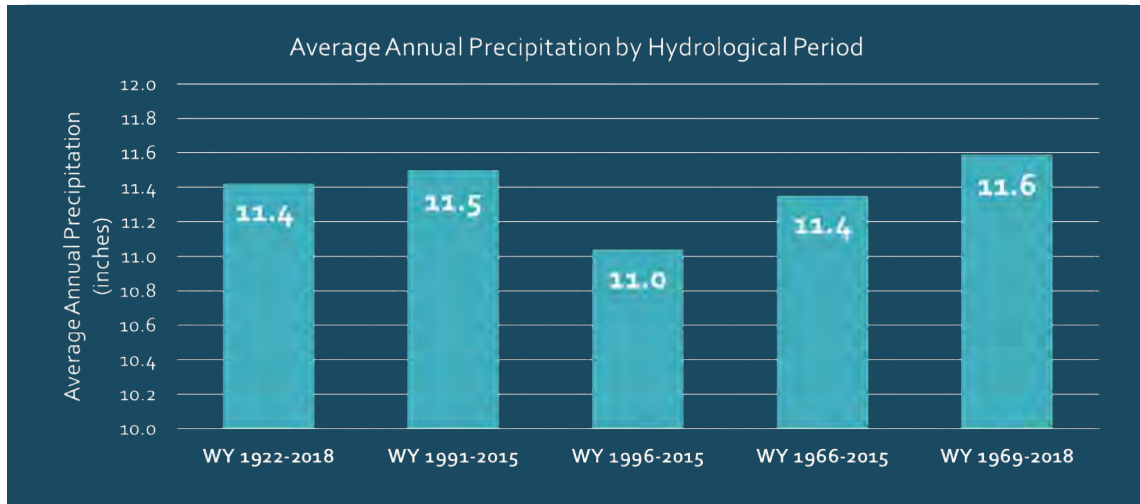


Shortage (+) : Amount of applied water that is not available to meet estimated water demand
Surplus (-) : Amount of applied water in excess of estimated water demand

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PRECIPITATION

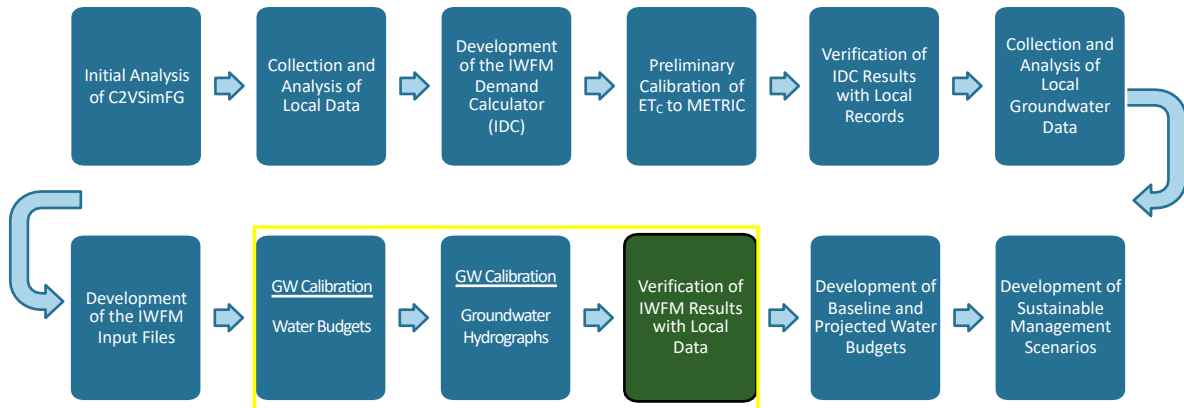
| Water Year | 1922-2018 | 1991-2015 | 1996-2015 | 1966-2015 | 1969-2018 |
|--|-----------|-----------|-----------|-----------|-----------|
| Average Annual Precipitation (inches) | 11.4 | 11.5 | 11.0 | 11.4 | 11.6 |



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DRAFT FIGURE

MODEL DEVELOPMENT PROCESS



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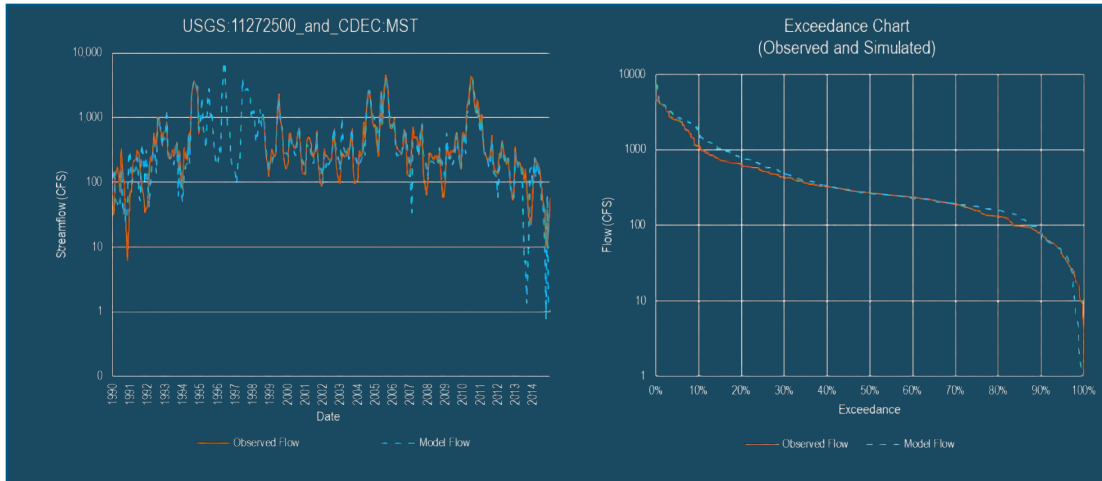
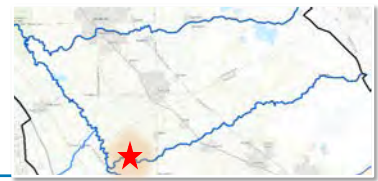
Stream & Canal System

STREAMFLOW GAGING STATIONS USED FOR MODEL CALIBRATION



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STREAM HYDROGRAPHS

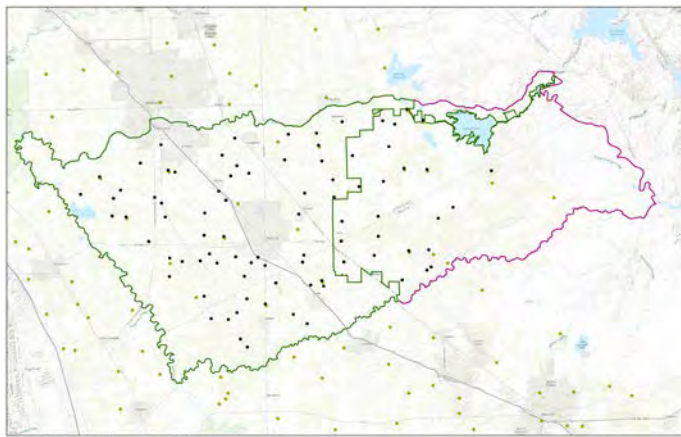


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DRAFT FIGURE

Groundwater System

CALIBRATION WELL SELECTION

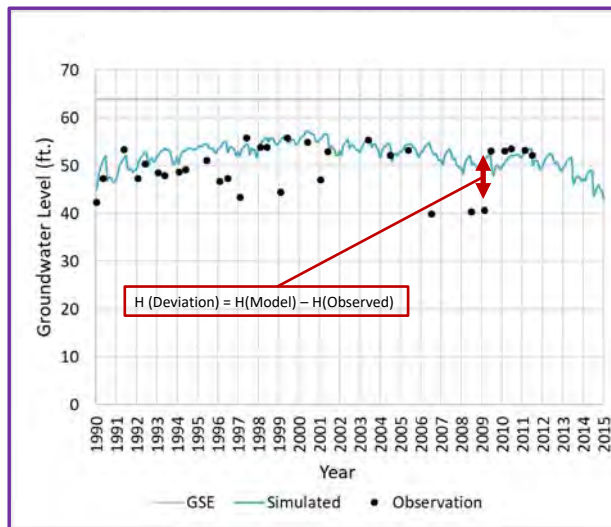


- 125 Calibration Wells
- **Considerations:**
 - Period of Record
 - Dedicated monitoring location
 - Availability of construction information
 - Minimal outliers

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EXAMPLE

GROUNDWATER HYDROGRAPHS



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POLL:

HOW ARE WE DOING THUS FAR, REGARDING LEVEL OF CONTENT?

- This is about what I expected
- Slow down, this is kind of new
- I need more details
- Others?

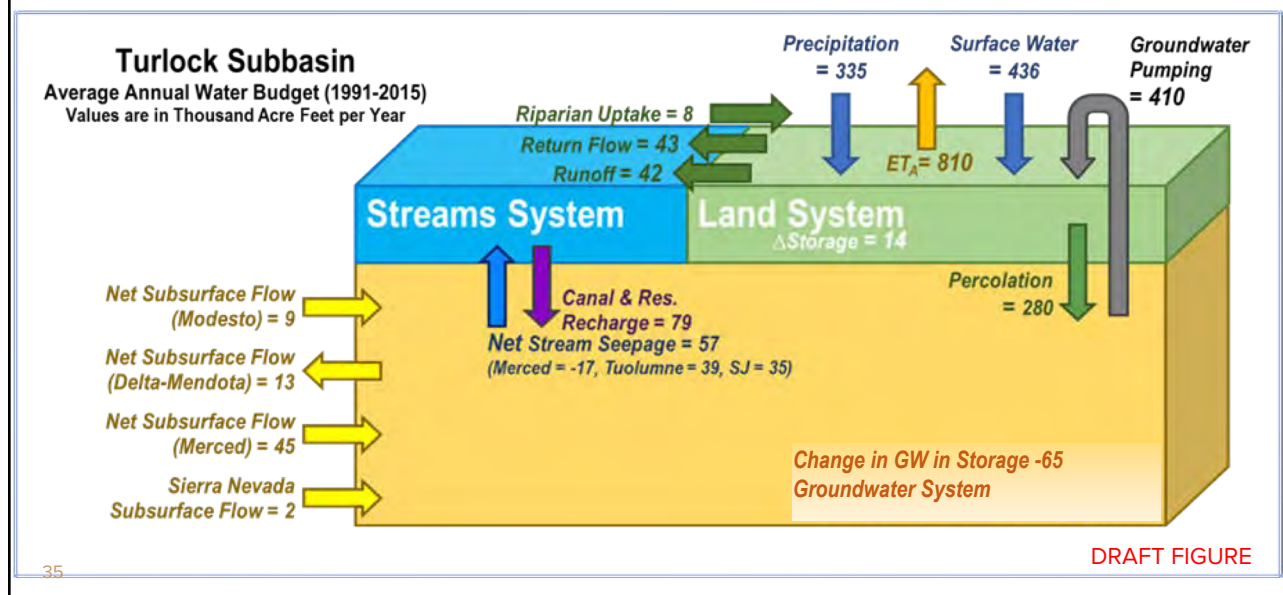
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GROUNDWATER BUDGETS

- Inputs (sources)
- Agricultural Demand
- Urban Demand
- Recharge/Extraction (inputs and outputs)
- Evaluate surplus and deficit over time

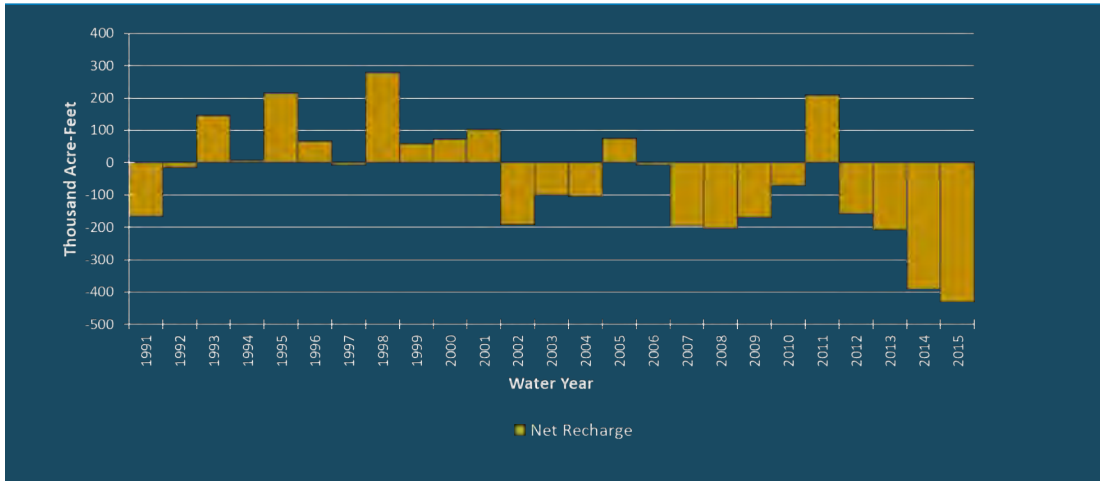
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GROUNDWATER BUDGET DIAGRAM



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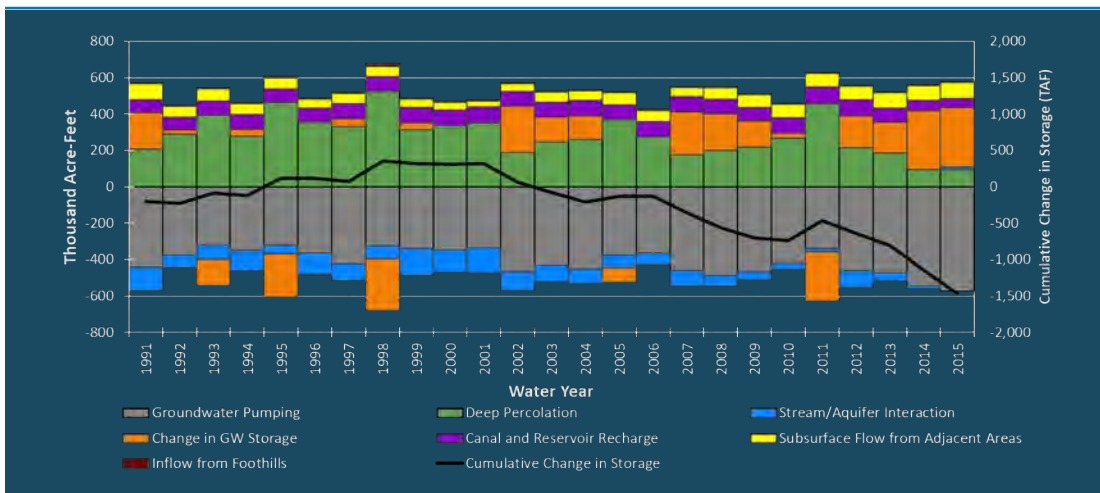
TURLOCK SUBBASIN: NET RECHARGE



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DRAFT FIGURE

TURLOCK SUBBASIN: GROUNDWATER BUDGET



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DRAFT FIGURE

TO SUMMARIZE WHERE WE ARE AT TODAY



- Subbasin has a historical water deficit of **65,000 AFY** on average
- Use this data to develop **projected water budgets** to analyze sustainable yield for future conditions, as required by the GSP regulations
 - *How does this affect sustainability indicators?*
 - *What management actions will we take over next 20 yrs to ensure sustainable yield?*



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SUSTAINABILITY INDICATORS



Chronic Lowering of Water Levels



Reduction of Groundwater Storage



Degradation of Water Quality



Land Subsidence Affecting Land Use



Depletion of Interconnected Surface Water Affecting Beneficial Use

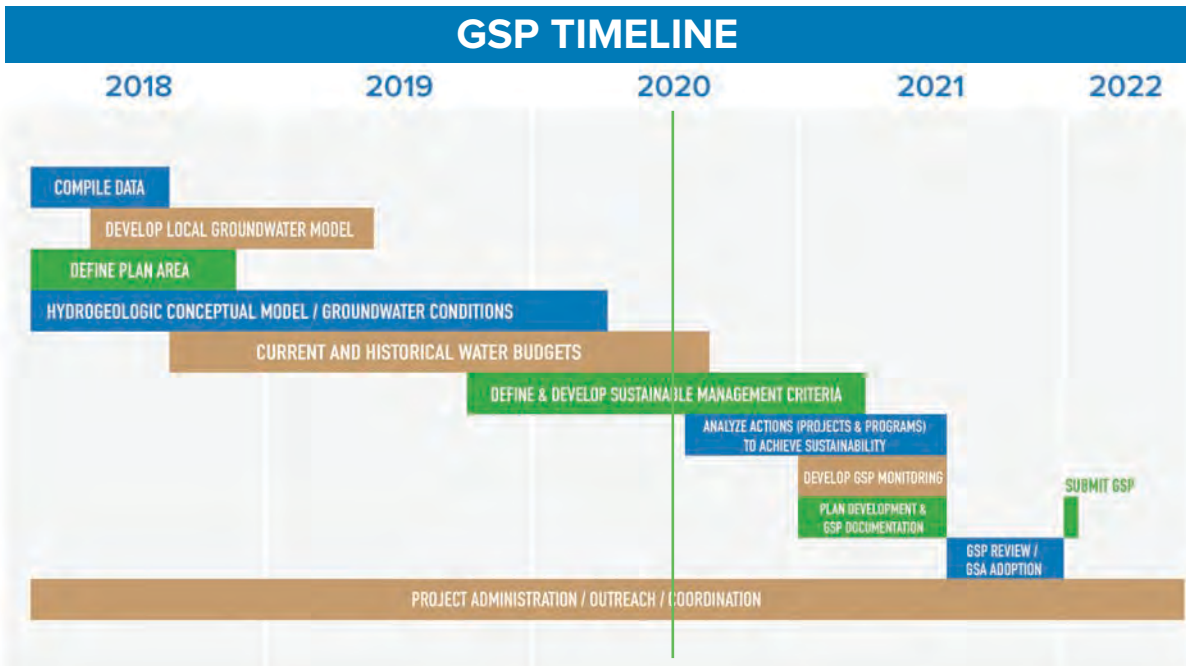
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MOVING FORWARD



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NEXT STEPS FOR GSP CONTENTS



- Address Comments on Model Calibration, as appropriate
- Projected Water Budgets and Sustainable Yield Analysis
- Develop *undesirable results* definition for Sustainability Indicators

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NEXT STEPS FOR CONNECTING WITH YOU



- In addition to existing actions (like email blasts)
 - Launch **Stakeholder Survey**; assess results; create report
 - Conduct **“Office Hours”** w/ Modesto Subbasin
 - More **Workshops** – virtual or physical
 - Develop mechanisms for receiving **formal GSP comments**
 - New **Videos**

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POLL:

WHAT DO YOU WANT TO LEARN ABOUT & DISCUSS NEXT?

- Sustainability Indicators
- Undesirable Results
- Management Actions and Projects
- More on Water Budgets
- Other

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POLL:

HOW WOULD YOU PREFER TO RECEIVE NEWS/INFORMATION ABOUT THE GSP?

- Website
- Email
- Social Media
- Direct mail (standard mail)
- Phone calls
- In person
- Text messages
- Other

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THANK YOU!



@TurlockSubbasin



Turlock Groundwater



Turlock Groundwater



TURLOCKGROUNDWATER.ORG

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