TWDB GROUNDWATER-SURFACE WATER INTERACTION STUDY

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Why Study Groundwater-Surface Water Interactions?

There is currently lack of data AND established data collection/analysis approach

Science of these interactions impacts understanding of:

- Surface water rights
- Groundwater pumping
- Environmental flows
- Bed and banks permits
Project Benefits

- Improve estimates of river gains and losses
- Improve understanding of relationship between alluvium and rivers
- Inform strategies to help achieve instream flow requirements
- Establish methodology for data collection and analysis
- Demonstrate regional cooperation
Project Background

- Project need and scope identified during update to the Central Carrizo-Wilcox, Queen City and Sparta GAM
- Funded by TWDB through Senate Bill 3 to support adaptive management efforts of Basin Bay Area Stakeholder Committee
- TWDB initially funded project at $75,000
- TWDB approached LCRA to implement the project
- Initial scoping after site identification indicated required budget of at least $160,000
Project Goals

- Establish data-based hydraulic parameters to be used in groundwater and surface water models
- Develop method and technologies to measure GW-SW interaction
Project Approach
Project Approach

Monitoring equipment:

- Three monitoring wells screened in distinct zones (water surface elevation, electrical conductivity, barometric pressure and temperature)
- Water data logger in Colorado River (surface water elevation, electrical conductivity and temperature)
Project Approach

Data analysis:

- Characterize water exchange between river and alluvium
- Quantify importance of bank storage as source of water to river
- Provide information that can be used in computer models (underflow, hyporheic zone, baseflow)
Project Partners
Draft Schedule

- Currently contracting with TWDB and project partners
- March-June 2019: Site prep and equipment installation
- June 2019-June 2020: Data collection
- June 2020: Presentation of preliminary results to project partners
- November 2020: Presentation of final results to project partners
- January 2021: Final project report