



**Request for Approval to Enter into an Interagency Agreement with the Regents of the University of California for \$1,497,611 to Provide Monitoring Support for the Delta Drought Response Pilot Program  
Staff Report**

---

This agenda item provides background on a proposed interagency agreement with the Regents of the University of California to monitor impacts of water conservation practices on field-level water budgets (10.1) and the draft Scope of Work and Tasks for the agreement (10.2). The content of the Scope of Work and Tasks is final, but minor writing changes may still occur during final review.

**RECOMMENDATION**

Staff recommends that the Board authorize the Executive Officer to execute the proposed interagency agreement with the Regents of the University of California.

**DESCRIPTION**

The proposed interagency agreement (Contract) between the Sacramento-San Joaquin Delta Conservancy (Delta Conservancy) and the Regents of the University of California (Davis, hereafter University) for \$1,497,611 would measure and estimate water budgets for up to six fields in the Sacramento-San Joaquin Delta (Delta) in support of the Delta Drought Response Pilot Program (DDRPP). The University and the Delta Conservancy will work with the Delta Drought Response Pilot Program (DDRPP) Oversight Committee to choose six field sites that can provide data to verify how different water conservation strategies affect field-level water budgets. A Field Selection Memorandum will document the rationale behind the fields identified for the study.

For each field site, the University shall acquire and install one set of research-grade eddy covariance, biometeorological, and soil measurement equipment to continuously measure and monitor micrometeorological conditions including evapotranspiration and carbon dioxide exchange. In addition to continuous evapotranspiration measurements, the University shall equip each field with the proper instruments to collect the following measurements that will enable the calculation of the full water budget: continuous soil moisture to be monitored at six locations that provide vertical profiles at nine depths down to 40 inches, soil core sampling twice per year at multiple locations across each field to quantify change in soil moisture storage at depths down to eight feet, which will account for depths beyond the root zone), local precipitation, applied water through irrigation, and runoff. Before the initiation of any sampling, the University will work with each individual landowner across the six fields to explain the full sampling schedule, the spatial extent and locations of sampling equipment, and field access needs for sampling. Due to supply chain delays in obtaining equipment, in the first year, the University will be working with data available from previous studies of annual crops in the Delta and use common modeling approaches and available data ([OpenET](#)), to estimate evapotranspiration. In the following project years, the University anticipates including the full deployment of field equipment to refine the model and remote sensing ET estimates.

After collecting data, the University shall calculate the monthly water budget for each field. The University shall analyze and perform quality assurance and quality control on collected field data (including, but not limited to, plant evapotranspiration, soil evaporation, precipitation, irrigation, carbon dioxide emission/sequestration, soil water storage, shallow groundwater level, and runoff). In the final year of the agreement, the University shall submit a Water Budget Calculations Memorandum to the Delta Conservancy documenting and summarizing the field measurements and calculations.

OpenET is a service that uses best available science to provide easily accessible satellite-based estimates of evapotranspiration for improved water management across the western United States. The water budgets calculated for each of the field sites will also be used to assess the application of OpenET to estimate consumptive water use of these six fields, recommend improvements to OpenET, and recommend improvements to the calculation of the OpenET ensemble value as applicable. The University shall use eddy covariance systems as the most direct way to measure evapotranspiration and CO<sub>2</sub> exchange known to the date, to ground truth the OpenET remote sensing product as an ensemble of multiple remote sensing products and evaluate the individual products involved in OpenET estimation of crop water use. The scope of this task will depend on the products and data provided by OpenET, which will either be via the publicly available products or the application programming interface (API). The University shall develop a OpenET Remote Sensing Evapotranspiration Memorandum to document the comparison between the ground measurements and the remote sensing products used in OpenET methodology.

**SUGGESTED MOTION LANGUAGE:**

Move the Board authorize the Executive Officer to enter into an interagency agreement with the Regents of the University of California to Provide Monitoring Support for the Delta Drought Response Pilot Program.

**CONTACT**

Dr. Rachel Wigginton, Senior Environmental Scientist  
Sacramento-San Joaquin Delta Conservancy  
[rachel.wigginton@deltaconservancy.ca.gov](mailto:rachel.wigginton@deltaconservancy.ca.gov)  
(916) 375-4994