

BACKGROUND:

The East Corning Basin, Groundwater Management Sub-area 8 of Glenn County relies solely on groundwater to meet the agricultural and domestic needs for water use. The area encompasses approximately 22,300 acres of large to medium agricultural operations, smaller ranchettes and riparian vegetation. Over the past few years a realization by the community that the reliability of groundwater and the continuing competition for the resource may be being affected by an increase in planted acreage into permanent crops and the subdivision of parcels. This along with the potential of adjoining surface water supplies being used to meet Delta water quality standards has brought on a greater level of awareness that alternatives need to be developed for source supplies.

This project will evaluate the feasibility of a conjunctive use program in the East Corning Basin area in Glenn County, and will investigate the feasibility of providing surface water from GCID's contractual water supplies, or flood flows from the Sacramento River to recharge this area thus reducing the frequency and duration of stream losses to the aquifer. This project provides significant benefits to the region by making water previously stored through in-lieu recharge available for extraction during dry periods. This increase in groundwater availability during dry periods makes more water available in the Sacramento River which would then be available to help meet Delta standards.

WORK PLAN:

The Glenn County Groundwater Reliability and Recharge Pilot Program will evaluate the feasibility of a conjunctive use program in the sub area 8 portion of Glenn County. The work will consist of five tasks.

ITEM 1: OUTREACH AND PUBLIC EDUCATION

Outreach is a key component of this in-lieu feasibility study. Outreach supports the project purpose by identifying landowners and irrigators that may be willing to participate in the program. Outreach will include development of an outreach plan, newsletters, webpage updates, public meetings, stakeholder meetings, participant meetings, GCID meetings, Glenn County WAC/TAC meetings, and Tehama County AB3030 TAC meetings. Newsletters and webpage updates are intended to reach as many members of the public in the area as possible. Public meetings are intended to solicit for project participants while meetings with County committees and GCID are intended to work out project details.

Outreach activities will also be used to disseminate study results to potential project participants. Willing participants will be provided with a cost analysis of achieving the project goals. GCID will have to review existing policies and/or establish new policies and procedures for the commitment of supplies to carry out the project. County water committees will need to be informed about project progress. Details of the outreach task are provided below:

- a) Task 1 - Develop Outreach Plan - An outreach plan will be developed that identifies the project's outreach methods, materials, and meetings.
- b) Task 2 - Public Outreach - Public outreach is focused in informing the public, disseminating information to potential project participants, and meetings with participants to work out agreement details. Public Outreach includes 4 sub-tasks:
 - 1. Outreach Materials - Outreach materials will be developed, including newsletters and a specific project webpage added to the Glenn County WAC webpage.
 - 2. Public Meetings – Three (3) public meetings will be held to inform the public and to inform potential project participants about the project.
 - 3. Focused Meetings – Three (3) focused meetings will be held with potential project participants to discuss surface water delivery options, discuss project details, solicit involvement from stakeholders, and share project results.
 - 4. Landowner Meetings – Three (3) landowner meetings will be held to work out agreement details with involved project participants.
 - 5. GCID Outreach – GCID Outreach will consist of up to two (2) meetings with GCID staff to discuss formalization of the water delivery contract for the project and a final, signed formalized contract to deliver water to project participants.
- c) County Water Committee Outreach – Outreach under this subtask will include three (3) presentations to the Glenn County WAC/TAC and two (2) presentations to the Tehama County AB3030 TAC. Presentations are intended to inform the county water committees, as well as to solicit input from the committees.

ITEM 2: LAND AND WATER USE SURVEY

A land and water use survey will be performed to help identify subarea 8 locations that are suitable for participation in the in-lieu project. Survey criteria and methods will be developed by the project team in coordination with consulting engineers and geologists, the Department of Agriculture, the Glenn County WAC/TAC, GCID, and the Capay Landowners Association. Existing information will be collected, and compiled in Geographic Information Systems (GIS). Data will then be reviewed, analyzed, and used to guide the land and water use field survey. Aerial images, parcel maps, agricultural use and history, groundwater contour data, current and historical groundwater level data, and existing groundwater models. The survey will also include investigation and inventory of existing irrigation wells as well as canals and ditches in the project area, and will

conclude with a searchable GIS database of surveyed information. Details of the land and water use survey task are outlined below:

- a) Task 1 - Preliminary GIS – Preliminary GIS work will identify, collect, and compile available data to use as a starting point for the land use survey. Preliminary GIS will collect, at a minimum, the data listed below:
 - Most current DWR and County Land use information
 - NRCS soil type and surface infiltration characteristics
 - Parcel maps
 - Aerial Photos
 - Roads and highways
 - Waterways and lakes
 - Water district boundaries
 - Conveyance facilities
 - DWR groundwater level monitoring well locations
- b) Task 2 - Land and Water Use Survey – The land and water use survey will be conducted by field staff that will physically visit locations in the project area and then will correct or verify land and water use data provided by DWR as necessary. The field survey will collect information on type of agriculture, source of irrigation water, irrigation method, crop types, and management practices.
- c) Task 3 - Well Inventory –The well inventory will identify existing wells through mailed paper surveys, email surveys, and phone surveys when and where applicable. Information collected will include, at a minimum: date installed, pumping capacity, well use, well log information, well depth, and well screened interval.
- d) Task 4 - Canal and Ditch Survey – The canal and ditch survey will identify waterways available for use during implementation of the in-lieu project. The survey will identify ownership of the canal or ditch, conduct field visits to determine canal or ditch suitability as a waterway, and will generate an inventory of canals and ditches suitable for use as part of the sub area 8 in-lieu project.
- e) Task 5 - GIS Database – All collected survey information will be compiled into a searchable GIS database. The database will provide the information necessary to determine feasibility of the in-lieu project by allowing identification of areas that meet multiple criteria.

ITEM 3: ANALYSIS AND DELIVERY OPTIONS

Analysis of data collected in Item 2 will be performed to determine the areas and participants that are most likely to benefit from the program. Analysis will include an evaluation of slopes, crop types, soils, and management practices, as well as proximity to

existing canals and ditches. Water needs for agricultural uses in the study area will be assessed and compared to available supplies.

Methods to deliver water to irrigators in the project area will be investigated. Analysis will consider the costs of pumping groundwater, costs associated with utilizing existing canals and ditches, costs of developing new canals and ditches, costs associated with developing a pressurized piping system, and costs associated with other alternate delivery systems if identified.

- a) Task 1 - Identify In-lieu Recharge Areas – Areas of sub area 8 that will benefit from surface water deliveries will be identified. Areas will be identified through comparisons of crop type, land slope, soil type, and management practices.
- b) Task 2 - Water Demand Assessment – Current water demands for areas that will benefit from surface water deliveries will be estimated. Qualitative description of historical and potential future water demand will be evaluated.
- c) Task 3 - Surface Water Delivery Option Identification – Potential methods to deliver surface water to participating landowners will be identified and described. Methods to be considered include, at a minimum: small canal and ditch delivery, large canal delivery, and pressurized piping delivery.
- d) Task 4 - Surface Water Cost – Costs to utilize surface water by participating landowners will be estimated. Cost estimates will include the cost to purchase surface water from GCID, operations costs, and costs to move surface water from the Glenn Colusa Canal to participating land. Costs for surface water will be estimated for each surface water delivery option.
- e) Task 5 - Groundwater Cost – Costs currently paid by sub area 8 landowners will be estimated. Cost estimates from groundwater pumping will include lift and energy costs.

ITEM 4: FORMALIZATION

The project team will develop an implementation schedule of the project when and if all are agreeable to the benefits of the project. Potential funding mechanisms will be identified and explored. A summary report will be prepared.

- a) Task 1 - Receive concurrence of GCID and landowners – Documentation of a commitment to participate in the program will be collected from GCID and participating landowners.
- b) Task 2 - Develop Schedule - A schedule will be developed that indicates the timing of project implementation.
- c) Task 3 - Identify Funding Sources – Funding opportunities will be identified and evaluated for feasibility. Funding sources evaluated will include funding for the

project as a standalone project, and will include evaluation of opportunities for funding through partnership with local Integrated Regional Water Management Plan areas.

- d) Task 4 - Landowner Monitoring Program – A landowner groundwater monitoring program will be developed to help evaluate effectiveness of converting from groundwater to surface water.

ITEM 5: PROJECT MANAGEMENT

Project Management will include quality control and assurance tasks, as well as coordination with local, regional, and state agencies. Quarterly reports will be submitted, and a final summary report will be developed.

- a) Task 1 - Quality Control and Quality Assurance

This task includes Quality Control and Quality Assurance (QA/QC) activities. QA/QC activities will include:

- Senior staff review and technical editing of written deliverables
- Calculation checks
- Reviews by Glenn County staff and GCID engineer
- Cost estimate reviews
- Design reviews and value engineering
- QA/QC updates will be presented in quarterly reports

At the start of the project, a kick-off meeting will be held to ensure that the project team understands the project and “buys in” to the project’s scope of work and QA/QC activities.

Periodic review of progress will be performed by County and GCID staff in a timely manner to ensure work is being performed in a professional manner in accordance with standard accepted practices.

- b) Task 2 - Coordinate with Local, Regional, and State agencies and committees - When given the opportunity, Glenn County staff will provide information regarding this project at other local and regional meetings where project specifics would be of interest to those in attendance.
- c) Task 3 - Prepare quarterly reports – Quarterly reports will be prepared every three months during project implementation. Quarterly reports will include project activities updates, project expenditures, and a summary of outreach activities.
- d) Task 4 - Prepare Final Report – A final report will be prepared that describes project activities; records land use surveys, and documents GCID and landowner involvement.

All project components will be done with full consultation and cooperation with the Department of Water Resources (DWR). Additionally all components of this proposal

will also be consistent with the ongoing DWR technical assistance to Glenn County and the surrounding region. Evaluation of qualifications of consultants selected to perform the assigned tasks presented in this proposal will be reviewed by the Glenn County WAC/TAC prior to the start of the project. None of the tasks in this proposal require development or use of unproven technology or procedures.