



PART C STATEMENT OF WORK, SECTION 1: RELEVANCE AND IMPORTANCE

The Department of Water Resources Northern District (DWR) Land and Water Use Section, conducts County Land and Water Use Surveys for each county on a five-year rotational basis. The 13 counties within the Northern District of DWR are shown on Map 1. Data collected includes crop type, water source, groundwater well and lift pump locations, and irrigation methods on a field-by-field basis. This information will be incorporated into the GIS-based pesticide permitting application developed by the Glenn County Agricultural Commissioner's office in cooperation with the Department of Pesticide Research. DWR will provide Glenn County agricultural commissioners with digitized line-work of County Surveys, to be used as a backdrop for the proposed project.

During the annual Pesticide Permit Application process, County biologists generally collect crop type and assign specific pesticides to the location. To assist DWR in its ability to develop annual updates, water source, specific well locations, irrigation methods, field drain locations, and receiving waterway will be able to be added with first-hand accuracy from property operators. This information will be provided to DWR in a GIS format that will assist determining on a yearly, rather than a five-year, time step to facilitate analyses of the following:

- Estimated groundwater extraction.
- Groundwater and surface water contamination.
- Applied water use for each field by crop, by water source.
- Water supply and demand for water districts, counties, and other local entities to help resolve local and regional water issues.
- Irrigation type and irrigation efficiencies.
- Irrigation water reuse.
- Irrecoverable losses.

Current land and water use data would provide different layers for analysis and help determine water parameters needed to maintain flexibility of implementing water use management and efficiency improvement at the local level while exploring regional program to maximize benefits. This product will support regional water initiatives such as groundwater storage, recycling, conservation, and desalination projects developing throughout the state. The rising costs and decreasing availability of imported water supplies have forced the state to seek new solutions for its water shortages. Regional response may be the most effective way to treat the symptoms as well as water shortages.



The proposed work and the information to be made available will aid significantly in determining water parameters for local water users, water districts, groundwater basins, watersheds groups, and for regional planning and water management areas. This would provide positive momentum with existing work groups and programs in addressing water reliability, water quality, and outflow to the Bay-Delta system.

Presented on Figure 1 are the tasks to be performed under this proposal, including the purchase and installation of equipment including computers and software in 12 offices of the agricultural commissioner offices (Glenn is already equipped) and five CIMIS stations.

The CIMIS stations are proposed for three counties in the Sacramento Valley. One would be located in the northwest and one on the coast.

Although the CIMIS stations are primarily for obtaining data to improve the efficiency of water use at the farm level, the data will have much broader application and be useful for storm and flood management as well.



PART E STATEMENT OF WORK, SECTION 3: MONITORING AND ASSESSMENT

The initial assessment of this proposal will be performed in Glenn County. A comparative assessment will be performed to compare the results of the data and information acquisition from the GIS-based permitting application with the results from DWR's most recent land use survey. The assessment will relate to total land in agriculture, estimates of applied water and source being groundwater or surface water. The results of this assessment for Glenn County will be presented to the Glenn County Advisory Committee to seek feedback from local water districts.

The impact of incorporating the additional data acquisition into the program will be evaluated as well. Glenn County, being the only county in the Northern District utilizing the program, will determine the impact so the information can be shared with other agricultural commissioner offices in advance of installing the station.

Incorporating high quality water and land use data into the GIS-based permitting program will enhance the ability of County agricultural biologists and water quantity and quality experts to facilitate future demands on limited resources.

Project effectiveness will be evaluated by tracking the number of permits issued by each County Department of Agriculture along with the number of acres having enhanced pesticide use conditions; this is the basis for the collection of this information. When grower information is assembled, the data will be provided to and reviewed by DWR to ensure the information is in the format necessary for its use as it relates to land and water use updates. As the project progresses, the collection of additional information may be necessary if initial assessments are inadequate for DWR's purposes. DWR Land and Water Use staff will coordinate with each county Department of Agriculture to ensure the data is correct. The Glenn County project manager will facilitate any additional training deemed necessary by any county Department of Agriculture during the term of this study through a staff Arc-GIS technician and the program developer.

Prior to program installation and use, a presentation by Glenn County staff, the program developer, and DWR staff will assemble all County staff for a formal presentation of the project. A series of workshops regarding this program will be held when the need arises or in the event of a new development in the program.



PART G OUTREACH, COMMUNITY INVOLVEMENT, AND ACCEPTANCE

Information on implementing and developing this program will be addressed initially with the Water Advisory Committee of Glenn County. Once the information has been worked up and gone through the quality assurance reviews, it will be made available to water districts in Glenn County for review and comment on the utility of the information and ways that it might be enhanced. The information will also be presented at other county or regional water organizations and at regional Agricultural Commissioner meetings, which meet monthly in the Sacramento Valley and bi-monthly in Northern California.

Issues such as training and scheduling for individual counties can be presented during these meetings. As the program develops and improves, continuing education may become available with further assistance from the Department of Pesticide Regulation.

The work product will replace the annual crop reports presently compiled. The information will reside in a Regional/County GIS library. Once the GIS library is established, it will support water initiatives such as groundwater storage, recycling, conservation, and desalination projects.



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PART I BENEFITS AND COSTS

The costs for this proposal are provided in Table 1. The total cost of \$610,115 breaks down as follows:

Equipment:	\$177,500	Five CIMIS Stations
	74,400	Computers and Software for 12 County Agricultural Commissioner's Offices
Labor and Travel:	\$143,040	DWR Northern District
	<u>215,175</u>	Glenn County
	\$610,115	

Currently, the cost to perform a survey for each county is approximately \$200,000. The work performed under this proposal will facilitate obtaining more accurate data on an annual basis for important agricultural land.

The data and information to be developed from the work proposed herein are critical to improving water management at the local level. The understanding that comes from the evaluation and analyses that can be performed with the improved quality of the data and information, will aid local water districts and municipalities in formulating sound water management programs and drought emergency preparedness programs. Recognizing the period of record of the state's water resources is relatively short and that it is not possible to develop water supplies to meet the state's water needs during dry periods that are more severe in magnitude and duration than what has been recorded, dictates obtaining information with the detail and specificity described herein. The development of this "tool," first for Glenn County with the transfer to other counties within the Northern District as it is developed and checked, and then to other counties and districts in the state.