



Water Advisory Committee

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FREQUENTLY ASKED QUESTIONS ABOUT GLENN COUNTY GROUNDWATER ORDINANCE NO. 1115 ITS BACKGROUND AND INTENT, ORGANIZATIONAL STRUCTURE, AND STATUS

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INTRODUCTION

Glenn County Ordinance No. 1115, Groundwater Management is an important ordinance aimed at protecting the groundwater resource through wise management. Its implementation and long term success partially depends on a well-informed constituency of water users.

BACKGROUND AND INTENT

On February 15, 2000 the Glenn County Board of Supervisors adopted Ordinance No. 1115, Groundwater Management, and made it part of the county code. The intent of the ordinance is to insure the continued availability of groundwater and to ensure that extraction of groundwater does not exceed safe levels that could threaten the economy or environment of Glenn County. Protection of groundwater quality and prevention of land subsidence are also objectives of the ordinance.

By adopting the groundwater ordinance, the county does not intend to limit other means of managing the county's groundwater. The ordinance supports cooperation among interested, local agencies to further develop and implement joint groundwater management practices. It emphasizes

locally driven processes to manage the groundwater resource.

The ordinance does not prohibit groundwater management practices that may involve the export of water. However, it clearly states that groundwater management practices including water exports shall not cause harm to adjacent areas. The ordinance specifically cites modification, reduction, or termination of wells involved with water exports as a first priority in a sequence of management actions to be taken in the event groundwater levels become critical.

Frequently Asked Questions about the Ordinance

Q1. How did the ordinance come about?

A1. Several years ago a number of concerned farmers began meeting to discuss how to insure that the future of the groundwater resources of Glenn County remained in the hands of local residents. The ordinance is the culmination of what was considered the best alternative available to local residents.

Q2. Why is the ordinance necessary?

A2. There are many reasons but foremost the ordinance demonstrates a desire for local management and control of the groundwater resource opposed to risking state or federal intervention. Local users of the groundwater can most effectively manage the groundwater resource.

Q3. How is the WAC funded?

A3. The County provides administrative support to the Water Advisory Committee and its Technical Advisory Committee through the Department of Agriculture. Much of the development of the Ordinance and administrative support was provided by the Board of Supervisors, staff of the Glenn County departments of Public Work, Planning and Agriculture, and other agency employees as one task in their overall job assignments. Interested citizens and water districts of Glenn County voluntarily do a share of the work too. Also, a grant helps support part-time assistance from a professional engineer.

Q4. The ordinance sounds complex, how can it be implemented effectively?

A4. Without question, implementing an effective groundwater management ordinance is no small feat. However, the ordinance has adopted a thoroughly thought-out approach for managing its groundwater resource. The approach is referred to as the Basin Management Objective (BMO) method of managing groundwater.

Q5. Why is the Basin Management Objective (BMO) Method considered a reasonable and technically sound approach to manage groundwater?

A5. Nearly everyone interested in groundwater agrees that the “safe yield” of the groundwater resource should not be exceeded. One challenge is that “safe yield” is a moving target that is difficult to define in a manner acceptable to all stakeholders. Usually, “safe yield” is associated with balancing groundwater extraction with groundwater recharge and it is often expressed as a specific volume (acre-ft) of water that can be pumped from

the aquifer system. However, the more groundwater that is extracted, the greater the groundwater recharge will be from surface water when it is available. More pumping creates a larger difference in elevation head (gradient) between the surface water and groundwater and the rate of recharge to the groundwater aquifer is greater. A second challenge is that “safe yield” is nearly impossible to measure accurately using affordable methods. Plus, measuring “safe yield” could potentially be quite intrusive on private property rights.

The BMO method of managing groundwater acknowledges that measuring “safe yield” in terms of volume (ac-ft) is impractical and does not try to measure it. Instead, the BMO method is founded on monitoring tangible indicators of the groundwater aquifer condition. Groundwater levels, groundwater quality, and land subsidence are measured to maintain a current understanding of the aquifer. Successive years of declining groundwater levels or groundwater depths approaching historically low levels are indicators that existing groundwater management may need to be re-evaluated and modified. Similarly, early awareness of changes in groundwater quality may signify need to re-evaluate existing management. Early detection of land subsidence protects against damage to hydraulic infrastructure such as well casings and canals.

Q6. Where can I get a copy of the ordinance and the BMO document?

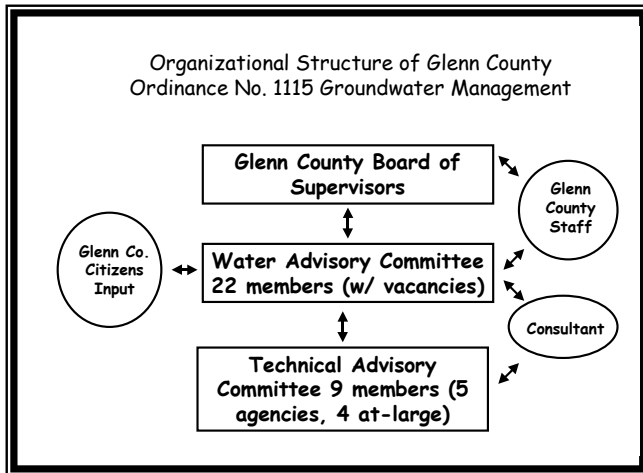
A6. The ordinance has been incorporated into the county code, Section 20.03. It may be viewed on the County’s website, www.countyofglenn.net. The BMO document is also available on the website in the Water Advisory Committee section.

ORGANIZATIONAL STRUCTURE

The importance and sensitive nature of this ordinance was not taken lightly or rushed during its development. There was no attempt to actually write the ordinance until

several years of sharing concepts and concerns were openly discussed among local parties with similar and different interests in the groundwater resource. The ordinance was not adopted until a public hearing that reviewed the ordinance in draft form was completed.

The flow chart below illustrates who is responsible for operation of the ordinance. It was designed to be a locally driven process that is responsive to continuous public input by experienced groundwater users. Final decisions and actions are the responsibility of the publicly elected Glenn County Board of Supervisors.



A 22-member Water Advisory Committee (WAC) was formed by the Board of Supervisors. A concerted effort was made to assure the appointments reflected a wide cross-section of local interests in the Glenn County groundwater resource. During the initial phases of implementing the groundwater ordinance, the WAC met about every month, eventually, the frequency of meeting should lessen.

Each Water Advisory Committee member contributes to the groundwater ordinance by:

- Providing hands-on experience with agricultural and domestic wells and pumps concerning operable and affordable groundwater levels.
- Asserting leadership, providing representation, and assisting with

communication among their sub-community of groundwater users as implementation of the ordinance progresses.

- Being aware and knowledgeable of historic groundwater levels and data sources.
- Developing, approving, and overseeing specific Basin Management Objectives (BMO) for their sub-area groundwater basin.
- Exercising voting authority on WAC recommendations to the Board of Supervisors.
- Directing and scrutinizing work completed by the Technical Advisory Committee (TAC).

A Technical Advisory Committee (TAC) consisting of nine members works under the direction of the Water Advisory Committee. The TAC is appointed by the Board of Supervisors. Five members represent public agencies and four of the members are at-large appointments representing the north, central, south, and east groundwater regions of the county.

Members of the Technical Advisory Committee contribute to the ordinance by:

- Completing tasks involving groundwater data gathering, analysis, and interpretation.
- Reviewing groundwater monitoring methods, proposing methods of establishing Basin Management Objectives within each sub-area, and addressing compliance issues.
- Assisting with out-reach to the larger community of groundwater users in Glenn County.

The Technical Advisory Committee has no decision-making authority, all of its recommendations are subject to review, modification, and approval by the larger Water Advisory Committee.

A consultant representing a reputable engineering firm was hired with grant monies to also assist with implementing the initial phases of the groundwater ordinance.

Questions about the Management Structure of the Ordinance

Q1. Specifically, who are the Water Advisory Committee Members and the Technical Advisory Committee Members?

A1. A sincere effort was made to establish a wide cross-section of representation on this committee so the list of individuals is long. Names of the committee members may be obtained from the Glenn Co. Dept. of Agriculture, (530) 934-6501.

Q2. What rationale was used when appointments were made to the Water Advisory Committee?

A2. The groundwater basin underlying the valley floor of Glenn County was divided into 17 sub-area basins. An attempt was made to group groundwater users together who had consistent interests, similar hydrologic conditions, and to the extent possible, Board of Supervisor boundaries were considered. WAC membership reflects these 17 sub-areas.

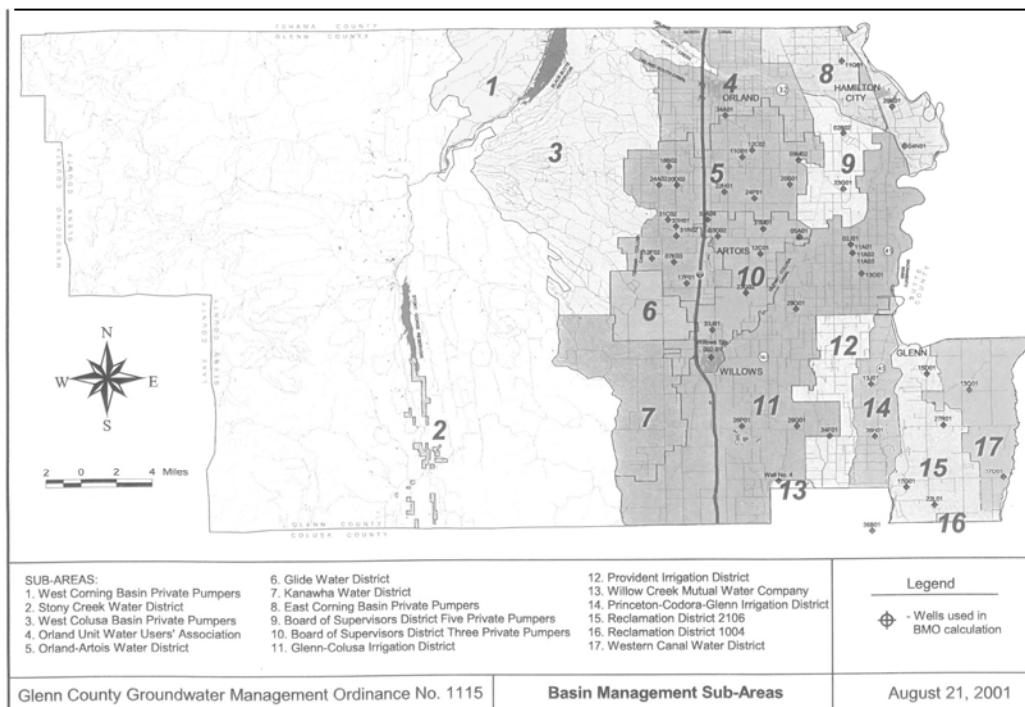
Q3. Are all sub-areas well represented?

A3. Most sub-areas have active

representation. There is a need for volunteers among private pumpers in sub-areas 1, and 2 to represent their respective groundwater sub-basins. Sub-areas that have surface water as well as groundwater have tended to be better represented. This reflects that water districts have existing Boards of Directors and management so participation in implementing the ordinance is more readily accessible.

Q4. What happens if a sub-area is not actively represented?

A4. It is difficult to implement an initial Basin Management Objective for the sub-area because there is no organization to provide input from the groundwater pumpers in that sub-area. More than likely, it puts their very own groundwater resource at more risk. The intent of the ordinance is to protect the continued availability of groundwater in the sub-area. If a Basin Management Objective is not in place for a sub-area, there is no mechanism to protect the groundwater resource in the event of drought, increased local uses, or exports.



BMO METHOD OF MANAGING GROUNDWATER and STATUS OF IMPLEMENTATION

The BMO method of managing groundwater is a concept that has been adopted in the groundwater ordinance as the approach to be used in managing the county's groundwater resource. The method incorporates some fundamental principles. They include:

- Defining management sub-areas
- Identifying key elements to manage
- Public input
- Monitoring
- Adaptive management
- Enforcement

Management sub-areas have been established. The boundaries of these 17 sub-areas are subject to annual review as implementation of the ordinance progresses, so if necessary, they may be changed based on results of groundwater monitoring.

The **key management elements** as stated in the purpose statement of the ordinance are:

- Groundwater levels (quantity)
- Groundwater quality
- Land subsidence

All of these management elements are considered of equal importance. However, due to limited resources, the Water Advisory Committee and the Board of Supervisors agreed that Basin Management Objectives would be established for groundwater levels first. Initial Basin Management Objectives (BMOs) concerning groundwater levels were adopted in August 2001. Groundwater quality will be addressed along with land subsidence in 2002.

Several steps have been taken to engage **public input** while developing and implementing the groundwater ordinance: They include:

- Many years of discussion prior to drafting of the ordinance to reach agreement on the best approach to take.
- Public hearings were held to comment on the draft ordinance prior to its approval by the Board of Supervisors.
- Appointment of the Water Advisory Committee members is an ongoing mechanism to assure public input into the locally driven ordinance.
- Outreach efforts to help keep the larger constituency of groundwater users informed on the process. Public workshops have been held and articles have appeared in the Glenn County Farm Bureau Newsletter and area newspapers.

Monitoring groundwater conditions is the foundation of the BMO concept and the groundwater ordinance. Unbiased scientific monitoring and rapid dissemination of all groundwater data collected is essential to the process.

An existing countywide monitoring network of wells is being used initially to determine both historic and present conditions of the groundwater aquifer system for each of the 17 sub-area basins. Monitoring of groundwater levels is done only at well sites where the individual landowner has voluntarily given permission.

For many years about 180 wells throughout Glenn County have been used to access and measure the groundwater levels. The Northern District of the California Department of Water Resources manages this data collection. At a minimum, static groundwater levels (without pump drawdown) are measured in the spring (usually March) and then again in the fall (usually October) each year.

Historic groundwater levels from selected wells among this network are the primary source of data being used to establish the initial BMO for each sub-area basin. Some water districts and municipalities have independent records of groundwater levels

for their sub-areas and are contributing this data to the process too. The extent and the intensity of the groundwater monitoring can change to reflect a growing understanding of the groundwater system.

If available, well sites with groundwater level records for the period of 1976 to the present are being used to establish the management objectives for each sub-area groundwater basin. The Tehama-Colusa Canal began delivering surface water for irrigation in 1976 and became an important source of recharge to the groundwater aquifer system in Glenn County. This historical timeframe also shows groundwater levels for two critical periods of drought (1977 and 1987-1992).

A Basin Management Objective (BMO) is a written description of acceptable, unacceptable, and critically unacceptable groundwater levels within each sub-area basin. These threshold levels are determined based on evaluation of the historic groundwater data described previously. Included with this description is a written explanation giving the rationale for setting these thresholds. The management objectives will be reviewed annually.

Each Water Advisory Committee member is responsible to ensure acceptable management objectives are established for their sub-area. Assistance is available from the other members of the Water Advisory Committee, from individuals on the Technical Advisory Committee, and from an independent consultant.

Different methods have been used to establish the initial management objectives in the 17 sub-areas. Fifteen of the 17 sub-areas have established initial management objectives at this time.

If available, each sub-area is using groundwater levels from multiple well sites to establish their management objectives. Most sub-areas have established management objectives for each individual well site where monitoring data has been

and is continuing to be collected rather than setting one set of management objectives for an entire sub-area. Setting management objectives for each monitoring site within a sub-area may be a more robust and flexible approach to understanding and managing site specific groundwater conditions within a sub-area.

However, sub-areas 6 and 7 have established one basin management objective for their respective sub-basins based on average groundwater levels monitored for a network of well sites. These differences in preferred methods of setting management objectives emphasize that local control is truly being exercised by groundwater users.

Similarly, there is no “one size fits all” countywide set of management objectives. Instead each of the 17 sub-area basins has set its own management objectives and can operate within them as long as their management practices do not result in exceeding the management objectives of other surrounding sub-areas.

Groundwater data processing, analysis and reporting will follow data collection. Reporting the new findings and comparing them to the initial management objectives established for each sub-area will lead to sound **adaptive management** decisions by the Glenn County Water Advisory Committee and the Glenn County Board of Supervisors (the management authority).

Adaptive management can only be successful if all the parties participating in the process genuinely want to properly manage their groundwater resource within their management sub-area. Also, the results from monitoring must be the only basis for determining whether a management area is within acceptable management levels. The Basin Management Objectives concept cannot succeed if unfounded complaints by individuals or small groups of individuals drive the process.

Enforcement is the final principle of the BMO concept. The intent of the Glenn County Groundwater Ordinance and of the Basin Management Objectives concept is to protect the resource through wise management, not to regulate it.

No enforcement actions will be taken until the basin management objectives are not met in a sub-area. Negotiations and constructive solutions between the affected parties will be sought first. Enforcement actions will require approval by the Water Advisory Committee and the Board of Supervisors before they are implemented.

Questions about the BMO Concept

Q1: If I were interested in becoming more involved who should I contact?

A1: Contact the Department of Agriculture for Glenn County, (530) 934-6501.

Q2: I thought this was only a monitoring ordinance and not a regulatory ordinance?

A2: The title of the ordinance implies this is a "Management" ordinance. If the monitoring suggests the groundwater levels are declining to levels not ever experienced before, wouldn't it be prudent to investigate what has changed with the management practices if the intent is to truly protect the resource? Local efforts to manage the groundwater resource would likely be much less regulatory in nature than if regulations were mandated through state or federal legislation.

Q3: This is coined "a locally driven process" but it sounds like the main source of groundwater data is through a state agency, shouldn't the process rely on an independent network of groundwater monitoring sites.

A3: A tough but reasonable question. Underlying this question are fiscal and trust issues. Monitoring the groundwater resource is an expensive process. Are local taxpayers willing to pay more taxes to have trained independent staff available to collect

groundwater data and to manage this groundwater ordinance? It may be more fiscally responsible to try to capitalize on the existing groundwater monitoring network.

With a wide cross-section of participation in the process, perhaps some of the confidence issues can be overcome with appropriate checks and balances built into the process. As an example, in some sub-areas, water districts and city municipalities are using some of their independent groundwater data in combination with data from the Department of Water Resources groundwater monitoring network.

Also, there is value in the historical data. We can observe where groundwater levels have been during some of the more recent, severe droughts (i.e. 1977 and 1991). Choosing not to use this 25-year history while accumulating new, historical data will delay the establishment of management objectives for years and the actual management of the groundwater resource. A delay could be risky given the larger scope of California's statewide water needs.

Q4. It has been stated that groundwater levels are monitored by the State (Department of Water Resources) only at well sites where the private landowner has voluntarily given permission to take the measurements. However, I have experienced someone taking measurements at a well on my property without my permission, so is voluntary participation really true?

A4: No one desires to be trespassing on private property or to ignore private property rights. If you are concerned that groundwater data is collected from a well on your property without your permission, contact your sub-area representative on the Water Advisory Committee, your Board of Supervisor representative; the Department of Agriculture; the Department of Water Resources; or UC Cooperative Extension to help resolve the problem.

There have been instances where this concern has occurred and after checking

into the matter, it was discovered that communications had broken down in one form or another. For example: one member of the land ownership may have given permission without notifying others; land ownership or tenant changed since permission was initially given to monitor groundwater levels; or several years have passed since permission was given and periodic communication had not continued to ensure it was alright to continue the monitoring.

Q5: Shouldn't we be monitoring groundwater levels in the summer when pumping is most intensive?

A5: Yes summer groundwater levels would improve the ability to recognize unacceptable declines in groundwater levels. Scheduling to monitor static levels in the summer is more difficult because pumps and neighboring pumps are almost always running. At this time, there are no dedicated monitoring wells to support this task. However, an AB303 grant has been awarded to install four dedicated monitoring wells. These wells will be installed in 2002. Additional grant funding will be sought for 2003 to improve the dedicated monitoring grid. In the interim, fall measurements prior to any significant recharge are a reasonable substitute since the measurement is taken before there is much recharge from rainfall and runoff.

Q6: Do all sub-area basins have historic groundwater level data available? If not, how can management objectives be established for these sub-basins?

A6: No, sub-areas 1 and 3 do not have any wells in the existing monitoring network. So, no management objectives can be set in these areas, thus, the groundwater levels in these sub-areas are left unprotected. Steps are being undertaken to identify well sites and gain permission to measure groundwater levels. Volunteer landowners with wells and who would allow groundwater measurements are needed in these sub-areas. No management objectives can be established until a history of groundwater levels is developed for these sub-areas.

Some other sub-areas have fewer monitoring sites than desired and efforts are underway to try to correct the situation.

Q7: Why are static groundwater levels measured instead of pumping levels?

A7: The change in static groundwater levels between spring and fall is a practical and reliable means to monitor groundwater conditions and confirm that management of the resource is within a "safe yield". Static groundwater levels also measure the condition of aquifer system without the influences of well design and geology, which affect well efficiency, plus, pumping plant efficiency can change. However, if a sub-area would prefer to measure pumping levels, there is nothing in the ordinance that restricts them from doing so. It would require implementing a practical monitoring program and developing enough historical data to establish an initial management objective.

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Both are appointed members of the Glenn County Groundwater Technical Advisory Committee.