

Section 3

Plan Implementation

The Department is already performing many of the groundwater management activities associated with an AB 3030 Groundwater Management Plan. Through plan implementation, the Department is formalizing its groundwater management goal, management objectives, and plan components that elaborate on both current actions and planned future actions under the GMP.

3.1 Groundwater Management Goal

The goal of the Butte County GMP is to maintain efficient and effective groundwater management, quantity and quality, thereby providing a sustainable, high quality supply for agricultural, environmental, and urban use into the future that remains protective of residents' health, welfare, and safety.

3.2 Groundwater Management Objectives

Butte County began to establish groundwater management objectives in Chapter 33 of the Butte County Code, the Groundwater Conservation Ordinance. The purposes of Chapter 33 include:

“The groundwater underlying Butte County is a significant water resource which must be reasonably and beneficially used and conserved for the benefit of the overlying land by avoiding extractions which harm the Butte Basin aquifer, causing exceedence of the safe yield or a condition of overdraft.”

To accomplish the stated plan goal, the following management objectives are adopted under the Butte County GMP:

- Minimize the long-term drawdown of groundwater levels;
- Protect groundwater quality;
- Prevent inelastic land surface subsidence resulting from groundwater pumping;
- Minimize changes to surface water flows and quality that directly affect groundwater levels or quality;
- Minimize the effect of groundwater pumping on surface water flows and quality; and
- Evaluate groundwater replenishment and cooperative management projects.
- Provide effective and efficient management of groundwater recharge projects and areas.

The Butte County Board of Supervisors February 10, 2004 approval of a groundwater management ordinance, establishing Chapter 33A of the Butte County Code, directs

the Department to support the development and implementation of quantitative BMOs within 16 defined sub-inventory units overlying the groundwater basin by February 2005. The above stated management objectives will guide development of the quantitative BMOs in Butte County. The Butte County Groundwater Management Ordinance is included in Appendix B.

If a conjunctive use or coordinated groundwater management program were to be established within Butte County, a preliminary evaluation must first occur to address and explore the hydrogeology of our region. Economic, engineering, and environmental issues must be determined to assist local decision makers with policy making. Such work would likely involve CEQA and the process would be clear and transparent. Butte County's fiscal condition is always a concern to policy makers. If possible, and if it is environmentally, economically, technically, and socially sound, it is the interest of the County to minimize financial impacts on its General Fund, which in turn preserves the use of tax payer dollars to other vital County functions.

3.3 GMP Components

As discussed in section 1.6 and shown on Table 1-2, a number of mandatory, recommended, and voluntary components constitute the GMP content. These components have been grouped and are discussed under the following five headings:

- Groundwater Monitoring;
- Groundwater Resource Protection;
- Groundwater Sustainability;
- Stakeholder Involvement; and
- Integrated Water Resource Planning.

3.4 Groundwater Monitoring

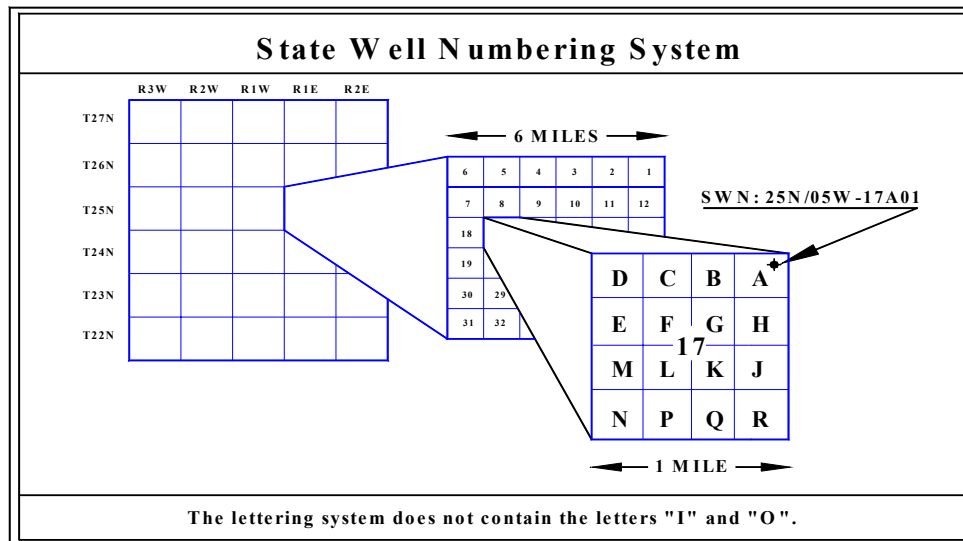
The Department, in close cooperation with DWR Northern District, has developed and monitors an extensive monitoring network, as shown on Figure 3-1. Ongoing groundwater monitoring provides information needed to document current conditions, assess long-term trends, and to support development and implementation of BMOs associated with:

- Groundwater levels;
- Water quality; and
- Inelastic land subsidence.

3.4.1 Groundwater Elevation Monitoring

The Groundwater Conservation Ordinance (see Section 3.5.3) requires the Department, in cooperation with its Technical Advisory Committee, Butte Basin Water Users Association (BBWUA), DWR and the Regional Water Quality Control Board to develop and coordinate a countywide groundwater monitoring program. The program requires:

- Identification of specific monitoring wells.
- Measurement of groundwater levels in the monitoring wells at least four (4) times per year, during the months of March, July, August, and October.
- Each district and city within in the County is requested by the Department to submit copies of all its groundwater monitoring reports not later than December 1 of each year. Individuals are also encouraged to voluntarily provide any available



Source: Department of Water Resources, Northern District

Figure 3-2
State Well Numbering System

groundwater data.

In 1997, the Department, in cooperation with DWR, began to expand the number of wells and frequency of groundwater level monitoring in the valley portion of Butte County. The current monitoring grid has 104 wells that the Department monitors for groundwater level. Approximately 29 of the 104 wells include water level sensors that continuously monitor and record water elevation. The remaining wells are monitored four times per year, in March, July, August, and October.

The monitoring wells are numbered using the state well numbering system. The state well numbering system identifies each well by its location according to the township, range, section, and tract. Figure 3-2 illustrates the State Well Numbering System. An example could be a well designated 25N05W17A01M. The "25N" indicates the township, "05W" indicates the range, "17" indicates the section number, "A"

indicates the tract portion of the section, "01" indicates that this is the first well installed in that area, and "M" stands for Mount Diablo Meridian (the baseline for the township and range system). Maps often represent this well information with just the section, tract portion of section and number; in this case, 17A01.

Recent monitoring results and a discussion of groundwater levels are included in the annual report submitted to the Butte County Water Commission by BBWUA entitled *2003 Groundwater Status Report*. The report is included in Appendix C. In general, the overall health of groundwater elevations is good. Groundwater level declines ranging from 0.8 to 2.0 feet per year have been observed in many areas of the county. The report recommends close observation of groundwater level trends in areas with observed declines, but increased groundwater extraction is not believed to be the cause.

3.4.2 Groundwater Quality Monitoring

Groundwater quality monitoring is now required under the Groundwater Management ordinance as codified in Chapter 33A-9. At a minimum, groundwater samples will be collected once per year during peak groundwater use (July or August) and analyzed for temperature, pH, and electrical conductivity (EC).

The Department last conducted groundwater quality sampling throughout the Butte Basin during the week of July 28 through August 1, 2003. In cooperation with the DWR Northern District and the California State University, Chico, ten actively pumped wells throughout the basin were sampled for temperature, total dissolved solids (TDS), EC and pH. Figure 3-1 shows the sample locations and Table 3-1 presents the results of the water quality testing.

TDS measurements generally indicate the quantity of inorganic salts and small amounts of organic matter. The California state and Environmental Protection Agency (EPA) secondary drinking water standard for TDS is 500 milligrams per liter (mg/L), and the agricultural water quality goal for TDS is 450 mg/L. The secondary standards refer to the levels above which the constituent may be objectionable because of aesthetics or taste. All samples collected in 2003 indicated TDS levels meet both agricultural and drinking water standards.

The EPA's recommended preferable range for pH is from 6.5 and 8.5. All of the pH levels sampled for the basin are within this preferred range.

**Table 3-1
Butte County 2003 Groundwater Quality Assessment**

State Well Number	Approximate Location	Temperature °C	TDS (ppm)	EC (µS)	pH
18N02E35R01M	Gridley	18.5	184	370	7.5
19N04E06E02M	Oroville	17.9	82	164	6.5
20N01E15D01M	Western	18.1	123	248	8.1
20N02E09M02M	Esquon	19.9	213	425	7.5
20N02E15R01M	Western	18.2	172	344	6.6
20N02E24Q01M	Cherokee	21.9	115	232	7.5
21N01E15E02M	Dayton	19.9	175	348	7.2
21N03E26E01M	Butte Valley	26.4	93	186	6.9
22N01E15D02M	M&T	18.2	279	551	7.5
23N01E29L03M	North Chico	20.3	109	225	7.6

TDS – Total Dissolved Solids (parts per million)
EC – Electrical Conductivity (microseimens)

3.4.3 Inelastic Land Subsidence Monitoring

Four extensometers were installed between 1999 and 2003 by DWR in conjunction with the Department. Extensometer locations are shown on Figure 3-1. Two of the four wells are currently capped due to artesian flow. The Department does not currently monitor these two extensometers, but will monitor them after extending the well casing to a level above the well's static water level. Figures 3-3 and 3-4 present the extensometer records from the other two wells. Recent subsidence monitoring results are included in the *BBWUA 2003 Groundwater Status Report*. The report is included in Appendix C. Extensometer measurements indicate subsidence is not occurring. Qualitative observation also indicates no subsidence of a significant magnitude.

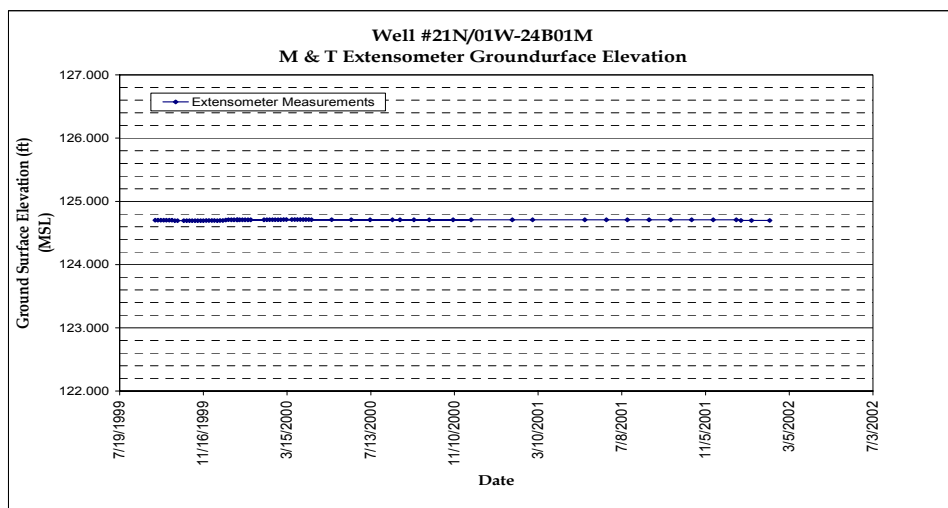
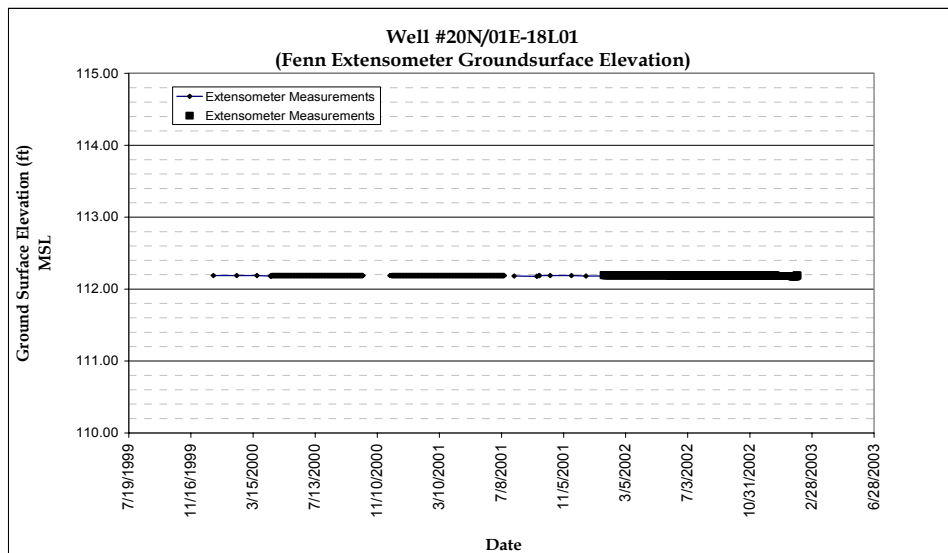


Figure 3-3
Extensometer 21N01W24B01M



Source: Department of Water Resources

Figure 3-4
Extensometer 20N01E18L01M

Groundwater Monitoring Actions: The Department will take the following actions:

- Support the development and implementation of BMOs in 16 sub-inventory areas overlying the groundwater basin.
- Work with local stakeholders and DWR to identify areas that may need additional groundwater level, groundwater quality, or subsidence monitoring based on identified data gaps or negative performance trends.
- Work with state and federal agencies to secure funding for expansion of the monitoring grid.
- Coordinate with DWR and local landowners to ensure that selected wells are maintained as part of a long-term monitoring program.

3.5 Groundwater Resource Protection

Butte County has enacted various ordinances specifically designed to promote the protection of groundwater resources, including:

- Groundwater well ordinances (5);
- Groundwater Management Program and Plan ordinance;
- Groundwater Management ordinance (BMO ordinance); and
- Groundwater Conservation ordinance.

Additional groundwater protection measures are provided under the Conservation Element of the County's General Plan. Wellhead and recharge protection measures may also be considered by the Department. The following sections describe existing groundwater resource protection ordinances and measures.

3.5.1 Groundwater Well Ordinances

The California Water Code (13700 through 13806) requires proper construction of wells, and minimum standards for the construction of wells are specified in DWR Bulletins 74-81 and 74-90. These standards apply to all water wells, cathodic protection wells, and monitoring wells.

Chapter 23B of the Butte County General Ordinances Appendix E of the GMP enforces minimum standards for the construction of wells as specified in DWR Bulletins 74-81 and 74-90, except where superseded by state or federal law or modified by resolution of the Butte County Board of Supervisors, and also provides procedures for well spacing of new wells to reduce potential well interference problems.

The following is an overview of principal Butte County Ordinances related to groundwater well permitting, construction, and abandonment as contained in the Butte County Code.

- **Chapter 23B-3 Well Permitting.** This ordinance requires that any person, firm, association, organization, partnership, joint venture, business trust, corporation, company, federal, state or local agency, or special district formed under the laws of this state shall, within the unincorporated area of the County of Butte, obtain a written permit from the health officer to construct, repair, or deepen any public water supply well or individual well, or destroy any abandoned well. The permit application procedures are outlined in Chapter 23B-4.
- **Chapter 23B-5 Well Standards.** Standards for the construction, repair, reconstruction, deepening, abandonment and destruction of wells in Butte County are specified within Bulletin 74-81, Water Well Standards, State of California, except where superseded by state or federal law or modified by resolution of the Board of Supervisors.
- **Chapter 23B-5a Pumping capacity and parcel size.** The pumping capacity of the well's pump shall not be greater than fifty (50) gallons per minute per acre to reasonably serve the overlying land, including contiguous parcels of land under the same ownership as the land upon which the well is located. The total of the pumping capacities of the pumps for the new well and all existing wells (excepting wells which are exempt under section 23B-5c(1) and section 23B-5c(4)) within the applicable parcels shall not exceed fifty (50) gallons per minute per acre. The limitation on pumping capacity applies to all wells required to have a permit under this chapter and that are installed after July 25, 1996.
- **Chapter 23B-5b Well spacing requirements.** Butte County has established a well spacing ordinance. This ordinance requires that any well required to have a permit under Chapter 23B of the County Ordinances, and installed after July 25, 1996 be subject to the spacing requirements summarized in Table 3-2.

**Table 3-2
Summary Butte County Well Spacing Requirements**

Engineered Pumping Capacity (Gallons per minute)	Well Spacing Requirement (feet)
1000	450
2000	1,150
3000	1,700
4000	2,200
5000	2,600
Greater than 5000	Variance shall be required

- **Chapter 23B-13 Minimum well depth for domestic wells.** This chapter of the Ordinances requires that new individual well for domestic purposes be drilled to an adequate depth to ensure that it "will operate properly assuming a repeat of the groundwater conditions experienced during the period 1987 through 1994 in the area in which the new well is located."

3.5.2 Groundwater Management Program and Plan Ordinance

Chapter 24A of the General Ordinances of Butte County pertains to the coordination of groundwater management programs and plans adopted by various public agencies within the County. Chapter 24A is provided in Appendix T.

The ordinance requires that the County help coordinate groundwater management programs and plans adopted within the County, and provide a minimum and uniform standard of groundwater protection within the County. To accomplish this, the ordinance states that the County should:

- Identify and implement, on a comprehensive and integrated basis, existing County ordinances and land use planning policies and their applicability and effect on groundwater management and regulation within the County.
- Protect the groundwater resources within the County through the management and regulation of groundwater pursuant to the County's police power and land use authority.
- Coordinate and cooperate with local water agencies, purveyors and groundwater users within the County.
- Participate in annual meetings to coordinate groundwater programs as required by CWC § 10755.3.

3.5.3 Groundwater Management Ordinance (BMO ordinance)

In January 2002, the Water Commission recommended to the Board of Supervisors to investigate the concept of utilizing BMOs as a potential method to manage the groundwater basin. The Board accepted this recommendation and directed the Department to proceed with the development of BMOs for the basin area of the County. The Department drafted and publicly circulated a draft ordinance for consideration by the Board. After significant public comment and ordinance revisions to address comments, the Board approved the ordinance on February 10, 2004.

The ordinance is based on several key guidelines, summarized below:

- The Board finds that the protection of the groundwater resource for beneficial use within the County is of major concern to the residents of the county for the protection of their health, welfare, and safety. The Board further declares that the beneficial use and maintenance of groundwater and protection of recharge zones is of critical importance to the economy and environment of the County.
- The Board intends to ensure the continued sustainability of groundwater quantity and quality within the county.
- The Board intends to protect groundwater quality and prevent land subsidence.
- The County does not hereby intend to regulate, outside of Chapter 33, the use of groundwater; unless established BMOs are exceeded.

- It is essential for information gathering and management purposes that the County maintains a monitoring program addressing groundwater elevations, groundwater quality standards, and land subsidence criteria.
- In adopting this groundwater management ordinance, the County does not intend to limit other means of managing groundwater within the county authorized elsewhere in statute or ordinance, and intends to work cooperatively with local entities and the general public to further develop and implement joint groundwater management practices.

Table 3-3 provides an overview of a generalized BMO development and implementation process. The process for development and implementation of BMOs is discussed in Section 3.6.1.

**Table 3-3
Generalized Approach to BMO Development¹**

Planning Phase
Develop Organizational Structure Establish Public Input Process Establish Management Areas
Implementation Phase
Obtain Statutory Authority Establish Advisory Committees Establish Monitoring Elements Establish Monitoring Program Develop Management Objectives
Management Phase
Collect Data Evaluate Data Reevaluate Monitoring Program Reevaluate Management Objectives Determine Need For Resolution
Resolution Phase
Technical Advisory Committee Investigation and Recommendation Water Advisory Committee (WAC) Strives For Mutually Agreeable Solution WAC Recommendation To Board Of Supervisors Board Of Supervisors Action

3.5.4 Groundwater Conservation Ordinance

Chapter 33 of the General Ordinances (Appendix D) of Butte County pertains to the protection of groundwater resources from harm resulting from both the extraction of groundwater for use on lands outside the County and the substitution of groundwater for surface water transferred outside the County. The main components of the ordinance are described below:

- **Transfer Pumping Permits:** The ordinance bars the extraction of groundwater for use outside the County without first obtaining a permit. Permits are also required for groundwater pumping for use on land within the county in lieu of surface

¹ From BMO Presentation By Toccoy Dudley, DWR, Northern District

water, if the surface water which would have otherwise been used on the land is proposed to be transferred outside the County.

- **Monitoring:** As described in detail in Section 3.4.1, this ordinance requires that the Department, in coordination with BBWUA, DWR, and the Regional Water Quality Control Board “develop and coordinate a county-wide groundwater monitoring program”.
- **Planning/Reporting:** A groundwater status report is to be developed based upon the data gathered and analyzed from the required monitoring program (see Section 3.9.1).

3.5.5 Conservation Element of General Plan

Butte County’s General Plan, which sets out the County's adopted goals, objectives, policies and standards for various issues, includes a Conservation Element that emphasizes the importance of Butte County’s natural resources, and outlines methods to protect these resources.

As part of the Department’s Integrated Water Resource Plan development, the Department has provided technical information to the Butte County Department of Development Services to support an update of the water resource section of the General Plan’s Conservation Element.

3.5.6 Wellhead and Recharge Area Protection Measures

To date, Butte County has not formally adopted wellhead or recharge area protection measures. The Department is currently in the process of completing its Integrated Water Resource Plan that includes a policy recommendation specific to protection of groundwater recharge areas through appropriate zoning and other management measures. The Butte County Water Commission and Board of Supervisors will consider implementation of policy recommendations during the plan review and approval process.

Butte County has not pursued a wellhead protection plan, however, a federal program is in place to support development of such a plan if the Department deems it necessary. The purpose of the federal Wellhead Protection Program is to protect groundwater sources of public drinking water supplies from contamination, thereby eliminating the need for costly treatment to meet drinking water standards. The program was established by the Safe Drinking Water Act Amendments of 1986 and is based on the concept that the development and application of land-use controls (usually applied at the local level in California) and other preventative measures can protect ground water.

A Wellhead Protection Area (WHPA), as defined by the 1986 Amendments, is "the surface and subsurface area surrounding a water well or wellfield supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield." The WHPA may also be the recharge area that provides the water to a well or wellfield. Unlike surface watersheds that can be easily

determined from topography, WHPAs can vary in size and shape depending on geology, pumping rates, and well construction.

Under the Act, states are required to develop an EPA-approved Wellhead Protection Program. To date, California has no formal state-mandated program, but instead relies on local agencies to plan and implement programs. For this reason, AB 3030 was enacted. A number of local governments, including Santa Clara Valley Water District, Descanso Community Water District, West San Bernardino County Water District, and Monterey County Water Management District, are in various stages of developing local groundwater management programs that include WHPAs. Wellhead Protection Programs are not regulatory by nature, nor do they address specific sources. They are designed to focus on the management of the resource rather than control a limited set of activities or contamination sources.

Groundwater Resource Protection Actions: The Department will take the following actions:

- Support the development and implementation of BMOs in 16 sub-inventory areas overlying the groundwater basin.
- Participate in the review and provide recommendation for permit applications submitted under the Groundwater Conservation ordinance.
- Support the Butte County Department of Development Services during the policy update of the water resource section of the General Plan's Conservation Element.
- Pursue implementation of Integrated Water Resource Plan policies, programs, and projects approved by the Board of Supervisors, including recommendations addressing protection of groundwater recharge areas and development of a cooperative management program.
- Evaluate the need for a wellhead protection program in Butte County.

Before such policies (i.e. General Plan zoning designations to protect natural recharge areas) are considered by the Board of Supervisors, one of the Department's top priorities is to conduct evaluations of the local hydrogeology and understand the science that would support such zoning policy recommendations.

3.6 Groundwater Sustainability

The Department is currently engaged in various activities that promote groundwater sustainability. Specific actions currently being pursued or studied include:

- Development of quantitative Basin Management Objectives;
- Groundwater modeling; and

- Assessment of the potential for cooperative groundwater management between surface water and groundwater users.

3.6.1 Development of Quantitative Basin Management Objectives

Following the Board of Supervisors' February 10, 2004 approval of a Basin Management Objective (BMO) ordinance, the Department is supporting local areas with development of BMOs within their respective areas. The ordinance states, "The Board intends to ensure the continued sustainability of groundwater quantity and quality within the county." Butte County Ordinance 3869, describing BMO development and implementation, is included as Appendix B.

Water Advisory Committee (WAC) members appointed by the Board of Supervisors will support BMO development and implementation. The Department has developed a BMO Development Packet for use by local BMO representatives in each of the 16 areas identified in the approved ordinance. The packets are intended to provide information and guidance necessary to develop BMOs within each area.

Local representatives will be responsible for the development, implementation of BMOs, monitoring and reporting of groundwater levels, groundwater quality, and inelastic land subsidence within their local area. The Technical Advisory Committee will investigate reported noncompliance. Efforts will be made to resolve noncompliance issues at the local level. If noncompliance issues cannot be resolved at the local level, the Water Advisory Committee may recommend a plan to the Water Commission to modify, reduce or terminate groundwater extraction in the impacted/impacting area.

3.6.2 Groundwater Modeling

Groundwater models can be effectively used to assess how proposed groundwater management actions, changes in cultural practices, or changes in hydrologic conditions may affect groundwater sustainability.

In 1994, BBWUA developed a groundwater flow model of the "Butte Groundwater Basin" following the late 1980s through early 1990s drought. The model provides BBWUA with a tool to improve groundwater management within the basin. The model was last updated in 2002. The Department has entered into an agreement with BBWUA whereby the Department is responsible for model updates and maintenance.

In support of the Department's Integrated Water Resource Plan project, the Department is currently completing a review and update of the Butte Basin Groundwater Model. As part of the model update, the Department is incorporating DWR Northern District's improved interpretation of the basin stratigraphy and hydrogeologic properties. An improved representation of these model properties will allow the Department to more accurately evaluate current and future water management options. The Department is also considering which model code will have the greatest utility during participation in regional groundwater studies and programs.

Once the groundwater model has been reviewed, updated and re-calibrated, it can be used to:

- Evaluate water transfer applications under chapter 33;
- Study short-, medium-, and long-term drought impacts to groundwater;
- Evaluate recharge benefits and impacts;
- Support updates of water inventory and analysis and annual groundwater status reports; and
- Support development of quantitative management objectives (see Section 3.6.1).

A Department priority is also to develop a sophisticated watershed model for the upper watersheds that contribute to Butte County's groundwater system. The Department has contracted with the University of California-Davis for assistance.

3.6.3 Construction and Operation of Groundwater Management Facilities

Ensuring the long-term sustainable use of the groundwater resources within the Plan area may require the planning and construction of projects that:

- Evaluate the need and potential for enhanced groundwater recharge;
- Enhance groundwater recharge;
- Evaluate cooperative management projects through improvements to recharge, extraction, and distribution infrastructure; and
- Protect groundwater quality, or remediate contaminated sites.

The Steering Committee supporting the development of the Integrated Water Resource Plan is currently considering policies, programs, and projects associated with the construction and operation of groundwater management facilities. Regarding the mapping of contamination plumes and their movement with respect to seasonal water extractions, the Department defers to the Butte County Department of Public Health, Division of Environmental Health. Groundwater management facilities, if feasible, must be backed up by scientific evaluation. Further evaluation of the groundwater of Butte County is necessary as existing conditions are not completely understood. Potential action such as the implementation of a recharge district or cooperative management program will be addressed by the Board of Supervisors when more options are evaluated.

Groundwater Sustainability Actions: The Department will take the following actions:

- Provide technical support associated with development of BMOs in Butte County.

- Assist in coordination and management activities of the Water Advisory Committee.
- Complete an update of the BBWUA groundwater model and support maintenance of the model into the future.
- Utilize the groundwater flow model to simulate proposed changes in groundwater management practices that may impact groundwater sustainability.
- As directed by the Board, support the coordinated management of groundwater and surface water.
- Pursue funding from state agencies, federal agencies, and partnerships for groundwater sustainability activities.

3.7 Stakeholder Involvement

Public outreach and education is a primary function of the Butte County Department of Water and Resource Conservation. The Department encourages two-way dialogue, characterized by information dissemination and requests for suggestions and feedback on Department activities. The Department has regularly disseminated information on GMP development as part of its ongoing public outreach effort. GMP-related information and draft documentation are available to the public on the Department's website (<http://www.buttecounty.net/waterandresource/>) and have been included in the Department's monthly newsletter, *Water Solutions*, that is distributed in hardcopy and via e-mail to all interested parties.

The Department will work closely with the Water Advisory Committee (WAC), Technical Advisory Committee (TAC), and environmental community to assist in meeting public outreach needs. The WAC and TAC are explained in Chapter 33A of the Butte County Code (included as Appendix B of the GMP), which addresses the Basin Management Objective (BMO) ordinance adopted by the Board in February 2004.

The Department also regularly engages in cooperative efforts with state and federal agencies. Additionally, the Department actively encourages the involvement of advisory committees and related stakeholders. The following sections describe the Department's involvement with these water resource stakeholders.

3.7.1 Interagency and District Cooperation

Effective groundwater management requires coordination and cooperation between numerous local, state, and federal agencies. The Department will continue to work proactively with key state and federal regulatory agencies, as well as the local districts and County departments, such as:

Local Districts with AB 3030 Groundwater Management Plans. The Department works closely with local water districts, including those with existing AB 3030 Groundwater Management Plans. Water districts with existing AB 3030 groundwater

management plans are represented on the Butte County Water Commission where they provide coordination between Department activities and groundwater management activities of the local water districts. Also, through his role as Chairman of the Butte Basin Water Users Association, the Department's Director, Ed Craddock, facilitates communication and cooperation between the Department and members of BBWUA.

In Butte County, the following agencies have AB 3030 plans:

- Biggs-West Gridley Water District,
- Butte Water District,
- Richvale Irrigation District, and
- Western Canal Water District.

AB 3030 legislation is not available to municipal utilities that are under control of the Public Utilities Commission. AB 3030 is available to local agencies, including counties and special districts such as water districts, which are recognized as political subdivisions of the State. By statute, under AB 3030, Butte County has no authority over these districts that already have their own authorities under existing legislation. It is the desire of the Department to conservatively manage groundwater resources in Butte County. The implementation of the GMP will ensure that there is a management strategy to address groundwater resource issues.

- **State Water Resources Control Board (SWRCB).** The SWRCB is the lead state water agency responsible for maintaining water quality standards and providing the framework and direction for groundwater protection efforts. The Department has established a working relationship with the SWRCB, which currently funds a number of watershed coordination programs within the County.
- **California Department of Water Resources.** DWR plays an important role in supporting both surface water and groundwater management. The Department and the DWR Northern District have worked cooperatively on a number of important programs, including the Butte County Groundwater and Surface Water Inventory Analysis. DWR also continues to support water level and extensometer monitoring in Butte County. Additionally, DWR is actively studying the Butte groundwater basin to achieve an improved understanding of the rate and direction of groundwater movement. DWR is also assessing groundwater recharge locations and rates within the county. These studies will provide information that could lead to improved groundwater management in the county.
- **Bureau of Reclamation (Reclamation).** The Department is working closely with Reclamation to develop projects to enhance both surface and groundwater management within the County. Reclamation plans to fund the review and update of the Butte County groundwater model.

- **California Bay-Delta Authority.** The Department has an inter-jurisdictional personnel exchange agreement with the California Bay-Delta Authority (CBDA), where a Department staff member is serving as CBDA's Sacramento Valley regional representative. The agreement enhances the Department's interaction with CALFED member agencies and provides a means for the Department to actively communicate the county's position on CBDA programs and activities that have the potential to affect Butte County.

3.7.2 Advisory Committees and Stakeholders

There are a number of important advisory committees and stakeholder groups that play an active role in managing the water resources of Butte County.

- **Butte County Water Commission.** The Butte County Water Commission was appointed by the Board of Supervisors to advise and provide technical information on water management issues affecting the County. The Water Commission is composed of one member representing each board district (nominated by the county supervisor elected to represent that district) and four members at large of whom two are landowners of property served by water districts and two are landowners served by private wells.
- **Water Commission Technical Advisory Committee.** The Water Commission in turn has nominated a seven person Technical Advisory Committee. The Technical Advisory Committee consists of individuals with backgrounds and/or education in water management and hydrology.
- **BMO Water Advisory Committee.** WAC members appointed by the Board of Supervisors will support BMO development and implementation. The WAC will be comprised of area-specific members, with one member appointed from each defined sub-inventory unit, and one each from the Foothill and Mountain inventory units. Additional at-large members will include representatives from the incorporated communities, the agricultural community, the environmental community, and one from each organized watershed group in the county.
- **Butte Basin Water Users Association.** BBWUA is one of the largest water management associations in the County, and was formed in response to a number of events affecting water users in the County, including the 1987-1992 drought. The main function of the association is to inform members of current and potential changes in local, state, and federal water policy that could affect water supplies. Current members of the BBWUA include:
 - Biggs-West Gridley Water District
 - Richvale Irrigation District
 - County of Butte
 - California Water Service Company

- Western Canal Water District
 - City of Biggs
 - City of Gridley
 - Durham Mutual Water Company
- **Butte-Sutter Area Groundwater Users Corporation.** Fred Montgomery formed the Butte-Sutter Area Groundwater Users Corporation (BSAGUC) in the early 1990s to represent independent groundwater producers' interests. BSAGUC is an initial member of BBWUA. The BSAGUC holds periodic meetings of its members to discuss groundwater management issues. As an example, the group provided comments on the recently enacted BMO ordinance in the county. The Department regularly solicits comment from BSAGUC on groundwater-related issues.

Stakeholder Involvement Actions: The Department will take the following actions:

- Continue to work cooperatively with DWR headquarters and DWR Northern District on groundwater management activities.
- Continue to work cooperatively with the Bureau of Reclamation on groundwater management activities.
- Continue to work cooperatively with the California Bay-Delta Authority on programs and policies that support groundwater management efforts in Butte County.
- The Department will be responsive to the needs and requests of the Water Commission, TAC, WAC, BSAGUC and BBWUA.
- The Department will continue to support locally-driven stakeholder groups.
- Consider discussions to jointly develop a countywide coordinated AB3030 GMP that would incorporate areas with existing AB3030 plans.

3.8 Integrated Water Resource Planning

The Department is developing an Integrated Water Resources Plan to provide direction for the long-term enhancement and conservation of the County's resources. The Integrated Plan's stated purpose is "to improve water management in the County and to maintain agricultural viability, meet urban and environmental needs, ensure a future groundwater supply to overlying users, enhance the economy, and protect the citizens and natural resources of Butte County."

The Department initiated an 8-month planning process to develop the Integrated Plan. The Department formed a Steering Committee of local stakeholders

PLANNING PROCESS

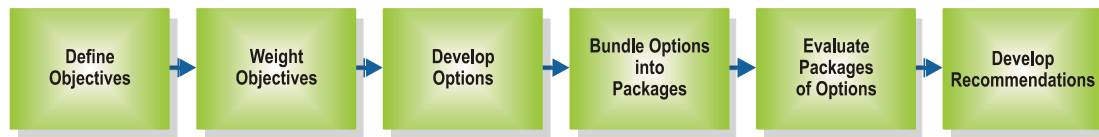


Figure 3-5
IWRP Planning Process

representing agricultural, urban, and environmental interests to participate in development of the Integrated Plan. Figure 3-5 depicts the planning process.

The Committee met six times during the planning process. First, the Committee developed plan objectives, which were grouped into four categories: local control, water supply, economy, and natural resources. Figure 3-6 presents the Plan's objectives. The Committee then developed options to meet the objectives. The options address environmental needs within the County, water conservation opportunities, water supply needs on the Ridge, conjunctive management programs, policy issues, and future management of the SWP allocation. The Committee evaluated each option and created a package of options to be considered for implementation.

The final product of the Integrated Plan is a set of policy recommendations for consideration by the Board of Supervisors. The policy recommendations have the Integrated Plan's objectives as their foundation and incorporate the options as a series implementation steps for each policy. The policy recommendations build off the County's existing water management efforts and if approved, will shape future Butte County water management.

Integrated Water Resource Planning Actions: The Department will take the following actions:

- Assist in the development of plan recommendations for consideration by members of the public, the Water Commission, and the Board of Supervisors.
- Implement plan policies, programs, and projects approved by the Board of Supervisors.
- Pursue funding sources for implementation of plan policies, programs, and projects.

3.9 GMP Implementation, Reporting and Updating

Implementation of the BMO ordinance will result in development of compliance reports associated with water level elevation, water quality, and inelastic land subsidence. The Department is currently receiving annual reports associated with groundwater level and land subsidence monitoring from BBWUA. GMP updates will

be considered each five years or as needed on a more frequent basis. The following sections discuss plan implementation, reporting and updating in additional detail.

3.9.1 GMP Implementation

Plan section 3.3 identifies the five GMP component groups. Individual plan components are described in sections 3.4 through 3.8. Plan implementation actions are identified at the conclusion of each section. Additionally, this section concludes with actions associated with GMP implementation, reporting, and updating. Table 3-4 summarizes implementation actions and the associated implementation schedule.

3.9.2 GMP Implementation Report

Currently, separate groundwater-related reporting is required by BBWUA under the Groundwater Conservation Ordinance (see Section 3.5.4) and by BMO sub-area representatives (see Section 3.6.1). Information contained in these reports is used to:

- Develop groundwater depth or elevation contour maps, which can be used to develop an understanding of the overall groundwater flow patterns in a basin;
- Develop groundwater hydrographs (charts of depth /elevation of groundwater versus time), which can be used to illustrate historic trends or changes in groundwater levels over time;
- Assess the change of groundwater in storage; and
- Measure changes in land surface elevation because of groundwater withdrawals.

Specific to the Groundwater Conservation Ordinance, BBWUA must submit a report summarizing the previous year's monitoring activities to the Department by February of each year. The report must include an analysis of the amount of groundwater pumping that can occur during the water year within each sub-basin without exceeding the safe yield of each sub-basin. Additionally, the Department requests each district and city within the county to submit copies of groundwater monitoring reports to the Department not later than December 1 of each year. The Department also encourages individuals to voluntarily provide any available groundwater data.

Specific to the BMO ordinance, representatives from each of the 16 individual BMO areas are required to submit results associated with groundwater level, groundwater quality, and land subsidence monitoring to the Department within 30 days of collection.

3.9.3 GMP Update

The Department's increasing knowledge of subsurface conditions and management techniques will likely result in the need for periodic plan updates. As further studies of basin geology and groundwater behavior provide new information, the Department must consider if this new information should result in a change in groundwater management. Additionally, as the Department works with different

management techniques, it will likely realize more effective ways to accomplish the objectives within this Plan.

The Department will continually consider improvements to the groundwater management techniques. The Department will work to incorporate these improvements as they develop. In addition, the Department will formalize changes to this AB 3030 plan once every five years, if changes need to be made.

GMP Implementation, Reporting and Updating Actions: The Department will take the following actions:

- Pursue funding for a web-based BMO Information Center to house BMO development, implementation, and reporting information.
- Consider opportunities to consolidate reporting of groundwater level, groundwater quality, and inelastic land subsidence information as currently required of BBWUA and BMO participants.
- Work cooperatively with local stakeholders, county government, and local advisory committees to assess needed GMP updates.
- Sponsor an annual meeting of local districts with AB3030 GMPs to discuss the status of individual plans and opportunities for development of a countywide coordinated AB 3030 GMP.

Table 3-4. Summary of GMP Actions	
Description of Action	Implementation Schedule
I. Groundwater Monitoring	
1 Support the development and implementation of BMOs in 16 sub-inventory areas overlying the groundwater basin.	Spring 2004 - Spring 2005
2 Work with local stakeholders and DWR to identify areas that may need additional groundwater level, groundwater quality, or subsidence monitoring based on identified data gaps or negative performance trends.	Annual
3 Work with state and federal agencies to secure funding for expansion of the monitoring grid.	Annual
4 Coordinate with DWR and local landowners to ensure that selected wells are maintained as part of a long-term monitoring program.	Annual
II. Groundwater Resource Protection	
1 Support the development and implementation of BMOs in 16 sub-inventory areas overlying the groundwater basin.	Spring 2004 - Spring 2005
2 Participate in the review and provide recommendation for permit applications submitted under the Groundwater Conservation ordinance.	Ongoing
3 Support the Butte County Department of Development Services during the policy update of the water resource section of the General Plan's Conservation Element.	Through Completion
4 Pursue implementation of Integrated Water Resource Plan policies, programs, and projects approved by the Board of Supervisors, including recommendations addressing protection of groundwater recharge areas and development of a cooperative management program.	2004 - 2005
5 Evaluate the need for a wellhead protection program in Butte County.	Fall 2004

Table 3-4. Summary of GMP Actions (continued)		
	Description of Action	Implementation Schedule
III.	Groundwater Sustainability	
1	Provide technical support associated with development of BMOs in Butte County.	Spring 2004 - Spring 2005
2	Assist in coordination and management activities of the Water Advisory Committee.	Annual
3	Complete an update of the BBWUA groundwater model.	Spring 2004 - Spring 2005
4	Support maintenance of the BBWUA groundwater model.	Annual
5	Utilize the groundwater flow model to simulate proposed changes in groundwater management practices that may impact groundwater sustainability.	Annual
6	As directed by the Board, support the coordinated management of groundwater and surface water.	As Needed
7	Pursue funding from state agencies, federal agencies, and partnerships for groundwater sustainability activities.	Annual
IV.	Stakeholder Involvement	
1	Continue to work cooperatively with DWR headquarters and DWR Northern District on groundwater management activities.	Annual
2	Continue to work cooperatively with the Bureau of Reclamation and the USACE on groundwater management activities.	Annual
3	Continue to work cooperatively with the California Bay-Delta Authority on programs and policies that support groundwater management efforts in Butte County.	Annual
4	The Department will be responsive to the needs and requests of the Water Commission, TAC, WAC, BSAGWUC, and BBWUA.	Ongoing
5	The Department will continue to support locally-driven stakeholder groups.	Ongoing
6	Consider discussions to jointly develop a countywide coordinated AB 3030 GMP that would incorporate areas with existing AB 3030 plans.	2004 - 2005
V.	Integrated Water Resources Planning	
1	Assist in the development of plan recommendations for consideration by members of the public, the Water Commission, and the Board of Supervisors.	Spring 2004
2	Implement plan policies, programs, and projects approved by the Board of Supervisors.	Annual
3	Pursue funding sources for implementation of plan policies, programs, and projects.	Annual
VI.	GMP Implementation, Reporting and Updating	
1	Pursue funding for a web-based BMO Information Center to house BMO development, implementation, and reporting information.	Spring 2004
2	Consider opportunities to consolidate reporting of groundwater level, groundwater quality, and inelastic land subsidence information as currently required of BBWUA and BMO participants.	Spring 2005
3	Work cooperatively with local stakeholders, county government, and local advisory committees to assess needed GMP updates.	Annual
4	Sponsor an annual meeting of local districts with AB3030 GMPs to discuss the status of individual plans and opportunities for development of a countywide coordinated AB 3030 GMP.	Annual