

Sonoma County General Plan 2020

WATER RESOURCES ELEMENT

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WATER RESOURCES ELEMENT

1. INTRODUCTION

1.1 PURPOSE

Water is an essential element of all life forms. Plants and animals are mostly composed of water and need water and the nutrients carried by water. An adequate and high quality water supply is therefore required for continued human survival, development and use of the land, and the health of the entire natural environment.

Due to its critical importance, water is legally considered a public resource, an adequate and high quality water supply is considered a basic human right, and the use and quality of water have long been regulated by government. Since water moves easily across city and county boundaries, much of the regulation is at the regional, State and Federal levels. However, since cities and counties have legal authority over development and land use, they are involved in considering the adequacy of water supplies and how development affects the quantity and quality of water available for other beneficial uses.

As development has continued, the long term adequacy of groundwater and surface water resources has become a major public concern. Water related issues include lowered groundwater levels, increased stormwater runoff, sediment and pollutants in runoff, water diversions into and out of the Russian River basin, summer rationing in dry years, the water needs of fish and wildlife, the rates of water usage, conservation methods, water storage limitations, the growing re-use of water and continuing changes in State and Federal regulations.

In order to address the conditions of groundwater and surface water in the County that would be effective in future water management, more information is required. As a result, an organized data collection and problem identification effort is a necessary step to formulate a prudent management strategy.

The primary purpose of this element and the reason for adding this optional element to the Sonoma County General Plan is to ensure that Sonoma County's water resources are sustained and protected. To achieve this purpose, water resource management should consider the amount of quality water that can be used without exceeding the replenishment rates over time or causing long term declines or degradation in available surface water or groundwater resources. Nothing in this element should be construed to encourage or condone illegal use of water.

1.2 RELATIONSHIP TO OTHER ELEMENTS

The Water Resources Element addresses a range of water related issues in Sonoma County. Some other water related topics are also addressed in other elements. Water availability as a factor in Land Use Map densities is addressed in the Land Use Element. The Open Space and Resource Conservation Element addresses riparian corridors, wetlands, wildlife protection, tree protection, fishery resources and other biotic resources, water oriented recreation, soil erosion, forestry, and mineral resources. The Public Facilities and Services Element addresses connections to public water systems. The Public Safety Element addresses flood hazards, fire suppression, and hazardous materials. The Agricultural Resources Element addresses aquaculture.

The Water Resources Element has been developed to be consistent with other elements. References to policies in other elements are provided where they support or implement the objectives of the Water Resources Element.

1.3 SCOPE AND ORGANIZATION

The Water Resources Element is organized as follows. Section 2 reviews the relevant water rights law, the hydrologic system, the major streams and drainage basins, the role of vegetation in the water cycle, and the natural underground water storage in the County. Section 3 states the County's goals, objectives, and policies in each of six topical areas. The implementation programs are described in Section 4.

2. WATER RESOURCES BACKGROUND

2.1 WATER RIGHTS

The California Constitution requires that water be used in a reasonable and beneficial manner and prohibits misuse and waste of water. Water is used beneficially when, for example, it is used to drink, grow crops or wash cars. What is reasonable water use depends on the circumstances. For example, it could be unreasonable to wash cars during a severe drought. All types of water rights are subject to this constitutional policy, and a State agency, the State Water Resources Control Board (SWRCB), is authorized to take action to prevent unreasonable uses of water.



There are two principal types of surface water rights in California, riparian rights and

appropriative rights.

Riparian Water Rights

A riparian water right allows a landowner bordering a watercourse to share the water flowing past his property with other riparian landowners. Riparian rights are not defined by California statutes but have been established by common law and court decisions. Permits or other government approvals are not required to exercise riparian rights. However, a permit from the Army Corps of Engineers or some other regulatory agency, or an agreement with the California Department of Fish and Game, may be necessary to construct diversion facilities needed to exercise riparian or appropriative rights.

Riparian rights extend only to natural flow and do not apply to water imported into a stream system or water released from storage in an upstream reservoir. Riparian rights do not allow a water user to store water in a reservoir during the wet season for use during the dry season. In times of shortage, riparian rights are entitled to share the supply before any appropriators may divert water. The water from riparian rights can only be used on the riparian lands and cannot be transferred or exported for use on other properties or outside the watershed.

Riparian rights ordinarily cannot be lost through non use and generally remain with property when it changes hands. However, a riparian right may be impaired or lost if a parcel is subdivided or the land otherwise severed from its water source, if SWRCB approves a prescriptive appropriative right, or if a court approves allocation of a stream's water among users.

Appropriative Water Rights

Since 1914, all new appropriations of surface water have required a permit from the State. The permits are issued by the SWRCB and specify the amount of water that may be diverted, purposes for the water use, seasons of diversion, and the locations of diversion, storage (including underground storage) and use. An appropriative water right permit may allow the use of water at locations outside the watershed. When the State Board considers an application for a permit, it evaluates whether water is available during the requested season and potential environmental impacts, including any impacts on the rights of the public to use the waterway for navigation, commerce, fishery, recreation, aesthetic enjoyment and the preservation of open space, ecological study areas and wildlife habitat. Based on this evaluation, the State Board decides whether or not to issue a permit, and, if it issues a permit, what conditions to include in the permit.

Appropriative rights are limited to the amount of water that may be put to beneficial use, and a right may be lost after a period of nonuse. Appropriative water rights are based on a "first come, first served" principle; the first to take water has a superior right over later appropriators. In times of shortage, all appropriators must stop diverting water, if necessary to satisfy riparian rights. There is no sharing of a shortage among appropriators; instead, senior

appropriators are entitled to exercise their rights to satisfy all of their reasonable needs before junior appropriators may divert any water.

Water flowing in subterranean streams through known and defined channels is subject to diversion, use and regulation under riparian and appropriative rights as described above. Water is considered to be flowing in a subterranean stream through a known and definite channel if it is in contact with surface water and moving in the same direction in a relatively defined channel. Groundwater not flowing in any subterranean stream through a known and defined channel is known as “percolating groundwater” and is not subject to surface water rights.

Groundwater Rights

Except for groundwater flowing in subterranean streams, there is no statewide statutory regulation of groundwater in California. Landowners overlying groundwater have rights to share the groundwater under their property with other overlying landowners without obtaining a permit from any State agency. Groundwater may also be used on lands that are not overlying, but this right is subordinate to the prior use of any overlying landowners. Surface water can be diverted or pumped into aquifers for later extraction, with SWRCB approval.

The courts have held that cities and counties may regulate groundwater use under their police powers to protect the public’s health, safety and welfare. In addition to those powers, the State Water Code provides other regulatory tools including the adoption and implementation of a groundwater management plan under the Groundwater Management Act (Water Code Section 10750-10755.4; AB 3030). Several California counties have adopted groundwater regulation programs. Litigation has also resulted in court decrees regulating groundwater use in some cases.

2.2 WATER CYCLE

In Sonoma County, the hydrologic cycle of water movement is dominated by the frequent inflow of moisture laden air from over the Pacific Ocean. As the moisture laden air cools, particularly where it is forced higher by steep slopes, the vapor condenses into water that falls as rain or, if the vapor is chilled enough, it forms solid ice crystals and falls as snow. Most of the rain and snowmelt runs off into surface water bodies that drain back to the sea. Some of the precipitation is absorbed into the Earth and becomes “groundwater”, some of which moves slowly through subsurface layers to streams, lakes and the ocean. When the sun heats up this surface water, it evaporates into vapor or steam in the atmosphere and again becomes potential precipitation.

The range of temperatures, cloud cover, moisture and evaporation levels, when combined with the effects of topography, vegetation, and development, can result in varying rainfall levels at any particular time in each of the watersheds in the County. In addition, long term changes in snow pack and precipitation related to climate change could affect future precipitation patterns,

regional availability and temperature of water, surface runoff and sea level elevation.

2.3 WATERSHEDS

The term “watershed” refers to the surface water drainage area that is tributary to or drains into a particular stream. Hydrologically, most land in Sonoma County falls within the three main watersheds: Russian River, Gualala River and San Pablo Bay. The watersheds and sub-watersheds within Sonoma County are shown on Figure WR-1.



Watershed Characteristics

In general, watersheds in the northern areas of the county (Gualala River, Austin Creek, Dry Creek, Big Sulphur Creek, and Maacama Creek) consist of mountainous, rugged terrain with little urban development. Land use in these upper watersheds is predominantly rural, with timber production and grazing being the primary uses.

Most of central Sonoma County is part of the Russian River watershed and ultimately drains west to the Pacific Ocean. This area has moderate topography and lies in the ancient alluvial floodplain of the Russian River. Much of the suburban and urban development of Sonoma County is located within these central sub-watersheds, including Healdsburg, Windsor, Santa Rosa, Sebastopol, Rohnert Park and Cotati.

Table WR-1 Watershed Boundaries

The portions of the watersheds that lie within Sonoma County are:

Watershed	Sub-watershed	Size (Square Miles)
Gualala River		269
Russian River	Big Sulphur Creek	80
	Maacama Creek	69
	Dry Creek	175
	Mark West Creek	83
	Laguna de Santa Rosa	89
	Green Valley and Atascadero Creeks	37
	Austin Creek	70
	Santa Rosa Creek	81

	Other subwatersheds	237
	Watershed total	921
Coastal	North Coast	49
	South Coast	9
	Salmon Creek	37
	Estero Americano	50
	Stemple Creek	22
	Watershed total	167
San Pablo Bay	Sonoma Creek	170
	Petaluma River	112
	Watershed total	282

The portions of the watersheds that lie outside Sonoma County are:

Watershed	County	Size (Square Miles)
Russian River	Mendocino and Lake	564
Gualala River	Mendocino	31
Estero Americano	Marin	13
Stemple Creek	Marin	28
Petaluma River	Marin	34

The watersheds for the Petaluma River and Sonoma Creek in the southern portions of the county are tidally influenced. They have their headwaters on the steep grass and oak foothills of the Sonoma Mountains and coast range, pass through small valleys where the Petaluma and Sonoma urban areas are located, and open up to wide marshlands that interact with the San Pablo Bay. Land use in these subbasins is varied and includes agriculture and rural and urban residential use.

2.4 AQUIFERS

Groundwater is an important source of agricultural, industrial, and domestic water supply in Sonoma County. While the Russian River is the primary source of domestic water for the county's urban areas, most rural areas are served by groundwater. Groundwater resources are tapped by both municipal and private wells. However, not all groundwater in the county is of sufficient volume, has a reasonable rate of recharge, or is suitable for drinking water or other purposes.

In 1975, the California Department of Water Resources (DWR) identified the groundwater basins and subbasins in Sonoma County listed in Table WR-2 and shown on Figure WR-2.

Most of these groundwater basins are centered along major creek and river valleys in the central and southern portions of the county. Recharge of groundwater typically occurs along the major streams as well as their principal tributaries. The principal water bearing formations in Sonoma County groundwater basins are typically alluvium. While other geologic units can yield adequate amounts of water in some areas, much of the county may not have dependable groundwater supplies.

Poor groundwater quality can be the result of geologic conditions such as the highly mineralized water extracted from the Sonoma Volcanics or brackish water from the Petaluma Formation. Also, some groundwater naturally contains dissolved elements such as arsenic, boron, selenium, mercury and/or radon (a gas formed by the natural breakdown of uranium in the soil).

Table WR-2 Groundwater Basins and Sub-Basins

Groundwater Basin	Subbasin	DWR Number
Annapolis-Ohlson Ranch Formation		1-49
Knights Valley		1-50
Alexander Valley	Alexander Area	1-54.1
	Cloverdale Area	1-54.02
Santa Rosa Valley	Santa Rosa Plain	1-55.01
	Healdsburg Area	1-55.02
	Rincon Valley	1-55.03
Bodega Bay Area		1-57
Wilson Grove Formation Highlands		1-59
Lower Russian River Valley		1-60
Fort Ross Terrace Deposits*		1-61
Petaluma Valley*		37652
Napa-Sonoma Valley	Sonoma Valley	2-2.02
	Napa-Sonoma Lowlands	2-2.03
Kenwood Valley		37670
*note; an asterisk indicates that the basin is partially in another county.		

The sizes of the larger basins and basin groups are as follows:

Groundwater Basin	Size (Square Miles)
Santa Rosa Valley	158
Sonoma Valley	70
Petaluma Valley	70
Napa-Sonoma Volcanics	65
Alexander Valley	47
Annapolis-Ohlson Ranch Formation	13.5
Kenwood Valley	8
Knights Valley	6
Fort Ross Terrace Deposits	3.5

2.5 BIOTIC RESOURCES AND WATER

The policies in the Water Resources Element recognize the importance of natural vegetation and wildlife habitat, both as beneficial water uses whose needs must be considered but also as factors in maintaining adequate water quality and quantity. The supporting biotic resource goals, objectives, and policies are contained in the Open Space and Resource Conservation Element.



Trees and other natural vegetation are dependent on water, but their presence also supports affects the long term quality and quantity of water resources in several ways. The natural vegetation found around wetlands, streams and lakes benefits water quality by filtering out sediment and pollutants from runoff before it enters surface water bodies. Vegetation can also block stream flows and increase the retention of stormwater, thereby recharging groundwater, absorbing pollutants, and modifying flood peak levels. Vegetation on stream banks reduces bank erosion as a source of sediment. Trees and shrubs provide shade which can lower the temperature of the water and increase its value as fishery habitat in a warm climate. Streamside trees that fall into stream channels may aid fishery habitat by providing shelter, diverting flood flows, and scouring of deep holes. The Open Space and Resource Conservation Element also includes discussion of the relationship of biotic resources to water.

Trees and other vegetation need and use water but also help maintain year-round water levels in streams and groundwater. In the fall, many trees stop absorbing water. Trees in exposed

foggy areas reportedly increase precipitation. Trees in any location provide shade that cools the ground surface and reduces evaporation. Plants add moisture to the air through transpiration of water from their leaves.

3. WATER RESOURCE GOALS, OBJECTIVES, AND POLICIES

3.1 WATER QUALITY

Water Quality Regulations

Water quality protection has long been a priority at all levels of government. In California, programs implementing the Federal Clean Water Act and the State Porter-Cologne Act are administered by the SWRCB and the nine regional water quality control boards (RWQCBs). In Sonoma County, the Sonoma Creek and Petaluma River watersheds are in the Bay Area RWQCB jurisdiction, and the remainder of the county is governed by the North Coast RWQCB. Waste discharge requirements are set by each RWQCB for point sources, including industrial and commercial uses, community wastewater management systems and individual septic systems. Implementation of point source controls has led to substantial increases in the level of treatment and quality of discharges.



Over time, development and management of natural resources has resulted in erosion, sedimentation and degradation of surface water quality in the Russian River watershed and elsewhere. Surface water quality concerns in some watersheds include low levels of dissolved oxygen, high temperatures, and high levels of coliform bacteria, ammonia, nutrients, pathogens, metals, herbicides, pharmaceuticals and exotic species.

National Pollutant Discharge Elimination System

The focus of regulatory efforts has expanded in recent years to address surface runoff pollutants into drainage channels, streams and groundwater. The National Pollutant Discharge Elimination System (NPDES) program requires individual permits for construction sites and certain industrial and commercial activities and requires "municipal" area wide permits for urbanized areas and local jurisdictions having a population greater than 10,000. The cooperative NPDES permit with the City of Santa Rosa, County of Sonoma, and the Sonoma County Water Agency (SCWA) includes unincorporated areas near the cities of Santa Rosa,

Healdsburg, Windsor, Sebastopol, Rohnert Park, and Cotati. Another NPDES municipal permit program has been established for the Petaluma and Sonoma areas in the south part of the County. Similar approaches to controlling stormwater pollution are being developed in the county's Coastal Zone in response to California Coastal Commission policies. The requirements for NPDES permits now include the "California Toxics Rule" and State and Federal criteria for metals, pesticides and other pollutants that could affect aquatic life and human health.

Total Maximum Daily Load Program

The other major Clean Water Act program affecting the county in the future is the Total Maximum Daily Load (TMDL) program. The RWQCBs are required to determine which surface water bodies are impaired by certain pollutants limiting beneficial uses of water and then to initiate a public process to assess pollutant sources, determine acceptable levels, allocate allowable pollutant loads to various sources, and establish implementation programs. Water bodies in Sonoma County that have been identified as impaired are the Russian River, Gualala River, Lake Sonoma, Santa Rosa Creek, Laguna de Santa Rosa, Estero American, Stemple Creek, Sonoma Creek, Petaluma River, and San Pablo Bay. Pollutants of concern typically are sediment/siltation, nutrients, pathogens, and temperature but also include low dissolved oxygen, mercury, other metals, herbicides and exotic species. The listing of impaired water bodies is periodically re-evaluated by the RWQCBs. The time frames for completing the TMDL processes in Sonoma County vary over the course of the next decade or so. In the meantime, Sonoma County can continue to be proactive in addressing water quality issues through a combination of education, restoration, and development policies.

Groundwater Quality

The objectives of the water quality laws and programs described above include the protection of groundwater quality. Some groundwater naturally contains dissolved elements that can cause health problems, depending on the concentrations and combinations of the substances present. According to the RWQCBs, groundwater also is often polluted by human activities generating plumes of contaminants such as microorganisms, gasoline and diesel fuels, solvents, nitrates, pesticides, pharmaceuticals, and metals. The underground flow and concentration of these contaminants and ocean saltwater can be influenced by the extraction of groundwater and changes in levels of groundwater and surface water.

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|-------------------|---|
| GOAL WR-1: | Protect, restore and enhance the quality of surface and groundwater resources to meet the needs of all reasonable beneficial uses. |
| Objective WR-1.1: | Work with the Regional Water Quality Control Boards (RWQCB) and interested parties in the development and implementation of RWQCB requirements. |
| Objective WR-1.2: | Avoid pollution of stormwater, water bodies and groundwater. |
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- Objective WR-1.3: Inform the public about practices and programs to minimize water pollution and provide educational and technical assistance to agriculture in order to reduce sedimentation and increase on-site retention and recharge of stormwater.
- Objective WR-1.4: Seek and secure funding for development of countywide groundwater quality assessment, monitoring, management, and education regarding groundwater quality issues.
- Objective WR-1.5: Seek to protect groundwater from saltwater intrusion.

The following policies, in addition to those in the Land Use, Open Space and Resource Conservation, and Public Facilities and Services Elements, shall be used to accomplish the above objectives:

Policy WR-1a: Coordinate with the RWQCB, public water suppliers, Cities, Resource Conservation Districts (RCDs), watershed groups, stakeholders and other interested parties to develop and implement public education programs and water quality enhancement activities and provide technical assistance to minimize stormwater pollution, support RWQCB requirements and manage related County programs. Where appropriate, utilize watershed planning approaches to resolve water quality problems.*

Policy WR-1b: Design, construct, and maintain County buildings, roads, bridges, drainage and other facilities to minimize sediment and other pollutants in stormwater flows. Develop and implement "best management practices" for ongoing maintenance and operation.*

Policy WR-1c: Prioritize stormwater management measures in coordination with the RWQCB direction, focusing first upon watershed areas that are urbanizing and watersheds with impaired water bodies. Work cooperatively with the RWQCBs to manage the quality and quantity of stormwater runoff from new development and redevelopment in order to:

- (1) Prevent, to the maximum extent practicable, pollutants from reaching stormwater conveyance systems.
- (2) Ensure, to the maximum extent practicable, that discharges from regulated municipal storm drains comply with water quality objectives.
- (3) Limit, to the maximum extent practicable, stormwater from post development sites to pre-development quantities.
- (4) Conserve and protect natural areas to the maximum extent practicable.*

Policy WR-1d: Where appropriate, support RWQCB waste discharge requirements for all wastewater treatment systems and other point sources.*

Policy WR-1e: Assist in the development of Total Maximum Daily Loads (TMDLs) for the impaired water bodies and pollutants of concern identified by the RWQCBs to achieve compliance with adopted TMDLs. Work with the RWQCB to develop and implement measures consistent with the adopted TMDLs.*

Policy WR-1f: Work closely with the RWQCBs, incorporated cities, public water suppliers, and other interested parties in the development and implementation of water quality plans and measures.*

Policy WR-1g: Minimize deposition and discharge of sediment, debris, waste and other pollutants into surface runoff, drainage systems, surface water bodies, and groundwater.*

Policy WR-1h: Require grading plans to include measures to avoid soil erosion and consider upgrading requirements as needed to avoid sedimentation in stormwater to the maximum extent practicable.*

Policy WR-1i: Develop standards for erosion and sediment control for orchards similar to the standards established for vineyards.*

Policy WR-1j: Support educational technical assistance programs for agricultural activities and dissemination of best management practices for erosion and sediment control, which include on-site retention of stormwater, maintaining natural sheetflow and drainage patterns, and avoiding concentrated runoff, particularly on slopes greater than 35%.*

Policy WR-1k: Seek opportunities to participate in developing programs and implementing projects for water quality restoration and remediation with agencies and organizations such as RWQCBs, the California Department of Fish and Game, and RCDs in areas where water quality impairment is a concern. Consider allowing expanded treatment options for contaminated water from individual wells.*

Policy WR-1l: Consider development or expansion of community wastewater treatment systems in areas with widespread septic system problems that are a health concern and cannot be addressed by on-site maintenance and management programs.*

Policy WR-1m: Consider on-site wastewater management districts in areas with septic problems.*

Policy WR-1n: Initiate a review of any sewer systems when they persistently fail to meet applicable standards. If necessary to assure that standards are met, the County may deny new development proposals or impose moratoria on building and other permits that would result in a substantial increase in demand and may impose strict monitoring requirements.*

Policy WR-1o: Require that commercial and industrial uses reduce and pretreat wastes prior to their entering sewer systems.*

Policy WR-1p: Actively pursue the abatement of failing septic systems that have been demonstrated as causing a health and safety hazard.*

Policy WR-1q: Require new development projects to evaluate and consider naturally-occurring and human caused contaminants in groundwater.*

Policy WR-1r: Work with the Sonoma County Health Services Department and the RWQCBs to educate the general public on evaluating, monitoring and protecting the quality of groundwater.*

Policy WR-1s: Resist accepting administrative responsibility for regulatory programs required by State or Federal agencies unless a State or Federal subvention will compensate the County for costs associated with such shift in administrative responsibility.

Policy WR-1t: Where area studies or monitoring find that saltwater intrusion has occurred, support analysis of how the intrusion is related to groundwater extraction and support development of a groundwater management plan or other appropriate measures to avoid further intrusion and, where practicable, reverse past intrusion.*

Policy WR-1u: In the marshlands and agricultural areas south of Sonoma and Petaluma, require all environmental assessments and discretionary approvals to analyze and, where practicable, avoid any increase in saltwater intrusion into groundwater.*

Policy WR-1v: Request that the SCWA revise the SCWA flood control design criteria to include a section on stream geomorphic analysis and to update information on bank protection and erosion control to incorporate biotechnical bank stabilization methods for the purpose of preventing erosion and siltation in drainage swales and streams.*

3.2 GROUNDWATER

Sonoma County's groundwater plays an extremely important role in our natural environment, communities, industry sectors and agriculture. In 2002, there were approximately 40,000 wells in Sonoma County, with 42% of the population supported at least in part by groundwater. Nearly all of the county's population relies on groundwater as either a primary or backup source of water supply. The release of contaminants or pollutants into this resource from natural sources or human activities has the potential for adverse impacts upon human health, the environment and



property, depending on the type, location, and quantity of materials released.

The amount of groundwater in an area varies by the recharge from rainfall, the surface runoff in streams and drainage channels, and the local underground geology. The alluvial soils, sand and gravel found in valleys generally can hold large amounts of water and thus constitute the largest aquifers in the county. Sandstone and some other sedimentary rocks can still absorb some water. However, many upland areas of the county are composed of harder rock formations where groundwater is only found in cracks and fractures.

Using information on geology and water yields, the County utilizes a four tier classification system to indicate general areas of groundwater availability. Class 1 are Major Groundwater Basins; Class 2 are Major Natural Recharge Areas; Class 3 are Marginal Groundwater Availability Areas; and Class 4 are Areas with Low or Highly Variable Water Yield. Since County maps of these areas are utilized in the development review and well permitting process and the requirements for proving adequate groundwater vary by these classes, a rigorous process is needed to assure that classification mapping is based on the latest available data.

In unincorporated Sonoma County, most water users obtain their water from groundwater. Groundwater wells also supply many community water systems and occasionally provide a supplemental or backup source for some of the large municipal systems. As concern over future availability of surface water from the Russian River Basin has heightened in recent years, more municipalities are developing, or considering development of, groundwater resources.

Public concerns over depletion of groundwater supplies have increased as development increases and uses groundwater supplies, but limited factual data about existing groundwater levels and use is currently available upon which to fully assess the problem or to formulate a comprehensive management strategy. Complicating the problem is the proprietary nature of well drilling data, the inconsistent character of the County's varied geology, and water rights law.

In response to reports that groundwater levels have declined in some areas, the County has initiated a long term program to increase the available data on groundwater resources and to systematically organize and use it as development is planned and new well permits are sought. Programs are underway to assess the available groundwater in the County's major basins. As these data collection and monitoring efforts begin to produce better information, County decision makers will be in a better position to determine what further measures may be appropriate in order to properly manage these resources.

GOAL WR-2: Manage groundwater as a valuable and limited shared resource.

Objective WR-2.1: Conserve, enhance and manage groundwater resources on a sustainable basis that assures sufficient amounts of clean water

required for future generations, the uses allowed by the General Plan, and the natural environment.

Objective WR-2.2: Develop a scientifically based program to collect the data needed to assess and understand groundwater conditions.

Objective WR-2.3: Encourage new groundwater recharge opportunities and protect existing groundwater recharge areas.

Objective WR-2.4: Increase institutional capacity and expertise within the County to competently review hydrogeologic reports and data for critical indicators and criteria.

Objective WR-2.5: Avoid additional land subsidence caused by groundwater extraction.

The following policies, in addition to those in the Public Facilities and Services, Land Use, and Open Space and Resource Conservation Elements, shall be used to accomplish the above objectives:

Policy WR-2a: Encourage and support research on and monitoring of local groundwater conditions, aquifer recharge, watersheds and streams where needed to assess groundwater quantity and quality.*

Policy WR-2b: Initiate and support educational programs to inform residents, agriculture, businesses and other groundwater users of best management practices in the areas of efficient water use, water conservation, and increasing groundwater recharge.*

Policy WR-2c: Work with well drillers and other parties familiar with groundwater conditions in Sonoma County to develop well permit standards in order to:

- (1) Improve the data obtained from well permit applications on locations, depths, yield, use, flow direction where appropriate, and water levels of proposed and existing wells on the site.
- (2) Establish standards to reduce the potential for well interference and drawdown.
- (3) Ensure sufficient groundwater quantity and quality for existing and proposed uses using the subject well through standards for pump tests, well yields, pollutant levels, and water storage, particularly for higher capacity wells.
- (4) In areas where a groundwater management plan has been approved and has been accepted by the County, require the issuance of well permits and any limitations imposed on well permits to be consistent with the adopted plan.*

Policy WR-2d: Continue the existing program to require groundwater monitoring for new or expanded discretionary commercial and industrial uses using wells. Where justified by the monitoring program, establish additional monitoring requirements for other new wells.*

Policy WR-2e (formerly RC-3h): Require proof of groundwater with a sufficient yield and quality to support proposed uses in Class 3 and 4 water areas. Require test wells or the establishment of community water systems in Class 4 water areas. Test wells may be required in Class 3 areas. Deny discretionary applications in Class 3 and 4 areas unless a hydrogeologic report establishes that groundwater quality and quantity are adequate and will not be adversely impacted by the cumulative amount of development and uses allowed in the area, so that the proposed use will not cause or exacerbate an overdraft condition in a groundwater basin or subbasin. Procedures for proving adequate groundwater should consider groundwater overdraft, land subsidence, saltwater intrusion, and the expense of such study in relation to the water needs of the project.*

Policy WR-2f: Require that discretionary projects in Urban Service Areas maintain the site's pre-development recharge of groundwater to the maximum extent practicable. Develop voluntary guidelines for rural development that would accomplish the same purpose.*

Policy WR-2g: In cooperation with Sonoma County Water Agency (SCWA), DWR, and other public agencies and well owners, support the establishment and maintenance of a system of voluntary monitoring of wells throughout the county, utilizing public water system wells and private wells where available. Encourage participation in voluntary monitoring programs, and, if funds are available, consider funding of well monitoring where determined necessary in order to stimulate participation.*

Policy WR-2h: In cooperation with SCWA, DWR and other public agencies, support the establishment and maintenance of a groundwater data base from available application data, well tests, monitoring results, study reports and other sources; analyze the data collected in an annual report to the Board; provide the data to DWR; and use the data along with other available information to refine the mapping of groundwater availability classifications. Protect the proprietary nature of well drilling data and release it only in summary form.*

Policy WR-2i: In order to identify areas where groundwater supplies may be declining, in the annual report review well permit data, monitoring data and reported problems and recommend to the Board of Supervisors areas where comprehensive groundwater studies are needed. As part of the first annual report, consider the recommendations of the recently completed groundwater studies in the Joy Road, Mark West Springs, and Bennett Valley areas, as well as the Sonoma Valley Groundwater Management Plan. In each such special study area that is approved by the Board following a public hearing, develop a comprehensive groundwater assessment that includes the following:

- (1) An existing system of monitoring wells and stream gauges,

- (2) Locations of water wells,
- (3) Available data on groundwater and surface water levels and contamination,
- (4) Maps and graphs that show past and present data and changes in precipitation, imports, groundwater levels, groundwater quality, rates of extraction, and the relationship of groundwater to surface water,
- (5) Drillers' logs, geologic data and monitoring data needed to estimate water yields in the area,
- (6) Estimated future rates of imports, recharge, extraction, exports, changes in groundwater levels, and possible changes in groundwater quality,
- (7) A water budget for the area that estimates the total amount of water gain or loss in the area,
- (8) Any needed changes in well monitoring, data collection and reporting, and
- (9) Provisions for applicant fees and other funding of County costs.

If an area assessment, as defined above, demonstrates a need for additional management actions to address groundwater problems, prepare a plan for managing groundwater supplies pursuant to the California Water Code or the County's land use or other legal authority. Include involvement by the affected water users, well drillers, local agencies, private water companies and landowners. In recognition of concerns regarding the potential for overdraft condition in the south Santa Rosa Plain groundwater basin, give a high priority to preparation of a groundwater assessment and adoption of a management plan or other appropriate actions in this area prior to approval of any city annexations and changes in land use or density in this area of the county.*

Policy WR-2j: Cooperate with the incorporated Cities, SCWA, DWR, US Geological Survey, well drillers, and all water users and purveyors in the development of a comprehensive groundwater assessment for each major groundwater basin in the county and the priorities, sequence and timing for such studies. Prepare such assessments to meet the applicable requirements of the California Water Code for a "groundwater management plan" and, where appropriate, include the following:

- (1) Computer models of groundwater recharge, storage, flows, usage and sustainable yield,
- (2) Assessment of nitrates, boron, arsenic, saltwater and other water quality contaminants,
- (3) Analysis of resource limitations and relationships to other users for wells serving public supply systems and other large users,

- (4) Opportunities for changing the sources of water used for various activities to better match the available resources and protect groundwater,
- (5) Possible funding sources for monitoring, research, modeling and development of management options, and
- (6) Provisions for applicant fees and other funding of County costs.

If a basin assessment indicates that future groundwater availability, water quality and surface water flows may be threatened and there may be a need for additional management actions to address groundwater problems, prepare a plan for managing groundwater supplies which may require limitations on water extraction and use and other special standards for allowed development, wells, extraction or use. Consideration of new management actions shall include involvement by the interests and parties stated above in development of alternatives addressing specific problems and a review of legal and fiscal issues for each alternative.*

Policy WR-2k: Encourage and support comprehensive studies of long term changes in climate and precipitation patterns in the county and region.*

Policy WR-2l: Increase institutional capacity and expertise within the County to competently review hydrogeologic reports and data for critical indicators and criteria.*

Policy WR-2m: Work with SWRCB, DWR, California Department of Health Services (DHS), CalEPA, public water suppliers, and applicable County and City agencies to seek and secure funding sources for development of groundwater assessment, protection, enhancement and management programs.*

Policy WR-2n: Where area studies or monitoring find that land subsidence has occurred, support analysis of how the subsidence is related to groundwater extraction and develop a groundwater management plan or other appropriate actions, where practicable, to avoid further subsidence.*

3.3 PUBLIC WATER SYSTEMS

An adequate and sustainable water supply is essential if Sonoma County is to serve projected increases in population, housing, employment, business, and agriculture. The main purpose of this section is to address what the County can do to help maintain the long term adequacy of water supply services provided by public and private entities, given the legal limitations on the County's authority over such services.



Large water systems serve the county's cities as well as some of the larger unincorporated communities. The largest system is operated by the SCWA in the Russian River watershed. This system stores runoff from rainfall in the Eel and Russian River watersheds in the Lake Mendocino and Lake Sonoma reservoirs, diverts it from large collector wells beside the Russian River, and transmits it primarily to the Cities of Santa Rosa, Petaluma, Rohnert Park, Cotati, and Sonoma, the Town of Windsor, Sonoma County Airport Industrial Area, the unincorporated Forestville and Valley of the Moon areas, and the North Marin Water District. The supply of water has been generally adequate to meet the system's demand in the past, but challenges remain to supply water to Russian River water users in the future, including the limited amount of unappropriated water, potential reduction in water diverted from the Eel River through a hydroelectric power plant, the capacity of water transmission systems, the ability to secure additional water rights, and the potential effect of recovery plans for threatened and endangered anadromous fish species.

Other large water systems in the unincorporated areas of the county include those serving such communities as Bodega Bay, Sea Ranch, Occidental, Geyserville, Larkfield, Camp Meeker, Kenwood, and Guerneville. Small water systems supply water to a wide variety of uses such as rural businesses, residences and schools, mobile home parks and small unincorporated communities. Most are owned by mutual companies or other private entities, and a few are operated by special districts. These systems have small revenue bases and relatively high per capita costs and often have difficulty financing major capital investments needed to replace aging facilities or accommodate growth.

All water systems are responsible for meeting and maintaining water quality standards established by DHS and the RWQCBs. The suppliers are required to prepare and adopt wellhead protection plans that will avoid future contamination. To the extent that these plans may need to rely upon the regulation of land uses around supply wells, the County's cooperation may be necessary for wells located in the unincorporated area.

In light of concerns over the future availability of water from the Russian River system and from groundwater sources, water conservation, re-use, and alternative water resources such as impoundments, desalinization, etc. are an increasingly important part of all of the supply systems.

GOAL WR-3: Encourage public water systems and their sources to provide an adequate supply to meet long term needs that is consistent with adopted general plans and urban water management plans and that is provided in a manner that maintains water resources for other water users while protecting the natural environment.

- Objective WR-3.1: Assist public water suppliers in the collection and dissemination of surface and groundwater data and the assessment of available water supplies and protection of water quality.
- Objective WR-3.2: Work with public water suppliers in the development and implementation of long term plans for water supply, storage, and delivery necessary to first meet existing water demands and, secondly, to meet planned growth within the designated service areas, consistent with the sustainable yield of water resources.
- Objective WR-3.3: Work with public water suppliers to balance reliance on groundwater and surface water to assure the sustainability of both resources.

The following policies, in addition to those in the Land Use and Public Facilities and Services Elements, shall be used to accomplish the above objectives:

Policy WR-3a: Work with public water suppliers in assessments of the sustainable yield of surface water, groundwater, recycled water and conserved water, including during possible drought periods. This work should include the exploration of potentially feasible alternative water supplies. Surface and groundwater supplies must remain sustainable and not exceed safe yields.*

Policy WR-3b: Support to the extent feasible the actions and facilities needed by public water suppliers to supply water sufficient to meet the demands that are estimated in adopted master facilities plans, consistent with adopted general plans, urban water management plans and the sustainable yields of the available resources and in a manner protective of the natural environment.*

Policy WR-3c: Request technical assistance and water resource data from public water suppliers and share available water resource information with them and the public.*

Policy WR-3d: Assist public water suppliers in complying with Federal and State water quality standards by assuring that water sources used for public water systems are not contaminated by land uses or pollutants in the watershed, by supporting continued study and monitoring of water quality, and by encouraging acquisition of critical watershed areas by the suppliers or the Sonoma County Agricultural Preservation and Open Space District.*

Policy WR-3e: Work with public water suppliers in developing and implementing wellhead protection plans.*

Policy WR-3f: Support water conservation and education programs with measurable targets for public water suppliers.*

Policy WR-3g: Assist public water suppliers in assuring that proposed water supplies and facilities are consistent with adopted general plans, that all planning jurisdictions are notified of and consider potential water supply deficiencies during the preparation of such plans, and that adopted general plans accurately reflect secure water sources.*

Policy WR-3h: Help public water suppliers to disseminate and discuss information on the limits of available water supplies, how the supplies can be used efficiently, the possible effects of drought conditions, acceptable levels of risk of shortage for various water users, priorities for allocation of the available water supply, conditions for use of limited supplies, and limits of alternate sources that could be used or developed.*

Policy WR-3i: Prepare or encourage the preparation of master facilities plans, and urban water management plans where required by State law, for all public water suppliers to design and construct all facilities in accordance with sustainable yields and the general plans of applicable jurisdictions. A master facilities plan should contain but not be limited to the following:

- (1) Maps showing future service area boundaries,
- (2) Forecasted growth and relationship to General Plan projections and limits,
- (3) Projected service and facility needs,
- (4) Estimated costs and revenues for needed improvements,
- (5) System design parameters and assumptions,
- (6) Monitoring and mitigation measures to assure long-term adequacy of sources, including during possible drought conditions, and
- (7) Water conservation measures

In the event that a master plan or monitoring fails to show adequate public water facilities or supplies for planned growth, consider moratoria on plan amendments, zoning changes, building permits or other entitlements in order to protect services to existing residents.*

Policy WR-3j: Seek to maintain consistency between the Sonoma County General Plan, adopted groundwater management plans and the master facilities plans of public water suppliers through meetings between staff of PRMD and public water suppliers, PRMD review of proposed master facilities plans, and referral of General Plan changes to all public water suppliers.*

Policy WR-3k: Cooperate with public water suppliers in the planning, development and construction of the storage and transmission facilities needed to supply water pursuant to

adopted General Plan policies, urban water management plans, water supply agreements, master facilities plans, and, where applicable, programs to mitigate identified groundwater overdraft conditions.*

Policy WR-3l: Pursuant to the requirements of Government Code 65400-65402, request that local public agencies that are public water suppliers, including cities, county-dependent districts, special districts and other local public agencies, consult with the County prior to acquiring a site or developing any well or facilities for public water supplies in the unincorporated area and request a determination of consistency with the Sonoma County General Plan.*

Policy WR-3m: Encourage public water suppliers that are developing or have adopted groundwater management plans to monitor and report groundwater levels, yields and other information on groundwater conditions.*

Policy WR-3n: Encourage public water suppliers who currently utilize water from the SCWA system to balance their use of surface water and groundwater so that environmental impacts and impacts on other legal water users are minimized.*

Policy WR-3o: Encourage public water suppliers to avoid or minimize significant adverse impacts on the environment resulting from water supply, storage and transmission facilities, including impacts on other water users.*

Policy WR-3p: Involve public water suppliers in any development of area studies, groundwater management plans and general plans in order to assure full compliance by suppliers with the groundwater management plans and mitigation measures.*

Policy WR-3q: Support cooperative inter-regional planning efforts by the public water suppliers, their contractors, other existing water users and Sonoma County to consider future demand projections concurrently with the availability of sustainable water supplies.

Policy WR-3r: Work with the SCWA in the following ways to provide an adequate water supply for its contractors consistent with this element:

- (1) Support SCWA participation in proceedings of the Federal Energy Regulatory Commission, California Public Utilities Commission, and State Water Resources Control Board involving the Potter Valley Project to ensure that the interests of all water users in Mendocino, Sonoma, and Marin Counties receive consideration and that decisions on the use of Eel River water are made on a sound scientific basis.
- (2) Encourage SCWA to work cooperatively with Mendocino County interests to resolve water resource issues, including assessment of water resource projects, water supply alternatives, and use of recycled water.
- (3) Work with all water users along the Russian River and its tributaries to encourage

development of water supply alternatives for existing water users.*

Policy WR-3s: Cooperate with public water suppliers in the planning, development and construction of the storage and transmission facilities needed to serve projected demand consistent with adopted general plans.

3.4 CONSERVATION AND RE-USE

Water conservation has long been a practice in Sonoma County households, businesses, and agriculture. The rise of environmental consciousness in the 1970s and a prolonged drought in 1976/77 led to the early efforts by some water suppliers to reduce demand. Planned re-use of treated water in the Santa Rosa Plain was initiated by the City of Santa Rosa during this same period as part of its regional wastewater system. Most of these earlier conservation efforts were not well publicized and, due to the relative abundance of fresh water sources, were not thought to be significant as a water supply strategy.



In recent years, both water conservation and re-use programs have expanded considerably. As advanced treatment has become an increasingly standard practice, re-use programs are becoming even more viable. However, the quality of recycled water still remains an issue. Most of the larger municipal water systems, particularly those that rely upon the Russian River Water Supply and Transmission System, have water conservation programs, including low water use appliances and landscaping, various education and promotional programs, and water rate incentives. Meeting peak demands in the future may require increased conservation efforts and water recycling by water users in both urban and rural areas.

- GOAL WR-4: Increase the role of conservation and safe, beneficial re-use in meeting water supply needs of both urban and rural users.
- Objective WR-4.1: Increase the use of recycled water where it meets all applicable regulatory standards and is the appropriate quality and quantity for the intended use.
- Objective WR-4.2: Promote and encourage the efficient use of water by all water users.
- Objective WR-4.3: Conserve and recognize stormwater as a valuable resource.

The following policies, in addition to those in other sections of the Water Resources Element and the Public Facilities and Services Element, shall be used to accomplish these objectives:

Policy WR-4a: Encourage disposal methods that minimize reliance on discharges into natural waterways. If discharge is proposed, review and comment on projects and environmental documents and request that projects maximize reclamation, conservation and reuse programs to minimize discharges and protect water quality and aquifer recharge areas.*

Policy WR-4b: Use water effectively and reduce water demand by developing programs to:

- (1) Increase water conserving design and equipment in new construction, including the use of design and technologies based on green building principles,
- (2) Educate water users on water conserving landscaping and other conservation measures,
- (3) Encourage retrofitting with water conserving devices,
- (4) Design wastewater collection systems to minimize inflow and infiltration, and
- (5) Reduce impervious surfaces to minimize runoff and increase groundwater recharge.*

Policy WR-4c: Support programs to monitor and determine per capita or per unit water use in each community and area and utilize these data in groundwater management plans, master facilities plans, and wastewater treatment plans.*

Policy WR-4d: Encourage monitoring for all water use and water metering for public water suppliers that require water users to pay for costs of the amount of water used. Encourage tiering and other pricing mechanisms for public water suppliers that provide incentives for water users to employ conservation and reuse programs. Actively encourage public water suppliers to maximize water re-use and conservation prior to increasing net water use for new development.*

Policy WR-4e: Require water conserving plumbing and water conserving landscaping in all new development projects and require water conserving plumbing in all new dwellings. Promote programs to minimize water loss and waste by public water suppliers and their customers. Require County operated water systems to minimize water loss and waste.*

Policy WR-4f: Promote programs for retrofitting plumbing, providing cost rebates, identifying leaks, changing landscaping, irrigating efficiently and other methods of reducing water consumption by existing users.*

Policy WR-4g: Require that development and redevelopment projects, where feasible, retain stormwater for on-site use that offsets the use of other water.*

Policy WR-4h: Encourage and support conservation for agricultural activities that increase the efficiency of water use for crop irrigation, frost protection and livestock. Work with RWQCB and DWR to promote stormwater impoundments for agricultural uses.*

Policy WR-4i: Assess water use by County buildings and facilities and reduce water consumption to the maximum extent practicable.*

Policy WR-4j: Ensure that public wastewater disposal systems are designed to reclaim and reuse recycled water for agriculture, geothermal facilities, landscaping, parks, public facilities, wildlife enhancement and other uses to the extent practicable, provided that the water meets the applicable water quality standards and is supplied in appropriate quantities for the intended uses.*

Policy WR-4k: Where consistent with water quality regulations, encourage graywater systems, roof catchment of rainwater and other methods of re-using water and minimizing the need to use potable surface water or groundwater.*

Policy WR-4l: Establish a program to revise County Codes to increase, where appropriate, the use of recycled water for new commercial, residential, and agricultural development.*

3.5 IMPORTING AND EXPORTING

For many years, Sonoma County has relied to some degree upon importation of water from sources outside of the County borders. Since 1908, water has been diverted from the Eel River watershed through a hydroelectric power plant into the Russian River watershed. This water has increased dry season flows in the Russian River and supplemented water supplies for downstream users.



Russian River water is exported to Marin County. Exports of recycled water outside of Sonoma County have also been considered. As statewide water supplies are falling behind demand, areas with relatively abundant water supplies are likely to be targeted for additional exports. An example is the proposal to export water from the Gualala and Albion Rivers to Southern California. While such proposals are within the jurisdiction of the SWRCB, Sonoma County needs to be proactive in protecting its water resource interests.

- GOAL WR-5: Assure that new proposals for surface and groundwater imports and exports are consistent with Sonoma County's ability to sustain an adequate supply of high quality water for all its water users and dependent natural resources.
- Objective WR-5.1: Protect the interests of current and future water users of Sonoma County in the review of proposals to export water from Sonoma County.
- Objective WR-5.2: Assure consideration of the environmental impacts of all proposed water imports and exports.

The following policies, in addition to those in the other sections of the Water Resources Element, shall be used to accomplish these objectives:

Policy WR-5a: Assess the environmental impacts and impacts on current and future water users in Sonoma County of any proposals to physically export water to new locations or to new water users outside Sonoma County or to substantially increase water supply to existing out-of-county water users. Request that any consideration to export additional water resources place primary priority upon the benefit of and need for the water resources in Sonoma County and assure that water resources needed by urban, rural and agricultural water users in Sonoma County will not be exported outside the county.*

Policy WR-5b: Require or request full assessment of the environmental impacts of any proposals to import additional water into Sonoma County.*

Policy WR-5c: Where allowed by State law, require that groundwater not be exported off site for commercial purposes without prior discretionary approval of the County.*

3.6 WATERSHED MANAGEMENT

- GOAL WR-6: Improve understanding, valuation and sound management of the water resources in Sonoma County's diverse watersheds.
- Objective WR-6.1: Seek and secure funding for addressing water resource issues on a watershed basis.
- Objective WR-6.2: Support programs to assess the quality and quantity of the water captured, stored and used within each unique watershed.

The following policies, in addition to those in other sections of the Water Resources Element, shall be used to accomplish these objectives:

Policy WR-6a: Work with the RWQCBs, watershed focused groups and stakeholders in the collection, evaluation and use of watershed-specific water resource information.

Policy WR-6b: Where there is a water related problem identified, promote and seek funding for the evaluation and remediation of the problem through a watershed management approach.

4. WATER RESOURCE IMPLEMENTATION PROGRAMS

Water Resources Program 1: Education and Technical Assistance *

Program Description: Develop a public education and technical assistance program that provides property owners, applicants and the general public with information regarding stormwater pollution, efficient water use, public water supplies, water conservation and re-use, and groundwater. Include the preparation of “best management practices” for agricultural cultivation that address reduction of peak runoff from cultivated slopes and erosion and sediment on slopes greater than 35 percent (Policy reference: WR-1a, -1j, -1r, -2a, -2b, -2h, -3c, -3h, -4b, -4e, -4f, -4h, -6a, -6b).

Water Resources Program 2: County Facilities *

Program Description: Prepare and implement a “best management practice” manual for minimizing stormwater pollutants associated with construction and maintenance of County buildings, roads, and other facilities. Assess water use in County operated facilities and implement programs for efficient water use and wastewater re-use (Policy reference: WR-1b, -4b, -4e, -4i).

Water Resources Program 3: Stormwater Management Regulations

Program Description: Work with the RWQCBs during the official formulation and adoption process for stormwater pollution management regulations affecting Sonoma County (Policy reference: WR-1c, -1e, -1f).

Water Resources Program 4: Total Maximum Daily Load (TMDL) Regulations

Program Description: Work with the RWQCBs during the official formulation and adoption process for TMDL regulations affecting Sonoma County (Policy reference: WR-1e).

Water Resources Program 5: Grading Ordinance and Erosion and Sediment Control

Program Description: Prepare, adopt, and implement a revised grading, erosion and sediment control ordinance to include slope-related standards and standards for orchards and vineyards (Policy reference: WR-1g, -1h, -1i).

Water Resources Program 6: Well Permits and Procedures

Program Description: Prepare, adopt, and implement a revised well permit ordinance that provides for improved data collection and monitoring of groundwater. Prepare revised procedures for proving adequate ground water for discretionary projects (Policy reference: WR-2c, -2d, -2e).

Water Resources Program 7: Groundwater Monitoring, Annual Report, Area Studies, and Evaluation*

Program Description: Establish a ground water database and monitoring program consisting of well permit data and basin studies. Prepare an annual report to the Board of Supervisors assessing the current status of groundwater conditions in the unincorporated area and evaluating the need for any special studies and/or management actions that may be necessary in problem areas. The initial reports would focus on the recommendations from the groundwater studies in the Joy Road, Mark West Springs, and Bennett Valley areas, as well as the Sonoma Valley Groundwater Management Plan (Policy reference: WR-1t, -2d, -2g, -2h, -2i, 2j, -2m, -3a, -3i, -3m, -4c, -6a).

Water Resources Program 8: Public Water Supply Plans

Program Description: Develop an information sharing program in cooperation with public water suppliers as necessary to make appropriate data available to the public pertaining to water supply and water use in each supplier's jurisdiction. Cooperate with public water suppliers in the development and implementation of measures necessary to protect the water quality of its water supply sources (Policy reference: WR-3a, -3b, -3c, -3d, -3e, -3g, -3h, -4d, -4e, -4f).

Water Resources Program 9: Integrated Water Resources Funding

Program Description: Work with public water suppliers, utility districts, stakeholder groups and interested parties to seek and secure outside funding sources for Water Resources Element programs and associated plans. Sources considered should include acquisition of critical watershed areas by the Sonoma County Agricultural Preservation and Open Space District and establishing a stewardship fund derived from the use and off-site sale of extracted groundwater to provide a financial base for the on-going protection, monitoring and management of the groundwater resource (Policy reference: Implementation programs 1-8 above).

Water Resources Program 10: Watershed Planning

Program Description: Seek funding opportunities for collaborative watershed planning approaches to water quantity and quality enhancement and protection by watershed groups, resource conservation districts, scientific research programs, and other interested parties, where such an approach is the desired method of accomplishing the program objectives (Policy

reference: WR-1a, -1c, -1e, -1f, -2j, -3r, -6a, -6b).

Water Resources Program 11: Water Conservation in New Development

Program Description: Prepare, adopt, and implement an ordinance that requires water-conserving plumbing in all new dwellings and water-conserving plumbing and water-conserving landscaping in all new development projects. Develop programs to reduce water demand and increase groundwater recharge (Policy reference: WR-4b, -4e).

Water Resources Program 12: Reclaimed Water

Program Description: Revise County Codes in order to enable greater re-use of recycled water where appropriate to the use (Policy Reference: WR-4I).