

CHAPTER 12: RELATION TO LOCAL PLANNING

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One of the goals of the *California Water Plan* is to ensure that water managers and land use planners make informed, collaborative water management decisions to better ensure meeting California's water needs into the future while balancing environmental resources and anticipating climate change impacts. The 2012 IRWM Grant Program Guidelines require that the IRWM Plan describe the current relationship between land use and water resource managers (e.g., how water management input is considered in land use decisions and vice versa), identify current constraints to collaboration, and explore opportunities to facilitate improved collaboration between land use planners and water managers in the future. Local jurisdictions in the Santa Cruz Region have long sought to protect the environment, and specifically water resources, through ordinances and strong general plan policies. The intent of this chapter is to highlight these efforts to meet the standard of the IRWM Grant Program Guidelines and the goals of the *California Water Plan Update 2009*. This chapter is also to document coordination between land use planners and water managers in the Santa Cruz IRWM region.

12.1 LAND USE, GROWTH, AND WATER RESOURCES PLANNING OVERVIEW

Despite its relatively small geographic extent, the Santa Cruz IRWM Region encompasses a number of agencies with water management responsibilities. Two of these water management agencies also have local land use jurisdiction, the Cities of Santa Cruz and Watsonville. Typically, where water resource management and land use management occur in-house, coordination tends to occur naturally through ongoing interdepartmental communications. It should be noted that a large portion (35%) of the City of Santa Cruz Water Department customer base is located in community of Live Oak and other unincorporated areas, limiting the water-land use collaboration in those areas.

Water infrastructure within the remainder of the Santa Cruz IRWM Region is decentralized, and communities within those areas have their water and wastewater services performed by an outside agency or district. In these areas, coordination between water and land use planning can be more difficult where separation exists between a utility and a municipality. For the most part, the districts are independent entities created under California state law, each governed by separate elected boards and managed by individual staff. There is no single overarching authority with jurisdiction over the districts. Overall, linking water and land use planning can be challenging, but as described in the following sections, the Santa Cruz Region has taken a unique approach to planning that has, for decades, linked water resources and land use.

It is important to note that water planning efforts throughout the region generally base their future demand projections on future population projections developed by the land use agencies and the Association of Monterey Bay Area Governments (AMBAG). The water agencies may adjust overall projected water



Swanton Road (photo courtesy Gary Kittleson)

demand based on projected changes in per capita water demand and water use efficiency, but they take the population projections as a given and plan to develop water supplies to accommodate those projections. Land use agencies in turn rely on water agency plans and projections to make the determination that there will be adequate water supply to serve future planned growth. The land use agencies have implemented numerous general plan policies and ordinances to ensure that measures to protect water resources and watershed resources are incorporated into new development. In response to Measure J, a 1978 ballot measure, the County also took steps to reduce growth rates and direct most future growth to urban areas and away from rural lands, watershed lands and groundwater recharge areas.

12.1.1 STATE LEGISLATION

In 2001, the California Legislature passed, and the governor signed into law, two bills linking land use decisions to available water supplies. The intent of these two bills, SB 610 and SB 221, was to strengthen the process by which local agencies determine whether the water supplies of a region are adequate to satisfy the demands of new, large-scale, development projects. The two bills integrate land use and water planning at different stages of project approval. SB 610 requires the preparation of a detailed water supply assessment by the responsible water agency early on when major projects that are subject to the California Environmental Quality Act (CEQA) undergo environmental review. SB 221 prohibits local land use agencies from later approving tentative maps or developer agreements for large subdivisions unless adequate, reliable water supply has been verified. Since new development in the Santa Cruz Region is generally much smaller than that which is covered by SB 610 or 221 (i.e., ~ 500 units), it is unlikely that these laws will change how decisions are made locally. Nevertheless, the policy considerations embodied in these bills are relevant to planning considerations in the Region. The City of Santa Cruz conducted a water supply assessment in conjunction with the 2013 adoption of their 2030 General Plan Update.

Senate Bill X7-7 creates a framework to reduce California's per capita water consumption 20 percent by 2020. The law establishes methods for urban retail water suppliers to determine their urban water use target. Methods specified include: setting a water demand target of 80 percent of their daily per capita water baseline; utilizing performance standards for indoor, landscaping, industrial and institutional uses; meeting 95 percent of the per capita water goal for their specific hydrologic region as identified by the California Department of Water Resources (DWR) and other state agencies in the 20x2020 Water Conservation Plan; or using an alternative method developed by DWR. The bill also requires urban water suppliers to set an interim urban water use target and meet that target by December 31, 2015. SB X7-7 also requires agricultural water suppliers to implement efficient water management practices and prepare, adopt, and periodically revise agricultural water management plans to document their water conservation efforts. DWR is required to work cooperatively with the California Urban Water Conservation Council in achieving the goals of SB X7-7. Implementation of SB X7-7 requirements is resulting in changes in local land use planning practices throughout the state to encourage and require reductions in per capita consumption. For example, some Bay Area municipalities are collaborating with local water districts to incorporate water efficiency requirements into the development approval process.

12.2 WATER PLANNING

The Santa Cruz IRWM Plan combines the relevant information contained in numerous water resources planning documents throughout the Region, as described below. The IRWM Plan does not take the place of local water planning, but rather uses these documents as a basis for developing a regional perspective for water resources issues and concerns. Many of these plans identify the specific projects and programs listed in this IRWM Plan. Local plans were particularly instrumental in preparing the following chapters of this IRWM Plan:

- **Region Description:** This chapter relied on current local and regional water resource plans to define regional water supply and demand, issues and conflicts, and major water-related infrastructure
- **Resources Management Strategies:** This chapter used the water resources information described in the Region Description chapter to characterize strategies needed for the Santa Cruz IRWM Region.

This section provides an overview of the water resource plans in the Santa Cruz Region that were used as a basis for this IRWM Plan. Since the information used in this IRWM Plan was derived from these local planning documents, the IRWM Plan is entirely consistent with these plans. Most of these planning documents are updated on a regular basis. The IRWM Plan will be revised to reflect the most current information from each of these plans during every formal IRWM Plan update, which is anticipated to occur approximately every five years or as funding allows.

12.2.1 URBAN WATER MANAGEMENT PLANS

Urban water management plans (UWMPs), prepared by water service providers with more than 3000 connections, are long-range planning documents for water supply, and serve as source documents for cities and counties as they prepare their general plans. State law requires that UWMPs be prepared and updated every five years. Water suppliers are required to estimate water supply needs for their service areas in normal, dry, and drought years over a 20-year planning horizon. Within these estimates, suppliers are required to ensure that the level of water service is sufficient to meet the needs of their various categories of customers. The four largest water agencies in the Santa Cruz IRWM Region - San Lorenzo Valley Water District (SLVWD), Scotts Valley Water District (SVWD), City of Santa Cruz Water District (SCWD) and the Soquel Creek Water District (SqCWD) - are subject to state requirements to develop UWMPs. All but the SLVWD have developed and adopted their 2010 UWMPs (SLVWD has a draft plan nearing completion).



Photo courtesy SVWD

The estimates provided in these UWMPs have formed the basis for the population, water supply, and water demand estimates used in this IRWM Plan as described in the Region Description chapter. Where more current or updated information was available, particularly for the SqCWD and the SCWD, that information supplemented the information provided in the UWMPs. In addition to the UWMPs, numerous other water resource plans and studies have informed the development of this IRWM Plan, as described below.

12.2.2 CITY OF SANTA CRUZ - INTEGRATED WATER PLAN

In 2003, the City of Santa Cruz adopted an integrated water plan (IWP). The IWP was developed to reduce the City's vulnerability to water shortages and to decrease the level of risk to the community from drought impacts. The IWP calls for increased water conservation, short term curtailment of 15%, and development of a supplemental water supply to avoid severe cutbacks as experienced in the 1976-77 drought, which would be harder to implement today given current lower per capita usage rates and new regulatory requirements to maintain instream flows. After members of the public expressed strong reservation about the recommended desalination project, the City has formed a Water Supply Advisory Committee to review and update projections of demand, supply shortfalls and reevaluate potential alternatives for supplemental or alternative supply.

12.2.3 CITY OF SANTA CRUZ - WATER SUPPLY ASSESSMENT GENERAL PLAN 2030

As described previously, Senate Bills 610 and 221 amended California law to improve the linkage between land use decisions made by cities and counties and water supply availability. Pursuant to SB 610, a water supply assessment (WSA) is required for projects that are subject to the California Environmental Quality Act (CEQA) and that meet certain size thresholds. While not technically required, the City chose to prepare a WSA, building upon the Integrated Water Plan, to support the City's update of its general plan. As part of the WSA, the City evaluated whether water supplies are sufficient to meet the demand of the general plan update over the next 20 years. The WSA describes the City's historical water demand, projected water demand and water supply sources, and provides a comparison of the City's expected water supply and demand through the year 2030. As part of the WSA, the City developed two estimates of water demand that were compared to the various water supply estimates that considered the possibility of drought, regulatory restrictions, and other considerations. The assessment found that the City does not have sufficient water to meet current or future projected water demand during dry years, consistent with the most recent urban water management plan and the Integrated Water Plan. The City is pursuing various sources of supplemental supply to help alleviate this condition.

12.2.4 SOQUEL CREEK WATER DISTRICT INTEGRATED RESOURCES PLAN

In 2006, Soquel Creek Water District adopted an integrated resources plan that was based on extensive review and community participation to evaluate alternatives and establish preferred supply options for the district. That plan was updated in 2012 to reflect lowered estimates of groundwater yield and projected demand. That plan calls for development of a desalination project or other supplemental supply to allow reduced groundwater pumping. With the 2014 hold on the joint desalination project with the City of Santa Cruz, the District is now re-evaluating additional supplemental supply alternatives including increased demand reduction, recycled water, water exchange, or other desal projects.

Groundwater Management Plans and Basin Reporting

Condition and trends for both the Santa Margarita and Soquel-Aptos groundwater basins are extensively monitored and reported, and these reports have informed various chapters of this IRWM Plan. Scotts Valley Water District adopted its groundwater management plan in 1994 and uses the Santa Margarita Groundwater Basin Model (currently being updated) to assess the overall changes in groundwater storage in the Scotts Valley Area. Annual reports describing the groundwater conditions within the management area are prepared annually. Similarly, the groundwater management plan for the Soquel-

Aptos basin was approved by both the SqCWD and Central Water District in 2007. An Annual Review and Report summarizes groundwater conditions in the basin, documents the status of groundwater management activities, and recommends any amendments to the management plan.

12.2.5 FLOOD PROTECTION AND STORMWATER MANAGEMENT PLANS

Flood protection and stormwater drainage in the Region is provided by the County and the four cities as well as one dependent special district. The Santa Cruz County Flood Control and Water Conservation District was formed by a special act of the State Legislature and is the designated flood protection agency for the County. All of the local jurisdictions are subject to Phase II of the Municipal Separate Storm Sewer System (MS4) National Pollution Discharge and Elimination System (NPDES) permit for stormwater discharges administered by the Central Coast Regional Water Quality Control Board. This permit is one of the main primary drivers for addressing water quality in stormwater, which is identified as the largest source of pollution in the region. Under this permit, local jurisdictions are required to implement various management, monitoring, and reporting requirements to support compliance with the NPDES General Permit. The stormwater management plans developed under this permit by the each of cities, the County, and UCSC have informed various sections of this IRWM Plan.

12.2.6 SEWER SYSTEM MANAGEMENT PLANS

In 2006, the State Water Resources Control Board adopted requirements for all public sanitary sewer collection system agencies prohibiting sewer overflows. Under these requirements, each sewer collection system agency is required to develop a plan to provide for the proper and efficient management, operation and maintenance of the collection system. Many of the resource strategies addressing water quality in this IRWM Plan are derived, in part, from these management plans.

12.2.7 WATERSHED AND HABITAT RESTORATION PLANS

Beginning in the late 1990s, eight watershed restoration plans and a number of other related assessments were undertaken for seven watersheds in Santa Cruz County. Staff from the Santa Cruz County Resource Conservation District (RCD), Coastal Conservancy, California Department of Fish and Game (CDFG), Coastal Watershed Council, and the City and County of Santa Cruz developed the concept for the Integrated Watershed Restoration Program (IWRP) for Santa Cruz County in 2002 to address stumbling blocks that had historically prevented implementation of these plans. IWRP is a voluntary framework, put into place to coordinate resource, funding, and permitting agencies to reduce staff time and help ensure that critical projects are identified, funded, and permitted. IWRP also provides resources to local watershed partners for developing projects. IWRP has informed development of this IRWM Plan through the identification of projects and by defining environmental goals and objectives.

12.3 LAND USE PLANNING

There are many factors, both private and public, that affect the amount, location, type and density of development that is permitted and built within the Region. From the policy standpoint, local jurisdictions adopt general plans, local coastal programs, zoning regulations, and development standards that serve to regulate and manage growth. These seek to protect existing neighborhoods and preserve environmental resources as a way to maintain the quality of life and the unique sense of place

for those that live, work, and visit the area. As decisions about infrastructure (such as roads, water facilities, and sewer facilities) affect the amount of growth possible for an area, limiting such services can act as a constraint to development, an approach that has been utilized to varying degrees in the Santa Cruz Region. The following sections describe land use planning in the Santa Cruz Region, particularly as it relates to water resources planning and water management objectives in the region.

12.3.1 GENERAL PLANS

Each city and county in California is required to adopt a comprehensive, long-term general plan for the physical development of its jurisdiction. The general plan is a statement of development policies and is required to include elements (chapters) that address land use, circulation, housing, conservation, open space, noise, and safety. The Land Use element designates the proposed general distribution, location, and extent of land uses and includes a statement of the standards of population density and building intensity recommended for lands covered by the plan.

With respect to planning development to accommodate housing growth, the State Planning and Zoning law prescribes that the Housing element of a general plan may not be constrained by the lack of all needed governmental services, including water service. Assignment of a region's "fair" share of the state's projected housing growth are first developed by the state and then allocated to subareas by the local regional government, in this case the Association of Monterey Bay Governments (AMBAG). To the extent that governmental services, like a public water supply, are not available to fully meet a city's or county's housing allocation, state law requires the city or county to remove the governmental constraints to the development of the housing described in the general plan. This requirement promotes the state general plan policy that the availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every California family is a priority of the highest order. However, state legislation (i.e., SB 610 and SB 221 discussed above) ensures that specific housing and other development projects are not approved and constructed without a demonstrated, adequate water supply.

Water resource topics are usually addressed in general plan conservation, public services and/or open space elements where policies are developed that connect the management of water resources and provision of water supply infrastructure with development patterns. In 2003, the California Governor's Office of Planning and Research published general plan guidelines that encouraged jurisdictions to include an optional Water element in their general plan to allow a more thorough consideration of water supply availability and subsequent development decisions. The water element of the general plan must be developed in coordination with any county-wide water agency and with all districts and city agencies. Such coordination must include the discussion and evaluation of water supply and demand information. While none of the local general plans in Santa Cruz County include the optional water elements, it could be argued that several contain functionally equivalent policies in the required elements.

Similarly, in 2007, legislation was passed to facilitate coordination between land use and flood risk management agencies by updating cities' and counties' responsibilities related to local land use planning requirements. Specifically, the legislation requires cities and counties to amend their general plan land use, conservation, safety, and housing elements to consider and address flood risks. Revised water

resources policies are required to be developed in coordination with applicable flood management, water conservation, and groundwater agencies.

The Cities of Santa Cruz, Capitola, Scotts Valley, and Watsonville as well as the County of Santa Cruz have all adopted general plans. Additionally, these jurisdictions have local coastal plans (Capitola, Santa Cruz, Watsonville, and the County of Santa Cruz), zoning, and other regulations that guide development, and in the case of the County, help to manage growth. Each of these jurisdictions has updated housing elements, each of which sets forth goals and objectives for housing production, rehabilitation, and conservation to address their required regional housing need allocation established by the Association of Monterey Bay Area Governments (AMBAG).¹

This IRWM Plan recognizes and incorporates local water, watershed, and land use goals and objectives as described in various chapters of this plan. Many of these goals and objectives are reflected in the goals and objectives of this IRWM Plan. The IRWM Plan integrates with local general plans in two primary ways:

1. Through communication with local land use planners in the development, implementation, and future updates to the IRWM Plan;
2. Through the participation of local planners in project development, review, and implementation.

The following sections briefly summarize the status of each jurisdiction's general plan.

12.3.2 CITY OF SANTA CRUZ

The City of Santa Cruz's 2005 General Plan was recently updated and the General Plan 2030 was adopted by the City Council in June 2012. The general plan describes goals, policies, and actions to address each of the required elements. The Plan includes a land use map that identifies land use designations throughout the City, with accompanying residential densities and non-residential land use intensity, which remain largely unchanged from the 1990-2005 General Plan and Local Coastal Program. Importantly, the City designates the University of California at Santa Cruz (UCSC) campus and off-campus lands as "UCSC Development," which is guided by the University's Long Range Development Plan (LRDP). Further description of the UCSC LRDP and future development is provided below.

12.3.3 CITY OF CAPITOLA

The City of Capitola's recent General Plan Update was adopted in June 26, 2014. There are no permit restrictions on development or growth limitation policies for Capitola; however, growth is limited by the lack of developable land. As with the City of Santa Cruz and the County, Capitola's housing element was adopted and certified by the state in 2010, and covers the years 2007 - 2014.

¹ The foregoing discussion has been paraphrased from: URS Corporation. 2013. *SCWD² Regional Seawater Desalination Project Draft Environmental Impact Report*. City of Santa Cruz and Soquel Creek Water District. Pg. 3-13 - 3-17.

12.3.4 CITY OF SCOTTS VALLEY

The City of Scotts Valley's General Plan was adopted in 1994. Scotts Valley has initiated the process of updating its General Plan. Between 1970 and 2000, Scotts Valley has grown from a small town of 3,621 persons to a community of 11,385 persons, in large part in response to regional employment opportunities. The City's housing element was adopted and certified by the state in 2010, and covers the years 2009 - 2014.

12.3.5 CITY OF WATSONVILLE

The City of Watsonville's 2005 General Plan was adopted in 2005 and the Watsonville Vista 2030 General Plan Update was adopted in 2013. Conservation and preservation of the agricultural base, as well as natural resources management - including surface and groundwater protection - are key themes in the plan.

12.3.6 COUNTY OF SANTA CRUZ

Land use in the unincorporated portions of the County, which make up the majority of land area in the Region, is regulated and guided by the policies and programs contained in the 1994 Santa Cruz County General Plan and Local Coastal Program. The general plan establishes 15 planning areas for the unincorporated County, and each has a land use map that locates a range of land uses within the planning area. Five of these planning areas are largely within urban areas served by water agencies: Carbonera and Live Oak - City of Santa Cruz; Soquel and Aptos - Soquel Creek Water District; Pajaro - City of Watsonville. In addition to the general plan and local coastal program, the County's current housing element was adopted and certified by the state in 2010.

The County's general plan does not contain the optional water element; however, strong, comprehensive policies related to the sustainable management of land and water resources are contained throughout the plan's required elements. These policies generally reflect the need to protect and sustain the County's water resources, and to ensure compatibility between development and land use.

12.4 OTHER LOCAL LAND USE ORDINANCES, PLANS, AND POLICIES

City and county planning agencies also use specific plans, zoning ordinances, and other development regulations (e.g., urban limit lines), and conditional use permits to implement the general plan policies and regulate development as well as the protection of water and environmental resources within their jurisdictions. Specific plans can be used to implement policies of a general plan. Conditional use permits (CUPs) are planning tools to impose specific requirements on a given proposed land use. In the context of water resources management, CUPs can provide opportunities to impose requirements that advance numerous policies, including low impact development (LID) features to manage stormwater runoff and reduce impervious surfaces and flooding potential.

12.4.1 MEASURE J

Various ordinances contained in the County Code also dictate how growth and development should occur. Of particular note is Measure J, which was passed by County voters in 1973 as a means of managing growth, which resulted in the development of Title 17 of the County Code, entitled Community Development. This established the County's Growth Management Ordinance that sets policies that govern future growth and development in the County, and specifically regulates the character, location, amount, and timing of future development. The ordinance includes:

1. the establishment of urban and rural boundaries
2. the program for developing the annual population growth goal
3. affordable housing requirements and incentives

The establishment of the Rural Services Line and an Urban Services Line in the county has defined areas that are or have the potential to be urban, and areas that are and should remain rural. These designations serve to encourage new development to locate in urban areas, served by utilities, and to protect agricultural land and natural resources. The population growth goal is intended to limit population growth during a given year to an amount determined to represent the County's fair share of statewide population growth. Each year's population growth goal is to include plans to assist and encourage the production of a number of housing units equal to, on average, not less than 15 percent of the newly constructed units during any three consecutive years for purchase or rent by persons with average or below average incomes.

12.4.2 UCSC LONG-RANGE DEVELOPMENT PLAN

Universities within the University of California system are required to prepare long-range development plans (LRDP) that guide physical development and land use to meet the academic and institutional objectives for their campus. The Regents of the University of California adopted an LRDP for the University of California at Santa Cruz (UCSC) in 1988 that guided development through 2005-06. Projected increases in enrollment spurred UCSC to prepared a new LRDP for growth through 2020. UCSC is the City's largest single water customer using about 6 percent of the total city area water demand, and given the relationship between the City of Santa Cruz and UCSC, the LRDP could have a significant impact on water resources.

When UCSC was first established, the City agreed to provide sufficient water to meet University growth, and a 1965 agreement between the City and University states that the City will supply up to 2 million gallons per day to the Campus. Current average daily use is currently well below that level at approximately 565,000 gallons per day. The LRDP calls for increasing enrollment up to 19,500 students by 2020, an approximately 40% increase over current enrollment of 14,000. Potentially more critical to water resources given the seasonal nature of the City's water supply and demand, the LRDP is also proposing expanded summer programs that could increase summer enrollment levels from a current level of about 1,600 students to 8,100 students. With implementation of the LRDP, total UCSC population including students, faculty, and staff would grow from a total of 18,130 to an estimated 27,600. Eighty-five percent of current students and staff reside on campus or elsewhere within Santa Cruz County.

The Environmental Impact Report (EIR) for the LRDP states that the City estimates that there is approximately 300 mg/year of excess capacity within the City's system. The EIR states that the City can meet 100 percent of demand in 7 of 10 years, and approximately 90 percent in 9 of 10 years. At full development under the LRDP, in 2020 the main campus was projected to have an average daily water demand of just over 1 million gallons per day, nearly double the current demand on campus. Increased summer demand would increase total demand during that 10-week period up to approximately 11 million gallons. This increase in summertime demand would account for only approximately 1% of the City average daily summertime demand. The EIR for the LRDP determined that this impact on water resources would be significant and unavoidable and proposed a number of mitigation measures to partially offset this impact. Measures include ongoing implementation of conservation programs, installation of high-efficiency plumbing fixtures, and water efficient landscaping. If campus demand reaches 250 million gallons per year, the campus will be required to initiate a program to retrofit existing facilities with efficient campus standards. Additional measures will be required if demand exceeds 300 million gallons per year, or if the City implements drought emergency management measures. As a result of a lawsuit over the LRDP, UCSC, the City and the County entered into a comprehensive settlement agreement that committed the University to many of the water efficiency mitigation measures contained in the EIR.

12.4.3 SANTA CRUZ COUNTY ECONOMIC VITALITY STRATEGY AND SUSTAINABLE SANTA CRUZ COUNTY PLAN

The Santa Cruz County Economic Vitality Strategy represents the results of an initiative led by the County of Santa Cruz to identify strategies that could work together to strengthen the local economy. the perspective of the Strategy is to recognize countywide assets, opportunities and partnerships, and to highlight goals, strategies and actions that the County government could pursue to complement and strengthen private-sector the economic development efforts. The Strategy recognizes core community values that exist in Santa Cruz County, including an emphasis on environmental conservation and restoration, and a mindfulness of the importance of equity for all County residents. The County is also completing a Sustainable Santa Cruz County Plan which proposes targeted infill development along established transportation corridors to support housing and employment needs in the county. This plan identifies water supply constraints and other natural resource issues.

Healthy Economies Initiative

Healthy Lands and Healthy Economies: Demonstrating the Economic Value of Natural Areas and Working Landscapes is a regional collaboration intended to estimate and articulate the economic value of local ecosystem services and the direct role they play in maintaining sustainable local economies and communities in Santa Clara, Santa Cruz and Sonoma Counties. This effort in the Santa Cruz region is being led by the Resource Conservation District of Santa Cruz County and is supported by a private funding grant.

Santa Cruz County's economy is housed within a landscape of Natural Capital, which provides valuable benefits to people, called Ecosystem Services, such as water supply, clean air, food, fiber, soil fertility, flood protection, recreation opportunities, and more. A few examples of economic goods and services provided by Santa Cruz County's natural capital include:

- **Climate Regulation.** Oak woodlands, grasslands, and evergreen forests native to California contribute to climate regulation by sequestering carbon from the atmosphere. Species like the Blue Oak, Coast Oak, and Black Oak can be found along the eastern foothills of the Santa Cruz Mountain range and play an important role along with other ecosystems in mitigating climate change.
- **Pollination.** Many of Santa Cruz County's most important crops, such as fruit and nursery crops, rely on pollination for production. Species like the wild Digger Bee thrive in grassland, shrub and forest habitats adjacent to agricultural lands and contribute to their yield. In Santa Cruz, apple production for 2012 was valued at \$12.5 million, revealing the economic importance of natural pollination services. A 2011 study by the University of California Berkeley found that wild pollinators contribute to roughly 40% of crop production for the State of California. Diversified farmland, open grassland, and riparian zones are crucial for maintaining the presence of wild pollinators. Wild pollinators in California also help to reduce pest incidences, and the need for pesticide use by farmers.
- **Recreation and health.** Visitors to Santa Cruz County spent almost \$700 million in 2011, supporting roughly 8,000 jobs. This spending also generates \$15.5 million in local taxes, \$29.9 million in state taxes, and \$45.4 million in federal taxes. The natural beauty of Santa Cruz County's forests and coast undoubtedly attracts many of these visitors. In addition, green space within and surrounding towns and cities provides lasting physical and mental health benefits to residents and visitors alike. Researchers have found that when compared to walks in urban areas, leisurely forest walks lead to a 12.4% decrease in the stress hormone cortisol.

Using the latest advances in natural resource valuation methods and geographic information systems data, this study identified and assigned dollar values to bundles of ecosystem services by land cover type, and it estimated the total asset value of natural system within the County.

12.4.4 SANTA CRUZ COUNTY PRIMARY GROUNDWATER RECHARGE ZONES

The County of Santa Cruz designates the areas where an aquifer is exposed at the ground surface and allows water to move downward into the aquifer as primary groundwater recharge (PGR) zones. PGR designation provides for special consideration and protection from development, the intent of which is to allow aquifers to maintain an adequate quantity and quality of groundwater recharge. Parcels outside the urban services line and within mapped PGR can not be subdivided smaller than 10-acres. The rationale for this is to minimize the blockage of the aquifer recharge areas inherent to development and to reduce the amount of impacts to the recharge water quality from septic systems and other site activities. An indirect benefit of the lower development density is that it reduces the amount of potential groundwater extraction from those areas.

12.4.5 SAN LORENZO WASTEWATER MANAGEMENT PLAN

Santa Cruz County has over 23,000 septic systems, 13,500 of which are in the San Lorenzo River watershed. The San Lorenzo Watershed has the highest density of septic systems of any comparable area in the state. The majority of the septic systems in the watershed are over 25 years old and are located on parcels that could not fully meet today's standards for installation of a new septic system due to small lot size, close proximity to a stream, high groundwater, steep slope, or clay soil. Many of these

systems have already been repaired or replaced at least once. However, many of the repairs were done prior to 1980 when there were little or no standards for septic system repairs. There were no minimum size requirements and systems were allowed to go in very deep, with little regard to soil conditions or winter groundwater levels. Poor septic system conditions in the San Lorenzo Valley during the 1970s and early 1980s led to frequent failures, high bacteria levels in the river and elevated nitrate levels which threatened the City of Santa Cruz water supply. In 1986, County Environmental Health proposed a solution whereby septic systems could be allowed to continue to be used, provided that they were upgraded over time to meet a minimum set of standards necessary to improve the water quality in the river. In May, 1995, the State Water Board lifted the septic system prohibitions and adopted the San Lorenzo Wastewater Management Plan, including the repair standards as they substantially are today. Since the County began the program in 1986, septic system failure rates have dropped from 15% to 2%. Some 3,000 systems have been repaired and 85% of these have been able to fully meet the repair standards for standard systems. Where standards for conventional disposal cannot be met, alternative technology is being used. The region now has over 600 alternative technology onsite sewage disposal systems.

12.4.6 SANTA CRUZ COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE

In 2013, the County Board of Supervisors adopted a Water Efficient Landscape Ordinance (WELO) to promote efficient water use and to comply with state law that requires every city and county to adopt efficiency standards for landscaping. The goal of the WELO is to lower the demand for water, particularly during the months of April through October. The WELO, with certain exceptions, requires that all landscapes installed with new buildings must comply with landscape water efficiency standards. A checklist guides property owners subject to the WELO that includes standards for overall landscape design, turf limits, invasive plant control, and irrigation design, among other requirements. WELOs are required throughout the state, and in some cases are implemented directly by the water supply agency. In the Santa Cruz region, the water efficient landscape requirements are also implemented by the City of Santa Cruz Water Department and the Soquel Creek Water District.

12.4.7 SANTA CRUZ COUNTY RUNOFF AND POLLUTION CONTROL ORDINANCE

On March 6, 2012 the County Board of Supervisors adopted a Runoff and Pollution Control Ordinance. The County developed a stormwater management plan (SWMP) as required under the County's MS4 NPDES permit. Under the SWMP, the County was required to develop an ordinance that prohibits non-stormwater discharges into the storm drain system along with appropriate enforcement procedures and actions. The ordinance also addresses construction erosion and sediment control, post-construction runoff from new development and redevelopment projects, and implementation of design standards for specific development projects. The ordinance also requires ongoing maintenance of private stormwater management facilities, and mitigations for impacts on runoff quality and quantity, as well as potential for percolation of pollutants to groundwater.

12.4.8 CLIMATE ACTION PLANS

Providing water to residents and businesses requires a significant amount of energy. The State of California estimates that 20% of state electricity use is for the treatment and distribution of potable water.² Several municipalities within the Santa Cruz Region have developed climate action plans that partially address this issue, including the Cities of Santa Cruz and Watsonville and the County of Santa Cruz. These plans outline the actions the cities and their partners may take to meet state land use requirements pertaining to climate change, achieve the policies identified in the General Plan 2030, and accomplish the greenhouse gas (GHG) reduction goals.³ The GHG emission goal statements in each city plan indicate that nearly 50% of GHGs emitted from municipal sources come from water treatment and delivery and wastewater treatment. Because these municipalities rely on locally obtained surface water and have invested in energy efficient equipment to treat and distribute water, the energy content of each acre-foot of water supply is below most California districts, many of which rely upon imported water.



Solar panels on Graham Hill Water Treatment Facility

Photo courtesy SCWD

The climate action plans identify several actions to significantly reduce municipal energy use, including integrating new energy efficient equipment and reduction measures into the efficiency conservation strategy for the Water Department to reduce energy use 10% below 2005 values; and integrating new energy efficient equipment and reduction measures into the efficiency conservation strategy for the wastewater treatment and collection system to reduce energy use 10% below 2005 values. Specific actions include:

- Public awareness and education: promote awareness about the water system and conservation
- Water demand monitoring: evaluate water supply and demand and determine need for increased demand reduction efforts
- Long-term water conservation programs: develop and implement various conservation programs that result in sustained demand reductions
- Planning and emergency management: plan for future demand, coordinate conservation activities, and analyze impacts of water shortages and demand hardening.

The County's Climate Action Strategy also addresses various measures to adapt to the projected effects of climate change and explicitly supports IRWM as a venue to help mitigate and adapt to climate change.

² Wolff, G., Cohen, R., Nelson, B. Energy Down the Drain. Natural Resources Defense Council. August, 2004.

³ City of Santa Cruz. Climate Action Plan. June, 2012.

12.5 REGIONAL PLANNING

12.5.1 SANTA CRUZ LOCAL AGENCY FORMATION COMMISSION

To provide for better coordination of local land use planning, the California Legislature created Local Agency Formation Commissions (LAFCOs) within each county to discourage urban sprawl and to reserve open space and agricultural lands while meeting regional housing needs and planning for the efficient provision of public services and utilities, including water and wastewater service. LAFCOs have approval authority (with some limits) over the establishment and expansion of municipal and service district boundaries, including expansion related to a city proposing to expand its sphere of influence. LAFCOs also have responsibility to conduct Municipal Service Reviews that evaluate the provision of municipal services within each county. Municipal Service Reviews are required to include determinations regarding (among other things) infrastructure needs or deficiencies, growth and population projections for the affected area, and government structure options (including service providers).

In 2010, Santa Cruz LAFCO amended its policies and guidelines to specifically address water issues.⁴ The additional policies related to water are as follows:

“LAFCO recognizes that the water resources of Santa Cruz County are limited, and the Commission’s objective is to ensure that its decisions relating to water do not lead to adverse impacts on the natural resources of Santa Cruz County. In reviewing sphere of influence adoptions and amendments, LAFCO shall be guided by the potential impacts of the proposal on water resources and will consider the efforts of the water agencies and land use agencies to maintain stream and river flows, promote high water quality of surface waters and groundwater, and reduce groundwater overdraft.

1. To assist in the review of Spheres of Influence and other LAFCO reports, the Local Agency Formation Commission will utilize the following data sources to maintain an ongoing database of the supply, demand, and related water data of the local water agencies subject to LAFCO’s boundary regulation:
 - a. The Public Water System Annual Reports filed by each public water agency with the California Department of Public Health
 - b. The Urban Water Management Plans prepared by water suppliers with 3,000 or more customers as required by the California Water Code Sections 10610 et. seq.
 - c. The annual Water Resources[Status] Report prepared for consideration for the Santa Cruz County Board of Supervisors.
2. Water resources and supplies are critical issues for many sphere of influence and application decisions made by the Local Agency Formation Commission. Public information and participation is an important component in the decisions of the Commission, the land use agencies, and the water agencies. To promote public

⁴ Santa Cruz Local Agency Formation Commission Spheres of Influence Policies and Guidelines. Amended by Resolution 2011--1, February 2, 2011.

education, at least every two years, the Local Agency Formation Commission will sponsor, or co-sponsor with the Regional Water Management Foundation, the County of Santa Cruz, and local water agencies, a public forum that provides the public with an overview of the state of the water supplies in Santa Cruz County.”

12.5.2 ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS

The Association of Monterey Bay Area Governments (AMBAG) was organized in 1968 for the purpose of regional collaboration and problem solving. AMBAG was formed by a Joint Powers Authority (JPA) governed by a 24-member Board of Directors comprised of elected officials from each city and county within the AMBAG region, which includes Monterey, San Benito, and Santa Cruz counties. AMBAG coordinates planning activities within the region and carries out selected state and federal statutory duties, including setting state-mandated fair-share regional housing allocations for Monterey Bay Area cities and counties. AMBAG’s member jurisdictions include the three Monterey Bay Area counties and the 18 cities and towns in the region.

Notable for the purposes of IRWM planning, approximately every five years, AMBAG produces a regional forecast of population, housing, and employment. Each forecast is produced with the best available data and is extensively reviewed by AMBAG’s member agencies. Once completed, the forecast is used to provide data support to long-term regional planning documents and special districts’ master plans, as well as to support city and county long-range planning.

In addition to the regional forecasts, an AMBAG effort related to water resources is the 2035 Metropolitan Transit Plan and Sustainable Communities Strategy (MTP/SCS). This is a long-range planning document required by both state and federal law that contains a compilation of regional transportation plans (RTPs) for Monterey, San Benito, and Santa Cruz counties and is used to achieve a coordinated and balanced regional transportation system. Transportation system improvement projects identified in the 2035 MTP/SCS include: highway/roadway projects; bus rapid transit and rail projects; active transportation (bicycle and pedestrian projects); transportation demand management, transportation system management and intelligent transportation system (ITS) projects; and aviation projects. For the first time, AMBAG now also has the responsibility to prepare a sustainable communities strategy (SCS) as part of the MTP, pursuant to the requirements of California Senate Bill 375 as adopted in 2008. The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce GHG emissions from passenger vehicles and light duty trucks to achieve the regional GHG reduction targets set by the California Air Resources Board (CARB).

Specific to area water demand and environmental protection, the land use scenario envisioned by the 2035 MTP/SCS would encourage infill, mixed use, and transit oriented development (TOD) within existing urbanized areas. Similar to the effects of Measure J, promoting development of existing vacant or underutilized properties would reduce the impacts on water resources and water quality. However, some improvements in the 2035 MTP/SCS are located within rural areas, and these proposed improvements can be perceived as removing an obstacle to growth by either creating additional traffic capacity (in the case of widening) or improving access to undeveloped areas (in the case of road extensions). However, transportation improvement projects are already anticipated within applicable

general plans and proposed improvements have been coordinated with Santa Cruz County and are consistent with the general plan and Measure J.

12.5.3 REGIONAL TRANSPORTATION COMMISSION

The Santa Cruz County Regional Transportation Commission (RTC) is the regional transportation planning agency for Santa Cruz County. Created by the State of California in 1972 to carry out transportation responsibilities that cross city-county boundaries in Santa Cruz County, the RTC:

- Sets priorities for major improvements to the transportation infrastructure and network of services, including highways, major roads, bus transit, paratransit, rail, and alternative transportation facilities;
- Pursues and allocates funding for all elements of the transportation system;
- Adopts policies to improve mobility, access and air quality;
- Plans for future projects and programs to improve the regional transportation system while improving the region's quality of life;
- Informs businesses and the public about the need to better manage the existing transportation system; and
- Conducts programs to encourage the use of alternative transportation modes.

The Commission consists of all five members of the Santa Cruz County Board of Supervisors, one member of the Watsonville, Santa Cruz, Scotts Valley, and Capitola City Councils and three members appointed by the Santa Cruz Metropolitan Transit District. The Caltrans District 5 Director serves as an ex-officio member of the Commission. The Commission employs a professional planning and administrative staff.

According to the RTC's website, transportation projects must consider the natural and built environment in which they are located. Similarly, the built environment must consider its impacts on the transportation network. The RTC employs several means of promoting compatibility between the natural and built environments and the transportation system, including the following:

- Reviews and comments on transportation aspects of planning and environmental documents prepared by other agencies to ensure consistency with the Regional Transportation Plan Goals and Policies, and forwards applicable plans to the appropriate RTC Committees for consideration.
- Completes environmental reviews for transportation projects and solicits input from the public, transportation agencies, resources agencies, and other partner agencies as required by CEQA and NEPA.
- Implementation of habitat restoration and other projects to mitigate the effects of transportation projects.

One of the RTC's goals is to ensure that the transportation system complements and enhances the natural environment of the Monterey Bay region, and to reduce GHG emissions. Policies related to that goal include:

- emphasizing sustainable transportation modes consistent with regional environmental policies; and
- ensuring that transportation projects contribute to the protection of biological and scenic resources, open space, and agricultural land.

12.5.4 COHO AND STEELHEAD RECOVERY PLANNING

In September 2012 the National Marine Fisheries Service (NMFS) division of the National Oceanic and Atmospheric Administration (NOAA) released a Recovery Plan for the Evolutionarily Significant Unit of the Central California Coast Coho Salmon.⁵ A comparison has been performed between the Recovery Plan and the IRWM Plan for Northern Santa Cruz County in order to determine opportunities for collaboration, and to potentially attract needed restoration funds for projects that will have both water resources and fishery benefits. The Steelhead Recovery plan is in progress and will also have significant bearing on IRWM efforts. It is expected to be released in 2015.

12.6 LAND USE AND WATER RESOURCES COLLABORATION

A primary aim of IRWM planning is to solve regional water management issues through diversified water management portfolios and early water management input into, and coordination with, those responsible for making land use decisions. Many of the IRWM Plan objectives require coordination between land use planners and water managers; as a result, improving collaboration between land use planners and water resource managers will support accomplishment of the IRWM Plan objectives. As noted in the foregoing sections, collaboration between land use planners and water resource managers occurs in the Santa Cruz Region on multiple levels - from project-specific planning to long-term general land use planning. There are numerous triggers for collaboration at the project level, often initiated by the filing of a Notice of Preparation under CEQA. Another route for collaboration is consultation during the development of a Water Supply Assessment, or through specific project review triggered by various development applications. A significant opportunity for long-term planning occurs during the update of general plans and urban water management plans. These documents require an assessment of the reliability of the supplier's water sources over a 20-year planning horizon, and require coordination with appropriate agencies including land use and planning agencies.

12.7 OPPORTUNITIES AND CHALLENGES FOR ONGOING COLLABORATION

Numerous local stakeholders, including water resource managers and land use planners, were involved in the development of this IRWM Plan through the Conceptual Framework, project solicitation, and the IRWM Plan review processes. Involvement continues through ongoing Steering Committee and Regional Water Management Group (RWMG) meetings, as well as workshops and other events related to the IRWM Plan.

⁵ National Marine Fisheries Service. 2012. Final Recovery Plan for Central California Coast Coho Salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.

In part, the governance structure of the IRWM Region was developed in a manner to facilitate participation through the RWMG Steering Committee. The Steering Committee's makeup was chosen to represent the various interests of the region, including:

- Water resources: One seat on the Steering Committee is reserved for a General Manager from one of the Region's water districts to ensure that interests specific to water districts are represented on the Committee
- Environment: One seat on the Steering Committee is reserved for the Executive Director of the Resource Conservation District of Santa Cruz County
- Government: The final Steering Committee seat is reserved for the County's Water Resources Division Director to represent government interests and the functional areas not specifically covered by the other Steering Committee members.

Among other concerns, the government seat of the Steering Committee was intentionally set to ensure that a broad range of planning and land use interests have an avenue for input to the IRWM planning process. While the IRWM Plan has been informed through input from both water resource and land use planners, it is important to recognize that the dynamic works both ways: through their participation in the IRWM planning process - either as Steering Committee members, the full RWMG, or stakeholders - the IRWM planning process informs and influences local planning efforts. Local planning efforts are also influenced through the implementation of regional projects that cross over jurisdictional and land use/water resource boundaries in carrying out the objectives of the IRWM Plan.

Ongoing involvement in IRWM planning and implementation is limited, however, by stakeholders' capacity (i.e., funding, time, resources) and understanding of the relevance of the IRWM process to existing workloads. Following the economic downturn, most agencies have reduced capacity to participate in efforts for which there is no dedicated funding source. However, participation can be maximized by ensuring that the IRWM Plan and planning effort is as relevant as possible to stakeholders' interests and concerns. Further, it is incumbent upon IRWM planners that development and implementation be conducted in an efficient manner that maximizes benefit from the time and resources invested in the process.

The understanding of relevance can be addressed through communication and the process through which the IRWM program and projects are developed. Water supply reliability is a particular concern for the Santa Cruz Region that has a long history of growth management and is reliant upon a locally-derived water supply. As such, it is fitting to integrate land use managers into the IRWM process. However, these managers' roles will be different from many other stakeholders in that they generally do not have a vested interest in the IRWM Plan, which seeks funding for project implementation. While project proponents will meet on a more regular basis regarding grants, project solicitations, and other project-related topics, land use planners' involvement will occur on a less frequent basis, likely when the IRWM Plan is updated. During these events, staff and the Steering Committee will conduct specific outreach to land use agencies to ensure their involvement, including targeted meetings and issue-specific workshops.