

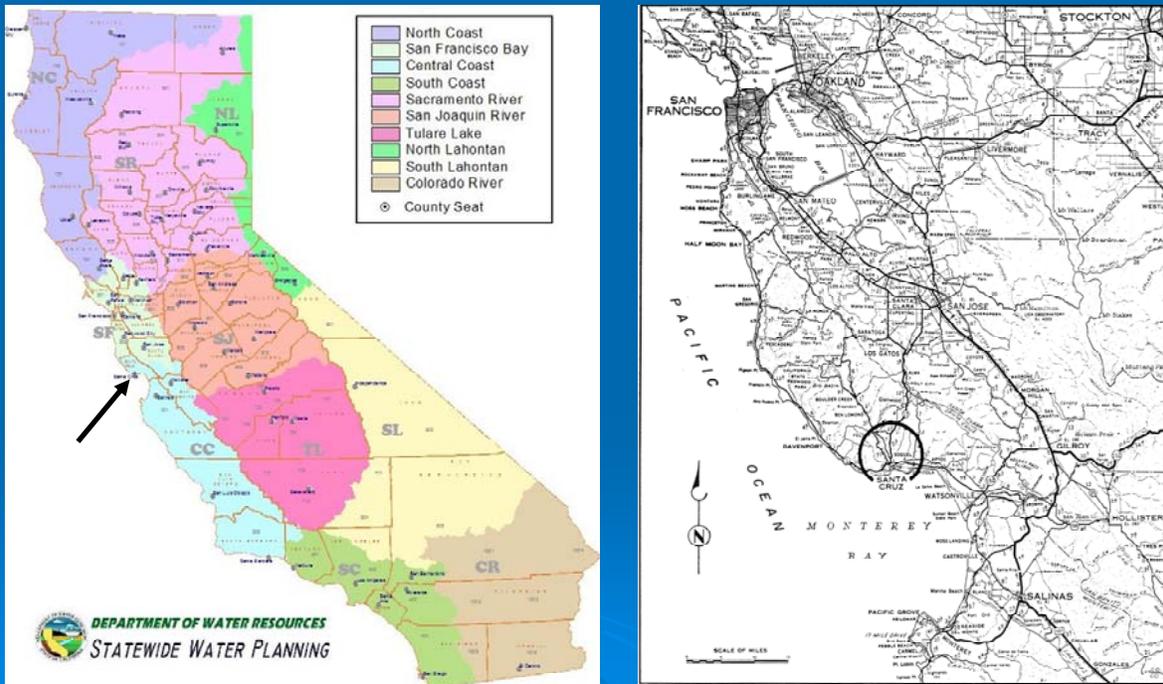
Chapter 2

PROFILE OF SERVICE AREA AND WATER DEPARTMENT

The City of Santa Cruz is located on the central coast of California along the northern shore of Monterey Bay. The City’s position on the northern end of the state’s Central Coast hydrologic region (Region 3) and vicinity relative to the San Francisco Bay Area are shown below in Figure 2-1.

Water service is provided to an area approximately 20 square miles in size, including the entire City of Santa Cruz, adjoining unincorporated areas of Santa Cruz County, a small part of the City of Capitola, and coastal agricultural lands north of the city. The geographic area served by the City water system (not including the north coast) is shown in Figure 2-2.

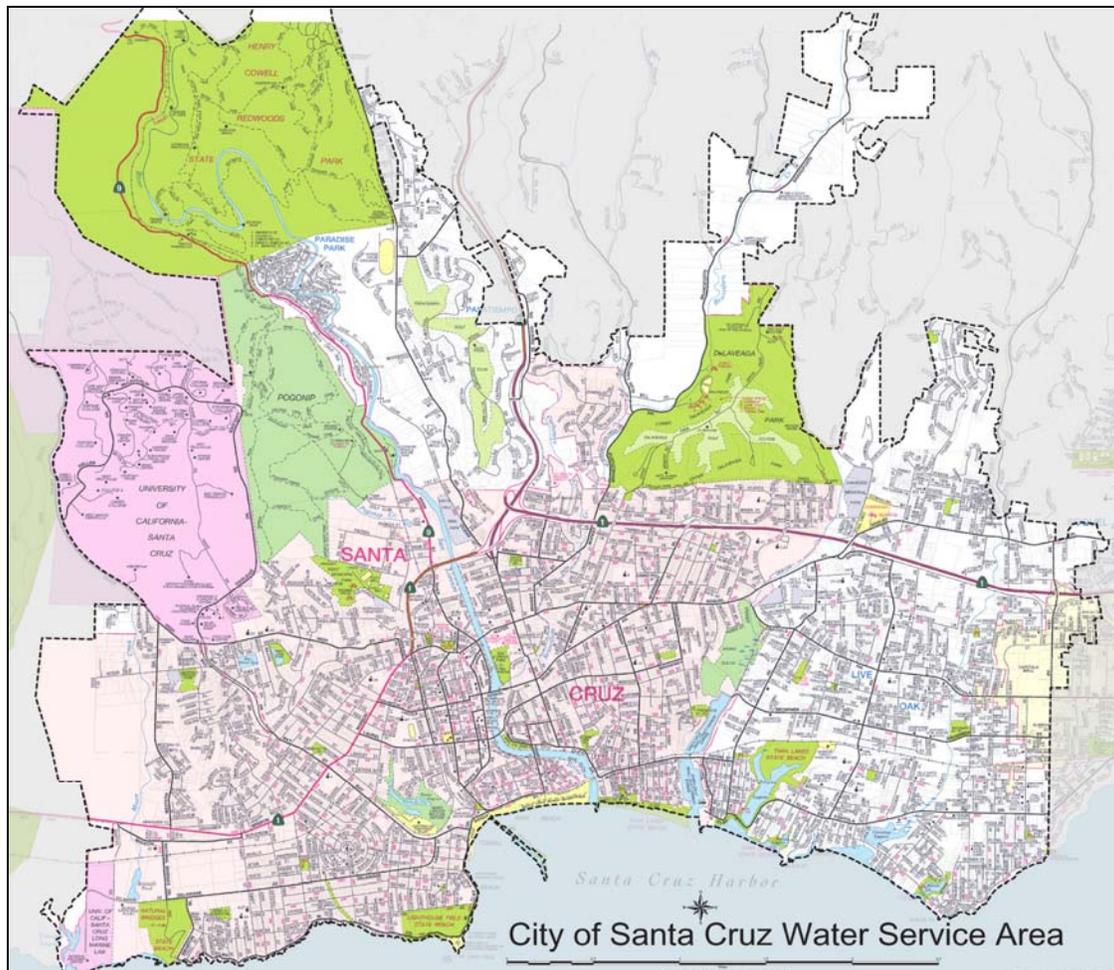
Figure 2-1 Hydrologic Regions of California and City of Santa Cruz Vicinity Map



People are drawn to the Santa Cruz area for its recreational attractions, its small town ambiance and sense of community, its pleasant weather, its natural beauty and scenic coastline, and its higher education facilities. The sandy beaches and nearby mountains attract millions of visitors to the region every year. The City is bounded by several state parks and open-space lands that provide facilities for bicycling, hiking and other outdoor activities. The seashore and ocean waters of the Monterey Bay National Marine Sanctuary serve as a prime destination in the summer months for sunbathers, surfers, and tourists. Other visitor attractions include the Santa Cruz Beach Boardwalk, Municipal Pier, and Pacific Avenue Mall.

The [University of California, Santa Cruz](#) is situated atop the upper west side of the City overlooking the downtown area and Monterey Bay. The campus is nationally recognized for its quality of instruction, its academic stature, and its research impact. It currently accommodates an enrollment of about 16,300 students during the academic year.

Figure 2-2. City of Santa Cruz Water Service Area



Water Code Section 10631(a) requires urban water suppliers to:

“Describe the service area of the supplier, including the current and projected population, climate, and other demographic factors affecting the supplier’s water management planning.”

Many underlying factors influence water demand systemwide and are taken into account in the City’s water management planning. These include weather and climate, population, housing and community development, employment and the economy, price, and effectiveness of water conservation programs. The relative importance of these factors as well as the time scale on which they shape overall demand for water varies. Some, like weather, are more important in the short-term, while others, like population growth, develop over long periods of time.

In terms of water system management and planning, variations that occur in short time frames – one year or less – mainly affect budgeting, financial management, and system operations. Variations that occur over the long term – years to decades – affect capital planning for system infrastructure, from sizing and phasing of treatment and distribution system improvements to system capacity and raw water supply.

The factors pertaining to the City’s service area and community makeup and their significance to the City’s water management and planning are discussed below. How water conservation and pricing factor into the City’s water management is covered later in Chapter 6.

2.1 Climate

Santa Cruz enjoys a pleasant Mediterranean climate that is characterized by warm, mostly dry summers and mild, wet winters. Due to its proximity to Monterey Bay, fog and low overcast are common during the night and morning hours, especially in the summer. Monthly and annual climate data for Santa Cruz are shown in Table 2-1 below.

Mean monthly temperatures range between 50 and 64 degrees, with the warmest weather usually occurring during August and September. Extreme temperatures are rare and short-lived, with weather conditions being moderated by the oceanic influence and presence of summer fog.

Table 2-1. Climate Data for Santa Cruz (a)

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Mean High Temp (F) | 60.9 | 63.2 | 64.6 | 68.4 | 71.3 | 74.4 | 75.7 | 76.2 | 77.0 | 73.7 | 65.8 | 60.3 | 69.3 |
| Mean Low Temp (F) | 38.8 | 41.0 | 41.8 | 42.9 | 45.8 | 49.4 | 51.2 | 51.7 | 50.7 | 47.3 | 42.9 | 38.8 | 45.2 |
| Mean Temperature (F) | 49.9 | 52.1 | 53.2 | 55.7 | 58.6 | 61.9 | 63.5 | 64.0 | 63.9 | 60.5 | 54.3 | 49.5 | 57.3 |
| Precipitation (in) | 6.49 | 6.15 | 4.78 | 1.97 | 0.70 | 0.18 | 0.14 | 0.11 | 0.41 | 1.44 | 4.08 | 4.22 | 30.7 |
| Evapotranspiration (in) (b) | 1.5 | 1.8 | 2.6 | 3.5 | 4.3 | 4.4 | 4.8 | 4.4 | 3.8 | 2.8 | 1.7 | 1.2 | 36.6 |

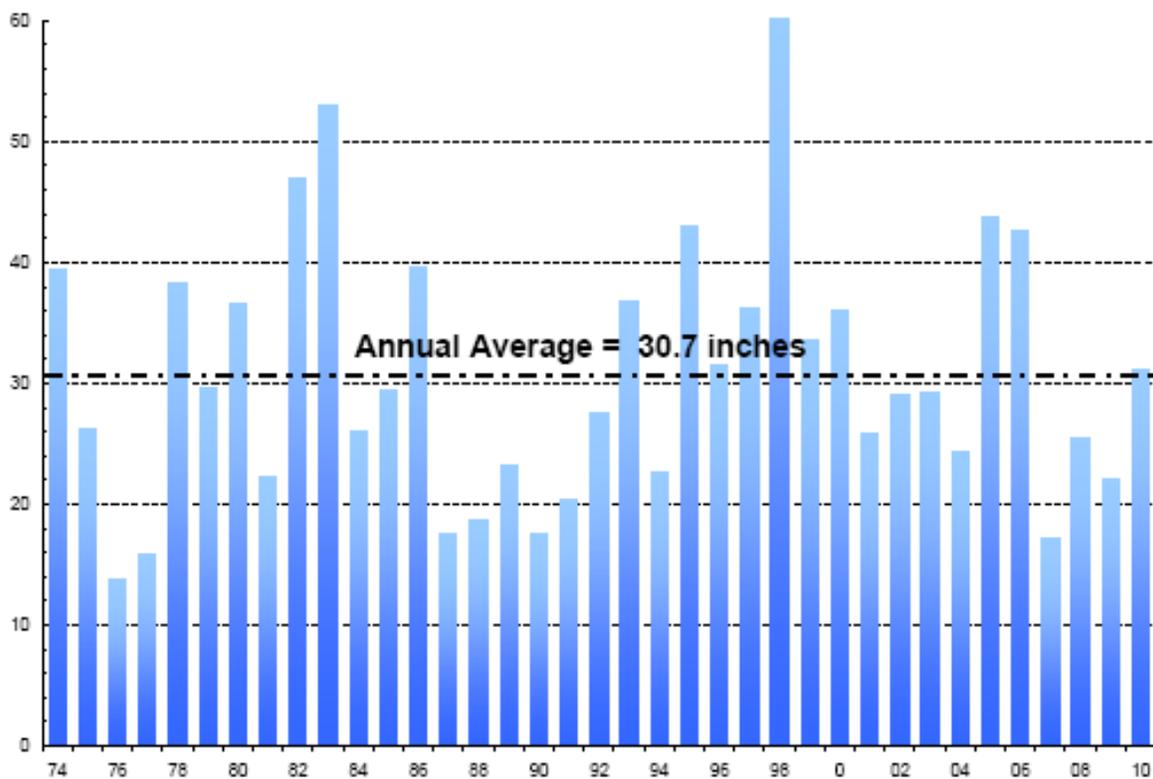
Notes:

(a) National Climate Data Center 1971-2000 Monthly Normals

(b) CA Department of Water Resources

Rainfall in Santa Cruz averages 30.7 inches annually, but varies considerably from year to year. The bulk of seasonal rainfall occurs between November and March. Annual rainfall amounts over the last 37 years are shown in Figure 2-3. During this time, annual precipitation ranged from a minimum of 13.9 inches in 1976 to a maximum of 60.2 inches in 1998. In the watershed above the City’s reservoir in the Santa Cruz Mountains, rainfall averages nearly 50 inches per year.

Figure 2-3. Annual Rainfall at Santa Cruz



Reference evapotranspiration - a standard measurement of environmental parameters used for determining irrigation needs - averages 36.6 inches per year in Santa Cruz. Average monthly evapotranspiration varies seasonally from a low of 1.2 inches in December to a high of 4.8 inches in July.

Like other coastal communities, the marine influence on local air temperature, humidity, and cloud cover helps keep demand for water relatively low in the City’s service area compared to inland locations elsewhere in California and acts to moderate outdoor water use during peak summer season.

2.2 Population

The current population residing in the Santa Cruz water service area, according to the 2010 US Census is estimated to be 91,291 people. Some 59,946 people, or about two thirds of the total population, live inside the City limits. Of these, about 8,100 people including students, faculty, staff, and their families reside on the UC Santa Cruz campus. It is estimated that another 31,345 people, or 34 percent of the service area population, live outside the City limits.

Table 2-2 shows the change in the service area population from 2000 to 2010. The City’s population grew by over 5,000 during this time, or about one percent per year, while the population in the unincorporated area seems to have actually declined by 446 people over the same time period.

Table 2-2. Change in Service Area Population, 2000-2010^(a)

| Year | 2000 | 2010 | Change | % Change |
|---------------------------|--------|--------|--------|----------|
| City of Santa Cruz | 54,588 | 59,946 | 5,358 | 9.8% |
| Santa Cruz County | 30,328 | 29,882 | -446 | -1.5% |
| City of Capitola | 1,281 | 1,463 | 182 | 14.2% |
| Service Area Total | 86,197 | 91,291 | 5,094 | 5.9% |

Notes:

(a) Source: US Census and City of Santa Cruz GIS

Table 2-3 shows the projected population in the City’s water service area by jurisdiction to the year 2035, in five-year increments. These figures are derived from a regional population forecast prepared by the Association of Monterey Bay Area Governments

(AMBAG, 2008)¹. The forecast was based on the previous 2000 Census and includes the increase in enrollment and population growth that is anticipated to occur at the University of California over the next ten years. According to the forecast, the total number of people receiving water service is expected to grow by about 9,500 people to almost 102,000 in 2030 and reach 104,000 in 2035. This equates to a relatively low population growth rate of about 0.5 percent per year. About one quarter of this total expected population growth is related to increased enrollment planned at the University. AMBAG expects to update its population forecast for the Monterey Bay region in 2012 using the 2010 US census data.

Table 2-3. Population Forecast for the Santa Cruz Water Service Area (a)

| Year | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 |
|---------------------------|--------|--------|--------|--------|---------|---------|
| City of Santa Cruz | 58,919 | 62,480 | 63,265 | 64,649 | 65,884 | 67,807 |
| Santa Cruz County | 32,236 | 32,831 | 33,478 | 34,162 | 34,746 | 35,176 |
| City of Capitola | 1,010 | 1,020 | 1,050 | 1,070 | 1,070 | 1,075 |
| Service Area Total | 92,165 | 96,331 | 97,793 | 99,881 | 101,700 | 104,058 |

Notes:

(a) Source: AMBAG Monterey Bay Area 2008 Regional Forecast

Population is a key trend factor in determining water use. In recent years, however, reductions in per capita water use over the last decade have more than offset gradual population increases; that is, even though the service area population has been slowly but steadily rising, total water use has declined. At what point this trend may reverse is unknown. More information on per capita water use is covered in Chapter 4 of this report.

2.3 Housing

According to utility billing records, there are some 36,651 housing units within the City's water service area. The number of housing units, broken down by account type and jurisdiction is shown in Table 2-4 below. Approximately 18,862, or a little over half of all households in the service area are classified as single family accounts². The other

¹ The actual 2010 population according to the US Census differs from AMBAG's 2010 forecast population by a total of 874 people, or < 1 percent. Population growth in the City of Santa Cruz was higher than forecasted by AMBAG. Outside the City limits, the population declined slightly, whereas AMBAG had forecast it would increase by about 1,000 people from 2000 to 2010. In addition, there were slight differences in the methods used between the City GIS staff and AMBAG to determine service area population where the service area boundary and census blocks boundaries do not coincide.

² Water account categories are not the same as housing type. A single family account has one dwelling unit per meter, but may be any type of residence. A multifamily account has two or more dwelling units per meter.

17,789 homes are multiple family dwelling units consisting of various housing types including duplexes, condominium and townhouse complexes, apartments, mobile homes and alternative housing types such as live/work units, mixed use development, single room occupancy, and accessory dwelling units. The figures below do not include dormitory rooms, apartments, and other housing units located on the UC Santa Cruz main campus. A large proportion of the local housing stock (over 50 percent) is rented.

Table 2-4. Number of Housing Units, by Account Type and Jurisdiction (a)

| | Single Family | Multi-Family | Total |
|---------------------------|---------------|--------------|--------|
| City of Santa Cruz | 12,122 | 9,763 | 21,885 |
| Santa Cruz County | 6,604 | 7,907 | 14,511 |
| City of Capitola | 136 | 119 | 255 |
| Service Area Total | 18,862 | 17,789 | 36,651 |

Notes:

(a) Source: Santa Cruz Municipal Utilities Billing System

Over the past five-year period, about 700 new housing units were added in the service area, the majority of which (542) were classified as single family residential accounts. In the past few years, though, new housing construction has plummeted following the deep downturn in the housing market that began in 2007.

Each of the three jurisdictions served by the City has an adopted Housing Element that addresses its required regional fair share of the statewide housing needs established by AMBAG. These documents set forth goals and objectives for housing construction, rehabilitation, and conservation for the period 2007 - 2014.

The regional housing goals for the three jurisdictions served by the City are shown below in Table 2-5. For this housing element cycle, the City is planning for an additional 672 units, some of which already has been approved and is under construction. The County is planning for a total of 1,289 units to be built Countywide through 2014, of which perhaps 254 units would be located within the City water service area. Capitola has a goal to construct 143 units by 2014 in its housing element, but only a small number of these are expected to fall into the City’s water service area. Together, these housing plans represent a total residential development potential in the near term of about 965 new homes.

Table 2-5. Regional Housing Goals ^(a)

| Period: 2007-2014 | Total Housing Units | | Units in Lower Income Categories | |
|----------------------------------|---------------------|-------------------------|----------------------------------|-------------------------|
| | Entire Jurisdiction | City Water Service Area | Entire Jurisdiction | City Water Service Area |
| City of Santa Cruz | 672 | 672 | 263 | 263 |
| Santa Cruz County ^(b) | 1,289 | 254 | 505 | 167 |
| City of Capitola ^(c) | 143 | 39 | 56 | 6 |
| Service Area Total | -- | 965 | -- | 436 |

Notes:

(a) Source: City and County housing elements

(b) Santa Cruz County Planning Department

(c) Capitola Community Development Department

It is important to note that while each jurisdiction must demonstrate it can accommodate its fair share of the regional housing needs, it does not necessarily mean such housing actually will be constructed. Also unknown is the type of housing that might be built over the next few years under these housing plans.

SB 1087 of 2005

State housing law was recently amended to ensure adequate water service is available to accommodate housing needs, especially for housing lower income households. Under the law, water and sewer providers are required to:

1. *Adopt written policies and procedures granting priority in the provision of service to housing units affordable to lower income households. (See Appendix J);*
2. *Make specific written findings before it can deny, condition the approval of, or reduce the amount of services applied for in proposed developments with lower income housing; and*
3. *Include projected water use for single-family and multifamily housing needed for lower income households (Refer to Chapter 4.)*

2.4 Community Growth and Development

All three jurisdictions served by the Santa Cruz water system have general plans, local coastal programs, zoning regulations and development standards that determine the location, type, and density of growth allowed in the region. The General Plan serves as the principal policy and planning document guiding long-range land use decisions in cities and counties. Both the cities of Santa Cruz and Capitola are actively in the process of updating their General Plans, although they are at different stages of the process, as described below.

City of Santa Cruz The City is well along towards completing a comprehensive update to its existing General Plan, which covered the period 1990 - 2005. The new General Plan will extend to 2030, corresponding with the timeline for this Urban Water Management Plan. Public review of the draft General Plan and its accompanying Environmental Impact Report (EIR) is scheduled for the latter half of 2011, followed by consideration and adoption by City Council, expected in early 2012.

City of Capitola It has just begun a 2-3 year process to update its General Plan. Although no decisions have yet been reached, it is considering the possibility of adding mixed-use development or increasing the intensity of land use in selected areas of Capitola served by the City.

County of Santa Cruz The current General Plan for the County was adopted in 1994. No comprehensive update is anticipated. The County does, however, intend to begin a process, consistent with a regional growth strategy developed by AMBAG known as the “Blueprint”, to coordinate local transportation improvements and land use changes at certain “opportunity sites”, some of which are located within the City’s water service area.

In the process of developing the City’s new General Plan, a buildout projection was prepared for the City’s Planning Department that provides new information about residential and commercial development foreseen in the City over the next 20 years. This information was used in developing new water demand projections described in Chapter 4. In the other jurisdictions, no new information about community growth and development was available. Therefore, other techniques were used to forecast water use outside the City limits.

University of California In addition to city and county General Plans, the University of California recently approved separate Long Range Development Plans (LRDPs) for both its main campus (in 2006) and its marine science campus located on the western edge of the City (in 2007). These plans provide a comprehensive framework to guide physical development, land use, and resource protection to meet the University’s academic and institutional objectives through the year 2020. These documents and their companion EIRs were used to adjust and account for future University water needs.

The UCSC LRDP envisions increasing enrollment to 19,500 by 2020 and expanding academic, support, and housing space on campus from 4.8 to 8.0 million gross square feet. To do so, it intends to extend development north of the existing campus beyond the current City limits and present water service area boundary. The timing of any such

physical expansion, however, remains uncertain due to state budgetary constraints, lengthy regulatory approvals, and ongoing legal challenges.

Other local factors concerning community growth and development that affect water management and planning are the following:

Service Area Boundary The size of the City water service area has remained relatively fixed over time due to a long-standing prohibition against new water connections along the north coast, the acquisition of open space lands which created a greenbelt around the City, and the County's urban services boundary, all of which have served to inhibit urban sprawl. Accordingly, most growth and redevelopment that does happen going forward is expected to be concentrated within the confines of the existing service area boundary. Any proposed changes to the City's service area boundary that do come forward are subject to approval by both City Council and the Santa Cruz Local Agency Formation Commission (LAFCO). The only known location where this might change in the future is at the University. There are currently two applications concerning UC Santa Cruz pending before LAFCO. One proposes to expand the City's Sphere of Influence to add 374 acres known as the "north campus". The other application seeks LAFCO's authorization for the City of Santa Cruz to provide extraterritorial water and sanitary sewer services to the north campus unincorporated area in accordance with Government Code section 56133.

Diminishing Vacant Land Within the City of Santa Cruz, only a small amount of land remains undeveloped. The same is true in the parts of the County and City of Capitola served by the City. Because of the relative scarcity of raw land, the majority of future growth in the area is likely to be achieved through redevelopment, remodeling, increased density on underutilized land, and infill development in the urban core and along major transportation corridors, along with new construction on the little amount of vacant land remaining. The trend toward higher density and redevelopment can result in more people using more water, but new buildings also tend to be more water efficient than the older construction they replace.

Coastal Zone Management Many of the major decisions made by local governing bodies about public improvements and private development are also subject to the review and oversight of, or may be appealed to, the California Coastal Commission. Accordingly, change in the City water service area tends to occur slowly, if at all, and only after exhaustive public process.

2.5 Employment and the Economy

The State Employment Development Department estimates annual average employment within the City's water service area in 2010 to average about 40,600, which represents over 50 percent of all non-farm jobs in Santa Cruz County (CA EDD, 2011). The three largest employment sectors are health services, education, and retail trade. The University is a key component of the region's economic fabric in terms of employment, spending, research, and business creation. It is the area's largest single employer. Tourism and lodging is another major economic driver in the community. Commercial development is centered in downtown Santa Cruz, around 41st Avenue in Capitola, and along the major transportation corridors including Mission, Ocean, and Water Streets and Soquel Avenue. The Harvey West area and west side of Santa Cruz support a diverse mix of light industry, retail, high tech, research, and consumer goods and service enterprises. Regional hospitals, medical, and health care facilities and services are concentrated along Soquel Drive in unincorporated Santa Cruz County.

Like elsewhere in California and across the nation, the Santa Cruz region experienced a severe economic downturn that accompanied the financial crisis and recession of the late 2000s. As a result, local unemployment rates more than doubled from less than 5 percent in 2007 to almost 11 percent in 2010.

Water use trends in Santa Cruz reflect the evolving economy. Beginning with the loss of several long-established manufacturing and technology employers earlier in the decade to the recent recession and corresponding loss of jobs, vacant commercial space, and reduction in personal income, all of these factors have contributed to the decline in total water requirements over time. While the economy and unemployment rate now appear to be slowly recovering, what happens going forward and its effect shaping system water use is difficult to tell.

2.6 Water Department

The Santa Cruz Water Department is a municipal utility that is owned and operated by the City of Santa Cruz. It is led by a Director who is appointed by the City Manager. The governing body for the Water Department is the City Council. A seven-member Water Commission advises Council on policy matters involving the operations and management of the water system. The Commission is composed of six members who reside within the City limits and one member who resides in the unincorporated portion of the water service area.

The Department is organized into nine sections. These include Administration, Engineering, Customer Service, Water Conservation, Water Resources, Production, Water Quality, Distribution, and Recreation. There is currently the equivalent of 95 full-time staff positions in the Water Department. An organization chart of the Water Department is shown in Figure 2-5.

The Water Department's adopted mission statement is as follows:

“To provide a safe, clean, and continuous supply of water for municipal and fire protection purposes that meets or exceeds local, State, and Federal standards for public health and environmental quality, and to provide courteous, responsive, and efficient service in the most cost-effective manner to our customers”.

The water supply system operated by the Department consists of several surface water diversions, Loch Lomond reservoir, and a small well field. Major facilities include a 20 million-gallon per day (mgd) conventional surface water treatment plant, several pump stations, and 16 distribution reservoirs storing almost 15 million gallons of treated water. There are also about 300 miles of pipe and over 24,350 active water meters in service. The water system is regulated under a drinking water permit issued by the CA Department of Public Health through its [Drinking Water Program](#).

The Department operates financially as an enterprise in which all the costs of running the system are paid by water rates, service charges, and related revenues. The Water Fund receives no tax or general fund revenues.

The Water Department's annual operation and maintenance budget is approximately \$21 million. Capital improvement expenses have varied between \$8-10 million annually in the past few years. A number of critical components, including major pipelines, pumps, and reservoir facilities are approaching or have exceeded their useful life and must be modernized to continue delivering a safe, clean, and reliable supply of drinking water. In all, over \$96 million in capital improvements are needed over the next decade to maintain and enhance the integrity of the water system. Another \$68 million is earmarked for a supplemental water supply project.

In addition to providing water service, the Department has responsibility for billing and customer service functions related to sewer and refuse service inside the City limits.

Figure 2-5. Water Department Organization Chart

