

# Water

department



## Department Description

The mission of the Water Department is to ensure public health and safety by providing a clean, safe, and reliable supply of water. We strive to serve the community in a courteous, efficient, cost-effective and environmentally sustainable manner.

We are passionate about our work and try to instill our values of integrity, innovation, objectivity, professionalism, teamwork, and transparency in everything we do. We collect water, treat and test it, move it, store it, distribute it, track how much is used, and bill our customers for their use. We're at the end of the phone when customers call with questions and we're the smiling faces they see when they visit the department. We educate our customers about the quality of their water, how to use less water, and we provide them the tools to do so. Our work includes the maintenance and operation of the Loch Lomond Recreation area, as well as the protection of the Majors, Liddell, Newell Creek, Zayante, and Laguna watersheds. We are stewards of an important community asset: the water system and all it entails, as well as a range of natural resources and ecosystems that we and many species depend upon, and that are important elements of a sustainable community. We take pride in meeting the diverse needs of the broad region we serve.



The department is organized into operational and administrative sections. Operational sections include Production, Water Quality Lab, Distribution, Water Resources, and the Loch Lomond Recreation area. These sections are responsible for managing the watersheds by collecting, treating, and testing untreated and treated water, and storing and distributing treated water to our customers. The administrative sections are comprised of Finance and Administration, Engineering, Conservation, Customer Service, and Community Relations. Staff in these sections provide leadership, plan and implement the Capital Improvement Program (CIP), develop and implement financial plans, read meters, bill customers and collect revenues, help our customers conserve water, and support active community outreach and engagement efforts covering a range of department activities.

Every day department staff work hard to produce and deliver millions of gallons of water to 96,000 customers while performing all the related utility, land, and natural resource management activities, that often happen behind the scenes, but play a part in providing reliable and high quality water service to our community.

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## **FY 2018 Accomplishments**

### **Water Supply Planning and Delivering a Substantially Increased Capital Program**

The Water Department has embarked on an ambitious and historic 10 year/\$300 million Capital Improvement Program (CIP) to reinvest in the utility's backbone infrastructure while planning and evaluating a supplemental water supply project, following the approach recommended by the Water Supply Advisory Committee (WSAC).

In order to accomplish this critical work, the Department has engaged an engineering firm in what is called a program management contract. This approach allows the department to augment in-house engineering staff with the additional technical resources and expertise needed to deliver the CIP.

Major water supply and capital reinvestment planning activities during FY 2018 include:

- Providing the Santa Cruz Water Commission with comprehensive quarterly reports on the status of implementing the WSAC recommended work plan; including efforts related to demand management programs, groundwater storage strategies involving both passive and active recharge of regional aquifers, advanced treated recycled water, and seawater desalination. The City Council and Water Commission continued their annual, joint meeting to discuss progress in each of these areas.



- Producing and distributing the 2017 WSAC Annual Report, "Our Water, Our Future," describing progress made to date on implementing the WSAC recommendations.
- Working in cooperation with the various regional water agencies to establish effective working relationships, engage in regional water resource planning and management activities such as the implementation of the Sustainable Groundwater Management Act; working with the Soquel Creek, San Lorenzo Valley, and Scotts Valley Water Districts on potential projects for the conjunctive use of regional surface and groundwater resources; and working specifically with the Soquel Creek Water District on water quality blending studies that will assess the feasibility of delivering treated surface water from Santa Cruz to Soquel Creek's service area, which is entirely dependent on groundwater.
- Initiating the Riverbank Filtration study to assess the feasibility of drawing low turbidity water from the system, at times when the surface water is very turbid, as a means to increase available water supply and system reliability during storm events.

- Continuing focused project planning for the Newell Creek Dam Inlet/Outlet Pipeline project, which is the largest capital project currently under development. Key FY 2018 milestones for this project, which is required by the State Division on the Safety of Dams, include initiating CEQA, preparing an updated Emergency Action Plan (EAP) and Dam Failure Inundation Maps, and creating a lake model to support placement of the new inlets/outlets structures, as well as for use in ongoing lake water quality planning and management activities.
- Engaging a specialized consultant to help us apply for \$30 million in Drinking Water State Revolving Fund (DWSRF) loan for the GHWTP Concrete Tanks project which, if successful, would offer financing at a substantially lower interest rate than typical municipal revenue bond financing would provide.

## Infrastructure Infrastructure Infrastructure

As planning for the department's large CIP ramped up, several major capital projects were completed or achieved major milestones during FY 2018, including:



- Completing the Bay Street Tanks project by installing new landscaping and solar panels on the \$26 Million multi-phased and multi-year project.
- Finishing the design work for the replacement of the University #5 Tank, as well as installing the maintenance tank to be used while the permanent tank is under construction.
- Completing a remodel and expansion of the department's offices at Locust Street to accommodate additional staff and the program management team.
- Initiating the permitting work for the replacement of the Felton Diversion's inflatable dam, which is used when water is pumped from the San Lorenzo River to the Loch Lomond Reservoir.

- Completing a comprehensive conditions assessment of the Loch Lomond Reservoir spillway, which found no deficiencies.
- Completing the construction of 25,639 linear feet (4.86 miles) of raw water and treated water pipelines at an average cost of \$415 per linear foot (\$2.2 M/mile) including: 3,110 linear feet on Cedar Street, 3,710 linear feet on River Street, 16,500 linear feet in Phase 3 of the North Coast Pipeline replacement project, 1,095 feet on 14th Avenue in Live Oak, 400 linear feet in Harvey West Park, 200 linear feet on Robertson, 350 linear feet on Thurber Lane, and 874 linear feet on Carol Avenue.

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## Customer Services, Water Use Efficiency, and Community Outreach & Education

A strong customer service ethic is foundational to the work we do in the utility. We help customers with inquiries regarding their bills or conservation rebates, explain our work in the community, provide education on the water system, and keep the public informed on progress made on the water supply project. The department also provides billing and customer service on behalf of the City's three utilities: water, refuse, and sewer. In FY 2018, we:

- Supported the implementation of and worked with customers to respond to questions related to the July 1, 2017 rate increases for all three utilities.
- Oversaw development of and began distributing to our customers the "Know Your Water Service" guidebook that provides basic water service information to our customers, including information about efficient use of water.
- Produced and distributed the Second Annual Report on progress implementing the Council approved recommendations of the Water Supply Advisory Committee (WSAC).



- Produced and distributed spring and fall newsletters for the Santa Cruz Municipal Utilities, called The SCMU Review. The Fall 2017 version focused on Newell Creek Dam, and was a masterpiece of candid, informative writing covering a topic that was high in the public's consciousness due to the situation at that state's Oroville Dam in the winter of 2017.
- Implemented a Home Water Survey program in support of the new leak forgiveness policy developed as part of applying the new water rate structure.
- Improved the large landscape water budget program by providing hourly consumption data online, promoting field surveys, and hosting workshops and trainings.
- Continued to offer and promote financial incentive programs for residential, commercial, and landscape customers.
- Continued to administer water conservation ordinances, including prohibitions against water waste, requirements for water-efficient landscapes in new development, and plumbing fixture retrofit requirements; with the last program reaching a milestone of 10,000 properties processed since it began in 2003.
- Began planning and designing several new programs as contemplated in the Water Conservation Master Plan.
- Designed and implemented an advanced metering infrastructure project for large landscapes, parks, and school sites to assess the feasibility of such technology. The new meters provide more timely information to customers to help them better manage their water use.

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## Water Quality & Treatment

The Water Department's core goal is to ensure public health by providing clean and safe water to our customers. Our water quality and treatment functions ensure that water delivered meets all state and federal drinking water regulations. Some key achievements of these groups in FY 2018 include:

- Successful completion of all required drinking water monitoring and compliance sampling, analyses, and reporting for regulated contaminants;

maintaining the Department's strong performance for providing a water supply that is consistently in compliance with standards set by state and federal regulations.

- Began the implementation of the new "The NELAC Institute" standards to maintain the Water Quality Lab's State of California Water Resources Control Board Environmental Laboratory Accreditation Program.
- Supported the department's Source Winter Water Assessment/Winter Water Monitoring programs by collecting and processing samples and reviewing and commenting on consultant reports and analyses.



- Staff expanded the list of certified analytical methods to include dissolved organic carbon and UV254 and Heterotrophic Plate Counts by Pour Plate and Enterococci analyses, and also created and maintained a picture library of cyanobacteria, other algal species, and zooplankton to support reservoir management and treatment planning activities.
- Responded to concerns about home water quality following the lead contamination in Flint, Michigan, and the colored water issues in Fresno, California, by providing free lead testing in homes and following up on the State's directives regarding lead testing in elementary schools.
- Provided water quality testing services to support a wide range of operational activities including: infrastructure repair projects, treatment plant operations, and treatment plant process pilot studies to evaluate alternate combinations of chemicals or treatment processes to address changing water quality.



- Participated in work to update to the Sanitary Survey, which is a detailed evaluation of surface water sources and an assessment of vulnerability due to contamination.
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## System Production & Maintenance

Every day, the Water Department produces and delivers millions of gallons of water to nearly 100,000 customers residing within and outside of the City. A staff of water treatment operators and maintenance professionals is charged with operating and maintaining a set of water facilities that include a raw water storage reservoir, multiple flowing sources of supply, wells producing groundwater, untreated and treated water pipelines, treated water storage tanks, pump stations, and treatment facilities. Key accomplishments during FY 2018 include:

- Producing and delivering over 2.6 billion gallons of water to customers.
  - Designing and installing a new chemical feed system at the water treatment plant.
  - Using an analytical technique called "jar testing" to assess the feasibility and benefits of switching the main coagulant used in water treatment to aluminum chlorohydrate (ACH) to produce better quality water and re-purposing of one of the treatment plant's bulk chemical storage tanks to receive ACH when its use was found to be highly beneficial.
  - Replacing a number of pressure reducing stations to improve our ability to deliver water to customers that meet standard pressures.
  - Providing numerous tours of the Graham Hill Water Treatment Plant (GHWTP), both for members of the public, as well as for employees and contractors, working on capital projects such as the GHWTP Concrete Tank Rehabilitation Project.
  - Playing an active role in planning for capital improvements to the water system that are under development as part of the major water system reinvestment initiative.
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# Water Distribution

Our State certified Water Distribution Operators provide 24/7 response to interruptions of water service to our 100,000 customers, in addition to doing the construction of new water distribution lines summarized previously. Distribution crews respond to outages caused by vehicles hitting fire hydrants,



damage to the water system caused by actions of other contractors working in the public right of way like those installing fiber optics cable to support high speed internet service. They perform emergency repairs of raw water transmission lines, maintain and patrol miles of pipeline right of way, and keep culverts clean and right of ways accessible so that crews can promptly reach leaks and control valves that need to be shut off prior to leak repairs. Additional accomplishments for the Distribution Section in FY 2018 include:

- Repairing or replacing 90 leaking service lines.
- Providing emergency repairs for 33 leaking water mains.
- Flushing all of the water system's dead end distribution mains and completing high-velocity uni-directional flushing on more than half of the 300 miles of distribution mains.

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# Environmental Stewardship

Providing high quality drinking water begins with protecting and managing our watersheds for both water supply production and for the natural resources and ecosystems that are an integral part of our stewardship role. Included in this role are a wide range of activities such as:

- Monitoring and reporting on our use of water rights.
- Ensuring our operations and maintenance activities comply with environmental regulations.

- Working with federal, state, and regional agencies to plan for and protect diverse ecosystems that support sensitive species including coho salmon and steelhead trout, Mt. Hermon June beetles, and Red Legged Frogs.
- Removing invasive species that compete with natural vegetation and addressing conditions that could exacerbate the ever present threat of wildfire.

We also provide high quality recreation programs and natural resource interpretive services at Loch Lomond Reservoir and Park. Additional accomplishments in FY 2018 include:

- Defended Newell Creek watershed property from the adjacent Bear Fire with the assistance of Cal Fire and Santa Cruz Fire.
- Patrolled watershed lands and performed culvert clearing, trail cleaning, and firebreaks maintenance, all of which reduce



the potential for catastrophic failures from storms or wildfire.

- Continued implementing land management and protection activities for the Mt. Hermon June beetle, a native and threatened species, and were rewarded by observing the beetle on the Bonny Doon mitigation site for the first time in several years.
- Implemented a new volunteer invasive species management program for our Loch Lomond property that has generated good participation.
- Made major progress on finalizing a Habitat Conservation Plan (HCP) for threatened and endangered anadromous salmonids by completing new biological effects analysis and drafting chapters 1-3 and 6 of the HCP.
- Initiated work to address a number of long-standing water rights issues and started the CEQA process that will need to be completed prior to taking the proposed changes to the State Water Resources Control Board for review and action.

- Continued to monitor and take action where needed, to protect the City's water rights, including successfully asserting the water rights seniority on Liddell Creek with the State Water Resources Control Board and Coastal Commission, related to the proposed construction and operation of a private well using the same resources.
  - Participated in environmental review of a diverse range of proposed programs and projects which could pose impacts to our water source watersheds including the County's proposed cannabis licensing program.
  - Partnered with local schools to provide watershed education.
  - Expanded the Trout in the Classroom program with the American Fisheries Society.
  - Served a record number of Loch Lomond recreation and interpretive program customers since re-opening the park after the closure caused by the 2014/2015 drought.
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## Working Smarter & More Collaboratively

Water Department staff has an enormous amount of work to accomplish, in support of the Department's mission, and faces a growing workload across many divisions as it works to deliver the planned reinvestments and new investments in the City's drinking water system. To accomplish these tasks, the department is implementing a variety of "work smarter" strategies including:

- Initiating Department-wide skills development in problem solving, communications, and meeting skills to establish a common language and common expectations, while increasing the efficiency of coordination and collaboration activities that are needed for success in meeting the challenges ahead.
- Using cross functional teams to do work that has multiple dimensions. For example, water loss control, which involves staff from Conservation, Engineering, Meters Shop, Production, and Distribution, work to comply with new state regulations that require utilities to complete water loss audits with those audits being validated by third party independent review.

- Recognizing and addressing both the utility's need to transfer knowledge from senior level employees approaching retirement and to develop critical technical skills involving mechanical, electrical, and instrumentation specialties. In FY 2018, two Utility Maintenance Technician Trainee programs were implemented as a way to "grow our own" employees with the specialized technical skills needed to operate and maintain the water system. Additionally, in FY 2018, the department developed a plan to double fill the most senior mechanical maintenance position, who will spend his final year training the many newer engineering and operating staff, as well as key staff in the program management contract, on the details of the system's operation.

Last, we are proud to announce that the City of Santa Cruz received recognition from the Alliance for Water Efficiency for achieving a 100% compliance with the AWWA Standard for Water Conservation Program Operation and Management and became the first utility in the nation to earn its platinum status.

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## FY 2019 Goals

In FY 2019, the department plans to continue focusing on its mission to provide high quality drinking water while protecting our watershed and educating our customers. To fulfill our mission, we must:

- Continue to deliver a reliable and high quality supply of water that complies with all federal and state drinking water standards to our 96,000 customers, 24 hours a day, 7 days per week, and 365 days per year.
- Focus on CIP project implementation, with key initiatives being reinvestment in the water system's backbone infrastructure.
- Continue to develop and implement the financial management and planning strategies outlined in the 2016 Long Range Financial Plan, in order to fund reinvestments in the water system, and do so in a manner that protects rate-payer interest and provides customers with the best value we can deliver for their contributions to infrastructure rehabilitation and replacement efforts.
- Plan for our customer's future drinking water sufficiency through the implementation on water conservation programs and work in order to determine the right supplemental water supply project for our community.

- Continue to invest in our workforce to support their ability to meet the challenges we face, and build an effective and well adapted workforce for today and tomorrow.
- Continue to build upon organizational development work. Began in 2016 to create a strong, high performing, and highly aligned organization that is nimble, responsive, customer focused, and actively embraces its multi-dimensional role as stewards of infrastructure, natural resources, and water resources that are critically important to the quality of life, public health, and safety of our community.

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We will accomplish these goals by engaging our dedicated staff, working with other City Departments, working with state and federal regulators and funders, as well as working with other regional partners.

The Water Department's core mission fits squarely with the City Council's Strategic Goal #2: Public Safety & Well-Being. Without high quality drinking water, the community health and safety standards would not be met. Additionally, the department supplies the Fire Department with the water necessary to fight fires.



The balance of work planned for FY 2019 is centered on the City Council's Strategic Goal #3: Infrastructure. The Department plans to accomplish these additional goals for FY 2018:

- Continuing to implement the WSAC recommended work plan including working collaboratively with Soquel Creek Water District on water quality compatibility studies, completing ASR pilot testing, and the preliminary alternatives analysis of recycled water and seawater desalination as back up supply augmentation options.

- Initiating the NEPA/CEQA process for the draft aquatic-species Habitat Conservation Plan/Section 2081 Permit with NOAA and California DFW.
- Completing CEQA work to address long-standing water rights issues and sending the package of requested changes to the State Water Resources Control Board for review and action.
- Implementing all relevant processes, tools, and procedures, developed as a part of our CIP program management contract to the rest of the department to align work processes and take advantage of new tools and techniques.
- Continuing to develop and implement cost-effective financial management and planning strategies for funding the CIP, including finalizing applications for funding on eligible projects to the Drinking Water State Revolving Fund.
- Assessing opportunities for implementing additional energy efficiency measures identified through an energy master planning effort.
- Completing construction on several significant infrastructure rehabilitation and replacement projects including:
  - The new inflatable dam at the Felton Diversion.
  - University Reservoir No. 5.
- Completing preliminary engineering, environmental review, and design for capital improvement projects to:
  - Replace four, 60-year-old concrete tanks at the Graham Hill Water Treatment Plant with new tanks.
  - Rehabilitate or replace the Newell Creek Dam Inlet/Outlet Pipeline.
  - Inform decision-making on whether to repair or replace all or parts of the Newell Creek Pipeline from Loch Lomond to Graham Hill Water Treatment Plant.
  - Inform decision-making on whether the diversion dams on Laguna and Majors can be modified to improve the efficiency and reduce environmental impacts.
  - Replace the aging water main on Water Street.

- Inform decision-making on how to address aging infrastructure treatment process issues, such as solids production and long term water treatment needs related to potential supplemental supply options at the GHWTP.
- Maintaining water service water quality by cleaning and inspecting all potable water storage reservoirs.
- Developing a business case for the use of Advances Metering Infrastructure in our system.
- Continuing to engage with regional partners in our area to plan for sufficient water to serve the mid and northern Santa Cruz County areas.





## DEPARTMENT SUMMARY

	Fiscal Year* 2017 Actuals	Fiscal Year 2018			Fiscal Year 2019 Adopted
		Adopted Budget	Amended* Budget	Estimated Actual	
<b>EXPENDITURES BY CHARACTER:</b>					
Personnel Services	11,465,387	14,249,469	14,501,384	12,380,704	14,724,425
Services, Supplies, and Other Charges	10,750,983	14,663,254	17,752,103	14,190,854	15,436,081
Capital Outlay	369,864	175,000	710,180	666,736	438,000
Debt Service	1,656,266	2,091,114	2,091,114	2,091,115	2,676,489
Total Expenditures	<u>24,242,500</u>	<u>31,178,837</u>	<u>35,054,781</u>	<u>29,329,409</u>	<u>33,274,995</u>
<b>EXPENDITURES BY ACTIVITY:</b>					
Water Administration	7101 4,671,256	5,510,616	5,861,937	5,052,869	6,067,687
Water Engineering	7102 2,318,507	3,157,517	5,924,786	4,045,329	4,102,547
Water Customer Services	7103 1,467,008	1,803,922	1,803,922	1,795,400	1,790,583
Water Conservation	7104 599,642	1,233,608	1,248,461	914,382	1,272,934
Water Resources	7105 1,196,722	2,667,347	2,900,449	1,515,674	2,206,623
Water Production	7106 5,678,113	6,682,228	6,656,218	6,294,416	6,790,886
Water Quality	7107 948,151	1,207,518	1,333,002	1,110,407	1,535,372
Water Distribution	7108 4,066,836	4,744,134	5,059,031	4,719,334	4,599,237
Water Recreation	7109 946,444	1,186,858	1,186,858	860,070	1,213,129
Water meter Shop	7113 673,365	893,037	989,003	930,413	1,019,508
Meter Shop	7118 20,191	938	-	-	-
Water Debt Service	7140 1,656,266	2,091,114	2,091,114	2,091,115	2,676,489
Subtotal Other Funds	<u>24,242,500</u>	<u>31,178,837</u>	<u>35,054,781</u>	<u>29,329,409</u>	<u>33,274,995</u>
Total Expenditures	<u>24,242,500</u>	<u>31,178,837</u>	<u>35,054,781</u>	<u>29,329,409</u>	<u>33,274,995</u>
<b>RESOURCES BY FUND</b>					
Water	711 29,782,732	41,340,450	41,683,450	38,717,595	43,885,642
Water Rate Stabilization Fund	713 -	-	-	2,384,543	3,342,244
Water System Development Fees Fund	715 1,342,726	825,000	825,000	1,208,700	1,600,000
Total Resources	<u>31,125,457</u>	<u>42,165,450</u>	<u>42,508,450</u>	<u>42,310,838</u>	<u>48,827,886</u>
	<b>FY 2017</b>			<b>FY 2018</b>	<b>FY 2019</b>
<b>TOTAL AUTHORIZED PERSONNEL:</b>	<u>106.50</u>			<u>113.25</u>	<u>115.25</u>

# Water Department

