115 Years

CAWD Connections

"Protecting your health and the environment"

CONSUMER NEWS FROM YOUR CARMEL AREA WASTEWATER DISTRICT

SPRING/SUMMER 2024

And now for some good news . . .

Rates will not go up this year

That's right: rates will stay the same for fiscal year 2024-2025—amazing news, especially considering that we decreased last year's rates by an average of 10.3 percent below the previous 2022-2023 fiscal year! Homeowners will pay the same annual fee as last year, $952.82, a 10.9 percent decrease from two years ago, and all customer categories will have similar savings.

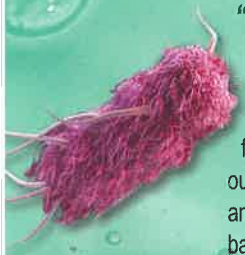
"We are happy we can offer this reprieve to our customers, especially now when we are all shouldering higher costs for goods and services," said CAWD General Manager Barbara Buikema. "Power, labor, and chemicals are our three biggest costs, but small savings add up over time. By cutting operational expenses whenever and wherever it is safely possible, we have managed to hold the line on ratepayer fees."

In particular, energy efficient improvements completed as part of our 15-year master plan are now paying off with reduced power bills. CAWD's last six-month energy report showed the lowest electrical usage in over ten years—15 percent lower than before projects were completed.

Senior Operator Christian Schmidt checks the status monitor on CAWD's new motor control center, which provides power for all pumps and motors at the treatment plant. Equipment upgrades installed as part of our 15-year master plan have helped reduce power costs by approximately 15 percent.

MICROORGANISM OF THE MONTH

"ELMO" *E. COLI*: 11X NOBEL PRIZE WINNER!



***E. coli*'s accomplishments include discovering DNA's role in genetics, as well as how it replicates–the bedrock of modern biological and genetic research.**

"Elmo" *E. coli* gets a lot of bad press, but the truth is we couldn't live without him. While certain strains of the bacteria can cause foodborne illness, the *E. coli* we all carry in our guts help us digest food, absorb vitamins, and guard our intestinal flora against harmful bacteria. At the CAWD treatment plant, we regularly test *E. coli* levels to ensure that all pathogens are killed before water is released into the environment.

E. coli's ease of propagation and well-known genetics make it the most studied organism in research, responsible for numerous discoveries and life-saving *(Cont. on P. 2)*

Interest rates and project delays

Another reason we can forgo rate hikes is that interest rates on CAWD's deposit/billing account with Monterey County has climbed to 3.54 percent, helping to offset lowered revenue. In addition, some capital projects have been delayed due to regulatory and supply issues, so fee increases can be postponed for now. As a not-for-profit agency, CAWD's goal is to match revenue to expenses, leaving no profit, The CAWD Board of Directors remains committed to a pay-as-you-go system to maintain our infrastructure. This conservative approach avoids debt interest, allows us to get the most value from project dollars, and helps ensure CAWD's future financial health.

Check your sewer relief valve!

In the event of a main line backup the only thing that will prevent sewage from entering your home is the sewer relief valve in your yard. It looks like a metal mushroom or capped pipe (see below). Check it regularly to make sure it is working and clear of branches, dirt, and debris, especially after storms. *Call us at (831) 624-1248 for a free inspection. A friendly CAWD staff member can show you how to check this simple device to ensure it is protecting your home.*

Carmel Area Wastewater District
3945 Rio Road
Carmel, CA 93923
(831) 624-1248

Meet our new Lab Supervisor

We welcome new **Lab Supervisor Carla James** to the CAWD team. Carla brings over 23 years of professional experience to the CAWD laboratory. Her most recent position was as Senior Operations Supervisor for California American Water. Before that she served as Water Quality Program Coordinator at Soquel Creek Water District. She has also worked as a lab analyst at Monterey One Water, and for the Monterey County Water Resources Agency.

Carla and her laboratory team work together to keep the treatment plant running at peak efficiency. She analyzes and maintains our data, and monitors changes in regulations and technology to ensure we meet permit requirements. Carla is also in charge of environmental compliance, working with local businesses to prevent fats, oils, grease, and toxins from entering our wastewater system. In addition, Carla serves on the steering committee for the Central Coast Long-term Environmental Assessment Network (CCLEAN–see article at right) that monitors discharges to protect the Monterey Bay National Marine Sanctuary.

"I'm so happy to be able to use my skill set here at the CAWD lab, working with others who are dedicated to high quality testing and analysis," said Carla. "It's also rewarding to know that our work protects the community, and safeguards the Carmel River Lagoon and beautiful Carmel Bay."

Carmel Area Wastewater District

3945 Rio Road Carmel, CA 93923
(831) 624-1248 • CAWD.org

CAWD is a special district dedicated to protecting public health and the environment with the cost-effective collection and treatment of wastewater and the return of clean water to the environment.

Board meetings: last Thursday of the month at 9 am at the CAWD office, or attend via the zoom link at CAWD.org.

"Bug of the Month" © Anne Muraski 2024

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Monitoring ocean health

CCLEAN's ongoing research shows trends over time and provides an important database to track and support the health of our nearshore ecosystems.

Monitoring our local nearshore waters is an important part of CAWD's mission to protect human health and the environment. For the past eight years, CAWD has been the lead agency for the Central Coast Long-Term Environmental Assessment Network, or CCLEAN.

The collaboration began in 2001 when local dischargers partnered to share the cost of fulfilling regulatory obligations. Participants include CAWD, Monterey One Water, Vistra Moss Landing Energy Storage Facility, and the Cities of Santa Cruz, Watsonville, and Scotts Valley. We employ Applied Marine Science, a national leader in ecological assessment, to regularly test effluent, ocean water, sediment, and mussels for contaminants including pathogens, persistent organic pollutants (POPS), and, since 2020, microplastics. Sampling occurs around outfall pipes, in estuaries, and at the mouths of the Carmel, Salinas, Pajaro, and San Lorenzo Rivers.

Since its inception, CCLEAN data has shown no adverse impacts attributed solely or directly to participating wastewater facilities (see back page sidebar to view CAWD's high quality water ratings). The vast majority of POPs entering the ocean are from agriculture and come from river discharge. During the first rain after the dry season, more pollutants enter Monterey Bay via rivers and stormwater in a single day than what CAWD discharges from the plant during an entire year.

As climate change increases stress on local ecosystems, CCLEAN monitoring is more important than ever. Sadly, CCLEAN data shows significant declines in abundance and diversity of bivalves, brittle stars, and crustaceans over the past 20 years. More studies are needed to determine how ocean warming, acidification, and pollutants are contributing to the decline. We will continue to actively support CCLEAN research, which provides the scientific knowledge that regulators and resource managers need to make informed decisions that support our local marine habitat and wildlife. *To view CCLEAN data, please visit cclean.org.*

Yew trees are being decimated for the ingredient in a cancer-fighting drug that *E. coli* is now being engineered to produce.

Microorganism *(Cont. from front page)*

advancements. *E. coli* helped us discover the role of DNA as primary genetic material, as well as the mechanism of DNA replication—the fundamental tenets of biology that underpin the study of biochemistry, genetics, and neurobiology. In fact, research involving *E. coli* has received a record-setting 11 prestigious Nobel Prize awards to date, given for discoveries that "confer the greatest benefit on mankind."

One reason *E. coli* is used so extensively in research is its ease of propagation. The cell can divide and double itself every 20 minutes in ideal conditions.

Is there anything Elmo can't do?

Recently, *E. coli* helped produce the Pfizer COVID-19 vaccine, and the bacteria are also being used to create new drugs that can overcome antibiotic resistance. Genetically engineered *E. coli* manufactures insulin, as well as the cancer-fighting drug Taxol. Previously, the only source for the active ingredient in Taxol was the bark of Yew trees, requiring two to four fully grown trees per person; this quickly led to the Himalayan Yew being listed as endangered. Engineered *E. coli* offers hope as it produces the substance much more quickly and economically.

Yet Elmo's contributions are not confined to medicine. *E. coli* has been programmed to break down plastic bottles, giving them a second life as nylon clothing. Researchers have also altered *E. coli*'s metabolic system to produce fats identical to gasoline molecules, creating the first biofuel. Elmo's biochemical response to metal ions has allowed scientists to develop a biosensor that warns of heavy metal contamination in water. In addition, the bacteria has been trained to glow when encountering TNT, enabling humanitarian organizations to use biosensors to spot land mines and remove them. In short, we all owe a debt of gratitude to Elmo for not only keeping our bodies healthy, but for saving lives and helping to establish the foundation of modern science and medicine.

Scientists used *E. coli* to create the first biofuel.

How do we stack up to other utilities?

Approximate monthly utility cost comparison for a typical California family of four

gas/electricity	cell phone	Cable bundle	water	CAWD proposed sewer fee
$375	$180	$160	$140	$79.40

We've got your back...

No power? No problem!

The 24/7 flow of wastewater never stops. Winter storm runoff can stress the wastewater system, and during power outages the risk of breakdowns and overflows increases. While we can't control nature, CAWD takes every precaution to maintain the wastewater system and safeguard the health of our community and the environment.

During power outages, our collections team works 12-14 hours per day monitoring backup generators at our seven pump stations, always ready to deploy third-tier portable generators if one fails. Before storms, they stage bypass equipment at critical pump stations so wastewater can be safely diverted if flow exceeds capacity. All bypass piping has been standardized for efficiency. Frequent training drills ensure that staff can perform emergency setups quickly and easily, and that all equipment is in good working order. Our dedicated emergency response trailer is always thoroughly outfitted and ready to deploy with portable lighting, pumps, and all the hoses, fittings, and tools required for any task.

CAWD has also installed stronger, locking manhole covers to exclude storm runoff and reduce the deluge of water flowing into the treatment plant. Redundant backup generators at the plant ensure that buildings and equipment always have power. We have also added bypass piping where water enters and exits the plant so that portable pumps can be employed there if needed.

The treatment plant and collection system have tiered alarm systems and backups in event of power and internet outages. In case of internet failure, our system automatically switches to satellite communications so staff can retain phone service and monitor remote sites. In addition, our cyber security response plan includes redundant systems to prevent disruption of service in the event of an attack on our network.

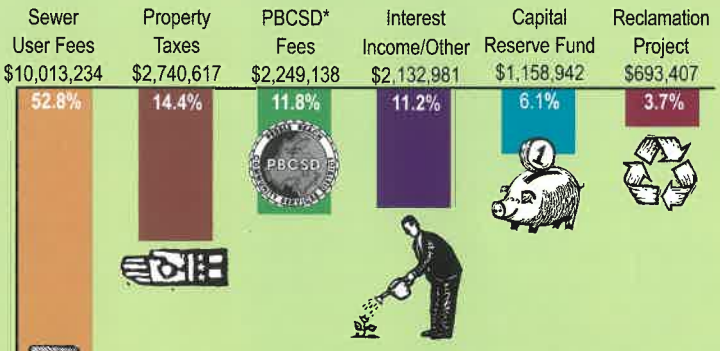
PRE-STORM PRECAUTIONS CAWD collections crew members prepare to inspect the wet well at our Scenic Road pump station before arrival of the February storms. The generator at left stands ready to provide immediate backup power during outages.

CARMEL AREA WASTEWATER DISTRICT PROPOSED BUDGET

July 1, 2024-June 30, 2025

Sources of Cash

$18,988,319

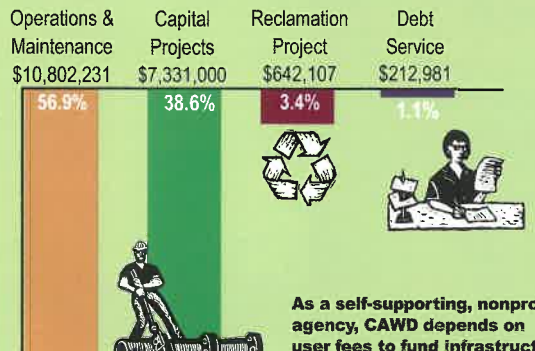


As you drive around town you may see various CAWD projects underway to help protect the health of our community and local environment. We are planning to spend $7.3 million on capital projects this fiscal year, self-funded with a combination of current year revenues and drawdown on our capital reserve fund. These large capital projects are necessary to help bring our collection system up to Central Coast Regional Water Quality Control Board standards.

* Pebble Beach Community Services District

Uses of Cash

$18,988,319



As a self-supporting, nonprofit agency, CAWD depends on user fees to fund infrastructure and maintenance. Our detailed assessments show that we need to spend $16 million on our community's treatment plant, and $67 million on our collection system over the next 15 years to keep it safe and reliable. When necessary, ratepayers will see incremental fee increases to fund rehabilitation. CAWD's goal is always to match revenues to expenses, leaving no profit.

Pathogen testing expanded

In July 2020, CAWD was one of the first wastewater treatment facilities in our area to begin testing for the COVID-19 virus. Now, as partners in the government-funded Centers for Disease Control (CDC) National Wastewater Surveillance System, we are expanding testing to include monkeypox, influenza A and B, and the respiratory syncytial virus (RSV) A and B.

Weekly samples collected at our Carmel treatment plant are sent to the Verily lab in San Francisco, the new contractor for the CDC. Our local data is also shared with the Monterey County Health Department, the Carmel-by-the-Sea City Council, and the public.

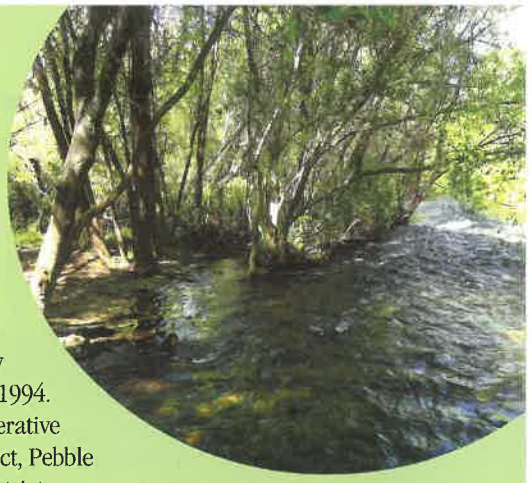
"Since people can harbor viruses before symptoms appear, wastewater testing is an important early warning system which can reduce transmission and identify hotspots throughout the country," said CAWD General Manager of Barbara Buikema. "Our weekly reports can also help immune-compromised individuals gauge risk factors in our own community." To view our local pathogen reports please visit CAWD.org/pathogen-concentration-levels.

High marks for water quality

CAWD treatment removes 95 to 99% of organic pollutants from local wastewater, and we have been recognized by the Central Coast Water Quality Control Board for our outstanding record. We typically discharge at 3 mg of BOD* per liter, far better than the 30 mg or below required by the Environmental Protection Agency.

* Biochemical oxygen demand (BOD) is a standard measurement of how much oxygen microorganisms use when they consume organic matter.

CAWD partnerships conserve water



Wastewater reclamation reduces Carmel River drawdown, leaving more water for threatened steelhead, red-legged frogs, and other wildlife.

While our region has been grappling with drought and water shortages for decades, CAWD has been quietly reclaiming millions of gallons of water annually since 1994. Our wastewater reclamation is possible through a cooperative agreement with Pebble Beach Community Service District, Pebble Beach Company, and the Monterey Peninsula Water District. The project saves potable water, reduces drawdown on the overpumped Carmel River, and reduces outfall into Carmel Bay.

Fully funded by Pebble Beach Company and the independent golf course owners, CAWD's sophisticated microfiltration/reverse osmosis (MF/RO) system turns Carmel And Pebble Beach wastewater into pristine recycled water that irrigates all seven Pebble Beach golf courses 100 percent of the time, as well as Stevenson School and open space areas. The reclaimed water is stored in the Forest Lake Reservoir for use during the dry season. The project uses an average of 950 acre-feet of water for irrigation each year, saving that same amount annually (about 310 million gallons of potable water) for use in residential homes and gardens—all at no cost to the public. The same MF/RO technology is now being used by Monterey One Water's Pure Water Monterey project to reclaim wastewater for household use.

Reclaimed wastewater saves potable water for residential use, and maintains Pebble Beach golf courses which are major contributors to our local economy and charities.

Protecting the Carmel River

The potable water saved through reclamation is also water that does not have to be pumped from the Carmel River, which benefits our local riparian wildlife. CAWD has a long history of stewardship of the Carmel River, which runs directly by our treatment plant. In 2004, CAWD helped save most if not all of our local steelhead juveniles that were dying due to extremely low water levels. With support from the U.S. Fish and Wildlife Service, Carmel River Steelhead Association, and California State Parks we were able to release treated water into the nearby riparian forest to filter through the soil and replenish the waterway. This Water for Wetlands project recharged the Carmel River Lagoon annually during the dry season by releasing millions of gallons of treated water. Unfortunately, the project had to stop after four years because it worked *too* well: fish were found near the recharge pipeline and our permit did not allow for direct discharge into the lagoon.

The Carmel River was listed as one of North America's ten most endangered rivers in 1999, four years after the State Water Resources Control Board ordered Cal-Am to stop drawing water from it. Fourteen years later in 2009, the state issued a cease and desist order preventing new water hook ups, curtailing development on the Monterey Peninsula. Now, nearly 30 years after that first order, decades of effort by many agencies and individuals has improved the river through land acquisition, the removal of the San Clemente Dam, enhancement of steelhead habitat, and the current Pure Water Monterey project and Carmel River Floodplain Restoration and Environmental Enhancement Project (Carmel River FREE). In 2023, the Carmel River Watershed Conservancy gave the Carmel River a 65 percent 'C' grade on its Health Report Card.

CAWD will continue to act as good stewards to the river by diligently maintaining our treatment system, adhering to stringent regulations and safety protocols, and participating in CCLEAN (see page 2) which monitors the health of our nearshore waters.

Water from the reclamation project is stored in the Forest Lake Reservoir for irrigation of golf courses during dry months. This saves an average of 950 acre-feet of potable water annually.