

110 Years

# CAWD Connections



"Protecting your health and the environment"

CONSUMER NEWS FROM YOUR CARMEL AREA WASTEWATER DISTRICT

SPRING/SUMMER 2020

*Ahead of the curve*

## CAWD meets COVID-19 challenges

As we go to press on April 15, much of the country remains under shelter-in-place orders to reduce transmission of the coronavirus. In Monterey County the end date is currently May 3, but orders may be extended. As the situation continues to unfold, we want our community to know that the Carmel Area Wastewater District's (CAWD's) mission to protect public health and the environment continues unabated.

"Customers can rest assured that COVID-19 has not compromised our community's wastewater treatment or recycling processes in any way," said CAWD General Manager Barbara Buikema. "The coronavirus is a prime example of the pathogens that our treatment plant is designed to eliminate."

After primary and secondary treatment at the CAWD plant, cleaned wastewater is disinfected with sodium hypochlorite (bleach) which destroys any remaining virus or pathogen. The water then undergoes tertiary filtration before entering our sophisticated microfiltration/reverse osmosis

system, which produces pristine recycled water for irrigation. In addition, the highly skilled technicians in our state-approved laboratory continually test water samples at all stages to ensure that quality standards are met at all times.

"While it's been challenging for everyone to meet the demands of the crisis, CAWD was ahead of the curve in responding. As a heavily regulated industry, we have detailed plans in place for many disaster scenarios, including pathogens," said Barbara. In February, CAWD's COVID-19 Risk Mitigation and Response Plan was already well underway, and it is now providing tiered response guidelines as conditions change.

In accordance with social distancing guidelines, some CAWD *(Cont. on back page)*



### CAWD will continue to provide all services

Our dedicated five-man collections crew are working staggered shifts to minimize contact in accordance with COVID-19 guidelines.

Despite smaller crews, they continue to perform regular safety inspections on our pump stations and other critical infrastructure, as well as respond to emergency calls around the clock (see back page sidebar).

With help from our new hydro vacuum truck (shown above), they are cleaning at-risk mainlines on schedule to prevent spills, protect human health, and safeguard the environment.

The new truck has much better fuel efficiency, a cleaner burning motor, and holds twice the amount of water so we can clean more pipeline with fewer trips back to the treatment plant. Our old truck, purchased 12 years ago, will be sold to offset cost.

### MICROORGANISM OF THE MONTH



#### MEET "MEL" METHANOCALDOCOCCLUS VILLOSUS

CAWD's biological treatment system is like a giant aquarium where thousands of microbe species flourish and propagate, eating bacteria and each other while effectively cleaning our community's wastewater.

You might assume that you can move far faster than any kind of microorganism at the CAWD plant . . . but you'd be wrong. Olympic swimmer Michael Phelps won gold medals by traveling 180.4 feet in 50 seconds, or approximately one body length per second.

Based on that, *E. coli* trounces Phelps with its ability to travel 15 to 20 body lengths per second—about the same speed as a cheetah. Yet *E. coli* is left in the dust by the marsh-dwelling *Thiovulum majus*, a bacterium *(Cont. on page 2)*

***M. villosus* uses flagella to attach itself, and to move at lightning speed.**

Image credit: Gerhard Wanner, Ludwig Maximilian University of Munich.

— Sewer rate notice inside! —

Presorted Standard  
U.S. Postage  
PAID  
Watsonville, CA  
Permit No. 30

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





## Check out our new look at CAWD.org!

As part of our ongoing commitment to transparency, we have updated the CAWD website to make it even easier to locate the information you're looking for.

Visit CAWD.org to find monthly board meeting agendas, minutes, budgets, and expenditures, as well as contacts for your elected CAWD Board of Directors. You'll also find details on capital projects in your neighborhood, tips on preventing backups into your home, permit applications, and much more—all presented in accordance with government regulations. Can't find what you need? Feel free to call us at 624-1248.




## Undergrounding will protect lagoon

CAWD continues to work diligently in partnership with Monterey County and the Big Sur Land Trust to mitigate risk of sewage spills from the Carmel River Floodplain Restoration and Environmental Enhancement Project (CRFREE). As previously reported, the project will remove levees south of the river and build a causeway for floodwaters to pass under Highway One. Floodwaters will enter the south arm of Carmel River Lagoon, where CAWD has 180-foot long outfall and sewage pipelines crossing the waterway. Expert evaluation shows that the project would increase water velocity, potentially causing debris to strike pipelines and cause a spill.

CAWD has applied for a \$750,000 grant from the California Coastal Conservancy to complete the engineering design and Environmental Impact Report (EIR) to underground the pipelines, which will safeguard the lagoon and adjacent Carmel River State Beach. While there have been delays due to the COVID-19 crisis, we anticipate that the grant will be awarded in May. Once the design and EIR are complete, Monterey County will include it in their \$26 million FEMA grant application to fund CRFREE, of which \$4.6 million is slated for the CAWD pipeline undergrounding. CAWD is also working cooperatively with California State Parks, as we will need access to their property during construction.

CAWD fully supports the CRFREE Project, and we are taking the precautions needed to protect human health, the environment, and the abundant wildlife that depend upon the Carmel River Lagoon, the riparian corridor, and Carmel Bay, a designated Area of Special Biological Significance. We will keep you informed as the undergrounding project progresses. Currently, we anticipate that construction will begin in 2021.



**A flock of elegant terns congregates at Carmel River Lagoon, a migratory hot-spot for hundreds of bird species. The lagoon also provides habitat for the red-legged frog and South-Central California Coast steelhead, both federally listed threatened species.** Photo courtesy Mike Mora

## Microorganism (Cont. from front page)

which has been clocked moving at an amazing 60 body lengths per second. While moving forward, the bacteria also rotate rapidly with their hundreds of whip-like flagella, which is why researchers call them “microscopic tornadoes.” They also use their flagella to create a current which brings in food. Sometimes they organize themselves into a honeycomb-shaped colony to increase water circulation so that the spaces between them flow with rivers of oxygen and nutrients. In the laboratory on a glass slide, they form beautiful, two-dimensional lattice crystals of constantly rotating and shifting cells held together by hydrodynamic suction.



**Individual *Thiovulum majus* bacterium come together to form a constantly moving “bacterial crystal”—a colony that filters food and oxygen.**

Image credit: Xiao-Lun Wu

**The ubiquitous *E. coli* bacterium can move about 15-20 body lengths per second, about the same speed as a cheetah.**

Image credit: James Archer/CDC

## Mighty microbes: fastest organisms on earth

Not to be outdone, an obscure bacterium found in the shallow waters off Denmark can travel a truly astounding 200 body lengths per second. *Ovobacter propellens* performs this feat using a huge tuft of 400 flagella that it wears like a flamboyant toupee. Michael Phelps would have to swim 3.28 football fields per second to keep up with this guy!

But hold on to your hats because some of the fastest organisms live at high temperatures where the rates of everything tend to be higher. *Methanocaldococcus villosus* (or, as we like to call him, “Mel”) is a single-celled extremophile that lives around hydrothermal vents 1.6 miles under the sea north of Iceland, where water temperatures are near boiling and the pressure would crush a submarine. Mel is one of the fastest organisms ever found with an unimaginable swimming speed of 500 body lengths per second. A cheetah would have to run 2,000 mph to attain the same relative speed—and the human eye cannot even see an object that is traveling faster than 550 mph. And Michael Phelps? To match Mel’s speed he would have to swim 6.8 football fields (almost a half mile) per second!



**Carmel Area Wastewater District**

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

**Free 24-hour sewer back-up service:**  
Call 624-1248; after 5 pm, please call Carmel Police Department at 624-6403.  
*If water is backing up into your tub or toilet, it is an emergency. Call us immediately, day or night!*

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.

*We welcome the public to attend CAWD board meetings, held the last Thursday of each month at 9 am at the CAWD office.*

### Board of Directors

Greg D'Ambrosio Charlotte Townsend  
Michael Rachel Ken White  
Robert Siegfried

**General Manager, Barbara Buikema**

“Bug of the Month” © Anne Muraski 2020



## How do we stack up to other utilities?

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



gas/electricity  
\$235



cell phone  
\$180



Cable bundle  
\$160



water  
\$140



CAWD proposed sewer fee  
\$68.82

*We hate to brag, but . . .*

### CAWD honored for Project of the Year

Your District's Hatton Canyon Road Rehabilitation Project has been honored with the 2020 Project of the Year Award, given by the American Public Works Association Monterey Bay Chapter, which includes Monterey, Santa Cruz, and San Benito Counties. The project was recognized in the "under \$5 million Emergency and Disaster Repair" category.

The road is critical for CAWD and fire access; is it also a popular route into the Hatton Canyon hiking/biking trail, owned by California State Parks. Heavy storms in 2017 severely eroded the access road, and high velocity flows from Hatton Creek excavated CAWD mainlines in the canyon when the waterway overtopped its banks. Both repair projects were funded with hazard mitigation grants from the California Office of Emergency Services. Timing of the road repair was critical. Construction had to be done before winter rains and bird nesting season. Plus, the new road was needed to bring in equipment to repair our mainline, which was vital to protect wetland and riparian habitat.

Thanks to the collaborative effort of CAWD, MNS Engineers, Graniterock construction, and California State Parks, the \$212,000 project was fast-tracked, completed on time, and within budget. The .4 mile repair improved drainage, and a compacted aggregate was used instead of concrete or asphalt, which will prevent disruption of pH scales in local waterways. The newly resurfaced road is now safer for CAWD crews who use it weekly to perform inspections, and it's allowing more people to enjoy the riparian forest, grasslands, and wildlife in the canyon.



The newly completed CAWD access road also provides safer access to the Hatton Canyon trail for hikers and bikers.

**YOUR  
OPINION  
MATTERS**

### Help your community prepare for disasters

Your Carmel Area Wastewater District (CAWD) is coordinating with Monterey County and other local municipalities to update our county's *Multi-Jurisdictional Hazard Mitigation Plan*. The plan's purpose is to reduce risks to life and property caused by natural disasters such as floods, earthquakes, wildland fires, etc.

We urge residents and businesses to participate by taking the 30-question, confidential public survey. Your input will help the planning team identify areas of concern, prioritize projects, and enact proactive policies to lessen impacts in your community. The public can also participate during scheduled events, or by submitting comments on the draft plan. Upon completion in 2021, the plan will serve as a guide for decision-makers who commit resources to make our communities more sustainable and disaster resilient.

To participate, please visit the "Monterey County Hazard Mitigation" website and click the Public Participation tab.

## CARMEL AREA WASTEWATER DISTRICT PROPOSED BUDGET

July 1, 2020-June 30, 2021

### Sources of Cash \$17,022,776

Sewer User Fees	Capital Reserve Fund	PBCSD* Fees	Property Taxes	Reclamation Project	Interest Income/Other
\$8,206,708	\$3,281,031	\$2,344,834	\$1,858,219	\$820,295	\$511,689

48.2%

19.3%

13.8%

10.9%

4.8%

3.0%



Our current 15-year capital plan shows that we need to spend \$15 million on the CAWD treatment plant and \$33 million on collections infrastructure (\$48 million total) to keep our wastewater system safe and reliable. One-third of the plant cost is paid for by Pebble Beach Community Services District, per our agreement to provide them with wastewater treatment.

\* Pebble Beach Community Services District

### Uses of Cash \$17,022,776

Capital Projects	Operations & Maintenance	Reclamation Project	Debt Service
\$8,156,761	\$7,822,031	\$820,295	\$223,689

47.9%

46.0%

4.8%

1.3%



Ratepayers will see annual, incremental fee increases to fund rehabilitation of the plant and collections system. As a self-supporting, nonprofit agency, CAWD depends on user fees to fund replacement of infrastructure, as well as maintenance costs. Our goal is always to match revenues to expenses, leaving no profit.



**We're here for you—  
day or night!**

**Have a backup? Call us!**

As essential service providers, our friendly, professional crew respond to all sewer-related emergencies, regardless of shelter-in-place orders. If water is backing up into your tub, toilet, or shower, do not hesitate to call us promptly, day or night. We will determine if the problem is in the main line (our problem) or the lateral line (your responsibility). We do not need to enter your home to provide this free service. If you call a plumber first, the plumber will charge you regardless of where the block is located.

**See a spill?  
Call CAWD immediately!**

If you see water flowing out of a sewer hole cover, in the street, through cracks in the road or sidewalk, or coming out of the sewer relief valve in your yard, it is a serious emergency! Please call CAWD at once so we can find the source and resolve the problem. CAWD crews continually clean and maintain our sewer system, but with 84 miles of pipeline, we count on the public to be our eyes and ears in the community. If you see anything out of the ordinary, please call us!



*CAWD responds to emergency calls seven days a week, 24 hours a day—just phone 624-1248. After 5 pm, please call the Carmel Police Department at 624-6403. Thank you for helping us protect human health, property, and the environment!*



Printed by a certified Monterey Bay Area Green Business on sustainable and/or recycled stock with vegetable-based inks. Please recycle!

## Coronavirus *(Cont. from page one)*

personnel are working from home, our collections crew are on staggered shifts, and half of our treatment plant staff are working a new night shift from 3 to 11 pm. Routine safety practices have been stepped up to include additional protective gear, more frequent disinfection, and strict procedures for vendors who must enter and exit the plant.

The CAWD collections crew continue to inspect and maintain our pump stations and perform scheduled cleanouts of mainlines to prevent spills—a task that is even more vital during the current toilet paper shortage (see below). Our administrative office is open for business through telephone and email, with permits distributed via a drop box at our front door. In addition, the public can participate in CAWD board meetings remotely by clicking the link on our CAWD.org homepage (next meeting: May 28, 9 am).

“Our sanitation workers and entire staff are doing an incredible job of keeping customers and each other safe, while protecting the integrity of the plant we all rely upon,” said Barbara. “In short, CAWD operations has provided, and will continue to provide, the highest level of service to the community. We are here for you, so please feel free to call us at 624-1248 if you have questions or concerns.”



**NIGHTWATCH**  
Treatment plant staff were split into day and night shifts to adhere to social distancing guidelines.

## Please—don't flush wipes or paper towels!

- Despite package claims, wipes are not flushable. Paper towels/facial tissue/rags/all wipes cause sewage spills and home backups—please put them in the trash.
- Did you know: at your treatment plant, staff spend 24-32 labor hours every week dismantling pumps to remove entangled wipes, which then must be transported to the landfill where they belong?



- To protect your home, the environment, and our community's sewage treatment system, please flush nothing but human waste and toilet paper.

### Green up your bathroom with a bidet

Simple bidets are inexpensive and easily attach beneath your existing toilet seat. Luxury bidet toilet seats provide heat, spray modes, and air drying. Both offer superior, hands-free cleansing:



**Cost-saving, one-time purchase, which is healthier and leaves no chemical residue**

**Helps prevent sewage spills and backups into homes**

**Uses far less water than the manufacture of wipes or toilet paper**

**No microplastic pollution which harms marine life**

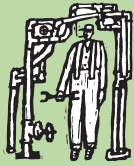
**Much smaller carbon footprint**

**Trees will thank you—and so do we!**

*Thank you for helping us protect human health, the environment, and our community's wastewater system!*







## How does CAWD set sewer rates?

CAWD's rate model was devised by the State Water Resources Control Board. It allocates costs based on **flow, biochemical oxygen demand (BOD), and suspended solids.**

**Flow** is the amount of liquid wastewater—at CAWD this is about 1.3 million gallons each day. A large cost of flow is for the energy needed to continually pump the water to the headworks where it then gravity feeds through the rest of the plant during treatment.

**Suspended Solids** are the particles of matter left in wastewater after heavier solids have settled out. When wastewater enters the plant, it is screened at the headworks to remove large debris—this goes to the landfill. Then the water goes to a clarifier where larger particles settle to the bottom. This sludge gets pumped to a digester that turns it into compost. The remaining particles in the water are the suspended solids that must be consumed by the billions of microorganisms we propagate to clean our wastewater.

**Biochemical Oxygen Demand** is the amount of oxygen consumed by the microorganisms that eat bacteria to clean our wastewater. The more concentrated the wastewater, the more oxygen we need to support the microbes. More oxygen means more cost to run the large blowers which aerate the water in our secondary treatment tanks, which are like giant aquariums of microscopic animals. Much of the plant's equipment and infrastructure are there to keep our hardworking microbes happy and healthy.



**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 of Directors

Greg D'Ambrosio  
Michael Rachel  
Robert Siegfried  
Charlotte Townsend  
Ken White

**General Manager**  
Barbara Buikema

## — Proposition 218 Notification — Notice of Public Hearing on Proposed Sewer Rate Increase

**Thursday, June 25, 2020, 9:00 am**  
**Carmel Area Wastewater District**  
**3945 Rio Road, Carmel, CA 93923**  
**CAWD.org**

On June 25, 2020, at 9:00 am, or as soon thereafter as the matter may be taken up, the Carmel Area Wastewater District (CAWD) Board of Directors will hold a public hearing prior to the adoption of its sewer rates. If shelter-in-place orders are lifted, the hearing will be held at the District offices located at 3945 Rio Road, Carmel, CA 93922. Either way, the public can attend remotely by clicking the link on our homepage at CAWD.org.

Your District board and staff are keenly aware of the need to keep user fees low given our current COVID-19 crisis. These are difficult times, and we recognize that the community is struggling and will likely continue to struggle during the coming year. Our rate model, provided by the State Water Resources Control Board, recommended an increase of \$5.06 per month in our largest category, residential. Your elected board of directors rejected this increase, and asked staff to cut budgets to reduce fee increases as much as possible, while still ensuring safe operations.



**KEEPING IT CLEAN** Thanks to your support, our community's vital wastewater treatment plant will continue to safeguard human health and the environment for many years to come.

While we have reduced budgets in as many areas as possible, we must still cover the increase in costs from our vendors who supply the chemicals and other products needed to clean our community's wastewater. Taking these factors into consideration, we are decreasing the rate hike from \$5.06 to \$2.17 per month for residential users, with a similar dramatic reduction

across all customer categories. In addition, with continued tight fiscal management and strategic project scheduling, the board has concluded that we can continue our pay-as-you-go strategy to avoid loan costs as we move forward.

Even with budget cuts, we remain fully committed to our long-range plan to upgrade our 1980s-era sewage treatment plant to modern standards. We have completed Phase One of rehabilitation, and we are well underway in planning and permitting the next phase. Our long-term capital planning shows that we will need to spend another \$15 million over the next 15 years.

Our engineering consultants, West Yost Associates, have completed analysis of the 84 miles of mainline in our collection system. They have prioritized replacement and rehabilitation projects required to maintain this vital infrastructure, which will cost approximately \$58 million over the next 30 years. The CAWD Board of Directors supports fixing lines with the highest level of risk within five to 10 years, and the next level of risk within 10 to 15 years, which totals \$33 million. In addition, we must allow for unforeseen emergency projects as part of our budgeting concerns. We are also preparing for sea level rise, given that our facility sits roughly 2,500 feet away from the ocean, next to the Carmel River. While flooding is not imminent, we must plan ahead to protect our community and fulfill mandates set by the State of California. We are investigating the feasibility of defending our current location, or performing a managed retreat.

While the pandemic has postponed our immediate goals, our long-term strategic vision continues. We remain dedicated to our mission: operating a safe and reliable sewage treatment facility in the most cost-effective manner possible, to protect human health and the natural environment we all treasure.

The procedural requirements of Proposition 218 require that the District provide a notice of the proposed rate schedule to all property owners of record forty-five (45) days prior to holding a public hearing. In order for the increase to “not take effect,” a majority of the property owners are required to file opposition to the increase.

Property owners may file a written and signed protest against the proposed increase with the Board of Directors of Carmel Area Wastewater District (CAWD) at or before the close of the public hearing. To be valid, a protest must be in writing even if you plan to attend the public hearing. Email protests cannot be formally considered. Each written protest must include the parcel owner’s name, service address, assessor’s parcel number for the parcel served, and the parcel owner’s signature. Only one protest will be counted per parcel. If you own more than one parcel, you may file a single protest, but it must identify each parcel you own. The protest must be signed by the property owner(s). If the signer(s) is not shown on the last equalized assessment roll of Monterey County as the owner(s) of the property, the signer(s) must provide written evidence of ownership of said property. For your convenience, we have posted a protest form on our website, CAWD.org. At the hearing, the Board of Directors shall hear all protests and tabulate the ballots.

Protests should be mailed or delivered to the same address as the hearing location. For further detailed information regarding the proposed rate plan, please call James Grover, CAWD Principal Accountant, at (831) 624-1248.

*We will continue to update you on improvements to our community’s wastewater system, and we invite you to review our long-term capital plan at CAWD.org. Please feel free to contact us at 624-1248 should you have any questions.*

### **Carmel Area Wastewater District Proposed Sewer Rate Increases for 2020-2021**

<b>User Categories</b>	<b>2019-20 Annual Rates</b>	<b>2020-21 Proposed Rates</b>	<b>Percentage of Change</b>
Bakery (each location)	\$ 3,163.94	\$ 3,339.10	5.54%
Bar (each location)	\$ 1,327.44	\$ 1,358.00	2.30%
Beauty Salon (each location)	\$ 1,100.86	\$ 1,121.26	1.85%
Business/Govt./Retail (1-10 employees = one unit)	\$ 495.42	\$ 505.36	2.01%
Camera/Photo (each location)	\$ 684.52	\$ 702.20	2.58%
Church/Synagogue/Mission (each location)	\$ 736.58	\$ 750.24	1.86%
Convalescent Hospital (per bed)	\$ 391.50	\$ 400.58	2.32%
Dental Office (per dentist)	\$ 742.66	\$ 751.60	1.20%
Gym/Health Spa (each location)	\$ 951.58	\$ 969.84	1.92%
Hotel/Motel (per room)	\$ 413.22	\$ 422.82	2.32%
Laundromat (per machine)	\$ 918.06	\$ 930.62	1.37%
Laundry (each location)	\$ 3,411.96	\$ 3,533.92	3.57%
Market (each location)	\$ 1,525.26	\$ 1,603.04	5.10%
Medical Office (per physician)	\$ 364.94	\$ 364.94	0.00%
Residential/Minimum vacant (each location)	\$ 825.78	\$ 851.84	3.16%
Restaurant (per seat/meal)	\$ 62.74	\$ 65.98	5.17%
School (per population)	\$ 33.90	\$ 34.36	1.36%
Service Station (per pump)	\$ 2,455.60	\$ 2,517.14	2.51%
Supermarket (each location)	\$ 21,500.58	\$ 21,601.64	5.12%
Special User (each location)	\$ 751.26	\$ 765.36	1.88%
Veterinary Office (each location)	\$ 1,892.64	\$ 1,938.78	2.44%
Vet Hospital/Boarding (each location)	\$ 5,411.36	\$ 5,543.28	2.44%