

110 Years

CAWD Connections



"Protecting your health and the environment since 1908"

CONSUMER NEWS FROM YOUR CARMEL AREA WASTEWATER DISTRICT

FALL/WINTER 2022

Building community

CAWD spearheads new walking trail

CAWD is exploring the possibility of creating a community walking trail that would give new life and purpose to an unused, CAWD-owned footbridge over the Carmel River, and a long-out-of-service access road that leads to our plant from Highway One. While CAWD's main mission is to protect human health and the environment, we are always on the lookout for ways we can enhance the quality of life in our community. Some examples include providing public access to Hatton Canyon Trail via our maintenance road, and our partnerships to recycle wastewater to irrigate Pebble Beach golf courses, which saves potable water and protects the Carmel River.

New trail would connect existing trails

"The location of our proposed Rio Park/CAWD Bridge Trail Project is ideal for linking trail networks south of the Carmel River to trails north of the river in Carmel-by-the-Sea," said CAWD General Manager Barbara Buikema. "We hope to connect Mission Trail Park to Palo Corona Park."



This conceptual artist rendering shows the proposed CAWD bridge refurbishment which could be part of a new walking path to link Mission Trail Park and Palo Corona Regional Park trail systems.

MICROORGANISM OF THE MONTH

MEET "RAMONA" ROTIFER!

"Ramona" rotifer is found in great numbers everywhere there is water or moisture—you have probably swallowed one, bathed with one, or picked one up on your shoe! At the CAWD plant, they are top predators in our wastewater treatment tanks where trillions of microbes reproduce, eating bacteria and pathogens to clean our wastewater.

Rotifers have long been known for their superpower ability to survive freezing, boiling, desiccation, and DNA-shattering radiation levels. When water disappears, they dry out instead of dying, forming a "dun." When a droplet hits the dun they can rehydrate and come back to life, even after a decade or more. (Cont. on flip side)



A mother rotifer (*Brachionus manjavacas*), carrying four eggs.

Photo: Michael Shribak, Evgeny Ivashkin and Kristin Gribble

The new trail would cross Rio Road from Mission Trail Park, then continue along the edge of the Carmel Mission baseball field to Rio Park (owned by the City of Carmel-by-the-Sea and currently used as a corporation yard). From there, it crosses the CAWD footbridge and continues around the perimeter of the treatment plant to an out-of-use, paved, wooded access road (approximately 8 feet in width) which leads to Highway One and Palo Corona Park trails. The project could also provide a link to the statewide California Coastal Trail, which is currently 70 percent complete.

The new trail would require easements, and the circa-1930s suspension bridge would need upgrades for public use and ADA compliance— (Cont. on flip side)



Enter the CAWD "Connisewer" Quiz Contest to win a free lunch!

Win a \$50 gift certificate to your favorite Carmel restaurant! We will draw two winners from participants who answer all questions correctly. Can you get them all right?

- Which of these breakthroughs has saved the most lives?
 - Antibiotics
 - Water chlorination
 - Toilets/sanitary sewers
 - Pasteurization

(Cont. on flip side)

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“Connisewer” Quiz (Cont. from P.1)



2. Approximately how much wastewater is cleaned at the CAWD plant each day?

- A. 1.2 million gallons
- B. 550,000 gallons
- C. 2.5 million gallons
- D. 700,000 gallons

3. Which of these does not happen at the CAWD treatment plant?

- A. Sampling incoming wastewater at regular intervals to determine Covid levels
- B. Transforming methane into electricity
- C. Recycling wastewater to irrigate Pebble Beach golf courses
- D. Recycling personal wipes to be made into traffic cones

Email your answers by midnight on Halloween, October 31 to downstreamquiz@cawd.org (your three A, B, C, or D letters is sufficient). We will randomly pick two winners from entries with all-correct answers, and notify all participants via reply email soon after. We will also publish answers in our next newsletter. **Good luck everyone!**

New trail (Cont. from page one)

but having a permitted, existing bridge already in place is a huge advantage that should speed progress.

“When you’re standing on the bridge, the view down the river is just beautiful,” said Barbara. “We hope to retain the classic structure of the bridge, which is aesthetically pleasing.” The bridge crossing, which is near the Carmel River estuary, is also an ideal site for public education displays about steelhead migration and bird watching.

“As with all new projects, funding is the issue,” said Barbara. “We conducted a tour for the California Coastal Conservancy and they were very encouraging. The project is a good fit for their grant requirements, but to secure funding we need partnerships and cooperative agreements with participating agencies.”

So far, CAWD has made preliminary contact with the City of Carmel-by-the-Sea, the Diocese of Monterey County, California State Parks, and the Monterey Regional Park District, who all show interest in the project. We are also nearing completion of a project web page which includes a drone video to provide a bird’s-eye flyover of the trail. We hope our readers will share the news with their fellow outdoor enthusiasts, and encourage their local city administrator, park districts, and organizations to help champion this great opportunity for our community. *Watch your newsletter for updates on the Rio Park/CAWD Bridge Trail Project.*



The proposed Rio Park/CAWD Bridge Trail (indicated in red) will require cooperative partnerships with other local agencies in order to secure grant funding.

Microorganism (Cont. from page one)

Last year, Russian scientists made an even more amazing discovery when they found rotifers inside a sample of Siberian permafrost that froze 24,000 years ago—the same time woolly mammoths roamed the earth. As the climate catastrophe continues, the thawing Arctic permafrost has revealed many remarkably preserved prehistoric animals such as wolves, lion cubs, a pony, and a woolly rhino—all in the last five years. Of course, what sets the rotifer apart from all these frozen animals is that *it came back to life and began reproducing within hours!*

Like humans, rotifers have a brain, jaws, stomach, intestine, mouth, and anus. They are the most advanced life form to survive freezing, so this recent discovery has drawn the interest of those who research cryopreservation and human longevity. (Currently, there are over 350 cryogenically frozen humans waiting to be raised from the dead.)

Besides the ancient rotifer, researchers also found a “frozen zoo” of 35 other viable protists ranging in age from hundreds to tens of thousands of years old, prompting speculation that entire micro-ecosystems could thaw out of the permafrost. How these ancient microbes might interact with current-day life forms is anybody’s guess.

Rotifers have hair-like cilia on either side of their mouths that serve as twin turbines, whirling bacteria down to their crushing jaws. © Michael Plewka 2020



These electron micrographs show a reanimated rotifer (right) and the desiccated “dun” from which it revived.



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 invite the public to attend CAWD board meetings via the zoom link on our home page at cawd.org. Please join us on the last Thursday of the month at 9:00 am.

Board of Directors

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

General Manager
Barbara Buikema

“Bug of the Month” © Anne Muraski 2022

CARMEL AREA WASTEWATER DISTRICT BUDGET

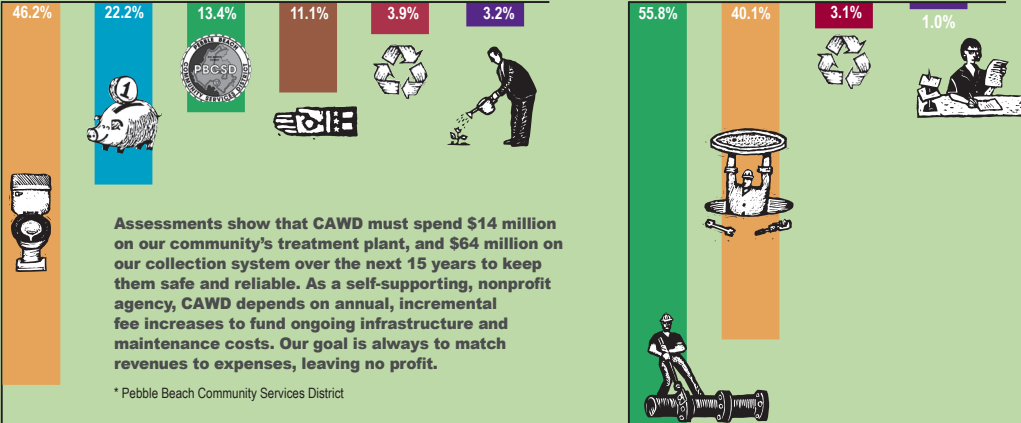
July 1, 2022 - June 30, 2023

Sources of Cash: \$21,495,701

Sewer User Fees	Capital Reserve Fund	PBCSD* Fees	Property Taxes	Reclamation Project	Interest Income/Other
\$9,941,528	\$4,772,308	\$2,883,220	\$2,376,600	\$840,589	\$681,456
46.2%	22.2%	13.4%	11.1%	3.9%	3.2%

Uses of Cash: \$21,495,701

Capital Projects	Operations & Maintenance	Reclamation Project	Debt Service
\$11,992,250	\$8,626,816	\$663,179	\$213,456
55.8%	40.1%	3.1%	1.0%



Assessments show that CAWD must spend \$14 million on our community’s treatment plant, and \$64 million on our collection system over the next 15 years to keep them safe and reliable. As a self-supporting, nonprofit agency, CAWD depends on annual, incremental fee increases to fund ongoing infrastructure and maintenance costs. Our goal is always to match revenues to expenses, leaving no profit.

* Pebble Beach Community Services District