

100 Years

CAWD Connections



"Protecting your health and the environment since 1908"

CONSUMER NEWS FROM YOUR CARMEL AREA WASTEWATER DISTRICT

FALL/WINTER 2017

Plant renovation update

Renovation Phase One: it's a wrap!

As Phase One construction of our Capital Improvement Projects 15-Year Master Plan draws to a close, CAWD engineers and technicians are fine-tuning new equipment throughout our complex and interrelated plant systems to ensure maximum efficiency.

"Phase One has remained well within budget and is turning out to be a great success," said CAWD General Manager Barbara Buikema. "We are very satisfied with the quality of work and we're confident that these vital improvements will safeguard our community and the environment for at least the next 50 years."

Our new 450,000-gallon primary digester is now online, efficiently breaking down plant biosolids, and we are testing our safer hypochlorite disinfection system, which replaces the chlorine gas we used before. All Phase One systems will be online by the end of the year. Our cutting edge dissolved air flotation thickener system (DAFT) is capturing nearly twice the suspended solids as our old process, while using less chemicals and half as much power. The clearer waste stream has improved processes throughout the plant.

"Power and chemicals are our biggest expense in running the plant," said

Barbara. "We are doing all we can to reduce these costs, and keep sewer rates as low as possible."

CAWD has already started the design process for Phase Two of the three-phase renovation project. Phase Two includes further electrical and computer upgrades, and the cleaning and rehabilitation of our back-up digester. Phase Three will focus on alternative energy sources, such as a new gas conditioning system which will use more of our by-product gas to generate electricity to run the plant. We are also looking at ways to generate income, such as serving as a receiving station for grease, food waste, and septage. *To view CAWD's Capital Improvement Projects 15-Year Master Plan, please visit cawd.org and hit the link under the "Financials" tab.*



CELEBRATING A JOB WELL-DONE CAWD's new 450,000-gallon digester is now online, protecting human health and the environment by breaking down biosolids in our community's wastewater.

MICROORGANISM OF THE MONTH

MEET "DARLENE" DIDINIUM!

Out of the countless microscopic organisms that clean our wastewater at the CAWD plant, *Didinium nasutum* is one of the most voracious predators. If you could view the dense soup of microbes that eat bacteria and each other in our aeration basins, "Darlene" Didinium would be the one racing around, an encircling band of cilia propelling her barrel-shaped body forward.

But don't let that frilly skirt fool you: when her pointy snout bumps into her favorite food, paramecium, this efficient carnivore releases

thread-like filaments to ensnare and paralyze her hapless prey. After that, Darlene begins to expand the food vacuole, or mouth, inside her snout until it is a huge gaping hole big enough to engulf microbes over twice her size! She ingests (Cont.)



THIS MICROBE WEARS A TUTU *Didinium nasutum* may look delicate with its encircling "tutu" of cilia, but it's actually a voracious carnivore.

Flush with confidence ...

Your CAWD team has the expertise required in engineering, chemistry, biology, microbiology, public policy, and management to safely clean our community's wastewater, and protect human health and the environment.

Our **Board of Directors** are elected public officials that represent your interests and ensure transparency. The **General Manager** oversees fiscal responsibility and administration. Our **Principal Engineer** designs systems to ensure efficiency and effectiveness.

The **Plant Superintendent** oversees operations and creates budgets for future needs. **Certified Operators** monitor instrumentation and technology. Our **Maintenance Supervisor** repairs machinery and prevents breakdowns. **Lab Analysts** continually test waste stream and effluent samples. **Collection Workers** maintain 84 miles of sewer line to prevent spills and protect the environment.



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3945 Rio Road
Carmel, CA 93923
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Flood project impacts pipelines

CAWD has been working with Monterey County and the Big Sur Land Trust (BSLT) to reach solutions for impacts that their Carmel River FREE Project (CRFree) could potentially have on CAWD infrastructure. The intent of the CRFree Project is to restore flood plain habitat and reduce flood risk to homes and properties where the natural and built-out environments currently intersect. The project would remove a levee south of the river and build a causeway for floodwaters to pass under Highway One into the south arm of the lagoon.

CAWD maintains two 185-foot long pipelines that cross over the south arm of the lagoon: an outfall line and a force main that delivers raw sewage from south of the Highway One bridge to the plant. Both are critical pieces of infrastructure. Two separate hydrology consultants hired by CAWD have analyzed computerized flow studies and concluded that increased water velocity from the project could potentially cause debris to strike the pipelines with sufficient force to cause a break. CAWD must

take all reasonable precautions to prevent contamination of the lagoon and Carmel Bay, a Designated Area of Special Biological Significance. We answer to the public, and to our regulators, the Regional Water Quality Control Board and the California Coastal Commission.

Currently the pipe is in good condition and we planned to replace it in five years as part of our capital improvement program. In order to support CRFree, CAWD has put the project on a fast track for next year, however; the additional work required to protect the pipeline from debris flow (most likely installing the pipeline below the lagoon bed) could be as high as \$700,000 more than budgeted.

We have been working diligently with the county and BSLT to obtain grant funding for the additional work so it does not unfairly burden our ratepayers. While we have a small number of customers who would benefit from flood protection, 97% of ratepayers do not directly benefit and should not have to shoulder the expense of relocation.

CAWD has always taken stewardship of our precious lagoon and coastline very seriously. It is our duty to proactively anticipate and manage risks to our pipelines, now and far into the future.

“A raw sewage spill into the lagoon and ocean would be catastrophic and we cannot risk it,” said CAWD General Manager Barbara Buikema. “CAWD fully supports the CRFree project and we’re optimistic that we’ll find a solution that is fair to our ratepayers and also protects human health, habitat, and wildlife. We have applied for FEMA mitigation money and we are moving forward to begin construction in summer of 2018.”

SAFEGUARDING THE LAGOON
Flow studies show that the CAWD mainline and outfall pipe that cross the south arm of the Carmel River Lagoon could be threatened by increased water velocity from the CRFree Project.

If you see something, say something!

If you see water flowing out of a manhole cover, through cracks in the road or sidewalk, backing up in your tub or toilet, or coming out of the sewer relief valve in your yard it is a serious emergency! Please call CAWD immediately—anytime day or night—so we can find the source and resolve the problem. We count on you to be our eyes and ears in the community, helping to protect property, human health, and the environment. If you see anything out of the ordinary please call 624-1248. After-hours please call the Carmel Police Department at 624-6403.



Carmel Area Wastewater District

3945 Rio Road, Carmel, CA 93923
831 . 624 . 1248
cawd.org

Free 24-hour sewer back-up service:
If water is backing up in your tub or toilet call us immediately: 624-1248, or 624-6403 after-hours.

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, held the fourth Thursday of each month at 9:00 am at the CAWD office.

Board of Directors

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

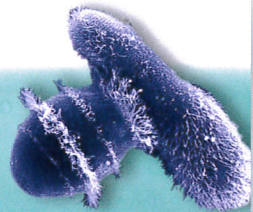
General Manager
Barbara Buikema

"Bug of the Month" © Anne Muraski 2001-2017

Microorganism (Cont. from page one)

paramecia whole in one slow motion gulp.

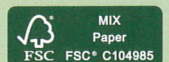
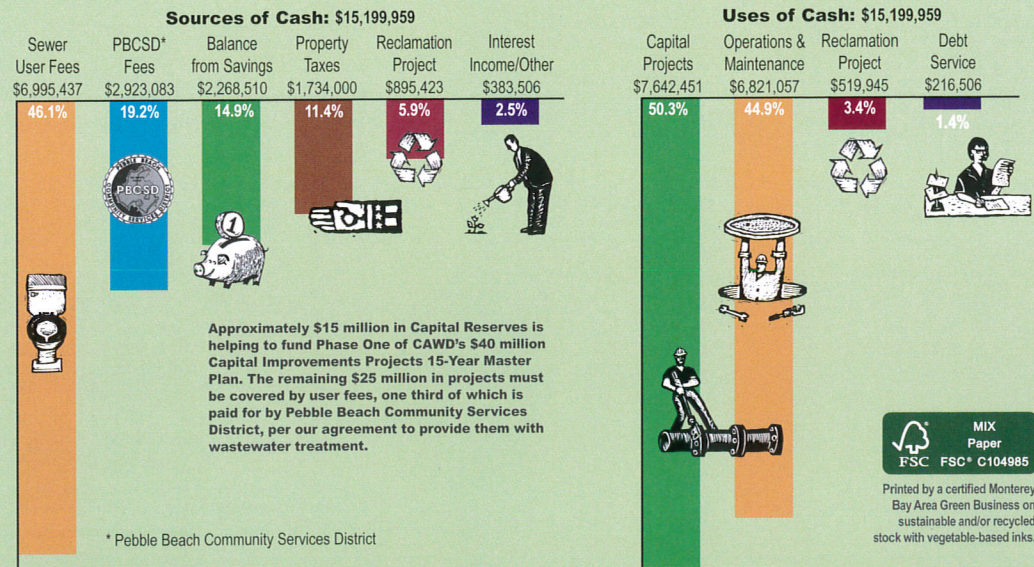
Instead of dying off when their food source is gone, Didinium have the remarkable ability to enter a state of suspended animation. They transform themselves into a blob of living protoplasm with a nucleus, all contained inside a cyst wall. There they can lie dormant for 10 years or more until conditions change for the better. For example, if Darlene got carried through a Carmel sewer line to the microbe smorgasbord at CAWD's aeration tank, she would immediately re-form and break through her cyst wall to begin hunting paramecia again!



I CAN'T BELIEVE I ATE THE WHOLE THING
Didinium (left) paralyze and engulf prey over twice their size, such as this paramecium.

CARMEL AREA WASTEWATER DISTRICT BUDGET

July 1, 2017 - June 30, 2018



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