

FEATURES

A BUG'S LIFE

The end of the line for the little bugs that could

In the conclusion of a three-part series on how Cranbrook turns sewage into water, we learn how the bugs in our wastewater change as the effluent moves through the wastewater system

SALLY MACDONALD
Township Staff

Bugs have a vital role in helping Cranbrook get rid of the roughly 2 million gallons of wastewater that we produce

every day. We are learning how microorganisms do away with our feces in the most unappetizing way at the city's wastewater lagoons.

On a tour of the site with Director of Public Works Joe McGowan, we've learnt how the city filters out "floaties" and foreign materials from the wastewater, before billions of microorganisms go to work breaking down the organic material like they're Lance Armstrong in the Tour de France.

There are three lagoons at the wastewater site. Each lagoon is slightly lower than the last, and the wastewater flows from the first pond into the second and then the third.

Each lagoon has a different colony of microorganisms. The first pond receives more ox-

xygen, so it has bugs that do much of the hard work breaking down organic materials.

McGowan describes the bugs in the first lagoon as grizzly bears.

"It's like a bunch of people standing around a Las Vegas buffet. They don't care what they are presented with, they are going to eat it in huge quantities."

In the second pond, the bugs get what's left over - they are lean runners with a narrower diet.

And the third lagoon's bugs are essentially vultures - they will eat anything.

What's more, the temperature in the lagoons gets cooler the

further from the source. The first pond is on average seven or eight degrees warmer than the third. There's two reasons for that: first, wastewater is warm when it leaves your home, because the water picks up the heat in your home as it passes through. Second, the microorganisms generate heat as they are feeding on the organic material.

Once the wastewater has flown through the lagoons, it's now considered "effluent" - treated sewage. When it leaves the third lagoon, it goes through another screener - that conveyor belt that it first met at the head of the lagoons - which picks up anything that has fallen into the lagoons along the way, such as bulrushes.

It then flows into a large underground chamber. From there, pumps pick up the effluent and force it up the hill into a trunk main that carries the wastewater to Cranbrook's spray irrigation fields in Mayook.

Here, the wastewater sits in two ponds, which add more oxygen to the water so that bugs can continue to work on the little organic material that's left. Then the effluent - now containing little more than water - goes through an ultraviolet facility the city built in 2012.

Here, the water is sent through pipes that contain dozens of fluo-



SALLY MACDONALD PHOTO

The water from these taps was once our wastewater and is now ready to be used for irrigation.

rescent lights, which kick off pathogens in the water. The ultraviolet light doesn't kill the bugs, but it renders them infertile.

If you turn on the tap inside the ultraviolet facility, water gushes out - water that bears little resemblance to sewage because the bugs have done such a thorough job of cleaning it.

The water is then piped all over the spray fields - 900 hectares of pastures where cattle graze and hay crops grow.

Only about 10 per cent of Cranbrook's wastewater is not used on the spray fields. That 10 per cent is piped to the opposite end of the spray fields to a third lagoon, built in 2011.

Before it goes into that lagoon, the water is treated again - at a building that's the only place a chemical is added to the wastewater. Here, alum is added

to the water, a chemical that settles out the phosphorous. There's about a thimble full of alum added to each cubic metre of water.

From the third lagoon, the water is treated for a final time at a second ultraviolet facility. That is essentially the end for Cranbrook's hardest working bugs. Their job complete, they are put to rest as the little leftover wastewater is sent into the Kootenay River.

Each fall, for two or three weeks, the city empties what is left of the irrigation water it no longer needs into the river, ready to start collecting wastewater over the winter for the coming farming season.

McGowan explains that, thanks to those dedicated, hungry bugs, the water the city sends into the Kootenay River is better quality than the spring melt that is already in the river.

Weather Outlook

TONIGHT	TOMORROW	THURSDAY
11 POP 30%	26 13 POP 40%	16 12 POP 20%
FRIDAY	SATURDAY	SUNDAY
24 9 POP 0%	27 10 POP 0%	30 12 POP 0%

Temperatures/Almanac

Normal	High	Low
	27°	9°
Record	36.6° 1985	7.2° 1968
Sunday	26.6°	14°

Precipitation yesterday 0.0 mm
Sunrise 6:00 am
Sunset 21:39 pm

Waxing Quarter Aug. 3	Full Moon Aug. 10	Waning Quarter Aug. 17	New Moon July 26

THE CITY OF CRANBROOK

INVITATION TO TENDER

Grader

The City of Cranbrook is inviting Tenders for the supply of one Grader.

Tender Documents will be available from City Hall at 40 - 10th Avenue South Cranbrook BC. The documents are also available on BCbid and on the City's web site under "Business - Tenders".

Sealed Tenders, labeled with Tenderer's name, project name and Owner's name must be submitted by **2:30:00 pm, local time, Friday, August 1, 2014 to:**

Attention: Melissa Smith, Financial Services Manager
City of Cranbrook
40 10th Avenue South
Cranbrook, BC
V1C 2M8

Late submissions will be rejected.

The City reserves the right to accept or reject any or all tenders submitted.

For More Information:
250-426-4211
1-800-728-2726

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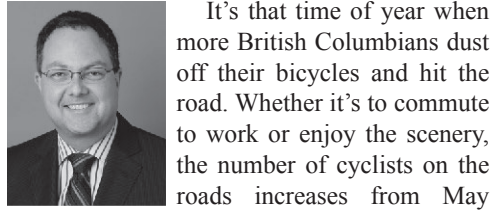
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Special Information Supplement

On the road ... 2 Wheel Safety

Regardless of who is to blame for these accidents, both drivers and cyclists (many of whom participate in both activities) are responsible for helping to keep our roads safe.



By Blair Qualey

Unfortunately, it's also the time of year when we see more accidents between cars and bicycles.

According to ICBC, on average, 160 cyclists are injured every month from May to October, and the problem isn't isolated to any one region. In the Lower Mainland, ICBC says 630 cyclists are injured and four killed from May to October every year, based on crash data from 2009 and 2013 and fatality data from 2008 to

2012. That means an average of 100 cyclists are injured every month from May to October in the region.

Regardless of who is to blame for these accidents, both drivers and cyclists (many of whom participate in both activities) are responsible for helping to keep our roads safe.

The BC government, police and ICBC recently launched a campaign to remind drivers on both two and four wheels about the rules of the road. They also offered some tips that I thought were worth sharing:

- Tips for cyclists:**
- **Get a tune up:** Regular bike maintenance will prevent breakdowns on the roads that can lead to accidents.
- **Plan ahead:** Know what route you're taking and choose designated bike lanes and paths

where possible. Also plan for the weather and potential delays such as traffic jams or construction activity.

- **Get off the sidewalk:** It's illegal to cycle on most sidewalks, not to mention it puts pedestrians in potential danger.
- **Be alert:** Watch for potholes, gravel, and opening car doors ahead that are potential hazards.
- **Wear a helmet:** It's the law in BC, after all. It also keeps you safe.
- Tips for drivers:**
- **Be alert:** Lookout for cyclists and make eye contact when possible to let them know you see them.
- **Shoulder check:** You do this when you're changing lanes to watch for other cars, but you also need to do it when you're crossing a bike lane or pulling off to the side of the road.

- **Mind the doors:** Before you or a passenger open the door to get out of the vehicle, look to see if there's a cyclist approaching behind you.

- **Leave room:** Cyclists may need to react quickly to potential hazards. Experts recommend leaving at least three seconds of following distance.
 - **Don't honk unless you have to:** That might get the attention of the driver ahead of you, but for a cyclist it could be startling and actually cause an accident. Only lay on the horn if you need to give a cyclist a warning.
- Happy cycling, and driving. Be safe.

Blair Qualey is President and CEO of the New Car Dealers Association of BC. Email him at bqualey@newcardealers.ca.