

# **Victoria's Raw Sewage Discharge - Frequently Asked Questions**

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## **How much raw sewage is discharged?**

Victoria and core municipalities, Oak Bay, Saanich, Esquimalt, View Royal, Langford and Colwood, with over 350,000 residents, discharge 130 million litres of raw sewage daily. The sewage is carried through two outfall pipes, 1.1km and 1.8km long, into Victoria Bight and the waters the Strait of Juan de Fuca.

## **Don't currents in the Strait of Juan de Fuca dilute the sewage rapidly?**

Contrary to what we've been told, the currents near the outfalls do not carry the sewage out into the Pacific. The net current at the outfall depth, 65 meters, is east towards Haro Strait or San Juan Island. Therefore, because currents change direction with the ebb and flow of the tide, a lot of the sewage either stays nearby or flows back into Georgia Strait. Also, dilution does not get rid of what's in sewage (organics, pathogens like hepatitis, heavy metals or chemicals) and, therefore, it doesn't prevent the long-term damage to the environment, or the waste of the energy and mineral resources carried by sewage. Further, a 60 square kilometre closure to shellfish harvesting is now in effect due to releases of bacteria and other contaminants from the sewage outfalls, a 50% increase from 2002 (Fisheries and Oceans Canada).

## **Victoria has concentrated on source control - isn't this enough?**

Source control is an important part of keeping our environment healthy, and responsible municipalities both control the sources of contaminants and treat their sewage. However, according to a Decision Note prepared by the Ministry of Water, Land and Air Protection (MWLAP) staff for the Minister on February 20, 2002 concerning Victoria's raw sewage situation, "*source control has limited capacity to reduce contaminants ... Treatment is not only more effective in reducing contaminants, it is effective immediately upon implementation and will remove a wide array of contaminants not targeted under source control.*" Victoria's 20 year old source control program has had limited success in reducing overall contaminant loading.

## **Isn't Victoria's sewage non-industrial, unlike most other cities, so we don't need treatment?**

Most industrialized cities have a sewer use bylaw similar to Victoria's sewer use bylaw, which ensures all industrial waste is pre-treated before entering the sewers. These bylaws will ensure that industrial wastewater on a level similar to Victoria's, however these more industrialized cities also have sewage treatment before discharging wastewater into the ocean or other surface water.

## **But science has not proven that raw sewage harms the environment, has it?**

Yes it has. In fish toxicity tests on Victoria's sewage, the fish died within 20 minutes<sup>1</sup>. In identical tests on pulp mill effluent, fish routinely survive for more than 96 hours<sup>2</sup>. These are just a few examples of the growing amount of independent scientific data (i.e. not conducted by an organization biased against sewage treatment) that supports the need for treatment.

## **Victoria has discharged raw sewage since 1894; why change now?**

In 1894, those responsible for Victoria's sewage did what they were first asked to do - get rid of it. In that era, industry also discharged its effluent untreated; but, as our understanding of the effects of industrial effluent discharges changed, so did society's tolerance for pollution. We now understand that raw sewage includes many harmful pathogens and toxic chemicals – from pharmaceuticals to personal care products to heavy metals. Therefore, environmental laws no longer tolerate raw sewage discharges from municipalities.

## **Shouldn't we wait for better technology?**

Treatment technology will always be improving, and doing nothing is no longer an option. We have the technology to treat our sewage. We know that secondary sewage treatment kills most pathogens, removes a large amount of organic matter, as well as many chemicals such as heavy metals and PCBs and keeps them out of the marine environment.

## **Isn't sewage treatment too expensive in Victoria?**

The sewage treatment plant will cost money, an estimated \$782 million, though this cost should be shared equally with the provincial and federal governments. It will also provide economic benefits to the

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<sup>1</sup> The results of industry standard fish toxicity (LC96) tests on samples of Victoria's sewage. EVS Consultants 1994.

<sup>2</sup> Other BC municipal sewage treatment plants and industry must conduct fish toxicity (LC96) tests monthly; results are available to the public through the Ministry of Environment.

## Victoria's Raw Sewage Discharge - Frequently Asked Questions

community during plant construction and operation. The gains to tourism may be harder to measure, but they are no less significant. Can we really afford not to protect our marine environment? Is it really an option to go on ignoring Federal and Provincial environmental laws?

### **Should Victoria hold a referendum on this issue?**

The waters that are affected by Victoria's discharge belong to all citizens of Canada, not just the CRD. Therefore any referendum would need to be Canada wide and ask all Canadians to support a special polluter exemption for Victoria. This would be a ridiculous exercise given that all polls in the last decade show over 70% of people inside the CRD support treatment, and the non-trivial matter of contravening existing laws.

### **Why is Treatment Needed?**

#### **Environmental and Human Health Impacts**

- 1. It's Toxic:** Apart from the astonishingly high levels of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)<sup>3</sup> in untreated effluent, many of the chemicals contained in Victoria's sewage, such as ammonia and nitrite, are known to be toxic to fish and other aquatic organisms; 28 contaminants have been measured in the effluent at levels that exceed guidelines established for the protection of fish and aquatic life (Golder Associates Ltd. 2005).
- 2. Risk to Public Health:** According to Capital Regional District (CRD) reports, the CRD's engineers, and Environment Canada studies, sewage carrying faecal coliform bacteria does rise to the ocean surface for as many as eight months per year. Wind surfers, leisure boats, eco-tourist, fishing, and other vessels routinely travel through these polluted surface waters, exposing the public to third-world health risks.
- 3. Victoria Fails World Health Organization (WHO) Guidelines:** Victoria's sewage situation doesn't even meet the basic WHO guidelines for wastewater treatment in developing countries.
- 4. Food Chain Contamination:** Some of the chemicals in Victoria's sewage, such as PCBs and mercury, can accumulate in fish and marine invertebrates, representing a major hazard to wildlife. Although experts can't agree on the most significant sources of PCBs in ocean waters, Victoria's sewage contribution of several kilograms per year is a notable contribution to the contamination.
- 5. Harm to the Environment:** The long-term impact of dumping raw sewage into the ocean is unpredictable, but seabed contamination studies already show serious impacts<sup>4</sup>, including acute toxicity to marine invertebrates. If society doesn't allow industry to pollute in this way, how can we tolerate polluting behaviour from our own government?
- 6. Contribution to Greenhouse Gases:** As untreated sewage decomposes, it generates carbon dioxide and methane – which are greenhouse gases. Enough methane gas could be recovered from Victoria's sewage to run a large number of Victoria's buses, reducing reliance on fossil fuels and overall greenhouse gases. The Greater Vancouver Regional District's (GVRD) sewage treatment plants recover enough energy to generate 7 megawatts of electricity, worth over \$1.6M/year.

#### **Legal Issues**

- 7. It's Illegal:** Dumping raw sewage is against the law, and Victoria residents and others are increasingly aware of this fact. Tests show Victoria's sewage kills fish; the current situation contravenes the Federal *Fisheries Act* and the Provincial *Waste Management Act*.
- 8. Liability:** Environment Canada has considered charging Victoria under the *Fisheries Act*, but so far has worked hard to change Victoria's raw sewage discharge without resorting to legal actions. Acting now to get secondary sewage treatment will also reduce the risk of US parties taking legal action (*Washington State farmers vs. Cominco in 1993; EPA and Colville Confederated Tribes vs. Tech Cominco in 2004*).

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<sup>3</sup> BOD and TSS are measurement standards used to describe the state of the effluents. The BOD is "biological oxygen demand", which measures how much the decomposition of organic matter depletes oxygen in the receiving waters, threatening natural organisms' survival. TSS refers to the total suspended solids, which is simply the solid matter suspended in the effluent, which blocks light and effects processes like photosynthesis.

<sup>4</sup> Golder Associates Ltd. 2005 CRD's Wastewater and Marine Environment Program Annual Reports

## Victoria's Raw Sewage Discharge - Frequently Asked Questions

9. **Uneven Enforcement:** The CRD is being given preferential treatment when it comes to enforcement of environmental laws, and this is not lost on other municipalities and the BC business community. Victoria's unregulated sewage discharge places a loading on the environment equal to *all of the kraft pulp mills in BC combined, concentrated around Victoria's harbour*. All sewage treatment plants in BC, including the CRD's own sewage treatment plant in North Saanich, pay permit fees based on BOD, TSS, and discharge volume, and if they exceed their permit, charges and fines are applied. **Victoria however does not. Why?** Also, Environment Canada has seen fit to lay charges again Dawson City, North Battleford and Iqualuit for the discharge of raw sewage into the environment, but not Victoria whose offence is far greater than any of these cities.

### Social and Economic Impacts

10. **Harm to Ocean-based Industries:** Those making their living through fisheries, eco-tourism, and other ocean-based industries are being directly affected by ocean pollution. The lucrative swimming scallop fishery off Victoria Harbour has been closed for over 20 years and local whale watch operators' access to whales has been severely limited, in part, because of the high levels of toxins in local orcas.
11. **Harm to Tourism:** Victoria's reputation as a polluter does not enhance tourism, especially among the residents of Washington State. In 2003, the BC tourism industry brought in nearly \$10 billion; reductions in this revenue because of Victoria's growing reputation as a polluter will be felt throughout the province. On the other hand, we have an opportunity to become a showcase for advanced sewage treatment and resource recovery processes if we take steps now to treat our sewage.
12. **Financial Losses for the CRD:** Under the BC Contaminated Site Regulation, the province could force the CRD to not only stop polluting (put in sewage treatment) but clean up the contaminated seabed. Environment Canada could charge the CRD with violations of the Fisheries Act, and doing so could lead to fines of up to \$300,000 per day.
13. **Pride vs Shame:** BC residents and Victorians in particular feel ashamed that one of their major cities operates below third-world standards. An *Ipsos Reid Survey* conducted for the CRD in 2007 showed sewage treatment as the number one priority for CRD residents. All other public polls conducted in the CRD over the last decade clearly showed majority support among Victorians for moving ahead with sewage treatment.
14. **Leading by Example:** How can we convince our children of the value of protecting our environment when we dump the equivalent of *2,600 tractor-trailer loads of raw sewage* into the ocean every day?
15. **Increased Awareness:** Canadians are becoming more aware of our impacts on the environment, partly through the education and activism of environmental organizations, and partly through Canada's participation in initiatives like the Kyoto Accord. In fact, the CRD shows tremendous initiative on other environmental fronts such as recycling. With this kind of leadership in other areas, the public is ready for leadership on this issue too.

### Opportunities

16. **Recovery of Resources:** Victoria's sewage contains valuable resources: water, energy, and minerals. These resources should be captured and reclaimed, as they are in other modern treatment plants. MOE's website encourages re-use of wastewater, as do the LEED<sup>5</sup> criteria for sustainable building design. Current sewage treatment technologies require less land, and can generate energy through co-generation or provide natural gas to run public transportation.

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<sup>5</sup> LEED - Leadership in Energy and Environmental Design, a green building rating system, is a voluntary, consensus-based international standard for developing high-performance, sustainable buildings.