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"Salmon Forever"

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Backgrounder: Metro Vancouver's Sewage Treatment

The full text of the CEC decision can be found at <http://www.fraseriverkeeper.ca/cec/cec.pdf>

- Metro operates five wastewater treatment plants in the Greater Vancouver area: Annacis Island, Iona, Lions Gate, Lulu Island and North West Langley. The sewage treatment plants at Annacis, Lulu and North West Langley provide secondary treatment.
- Iona and Lions Gate sewage plants provide only primary treatment and discharge directly into the marine environment

Iona sewage treatment

- The Iona plant is located in Richmond, just north of the Vancouver International Airport. 47 percent of Metro's sewage effluent is discharged at Iona, which services Vancouver, the University Endowment Lands, and parts of Richmond and Burnaby.
- On average, the Iona sewage plant discharges 552 million litres of sewage effluent every day into the marine environment. That equates to dumping 221 Olympic-size swimming pools full of sewage waste every day into our coastal waters. In 2005, Iona released 201.5 billion litres per year of undertreated sewage effluent, equalling 80,600 Olympic-size swimming pools.
- Effluent from Iona is discharged into the Strait of Georgia. The Strait of Georgia ecosystem provides habitat to a wide range of species, including almost 200 species of fish, and over 100 species of marine birds. According to Parks Canada, the Strait of Georgia is "*the most at-risk natural environment in Canada.*"
- The Iona outfall is near the mouth of the Fraser River, which supports some of North America's most important commercial, Aboriginal and recreational salmon fisheries. Roughly one billion juvenile salmon pass through the mouth of the Fraser every year.
- In 2005, Metro discharged these toxic contaminants at Iona: 82 kg of Polycyclic Aromatic Hydrocarbons (PAHs), 2248 tonnes of Ammonia, 21 kg of Mercury, 12 tonnes
- ***The Iona sewage treatment plant failed its toxicity tests in June, July and August of 2011.***

Secondary versus Primary

- Secondary treatment refers to sewage treatment that includes a biological process to reduce the toxicity of sewage effluent. The process removes up to 90 percent of organic waste (biochemical oxygen demanding substances/BOD) and of total suspended solids (TSS). It also removes over 90 percent of the toxic, bioaccumulative substances like heavy metals and persistent organic pollutants (PCBs, PAHs, pesticide residues).

- Primary treatment is a mainly mechanical process that removes only between 30 and 40 per cent of BOD and approximately 50 percent of TSS. Primary treatment does not adequately treat heavy metals or persistent organic pollutants.

Toxics in Sewage

- Inadequate sewage treatment in Canada is particularly disturbing when you consider what sewage really is - a foul mix of water, human waste, microorganisms, pathogens, heavy metals and chemicals, not just from households but from industry.
- Hundreds of toxic chemicals are commonly found in municipal sewage effluent. Many of these do not break down and persist in the environment for a very long time. Some heavy metals and synthetic chemicals also “bioaccumulate” as they move up the food chain, posing risks to benthic invertebrates, fish, sea birds, and mammals. Ultimately they can contaminate humans, through the fish and shellfish we eat.
- According to Environment Canada's 2001 National Pollutant Release Inventory (NPRI), the top fifteen water polluters in Canada are all municipal sewage treatment plants. Pollutants released to water include common pollutants like nitrate, ammonia and, in lesser quantities mercury, copper, zinc, manganese and cadmium.

Metro sewage effluent is toxic to fish

- Metro is required under its permit to conduct monthly toxicity testing – known as the Acute Lethality Test – to determine whether the sewage effluent that is being discharged from Iona and Lions Gate sewage treatment plants is acutely toxic to fish.
- On numerous occasions in 2001 and 2002, Environment Canada inspectors attended the Iona and Lions Gate sewage treatment plants and took samples of the sewage discharged from the facilities. Half of the samples taken by Environment Canada at Iona failed the Acute Lethality Test. All of the Lions Gate samples failed.
- Environment Canada sent Metro warnings, putting Metro on notice that sewage effluent from both Iona and Lions Gate was found to be acutely toxic to fish, and that Metro appeared to be in violation of the federal *Fisheries Act*.
- Despite these warnings, both Iona and Lions Gate plants have continued to regularly fail their monthly toxicity tests. In recent years, Iona and Lions Gate have failed roughly one out of every three tests, with routine failures in the summer months.

The Province is sanctioning Metro’s actions

- In 2002, the Provincial government approved Metro’s Liquid Waste Management Plan (LWMP), without requiring that the ongoing toxicity failures be halted. The Province approved the LWMP despite being warned by Environment Canada in 2001 that the LWMP would fail to ensure Metro’s compliance with the federal *Fisheries Act*.
- The LWMP allows Metro to continue to operate the Iona and Lions Gate sewage plants at a mere primary treatment level until 2020 and 2030 respectively. In other words, the Provincial government is allowing Metro to avoid upgrading to secondary treatment at Iona for another 14 years, and at Lions Gate for another 24 years. Yet the Province is aware of the regular toxicity test failures at both facilities, and the need for advanced sewage treatment to remedy those failures.

- No enforcement has been taken against Metro, despite Environment Canada's warnings.
- The *Fisheries Act* provides a maximum fine of \$300,000 upon conviction for each day an offence has been committed.