

Trash mountain [part 5 in waste series]



Incoming garbage is spread out and packed down in layers at the Vancouver Landfill in Delta.

Evan Seal / The Leader

By [Jeff Nagel - BC Local News](#)

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Drivers passing through Delta on Highway 99 can usually smell it before they see it.

The Vancouver Landfill, a man-made mesa of garbage as tall as a 10-storey building, is the final resting place of 40 per cent of the Lower Mainland's waste.

Metro Vancouver's proposed solid waste management plan assumes garbage will continue to be packed in layers at the landfill on the edge of Burns Bog for decades to come, regardless of whether a second waste-to-energy incinerator is built or the Cache Creek regional landfill is expanded.

The dump – owned and operated by the City of Vancouver – poses environmental risks more serious than odour.

In January 2009, a fire broke out in the landfill and burned underground for four weeks before fire crews were able to extinguish it, using 500,000 gallons of water.

The smoke plume from such fires can contain large amounts of airborne toxins. Unlike burning garbage at a waste incinerator, no scrubbing systems clean emissions from a landfill fire. Nor is the waste burned at the extremely high temperatures an incinerator uses to break down most dangerous organic compounds.

And there is no accurate way to test what is actually coming out of the ground.

Metro officials estimate the 2009 Vancouver Landfill fire released dioxins into the air equivalent to running the Burnaby incinerator for 57 years.

"You're dealing with an uncontrolled emission source that has no air pollution controls associated with it," Metro senior engineer Chris Allan said.

Landfill manager Lynn Belanger calls the 2009 fire an isolated incident.

She also says the dioxins released may be lower than Metro calculates, because demolition and construction waste was on fire, rather than regular garbage, on which U.S. Environmental Protection Agency (EPA) landfill fire data is based.

Metro officials say similar dioxin levels could easily come from burning demolition waste, which contains wood treated with preservatives or coated in stains and paints, along with some plastics and PVC.

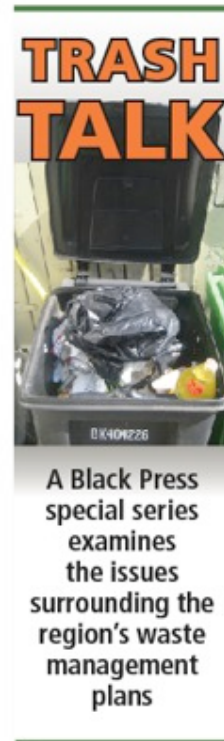
They argue the risk to the public of more fires in the future remains significant and should be at least considered in weighing the region's waste disposal alternatives.

Collecting landfill gas

The Vancouver Landfill is also a big local source of greenhouse gas emissions, because the landfill gas that burps from the pile contains methane, which is 21 times more potent in warming the atmosphere than carbon dioxide.

According to the U.S. EPA, landfill gas also contains low levels of mercury – absorbed from the batteries, fluorescent light bulbs, electrical devices and paint that can end up in dumps.

Capturing and burning landfill gas reduces greenhouse gas impacts and converts any mercury to a less toxic form.



More garbage goes to the Vancouver Landfill in Delta than to either Cache Creek or the existing Metro incinerator.

This fifth part in a Black Press series on waste management looks at the future of the region's local dump.

PREVIOUSLY IN THIS SERIES:

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A grid of pipes in the Vancouver Landfill collects an estimated 70 per cent of its landfill gas. Belanger expects that will soon climb to 73 per cent and beyond as the dump closes more cells and lays down plastic covers on top to trap more gas.

Close to a fifth of the landfill gas is flared on site at two large burners.

Most of the gas collected is piped under Highway 99 and burned to heat nearby greenhouses run by Village Farms and to generate electricity for B.C. Hydro. The partnership eases climate change impacts and reduces the need to burn other fuels – equivalent to taking 6,000 cars off the road and heating up to 4,000 homes.

Water pollution is also a risk.

Any landfill generates a certain amount of leachate – the toxic soup produced when rainwater sluices through garbage.

The Vancouver Landfill is particularly susceptible because of its rainy West Coast location, unlike the arid, desert-like climate at the Cache Creek landfill.

Any new landfill built under modern regulations would require a composite clay-and-plastic liner to contain leachate.

But the Vancouver landfill, built in 1966, has no such liner. Instead it relies on a compacted clay base that's considered highly impermeable and a system of twin ditches that surround the perimeter to catch leachate that seeps out the sides of the dump.

Leachate caught by the dikes is pumped out to the Annacis Island sewage plant for treatment.

Underground wells are used to regularly test the groundwater in aquifers that flow southwest under the dump toward Boundary Bay.

"We're not seeing migration of leachate in the aquifers in the groundwater below the

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[Garbage burning plan gets easy ride in White Rock](#) (May 19)

[Trashy subject discussed in Delta](#)

MORE RESOURCES

For the public meeting schedule, reports, feedback received so far and the plan itself, see Metro Vancouver's [Draft Integrated Solid Waste and Resource Management Plan page](#)



the aquifers in the groundwater below the landfill," Belanger said.

Meanwhile, efforts to take food scraps and other organics out of the waste stream should reduce the amount of leachate generated over time, as will the gradual closing of more sections of the dump.

Not everyone is reassured.

Eliza Olson, president of the Burns Bog Conservation Society, fears an earthquake could liquefy soil in the area and release a torrent of pent-up landfill effluent.

"It could spill toxins into the neighbouring farmland and the Fraser River," she said. "You've got an ecological disaster waiting to happen there."

Cheap but unloved

Delta council wants the landfill closed as quickly as possible.

"The majority of people don't want to have it here," said Mayor Lois Jackson, speaking as Delta mayor, rather than the chair of Metro's board.

She faces an uphill battle.

City of Vancouver officials see the potential to run the landfill for at least another 40 years – it's currently permitted to operate until 2037.

Jackson said she has tried but failed to persuade City of Vancouver politicians to meet to discuss the long-term future of the dump.

Delta cannot unilaterally end the tripartite agreement it has with Metro and Vancouver authorizing the landfill.

"They have carte blanche to continue dumping stinking garbage into another community without negotiations, without discussion, and they're very content with the status quo," Jackson said. "They want to be the greenest city in the world – but at the expense of the Delta airshed, our roadways, our truck traffic problem and



Landfill gas is collected from the Vancouver Landfill. Some is flared off at on-site burners (top) but most is piped to nearby greenhouses to create electricity and heat. Dikes (above) surround the landfill and trap leachate, which is then sent to a sewage treatment plant. Photos: Evan Seal / The Leader



the longevity of that permit."

Money is a big motive, she charges.

The low cost of the Vancouver Landfill – \$30 per tonne of waste dumped there – gives City of Vancouver residents far cheaper disposal than if they had to use the rest of the regional system, which costs \$82 per tonne.

Vancouver also charges the full regional rate on much of the non-residential waste dumped there and pockets the difference – a \$52-per-tonne profit that adds up to millions of dollars of revenue a year.

Consultants for Vancouver estimated the city will save \$700 million over the next 40 years by being able to dump at its own landfill, rather than using the regional system. They also recommended Vancouver resist any proposals to either close the landfill early or open it up to more of the rest of the region, and instead preserve it as long as possible for the primary use of Vancouver taxpayers.

As host of the landfill, Delta gets major benefits as well – free disposal for its residents and a flow of royalties paid by Vancouver.

"It's a sweet deal for us," Jackson acknowledges, adding some of her taxpayers might say Delta should shut up and take the money.

"But it's not socially responsible, it's not politically responsible."

Vancouver city council has come out against the combustion of more waste (they prefer alternative waste-to-energy technologies other than a new mass-burn incinerator).

Vancouver Coun. Heather Deal, who serves on Metro's waste management committee, denies Jackson's claims that Vancouver is opposing incineration to ensure long-term use of the Vancouver landfill and block a competing outlet for waste.

She said finances were not a factor in the decision and that Vancouver is willing to discuss the landfill's future with Delta and Metro Vancouver.

"We're happy to have that discussion," Deal said. "We want to aggressively pursue reducing the amount of waste going into the landfill and taking out the organics so we don't have the methane issues."

Deal said the Vancouver Landfill will likely always need to be open to take the ash that's left behind by the existing waste incinerator.



Aerial view (top) of Vancouver Landfill at Burns Bog with Fraser River estuary in the background. Above: Delta Mayor Lois Jackson and Vancouver Coun. Heather Deal.

NEXT IN THIS SERIES: Decision time**As recycling rises, dump limit tightens**

Waste-reduction advocates say Metro Vancouver could – if it can boost the recycling rate past 70 per cent – get by without sending waste to Cache Creek or building a new incinerator.

They suggest all residual waste would go to either the Burnaby incinerator, which takes about 280,000 tonnes per year, or the Vancouver Landfill, which currently takes 650,000 tonnes annually but could go up to a maximum of 750,000 tonnes allowed under its operating permit.

But that becomes problematic as diversion rates rise.

The three-way agreement governing the Vancouver Landfill limits how much can be dumped there to the actual amounts of waste generated by its service area – the City of Vancouver, UBC-area lands, Richmond, Delta, South Surrey and White Rock.

If those areas increase recycling and reduce what they dump – currently 670,000 tonnes per year – the annual disposal limit at the landfill falls as well.

If the region's western municipalities attain 70 per cent recycling by 2015, Metro estimates the annual limit for the Vancouver Landfill will fall to 470,000 tonnes per year.

Along with the Burnaby incinerator, the region would then have 750,000 tonnes of disposal capacity – well below estimates that more than 1.2 million tonnes per year will need disposal.

Metro estimates a diversion rate of 80 to 83 per cent would be needed to fit the waste needing disposal within the limits on the use of the Vancouver Landfill and Burnaby incinerator.

Vancouver Landfill by the numbers:

Height: 39 metres at peak

Area: 225 hectares

Permitted until: 2037

Current annual disposal: 510,000 tonnes of garbage plus 140,000 tonnes of demolition waste

Leachate pumped out per year: 2 million cubic metres

Serves: 1 million Metro residents in Vancouver, Richmond, Delta, White Rock and South Surrey.

Vancouver Landfill waste comes from....

Vancouver – 175,000 tonnes

North Shore – 115,000 tonnes

Coquitlam – 68,000 tonnes

Richmond – 58,000 tonnes

Delta – 53,000 tonnes

South Surrey – 10,500 tonnes

White Rock – 7,300 tonnes

Also dumped are 140,000 tonnes of demolition waste from around the region and 47,000 tonnes of incinerator bottom ash.

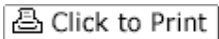
OPEN HOUSE

Want to get a better look at the Vancouver Landfill operations? An open house is slated for Saturday, June 5. Details at www.vancouver.ca/landfillopenhouse

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