

Reprint Island Tides

Visit www.islandtides.com for more interesting articles on other BC, national & international topics

Reprint from Volume 25 Number 01

January 17, 2013

\$780 million sewage system won't solve toxic effluent problem

Patrick Brown

Victoria sprawls over a rocky outcrop jutting into the Strait of Juan de Fuca at the south end of Vancouver Island. The Strait has strong tides and serves as an outlet to the Pacific Ocean for the drainage from the southern coastal mountains of British Columbia and northwest Washington, and particularly the Fraser River, which drains much of the interior of BC and has a volume of 3,500 cubic metres per second.

Currently, Victoria's sanitary sewer outflows, two pipes at Macaulay Point and Clover Point, on either side of Victoria Harbour, are screened to remove particles over 6mm in diameter.

Given the terrain, the system minimizes pumping. The outfalls empty a volume of one cubic metre/second into the Strait of Juan de Fuca, some 1.1km and 1.8km from shore and at a depth of 65 metres. This is approximately 0.001% of the Strait's daily flow. Monitoring indicates that the outflow is diffused and diluted with the effect that it meets federal Wastewater Systems Effluent Regulations within 100 metres of the end of the pipes.

In order to meet equivalent standards, comparable cities in North America have central secondary treatment plants, discharging the resulting effluent into nearby rivers. Public opinion has called for Victoria to adopt secondary treatment, but a large group of scientists and engineers have suggested that it is not necessary, given the capacity of the Strait of Juan de Fuca.

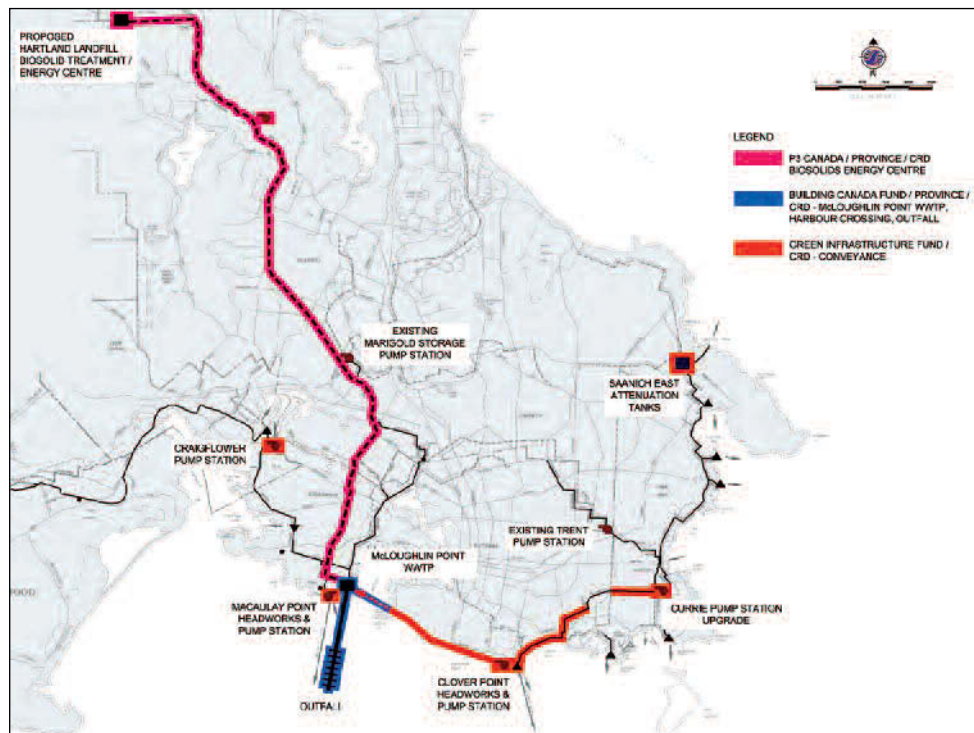
Nevertheless, the Capital Regional District (CRD) has, under orders from the provincial government, developed a secondary processing plan.

The New Proposal

The new Capital Regional District (CRD) proposal meets standards designed for Canada's inland cities, but not for coastal cities like Victoria. It would site a central secondary sewage treatment at McLoughlin Point, at the entrance to Victoria Harbour, with a single 2,000mm diameter outfall some 1,600 metres offshore into the Strait of Juan de Fuca.

The McLoughlin Point site is too small to accommodate the necessary sludge treatment, so the sludge would instead be pumped through two 250mm diameter pipes to a treatment plant at the CRD-owned Hartland Landfill, about 18km away (see map), for further treatment and intended sale as fertilizer or fuel.

In order to collect all the sanitary sewage from the city for



Source: Capital Regional District

The secondary treatment system design proposed for the Victoria core area.

© Island Tides Publishing Ltd. This article may be reproduced with the following attribution, in its entirety, and notification to Island Tides Publishing Ltd.

This article was published (January 17, 2013) in 'Island Tides', an independent, regional newspaper distributing across the Strait of Georgia on the Gulf Islands and Vancouver Island.'

Island Tides Publishing Ltd, Box 55, Pender Island, BC V0N 2M0 • 250-629-3660 • islandtides@islandtides.com • www.islandtides.com

processing in one plant, it would be necessary to run collector mains along the city's waterfront. Notable among these are a new pumping station at Clover Point and a 1,200mm (4ft) diameter main from Clover Point 3.3km to Ogden Point along Dallas Road. Also necessary would be a 1,200mm (4ft) diameter pipe, which the current system avoids, under the entrance to Victoria Harbour. Other feeder pipes and additional pumping stations would also be necessary.

Estimated Costs & Funding

The actual total construction cost (including a contingency) is \$549 million. 'Indirect costs', identified as engineering, administration and program management, inflation, financing, etc, account for a further 40%, at \$221 million. Land costs are \$13 million. Some critics have suggested that these figures may be underestimated.

The funding required for the entire plan is \$783 million, of which the federal government has pledged \$253 million, and the provincial government \$248 million. This leaves \$281 million to be financed by the taxpayers of the CRD. Various estimates, ranging from \$200 to \$500 per year, have been presented as the effect on residential property taxes. Operating costs have been estimated at \$14.5 million/year.

The financial plan for the project has been influenced by provincial and federal government preference for significant private sector involvement. The exact degree of private sector involvement is unclear. However, at an estimated capital cost of \$205 million, a public-private partnership for the sludge processing plant would be about 1/4 of the total plan.

Proposal Shortcomings

Neither the present sanitary system nor the proposed new one deals with storm sewers carrying surface runoff drainage from the streets of Victoria, although studies have shown that it contains a high volume of contaminants. This situation is typical of many North American cities the size of Victoria.

Victoria's storm sewers empty into the sea at numerous points around the shore. Some of these are connected to sanitary sewers, leading to beach pollution. About 20 of these outlets have been recommended for action in the *2007 Stormwater Quality Annual Report*.

Neither the existing sanitary sewage system nor the proposed one deal effectively with some critical toxins (pharmaceuticals, mercury and 1,4-dichlorobenzene) in the effluent.

Alternatives

As an alternative to the present proposal, a more broad-based program has been suggested. Maintaining the existing primary system and its outflows, it would include wastewater treatment facilities at major contaminant sources such as hospitals and food-processing plants, changes to storm sewers to eliminate overflows, expanding the wastewater monitoring system, and encouraging resource-recovery systems in new developments.

It has also been suggested that existing federal and provincial regulations, which do not anticipate alternatives to secondary processing, should be challenged. This approach would be expected to involve significantly lower costs, and to delay major capital expenditures for many years. ☞