Mr Sinky's last stand?

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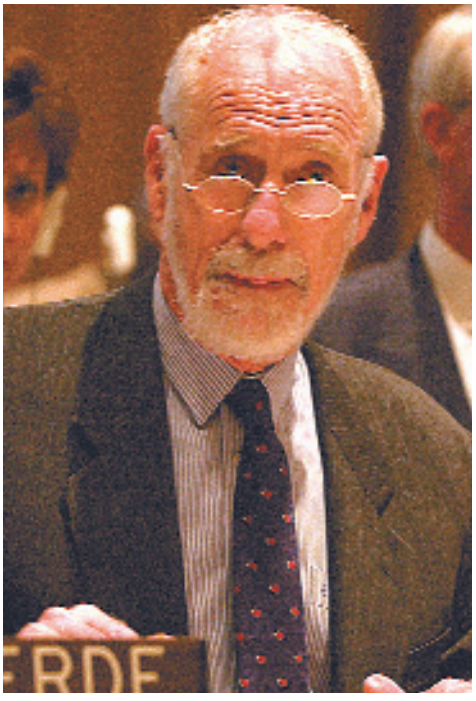
Victoria can thank David Anderson for the fact that we don't have sewage treatment—which may be the best place to start from as we move towards sewage treatment *with* resource recovery.

Back in December 2002, when a beaming David Anderson, then Canadian environment minister, watched Jean Chretien sign the Canadian ratification of the Kyoto Protocol, he probably couldn't have guessed that, one day, the need to reduce greenhouse gases to mitigate climate change would also become a powerful argument against his long held belief that Victoria doesn't need to treat its sewage.

But it has.

Although there have been a number of interpretations in the local media of what the provinces's *Resources from Waste, Integrated Resource Management Phase I Study Report* (generally referred to as the IRM report) actually says, one of the most under-reported pieces of information from the report is the dollar value of energy we are dumping into the Strait of Juan de Fuca, and the tremendous reduction in greenhouse gases to be had if we were able to recover a portion of that energy.



Former federal environment minister David Anderson

The provincial Ministry of Community Services asked the report's authors—Chris Corps, Stephen Salter, Patrick Lucey and Jon O'Riordan—to develop a conceptual design for the application of integrated resource management to municipal waste streams and water systems in the province, and to analyze its potential contribution to the provincial climate change agenda. The report also created a case study which illustrates how this might be applied by the CRD in development of its sewage treatment infrastructure.

The conceptual case study for the CRD envisions one "extra-large" plant, one "large" plant, two "medium" treatment plants, and as many as 28 "small" plants. It makes no recommendations about siting the plants as this would be a political decision made by the CRD. By the way, this part of the report has been endlessly reported in the press as "32 small plants," or "32 mostly house-sized plants."

The report's release seems to have thrown into a tizzy the body of regional politicians responsible for shepherding the CRD's sewage treatment plan into something concrete. They've asked the province for a year's extension of the deadline to come up with a complete plan so that they might re-examine their direction.

One thing is certain: given the values the IRM report assigns to both the recoverable energy from the sewage and the tonnage of greenhouse gas emissions that could be eliminated if a resource recovery approach was taken, the CRD would be nuts not to move their plans in that direction.

Up until the report's release, the CRD seemed to be moving in the traditional direction of "least cost" to taxpayers. But the IRM report strongly suggests that the "least cost" approach may actually be, over the long run, the one with all the bells and whistles of resource recovery.

It needs to be said that the technologies that the IRM report advocates to recover energy, water and nutrients from the sewage are all practical, commercially available and in use elsewhere. And the environmental engineers who have been developing the CRD's plan are fully aware of all these possibilities.

For example, energy can be recovered using either liquid to liquid heat exchangers or heat pumps that absorb thermal energy from the sewage stream. When we pull the plug on a bathtub full of hot water, we add energy to the stream of sewage headed for the ocean. When you add all the ways in which we heat water in our homes, businesses and institutions, and then dump that heat down our drains, you get 130 million litres of sewage each day with a temperature up around 15 degrees celsius—year round. The thermal energy in this tremendous volume of heated water can be extracted and transferred back to public institutions, businesses and homes.

Another technology used to extract energy from sewage requires conventional sewage treatment and then reprocessing of the resultant sludge to produce "biogas" or methane. Biogas can be used to fuel automobiles and buses, or to generate electricity.

The IRM report includes a "Financial Summary" spreadsheet showing capital costs for applying IRM in the CRD's sewage treatment project. It also shows annual operating costs, net annual revenues and the annual reduction in greenhouse gas emissions below 1990 levels in the CRD that would result if IRM were used. It provides all these figures for three scenarios ranging from "optimistic" to "pessimistic."

Has this spreadsheet caught the attention of CRD politicians? The report's middle-of-the-road values show that by 2065, building sewage treatment infrastructure that utilizes IRM would create *a net surplus value of over $3 billion dollars*. The net annual revenue from the system would be on the order of $61 million. That's essentially equivalent to what the CRD would have to collect in taxes each year to build a sewage treatment system that has resource recovery capability. No brainer?

Moreover, the IRM report says "Full deployment of the IRM model in the Capital Region could potentially result in a reduction of over 23

percent in GHG emissions assuming that markets can be found for all generated non-fossil-based energy." With energy costs escalating weekly and peak oil apparently around the corner, is that a particularly difficult assumption to make?

The CRD has signed on to the province's Climate Action Charter and Community Energy Plan, committing to achieve a 33 percent reduction in greenhouse gas emissions by 2020. In other words, the CRD could accomplish 66 percent of its commitment by building sewage treatment that utilizes the IRM approach.

Since the release of *Resources from Waste*, there's been the usual tongue wagging and pooh-poohing. Which brings us back to David Anderson. After reading his June 11 op-ed in the *Times-Colonist*, I have come to think of him as "Mr Sinky," the guy whose ideas will no longer float.

Mr Anderson writes: "With weeks to go before the provincial government's June 30 deadline for the Capital Regional District to decide on a liquid-waste plan, residents are farther than ever from a clear direction in which to proceed."

Farther than ever? Hardly. Finally zeroing in on resource recovery as the best way to proceed. And about time.

Mr Anderson continues: "The question of whether further treatment has benefits that justify the cost is raised by another recent report... It proposes some 33 small treatment plants rather than the four larger plants originally proposed in the CRD's June 2007 plan, *The Path Forward*. This radical change in the proposed approach casts further doubt on the merits of the original thinking calling for treatment."

Mr Anderson appears to have not read the report, at least not carefully. As mentioned above, the report bases its conceptual CRD example on four "extra-large" to "medium" treatment plants, and up to 28 "small" plants. And how, exactly, does including resource recovery capability in the treatment infrastructure negate the finding of both the SETAC study and the Macdonald report that the area around the outfalls are contaminated sites?

Anderson goes on to attack the report as though it were written by amateur plumbers. He writes, "The issue is how practical the concept is in implementation." He then goes on to provide details on how the whole problem of energy loss from sewage could be easily solved by each of us in our own homes without the help of IRM technology. He offers a specific way we could do this: "...the technology is straightforward and cheap. A slightly flattened copper pipe is wound around the cast iron waste water pipe, which transfers the heat from the exiting waste water to the incoming water in the copper pipe to preheat the water going to the home water heater."

At least two practical considerations seemed to have escaped Mr Anderson in presenting this idea. The plumbing in existing homes was not designed for heat extraction. As currently plumbed, greywater and blackwater exit the home in seconds, leaving little chance for heat extraction. Secondly, most homes built since the late sixties in Victoria have ABS plastic water drains. Wrapping copper pipe around these drains wouldn't accomplish anything—the plastic is essentially thermally non-conductive. Mr Anderson would have us create 100,000 ineffective heat recovery plants. Instead, why not act collectively, like we do with our recycling?

Mr Anderson, throughout his years as an MP for Victoria, denied the need for sewage treatment, telling the House of Commons in 2005, "Vast amounts of fast-moving well-oxygenated sea water moving through at anything up to 6 knots does what a treatment plant does artificially. It oxygenates the sewage. It eliminates the problem of pathogens. Essentially, we end up with nutrients." He could, as a Seattle *Post-Intelligencer* writer put it, "evoke a giant flushing sound in describing the Strait of Juan de Fuca. And, ignoring the volume of toxics, he managed to depict the effluent as good fish food."

In a way, Mr. Anderson's long-time opposition to sewage treatment has created a unique opportunity for Victoria to build a state-of-the-art system. With nothing invested in older treatment technology, plants can be designed with resource recovery in mind right from the start. We are a blank slate.

Environment minister Barry Penner isn't going to change *his* mind. Federal legislation is pending that will make sewage treatment mandatory for all Canadian cities. Now, a moral obligation to respond to the climate crisis in a timely and meaningful way has shifted power to new voices in the territory Mr Anderson once controlled. It's over, Mr Sinky.

Back in 2002, after Prime Minister Chretien signed Canada's ratification of the Kyoto protocol, David Anderson triumphantly flew to New York to present this country's commitment to address climate change to the United Nations. It's widely believed that Anderson and Chretien did nothing further to back up that commitment with real action. But since then, the shit has truly hit the climate change fan. Float Mr Sinky, float!

Sam Williams is a Victoria writer and former house-builder.