

Resource Recovery Centre (RRC) and Conveyance Pipe

- About the RRC
- Siting of the RRC
- Resource Recovery and Biosolids Management
- Odour, Noise, Traffic and Safety
- About the Residual Solids Pipe
- Spill Protection and Response

About the RRC

Q: What is the Resource Recovery Centre?

A: The Resource Recovery Centre (RRC) is one of the major components of the Seaterra Program. It will treat residual solids received via a small underground pipe from the Treatment Plant at McLoughlin Point. The approved Liquid Waste Management Plan requires the RRC to recover biogas and phosphorous as well as dried biosolids for a beneficial use.

Q: What are the major elements of the RRC?

A: The RRC will require at least two hectares of land and will consist of several buildings and large tanks, mainly above ground. Because it will use an anaerobic digestion process, the tanks will not be open to the atmosphere. The facility will be procured using a Design-Build-Finance-Operate (DBFO) model.

The structures and processes that could be part of the RCC facility include:

- the thickening of residual solids
- anaerobic digestion tanks
- a biosolid dewatering building,
- a biosolids drying building
- a receiving station for fats, oils, and grease (FOGs)
- an operations administration building,
- a gas flaring unit,
- phosphorus recovery facilities,
- odour control facilities, and
- a biogas purification facility.

Q: Who will be operating the RRC?

A: The facility will be owned by the CRD. The successful proponent of the Request for Proposal process will design, build, partially finance and operate the facility. The operating agreement will be for a 25-year period.

Q: Will the RRC digesters remove the pharmaceuticals and emerging chemicals of concern from our wastewater?

A: The anaerobic digesters at the RCC will kill pathogens and make the end product (biosolids) safe to be beneficially utilized. The digestion process will also reduce the pharmaceuticals and chemicals in the residual solids.

The amount of pharmaceuticals and other trace contaminants in raw sewage is very small, typically measured in parts per billion or less.

The CRD's Regional Source Control Program is a pollution prevention initiative aimed at reducing the amount of contaminants that industry, businesses, institutions and households discharge into the district's sanitary sewer systems.

Source control plays a significant role in protecting the environment regardless of the level of wastewater treatment. Working with local industries, businesses and institutions, the program has greatly reduced contaminants in the marine receiving environment.

Siting of the RRC

Q: Why are you locating the RRC at Hartland?

A: In the last four years a total of 58 locations were identified as potential sites for the RRC. The CRD Board made the final decision to site this facility on the Hartland North site, located to the north of the active landfill and adjacent to Willis Point Road.

The Hartland landfill site was confirmed as the preferred option for the RRC for many reasons, including:

- This site is the greatest distance from residential neighbours, over one km
- It is not part of the Agricultural Land Reserve, a Park, or the Ecological Land Reserve
- There is low likelihood of residential encroachment in the future
- The land is owned by the CRD
- Locating the RRC facility next to the existing landfill will allow for integration between the Region's solid waste and liquid waste management systems

Q: I don't feel that local residents were consulted. What was the process to develop the plan?

A: The need to treat the core area's wastewater has been an ongoing issue since 2006. Hartland landfill was identified as a preferred location when Amendment No. 7 to the Core Area Liquid Waste Management Plan was submitted for provincial approvals in 2009. This location has been shown on information materials, on the CRD website and presented at numerous Public Open Houses since that time.

At the time, the plan was to continue to look for other sites that may be better suited. After several years of searching and reviewing a total of 58 locations, the Hartland site was confirmed as the location for the Resource Recovery Centre. The Seatera Program hosted a series of meetings in December 2013 for communities around Hartland. A Community Liaison Committee will be struck in early 2015 during the construction phase of the project to share information, address issues and suggest ways to mitigate impacts of the RRC during construction.

Q: Residents around Hartland aren't even hooked up to the sewer system. Why should we have to deal with having this facility sited in our neighbourhood, if we're not going to be serviced?

A: The Hartland landfill has long been part of waste management for the regional community and has been receiving the solid waste from a number of regional wastewater facilities.

However, instead of just landfilling the waste, the Resource Recovery Centre will be an important part of ensuring we are taking what was “waste” and turning it into a reusable resource by capturing methane gas, recovering phosphorous (fertilizer) and creating biosolids for a beneficial use. It’s an important piece of the whole picture and ensuring that our “waste” becomes a sustainable usable resource. That is something we can all be proud of in the region and in the community. Residents of Saanich who are currently outside of the sewer service area will not be paying for the Seatterra Program.

Q: What environmental studies have been conducted to prepare for the construction of the RRC?

A: An Environmental Impact Study is a necessary part of the process of developing the RRC. EIS reports note expected construction impacts, the impact of facility operations and suggested mitigation options.

In 2010, the CRD commissioned an EIS report on the siting of the RRC at Hartland landfill. An updated EIS report on the siting of the RRC at Hartland landfill and conveyance pipe will be completed in 2014. Completed reports are available online at <https://www.crd.bc.ca/seatterra-program/information-materials/documents/reports-studies>.

Resource Recovery and Biosolids Management

Q: What resources are we actually recovering?

A: The RRC will recover methane (biogas), phosphorus and produce biosolids. It will also utilize landfill gas.

Biosolids are wastewater residual solids that have been biologically digested to reduce the volume, kill pathogens and have had much of the water removed at the RRC. Biosolids are nutrient-rich organic materials that meet B.C. Ministry of Environment regulatory standards and are safe to be recycled. The biosolids will be dried and used as a fuel substitute.

Q: How are we going to be using these recovered resources?

A: The Operator of the RRC will be required to market and sell the phosphorous. Some of the biogas will be used on-site and the excess gas will be cleaned and injected into the natural gas system.

The processed biosolids are safe for a variety of uses but the end use of biosolids produced at the RRC must comply with CRD policy. The approved plan for the Seatterra Program is to produce biosolids for a beneficial use as a substitute fuel or in a waste to energy facility.

Q: How much money can be recovered through resource recovery?

A: It could be as much as \$3 million per year—depending on natural gas prices and tipping fees from other food wastes. While it won’t offset the capital cost, it will partially offset the operating cost of the facility.

Q: Why aren’t we integrating the dried biosolids and our garbage into a waste to energy (WTE) facility?

A: Locating the RRC next to the existing landfill will allow for integration between the CRD’s solid waste and liquid waste management systems if a WTE system is built in the future.

Currently, the Ministry requires 70 per cent of solid waste be diverted from the landfill through recycling or other initiatives before they would consider a WTE facility. This is to ensure that we are reducing, reusing and recycling as much waste as possible before a WTE facility is constructed. Currently, the region is at about a 50 per cent diversion rate and will not reach 70 per cent until beyond 2020.

Odour, Noise, Traffic and Safety

Q: Won't the RRC smell bad? What about air quality during construction?

A: No odours will be released from the facility, as all facilities will be enclosed. Odour control systems that have successfully treated these types of odours could include a combination of bio-filters and dry scrubbing systems, such as activated carbon. Backup systems and standby power will reduce the risk of untreated air discharges from the facility during a power failure. Prior to the CRD accepting the RRC, the proponent will have to demonstrate that the odour control specifications in the request for proposals have been met. The CRD will also hold back operating payments if plant specifications are not met.

The CRD Code of Practice for "Construction and Development Activities" will be used to minimize dust and mud impacts during construction.

Q: Once the RRC is built will I be able to hear it? What about during construction?

A: Noise from the construction and operation of the RRC facility will comply with the current District of Saanich Noise Control Bylaw. Sound reducing building materials will be used to cut noise levels and special exhaust systems will be used to diminish the noise from backup generators.

Q: How much more traffic can I expect to go to Hartland during and after construction?

A: Prior to construction, a traffic management plan will be developed to address safety, work zone speed limits, parking issues, traffic disruptions and truck traffic.

Once the RRC is operational, the volume and frequency of traffic to the site will be minimal and depend on the end use of the biosolids. If biosolids are removed from Hartland, it is estimated that two trucks per day will be required.

Q: You're producing methane? What is the risk of explosion or fire at the RRC?

A: The bi-product of biologically digesting the residual solids at the RRC is methane, which will be one of the resources recovered from this process. The RRC will be designed to meet all relevant fire protection codes and standards specific to methane generated at wastewater treatment plants to greatly reduce the risks of potential fires. The air methane ratio will be kept below the levels where combustion can occur.

Hartland landfill has been successfully collecting methane from landfill waste without an explosion for the past 50 years.

Q: What happens if there is an explosion or fire at the RRC?

A: Design of the RRC will include backup safety features to comply with the Municipal Wastewater Regulations and to reduce the chance of accidents and malfunctions.

Once constructed, the RRC will have onsite operators during normal working hours and will be remotely

monitored on a 24/7 basis. A requirement of the RFP will be the development of a detailed emergency response plan, approved by the CRD, which will meet local, provincial, and federal standards. This plan will be in place before the RRC becomes operational.

Q: Who would be a first responder in the case of an emergency? How will this impact our volunteer firefighters?

A: Initially it would be the contractor who is running the facility that would deal with any emergency. If there is a fire, the Saanich Fire Department will be contacted immediately.

Q: What about mud and stormwater management?

A stormwater management plan will be prepared prior to the start of construction. The plan will identify strategies for managing rainwater during construction. Erosion and sediment control plans will be prepared and implemented during construction.

About the Residual Solids Pipe

Q: How will the residual solids be transported to the Resource Recovery Centre (RRC)?

A: A small underground pipe will transport residual solids, made up of about 2 per cent solids, from the Treatment Plant at McLoughlin Point to the RRC. A second underground conveyance pipe will transport all extracted water from the RRC to the CRD's Marigold Pump Station to be returned to the Treatment Plant. These pipes will be designed to meet the latest codes and standards. No wastewater will be released at Hartland landfill. There could be an opportunity to use one of these new pipes for leachate disposal as well which would provide redundancy to the existing leachate pipeline.

Q: How can residual solids be moved that far uphill?

A: When people hear residual solids, what some people call sludge, they think of a thick mud. In fact, the residual solids being moved in the pipe are made up mostly of water (only 2% solids). Four underground pump stations, similar to the 140 existing pump station located throughout the core area, can easily move the solids uphill to Hartland. The small particles of solids are then removed from the water and processed at the RRC to become biosolids. The extracted water will then be piped back to the Treatment Plant at McLoughlin Point.

Q: Where will the underground pipe between the Treatment Plant and the RRC run?

A: The conveyance pipe route between the Treatment Plant and the RRC has not been finalized. The preliminary routing has the pipe running along municipal right of ways along Interurban Road, West Saanich Road, and Willis Point Road. Once the route has been finalized, Seatterra Program staff will work with local communities to minimize construction impacts.

Spill Protection and Response

Q: Will our water be at risk because of the RRC or the conveyance pipe?

A: All treatment processes will be completed within closed containers designed to the required earthquake standards. No water will be released from the RRC to the environment. Surface water quality will continue to be monitored near the RRC site by the CRD as part of the environmental monitoring

program for Hartland landfill. Environmental monitoring at Hartland landfill is extensive and is reported annually to the CRD Board and Ministry of Environment.

The conveyance pipe from the Treatment Plant to the RRC will be designed and installed in accordance with the latest codes and standards. The pipe material will be extremely durable and it has been proven to perform well in earthquake-prone areas. Pressure in the pipe will be monitored continuously so that any deviations from the set levels will trigger a shutdown of the pumps while the cause is investigated. The CRD has an ongoing operations and maintenance program in which pipe and pump stations are regularly inspected and maintained.

Q: What happens if there is a leak?

A: A leak detection system will be designed into the RRC and conveyance pipe system that will automatically shut down pumping operations and isolate the conveyance pipe in the unlikely event that a leak does occur.

The CRD will prepare a stringent spill response plan that includes the immediate containment, repair, groundwater monitoring and mapping of the spill impact area, removal, replacement and potentially disinfection of the leak area.

Q: How can I be sure that my drinking water will be safe if there is a leak?

A: Spill containment will be required to meet Federal and Provincial requirements for environmental protection and operator protection. Containment and spill planning and response activities will be required from the successful RFP proponent.

All reporting and monitoring work will be forwarded to Vancouver Island Health Authority and the Ministry of Environment for their review.

Further Information

Additional information about the Seaterra Program is available at www.seaterraprogram.ca

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