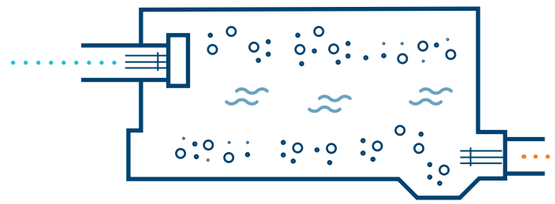
Core Area Wastewater Treatment Process

1 CONVEYANCE SYSTEM

Collects wastewater from across the core area and conveys it to the Clover Point and Macaulay Point pump stations.

Screening
Wastewater is screened (6mm) to remove stones, paper, cloth, plastics and other debris.

Grit Removal
A vortex system uses centrifugal force to keep the organic material suspended while grit settles and is removed.



Pumping
Wastewater is pumped to the new treatment plant.

The grit and screenings are compacted and trucked to an approved landfill.

Storm Outfalls
Previously, untreated wastewater was discharged out of the Clover Point and Macaulay Point outfalls. These outfalls are now used only to discharge storm flows associated with heavy-rain events. To reduce the need to discharge storm flows, a buried underground concrete tank (the Arbutus Attenuation Tank) was built in Saanich to temporarily store flows during high volume storm events. In addition, core area municipalities have committed to an inflow and infiltration program that will reduce the volume of storm flows that need to be discharged.

2 MCLOUGHLIN POINT WASTEWATER TREATMENT PLANT

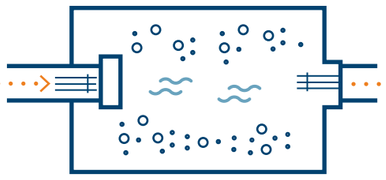
PRIMARY TREATMENT
Is the physical separation of solids from wastewater.

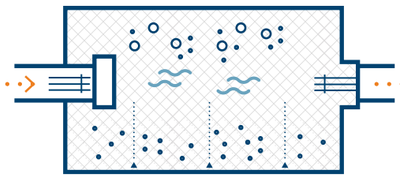
Removing Solids
Heavier solids settle to the bottom and lighter 'scum' floats to the top.

SECONDARY TREATMENT
Is a biological process that removes dissolved and suspended organic compounds in the wastewater.

Fine Screening
Primary effluent is finely screened (2mm) to remove smaller debris.

Biological Reactors
Wastewater flows through tanks where microorganisms grow. The microorganisms consume organic compounds in the wastewater and reproduce to form cells that result in residual biological solids. Solids are removed and sent to the Residuals Treatment Facility for further treatment. Treated secondary effluent is sent to tertiary treatment.

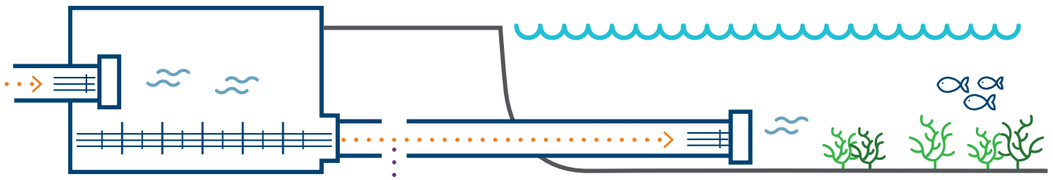




TERTIARY TREATMENT
Is one of the highest levels of treatment, reducing contaminants that remain after the secondary treatment process.

Disc Filter
Wastewater passes through a fabric disc filter (5-micron), reducing many pharmaceuticals, hormones, microplastics and other contaminants.

OUTFALL
The tertiary-treated effluent flows through the outfall and discharges into the ocean approximately 2km from shore and 60m deep.



As wastewater moves through the treatment process, residual solids are removed. These solids are pumped to the Residuals Treatment Facility for further treatment.

3 RESIDUALS TREATMENT FACILITY

Digestion
The residual solids undergo anaerobic digestion in which microorganisms break down biodegradable material in the absence of oxygen and produce biogas.

Biogas
Biogas produced during the digestion process is collected and reused within the facility as fuel for the dryer.

Drying
The residual solids are dewatered and then heated at a very high temperature (220°C).

Biosolids
Dried Class A biosolids are produced that contain almost no detectable levels of pathogens. These are the highest standard of biosolids and are suitable for beneficial use. The biosolids are dark, dry granular pellets.

Residual Solids Conveyance Line
Consists of two pipes and three small pump stations to transport all residual solids to the Residuals Treatment Facility. Liquid removed from the residual solids during the treatment process is returned to the McLoughlin Point Wastewater Treatment Plant through the conveyance system.

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