



# Factsheet #3

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## Wastewater Treatment Basics

### Wastewater Treatment Processes

The City of Port Alberni's (the City) wastewater treatment facility consists of a 5 hectare earthen lagoon system. The lagoon was originally constructed in 1955, and has been used by the City as the method for wastewater treatment. Once treated, the effluent is discharged to the Somass Estuary and thus re-integrates "used water" with the watershed from which it originated.



Common stages of wastewater treatment include the following processes:

- Preliminary treatment
- Secondary treatment

**Preliminary wastewater treatment** involves screening followed by removal of sand and other gritty materials. Screening removes larger-sized solids found in wastewater such as sticks, rags, and plastics. The screening stage is often followed by calm conditions, often in a tank, that allow for settling out of other materials that may interfere with other treatment processes downstream. The City's existing wastewater treatment system does not include preliminary treatment. *As part of the City's Liquid Waste Management Plan (LWMP), the City's proposed wastewater treatment system will include preliminary treatment.*



The City's existing wastewater treatment facility treats wastewater exclusively using **secondary wastewater treatment**. Secondary wastewater uses bacteria and other microorganisms to breakdown organic materials in wastewater. This microbiological activity produces biomass that settles out of the water and must be periodically removed. Aerobic biological treatment (the addition of air to the treatment process) is currently used by the City's wastewater treatment facility to treat wastewater. *As part of the*

*City's LWMP, the City's proposed wastewater treatment system will include secondary wastewater treatment.*

Prior to returning treated effluent back to the environment, a **disinfection** step may be added. Disinfection further reduces levels of potentially harmful pathogens in treated wastewater. An example of a common disinfectant for treated effluent is ultraviolet light or UV. *As part of the City's LWMP, the City's proposed wastewater treatment system will include UV disinfection.*

In addition to treatment of water before it is returned to the environment, solids should also be treated. Biosolids is a term typically used to describe biomass that has been stabilized and dewatered. As part of the City's LWMP, the City's wastewater treatment system will include periodic removal of biomass from the wastewater treatment facility. This biomass will be converted to biosolids, using composting with wood chips, for reuse as a valuable fertilizer at the Alberni Valley Landfill.

For more information, visit the City of Port Alberni's LWMP website at [www.portalberni.ca/liquid-waste-management-plan](http://www.portalberni.ca/liquid-waste-management-plan) or contact City of Port Alberni Engineering at 250-720-2830.