



# The Appleton-Glenwood Engineered Wetland

**Location:** Town of Glenwood, Newfoundland and Labrador

**Type:** Municipal Sewage and Sludge Treatment

**Population Served:** 1,800 P.E. (Population Equivalent)

**Average Flow:** 3,037 m<sup>3</sup>/d

**Wetland Treatment Area:** 12,000 m<sup>2</sup>

- 4 horizontal-flow subsurface wetland beds
- 1 vertical-flow subsurface wetland bed
- 1 storm water treatment bed – no bypass
- 3 Sludge treatment cells

**Constructed in:** June – November 2006

**Commissioned in:** December 2006 – June 2007

**Awards:**

- 2010 Environment Award, Professional Engineers and Geoscientists of Newfoundland and Labrador (PEG-NL)
- 2008 Provincial Environmental Award – Town of Appleton

**Description:** The Towns of Appleton and Glenwood had overloaded, outdated sewage treatment systems. The engineered wetland system was chosen for its low operating costs, high treatment capabilities, environmental benefits, and ability to treat sludge.

The effluent from both towns is pumped to the treatment facility where it passes through a grinder and a spiral lift screen to remove non-organic materials. The flow then enters a series of settling chambers where solids and suspended solids settle out.

During times of high infiltration, the flow is split by a weir that sends the main flow to the wetland treatment beds and any excess to a storm water treatment bed. There is no bypass on this system. All effluent including storm water is treated. The wetlands reduce the contaminants by biological treatment. The two flows are recombined at the end of the system and discharged to the Gander River.

Other than the screen and grinder there are no mechanical or electrical components. No electricity or chemicals are required in the wetland.

Sludge from the settling chambers is pumped to the sludge treatment wetland cells where it is mineralized by the plants resulting in a compost-like end product that can be used for landscaping, or Abydoz will use it at its nurseries.



Aerial view



Plant growth in system



Sludge treatment cells



Educational tour for school group

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