

## **Wastewater Treatment in the Pigeon Lake Watershed**

The North East Pigeon Lake Regional Services Commission (NEPL) has been actively planning on increasing the capacity of its Mulhurst lagoon and making the transition to a Regional Lagoon to be able to handle wastewater in the entire Pigeon Lake watershed. The first step in moving towards this goal was a stage 1 lagoon expansion at our Mulhurst facility. Some highlights of that initiative are as follows;

- The Mulhurst Lagoon Expansion Project was tendered on March 15th, 2007 with a closing date of April 13th 2007.
- Eighteen copies of the contract were sold and 3 addendums were issued. Two bids were received; Iron Horse Earthworks (\$5,533,319) and BYZ Construction Inc. (\$4,144,877).
- The contract was awarded to BYZ Construction Inc. on June 13, 2007 for \$4,144,877. The total value of the project is currently estimated at \$4,404,877. The Province has agreed to pay 80% of the lagoon cost expansion and 100% of the new truck unloading facilities. The balance will come from NEPL reserves. Actual costs are projected to be lower than Budget.
- To better handle the increased volumes of sludge and septage, the design of the anaerobic cells and truck dump incorporate maximum efficiency. The four anaerobic cells will be interconnected by a piping system that provides a monitored, effective circulation and recirculation of the wastewater. The anaerobic cells will be designed to provide an environment that facilitates bacteria growth that will mineralize sludge and reduce sludge volumes up to 70%.
- Construction of the new facility was completed as of October 31, 2007.
- Seasonal deficiencies to be completed in the spring of 2008:
  - Landscaping and seeding
  - Removal of Geo-tube to sanitary landfill
  - Lighting for the truck dump
- The NEPL has been proactive in the protection of Pigeon Lake water quality through the construction of this facility and by constructing state of the art wastewater treatment facilities with the following features:
  - The lagoon is fully staffed during operating hours (open 7 days a week in summer)
  - HDPE Liners
  - Truck dump with recirculation system
  - Geo-tube treatment and disposal of sludge
  - Ground water monitoring wells
  - Environmental insurance.
- NEPL has worked closely with Alberta Environment to ensure that all standards are met.

- NEPL is currently undergoing a professional review of the older waste collection and treatment facility systems as part of our ongoing commitment to a well maintained system.
- Customers utilizing the system at this point in time are:
  - Summer Village of Norris Beach
  - Summer Village of Crystal Springs
  - Summer Village of Poplar Bay
  - County of Leduc
- Agreement Effective Date January 1, 2007
  - 5 year term
- Agreement Highlights
  - NEPL will accept wastewater from all contracted Customers
  - Customers will pay for the operational costs for the “Truck Dumping Station” only
  - Capital costs for the lagoon and improvements including the “Truck Dumping Station” have been born by the NEPL at this stage until we have a collection system around Pigeon Lake.
- Additional Customers
  - Indications are that two additional Villages will start utilizing the system late second quarter of 2008.

The non NEPL Summer Villages and the County of Leduc will form a Steering Committee as of April 30, 2008 charged with the responsibility of designing a collection system for the rest of the lake. The County of Wetaskiwin had agreed to be the lead municipality on this important Steering Committee and uses its experience to enable the group to achieve its mandate. The NEPL is also a member of the Committee as well. The goal is to get closed wastewater systems all around Pigeon Lake as step 2 in cleaning up our current problem of wastewater nutrients getting into the lake which foster plant growth and ultimately algae blooms.