

# Wastewater Project Moves Forward

The *Pigeon Lake Regional Wastewater Planning Committee* was officially established in the fall of 2007 as the next step in designing and implementing an effective wastewater system for the Pigeon

Lake watershed area as well as the Dorchester Development. These areas are not currently served by the North East Pigeon Lake Commission (NEPL) system, which manages the wastewater collection and treatment system, including the Mulhurst Lagoon on the northeast side of the lake.

Members of our committee were appointed by and represent the counties of Leduc and Westaskiwin and the summer villages of Sundance Beach, Ma-Me-O Beach, Norris Beach, Crystal Springs, Grandview Beach and Poplar Bay. We're working together with Alberta Environment and Alberta Infrastructure & Transportation to oversee implementation of the recommendations of the Wastewater Strategy and Master Plan Study conducted by Associated Engineering over the past year, which was recently accepted by the *Pigeon Lake Wastewater Steering Committee*. The recommended strategy involves the construction of a regional wastewater transmission system that will link individual property owners to an upgraded NEPL treatment system. This strategy was identified as Option #1 in the public consultation. Through the consultation process held as a part of the study, you told us that the environmental health of the lake is more important than ever before, to proceed as quickly as possible, minimize rate implications and ensure the chosen solution is ultimately capable of servicing the entire lakeshore area. This input was carefully considered by the Steering Committee in the decision making process. Issues and concerns identified are being addressed as we move forward.

We've created this information bulletin to keep you informed of the project, its progress and how it affects you as a property owner or resident. Our first issue contains details on wastewater management in general as well as details of the recommended

strategy and where we go from here.

We hope that you will find this and future issues informative and useful.

Sincerely,

Pigeon Lake Regional Wastewater Planning Committee

Leduc County

Wetaskiwin County No. 10

Summer Village of Grandview

Summer Village of Norris Beach

Summer Village of Crystal Springs

Summer Village of Sundance Beach

Summer Village of Ma-Me-O Beach

Summer Village of Poplar Bay

## Wastewater101: An Overview of Wastewater Management

There are three stages that together will provide a complete wastewater system for the Pigeon Lake area.

**Stage 1 - Treatment and Effluent Disposal**  
(Wastewater Treatment Facility)

**Stage 2 - Regional Transmission**

**Stage 3 - Local Collection**

Wastewater treatment is the key stage of the wastewater management process, however, appropriate treatment and effluent disposal capacity must be in place before collection and transmission to a treatment facility is possible.

Prior to completion of the upgraded wastewater treatment facility and a new regional transmission system, truck

haul remains an option for local waste removal. Once the treatment facility is initially built, residents who use septic fields may be required to change to a pump out tank and truck system under future local bylaws.

### **Treatment and Effluent Disposal**

- The treatment system will be developed and operated by the NEPL in cooperation with the Planning Committee member municipalities.

- Treatment facility upgrades are the critical first step to ensure a suitable treatment and disposal location for trucked wastewater.

- The options that were considered in the planning study for wastewater treatment included stabilization lagoons, aerated lagoons, conventional mechanical plants, and advanced mechanical plants. Options for effluent management included Pigeon Lake Creek and/or Pipestone Creek, Battle River or constructed wetlands with indirect discharge. Details on these options can be obtained through your municipality.

- The options considered in the planning report included either one main facility or two decentralized treatment facilities, or combinations of these options.

- Provincial funding (75 to 90%) may be provided for regional components of the system under the Alberta Municipal Water and Wastewater Partnership (AMWWP) Water for Life grant program.

### **Regional Transmission**

- This stage includes wastewater transmission from transmission facilities (pump stations) through pipelines to a regional treatment facility.

- Regional transmission systems will be developed to lower truck haul distances and provide future connection points for local collection systems.

- Regional pipeline systems will be developed and operated by the responsible municipalities on a shared basis.

## Local Collection (Public and Private)

- This stage deals with the transmission of wastewater from buildings to regional transmission facilities.
- Local collection options considered in the planning study included hauling, pressure sewer – grinder, pressure sewer
- effluent pump, conventional gravity or some form of a combined system (public).
- Property owners will be required to install individual systems (private) to connect to the municipal (public) collection system. This will be necessary once the treatment facility and regional transmission systems are in place.
- Local collection system(s) development will follow development of the regional transmission system.
- Each municipality will be responsible for determining when to develop local collection systems.
- This is the most significant cost stage for municipalities and it will be directly impacted by escalating truck haul costs.

## Project History: The 2007 Study

This project is the result of a desire by Pigeon Lake area residents to protect the quality of the lake water and public health by ensuring untreated wastewater is collected without allowing it to flow into or affect the lake. As development around the lake intensifies and properties change from seasonal to permanent, addressing the issue sooner rather than later is prudent.

In November 2006, the *Pigeon Lake Regional Wastewater Steering Committee*, (consisting of representatives from the Counties of Leduc and Wetaskiwin and the Summer Villages of Sundance Beach, Ma-Me-O Beach, Norris Beach, Crystal Springs, Grandview Beach and Poplar Bay as well as Alberta Tourism, Parks, Recreation & Culture, Alberta Environment

and Alberta Infrastructure & Transportation), contracted Associated Engineering to conduct a feasibility study to review regional wastewater solutions and to develop a strategy and solution to address wastewater treatment for Pigeon Lake communities not served by the NEPL.

The objectives of the study were to:

- Define logical project boundaries
- Provide conceptual cost estimates for options
- Provide recommended project phases
- Consider community growth requirements
- Provide recommendations for viable governance model(s).

The study identified key issues and gathered stakeholder and public input through a series of profiling interviews, community meetings and an information session. This information was included in the study's final report and carefully considered by the Steering Committee in the decision making process.

Common themes included increasing concern for the environmental health of the lake, concern over the growth and increasing density around the lake, that the status quo is not an option, and development costs and maintenance fees for the system are important. You asked us to devise a funding system that will be fair to and supported by all.

## Five Options

Five feasible regional wastewater options were developed consisting of various combinations of treatment process, treated effluent disposal locations, transmission systems, and methods of local collection. A comparative cost analysis of the options considering capital costs, operating costs and funding opportunities identified three preferred options.

A qualitative analysis of the three preferred options considering cost, implementation timing, operations,

governance, regulatory, aesthetic and environmental advantages and disadvantages indicated Option 1 presented the best overall future strategy.

In September 2007, the *Pigeon Lake Wastewater Steering Committee* approved the recommendation of the study and moved to proceed with the development of the Planning Committee, mandated to implement the study recommendations.

## Recommended Strategy

The recommended wastewater strategy for the Pigeon Lake area involves the development of a complete regional wastewater transmission system that will link individual property owners to the existing, but upgraded, NEPL treatment system. The existing NEPL collection system will remain unaffected by the proposed regional pipeline system. New regional pipelines will convey wastewater directly to the NEPL treatment facility. This will involve the following:

- Upgrade of the Mulhurst treatment facility to an aerated lagoon (or higher level of treatment).
- Development of a regional transmission system to service the north and south sides of the lake.
- Development of local pressure sewer collection system(s) in the existing developed areas and connection to the regional transmission system.
- Allowance for connections from future private development and local collection systems and which would connect to the regional transmission system.

## Estimated Project Cost

The project cost is estimated to be \$74,200,000, which is similar to the typical range of current costs for sewage storage, truck haul and disposal. The estimated total is broken down as follows:

Treatment Facility and Effluent Disposal \$6,500,000  
Regional Transmission \$20,200,000  
Local Collection (Public) \$16,200,000  
Local Collection (Private) \$31,300,000

Funds may be available through the Alberta Municipal Water and Wastewater Partnership (AMWWP) Water for Life grant program to support 75 to 90 per cent of the costs of expansion of the current regional transmission system.

Those currently using on-site disposal systems would see increased costs to upgrade to holding tanks and/or a piped collection system. No funding is available to support development of on-site (from building to property line) private systems for local collection from building to private property line. In current dollars, the cost for on-site private collection systems is estimated between \$8,000 and \$18,000 per lot, depending upon the circumstances.

## Where we go from here

Next steps for the Pigeon  
Lake Regional Wastewater  
Planning Committee:

- Identify a lead municipality within the committee membership
- Determine the future organizational structure
- Continue discussions with the Northeast Pigeon Lake Regional Services Commission (NEPL) to develop an agreeable service agreement and upgrade strategy
- Apply for provincial funding
- Develop systems as funds are available

Implementation of this project could take between two and five years. A time line will be developed over the next few months.

## Working together for you

Leduc County

Wetaskiwin County No. 10

Summer Village of Crystal Springs

Summer Village of Grandview Beach

Summer Village of Ma-Me-O Beach

Summer Village of Norris Beach

Summer Village of Poplar Bay

Summer Village of Sundance Beach

Alberta Environment

Alberta Infrastructure & Transportation