

# WASTEWATER TREATMENT UPDATE

For the Community of Lumsden



LUMSDEN, IN THE QU'APPELLE

## TIMELINE

**1969**... exfiltration lagoons built in the Qu'Appelle Valley East of Lumsden

**1993** to present... occasionally the volumes in the lagoons are high and the Town requests emergency discharge into the adjacent oxbow... Ministry of Environment communicated with the Town of Lumsden that the lagoons are undersized and do not treat sewage to current standards and that they should be replaced by 2014

**2007**... Associated Engineering completed a study recommending a mechanical treatment plant be constructed near the existing lagoons. The cost estimate was \$7.5 million dollars

**2008**... SaskWater investigated the costs of a lagoon system between Lumsden and Regina Beach and determined it would not be cost effective

**2010**... Work began with Associated Engineering to revisit the design of a wastewater treatment upgrade

**2011**... Letter from Ministry of Environment regarding the need for Lumsden to deal with the undersized and overloaded sewage treatment system

**2011**... Open House was held to share Wastewater Treatment Plant design with the community

**2012**... Preliminary Design by Associated Engineering for an Extended Aeration Mechanical Treatment Plant was completed and the results were a cost estimate of \$12.1 million in 2014 dollars including engineering and contingencies

**2012**... Lumsden hosted a regional meeting to determine if there



were opportunities for partners in a Regional solution for wastewater treatment and subsequently investigated opportunities with the City of Regina

**2013**... Town of Lumsden completed an application for a loan and associated grant from the Green Municipal Fund from the Federation of Canadian Municipalities. The wastewater treatment plant must meet tertiary treatment criteria to qualify for the loan. An example of such a plant would use a Membrane Bioreactor (MBR). The loan would be for \$6 million dollars with an associated \$600,000 grant. A coordinator was hired to run this project. A request for proposals was issued for an updated design of a plant that would meet the Green Municipal Fund criteria and reflect more current cost estimates

**2014**... Stantec Engineering has completed the preliminary design for a mechanical plant using a Sequencing Bioreactor (SBR) and filtration system with a sludge handling system. The capital cost estimate is \$14,963,000. Contingencies are set at 20% to be sure the community has sufficient protection against overruns and the engineering costs are estimated to be 10% for the total project

bringing estimated costs to \$19,650,000

**2014**... Town of Lumsden received a letter from Water Security Agency (WSA), now the regulator for sewage works, stating that WSA will be recommending against approving any new subdivisions within the Town of Lumsden until the wastewater treatment infrastructure is upgraded

### 3 Possible Options:

**Pipeline to Regina** – capital cost is estimated at \$23 million dollars not including engineering or contingencies

**Lagoons out of the Valley** – capital cost estimated at \$20 million dollars not including land purchase, engineering or contingencies

**Mechanical Treatment Plant** – capital cost estimated at \$14.9 million dollars with 20% contingencies and 10% engineering costs; the total project is estimated to be \$19.7 million

## Sewage Upgrade - Billing Implications

Council is planning on implementing an infrastructure surcharge on utility bills. In the short term, this new fee will increase reserve fund contributions by about \$350,000 per year to assist with funding of a new Wastewater Treatment Upgrade. As the new facility is built and money is borrowed, this portion of the sewer bill will be used to finance the loan. Council will consider an option for home owners to pay their capital portion up front and avoid interest accumulating on the borrowed money.

In the future, the cost of sewage treatment may be based on consumption similar to current water bills. These funds will be used to operate the sewage treatment facility and maintain the sewage infrastructure in the sanitary sewer system of the community.

Rural residents who hook up to the Town of Lumsden sewer infrastructure will also contribute to capital and operating costs in addition to paying for the mainlines needed to bring their sewage to the sanitary sewer system.

### Discharge Criteria:

The existing lagoon system cannot handle the current sewage volumes and infiltration indefinitely. Therefore, liquid effluent needs to be discharged. To meet the stringent criteria required by Water Security Agency for discharge into the Qu'Appelle River, the Wastewater treatment process must significantly reduce the Biochemical Oxygen demand, Nitrogen and Phosphorous contamination.

### BLOG:

<http://lumsden.blog.com>

## What Happens Next

Council of the Town of Lumsden wants to answer your questions and receive your feedback. Please submit comments and questions to the Town of Lumsden's Wastewater Treatment BLOG at <http://lumsden.blog.com>. You will receive answers from the Wastewater Treatment Committee or Town staff depending on the nature of the question. Answers to questions will be posted and available to all who are interested.

Council is eagerly awaiting the announcement that the New Building Canada Fund is open to accept grant applications. This is a funding partnership between the federal, provincial and municipal governments. Once the mechanism for submitting applications is announced, the Town will apply for matching funding (one third from each level of government) for a new wastewater treatment facility. If we are successful with this application, an engineering firm will be hired to complete the detailed design for the plant, which will take about six months. Construction will take twelve to eighteen months after the detailed design is completed.

In the meantime, the Director of the Community Planning Branch of the Ministry of Government Relations will not approve any new subdivisions for Lumsden. Homes can be built on lots for which developers already have approval or lots that already have a sewer line hook up. There are approximately 70 such lots in Lumsden.

## What Citizens Can Do

High water events over the past few years have added to the sewage treatment problem in Lumsden. The lagoons are designed for exfiltration and when there is a high water table they become infiltrate and water moves out of the ground and into the lagoons. Sewer lines through the community also have water moving into them at the joints. Some people have sump pumps in their basements that discharge into the sanitary sewer system. All three of these circumstances add volume to the lagoons which is a problem because when the lagoons are too full, the secondary cell is pumped into an adjacent oxbow. The Town will work on lining the sewer lines to reduce groundwater infiltration. Homeowners could be of great assistance by diverting their sump water out of the house and into the storm water collection system. To receive a design for such a system, please contact the Town Office or visit the website at [www.lumsden.ca](http://www.lumsden.ca).

Homeowners can also help by making sure they only use phosphate free detergents. This reduces phosphorus compounds in the sewage. Moving forward, this will reduce the cost of removing phosphate from the effluent in a mechanical treatment plant.