

Town of Aylmer's Wastewater Management

Town of Aylmer's Lagoons Facility

The Town of Aylmer is very proud of their all natural environmentally friendly waste water process facility. The lagoons treatment facility uses no mechanical treatment and is one of the largest natural lagoon systems left in the Province of Ontario, according to information provided by the Ministry of the Environment.

Each year approximately 1.1 million cubic meters (242,000,000 gallons) of wastewater is processed at our Aylmer lagoons. The sanitary sewer water, water and wastewater from every drain and toilet within the Town's limits, leaves homes and businesses and travels by gravity and/or with the aid of pumps to the main pumping station located on Elm Street in Aylmer. From there, the raw sewage is pumped to the Aylmer Lagoon's facility located on Rogers Road in the Township of Malahide where four separate lagoon cells are located, the largest (cell #1) being 7.8 hectares (19.3 acres) in size and the smallest (cell #4) being 6.4 hectares (15.8 acres). The raw sewage more commonly described as effluent enters lagoon cell #1 which is aerated, where it spends time being broken down and cleansed by micro-organisms before moving onto lagoon cell two, which is also aerated and then into cell three. In each lagoon cell it repeats this process of cleansing and purifying until it is finally ready to be either released directly into the watershed through the winter months or processed further through a series of sand filters during the months from April to November. The average process period from the time the raw sewage enters the lagoons until the treated effluent is released back into the watershed is about three months. Samples of the effluent are required to be taken weekly and sent to an accredited licensed laboratory for chemical analysis and have to meet the stringent perimeters as outlined in the Lagoon Facility's Certificate of Approval which is issued and imposed by the Ministry of the Environment prior to any release.



This photo displays one of the four Aylmer Sewage Lagoon Cells.

The Aylmer Lagoon System is a natural process that is its own living ecosystem and relies heavily on Mother Nature. The system relies on the ultra-violet rays from the sunshine along with the micro-organism's (certain aquatic bugs) to break down and cleanse all the effluent. Everything that is put down sinks, toilets, washing machine and dishwasher drains eventually ends up at the lagoons and directly affects the organisms living and working there.

The Town of Aylmer has been very proactive searching for ways of providing more cost efficient, environmentally friendly, and energy saving solutions for the Town's Sewage Treatment Lagoons. The Town, with approval from the Ministry of Natural Resources implemented an innovative natural bio-remediation product into the lagoon system in 2007 for a trial period of 2 years. The additive used is a totally natural carbon based product which aids in breaking down the solid sludge that forms on the bottom of the lagoons, thus suspending those solids which in turn along with the product itself provides a superior richer source of food for the lagoons aerobic micro-organism's. By providing additional food and a much more favorable environment for the aerobic micro-organisms, the aquatic bugs multiply substantially, thus reducing the sludge and cleansing the effluent more quickly and efficiently. Not only is the quality of effluent to be processed and released improved, but by reducing the sludge blanket substantially, this prolongs the need to have the sludge removed from the lagoons which is a very costly procedure. The procedure has also allowed for an overall 32% reduction in energy costs (hydro) used to operate the aeration system at the lagoons. The Town is currently working with the Ministry of the Environment to amend the current Lagoon's Operations Certificate of Approval to include provisions that will permit the Town to continue the use of innovative all natural bio-stimulant/bio-remediation products in the Lagoons process.

Other environmental friendly initiatives that the Town has implemented at the Lagoon's facility are as follows:

- Cell #4 which is primarily used for overflow storage has been transformed into a natural marsh that provides ideal habitat for a wide variety of wildfowl, birds, turtles, frogs etc. By keeping the water levels at an ideal level, the right combination of vegetation and water provides for ideal conditions which in turn attract a vast number of wildlife species to the Lagoons facility.
- All areas encompassing the Lagoons are of natural vegetation and mowing of all laneways etc. is prohibited until after June 30th to ensure that the waterfowl nesting habitat is not disturbed.

The number one challenge facing the Town of Aylmer's Lagoons Operations at this time as with most other lagoon facilities across the country is the continued use of phosphates in detergents and cleaning agents. A large number of household and industrial laundry detergents, cleaning agents and solvents still contain phosphates despite the fact that this particular additive is unnecessary and very detrimental to the lagoons operations and the environment. The Town has implemented an education program which includes sending out information notices periodically each year informing the community as to what they can do to help the environment and improve the operation and the health of the Town's Communal Sewage System, including recommending the use of "Green" phosphate free cleaning and detergent products.

The Town, through education, encourages all its residents and businesses to do the following:

- Please avoid the use of products containing phosphates.
- Be aware of how much water you use and how you use it.
- Think about what you send to the lagoons. The Lagoons System is a natural living ecosystem and is intended to clean up our basic wastes, not our toxic environmental harmful chemicals etc.



This photo displays Cell #4 that has been converted into ideal marsh conditions when not being used for excess effluent storage.

Combined Sewer Separation Program

The Town of Aylmer has endorsed, implemented and continues to support a multi-year, multi-phase combined sewer separation program which includes the construction of separate sanitary and storm sewers, thus eliminating combined sewers in the problem areas in Town where they exist. Also included in the scope of work is the replacement of aged cast watermains and full road restoration.

The separation of the Town's sanitary and storm sewer system's is of great benefit in many ways to the environment, the local water ways (ie. Catfish Creek Bradley Creek) and also for the Source Water Protection of Lake Erie.

These include the elimination of raw sewage flooding basements, overflows and increased reserve capacity and processing capabilities of the Town's Sewage Lagoons.

Under the stringent C of A (Certificate of Approval) process conducted and approved by the MOE (Ministry of the Environment) prior to receiving any authorization to proceed with all sewer separation construction projects, all environmental impacts and storm water runoff issues are dealt with using extremely high standards. As part of these high standards, storm water retention ponds are required to be constructed. These storm water management ponds are specifically engineered designed and MOE approved to provide for filtration, removal of

silt, chemicals etc. before any storm water enters the surrounding waterways (Catfish, Bradley Creeks) which empty back into Lake Erie.

Currently there are four strategically located storm management ponds within the Town of Aylmer. Furthermore, relatively newly engineered, designed and MOE approved storm interceptor manholes are being incorporated into the Town's storm water piping systems where deemed necessary as the Town constructs them to ensure the removal of any harmful additives to the environment such as various chemicals, salt, silt, and petroleum oils etc. This type of manhole acts as a superior filter of all storm water processed before entering into the natural waterways.

The Town of Aylmer has applied for and has been very successful in obtaining funding under the various Federal and Provincial Government Infrastructure Programs over the last several years, with the latest project being constructed in 2010, Fourth Avenue Combined Sewer Separation Construction Project. The overall program has eliminated a significant percentage of the remaining combined sewers within the Town of Aylmer. The Federal Government of Canada, Province of Ontario, Ministry of the Environment, Elgin/St. Thomas Health Unit and the local Conservation Authority have strongly endorsed the Town's initiatives when it comes to moving forward with the separation of the Town's combined sewers and as witnessed by the recent funding received for such projects the past few of years (\$5,000,000.00 plus in funding). This type of project has been deemed very viable and very environmentally responsible by all of the aforementioned agencies.

The Town's Combined Sewer Separation Program continues to be a very imperative and integral part of the Town's overall Waster Management and Infrastructure Renewal moving forward.

If you require any additional information concerning the Town of Aylmer's Waste Water Management and programs please contact me.

Yours truly,

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