

## Wainfleet Geotechnical Study

The Township and Region are preparing to carry out geotechnical work in the Wainfleet Lakeshore area. This will involve drilling holes along the Lakeshore Road right-of-way to gather core samples of the underlying soil and rock. This work is being done to provide a better understanding of rock conditions and allow cost estimates for the Lakeshore Water and Wastewater Servicing Project to be refined.

The rock drilling is a preliminary step to gather data that will be used in the detailed design stage of the project. It does not represent the beginning of the construction phase for sanitary sewers and water mains. Construction can only begin after the Minister of the Environment's approval of the Wainfleet Servicing Environmental Assessment has been granted and after the detailed design and tendering stages are completed.

AMEC Earth & Environmental will be carrying out fieldwork along Lakeshore Road, Morgan's Point Road, Belleview Beach Road, Secord Avenue and Harbourview Road, as well

as sections of Rathfon Road and Bessie Road. Other small sections may be included. This work is expected to begin in late August or early September and should be completed by the end of the first week of September.

The fieldwork will consist of drilled boreholes to varying depths. The majority of the boreholes will require a drilling rig to be stationary at one location for approximately 15 to 45 minutes. Where possible, boreholes will be drilled through the road shoulder to limit traffic disturbance. Where this is not possible, adequate traffic control will be used to ensure safe working conditions.

Every effort will be made to ensure that borehole locations are chosen to minimize inconvenience (e.g.: away from driveways and main intersections). Prior to drilling, underground clearances will be located and marked to avoid damage.

If you have any specific technical questions related to this study, contact Ivan Severinsky or Jane Doucette of Amec at (905) 687-6616. ■

*"In the interest of the environment and public health, the resolution of this problem is long overdue."*



*"Wainfleet Council should petition the Regional Council to conduct a study to investigate and resolve the sewage problem in Wainfleet."*

*1995 Wainfleet Community Strategic Plan*



Niagara Region

Building Community. Building Lives.

There are a variety of ways to contact the Region to voice your opinion or share your thoughts/concerns over anything happening in your community related to the water and sewer issue, including the following: [www.regional.niagara.on.ca/wainfleetwater](http://www.regional.niagara.on.ca/wainfleetwater)  
Bob Steele, Project Manager, Niagara Region (905) 685-4225 ext.3745

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## Our Goal

It is our goal to work with the community to find a solution that has their support and is acceptable and affordable. It is hoped that through this publication, as well as other activities, this remains an open and inclusive process; one that relies on valuable two-way communication.

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Niagara Region

## Wainfleet Lakeshore Servicing Update

Welcome to the fourth edition of the Healthy Water - Healthy Environment newsletter. Niagara Region's Public Works and Public Health Departments have launched this publication to keep you up-to-date on the issues surrounding the public health and water and sewer servicing issues affecting the lakeshore residents/property owners of Wainfleet.

### Is There Actually a Problem?

What's the problem in Wainfleet? There isn't really a problem, is there? My septic system is new, why do I need to worry? Why wasn't anything done years ago? Why does anything have to be done right now?

These are just some of the questions that have been raised regarding the Wainfleet Lakeshore servicing project.

In ongoing discussions with lakeshore residents, it has become clear that many people are not convinced that there is a problem in Wainfleet. However, some quick research will show that problems associated with water and sewage systems are well documented.

Ten years ago, the 1995 Wainfleet Community Strategic Plan was created (The Plan is available at the Wainfleet Municipal Office). This community-driven exercise, completed with extensive input from residents, recommended nine infrastructure projects. **Topping the list** was the need for a sewage treatment system and a water treatment system.

Excerpts from this document clearly state that serious health and environmental problems existed and Town Council faced the daunting task of addressing them. However, with no cost effective solution at their disposal, Town Council put both recommendations on hold.

In 1998, the Wainfleet Community Strategic Plan was revisited and the Wainfleet Community Strategic Planning Wastewater Committee was formed. This committee assessed wastewater treatment

in Wainfleet, focusing primarily on lakeshore communities. The assessment by this committee indicated that there were definitely problems that needed to be resolved, and that many residents no longer trusted their wells as a source of drinking water.

In 2001, Wainfleet Town Council requested that the Niagara Region Public Health Department conduct a sanitary survey in the Long Beach area. This survey identified the potential for significant public health concerns and recommended some form of communal or municipal sewer system, as well as additional sanitary surveys of similar sites along the Lake Erie beach front in Wainfleet.

Since then a number of additional studies have been completed, each resulting in similar conclusions and recommendations. Significant problems, directly related to the lack of sewer and water systems, have existed in Wainfleet for decades, however they are bordering on a crisis today. The problems are now so widespread that their effects are on the verge of creating significant health issues and are causing environmental damage. ■

### Why just the Lakeshore?

Some questions have been raised, as to why it is just the lakeshore communities of Wainfleet that are affected by the water and sewer servicing project. The reason for this is the number of people concentrated along the lakeshore.

The Township of Wainfleet is geographically extensive, but thinly populated. The population density for the Township as a whole is less than 30 people/square kilometre (km<sup>2</sup>). However, Wainfleet's population is not evenly spread out over the entire geographic area. The lakeshore area has a population density that is more than 10 times greater than the rest of Wainfleet and increases in the summer due to visitors and cottages. The more people there are in an area, the harder it is for septic systems to work correctly, and the higher the potential for health risks. ■

Lakeshore density	153.6 people/km <sup>2</sup>
Wainfleet density (excluding lakeshore)	14.5 people/km <sup>2</sup>
Overall Wainfleet density (including lakeshore)	28.8 people/km <sup>2</sup>
BASED ON 2001 CENSUS INFORMATION	

## Notice of Completion and Review Period Extension

An Environmental Study Report (ESR) was prepared to document the planning and decision making process followed for the Wainfleet Servicing Project. Notices of completion to all affected property owners and review agencies were sent out during the week of July 18th, 2005. The Provincial government requires a 30 calendar day review period to allow area residents to

review the study documents.

Because of a request for additional time, the Township and Region agreed to provide an extension of the public review period. As a result, the public review period will now lapse on August 31, 2005.

Copies of the ESR were been provided to the Regional Clerk's Office at Niagara Region (2201 St. David's Rd.) and Wainfleet Township

Offices. Copies were also accessible at the main public libraries in Wainfleet, Welland, Port Colborne and Buffalo. Documents were available to community residents on the "sign-out and return" basis and through Public Advisory Committee members (see back page for names and contact information). ■

# Septic System Failure

There are two ways that a septic system can fail. The first, hydraulic failure, often occurs when the septic tank reaches capacity. The septic tank is where solids settle out of the water and anaerobic digestion begins. If the tank is full, new sewage has little time to settle, and moves on quickly into the absorption field. Solids can block tiles and even break out onto the surface, leading to smelly puddles on the grass or liquid leaking out around the edges of the raised bed. One of the first signs of overloading is when toilets do not flush well or start to bubble over. Hydraulic failure is the most easily detected type of septic system failure.

The second type of septic system failure is less obvious. This type is known as treatment failure or soil overloading. Over time, the soils or medium used in a septic bed reach a maximum capacity and the build up of micro-organisms and other biotic material makes it impossible for the system to function properly. In this type of failure, the liquid that flows from the septic tank passes through the tile field with no further treatment. It can seep through the soil into the lake and groundwater supplies. This is the main concern along the Wainfleet lakeshore - wastewater is flowing from houses and cottages and passing with little or no treatment, through septic beds and into the groundwater and the lake.

It is estimated that half of the septic systems in use along the Wainfleet lakeshore area are older than 25 years. These older systems are typically not up to current standards. They were installed at a time when less was known about the impact to water quality and systems were often substandard in design and operation. Tile beds were often too small or constructed with poor material, and systems were sometimes located too close to wells.

To further complicate things, the majority of the soil along the Wainfleet lakeshore is clay based, a very poor medium for septic systems. With this type of soil it is necessary to use a raised septic bed, where the tiles are laid out on imported medium, through which water filters before hitting clay. Unfortunately, no matter what is done, septic beds have a finite lifespan. Even with regular care and good maintenance, a system receiving moderate to high use is only good for approximately 20 years before the septic bed needs to be relocated and replaced.

Occupancy is another concern in Wainfleet. This refers to the number of people using the system and whether it is used seasonally or year-round. While the Wainfleet Lakeshore community still has a large percentage of seasonal cottages, more and more properties are being converted to permanent residences. When this happens, unless an addition is made to the original cottage requiring a building permit, there are often no changes made to the septic system. This can result in over use of the system.

Septic tanks should be inspected regularly and pumped out every three to five years.

## The Current Situation



Septic system effluent contaminating the underground water supply (aquifer) could introduce dangerous contaminants such as E. coli. into your well water, as well as to Lake Erie's lakeshore environment. This contamination could cause severe health-related impacts.

## Doing Nothing is Not an Option

Municipal water and sewer services do not exist in the Township of Wainfleet. With the exception of the Long Beach area, all communities rely on private water wells and individual on-site septic systems for sewage disposal.

Studies conducted by Niagara Region and the Ministry of the Environment have concluded that a significant number of private wells are contaminated with water-borne bacteria. As a result, residents using raw groundwater resources are potentially at significant health risk due to contamination.

Some residents suggest that only a few properties are contributing to this problem. Studies conclude otherwise. One of the Niagara Region's Public Health Department's functions is to identify potential risks to health, educate the affected portion of the public and advocate for elimination of that source. "Status quo is not an option," said Dr. Robin Williams, Medical Officer of Health for Niagara Region. "The level of contamination in private drinking water

supplies in the affected area presents a significant risk to the health of the residents and is simply unacceptable."

In the short-term, every effort is being made to inform Lakeshore area residents about the risk to health and steps to take to protect themselves and their families. Despite common knowledge about private well water and groundwater contamination, it is discouraging and alarming to learn - through the results of MacViro's second study - that some residents continue to consume untreated or improperly treated private well water placing their health, the health of their families and visitors at risk.

When problems have been brought to the Department's attention, public health inspectors have issued orders for corrections to septic systems. In addition, renovations, home alterations, expansions and new building requests are assessed against Ontario Building Code standards. Most often, they are rejected. Home and property buyers who invest in new septic systems

on properly sized lots are advised that a permanent water and septic servicing infrastructure solution is required for the Lakeshore area.

Public health inspectors are requested to undertake lot inspections on resale properties by realtors to advise prospective buyers about septic system concerns.

In the long-term, a permanent community solution is required and the Medical Officer of Health looks to the Environmental Assessment process to identify the appropriate solution.



## Legal Responsibilities

A Public Health Department and its Medical Officer of Health are meant to act in a proactive, preventative manner whether through education, programs and services or intervention. The Health Protection and Promotion Act requires the Medical Officer of Health to inspect for health hazards and gives wide discretion to make orders or give directions to prevent, decrease and eliminate health hazards.

The Medical Officer of Health has authority through the Health Protection and Promotion Act to make "orders" against persons whose septic systems are found to be leaking or otherwise causing a health hazard. Currently, orders typically require the repair or replacement of septic systems depending on what steps are needed to eliminate the health hazard. Public

health inspectors have been applying this legislation on a case-by-case basis in the affected area.

However, for many properties in Wainfleet, an individual solution is not possible because of many factors (ie: lot size, the lack of adequate attenuation, age of septic system, etc.) and consequently a community-based infrastructure solution is required to correct the systemic septic system problem.

The Ontario Drinking Water Quality Standards identify that private well water supplies are the responsibility of the property owner. However, once a potential or real health hazard is identified the Medical Officer of Health has wide discretion to take the necessary steps to ensure that public health is not at risk.



Based on current MOE guidelines, significant portions of the study areas would be defined as hydrogeologically sensitive. As such, the MOE would not normally support individually serviced developments in these areas.