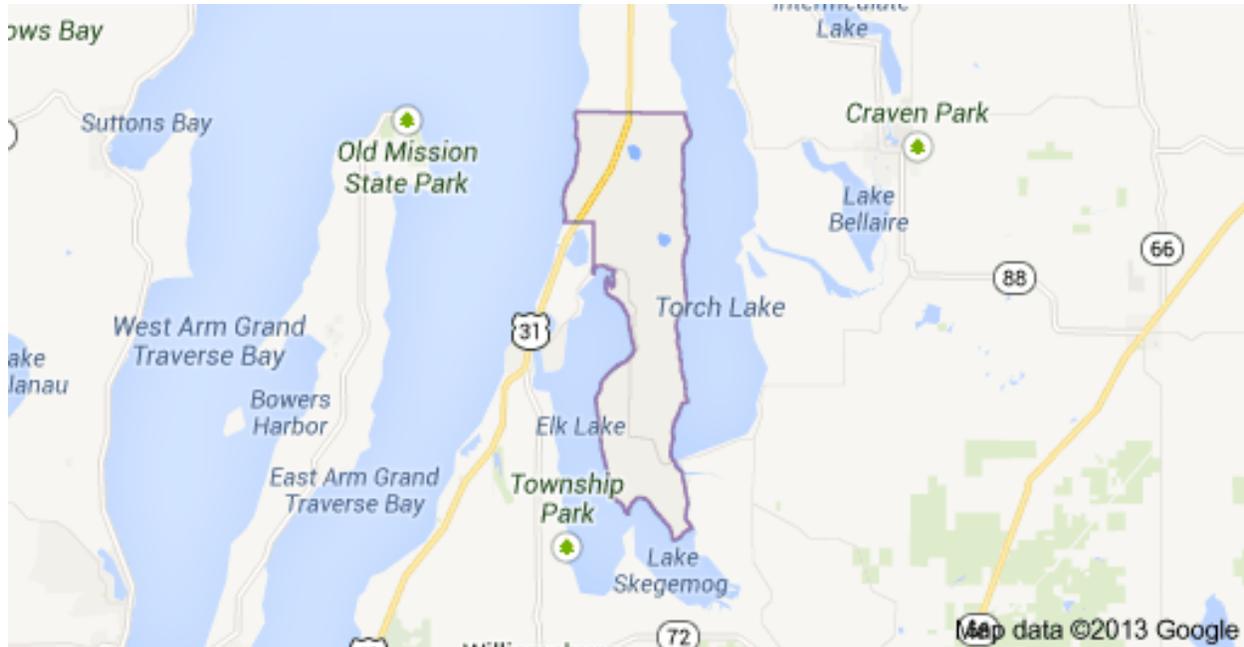


**MILTON TOWNSHIP ORDINANCE – ANNUAL REPORT
OCT 2012 THROUGH OCT 2013**



Introduction:

Milton Township lies in Antrim County, bordered by Lake Michigan, Elk Lake, Lake Skegemog and Torch Lake. These surface water resources give relevance to implementing an ordinance that evaluates existing water and wastewater systems serving private and public facilities in order to protect and preserve these natural resources. The Milton Township **Septic Inspection and Property Transfer Ordinance** was adopted, October 8, 2012, to *“protect public health and to prevent or minimize the degradation of groundwater and surface water quality by malfunctioning sewage treatment and disposal systems (STDS) and to assure safe water supplies...”* The Time of Transfer (TOT) ordinance also acts as a mechanism to provide information, to buyers and sellers of real estate, regarding the operational status of existing water and wastewater systems serving private residences and commercial facilities.

The ordinance requires an inspection of the water and wastewater systems prior to the time of property transfer. In order to assure consistency of inspections and accurately determined compliance with the District Sanitary Code, Milton Township entered into an Inter Governmental Agreement (IGA) requiring the Health Department of Northwest Michigan (HDNW) to conduct all TOT evaluations and to annually report to the Township, upon their request.

Section I, A (2.), states in part:

“Provide the Township with an annual report, at no cost to the Township, regarding the number of evaluations conducted in the Township in the preceding year and the number of evaluations that failed to meet the standards of sections 5 and 7 of the Ordinance”

The following report outlines the findings of the first year of the ordinance and suggests some improvements to enhance the information gathered through the process.

Findings:

From the standpoint of timely delivery of service and identifying potential problems, we believe the program to be a success. From October 2012 to October 2013 there were forty-four (44) TOT evaluations conducted. Of those, three (6.8%) required permits to correct failed water and wastewater systems.

Although only three (3) systems were considered **failed** and needed to apply for permits to correct failing or inadequate water and wastewater systems, there were numerous other deficiencies and recommendations documented by this department. In addition, several reports provided information regarding future uses of properties and what would be required to change, modify or rebuild a structure.

Water Supply Systems:

Most water supply systems reviewed were in substantial compliance with Part 127 of Act 368, **Michigan’s Well Construction and Pump Installers Code**, and were found to have acceptable water quality. There were some deficiencies identified and appropriate recommendations were made by HDNW field staff on the final report.

Water Quality – Generally, water quality was found to be very good. Eighty-eight (88) water quality tests were collected by HDNW field staff, which were analyzed for bacteriology and partial chemistry parameters. **Nitrates** ranged from ND (non Detect) to as high as 7.79 mg/L and **Nitrites** were found in one sample at .18mg/L. These results are below EPAs Maximum Contaminant Levels (MCL) for these parameters, 10mg/L and 1mg/L respectively. **Bacteriology** samples were found to be ND in all but one case. There were other results that showed elevated results in aesthetic water quality analytes such as; Calcium (Ca or hardness), Iron (Fe), Sodium (Na) and Chlorides (Cl).

Well Construction – Most well construction elements were in compliance with Part 127 and very few construction issues were cited. There were identified, however, non-compliant old-style overlapping well caps, unprotected suction lines, some wells observed in well pits (one flooded), and one system where field staff were unable to locate pressure tank.

Location – Wells must be properly isolated from a variety of potential sources of contamination to reduce their vulnerability of becoming contaminated. During inspections, several wells were found to not be properly isolated from septic systems and two wells were unable to be located (buried well

head). These issues were noted and recommendations were made to conduct routine water quality monitoring and to relocate the well and/or septic system when replacing either system.

Required Action – Replacement of a severely compromised well installation. A well was discovered that failed to substantively meet Michigan’s well construction code and which posed a public health threat (no well rerecord, shallow well of unconfirmed depth, well casing under direct suction, isolated 25’ from a septic tank). This well was not approved in the context of the evaluation and a permit was required for replacement.

Wastewater:

A majority of systems evaluated were found to be functioning properly and met the code requirements when installed. Below are some of the issues identified which do not meet the conditions of failure, as outlined in the District Sanitary Code, but which were reported and provided with recommendations, along with the two system that were not approved in the final evaluation report.

Site Conditions – Systems were identified that were installed in areas with site limitations that could contribute to poor system performance and/or premature failures. Most system were installed in favorable conditions, but a small number were installed in areas that presented shallow seasonal high groundwater conditions, unacceptable soils and sites with significant space limitations.

Construction /Location– Proper STDS design and installation can extend the life expectancy of systems, provide for enhanced system performance and prevent contamination of surface or groundwaters. During the evaluations, several systems were noted as having construction deficiencies or being improperly designed for site conditions:

- Installed in poor soil conditions
- Installed without proper isolation to seasonal high groundwater
- Undersized drainfields
- Unable to locate drainfields or confirm the size of final disposal area
- Inadequately sized septic tanks
- Septic tanks installed too deep without proper access
- Unable to locate outlet baffle
- Leaking septic tank
- Substandard or damaged septic tank risers and lids
- Lack of “traffic-rated” septic tank lids in driveways
- Pump seal failure
- Improperly functioning distribution box
- Improperly isolated from wells, surface water and property lines
- Drainfield located partially on neighbor’s property
- Drainfield suspected of partially located under a garage

Functional Status – Even considering the issues above, most systems were functioning satisfactorily and were not creating a public health issue. There were some systems, however, that were failing, were in a

state of failure or were being compromised by external factors. Although not representing a failure, several systems were identified as having a root intrusion problem or a suspected root intrusion problem. Root intrusion can lead to premature failure of a septic system, plugging lines and working into septic tanks and pump chambers. The more serious issues encountered were effluent ponding and saturating a drainfield and a leaking septic tank.

Required Action – Replacement of failed drainfield and replacement of leaking septic tank. Hand auger borings revealed that one of the drainfields evaluated was completely saturated and wastewater was present above the stone. Although not present at the ground surface during the evaluation, evidence of ponding existed and the ground above the drainfield was spongy and soft. Additionally, a septic tank was discovered to be leaking as evidenced by the effluent level in the tank being well below normal operational level, appearing to be leaking out the mid-seam of the tank. The evaluations failed the systems and a permit was required by the Health Department for correction.

Program Improvements:

Over the last year, we have identified the need to change the process slightly to align better with our database tracking program and to clarify, for the consumer, the outcome of the report. In June of 2013, we changed the **Water Supply/Sewage Disposal Evaluation Report (EH-09)** to include a distinction between required and recommended actions. At the bottom of the form are two new check boxes along with examples of these categories of response. We also, in August, expanded the notes sheet to provide more space to record information during the evaluation.

In discussions between Milton Township representatives and HDNW staff, it was identified that there are instances where actions are being taken prior to the final report that are not being recorded. A common example of this is where an unacceptable water result is received and the well is subsequently disinfected and resampled. We are looking at ways to record this information along with the follow-up activity.

We also identified that there is a desire by the Township to have records of follow up activities conducted to resolve failed systems. This may take the form of permit documentation, final inspection documentation and correspondence from the agency. We are planning to provide this information to the Township in the future.

Conclusions:

Since October 8, 2012, Forty-four (44) evaluations were conducted by the Health Department of Northwest Michigan under Milton Township's TOT ordinance, resulting in numerous recommendations to improve both wastewater and water supply systems. Three (6.8%) evaluation requests resulted in failure and the HDNW requiring applications for permits to replace those systems.

Overall, the implementation of the Ordinance has been a positive experience, both in working collaboratively with Milton Township and from a service delivery standpoint. Functionally, our staff have been able to provide evaluation services in a timely manner and have documented and addressed issues both through recommended and required actions.

As part of this report, an evaluation of wastewater system age was conducted and compared against the state average of system life expectancy. There were Forty-four (44) systems total, eleven (25%) of which had no permit documentation and likely predated the 1968 sanitary code for Antrim County or were installed without permits. The average age of the remaining Thirty-three (75%) systems was 22.4 years (ranging from 1 to 44 years). This is very close to the state average of 23-25 years for an on-site wastewater system and is believed to be noteworthy when considering the need for mortgage evaluation programs.

A review of evaluations has shown that, for the most part, water and wastewater systems are functional, but that there are problems in some cases needing action. Very few systems resulted in no recommendations reported, indicating that, although functioning with respect to the definition of failure, there are construction or unseen performance issues. This may be directly related to the age of the system, either by compliance issues with sanitary or well construction code requirements or the systems functional status.

After the first year, we have identified areas in our process that could be improved and planning has already begun to implement quality improvement measures. We will continue to work closely with Milton Township representatives to provide the information necessary to fulfill the purpose of the **Septic Inspection and Property Transfer Ordinance** and to protect the citizens and environment of Antrim County.