

2019

# Milton Township Time of Transfer (TOT) Ordinance Annual Report



## INTRODUCTION

Milton Township, located in Antrim County, is a sensitive ecological region due to the vast water resources of Lake Michigan, Elk Lake, Lake Skegemog, and Torch Lake. The richness of these water sources are a driving force behind the local economy, and the protection of these resources are vital to the area.

On October 8, 2012, Milton Township took an important step in the recognition of these resources by adopting the Septic Inspection and Property Transfer Ordinance (commonly referred to as time-of-transfer (TOT) or point-of-sale (POS)). The adoption of this Ordinance was driven by the desire to protect these natural resources, to provide information to owners and purchasers of properties using on-site water and wastewater systems, and to raise awareness of ways to improve and extend the life expectancies of on-site systems.

This is accomplished through evaluations of residential and commercial on-site water supply systems and on-site sewage treatment and disposal systems (STDS) by trained Environmental Health staff of the Health Department of Northwest Michigan. The resulting evaluation report includes a detailed assessment of the condition and functionality of water and wastewater facilities serving the property, a determination of compliance with relevant regulations, any recommendations to improve existing systems and, where threats to environmental or human health exist, require corrections to mitigate environmental and public health impacts.

To assure consistency of inspections and compliance with the federal, state, and local regulations, Milton Township entered into an intergovernmental agreement (IGA) with the Health Department of Northwest Michigan (HDNW). The IGA establishes a relationship between the two governmental entities and clearly defines the roles of each in executing the Ordinance. Outside of inspection activities, HDNW has an ongoing obligation to provide Milton Township with a report of its finding on an annual basis. Annual reporting is intended to keep the Township informed on the outcomes of the evaluation process, and to discuss where improvements can be made to the program.



Section I, Subsection A (2.) of the intergovernmental agreement states that HDNW is responsible for:

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

Section five (5) of the Ordinance covers both required STDS evaluations, and exemptions to the requirement. Section seven (7) covers the evaluation application and fee.

This document serves as the 2019 annual report for the Milton Township TOT Ordinance, satisfying Section I of the IGA. This document also provides information beyond that required under the Ordinance in an effort to offer a more comprehensive understanding of the program, and its outcomes and recommendations for enhancement of data collection and program improvement.

## METHODS

In 2019, the seventh year since the enactment of the Ordinance, 32 evaluations were conducted. Since the implementation of the Ordinance in October 2012, a total of 320 evaluations have been performed by HDNW in Milton Township. Prior to sale or transfer, all properties in Milton Township must have an evaluation of the water and wastewater supply performed unless one of the following conditions is met:

- A new STDS has been installed within the past 10 years
- The STDS has been evaluated within the past five years and was found to be functioning properly at that time
- The seller meets the requirement for an exemption under Section 5

When conducting evaluations, Environmental Health staff inspect the water supply system(s) and wastewater system(s) serving the property. Water supply systems are evaluated by determining compliance with Michigan’s Water Well Construction and Pump Installation Code (*Part 127 of Act 368, PA 1978*), the District Sanitary Code serving Antrim, Charlevoix, Emmet, and Otsego counties, and Michigan’s Safe Drinking Water Act (*Act 399 of Act 368, PA 1978*).

Water samples are collected from a tap used for drinking water purposes, and analytical results are compared against the Environmental Protection Agency’s drinking water quality standards. Items of non-compliance are identified and required to be upgraded if the deficiency poses an imminent public health threat to those using the water supply system for potable use.

The sewage treatment and disposal system evaluation consists of determining the location, size, and condition of the existing septic tank(s) and pump chamber(s), location of the existing drainfield and documenting the design, size, and functional status, conducting a soil analysis, determining the seasonal high groundwater elevation, isolation to surface water(s), and future replacement options. These data, along with other requirements under the District Sanitary Code, are used to determine the property’s existing and future compliance with the Code with respect to on-site (and possible off-site) systems.

Together, the information gathered for the water supply and wastewater systems is used to develop a comprehensive report and site plan, document existing facilities, and indicate compliance status of these systems. Additionally, all reports are concluded with marking the following categories (if applicable):

**Required Action:** Where items of non-compliance pose a direct threat to the environment and/or public health

**Recommended Action:** Where the enhancement of existing systems could bring systems into compliance, extend the life expectancy of systems, enhance the ability to maintain systems, increase the safety of systems, or reduce impacts to the environment

**Restricted Future Use:** Where the site is non-conforming with respect to the District Sanitary Code, and any future improvement of the property would require the use of an off-site drainfield location

## DISCUSSION

In January of 2017, a revision to the 2007 Sanitary Code was passed. In the 2017 Code change, several changes in Code requirements and definitions would possibly impact evaluation outcomes of this Ordinance. Most notably, the definition of failure has been changed to state, *“Where the drainfield aggregate of a sewage treatment and disposal system has hydraulically saturated or effluent from a sewage treatment and disposal system is exposed to the surface of the ground, backing up into a structure, or is permitted to drain onto the surface of the ground of into any lake, river, storm sewer, or stream, or where the seepage of effluent is endangering a public or private water supply or where a public health nuisance is created by a system improperly constructed or maintained.”*

When reviewing results of the water and wastewater inspections, it is important to note that the District Sanitary Code has undergone several revisions since the initial code in 1964. Sanitary code changes impact regulatory approval criteria for properties, design, and construction requirements, and can change the compliance status of water and wastewater systems. This is important to understand as many systems were installed lawfully under previous codes and regulations; non-compliance with current regulations does not imply that these systems are creating public health threats or environmental impairments. The strength of the evaluation process is to determine the functional status of existing systems and the potential future use of the property. Where existing systems are found to meet the definition of failure, a replacement septic permit will be required. If a replacement septic permit is not applied for, HDNW will enter into enforcement actions until the system has been replaced or an alternative solution has been identified.

The changes in the District Sanitary Code impact both on-site water supply and on-site sewage treatment and disposal systems. One of the code changes over time is an increase in absorption area required per bedroom. With this increase in absorption area, most of the systems installed prior to 2007 do not meet current Code requirements with respect to absorption area size. A water supply or wastewater system is only required to come into full compliance with the Code at the time changes of

use are proposed to the home, most notably with living space additions or complete replacement and reconstruction activities.

## RESULTS

### Water Supply Systems

In 2019, 32 water supply systems were evaluated. Evaluations consist of a file review to determine whether the systems were installed under a permit issued by the Health Department, if there is a well log detailing the installation of the well, if the well is properly isolated from potential sources of contamination, and if the construction of the well and pumping equipment meet state requirements. Evaluations also include the collection of a bacteriology and partial chemistry water quality sample from a drinking water tap. Table 1 shows the findings of the evaluations.

**Table 1: Results of 2019 Water Supply Evaluation**

Finding	Number of Cases	Percentage of Total
No well log	17	53
No well permit	8	25
Overlapping well cap	4	13
Cracked well cap, collar, or casing	4	13
Well location unverified/Buried wellhead	3	9
Inadequate isolation to septic or fuel oil tank	2	6
Coliform bacteria present	1	3

When reviewing compiled water sample results, it was determined that nitrates ranged from less than 0.1 mg/L to 9.76 mg/L (or parts per million). The Environmental Protection Agency has established a maximum contaminant level (MCL) of 10 mg/L for nitrates in drinking water. This MCL was not exceeded in any evaluations in 2019.

Coliform bacteria was present in one water sample. Following chlorination and subsequent flushing of the well, the water supply was non-detect for coliform bacteria. Possible causes of coliform bacteria in water supplies can be attributed to work being performed on the water supply system without chlorination afterwards, and the well not being used routinely.

For several evaluations, the pressure tank and associated water well plumbing were not available for inspection. In the majority of these cases, the pressure tank was located in the crawl space and was not accessible for inspection without an undue burden on the homeowner/realtor to make the crawl space accessible. Overall, the majority of plumbing equipment, pressure tanks, and water plumbing inspected appear to be in good working condition.

## Wastewater Systems

In 2019, 32 wastewater systems were evaluated. Of these, 31 were private on-site systems, and one was a community wastewater system. The evaluation includes a record search for any previous septic permits issued for the property, and an on-site assessment of the various components of the system. The on-site assessment includes the following: septic tank(s), pump chamber(s) and components, dry wells, block trenches, conventional trenches, drainbeds, elevated systems (mounds), off-site systems, or advanced treatment systems. Inspections include determination of horizontal and vertical isolation compliance with the District Sanitary Code, evaluation of soil conditions, and the functional status of the system at the time of the inspection. Table 2 shows the findings of the evaluations.

**Table 2: Results of 2019 Wastewater Evaluation**

Finding	Number of Cases	Percentage of Total
Drainfield undersized for current number of bedrooms	23	72
Septic permit not available	7	22
Drainfield <4' to groundwater	4	13
Drainfield dimensions not confirmed	3	9
Groundwater or soils non-compliant with Code	2	6
Suspected drywell or block trenches	1	3
Drainfield <100' to surface water or high water line	1	3

A high number of septic tanks were not available for inspection, and this is primarily due to two factors. First, if the septic tank has been pumped within five (5) years of the evaluation, the septic tank is not required to be pumped again. Very few of the septic tanks pumped within this five-year span were available for inspection. Second, the inlet of the septic tank was left uncovered more often than the outlet lid, which does not allow for a complete evaluation of the outlet of the tank to determine if an outlet baffle and effluent filter are present.

In 23 evaluations (72%), the existing sewage treatment and disposal system was undersized for the home. This can be attributed to several different factors, with the primary factor being required absorption area changes in the 2007 District Sanitary Code. In addition, several of the homes had an increased number of bedrooms from when the system was originally permitted. Finally, several of the systems were not adequately sized for the soil conditions found on-site at the time of inspection.

Waterfront properties comprised 14 evaluations of the total 32, or 44 percent. These properties have a greater potential of contaminating surface water and generally have a higher seasonal groundwater level than non-waterfront properties. Overall, four (4) properties had drainfields that were improperly isolated to groundwater, with four feet being the minimum separation distance. Of these four properties, three were waterfront lots. In many cases, the groundwater elevation level noted on the

original permit differs from what was measured on-site. Overall, HDNW has found that groundwater and surface water levels have been increasing in the past several years compared to the last decade.

Of the 32 wastewater systems evaluated in 2019, 7 (22%) were found to have no records of permitting or installation. Of the systems where records exist, the average age of systems evaluated was 23 years. Assuming the systems without records represent those that were installed prior to the first sanitary code in 1964, the continued operation of these systems would suggest that these systems are greater than 50 years old. Historically, many of the properties evaluated have experienced only seasonal use, thus only being used at a fraction of their system design capacity. Other potential explanations for the lack of information may be the result of poor record keeping or systems installed without permitting. In these cases, it is impossible to accurately determine the age of the system.

Regarding functional status of the STDS, many of the homes inspected are not year-round, full-time residences. That is an important factor in determining the functionality of the existing wastewater disposal system. Many of the homes inspected had not been occupied for quite some time, or had only seasonal or weekend occupancy for the life-span of the system. A full functional analysis of the STDS cannot be completed for a system that has not been utilized under normal operating conditions or has not seen peak demand use.

### Required, Recommended, and Restricted Actions

As mentioned in the methods section, the report can include marking any required, recommended, or restricted actions, if applicable. Table 3 shows the findings of the evaluations.

**Table 3: Number of Required, Recommended, and Restricted Actions of 2019**

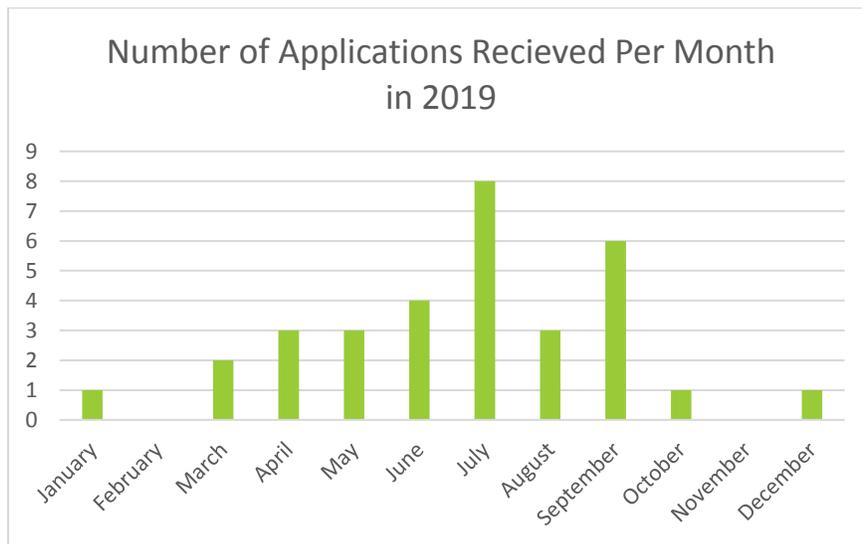
Finding	Number of Cases	Percentage of Total
Required	0	0
Recommended	12	38
Restricted	2	6

Overall, 12 (38%) of the homes evaluated had associated recommendations to extend the life expectancy of the water supply or wastewater systems. These recommendations ranged from updating a pump chamber with approved lid, riser, and high-water alarm, to trimming vegetation to reduce root intrusion into the drainfield, to replacing well caps with a newer vented style, and to replace cracked well caps or collars. Specific recommendations were made for each home evaluated (if applicable), along with a general comment for all homes that HDNW recommends pumping the septic tank every three to five years. The recommended pump-out for STDS maintenance was not commonly known among buyers and sellers, and regular pump-outs can help maintain longevity of the system.

Of the 42 evaluations conducted, two (6%) sites had restricted future use. In these cases, there were site factors that did not allow for additional bedrooms to the existing home or replacement of the home without a suitable off-site drainfield location or, in one case, the installation of an Advanced Treatment System. The site factors included soils non-compliant with the District Sanitary Code and/or seasonal high groundwater less than 12 inches. The restricted future use of the site provides information for the buyer and seller and is only relevant when changes of use to the existing home are proposed (changes of use include remodeling greater than 50%, proposing additional bedrooms, and tear down/rebuild). Typically, this category is used when the existing home and STDS are operationally functional and there is no requirement to upgrade or replace the system at the time of the evaluation.

### Seasonality and Turnaround Time

While an application can be submitted at any point throughout the year to perform an evaluation, the majority of the evaluations are performed during the summer and fall seasons. Figure 1 below indicates the number of applications received each month in 2019.



**Figure 1: Number of Applications Received Per Month in 2018**

Few evaluations are requested during the winter months and that speaks to two different factors. The first factor being that Milton Township has a strong seasonal population and winter is simply not as active for tourism. The second factor is that due to possible frozen ground conditions and snow cover, HDNW has encouraged realtors and homeowners to apply for the evaluation during the fall months if they think the property may be listed in the winter. Since the evaluation is good for five years, there is no penalty for performing an evaluation early.

Additionally, HDNW frequently receives questions regarding the turn-around time of the evaluation. A three-week (15 working days) time frame is given to process the application, schedule and perform fieldwork, receive water sample results, and write the report. Note that due to weather conditions, staff vacation, water sample results, and scheduling the time frame cannot be guaranteed. In 2019, the

average turnaround time of this service was 13 business days. As this service can take an average of three weeks, closing dates should be scheduled accordingly.

In 2019, a Miss Dig policy was enacted by HDNW. The policy was created to comply with the requirements of Public Act 53 of 1974 by the Michigan State Legislature for the Protection of Underground Facilities and protect environmental health field staff from physical injury during routine site work. Following Act 53 also protects the property of our clients, utility companies and prevents unintended utility emergencies, necessitating first responder involvement. At the time an application for an evaluation is received, a Miss Dig ticket is entered by HDNW staff. The Miss Dig service takes four (4) working days to complete. The turnaround time mentioned in the preceding paragraph includes the four days allowed for Miss Dig to flag underground utilities.

### INCREASING WATER LEVELS

Since the implementation of the Ordinance in October of 2012, Lake Michigan water levels have risen 4.98 feet, and are forecasted to rise an additional foot by the end of 2020 per the Army Corps of Engineers. This rise not only impacts surface water levels, but is also increasing erosion along Great Lakes shoreline and impacting seasonal high groundwater. These factors play an important role in the on-site permitting process.

Due to erosion, some lakefront properties are rapidly losing, or have lost, tens of feet of beach. As on-site septic fields are required to be a minimum of 100 feet to surface water, drainfields that were once properly isolated to surface water may no longer be so. While a revision in the 2017 District Sanitary Code changed isolation from the ordinary high water mark to the known high water elevation of 1986 (582.35'), many properties currently have water levels near or at the all-time high.

Coupled with increasing surface water levels is also an increase in groundwater levels. While every effort is made to determine maximum seasonal high groundwater levels at the time of permitting, groundwater levels have increased along with surface water levels. Many times, the seasonal high groundwater determined through this evaluation is higher than what was indicated on the historical septic permit. This means that sites that have conventional, in-grade systems may require a mounded or Advanced Treatment System as a replacement if/when the existing drainfield fails or changes of use are proposed. In rare cases, sites that were once compliant with the District Sanitary Code may not be so now due to high groundwater levels.

### CONCLUSION

Over the past seven years, the evaluation and evaluation process has been generally well received by buyers, sellers, and realtors. While very few required actions have resulted from the inspections, the Ordinance has helped raise awareness regarding the installation, use, operation, and maintenance of on-site systems. Homeowner education has been one of the positive outcomes of the Ordinance and evaluation findings serve as a broad indicator of the overall status of on-site systems in Milton Township.

Beyond the status of existing water and wastewater systems, the determination of compliance with the current District Sanitary Code and future uses of the property has put relevant information in the hands of buyers and sellers. On some sites, the existing structure cannot be replaced or added onto due to non-compliance of the property, with respect to current regulatory requirements. This information is critical to buyers wanting to establish a home in Antrim County, and it also encourages the home to be advertised and priced accordingly. One local realtor commented, *“The Ordinance has been well received in my opinion by buyers and sellers. . . . Sellers are ok with the process as long as it’s not brought up at the last minute and buyers generally like the idea since it puts the burden on the sellers.”*

In addition to property owner and buyer benefits, Milton Township and HDNW have also benefited by having a better understanding of how existing systems are functioning and what impacts they are having on public health and the environment. The on-site evaluation findings indicate that there are relatively low rates of on-site septic system failures with life expectancies that commonly exceed statewide averages, and on-site water supply systems are largely compliant with state regulations and are providing safe water for domestic uses. While the District Sanitary Code serving Antrim, Charlevoix, Emmet, and Otsego counties is one of the more restrictive sanitary codes in the state, it appears that the Code encourages system longevity and minimizes impacts to public health.

The success of the Milton Township Ordinance relies heavily on collaboration between township officials, HDNW staff, realtors, land surveyors, and homeowners. Without this strong community support, the program would not achieve the same effectiveness.

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