Interim Fact Sheet
MOECC Design Sewage Flow Rates for Seasonal Trailer Parks and Park Model Units

(February 2015)

'Large subsurface sewage disposal systems' of a capacity greater than 10,000 L/day require approval from the Ministry of the Environment and Climate Change (MOECC) according to the Ontario Water Resources Act (OWRA) Section 53[1].These include on-site subsurface sewage disposal works commonly used in recreational trailer parks and campgrounds, as well as residential developments.

This fact sheet provides clarification on the application of design sewage flow rates for seasonal trailer parks as listed in Table 5-3 of the *MOE Design Guidelines for Sewage Works 2008* (**2008 Design Guidelines**), which includes seasonal "Park Model" developments as follows:

- 800 L/d for each space occupied by a travel trailer with individual water hook-ups; and
- 340 L/d for each space occupied by a travel trailer without water hook-ups.

Park Model Units

Park Model Units (**PMUs**) are pre-manufactured one, two or three bedroom recreational/seasonal residential units, permanently or semi-permanently situated at park sites, usually equipped with a near full sized bathroom and kitchen, a hot water tank and potentially other amenities. Due to their design, PMUs require connection to facility water and sewer systems to be functional.

Park Model trailers built under specifications CSA-Z240 and CSA-Z241 are considered PMUs by the MOECC. Typical PMUs are shown below.

Courtesy of Camping in Ontario

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[1] Note: Subsurface sewage disposal systems (also referred to as 'septic systems') that do not meet the criteria outlined in subsection 53 (6.1) of the *OWRA* are regulated under Part 8 of the Building Code (Ministry of Municipal Affairs and Housing) and require a permit which is usually issued by the local municipality.

Design Flow Rates for Seasonally Operated Park Model Units

PMUs represent newer types of trailers being installed in Ontario and as a result the MOECC does not have the same volume of historical sewage flow data for PMUs as we do for traditional travel trailers.

The ministry currently expects that each space occupied by a PMU with water hook-ups has a minimum sewage design flow rate of 800 L/d per space, consistent with Table 5-3 and narrative in Section 5.5.2.2 of the 2008 Design Guidelines.

We still need to gather more information on the appropriate sizing as incorrect sizes could lead to overloading of the sewage works, premature failure, and the potential release of sewage to surface watercourses leading to adverse impacts to human health or the environment.

Reduction from the 800 L/d Table 5-3 Design Sewage Flow Rate

Preliminary flow data from a limited number of PMU facilities suggest that, in some cases, the design flow of 800 L/d per trailer may be overly conservative. The ministry is currently working to expand our knowledge of flow data regarding PMUs. In the interim, the MOECC would consider a reduction to the design sewage flow rates for PMUs under the following scenarios.

Replacement of Sewage Works at Existing Facilities

MOECC will consider a reduction in the design sewage flow rates from 800 L/d per PMU to 425 L/d per PMU subject to the following information being provided to MOECC with an ECA amendment request:

1. Daily volumes of sewage discharged to each independent subsurface sewage disposal field, either through direct or indirect (e.g., water use) measurements;
2. Three years of daily flow data (as in the previous bullet) with supporting information including the number and type of trailers being serviced with their periods of occupancy; and
3. Confirmation that accurate flow measuring or monitoring methods have been used for the collection and recording of representative daily flow data. Acceptable flow measuring methods include:
    a. Calibrated dosing pump with operating time;
    b. Electronic flow meters;
    c. Doppler flow meters;
    d. Water use metering with site supporting information (e.g., swimming pool filling records) to account for differences in sewage generation rates; and
    e. Other flow measuring methods demonstrated to be effective under field conditions.

In addition, the historical data must be reviewed and signed off by a ***Qualified Person***[2] to ensure it is accurate and representative of the field conditions throughout the collection period.

[2] Note: The MOECC considers a ***Qualified Person*** to be a Professional Engineer, a Professional Geoscientist or a certified engineering technologist (CET), licensed in the Province of Ontario.

New Facilities

For new facilities, and for traditional seasonal recreational travel trailer parks transitioning to Park Model Unit developments, where the above information is not available, MOECC will consider approving a reduction of the sewage system rated design flow from 800 L/d per PMU to 425 L/d per PMU provided the following conditions are met:

- The sewage works must include balancing tanks with a minimum capacity based on 375 L/d per PMU to accommodate the difference between 800 and 425 liters per day per PMU site;
- Reserve areas for additional subsurface disposal must be sized and designated based on 375 L/d per PMU; and,
- When determining the required size of septic tanks a safety factor of 2 or 1.6 needs to be applied depending on the number of PMUs serviced as follows:

  Volume = 2.0 x 425 L/d per PMU space for 50 or less PMUs; and

  Volume = 1.6 x 425 L/d per PMU space for 51 or more PMUs.
- The sewage works is to be equipped with suitable metering so that a record of daily sewage flow rates is maintained and determined to be within design flows, and all the flows are accounted for.
- An annual report detailing daily sewage flows is to be created and submitted to the ministry.
- The ministry must be notified if daily sewage flows exceed the approved capacity of the sewage works.

Other conditions such as Financial Assurance and routine monitoring/reporting may also be required based on site-specific considerations.

Traditional Recreational Travel Trailer Sewage Works

The review and approval of new and existing traditional recreational travel trailer sewage works will continue to be evaluated on a site specific basis with respect to recommendations in the 2008 Design Guidelines. Note that, on a site specific basis, the recommended design flows in Table 5-3 of the 2008 Design Guidelines may be reduced based on an the results of an engineering review by MOECC.

Onsite Subsurface Sewage Works Guidance Manuals

The Ministry has two manuals that provide guidance in regard to subsurface sewage works:

- "*Manual of Policy, Procedures and Guidelines for Onsite Sewage Systems",* 1982, https://archive.org/details/manualofpolicypr00ontauoft ; and
- The more recent, "*Design Guidelines for Sewage Works, 2008*", http://www.ontario.ca/environment-and-energy/design-guidelines-sewage-works

The 1982 manual contains more details than the 2008 Guidelines on how to site, design and construct an on-site sewage system (especially those under 10,000 L/day capacity) and should continue to be used as a resource for those matters.

However, the 2008 Guidelines, specifically Section 5.5 of Chapter 5 and Chapter 22, contains information relevant to on-site sewage works with a daily flow greater than 10,000 L/day which are referred to as 'large subsurface sewage disposal systems'. Where there is a conflict between the 1982 document and the 2008 document, the 2008 Design Guidelines prevail.