



# REGIONAL DISTRICT OF NORTH OKANAGAN MABEL LAKE SEWER

## Septic Tank Planning and Installation Guidelines

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### 1 General Information

#### 1.1 What is a septic tank?

##### 1.1.1 Two Chamber Tank

The two (2) chamber septic tank is a large watertight vessel that allows for the collection and temporary storage of sewage effluent from a residence or building before the effluent is released into the municipal sewer system. For the Mabel Lake Sewer System, solids are not authorized to be released into the sewage effluent collection system and must be pumped out by the owner as required.

##### 1.1.2 Tank Materials

Tanks may be constructed of a variety of materials and can be prefabricated or constructed (engineered) in place. Tanks that are prefabricated must meet the current CAN/CSA standard for design, material, and manufacturing requirements for prefabricated septic tanks. See Section 3, *Construction and Installation* for specifics. Tanks constructed in place must be designed and sealed by a Professional Engineer registered to practice in BC.

##### 1.1.3 Tank Use

Improper use and/or maintenance of septic tanks may lead to raw sewage discharges onto the ground, into water bodies and/or backing up into the serviced building, presenting significant health hazards to the public and occupants of the serviced building.

##### 1.1.4 Tank Capacity

The two (2) chamber septic tank must be sized to a minimum of 4,542 liters / 1,200 US gallons for up to a six (6) bedroom house with a minimum of 606 liters / 160 US gallons additional storage per additional bedroom required where there will be more than six (6) bedrooms.

#### 1.2 How Do I Connect to Mabel Lake Sewer?

##### 1.2.1 Make a Service Application

Submit the following to the Regional District of North Okanagan (RDNO) Utilities department either by mail, in person at the RDNO front counter, or email at [utilities@rdno.ca](mailto:utilities@rdno.ca):

- a. A completed “**Sewer Service Application Form**” located on the RDNO website in the Forms section: <https://www.rdno.ca/mls>. Completed applications must include information on the type of building(s) the septic tank will serve, number of bedrooms if residential and information of the tank (See Section 2.3 – *Construction and Installation* for more information).

- b. Sewer service application fee payment as per the current Small Utilities Rates and Regulations Bylaw (available at <https://www.rdno.ca/mls>). See <https://www.rdno.ca/rdno-services/financial-services/bill-payment-services> for payment “How To”. Payment options include the following:
  - i. Mail a cheque to 9848 Aberdeen Road, Coldstream BC, V1B2K9
  - ii. Pay in person
  - iii. Pay through online banking (Call 250-550-3700 and ask for a utility department clerk to coordinate this)
- c. Septic tank plans and specifications prepared and provided by a qualified professional that includes but is not limited to, a Registered Onsite Wastewater Professional (ROWP), or a BC Professional Engineer who is declared with the Association of Professional Engineers and Geoscientists of BC.
- d. Site plan showing the location of the proposed septic tank in relation to the following items (in meters) (see Appendix A – Example of a Site Plan):
  - i. buildings (with labels)
  - ii. surface water bodies (lakes, rivers, streams, creeks, etc.) if applicable
  - iii. drinking water source(s) and water lines
  - iv. water service and underground utilities
  - v. property boundaries with separation distances clearly marked. A surveyor is not required or recommended
  - vi. any other information requested by the Utilities Department.

## 1.3 What Happens Next?

### 1.3.1 Permit Issued

With receipt of payment and a complete application package, the RDNO may issue a permit to construct if satisfied that the septic tank is adequate to deal with the domestic sewage originating from the structure. Conditions may be attached to the permit as appropriate. The installation of the septic tank and related works must comply with the applicable RDNO bylaws and meet Master Municipal Construction Documents (MMCD) and RDNO standards to connect as per the current Small Utilities Rates and Regulations Bylaw.

### 1.3.2 Final Installation

Prior to connection to the sewer service, the property owner is required to contact the RDNO at 250-550-3700 to arrange for a service connection inspection by the Operator. This inspection will be completed during business hours and requires at least two (2) business days’ notice. The sewer connection and septic tank must remain uncovered until after the service connection inspection has been completed. Failure to have a service connection inspected may result in having to expose the connection at the customer’s expense. The final installation must be inspected and approved by the Operator before building occupancy will be issued.

## 2 Septic Tank Specifications

### 2.1 Septic Tank Capacity

A septic tank receives wastewater from toilets, baths, washbasins, showers, sinks, and washing machines. Water from roofs, yards, or foundation drainage must not enter the septic tank and must be diverted away from the tank location. See Section 1.1.4 for septic tank capacity volume.

Reduction in water consumption will ensure that effluent volume will stay within the design capacity of the onsite septic tank systems. This will also reduce loading to the municipal sewer collection system and extend the time needed for municipal sewer system capacity upgrades. An added benefit to the environment is to research ways to conserve water usage. For example, do not let water run unnecessarily and install low flow shower heads and toilets.

### 2.2 Setback Distances (Minimum)

Minimum septic tank setback distances are required as per Table 1. Install the tank in a location that provides easy access for pump-out, any time of the year.

**TABLE 1. Minimum Setback Distances from Septic Tank Location**

Site the tank a minimum distance from the following:

| Minimum Septic Tank Setback Distance (meters/feet) | Object Septic Tank Needs to be Setback From  |
|--|--|
| 15 m. (50 ft.)                                     | Surface Source of Drinking Water (includes lakes, rivers, etc.)                            |
| 15 m (50 ft.)                                      | Domestic water supply well   |
| 1 m. (3 ft.)                                       | Property line  |
| 1 m. (3 ft.)                                       | Building or structure  |
| 1 m. (3 ft.)                                       | Buried utility service includes sewer, stormwater, electricity, gas, cable, and telephone. |
| 1 m. (3 ft.)                                       | Drinking water supply cistern, at or above ground  |
| 3 m. (10 ft.)                                      | Domestic water pipeline  |

Source: Sewerage System Standard Practice Manual Version 3 (September 2014)

### 2.3 Construction and Installation

#### 2.3.1 Tank Selection

Septic tanks can be constructed from a variety of materials and must be designed for its intended usage. They can be prefabricated or they can be poured in place. Acceptable tanks can be identified as having the current CAN/CSA approval stamp.

The type of tank that you choose may require additional information to be submitted with your application.

For example:

- **CAN/CSA approved prefabricated tank** – A photograph of the CSA certification stamp on the tank is required during the RDNO Operator inspection. Include the photo and a copy of the CSA certification document specific to that tank with your application if available or submit it once the information is available. See Appendix B – Tank Marking (CAN/CSA Standard) for more information.

If proposing to use a **prefabricated tank that is not to the current standard** (CAN/CSA), then a report from a Professional Engineer is required with the design stating that the tank is equivalent to CAN/CSA current standard and will not constitute a health hazard.

Tanks that are constructed on-site will require a Professional Engineer sealed design that states that the tank is equivalent to CAN/CSA current standard and will not constitute a health hazard. This includes tanks that are poured in place and those that come in pieces and are assembled on-site unless they have proof of CAN/CSA approval. Registered Onsite Wastewater Professionals (ROWPs) cannot engineer a design in place.

### 2.3.2 Sizing

See Section 1.1.4 for required tank size.

### 2.3.3 Location

Locate the tank to protect it from physical damage and to allow easy access for the pumping truck. In areas where a high water table exists, additional precautions may be required (i.e. anchoring that would require a Professional Engineer).

### 2.3.4 Installation

The final installation of the septic tank and related works shall be inspected and approved by the RDNO Operator before building occupancy will be issued as per the current Small Utilities Rates and Regulations Bylaw.

### 2.3.5 Access

Septic tanks must have access openings at or above finished grade and with the ground graded to slope away to divert surface water. Access risers must be water tight at the connection to the holding tank and at the joints between all sections. To prevent unauthorized or accidental entry into a septic tank, openings must be equipped with a secure lid or cover. In extremely cold climates, the access riser must be insulated to prevent freezing.

### 2.3.6 Tank Bedding and Backfill Information

Follow the manufacturer's standards, including maximum depth for burial. Ensure any bedding layer below the tank is compacted before installing. Septic tanks should be backfilled evenly on all four (4) sides in 30 cm lifts, with compaction, to final grade. Risers and lids are not to be shifted or distorted when backfilling. Tanks and piping must be adequately protected from freezing.

### 2.3.7 Piping

The inlet piping (sewer pipe) connected to the septic tank must be protected from damage caused by differential settlement which could result in high or low points in the sewer pipe and fittings breaking. The excavation for a tank should not be any larger than is necessary to install the tank. This provides undisturbed earth closer to the tank to support the sewer line leading into the septic tank. Piping connected to the septic tank must be supported to within 30 cm of the tank on a solid base. In addition, septic tanks buried in the ground require the installation of a flexible coupling near the entrance to the septic tank and at the point at which the pipe to the septic tank exits from the building.

### 2.4 Alarm

The owner/resident could consider installing an audible or visual high sewer level alarm in the tank which would alert the owner/resident if the tank needs to be pumped out.


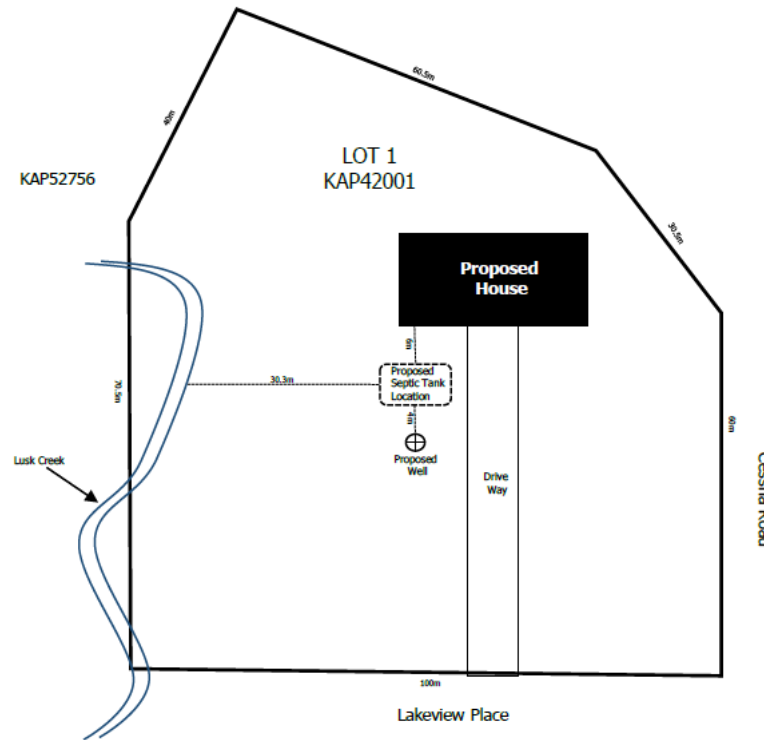
### 2.5 Maintenance Plan

The maintenance plan should include plans to pump out the solids at a minimum of every five (5) years and regular checks on the tank to monitor for solid accumulation.

The owner must keep operational and maintenance records, including information about pumping frequency, sewage volume pumped, disposal site, proof of acceptance by treatment and disposal site, and system servicing and repairs and submit them to the RDNO Utilities Department. A copy of the important records must be maintained for reference.

***Under no circumstances is sewage from a holding tank to be discharged onto the surface of the ground or into groundwater or surface waters.***

## APPENDIX A – SITE PLAN EXAMPLE

| <b>Septic Tank Lot Plan Requirements</b><br>  |   | PROPOSED SEPTIC TANK FOR<br>Lot 1, plan KAP42001, section 25,<br>township 9, Osoyoos div of yale land<br>district, except plan KAP59100                                     |  |
|--|---|---|--|
|  <p style="font-size: small; margin-top: 10px;">*Not to Scale, only for example</p>  |   | <b>Legend</b><br><ul style="list-style-type: none"> <li> Proposed Drinking Water Source</li> <li> Proposed property boundary</li> <li> Setback distance (meters)</li> </ul> |  |
| <b>Information required on Lot Plan</b>  |   |   |  |
| <ol style="list-style-type: none"> <li>1. The Proposed property boundaries area and dimensions.</li> <li>2. The location of the proposed septic tank.</li> <li>3. The location of buildings, or proposed buildings, driveways, and other property structures.</li> <li>4. The location of the source of drinking water.</li> <li>5. Include setback distances from edge of septic tank to: property lines, source of drinking water, buildings, and surface water.</li> <li>6. The location of any creeks, rivers, lakes or other surface water within the property.</li> <li>7. The location of any existing wells, sewage disposal systems, buildings, driveways, underground services on the proposed lot.</li> </ol> |   |   |  |
| Submission Date: _____<br>_____  | Authorized Person (name): _____<br><br>Contact Information:<br>Phone: _____<br>Email: _____ | Septic Tank Information:<br><br>Size: _____ gal/liters<br># of bedrooms: _____  | Physical Address:<br><br>Street: _____<br>House #: _____ |

## **APPENDIX B – TANK MARKING**

### **CAN/CSA Standard**

#### TANK MARKING:

The applicant will be required to have the septic tank marking exposed for the Operator during the final inspection. Each tank shall be permanently marked, legible and readily visible and located on top of the tank near the access opening or at the end of the tank near the inlet. In addition, the inlet and outlet shall be marked to indicate the direction of flow. The tank marking or label shall include the following:

- Manufacturer's name or trademark
- Last two (2) digits of year of manufacture
- Working capacity of the chambers (in litres / US gallons)
- Volume of the chamber(s) per centimeter of depth, expressed in litres
- Type of tank
- Maximum burial depth for which the tank is designed, expressed in metres
- Liquid depth of the septic tank if less than 1,200 mm, expressed in millimeters
- CSA monogram.

If manufacture bar code system / serial number is available, a clear picture of the manufacture bar code / serial number is acceptable for the file which will provide the required information.