



Township of Oro-Medonte Communal Tile Field Performance Report 2023

Horseshoe Valley Municipal Communal Tile Field & Sewage Collection Systems Annual Report

(Prepared in accordance with Environmental Compliance Approvals, Section 6 and Consolidated Linear Infrastructure Environmental Compliance Approvals, Schedule E, Section 4.6)

Period Covering: January 1, 2023 to December 31, 2023

March 28, 2024

COMMUNAL TILE FIELDS PERFORMANCE REPORT 2023

Table of Contents

1 Introduction	3
2 Reporting Requirements	3
2.1 ECA, Terms and Conditions, Section 6: Reporting Requirements.....	3
2.2 CLI-ECA, Schedule E, Section 4: Reporting Requirements.....	4
3 Compliance Reporting Requirement	5
3.1 Availability of the Annual Performance Report	5
4 Communal Tile Field & Collection System Descriptions.....	5
4.1 Communal Tile Field 1	5
4.2 Communal Tile Field 2.....	6
4.3 Communal Tile Field 3.....	6
4.4 Communal Tile Field 4.....	6
4.5 Communal Tile Field 5.....	6
4.6 Communal Tile Field 6.....	7
4.7 Communal Tile Field 7	7
5 Performance & Maintenance Objectives	7
5.1 Maintenance & Visual Inspections	8
5.2 Effluent Flow Monitoring	9
5.3 Filter Cleaning & Pump Out Records.....	10
5.4 Sampling & Testing.....	10
6 Consumer Complaints.....	11
7 Spills or Abnormal Discharge Events	12
8 Summary of Alterations to the Authorized System	12
9 Financial Planning.....	12
10 Conclusion	13

Appendix

Appendix A – Communal Tile System Maps

List of Tables

Table 1: Filter Cleaning & Pump Out Records

Table 2: BOD5 Results Summary

Table 3: Total Suspended Solids Results Summary

Table 4: Compliant Details & Resolution Summary

COMMUNAL TILE FIELDS PERFORMANCE REPORT 2023

1 Introduction

The Township of Oro-Medonte (Township) has prepared this report to satisfy the requirements of Ministry of Environment, Conservation and Parks' Environmental Compliance Approvals (ECAs), Section 6 and Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA), Schedule E, Section 4, as outlined below.

This report covers the period of January 1 to December 31, 2023, and applies to the following municipally-owned sewage works and collection systems:

- Horseshoe Communal Tile Field 1 – ECA# 8000-BD9SEA
- Horseshoe Communal Tile Field 2 – ECA# 8649-BVQJ2Q
- Horseshoe Communal Tile Field 3 – ECA# 9622-C6NMVN
- Horseshoe Communal Tile Field 4 – ECA# 7776-BRGLAP
- Horseshoe Communal Tile Field 5 – ECA# 9708-BDAHGS
- Horseshoe Communal Tile Field 6 – ECA# 3726-BCZLBB
- Horseshoe Communal Tile Field 7 – ECA# 2781-BD8KZG
- Communal Tile Sewage Collection System - CLI-ECA# 126-W601

The above ECAs and CLI-ECAs were issued to the Township between the years of 2019 and 2023 under Sections 20.2 and 20.3 of Part II.1 of the Environmental Protection Act for the approval of municipal domestic sewage treatment and collection for select locations in the Horseshoe Valley area.

2 Reporting Requirements

2.1 ECA, Terms and Conditions, Section 6: Reporting Requirements

Section 6 of the referenced ECA's Terms and Conditions requires the Township to prepare performance reports on a calendar year basis and submit them, upon request by the Ministry, to the District Manager by March 31 of the calendar year following the reported period. The report shall contain, but is not limited to, the following information pertaining to the reporting period:

- A review and assessment of the performance of the Works, including general operational condition and any potential indicators of failure.
- A description of any operating problems encountered and corrective actions taken.
- A record of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of all Works located at the property including, but not limited to: records of maintenance inspections for the treatment system, records of septic tank effluent filters cleaning, records of septic tank

pump-outs, records of sludge pump-outs accumulated from the treatment system, records of visual inspections of all disposal systems.

- A summary of any complaints received during the reporting period and any steps taken to address the complaints.
- A summary of all spill or abnormal discharge events.
- Any other information the District Manager requires from time to time.

2.2 CLI-ECA, Schedule E, Section 4: Reporting Requirements

Section 4 in the referenced CLI-ECA's Schedule E requires the Township to prepare performance reports on a calendar year basis and submit them, upon request by the Ministry, to the District Manager by March 31 of the calendar year following the reported period. The report shall contain, but is not limited to, the following information pertaining to the reporting period:

- Includes a summary of any operating problems encountered and corrective actions taken.
- Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.
- Includes a summary of any complaints related to the sewage works received during the reporting period and any steps taken to address the complaints
- Includes a summary of all alterations to the authorized system within the reporting period that are authorized by this approval including the list of alterations that pose a Significant Drinking Water Threat.
- Includes a summary of all collection system overflows and spills of sewage including;
 - a) Dates;
 - b) Volumes and durations;
 - c) If applicable, loadings for total suspended solids, BOD, total phosphorous, and total Kjeldahl nitrogen, and sampling results for E.coli.
 - d) Disinfection, if any; and,
 - e) Any adverse impact(s) and any corrective actions, if applicable.
- Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and or STP Bypasses, including the following items, as applicable:
 - a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including

expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.

- b) Details of the establishment and maintenance of a PPCP, including a summary of project progress compared to the PPCP's timelines.
- c) An assessment of the effectiveness of each action taken.
- d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
- e) Public reporting approach including proactive efforts.

The Township's first CLI-ECA for the Communal Tile Fields Sewage Collection System was issued on January 11, 2023. Environmental Services staff will be working toward fulfilling the compliance requirements by the established deadlines found within the CLI-ECA to support the linear infrastructure that conveys sewage to the Tile Fields.

3 Compliance Reporting Requirement

3.1 Availability of the Annual Performance Report

In accordance with Section 4 of the referenced CLI-ECA's Schedule E, a copy of the report is available to the public who are served by the system, free of charge from the following outlets:

- Township of Oro-Medonte's website (www.oro-medonte.ca); and,
- Public request at the Municipal Office, located at 148 Line 7 South, Oro-Medonte.

The public is advised of the report's availability and how to obtain a copy, without charge, on the Township of Oro-Medonte's website by June 1st, 2024.

4 Communal Tile Field & Collection System Descriptions

The Township owns and operates seven (7) Municipal Communal Tile Fields (Tile Fields) and their associated collection systems within the Horseshoe Valley area, which services less than 100 homes as identified in Appendix A.

4.1 Communal Tile Field 1

Wastewater System Number: 120003799

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 1 is located behind 23, 25, 27 & 29 Cathedral Pines Road. It services 5 properties (each equipped with an individual septic tank on their properties to serve as primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface

disposal through a syphon/dosing chamber and leaching bed. The collection system consists of 237 m of gravity sanitary sewer main and two manholes.

4.2 Communal Tile Field 2

Wastewater System Number: 120003806

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 2 is located behind 12 Pine Point Road. It services 8 properties (each equipped with an individual septic tank on their properties to serve as primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface disposal through a syphon/dosing chamber and 2 separate leaching beds. The collection system consists of 285.5 m of gravity sanitary sewer main and 3 manholes.

4.3 Communal Tile Field 3

Wastewater System Number: 120003815

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 3 is located behind 2 & 4 Maplecrest Court. It services 3 properties (each equipped with an individual septic tank on their properties to serve as primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface disposal through a syphon/dosing chamber and leaching bed. The collection system consists of 257.6 m of gravity sanitary sewer main and 3 manholes.

4.4 Communal Tile Field 4

Wastewater System Number: 120003824

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field is located in the municipal lot easement on 27 Pine Ridge Trail. It services 14 properties (each equipped with an individual septic tank on their properties to serve as primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface disposal through a syphon/dosing chamber and leaching bed. The collection system consists of 442.7m of gravity sanitary sewer main and 7 manholes.

4.5 Communal Tile Field 5

Wastewater System Number: 120003833

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 5 is located behind 1, 3, 5 & 7 Pine Ridge Trail. It services 22 properties (each equipped with an individual septic tank on their properties to serve as

primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface disposal through 4 syphon/dosing chambers and leaching bed. The collection system consists of 515.6m of gravity sanitary sewer main and 7 manholes.

4.6 Communal Tile Field 6

Wastewater System Number: 120003842

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 6 is located behind 15 & 17 Beechwood Road. It services 26 properties (.). The effluent from these properties flows directly through the municipal collection system to a communal septic tank, where the effluent then flows to a second septic tank for a two-staged treatment sequence. The effluent from the second septic tank then continues to the communal tile field for subsurface disposal through a leaching bed. The collection system consists of 559.6 m of gravity sanitary sewer main and 7 manholes.

4.7 Communal Tile Field 7

Wastewater System Number: 120003851

Wastewater System Type & Classification: Wastewater Collection Class 1

Communal Tile Field 7 is located south of the service road between Country Club Lane and Valleycrest Drive. It services 18 properties (each equipped with an individual septic tank on their properties to serve as primary treatment). The effluent from the individual private septic tanks then flows through the municipal collection system to the communal tile field for subsurface disposal through a syphon/dosing chamber and leaching bed. The collection system consists of 535.7 m of gravity sanitary sewer main and 7 manholes.

5 Performance & Maintenance Objectives

Environmental Services is available to respond twenty-four (24) hours a day, seven (7) days a week, three hundred and sixty-five (365) days a year for service calls or emergencies related to the Municipal Communal Tile Fields System. All Environmental Services Technicians are licenced under Ontario Regulation 129/04 (Regulation Licensing of Sewage Works Operators). No emergency maintenance and/or investigation was required during this reporting period.

Draft versions of an updated Operations Manual and Quality Management System for the Tile Fields have been created, with an anticipated completion date of December 2024. The program is being designed on a Quality Management System platform to mirror the Municipal Drinking Water Licensing Program.

5.1 Maintenance & Visual Inspections

Environmental Services completes visual inspections of the Tile Fields and their associated tanks/distribution boxes, collection system and manholes; while an outside contractor completes filter cleaning and sewage pump-outs. In this regard, actions completed in 2023 included the following:

- Grass and vegetative cover were maintained at the Tile Fields as needed, between May and October.
- Monthly visual inspections of the Tile Fields were completed between May and October with the following noted:
 - Riser and dome lid repair for Tile Field 6 in both May and July.
 - Reset siphoning/dosing chamber in Tile Field 6 in July (Monitoring);
 - No visual evidence of bed breakout, erosion or tank surcharging;
 - No visual evidence of failure across piping, blockages across beds or clogged inlets;
 - No abnormal conditions were noted or specific follow-up maintenance recommended based on visual inspections; and,

Where private lot level septic tanks are used (Tile Fields 1 through 5 and 7), property owners remain encouraged to inspect, service and pump-out septic tanks at minimum every three (3) years and provide the record to Environmental Services. In 2023, Environmental Services contacted 26 property owners of a total of 99 properties connected to tile fields. These properties were chosen because there were no records of pump outs or inspections completed since 2019. This is done to update private maintenance activities as a best management practice to support the municipal assets' continual operational performance and maintenance.

Given the proximity of property septic tanks to the Horseshoe Highlands Municipal Drinking Water System and Well Head Protection Area, several lots serviced by the Tile Fields and surrounding vulnerable areas are also subject to provincial legislation (Ontario Regulation 315/10) that established mandatory on-site sewage maintenance inspection programs to support the Clean Water Act, 2006. The Clean Water Act identifies sewage storage, including septic systems, as one of 21 activities that can pose a significant threat to drinking water. This is a continual monitoring program delivered through the Building Department (by the authority of the Ontario Building Code) in place to identify septic systems that aren't properly maintained and may pose a threat to public health. The collection of septic inspections and property records has been ongoing for the past 7 years by the Building Department. A new compliance cycle (2023-2026) has started with 71 of the 199 properties within the Horseshoe Highlands Well Head Protection Area inspected and the Building Department aims to have all properties inspected by the end of the cycle in 2026.

5.2 Effluent Flow Monitoring

The referenced ECAs include requirements for the daily measurement of effluent being discharged to the subsurface disposal systems (i.e. Tile Fields) to ensure daily design sewage flow is not exceeded. The measurement of flows may also assist the Township in determining the capability of the system to support existing community demands and future planning.

The use of manual event counters and the principle of averaging monthly data for daily flow estimates was discussed on July 31, 2019, with the MECP Approvals Branch and through follow-up telephone calls with the MECP Barrie District Office. Furthermore, in March 2020 and on behalf of the Township, AECOM submitted a letter to the MECP Barrie District Office advising of the following:

“The Township of Oro-Medonte is currently seeking proposals for mechanical siphon dosing counters from suppliers. Previously, the Township had pursued electronic flow metering, however, the challenges and costs associated with the method of flow measurement were prohibitive. These challenges included long lead time for installation, partial pipe flow, no power supply at the siphon chambers, and cost of the electronic flow meters.

During discussions with MECP staff during the ECA process for Tile Field 4, it was proposed that dosing counters would be read monthly to determine the average daily flow. There was no objection to this proposal. “ - Craig West, P.Eng

Currently, the seven (7) Municipal Tile Field locations are not equipped with flow monitoring due to constraints with sourcing electrical power to the various Tile Field locations. Each Tile Field is dosed with a siphon chamber to control flow. Taking into consideration the age of the Tile Fields and their extremely good operating condition, there is no evidence to suggest that they have been historically overloaded. As outlined in the AECOM Horseshoe Communal Septic System Assessment (September 2018) and the Tile Field ECA applications, it appears that the Tile Fields were designed to treat and collect a larger daily flow capacity than the current daily demands of the existing service connections.

In June 2023, a dose counter was installed on Tile Field 6 as a trial to comply with the flow measuring requirement set out in the ECA. Many challenges have arisen with intermittent flows and limited technology options. The continued review and modifications of the trial dose counter will continue in 2024.

Until a long-term operational and financially viable monitoring solution has been implemented, the Township has elected to continue consulting with AECOM to install manual event counters to collect monthly data and estimate daily average flow. The remaining flow monitoring device installations are still anticipated, however, the Township is actively seeking other less expensive alternatives to achieve compliance

objectives. (The absence of hydro servicing within close vicinity to the tile field locations has been the biggest financial impact to the delay of implementation).

5.3 Filter Cleaning & Pump Out Records

Tank filter cleaning and replacement as well as solid removals were completed by Espey D. Robert Excavating & Septic Services Ltd. as outlined in Table 1:

Table 1: Filter Cleaning & Pump Out Records

Date	Location	Filter Cleaning / Replacements	Solids Removal
2023/01/19	Tile Field 7	X	
2023/02/20	Tile Field 7	X	
2023/03/17	Tile Field 7	X	
2023/04/19	Tile Field 7	X	
2023/05/09	Tile Field 7	X	X
2023/05/09	Tile Field 6		X
2023/06/13	Tile Field 7	X	
2023/06/14	Tile Field 7	X	
2023/08/19	Tile Field 7	X	
2023/09/08	Tile Field 7	X	
2023/10/05	Tile Field 7	X	
2023/10/25	Tile Field 7	X	
2023/11/26	Tile Field 6		X
2023/11/27	Tile Field 2	X	
2023/11/27	Tile Field 4	X	X
2023/11/27	Tile Field 5		X
2023/11/27	Tile Field 7	X	
2023/12/20	Tile Field 7	X	

5.4 Sampling & Testing

The referenced ECAs outline sampling requirements for quarterly grab samples to be collected from syphon/dosing chambers and analyzed for Five-Day Biological Oxygen Demand (BOD5) and Total Suspended Solids (TSS). These parameters are commonly used as an indicator of operational efficiency and general examination of wastewater quality.

Summarized in the tables below are the 2023 BOD5 and TSS results for reference. As previously reported, the Influent Monitoring Sampling Program was initiated on May 20, 2020.

Table 2: BOD5 Results Summary

Sample Date	TF1	TF2	TF3	TF4	TF5	TF6	TF7
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
2023/03/28	36	209	<4	<4	96	299	10
2023/06/22	15	60	99	<12	<12	128	<12
2023/09/06	34	49	31	93	56	145	25
2023/12/18	44	120	80	97	88	164	<12

*Note: 'TF' indicates 'Tile Field'

Table 3: TSS Results Summary

Sample Date	TF1	TF2	TF3	TF4	TF5	TF6	TF7
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
2023/03/28	15	117	13	4	25	209	8
2023/06/22	9	67	53	5	4	79	23
2023/09/06	12	12	577	19	21	39	139
2023/12/18	20	28	34	27	39	52	10

*Note: 'TF' indicates 'Tile Field'.

6 Consumer Complaints

The nine (9) consumer complaints were received during this reporting period and details are summarized below in Table 4:

Table 4: Compliant Details & Resolution Summary

Date	Complaint Details & Resolution
2023/01/01	CT 2023-01: Sewer Back Up (Property connected to Tile Field #6). Environmental Services staff attended the property. Staff investigation determined sewer back up involved internal plumbing and not due to a blockage in the municipal sewage collection system.
2023/01/31	CT 2023-02: Directional Drilling Mishap by Utility Contractor (Property connected to Tile Field #6). Camera inspection revealed a utility contractor directionally drilled through a property's sewer lateral (Township-owned portion of the sewer lateral) during an underground communication infrastructure installation. Environmental Services repaired and restored operation of the sewer lateral.
2023/04/11	CT 2023-05: Odour Compliant (Property connected to Tile Field 4) Environmental Services staff attended the property. Staff investigation determined a dry trap was the issue due to no water usage in the home for an extended period of time.
2023/07/06	CT 2023-04: Odour Compliant (Manhole Connected to Tile Field 7) Environmental Services staff inspected the area in question. Manholes were inspected for evidence of sewage backup. The municipal

	collection system was operating properly and odour was not present at the time of inspection.
2023/07/04	CT 2023-05: Odour Compliant (Tile Field 4) Environmental Services staff inspected the area in question and discussed the matter with the concerned resident. The municipal collection system was operating properly.
2023/08/03	CT 2023-06: Water Infiltration into Property’s Septic Tank (Property connected to Tile Field 7) A septic contractor noticed water infiltrating into a customer’s septic tank while performing maintenance and contacted Environmental Services to investigate the issue. It was determined to be an issue on the private drinking water system (FREED). The operating authority for the private drinking water system was contacted to address the issue.
2023/11/06, 2023/11/09, 2023/11/13 (Related events)	CT 2023-07, 2023-08 & 2023-09: Sewer Back Up (Property connected to Tile Field #6). Environmental Services staff attended the property. Staff investigation determined sewer backup involved internal plumbing with a blockage on the homeowner’s side of the sewer lateral. The municipal collection system was operating properly.

7 Spills or Abnormal Discharge Events

No spills, bypasses or abnormal discharge events were observed during this reporting period. (Any spills or discharge events would be recorded and addressed in accordance with Part X of the Environmental Protection Act, Ontario Regulation 675 (as amended) and reported to MECP, both by telephone and in writing, in accordance with ECAs and the CLI-ECA requirements.

8 Summary of Alterations to the Authorized System

No alterations were made to the Tile Fields or their associated sewage collection systems within the reporting period that required authorization by ECA and CLI-ECA approvals.

9 Financial Planning

The communal tile systems are solely supported through a user fee delivery model, meaning only those receiving the service, pay for the service. Although Sewage System Financial Plans are not currently legislated in the same fashion as Drinking Water Financial Plans, Township Staff is developing this program to mirror provincial drinking water system practices in the delivery of sewage services to customers. Environmental Services believes that a financial plan is imperative to assist in the prioritization of future projects, achieve operational targets and goals, and provide customers with a long-term vision of costs associated with communal tile field services.

COMMUNAL TILE FIELDS PERFORMANCE REPORT 2023

On November 22, 2023, a 10-Year Communal Tile Field Financial Plan (Financial Plan) with the inclusion of multi-year user rates was received and endorsed by Council (Motion No. SC231122-3). This process increases financial confidence in the delivery of sustainable operational programs while continuing to build a capital financial reserve fund supporting long-term asset management. The 2023 Financial Plan is available to the public on the Township website.

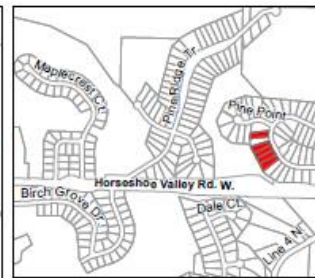
10 Conclusion

It is the belief of the Township of Oro-Medonte that this report satisfies the requirements of ECAs, Section 6, and the CLI-ECA, Schedule E, Section 4.



Any questions regarding this report should be directed to Environmental Services.

Appendix A – Communal Tile System Maps


COMMUNAL TILE SYSTEM MAPS




December 2022

-  Serviced Properties
-  Tile Beds
-  Distribution Box
-  Syphon/Dosing Chamber
-  Manholes
-  Service Laterals
- Gravity Mains**
-  150mm
-  100mm

Wastewater System Plan Tile Field 1



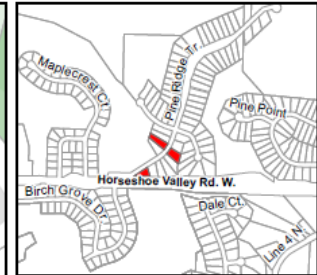
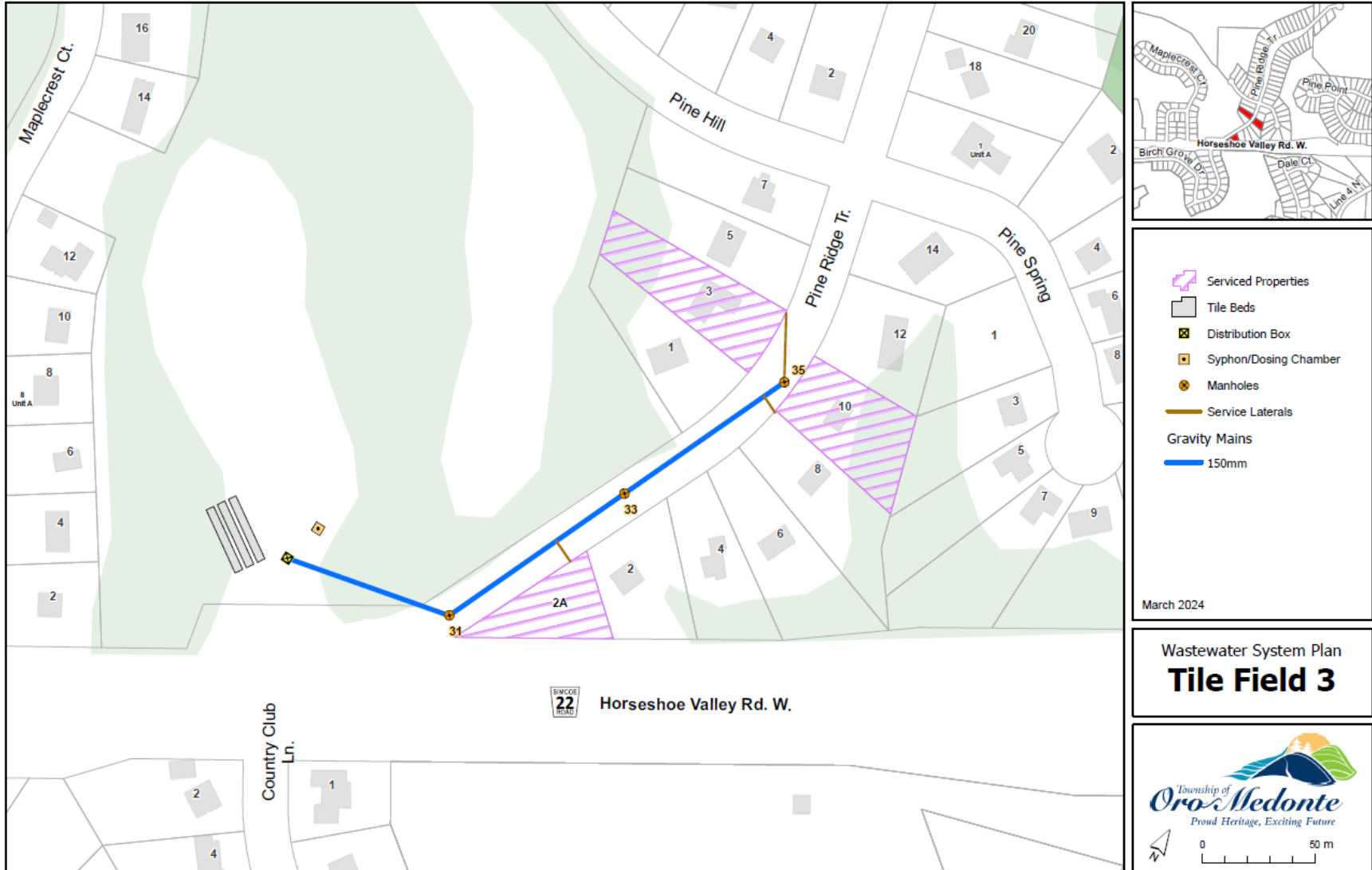
0 50 m










COMMUNAL TILE SYSTEM MAPS



COMMUNAL TILE SYSTEM MAPS



Legend

-  Serviced Properties
-  Tile Beds
-  Distribution Box
-  Syphon/Dosing Chamber
-  Manholes
-  Service Laterals
- Gravity Mains**
-  150mm

March 2024

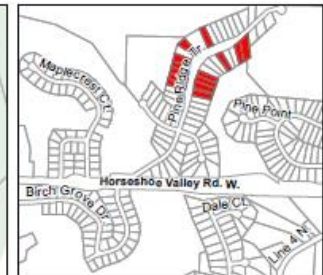
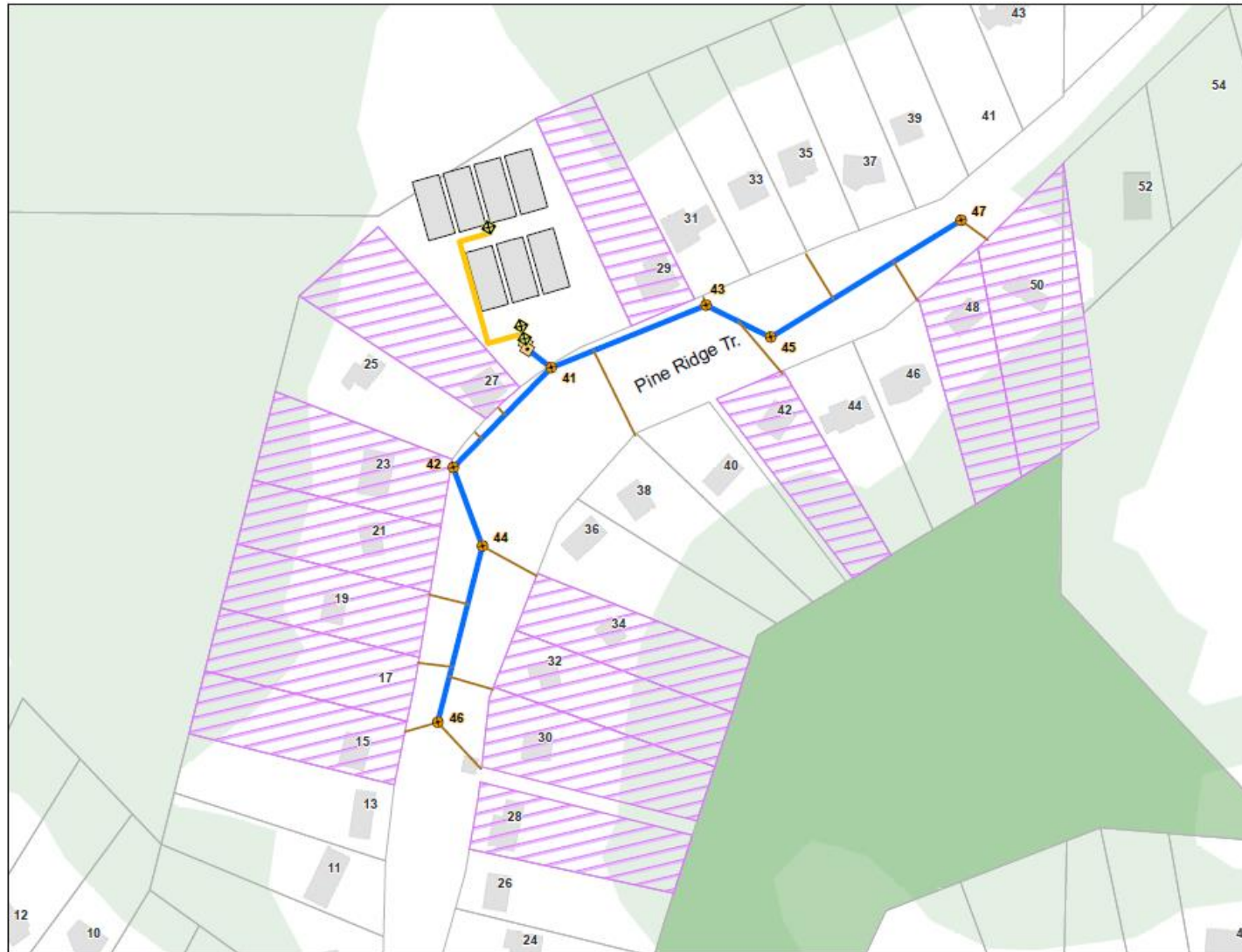
Wastewater System Plan
Tile Field 3











0 50 m



COMMUNAL TILE SYSTEM MAPS




-  Serviced Properties
-  Tile Beds
-  Distribution Box
-  Syphon/Dosing Chamber
-  Manholes
-  Service Laterals
- Gravity Mains
 -  150mm
 -  100mm

December 2022

Wastewater System Plan
Tile Field 4










Township of
Oro-Medonte
Proud Heritage, Exciting Future



0 50 m

COMMUNAL TILE SYSTEM MAPS



-  Serviced Properties
-  Tile Beds
-  Distribution Box
-  Syphon/Dosing Chamber
-  Manholes
-  Service Laterals
- Gravity Mains**
-  150mm

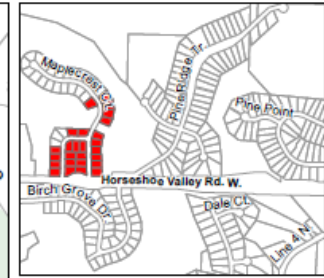
December 2022

Wastewater System Plan Tile Field 5



0 80 m

COMMUNAL TILE SYSTEM MAPS



▨ Served Properties
 Tile Beds
 Distribution Box
 Syphon/Dosing Chamber
● Manholes
— Service Laterals
Gravity Mains
— 200mm
— 100mm

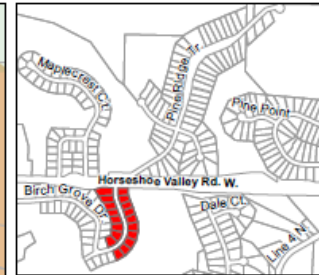
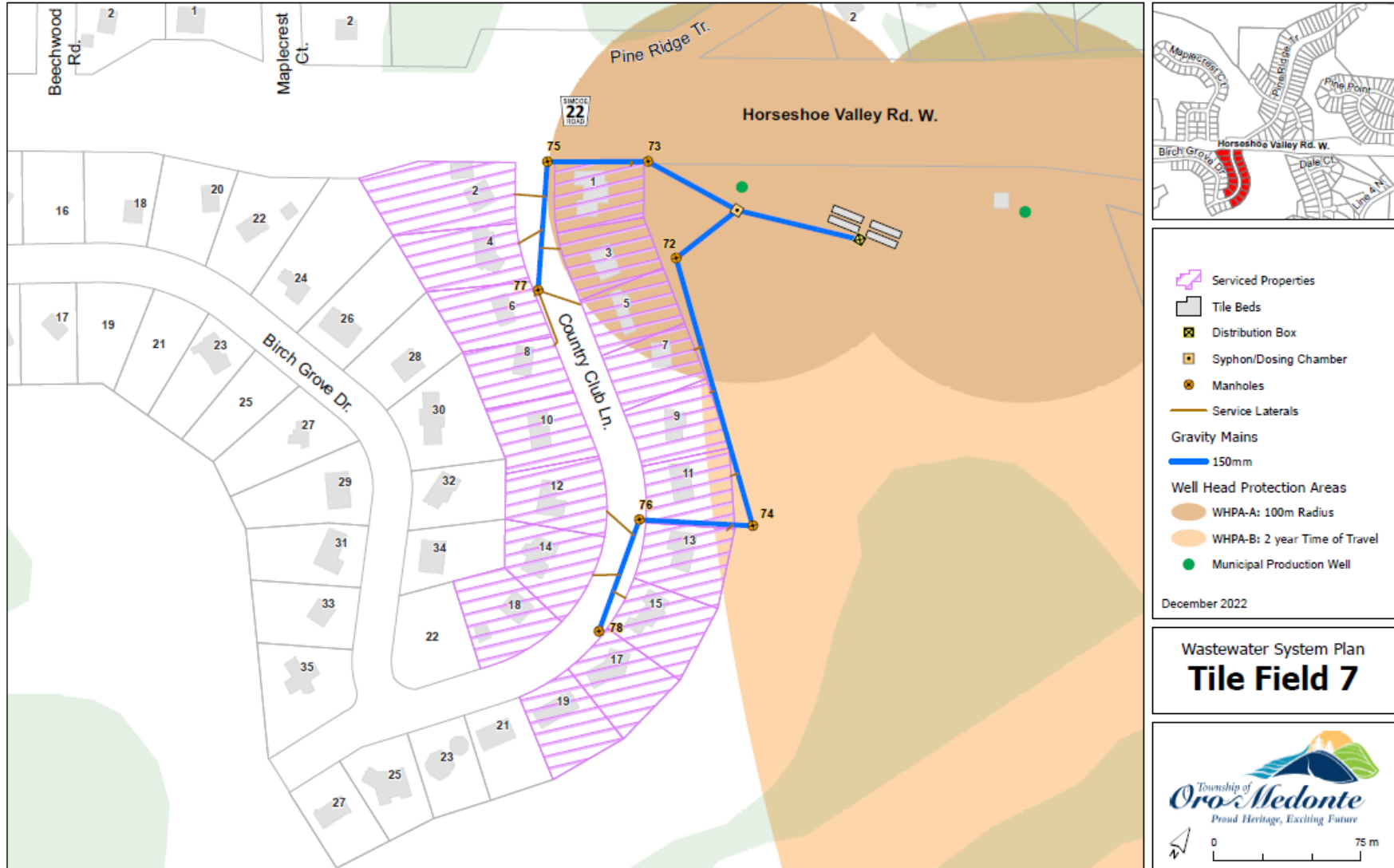
December 2022











Wastewater System Plan Tile Field 6



N 0 75 m

COMMUNAL TILE SYSTEM MAPS



-  Serviced Properties
-  Tile Beds
-  Distribution Box
-  Syphon/Dosing Chamber
-  Manholes
-  Service Laterals
- Gravity Mains**
-  150mm
- Well Head Protection Areas**
-  WHPA-A: 100m Radius
-  WHPA-B: 2 year Time of Travel
-  Municipal Production Well

December 2022

Wastewater System Plan Tile Field 7



0 75 m