Memorandum to the Council of

Corporation of the Municipality of Temagami

Subject: Advancing Municipal GIS and Field Data Collection

Memo No: 2025-M-174

Date: August 14, 2025

Attachment: None

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Recommendation

BE IT RESOLVED THAT Council receives Memo 2025-M-174 as presented

Contents

1. Executive Summary

Since the successful foundation laid in the initial months, the Municipality has continued strengthening its GIS infrastructure and preparing for more accurate spatial data collection. This report outlines key developments since July, including the acquisition of property data, replication of CGIS datasets in ArcGIS, initial field mapping of trails, and efforts to build internal capacity for digital asset management.

Of particular importance is the shift toward high-accuracy, in-house data collection using Trimble GPS equipment. Initial datasets from Ontario Open Data and CGIS were found to have positional inaccuracies of up to 10 metres—suitable for general mapping, but not precise enough for operational planning. The Municipality is now working toward sub-3-metre accuracy, ensuring more reliable datasets for infrastructure planning, emergency response, and future grant applications.

2. Laying the Groundwork

Over the past few weeks, the Municipality has expanded its use of ArcGIS and GPS-based tools, setting the foundation for accurate, long-term asset management. Reliable GIS systems support effective infrastructure oversight, enable informed decision-making, and improve eligibility for external funding.

To support this vision, efforts have focused on acquiring authoritative datasets, preparing field workflows, and building staff capacity for maintaining GIS data in-house. These steps align with the broader goal of creating a sustainable, department-supported GIS ecosystem.

2.1. Establishing a Municipal GIS Framework in ArcGIS

Following the transition from CGIS to ArcGIS, I replicated key municipal datasets and resolved inconsistencies during migration. ArcGIS now serves as the Municipality's central platform for mapping and spatial data.

To promote wider adoption, staff training sessions will be delivered to help departments become familiar with ArcGIS and its daily applications. This ensures GIS remains a shared and practical tool across municipal functions.

2.2. Acquiring Crucial Land and Parcel Data

In July, updated parcel and boundary datasets were acquired through MPAC, MNRF, and Teranet. These form the foundation of our new GIS base maps and will support zoning, asset management, and permitting.

However, the provincial and CGIS-provided datasets have an approximate accuracy of 10 metres. To improve this, the Municipality has transitioned to in-house field data collection using Trimble TDC600 and R1 GPS devices, capable of sub-3-metre precision. This marks a major step toward improving asset accuracy, reducing risk, and enabling evidence-based decisions.

2.3. Field Mapping Using GPS Devices (Planned for August–September)

A comprehensive field data collection campaign will take place from August through September. Key activities include:

- Mapping municipal assets (e.g., roads, hydrants, shutoffs, signage, park infrastructure) with precise coordinates.
- Real-time data integration using ArcGIS Field Maps.
- Building a reliable internal dataset to support planning, inspections, and maintenance.

This initiative will ensure all future works—from road resurfacing to emergency response—are based on accurate, verified location data.

2.4. Trail Mapping and Cultural Preservation (Completed)

In collaboration with Parks and Recreation Coordinator Omar de La Serna and Public Works Superintendent Barry Turcotte, we successfully mapped key trail systems including:

- White Bear Forest - Old Growth Trails
- Goward Trail
- Old Ski Trails
- Parts of the Old Highway 11 corridor

The original data from CGIS and Ontario Open Data had positional errors of up to 10 metres. Our field mapping reduced this to under 4 metres, helping preserve important recreational and historical routes and supporting future trail development opportunities.

2.5. Internal GIS Training and Staff Support

To ensure long-term sustainability:

- GPS training was provided to Parks and Recreation staff, enabling direct contributions to data collection.
- Upcoming training will be delivered to Public Works staff to support their operational use of Trimble devices and ArcGIS apps.

This internal capacity-building model promotes cross-departmental ownership and strengthens the Municipality's ability to maintain data independently.

3. Why High-Accuracy Data Collection Matters

Much of the GIS data historically used by the Municipality—whether from CGIS, Open Data, or MNRF—was designed for regional use, not for municipal operations. Their positional inaccuracies can cause real problems in the field.

For example, Fire Chief Jim Sanderson recently highlighted that many fire hydrants are inaccurately mapped or missing entirely from the GIS. In emergencies, inaccurate or missing data can delay response, increase risk, and jeopardize public safety.

Similar issues affect water shutoffs, culverts, and other infrastructure. High-accuracy GPS data—collected at under 3-metre precision using Trimble equipment—offers several advantages:

- Emergency Response Readiness: Ensures first responders have exact locations for hydrants, roads, and access points.
- Better Asset Management: Enables more efficient inspections, replacements, and repairs.
- Support for Funding and Compliance: Provides solid data to back up grant applications and meet regulatory requirements.

- Lower Risk and Cost: Reduces avoidable digging, asset loss, and planning errors.

This initiative lays the digital foundation for how Temagami will manage infrastructure, plan capital projects, and ensure public safety in the years ahead.

4. Ongoing Support with Square Payment Systems

In addition to GIS work, I continue to support operational improvements by:

- Assisting with Square terminal setup and troubleshooting at the Transfer Station and Briggs.
- Supporting upcoming implementation at Strathy and Sisk.

These efforts support improved transaction efficiency, transparency, and service delivery.

5. Conclusion

The Municipality has made important progress in building a resilient, internally managed GIS system. While datasets from provincial partners have provided a starting point, the move to high-accuracy, field-verified data will define the success of long-term infrastructure and asset management planning.

By increasing data accuracy from 10 metres to under 4 metres, the Municipality is better positioned to deliver safe, efficient services and support future grant readiness. Continued staff training and collaboration with Esri Canada will further enhance our ability to track assets, plan capital projects, and support evidence-based decisions.

GIS is no longer just a mapping tool—it is becoming a cornerstone of Temagami's operational planning and service delivery.