Memorandum to the Council of

Corporation of the Municipality of Temagami

Subject: Modernizing Our Mapping Tools - Moving to ArcGIS for Better Efficiency and Reliability

Memo No: 2025-M-095

Date: April 24, 2025

Attachment: None

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Recommendation

BE IT RESOLVED THAT Council receives Memo 2025-M-095 as presented;

AND FURTHER THAT Council directs staff to proceed with transitioning municipal GIS operations from CGIS to ArcGIS.

Contents

1. Executive Summary

A Geographic Information System (GIS) is an essential tool for municipalities, enabling the efficient management of infrastructure, land use, asset tracking, emergency response, and environmental planning. A robust GIS platform supports accurate mapping, data-driven decision-making, and increased public transparency.

Over the past six years, the Municipality of Temagami has invested more than $110,000 in CGIS, a system that has shown limitations in terms of efficiency, data accuracy, and operational control. Despite this significant expenditure, municipal operations continue to experience delayed service, inaccurate data, and the need for external support for basic updates. This reliance on external assistance results in slow response times, which can hinder timely decision-making. Additionally, discrepancies in mapped infrastructure, such as driveways incorrectly placed on top of buildings, have persisted, impacting planning and asset management.

ArcGIS, an industry-standard GIS platform used by the Government of Canada, the Government of Ontario, and neighboring cities, municipalities and reserves—including North Bay, Temiskaming Shores, Bear Island, and Sudbury—presents a viable alternative. It offers more accurate mapping, greater control over municipal data, and improved operational efficiency. Temiskaming Shores, which previously used CGIS, transitioned to ArcGIS due to its enhanced capabilities.

Transitioning to ArcGIS would reduce the municipality's dependency on external support, improve data accuracy, and enhance transparency by providing public access to key geographic data. This report presents the financial and operational reasons for making this transition, demonstrating that continuing with CGIS is no longer in the municipality's best interest.

2. Background

In 2009, the Municipality of Temagami adopted CGIS through a provincial initiative aimed at helping northern municipalities implement Geographic Information System (GIS) technology. At the time, CGIS offered an accessible and cost-effective solution for municipalities without in-house GIS capacity.

However, over the past decade, technology has significantly advanced, and CGIS has not evolved accordingly. The platform continues to rely on outdated infrastructure, including the now-defunct Internet Explorer browser, which Microsoft officially retired. In contrast, modern platforms like ArcGIS are fully compatible with current browsers and seamlessly integrate with contemporary software environments. This technological lag has introduced inefficiencies that directly impact staff productivity and hinder project delivery.

One of the core limitations of CGIS is its third-party service model. Unlike ArcGIS, which allows municipalities to manage and control their GIS data independently, CGIS requires external support for even routine data updates. This reliance has led to extended service delays—sometimes stretching over several weeks. More concerning is the growing difficulty municipalities face in obtaining timely access to their own data, raising questions about data ownership and long-term accessibility.

Figure 1 below provides a clear example of data inaccuracy within CGIS, where a driveway has been mistakenly mapped on top of a building. Such errors compromise the integrity of planning, asset management, and operational decision-making.
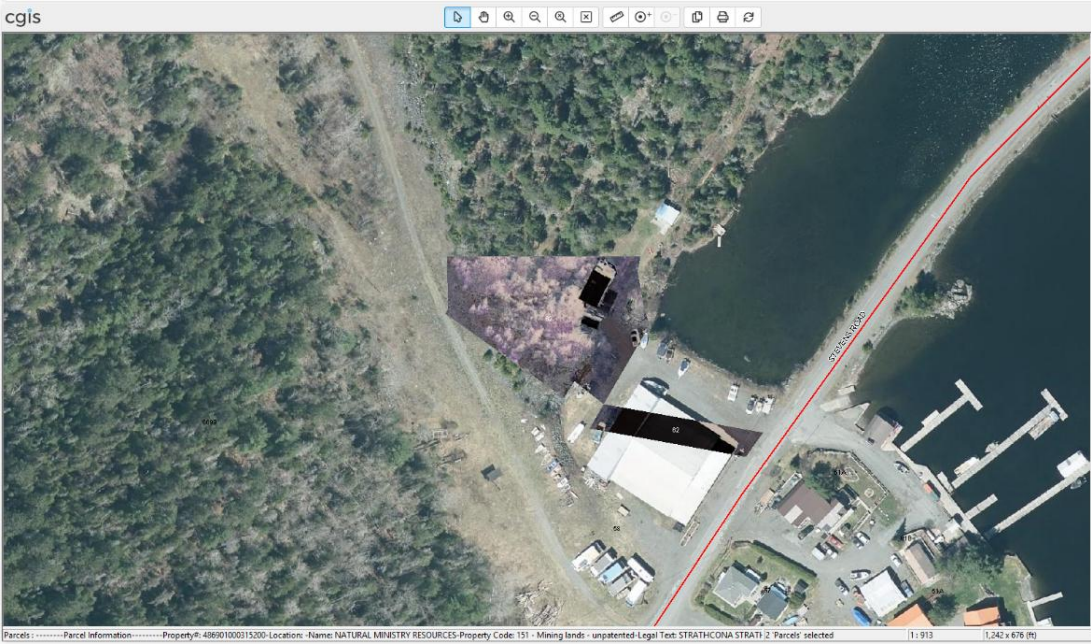

Figure 1 - CGIS data comparison showing discrepancy between property lines and real-world imagery

With ArcGIS already in use across multiple levels of government and among several peer municipalities, the case for transitioning to a more robust, self-managed GIS solution is compelling. Continued reliance on CGIS restricts the municipality's ability to operate efficiently, manage costs effectively, and ensure the accuracy and ownership of critical data. Moving to ArcGIS is not simply an upgrade - it is a strategic investment in modern governance and operational resilience.

3. Current Issues with CGIS

3.1. High Service Costs

Over $110,000 spent on CGIS over the past six years, including:

- Annual subscription cost is approximately $16,000.

- Additional charges for services as in 2021, the Municipality paid $5,264.48 for aerial imagery.

- Hidden costs arise from delays, inefficiencies, and staff time required to manage external coordination.

3.2. Service Timelines and Limited Administrative Flexibility

- All updates must be submitted through CGIS staff via email.

- Even minor changes involve delays and reliance on third-party processing.

- These delays negatively impact:

  ‣ Project timelines

  ‣ Decision-making processes

  ‣ Emergency planning and response

- The Municipality does not have direct control over its own GIS data.

3.3. Data Accuracy and Update Concerns

- CGIS still relies on 2021 aerial imagery, which is now outdated.

- Outdated data causes:

  ‣ Discrepancies in current mapping

  ‣ Risks in land use planning and asset management

- Inaccuracies increase the risk of:

  ‣ Legal challenges

  ‣ Costly settlements

  ‣ Loss of public trust

3.4. User Interface and Accessibility Limitations

- The platform is not intuitive; staff depend on external support.

- Employees struggle to:

  ‣ Extract data

  ‣ Analyze spatial information

  ‣ Visualize results for decision-making

- GIS should be a tool that empowers staff, not impedes their productivity.

3.5. Customer Service Responsiveness Issues

CGIS is contractually required to provide access to our GIS data. In recent cases, access has been delayed or obstructed. This has resulted in:

- Frustration among staff

- Project slowdowns

4. Why ArcGIS is the Preferred Solution

4.1. Industry Standard and Widespread Adoption

- Used by the Government of Canada, the Government of Ontario, and cities & municipalities across the country.

- Adopted by Bear Island, City of North Bay, City of Temiskaming Shores, the District of Muskoka and West Parry Sound.

- Universities and colleges train students on ArcGIS, ensuring skilled professionals are available.

- In last few years, MNRF has requested the Municipality Boundary in ArcGIS format (ESRI shape file).

4.2. Costs Efficiency

- Eliminates hidden expenses with CGIS.

- Includes accurate aerial imagery without extra cost.

- Reduces technician dependency, allowing in-house updates.

4.3. Faster Updates & Data Accuracy

- Real-time updates instead of waiting for external providers.

- Improves infrastructure planning, asset management, and project timelines.

4.4. Public Transparency & Community Engagement

- Enables public access to relevant GIS data (e.g., road conditions, trail maps).

- Facilitates collaboration with local colleges and universities.

4.5. Enhanced Security & Data Protection

- Secure data storage with controlled access levels.

- Used by government agencies and industries globally.

4.6. Supports Future Growth

- Enables mapping trails, tracking municipal assets, managing environmental data, and enhancing tourism.

- Integrates with mobile apps and dashboards for real-time decision-making.

4.7. All in One Solution

- ArcGIS is capable of replacing Service Tracker by MuniSight LTD. As we can create similar interface with improved functionality using ArcGIS services.

- Offers customizable dashboards for real-time monitoring and reporting.

- Scalable for future expansion, ensuring long-term usability.

- Supports integration with other municipal software and databases.

- Provides real-time GPS tracking for field operations and workorders.

5. Making Every Dollar Count - CGIS vs. Alternatives

5.1. Comparative Expense Analysis

The following table outlines a detailed cost and impact comparison between CGIS and ArcGIS over a six-year period, highlighting key areas of financial and operational difference.

Expense Category	CGIS	ArcGIS
Subscription Fee	$16,000 (approx.)	$4500 - $6000 (estimate)
Technician Fees	$75 per hour (*)	None (In-house Control)
Aerial Imagery	Extra Charges	Included/Customizable
Legal Risk & Lawsuits	Potential High Costs	Avoided with Accurate Data
Employee Downtime	Significant	Minimal
Total Money Spent (6 Years)	$110,000+	$36,000 (estimate)

5.2. Estimated 6-Year Savings with ArcGIS

- ▪ Switching to ArcGIS is projected to save approximately $75,000 over six years.

- ▪ Factoring in the $10,000 spent on Service Tracker in 2022–2023—functionality that ArcGIS can replace—the total estimated savings rises to $85,000.

6. Conclusion - Why ArcGIS is the Strategic Choice for the Future

Despite this investment, the Municipality continues to experience delays, outdated data, service limitations, and ongoing costs.

Switching to ArcGIS offers several advantages:

- Cost savings by eliminating the need for third-party service dependencies.

- Greater control over GIS data without waiting for external support.

- Improved data accuracy, reducing the risk of legal challenges associated with outdated information.

- Enhanced public transparency by enabling easier access to relevant information for residents.

- Opportunities for local collaboration by providing students with hands-on learning experiences.

- Adoption of an industry-standard GIS platform, already used by governments and municipalities across Canada.

We recommend that Council approve the transition to ArcGIS and allocate the necessary resources for implementation. Delaying this decision may lead to continued financial burdens, including ongoing service costs, and expose the Municipality to legal risks due to outdated or inaccurate data.