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 Alberta
 Government

Alberta Cadastral Mapping: Transformation Led by MNC

In 1998, the Government of Alberta initiated a comprehensive cadastral mapping project led by **MNC (Martin Newby Consulting Ltd.)** to modernize and optimize the province's land administration system. This effort marked the transition from outdated and manual processes to a digital platform, enabling more efficient management of the Alberta cadastral map.

MNC re-engineered the cadastral mapping framework using MicroStation (Bentley) and AutoCAD (Autodesk). **Today, 26 years later, MNC continues to maintain this foundational dataset, with over 215,000 survey plans successfully integrated.**

New Cadastral Plan Integration

Before

After



Spatial Integration of New Parcels

 Spatial Adjustment and Integration:
 Correct spatial placement and integration
 with surrounding features

CHALLENGE

By 1995, there were growing demands from users to improve the quality, timeliness, and accuracy of Alberta's cadastral data while reducing the cost of various map products.

The primary challenges stemmed from the complexity and volume of cadastral data across the province. The original datasets were poorly maintained, difficult to access, and stored in various formats, which created complications for ongoing use. The cadastral maintenance process was inefficient and relied on a digital-to-paper-to-digital workflow that limited productivity.

KEY CHALLENGES INCLUDED:

- Cadastral data was stored in multiple formats and sourced from various systems.
- A cumbersome maintenance process that required manual conversion steps.
- Poor data accessibility for users and high operational costs.
- Inconsistencies and inefficiencies in compiling and updating the cadastral database.

These issues increased maintenance costs and limited the ability to deliver timely and accurate spatial data for land use, planning, and administrative decision-making.



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SOLUTION

To address these issues, MNC led the development of a comprehensive digital cadastral mapping solution through a public-private partnership (P3). This included the formation of **Altalis**, a joint venture with Spatial Data Warehouse Ltd (now **Alberta Data Partnerships**, or ADP).

Under this partnership, MNC converted paper records into a centralized digital format. MNC initiated and funded the development of new processes for data loading, maintenance, storage, and distribution.

KEY STEPS INCLUDED:

CENTRALIZED DIGITAL FRAMEWORK:

- Designed and implemented an IT infrastructure tailored for cadastral data.
- Developed new software tools to enhance plan integration and ensure consistent quality control.

DATA CONVERSION AND SYSTEM DESIGN:

- Carried out a full conversion and update of cadastral datasets.
- Ensured consistency, spatial accuracy, and data integrity across the province.

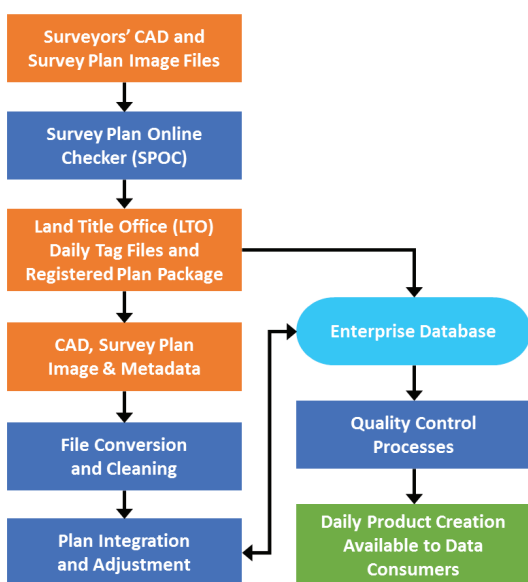
STAKEHOLDER SUPPORT AND INTEGRATION:

- Delivered extensive training to end-users to support adoption.
- Established support services to allow surveyors to digitally submit plans in alignment with Land Titles Office (LTO) procedures.

TECHNOLOGY DEPLOYMENT:

- Built an integration engine to streamline plan submissions.
- Focused on eliminating breaks, benching errors, and preserving survey accuracy.
- Enabled full integration with the LTO filing system to consume both current and historical records for easy online access.

LAND TITLE OFFICE (LTO) CAD FILE PROCESSING AND INTEGRATION



Cadastral Mapping is now a well organized and quality controlled process

This end-to-end approach enabled Alberta

to move from static graphics mapping to an intelligent, digital cadastral system that supports real-time maintenance and user access.

RESULTS

Within less than a year, MNC demonstrated measurable improvements in the management of cadastral data. A key achievement was the elimination of maintenance costs previously incurred by the Government of Alberta, estimated at \$5.9 million in today's dollars. These costs are now borne by the parties creating or using the data, creating a more sustainable and scalable model.

ADDITIONAL OUTCOMES INCLUDE:

FASTER UPDATES: Cadastral updates that previously took 2 to 8 months are now accessible within 1 to 7 days of registration at the Land Titles Office.

IMPROVED ACCESS: Orders that used to take 2 to 6 weeks are now fulfilled in real time, reducing delays and enhancing user satisfaction.

ENHANCED ACCURACY: The updated dataset demonstrates enhanced spatial accuracy and is continuously improved as new survey plans are added.

COST EFFICIENCY: No additional cost was incurred by the Government of Alberta to transform the system from a static map to an intelligent digital dataset.

The enhanced cadastral system provides a more accurate and accessible foundation for land administration, planning, and resource management across Alberta.

Led by MNC, this modernization initiative laid the foundation for a long-term digital cadastral solution that continues to evolve, supporting data integrity, system reliability, and public service delivery.

1-7 Days

TO UPDATE CADASTRAL DATA
(COMPARED TO **2-8 MONTHS**
PREVIOUSLY).

Real Time

FULFILLMENT OF ORDERS
(COMPARED TO **2-6 WEEKS**
PREVIOUSLY).

\$5.9 Million

IN MAINTENANCE COSTS
ELIMINATED (ADJUSTED FOR
INFLATION IN 2025).

MNC SERVICES & TECHNOLOGY USED

SERVICE CATEGORIES:

- GIS Strategy and Planning
- Needs and Requirements Analysis
- Data Model and Database Design
- Data Conversion and Migration
- Training and Support Services
- Digital Plan Submission

TECHNOLOGY PLATFORM & TOOLS:

- MicroStation (Bentley)
- AutoCAD (Autodesk)
- FME (Safe Software)



CONTACT US TODAY to discuss your geospatial needs.

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ABOUT MNC

The Cadastral and Parcel Mapping Experts



MNC is a trusted leader in cadastral and parcel management with 25+ years of experience delivering GeoAI-ready datasets, modernizing parcel fabrics, and automating GIS workflows. As an Esri Gold and Cornerstone Partner with a Parcel Management Specialty and State and Local Government Specialty, MNC provides scalable advanced GIS, ArcGIS Pro, FME automation, MicroStation, AutoCAD and cloud-ready geospatial systems that improve data quality and support government land administration modernization across Canada, the USA, and the Caribbean.





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