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ParcelMap BC Project: MNC Delivers Award-Winning Parcel Fabric Modernization for British Columbia

To modernize cadastral mapping and support province-wide land administration needs, the **Land Title and Survey Authority of British Columbia (LTSA)** initiated the **ParcelMap BC project**, an ambitious effort to create a unified, digital map of over two million titled and Crown land parcels across British Columbia. LTSA partnered with **MNC (Martin Newby Consulting Ltd.)**, along with MacDonald, Dettwiler, and Associates (MDA) and Esri, to lead the technical implementation of this award-winning system.

Using Esri's advanced GIS solutions and **FME by Safe Software** for data transformation and custom digital workflows, MNC played a central role in designing and compiling a **high-quality, authoritative parcel fabric that now serves as the foundation for land records and services across the province. The project's success led to recognition at the Esri User Conference**, demonstrating how ParcelMap BC would form the foundation for land administration service excellence.



Special Achievement in GIS
2017 Award Winner

CHALLENGE

Before ParcelMap BC, British Columbia's parcel data was fragmented, inconsistently maintained, and lacked a standardized approach. While most of the province's 188 local governments maintained parcel mapping, these datasets were often created using undocumented or varying methods, such as coordinate geometry, digitization, or scanned images, resulting in gaps in accuracy, completeness, and spatial reliability.

This lack of integration and standardization made it difficult for the Land Title and Survey Authority of British Columbia (LTSA) to support internal operations or deliver a consistent land data experience to stakeholders. Without a single, authoritative electronic map of Crown and titled parcels, legal, regulatory, and planning workflows were hindered by inconsistent or missing information.

The ParcelMap BC (PMBC) Project was launched to address these challenges by unifying and standardizing the provincial parcel fabric.

KEY CHALLENGES INCLUDED:

- Inconsistent parcel mapping practices and undocumented methodologies across jurisdictions
- Gaps in spatial coverage and missing parcels from critical datasets
- No centralized, authoritative parcel map for the entire province
- Operational inefficiencies stemming from fragmented land data
- Difficulty supporting planning, regulation, and land transactions due to unreliable sources



+1 (403) 294-1028



mnc@mncl.ca



www.mncl.ca



Following a competitive procurement process, LTSA selected a project team that included MNC, Esri, and MDA to lead the delivery of ParcelMap BC. As part of this collaboration, MNC played a key technical role in compiling the province-wide parcel fabric, developing automation workflows, and designing digital submission systems that would modernize parcel data handling at scale.

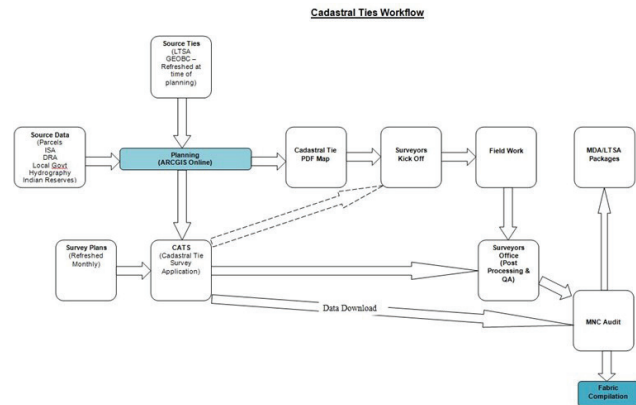
Esri's parcel fabric data model was chosen as the foundation for ParcelMap BC due to its status as a widely adopted Commercial Off-The-Shelf (COTS) solution. It offered robust capabilities for maintaining and updating large cadastral datasets and supported the application of Least Squares Adjustments (LSA)—a technique used to improve spatial accuracy by minimizing positional errors across the fabric.

MNC WAS RESPONSIBLE FOR LEADING SEVERAL CRITICAL COMPONENTS OF THE PROJECT:

FIELD CAD TIE COLLECTION

MNC developed an online and mobile solution for Cadastral Tie Survey (CATS) field data collection, capturing approximately 2,600 cadastral field ties.

- FME workspaces were created to facilitate the migration and conversion of field data from XLS into GIS features.
- An additional 4,500 ties were collected from registered survey plans.
- All field ties were integrated into the parcel fabric and used to conduct spatial accuracy assessments and apply LSA corrections across the dataset.



ESRI'S PARCEL FABRIC COMPILATION

MNC created a complete Esri parcel fabric representing every active titled parcel and surveyed provincial Crown land parcel in British Columbia—approximately 2 million parcels.

- The fabric was compiled from disparate source datasets
- The fabric was completed through the precise addition of over 10,000 missing parcels using legal survey plans and metes and bounds descriptions.
- To support quality assurance and validation, 54 unique FME workspaces were developed and used for automated acceptance testing.

SURVEY PLAN SUBMISSIONS (SPS) WEBSITE

Released in 2016, the SPS system allows BC Land Surveyors to submit survey plan datasets for approval digitally.

- MNC supported the creation of a CAD specification and a web-based digital plan submission and validation platform.
- CAD files and survey plan images are automatically checked against LTSA business rules before submission and approval.
- MNC designed and built FME workspaces that validate and ensure high-quality data is submitted into the system.

By combining a modern COTS framework, advanced spatial accuracy methods, and custom automation workflows, MNC helped LTSA deliver a scalable, sustainable solution that supports dynamic parcel updates and meets the evolving needs of British Columbia's land management system.

“
The LTSA is pleased to have MNC as part of the PMBC Build Team. MNC's work has been timely and within the budget envelope established by the contract.
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MIKE THOMSON BCLS SURVEYOR GENERAL OF BRITISH COLUMBIA

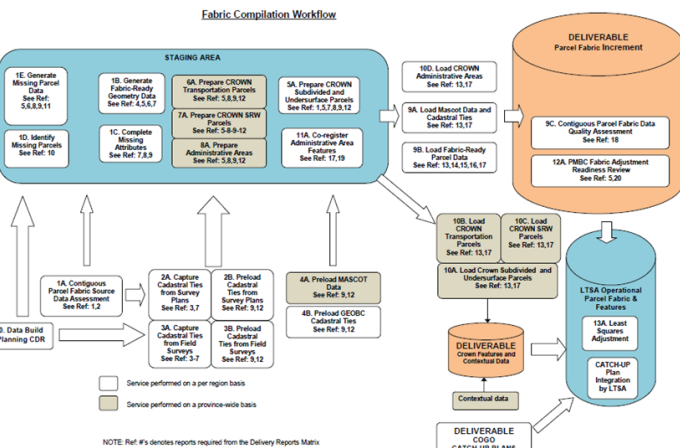


Diagram - Parcel Fabric Compilation Workflow

ParcelMap BC successfully delivered a unified, authoritative, and survey-aware digital parcel fabric covering over two million titled and Crown land parcels across British Columbia. The system enables the LTSA operations team to update the fabric dynamically as new survey plans or title changes occur, ensuring the dataset remains current, accurate, and trusted.

KEY OUTCOMES INCLUDE:

UNIFIED, PROVINCE-WIDE PARCEL DATA: MNC compiled and standardized data from disparate sources to produce a complete, survey-aware GIS parcel fabric for the entire province, providing a reliable foundation for land administration and decision-making.

AWARD-WINNING RECOGNITION: ParcelMap BC was honored with Esri's Special Achievement in GIS (SAG) Award, recognizing its innovative use of spatial analytics, automation, and modern mapping infrastructure.

FASTER ACCESS TO RELIABLE LAND INFORMATION: The system accelerated real estate transactions and improved land research and planning by giving lawyers, surveyors, realtors, government agencies, and property owners instant access to accurate, visualized parcel data.

IMPROVED DATA QUALITY AND WORKFLOW AUTOMATION: Automated digital plan submissions and FME-powered quality checks reduced manual errors, streamlined approvals, and ensured that only high-quality data entered the system.

SCALABLE AND SUSTAINABLE CADASTRAL INFRASTRUCTURE: The parcel fabric is continuously updated with newly surveyed parcels and enhanced with Least Squares Adjustments (LSA), improving spatial accuracy over time and supporting long-term registry sustainability.

COMPREHENSIVE, MULTI-CHANNEL ACCESS: ParcelMap BC is accessible via web portals, industry-specific interfaces, and open data services for GIS professionals—empowering a wide range of users across sectors.

OPERATIONAL EFFICIENCY & COST-SAVINGS: The modernization of BC's parcel fabric reduced administrative burden, lowered operational costs, and delivered consistent, high-quality data to support transparent and efficient land governance.

As a key solution partner, MNC played a central role in the successful delivery of ParcelMap BC, helping to transform how land information is managed in British Columbia. The project sets a new standard for digital land administration systems across Canada and offers a proven model for other jurisdictions seeking to modernize, unify, and streamline their cadastral mapping.

MNC SERVICES & TECHNOLOGY USED

SERVICE CATEGORIES:

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

TECHNOLOGY PLATFORM & TOOLS:

- ArcGIS (Esri)
- 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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