



## Automating Survey Plan Validation in Alberta: The SPOC Web-Based Solution

**Survey Plan Online Checker (SPOC)** is a geospatial web map application that allows Alberta land surveyors to verify that their survey plan meets Alberta Land Title specifications before submitting applications for approval to Alberta's Land Titles Office (LTO).

SPOC imports a survey plan CAD file and performs various business rule checks to validate contents,

spatial integrity, and formatting. Once the CAD data meets or exceeds quality parameters, SPOC packages validated data, the corresponding survey plan image, and relevant metadata into a digital submission package. The package is then submitted to LTO by surveyors in conjunction with their survey plan registration request.

### CHALLENGE

In 2009, budget constraints at Service Alberta placed pressure on the LTO to find digital efficiencies. MNC (Martin Newby Consulting Ltd.) was engaged to help reduce manual workloads and ensure higher-quality submissions by automating survey plan validation. The SPOC initiative was designed to address the following challenges:

#### KEY CHALLENGES INCLUDED:

- **Budget Constraints:** Reduced funding at Service Alberta necessitated new ways to streamline LTO operations and reduce manual review times.
- **Manual Workload Reduction:** LTO required an automated system to verify CAD files submitted for plan registration.
- **Submission Compliance:** The system needed to validate each CAD file for the following:
  - Met submission specifications
  - Included the correct CAD layers
  - Was accurately geo-referenced
  - Contained properly annotated dimensions
- **Improved Plan Quality:** Ensuring CAD files were validated prior to submission would directly improve the overall quality of registered plans.
- **Web-Based Validation Platform:** Application that would allow surveyors to pre-validate their plans, easing pressure on LTO staff while enhancing efficiency and compliance.



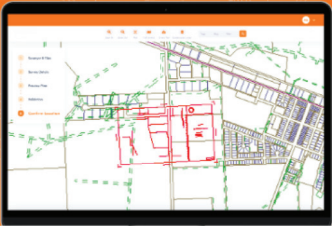
SPOC Survey Details and Web map images

## SOLUTION

MNC developed the Survey Plan Online Checker (SPOC) as a custom web-based application with an integrated geoprocessing engine. The solution supports Alberta's land surveyors and the LTO with the following core functionality:

### KEY STEPS IN THE SOLUTION:

- **CAD FILE IMPORT:** Accepts CAD files from Bentley (MicroStation) and AutoCAD (Autodesk).
- **AUTOMATED VALIDATION:** Performs business rule checks on content structure, formatting, spatial accuracy, and compliance with the Director of Surveys' requirements.
- **SUBMISSION PACKAGING:** Generates a secure digital submission package that includes:
  - Validated CAD data
  - Associated survey plan images
  - Supporting metadata fields (e.g., survey method, datum)



**SPOC**

### Survey Plan Online Checker

Survey Plan Online Checker (SPOC) is a geospatial web mapping application that allows Alberta land surveyors to verify that their survey plan meets Alberta Land Titles specifications before submitting applications for approval to Alberta's Land Titles Office (LTO).

## RESULTS

SPOC has significantly improved the quality and efficiency of survey plan submissions across Alberta. The application not only reduces manual effort at the LTO but also empowers surveyors to proactively correct errors before submission.

- **IMPROVED QUALITY:** All files processed through SPOC are verified to ensure the digital CAD file is georeferenced in accordance with the Director of Surveys requirements.
- **VISUAL CHECKS FOR USERS:** Surveyors can view their plans relative to Alberta's complete and current cadastral fabric, enabling them to identify plan anomalies or spatial conflicts prior to submission.
- **FASTER APPROVALS:** The digital workflow streamlines the approval process and enhances the overall quality of registration documents.
- **REDUCED EFFORT:** LTO staff can focus on document registration rather than verifying submission compliance.
- **MORE SECURE:** The system compresses and encrypts the surveyor's digital plan package, ensuring only LTO staff can extract the contents for registration.
- **MORE INFORMATION:** Metadata fields, such as survey method and datum, are captured to support the registration and mapping process.
- **REDUCED ERRORS AND COSTS:** Identifying errors before registration can lead to potential cost savings of more than \$2,000 per plan, while also increasing confidence and reliability in the land registration process.

**SPOC's reliable digital workflow underpins Alberta's leadership in digital land registration**, setting a new benchmark other jurisdictions can follow for process modernization, technical reliability, and stakeholder satisfaction.

## MNC SERVICES & TECHNOLOGY USED

### SERVICE CATEGORIES:

- Training and Support Services
- Digital Plan Submission
- Geospatial Development

### TECHNOLOGY PLATFORM & TOOLS:

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



**CONTACT US TODAY** to discuss your geospatial needs.

+1 (403) 294-1028 | [mnc@mncl.ca](mailto:mnc@mncl.ca) | [www.mncl.ca](http://www.mncl.ca)

### 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.

