



CAD to GIS Data Cleanse and Spatial View Web Map: MNC Converted and Modernized Pipeline Data into GIS-Ready Mapping for Alberta Gas Co-ops

The Federation represents over 123,000 customers across rural Alberta through a network of 52 natural gas distribution co-operatives, six counties, 16 towns and villages, and seven First Nations systems. With over 134,000 kilometers of pipeline in the ground, **managing accurate spatial data is vital to maintaining service delivery, regulatory compliance, and infrastructure planning.**

By 2018, however, the Federation's spatial data, originating primarily from legacy CAD files, had

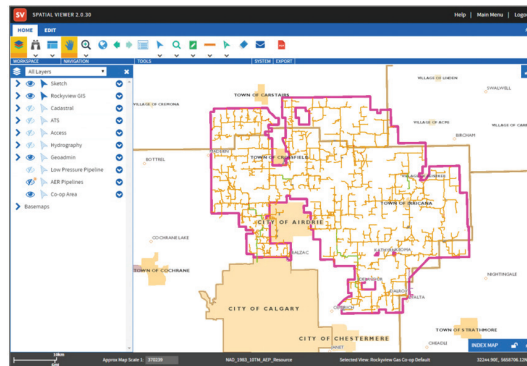
become **inconsistent, incomplete, and incompatible with modern GIS standards.** This hindered their ability to analyze, update, and visualize their vast underground and above-ground infrastructure.

To address these issues, the Federation partnered with **MNC (Martin Newby Consulting Ltd.)** to **transform its outdated CAD-based mapping into a clean, fully connected GIS environment with web-based accessibility.**

4,300 CAD files



GIS data for 134,000 kilometers of pipe in the ground



CHALLENGE

The Federation's pipeline infrastructure data was spread across 4,300 CAD files and **did not meet modern geospatial standards.**

KEY CHALLENGES INCLUDED:

- **Spatial inaccuracies** that limited analysis and asset management
- **Lack of connectivity** between gas line segments and features
- **No GIS-ready structure** to support centralized updates or queries
- **Outdated or missing attribution** for pipeline and infrastructure components
- **No web-accessible tool** for internal teams to view, edit, or generate maps

With growing regulatory, operational, and planning needs, the Federation required a full data transformation and modern delivery solution to support the long-term sustainability of its network mapping.

SOLUTION

MNC executed a comprehensive data conversion and cleansing initiative, transforming decades of CAD-based pipeline records into an accurate, GIS-ready environment.

KEY STEPS IN THE SOLUTION:

DATA CLEANSING & MODEL CREATION:

- Processed over 4,300 CAD files into a consistent, topologically clean GIS dataset.
- Ensured all gas lines were fully connected and spatially accurate.
- Standardized attribute fields and validated domains across all features.
- Applied symbology for key infrastructure, including crossings and end caps.

GIS SYSTEM DEPLOYMENT:

- Built a fully connected GIS mapping model using Esri's ArcGIS software.
- Integrated both underground and above-ground infrastructure.
- Delivered the new GIS database in a format compatible with modern geospatial workflows.

SPATIAL VIEWER IMPLEMENTATION:

- Launched a web-based Spatial Viewer application for internal use
- Enabled data visualization, attribute editing, upload of new infrastructure data, and PDF map generation
- Provided the Federation's team with hands-on access to an intuitive tool for maintaining and using their GIS data

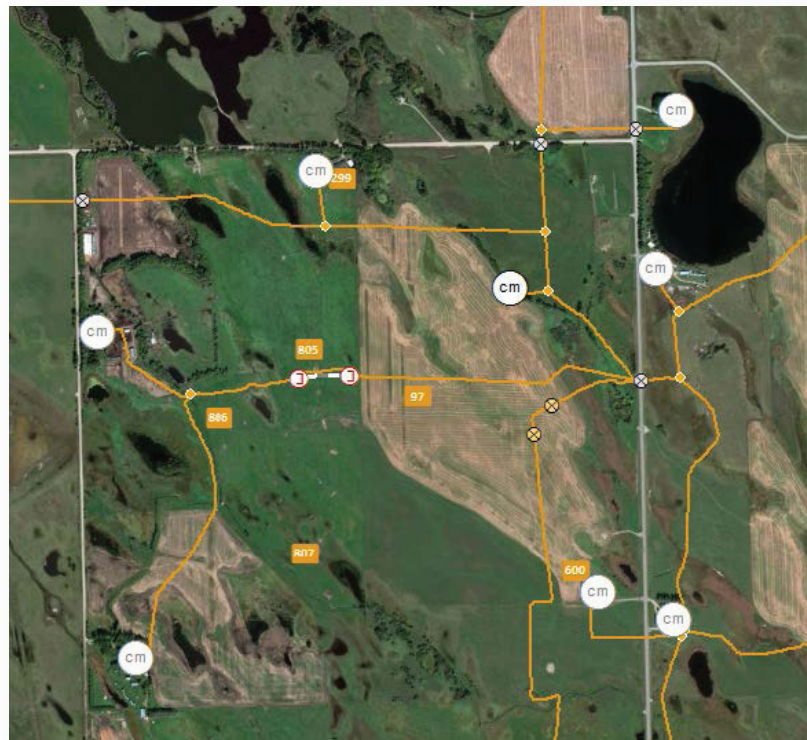
RESULTS

The Federation now benefits from a centralized, accurate, and fully connected GIS database covering over 134,000 kilometers of pipeline infrastructure.

KEY BENEFITS INCLUDE:

- GIS-ready data that meets modern standards for spatial accuracy and connectivity
- Errors such as dangles and disconnected features have been eliminated
- All features have valid domains and consistent attributes
- Pipeline crossings and caps are accurately placed and symbolized
- Internal teams access and manage data through the web-based Spatial Viewer

Led by MNC, this transformation demonstrates a scalable approach that can support any organization looking to modernize legacy infrastructure data, improve spatial accuracy, and enable informed, data-driven decision-making.



MNC SERVICES & TECHNOLOGY USED

SERVICE CATEGORIES:

- GIS Strategy and Planning
- Data Conversion and Migration

TECHNOLOGY PLATFORM & TOOLS:

- ArcGIS (Esri)
- AutoCAD (Autodesk)



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.

