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Business Domain

GIS and Geospatial

Project Type

Utility Infrastructure Inventory,
Subsurface Utility Engineering,
Data Analysis, CAD Drawing

Transforming Energy Access: New Gas Infrastructure for Ontario's Growing Urban District

Client

A leading provider of subsurface utility engineering (SUE) and geophysics services in Canada, specializing in utility mapping, locating, and design. Using advanced geospatial techniques and cutting-edge equipment, the company supports infrastructure projects by delivering precise data to minimize risks and ensure efficient planning.

Project

The project entailed mapping a new gas network to support urban growth. Standard-compliant CAD drawings were delivered, accurately depicting pipeline routes to ensure seamless integration with the local infrastructure.

Objective

The aim was to create detailed drawings to facilitate subsequent construction work. The client requires an efficient, accurately mapped network that complies with Ontario's regulatory standards, optimizes resource allocation, and minimizes operational risks. This also involved aligning infrastructure planning with anticipated urban growth to lower maintenance costs and improve emergency response efficiency.

Team Reinforcement

The project team included GIS and CAD engineers with significant experience in subsurface utility mapping and environmental consultants supported by municipal liaisons to ensure alignment with local infrastructure projects and community needs.

Challenge

The Client required detailed drawings of the subsurface infrastructure, including a new gas network that needed to comply with current Canadian standards, specifically the Ontario Energy Board (OEB) and Canadian Standards Association (CSA) standards for gas infrastructure.

Limited GIS/CAD expertise hindered in-house infrastructure mapping within the project timeframe.

Lack of efficient tools to reconcile field inspection data with existing drawings.

Tight deadlines required the team to efficiently process data and produce CAD drawings within a compressed timeframe.

Quick Facts

- ✓ 25 kilometers of new gas pipelines were mapped across the district
- ✓ Over 3,000 residential and commercial customers will be connected to the newly expanded gas network
- ✓ The integration of CAD and GIS technologies improved planning efficiency by 20%, reducing design and approval timelines

Technologies

ArcGIS Pro / AutoCAD / Civil 3D

Solution

★ 01

The materials provided are the basis for the construction of a new gas network and ensuring more than 3,000 consumers (residential and commercial) with the necessary service.

★ 02

Gas distribution providers received design materials for expanding the local gas network, ensuring the accessibility of services in the region.

★ 03

Tailored CAD and GIS solutions focused on the district's unique urban layout, following Ontario standards to ensure legal compliance and operational reliability for all gas infrastructure.

★ 04

The best practices of 3D modeling and data processing were applied, mainly through integrating geospatial data layers, precision LiDAR point clouds, and CAD-based utility schematics.

★ 05

Deployed quality control scripts within CAD and GIS environments to verify data accuracy and connectivity in the new gas network layout, reducing the chance of errors and rework.



Client Reference



The services provided under the Ontario Municipality Gas Supply Expansion Design Collaboration were completed on time and met all expected requirements. Notably, Intetics demonstrated proactive engagement by proposing optimization of existing infrastructure and an alternative approach to achieve the project objectives within the established timeframe.

Benefits and Results

- ★ 25 kilometers of new gas pipelines have been processed and mapped, expanding service coverage to over 3,000 residential and commercial consumers.
- ★ Enhanced data visualization for future planning through GIS-based 3D perspectives of underground infrastructure.
- ★ Operational safety improved through accurate GIS data, enabling quick location and analysis of network areas for emergency response and routine inspections.
- ★ Options to optimize existing subsurface infrastructure and enhance overall system efficiency were identified and proposed.