



## PROJECT BRIEF

# TransEd Valley Line LRT Instrumentation & Monitoring

## PROJECT PROFILE

### CLIENT:

TransEd / City of Edmonton

### LOCATION:

Edmonton, AB

### VALUE:

- Real-time data to allow dynamic construction decisions and design optimization
- Geotechnical engineering expertise to assist TransEd with analysis of monitoring data
- Wireless and solar powered system removing costs of cabling and main connections

### SERVICES PROVIDED:

- Real-time monitoring
- Geotechnical instrumentation

“The software incorporates installation documentation and photos into the database to better centralize all instrumentation information and make it readily accessible for reporting and review by TransEd.”



## INSTALLATION OF GEOTECHNICAL INSTRUMENTS , MONITORING & DATA MANAGEMENT

Geocomp provided instrumentation and monitoring for one mile of twin bored tunnels, using our *iSiteCentral*® GIS web-based software to provide real time assessment of construction related activity. *iSiteCentral*® integrated data from more than 2,000 sensors, including automated MPBXs, inclinometers, vibrating wire piezometers, and tilt meters, with settlement measurements and performance data from the contractor’s own tunnel monitoring regime. The software also incorporates installation documentation and photos into the database to better centralize all instrumentation information and make it readily accessible for reporting and review by TransEd. Geocomp installed a combination of manual survey and automated instrumentation monitoring to best suit the project requirements. The automated instruments were entirely wireless and solar or battery powered. A combination of radios and cellular modems were used to transmit data to the servers and web-based data management center, allowing near real-time viewing of data by anyone with an internet connection and the correct login credentials.



## BACKGROUND

The TransEd Valley Line LRT is building a light-rail transit (LRT) project in Edmonton, Alberta, connecting Mill Woods to downtown Edmonton with approximately 13 km of light-rail. This stage includes 11 stops, an elevated station incorporating transit center and Park & Ride, and a transfer point to the existing LRT at Churchill Square. It also consists of two, one-mile long tunnels under the center of Edmonton. The underground work to be done includes bored tunnels and station excavations. Since the work takes place in an urban setting, the protection of existing structures and buried utilities that could be impacted by the construction is critical to the successful completion of the work.