

# Project Profile

## LAKE HURON WATER SUPPLY SYSTEM Infrastructure Renewal - Electrical

The Lake Huron Primary Water Supply System services the communities of London, Lambton Shores, North Middlesex, South Huron, Bluewater, Middlesex Centre, Lucan-Biddulph and Strathroy-Caradoc from a water treatment plant located just north of the village of Grand Bend in South Huron. The plant has a current treatment capacity of 340 million litres per day and serves a population of approximately 325,000 people.

Originally built in 1964, the system has undergone many upgrades to meet the demands the community. It is, however, anticipated that system will assume its function for the next 50 years with no plans to decommission the facility after that time, and therefore electrical renewal is essential.



MVA Engineering has by competitive bid been successfully providing electrical infrastructure renewal since 1995. During this tenure MVA has completed more than thirty five electrical assignments such as:

- 4.16kV High Lift Pump MCC and Switchgear replacement
- 416kV Remote Breaker Control Panel Design Build
- Electrical Arc Flash Systems Study in accordance with NFPA 70E and the Ontario Occupational Health & Safety Act
- Electrical Power Systems Study and Digital Modeling
- Electrical Control Documentation Verification and Protective Device Co-ordination Study
- Electrical Ground Anomaly Probable Cause Investigation
- Electrical Needs Study Including Electronic Circuit and Area Mapping Drawings
- Digital Archive and Library



Recently MVA Engineering provided the detailed electrical design and tender for the arrangement of components within the High Lift 4.16 KV MCC that included:

- Confirm and revise design philosophy for power, protection and control systems
- Detailed removals & planning to maintain plant operations
- Detailed electrical drawings to include existing and proposed single-line diagrams, and control/protection schematic diagrams
- MCC, starter controller, and protection equipment detailed purchase and installation specification
- Detailed specification for changes of static exciters to rotating brush-less exciter for three (3) motors

The construction and engineering budget for this phase of the renewal was approximately \$1.0 million.



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