

Project:

King George Bascule Bridge

Client:

The County of Elgin
Port Stanley, Ontario



Description:

The King George Lift Bridge is a double bascule bridge traversing Kettle Creek at Bridge Street in Port Stanley, Ontario. The bridge, first designed and built in the late 1930's, opens to allow passage of fishing and recreational boats. Each bridge leaf pivots on trunnions located on abutments at either side of the river. Control houses are located on both the southeast and southwest sides.

Byrne Engineering Inc., in partnership with Burgess Engineering, undertook a mechanical and electrical inspection of the bridge with respect to its present and future viability. Burgess undertook the structural review while Byrne was tasked with the mechanical and electrical investigation.

These inspections included condition surveys of all mechanical and electrical systems of the bridge. The mechanical components included gears, bearings, brakes, shafts, and hydraulic buffers. The electrical items included the power distribution and control systems. Byrne drafted a comprehensive report that contained numerous recommendations for future work to maintain the bridge.

As recommended in the report, the client agreed to develop a maintenance schedule for the bridge and retained Byrne Engineering to complete this task. Since completing this report, Byrne has acted as the client's engineer for this structure, performing all engineering services.

Byrne prepared a maintenance schedule that documents the frequency with which operating and maintenance tasks are to be performed and what personnel are to conduct them.

The following year, the client requested that Byrne Engineering prepare drawings and specifications for replacing the sidewalk grating on both leaves of the bridge. Byrne was responsible for tendering the work and supervising the repairs.

Byrne has since carried out additional structural and mechanical inspections of the bridge. Several concerns with the bridge electrical systems were identified in the original report. Byrne has been tasked with the redesign of the electrical system to correct these deficiencies and upgrade the bridge electrical systems in order to reduce maintenance and increase reliability.