



PUMP UPGRADES HELP CITY OPERATIONS SAVE MONEY, TIME

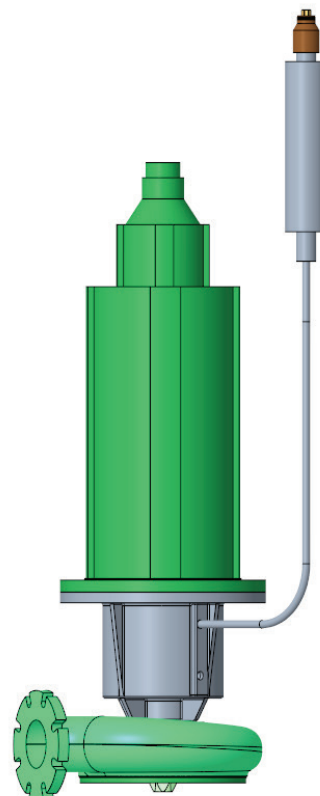
The City of Kelowna, British Columbia had experienced continuous clogging issues in their Gyro sanitary lift pump stations. Like many systems relying on basic non-clog pumps, Kelowna city employees were dealing with service and system operations issues due to the challenges rags ensued on the Variable Frequency Drives (VFDs), slowing the pumps at times of lower station inflow rates.

Then, as one pump plugged, pump flow fell, which caused other pumps to cycle harder to keep up with inflow rates. Eventually, the next pump was also slowed by the VFD, and under this slowed condition it would generally also plug, compounding the issue.

There were many circumstances where all the station's pumps were plugged or off-line, causing serious cost and operations implications. On average, their outmoded pumps were removed from the pump station for unplugging and cleaning three times per week. Three staff members and a crane truck were required for each maintenance event. Factoring in labor and equipment, maintaining the old pumps cost the city nearly \$50,000 USD / \$60,000 CAD annually. In 2009, needing an updated, more cost-effective solution, Kelowna Operations decided it was time for an upgrade.

The City of Kelowna purchased one 60 horsepower (hp), 1,180 revolutions per minute (rpm) model submersible chopper pump in September 2009. A newer submersible (rated performance: 2,000 U.S gallons per minute (gpm) at 54.5 feet total dynamic head [tdh]) was installed alongside their older non-clog pumps in an effort to evaluate and improve operating efficiencies. After successful implementation and noticeable improvements, a second submersible pump was purchased in May 2011, and a third in November 2015. Thanks to the ability to reuse the original guiderail system, swapping out the pumps was fast and simple, with no rework required.

Since replacing their older non-clog pumps with the newer chopper pumps, routine plugging problems in the pump station have been eliminated. "No pump servicing has been required for cleaning (unplugging) of the chopper pumps," explained Brad Stuart from Kelowna Ops. "The only pump servicing has been related to inspections at appropriate routine maintenance service intervals."



**Cost-savings calculations: Cost to resolve each plugging event: 3 operators x 2 hours x \$40/hr = \$240/event labor costs. The cost of the crane truck was \$150 for each event. Total cost: \$390/event. With 3 plugging events/week, cost was 3 x \$390 = \$1170/week. With 52 weeks/year x \$1170 cost/week = \$60,840 CAD/year cost to maintain the old pumps. In US dollars at 2021 exchange rate: \$60,840/1.25 = \$48,672.*