

PROJECT:

Halifax Regional
Water Commission

LOCATION:

Cole Harbour Road,
Dartmouth, Nova Scotia

PRODUCTS:

Hydro-Guard® HG-4
LongNeck™
Sub-Surface
Direct Discharge
Automatic
Flushing System

Hydro-Guard® Contributes Substantial Time and Money Savings, Environmental Safety and Water Quality at Halifax Water

**SCOPE**

Nova Scotia's Halifax Regional Water Commission (HRWC), also known as Halifax Water, provides potable water, wastewater and stormwater services to the Halifax Regional Municipality. Halifax Water currently manages eight watersheds as well as three groundwater sources which collectively supply potable water to over 86,000 customers. Water is delivered via 82,334 service connections—31,878 of which are located within its east region. Included within the WDS are 23 Dept. of Environment sampling stations.

PROBLEM

One of the sampling stations is located in a park on Cole Harbour Road, serviced by the Lake Major Water Supply Plant. Until 2011, water flowed regularly through a 14-inch transit line with a 2-inch connection to a car wash located prior to the dead end of the line. Toward the end of 2011 the car wash closed resulting in a decrease in low chlorine residuals due to non-movement in the main. Stimulating water movement required two HRWC staff to show up on-site for up to two hours, sometimes twice a week, to partially open a hydrant. This method flushed up to 50m³ at a cost of \$150.00 to \$175.00 per visit. Of course non-revenue water usage increased as well.

SOLUTION

To help solve the water quality issue economically, HRWC's East Water Services Superintendent Dave Hiscock directed removal of the hydrant and installation of a Mueller Hydro-Guard HG-6 Automatic Flushing System in its place. Subsequently, although the HG-6 resulted in far fewer man-hours at the site, water continued running down the street during flushing. Contemplation of winter climate severity issues necessitated looking into the installation of the Mueller Hydro-Guard HG-4 LongNeck Sub-Surface Direct Discharge Unit as the ultimate solution, as it has the capability of flushing, de-chlorinating and expelling the water into a storm

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sewer in an environmentally safe manner. Additionally, keeping water out of the street enhances public perception.

Installation was completed in June 2013, after an experimentation program by Halifax Water's water quality section, using a portable unit to determine optimal flush times. Hiscock reports that HRWC has reduced man-hours down to one visit per month to check the de-chlorination pucks and ensure battery strength. The Hydro-Guard HG-4's battery has provided three years of trouble-free automatic operation vs. manual flushing. HRWC programmed their Hydro-Guard HG-4 to flush for one hour twice a day (at 10 m³ per thirty minutes) vs. their former one-hour flush duration. A further reduction in flush times is anticipated since there has been no variation in chlorine residuals with the HG-4 in place. Also, little maintenance has been required since installation. The only variances of this installation are extra insulation called for by HRWC, plus the appealing rock enclosure which helps the unit blend desirably with its park location.

Labor costs per flush remain at \$175.00; however, average visits to the flush site per month are down from eight to one—a savings of \$1225.00 per month. Water use per flush immediately fell from 52 m³ to 10 m³ which, when calculated over the two-year period, shows a decrease in non-revenue water use from 12,480 m³ to 9,000 m³, a 3,480 m³ savings. Aggregate costs have fallen from \$42,000 to \$24,750 within the past two years—a total savings of \$17,250 after installation.

CONCLUSION

Savings in the two years since installation of the Mueller Hydro-Guard HG-4 have been substantial with over 51% in costs saved and over 32% less water loss. The cost of installation included the unit, labor and reinstatement. The cost of reinstatement comprised about half of the total cost; therefore, picking the optimal location is highly recommended. The investment has already been returned and installation of more Hydro-Guard HG-4 units is contemplated. Halifax Water's forward-looking Business Plan includes a commitment to continuous improvement and ensures that the system's technology and capacity will serve its communities into the future years of growth and expansion.

REFERENCES

1. Hiscock, Dave, Halifax Water. Phone interview, 3 November 2015.
2. Hiscock, Dave, "The HG-4", Halifax Water, 6 November 2015.
3. Halifax Regional Water Commission, Section 2-01 Environmental Policy ISO 14001: 4.2, February 2013.
4. Halifax Regional Water Commission Eighteenth Annual Report, 31 March 2014.
5. Halifax Regional Municipality, Source Water Protection, 8 December 2015.



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