



**City of Kingston
Report to Council
Report Number 17-304**

To: Mayor and Members of Council

From: Mark Van Buren, Acting Commissioner, Transportation and Infrastructure Services

Resource Staff: Damon Wells, Director, Public Works

Date of Meeting: November 7, 2017

Subject: Sign Retro-reflectivity Annual Inspection

Executive Summary:

Sign retro-reflectivity inspections are required annually as per the Minimum Maintenance Standards Regulations (MMS), under the Municipal Act. Public Works employees currently perform annual, visual night-time inspections to meet the requirement in the regulation. Under the appropriate circumstances this method of inspection is considered suitable under the guidelines set-out in the Manual for Uniform Traffic Control Devices (MUTCD).

Measured sign retro-reflectivity is an alternate inspection process that utilizes hand-held contact devices called retro-reflectometers. This method of inspection provides the most direct means of monitoring the retro-reflectivity levels of traffic signs and removes the subjectivity of the visual night-time method.

Advantage Data Collection Ltd. is a company that specializes in sign retro-reflectivity inspections and provides specific sign inventory and asset data management services to not only meet the MMS, but to improve sign maintenance and replacement, as well as enhance the asset management of traffic signs. They are the only company who can provide the complete inventory review using the latest in field data collection software, sub-metre GPS accuracy and the post processing data work.

Based on their specialized service product and their very specific experience in this field, staff recommend a single-source agreement with Advantage Data Collection Ltd. for the annual sign retro-reflectivity inspection for the next two years.

November 7, 2017

Page 2 of 6

Recommendation:

That Council authorize the Mayor and City Clerk to enter into an agreement with Advantage Data Collection Ltd., in a form satisfactory to the Director of Legal Services, for the provision of services related to the annual retro-reflectivity inspection and data collection for municipal signage for a two year term.

November 7, 2017

Page 3 of 6

Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

**Mark Van Buren, Acting
Commissioner, Transportation
and Infrastructure Services**

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Gerard Hunt, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Lanie Hurdle, Commissioner, Community Services	Not Required
Desirée Kennedy, Chief Financial Officer & City Treasurer	<input checked="" type="checkbox"/>
Denis Leger, Commissioner, Corporate & Emergency Services	Not Required

November 7, 2017

Page 4 of 6

Options/Discussion:

Traffic signs provide important information to road users. To be effective, traffic sign visibility must be maintained during daytime and nighttime conditions. The Minimum Maintenance Standards Regulations (MMS), under the Municipal Act sets the requirement to inspect and maintain certain traffic signs, including regulatory and warning signs.

Signs

11. (0.1) The minimum standard for the frequency of inspecting signs of a type listed in subsection (2) to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 7 (1); O. Reg. 47/13, s. 11 (1).

MMS Section 11, Subsection 2 lists specific signs such as Stop and Stop Ahead, One Way, School Zone Speed Limits, Yield and Checkerboards.

Regulatory or warning signs

12. (1) The minimum standard for the frequency of inspecting regulatory signs or warning signs to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 8; O. Reg. 47/13, s. 12 (1).

MMS Section 12, Subsection 1 covers all signs listed under Ontario Traffic Manual (OTM) Book 5 - Regulatory Signs and all signs listed under OTM Book 6 – Warning Signs. The list of signs in these OTM books is extensive and includes signs such as Speed Zone signs, Curve signs and Deer Crossing signs. The OTM sets guidelines for the uniformity, design, placement, operation and maintenance for these signs.

Current Public Works Inspection Practices**Routine Inspection**

Public Works have staff dedicated to sign inspection, maintenance and new sign installations. To meet general maintenance inspection requirements, patrol staff performs routine visual inspections of road signs during routine road patrols. Patrollers watch for missing signs, damaged sign posts, leaning signs, signs with graffiti, and visibility obstructions. Staff who perform routine road patrol also identify deficiencies such as potholes, washouts and guide rail damage. The routine road patrol takes place during daylight hours.

Annual Inspection

The annual retro-reflectivity inspections are currently performed using the night-time visual inspection method. The retro-reflectivity of an existing sign is assessed by a trained sign inspector conducting a visual inspection from a moving vehicle during night-time conditions. Non-compliant signs are identified for replacement; however compliant signs are not specifically recorded as inspected, leaving a gap in inspection data.

November 7, 2017

Page 5 of 6

Analysis

One of the most fundamental parts of a sign maintenance program is to develop an accurate inventory of the sign assets. An inventory is currently in place and is tracked in Cartegraph (software database), which is an asset management software hosted by the City Engineering department. The sign inventory in the City for only the signs that require retro-reflectivity inspection is greater than twelve thousand (12,000 +).

Currently the sign asset database and the annual visual night-time retro-reflectivity inspections are separate entities. When reviewing this inspection program staff looked at ways to better track these inspections and with a sign database already in place we pursued ways to incorporate these inspections into Cartegraph.

Another significant consideration is risk management and the ability to provide adequate protection from potential claims. This means finding the solution that provides the most accurate result. The use of retro-reflectometers is the only objective way to evaluate retro-reflectivity.

Advantage Data Collection Ltd. (Advantage) is a company that specializes in sign retro-reflectivity inspections and provides specific sign inventory data collection and asset data management services. This unique service meets the MMS inspection requirement, improves traffic sign maintenance, enhances the asset management of traffic signs, as well as lowers the risk exposure to potential traffic sign related claims. Advantage promotes their business as the only company in the Province of Ontario to develop and implement sign management programs for municipal governments. They provide retro-reflectivity inspection and sign management services to over 150 municipal clients in Ontario. As this technology develops and other companies enter this specific service market, Public Works will review and consider the available options beyond the recommended two-year term in this report.

The services proposed by Advantage include inspecting the Regulatory and Warning signs in the City's road network with a team of IT and GIS professionals who will use retro-reflectometers to inventory each sign by placing a barcode and assigning each with a unique identification number.

The data collection will include the type of sign, sub-metre accuracy for GPS location, sign size, type of post, general sign condition and the measured retro-reflectivity reading. This data is recorded, processed and incorporated into the City's sign database. The service also includes training on the use of the software, principles of retro-reflectivity, and principles of sign management as well as general data management.

Existing Policy/By-Law:

Bylaw 2000-134, "A Bylaw to Establish Purchasing Policies and Procedures for the City of Kingston".

Notice Provisions:

Not applicable.

November 7, 2017

Page 6 of 6

Accessibility Considerations:

Not applicable.

Financial Considerations:

There are over twelve thousand signs along City of Kingston roads that require annual retro-reflectivity inspection. The cost to have Advantage Data Collection Ltd perform the detailed inspection and provide the inventory comparative data and retro-reflectivity results for a two-year term is \$132,034.59 before HST.

This cost includes the increased time it takes for the initial data collection of sign attributes, retro-reflectivity, GPS, barcoding and training.

This cost will be covered in the annual Public Works operating budget.

Contacts:

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Bill Linnen, Operations Manager, Public Works Department, 613-546-4291, extension 1856

Other City of Kingston Staff Consulted:

Lana Foulds, Manager, Financial Planning

Exhibits Attached:

Not applicable.