



OPERATIONS COMMITTEE AGENDA

Operations Committee Meeting
Monday, November 18, 2013
Tom Davies Square

COUNCILLOR JACQUES BARBEAU, CHAIR

Claude Berthiaume, Vice-Chair

4:00 p.m. OPERATIONS COMMITTEE MEETING
COMMITTEE ROOM C-11

Council and Committee Meetings are accessible. For more information regarding accessibility, please call 3-1-1 or email clerks@greatersudbury.ca.

DECLARATIONS OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF

PRESENTATIONS

1. Report dated November 7, 2013 from the General Manager of Infrastructure Services regarding Pedestrian Crossing - Brady Street at Shaughnessy Street. **5 - 21**
(ELECTRONIC PRESENTATION) (RECOMMENDATION PREPARED)

- David Shelsted, Director of Roads and Transportation Services

(As requested by the Operations Committee, the report provides options to provide a protected crossing for pedestrians at the intersection of Brady Street and Shaughnessy Street.)

2. Report dated November 7, 2013 from the General Manager of Infrastructure Services regarding Winter Control Update. **22 - 27**
(ELECTRONIC PRESENTATION) (FOR INFORMATION ONLY)

- Randy Halverson, Manager of Operations

(This report provides details to the Operations Committee on the Winter Control plan for the 2013/2014 Winter Season.)

CONSENT AGENDA

(For the purpose of convenience and for expediting meetings, matters of business of repetitive or routine nature are included in the Consent Agenda, and all such matters of business contained in the Consent Agenda are voted on collectively.

A particular matter of business may be singled out from the Consent Agenda for debate or for a separate vote upon the request of any Councillor. In the case of a separate vote, the excluded matter of business is severed from the Consent Agenda, and only the remaining matters of business contained in the Consent Agenda are voted on collectively.

Each and every matter of business contained in the Consent Agenda is recorded separately in the minutes of the meeting.)

CORRESPONDENCE FOR INFORMATION ONLY

- C-1. Report dated November 5, 2013 from the General Manager of Infrastructure Services regarding DWQMS Annual Communication Update. **28 - 31**
(FOR INFORMATION ONLY)

(The Drinking Water Quality Management Standard requires that "relevant aspects of QMS (be regular) communicated" to the Owner. These include organizational roles and responsibilities, infrastructure review and maintenance, and results of audits and management review.)

REGULAR AGENDA

MANAGERS' REPORTS

- R-1. Report dated November 14, 2013 from the General Manager of Infrastructure Services regarding Snow Removal Report. **32 - 36**
(FOR INFORMATION ONLY)
(As requested by Council, this report provides to the Operations Committee options and costs for an enhanced service level of snow removal along roadways and a description of the current level of service.)
- R-2. Report dated November 7, 2013 from the General Manager of Infrastructure Services regarding Advertising Contract Agreement. **37 - 38**
(RECOMMENDATION PREPARED)
(This report provides information regarding recommended amendments that have been made to the current advertising agreement.)

MOTIONS

- R-3. **Request for all way stop at intersection of Montée Rouleau and Carrière Street**
THIS MOTION WAS DEFERRED AT THE OPERATIONS COMMITTEE MEETING OF OCTOBER 21, 2013.
As presented by Councillor Dutrisac:
WHEREAS there appears to have been a significant increase in traffic volume and speed violators along Montée Rouleau in recent years;
AND WHEREAS the intersection at Montée Rouleau and Carrière Street is a hidden intersection, which creates a hazard to drivers trying to enter Montée Rouleau from Carrière Street;
AND WHEREAS residents in the area claim to have witnessed several accidents at this intersection;
AND WHEREAS residents in the area are requesting that an all way stop be installed at this intersection;
THEREFORE BE IT RESOLVED that City of Greater Sudbury staff be directed to undertake an all way stop review for the intersection of Montée Rouleau and Carrière Street, and that they report their findings to the Operations Committee at its November 18th, 2013 meeting.

ADDENDUM

CIVIC PETITIONS

QUESTION PERIOD AND ANNOUNCEMENTS

NOTICES OF MOTION

ADJOURNMENT

BRIGITTE SOBUSH, DEPUTY CITY CLERK

Request for Decision

Pedestrian Crossing - Brady Street at Shaughnessy Street

Presented To:	Operations Committee
Presented:	Monday, Nov 18, 2013
Report Date	Thursday, Nov 07, 2013
Type:	Presentations

Recommendation

THAT, to improve pedestrian safety, the City of Greater Sudbury maintain and enhance the pedestrian crossing on the west approach of Brady Street at Shaughnessy Street by installing zebra style pavement markings as well as "Yield to Traffic" signs at both ends of the crossing with funding from the 2014 Operating Budget and;

THAT the City of Greater Sudbury install a fence and/or planters along the Brady Street median to reduce jay-walking and funnel pedestrians to the enhanced crossing in the 2015 construction season and funded from the 2015 Capital Budget.

Finance Implications

If approved, the zebra style pavement markings and the signage will be funded by the 2014 Operating Budget and the fencing and/or planters will be funded from the 2015 Capital Budget.

Background

See attached report entitled Pedestrian Crossing Policy and Recommendations.

Signed By

Report Prepared By

Dave Kivi
Co-ordinator of Transportation & Traffic
Engineering Services
Digitally Signed Nov 7, 13

Division Review

David Shelsted
Director of Roads & Transportation
Services
Digitally Signed Nov 7, 13

Recommended by the Department

Tony Cecutti
General Manager of Infrastructure
Services
Digitally Signed Nov 7, 13

Recommended by the C.A.O.

Doug Nadorozny
Chief Administrative Officer
Digitally Signed Nov 9, 13

BACKGROUND

At the Operations Committee Meeting held on March 5, 2012, City Staff and staff of HDR Corporation presented a new Pedestrian Crossing Policy for the City as well as the results of site assessments for three pedestrian crossing locations in downtown Sudbury (see Exhibit "A"). The Operations Committee approved the Pedestrian Crossing Policy, but directed Staff to review and report on other options for the Brady Street pedestrian crossing.

Existing Conditions

This unprotected pedestrian crossing is located adjacent to Tom Davies Square on the west leg of the intersection of Brady Street and Shaughnessy Street (see Exhibit "B"). It is approximately 95 metres west of Paris Street and 90 metres east of Minto Street. Brady Street is posted at 50 km/h and carries an AADT of approximately 15,900.

Based on a traffic count conducted on November 12, 2012, there were 187 pedestrians that crossed Brady Street on the west side of Shaughnessy Street and 72 pedestrians crossed on the east side during the afternoon peak period between 4:00 p.m. and 5:00 p.m. Although the pedestrian volumes are high in the peak periods, they are insufficient throughout the day to meet the thresholds required in the Ontario Traffic Manual for traffic signals. The spacing of this location to the adjacent traffic signals does not meet the minimum spacing guidelines of 215 metres between signals. The 215 metre guideline is intended to reduce the potential for driver confusion when approaching closely spaced signals. In this situation drivers may focus on downstream signals rather than the impending intersection.

A review of the City's collision information revealed that there were no collisions involving pedestrians in the last three years in this area of Brady Street.

Based on the above information, HDR Corporation recommended that the existing unprotected mid-block crossing be maintained and enhanced to accommodate this pedestrian desire line. Recommended crossing enhancements to the mid-block crossing include the application of Zebra style pavement markings similar to those used along Elm Street, as well as the addition of "Yield to Traffic" signs at both ends of the crossing.

In order to eliminate jay-walking at random locations across Brady Street, it was recommended that median enhancements be installed along Brady Street to discourage jay-walking and funnel pedestrians to the enhanced pedestrian crossing. Median enhancements can include the installation of a fence and/or planters similar to the median enhancements applied along Elm Street at the Elm Street crossing.

Alternatives

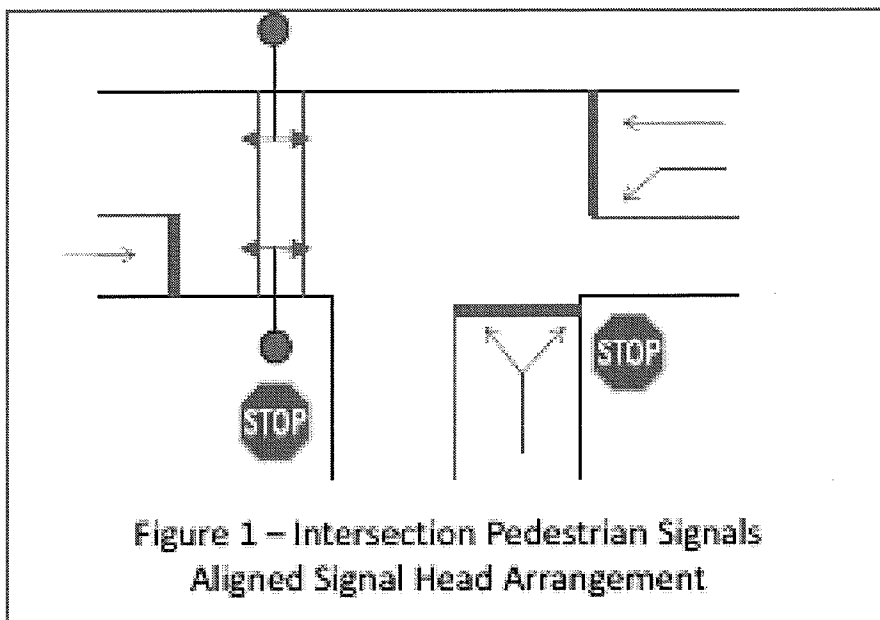
To address the request of the Operations Committee to review other options for Brady Street, the City retained HDR Corporation. HDR has reviewed the following three options for providing a protected pedestrian crossing at the Brady Street and Shaughnessy Street intersection.

1. Intersection Pedestrian Signals with an aligned signal head arrangement
2. Intersection Pedestrian Signals with a conventional signal head arrangement
3. Full Traffic Control Signals with a conventional signal head arrangement

A summary of the alternatives that were reviewed is provided below. The full memorandum from HDR can be found in Exhibit "C".

Option 1 - Intersection Pedestrian Signals with an Aligned Signal Head Arrangement

In this option, intersection pedestrian signals are installed on the west leg of the Brady Street and Shaughnessy Street intersection. The west leg is selected to avoid impeding on the westbound left turn storage area. A schematic of this option is shown in Figure 1.



This type of intersection pedestrian signal is very similar to the signalized crossing on Paris Street at the Southwind Retirement Residence. The estimated cost to install this option is \$100,000 to \$125,000.

Most agencies in Ontario run IPS's in an uncoordinated (or free) operation. This mode of operation minimizes the delays to pedestrians as they are generally serviced immediately. The alternative (coordinated mode of operation) has the potential to introduce a delay before servicing the pedestrian. The concern with this delay is that pedestrians may not wait and cross the road before getting the right-of-way particularly since there are no other signal indications that would give the pedestrian the sense that the signals are actually cycling.

As a result, and for the purposes of this evaluation, it is assumed that the City would operate the signals shown in Figure 1 in free mode. There are both advantages and disadvantages of this option.

Advantages:

- Traditional design for intersection pedestrian signals
- Fewer poles required
- Lower cost than a full set of signals,
- Typically responds quickly to pedestrian demands by running free

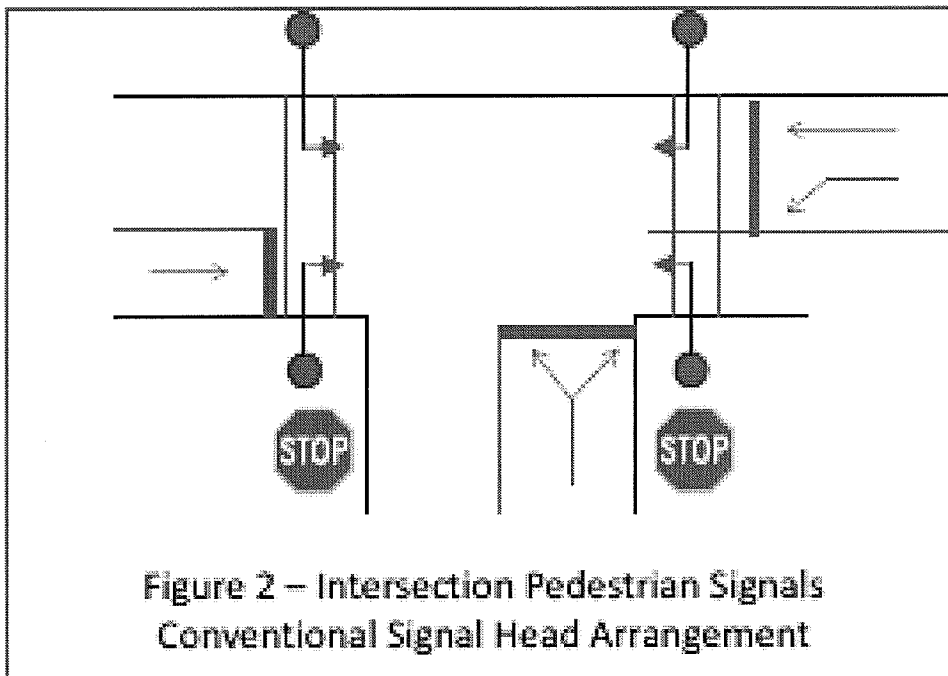
Disadvantages:

- Free operation results in the potential to interrupt signal coordination along Brady Street
- Optically programmed signal displays on Brady Street may confuse drivers (and pedestrians)
- on Shaughnessy Street since the heads will appear dark
- This orientation results in a repositioning of the stop bar for eastbound traffic some 15 meters further to the west, resulting in an even shorter signal spacing with signals at Minto Street

Option 2 - Intersection Pedestrian Signals with a Conventional Signal Head Arrangement

The second option considered an intersection pedestrian signal but using a four-pole, conventional signal head arrangement. This option is considered to allow the eastbound stop bar to be positioned closer to the Shaughnessy Street intersection than in Option 1. Additionally, to address the pedestrian demand crossing the east leg, this Option introduces a second crosswalk on Brady Street. It is schematically illustrated in Figure 2.

The cost to implement this option is significantly higher due to the additional poles and conduit that is required. The estimated cost is \$170,000 to \$190,000.



Again, there are advantages and disadvantages of this option.

Advantages:

- Allows for optional second Brady Street crossing
- Compresses the intersection and maximizes spacing between stop bars
- Typically responds quickly to pedestrian demands by running in free

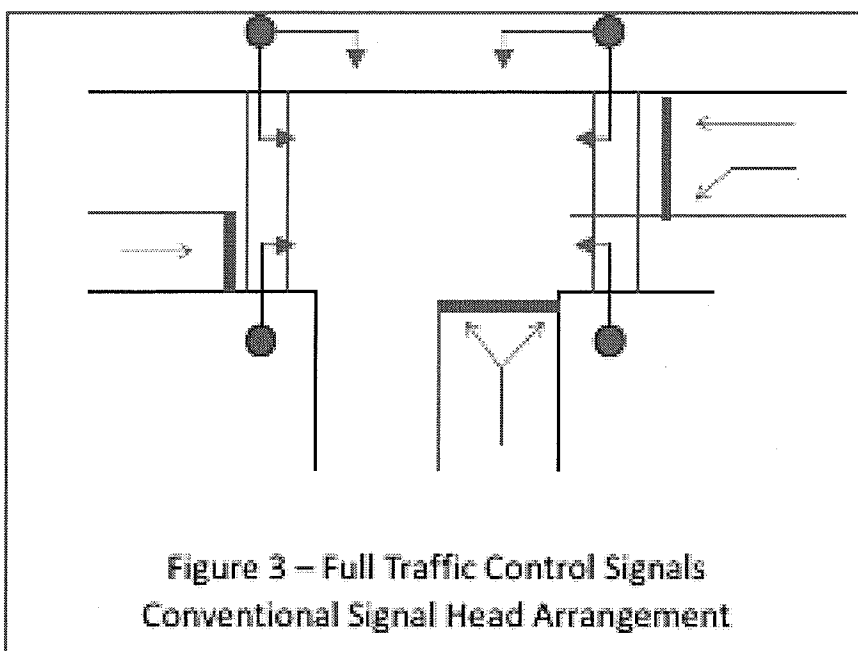
Disadvantages:

- Non-traditional design
- More costly than Option 1
- Free operation results in a potential loss of coordination on Brady Street
- May result in confusion for drivers (and pedestrians) on Shaughnessy Street particularly with optically programmed signal displays on Brady Street

Option 3 - Full Traffic Control Signals with a Conventional Signal Head Arrangement

Option 3 was identified as a means of reducing the confusion to drivers waiting on Shaughnessy Street and re-introducing progression along Brady Street. It consists of a full set of traffic signals. The schematic for this option is shown in Figure 3.

The estimated cost to implement full signals is not much higher than Options #2 at \$180,000 to \$200,000.



Once again, there are advantages and disadvantages of this option.

Advantages:

- This option uses a traditional design
- Minimizes driver confusion on Shaughnessy Street
- Coordination maintained along Brady Street
- Compresses the intersection and maximizes spacing between stop bars
- Safer operations during pre-emption

Disadvantages:

- Longer delay to pedestrians and traffic on Shaughnessy Street
- More costly than Option 1 and marginally more costly than Option 2
- May set a precedent of installing signals where they do not fully comply with the Warrant

Another disadvantage of this option is that full traffic signals will attract additional traffic to Shaughnessy Street to turn left onto Brady Street. This will increase congestion and conflicts between turning traffic and pedestrians.

Median Enhancements

Enhancements to the existing median along Brady Street should be considered with all options in an effort to limit the amount of “jay-walking” across the street and to force pedestrians crossing the street to use the signals at Shaughnessy Street. Median enhancements could include the addition of added landscaping / planting or a fence along the median to limit the potential for pedestrians to cross at various locations between Paris and Minto Streets.

RECOMMENDATIONS

While cost and mobility are important criteria for the City, pedestrian safety is paramount. HDR’s original recommendation of maintaining a marked, uncontrolled crossing is still the preferred result. As indicated previously, there have been no collisions involving pedestrians within the last three years at this location. However, should the option of signalization be selected, Option 3 is recommended as it is expected to result in the highest compliance rate for pedestrians while servicing pedestrians on both the east and west legs. It also offers the advantages of signal progression on Brady Street and the ability to provide optically programmed signal displays with minimal confusion to motorists and pedestrians.

A median consisting of raised planters and/or a fence should be constructed to discourage pedestrians from crossing mid-block.



Request for Decision

Pedestrian Crossing Policy and Recommendations

Presented To: Operations Committee

Presented: Monday, Mar 05, 2012

Report Date Wednesday, Feb 22, 2012

Type: Presentations

Recommendation

That the Operations Committee adopt the Pedestrian Crossing Policy prepared by HDR Corporation dated February 2012, and;

That the recommendations contained in the Pedestrian Traffic Study – Crossing Review prepared by HDR Corporation dated February 2012 with respect to the pedestrian crossing on Elm Street between the Transit Depot and the Rainbow Value Centre be approved, and;

That the recommendations contained in the Pedestrian Traffic Study – Crossing Review prepared by HDR Corporation dated February 2012 with respect to the pedestrian crossing on Brady Street at Shaughnessy Street be approved, and;

That HDR Corporation complete the development of an educational brochure and that Staff undertake an educational campaign regarding pedestrian crossings all in accordance with the report from the General Manager of Infrastructure Services dated February 22, 2012.

Signed By

Report Prepared By

Dave Kivi
Co-ordinator of Transportation & Traffic
Engineering Services
Digitally Signed Feb 22, 12

Division Review

David Shelsted, MBA, P.Eng.
Acting Director of Roads &
Transportation
Digitally Signed Feb 22, 12

Recommended by the Department

Greg Clausen, P.Eng.
General Manager of Infrastructure
Services
Digitally Signed Feb 22, 12

Recommended by the C.A.O.

Doug Nadorozny
Chief Administrative Officer
Digitally Signed Feb 28, 12

Background

The City's Roads and Transportation Services Division retained HDR Corporation to develop a Pedestrian Crossing Policy to assist the City in determining how and when to implement pedestrian crossings (see **Exhibit A**).

HDR Corporation was also asked to undertake an assessment of three (3) specific pedestrian crossings in downtown Sudbury. The pedestrian crossing locations included as part of the assessment are:

1. Ste. Anne Road crossing at the Radisson Inn
2. Elm Street crossing at the Rainbow Value Centre
3. Brady Street crossing at Shaughnessy Street

The results of the assessments are contained in **Exhibit B, Pedestrian Traffic Study – Crossing Review**.

Pedestrian Crossing Policy

The Pedestrian Crossing Policy has been developed in light of the benefits of improving both driver and pedestrian awareness and understanding of rules of right of way. Research into the development of the policy has included a review of the practices of other jurisdictions, generally accepted and published best practices in Ontario, original research into traffic safety, and legislative references such as the Ontario Highway Traffic Act. However, as this is a City of Greater Sudbury Policy, it has been developed in recognition of the specific roadway environment in the City of Greater Sudbury, existing pedestrian crossing features, and existing driver expectancy with the City.

Some of the key recommendations contained in the policy include the following:

1. Continue to follow the Ontario Traffic Manual Warrants and Methodologies for implementing protected pedestrian crossings using traffic control signals, mid-block pedestrian signals and intersection pedestrian signals.
2. Consider pedestrian grade separation within the context of potential benefits and costs at locations where other forms of protected crossings are warranted, but cannot be reasonably, economically and practically implemented.
3. With the exception of supervised school crosswalks, marked crosswalks will be discouraged.
4. Utilize warning signs, pedestrian refuge islands and other measures such as reflective delineator posts at unprotected crossings to draw driver's attention to the possible presence of pedestrians.
5. Consider removing crosswalk markings at unprotected crossings on high speed or high volume multi-lane roads.
6. Proactively address pedestrian safety needs and establish a program for reviewing pedestrian crossings.

Pedestrian Traffic Study – Crossing Review

The City of Greater Sudbury has been responsive to the need to better accommodate the safety and security of pedestrians in the roadway environment. To this end, the City initiated a pedestrian crossing policy study and reviews of pedestrian safety and accommodation of "in-service roads". This study is an assessment of these specific pedestrian crossings in downtown Sudbury.

It was the objective of the study to assess the appropriateness of the existing forms of pedestrian crossings. The study provides an inventory of existing conditions and identifies opportunities to improve pedestrian crossing safety. For the recommended measures, an implementation strategy is also identified.

It should be noted that this study commenced in 2006. Since then, some of the recommendations identified in the draft report have been implemented. Other changes that have occurred at the study sites since 2006 have also been noted in report.

The following is a summary of the major findings and recommendations for the three (3) existing pedestrian crossing locations:

1. Ste. Anne Road Crossing at the Radisson Inn

It was concluded that the presence of senior and student crossings at this unprotected marked crossing adjacent to a horizontal curve is not desirable. It was also noted that based on current counts that pedestrian and vehicle volumes approach Ontario Traffic Manual warrants for signals at the crossing and that warrants would likely be met during high volume (spring time) conditions. On this basis, it was recommended that traffic control signals be implemented in the vicinity of the existing crosswalk, coordinated with the adjacent driveways.

The pedestrian signals were installed in 2010.

2. Elm Street Crossing at the Rainbow Value Centre

It is concluded that the pedestrian demand of the current crossing is a function of existing land use (Rainbow Value Centre and the Transit terminal) and that there is no simple solution to change pedestrian desire lines. The location of existing signals does not permit a protected (signalized) crossing with adequate sight distance.

It is recommended that the existing unprotected pedestrian crossing point be retained. The zebra markings offer greater benefit in terms of driver awareness of crossing pedestrians than any existing confusion it may represent in terms of pedestrian and driver right of way. Existing pedestrian signage, which addresses the need to alert pedestrians of the fact that they do not have the right of way and encourages caution, should also remain.

It is also recommended that an educational campaign be implemented to remind drivers and pedestrians of the rules of right of way.

3. Brady Street Crossing at Shaughnessy Street

Considering the high pedestrian volumes that cross Brady Street throughout the day, and the strong pedestrian desire line between the numerous pedestrian generators along Shaughnessy Street and City Hall and the Police station, it is recommended that the existing unprotected mid-block crossing be maintained and enhanced to accommodate this desire line. Recommended crossing enhancements to the mid-block crossing include the application of Zebra style pavement markings similar to those used along Elm Street, as well as the addition of "Yield to Traffic" signs at both ends of the crossing.

In order to eliminate jay-walking at random locations across Brady Street, it is recommended that median enhancements be installed along Brady Street to discourage jay-walking and funnel pedestrians to the enhanced pedestrian crossing. Median enhancements can include the installation of a fence and / or planters similar to the median enhancements applied along Elm Street at the Elm Street crossing.

Educational Campaign

As part of the HDR Corporation's assignment, they will develop an educational brochure regarding pedestrian crossings. In addition to the publication and distribution of the educational brochure it is recommended that Staff, with the support of the Corporate Communications Section, undertake an educational campaign on the rules of right of way. Staff will work with groups such as the Sustainability Mobility Advisory Panel in the promotion of pedestrian safety.

EXHIBIT B

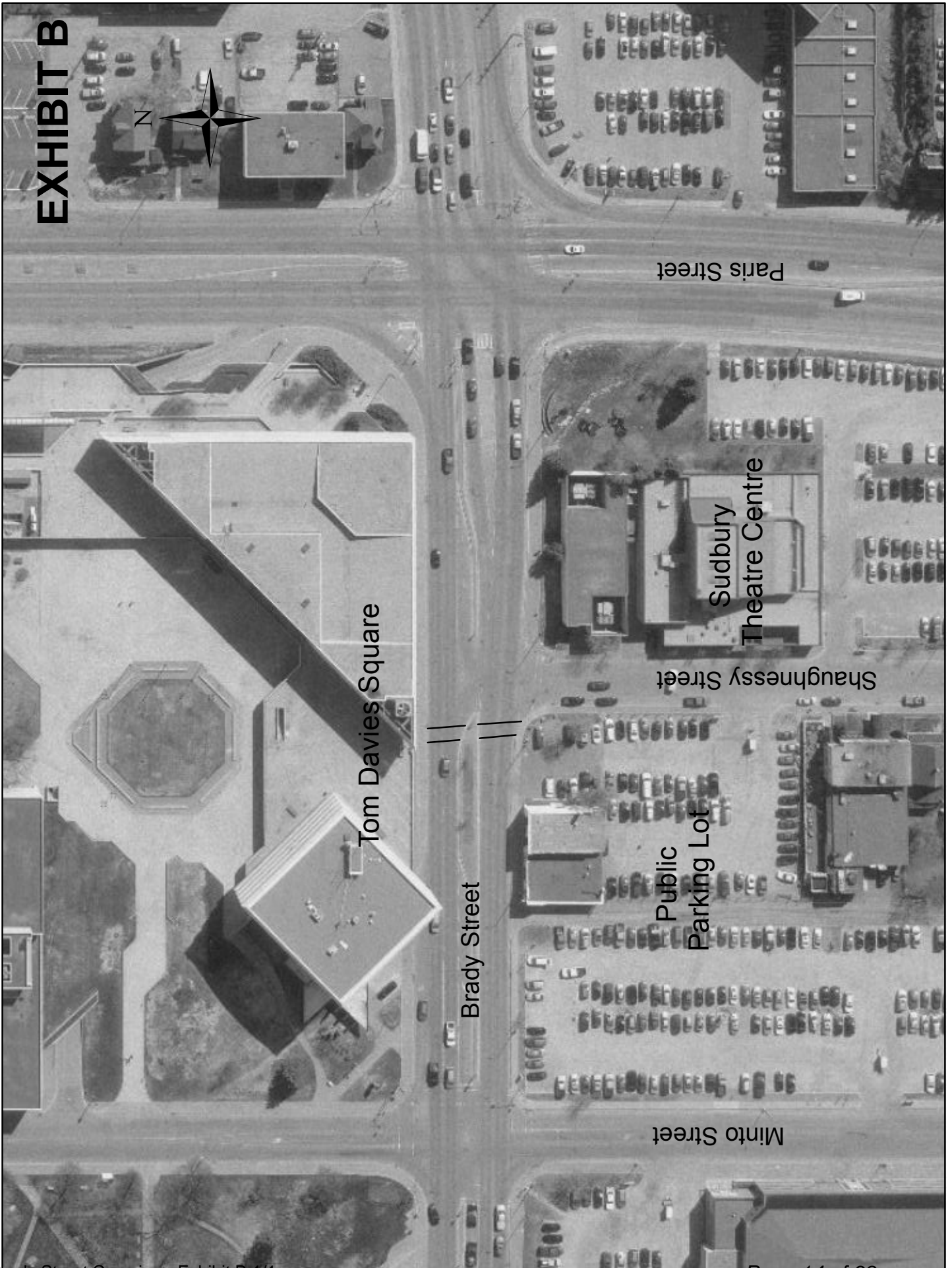


EXHIBIT C



HDR Corp
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Fax: (647) 777-4901
www.hdrinc.com

File: 2.0
Project # 6583

Memorandum

To: Dave Kivi – City of Greater Sudbury
Cc: Dave Shelsted – City of Greater Sudbury
From: Sasha Naylor – HDR
Chris Philp – CIMA
Date: September 27, 2013
Re: **Design Considerations for an IPS at Brady Street and Shaughnessy Street**

1. BACKGROUND

This memo has been prepared in response to the request from the staff of the City of Greater Sudbury for design considerations for a new set of intersection pedestrian signals (IPS) at Brady Street and Shaughnessy Street.

In January of 2012, HDR developed a pedestrian crossing policy for the City and completed a review of three individual locations where the new policy was applied. One of the locations was at Brady Street and Shaughnessy Street. The resulting report concluded that a controlled crossing (i.e. a pedestrian signal) was not warranted according to the justification requirement of the Ontario Traffic Manual Book 12 and that signal spacing between Shaughnessy Street and the signals at Minto Street and Paris Street were of concern. As a result, a marked, uncontrolled crossing should be maintained. Specifically, the recommendations stated:

Considering the high pedestrian volumes that cross Brady Street throughout the day, and the strong pedestrian desire line between the numerous pedestrian generators along Shaughnessy Street and City Hall and the Police station, it is recommended that the existing unprotected mid-block crossing be maintained and enhanced to accommodate this desire line. Recommended crossing enhancements to the mid-block crossing include the application of Zebra style pavement markings similar to those used along Elm Street, as well as the addition of “Yield to Traffic” signs at both ends of the crossing.

In order to eliminate jay-walking at random locations across Brady Street, it is recommended that median enhancements be installed along Brady Street to discourage jay-walking and consolidate pedestrians to the enhanced pedestrian crossing. Median enhancements can include the installation of a fence and / or planters similar to the median enhancements applied along Elm Street at the Elm Street crossing.

To ensure pedestrians use the side of the intersection with the crosswalk, no markings should be shown on the east side of the Brady Street and Shaughnessy Street intersections. Further, Ra-9A signs requiring pedestrians to "Cross Other Side" should be posted across this leg of the intersection. It is also recommended that these "Cross Other Side" signs be regularly enforced.

This recommendation was presented to the City's Operations Committee during a meeting of April, 2012. After some debate, the Committee determined that staff should investigate a controlled (i.e. signalized) crossing at the Brady Street / Shaughnessy Street location. Given the concerns associated with signal spacing and insufficient justification of the warrant, signals at this location must be planned carefully. This memo provides some considerations and recommendations for the design of IPS's at this location.

2. EXISTING CONDITIONS

An unprotected pedestrian crossing is currently located on the west leg of the Brady Street / Shaughnessy Street intersection, at approximately 95 metres west of the Paris Street intersection and 90 metres east of Minto Street intersection. Brady Street is posted at 50 km/h and carries an AADT of approximately 15,900. There is a fire hall located on Shaughnessy Street, south of Van Horne Street.

The traffic signals at Minto and Paris Streets run coordinated using a 110 second cycle time throughout the day. The storage area for the eastbound left turn lane at Brady Street and Paris Street extends back to the Shaughnessy intersection. Queuing was observed in previous safety reviews to extend from Paris Street beyond Shaughnessy Street in the PM peak hour.

The volume of pedestrians crossing Brady Street at Shaughnessy Street was observed during a traffic count undertaken on November 13, 2012. The count shows that the peak period of the day is between 4:00 and 5:00 pm. During that peak period, 187 pedestrians crossed Brady Street on the west side and 72 crossed Brady Street on the east side for a total of 259 pedestrians per hour.

The November 13, 2012 count also shows that the volumes on Shaughnessy Street are insufficient to meet the thresholds required in the Ontario Traffic Manual for signalization. Furthermore, the spacing to the adjacent intersections violates the minimum spacing guidelines of 215 metres spacing between signals. The 215 metre guideline was selected to reduce the potential for driver confusion when approaching closely spaced signals. In this situation, drivers may focus on downstream signals rather than the signals at the impending intersection.

3. ALTERNATIVES

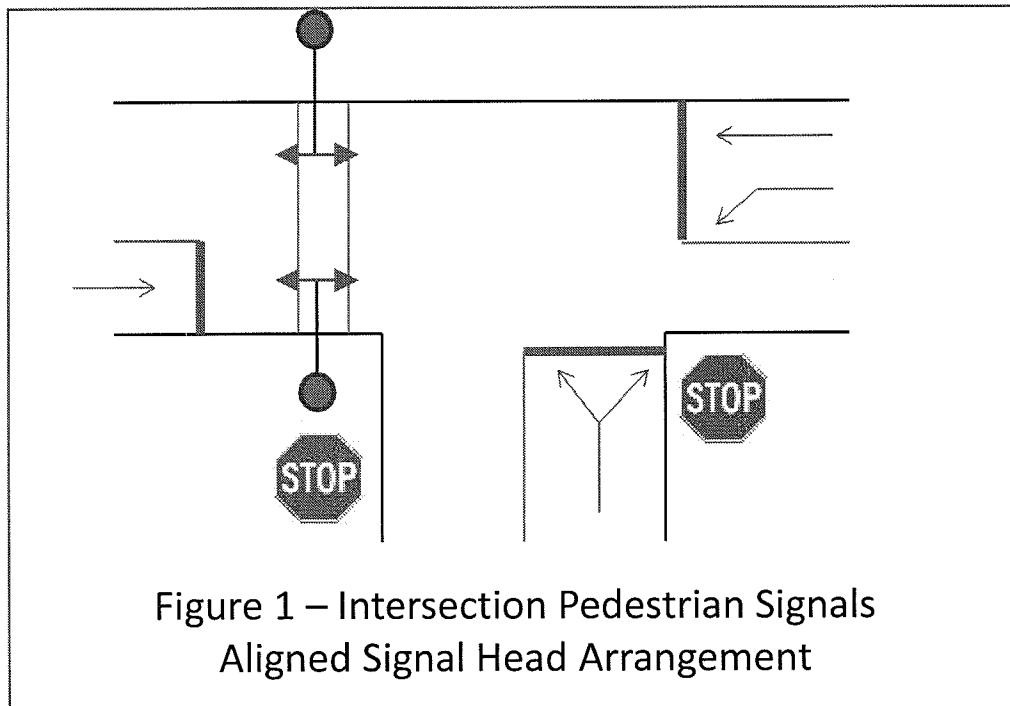
To address the potential for driver confusion, optically programmable signal indications (OPSI) are recommended. OPSI's allow the signal indication to be focussed on a specific footprint on the roadway. With this intended operation, drivers will not see the indication upstream of this footprint area and therefore will not confuse the indication at one intersection with another.

To address the request of the City's Operations Committee and in light of the tight spacing between the proposed IPS and the signals up and down stream, three options were considered for a protected crossing at the Brady Street and Shaughnessy Street intersection:

1. Intersection Pedestrian Signals with an aligned signal head arrangement
2. Intersection Pedestrian Signals with a conventional signal head arrangement
3. Full Traffic Control Signals with a conventional signal head arrangement

Option 1 - Intersection Pedestrian Signals with an Aligned Signal Head Arrangement

In this option, intersection pedestrian signals are installed on the west leg of the Brady Street and Shaughnessy Street intersection. The west leg is selected to avoid impeding on the westbound left turn storage area. A schematic of this option is shown in Figure 1.



Most agencies in Ontario run IPS's in an uncoordinated (or free) operation. This mode of operation minimizes the delays to pedestrians as they are generally serviced immediately. The alternative (coordinated mode of operation) has the potential to introduce a delay before servicing the pedestrian. The concern with this delay is that pedestrians may not wait and cross the road anyway before getting the right-of-way particularly since there are no other signal indications that would give the pedestrian the sense that the signals are actually cycling.

As a result, and for the purposes of this evaluation, it is assumed that the City would operate the signals shown in Figure 1 in free mode. There are both advantages and disadvantages of this option.

Advantages:

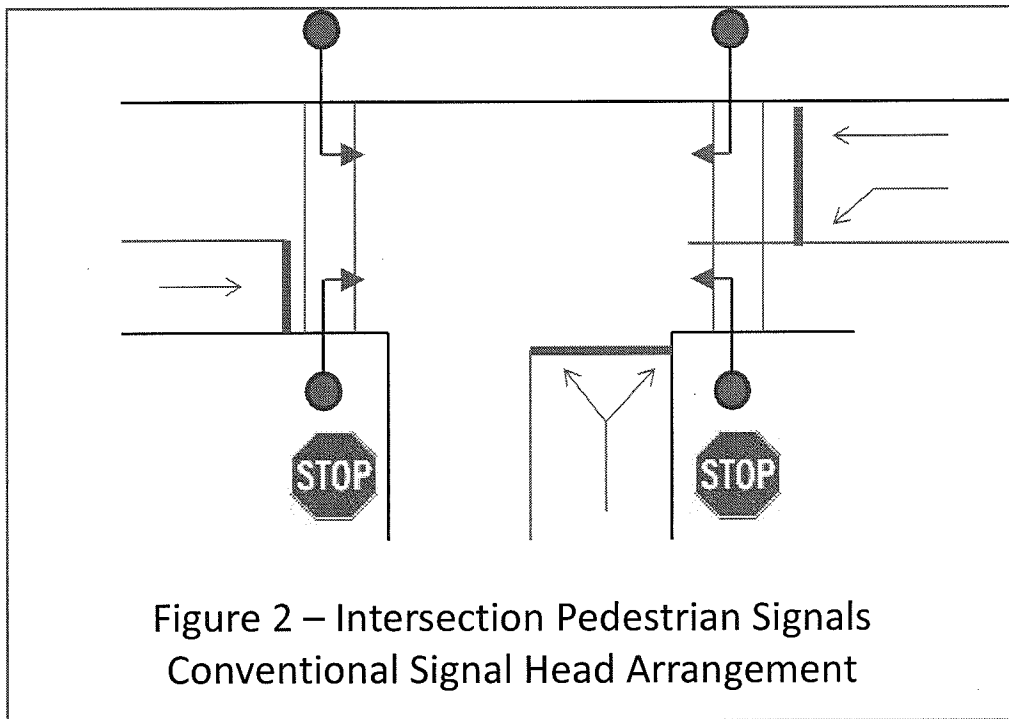
- Traditional design for intersection pedestrian signals
- Fewer poles required
- Lower cost than a full set of signals,
- Typically responds quickly to pedestrian demands by running free

Disadvantages:

- Free operation results in the potential to interrupt signal coordination along Brady Street
- OPSI's on Brady Street may confuse drivers (and pedestrians) on Shaughnessy Street since the heads will appear dark
- This orientation results in a repositioning of the stop bar for eastbound traffic some 15 meters further to the west, resulting in an even shorter signal spacing with signals at Minto Street

Option 2 - Intersection Pedestrian Signals with a Conventional Signal Head Arrangement

The second option considered an intersection pedestrian signal but using a four-pole, conventional signal head arrangement. This option is considered to allow the eastbound stop bar to be positioned closer to the Shaughnessy Street intersection than in Option 1. Additionally, to address the pedestrian demand crossing the east leg, this Option introduces a second cross-walk on Brady Street. It is schematically illustrated in Figure 2.



Again, there are advantages and disadvantages of this option.

Advantages:

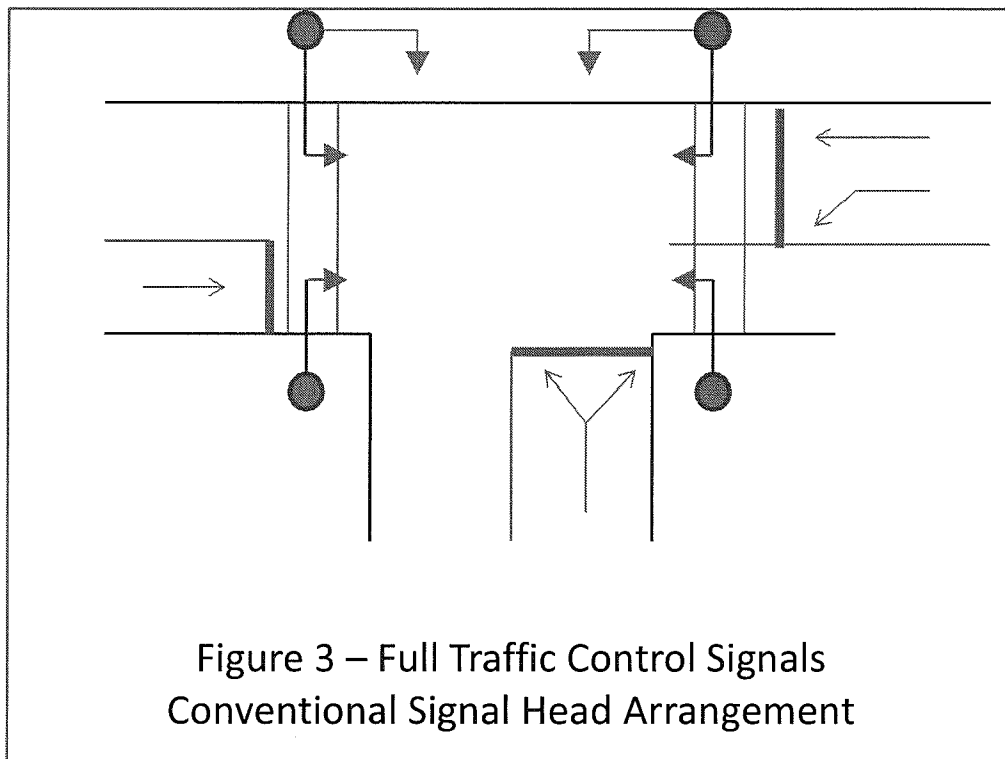
- Allows for optional second Brady Street crossing
- Compresses the intersection and maximizes spacing between stop bars
- Typically responds quickly to pedestrian demands by running in free

Disadvantages:

- Non-traditional design
- More costly than Option 1
- Free operation results in a potential loss of coordination on Brady Street
- May result in confusion for drivers (and pedestrians) on Shaughnessy Street particularly with OPSI's on Brady Street

Option 3 - Full Traffic Control Signals with a Conventional Signal Head Arrangement

Option 3 was identified as a means of reducing the confusion to drivers waiting on Shaughnessy Street and re-introducing progression along Brady Street. It consists of a full set of traffic signals. The schematic for this option is shown in Figure 3.



Once again, there are advantages and disadvantages of this option.

Advantages:

- This option uses a traditional design
- Minimizes driver confusion on Shaughnessy Street
- Coordination maintained along Brady Street
- Compresses the intersection and maximizes spacing between stop bars
- Safer operations during pre-emption

Disadvantages:

- Longer delay to pedestrians and traffic on Shaughnessy Street
- More costly than Option 1 and marginally more costly than Option 2
- May set a precedent of installing signals where they do not fully comply with the warrant

Median Enhancements

Enhancements to the existing median along Brady Street should be considered in an effort to limit the amount of “jay-walking” across the street and to force pedestrians crossing the street to use the signals at Shaughnessy Street. Median enhancements could include the addition of added landscaping / planting or a fence along the median to limit the potential for pedestrians to cross at various locations between Paris and Minto Streets.

Other Considerations

Consider pedestrian buttons that give audible and visual feedback that the call has been acknowledged.

4. RECOMMENDATIONS

While cost and mobility are important criteria for the City, pedestrian safety is paramount. HDR's original recommendation of maintaining a marked, uncontrolled crossing is still the preferred result. However, should the option of signalization be selected, Option 3 is recommended as it is expected to result in the highest compliance rate for pedestrians while servicing pedestrians on both the east and west legs. It also offers the advantages of signal progression on Brady Street and the ability to provide OPSI's with minimal confusion to motorists and pedestrians.

A median consisting of raised planters should be constructed to discourage pedestrians from crossing mid-block.

For Information Only

Winter Control Update

Presented To:	Operations Committee
Presented:	Monday, Nov 18, 2013
Report Date	Thursday, Nov 07, 2013
Type:	Presentations

Recommendation

For Information Only

Background

Enclosed are details of the Winter Control Plan for the 2013 / 2014 winter season. The plan detailed herein includes information about snow plowing standards for roadways and sidewalks, snow removal and technology used for winter control. The service levels have remained the same for the past six years and are familiar to most of our citizens.

Staff has been placed into their winter assignments as of November 2nd. For this season, there is a total of 83 operational hourly staff assigned to winter control activities. In addition to our winter control compliment, there is an additional 17 hourly staff working in the Forestry, Building Maintenance and the Sign Shop. There are a total of 21 Forepersons and six Superintendents filling supervisory and road patrol roles. When conditions warrant, the City has the ability to call in an additional 37 Contractor crews, which include 27 contracted plows for roadways and 10 loaders and/or 4x4 units to handle parking lots lanes and cul-de-sacs.

The winter control plan is designed to deploy City crews on the Class 1 to 3 road network when the winter event starts, sanding/salting/plowing as required. City crews will continue to treat Class 1 to 3 roads until a snow depth of 8 cm is achieved, at which point the road supervisor will call in the Contractors. The Contractor crews will be placed on our Class 1 to 3 network and City crews will be switched into the Class 4 to 6 road network. The loaders and 4x4 units will be deployed at a snow depth of 8 cm and will focus on either parking lots or cul-de-sacs depending on the time of day. During freezing rain events, deployment on the Class 4 to 6 roads, parking lots, lanes and cul-de-sacs will be immediate with the focus on sanding/salting. Appendix A summarizes the current winter control policy.

To achieve service levels, staff has access to 34 tandem axle combination plows, eight single axle plows, seven graders, 28 sidewalk plows, eleven loaders and five, 4x4 units. Contractors equipment on standby includes 23 tandem axle combination plows, four graders, six loaders and four, 4x4 combination plows. If the

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storm conditions warrant, staff has access to a casual pool of employees to call in as well as additional Contractors.

There are Forepersons, in each geographical section, on a twenty-four hour, seven day a week schedule. The Forepersons are expected to perform road patrols, monitor weather and deploy / supervise staff as conditions dictate. In addition to the Forepersons, an Overall Responsible Superintendent is placed on standby each day to provide overall management of a winter event as required.

Snow Plowing – Roadways

Service levels have been established for our roadways based on the classification of the road as well as type of winter event. Roadway classification is based on the traffic counts in combination with the posted road speed. City roadways have been split into two (2) categories, Class 1 to 3 and Class 4 to 6 with service levels defined for both. For the purpose of service standards, two different types of winter weather events have been defined, snow and freezing rain.

When a winter event starts (regardless of type of event) crews are dispatched to the Class 1 to 3 network as soon as practicably possible. On snow events, crews will commence plowing services once a 5 cm snow depth and will continue to plow until the event is over. On freezing rain events, crews will apply salt/sand immediately and continue to do so until the event has concluded. In both weather conditions, it is expected to have the Class 1 to 3 network returned to bare pavement within 3 to 8 hours after the storm concludes.

On the Class 4 to 6 roadways, crews are deployed when an 8 cm depth is achieved on snow events and immediately on freezing rain events. Crews will continue to service these types of roadways until the storm ends. On snow events the service level dictates that the roadways will be returned to snow packed condition within 12 to 24 hours after the storm ends regardless of the type of event.

Currently there is 17, Class 1 to 3 and 28, Class 4 to 6 roadway beats to service during snow events. In addition to the roadway routes there is also 10 parking lots, lane and cul-de-sac beats that are managed.

To achieve these service level standards rock salt and/or pickled sand is used to either melt or provide traction during winter events. Due to environmental and cost concerns associated with the use of rock salt (sodium chloride), the locations where this is applied is limited to Class 1 to 3 roadways and some select hills (warranted by grade). Pickled sand (5% sodium chloride) is always used on Class 4 to 6 roadways, parking lots, laneways and cul-de-sacs and pickled sand is also used on Class 1 to 3 roadways when the temperature is lower than -13 degrees Celsius as rock salt is no longer effective.

Table 1 attached provides details on how the City's service levels compare to the minimum maintenance standards as well as select northern communities. As highlighted, the City meets or exceeds the minimum maintenance standards.

Table 1						
Plowing and Abrasives Application Comparison of Large Northern Ontario Municipalities						
Road Authority	Snow Plowing	Road/ Sidewalk	Snow Accumulation Trigger	Response for a Single Pass	Abrasives Application	Other Notes
Sudbury	Roads	Class 1 – 3	5 cm	3 – 8 hrs	Salt or Sand	17 Beats
	Roads	Class 4 – 6	8 cm	Up to 24 hrs	Sand	28 Beats
	Sidewalks	All Sidewalks	8 cm	12 to 24 hrs	Sand	20 Beats
Timmins	Roads	Class 1 – 3	8 – 10 cm	8 – 12 hrs	Sand	13 Total Beats
	Roads	Class 4 – 6	8 – 10 cm	8 – 12 hrs		
	Sidewalks	All Sidewalks	8 – 10 cm	8 – 16 hrs	Sand	6 Beats
North Bay	Roads	Class 1 – 3	8 – 10 cm	8 – 12 hrs	Salt or Sand	13 Total Beats
	Roads	Class 4 – 6	8 – 10 cm	8 – 12 hrs	Sand	
	Sidewalks	All Sidewalks	8 – 10 cm	Up to 12 hrs	Sand	5 Beats
Sault Ste. Marie	Roads	Class 1 – 3	5 cm	Up to 12 hrs	Salt or Sand	17 Total Beats
	Roads	Class 4 – 6	5 cm	Up to 24 hrs	Sand	
	Sidewalks	All Sidewalks	5 cm	Up to 12 hrs	Sand	9 Beats
Thunder Bay	Roads	Class 1 – 3	5 cm	Up to 72 hrs	Salt or Sand	34 Total Beats
	Roads	Class 4 – 6	10 cm	Up to 72 hrs		
	Sidewalks	High Priority	5 cm	14 – 24 hrs	Salt or Sand	15 Total Beats
	Sidewalks	Low Priority	5 cm	Up to 72 hrs		
Minimum Maintenance Standards	Roads	Class 1 – 3	2.5 – 8 cm	4 – 12 cm		
	Roads	Class 4 – 5	8 – 10 cm	16 – 24 hrs		
	Sidewalks	N/A	N/A	N/A		

Snow Plowing – Sidewalks

Currently, winter sidewalks maintenance is being provided in areas that were identified pre-amalgamation with a few exceptions. New sidewalks constructed as part of a development that tie into an existing, winter maintained sidewalk will automatically be added to the routes as well as new sidewalks that have been constructed under the Capital program and identified for inclusion under the City's winter sidewalk maintenance program.

There is approximately 425 km of sidewalks and walkways connecting neighborhoods within the City of Greater Sudbury. Approximately 25% of the sidewalks are not maintained during the winter months. Some of these sidewalks do not meet the current sidewalk standard width of 1.5 metres and cannot be plowed with the City's existing sidewalk plowing equipment due to their narrow width.

Currently, there are no plans to change the level of winter maintenance on sidewalks for the 2013/2014 winter season. The service level includes plowing/sanding sidewalks when an accumulation of 8 cm of snow is reached or when icy conditions are detected. The plan is designed to provide snow clearing services within 4 to 24 hours after the storm has ended. The only exception to this approach is the former City downtown business core which receives plowing/sanding services 5 days a week (Monday to Friday, 12:00 a.m. until 8:00 a.m.).

There are a total of 20 sidewalk routes throughout the City. The routes are designed based on an area being plowed within 8 hours with a straight blade and 12 hours with a snow blower attachment using municipal tractors.

Snow Removal

Currently, snow removal in the form for snow pickup, blowing or benching is completed at intersections to address sight line issues, along roadways when lane width or traffic capacity problems occur, at select bus stops and along Elm Street between Elgin and Lisgar Street to allow for on street parking. We also remove snow in the central business districts up to twice a year. The City does not provide for snow removal at private driveways.

Snow pickup is used when there is a small amount of snow to be removed. Snow blowing is used primarily in the central business districts and when there is a significant amount of snow to be removed. Snow benching is used in rural areas to establish lane width/storage capacity on the shoulders.

Technology and Monitoring

Staff will continue to use all the technology available to them to manage winter control events. Each year Staff builds on the services used in previous years to help better monitor/predict the state of a winter event.

In early September staff commenced work on the installation of new AVL (Automatic Vehicle Location) devices in the winter fleet. The installation of new AVLs is a multi-phase project. Phase one includes the installation of the new hardware in each piece of City / Contractor equipment used for winter control. This phase will provide staff the ability to monitor the location of the winter control fleet as well as provide vehicle technicians with key indicators of the status of the plows (maintenance information). Future phases will include the installation of hardware in the balance of the Roads and Transportation Services fleet as well as the development of a customized winter control application. The application will allow staff the opportunity to introduce AVR (Automatic Vehicle Routing) technology, monitor material application rates and road patrol integration. For this year staff will continue to use a Storm Centre to monitor plows as they complete their various routes. Next season it is scheduled to have the customized application in place that will monitor the fleet and advise Winter Control Forepersons as to any deviation from the preset routes and/or other key vehicle data.

In addition to AVL technology, staff will be monitoring weather and road conditions 24 hours a day, 7 days a week. Staff will be using data contained in customized weather reports, radar site monitoring as well as RWIS (Road Weather Information System) data to better predict when / where to deploy the winter control resources. The weather reports and radar monitoring provides us tools for tracking weather events while RWIS data gives staff a snapshot of the current condition at a specific location. Currently, the City has one dedicated RWIS site in the Northwest (Levack) and is planning on adding more in the future.

Parking Restrictions

To assist with the efficient operation of winter control activities, parking restrictions are imposed on municipal roads from December 1st to March 31st. All vehicles are restricted from parking between midnight and seven (7) a.m. Additional restrictions are imposed on commercial traffic.

Appendix 'A' - Current Winter Plowing, Salting and Sanding Policy/Practice

Road Winter Maintenance - Snow Events			Service Timelines ¹		Written City Policy	City Practice
Road Classification	Protocol / Action	Snow Accumulation	Complete Round #1 / Initial Deployment	Clear / Material Application		
Class 1 - 3	Apply Brine/Salt	N/A	Within 2 - 4 Hours of Significant Snowfall	-	Yes	Yes
	Plow Roads	5 cm	Within 3 - 8 Hours of reaching 5 cm Threshold	3 - 8 Hours after Storm Ends <small>if Required</small>	Yes	Yes
	Salt/Brine/Sand Roads	N/A	Within 3 - 8 Hours of reaching 5 cm Threshold	3 - 8 Hours after Storm Ends <small>if Required</small>	No	Yes
Class 4 - 6	Plow Roads	8 cm	Within 24 Hours after reaching 8 cm Threshold	24 Hours after Storm Ends <small>if Required</small>	Yes	Yes
	Spot Sand Roads	N/A	Within 24 Hours after reaching 8 cm Threshold	24 Hours after Storm Ends <small>if Required</small>	Yes	Yes

Road Winter Maintenance - Ice Events			Service Timelines ¹		Written City Policy	City Practice
Road Classification	Protocol / Action	Ice Detection	Complete Round #1 / Initial Deployment	Clear / Material Application		
Class 1 - 3	Salt/Brine/Sand Roads	Detected	Within 2 - 4 Hours of Ice Detection	2 - 4 Hours after Storm Ends <small>if Required</small>	Yes	Yes
Class 4 - 5	Sand Roads	Detected	Within 12 - 16 Hours of Ice Detection	12 - 16 Hours after Initial Application <small>if Required</small>	Yes	No
Class 4 - 6	Sand Roads	Detected	Within 24 Hours of Ice Detection	24 Hours after Initial Application, <small>if Required</small>	No	Yes

Sidewalk Winter Maintenance - Snow Events			Service Timelines ¹		Written City Policy	City Practice
Sidewalk Classification	Protocol / Action	Snow Accumulation	Complete Round #1 / Initial Deployment	Clear / Material Application		
Downtown	Plow & Sand Sidewalks	N/A	Midnight to 8 am, Weekdays	-	Yes	Yes
Class 1 ²	Plow & Sand Sidewalks	8 cm	Within 4 - 24 Hours of reaching 8 cm Threshold	12 - 24 Hours after Storm Ends <small>if Required</small>	Yes	Yes
Class 2 ³	Plow & Sand Sidewalks	8 cm	Within 8 - 24 Hours of reaching 8 cm Threshold	12 - 24 Hours after Storm Ends <small>if Required</small>	Yes	Yes

Sidewalk Winter Maintenance - Ice Events			Service Timelines ¹		Written City Policy	City Practice
Sidewalk Classification	Protocol / Action	Ice Detection	Complete Round #1 / Initial Deployment	Clear / Material Application		
Downtown	Plow & Sand Sidewalks	N/A	Midnight to 8 am, Weekdays	-	Yes	Yes
All Sidewalks	Sand or Salt	Detected	Within 2 - 24 Hours of Ice Detection	2 - 24 Hours after Initial Application, <small>if Required</small>	Yes	No
All Sidewalks	Sand Sidewalks	Detected	Within 24 Hours of Ice Detection	24 Hours after Storm Ends <small>if Required</small>	No	Yes

¹ Winter Control Supervisor's may alter any policy statement to suit actual weather conditions.

² Class 1 Sidewalks - Sidewalks adjacent to Class 1 - 3 Roads

³ Class 2 Sidewalks - Sidewalks adjacent to Class 4 - 6 Roads

For Information Only

DWQMS Annual Communication Update

Presented To: Operations Committee

Presented: Monday, Nov 18, 2013

Report Date: Tuesday, Nov 05, 2013

Type: Correspondence for Information Only

Recommendation

For Information Only

Background

Under the Safe Drinking Water Act (2002), the province requires that Municipal residential drinking water systems in Ontario be licensed under the Municipal Drinking Water Licensing Program. As one element of those licensing provisions, the City is required to maintain a Quality Management System.

This report is to provide an update on the status of the City's Drinking Water Quality Management system.

Requirements:

As legislated under the Safe Drinking Water Act, 2002, the Ministry of the Environment (MOE) requires that municipalities maintain an accredited Quality Management System (QMS) in order to be allowed to provide safe drinking water to residents. The Water & Wastewater Services Division of the Infrastructure Services department has and maintains an accredited QMS for all six of the CGS drinking water systems (DWS). This accreditation provides for the licensing of those systems under the MOE's new Municipal Drinking Water Licensing Program (MDWLP). The CGS's six licensed DWS's are:

- The Sudbury DWS, comprised of the Wanapitei and David St. surface drinking water plants, and the Garson wells, plus the distribution and storage system that connects them;
- The Valley DWS, including all thirteen (13) Valley and two (2) Capreol wells plus the distribution and storage system;
- The Dowling DWS, comprised of two wells and distribution and storage system;
- The new Falconbridge DWS, consisting of three wells new to CGS plus the existing distribution and storage system;
- The new Onaping-Levack DWS, comprised of the three new-to-the-City wells and the original distribution system for both communities; and
- The original Vermilion DWS servicing the Walden area with a distribution-only system.

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Accreditation proves that municipalities are adhering to the requirements of the Drinking Water Quality Management Standard (DWQMS). One such requirement, involves that information about the operation of the QMS is communicated to the owner of the DWS.

Updates to Owner:

Specifically, the DWQMS requires that the following information be shared with the representatives of the Owner:

- “the description of the organizational structure including respective roles, responsibilities and authorities”;
- “the relevant aspects of the Quality Management System”;
- “the findings of the review”: “the annual review of the adequacy of the infrastructure necessary to operate and maintain the subject system”;
- “sampling, testing and monitoring results”; and
- “the results of the management review, the identified deficiencies, decisions and action items”.

Drinking Water Quality Management System Results:

Communication to the Owner:

Information is regularly shared with Council as required by the DWQMS standard. The “findings of the annual review of the adequacy of the infrastructure” are shared with the Mayor and Council during budgetary discussions annually since this review drives plans for capital projects to comply with the requirement in the standard “to operate and effectively maintain the subject system(s)”.

“Sampling, testing and monitoring results” are shared with Council when Annual Reports are presented to Council each spring. The organizational structure is included in the approved Operational Plan, copies of which have already been provided to all members of Council.

This report is intended to satisfy the requirement to also share the results of the annual Management Review, and the results of both the internal and third party audits with Council.

As is expected, the audits and management review meetings yielded some items for further follow up and corrective action. Action is being taken to correct the items and continual improvement is taking place. Summaries of the specific results are included in the Appendices.

APPENDIX A:

WATER & WASTEWATER SERVICES AUDIT RESULTS, 2012

Internal Audits

In Jan, 2013, a full internal audit of the QMS for WWS division was completed using a CGS internal auditor. All 21 elements of the DWQMS were audited to obtain sufficient appropriate audit evidence to confirm that the system meets MOE requirements for the all elements of the DWQMS. It was reported that the Operational Plan, as updated to January 2013, substantively meets MOE requirements, as reflected in guidelines published by MOE, based upon audit evidence reviewed during the audit. The score achieved on the audit checklist used was 100 %.

During the Audit Closing Meeting, six opportunities for improvement (OFI) were identified. They have all been assigned for follow-up.

Spot Audits

Five Spot Check audits were performed by the City's Quality Management Systems Officer during 2012, and one follow-up to ensure that findings from a previous audit had been corrected. All negative findings were quickly corrected.

Third Party Audit

The DWQMS specifies the frequency and type or style for these audits:

The whole system will be audited comprehensively through performing a preliminary "desk audit" to check QMS documentation and then by visiting all Drinking Water Systems (DWS) once every three years.

In the intervening years, a "systems audit" is performed – a "desk audit" of documentation provided to the internal city staff member in absentia in order to make a determination of the system's fitness and health.

The CGS has successfully achieved accreditation for all DWS's under City control, and we are now in the second year of the cycle, necessitating a Systems Audit to be done each year until the next full Site Audit in 2014. The first Systems Audit was performed in August 2012, and the auditor recommended that the City maintain the current level of accreditation for the next year.

The Auditor reported four (4) minor non-conformances and five (5) Opportunities for Improvement. At this point in time, all minor non-conformances have been corrected and the Opportunities for Improvement are still under discussion.

APPENDIX B:

MANAGEMENT REVIEW RESULTS, 2012 DATA CYCLE

The Management Review Meeting to review data for 2012 was held in September 2013. As at every such meeting, the following items were included in the Agenda for discussion:

- Incidents of regulatory non-compliance;
- Incidents of adverse drinking-water tests (AWQI);
- Deviations from critical control point limits and response actions;
- Risk assessment results;
- Audit results; *
- Emergency response testing results;
- Operational performance;
- Quality trends: raw and treated water; *
- Follow-up on action items from previous management review;
- Status of management action items identified between reviews;
- Changes that could affect the QMS; *
- Consumer feedback;
- Resources needed to maintain QMS;
- Infrastructure review results;
- Operational plan currency, content and updates;
- Staff suggestions;
- Supplier performance;
- Source protection update; and
- Some other subjects discussed – Quality Policy (currency), management review scheduling, scheduling of other QMS activities, and fulfilling DWQMS requirements in the area of communication. *

Deficiencies were identified in the areas marked with an asterisk above and actions assigned to personnel with responsibility in the applicable areas, with due dates for all as required by the standard.

Request for Decision

Snow Removal Report

Presented To:	Operations Committee
Presented:	Monday, Nov 18, 2013
Report Date	Thursday, Nov 14, 2013
Type:	Managers' Reports

Recommendation

For Information Only

Background

Summary

During winters with excessive snowfalls, the number of complaints about snow bank heights and corresponding access to/from private driveways increases. High snow banks also create concerns for access to parking in the downtown business core, for ensuring adequate sight lines at intersections, and for ensuring there is sufficient road width for vehicular traffic.

The existing snow removal policy is adequate to ensure a reasonable level of service to address snow banks in the downtown core, for sight lines at intersections and for lane widths. Additional snow removal is not recommended principally because there has not been a demonstrated need and, the logistical requirements for additional snow removal are viewed as impractical.

Removing snow banks or reducing the height of snow banks to improve sight lines at private driveways would require an enhanced service policy change and is not recommended. Such a policy change would transfer liability to the City and result in a higher probability of claims for vehicle and pedestrian collisions. Additionally, this policy enhancement would result in prohibitively expensive and unnecessary snow removal operations to mitigate against potential claims.

Background

In response to many questions and concerns and as requested by Council, staff has prepared a report summarizing existing snow removal activities along various classifications of roadways throughout the City. Snow removal is the process of removing snow banks that accumulate along the side of roadways after the snow plowing activity. The graph attached as Appendix 'A' depicts the ACR calls (received from public) related to specific activities over the past five winter seasons. As highlighted, 17,317 winter related ACR calls were recorded over the past five winter control seasons (Nov. 1, 2008 to April 30, 2013) of which 1,809 ACR calls (10%) were related to snow banks/sight line concerns. The percentage of ACR calls related to snow banks/sight line concerns rose to 15% (686 calls) during the past winter control season given the larger snow fall quantity experienced in the City. Snow bank/sight line calls include issues with sight lines at intersections and private driveways, and snow accumulation along roadways.

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The volume of calls for snow banks and sight lines are dependent on the type of winter. As noted in Appendix 'A', there was a significantly higher volume of calls during the 2008/2009 and 2012/2013 winter seasons. These winter seasons had significant snowfall without any warm periods or rainfall events that would naturally reduce the snow bank height.

The report provides Council with clarification on how the existing policy addresses issues raised by property owners. The issues include, but aren't limited to; snow removal at the end of driveways and commercial entrances, bus stops, additional snow removal in the downtown business districts (parking meter access), and snow removal in dead ends and cul-de-sacs. Staff reviewed various snow removal techniques including snow pickup (with loaders/backhoes and trucks), snow blowing (large snow blowers, graders, sidewalk plows and trucks) and snow benching (graders, loaders and trucks). Opinions are also provided on enhanced snow removal for issues not covered in the current policy.

Existing Service Level

The current service model provides budget for snow removal in the various downtown business districts up to twice per year. The trigger point for snow removal in the various downtown business districts is based on snow bank height and time of year. Select bus stops are cleared after each major snow event. Sight lines at intersections and pedestrian cross walks are cleared of snow when visibility is hindered (snow bank height greater than 1.5 metres). Roadway snow clearing is conducted only when lane widths become too narrow. Residents and other private property owners are responsible for maintaining sight lines on their own driveways.

The current budget for this activity is approximately \$650,000 and is based on an average expenditure from the past five (5) years. The annual budget for snow removal at 110 bus shelters and 257 bus stops is approximately \$80,000. All of the bus stop snow removal is currently being performed by contractors. Bus stop snow removal occurs during the night shift subsequent to the end of a general callout (accumulation of 8 cm of snow).

Community Comparison

Staff polled four other northern municipalities (North Bay, Sault Ste. Marie, Thunder Bay and Timmins) to compare snow removal policies. All have similar policies as it relates to snow removal in the central business districts and sight lines at intersections, but differ on number of bus stops receiving snow removal and snow removal along roadways. All communities polled use lane width as a trigger point for snow removal along roadways. Timmins and Sault Ste. Marie perform full snow bank removal along roadways as part of their regular winter control activities, and is primarily related to the extent of on-street parking and different weather patterns than we experience in Sudbury.

Snow Removal Techniques

Table 1 provides a summary of alternative snow removal techniques and their applicability for various applications.

Table 1				
Snow Removal Technique	Applicability	Pros	Cons	Current Usage
<u>Snow Blowing</u> - snow hauled to the snow dump (Operation utilizes snow blowers, loaders, graders, MT's and trucks)	Urban areas with paved boulevards (mainly Class 1 – 3 Roads)	Very thorough Limited potential for damage	Expensive	Central business districts
<u>Snow pickup</u> – snow hauled to snow dump (Operation utilizes loaders, MT's, trucks)	Urban / Rural areas	Very thorough Limited potential for damage Can be used as fill in work during the winter months	Expensive Slow	Sight lines at intersections Bus stops

<u>Snow benching</u> – snow deposited in ditches / behind curbs (Operation utilizes graders and loaders)	Urban / Rural areas	Fast Smaller banks will remain Requires snow pickup at driveways	Potential for front yard damage in residential areas Not a viable option in areas with sidewalks abutting curb / boulevard	Rural areas where open ditches are present only when roadway width is an issue
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Staff also looked into snow melting units, but found this technique to be costly and difficult because of the issues associated with discharging melt water in storm sewers and open ditches.

Additional Snow Removal

The current policy requires the City to remove snow banks to address parking in the downtown core, to access bus stops, to improve sight lines at intersections and to ensure adequate roadway lane widths. Additional snow removal on roadways could be performed for the purpose of enhancing parking opportunities and/or improving the driven lane width.

Staff reviewed various additional snow removal options for traveled roadways. Options could include additional snow removal on arterial roadways to removing snow banks on all urban and rural roadways. Preliminary estimates suggest that these additional removal activities could result in annual budget enhancements ranging from \$650,000 to over \$4,000,000.

In analyzing these additional snow removal options, the following concerns were identified and would require further consideration:

- The City operates a minimum number of snow dump sites which may not be conveniently located for larger scale removal operations;
- Significant snow removal operations cannot be completed by existing City staff and will require a separate contract(s) to ensure the availability of contractor staff and equipment. This may require the City to pay standby charges throughout the winter and in years where additional snow removal is not required;
- The sheer magnitude of the removal requirements present logistical challenges for removing the snow in a reasonable period of time;
- The enhanced service levels described above assumes staff will be able to enter into a service contract that will provide the proper amount of equipment and staff to complete the work. To put the effort required to perform snow removal in context, the current snow removal effort in downtown Sudbury takes five, eight hour shifts and requires a loader with snow blower attachment, two graders, three municipal tractors, nine semi-trailer dump trucks, a crew cab utility truck and 17 staff to complete. The total length of roadway serviced in this scenario is 8.5 km (1.7 km per eight hour shift);
- The additional snow removal will take time to be completed, and depending on the weather, some areas may not receive snow removal services before the snow banks naturally melt to the point that sight lines are no longer of concern.

Any consideration for additional snow removal should be weighed against the existing policy and the need for additional removal. The existing policy allows staff to remove snow if the travelled roadway does not provide a reasonable width to accommodate traffic.

The winter control budget is based on a five year average cost for snow removal. Staff are allowed to exceed the five year average budget during years with heavy snow fall. If staff receive complaints regarding the width of roads, the existing policy allows staff to measure the width against a standard and to remove snow if necessary.

It is the opinion of staff that the current snow removal policy and funding envelope provide a reasonable level of service on the travelled roadway and additional snow removal is not necessary.

Service Enhancement Considerations

The current service level for snow removal is designed to address parking in the downtown cores, access to bus stops, sight lines at intersections and lane width. The current policy places the responsibility for maintaining sight lines at

driveways and commercial entrances with the property owner and vehicle operator.

Sight lines at private driveways and commercial entrances are extremely variable. Sight lines depend on the orientation of the entrance, width and length of the entrance, proximity to adjacent driveways and climate conditions such as extent of sunshine and wind. Further complicating the available sight visibility at private driveways is the style of vehicle. Pick up trucks and other high seated vehicles have better capability to see over snow banks.

Snow removal techniques are not practical for partial snow bank height removal. In urban roadways, conventional snow removal equipment is not designed for partial height removal. In addition, complications would arise from pushing snow at partial height such as might be accomplished with a wing blade. This practise would be difficult to manage due to the many objects and structures that exist in boulevards, such as mailboxes, fire hydrants, fences and sidewalks.

For reasons stated above, it would be difficult to establish a partial bank height standard or preferred removal methodology. Where snow removal is required, it is more practical to remove the full height of the bank, particularly in urbanized roadways.

As previously mentioned, the current snow removal policy obligates the owner of a private entrance to remove snow to accomodate vehicle movement. This policy is consistent with the Highway Traffic Act, which obligates the vehicle driver to enter a public roadway in a safe manner. Should the City change the responsibility for snow removal policy to transfer responsibility of snow bank height from the property owner to the City, there would be a substantial increase in the City's liability.

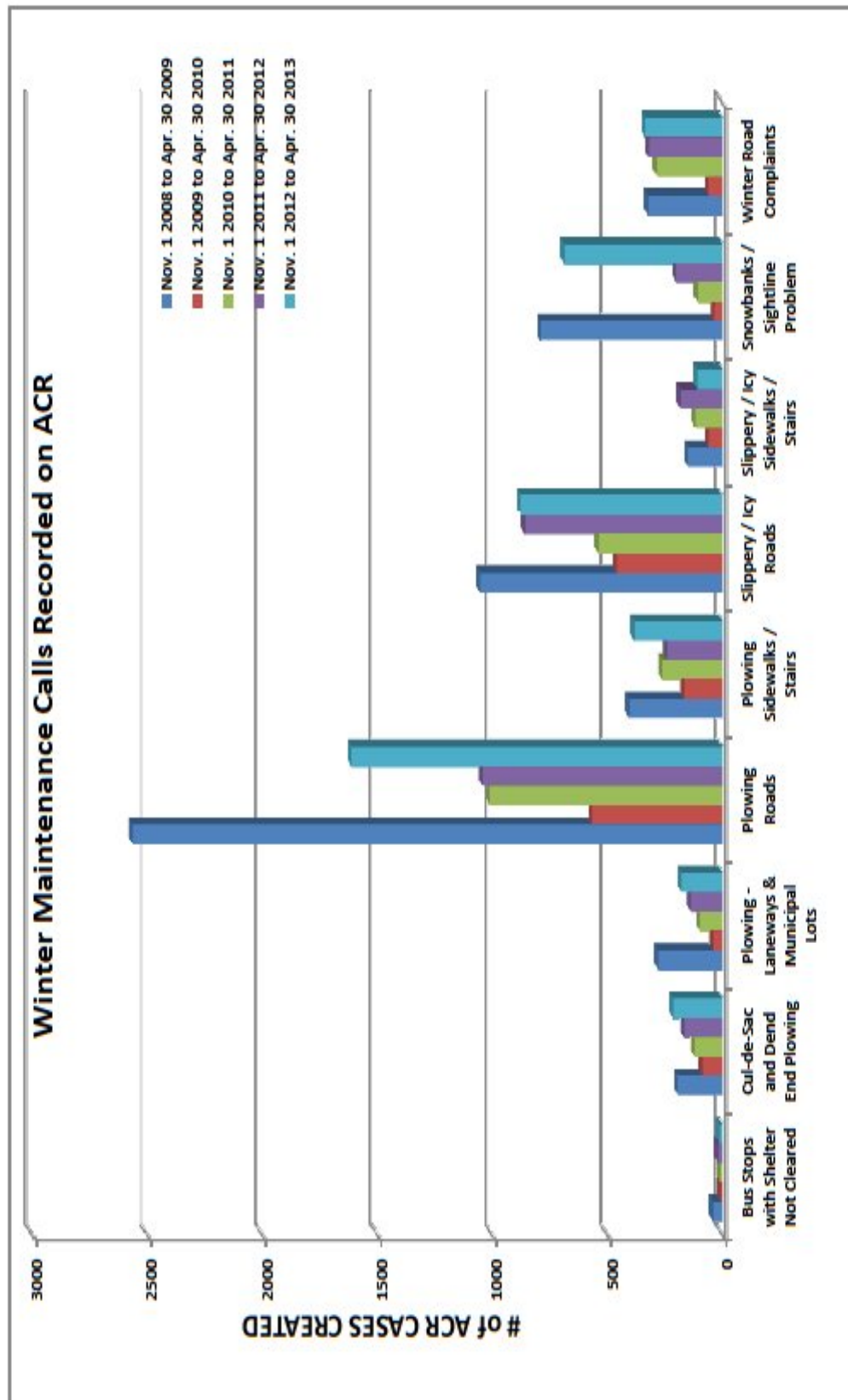
Increased liability would stem from a policy that creates a reasonable expectation of service by the driver of the vehicle and property owner. The obligation to monitor performance with this enhanced service level would then rest with the City.

To mitigate against potential claims, it would be necessary to meet or exceed the minimum service level at all times. Since it is practically impossible to know what size of vehicles use any specific driveway, the policy would impose an unnecessary requirement to remove snow at all driveways.

In summary, any policy to remove snow at private entrances is not recommended for the following reasons:

- The City would unnecessarily transfer liability for safe vehicle operation from the vehicle operator to the City and increase the probability for claims from both vehicle and pedestrian collisions;
- Available technologies and the presence of numerous conflicts in road ways would result in unnecessary full height snow removal although only partial height removal is required;
- In an effort to mitigate potential claims for non-compliance with driveway clearing policies, it would be required to unnecessarily remove snow banks from many driveways that practically would not require the service;
- An increase in snow removal will also increase the claims for private property damage (ie. mailboxes).

Appendix 'A' Winter Maintenance Calls Recorded on ACR



Presented To:	Operations Committee
Presented:	Monday, Nov 18, 2013
Report Date	Thursday, Nov 07, 2013
Type:	Managers' Reports

Request for Decision

Advertising Contract Agreement

Recommendation

That the City of Greater Sudbury approve the recommended changes to the Advertising Contract as outlined in the report dated November 7, 2013 from the General Manager of Infrastructure Services and authorize the General Manager of Infrastructure Services to execute the amending agreement.

Finance Implications

As a result of some of the changes identified in the report, the advertising revenue budget for 2013 of \$117,000 is expected to reach \$125,000 by year end. Furthermore, the 2014 budget is also expected to increase to \$130,000, an increase of \$12,000 or 11% of the previous year budget.

Background

In 2013 the Auditor General's Office conducted an audit of the Sudbury Transit and Municipal Arenas Advertising Contract.

The scope of this audit was to review the administration of the advertising agreement for the period of 2010, 2011 and 2012 with one of the objectives being to determine whether appropriate value has been obtained based on the amount of revenue received through these programs.

It was determined that some elements of the agreement were not operating effectively. The reporting requirements and the tracking process as identified in the agreement provided significant challenges for both City staff and the contractor. The audit recommended a review of the terms and conditions as an opportunity for improving the value for money for the City.

The Manager of Transit and Fleet Administration was assigned the task of reviewing the terms and conditions of the contract with BK Marketing and negotiating appropriate amendments.

The parties agreed to amend terms of the contract which will see increased value for money for the City, efficiencies for the contractor and flexibility for bench requests.

Signed By

Report Prepared By

Maureen Blanchard
Manager of Transit and Fleet
Administration
Digitally Signed Nov 7, 13

Division Review

Roger Sauvé
Director of Transit & Fleet Services
Digitally Signed Nov 7, 13

Recommended by the Department

Tony Cecutti
General Manager of Infrastructure
Services
Digitally Signed Nov 7, 13

Recommended by the C.A.O.

Doug Nadorozny
Chief Administrative Officer
Digitally Signed Nov 9, 13

The key amendments are as follows:

- Amend the contract and remove the obligations set out in Section 5 relating to the Confirmation of Revenue effective January 1st, 2013. To further simplify reporting and auditing process for both parties the obligations outlined in Section 15 Annual Gross Billings and Sections 5 and 6 of Schedule B would have no application to payment obligations arising in the 2013 or 2014 calendar year or in any extension term;
- Amend the Minimum Annual License Fee for transit advertising to reflect the increased guarantee of \$125,000 plus H.S.T. for 2013 and \$130,000 plus H.S.T. for 2014;
- That the annual fee represents advertising on Buses, Benches and Transit Shelters;
- Any new advertising initiatives will be negotiated with terms and conditions and revenues established for each; and
- That BK will place benches at up to 10 locations requested by the City on an annual basis.

The Sudbury Wolves and BK Marketing have been providing advertising services for Greater Sudbury Transit for more than 20 years. The current agreement is for a term of five years, from January 1, 2010 to December 31, 2014 with a renewal option for an additional five years.