



PUBLIC WORKS COMMITTEE

**Thursday, October 3, 2013
4:00 PM**

Forum, Main Floor, City Hall



**Public Agenda
Public Works Committee
Thursday, October 3, 2013**

Approval of Public Agenda

Minutes of the meeting held on August 8, 2013

Administration Reports

PW13-16 Winter Season Operations

Recommendation

That this report be received and filed.

PW13-17 2013 Clearing Snow at Homes Without Driveways

Recommendation

That item PW13-1 be removed from the list of outstanding items for this committee.

PW13-18 Options for Removing Properties Exempt from the Clean Property Bylaw)

Recommendation

That the Winter Maintenance Policy be amended to include sidewalk clearing as outlined in Option 2 - City to Plough all Sidewalks that do not have Private Frontage.

PW-13-19 Proposed Uniform Assessment Rates - 2014

Recommendation

1. That the following uniform assessment rates for the 2014 Local Improvement Program be approved.

Type of Construction	Prepaid Rate (\$) per Front Meter	Annual Rate (\$) per Front Meter
Water Main	256.86	35.85
Storm Sewer	359.61	50.19
Sanitary Sewers	219.43	30.62
Combined Works	670.44	93.57
Residential Pavement (8.5m traffic width)	404.78	56.47
Residential Pavement (10.36m traffic width)	485.73	67.79
Commercial Pavement (11.00m traffic width)	722.66	100.85



Office of the City Clerk

Curb and Gutter	210.30	29.35
Concrete Walk (up to 1.83m width)	203.30	28.37
Concrete Walk (each additional 0.61m width)	98.16	13.70
Monolithic Walk, Curb and Gutter (up to 1.83m width)	413.58	57.72
Alley Upgrades	Prepaid Rate (\$) per Rear Meter	Annual Rate (\$) per Rear Meter
Alley Paving (residential)	346.99	48.43
Alley Paving (commercial)	405.03	56.53
Alley Lighting Installation (incl. fixtures, poles & power source)	81.67	11.51
Alley Lighting Installation (fixtures only)	52.13	7.34

The 2014 annual rate is based on a ten year repayment period

2. That the City Solicitor be requested to prepare the required uniform rates bylaw for the 2014 uniform rates using the rates and information provided for in this report.

Adjournment

AT REGINA, SASKATCHEWAN, THURSDAY, AUGUST 8, 2013

AT A MEETING OF THE PUBLIC WORKS COMMITTEE
HELD IN PUBLIC SESSION

AT 4:00 PM

These are considered a draft rendering of the official minutes. Official minutes can be obtained through the Office of the City Clerk once approved.

Present: Councillor Sharron Bryce, in the Chair
Councillor John Findura
Councillor Bob Hawkins
Councillor Terry Hincks
Councillor Barbara Young

Also in Attendance: Committee Assistant, Elaine Gohlke
Solicitor, Jayne Krueger
Deputy City Manager, City Operations, Dorian Wandzura
Director of Development Engineering, Kelly Wyatt
Director of Water Works Services, Pat Wilson
Manager of Infrastructure Planning, Geoff Brown

APPROVAL OF PUBLIC AGENDA

Councillor Hincks moved, AND IT WAS RESOLVED, that the agenda for this meeting be approved, as submitted, and that the delegations be heard in the order they are called by the Chairperson.

ADOPTION OF MINUTES

Councillor Hawkins moved, AND IT WAS RESOLVED, that the minutes for the meeting held on May 9, 2013 be adopted.

ADMINISTRATION REPORTS

PW13-14 Edward Street Sewer and Drainage

Recommendation

That this report be received and filed.

The following addressed the Committee:

- Chad Jacklin;
- Linda McKenzie; and
- Wanda Silzer, representing West Cathedral.

Councillor Hawkins moved, AND IT WAS RESOLVED, that this matter be referred to Administration for further analysis and a report to the January 2014 meeting that provides options for solutions to sewer and drainage concerns on Edward Street.

PW13-15 2014 Servicing Agreement Fee Rates & Development Levy Bylaw

Recommendation

1. That the 2013 Servicing Agreement Fee (SAF) Rate of \$264,273 per hectare (ha) be approved to come into effect January 1, 2014.
2. That the 2013 Development Levy Bylaw Rate of \$264,273 per hectare (ha) be approved to come into effect January 1, 2014.
3. That the City Solicitor be instructed to prepare the necessary amendments to Bylaw 2011-16 *The Development Levy Bylaw, 2011* to include the new development levy rate.
4. That this report be forwarded to the September 9, 2013 City Council meeting to allow for sufficient time for public notice of the amendments to *The Development Levy Bylaw*.

Councillor Hincks moved, AND IT WAS RESOLVED, that the recommendations contained in the report be concurred in.

ADJOURNMENT

Councillor Findura moved, AND IT WAS RESOLVED, that the meeting adjourn.

The meeting adjourned at 4:52 p.m.

Chairperson

Secretary

October 3, 2013

To: Members,
Public Works Committee

Re: 2012-2013 Winter Season Operations Summary Review

RECOMMENDATION

That this report be received and filed.

CONCLUSION

Winter Maintenance is committed to evaluate service delivery annually, review the Winter Maintenance Policy, identify future considerations and enhancements, and be transparent in our budget and processes.

BACKGROUND

On December 18, 2006, City Council approved the Winter Maintenance Policy, which was implemented starting in November 2007. Council approved the recommended policy amendments submitted in November 2010. The Administration is committed to annual reviews of the Winter Maintenance Policy.

The purpose of this report is to present a summary of 2012/2013 winter operations as part of an ongoing review of service levels and operational accomplishments.

DISCUSSION

As part of the ongoing review of the Winter Maintenance Policy and operation, an evaluation assessment was completed after the 2012/2013 winter season. The assessment focused on the following: environmental conditions; budget allocation; operational challenges; storm response; innovations; activity analysis; department/branch support and communication; and relationships with the public and other stakeholders. The intent of this evaluation was to identify potential changes to the Policy, operation and/or resource levels. A summary of the key findings is described in the following sections.

Environmental Conditions

In 2012/2013, Regina experienced one of the most severe winter seasons on record. Above average snowfall accumulation, below average temperatures, and a higher than average number of freeze and thaw days contributed to a long and challenging season. According to Environment Canada, 2012/2013 broke a long-standing record for snow accumulation.

Budget Allocation

The Winter Maintenance operating budget for 2013 is \$6,343,772. This budget is based on the amount needed to cover an average winter season from November 1 to March 31. However, the Winter Maintenance budget is accounted for from January 1 to December 31 of each year. This budget includes incidental costs and overhead charges that are carried outside of the usual season. As of June 2013, year to date expenditures are \$7,245,598, which is \$901,826 over budget. This is due to the harsh conditions of the 2012/2013 season.

Winter is unpredictable and all costs are weather dependant, therefore the Administration relies on previous seasonal data to forecast the budget. The 2013 Winter Maintenance operating budget is currently forecasted to have expenditures of over \$10,000,000, assuming average weather conditions are experienced the rest of the year.

The Winter Maintenance Reserve is a fund available to provide services in the event of harsher than average environmental conditions. Each year, any under-expenditure in the annual operating budget for the Winter Road Maintenance Program is transferred to the Reserve for use during seasons with above average conditions. The current balance of the fund is \$3,523,053. Therefore, the reserve will be depleted to cover over-expenditures for the 2013 calendar year.

Winter maintenance costs are expected to increase in 2014 due to:

- New roads, sidewalks and alleys resulting from growth;
- Potential service level increases as a result of Public Works Committee requests;
- Market pricing for contracted ploughing services;
- Market pricing for contracted trucking services; and
- Market pricing for ice control sanding material.

These increases have been submitted in accordance with the 2014 budgeting process.

Operational Challenges

Rutting On Residential Roads

A significant challenge this winter was rutting on Category 5 (residential) roads in March and April. The Winter Maintenance Policy dictates Category 5 roads will be ploughed when we receive snowfall accumulations of 25 cm. Therefore, City of Regina crews ploughed Category 5 roads once in November, and once in December. As Regina experienced significant snowfall accumulation throughout the season, Category 5 roads were ploughed an additional four times to minimize rutting and inaccessibility.

Although significant resources were allocated to Category 5 roads this winter, each plough became a balance of enhancing driving conditions as well as minimizing the height and width of snow ridges. After the fourth residential plough, narrow lanes and reduced driveway sightlines created challenges for homeowners. While the streets were being ploughed and winter driving conditions were good, the snowpack increased with each accumulation. Eventually, most Category 5 roads had an average snowpack between 30 cm and 45 cm.

The Winter Maintenance Policy does not specify the minimum depth to which Category 5 roads should be ploughed, only to plough to a compacted snow surface. The Policy also states that the City will plough Category 5 roads when rutting exceeds approximately 10 cm. This is the operational standard that we try to achieve whenever a Category 5 plough is triggered, or during routine ice shaving maintenance.

To minimize rutting greater than 10 cm, Winter Maintenance staff strive to scrape snow pack as close to the pavement surface as possible. In some cases, this entails scraping to the pavement surface. This eliminates the majority of rutting issues throughout the season and during the spring melt. However, there may be concerns from residents as snow ridges will be larger and occupy more of the parking/snow storage lane.

If Regina continues to receive above average snowfall accumulations, there is potential that ploughing residential roads to the pavement numerous times each season will adversely affect driveway sightlines and driving lane widths. Typically this would make snow removal necessary, but the Policy only provides for snow removal operations on Category 1, 2, and 3 roads. A residential snow removal program is beyond our current capabilities, as the resources necessary would cause failure in current Policy requirements. There would be challenges not typically experienced when removing snow on the arterial network. Some of these challenges include: parked cars, narrow roads, noise, congestion and equipment/contractor availability. The estimated additional cost for this program is approximately \$1,667,575¹ per cycle. It would be a significant undertaking not previously experienced by Winter Maintenance operations, taking approximately 39 shifts to complete.

Ploughing Around Parked Vehicles

Vehicles parked on City streets present a challenge for Winter Maintenance crews every season, this year being no exception. While the majority of these vehicles are legally parked, the lack of snow bans, snow routes or temporary closures (such as those used in the downtown core and adjacent neighbourhoods) make the ploughing of non-priority streets a challenge.

The Winter Maintenance Policy specifies that when City crews encounter parked vehicles, they are to plough around the vehicle, sometimes leaving a snow ridge. This is not only an inconvenience to the vehicle owner, but to the equipment operator as well. Parked cars are a hazard that affects the overall efficiency, end result and timing of the plough. Unfortunately, the absence of snow bans/routes, the operational constraints involved in temporarily closing a street for ploughing and the provisions contained in *The Regina Traffic Bylaw, 1997*, requires City crews to plough around legally parked vehicles.

Many other municipalities have a range of parking bans (both annual and seasonal), that can be used to provide optimum conditions for ploughing operations. Some types of parking bans include temporary residential bans, annual snow routes and temporary no parking signs. These bans can also be used for other operations such as street sweeping, and asphalt and sidewalk repairs.

Introducing parking bans would require significant work, involving many branches of the Administration and other organizations, including:

- **Communications** – to communicate the changes to parking rules, develop website services and mobile applications to keep the citizens educated and up-to-date on declared parking bans;
- **Parking Services and/or Bylaw and Licensing** – to coordinate ticketing and towing operations and oversee amendments to parking regulations in *The Regina Traffic Bylaw, 1997*;
- **Legal** – to provide legal advice in implementing parking bans and preparation of potential bylaw amendments;

¹ I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

- **Traffic Control and Parking** – to install signage on all snow routes;
- **Winter Maintenance** – to develop a plan to optimize ploughing operations, and communicate this plan to all supporting branches and Policy stakeholders;
- **City Council** – to approve any Policy changes; and
- **External Contractors** – to assist in towing vehicles and ploughing streets in a timely manner.

This project would take a significant amount of time and capital funding to implement, and the potential cost are unknown at this time. However, parking bans of some sort would be a benefit to Regina citizens and Winter Maintenance operations and the possibility of snow bans/routes as a potential long-term solution could be investigated.

Snowbound Vehicles

Vehicles parked on City streets for the duration of the winter are another concern. Many of these vehicles are buried in snow by the end of the winter, posing an unnecessary risk to City crews. They affect traffic as the snow that is built up around the vehicle begins to impede driving lanes. Our current process is to call Dispatch and report these offending vehicles as we encounter them. Dispatch then creates a Service Request and sends it to Parking Services.

Due to limitations found in *The Regina Traffic Bylaw, 1997* pertaining to over-parked or snowbound vehicles, parking enforcement personnel must attend a minimum of three times before seizing the vehicle. Given the record snowfall amount for this season, Parking Services were unable to keep up because of all the other requests throughout the city. Winter Maintenance Services have held meetings with Parking Services during the summer to determine possible solutions for the proactive and timely removal of snowbound vehicles prior to ploughing.

Narrow Streets and New Subdivisions

Various developments in Regina are cause for concern in regards to Winter Maintenance activities. In an effort to maximize property in each development, narrower roadways are being constructed to a minimum road width of 8.7 metres. According to the City of Regina's Development Standards Manual, the developer is to install 'No Parking' signs on one side of the street when constructing streets less than 11.0 metres wide. Unfortunately, the appropriate 'No Parking' signs have not been installed. This makes ploughing snow on these streets very difficult. A typical scenario can be described as follows:

- Street Width = 8.7 metres
- Parked Car (Left side) = 1.8 metres
- Parked Car (Right Side) = 1.8 metres
- Grader Width = 3.7 to 4.3 metres (depending on position of mouldboard, not including wing and flipper attachments)

With cars parked on both sides, there is approximately 0.8 to 1.4 metres available to plough in optimum conditions. Some neighbourhoods that exhibit these development standards are:

- Harbour Landing
- The Creeks
- The Greens
- Lakeridge East
- Kensington Greens
- Hawkstone
- Skyview

In addition to narrow road widths, double car driveways situated on narrow lots are a concern. A typical lot in these neighbourhoods is 8.0 to 10.0 metres wide, with a double car driveway approximately 6.0 metres wide. This leaves only 2.0 to 4.0 metres of parking lane to store ploughed snow.

As a result, ploughing effectively and efficiently in these neighbourhoods is very difficult.

Winter Maintenance Services has met with Infrastructure Planning , Traffic Control and Parking and Parking Services on numerous occasions over the summer to undertake a plan to install 'No Parking' signs on one side of every road less than 11.0 metres wide. This would bring these roads to the minimum requirement according to the Development Standards Manual. This may not alleviate all concerns with the development standards of the new subdivisions, but it will ensure our ploughing equipment has adequate space to plough and store snow.

It would be operationally beneficial if one side of every street was marked with 'No Parking' signs, regardless of street width. This maximizes the width requirement for our equipment (and all large equipment like Solid Waste, Fire, Transit, etc), as well as provides an unimpeded snow storage lane which maximizes our ploughing operation.

Storm Response

During the 2012/2013 winter season, there were nine snow events that triggered a systematic response. This is almost double the average season of five storms. In accordance with the provisions in the Winter Road Maintenance Policy, Category 1 through 4 roads were ploughed six times, as accumulations were greater than 10 cm. Category 1 and 2 roads were ploughed an additional three times, as accumulations were less than 10 cm on these occasions. Category 5 roads were ploughed twice over the season because accumulations reached 25 cm during a storm event.

During each storm event, the 24 hour timeline outlined in the Policy for Category 1 roads was met consistently. The Category 2 ploughing response of 36 hours outlined in the Policy was met four out of nine times. This was a result of the enhanced level of service directed to the Downtown core. This operation included the ploughing and removal of all snow in the Downtown area over a two-night period. Depending on when the snow stopped falling and the start of the systematic plough, the remaining Category 2 roads on the Downtown list were deferred to the second night as reflected in the statistics.

The ploughing response for the Category 3 and 4 roads missed the timelines of 48 hours and 60 hours three out of six times. The first two storms of the season took place over the course of several shifts, where a large volume of snow accumulated. According to the Policy, once accumulations exceed 5 cm ploughing operations should focus on Category 1 and 2 streets during the snowfall to maintain pass-ability of the higher priority network. When City crews started ploughing Category 3 and 4 roads, snow pack had increased. This slowed operations considerably, causing the Policy timeframe to be missed.

As the Winter Maintenance operation was meeting Category 1 and 2 timelines handily, the Administration made some changes to the plough lists. Where it made sense operationally, many of the Category 3 and 4 roads were ploughed with the Category 2 roads. This created some ploughing efficiencies and alleviated the difficulty meeting the Category 3 and 4 timelines.

Based on the 2012/2013 season and depending on the nature of the storm and snowfall accumulations, the typical cost for a systematic plough (including ice control and sidewalks) can be summarized as follows:

- Category 1 to 2 Plough = \$133,000
- Category 1 to 4 Plough = \$235,000
- Category 1 to 5 Plough = \$458,000

Innovations

Slide-In Sander

Over the past two seasons, the Administration has investigated the use of a new piece of ice control equipment in an effort to promote consistent material spreading, gain efficiencies in routing, and decrease material usage. The unit is called an Epoke Slide-In Sander and its benefits include:

1. A spreading technique that provides a sharply defined spreading pattern with the ability to direct material to multiple lanes, both right and left, at the same time. The analysis reduced operational cycle frequency by approximately 50 percent.
2. A redesigned hopper box provides a more uniform and accurate amount of material upon request. The analysis confirmed a material consumption decrease of 35 percent.

3. The ability to 'slide' the spreading unit in and out of a regular tandem truck reduces turn-around time in transitioning from summer to winter activities. The analysis showed a reduced transition time of approximately 90 percent.
4. A satellite based system utilizes GPS to automate spreading based on a predetermined route.
5. In addition, the slide in and out capabilities of the sander provide further cost savings as the tandem truck can be utilized during the summer months by Asphalt Services or Sweeping and Alley Services. Between both branches, four contractors are hired to compliment their programs. The difference in utilizing our own equipment and manpower would save approximately \$20,000 per truck per season. This would equal roughly \$300,000 over the life of the equipment.

Winter Maintenance Services has determined that a slide-in sander and tandem truck with equivalent capabilities of the Epoke trial unit (complete with side wing and front plough), will increase efficiency and reduce costs throughout the life of the equipment. Therefore, the Administration is currently in the process of acquiring a slide-in sander, and has been entered into the Capital Budget submission process for 2014.

Activity Analysis

Snow Removal

During the 2012/2013 winter season, the Administration performed an analysis of snow removal activities. The analysis allowed us to compare our current capabilities against the Winter Maintenance Policy, explore operational efficiencies, and look for innovation to improve the level of service provided to the citizens of Regina.

Snow Storage

During the 2012/2013 winter season, the Administration performed an analysis of snow storage activities. The analysis allowed us to compare our current capabilities against the Winter Maintenance Policy, explore operational efficiencies and look for innovations to improve the level of service provided to the citizens of Regina.

Department/Branch Support

Winter Maintenance staff supplied trucking services to other City branches to build on partnerships developed over the past two seasons. The intent of this partnership is to maximize our manpower and equipment, and provide a service to other City branches at a reduced cost compared to hiring a contractor. The importance of this partnership was highlighted by the fact that the Corporate Trucking Contract was not in place to provide supplemental trucking to carry out City services.

Winter Maintenance staff provided alternate services to other City of Regina branches for 3,493 hours. This agreement resulted in a net savings to the Winter Maintenance operating budget of \$87,297, and a net savings to the Water Works Services Department of approximately \$129,269².

² Contractor (\$85/hr); City Tandem (\$23/hr)

Relationship and Communication with the Public

Service Regina

Service Regina is a department within the City of Regina that receives concerns and inquiries from the public. These calls are then forwarded to the appropriate branch. Winter Maintenance staff receive and inspect every service request sent to the branch. If the request falls within the Winter Maintenance Policy, the work is scheduled. However, there are a large percentage of requests that fall outside of our guidelines and Policy, and thus the work does not take place.

In total, the Winter Maintenance Branch received, inspected and responded to over 11,000 service requests for the 2012/2013 winter season.

Stakeholder Meetings

In an effort to foster good relationships with both internal and external agencies, Winter Maintenance staff conducts pre-season and post-season meetings with various community stakeholders. The intent of the meetings are to discuss the Winter Maintenance Policy and how it impacts the public, what operations did well, what can be improved, support services, how other areas may be able to assist operations, and any other issues stakeholders face during the winter season. The following is a list of internal departments we customarily meet with:

- Regina Police Service
- Transit Operations
- Parks and Open Space
- Solid Waste
- Fleet Services
- Bylaw and Licensing
- Parking Services
- Roadways Preservation
- City Operations Dispatch
- Traffic Control and Parking

The following is a list of external groups we customarily meet with:

- Public School Board
- Separate School Board
- Regina Downtown Association
- Ministry of Highways and Infrastructure
- Saskatchewan Government Insurance
- Special Interest Groups
- Community Associations
- Bike Regina

Although these meetings require a significant amount of time, they are held outside of winter months and provide insight into the issues faced during the winter season. Therefore, staff will continue with these pre-season and post-season meetings.

RECOMMENDATION IMPLICATIONS

Financial Implications

None with respect to this report.

Environmental Implications

None with respect to this report.

Policy and/or Strategic Implications

None with respect to this report.

Other Implications

None with respect to this report.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

The Communications Branch develops an annual comprehensive strategy. This strategy includes media relations, an advertising campaign for citizens to help clear snow from their sidewalks and use of the City's social media tools including Facebook, Twitter and YouTube.

Status updates were provided twice a day during storm and systematic ploughing, and almost daily throughout the rest of the season. As media interest for snow updates is very high, Winter Maintenance staff responded to over 160 media requests, including numerous media scrums.

Research and evaluation has taken place on awareness of the City's winter program and will be used in the development of the 2013/2014 winter communications strategy.

DELEGATED AUTHORITY

Winter Maintenance Policy changes would require City Council approval.

Respectfully submitted,

A blue ink signature of Adam Homes, consisting of a stylized 'A' followed by a long horizontal stroke.

Adam Homes, Director
Roadways and Transportation Services

Respectfully submitted,

A blue ink signature of Neil Vandendort, written in a cursive style.

Neil Vandendort, A/Deputy City Manager and COO
City Operations

Report prepared by: Chris Warren, A/Manager of Winter Maintenance

APPENDIX A

Winter Maintenance Operations Report

Winter Maintenance Operations Report

2012/2013

Prepared by Chris Warren

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1.0 OVERVIEW

This report focuses on the 2012/2013 winter season in which the City of Regina experienced severe and record setting conditions and snowfall accumulations. The report also focuses on activity and budget allocation, innovations and activity analysis, partnerships with internal and external stakeholders and operational challenges.

Winter Maintenance staff also researched two requests from the PW Committee to bring forward various options for Sidewalk Clearing and Snow Removal for Homes that do not have a Driveway.

2.0 BACKGROUND

2.1 Winter Maintenance Policy

The purpose of the Winter Maintenance Program is to provide winter maintenance that effectively supports the health, attractiveness, and economic viability of this community. The purpose of this Policy is to provide winter maintenance guidelines for the Winter Maintenance Program. Both the policy and program are intended to be complimentary with the City of Regina Salt Management Plan. All activities in the program, in particular the Ice Control activity, will follow the intent, guidelines, and practices laid out in the Plan.

The scope of the Winter Maintenance Program and Policy addresses those public right of way assets involving:

- a) streets;
- b) sidewalks;
- c) alleys; and
- d) easements.

Not included in the scope of this Policy or the Program are public and private property or right of way assets that are located within City limits:

- a) in City parks and open spaces;
- b) on City facilities and properties or on properties that are controlled by the City;
- c) in the F.W. Hill Mall;
- d) on properties controlled by the Wascana Centre Authority;
- e) are the responsibility of Saskatchewan Highways; or
- f) on private roads, sidewalks, facilities, or properties.

The Winter Road Maintenance Program is comprised of the following general activities:

- a) snow plowing of roads, alleys and sidewalks;
- b) ice control of roads, alleys and sidewalks;
- c) snow removal;
- d) snow dump sites; (To Be Inserted at Later Date)
- e) spring runoff - catch basins and ditches; (To Be Inserted at Later Date);
- f) snow fencing; and (To Be Inserted at Later Date)
- g) success indicators, monitoring, documentation and reporting (To Be Inserted at Later Date)

2.2 Winter Maintenance Strategy

The Administration of the City of Regina is committed to the corporate strategic priority of achieving Operational Excellence with focus on identifying and evaluating operational programs, understanding service level expectations,

optimizing resources through innovation and communicating the financial gap and implications.

As part of our business plan, Roadway and Transportation Services strive to achieve Operational Excellence through an annual review of the winter operation, and to develop measures in which to monitor performance. Operational reviews, such as this report, will provide the opportunity for recommending changes to the policy in regard to operational improvements and levels of service.

This report focuses on the 2012/2013 winter season in which the City of Regina experienced a severe and record setting conditions and snowfall accumulations. The report also focuses on innovations, partnerships with other stakeholders, struggles and complications and the analysis and recommendations of two requests from the PW Committee to bring forward options on Sidewalk Clearing and Snow Removal for Homes that do not have a Driveway.

3.0 DISCUSSION

3.1 Environmental Conditions

During the 2012/2013 winter season, Winter Maintenance crews faced above average conditions when compared to previous years. In obtaining the weather data, we have generally used two Environment Canada weather stations, SIAST and the Regina Airport. The explanation for the use of multiple stations is that the Regina Airport has the most accurate data in terms of temperature, dew point, and wind, but does not have comparatively accurate method of measuring snowfall accumulation. The weather station at SIAST provides accurate accumulation data and this information has been used yearly in an effort to achieve comparable and consistent data. For analytical purposes, the winter season is defined as the period from November 1 to March 31.

There are certain weather conditions that directly affect winter maintenance activities. The accumulation of snow and ice, the number of snow days, wind speed and the number of freeze and thaw cycles all contribute to the severity of a winter season.

A summary of the 2012/2013 winter conditions is shown below:

2012/2013 Winter Conditions

Weather Condition	Data
Average Temperature	-12.1 °C
Total Snowfall	193.1 cm
Snowfall Days	45
Freeze and Thaw Days	29

3.1.1 Temperature

Temperature is an indication of the severity of the cold weather the City of Regina experienced this winter season. The average temperature during the winter season was -12.1 °C, which would indicate below average temperatures based on the five year average of -10.5 °C. The coldest month was December, with an average temperature of -16.2, with the coldest day at -35.4 on January 31, 2013.

Temperature

2012/2013 Average	5 Year Average
-12.1 °C	-10.5 °C

3.1.2 Snowfall Accumulation

Snowfall accumulation is an indication of the amount of snow received during the winter season. The largest snow event that the City of Regina saw this winter was between November 9 and November 11, where we experienced 33 cm of snow. Between the reporting period for this report (November 1 to March 31), the City of Regina received 193.1 cm of snow. However, when including the

accumulation in October and April, the entire season saw a total of 207 cm. According to Environment Canada, this broke a long standard record for accumulation in a single season.

Snowfall

2012/2013 Average	5 Year Average
193.1 cm	113.4 cm

3.1.3 Snow Days

Snow days are the number of days in a season where the City of Regina experienced snowfall accumulation greater than 2 cm. The data shows that the winter of 2012/2013 had 24 snow days, which is nearly half of the five year average of 50 snow days. This is an indication that we received harsher conditions during storm events as a high snowfall accumulation occurred over a reduced number of days. There were also 22 days that the City of Regina experienced additional snowfall accumulations of less than 2 cm.

Snow Days

2012/2013 Average	5 Year Average
24	50

3.1.4 Freeze and Thaw Days

Freeze and thaw days are an indication of the number of times the temperature was above and below zero in a given 24 hour period. During these times, our ice control complement would need to be at a maximum in order to cycle through the various roadway network as per Policy timelines. The number of freeze/thaw days for 2012/2013 winter season was 55, which is higher than the five year average of 44 days.

Freeze and Thaw Days

2012/2013 Average	5 Year Average
55	44

3.2 Winter Maintenance Activities

The Winter Maintenance budget is based on the calendar year; however, for the purposes of this report, the activity summaries will be based on the winter season of November 1, 2012 to April 30, 2013 (under normal winter conditions, the winter season would end a month earlier on March 31). Occasionally, there are expenses associated with Winter Maintenance outside of these dates, and they are reported upon through the City of Regina Variance Reporting process.

3.2.1 Ploughing Streets

Description

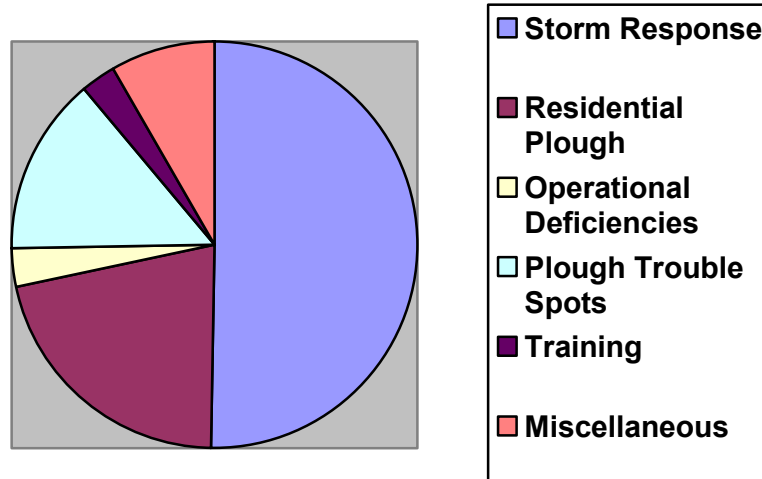
The ploughing of City streets is the grading, scraping and pushing of accumulated snow from the driving or parking lanes during and after a snowfall accumulation event. During the winter season, ploughing operations may take place in three environments: during a snow event, systematic ploughing and routine maintenance. The resulting snow ridges are stored on the centre medians and the parking lane adjacent to the curb.

Budget and Expenditures

The 2012 budget allocation for the Ploughing Streets activity was \$1,541,300. This activity involves all of the ploughing operations that Winter Maintenance staff may incur, from storm and systematic response, residential ploughing, operational deficiencies and overall training costs. The overall expenditures for the 2012/2013 winter season were \$3,202,656, which is over twice the amount allocated in the current budget. This is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Ploughing Streets	
Activity	Cost
Storm Response (9 storms)	\$1,611,798
Residential Plough (4 ploughs)	\$683,172
Operational Deficiencies	\$100,898
Plough Trouble Spots	\$449,010
Training (all Winter equipment)	\$87,101
Miscellaneous ¹	\$270,677

¹ Includes: leased equipment charges, damage claims, supervision, standby



Operational Challenges

Rutting on Residential Roads

A significant challenge that Winter Maintenance crews experienced this winter was the rutting on the Category 5 roads (residential) during the months of March and April. The Winter Maintenance Policy dictates that Category 5 roads will be ploughed when we receive snowfall accumulations of 25 cm. As a result, City crews ploughed the Category 5 roads two times. In addition, as the City of Regina experienced significant amounts of snowfall accumulation throughout the season, Category 5 roads were ploughed an additional four times to minimize the significant rutting and inaccessibility that took place at different times throughout the season.

Although there were significant resources allocated to the Category 5 roads this winter, each plough became a balance of enhancing driving conditions as well minimizing the height and width of the snow ridges. After the fourth residential plough, lane widths and driveway sightlines became an issue and created challenges for the homeowners. While the streets were being ploughed and winter driving conditions good, the snowpack became greater and greater with each accumulation and eventually, most Category 5 roads had an average snowpack of 30 – 45 cm.

Ploughing around Parked Vehicles

Another significant challenge Winter Maintenance crews faced during ploughing operations were the vehicles parked on City streets. This is not a concern from this winter alone, but one that is experienced every winter.

The Winter Maintenance Policy specifies that when City crews encounter parked vehicles, they are to plough around the vehicle, sometimes leaving a snow ridge. This is not only an inconvenience to the vehicle owner, but to the equipment operator as well. When ploughing around a parked car, it is an unnecessary

hazard and also affects the overall efficiency, end result and timing of the plough.

Snowbound Vehicles

Another concern is vehicles parked on City streets for the duration of the winter. Many of these vehicles are buried in snow by the end of the winter, and these also pose an unnecessary risk to our crews' while ploughing City streets. They also pose a hazard to through traffic as the snow built up around the vehicle begins to impede the driving lanes on the road. Our current process is to call Dispatch and report these offending vehicles as we encounter them. Dispatch will then create a Service Request and send it to Bylaw/Parking Enforcement. In our experience, these vehicles are not moved in a timely fashion.

Narrow Streets and New Subdivisions

In recent years, various developments in the City of Regina have exhibited a growing cause for concerns in regards to Winter Maintenance activities'. In an effort to maximize property in each development, the widths of the road networks have greatly diminished. It is now customary that the average road in the new neighbourhoods to be approximately 8.0 metres (minimum specification is 8.7 metres²). However, if these minimum lane widths are utilized, the developer is to install 'No Parking' signs on one side of the street. *This is currently not being done or enforced.* This presents great difficulty in terms of ploughing snow on these streets. A typical scenario can be described as follows:

- Street Width = 8.7 m
- Parked Car (Left side) = 1.8 m
- Parked Car (Right Side) = 1.8 m
- Grader Width = 3.7 to 4.3 m (depending on position of mouldboard, not including wing and flipper attachments)

Therefore, with cars parked on both sides, and the grader going down the road attempting to plough snow, there is approximately 0.8 to 1.4 m of space available to plough in optimum conditions. Some of the more recent neighbourhoods that exhibit these development standards are as follows:

- Harbour Landing;
- The Creeks;
- The Greens;
- Lakeridge East;
- Kensington Greens;
- Hawkstone;
- Skyview.

² Development Standards - Chapter 7, Section 3.8

http://www.regina.ca/opencms/export/sites/regina.ca/residents/roads-traffic/.media/pdf/development_standards_manual.pdf

In addition to the narrow road widths, the other development concern that is compounding winter maintenance activities is the double car driveway situated on a narrow lot. A typical lot in these neighbourhoods would be 10 m x 40 m, with a double car driveway measuring approximately 6 m wide. Therefore, this only leaves 4 m of parking lane to store the snow during the plough.

As a result, providing effective and efficient ploughing operations in these neighbourhoods is very difficult. In order to achieve this, we may want to look at providing an enhanced level of service in which no parking signs would be posted during ploughing and removal operations.

For informational purposes, there are certain locations throughout the City that require posted no-parking signage in order to perform appropriate ploughing and snow removal operations in an efficient manner. These locations are listed in the Winter Maintenance Policy and are as follows:

- Transition Area;
- General Hospital Area.

This is due to the fact that these roads have constant and non-stop parking, both night and day, and there are major inefficiencies in both ploughing and removing the snow.

Operationally, there are other locations that are not specified in the Policy, but require a similar level of service as they are located in high density neighbourhoods, both residents and parking. They are as follows:

- St. Chad's Crescent;
- Centennial Street/Monroe Place;
- Hanbidge Crescent;
- Kramer Boulevard;
- Victoria Avenue;
- College Avenue;
- Broadway Avenue.

There is a possibility that this process may need to be implemented for the new subdivisions in question.

Recommendations

Rutting on Residential Roads

The Winter Maintenance Policy does not specify the minimum depth in which to plough a Category 5 road, only to plough to a compacted snow surface. That being said, the Policy also states that the City will plough Category 5 roads when rutting exceeds approximately 10 cm. Therefore, this is the operational standard that we try to achieve whenever a Category 5 plough is triggered, or during

routine ice shaving maintenance.

In an effort to minimize the chance that rutting be greater than 10 cm, Winter Maintenance staff will strive to ensure that during residential ploughing operations', the snow pack is scraped as close to the pavement surface as possible, and in some cases, to the pavement surface. This would eliminate the vast majority of any rutting issues throughout the season and during the spring melt, however, there may be concerns from the general public as the snow ridges will be larger and take up more of the parking/snow storage lane.

In the event the City of Regina continues to receive above average snowfall accumulations, there is potential that ploughing residential roads to the pavement numerous times throughout the season will begin to adversely affect driveway sightlines and driving lane widths. In a typical situation, this would make snow removal necessary; however, the Policy only provides for snow removal operations' on Category 1, 2 and 3 roads. If a residential snow removal program is desirable, this would be a program that is greatly beyond our current capabilities' as the resources necessary would cause failure in current Policy requirements. There would also be significant challenges that we do not typically experience while removing snow on the arterial network, such as parked cars, narrow roads, noise, congestion and equipment and contractor availability. The estimated additional cost for this program would be approximately \$1,667,575³ per cycle, and would be a significant undertaking not previously experienced by Winter Maintenance operations, taking approximately 39 shifts to complete.

Ploughing around Parked Vehicles

Many other municipalities have a range of parking bans, both annual and seasonal, that can be utilized to provide optimum conditions for ploughing operations. Some types of parking bans include temporary residential bans, annual snow routes and temporary no parking signs. These bans can also be utilized for other operations such as street sweeping and asphalt repairs.

In order to bring in any parking bans, there would be a significant amount of work involving many branches of the Administration, such as:

- Communications – to communicate the changes to vehicular parking within the City of Regina, as well as to inform the public of any parking bans in place once declared throughout the season;
- Parking Services an/or Bylaw Enforcement – to coordinate ticketing and towing operations throughout the season;
- Legal – as legal advice to implement the parking bans and potential changes to the Bylaw;
- Traffic Control and Parking – to install signage on all snow routes;

³ I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

- Information Technology – to develop website services and mobile applications to keep the citizens educated and up-to-date on the various parking bans that may be declared;
- Winter Maintenance – ultimately develop a plan that would optimize ploughing operations, as well as communicate this plan to all supporting branches and Policy stakeholders;
- City Council – to approve any Policy changes;
- External Contractors – for assistance in towing of vehicles and ploughing of streets in a timely manner.

Therefore, this project would take significant time and capital funding to implement, but would be of great benefit to the citizens of Regina and Winter Maintenance operations.

Snowbound Vehicles

The Administration recommends Bylaw & Licensing and Parking Services work together to determine a process that can expedite the response time in removing snowbound vehicles, and to communicate the working process to Winter Maintenance staff.

Narrow Streets and New Subdivisions

The Administration's recommendation would be that Planning and Development undertake a plan to bring every road in the City of Regina that is less than 11.0 metres in width to have 'No Parking' signs installed on one side. This would bring these roads up to the minimum requirement in the City of Regina's Development Standards Manual. This may not alleviate all concerns with the development standards of the new subdivisions, but it will help in ensuring our ploughing equipment has adequate space to plough and store snow.

The second recommendation is that any new subdivisions that are approved are following the Development Standards Manual specifications.

Operationally, it would be of great benefit to see 1 side of every street marked with No Parking signs. This is ideal as it not only maximizes the width requirement for our equipment (and all large equipment like Solid Waste, Fire, Transit, etc), but it also provides an unimpeded snow storage lane so that we can maximize our ploughing operation.

3.2.2 Ploughing Alleys

Description

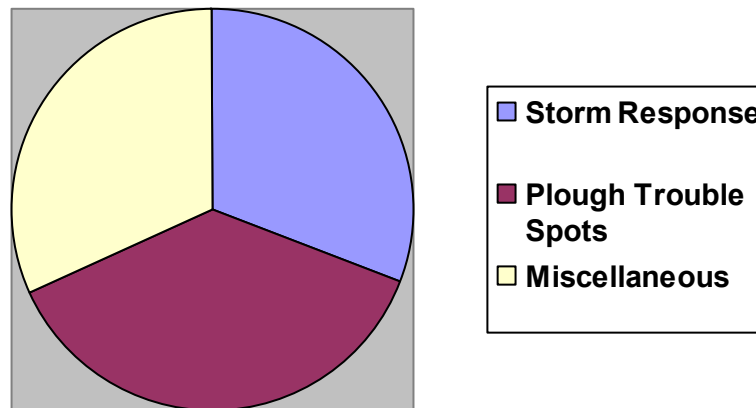
The ploughing of City alleys is the grading, scraping and pushing of accumulated snow from the centreline of the alley surface during and/or after a snowfall accumulation event. The goal is to provide an acceptable vehicle width for alley users, emergency vehicles and Solid Waste collection vehicles. This process results in a snow ridge on each side of the alley.

Budget and Expenditures

The 2012 budget allocation for the Ploughing Alleys activity was \$73,900. This activity involves the ploughing of alleys during snow events, as well as alley maintenance to minimize rutting and ensuring Solid Waste has access to the garbage collection. The overall expenditures for the 2012/2013 winter season were \$241,736, which is over three times the amount allocated in the current budget. This is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Ploughing Alleys

Activity	Cost
Storm Response (4 storms)	\$74,859
Plough Trouble Spots	\$89,600
Miscellaneous ⁴	\$77,277



Operational Challenges

There are no concerns at this time.

Recommendations

There are no recommendations at this time.

⁴ Includes: leased equipment charges, supervision

3.2.3 Ploughing Sidewalks

Description

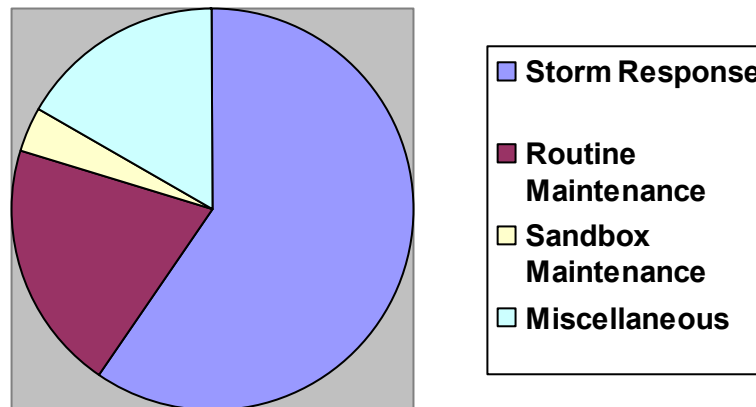
The ploughing of City sidewalks is the grading, scraping and pushing of accumulated snow from the sidewalk surface during and/or after a snowfall accumulation event. The goal is to provide a minimum of one metre plough width to allow users of the sidewalk safe and reasonable access. This process results in a snow ridge on each side of the sidewalk.

Budget and Expenditures

The 2012 budget allocation for the Ploughing Sidewalks activity was \$389,220. This activity involves the ploughing of sidewalks during snow events, as well as routine maintenance during minor snow events and freeze and thaw type conditions. The overall expenditures for the 2012/2013 winter season were \$485,613, which is approximately 1/3 over the allocated amount. This is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Ploughing Sidewalks

Activity	Cost
Storm Response (9 storms)	\$288,904
Routine Maintenance	\$98,612
Sandbox Maintenance	\$17,741
Miscellaneous ⁵	\$80,356



⁵ Includes: supervision

Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.4 Sanding Streets

Description

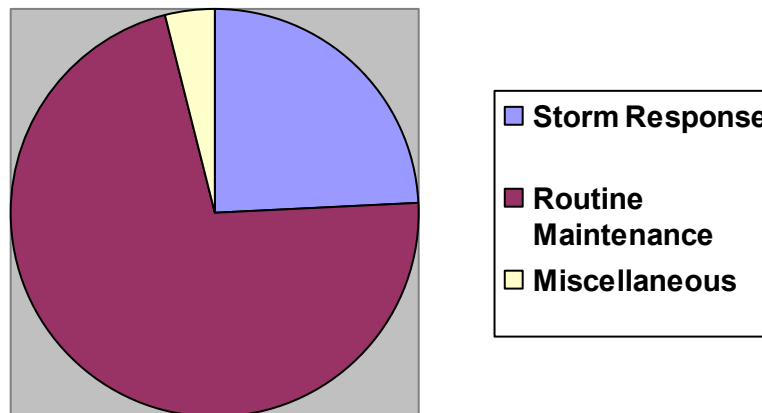
Sanding streets, or ice control, is the application of aggregate abrasives (sand and salt) to the driving or walking surface in an effort to improve traction to icy and slippery roads. During the winter season, ice control operations may take place in three environments: during a snow event, systematic ploughing and routine maintenance. Typically, ice control materials are only applied intermittently at spot sections along roads, alleys and sidewalks, usually near intersections, along road curves and on any hill or incline/decline.

Budget and Expenditures

The budget allocation for the Sanding Streets activity in 2012 was \$1,487,040. This activity involves all of the sanding and salting of streets in order to provide traction and reduce slippery conditions. This activity takes place in two basic modes: storm/systematic and routine maintenance. The overall expenditures for the 2012/2013 winter season were \$2,566,587. The over expenditures in the budget are due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Sanding Streets

Activity	Cost
Storm Response (9 storms)	\$618,931
Routine Maintenance	\$1,845,409
Miscellaneous ⁶	\$102,247



⁶ Includes: supervision, equipment preparation

Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.5 Open Catch Basins

Description

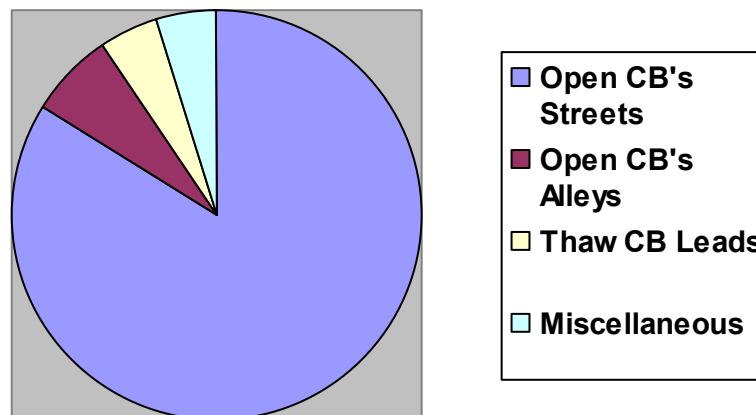
In advance, and during, the spring melting season, Winter Maintenance crews' systematically scrape and remove any snow ridges from the tops of the storm sewer delivery system, or Catch Basins. This is done so when the temperatures begin to warm, and the snow begins to melt, the water will have somewhere to drain.

Budget and Expenditures

Current budget, breakdown of money spent including storm response, forecast? The 2012 budget allocation for Opening Catch Basins activity was \$280,200. This activity includes the involvement of Winter Maintenance staff in clearing all snow ridges from the top of the catch basins in the streets and alleys. This program is performed in the spring when the snow begins to melt. The overall expenditures for the 2012/2013 winter season were \$436,468, which is almost double the allocated amount. This is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Open Catch Basins

Activity	Cost
Open Catch Basins in Street	\$366,043
Open Catch Basins in Alley	\$29,104
Thawing CB Leads	\$20,380
Miscellaneous	\$20,941



Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.6 Snow Removal

Description

Snow removal refers to the reducing or removing the snow ridges or piles that have accumulated in the parking lanes or centre medians as a result of street ploughing. This process is an entirely mechanical operation, and involves a major effort of equipment and manpower in order to load the snow and haul it off-site to the Snow Storage Site.

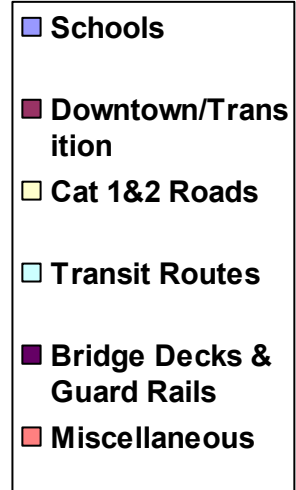
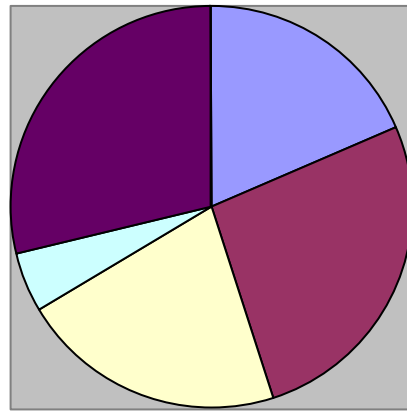
Budget and Expenditures

The budget allocation for Snow Removal in 2012 was \$1,708,870. This activity involves Winter Maintenance staff in mechanically loading up and hauling the snow away to a storage site once the snow ridges become too large. According to the Winter Maintenance Policy, there are many components to the Snow Removal program, including Category 1 and 2 roads, schools, transit stops and bridge decks. The overall expenditures for the 2012/2013 winter season were \$2,682,758, which is approximately 1/3 more than the allocated amount. This is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Snow Removal	
Activity	Cost
Schools (4 times)	\$299,921
Downtown/Transition (8 times)	\$202,746
Category 1 & 2 Streets	\$1,754,531
Transit Routes	\$681,920
Bridge Decks	\$158,481
Miscellaneous ⁷	\$ ⁸

⁷ Includes: supervision, equipment preparation, Bylaw Enforcement, towing, shop supplies

⁸ Need to determine discrepancy in WAM vs Variance (email to Dawn June 3 and July11)



Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.7 Snow Storage

Description

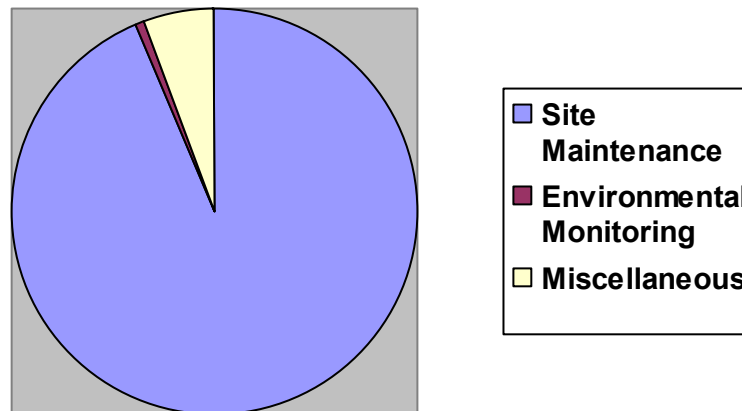
The snow storage site is a City owned property on the corner of Fleet Street and MacDonald Street that is utilized to store snow during the winter months. On average, 65% of all snow hauled to the site is from commercial and private enterprises, and is free of charge to all.

Budget and Expenditures

Current budget, breakdown of money spent including storm response, forecast? The 2012 budget allocation for the Snow Storage activity was \$204,700. These activities includes the overall operation of the snow storage site, from site prep and clean up, to piling up and stacking of snow during the winter season. Although City crews only haul into the snow storage site during periods of removal operations, private companies and commercial trucks utilize the site almost around the clock. The spring of 2013 saw the storage site remain open one month longer than ever before, with the eventual closure taking place in mid April. The overall expenditures for the 2012/2013 winter season were \$962,687, which is almost five times the amount allocated in the current budget. In addition to traditionally inadequate funding⁹, this is due to the extreme and above average winter season that the City of Regina experienced. The following chart shows a breakdown of the individual expenses:

2012/2013 Snow Storage Site

Activity	Cost
Site Maintenance	\$900,682
Environmental Monitoring	\$9,715
Miscellaneous ¹⁰	\$52,290



⁹ Five year average for actual Snow Storage Site expenditures is \$493,069

¹⁰ Includes: supervision, leased equipment, shop supplies

Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.8 Snow Fence

Description

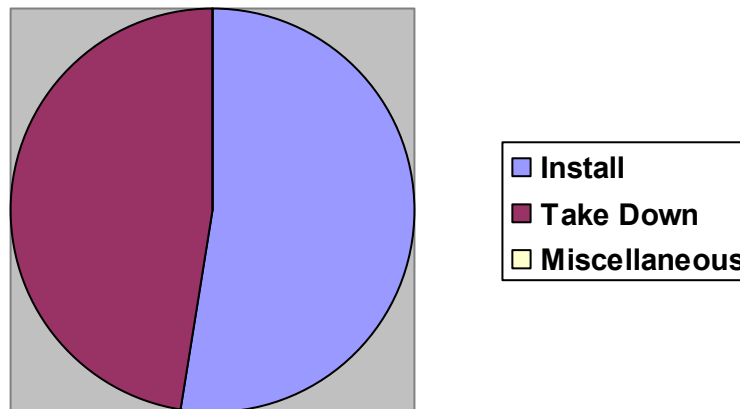
Snow fencing is a common tool used by municipalities to assist with controlling blowing snow in areas of chronic drifting as a safety precaution and to reduce costs associated with snow ploughing operations. Snow fences involve the installation of buffers made of slatted, wooden fence and metal t-bars along roadways to keep as much snow off roadways as possible. Snow fences must be properly designed and must be installed at a correct location relative to the adjacent roadway in order to be effective.

Budget and Expenditures

Current budget, breakdown of money spent including storm response, forecast? The 2012 budget allocation for the Snow Fence activity was \$40,000. This activity provides a barrier along open spaces to areas susceptible to drifting and blowing snow. This program is performed in the fall, when installation of the fence begins, to the spring, when the fence is taken down. The overall expenditures for the 2012/2013 winter season were \$76,210¹¹, which is slightly over budget. The chart shows a breakdown of the individual expenses:

2012/2013 Snow Fence

Activity	Cost
Install Snow Fence	\$39,998
Take Down Snow Fence	\$36,212
Miscellaneous	\$0



¹¹ Expenditures between October 2012 to May 2013

Operational Challenges

None at this time.

Recommendations

None at this time.

3.2.9 2013 Forecasted Budget

Although the winter season reporting is based on the winter period between November and March, the budget is based on the calendar year. In 2013, the Winter Maintenance operating budget is set for \$ \$6,343,772. City of Regina processes have each branch report on the finances of the budget in monthly interval, with a projection, or forecast, on whether operations is on target to spend the budget entirely, have a surplus, or go over budget.

As the winter season is unpredictable, and all costs are weather dependant, Winter Maintenance staff relies on previous seasonal data in an effort to forecast utilization of the budget. The 2013 Winter Maintenance operating budget is currently forecasted to be over budget by approximately \$3,600,000 and the reserve will be depleted to cover over-expenditures for this calendar year.

3.3 Storm Response

3.3.1 Summary of Street Ploughing

The Winter Maintenance Policy outlines criteria for streets to be ploughed in a systematic manner. Ploughing of Category 1 and 2 streets are triggered when snow accumulations reach 5 cm in one event. The timeframe to complete ploughing Category 1 streets is 24 hours from the end of the event, and 36 hours for Category 2 streets. Ploughing of Category 3 and 4 streets are triggered when accumulations reach 10 cm or more in one event. The timeframe to complete ploughing Category 3 streets is 48 hours from the end of an event, and 60 hours for Category 4 streets. Category 5 streets are to be ploughed once accumulations reach 25 cm in one event or conditions warrant ploughing to maintain a level driving surface and to keep rutting to less than 10 cm. No timeframe is specified for Category 5 streets.

During the 2012/2013 season there were 9 snow events that triggered a systematic response. Category 1 and 2 roads were ploughed 4 times, and Category 1, 2, 3 and 4 roads were ploughed 6 times, as the accumulations were greater than 10 cm. Category 5 streets were ploughed 2 times as a result of the snowfall accumulations in a single event.

The following table summarizes the seasons' Systematic Ploughing response, as well as indicating whether the timeframes were met according to Policy:

Summary of Systematic Street Ploughs

Systematic Plough Start Date	Cat 1 (24 hrs)	Cat 2 (36 hrs)	Cat 3 (48 hrs)	Cat 4 (60 hrs)
November 11, 2012	YES	YES	NO (72 hrs)	NO (84 hrs)
November 22, 2012	YES	NO (90%)	NO (60 hrs)	NO (72 hrs)
December 19, 2012	YES	NO (94%)	YES	YES
December 23, 2012	YES	YES	NA	NA
January 11, 2013	YES	NO (96%)	YES	YES
February 2, 2013	YES	NO (98%)	NO (55 hrs)	NO (67 hrs)
March 3, 2013	YES	YES	NA	NA
March 15, 2013	YES	NO (90%)	YES	YES
March 18, 2013	YES	YES	NA	NA

The Category 2 ploughing response came close to meeting Policy, but missed the timelines five times out of nine times. This is a result of the enhanced level of service that is directed to the Downtown core area. This operation included the ploughing and removal of all snow Downtown over a 2 night period. Depending on when the snow stopped falling, and the start of the systematic plough, the remaining Category 2 roads on the Downtown list were deferred to the second night, thus reflecting in the statistics.

The first two storms we experienced were over the course of several shifts, where a large volume of snow accumulated. A typical ploughing response once accumulations exceed 5 cm, as outlined in the Policy, is to focus ploughing operations on the Category 1 and 2 streets during the snowfall to maintain passability of the higher priority network. By the time City crews' commenced ploughing the Category 3 and 4 roads, the snow pack became great and slowed down the operation considerably, therefore missing the Policy timeframe.

As the Winter Maintenance operation was meeting Category 1 and 2 timelines handily, the Administration made some changes to the Plough Lists and where it made sense operationally, ploughed many of the Category 3 and 4 roads with the Category 2 lists. This brought in some ploughing efficiencies and also relieved some pressure on the difficulty meeting the Category 3 and 4 timelines.

3.3.2 Summary of Sidewalk Ploughing

The Winter Maintenance Policy also outlines criteria for sidewalks to be ploughed in a systematic manner. The ploughing of sidewalks outlined in the Policy is triggered by a 5 cm accumulation during a single snow event.

During the 2012/2013 season there were four snow events that triggered a systematic response. City crews met the Policy timeline of 72 hours in each of the four events, as is summarized in the table below:

Summary of Systematic Sidewalk Ploughs

Systematic Plough Start Date	NW	NE	SE	SW	Schedule B	Hand Crew
November 11, 2012	YES	YES	YES	YES	YES	NO
November 22, 2012	YES	YES	YES	YES	YES	YES
December 19, 2012	YES	YES	YES	YES	YES	YES
December 23, 2012	YES	YES	YES	YES	YES	YES
January 11, 2013	YES	YES	YES	YES	YES	YES
February 2, 2013	YES	YES	YES	YES	YES	YES
March 3, 2013	YES	YES	YES	YES	YES	YES
March 15, 2013	YES	YES	YES	YES	YES	YES
March 18, 2013	YES	YES	YES	YES	YES	YES

3.3.3 Cost Summary of Snow Events

The following table outlines the total cost of each snow event during the 2012/2013 winter season:

Cost Summary of Snow Events

Storm Date	Street Plough	Ice Control	Sidewalk Plough	Alley Plough	Total
November 9, 2012 Cat 1 - 5 & Alleys (1212645)	\$385,861	\$77,318	\$30,402 ¹²	\$17,132	\$510,713
November 22, 2012 Cat 1 – 4 (1212877)	\$188,304	\$65,776	\$15,807	NA	\$269,887
December 18, 2012 Cat 1 – 4 (1212878)	\$126,211	\$70,646	\$19,090	NA	\$215,948
December 23, 2012 Cat 1 – 2 (1212879)	\$66,735	\$22,938	\$10,139 ¹³	NA	\$99,812
January 10, 2013 Cat 1 – 5 & Alleys (1214164)	\$318,613	\$92,419	\$12,196	\$23,478	\$447,001
February 3, 2013 Cat 1 – 4 (1214165)	\$194,281	\$51,946	\$9,347	\$7,601	\$263,174
March 3, 2013 Cat 1 – 2 (1300993)	\$63,187	\$34,420	\$10,863	\$1,664	\$110,135
March 14, 2013 Cat 1 – 4 (1301534)	\$139,428	\$45,702	\$12,006	NA	\$197,136
March 17, 2013 Cat 1 – 2 (1301535)	\$126,180	\$46,696	\$17,849	\$1,604	\$192,329

Based on the 2012/2013 season, and depending on the nature of the storm and snowfall accumulations, the typical cost for a systematic plough (including ice control and sidewalks) can be summarized as follows:

- Category 1 to 2 Plough = \$133,000
- Category 1 to 4 Plough = \$235,000
- Category 1 to 5 Plough = \$458,000

¹² Charge errors: Approximately \$12,462 charged to Storm work order and should have gone to Routine Maintenance. Cannot make corrections to 2012 charges.

¹³ Charge errors: Approximately \$6,374 charged to Routine Maintenance instead of Storm work order. Cannot make corrections to 2012 charges.

3.4 Innovations or Activity Analysis

The task of providing an acceptable level of service during severe and inclement weather is an ever changing operation as the response and practices are dictated by the weather at hand. There is an ever evolving industry that strives to be innovative in the technology and equipment available to provide efficient and effective snow clearing operations and the Administration is constantly looking at ways to improve. This may be through innovation, or through analysis of our current operation to determine our capabilities, and ensuring we are providing the best level of service possible.

During the 2012/2013 winter season, operational staff performed a program analysis of two Winter Maintenance activities' in an effort to establish our current capabilities against the Winter Maintenance Policy, explore operational efficiencies and look for recommendations in improving the level of service we provide to the citizens of Regina.

3.4.1 Slide-In Sander - Innovation

Over the past two seasons, Winter Maintenance staff had investigated the use of a technologically advanced piece of equipment for the Ice Control program in an effort to promote consistent material spreading, gain efficiencies in routing and to decrease material usage. The benefits of this unit include:

1. A spreading technique that provided a sharply defined spreading pattern with the ability to direct material to multiple lanes, both right and left, at the same time.
2. A redesigned hopper box that provided a more uniform and accurate amount of material upon request.
3. The ability to 'slide' the spreading unit in and out a regular tandem truck, giving Winter Maintenance staff a greatly reduced turn-around time in transitioning from summer to winter activities.
4. A satellite based system that utilized GPS to automate spreading based on a predetermined route.

Winter Maintenance staff, after consultation with other municipalities in North America, the Ministry of Highways and Infrastructure and SGI, arranged for a 4 month trial of the unit, called an Epoke Sander. After an extensive trial period that took place over two winter seasons and involved a rigour comparison of the Epoke and our current fleet of tandem sanders, a detailed analysis provided the following details:

1. Our analysis showed the Epoke sander reduced our material consumption by approximately 35%. The material spreading technology is highly precise as compared to the existing tandem trucks. Observations also saw that material wastage with our existing tandem sanders was very high as salt and sand were dumped in patches rather than evenly spreading over

the lanes. Overall, when compared to our current sander fleet, the Epoke sander consumed 2.5 tonnes less material and wasted 1.4 tonnes less due to improved spreading patterns for each Category 1 cycle (156.6 km). In total, this technology has the potential to save approximately 1453 tonnes of material per season, with a total cost of \$46,500.

2. Our analysis showed the Epoke sander reduced our cycle frequency by approximately 50%. During the trials we found that the technological capabilities of the Epoke spreader allowed for directional sanding of up to 3 lanes, whereas traditional coverage with the CS440 is only 2 lanes. Therefore, frequency of the cycles times are reduced by half as adequate coverage is achieved on limited cycles. The analysis of the potential cost savings has been estimated to be approximately \$83,200 per season per truck.
3. Our analysis showed the Epoke sander reduced our equipment transition time from summer to winter operations by approximately 90%. During the trials we found that the typical transition times of the Epoke would be approximately 2 hours¹⁴, whereas traditional transition time of our current fleet is approximately 3 days¹⁵. The analysis of the potential cost savings has been estimated to be approximately \$1,300 per season per truck.
4. As the timing of our trial was limited, Winter Maintenance staff devoted little resources to analyze the satellite based, automated spreading system in an effort to focus our attention on the potential cost savings and efficiencies of the Epoke sander. However, during the trial, it was determined that the EpoSAT technology that is available could be of great benefit as it takes the distraction of spreader controls and automates the operation based on pre-determined and simulated routes.
5. In addition, the slide in and out capabilities of the Epoke would provide further cost savings as the tandem truck would be utilized during the summer months by Asphalt Services or Sweeping and Alley Services. In total, these branches hire 4 contractors to compliment their programs and the difference in utilizing our own equipment and manpower over a contractor would save approximately \$20,000 per truck per season. This would equal roughly \$300,000 over the life of the equipment.

Through our analysis, the Administration has determined that a slide in sander and tandem truck with equal capabilities of the Epoke trial unit, complete with side wing and front plow will provide a maximum benefit in terms of efficiencies and overall cost savings throughout the life of the equipment, and recommend the acquisition of a slide-in sander. Therefore, this has been entered into the

¹⁴ Transition time to include: washing tandem, accessing slide in unit at storage location, installation of slide in unit

¹⁵ According to data obtained by Fleet Maintenance

Capital Budget submission process for 2014, and is currently pending approval by CBAG.

3.4.2 Snow Storage Site – Innovation

Snow storage is an essential service in winter cities such as Regina. There are a number of environmental concerns associated with snow disposal, including uncontrolled melt water discharge and salt impact on the subsoil. The City should continue to deliver this service as part of our commitment to build an environmentally sustainable community.

The City of Regina owns and operates a single snow storage site in the north east of the City, south of McDonald Street (Hwy 46) and west of Fleet Street. The site is currently used by both the City of Regina and private companies. The site is large enough for the long-term snow storage needs of the City, located on a truck route, and adjacent to compatible uses. In 2012/2013, approximately 1.3 million cubic metres of snow was hauled to the Snow Storage Site, of which approximately 65% was generated by private and commercial haulers. This volume, of course, is dependent upon the amount of snowfall, which varies from year to year.

Currently, no fees are charged for providing snow storage service to private and commercial haulers. There is a potential revenue generating opportunity from the City operated snow storage service, however, the current site is challenged with operational and environmental issues, which stem from the fact that the land is undeveloped. This issues result in:

1. Vehicles becoming stuck in mud during the Spring and Fall.
2. Unauthorized snow dumping activities, leading to increased handling costs.
3. Uncontrolled run-off causing problems for adjacent properties.
4. Failure to meet the recommendations on industrial storm water run-off volumes and contaminants.

Incremental improvement of the snow site, such as drainage grading, road construction, fencing and lighting, would provide a municipal asset that has revenue potential. The current snow storage site may be further developed into a fully engineered facility in a phased manner.

During the spring of 2012, the City of Regina Real Estate Department identified the land the currently houses the Snow Storage Site is a potentially valuable piece of land, and there was interest externally to develop and sell the land to outside agencies. This revelation put some pressure on City staff to research alternate locations as snow storage is a must have in terms of the Winter Maintenance operation. With the involvement of various groups, including Environmental Services, Real Estate and Roadway and Transportation Services,

no viable option has been identified to date. Therefore, at this time, Winter Maintenance has approval to operate on the current site, with the intentions to investigate an alternate location.

In addition to the possible location change, City Operations has identified the snow storage site as a potential revenue generation opportunity and put forward through Strategic Focus 2012. However, due to the increasing demands on City resources¹⁶, this project has been put on hold until further notice. Therefore, Winter Maintenance will continue this activity as status quo for future seasons.

3.4.3 Snow Removal – Program Analysis

During the 2012/2013 winter season, the Administration performed an analysis of the Snow Removal activity in an effort to establish our current capabilities against the Winter Maintenance Policy, explore operational efficiencies and look for recommendations in improving the level of service we provide to the citizens of Regina.

3.4.4 Snow Storage – Program Analysis

During the 2012/2013 winter season, the Administration performed an analysis of the Snow Storage activity in an effort to establish our current capabilities against the Winter Maintenance Policy, explore operational efficiencies and look for recommendations in improving the level of service we provide to the citizens of Regina.

¹⁶ RRI, Wastewater Treatment Plant, etc

3.5 PW Committee Report

This section is to provide information that the Administration has been asked to provide to members of the PW Committee, or City Council.

3.5.1 Options for Removing Properties Exempt from the Clean Property Bylaw (WU07-29)

On July 17, 2007, a report was submitted to the Public Works Committee to amend the Clean Property Bylaw to clarify intent of certain sections of the Bylaw to make it clearer for the public to understand and to ensure more consistent enforcement.

Although the majority of the recommendations stated in this report were carried forward, there was one outstanding item that did not receive an update. Recommendation #5 stated that the Administration be requested to submit a report to a meeting of the Public Works Committee prior to the 2008/2009 winter season on options for ploughing of sidewalks adjacent to properties, which are exempt from the Clean Property Bylaw.

Option 1 – Status Quo

Currently, the Clean Property Bylaw states that Commercial Property, Apartment Buildings, Commercial Parking Lots and Vacant Lots are to be cleared within 48 hours. The Clean Property Bylaw represents a total of 134 km of the 1,265 km of the sidewalk network.

In 2006, the City of Regina adopted a Winter Maintenance Policy in an effort to consistently provide quality winter maintenance that effectively supports the health, attractiveness and economic viability of the community. According to the policy, Winter Maintenance is responsible to clear the following sidewalks within 72 hours:

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of the Clean Property Bylaw No. 9881.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by the Clean Property Bylaw No. 9881.
- Any frontage sidewalk adjacent to senior citizen complexes with more than 20 units in a single building.
- Adjacent to no frontage locations on Category 1 and 2 streets.
- Adjacent to a storm channel and railway crossings on Category 1 and 2 streets.
- Adjacent to city owned parks and vacant land on Category 1 and 2 streets.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.

- Adjacent to hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

The Winter Maintenance Policy represents a total of 44 km of the 1,265 km of the sidewalk network.

Option 1 – Staus Quo represents only 178 km, or 14%, of the approximate 1,265 km network of sidewalks in the City of Regina. The remaining sidewalks are to be cleared by property owners using the encouragement model, or are not cleared at all.

Option 2 – Plough all Sidewalks that do not have Private Frontage

Currently, the Winter Maintenance Policy states that City crews will clear sidewalks adjacent to the following locations:

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of the Clean Property Bylaw No. 9881.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by the Clean Property Bylaw No. 9881.
- Any frontage sidewalk adjacent to senior citizen complexes with more than 20 units in a single building.
- Adjacent to no frontage locations on Category 1 and 2 streets.
- Adjacent to a storm channel and railway crossings on Category 1 and 2 streets.
- Adjacent to city owned parks and vacant land on Category 1 and 2 streets.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.
- Adjacent to hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

This Policy only represents a fraction of the 1265 km of sidewalks within the City of Regina. The current breakdown is as follows:

- 134 km – Sidewalks that are cleared according to the Clean Property Bylaw;
- 44 km – Sidewalks cleared by City of Regina crews as per the Winter Maintenance Policy (Cat 1 & 2 streets);
- 59 km – Sidewalks surrounding City Parks and No Frontage Locations outside of the Winter Maintenance Policy (Cat 3,4 & 5 streets);

- 1028 km – All remaining residential sidewalks that are to be cleared by property owners using the encouragement model.

This option would be to amend the Winter Maintenance Policy to include all sidewalks that do not fall under the Clean Property Bylaw or the responsibility of a residential property owner.

Cost Estimate 1 (based on operational requirements of current program)

2013 Sidewalk Clearing Budget (based on current Policy) = \$406,510

Sidewalk Clearing measurement outlined in current Policy = 44 km

Estimated Required Additional Budget for Option 2 = \$418,203

Estimated Additional Sidewalk Clearing measurement outlined in Option 2 = 59 km

Option 3 – Change the Clean Property Bylaw to include all Properties

Currently, 1087 km of sidewalk in the City of Regina are exempt from the Clean Property Bylaw, or maintained by City crews' according to the Winter Maintenance Policy (1028 km if Option 1 is approved). This is a high number of sidewalks that are not enforceable in terms of snow clearing. According to a survey performed by Bylaw and Licensing during the 2012/2013 winter season, there was a 75% voluntary compliance rate from residents in removing snow from city sidewalks. This would suggest there are approximately 257 km of sidewalk that are not cleared. This causes great difficulties to the users of the sidewalk network during the winter months, which typically last over five months.

Therefore, another option is to amend the Bylaw so that all residential properties in the City of Regina fall under the Bylaw.

During the public consultation with the community and other stakeholders in 2006, there were many level of service options presented that garnered much input. Some of the options included an increased level of service on the sidewalks (\$830,000¹⁷), as well as the creation and enforcement of a residential sidewalk clearing bylaw (\$360,000). Interest was high, however, when the costs associated with the increased level of service were discussed, interest dropped off considerably¹⁸.

For informational purposes, other municipalities that have a Sidewalk Clearing Bylaw have experienced mixed results as this tends to be a highly contentious issue with citizens, especially when a timeline is included.

Saskatchewan municipalities that have a Sidewalk Clearing Bylaw:

- Saskatoon, SK

¹⁷ I:\Wordpro\Winter Road Maintenance\WM Policy & Annual Reports\Policy Review Info 2006\AAA Policy Draft Aug 2006\ W&UWinterMaintenancePolicyReviewDEC12- attachment #2

¹⁸ I:\Wordpro\Winter Road Maintenance\WM Policy & Annual Reports\Policy Review Info 2006\AAA Policy Draft Aug 2006\ W&UWinterMaintenancePolicyReviewDEC12- attachment #3

- North Battleford, SK
- Lloydminster, SK
- Melville, SK
- Moose Jaw, SK
- Swift Current, SK
- Weyburn, SK
- Estevan, SK

Canadian municipalities that have a Sidewalk Clearing Bylaw:

- Edmonton, AB
- Calgary, AB
- Brampton, ON
- Hamilton, ON
- Kitchener, ON

Canadian municipalities that clear their own sidewalks:

- Montreal, QC
- Toronto, ON
- Ottawa, ON
- Winnipeg, MB

In order to bring about changes to the Clean Property Bylaw, many branches of the Administration would need to be involved, such as:

- Legal – to identify the proposed amendment and as legal advice to implement potential changes to the Bylaw;
- Bylaw Enforcement – part of the Bylaw Working Group to draft the amendments to the Bylaw, as well as enforcement once the amendments approved;
- Traffic Control and Parking – part of the Bylaw Working Group to draft the amendments to the Bylaw;
- Winter Maintenance – part of the Bylaw Working Group to draft the amendments to the Bylaw;
- Regina Police Service – part of the Bylaw Working Group to draft the amendments to the Bylaw;
- Communications – to communicate the amendments to the Clean Property Bylaw, as well as to inform the public what is required of them;
- Information Technology – to develop website services and mobile applications to keep the citizens educated and informed of the amendments to the Clean Property Bylaw;
- City Council – to approve any Bylaw changes;

Therefore, this project would take significant time and both operating and capital funding to implement, but could be of great benefit to the citizens of Regina in terms of ensuring clean sidewalks throughout the winter season.

According to Bylaw and Licensing, they would provide the enforcement to an outside contractor and the cost for this service would be passed on to the owner of the property. However, there would still be an internal cost to administer the contract totalling approximately \$46,000 per season.

Cost Estimate from Bylaw & Licensing

½ year of salary for 1 FTE = \$30,000

1/10 year of salary for admin = \$3,000

1/10 salary for Senior Bylaw Standards Officer = \$8,000

1//20 salary for manager = \$5,000

The total estimated budget necessary = \$46,000.

The Administration recommends the Winter Maintenance Policy to be amended to include sidewalk clearing as outlined in Option 2. The Policy amendment would be described as follows (changes in **BOLD**):

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of the Clean Property Bylaw No. 9881.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, **excluding outdoor rinks.**
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by the Clean Property Bylaw No. 9881.
- Any frontage sidewalk adjacent to senior citizen complexes with more than 20 units in a single building.
- Adjacent to no frontage locations on **~~Category 1 and 2 streets~~ all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to a storm channel and railway crossings on **~~Category 1 and 2 streets~~ all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to city owned parks and vacant land on **~~Category 1 and 2 streets~~ all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to city owned buildings or parks not accessed by the public in winter on **~~Category 1 and 2 streets~~ all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

3.5.2 Clearing Snow at Homes without a Driveway (PW13-1)

On January 22, 2013, a delegate appeared before the PW Committee with a presentation requesting snow removal in front of houses that do not have a driveway, as during the winter months, there is inadequate visitor on-street parking due to snow storage in the parking lane.

In looking at various options, this was a difficult analysis to undertake as the City of Regina does not have any information readily available in terms of how many residential houses do not have a front street driveway.

According to the Winter Maintenance Policy, snow ridges formed as a result of ploughing the street are stored on the centre medians and the parking lane adjacent to the curb. The parking lane is typically referred to the snow storage lane during winter months.

Option 1 – Full Block Snow Removal on Streets that do not Have Driveways

According to the Winter Maintenance Policy, snow removal activities take place on Category 1, 2 and 3 Transit routes. Therefore, this option would require an amendment to the Policy. After the ploughing operations are complete following a winter snowfall, City snow removal crews would deploy and remove any snow on the entire block of any house that does not have a driveway. Removal of the entire block is necessary as it would be extremely inefficient to sporadically remove the snow in front of a single house alone.

Performing snow removal on Category 5 roads would follow a similar process that we have in place, but would also include some challenges that we do not typically experience while removing snow on the arterial network. Parked cars, narrow roads, noise, congestion and equipment and contractor availability, as well as decreased productivity would all be factors that would need to be analyzed if this option were to be considered.

Another factor that must be considered is public perception, as this level of service may appear to be unfair to homes that do have driveways.

For the purposes of this report, and because the City of Regina does not have any information readily available in terms of how many residential houses do not have a front street driveway, the cost estimate is based on areas of the City that do not typically have a front street driveway¹⁹.

Cost Estimate 1 (based on Financial Model of Expected Resources Necessary)
4 crews (crew = blower, grader, arrowboard, trackless, 5 trucks)

¹⁹ Windsor Place, Washington Park, City View, Highland Park, Churchill Downs, Eastview, Cathedral, Crescents, Lakeview, Broders Annex, Assiniboia Place, Arnheim Place, Rothwell Place

AVG - 18 blocks per crew, 772 block equivalent (typical no driveway neighbourhood) = 1,592,700m²/2064)²⁰

772 blocks / (18*4) = 10.7 shifts

Estimated Additional Budget for Full Block Removal on Streets that do not have Driveways = \$470,877²¹

Option 2 – Individual Removal of Snow on a Request Basis

This option would be the creation and deployment of a crew that would remove snow on a request basis to the homes that do not have a front driveway. This option may be difficult to set parameters around as it would entirely depend on the demand from the public. This option would also be highly inefficient as the locations may potentially be located in all areas of the City and there may be significant travel time from location to location.

Furthermore, a level of service would also need to be identified to determine the acceptable timeline expectations in regards to performing the removal operation after a ploughing event. However, based on the minimal number of locations removed per day, and that the operation is only necessary after each snowfall event, this option would prove to have considerable costs for minimal impact.

Cost Estimate

Equipment and Operator²² - \$26,926 per crew, per month

Average Number of Locations per Day = 9

Estimated Required Additional Budget for Option 2 = (\$26,926 per month) (5 months) = \$134,630

If the interest in this service is high, and the number of locations is too great to perform snow removal in a timely and consistent manner, the number of crew's would need to be increased.

Note: This may be a Revenue Generation or Cost Recovery operation.

Option 3 – Status Quo

This option would be to continue ploughing and removal operations as set forth in the current Winter Maintenance Policy. The Policy states the snow ridges may be stored in parking lanes adjacent to the curb. Providing an enhanced level of service to some homes, and not all, would be difficult to apply consistently. Furthermore, providing an enhanced level of service to some homes, and not all, would be difficult to explain to homeowners that are not eligible for snow removal in front of their house, and the public perception would seem unfair.

²⁰ Based on Pavement area of the Neighbourhoods outlined in Footnote 10

²¹ Shortcut to: I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

²² I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

If the Public interest is high, and to exhibit a fair and consistent approach, the Administration recommends an alternative solution, and that would be to perform snow removal operations on the Category 4 and 5 roads as well.

Option 4 – Residential Snow Removal of all Streets

If public interest is high, and to exhibit a fair and consistent approach, Option 4 would be to remove snow on all residential streets. According to the current Winter Maintenance Policy, the City only removes snow from Category 1, 2 and 3 roads. These roads make up approximately 421 km of the road network (41%). Category 4 & 5 roads include approximately 571 km of the network (58%). Performing snow removal on these additional roads would follow a similar process that we have in place, but would also include some challenges that we do not typically experience while removing snow on the arterial network. Parked cars, narrow roads, noise, congestion and equipment and contractor availability, as well as decreased productivity would all be factors that would need to be analyzed if a Residential Snow Removal program were to be considered.

The estimated additional budget for Option 4 – Residential Snow Removal of all Streets would cost \$1,667,575²³ per cycle, and would be a significant undertaking not experienced by Winter Maintenance operations, taking approximately 39 shifts for every removal cycle of these roads.

The Administration's recommendation is to choose Option 3 – Status Quo, continue ploughing and removal operations as per current Policy. The ambiguity of the request, absence of consistent data outlining homes without a front driveway and lack of Public interest make this request difficult to address.

The current Policy states the snow ridges may be stored in parking lanes adjacent to the curb. Therefore, an amendment to the Policy would need to be approved by City Council. Providing an enhanced level of service some homes, and not all, would be difficult to consistently apply. Furthermore, providing an enhanced level of service to some homes, and not all, would be difficult to explain to homeowners that are not eligible for snow removal in front of their house, and the public perception would seem unfair.

²³ I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

3.6 Other Department/Branch Support

Winter Maintenance staff supplied trucking services to other City branches in an effort to build on partnerships that we've developed over the past two seasons. The intent of this partnership is to maximize the utilization of our manpower and equipment, as well as providing a service to other City branches at a reduced cost when compared to hiring a contractor. The importance of this partnership was highlighted by the fact that the Corporate Trucking Contract was not in place to provide supplemental trucking to carry out City services.

3.6.1 Water and Sewer Services

Water and Sewer Services is a branch within the City that maintains the underground system. Although major construction takes place over the summer, repairs and maintenance to the water system take place year round in the form of water breaks.

Traditionally, this branch will use Contractor provided equipment and operators to perform the necessary trucking requirements to haul excavated material to the Landfill, and bring in new material for backfilling operations. However, in an effort to reduce costs, maximize the use of City resources, and offset the cancelled Corporate Trucking Contract, an agreement has been in place for Winter Maintenance staff to provide the trucking requirements to Water and Sewer as long as the mild weather continued.

The following table outlines the number of hours and total cost savings to the Winter Maintenance budget as a result of the shared resources:

Resource Allocation to Water and Sewer	
Number of Hours	Total Cost
3493	\$87,297

3.6.2 Asphalt Production and Material Engineering

Asphalt Production and Material Engineering is a branch within the City that provides a wide variety of services to City Departments. From the production of hot mix asphalt, to providing our Roadway branches with every type of material we use in both summer construction and winter season, the relationship we have with this branch is extremely important.

The majority of the material that AP&ME stockpiles are primarily hauled to the site with the use of Contractor provided equipment and operators. However, due to the above average winter, there was minimal trucking services provided to AP&ME branch this season.

In total, Winter Maintenance staff provided alternate services to other branches within the City of Regina for a total number of 3493 hours. This agreement

resulted in a net savings to the Winter Maintenance operating budget of \$87,297, and a net savings to the Water Works Department of approximately \$129,269²⁴.

²⁴ Contractor (\$85/hr); City Tandem (\$23/hr)

3.7 Relationship and Communication with the Public

3.7.1 Communication Plan

Communications for Winter Maintenance typically begins in October, or when the snow falls, and runs until March. The Snowfighter campaign is one of the longest running campaigns the Communication Department delivers and City Snowfighter participated in the Santa Clause parade in 2012 to raise awareness of our services. Over the course of the winter, media interest was very high and Winter Maintenance staff responded to over 160 media requests, including numerous scrum type events at the City Operations yard.

Use of social media continued (Facebook and Twitter) during the 2012/2013 winter season. Status updates were provided twice a day during storm and systematic ploughing, and almost daily throughout the rest of the season. The use of this media increased awareness to winter maintenance program and subsequently had some impact on the overall numbers of service requests received.

3.7.2 Service Regina

Service Regina is a department within the City of Regina that receives all concerns and inquiries from the public. These calls are then forwarded to the appropriate branch that is responsible. Winter Maintenance staff receives and inspects every Service Request that comes to our branch, and if the request falls within the Winter Maintenance Policy, then the work is scheduled. However, there are a large percentage of requests that fall outside of our guidelines and Policy; therefore work does not take place.

It is not statistically accurate to make any conclusions or comparisons of the annual requests received as conditions vary significantly (i.e. snowfall, policy changes, etc.) The statistics are provided for informational purposes only. Information from Service Regina noted that the current Hansen 8 program does not have specific code to separate transit stops.

.The number of inquiries/concerns received for the 2012/2013 winter season is shown in comparison to previous years:

Winter Maintenance Service Requests

Winter Season	2002 2003	2003 2004	2004 2005	2005 2006	2006 2007	2007 2008	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013
Blocked Driveway	179	244	425	106	358	159	311	310	721	46	714
Catch Basin – Blocked	0	0	0	0	0	0	0	0	1,778	44	285
Catch Basin – Frozen	8	32	16	0	26	35	144	493	166	4	556
Drainage – Culvert	2	1	2	4	2	1	4	8	1	1	3
Employee Bouquet - Winter Maintenance	0	0	0	0	0	0	0	8	30	17	249
Employee Concern - Winter Maintenance	0	0	0	0	0	0	0	6	24	12	35
General Inquiry - Winter Maintenance	0	0	1	16		0	5	184	192	58	122
Ice Control – Alleys	0	0	1	5	3	4	6	6	11	28	8
Ice Control – Roads	0	0	25	197	443	359	448	369	833	897	714
Ice Control – Sidewalks	0	0	6	24	30	35	63	32	77	44	48
Misc Concern - Winter Maintenance	0	0	0	0	0	0	0	89	76	7	NA
Sandboxes	11	14	10	12	7	4	8	6	17	10	17
Service Bouquet - Winter Maintenance	0	0	0	0	0	0	1	247	392	15	256
Service Concern - Winter Maintenance	0	0	0	0	0	0	0	148	426	30	183
Snow Dump Sites	16	17	17	27	24	13	9	44	155	10	25
Snow Fencing	22	28	43	28	21	17	6	12	72	19	15
Snow Plowing – Alleys	203	494	456	195	478	123	248	295	933	50	1011
Snow Plowing - Sidewalks	90	202	311	122	338	165	248	228	262	43	415
Snow Plowing - Streets	1198	2151	1762	583	2315	564	1435	1920	3281	103	3492
Snow Plowing - Walkways	0	0	2	2	1	2	4	17	21	6	28
Snow Removal	225	371	812	135	435	194	467	491	514	58	1360
Snow Ridge	0	2	6	17	1	72	311	314	1,380	118	772
Winter Maintenance Conditions	25	78	147	91	201	92	84	163	149	16	7
SEASON TOTAL	1979	3634	4042	1564	4683	1839	3802	5390	11511	1636	10315

3.7.3 Stakeholder Meetings

In an effort to foster good relationships with both internal and external agencies, Winter Maintenance staff conducts pre and post season meetings with various stakeholders in the community. The intentions of the meetings are to discuss the Winter Maintenance Policy and how it may impact the public, what Operations' did well, what Operations' may improve on, support services, how other areas may be able to assist Operations' and any other issues that the various groups may face during the winter season. The following internal departments that we customarily meet with are as follows:

1. Regina Police Service
2. Transit Operations
3. Parks and Open Space
4. Solid Waste
5. Fleet Services
6. Bylaw Enforcement
7. Parking Services
8. Roadways Preservation
9. City Operations Dispatch
10. Traffic Control and Parking

The following external groups that we customarily meet with are as follows:

1. Public School Board
2. Separate School Board
3. Regina Downtown Association
4. Ministry of Highways and Infrastructure
5. Saskatchewan Government Insurance
6. Special Interest Groups
7. Community Associations
8. Bike Regina

Although these meetings require a significant amount of time, they are held outside the normal winter months and give Winter Maintenance staff excellent insight into the issues we all face during the winter season. Therefore, staff will continue with these pre and post season meetings.

4.0 CONCLUSION

The Winter Maintenance branch is committed to the corporate strategic priority of achieving Operational Excellence with focus on identifying and evaluating operational programs, understanding service level expectations, optimizing resources through innovation and communicating the financial gap and implications.

The annual review provides an excellent opportunity to analyze our operational performance in terms of meeting Policy guidelines and to research innovations and determine operational improvements in an effort to become more efficient and effective.

This report focuses on the 2012/2013 winter season in which the City of Regina experienced severe and record setting conditions and snowfall accumulations. The report also focuses on activity and budget allocation, innovations and activity analysis, partnerships with internal and external stakeholders and operational challenges. Winter Maintenance staff also researched two requests from the PW Committee to bring forward various options on Sidewalk Clearing and Snow Removal for Homes that do not have a Driveway.

October 3, 2013

To: Members,
Public Works Committee

Re: Clearing Snow at Homes Without Driveways

RECOMMENDATION

That item PW13-1 be removed from the list of outstanding items for this committee.

CONCLUSION

The current Policy states that snow ridges may be stored in parking lanes adjacent to the curb therefore, an amendment to the Policy would need to be approved by City Council. Providing an enhanced level of service for some homes and not all, would not only be difficult to consistently apply, but would also be difficult to explain to homeowners that are not eligible for snow removal in front of their house. The public perception would seem unfair.

BACKGROUND

The current Winter Maintenance Policy states that during ploughing operations after a snowfall, snow ridges may be stored in parking lanes adjacent to the curb.

On January 22, 2013, a residential homeowner appeared before the PW Committee with a presentation requesting snow removal in front of houses that do not have a driveway. This was due to inadequate visitor street parking during winter months because of snow storage in the parking lane.

In looking at various options, this was a difficult analysis to undertake as the City of Regina does not have any information readily available in terms of how many residential houses do not have a front street driveway.

DISCUSSION

The Administration recommends continuing with current ploughing and removal operations as set forth in the Winter Maintenance Policy. The Policy states the snow ridges may be stored in parking lanes adjacent to the curb. Providing an enhanced level of service to some homes, and not all, would be difficult to apply consistently. Furthermore, providing an enhanced level of service to some homes, and not all, would be difficult to explain to homeowners that are not eligible for snow removal in front of their house, and the public perception would seem unfair.

Individual homeowners have the capability to hire a private contractor to remove the snow ridge in front of their home after a ploughing operation if on-street parking is desirable. However, even with this option, there is no guarantee the cleared space would be available to them for parking as it's a public street and the space is not designated to each property owner.

Additional options are presented below along with costs should the Committee wish to pursue this service further.

Option 1 – Full Block Snow Removal on Streets that do not have Driveways

According to the Winter Maintenance Policy, snow removal activities take place on Category 1, 2 and 3 transit routes. Therefore, this option would require an amendment to the Policy.

After the ploughing operations are complete following a winter snowfall, City snow removal crews would deploy and remove any snow on the entire block of any house that does not have a driveway. Removal of the entire block is necessary as it would be extremely inefficient to sporadically remove the snow in front of a single house alone.

Performing snow removal on Category 5 roads would follow a similar process that we have in place, but would also include challenges that we do not typically experience while removing snow on the arterial network. Some of these challenges include; parked cars, narrow roads, noise, congestion, equipment/contractor availability and decreased productivity. All of these factors would need to be analyzed if this option were to be considered.

Another factor that must be considered is public perception, as this option will appear to be unfair to homes that do have driveways, and does not provide a consistent level of service to all citizens. The City would also need to develop an inventory of addresses with no driveways which will be costly and time consuming as this would need to be manually obtained.

The estimated additional budget for Option 1 – Full Block Snow Removal on Streets that do not have Driveways would cost \$470,877¹ per cycle, and take approximately 11 shifts for every removal cycle of these neighbourhoods. This cost does not include staffing costs and resources required to develop the address inventory.

Option 2 – Individual Removal of Snow on a Request Basis

This option would be the creation and deployment of a crew that would remove snow on a request basis to the homes that do not have a front driveway. This option may be difficult to set parameters around as it would entirely depend on the demand from the public. This option would also be highly inefficient as the locations may potentially be located in all areas of the City and there may be significant travel time from location to location.

If the interest in this service is high, and the number of locations is too great to perform snow removal in a timely and consistent manner, the number of crews would need to be increased. However, at this time, the Administration does not have an inventory of this type of property, and it is difficult to accurately assume the total cost and number of crews required.

The estimated additional budget for Option 2 – Individual Removal of Snow on a Request Basis would cost \$134,630 per crew annually, with the ability to remove approximately nine locations per day. A level of service would also need to be identified to determine the acceptable timeline expectations in regards to performing the removal operation after a ploughing event. Based on the minimal number of locations removed per day, and that the operation is only necessary after each snowfall event (average five snowfalls per season), this option would prove to have considerable costs for minimal impact and is a reactive service.

¹ I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

Option 3 – Residential Snow Removal of all Streets

To exhibit a fair and consistent approach, Option 3 would be to remove snow on all residential streets. According to the current Winter Maintenance Policy, the City only removes snow from Category 1, 2 and 3 roads. These roads make up approximately 421 km of the road network, or 41 percent. Category 4 and 5 roads include approximately 571 km of the network, or 58 percent.

If a residential snow removal program is desirable, this would be a program that is greatly beyond our current capabilities at this time, as the resources necessary would cause failure in current Policy requirements. There would also be significant challenges that we do not typically experience while removing snow on the arterial network, such as parked cars, narrow roads, noise, congestion, and equipment/contractor availability.

The estimated additional budget for Option 3 – Residential Snow Removal of all Streets would cost \$1,667,575² per cycle. Option 3 would be a significant undertaking not experienced by Winter Maintenance operations, taking approximately 39 shifts for every removal cycle of these roads.

RECOMMENDATION IMPLICATIONS

Financial Implications

While the Administration is not recommending any of the options, should Council choose one of them, there will be financial implications as outlined in the report that should be deferred to 2015 budget deliberations.

Environmental Implications

None with respect to this report.

Policy and/or Strategic Implications

None with respect to this report.

Other Implications

None with respect to this report.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

None with respect to this report.

² I:\Wordpro\Winter Road Maintenance\WM Budget\2014 WORKING\T271 (2014).xls

DELEGATED AUTHORITY

City Council approval is required to amend the Winter Maintenance Policy and/or allocate budget.



Respectfully submitted,

Adam Homes, Director
Roadways and Transportation Services

Respectfully submitted,



Neil Vandendort, A/Deputy City Manager and COO
City Operations

Report prepared by: Chris Warren, A/Manager of Winter District Maintenance

/aeb

October 3, 2013

To: Members,
Public Works Committee

Re: Options for Removing Properties Exempt from the Clean Property Bylaw (WU07-29)

RECOMMENDATION

That the Winter Maintenance Policy be amended to include sidewalk clearing as outlined in Option 2 - City to Plough all Sidewalks that do not have Private Frontage.

CONCLUSION

The current service levels outlined in the Winter Maintenance Policy for sidewalk clearing are inadequate as there are a number of sidewalks surrounding City of Regina parks, and adjacent to no frontage locations that are not cleared during winter months. The expectation of the public is that the City will clear these sidewalks.

Option 1 – Status Quo represents only 178 km, or 14 per cent, of the approximate 1,265 km sidewalk network in the City. The remaining sidewalks are to be cleared by property owners using the encouragement model, or are not cleared at all.

Option 2 – City to Plough all Sidewalks that do not have Private Frontage would require an amendment to the Winter Maintenance Policy is required to include all sidewalks that do not fall under the Bylaw, or are the responsibility of a residential property owner.

Option 3 – Amend the Clean Property Bylaw to include all Residential Properties is to amend the Bylaw so all residential properties in Regina are responsible to clear their sidewalks, and can be enforced during non-compliance.

Although the recommendation to choose Option 2 would push our sidewalk clearing capabilities to near maximum in terms of equipment availability, it is a level of service we can provide and would be of great benefit to the users of the sidewalk network throughout winter months.

BACKGROUND

A report was submitted to the Public Works Committee to amend *The Clean Property Bylaw*, No. 9881 (the “Bylaw”) on July 17, 2007. The report was submitted to clarify the intent of certain sections of the Bylaw, allowing the public to better understand it and to ensure more consistent enforcement.

Although the majority of the recommendations stated in this report were carried forward, there was one item not updated. Recommendation 5 stated the Administration be requested to submit a report to the Public Works Committee, prior to the 2008/2009 winter season, on options for ploughing of sidewalks adjacent to properties exempt from the Bylaw.

DISCUSSION

Option 1 – Status Quo

The Bylaw states that commercial property, apartment buildings, commercial parking lots and vacant lots are to be cleared by the property owners within 48 hours of snowfall. The Bylaw includes 134 km of Regina's 1,265 km sidewalk network.

In 2006, the City adopted a Winter Maintenance Policy to provide quality winter maintenance that supports the health, attractiveness and economic viability of the community. According to the policy, Winter Maintenance is responsible to clear the following sidewalks within 72 hours:

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of the Bylaw;
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks;
- Any sidewalk adjacent to bridge decks and subways;
- Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by the Bylaw;
- Any frontage sidewalk adjacent to senior citizen complexes with more than 20 units in a single building;
- Adjacent to no frontage locations on category 1 and 2 streets;
- Adjacent to a storm channel and railway crossings on category 1 and 2 streets;
- Adjacent to City owned parks and City owned vacant land on category 1 and 2 streets;
- Adjacent to City owned buildings or parks not accessed by the public in winter on category 1 and 2 streets;
- Adjacent to hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street); and
- Adjacent to Core Community Park (Quebec Street side).

The Winter Maintenance Policy includes 44 km of Regina's 1,265 km sidewalk network cleared by City of Regina. In addition, the Bylaw represents an additional 134 km of sidewalk cleared by the property owner.

Option 1 – Status Quo represents only 178 km, or 14 per cent, of the approximate 1,265 km sidewalk network in the City. The remaining sidewalks are to be cleared by property owners using the encouragement model, or are not cleared at all.

Option 2 – City to Plough all Sidewalks that do not have Private Frontage

Currently, the Winter Maintenance Policy outlines only a fraction of Regina's 1,265 km of sidewalks within the City. The current breakdown is as follows:

- 134 km – Sidewalks cleared according to the Bylaw;
- 44 km – Sidewalks cleared by City of Regina crews as per the Winter Maintenance Policy (category 1 and 2 streets);
- 59 km – Sidewalks surrounding city parks and no frontage locations outside of the Winter Maintenance Policy (category 3,4, and 5 streets); and
- 1,028 km – All remaining residential sidewalks that are to be cleared by property owners using the encouragement model.

Option 2 – City to Plough all Sidewalks that do not have Private Frontage would require an amendment to the Winter Maintenance Policy to include all sidewalks that do not fall under the Bylaw, or are the responsibility of a residential property owner.

Option 3 – Amend the Clean Property Bylaw to include all Residential Properties

Currently, 1,087 km of sidewalk in the City is exempt from the Bylaw, or maintained by City crews according to the Winter Maintenance Policy (1,028 km if Option 2 is chosen). This is a large amount of sidewalk where snow clearing is not enforced. According to a survey performed by the Bylaw and Licensing Branch during the 2012/2013 winter season, 75 percent of residents voluntarily clear snow from City sidewalks bordering their property. This survey suggests there are approximately 257 km of sidewalk not being cleared. This causes difficulties for pedestrians in winter, which typically lasts almost half the year.

Option 3 – Amend the Clean Property Bylaw to include all Residential Properties is to amend the Bylaw so all residential properties in Regina are responsible to clear their sidewalks, and can be enforced during non-compliance.

During public consultation with the community and stakeholders in 2006, there were many service level options presented that garnered much input and interest. Some of the options included an increased level of service on sidewalks (\$830,000¹), as well as the creation and enforcement of a residential sidewalk clearing bylaw (\$360,000). However, when the costs associated with the increased service levels were discussed, interest dropped off considerably². Based on the results of public consultation contacted prior to approval of the existing Winter Maintenance Policy, there will be lack of public support for this option.

For informational purposes, other municipalities that have a sidewalk clearing bylaw have experienced mixed results, as the bylaws tend to be contentious with citizens, especially when a timeline for sidewalk clearing is included. Saskatchewan municipalities that have a sidewalk clearing bylaw include:

- Saskatoon
- North Battleford
- Lloydminster
- Melville
- Moose Jaw
- Swift Current
- Weyburn
- Estevan

Canadian municipalities that have a sidewalk clearing bylaw include:

- Edmonton, Alberta
- Calgary, Alberta
- Brampton, Ontario
- Hamilton, Ontario
- Kitchener, Ontario

¹ I:\Wordpro\Winter Road Maintenance\WM Policy & Annual Reports\Policy Review Info 2006\AAA Policy Draft Aug 2006\ W&UWinterMaintenancePolicyReviewDEC12- attachment #2

² I:\Wordpro\Winter Road Maintenance\WM Policy & Annual Reports\Policy Review Info 2006\AAA Policy Draft Aug 2006\ W&UWinterMaintenancePolicyReviewDEC12- attachment #3

Canadian municipalities that clear their own sidewalks include:

- Montreal, Quebec
- Toronto, Ontario
- Ottawa, Ontario
- Winnipeg, Manitoba

In order to bring about changes to the Bylaw, many branches of the Administration would need to be involved, such as:

- Legal – to identify the proposed amendment and to advise on implementation of changes to the Bylaw;
- Bylaw Enforcement – part of the Bylaw Working Group, to draft the amendments to the Bylaw, as well as enforcement once the amendments are approved;
- Traffic Control and Parking – part of the Bylaw Working Group, to draft the amendments to the Bylaw;
- Winter Maintenance – part of the Bylaw Working Group, to draft the amendments to the Bylaw;
- Regina Police Service – part of the Bylaw Working Group, to draft the amendments to the Bylaw;
- Communications – to inform the public of the amendments made to the Clean Property Bylaw;
- Information Technology – to develop website services and mobile applications to keep citizens educated and informed of the amendments to the Clean Property Bylaw; and
- City Council – to approve any Bylaw changes.

This project would take a significant amount of time and resources to implement, but could benefit the citizens of Regina by ensuring clean sidewalks throughout the winter season.

Additionally, according to the Bylaw and Licensing Branch, enforcement would be provided by an outside contractor and the cost for this service would be passed on to property owners. However, there would be an internal cost of \$46,000 per season³ to administer the contract.

RECOMMENDATION IMPLICATIONS

Financial Implications

With a current annual budget of \$406,510, City crews plow 44 km of sidewalk as stated in the Winter Maintenance Policy. Based on the operational requirements of the current program, Option 2 - City to Plow all Sidewalks that do not have Private Frontage is estimated to cost an extra \$418,203 annually, to plough an additional 59 km of sidewalk.

Environmental Implications

None with respect to this report.

³ 1/2 year of salary for 1 FTE = \$30,000; 1/10 year of salary for admin = \$3,000; 1/10 salary for Senior Bylaw Standards Officer = \$8,000; 1/20 salary for manager = \$5,000

Policy and/or Strategic Implications

The amendment in Section 2.3.b. of the Winter Maintenance Policy would be described as follows (changes in **BOLD**):

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of the Bylaw.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, ~~excluding outdoor rinks.~~
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by the Bylaw.
- Any frontage sidewalk adjacent to senior citizen complexes with more than 20 units in a single building.
- Adjacent to no frontage locations on ~~Category 1 and 2 streets~~ **all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to a storm channel and railway crossings on ~~Category 1 and 2 streets~~ **all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to City owned parks and City owned vacant land on ~~Category 1 and 2 streets~~ **all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to City owned buildings or parks not accessed by the public in winter on ~~Category 1 and 2 streets~~ **all streets (Category 1, 2, 3, 4 and 5).**
- Adjacent to hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

Other Implications

Option 2 - City to Plow all Sidewalks that do not have Private Frontage is a scenario that stretches the City's current sidewalk ploughing equipment capabilities to a maximum. Fleet Services would need to be able to provide maintenance services to our equipment both night and day as the equipment downtime for sidewalk ploughing machines in the 2012/2013 season was approximately 25 percent. Winter Maintenance will need to rent two units (trackless or skid steer) to supplement the City sidewalk clearing program.

Another implication is a resource strain on the Roadways and Transportation Services department as the sidewalk clearing program would require a significant update to activity booklets and ploughing location lists. This would require manually surveying, inspecting and updating all sidewalks adjacent to parks and no frontage locations, as this data is not readily available.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

Communications will include any policy amendments in the overall winter communications strategy.

DELEGATED AUTHORITY

City Council is required to amend the Winter Maintenance Policy.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Adam Homes', with a long horizontal flourish extending to the right.

Adam Homes, Director
Roadways and Transportation Services

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Neil Vandendort', with a long horizontal flourish extending to the right.

Neil Vandendort, A/Deputy City Manager and COO
City Operations

Report prepared by:
Chris Warren, A/Manager of Winter Maintenance/aeb

To: Members,
Public Works Committee

Re: Proposed Uniform Assessment Rates - 2014 Local Improvement Program

RECOMMENDATION

1. That the following uniform assessment rates for the 2014 Local Improvement Program be approved:

Type of Construction	Prepaid Rate (\$) per Front Meter	Annual Rate (\$) per Front Meter
Water Main	256.86	35.85
Storm Sewer	359.61	50.19
Sanitary Sewers	219.43	30.62
Combined Works	670.44	93.57
Residential Pavement (8.5m traffic width)	404.78	56.47
Residential Pavement (10.36m traffic width)	485.73	67.79
Commercial Pavement (11.00m traffic width)	722.66	100.85
Curb and Gutter	210.30	29.35
Concrete Walk (up to 1.83m width)	203.30	28.37
Concrete Walk (each additional 0.61m width)	98.16	13.70
Monolithic Walk, Curb and Gutter (up to 1.83m width)	413.58	57.72
Alley Upgrades	Prepaid Rate (\$) per Rear Meter	Annual Rate (\$) per Rear Meter
Alley Paving (residential)	346.99	48.43
Alley Paving (commercial)	405.03	56.53
Alley Lighting Installation (incl. fixtures, poles & power source)	81.67	11.51
Alley Lighting Installation (fixtures only)	52.13	7.34

The 2014 annual rate is based on a ten year repayment period

2. That the City Solicitor be requested to prepare the required uniform rates bylaw for the 2014 uniform rates using the rates and information provided for in this report.

CONCLUSION

New uniform assessment rates are required for the 2014 Local Improvement Program (LIP). The 2014 Uniform Assessment Rates proposed in this report were calculated based on actual construction costs for both surface works and underground works in new areas. Data regarding costing was obtained from engineering consultants working with private sector contractors on new subdivision construction in Regina in 2013. This data has been evaluated in combination with comparable 2013 City contract prices to set new uniform rates. The construction cost analysis determined that costs for all types of concrete and asphalt work have increased by 7% over last year. Costs for water main, storm and sanitary sewer work have increased by 5%. The rates for Alley Lighting Installation (fixtures only) have increased by 4.8%. Alley Lighting Installation (including fixtures, poles and power source) costs have increased by 4.9% based on private sector 2013 construction cost.

BACKGROUND

All City of Regina local improvements are done in accordance with provincial legislation called *The Local Improvements Act, 1993*. This legislation allows municipalities to specially assess the property for work or services from which the property benefits. City of Regina has used LIP to partially finance necessary improvements to municipal infrastructure. In recent years, LIP allowed the City to replace some sidewalks, curbs and gutters after the original infrastructure reached the end of its life.

The current practice is that LIP is applied when a block of a street requires more than 50 percent of the sidewalk, curb and gutter to be replaced in order to rehabilitate the existing road. If 50 percent or less of the concrete infrastructure replacement is required, the cost of that work is borne by the City.

City Council may declare, by resolution, that certain works are continuous or interlocking and are therefore a single project. For example, if the City planned to replace a sidewalk, curb and gutter for eight continuous blocks on a street, a resolution could be passed under Section 4 of *The Local Improvements Act, 1993* declaring the entire eight blocks as a single project. Construction is more efficient and cost effective when longer sections are constructed at the same time.

The LIP applies to all classifications of roadways, which include arterials, collectors, industrial/commercial and residential. At present, there is no charge to the property owners for the removal of the existing sidewalks, curb and gutters, pavement rehabilitation or any other work related to roadway reconstruction, such as renewal or replacement of the underground utilities done in conjunction with this program.

As part of this program, property owners may petition to have their location included in the local improvements program. They also can petition against local improvement work identified by the Administration, and if successful (majority of the property owners representing at least one-half of the amount of the special assessment petition against it), the location would be removed from the program.

The LIP requires City Council approval of the following three steps process to be completed in order to execute the construction projects under this program:

1. **Uniform Rates Approval** (which is the purpose of this report; typically provided in November or December) – Approval for setting the rates that will be applied to customers for the upcoming year under the LIP.
2. **Program Locations Approval** (January/February) – Approval of the project locations where the City of Regina would like to utilize the LIP.
3. **Program Approval** (March/April) – Approval to execute the projects under LIP.

In preparation for the 2014 Local Improvement Program, it is necessary to review construction and material costs, interest rates and economic trends in order to establish new uniform assessment rates. Uniform assessment rates include the portion of the cost of the work that is paid by benefiting property owners. The proposed 2014 uniform assessment rates are prepared in compliance with *The Local Improvements Act, 1993*.

DISCUSSION

Assessment rates are calculated and revised annually based on the following policies previously approved by City Council:

1. Uniform assessment rates for water main, sidewalk, curb and gutter replacement in older developed areas are based on the cost of construction being carried out in new residential areas. Additional costs of removing existing infrastructure and pavement repair are borne by the City. Costs born by the benefiting property owners are approximately 60 percent of the total cost of sidewalks, curbs and gutters.
2. In certain pre-designated areas, commonly known as Neighbourhood Improvement Areas, Neighbourhood Improvement Program and Community Service Areas, an assessment reduction of 50 percent is applied thereby reducing the cost to the benefiting owner to approximately 30 percent for sidewalk, curb and gutter replacement.
3. The annual LIP involves sidewalk, curb and gutter replacement. The cost of any other maintenance work undertaken at the same time, such as replacement or repair of sanitary and storm sewers and pavement renewal, is not assessed to the benefiting property owners.
4. The uniform assessment rate for back alley paving is based on total program cost with 100 percent being assessed to the benefiting property owners.
5. The uniform assessment rate for alley lighting is based on total program cost with 100 percent being assessed to the benefiting property owners. Two components make up the total program cost consisting of the supply and installation of street lights by SaskPower Corporation and the annual energy and maintenance charges paid to SaskPower Corporation for the alley lights. A large majority of the cost is for the energy component.

There are two types of alley lighting programs:

- a) Alley Lighting Installation (including fixtures, poles and power source): for alleys that do not presently have poles for mounting alley lights, or do not have a power service. Costs for this type of installation are substantially higher due to the need to install new poles and power lines. Energy and maintenance costs are added to the installation costs.
 - b) Alley Lighting Installation (fixtures only): for alleys with existing poles, and a secondary power source already in place. The cost is lower as it only includes the installation of the fixtures. Energy and maintenance costs are added to the installation cost.
6. In accordance with City Policy, the term of repayment for Local Improvement charges is ten years.
7. The majority of the construction carried out under the LIP is walk, curb and gutter replacement. However, uniform rates are established for other types of improvement to accommodate specific projects such as residential or commercial developments.

The 2014 uniform assessment rates proposed in this report were calculated based on actual 2013 construction costs for both surface works and underground works in new areas. Data regarding the costing was obtained from engineering consultants overseeing the work of private sector contractors on new subdivision construction in Regina in 2013.

Surface Works

In new subdivisions, the cost of concrete sidewalks, curb, gutter and asphalt increased by 7% from 2012 to 2013.

Sewer and Water main

In new subdivisions, water main, storm and sanitary sewer construction costs increased by 5% from 2012 to 2013.

Back Alley Lighting

The cost for back alley lighting upgrade installation increased by 4.8%, and back alley lighting new installation increased by 4.9% from 2012 to 2013, based on the private sector construction cost.

Financing

City Council sets the uniform assessment rates each year. The Finance Department proposes an interest rate for 2014, which is the average of the 10-year closed mortgage rates posted by CIBC, TD Canada Trust, Royal Bank, Bank of Montreal and Scotia Bank effective September 22, 2013. The average of the five banks was chosen in order to create a level of fairness, as some of the banks posted a different rate for the 10-year period.

City Council's policy is to adjust the previous year's uniform assessment rates on any works from other years that have not been completed if the interest rate in the year of construction is lower than the interest rate that existed when the uniform rates were established. A review of

interest rates has been completed for 2014. The interest rate proposed for 2014 is 6.57%, which is the same as the rate established in 2013. Therefore an adjustment is required to the rates for 2013 work carried over to 2014. There was one location carried forward from 2013 to 2014 program.

A comparison of the revised 2014 and the proposed 2013 uniform assessment rates is shown in Appendix A.

RECOMMENDATION IMPLICATIONS

Financial Implications

The LIP is funded through the Street Infrastructure Renewal Program. The uniform assessment rates applied against benefiting property owners form an integral part of the LIP.

Environmental Implications

There is a positive environmental impact caused by the replacement of deteriorated infrastructure. The condition of the infrastructure and the overall appearance of the streets are generally returned to “like new” condition. It has been observed in previous years that these improvements encourage many residents to improve their own properties.

Policy and/or Strategic Implications

None with respect to this report.

Other Implications

None with respect to this report.

Accessibility Implications

On all locations where the sidewalk, curb and gutter are being replaced, pedestrian ramps will be installed at all corners.

COMMUNICATIONS

The uniform assessment rates for the 2014 LIP will be used to estimate the property owner’s share of the cost. The estimated cost per property and the uniform assessment rates will be included in the mail out informational package that will be sent to all property owners affected by the 2014 LIP.

DELEGATED AUTHORITY

The recommendation of this report requires City Council approval.

Respectfully submitted,

A blue ink signature, likely of Adam Homes, consisting of a series of loops and a long horizontal stroke.

Adam Homes,
Director
Roadways and Transportation Services

Respectfully submitted,

A blue ink signature, likely of Neil Vandendort, written in a cursive style.

Neil Vandendort,
A/Deputy City Manager and COO
City Operations

Report prepared by:
TD/NY/sg/jk/aeb

Appendix A

Comparison of 2013 and 2014 Uniform Assessment Rates for Local Improvements

Types of Construction	2013 Rates			2014 Rates	
	Prepaid Rate (5) Per Front Metre	Annual Rate * Per Front Metre	Revised Annual Rate Per Front Metre	Prepaid Rate Per Front Metre	Annual Rate ** Per Front Metre
Water Mains	244.63	34.14		256.86	35.85
Storm Sewer	342.49	47.80		359.61	50.19
Sanitary Sewers	208.98	29.17		219.43	30.62
Combined Works	631.15	88.08		670.44	93.57
Residential Pavement (8.5m traffic width)	378.30	52.80		404.78	56.47
Residential Pavement (10.36m traffic width)	453.95	63.35		485.73	67.79
Commercial Pavement (11.0)m traffic width)	675.38	94.26		722.66	100.85
Curb and Gutter	196.54	27.43		210.30	29.35
Concrete walk (up to 1.83m width)	190.00	26.52		203.30	28.37
Concrete Walk (each additional 0.61m)	91.74	12.80		98.16	13.70
Monolithic Walk, Curb & Gutter (up to 1.83m width)	386.52	53.94		413.58	57.72
Alley Upgrades	Prepaid Rate Per Rear Lot Meter	Annual Rate* Per Rear Lot Metre	Revised Annual Rate Per Rear Lot Metre	Prepaid Rate Per Rear Lot Meter	Annual Rate **Per Rear Lot Metre
Alley Paving (Residential)	324.29	45.26		346.99	48.43
Alley Paving (Commercial)	378.53	52.83		405.03	56.53
Alley Lighting New Installation	77.86	10.87		81.67	11.51
Alley Lighting Upgradee Installation	49.70	6.94		52.13	7.34

* The 2013 annual rate was based on an interest rate of 6.57%

** The 2014 annual rate is based on an interest rate of 6.57%