CALL TO ORDER

1. ADOPTION OF AGENDA

2. PRESENTATIONS
   a. Alberta Public Works Association Annual Equipment Roadeo - Staff Award Winners - Levasseur
   b. Protective Services Presentation - Wolanski

3. BYLAWS

4. BUSINESS ITEMS
   a. Community Based Social Marketing Organics Diversion Pilot - Levasseur

5. CLOSED SESSION
   The following items will be discussed in Closed Session as permitted under the Freedom of Information and Protection of Privacy Act RSA 2000, c.F-25

6. BUSINESS ARISING FROM CLOSED SESSION

ADJOURNMENT
Presentations  Item #: 2. a.

Committee of the Whole Meeting Agenda

Meeting Date: 09/18/2017
Title: Alberta Public Works Association Annual Equipment Roadeo - Staff Award Winners - Levasseur
Department: Planning & Infrastructure

Request for Decision Summary

Two members of city staff won awards at the Alberta Public Works Association Annual Equipment Roadeo, a professional association competition and are coming before Council to be congratulated for their achievements.

Proposed Motion

That Clint Finkbeiner and Rick Fillion Operators with the Roads and Drainage division of Public Works be congratulated for their award winning finishes at the Alberta Public Works Association Annual Equipment Roadeo held September 7 to 8, 2017 in Red Deer, Alberta.

Background/Analysis

The Annual Equipment Roadeo is hosted by the Alberta Public Works Association (APWA) and is an opportunity for heavy equipment operators to demonstrate their skills in friendly competition. Individuals compete by operating heavy equipment through a defined course and completing skill testing maneuvers. Each competitor is judged and timed as they make their way through the obstacles and complete the course. This year marked the 20th annual Roadeo which was held in Red Deer on September 7th and 8th.

The APWA says that, “The Annual Equipment Roadeo is a great opportunity for your operators to practice and refine their skills in a fun and competitive environment.”

This year two operators from our Public Works department attended the competition and each achieved a top three finish!

- Clint Finkbeiner, Operator, Roads and Drainage, finished 3rd in the skid steer competition, and
- Rick Fillion, Operator, Roads and Drainage, finished 1st in the wheel loader event.

Options/Alternatives
N/A

Consultation/Engagement
N/A

Implementation/Communication
N/A

Impacts
N/A

Strategic Vision Element:
n/a

Related Goal:

Attachments

No file(s) attached.
Committee of the Whole Meeting Agenda
Meeting Date: 09/18/2017
Title: Protective Services Presentation - Wolanski
Department: Community & Protective Services

Request for Decision Summary
The Inspector for the Spruce Grove/Stony Plain RCMP Detachment is scheduled to come before Council bi-annually to provide an update on RCMP services within the area. Chief Kosterman will also be providing an update on the operations of Protective Services.

Proposed Motion
That the reports from the RCMP and Protective Services be accepted as information.

Background/Analysis
Inspector Rob Hill, Officer in Charge of the Spruce Grove/Stony Plain RCMP Detachment and Chief Robert Kosterman have been asked to come before Committee of the Whole to give a report and update of the activities with in the Spruce Grove area.

As discussed previously, the RCMP Inspector is scheduled to come before Council bi-annually in May and September to provide a report on the activities and information related to the detachment. Similarly, Chief Kosterman provides an annual report in September on the activities of the rest of the protective services areas in the City.

Additionally, the City received a letter earlier in the summer from a resident asking for consideration of Bylaw changes related to residential fire pits. Administration indicated that the concept would be included as a part of this report with any potential recommendations. The letter brought forward indicated concerns with public enjoyment being impacted by smoke from residential fire pits as well as a perceived public safety risk. The ultimate request was for a complete ban on residential fire pits in the City of Spruce Grove. Administration reviewed the concerns and provided a response to the author of the letter; however, are not recommending any changes to our existing Bylaw and processes. Residential fire pits are subject to a permit being obtained, at no cost, and approved through/by Fire Services.

The level of scrutiny and inspection that the City undertakes is above and beyond what
most municipalities provide. Normally, a municipality approves a permit with no on site inspection. Fire Services evaluates the proposed fire pit site to ensure that it meets all existing Bylaw requirements and other legislation in regards to burning materials. Any violation of the permit would be investigated by our own Enforcement Services team.

As discussed with Council previously, the public safety aspect of residential fire pits is also extremely low. We do recognize that there may be some impact to neighboring properties depending on conditions; however, there are other Bylaws that could be enforced and this would be few and far between. In consideration of the desire of many residents to enjoy their property and residential fire pits, administration does not recommend any Bylaw changes, especially those suggestions for a complete ban.

Options/Alternatives
n/a

Consultation/Engagement
n/a

Implementation/Communication
n/a

Impacts
n/a

Strategic Vision Element:
Where People Choose to Live - A dynamic city with an exceptional quality of life

Related Goal:
Citizens feel safe within their communities.

Attachments
RCMP Report
Protective Services 2016 Annual Report - presentation
Protective Services 2016 Annual Report
1. Statistical Overview
   - see reports

2. HR Update
   - Currently 6 watch support with 2 more to be hired in new calendar year
   - SRO
   - 5 year resource projections (RM’s)
   - Reader currently in place – will consider 2nd reader in the future

3. Youth Initiatives
   - Call to Duty Youth Camp
   - Log Cabin
   - Movie Nights

4. Specialized Units Updates
   - Drug Section
   - Crime Reduction Unit (CRU)
   - Habitual Offender Management (HOM)

5. Acquisitions
   - New detachment
   - Portable fume hood
   - Officer safety items
## Spruce Grove Municipal Detachment
### Statistical Comparison
#### January to July: 2013 - 2017

All categories contain "Attempted" and/or "Completed"

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Trend</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homicides &amp; Offences Related to Death</td>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Robbery</td>
<td></td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Sexual Assaults</td>
<td></td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>Other Sexual Offences</td>
<td></td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Assault</td>
<td></td>
<td>132</td>
<td>121</td>
<td>128</td>
<td>174</td>
<td>216</td>
</tr>
<tr>
<td>Kidnapping/Hostage/Abduction</td>
<td></td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Extortion</td>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Criminal Harassment</td>
<td></td>
<td>46</td>
<td>26</td>
<td>47</td>
<td>48</td>
<td>45</td>
</tr>
<tr>
<td>Uttering Threats</td>
<td></td>
<td>55</td>
<td>34</td>
<td>49</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Other Persons</td>
<td></td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL PERSONS</strong></td>
<td></td>
<td>252</td>
<td>197</td>
<td>250</td>
<td>340</td>
<td>373</td>
</tr>
<tr>
<td>Break &amp; Enter</td>
<td></td>
<td>58</td>
<td>61</td>
<td>82</td>
<td>111</td>
<td>95</td>
</tr>
<tr>
<td>Theft of Motor Vehicle</td>
<td></td>
<td>52</td>
<td>62</td>
<td>66</td>
<td>178</td>
<td>128</td>
</tr>
<tr>
<td>Theft Over $5,000</td>
<td></td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>Theft Under $5,000</td>
<td></td>
<td>414</td>
<td>350</td>
<td>417</td>
<td>640</td>
<td>591</td>
</tr>
<tr>
<td>Possn Stn Goods</td>
<td></td>
<td>31</td>
<td>33</td>
<td>30</td>
<td>73</td>
<td>57</td>
</tr>
<tr>
<td>Fraud</td>
<td></td>
<td>83</td>
<td>67</td>
<td>91</td>
<td>158</td>
<td>141</td>
</tr>
<tr>
<td>Arson</td>
<td></td>
<td>7</td>
<td>23</td>
<td>14</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Mischief To Property</td>
<td></td>
<td>410</td>
<td>286</td>
<td>341</td>
<td>477</td>
<td>330</td>
</tr>
<tr>
<td><strong>TOTAL PROPERTY</strong></td>
<td></td>
<td>1,067</td>
<td>897</td>
<td>1,059</td>
<td>1,667</td>
<td>1,373</td>
</tr>
<tr>
<td>Offensive Weapons</td>
<td></td>
<td>15</td>
<td>20</td>
<td>22</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Public Order</td>
<td></td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Disturbing the peace</td>
<td></td>
<td>203</td>
<td>147</td>
<td>153</td>
<td>272</td>
<td>179</td>
</tr>
<tr>
<td><strong>OTHER CRIMINAL CODE</strong></td>
<td></td>
<td>292</td>
<td>225</td>
<td>272</td>
<td>286</td>
<td>316</td>
</tr>
<tr>
<td><strong>TOTAL OTHER CRIMINAL CODE</strong></td>
<td></td>
<td>518</td>
<td>393</td>
<td>449</td>
<td>584</td>
<td>519</td>
</tr>
<tr>
<td><strong>TOTAL CRIMINAL CODE</strong></td>
<td></td>
<td>1,837</td>
<td>1,487</td>
<td>1,758</td>
<td>2,591</td>
<td>2,265</td>
</tr>
</tbody>
</table>
Spruce Grove Municipal Detachment
Statistical Comparison
January to July: 2013 - 2017

All categories contain "Attempted" and/or "Completed"

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Trend</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Enforcement - Production</td>
<td></td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Drug Enforcement - Possession</td>
<td></td>
<td>72</td>
<td>64</td>
<td>56</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Drug Enforcement - Trafficking</td>
<td></td>
<td>24</td>
<td>23</td>
<td>13</td>
<td>41</td>
<td>40</td>
</tr>
<tr>
<td>Drug Enforcement - Other</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Drugs</strong></td>
<td></td>
<td>97</td>
<td>89</td>
<td>73</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Federal - General</td>
<td></td>
<td>14</td>
<td>9</td>
<td>31</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td><strong>TOTAL FEDERAL</strong></td>
<td></td>
<td>111</td>
<td>98</td>
<td>104</td>
<td>113</td>
<td>108</td>
</tr>
<tr>
<td>Liquor Act</td>
<td></td>
<td>65</td>
<td>43</td>
<td>40</td>
<td>46</td>
<td>22</td>
</tr>
<tr>
<td>Other Provincial Stats</td>
<td></td>
<td>215</td>
<td>137</td>
<td>201</td>
<td>271</td>
<td>282</td>
</tr>
<tr>
<td><strong>Total Provincial Stats</strong></td>
<td></td>
<td>280</td>
<td>180</td>
<td>241</td>
<td>317</td>
<td>304</td>
</tr>
<tr>
<td>Municipal By-laws Traffic</td>
<td></td>
<td>27</td>
<td>48</td>
<td>37</td>
<td>51</td>
<td>46</td>
</tr>
<tr>
<td>Municipal By-laws</td>
<td></td>
<td>248</td>
<td>194</td>
<td>198</td>
<td>290</td>
<td>262</td>
</tr>
<tr>
<td><strong>Total Municipal</strong></td>
<td></td>
<td>275</td>
<td>242</td>
<td>235</td>
<td>341</td>
<td>308</td>
</tr>
<tr>
<td>Fatals</td>
<td></td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Injury MVC</td>
<td></td>
<td>52</td>
<td>54</td>
<td>59</td>
<td>78</td>
<td>65</td>
</tr>
<tr>
<td>Property Damage MVC (Reportable)</td>
<td></td>
<td>513</td>
<td>464</td>
<td>439</td>
<td>403</td>
<td>494</td>
</tr>
<tr>
<td>Property Damage MVC (Non Reportable)</td>
<td></td>
<td>79</td>
<td>47</td>
<td>98</td>
<td>59</td>
<td>52</td>
</tr>
<tr>
<td><strong>TOTAL MVC</strong></td>
<td></td>
<td>644</td>
<td>567</td>
<td>596</td>
<td>540</td>
<td>611</td>
</tr>
<tr>
<td>Provincial Traffic</td>
<td></td>
<td>994</td>
<td>1,804</td>
<td>2,235</td>
<td>2,584</td>
<td>1,390</td>
</tr>
<tr>
<td>Other Traffic</td>
<td></td>
<td>42</td>
<td>19</td>
<td>34</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td><strong>Criminal Code Traffic</strong></td>
<td></td>
<td>171</td>
<td>121</td>
<td>145</td>
<td>183</td>
<td>179</td>
</tr>
<tr>
<td><strong>Common Police Activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>False Alarms</td>
<td></td>
<td>482</td>
<td>445</td>
<td>433</td>
<td>450</td>
<td>500</td>
</tr>
<tr>
<td>False/Abandoned 911 Call and 911 Act</td>
<td></td>
<td>186</td>
<td>130</td>
<td>179</td>
<td>326</td>
<td>380</td>
</tr>
<tr>
<td>Suspicious Person/Vehicle/Property</td>
<td></td>
<td>192</td>
<td>332</td>
<td>326</td>
<td>484</td>
<td>333</td>
</tr>
<tr>
<td>Persons Reported Missing</td>
<td></td>
<td>33</td>
<td>31</td>
<td>31</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>Spousal Abuse - Survey Code</td>
<td></td>
<td>161</td>
<td>156</td>
<td>154</td>
<td>211</td>
<td>251</td>
</tr>
</tbody>
</table>
Fire Services Call Volumes

Call Volume in Spruce Grove

Spruce Grove Fire Calls

- Fire
- Explosion
- Ruptured Pipes
- MVC
- Public Hazard
- Public Services
- Gas Leak
- Alarm No Fire
- False Alarm

\[2014 \quad 2015 \quad 2016\]
Medical Calls in Spruce Grove continue to climb
Response Times = Good News!
Medical Responses on the Recovery.
Ten Year Data

10 Year Fire Loss

Dollar Loss  Single Event
How are we doing Provincially
Enforcement Services

Case reports

- Community Service
- Assist - Public
- Assist - RCMP / Outside Agency
- Assist - Spruce Grove Fire Services
- Assist - City of Spruce Grove Staff
- Traffic Safety Act
- Tobacco Reduction Act
- Gaming & Liquor Act
- Environmental Protection Act
- Bylaws - Traffic
- Bylaws - Property
- Bylaws - Animal
- Animal Protection Act

2016 vs 2015
Citations Remain Consistent
Animals

DOG COMPLAINTS - 2016

- Dog Attack: 35
- Barking: 123
- At large: 266
- Defecation: 17

Animal Protection Act

- Animal in Distress: 0%
- Animal Neglect: 9%
- Animals Seized: 7%
- Other: 84%
Even on dry pavement, the combination of reaction time and the braking distance means that your vehicle will travel a long way before stopping.

For pedestrians, speed is particularly lethal. If hit by a vehicle travelling at:

- **30 km/hr**, the survival rate is **95%**
- **50 km/hr**, the survival rate is **45%**
- **60 km/hr**, the survival rate is **10%**

**Speed Increases Stopping Distance**

**Stopping Distance (metres) — Dry Pavement Conditions**

- **50 km/hr**: Reaction Distance + Braking Distance = Stopping Distance
- **60 km/hr**: Reaction Distance + Braking Distance = Stopping Distance
- **70 km/hr**: Reaction Distance + Braking Distance = Stopping Distance

- **Stops in time**: Touches
- **Hits at 43 km/h**: Touches

Safe City
Does ATE work?

![Behaviour Change Graph]

- **Speeding per Hour Fixed**
- **Speeding per Hour Mobile**

<table>
<thead>
<tr>
<th>Year</th>
<th>Speeding per Hour Fixed</th>
<th>Speeding per Hour Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>5.1</td>
<td>0.7</td>
</tr>
<tr>
<td>2013</td>
<td>4.6</td>
<td>0.5</td>
</tr>
<tr>
<td>2014</td>
<td>2.7</td>
<td>0.3</td>
</tr>
<tr>
<td>2015</td>
<td>2.6</td>
<td>0.2</td>
</tr>
<tr>
<td>2016</td>
<td>1.65</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Collisions?
Domestic Violence
Safe City Fire Prevention

Assembly
Residential
Mercantile
Construction/Demolition
Institutional
Business Personal Services
Industrial

Inspections

- Assembly: 559
- Residential: 203
- Mercantile: 205
- Construction/Demolition: 21
- Institutional: 9
- Business Personal Services: 203
- Industrial: 155
Questions?
# Table of contents

## Message from the Chief
Message from the Chief 1

## Fire Services
Fire Services 2
- Accreditation Canada 2
- Fire Underwriters Survey 2
- Calls for Service 2
- Calls in Spruce Grove 3
- Calls by Day and Time 4
- Response Standards 5
- Fire Losses 6
- Provincial Comparison 7

## Enforcement Services
Enforcement Services 9
- Overview 9
- Criminal Code Offences 9
- Case Reports 10
- Citations 11
- Animal Control 12

## Safe City of Spruce Grove
Safe City of Spruce Grove 13
- Overview 13
- Traffic Safety 13
- Automated Traffic Enforcement 14
- Collision Data 16
- Intimate Partner Violence/Abuse 17
- Violence Threat Risk Assessment 18
- Fire Prevention 19

## Automated Traffic Enforcement Appendix
Automated Traffic Enforcement Appendix 20
Once again I am pleased to present the annual report for Protective Services. The Protective Services team works hard 24 hours a day, 365 days a year to provide the residents and visitors of Spruce Grove with preventative and reactive public safety initiatives.

These services include Bylaw and Provincial Legislation Enforcement including Traffic Enforcement, Fire Suppression, Rescue, Advanced Life Support - Emergency Medical Services, and Ambulance Service under a contract with Alberta Health Services. Also under the umbrella of Safe City, Protective Services staff assist the RCMP in crime prevention and the management of Automated Traffic Enforcement Initiatives.

In 2016 City Council approved the design and construction of a new Protective Services building, which in 2019 will bring the entire team under one roof. The additional space is required as Spruce Grove is a rapidly expanding city, growing faster in real numbers than Stony Plain, Parkland, and St Albert combined.

This year’s report contains more detailed information regarding Automated Traffic Enforcement (ATE), as it is important to share more information so that this tool is better understood and the false information being distributed on Social Media is addressed.

Finally I must thank the men and women of Protective Services who work hard every day to provide the safest city possible.

Your City, Your Family, Our Duty.

Chief Robert Kosterman
FIRE SERVICES

The members of the fire services section primarily work in the areas of Emergency Medical Services (including ambulance), Fire suppression, and Emergency rescue services. They are the largest staff component of Protective Services and are the only area that provides staffed service 24/7.

Fire services provides ambulance services under a contract with Alberta Health Services (AHS) and a high level of emergency medical response from fire apparatus. It also maintains a service agreement with the University of Alberta Residency Program for medical direction and enhanced services.

Accreditation Canada

Spruce Grove is accredited by Accreditation Canada for Emergency Medical Services.

Fire Underwriters Survey™

Fire Underwriters Survey™ (FUS) is a national organization that provides data on public fire protection for insurance companies. Subscribers of FUS make up approximately 85% of the private property and casualty insurers in Canada. The Public Fire Protection Classification (PFPC) system is published in the online Fire Insurance Grading Index which is used by insurers to determine their underwriting capacities and to help set property insurance rates.

The PFPC system has 10 levels from 1 (the best) to 10 (virtually no protection). Spruce Grove’s PFPC is currently rated at grade 4. The Dwelling Protection Grade is 1, which is the highest grade possible for dwelling protection.

Calls for Service

Fire Services provides two main services; traditional fire department responses and ambulance services. Ambulance and first response services are all categorized as medical incidents while all others are categorized as fire responses.
 Calls in Spruce Grove

The trend of increased call volumes within Spruce Grove continued in 2016 with a 15% increase. This brought the internal call volume to 2,507 in 2016. Of these, 2,021 were medical in nature, 133 were vehicle collisions, and 24 were fires with dollar loss.

There was a significant decrease in fires with dollar loss from 46 in 2015 to 24 in 2016. There was also a large decrease in fires without dollar loss (rubbish, brush, etc.) from 58 to 27. Motor Vehicle Collisions with injury are further discussed in the Safe City portion of the report.
Emergency Medical calls increased within Spruce Grove by 17.8% in 2016 over 2015. One property was responsible for 246 or 12.2% of all medical responses in Spruce Grove. This is also a 27.5% increase for this property over 2015.

**Calls by Day and Time**

Calls by the day of the week indicate the busiest day overall is Friday with the busiest day within Spruce Grove also being Friday. Within Spruce Grove the least busy day is Wednesday.

Time of the day is broken into 24 one hour periods of time. The busiest time of the day is 1100 and 1200.
Response Standards

Response standards are measured against National Fire Protection Association standards and are a target to strive for. For fire type responses the target is 320 seconds from time of dispatch to curbside while for medical calls it is 300 seconds. Both of these are applicable only to emergency type calls and within Spruce Grove’s boundaries.

In 2016 the fire responses met the 320 second standard 86.3% of the time and actual fires were responded to in less than 320 seconds 90% of the time. Non-emergency fire calls were responded to in less than 461 seconds 90% of the time.

The 90th percentile for fire responses was 299 seconds.
Medical emergencies in Spruce Grove were responded to in less than 300 seconds 87.5% of the time. The 90th percentile was 314 seconds. Non-emergencies were responded to in less than 500 seconds 90% of the time.

Fire Losses

In 2016 the value of structures that had fires are estimated at $19,013,846, with fire losses estimated at $599,820, 31.6% of this being from one incident. Fire losses are estimated by the service’s fire investigators and insurance companies report to the Fire Commissioner’s actual insurance loss. These numbers may differ significantly.
For the purposes of comparisons with other communities, the fire industry commonly uses a 10 year average. The following information was based on information held by the Alberta Fire Commissionaires Office.

Spruce Grove's fire loss is $99.00 per capita while the provincial rate is $160.00 per capita.

The 10 year fire fatality rate per 100,000 persons tells the story of a very safe city. Spruce Grove and Stony Plain have not had a fatality from fire in the last 10 years. The provincial 10 year rate is 0.75 per year per 100,000 persons and the provincial 2016 number is 0.73 per 100,000 persons. This means the provincial norm for Spruce Grove would be one fire death every four years on average. There has not been a fire death in Spruce Grove for over two decades.
The ten year injury rate also tells a story of safety. Although one must use caution when comparing injury rates, unlike deaths which are closely monitored, injuries are not reported with as much accuracy.
Enforcement Services consists of a team of Community Peace Officers appointed under the Peace Officer Act of Alberta. Unlike “Bylaw Officers” who are appointed by the municipality under the Municipal Government Act, Community Peace Officers (CPOs) have greater authorities, subject to a code of conduct, and subject to strict public complaints handling process.

Each municipality that employs CPOs may have different authorities and even each officer may have different authorities. Within Spruce Grove the CPOs enforce municipal bylaws and several Provincial Statutes. As a team, the officers develop individual specialized knowledge areas and work together. Every file by an officer must be reviewed by a supervisor and 30% of the supervisors’ files are reviewed by a supervisor.

Criminal Code Offences

The appointments granted to the CPOs govern the types of duties they are authorized to perform. At present, the authorities granted to them do not include enforcement of Criminal Code offences. That being said, certain laws listed within Municipal Bylaw Statutes and Provincial Statutes are similar to offences listed within the Criminal Code. An example would be “Cause a Disturbance in a Public Place” – listed under Section 175 of the Criminal Code. This section is similar to Section 11 of the Open Space Area Bylaw. Peace Officers must continuously remain cognizant of the range and scope of their authorities and only conduct activities within those specified parameters.

The City of Spruce Grove employs the RCMP to conduct its traditional policing duties. The CPOs however, are frequently called upon to assist both the RCMP and Fire Department in matters of public safety.
Case Reports

Spruce Grove Enforcement Officers conduct various diverse activities supportive of fostering the city’s vision of creating a safe and exceptional quality of life for its citizens. These activities may be sub-divided into 13 categories. As the City continues to grow the number of calls for service for Spruce Grove Enforcement Services (SGES) likewise has increased. Case reports reflect the number of complaints SGES have received.

In 2016 a total of 3,220 which is a 9.9% increase over 2015’s 2,930 complaints. This equates to 8.82 complaints per day in 2016. Parking offences (under Bylaw-Traffic) remains the number one complaint in Spruce Grove.

![Case reports diagram]

- Bylaws - Traffic: 2016 (800), 2015 (700)
- Bylaws - Property: 2016 (500), 2015 (400)
- Bylaws - Animal: 2016 (600), 2015 (500)
- Animal Protection Act: 2016 (100), 2015 (100)
- Environmental Protection Act: 2016 (20), 2015 (20)
- Tobacco Reduction Act: 2016 (10), 2015 (10)
- Gaming & Liquor Act: 2016 (5), 2015 (5)
- Assit - City of Spruce Grove Staff: 2016 (5), 2015 (5)
- Assit - Spruce Grove Fire Services: 2016 (5), 2015 (5)
- Assit - Public: 2016 (800), 2015 (700)
- Community Service: 2016 (10), 2015 (10)
Citations

Citations are the number of tickets or offence notices issued by Peace Officers. The vast majority of these offences may be classified as moving or non-moving traffic Violations. In 2016 SGES issued 2,463 citations which is a 9.7% increase over 2015, which saw 2,246 citations. The greatest number of citations issued were for speeding and parking infractions.
Animal Control

Peace Officers enforce the Municipal Dog and Domestic Animal Bylaw, the Provincial Animal Protection Act, the Dangerous Dogs Act, and the Stray Animals Act. There was an increase of 7% in this area with cases increasing from 676 in 2015 to 723 in 2016.

Dog issues make up the majority of complaints. Dogs at large were the number one complaint with barking dog second.

The most frequent calls responded to, under authority of the Animal Protection Act, are calls related to Animals in Distress. It must be noted that many complaints of animals in distress were deemed unfounded.

There was one incident that was investigated under the Dangerous Dogs Act and no cases involving the Stray Animals Act.
Overview

In 2008 the City of Spruce Grove implemented the Safe City Program. This initiative advances the Mission, Vision and Core Values the City has for its community and citizens. A safe city is a factor of significant importance when one is deciding where to live, raise a family or grow a business. The Safe City Program is a strategic, systematic approach, working in collaboration with city personnel and other stakeholders to ensure proactive actions are taken in promoting safety, safety education and safety programs. It encourages engagement, citizen participation, tips, tools, and resources which promote and enhance activities that foster the development of a caring community where residence are “safe” and “feel safe”. Traffic Safety, Fire Safety and collaborative initiatives are some of the key components of the Safe City Program.

Traffic Safety

Spruce Grove is not only a service hub for the area; it is also a transit / commuter route to the City of Edmonton, east, and to the Rockies, west. The City of Spruce Grove is correspondingly gaining greater prominence within an ever expanding capital region. It is for this reason Safe City is a member of the Capital Region Intersection Safety Partnership (C.R.I.S.P.). C.R.I.S.P. was formed in 2001 by a group of traffic safety stakeholders within the capital region. These partners share resources and expertise, identify best practices to implement on-going, collaborative and integrated intersection safety research, and to develop initiatives to reduce the frequency and severity of intersection collisions.
Automated Traffic Enforcement (ATE)

ATE is regulated by the Alberta Justice and Solicitor General. All aspects of the programs used in Spruce Grove meets or exceeds these regulations. ATE monitors intersections and roadways for various offences including failing to stop at stop signs and red lights, as well as speed. These are two leading causes of vehicle collisions.

The deployment of the City of Spruce Grove’s Automated Traffic Enforcement technology has been contracted out to Global Traffic Group. It should be noted that the ultimate responsibility for the Automated Traffic Enforcement Program rests with the police service of jurisdiction, that being the Royal Canadian Mounted Police. Safe City works in conjunction with Spruce Grove Enforcement Services, Planning and Engineering, and the RCMP to assure that the city maintains a robust and professional Automated Traffic Enforcement Program.

The two systems that have been in place the longest are the mobile and fixed speed systems. Data from these systems consistently shows a change in driver behaviour.
In 2015 Safe City added two new ATE programs to further improve safety, a new category of speeding and stop signs. Enhanced speed enforcement focused on a group of speeds that were not previously enforced with the ATE system. As this was started in mid 2015 there are not yet two years of completed data to compare. However, in the area of speeding the fixed system identified 0.34 speeders per hour while the mobile system identified 5.15 per hour. There is a high level of confidence that these numbers will decrease in time in a similar manner that we saw in the previous system reported above. The second system added was stop sign enforcement.

Stop Signs were enforced at 11 different locations, which included locations where fire services had seen serious collisions in the past. A total of 1,213.75 hours were monitored at these 11 locations in 2016 which equals 1.25% of the time. Of the 7,004 vehicles that did not make a proper stop 4,516 of them were ticketed. This equals 3.72 tickets per hour of operations. Once the 2017 year is completed we will be able to assess the success of this program.

**Frequently Asked Questions**

*Who sets the fine amounts?*

The fine amounts are set by the provincial government and the city has no say in the fine amounts.

*What is meant by a user pay system?*

All costs associated with ATE are covered from within the fines and there are no tax dollars or monies deferred from other priorities to the ATE program.

*Who is the main benefactor of the fines?*

Fines are divided up between three parties. Let’s look at a speeding ticket for 20 kilometers above the speed limit. The fine would be for $167.00. Of this $21.00 is for the Victims of Crime fund, $38.94 is retained by the province, and the remaining $107.06 is used by the city to pay for the costs associated with operating the system and remaining funds are placed in general revenues. No area of the city operation directly receives ATE funding.
How much money does the city make from ATE?

In 2016 the city received a net financial return of $2,739,037 from ATE. Overall, the City spends in excess of $16 million on its Protective Services departments. The revenue derived from ATE goes towards all city services which includes Protective Services departments and initiatives.

I got a ticket for only going a few kilometres over the speed limit, how is this fair?

No one has ever received a ticket for a few kilometres over the speed limit.

I got a failing to stop at a stop sign ticket even though I basically stopped, how come?

When the intersection conditions are such that engineering decides a complete stop is not necessary then there will be a yield sign. You must also stop before the stop sign or at the stop line. You may not proceed past the stop line or stop sign without first …stopping.

Collision Data

As the city has grown in population it has also grown in licensed drivers, but it has not grown proportionally in collisions or severity of collisions. One of the most accurate measures of collisions and severity is Fire Services reports. These reports show that although the drivers and population has increased, collisions have not.

The chart below shows a growth in percentage of collisions with patient transport via Fire Service data and collisions via RCMP data. 2010 is used as a bench mark (first year of red light ATE enforcement). In the chart one can see a population growth of 36.5% and a licensed driver increase of 25%. However during this same time collisions data from both RCMP and Fire Services shows collisions below the base line except a small increase in 2015 via RCMP data.
DOMESTIC VIOLENCE – INTIMATE PARTNER VIOLENCE / ABUSE

One of the mandates of Safe City is to collaborate with stakeholders to foster change towards personal and community safety. One of the City’s vision is that Spruce Grove is the best place to live and to raise an active and healthy family. It is along this vein that Safe Cities supports initiatives proposed by Family and Community Support Services (F.C.S.S.), the RCMP Domestic Violence Unit and the Parkland and Area Response to Family Violence Committee (PARFVC).

Safe Cities contributed $5,000.00 to (PARFVC) to fund a two day family violence conference which was held in the spring of 2016. Safe City further supported an interagency information session for the general public at the Spruce Grove Library in November 2016 for Family Violence Prevention Month. In reviewing the above data one must be cognizant of the definition utilized to delineate Domestic Violence – Intimate Partner Violence / Abuse. The definition is: any disharmony in an intimate relationship, past or present. This could include verbal disagreements, arguments, custody disputes or other physical or psychological methods to exert control over another person. The local RCMP responded to a total of 1,153 Domestic Violence – Intimate Partner Violence / Abuse incidents within their enforcement jurisdiction. Of these 315 incidents were reported within the municipality of Spruce Grove. This represents 27.3% of the incidents reported to the RCMP. Of the incidents reported only 85 cases or 26.9% resulted in criminal charges.
VIOLENCE THREAT RISK ASSESSMENT

Safe City supports the Parkland School Division, Evergreen School Division and the RCMP Community Policing/School Resource Officers in regards to the Violence Threat Risk Assessment (V.T.R.A) Program. The guiding principles of V.T.R.A. are:

- That prevention of youth violence is a community responsibility as it is everybody’s duty to report.
- Open and collaborative community partnerships help to ensure that the right child gets the right support at the right time.
- Through consultation and information sharing with local cross-sector agencies and other specialized agencies, threatening and/or violent behavior will be analyzed to guide school based and community-based risk reduction and child/youth support planning.
- To develop, encourage and support proactive strategies to recognize early warning signs and initiate/reinforce violence reduction in schools and the community.

In 2016 Safe City paid for lunch and refreshments following a signing ceremony of new community partners in support of V.T.R.A, following a V.T.R.A. training session.

In 2016 V.T.R.A. assisted 22 children and youth who were in the elementary to high school years of age.
FIRE PREVENTION / INSPECTIONS

Fire Prevention Officers (FPOs) work to reduce hazards and increase safety practices in all buildings and construction/demolition sites within Spruce Grove. This is achieved by ensuring compliance with the Alberta Fire Code, and certain municipal bylaws.

The FPOs work collaboratively with the City’s Fire Services, Enforcement Services, Planning and Development, and Cultural Services.

In 2016, 1,405 inspections were conducted.

All fires with a monetary dollar loss must be investigated. FPOs work alongside the Fire Chief and Deputy Fire Chief in conducting fire investigations. In 2016 there were a total of twenty eight (28) fires involving dollar loss which required investigations. Five (5) of these fires were investigated by the FPOs. As training and skill increase it is planned that FPOs will take over the majority of investigations.
Automated Traffic Enforcement  
Status Update – August 2017  
Spruce Grove, Alberta

The 2017 Automated Traffic Enforcement OER contained seven recommendations. The purpose of this appendix to the 2016 Protective Services Report is to inform Council of the progress on these recommendations to date.

“Audits

Although Spruce Grove passed its 2017 audit there were two recommendations and three “opportunities for improvement” identified. It is recommended that all five of these items be actioned and most had been completed at the time of this report.”

Recommendations:


   The RCMP have attended training sessions with AJSG and this recommendation has been met.

2. “That the police of jurisdiction concludes the approval process for all ATE location’s site assessments.”

   The RCMP reviewed all records and cannot find any that were not approved by them prior to use. It is believed that this is a standard recommendation in all audits. However the RCMP are re-reviewing all sites.

Opportunities for improvement included:

1. “It is suggested that the City and the RCMP work together to lower dependency of ATE as traffic enforcement for speed, red light/stop sign infractions sits at 90%”

   A formula has been developed to accurately estimate hours of traffic enforcement. The stats are now being gathered to complete the formula and start an accurate tracing system. Once the data is processed the calculations can be retroactive for all of 2016.

2. “That the municipality create a policy regarding the receipt of public complaints brought against the City’s ATE Program. In addition, the City is encouraged to
maintain statistics on the annual number of public complaints received specific to its specific ATE Program (not against an operator).

All complaints are being directed to the Inspector in Enforcement Services who has worked with Administrative Assistants to create a tracking system. However there needs to be a city policy drafted for approval that directs how these complaint will be processed. This is as complaints come into the city from many different reception points. Staff at these points are trying to answer questions and provide a response themselves instead of forwarding the complaints to Inspector Adamitz.

Since implementing the tracking system in May 2017, 11 complaints have been reported. These complaints may be categorized as follows: Three calls were received to identify the location, vehicle or operator of possible ATE deployment sites. Two reports were made with respect to the position / location of the ATE vehicle. Two complaints reported an ATE vehicle being an impediment to the flow of traffic. Two incidents were reported were the callers attempted to justify their actions or explain their driving habits. One report was received of an ATE vehicle positioned in a location where a speed limit sign was covered. The last incident was an inquiry respecting A.T.E. capabilities in detecting a vehicle that may have been utilized by individuals who committed thefts from motor vehicles.

3. “That the police service of jurisdiction maintains conventional traffic violation statistics so that annual comparisons may be made between the issuance of ATE violation tickets and conventional violations tickets issued.”

The City is are currently working with the RCMP who are very receptive to making improvements in both RCMP and City systems to ensure compliance. Safe City and the RCMP are working jointly in identifying the best type of data required to accurately monitor the effectiveness of the Spruce Grove Traffic Safety Plan and the Automated Traffic Enforcement tool. The commitment towards the sharing of information between both the RCMP and the City of Spruce Grove was solidified within a Memorandum of Understanding signed by both parties in July 2017.
“Public Awareness

In the area of public awareness it is recommended that the city explore developing a web based system where each ATE location is not only identified, but statistics related to the use of the location are available for public viewing. This would help to educate the public to the reasons why the site is used and the effect or behavioural change that is experienced at each location.”

ATE sites selected for enforcement are advertised in the Spruce Grove Examiner, and listed on the City webpage. In an effort to preserve transparency the report presented to Council on May 8th, 2017, “Automated Traffic Enforcement – Operational Effectiveness Review” has also been added to the City’s website.

Discussions have been held with the City’s Corporate Services, G.I.S. Coordinator to explore the feasibility of preparing a multi-layered geospatial map of ATE and other traffic safety information within the city. Data considered for inclusion are: ATE site locations, identification of the type of ATE enforcement activities being conducted at specified locations, the identification of high collision locations, monthly tracking of ATE violations per site, violations per hour per site, and information related to speeds per site. This map can then be placed on the city’s website for public viewing. Preliminary discussions appear favorable in realizing this objective. The potential launch of this website is anticipated in the summer of 2018.

The 2016 Protective Services Report contains more information related to ATE than any previous report and even more information will be included in the 2017 report.

“Monitoring and Data

It is recommended that Safe City meet with Engineering and identify the exact traffic data that Engineering requires from the system. Once this is identified, work towards contract modifications to ensure said data is provided.”

Since May 2017, Safe City personnel have met with the City of Spruce Grove Engineering and Technical Services Coordinator. Information sought by the Engineering and Technical Services department is in relation to traffic volume and speed. At present this information is captured via six radar speed signs, seven fixed ATE cameras or by way of manned deployment. Safe City is working with the ATE provider on additional information gathering tools.

Enforcement Services also possesses three Houston Radar Armadillo covert speed and traffic volume devices. A schedule has been implemented whereby two of these units will be in constant rotation throughout the city. Data collected will be used to identify
specific areas and time periods where the frequency of speeding incidents are most prevalent; and to monitor the traffic volume throughout the year. This data will be provided to Engineering and Technical Services Department for road safety engineering purposes.

Engineering will be a participant in any future ATE tenders or contract to ensure their needs are met.

“Cost of System

It is recommended that in the 2018-2020 Corporate Plan an initiative be added for a contracted cost analysis of bringing ATE in house be completed prior to summer 2018. This would then provide an in house option to be compared with any RFP options received in the fall of 2018.”

Protective Services has placed a request for funding in the 2018-2020 Corporate Plan for funding to perform an “in-house” ATE service cost analysis.

“Site Selection

It is recommended that a formal review process be created for the selection of sites to be submitted to the RCMP for approval. This should include a scoring system based on frequency of collisions, severity of incidents, and number of violations.”

This is still being developed. The first step is to gather sufficient data to determine what the criteria would be. As an example an 85th percentile of speed that is at least 10 kilometers per hour over the posted speed limit, and at least 3% of vehicles in violation. Once sufficient stats are gathered then the framework can be designed that would work within current resources. Another consideration is the use of conventional enforcement. As an example there are locations where there is a high volume of speeding but the bigger risks are illegal U-Turns, failing to stop, illegal turns, and pedestrian activates that are not enforced by ATE. At these locations ATE is simply not the answer and there needs to be a higher rotation of uniformed presence then elsewhere.

This should be completed early 2018.
“Uniformed Enforcement versus ATE

In order to ensure that equal hours of staffed ATE are relative to uniformed enforcement, uniformed enforcement should be tracked and recorded. A monthly report of these hours should be provided to the Protective Services Team for review.”

A formula has been developed to accurately estimate hours of traffic enforcement. The stats are now being gathered to complete the formula and start an accurate tracking system. Once the data is processed the calculations can be retroactive for all of 2016.

“Covert versus Overt

As covert is less intrusive to the roadway, does not distract drivers like the overt system, and is more likely to change drivers’ behaviours it is recommended that the use of covert be expanded and a measure of 50/50 be used between covert and overt operations. If the covert is being used more the overt should become even more obvious. The 50/50 ratio between these two statistics should be monitored for effectiveness.”

In June 2017 Safe City met with Global Traffic Group to increase overt ATE operations. Options explored were to park in plain sight, to utilize traffic cones and flashing signal indicators, and utilize a sandwich board. Global Traffic Group has committed to enhancing visibility of their traffic operations. Spruce Grove Enforcement Services have implemented a tracking procedure to record the number of hours, frequency and site location of “overt” ATE Traffic. This will continued to be monitored and any future systems or contracts will include a definition of overt and covert with methodologies and ratios.
Committee of the Whole Meeting Agenda

Meeting Date: 09/18/2017
Title: Community Based Social Marketing Organics Diversion Pilot - Levasseur
Presenter: Patrick Inglis
Department: Planning & Infrastructure

Request for Decision Summary

This presentation is being brought forward to Council to provide information on the Community Based Social Marketing (CBSM) Organics Diversion Pilot Program that was completed by a University of Alberta Sustainability Scholar. The pilot program saw the Sustainability Scholar traveling door-to-door in Hilldowns talking to residents about food waste diversion. Using CBSM principles the Scholar was able to influence the behaviour of several residents, thereby increasing the diversion of food waste from landfill.

Proposed Motion

That the Community Based Social Marketing Organics Diversion Pilot Program report be received as information.

Background/Analysis

The City of Spruce Grove is committed to reducing its landfill waste generation as a component of its environmental sustainability initiatives. Encouraging waste diversion behavior is how residential waste that goes to landfill can be reduced. Diversion refers to placing acceptable waste in the green organics cart or blue recycling bags instead of the black waste cart. A review of the City’s past diversion shows that the City’s diversion has stagnated at around 40% since 2008 and more recently dropped to approximately 37% in 2016, with food waste making up approximately 36% of the black waste cart content and only 2.5% of the green organics cart content. This stagnation signals residents are not diverting and not diverting properly.

Community Based Social Marketing (CBSM) is proposed as an alternative to the current information-intensive campaigns. CBSM was introduced by Doug McKenzie-Mohr through his 2011 book, "Fostering a Sustainable Behavior: An Introduction to Community Based Social Marketing". It uses direct person-to-person communication as a way to foster behavior change especially in a social context. In order to roll out CBSM based program to the scale of the whole city, this pilot program emerged to evaluate the effectiveness of the approach.
This pilot program targeted Hilldowns as a pilot community and Lakeview as a control community. Door-to-door surveying was used as the methodology. Conversation consists of information communication, surveying, and commitment inquiry. Successfulness of the project was assessed by waste data collected by GFL (the City’s waste management contractor), number of commitments made, and visual audit results. The overall result of the project are very positive. All 417 occupied houses in Hilldowns were visited at least once. Out of the 277 residents reached, 243 made commitments to diverting food to the green organics cart, which marks an 88% of success rate if the resident can be reached and is willing to participate. There was an overall downward trend in residents’ black waste cart tonnage as shown in the waste data. Visual audits also showed that residents who had never diverted food before showed evidence of food diversion behavior after the conversation. Aside from all the quantitative data, residents’ feedback was one of the most valuable forms of data gathered from this pilot program. This project and its method were highly appreciated by residents for it shows the City’s commitment in communicating with its residents in an open and transparent fashion.

Options/Alternatives
N/A

Consultation/Engagement
The Sustainability Scholar traveled door-to-door in the community of Hilldowns talking with a total of 277 residents about organic waste diversion. The Sustainability Scholar gained input from the residents through conversation and surveying. The Scholar then asked the residents to make the commitment to reducing the amount of food waste they place in their Black Waste Carts.

Implementation/Communication
Due to the effectiveness of this pilot program the Sustainability Section would like to see this program continue in future years. The Sustainability Section would like to have a summer student hired to complete the work on a City wide basis. Having a full-time summer student would allow the City to reach most of the residents over a few summers. With the pilot having an 88% success rate for commitments made, it is believed that rolling this program out across the whole City could make a substantial impact to the City’s overall waste diversion.

Impacts
The impacts of this report demonstrate that the most effective way to communicate to residents and influence their behaviour around waste diversion is through person-to-person conversations. Having someone traveling door-to-door to break down the perceived barriers around waste diversion greatly impacts the acceptance and successfulness of the City’s current waste program. With the City having the three streams of waste diversion already in place encouraging residents to use the program as intended could reduce the City’s overall emissions and move the City towards achieving the 2020 target of 65% diversion from landfill.
Strategic Vision Element:
Where People Choose to Live - A dynamic city with an exceptional quality of life

Related Goal:
Citizens consistently express high levels of satisfaction with municipal services.

Attachments

CBSM Organics Diversion Pilot Program
COMMUNITY BASED SOCIAL MARKETING ORGANICS DIVERSION PILOT PROGRAM

Sky Sun, Sustainability Scholar
University of Alberta, Faculty of Arts, Department of Interdisciplinary Studies (Humanities Computing)

Caitlin Van Gaal, Mentor
Environmental Coordinator, Planning and Infrastructure, City of Spruce Grove
# TABLE OF CONTENTS

1 EXECUTIVE SUMMARY ........................................................................................................ 1  
2 INTRODUCTION AND BACKGROUND ............................................................................... 2  
   2.1 Diverting Food .................................................................................................................. 2  
   2.2 Diversion Rate ................................................................................................................ 2  
   2.3 Current Communication ................................................................................................. 4  
   2.4 Community Based Social Marketing .............................................................................. 5  
3 PROJECT DESIGN .................................................................................................................. 6  
   3.1 Step 1: Behavior Selection .............................................................................................. 6  
   3.2 Step 2: Identifying Barriers and Benefits ....................................................................... 6  
   3.3 Step 3: Develop Strategy .............................................................................................. 8  
   3.4 Step 4: Piloting Program ............................................................................................... 9  
      3.4.1 Door-to-Door Communication Design ................................................................. 10  
      3.4.2 Assessment Strategies ......................................................................................... 12  
   3.5 Step 5: Broad Scale Implementation ............................................................................. 13  
4 RESULTS AND ANALYSIS ................................................................................................... 13  
   4.1 Visit Result ...................................................................................................................... 13  
   4.2 Commitment Result ........................................................................................................ 14  
   4.3 Waste Data Result ......................................................................................................... 15  
      4.3.1 Lakeview .................................................................................................................. 17  
      4.3.2 Hilldowns ................................................................................................................ 18  
      4.3.3 Comparison ............................................................................................................ 19  
   4.4 Visual Audit Result ......................................................................................................... 19  
5 SUCCESSFULNESS OF THE PROGRAM .............................................................................. 21  
6 LIMITATIONS OF THE CBSM APPROACH ....................................................................... 23  
7 INSIGHTS AND RECOMMENDATIONS ................................................................................. 23  
   7.1 Survey Result .................................................................................................................. 23  
   7.2 Residents’ Comments ..................................................................................................... 25  
8 CONCLUSION ......................................................................................................................... 26  
9 BIBLIOGRAPHY .................................................................................................................... 27  
10 APPENDIX ............................................................................................................................. 29  
   10.1 Appendix A. Door-to-door communication script ........................................................ 29  
   10.2 Appendix B. Survey Questionnaire .............................................................................. 30  
   10.3 Appendix C. Info Sheet .................................................................................................. 32  
   10.4 Appendix D. Visual Audit Photos of New Diverters ..................................................... 33  
   10.5 Appendix E. Map Showing Relative Location of Hilldowns and Lakeview Communities in Spruce Grove ................................................................. 36
1 EXECUTIVE SUMMARY

The City of Spruce Grove is committed to reducing its landfill waste generation as a component of its environmental sustainability initiatives. The City’s current curbside waste program consists of three streams of collection, black waste cart, green organics cart, and blue recycling bags. Encouraging a diversion behavior is how residential waste that goes to landfill can be reduced. Diversion refers to placing acceptable waste in the green organics cart or blue recycling bags instead of the black waste cart. A review of the City’s past diversion shows that the City’s diversion has stagnated at around 40% since 2008 and more recently dropped to approximately 37% in 2016, with food waste making up approximately 36% of the black waste cart content and only 2.5% of the green organics cart content. This stagnation signals residents are not diverting and not diverting properly. It goes to show that previous communication methods (information-intensive) have not been effective in affecting residents’ food diversion behavior. An alternative approach is needed so as to reach the diversion goal of 65% in 2020 as set out in the 2013 Reduce Your WasteLine Curbside Program Blueprint 2013 – 2018.

Community Based Social Marketing (CBSM) is proposed as an alternative to the current information-intensive campaigns. CBSM was introduced by Doug McKenzie-Mohr based upon his 2011 book, Fostering a Sustainable Behavior: An Introduction to Community Based Social Marketing. It uses direct person-to-person communication as a way to foster behavior change especially in a social context. In order to roll out CBSM based program to the scale of the whole city, this pilot program emerged to evaluate the effectiveness of the approach.

This pilot program targets Hilldowns as a pilot community and Lakeview as a control community. Door-to-door survey is used as the methodology. Conversation consists of information communication, surveying, and commitment inquiry. Successfulness of the project is assessed by waste data collected by GFL (the City’s waste management contractor), number of commitments, and visual audit results. The overall result of the project is very positive. All 417 occupied houses in Hilldowns were visited at least once. Out of the 277 residents reached, 243 made commitments to diverting food to the green organics cart, which marks an 88% of success rate if the resident can be reached and is willing to participate. There is an overall downward trend in residents’ black waste cart tonnage as shown in the waste data (see Figure 2 and Figure 3). Visual audits also show that residents who had never diverted food before showed evidence of food diversion behavior after the conversation. Aside from all the quantitative data, residents’ feedback is the most valuable data gathered from this pilot program. This project and its method is highly appreciated by residents for it shows the City’s commitment in communicating with its residents in an open and transparent fashion.
2  INTRODUCTION AND BACKGROUND

2.1 Diverting Food

Food diversion continues to manifest as the biggest challenge for waste diversion programs across North America. United States Environmental Protection Agency in its 2014 Fact Sheet shows that in 2014 there was 76.3% of total generated food waste went to landfill on a national level.

Several cities such as New York, Seattle, and Vancouver have made tremendous effort and commitment to rolling out the curbside compost system. New York’s curbside organics collection program was initiated as a pilot program for 3,200 residents in the spring of 2013. Even with its voluntary participation term, the program had already reached approximately one million residents citywide. As of July 2016, the popularity in New York was 8.537 million. The City’s March 23, 2017 press release announced an expansion of its organics collection program with the goal of reaching 3.3 million city residents by end of 2017.

Seattle has always been the trailblazer in composting and recycling, along with San Francisco and Portland in the U.S. The City of Seattle prohibited food waste in the garbage and started the curbside food waste collection in 2005. The program was expanded to businesses in 2009 and multi-family buildings in 2011. Seattle has even become stricter more recently by issuing fines to fight contamination in residents’ black waste carts. Seattle stated aggressive goals to divert 60% of its waste by end of 2015 and 70% by 2030.

Canadian cities have also led the way in curbside organics collection. Two notable leaders are Toronto and Vancouver. Both cities do weekly collection for their organics carts. Their programs have also expanded to multi-unit buildings.

Following the trail led by these successful cases, the City of Spruce Grove thrives to become an environmentally sustainable city and provide its residents with high quality of life. As a component of its environmental sustainability initiatives, reducing the amount of residential waste going to landfill is one of the City’s priorities.

2.2 Diversion Rate

Diversion rate measures the amount of waste diverted from landfill through the curbside program (green organics cart and blue recycling bags) and at the Eco Centre. It is a useful indicator of the program’s performance. Table 1 below illustrates Spruce Grove’s diversion targets versus the actual rates for 2012, 2016, and 2020. The figures for 2012 and 2016 are drawn from the Residential Waste Audit and Program Review in 2016; and the 2020 target is

---

1 The Eco Centre is a centralized facility in Spruce Grove, that collects excess garbage, additional organics and recycling as well household hazardous materials and electronics.
set out in the *Residential Curbside Waste Program Blueprint 2013 – 2018*. As shown in Table 1, although there has been a slight increase of 3% from 35% in 2012 to 38% in 2016, diversion rate has still stagnated around 40%. When compared to the 2016’s target diversion rate of 50%, 38% is less than satisfactory.

Table 1
The City of Spruce Grove’s target and actual diversion rates from 2012, 2016, and 2020

<table>
<thead>
<tr>
<th></th>
<th>Target Diversion Rate</th>
<th>Actual Diversion Rate</th>
<th>Potential Diversion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>N/A*</td>
<td>35%</td>
<td>85%</td>
</tr>
<tr>
<td>2016</td>
<td>50%</td>
<td>38%</td>
<td>86%</td>
</tr>
<tr>
<td>2020</td>
<td>65%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*There were no diversion rate goals set out prior of 2013.

Except actual diversion, it is also meaningful to look at potential diversion that includes contamination in waste sent to landfill (all waste that doesn’t belong in landfill). 2016’s waste audit indicated that 77% of materials in landfill could have been diverted while *Reduce Your WasteLine* report in 2013 shows the percentage of 76%.

Potential diversion rates as shown in Table 1 were calculated in the 2016 audit report with the following formula:

\[
\text{Potential Diversion Rate} = \frac{(\text{Garbage} \times 77\%) + \text{Organic Waste} + \text{Recycling}}{\text{Total Waste}}
\]

There are significant discrepancies between actual diversion rates and potential diversion rates for both 2012 and 2016. This gap signals that residents are not diverting properly and that there is still a considerable amount of room to improve with the program.

Figure 1 shows the trend of percentages of yard waste and food waste that go into the green organics cart in 2012 and 2016. To date, the percentage of food waste in green organics cart is still extremely low. It becomes more staggering when compared to the provincial average for food waste in organics collection of 21%. Drawn from 2016 waste audit results, the analysis of black cart composition reveals that there was 38% of organics...
found in black carts. 36% of the 38% of organics could have been diverted to green organics carts, out of which 76% is food waste while 15% is yard waste. In essence, the result shows that 27% of what goes in the black waste cart is food waste and could have been diverted to green organics cart. Food waste is the weak link in diversion practice but at the same time it also has the biggest potential to aid in advancing diversion practice. Hence, food diversion is the most critical behavior the City needs to advocate and target with respect to waste diversion.

In order to continue to advance diversion, the questions we need to ask are:

- Why residents are not diverting the best they can,
- What are the obstacles that hinder residents’ food diversion practice,
- Whether or not the existing tools adopted to communicate with residents are effective enough, and
- How we can address these challenges, elevate opportunities, and continue to improve.

2.3 CURRENT COMMUNICATION

Currently, the City communicates with residents surrounding food diversion via delivering information to residents, gathering information from residents, and accomplishing the two simultaneously. Some of the communication tools include:

- Waste audit (gathering information)
- December outreach and Canada Day outreach
- Articles in the City Pulse magazine\(^2\)
- Newspaper ads and social media posts around Waste Reduction Week
- Trim Your Trash waste app\(^3\)
- General promotion

The current tools of communication surrounding waste management and food diversion have a high reliance on information. These campaigns are either implemented on a large-scale or implemented in a more controlled fashion like tradeshow or sample community. These information-based campaigns assume that the enhancing of knowledge will naturally lead to behavior change. However, it has been realized that conventional communication tools become ineffective especially when it comes to environmental behavior change.

Several studies have shown evidence that campaigns that are strictly information-based have little or no effect on changing people’s behaviour. One example is Professor Scott Geller and his colleagues’ energy-conversation study. In 1977 to 1978 they studied the behavior effect of educational workshops on energy conservation. The

\(^2\) See page 30 and 31 for waste article on the Summer 2017 edition of the City Pulse magazine.
\(^3\) Trim Your Trash website version.
workshops were information-based with various formats of educational materials. Impact of the workshops was assessed by a 21-item questionnaire and 40 follow-up home visits. Results from the study show a higher level of awareness of the energy crisis, a greater realization of energy-conservation techniques, and increased willingness to commit to implement the techniques among workshops attendees. However, follow-up home visits suggested that a few attendees have changed their behaviours and there was no significant difference regarding behavior change between workshops attendees and non-attendees. Geller concluded that, information-based campaigns “should not be relied on to promote energy conservation unless they are supplemented with other techniques designed to motivate action.” (1981, p.334) This ineffectiveness of information-based campaigns has also been supported by numerous scholarly articles especially in the field of psychology (Abrahamse et al., 2005; Costanzo et al., 1986).

Behavior change is the pivotal concept in improving the performance of the program, it is so critical that as McKenzie-Mohr claims, it is “the cornerstone of sustainability” (2011, p. 2). Fostering behavior change becomes even more challenging for a municipality who works with a greater population. The stagnation of diversion rates, the high contamination rates, and the low food waste in green organics cart, all suggest that residents of Spruce Grove are struggling with waste diversion, especially with food diversion. Moreover, the conventional communication tools didn’t successfully foster the behavior change of diverting food waste. In order to achieve the diversion rate goal of 65% in 2020 (see Table 1), a more effective communication tool needs to be explored and implemented.

2.4 COMMUNITY BASED SOCIAL MARKETING

McKenzie-Mohr introduced Community Based Social Marketing (CBSM) as an alternative and a remedy for the conventional unintegrated intensive approaches that are proven to be not effective, such as education and economic self-interest (2011). CBSM is a social marketing technique that aims to influence behavior through direct communication on a person-to-person level or community-level. It accentuates removing barriers while at the same time increasing the behavior’s perceived benefits.

CBSM has a five-step process:

Step 1: Selecting behavior

Step 2: Identifying barriers and benefits

Step 3: Developing strategies

Step 4: Piloting program

Step 5: Broad-scale implementation
3 PROJECT DESIGN

This project adopts Community Based Social Marketing as a technique to encourage residents’ food diversion practice. It is a pilot program that pilots the approach and offers insights about the effectiveness of the approach.

3.1 STEP 1: BEHAVIOR SELECTION

Food diversion is the most critical behavior in the attempt to increase waste diversion. Since most curbside organics collection programs were initiated after 2005, diverting food is still not a habit that is rooted in many residents’ lives. As data from previous sections indicate, food diversion is the biggest component of contamination in the black waste cart but at the same time it also presents most opportunities to improve. Therefore, diverting food from the black waste cart to the green organics cart is the behaviour selected in this pilot program.

More specifically, the three key behaviors to be targeted with this program are:

- Residents using the kitchen catcher (KC) to divert meal prep waste (peelings, cuttings, etc.)
- Residents using the kitchen catcher (KC) to divert food waste after meal (left overs, inedible food pieces)
- Residents using the green organics cart as a means to throw away large quantities of food during fridge or pantry clean outs.

3.2 STEP 2: IDENTIFYING BARRIERS AND BENEFITS

Potential barriers to diverting food are identified via the engagement survey in 2016 and later confirmed by the conversation with 55 residents at Canada Day outreach event this year as well as literature review.

In December 2016, the City of Spruce Grove’s Green Team engaged with 354 people, of which 332 were Spruce Grove residents receiving GFL curbside collection services. Respondents indicated that the main reason they were not diverting food is due to inconvenience, followed by lack of knowledge, storage, smell, and bugs and flies. Results of conversations had with 55 residents at an outreach event on Canada Day 2017 confirms these potential barriers.

The City of Napa, California conducted a pilot composting program for 2,242 households. The City later sent out a survey to be answered on a voluntary basis. As shown in Table 2, the City of Napa’s survey results show same barriers with different percentages. However, other factors identified by Napa such as using garburator, backyard composting, and feeding leftovers to pets are identified in our program as ways to manage food waste as opposed to reasons that residents are not diverting food waste.
Table 2
Barriers to diverting food waste

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Inconvenience</th>
<th>Lack of Knowledge</th>
<th>Storage</th>
<th>Smell</th>
<th>Bug, flies</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2016 Engagement Survey</td>
<td>46%</td>
<td>18%</td>
<td>16%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Canada Day 2017 Conversations with 55 Residents (multiple choice)</td>
<td>65%</td>
<td>29%</td>
<td>26%</td>
<td>19%</td>
<td>13%</td>
</tr>
<tr>
<td>The City of Napa Residential Curbside Compost Pilot Program*</td>
<td>10%</td>
<td>3%</td>
<td>1%</td>
<td>14%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*Sample size is 515. Other reasons include using garburator and garbage disposal (17%), backyard composting (10%), leftovers are given to pets (4%), time-consuming (4%), don’t have enough yard waste to mix/layer with food (11%), seems dirty (5%), and other (7%).

Diverting food is extremely critical for our environment. When organics end up in garbage and are taken to the landfill, they are capped and as a result don’t break down properly which produces methane gas. Methane gas is 34 times more potent of a greenhouse gas than CO₂. Hence, not diverting food can be detrimental to our environment.

Diverting food, on the other hand, is incredibly beneficial to the environment. Organics collected by the city are then taken to a local composting facility and turned into compost. Compost can, according to USCC factsheet: *Compost and its benefits* produced by the US Composting Council, “improve the properties of soils and growing media physically (structurally), chemically (nutritionally), and biologically”. Diverting food to green organics carts also reduces the amount of space required for landfill, therefore saves land for a city’s future development and expansion.

Aside from environmental benefits, residents can also receive personal and financial incentives. Compared to Spruce Grove, Edmonton is adopting a different type of waste program, one that doesn’t incorporate a source separated diversion program. In Edmonton, organic portion of garbage collected is separated at the Edmonton Waste Management Centre. Edmonton’s integrated waste management system costs single unit residential $44.90 monthly, compared to $28.50 monthly for single unit residential in Spruce Grove. In addition to a cheaper monthly cost, the City of Spruce Grove also offers financial incentive to switch to a smaller black waste cart. Switching from a 240-litre garbage cart to a 120-litre one reduces residents’ solid waste rate from $28.50 to $25.25 per month.
3.3 Step 3: Develop Strategy

Strategy development is central to ensure the effectiveness of a CBSM program. McKenzie-Mohr in his book *Fostering Sustainable Behavior* recommends seven tools that could be incorporated into a CBSM program. These 7 tools are:

- **Commitment**: Asking strategic question to encourage an individual to commit to a certain behavior has proven to be highly effective in actually seeing a behavior change.
- **Social norms**: Studies have shown the positive impact social norms have upon individuals when it comes to fostering sustainable behavior.
- **Social diffusion**: Social diffusion, in the form of conversation with whom we know and trust, has a positive impact on sustainable behavior. When combined with commitment, it shows a rapid adoption of new behavior.
- **Prompts**: The use of prompts is a strategy to ensure the behavior will continue after the conversation and original commitment occurred.
- **Communication**: Effective communication secures the successfuless of a CBSM program. There are several techniques that can be incorporated to ensure effective communication. The message needs to be vivid, clear, concrete, personal, and framed properly.
- **Incentives**: Incentives, especially financial incentives, provide motivation for individuals to engage in or continue engaging in a behavior more effectively.
- **Convenience**: Identifying inconvenience then aiming to reduce the inconvenience is an essential strategy in convincing an individual to engage in behavior change. It is also beneficial to assess if the inconvenience is perceived or factual.

A program doesn’t have to incorporate all seven strategies. In the case of this pilot program, it is fitting to prioritize and package commitment, social norms, prompts, and communication as a bundle. Strategies such as social diffusion and incentives are not prioritized but are observed in the execution of prioritized strategies.

Strategies adopted in the CBSM Organics Diversion Pilot Program include:

- **Commitment**: Asking for residents’ commitments to diverting food is essential in this pilot program. It is important to make sure residents understand the commitment they are making.
- **Social norms**: Social norms of diverting food needs to be communicated during the conversation. Discussion around “norms” should focus on how most people think diverting food is a good thing and how a lot of people are currently practicing it easily.
- **Prompts**: Prompts is a good reminder for residents to ensure that the behavior change occurs. Several things in this program can be seen as prompts, such as stickers on the black waste cart,
kitchen catchers, info sheets, and follow-up emails. It is also vital to make the connection of food diversion practice to prompts during conversations with residents.

- Social diffusion: The strongest prompt in this program, stickers, are visible and public. These public stickers promote the strategy of social diffusion as well. They encourage neighbors to have conversations and hopefully change their neighbors’ behaviors.
- Incentives: Kitchen catchers are given to residents for free if they don’t already have one and wish to try the system. They are prompts and at the same time incentives. Residents are more open to the idea of free and good quality stuff. Residents who are willing to start diverting food will also receive free compostable bags as incentives.
- Communication: Techniques to carry out effective communication are woven into the whole conversations with residents, starting from giving information, obtaining information, to asking for commitments.

### 3.4 Step 4: Piloting Program

The CBSM Organics Diversion program is a pilot program aiming to assess the effectiveness of CBSM approach in affecting residents’ behaviors of diverting food. Completing the pilot will allow the City to determine the effectiveness and understand the pros and cons of the program.

This pilot program targets Hilldowns as its experimental community and Lakeview as its control community. Hilldowns has approximately 417 occupied single unit houses. The sample size allows field work portion of the program to be completed within a month. Lakeview is chosen as the control community by virtue of similar size, age, and demographic of the two communities. Comparing the two communities’ waste data will account for any other external influences (e.g. seasonal effect, residents going on vacation, and so on) that may have increased or decreased diversion rates. It is a way to make sure that the program is what causes the results, and not something outside the program.
Table 3
Instruments used for this pilot program

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Hildowns</th>
<th>Lakeview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tripartite door-to-door communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Information giving</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2. Surveying</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Asking for commitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual audits</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Waste data collected by GFL on a weekly basis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Total tonnage of the whole community’s black waste carts</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Total number of black waste carts collected</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The target behavior change is anticipated to be observable immediately after the door-to-door communication. Hence, the pilot is expected to take one to one and half months to gather a full picture of diversion trends and how the program influenced behavior.

The goal of the program is to visit all occupied houses in Hilldowns at least once. If time allows, it is ideal for each house to receive three weekday visits and one weekend visit.

3.4.1 Door-to-Door Communication Design

To ensure the effective delivery of the door-to-door communication, the flow and content of the communication needs to be carefully designed and practiced.

During the course of the field work, the scholar brings an iPad and goes door to door. The scholar is responsible for entering residents’ responses into the online survey created on SurveyMonkey while conversing with residents. Door-to-door communication starts with the scholar knocking on a resident’s door and asking for the resident’s willingness to participate (see Script #1 in Appendix A). Once the resident agrees to participate, the scholar introduces herself and gives the background about this pilot program (see Script #2 in Appendix A). Then the conversation should consist of the three parts detailed below.

3.4.1.1 Part I: Information

Once the resident agrees to participate, information about what goes in the green organics cart will be provided (see Script #3 in Appendix A). Giving residents information about food waste is essential to allow residents to obtain an understanding of this pilot program and the waste management system. Once resident has raised the awareness and increase their knowledge on food diversion, they are then able to gauge their own level of knowledge and identify the gaps of their knowledge. This component of the door-to-door communication frames the conversation and makes answering survey questions easier for residents. See Appendix A for full scripts.
3.4.1.2 Part II: Surveying

Survey is created on the platform of SurveyMonkey. It is a public survey; however, it was not made available to residents. The value of the program is face-to-face communication hence the survey needs to be delivered in the fashion of face-to-face. The City of Spruce Grove purchased a paid membership which allows advanced features like page skip logic so as to skip specific questions that makes the flow of the survey smoother and more logical.

Survey content is developed and revised based on engagement survey previously conducted and recommendations from consultant specialized in behavioral surveys. Residents are surveyed on:

- Level of knowledge on what goes in the green organics cart
- What currently goes to their own green organics carts
- How food waste is managed in their households
- Whether or not residents have kitchen catchers and (if yes) how the kitchen catchers are managed
- Reasons stop residents from diverting food waste
- Preferred channel(s) to receive city information

See Appendix B for full survey questionnaire.

Educational materials in the form of info sheet and the City’s Trim Your Trash mobile app (see Appendix C) are provided to enhance residents’ knowledge on what goes where. Incentives are also offered to encourage commitment. There are two types of financial incentives provided:

1. Free kitchen catcher
2. Free compostable bags

During the conversation, if residents are hesitant on committing to diverting food because of perceived obstacles, tips on how to reduce those barriers should be communicated (see Script #4 in Appendix A).

3.4.1.3 Part III: Commitment

After surveying, the scholar will ask whether residents are willing to make the commitment to diverting food. If commitments are made, residents are then asked if they are comfortable with having a sticker on their black waste carts as a reminder of their commitments. Stickers in this program are utilized as public prompts aiming to encourage social diffusion and enhance the continuity of the food diversion behavior.

Stickers are put on garbage carts of the residents who made commitments on the Monday (Hilldowns’ garbage collection day) following the door-to-door communication. The residents who made commitments will also receive follow-up audits on the same Monday assessing whether or not they have followed through with their commitments.
3.4.2 Assessment Strategies

1. Number of commitments
   Number of oral commitments will be used as one of the indicators of the program’s performance. Making commitment suggests that residents have received the message the program attempts to deliver.

2. Measured by waste data
   Waste data is collected by GFL (the City’s waste management contractor) for both Hilldowns and Lakeview on a weekly basis. Waste data allows the City to see the trend of residents’ garbage so as to measure the effectiveness of this pilot program.
   This pilot program is deemed successful if Hilldowns presents an overall downward trend in its garbage tonnage and if the slope of its decline is steeper than that of Lakeview (if Lakeview also shows an overall downward trend).

3. Measured by visual audit results
   Four visual audits are planned on the date of June 12th, June 19th, June 26th, and July 17th. Residents that are visited earlier in the program will receive more audits than the ones visited later in the program.
   Visual audits allow the City to see evidence of residents’ commitments. It measures the actual behavior change and determines if residents follow through with their oral commitments and transfer the commitment into practice.

At the end of this pilot program, all residents who provided their email addresses will receive a report outlining the result of this pilot program, insights, residents’ comments, and some tips surrounding managing food waste. The email will also include an evaluation survey inquiring the quality of this program. These follow-up emails have many benefits:

1. They show residents that their participation is appreciated
2. They communicate the result of the pilot program
3. They show residents that diverting food is a norm drawn from the result of the program
4. They educate residents surrounding the benefits of diverting food and composting with facts and data
5. They act as a prompt reminding the residents who made the commitment to diverting food waste
6. They provide tips on how to manage food waste and ways to reduce the barriers that hinder residents’ food diverting behavior
7. The evaluation survey allows the City of Spruce Grove to obtain residents’ perception about the quality of this program and the approach (CBSM) this program adopts
3.5 **STEP 5: BROAD SCALE IMPLEMENTATION**

This pilot program aims to assess the effectiveness of CBSM approach in its effect on changing residents’ food diversion behavior. If this pilot program is deemed successful, the program should be implemented across the entire city as resources are available.

4 **RESULTS AND ANALYSIS**

4.1 **VISIT RESULT**

Field work was conducted during the course of 20 days, consisting of 19 weekdays and one Saturday, between May 23rd and June 29th. Weekday visits are normally performed in the afternoon after 4pm when there is a higher chance of residents being home.

Visits don’t reflect reachability. Visits only mean knocking on residents’ doors regardless of whether they are home or not. There are 417 occupied single unit houses in Hilldowns. By the end of the program, all occupied houses were visited at least once. Due to time limitation, not all houses received a weekend visit if residents were not home for all three weekday visits. 310 houses received three weekday visits and one weekend visit as shown in Table 4.

With limited time and resources for field work, the program reaches the goal of visiting all occupied houses in Hilldowns.

| Table 4: Visit stats |
|----------------------|------------------|
| Total visited        | 417              |
| Complete (3 weekday visits + 1 weekend visit) | 310              |
| 1 weekday visit (no weekend visit)       | 57               |
| 2 weekday visits (no weekend visit)       | 30               |
| 3 weekday visits (no weekend visit)       | 18               |
| 4 weekday visits (no weekend visit)       | 2                |

Not all houses visited were reached. As shown in Table 5, there was 66% of houses reached while 34% of houses were not reached. 4% of houses are considered not valid visits because they either didn’t have a doorbell or they were moving. There is no way to determine if residents are home or not in houses that don’t have a doorbell or have a broken doorbell. Residents who are moving are considered invalid data as there is no way to track their behaviors.
### Table 5
Visits stats by reached and not reached

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage (out of total visits)</th>
<th>Percentage (out of total valid visits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reached</td>
<td>277</td>
<td>66%</td>
<td>69%</td>
</tr>
<tr>
<td>Not reached</td>
<td>140</td>
<td>34%</td>
<td>35%</td>
</tr>
<tr>
<td>Not valid (Not reachable or moving)</td>
<td>18</td>
<td>4%</td>
<td>/</td>
</tr>
<tr>
<td>Total visits</td>
<td>417</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total valid visits</td>
<td>399</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 Commitment Result

As shown in Table 6, of the 277 houses reached, there was 243 houses (residents) made the commitment to diverting food. The commitment rate of 88% (out of total number of houses reached) is such a remarkably positive result. Although oral commitment doesn’t always translate to practice, it still indicates the effectiveness of the CBSM approach with respect to the delivery of information. This number suggests that as long as you can reach residents, 88% of people are willing listen, reflect, engage, and make the commitment. When comparing the 243 houses that made the commitment to total valid visits of 399, the percentage drops to 61%. It is still a very notable number, considering that there was 35% of houses not reached. If the program was deemed successful and applied to the whole city, we can expect remarkable results with a 61% commitment rate.

### Table 6
Commitments stats

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage (out of total reached)</th>
<th>Percentage (out of total valid visits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed</td>
<td>243</td>
<td>88%</td>
<td>61%</td>
</tr>
<tr>
<td>Not committed</td>
<td>9</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Did not want to participate</td>
<td>25</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Total number of houses reached</td>
<td>277</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total valid visits</td>
<td>399</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition to a high ratio of commitment, prompts and incentives also saw positive results. There were 221 stickers put on residents’ black waste carts. (Photo 1 below shows commitment sticker on residents’ black waste carts). It means that more than half of the community have received stickers as prompts of their commitments. There are stickers visible on every street in the community of Hilldowns.
There were 110 kitchen catchers given away as part of the project. Kitchen catchers were given to residents on a per-request basis and only if they have made the commitment to diverting food. Previous survey shows that utilizing kitchen catcher increases the possibility of people’s food diversion behavior. It is safe to say that 110 houses are committed and took the initiative to request a kitchen catcher as a method to manage their food waste.

4.3 Waste Data Result

GFL generously assisted in collecting waste data for this pilot program. Total weights of black waste carts and total numbers of black waste carts collected were recorded every week\(^4\) on collection days for both communities. Table 7 illustrates this waste data. Week information in the table represents the week garbage carts were collected. As these data are considered third-party data, the accuracy and validity of these data are not tested nor

\(^4\) Number of garbage carts collected for Hilldowns were not recorded for the week of June 5th and June 26th. Hence, average weights for those two weeks are not calculated. Number of garbage carts collected for Lakeview was not recorded for the week of June 26th. Hence, average weight for that week is not calculated.
guaranteed. All data analysis below is under the assumption that waste data collected by GFL is valid and accurate.

Table 7
Waste data collected by GFL

<table>
<thead>
<tr>
<th>Collection Week</th>
<th>Hilldowns (Monday collection)</th>
<th>Lakeview (Tuesday collection)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weight (kg)</td>
<td>Number of carts</td>
</tr>
<tr>
<td>Week of May 8</td>
<td>4,730</td>
<td>358</td>
</tr>
<tr>
<td>Week of May 15</td>
<td>5,260</td>
<td>381</td>
</tr>
<tr>
<td>Week of May 22</td>
<td>5,720</td>
<td>392</td>
</tr>
<tr>
<td>Average before the pilot program</td>
<td>5,236.67</td>
<td>377</td>
</tr>
<tr>
<td>Week of May 29</td>
<td>4,730</td>
<td>365</td>
</tr>
<tr>
<td>Week of June 5</td>
<td>5,660</td>
<td>N/A</td>
</tr>
<tr>
<td>Week of June 12</td>
<td>5,500</td>
<td>347</td>
</tr>
<tr>
<td>Week of June 19</td>
<td>3,850</td>
<td>387</td>
</tr>
<tr>
<td>Week of June 26</td>
<td>4,720</td>
<td>N/A</td>
</tr>
<tr>
<td>Week of July 3</td>
<td>3,060</td>
<td>271</td>
</tr>
<tr>
<td>Week of July 10</td>
<td>5,500</td>
<td>382</td>
</tr>
<tr>
<td>Average after the pilot program</td>
<td>4,717.14</td>
<td>350.4</td>
</tr>
<tr>
<td>Overall Average</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The effect of field work can only be reflected in waste data collected on the next collection following the field work. Field work for this pilot program started from May 23rd and ended on June 29th. Therefore, waste data starting the week of May 29th represent the effect of this pilot program. Waste data collected for the week of May 8th, May 15th, and May 22nd are utilized as control data so as to assess the status quo of Hilldowns’ black waste carts prior the implementation of this pilot program. Average black cart tonnage for those weeks is calculated and used as a benchmark against which each week’s waste data is compared so as to measure the effectiveness of this pilot program. Average black cart tonnage after this pilot program is not calculated for Lakeview, as this pilot program was not conducted in Lakeview.
From Figure 2 and Figure 3, it becomes obvious that Lakeview presents a more stable trend in its total tonnage and average tonnage. It has a total tonnage with a peak of 5,655 kg in the week of June 26th and the lowest of 4,120 kg in the week of July 3rd. Overall, Lakeview’s black cart tonnage neither increased nor decreased.
significantly during the course of seven weeks. The result shows that residents in Lakeview are consistent with the amount of garbage they put in their black waste carts.

4.3.2 Hilldowns

Compared to Lakeview, Hilldowns presents a more fluctuating trend in its waste tonnage overall. There were sudden rises in the week of June 5th and June 12th, then total tonnage dramatically declined to 3,850 kg in the week following. Total tonnage numbers of the week of June 19th (3,850 kg), June 26th (4,720 kg), and July 3rd (3,060 kg) indicate drastic decline comparing to the average black cart tonnage of 5, 236.67 kg prior to this pilot program. Hilldowns’ data present an overall downward trend with a few anomalies.

There are numerous unidentified variables that could affect the waste data, such as vacation, seasonal effect (such as less yard waste), and so on. It is not defensible to conclude that the change in Hilldowns’ black cart tonnage is the result of this pilot program. It is, however, out of this project’s scope to evaluate all the possible variables affecting residents’ food diverting behavior.

<table>
<thead>
<tr>
<th>Collection Week</th>
<th>Number of Commitments</th>
<th>Anticipated decline rate*</th>
<th>Actual decline rate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week of May 29</td>
<td>23</td>
<td>- 5.52%</td>
<td>- 9.7%</td>
</tr>
<tr>
<td>Week of June 5</td>
<td>75</td>
<td>- 17.99%</td>
<td>+ 8.08%</td>
</tr>
<tr>
<td>Week of June 12</td>
<td>125</td>
<td>- 29.98%</td>
<td>+ 5.03%</td>
</tr>
<tr>
<td>Week of June 19</td>
<td>161</td>
<td>- 38.61%</td>
<td>- 26.48%</td>
</tr>
<tr>
<td>Week of June 26</td>
<td>219</td>
<td>- 52.52%</td>
<td>- 9.87%</td>
</tr>
<tr>
<td>Week of July 3</td>
<td>243</td>
<td>- 58.27%</td>
<td>- 41.57%</td>
</tr>
<tr>
<td>Week of July 10</td>
<td>243</td>
<td>- 58.27%</td>
<td>+ 5.03%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>- 37.31%</td>
<td>- 9.93%</td>
</tr>
</tbody>
</table>

*Anticipated decline rate is equal to commitment rate to date. Commitment rate is calculated the following formula:

\[
\text{Anticipated decline rate} = \frac{\text{Number of Commitments Accumulated Before the Date of Collection Date}}{\text{Total Number of Occupied Houses}} \times 100\%
\]

**Actual decline rate is calculated the following formula:

\[
\text{Actual Decline Rate} = \frac{\text{Black Cart Tonnage of the Week} - \text{Average Black Cart Tonnage Before Program}}{\text{Average Black Cart Tonnage Before Program}} \times 100\%
\]

Table 8 shows that the average actual rate of tonnage decline was 9.93%, meaning that the overall black cart tonnage declined during the course of 7 weeks. There were three weeks during which the black cart tonnage increased as opposed to decreased for reasons not identifiable from information gathered for this program.

However, the average actual decline rate is significantly lower than the average anticipated decline rate. Anticipated decline rates measure the decline rate if all residents who made commitments followed through with
their food diverting behavior in a perfect and efficient manner. The discrepancy between anticipated rate and actual rate indicates that not everyone who made commitment followed through with the behavior.

4.3.3 Comparison

Prior to this pilot program, Hilldowns and Lakeview had very similar garbage conditions. The average of total black cart tonnage was 5,236.67 kg in Hilldowns while the tonnage of Lakeview was 5,407 kg. Based on that fact, two communities are expected to present similar trends. If the program is effective, Hilldowns should present a downward trend with a steeper slope than Lakeview, which is not reflected in Figure 2 and Figure 3. As mentioned above, there are numerous factors and variables that may affect residents’ diversion behavior. The scope of this program doesn’t allow us to obtain a comprehensive composition of the variables that affect diversion behavior. Therefore, the comparison of two communities’ waste data doesn’t provide any defensible conclusion surrounding how this program alone affects black cart tonnage.

4.4 Visual Audit Result

Visual audits were performed as a means to confirm if residents’ oral commitments successfully translate to practice. It is also a useful way to get a sense of the composition of residents’ green organics cart. Visual audits were not performed on residents’ black waste carts for two reasons. First of all, it is not the emphasis of this program to evaluate residents’ behaviors on garbage management overall, only on food waste management. Secondly, a lot of times residents’ black waste carts consist of bagged garbage hence it is impossible to spot any contamination without further composition analysis.

Visual audits involve looking at the green organics carts of those who made the commitment to diverting food. Five categories are devised to cover the whole spectrum of the result of green organics cart audit. The five categories are visible food waste in green organics cart, green organics cart covered by yard waste, green organics cart contaminated, green organics cart not out, and both carts not out.

There were in total of four visual audits conducted. All houses that made the commitment (accumulated) prior to the next visual audit day receive visual audits on the next collection day. Hence, the earlier the houses were approached and made the commitment, the more times the houses received visual audits.
It was observed that 40.5%\(^5\) (on average of four audits) of residents who made the commitment to diverting food had visible food waste in their green organics carts. It means that approximately 40% of oral commitments translated to actual practice, of which 51.5%\(^6\) on average were new to diverting food. There were 243 houses made the commitment, of which 40% on average had obvious evidence of food waste in their green carts. That means approximately 97 houses on average practiced food diversion during the course of the program, constituting 23% of the community of Hilldowns. Because 51.5% of the houses that had visible food waste in their organics carts were new to the behavior, it can be calculated that approximately 12% residents of Hilldowns have evidence of starting the food diversion practice by virtue of this pilot program.

Covered by yard waste category is tricky as that is a situation where even if there is food waste in green cart, it is not observable with mere visual audit. Without composition analysis, we can’t affirm that these houses do or do not have food waste in their green organics carts. Other categories like green cart not out and both carts not out don’t necessarily indicate that those residents don’t utilize green cart or both green and garbage carts.

Conversations with residents indicate that some residents prefer not to put their carts out when they are not full.

---

\(^5\) Calculated by taking the average of percentages of visible food waste in green organics cart from four visual audits. \((55\%+49\%+38\%+20\%)/4=40.5\%\)

\(^6\) Calculated by taking the average of percentages of visible food waste in green organics cart who are new diverters from four visual audits. \((67\%+48\%+45\%+46\%)/4=51.5\%\)
Hence during the weeks that carts were not on the curb to be picked, number of residents that do practice food diverting collected might be lower than it actually was.

This pilot program only counts the residents who had visible food on top of their green organics carts as “food diverters” and doesn’t make any assumptions for those carts that were covered by yard waste or were not out on the curb. Therefore, the actual number of “food diverters” can only be higher than the number gathered from visual audits and not lower.

### Table 10

<table>
<thead>
<tr>
<th>Consistency of food diversion behavior</th>
<th>Received one visual audit</th>
<th>Received two visual audits</th>
<th>Received three visual audits</th>
<th>Received four visual audits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of houses that made the commitments</td>
<td>59</td>
<td>62</td>
<td>98</td>
<td>123</td>
</tr>
<tr>
<td>Observed visible food waste in green organics cart consistently on every audit</td>
<td>25 (42%)</td>
<td>16 (26%)</td>
<td>26 (27%)</td>
<td>13 (11%)</td>
</tr>
<tr>
<td>New: 9 (15%)</td>
<td>Not New: 16 (27%)</td>
<td>New: 4 (6%)</td>
<td>Not New: 12 (19%)</td>
<td>New: 15 (15%)</td>
</tr>
</tbody>
</table>

Food diversion consistency is used to assess residents’ continuity on food diversion behavior. Except the 59 houses that only received one visual audit, all the rest of the houses who made commitments all received multiple visual audits. Consistency is then evaluated by the number of residents who had visible food waste in their green organics carts observed on every audit.

In general, residents who have diverted food before this pilot program show better consistency in their food diversion behavior. On average, there is approximately 10%\(^7\) of the total houses that had visible food waste in their green organics carts are new to food diverting behavior while the number is 16%\(^8\) for residents that have diverted food waste prior this pilot program.

An example of new diverters’ consistent food diverting behavior is provided in Appendix D.

## 5 SUCCESSFULNESS OF THE PROGRAM

The evaluation mechanism consists of three methods, composing of number of commitments, waste data analysis, and visual audits analysis. Number of commitments is used to test the effectiveness of person-to-person

\[^7\] \((15\%+6\%+15\%+5\%)/4=10.25\%

\[^8\] \((27\%+19\%+11\%+6\%)/4=15.75\%\)
COMMUNITY BASED SOCIAL MARKETING ORGANICS DIVERSION PILOT PROGRAM

communication reflected by oral commitments. Waste data and visual audits are used as a dual method to assess how successful oral commitments translate to physical behaviors.

This mechanism has its limitations and room for errors. Number of commitments doesn’t reflect people’s actual behaviors; however, it shows how well residents received the information and message this pilot program aims to deliver. The commitment rate is 88% for the houses reached and 61% for the total valid visits (reached or not). This is a very positive result. It goes to show that if residents can be reached, 88% of them are willing to listen, reflect, and make oral commitments. Even when the number drops to 61% when number of commitments is compared to the whole community, it is still a considerably high number when taken to the scale of the whole city. It illuminates that this pilot program, particularly its Community Based Social Marketing approach, is proven to be effective in delivering the information and knowledge to residents, connects with residents on a more intimate level, and promotes behavior change.

Waste data collected by GFL has its limitations of validity and accuracy. The numbers do not reflect composition, contamination, or other factors that could influence residents’ food diversion behavior. Despite all the limitations, Hilldowns’ garbage tonnage still presents a downward trend. It is not defensible to say, however, if the decline is a direct result of this pilot program.

Visual audits are the most direct way to determine the effectiveness of the program. However, visual audit results are anticipated to have a high error rate due to the scope and lack of resources of this pilot program. Only houses that had visible food waste in their green organics carts are counted as “food diverters”, excluding those who had their carts covered by yard waste and those who didn’t have their cart(s) out for unidentifiable reasons. Hence, the actual rate of “food diverters” in Hilldowns should be higher than the number drawn from this pilot program. About 23% of houses in Hilldowns are observed to be “food diverters”, within which approximately 12% were “new diverters” by virtue of this pilot program. In conclusion, this pilot program successfully converted at least 12% of residents into practicing food diversion. That is a considerable number if the program is rolled out across the city.

In conclusion, this pilot program is proven to be successful in changing residents’ food diverting behaviors assessed by the number of commitments made and the analysis results from waste data and visual audits.
6 LIMITATIONS OF THE CBSM APPROACH

The essence of CBSM approach is face-to-face communication. This pilot program shows effectiveness in its ability to change residents’ food diversion behavior. At the same time, it also manifests a few limitations.

Face-to-face communication can be very time-consuming. The conversations with residents in this pilot program range from 5 minutes to 30 minutes with an average of 15 minutes. Moreover, the program involves more than conversations. It requires visit planning, accurate tracking on site, data entry off site, data analysis off site, sticker trip planning and executing, and so on. Field work and analysis were completed in two months in this pilot program.

Reachability is also a concern in this pilot program. Even with three weekday visits and one weekend visit, there was still 34% of houses not reached. Door-to-door approach is challenging in real life. It is almost impossible to pinpoint when people are home and what is a good time to visit. An alternative could be conducting community meetings as opposed to door-to-door visits and delivering information in a group setting. Community meetings can be made mandatory for residents who just move into a community.

Finally, behavior change is hard to track and measure. There are numerous variables that could go into people’s behaviors. It requires investment in resources and conducting comprehensive analysis to ensure the validity and defensibility of assessment results.

7 INSIGHTS AND RECOMMENDATIONS

7.1 SURVEY RESULT
The main method to obtain residents’ perception about food diversion in this program is door-to-door surveying. These door-to-door surveys reveal valuable insights about various aspects about the food diversion program. Figure 4 below illustrates the breakdown of reasons that residents are not diverting food as indicated in surveys.
86 out of the 277 residents (65%) surveyed indicated lack of knowledge as the main reason that they are not diverting food, followed by habit and laziness which constitutes 22% of the total. If we presume that residents answered the surveys with honesty, this result shows that many residents are not reluctant to make behavioral change if the communication of knowledge is effective. There is only 22% of residents as shown in the result that have the knowledge but are not practicing only due to habit. This is the group that requires more than just information so as to convince them to adopt a new behavior.

The survey also asks for residents’ preferred channels (multiple choice) of receiving information from the City of Spruce Grove. Figure 5 shows the top six preferred channels. The result shows that the percentage of residents who prefer email as their main contact method and the percentage of residents who prefer mail as their main contact method is almost the same. It means that there is a tendency of going digital amongst residents. With a percentage as high as 32%, the recommendation for the City of Spruce Grove would be to create a subscription based E-Newsletter service. Residents who are willing to go hundred percent digital can have the choice to opt out of traditional mail service while the residents who still wish to receive mails can continue to enjoy mail service. Having an E-Newsletter subscription service will not only give residents more choices surrounding communication method with the City but can also saves paper in a dramatic fashion.
Figure 5. Main preferred channels of receiving information from the City of Spruce Grove as indicated by residents in door-to-door surveys.

7.2 RESIDENTS’ COMMENTS

The most valuable component of the CBSM approach is the person-to-person communication strategy. Aside from its impact on influencing behavior change, person-to-person communication also shows value in the practice itself. Residents showed appreciation for the approach. Some popular comments regarding the CBSM approach include:

- The effort made by the City to reach to residents on an individual basis is highly appreciated
- The act of face-to-face conversation shows that the City cares about its residents
- Talking to a real person from the City makes receiving the City’s message and initiative easier
- It is a wonderful opportunity to connect to the City on a more intimate level and provide some feedback at the same time

These comments go to show that face-to-face communication is well received and appreciated by residents despite all the limitations accompanying the approach. Residents also feel more comfortable providing feedback and suggestions during conversations. Popular feedback surrounding the waste collection system include:

- Marketing on how to use kitchen catchers and what goes in the green organics cart is not effective
- Welcome package received when move in is not elaborate and not engaging
- Poor winter pickup schedule makes developing the habit of diverting food waste challenging
- Street parking makes spacing out carts very difficult
All comments are valuable and reflect key gaps faced by the waste collection system. These comments give the system room and direction to improve. To address these gaps, the City of Spruce Grove’s waste collection program can focus on the aspects below in its future development:

- Enhance the marketing strategy on kitchen catchers, including where to pick up kitchen catchers for free, how to use kitchen catchers, and tips surrounding managing kitchen catchers.
- Enhance the knowledge and information delivery mechanism of what goes into the green organics cart.

To date, all mass scale education strategies are information intensive. Based on residents’ comments and survey results as shown earlier in the report, information intensive campaigns are proven to be less effective especially when it comes to behavior change advocacy. Other strategies need to be envisioned. First, face-to-face communication is preferred over info sheets and articles. When face-to-face communication on an individual basis becomes too time- and resource-consuming, other strategies like community meetings, interactive seminars, or outreach activities can be utilized. Second, making education fun and engaging makes knowledge delivery more effective. Strategies like community competitions, quizzes to win prizes, interactive mobile and online tools, can make the learning process easy and knowledge receiving process more voluntary.

- Revise welcome packages for when residents newly move into a community. Welcome package should be straightforward, easy to follow, and comprehensive. Residents should be able to know exactly what to do after perusing the welcome package. To make reading the welcome package a pleasant experience, the welcome package should be short and not text-heavy.

8 Conclusion

Overall, the pilot program is considered a success based on the quantitative and qualitative analysis. Quantitative analysis performed by interpreting number of commitments, waste data, and spot audit results reveal a high commitment rate and shows evidence of behavior change in Hilldowns’ residents. Qualitative analysis performed on residents’ feedback and comments show that the CBSM approach accentuated on face-to-face communication is highly acclaimed and appreciated by residents. Valuable feedback was received and the tie between the City of Spruce Grove and the community of Hilldowns became tighter. Despite challenges such as time-consuming and reachability issue, the most valuable aspect of the CBSM approach lies in the quality of face-to-face communication. The comments gathered from conversations with residents indicate gaps within the program in the most direct manner. These comments also illuminate the future path of the City’s waste collection program.
9 **BIBLIOGRAPHY**


10.1 Appendix A. Door-to-door Communication Script

Script #1: Hi there, my name is Sky and I am the Sustainability Scholar with the City of Spruce Grove. The City is conducting a pilot program about food waste. We would appreciate it if you can spare a few minutes to talk to me.

Script #2: Thank you so much for participating! Let me give you some background about this pilot program. The City has been doing the current waste management system for a couple of years; however, we still find residents not clear about what goes where. In fact, audit result shows that almost half of what residents currently put in their black waste carts actually belongs to the green organics carts. When people put organics in garbage carts, the organics end up in landfill where they get capped and covered and don’t break down properly. Organics in landfill produces methane gas, which is 34 times more potent of a greenhouse gas than CO2 over a century. So, diverting your food waste to the green organics cart is extremely important. This pilot program is conducted to see if communicating with residents face to face will improve people’s food diversion practice. Hilldowns is the pilot community and based on the result of this pilot program the City will assess if it is a good idea to implement the program across the entire city.

Script #3: I would like to give you some information about what goes in your green organics cart first. There are a couple of big categories in green organics cart, food waste, soiled paper, and pet feces. The food category includes all food, vegetables, egg shells, meat, bones, all your leftovers, coffee grinds, etc. Soiled paper refers to any paper product that got contact with food or soiled with food. Some examples are coffee filter, pizza boxes, paper towels, and paper coffee cups. Finally, dog feces and cat litter all go to green organics carts as well. This is only a general breakdown. If you are not sure about some specific items, the City has a great free app called “Trim Your Trash” you can download. Simply type in the item you are not sure, and the app will tell you where it goes.

Script #4: Curbside organics collection is a practice that has been implemented for a lot of cities, like New York, Seattle, San Francisco, Vancouver, and Toronto. There are some great resources and tips online about how to reduce the smell and bugs and flies that you are concerned about. A common and very effective tip is mixing and layering your yard waste and food waste in green organics cart. In addition, using compostable bags or newspapers and other paper products as liners is a great method to maintain the tidiness of your kitchen catcher.
10.2 Appendix B. Survey Questionnaire

Survey URL: https://www.surveymonkey.com/r/CBSMorganics

Q1. Date: _________ Time: _____________
Q2. Home Address: ________________________
Q3. Are residents home?
   ☐ Yes
   ☐ No (SKIP TO: End of the survey)
   ☐ Moving (SKIP TO: End of the survey)
   ☐ Not reachable (Specify reason) (SKIP TO: End of the survey)
Q4. Are residents willing to take the survey?
   ☐ Yes
   ☐ Yes, but at a future date and time: (SKIP TO: End of the survey)
   ☐ No (SKIP TO: End of the survey)
Q5. How would you rate your level of knowledge on organic waste diversion?
   ☐ High
   ☐ Medium
   ☐ Low
Q6. How do you currently manage kitchen and food scraps? [Multiple choice]
   ☐ Green cart (SKIP TO: Q8)
   ☐ Garbage
   ☐ Backyard composting
   ☐ Pets
   ☐ Garburator
   ☐ Don’t make any
   ☐ Other
Q7. Do you currently use your green cart?
   ☐ Yes ☐ No (SKIP TO: Q9)

---

9 SurveyMonkey account has been cancelled after the program was concluded. Survey URL is currently inactive.
Q8: What do you put in your green cart?
   ☐ Food waste
   ☐ Yard waste
   ☐ Both
   ☐ Other
Q9: Do you have a kitchen catcher?
   ☐ Yes
   ☐ No (SKIP TO: Q12)
Q10: Where are you currently keeping your kitchen catcher?
Q11: How often do you use your kitchen catcher?
Q12: Would you like to commit today to divert food waste?
   ☐ Yes
   ☐ No, why? (SKIP TO: Q16)
Q13: What stops you from diverting organic food waste? [Multiple choice]
   (This question will be filled out by interviewer based on the perception of conversation with residents.)
   ☐ Inconvenience
   ☐ Lack of knowledge
   ☐ Storage
   ☐ Smell
   ☐ Bugs, flies
   ☐ Other:
Q14: (Ask only if no kitchen catcher) Where do you plan to keep your kitchen catcher?
Q15: (Ask only if no kitchen catcher) When do you plan to start using it?
Q16: What is your preferred channel to receive information and keep up-to-date with city programs and news?
Q17: May we have your email address to send you further info on sustainability and the result of this program?
   ☐ Yes
   ☐ No
10.3 **Appendix C. Info Sheet**

**Front of the info sheet.**

**Back of the info sheet.**
10.4 Appendix D. Visual Audit Photos of New Diverters

Based on the doorstep survey, residents in 46 Halden Cres have never diverted food waste in their green organics cart before. Visual audits show that there was visible food waste in the green organics cart on every visual audit.

Photo of the green organics cart of 46 Halden Cres on June 12th, 2017.

Photo of the green organics cart of 46 Halden Cres on June 19th, 2017.
Photo of the green organics cart of 46 Halden Cres on June 26th, 2017.

Photo of the green organics cart of 46 Halden Cres on July 17th, 2017.
Photos show that residents in 46 Halden Cres, who have never diverted food waste in their green organics cart before, have consistently practiced the food diverting behavior during the course of June 12th to July 17th after making the commitment of diverting food in the pilot program. Four free compostable bags were given to residents who made the commitment to diverting food waste. The photos indicate that 46 Halden Cres used all four compostable bags in the first two weeks. However, running out of compostable bags didn’t become their obstacle for diverting food waste. As shown in the photo taken on the June 26th visual audit, 46 Halden Cres put food waste in their green organics cart loose where the following week compostable bags were utilized once again (most likely newly purchased).
10.5 **Appendix E. Map Showing Relative Location of Hilldowns and Lakeview Communities in Spruce Grove**