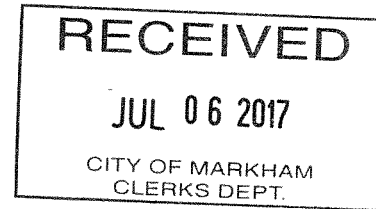




Regional Clerk's Office
Corporate Services Department

June 30, 2017

Ms. Kimberley Kitteringham
City Clerk
City of Markham
101 Town Centre Boulevard
Markham, ON L3R 9W3



Dear Ms. Kitteringham:

Re: 2016 Annual Update on SM4RT Living Integrated Waste Management Plan Implementation

Regional Council, at its meeting held on June 29, 2017, adopted the following recommendation of Committee of the Whole regarding "2016 Annual Update on SM4RT Living Integrated Waste Management Plan Implementation":

1. The Regional Clerk circulate this report to the local municipalities and the Ministry of the Environment and Climate Change.

A copy of Clause 5 of Committee of the Whole Report No. 10 is enclosed for your information.

Please contact Laura McDowell, Director, Environmental Protection and Promotion at 1-877-464-9675 ext.75077 if you have any questions with respect to this matter.

Sincerely,

Christopher Raynor
Regional Clerk

/C. Clark
Attachments

Clause 5 in Report No. 10 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on June 29, 2017.

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2016 Annual Update on SM4RT Living Integrated Waste Management Plan Implementation

Committee of the Whole recommends:

1. Receipt of the presentation by Laura McDowell, Director, Environmental Promotion and Protection and Lindsay Milne, Manager, Sustainable Waste Management, Environmental Services.
2. Adoption of the following recommendation contained in the revised report dated June 1, 2017 from the Commissioner of Environmental Services:
 1. The Regional Clerk circulate this report to the local municipalities and the Ministry of the Environment and Climate Change.

Report dated June 1, 2017 from the Commissioner of Environmental Services now follows:

1. Recommendation

It is recommended that:

1. The Regional Clerk circulate this report to the local municipalities and the Ministry of the Environment and Climate Change.

2. Purpose

This report provides an update on the third year of implementation of the SM4RT Living Integrated Waste Management Master Plan (SM4RT Living Plan).

**2016 Annual Update on SM4RT Living
Integrated Waste Management Plan Implementation**

3. Background and Previous Council Direction

SM4RT Living Plan implementation on track to complete 32 initiatives by end of 2017

The SM4RT Living Plan, approved by Council in September 2013, sets the direction for waste management over the next 25-40 years. York Region and its local municipal partners continue to be leaders in sustainable waste management, with a diversion rate consistently amongst the highest in Ontario for a large urban municipality. Building on this success, the SM4RT Living Plan shifts the focus to waste reduction as an innovative approach to improving the economic and environmental sustainability of the integrated waste management system. The SM4RT Living Plan supports implementation of the Regional Official Plan and its policy to develop a York Region Waste Management Master Plan based on a sustainable life-cycle approach containing comprehensive strategies to reduce, reuse, recycle, and recover all forms of waste in York Region.

A total of 32 initiatives were identified for the first five years of the SM4RT Living Plan. By the end of 2016, the Region and its local municipal partners had launched 24 of the 32 initiatives, including pilot programs, research, policy and advocacy efforts and data collection. In 2017, the Region will launch the final eight initiatives, in advance of the five year update in 2018.

Balanced Scorecard measures progress on SM4RT Living Plan initiatives on an annual basis

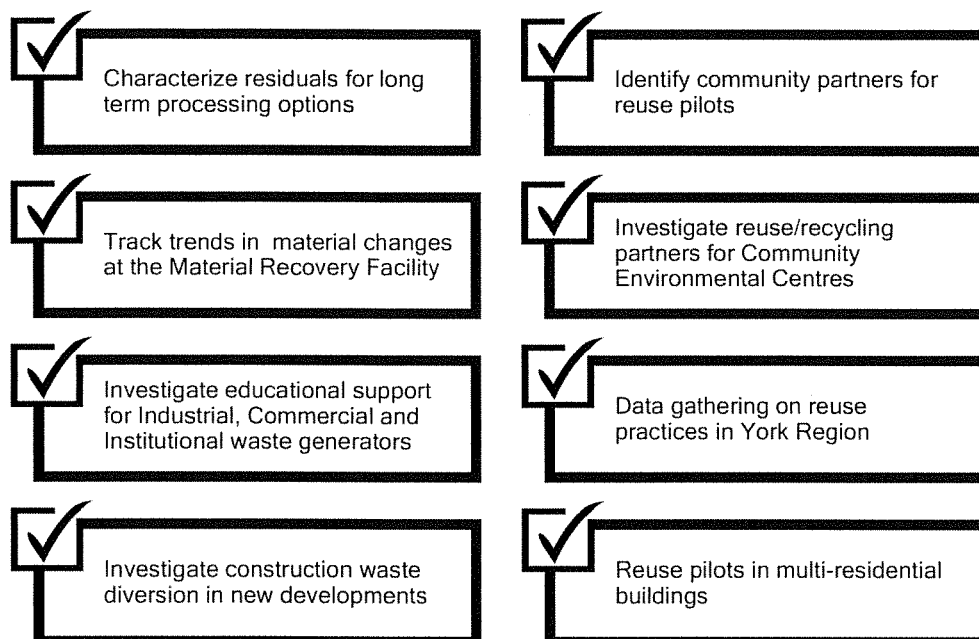
As part of the SM4RT Living Plan a Balanced Scorecard (Attachment 1) was developed to help evaluate and track on overall program success and value to the community. The Balanced Scorecard has been provided annually to Council following the first year of implementation in 2015. The Balanced Scorecard includes new metrics on key elements of the waste management system, including waste generation rate, pilot program tracking and outreach efforts. The following report and Balanced Scorecard will provide highlights on activities and initiatives conducted during 2016. These include updates on previously launched initiatives as well as newly implemented initiatives.

4. Analysis and Implications

Each year, progress on SM4RT Living Plan initiatives is reported to Council. The eight initiatives launched in 2016 are presented in Figure 1.

**2016 Annual Update on SM4RT Living
Integrated Waste Management Plan Implementation**

**Figure 1
SM4RT Living Plan Initiatives Launched in 2016**



This report provides highlights on the initiatives launched in 2016 and also provides an update on expansion of previously launched initiatives including curbside swap, textile collection, food waste reduction, zero waste schools pilot, and backyard composting.

Initiatives launched in 2016 inform plans for providing capacity to service future growth

SM4RT Living Plan initiatives launched in 2016 including tracking trends in blue box material changes and characterizing residual waste, help to inform new programs and plan for growth and future capacity. Both of these initiatives are ongoing and monitored by staff. The Annual Diversion Report, brought to Council each year in the fall also includes insight on blue box material composition. Overall trends indicate the composition of the blue box is changing with lightweight materials increasing (e.g. plastic containers) and heavier materials decreasing (e.g. newspaper). Tonnage and volume of blue box materials are monitored and used to forecast budget for processing operations and inform future capacity requirements.

Residual waste is characterized through ongoing audits. In 2016, staff administered a comprehensive audit program to monitor material composition trends in inbound blue box, green bin, and residual waste streams from single family and multi-residential sources. The audit program helps to characterize residual waste to inform decisions on long-term processing options and also covers composition of the residual stream after blue box materials are

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processed. Results of these audits are used to identify opportunities for improved material capture and develop targeted public education campaigns to increase participation rates and reduce quantities of unacceptable materials.

Tracking blue box material changes and residual waste composition support advocacy efforts to ensure York Region's interests are met as the Province's Strategy for a Waste-Free Ontario is implemented in the coming years. Further information and updates on the Strategy for a Waste-Free Ontario are provided in a separate report included on this Committee of the Whole agenda.

Commercial and Institutional sector support will focus on promoting and enhancing 3Rs

In 2016, York Region and its local municipal partners collaborated on a review of commercial and institutional facilities receiving collection services from local municipalities. This process supported the development of guidelines for servicing of commercial and institutional properties approved by Council earlier in 2017. The development of guidelines has helped to identify potential pilot partners for waste reduction programming in support of the SM4RT Living Plan. In 2017, the Region and its local municipal partners will look to pilot an engagement program with businesses and residents in mixed use Business Improvement Areas.

Reuse initiatives help identify community partners

In 2016, staff researched a number of initiatives to determine optimal community partnerships that would promote and encourage reuse activities within the Region. Use of online exchange platforms such as Kijiji, Craigslist, and a more community-based platform called Bunz, were investigated. In 2017, a partnership will be explored with one or more online platforms to promote and track reuse and swapping in the Region. Staff are also investigating partnership opportunities with community-based organizations such as Newmakeit a Newmarket-based non-profit organization that offers access to technology such as 3D printers, laser cutters and woodworking tools to its members. In 2017, staff will collaborate to offer repair and repurposing workshops with Newmakeit and explore the feasibility of establishing a tool library in 2018.

Staff have engaged in discussions and are exploring reuse opportunities with other partners at the Region's Community Environmental Centres. Potential partnership opportunities include operating a tool library where residents can check-out and borrow tools rather than purchase new ones or a sharing depot where residents can borrow items such as camping supplies. In 2017, staff will continue to work towards implementing reuse partnership opportunities at the Region's Community Environmental Centres.

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Survey identifies opportunities for new reuse pilots for 2017/2018

The SM4RT Living Plan identified the need to gather baseline data about how residents are engaging in reuse, repair and repurposing activities to inform program development. In 2016, a phone survey of 900 residents from across the Region was conducted to gain a better understanding of how people acquire and dispose of items such as clothing, sports equipment and other household goods through second-hand channels. Below are some examples of trends identified through the survey that will help focus efforts to increase reuse in York Region.

- Residents are more likely to participate in reuse activities as a means to dispose of items than as a means to acquire pre-owned items.
- Donation of clothing, toys and household items are among the most common methods of disposing of unwanted reusable goods.
- The majority of respondents have never acquired a used item.
- Among those who do buy used, consignment stores and yard sales were the most common methods.
- Buying and selling online was the least common method used for both acquisition and disposal of reusable items.

Survey results will help inform reuse pilots and initiatives to be further developed in 2017 and 2018.

Swap table pilot introduces new reuse option for multi-residential buildings

Swapping and sharing items increases reuse and helps reduce waste. Swapping and reuse was promoted in multi-residential buildings through a pilot program launched in 2016. Three buildings agreed to host a swapping space/event for their residents. A designated area in the building was set up for residents to leave reusable items they no longer need for others to take. Pilots ranged from one day to one month events. A follow up survey revealed resident feedback was generally positive. Some concerns about aesthetics and time required for management were raised by property managers. As the pilot expands, these concerns will be addressed through additional promotion and education materials.

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Curbside swapping programs expand to new communities in 2017

Curbside swapping programs operate in several communities in York Region, offering an easily accessible way for residents to swap reusable goods. In 2016, 16 swap days were held in Newmarket, King and Georgina. The Region monitored participation in four of the events using a GoPro camera to record the number and types of items left out by participating households in a sampling of neighbourhoods (approximately 7,000 households monitored). Based on that data, participation in curbside swapping programs is estimated to be about eight per cent of single family households in the municipalities offering the program, representing about 4,000 homes.

In 2017, the Region is working with local municipalities to expand the program to three more communities, with some overlap in dates. Additional promotion such as mobile signs and social media postings will promote awareness and help track participation more efficiently. As the program expands to more communities, engagement will be tracked using social media for estimating participation. Asking residents to post items for trade using a specific hashtag and share success stories on social media allows tracking of participation and contributes to more successful outcomes for individual participants.

Textile collection pilot provides convenient reuse option in Town of Aurora

Aurora's Textile Collection pilot ran from July 2016 to January 2017, with the goal of increasing reuse and trialing different collection methods. During that time, three curbside collection events were carried out in a pilot neighbourhood of 3,000 homes, a free on-demand pick up service was offered and four collection bins were installed in the parking lots at Town of Aurora facilities. Residents in the curbside collection pilot area were invited to place textiles, both gently used and worn and torn items, in plastic bags on their doorstep on collection day. Small housewares, toys and sporting equipment were also accepted.

Textile Waste Diversion, a private waste company specializing in textiles, partnered with the Town of Aurora to provide the collection and processing for this pilot project. Textile Waste Diversion was chosen because of their ability to provide tonnage data and their focus on trying to find Canadian/US markets for material collected. Pilot results indicated the following:

- The on-demand pick up service was discontinued in order to support charitable organizations already providing this service.
- The town-owned collection bin sites experienced far less illegal dumping than is typically seen at collection bins in commercial parking lots.

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- Over 500 households left items out for collection, diverting over 15 tonnes of material from disposal.
- Over the course of the pilot period, eight tonnes of material was collected from the Town of Aurora facility collection bins.
- The material collected through the pilot was sorted at a facility in Toronto, with 61 per cent suitable for resale, 35 per cent was sold for industrial rags and 4 per cent was sent for disposal.

In 2017, Aurora is expanding the collection program across the entire town and further testing collection frequencies to determine optimal collection dates. The Town is also installing collection bins in multi-residential buildings where possible. Several other local municipalities are also planning to pilot programs in 2017, including the Towns of Newmarket and Whitchurch-Stouffville.

Markham tackles textile waste with city-wide program and curbside ban

In 2016, the City of Markham initiated a textile diversion program accessible through collection bins located at municipal facilities and in multi-residential buildings. Markham's popular city-wide bin program has demonstrated good momentum as over 1,200 tonnes of textiles have been collected in less than a year. The textile bin program will be expanded to more locations in 2017. Markham has also instituted a full ban on textiles in the garbage stream starting in April 2017.

Trash Blasters school program promotes waste reduction and recycling to students, staff and parents

Schools were identified as a priority audience through public consultations and research for the SM4RT Living Plan. Although not all local municipalities provide collection services to schools, the Region does process recyclables from schools at the Waste Management Centre. Schools also represent a good opportunity to reinforce messaging about recycling, reuse and waste reduction to families. The *Trash Blasters* program provides guidance and support for participating elementary schools to reduce their waste and improve reuse and recycling efforts. It was developed in partnership with the school boards and is being piloted at two elementary schools in Newmarket, Rogers Public School and Bogart Public School, during the 2016/2017 school year. The program has been well received and plans are underway for expansion to 5-10 schools within the Region in the next school year.

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Successful backyard composting program expanding to new locations in 2017

The 2015 backyard composting pilot implemented in the Town of Aurora was expanded in 2016 resulting in over 300 backyard composters given away at events in the Towns of Richmond Hill and Aurora. Recipients also received four e-newsletters with tips and advice on composting to help them overcome challenges. A survey at the end of the growing season showed strong commitment to composting; 98 per cent of respondents were using their composter and 86 per cent of respondents reported a decrease in their green bin output as a result of composting. In 2017, the program will be refined and expanded. More communities will be included (Towns of Newmarket, Whitchurch-Stouffville, Georgina and East Gwillimbury, City of Vaughan and King Township) and composters will be offered at a subsidized cost rather than for free, to ensure recipients are invested in the program's success. Program participants will continue to be offered educational resources and a follow up survey after their first season of composting.

Food waste survey indicates small increase in positive behaviours to avoid waste

The Region launched the Good Food Program in March 2015. Since then, over 10,000 residents have been engaged through outreach events across the Region and thousands more have been reached through print, online and media channels. The program's messaging focuses on behaviours that improve health and reduce food waste, including meal planning, shopping with a list, proper food storage and refrigeration and using leftovers. A number of tools are used to gauge changes in awareness and behaviour that support reaching the 2031 target of reducing food waste in the green bin by 15 per cent. Biannual phone surveys are planned to track changes in awareness and reported behaviours over time. The first follow up phone survey was conducted in December 2016. Results were quite similar to the original baseline survey done in 2014 however there was an increase in reporting of two key behaviours: more respondents reported they often plan meals ahead of time (six per cent increase) and organize their fridge/cupboards to keep track of food (seven per cent increase).

There is still work to be done in building broader awareness of the program. When asked about the Region's food waste reduction program, 23 per cent of respondents indicated some level of awareness of the Good Food Program. In 2017, York Region will continue to share program materials through social media, at events and in the media. Engagement in social media posts and website traffic patterns help to identify messaging and tactics that most effectively engage residents. For instance, in 2016 social media posts with holiday cooking tips and local food themes appeared to drive more website traffic. Radio advertising also consistently generated web traffic. Hands-on cooking workshops were very well attended. As well, practical, tangible tools

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developed to assist residents with better planning, shopping, portioning and food storage skills, distributed at events have been very well received by the public. These tools will help prompt and promote behaviour change needed to reduce food waste over the long term.

Food waste issue gaining traction with other Ontario municipalities

York Region continues to work with municipalities and other organizations to advance food waste reduction across the Province. The Ontario Food Collaborative (the Collaborative), established by York Region, is working to develop common messages for food waste reduction and healthy eating promotions undertaken by its members. Peel Region launched a food waste reduction program in 2016 that promotes messaging consistent with the Good Food Program. Members of the Collaborative are also working together on a common framework for measuring food waste in the curbside waste streams so that data can be compared across jurisdictions. The Collaborative continues to grow and recruit new members to expand its influence. Members are now participating in consultations with the Ministry of the Environment and Climate Change to ensure food waste reduction is a key focus of the Province's Organics Action Plan.

Very dry growing season causes dip in Regional Waste Generation Rate in 2016

Table 1 shows the Regional waste generation rate by stream for 2015 and 2016. It is encouraging to note the decline in all four curbside collected streams and the overall decrease in waste generation rate from 313 kg/capita in 2015 down to 303 kg/capita in 2016.

**Table 1
Regional Waste Generation Rate (kg/capita)***

Waste Stream	2015	2016
Garbage	97	96
Blue Box	73	70
Green Bin	83	82
Yard Waste	38	31
Other	7	7
Small business depot users	15	17
Total	313	303

*Based on total population estimates from York Region Planning.

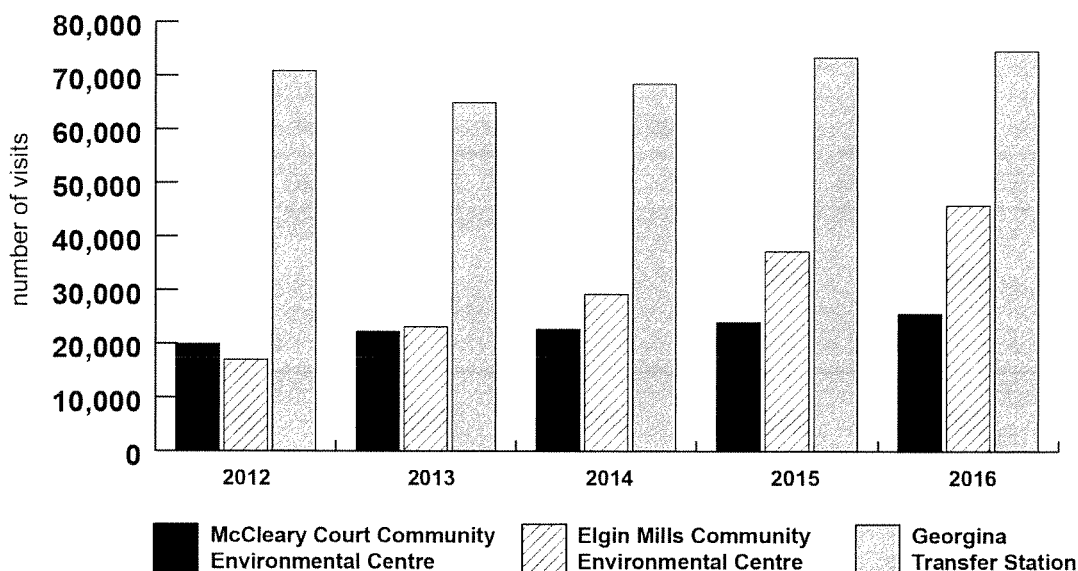
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The majority of the decrease in waste generation is attributed to a significant decrease in yard waste in 2016, due to a very dry growing season. Yard waste is quite variable; a good growing season in 2017 may result in an increase in annual yard waste generation next year. Removing yard waste from the calculation, the Region sees a slight decline of the waste generation rate from 275 kg/capita in 2015 to 272 kg/capita in 2016. Blue box tonnages also declined as the trend towards light-weighting in packaging continues. A slight decrease in garbage and green bin generation was also observed in 2016, an encouraging result given the Region's focus on waste reduction in these two streams.

More residents taking advantage of the Region's waste depot diversion programs

In 2016, there was a minor increase in depot materials collected such as electronic waste, scrap metal and household hazardous wastes at the Region's depots. This correlates with the number of visitors using the Region's waste depot diversion and disposal programs. As shown in Figure 2, the number of visits to the Georgina Transfer Station and both Community Environmental Centres continues to increase. Depot participation from small business users also increased, particularly at the Elgin Mills Community Environmental Centre. This is likely due to the reduction in hours servicing small businesses at Miller Waste System's private transfer station in the City of Markham. The Georgina Transfer Station continues to experience an increase in business waste as well due to the lack of private transfer stations in the northern municipalities.

Figure 2
Visits* to Georgina Transfer Station
& Community Environmental Centres



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*Number of visits are estimated based on paid transactions

Waste generation rates dropped in 2016 in all local municipalities

In 2016, a decrease in waste generation was observed across all local municipalities. It is important to note that fluctuations from year to year may not be indicative of an overall trend. An analysis, based on five years of data will be completed in 2019 to provide more insight on trends in waste generation. However, the 2016 data is generally consistent with 2015 data with lower generation rates seen in those municipalities with higher concentrations of high density housing. Table 2 shows the residential waste generation rates by local municipality.

**Table 2
Residential Waste Generation Rate by municipality (kg/capita)**

Municipality	2015	2016	Percentage change
Town of Aurora	349	331	-5.2%
Town of East Gwillimbury	343	327	-4.7%
Town of Georgina	334	330	-1.2%
King Township	349	326	-6.6%
City of Markham	266	254	-4.5%
Town of Newmarket	325	308	-5.2%
Town of Richmond Hill	311	306	-1.6%
City of Vaughan	292	279	-4.5%
Town of Whitchurch-Stouffville	324	309	-4.6%

The Cities of Markham and Vaughan continue to lead the way with the lowest overall waste generation rates

One factor that may be influencing their lower rates is the concentration of multi-residential housing in these communities. These higher-density housing types may have lower waste generation due to limited storage, smaller living space and outdoor areas. Residents in more urban areas also have access to a wider range of private reuse and disposal facilities therefore some of their waste may be managed outside the Regional system through private transfer stations and programs. Markham's clear bag policy for garbage may also be a factor in their lower waste generation rates as curbside bans on heavier materials such as grass clippings and electronics are more easily enforced.

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King Township experienced the biggest drop in waste generation rate with decreases in several streams

Although there can be many variables that may have contributed to King's overall decreased waste generation rate, the drop in yard waste generation is one factor. King Township also experienced one of the highest population growth rates of all the local municipalities in 2016. Population estimates reflect annual new home completions but occupancy is often staggered throughout the year. This lag may impact the amount of waste generated by new residents as those moving in early in the year contribute more waste to the system than those moving in later.

Georgina captured more material in the blue box and green bin programs and reduced their residential waste generation rate

The Town of Georgina experienced a decrease in their residential waste generation rate. Increases in curbside blue box and green bin materials as well as an increase in residential divertable material collected at the Georgina Transfer Station were offset by a larger decrease in the garbage and yard waste generation. These changes resulted in an overall decline of the waste generation rate in Georgina.

SM4RT Living Plan supports strategic objectives of 2015 to 2019 Strategic Plan and Vision 2051

Staff identified linkages and common deliverables between the SM4RT Living Plan and the Vision 2051 living sustainably goal through waste reduction and prevention. Waste reduction supports the 2015 to 2019 Strategic Plan objective "Optimizing critical infrastructure systems capacity."

5. Financial Considerations

Funds for SM4RT Living Plan implementation activities are included in the 2017 budget for waste management.

Collaborative delivery of programs promotes efficient use of resources

The collaborative model used to deliver pilots and expand programs across the Region makes efficient use of resources. The curbside swap program is delivered as a partnership between the Region and local municipalities; The Region provides promotional resources to be shared amongst local partners as well as staff support for monitoring. Local partners leverage their communication channels and connections with the community to spread the word amongst residents. Lessons learned can be shared between local municipalities to help

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bring new communities on board with programs and initiatives. This model keeps the cost of running pilots low. In 2016, the Region invested \$150,000 into SM4RT Living Plan pilots.

Full cost accounting study will inform advocacy on transition to new extended producer programs

In 2016, a full cost accounting study was launched to help prepare the Region and local municipalities for changes in the waste management system that may result from the recently proclaimed *Waste-Free Ontario Act, 2016*. Data collection for the study is now complete and analysis is underway. An update on the *Waste-Free Ontario Act, 2016* and full cost accounting study will be brought to Council in the fall. Each participating municipality will also receive a summary of their own costs and performance indicators to help inform decision-making. The template used to gather and analyse data for this study is also being shared with other municipalities through the Continuous Improvement Fund. The knowledge sharing will help other municipalities complete their own studies and support municipal advocacy efforts for full cost recovery from stewards as the new extended producer responsibility programs and regulations are developed by the province.

6. Local Municipal Impact

Expansion of pilots into full programs across the Region is crucial to success of SM4RT Living Plan. Full roll out of initiatives such as textile diversion and backyard composting at a Region-wide scale is needed to make progress towards long-term reduction targets.

The Town of Aurora has been very active in piloting new programs, including textile collection, backyard composting in 2016, and textile, battery and waste electronics collection in multi-residential buildings in 2017. City of Markham has already implemented many of these programs and have shared their experiences with other municipalities. Other local municipalities are now implementing some of these programs in their communities. In 2017, textile collection is expanding into Whitchurch-Stouffville with several other municipalities considering it for 2017 or 2018 including Newmarket, King, Vaughan and East Gwillimbury. Curbside swapping was led by Newmarket, King and Georgina and now has expanded into Aurora, Whitchurch-Stouffville and Vaughan for 2017. The Town of Richmond Hill also coordinates and hosts a well-attended garage sale event where residents can swap and sell used items.

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7. Conclusion

Good momentum demonstrated in 2016 as waste generation rates decline

In 2016, the Region and local municipal partners continued to grow and expand SM4RT Living Plan initiatives in order to progress towards long-term reuse and reduction targets. It is encouraging to see a decline in waste generation rates across all local municipalities as new initiatives were added during the third year of the SM4RT Living Plan implementation. Focused efforts on multi-residential reuse pilots, textile collection and backyard composting are showing promising results and opportunities for expansion across the Region. Local municipal efforts and support with implementing the Plan's initiatives are vital to sustain momentum and achieve long-term success.

Final eight initiatives identified in the SM4RT Living Plan to be launched in 2017 with support from local municipal partners

In 2017, the final eight initiatives will be launched achieving the SM4RT Living Plan's commitment of implementing 32 initiatives in the first five years of the Plan. Focus will shift to building momentum through expansion of successful pilots. Local municipal partners play a vital role in the success of the SM4RT Living Plan through their support for programs such as textile collection, swapping, and backyard composting in their communities.

Staff reviewing progress of initial five-year period of SM4RT Living Plan to update the Plan for Council in early 2019

In 2018, the Region and local municipalities will undertake a planned five-year review and update to the SM4RT Living Plan. The update will review progress to date, identify actions over the next five-year period and update targets and projections based on current data and experience over the past five years. A report on the outcomes of the update will be shared with Council in early 2019.

For more information on this report, please contact Laura McDowell, Director, Environmental Protection and Promotion at 1-877-464-9675 ext.75077.

**2016 Annual Update on SM4RT Living
Integrated Waste Management Plan Implementation**

The Senior Management Group has reviewed this report.

June 1, 2017

Attachment

77648445

Accessible formats or communication supports are available upon request or
communication supports are available upon request