

THE REGIONAL MUNICIPALITY OF PEEL

WASTE MANAGEMENT STRATEGIC ADVISORY COMMITTEE

AGENDA WMSAC - 1/2019

DATE: Thursday, February 7, 2019

TIME: 1:00 PM - 3:00 PM

LOCATION: Regional Council Chamber, 5th Floor

Regional Administrative Headquarters

10 Peel Centre Drive, Suite A

Brampton, Ontario

MEMBERS: G.S. Dhillon; P. Fortini; A. Groves; N. Iannicca; J. Innis;

J. Kovac; M. Mahoney; M. Palleschi; K. Ras; I. Sinclair; R. Starr

- 1. ELECTION OF CHAIR AND VICE CHAIR
- 2. DECLARATIONS OF CONFLICT OF INTEREST
- 3. APPROVAL OF AGENDA
- 4. DELEGATIONS
- 5. REPORTS
- 5.1. Overview of Waste Management in the Region of Peel (For information)
 Presentation by Norman Lee, Director, Waste Management
- 5.2. History of Energy from Waste in Peel (Oral)

 Presentation by Norman Lee, Director, Waste Management
- 5.3. Anaerobic Digestion Facility Project Update
- 6. **COMMUNICATIONS**
- 7. IN CAMERA MATTERS

8. OTHER BUSINESS

9. **NEXT MEETING**

Thursday, April 4, 2019, 1:00 p.m. - 3:00 p.m. Council Chamber, 5th Floor Regional Administrative Headquarters 10 Peel Centre Drive, Suite A Brampton, Ontario

10. ADJOURNMENT



REPORT Meeting Date: 2019-02-07 Waste Management Strategic Advisory Committee

For Information

DATE: January 29, 2019

REPORT TITLE: OVERVIEW OF WASTE MANAGEMENT IN THE REGION OF PEEL

FROM: Janette Smith, Commissioner of Public Works

OBJECTIVE

To provide an overview of Waste Management in the Region of Peel, a preview of strategic decisions that will need to be made this term of Council, and in response to the September 13, 2018 request from Regional Council, a summary of Peel's experience with Energy from Waste.

REPORT HIGHLIGHTS

- The Region of Peel operates the second largest municipal waste management program in the province.
- Peel's waste management initiatives must fit within the Provincial and Federal regulatory frameworks, which are evolving.
- In 2018, Regional Council adopted a long term waste management strategy entitled "Roadmap to a Circular Economy". The Roadmap is well aligned with Federal and Provincial regulatory frameworks. The Roadmap includes 17 actions that, together, achieve Council's target of 75 percent 3Rs diversion by 2034.
- Staff will work with the Waste Management Strategic Advisory Committee when making strategic decisions related to the actions set out in the Roadmap.

DISCUSSION

1. Background

The mandate of the Waste Management Strategic Advisory Committee is to provide strategic guidance on the implementation of the waste initiatives identified in the long-term strategic plan, the Roadmap to a Circular Economy. This report provides:

- An overview of the Region's Waste Management Service;
- A review of the Region's long-term Waste Management Strategy;
- Highlights of the Provincial and Federal regulatory framework; and
- Key strategic issues the Committee will be asked to address this Term of Council.

2. History of Waste Management in the Region of Peel

From 1991 to 1994, Regional Council discussed the opportunity and implications of Peel assuming full responsibility for waste management operations. Discussion commenced as a result of the Region assuming financial responsibility for the Blue Box program in 1991.

Council reports during that discussion indicate that uploading waste management services to the Region from the City of Brampton, City of Mississauga, and Town of Caledon would attain greater efficiency and cost-effectiveness.

In October 1994, Regional Council resolved to transfer the responsibility for waste management to the Region (Council Resolution 94-340) and to enact by-law 114-97 to authorize staff to begin the transfer prior to the commencement of a new Regional waste collection and processing contract on May 1, 1995.

3. Waste Management Role and Responsibilities

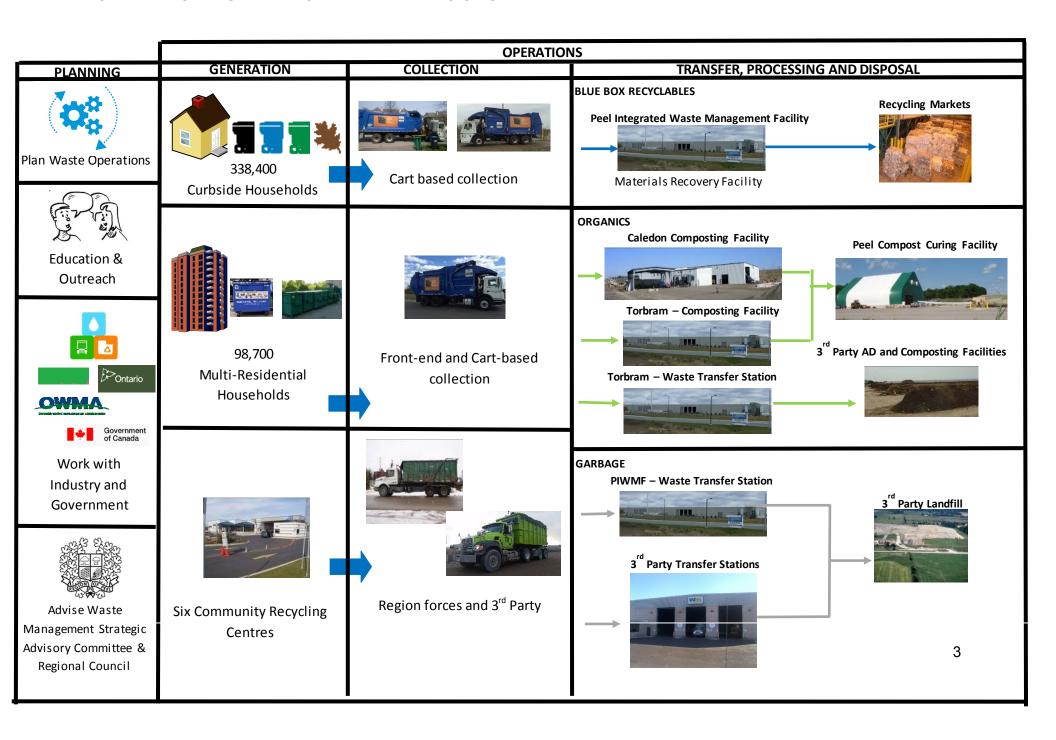
The Region collects, processes and disposes of residential waste within the City of Brampton, City of Mississauga, and Town of Caledon. It also provides service to small businesses in business improvement areas and along residential collection routes, to municipal and regional facilities, and recycling service to schools. It operates six Community Recycling Centres where residents can drop off garbage, yard waste, household hazardous waste, and a wide range of recyclable materials and re-usable items.

Peel operates the second largest municipal waste management program in the province (second only to Toronto). As such our input is often sought by the province and others as they develop their programs.

The Waste Management Service also:

- Provides promotion and education to encourage reduction, reuse and recycling and to educate residents about our programs.
- Advocates for fair and progressive Provincial and Federal legislation, regulations and programs.
- Collaborates with various government and industry associations including the Association of Municipalities of Ontario (AMO), Regional Public Works Commissioners of Ontario and Ontario Waste Management Association to provide feedback and leadership on issues affecting the waste sector.

The graphic below presents an overview of Peel's Waste Management System.



4. Roadmap to a Circular Economy

Staff worked closely with the Waste Management Strategic Advisory Committee to develop the Roadmap to a Circular Economy in Peel to meet Regional Council's reduction, reuse, and recycling (3Rs) target of 75 percent by 2034.

In December 2017, Regional Council adopted the Roadmap to a Circular Economy in Peel (Resolution 2017-971). The Roadmap aligns with the Region of Peel's overarching vision of a Community for Life and fits within the provincial framework for waste management as set out in the Waste-Free Ontario Act, 2016, the Strategy for a Waste-Free Ontario, 2017, and the Food and Organic Waste Framework. The Roadmap appears to be well aligned with the province's proposed Made-in-Ontario Environmental Plan. Staff will remain engaged as the province finalizes that plan. The Roadmap is also well aligned to support the Federal framework as set out in the Canada-wide Strategy on Zero Plastic Waste. Staff will remain engaged as the Federal government develops actions under its Strategy.

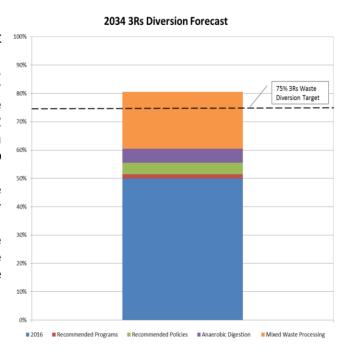
The Roadmap includes two aspirational goals:

- Zero waste from residential sources in the Region of Peel; and
- Zero greenhouse gas emissions from residential waste management.

The Roadmap includes the following objectives to guide the decisions and activities of the Waste Management Service:

- Minimize waste generation;
- Maximize the recovery of resources from our waste in a way that fosters the growth of the circular economy; and
- Design and deliver waste management services that meet the needs of the customer in a cost-effective manner.

The Roadmap includes 17 actions that, together, achieve Council's 3Rs target of 75 percent by 2034. These actions include new programs, new policies and new processing infrastructure. New programs such as textile collection are expected to increase diversion by 2 percentage points. New policies such as education and enforcement to participation increase in Peel's programs are expected to increase diversion by 4 percentage points. New processing infrastructure such Anaerobic Digestion and Mixed Waste Processing are expected to increase diversion by 5 and 20 percentage points respectively.



This combination of programs, policies and processing infrastructure was developed following a thorough review of high diversion jurisdictions across North America and Europe. As noted above, and shown in the graph, the largest contribution to diversion is through the development of new processing infrastructure. Without new infrastructure, Peel's diversion rate will cap out at around 56 percent.

Development of an Anaerobic Digestion Facility for green bin organics will allow Peel to add diapers and pet waste to its green bin program, which will increase diversion by five percentage points.

Development of a Mixed Waste Processing Facility for garbage will allow Peel to extract additional recycling and organics for Peel's garbage, which will increase diversion by 20 percentage points.

The Anaerobic Digestion facility is being developed before the Mixed Waste Processing facility for the following reasons:

- The organics collected in the Green Bin program is cleaner than the organics separated from Mixed Waste and is therefore expected to be easier to market.
- There are still some questions about Mixed Waste Processing that should be answered prior to commencing the procurement process.
- The Provincial Organics Framework, which sets high diversion targets for organic waste and which contemplates an organics disposal ban, requires that existing Green Bin programs remain in place.
- The Provincial Organics Framework supports the use of Mixed Waste Processing to supplement Green Bin programs.

A summary of the Roadmap's actions is included below. A complete list of the Roadmap's actions is included in Appendix I.

Programs

- Add diapers and pet waste to Green Bin organics program once Anaerobic Digestion facility is operational
- Textiles
- Carpets
- Mattresses
- •Furniture

Policies

- Advocate for Extended Producer Responsibility
- Update our communications, education and outreach
- Update our approach to enforcement
- Consider volume based user fee for garbage
- Update Waste Collection By-Law and Design Standards
- Update metrics

Processing

- Develop, implement and maintain integrated infrastructure plan including:
- •Upgrade Blue Box Material Recovery Facility (MRF)
- •Construct an Anaerobic Digestion Facility
- •Develop Yard Waste Transfer and Processing Capacity
- •Develop Mixed Waste Processing

5. Provincial Direction

In November 2016, the Province proclaimed the *Waste-Free Ontario Act, 2016* (the Act). The Act allows for the introduction of regulations to make producers fully responsible for resource recovery and waste reduction associated with their products and packaging and allows for the wind-up of the four existing waste diversion programs: the Blue Box Program, the Used Tires Program, the Municipal and Special Hazardous Waste Program and the Waste Electronics and Electrical Equipment Program. The Act also required the province to prepare a strategy to show how the Act would be implemented.

In February 2017, the "Strategy for a Waste-Free Ontario: Building the Circular Economy" (the Provincial Strategy) was finalized, setting the goals of zero-waste and zero greenhouse emissions for the waste sector. The Provincial Strategy set out a number of actions to help achieve these goals and also set out the transition sequence of the four existing diversion programs. The Strategy also required the development and implementation of the Food and Organic Waste Framework.

Transition of Existing Diversion Programs

The four existing diversion programs will transition to full producer responsibility program under the new Act as follows:

- Tires January 1, 2019
- Waste Electrical and Electronic Equipment July 1, 2020
- Municipal Hazardous or Special Waste January 1, 2021
- Blue Box to be determined

Staff have been participating in consultations related to the transition of the existing diversion programs to full producer responsibility and will continue to do so.

Food and Organic Waste Framework

On April 30, 2018 the Provincial government released the Food and Organic Waste Framework comprised of an Action Plan and a Policy Statement.

The Provincial Action Plan highlights the government's commitment to achieving the following objectives:

- Reducing the generation of food waste along the entire food supply chain
- Recovering resources from food and organic waste, in particular, the multi-residential and Industrial, Commercial and Institutional sector
- Supporting the development of organics processing infrastructure; and
- Promoting end uses of products derived from organic waste

The Provincial Policy Statement gives direction to municipalities and other stakeholders to prevent and reduce food and organic waste at each stage of the food supply chain, including the production, distribution, consumption and organic waste management stages.

The Provincial Policy Statement sets the following targets for organic waste reduction in municipalities such as Peel:

- 70 percent reduction of food and organic waste generated by curbside households by 2023;
- 50 percent reduction of food and organic waste generated by multi-residential buildings by 2025.

It also sets diversion targets for the Industrial, Commercial and Institutional sector for facilities that generate more than 300kg of food and organic waste per week:

- 70 percent reduction of food and organic waste generated in a facility subject to O.Reg 103/04 by 2025;
- 50 percent reduction of food and organic waste generated in a facility not subject to O.Reg 103/04 by 2025.

The Provincial Policy Statement makes municipalities responsible for achieving the curbside target, building owners responsible for achieving the multi-residential target and Industrial, Commercial and Institutional generators responsible for achieving the Industrial, Commercial and Institutional target.

The Provincial Policy Statement supports the development of anaerobic digestion facilities to process source-separated organic waste and the development of mixed waste processing to recover additional organics from garbage.

Made-in-Ontario Environment Plan

On November 29, 2018 the Provincial government released its proposed "Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan". The proposed plan focuses on four areas: protecting air, lakes, and rivers; addressing climate change; reducing litter and waste and keeping land and soil clean; and conserving land and greenspace. Many of the actions in the proposed plan are described at a high level, and important details will be released at a later date.

With respect to reducing litter and waste, the proposed Made-in-Ontario Environment Plan seeks to:

- Reduce and divert food and organic waste from households and businesses by retaining the food and organic waste reduction targets set out in the Provincial Policy Statement (discussed above) and including a potential landfill ban on food waste
- Reduce plastic waste
- Reduce litter in our neighbourhoods and parks
- Increase opportunities for Ontarians to participate in waste reduction efforts
- Make producers responsible for the waste generated from their products and packaging
- Explore opportunities to recover the value of resources in waste (using advanced energy recovery technologies)
- Provide clear rules for compostable products and packaging
- Support competitive and sustainable end-markets for Ontario's waste

A more detailed list of the Plan's proposed actions pertaining to reducing litter and waste is included in Appendix II.

The Provincial government has indicated that it will conduct more focused consultations on individual plan objectives and actions in 2019. Staff will remain engaged in these consultations and provide feedback in support of fair progressive actions that are aligned with direction provided by Regional Council.

6. Federal Direction

On November 23, 2018 the Canadian Council of Ministers of the Environment approved a Canada-wide Strategy on Zero Plastic Waste (the Federal Strategy). The Federal Strategy introduces the vision of a circular economy that moves towards zero plastic waste and focuses on preventing plastic waste, collecting and cleaning up all plastics, and recovering value from all plastics. It also sets Canada-wide plastic waste reduction targets of 30 percent by 2030 and 50 percent by 2040 to reduce the amount of plastic waste sent to disposal.

The Federal Strategy has ten priority areas: product design, single-use plastics, collection systems, markets, recycling capacity, consumer awareness, aquatic activities, research and monitoring, clean-up, and global action.

Of importance to Peel (and other municipalities) is the inclusion of reduction targets, a commitment to expand collection systems and recycling capacity and support for endmarkets.

In 2019, the Canadian Council of Ministers of the Environment will, in consultation with stakeholders, develop an action plan that sets out the measures and actions needed to implement the Strategy. Staff will remain engaged in these consultations and provide feedback in support of fair progressive actions that are consistent with direction set by Regional Council.

7. Key Issues for Term of Council

During this term of Council, the Waste Management Strategic Advisory Committee can expect staff to focus on the following initiatives:

Townhouse Conversions

There are approximately 33,000 townhouses in Peel. As of 2018, Peel has converted 18,000 townhouses from a bag-based collection system to a cart-based collection system. The remaining 15,000 townhouses have not yet been converted and remain on a bag-based system. Staff will present a recommended approach for townhouse conversions in 2019.

Community Recycling Centre (CRC) Optimization

Staff is reviewing CRC programs and policies to identify opportunities for improved customer service, environmental performance and financial effectiveness. Areas being reviewed include materials collected at the CRCs, hours of operation, fee structures and infrastructure changes. Staff will present recommended changes in 2019.

Textile Collection Program

The Region currently collects textiles through its Community Recycling Centres and is piloting other approaches to collect textiles. Pilots of third party textile recovery (e.g. semi-annual curbside collection events, community drop off boxes, promotion of existing call-in service, etc.) are currently underway. Staff will develop recommendations for a Region-wide textile program in 2019.

Education and Enforcement

Educating residents on how to properly participate in Peel's resource recovery programs is integral to maximizing Peel's 3Rs diversion. Peel is updating its approach to educating residents. This updated approach will utilize research to better understand residents' attitudes towards Peel's programs, identify barriers to participation, key messages, preferred channels and terminology, and pre and post campaign performance metrics. Staff will present a recommended communications approach in 2019.

Enforcement has an impact on participation rates, capture rates and the overall effectiveness of diversion programs. Staff will consider the impact that possible changes to the enforcement policies would have on Peel's diversion programs. Staff will review policy options in 2019 and present recommendations in 2020.

Volume Based User Fees

Some municipalities utilize user fees to drive behaviour change and help finance their waste programs. Staff will review various options for volume-based user fees and will present a recommended approach in 2020.

Anaerobic Digestion

Council approved the plan to develop an anaerobic digestion facility to process Peel's Green Bin organic material. This facility will replace the aerobic composting process currently being used and will allow Peel to expand its Green Bin organics program to include material such as diapers and pet waste. The Anaerobic Digestion facility is currently in the procurement process. Staff will report to Council at the end of the procurement process in early 2020 with a recommended award. The facility will be built by 2024.

Mixed Waste Processing

Mixed Waste Processing is an approach used in Europe and in parts of the United States, particularly California, to process garbage to recover recyclables and organics and/or to produce a recovered fuel product. In most cases Mixed Waste Processing is used to complement at-source separation diversion programs, like blue and green bin programs, and that is how it is being considered for use in Peel.

Mixed Waste Processing is a key component required to meet Council's 75 percent 3Rs diversion target by 2034.

In December 2017, Council endorsed the development of a Mixed Waste Processing facility in Peel and directed staff to further investigate Mixed Waste Processing. Staff is continuing to investigate the feasibility of Mixed Waste Processing and will provide an update on the investigations in late 2019 or early 2020.

Integrated Infrastructure Plan

Waste management infrastructure includes transfer stations, processing facilities and community recycling centres. Maintenance of an integrated infrastructure plan that identifies new infrastructure and modifications to existing infrastructure is necessary to ensure that the Region has the infrastructure in place to support the efficient and reliable operation of the waste management system and to enable the Region to achieve its diversion target. Staff will present an updated integrated waste management infrastructure plan in early 2020.

Waste Collection Design Standards

The Waste Management Service administers the Region's Waste Collection Design Standards, which set out how new or redeveloped residential properties must be designed to provide for the convenient and secure handling of waste materials on the property and the safe and efficient collection of the materials by the Region's waste collection services. The trend towards intensification in residential areas is encouraging developers to propose new types of residential developments. The Standards need to be updated to ensure that the appropriate design requirements are applied to the new development types. Staff is reviewing the design requirements of other jurisdictions, and investigating innovative collection methods, and will report the results in early 2020.

Closed Landfills

The Division manages 21 former landfills, some of which require ongoing monitoring of landfill gas and leachate and ongoing operation and maintenance of site infrastructure. Of the 21 sites, 20 are officially closed. The Caledon Landfill site received its last waste in 2007 and has been managed as a closed landfill since. However, because the landfill's design capacity was not fully utilized, it was maintained as a contingency site and was not formally closed in accordance with the Ministry of Environment, Conservation and Parks processes. Changes to the *Ontario Assessment Act* implemented in January 2018 created a new property tax class for operating landfills. The Caledon landfill is included in this new property tax class and as a result the Region will be required to pay property taxes unless the site is formally closed. Staff is therefore developing a plan to formally close the landfill, which will involve resolution of property ownership issues with the Town of Caledon and securing approval of a closure plan from the province. Staff will report to Council with a recommended plan to close the landfill in late 2019.

Blue Box Transition

The "Strategy for a Waste-Free Ontario" indicated that the Blue Box program would transition to full producer responsibility by 2023. Peel was one of the first municipalities to call for early transition of the Blue Box program and continues to support an accelerated transition, but only on terms that are fair and equitable to Peel and other stakeholders. Staff will continue to participate in consultations related to the transition of the Blue Box Program to full producer responsibility. Staff will report with updates on the Blue Box transition as appropriate.

Curbside Collection Contracts

Current curbside collection contracts expire in 2024 (with two possible 12-month extensions at the Region's sole discretion). The decision to extend the existing contracts depends on contractor performance and the timing of the Blue Box transition to full producer responsibility. The procurement process for new collection contracts should occur 2-3 years before the existing contracts end to allow successful bidders time to procure trucks, secure yards and hire staff. Given the 2024 expiry date, the procurement process will take place as early as 2021. Staff will recommend key terms of the new contracts prior to commencing the procurement process.

Multi-residential Collection Contract

Current multi-residential collection contract expires in 2022 (with three possible 12-month extensions at the Region's sole discretion). The decision to extend the existing contract depends on contractor performance and the timing of the Blue Box transitioning to full producer responsibility. The procurement process for new collection contract should occur 2-3 years before the existing contract ends to allow successful bidder time to procure trucks, secure yards and hire staff. Given the 2022 expiry date, the procurement process will take place as early as 2020. Staff will recommend key terms of the new contract prior to commencing the procurement process.

8. Peel's Involvement with Energy from Waste

From 1992 to 2012, approximately 50 percent of the Region of Peel's garbage was sent to the Algonquin Power energy from waste facility on Bramalea Road in Brampton (now Emerald Energy). The rest of Peel's garbage and the ash from incineration was landfilled under a 25-year landfill disposal contract.

In 2010, in anticipation of the end of Peel's agreement with Algonquin Power, staff was directed to conduct a long-term waste disposal study which considered all available waste disposal technologies (Resolution 2010-661). Technologies considered included established thermal technology, such as mass burn incineration and refuse derived fuel, as well as emerging technologies such as gasification, pyrolysis, plasma arc, refuse derived fuel and mixed waste processing. Continued landfilling was also considered. The study assumed Peel would achieve its then-current 3Rs diversion target of 60 percent and focused on a solution for the remaining residual waste.

In 2011, Regional Council adopted the findings of the study and approved the development of a 300,000 tonne per year energy from waste facility using established thermal conversion technology as the preferred long-term disposal option (Resolution 2011-1156). The Region's proposed energy from waste facility was to be known as the Peel Energy Recovery Centre.

In 2012, staff was directed to complete a detailed business case for the Peel Energy Recovery Centre to confirm the preferred procurement process and contract structure. In 2013, Council approved the detailed business case and directed staff to issue a Request for Prequalification followed by a Request for Proposal to develop the Peel Energy Recovery Centre using a Design-Build-Operate-Maintain contract structure.

In 2014, Peel issued a Pre-qualification document where three teams were prequalified.

In 2015, Regional Council adopted a new 3Rs target of 75 percent by 2034 (Resolution 2015-741). Recognizing that a 75 percent 3Rs target would not leave sufficient residual waste for a 300,000 tonne per year energy from waste facility, Regional Council terminated the procurement process for the Peel Energy Recovery Centre (Resolution 2015-781).

In 2016, the Ministry of the Environment suspended the Energy from Waste Standard Offer program which had been created to purchase electricity from energy from waste facilities.

Currently, Peel delivers up to 10,000 tonnes per year of residual waste to Emerald Energy (former Algonquin Power facility).

In the future, advanced thermal treatment may be considered for non-recyclable plastic waste as suggested in the "Canada-wide Strategy on Plastic Waste" and the "Made-in-Ontario Environment Plan". Investigation of mixed waste processing by staff will consider conversion of non-recyclable fractions to low carbon fuel or some other engineered fuels for use by industry.

FINANCIAL IMPLICATIONS

Staff will recommend annual budgets to support advancement of programs, policies and infrastructure to achieve the 75% diversion target.

The Region has a financial liability of \$37.8 million related to the future costs of post-closure care of its 21 closed landfill sites over the next 25 years. The Region maintains a reserve to mitigate this future liability.

CONCLUSION

Peel is responsible for the collection, processing and disposal of residential waste in the Cities of Brampton and Mississauga and the Town of Caledon. Peel also collects a small amount of commercial waste in Business Improvement Areas, along residential collection routes and at Community Recycling Centres. The Region assumed these responsibilities from the area municipalities in 1995 to attain greater efficiency and cost-effectiveness.

Peel's Roadmap to a Circular Economy sets out Peel's goals, objectives and actions to achieve Council's target of 75 percent 3Rs diversion by 2034 and is aligned with Federal and Provincial direction.

Implementing the Roadmap will require strategic advice from the Waste Management Strategic Advisory Committee and various approvals by Regional Council during this Term of Council.

Janette Smith, Commissioner of Public Works

Approved for Submission:

Jentle Smoth

Dang Sauce

D. Szwarc, Chief Administrative Officer

APPENDICES

Appendix I – Actions in Peel's Roadmap to a Circular Economy

Appendix II – Waste Related Actions in the Proposed Made-in-Ontario Environment Plan

For further information regarding this report, please contact Norman Lee, Director Waste Management, extension 4703, norman.lee@peelregion.ca.

Reviewed in workflow by:

Financial Support Unit

Actions in Peel's Roadmap to a Circular Economy

Programs

Action 1: Promote waste reduction activities and benefits

- Continue to promote waste reduction through school workshops and public outreach (as approved by Regional Council: Resolution 2014-627) Promote community repair workshops and support organizations running these workshops
- Support community initiatives that reduce waste including those related to the sharing economy
- Continue to work with the provincial government as they implement the Strategy for a
 Waste Free Ontario including its direction to promote public education and awareness
 with respect to waste reduction (as approved by Regional Council: Resolution 2017-630)

Action 2: Promote food waste reduction activities and benefits

- Continue to promote food waste reduction in schools and to our residents (as approved by Regional Council: Resolution 2014-627)
- Continue to participate in food waste reduction related industry organizations (Ontario Food Waste Collaborative, PACNext) (as approved by Regional Council: Resolution 2014-627)
- Continue to work with the provincial government on their Food and Organic Waste Action Plan, which includes efforts to reduce food waste (as approved by Regional Council: Resolution 2017-630)

Action 3: Promote existing reuse organizations, opportunities and benefits

- Continue to promote reuse and accept reusable goods at all Community Recycling Centres (as approved by Regional Council: Resolution 2014-627)
- Consider expanding the type of reusable goods accepted at the Community Recycling Centres, through the Community Recycling Centre service analysis recommended in Action 7
- Develop and promote a listing of third-party reuse organizations in Peel
- Promote existing online tools that facilitate goods swapping and reusable purchases
- Promote the benefits of reuse activities through education (as approved by Regional Council: Resolution 2014-627)

Action 4: Increase resource recovery in Peel's Agencies, Boards, Commissions and Departments (ABCDs)

- Continue to support local municipalities with their waste reduction and resource recovery efforts (as approved by Regional Council: Resolution 2014-627)
- Phase in an organics recovery program for Peel's long-term care centres and Peel's main administration buildings
- Support the Region's other waste reduction and resource recovery activities under its Corporate Social Responsibility Strategy

Action 5: Expand existing resource recovery programs

 Continue the process of converting townhomes from a bag-based collection system to a cart-based collection system

- Expand Peel's Green Bin program to include diapers, sanitary products, and pet waste and allow the use of non-compostable plastic liners once Peel's Anaerobic Digestion Facility becomes operational (as approved by Regional Council: Resolution 2015-741)
- Report the results of the multi-residential organics pilot to Regional Council and the Multi-Residential Working Group to help the Region and multi-residential building owners understand the feasibility of Green Bin organics collection in multi-residential buildings
- Reassess the expansion of the Green Bin organics program to multi-residential buildings once the province's Food and Organic Waste Framework has been finalized

Action 6: Implement new curbside and multi-residential resource recovery programs

- Pilot test various approaches to third party textile recovery (e.g. semi-annual curbside collection events, additional community drop off boxes, promotion of existing call-in service, etc.) and support the implementation of a Region-wide program based on the results of the pilots
- Pilot test mobile collection of household hazardous waste at multi-residential buildings as approved by Regional Council through the 2017 operating budget

Action 7: Optimize Peel's Community Recycling Centre services to increase resource recovery

 Perform a Community Recycling Centre service analysis and report back to Council with recommendations

Action 8: Improve resource recovery in Business Improvement Areas

- Improve the resource recovery performance in Business Improvement Areas through education, outreach, and enforcement
- Conduct an organics pilot program to recover organic material from the Business Improvement Areas to help the Region and Business Improvement Area businesses understand the feasibility of organics collection in Business Improvement Areas

Policies

Action 9: Advocate for extended producer responsibility

- Participate in the discussion on existing provincial 3Rs waste diversion programs (i.e. Blue Box, used tires, waste electronic and electrical equipment and household hazardous waste) as they are transitioned to full producer responsibility under the Resource Recovery and Circular Economy Act, 2016 (as approved by Regional Council: Resolution 2017-630)
- Support the development of new provincial extended producer responsibility programs (e.g. carpets, mattresses, furniture, compact fluorescent lightbulbs, etc.) and participate in resulting programs as appropriate (as approved by Regional Council: Resolution 2017-630)

Action 10: Update our approach to communications, education and outreach to improve the performance of existing curbside and multi-residential resource recovery programs

- Conduct research on approaches to change residents' behaviour so they are better motivated to properly participate in Peel's resource recovery programs
- Develop a comprehensive Communications Strategy based on the above research
- Implement actions to increase participation and decrease contamination in Peel's Blue Box and Green Bin programs through promotion and education approaches that will be identified in the Communications Strategy

 Review the educational activities conducted by Peel and its community partners, EcoSource and EcoCaledon to ensure they are aligned with the Roadmap and the above Communications Strategy

Action 11: Update our approach to enforcement to improve the performance of existing curbside and multi-residential resource recovery programs

- Implement an enforcement pilot program to reduce contamination in the curbside recycling program by checking carts and leaving contaminated carts behind without being collected
- Develop a comprehensive Enforcement Plan based on the findings of the pilot and additional research and report back to Council with recommendations
- Implement actions to increase participation and decrease contamination in Peel's Blue Box and Green Bin programs through education and enforcement approaches that will be identified in the Enforcement Plan

Action 12: Consider the adoption of a volume-based user fee for garbage to improve the performance of existing curbside and multi-residential resource recovery programs

- Further investigate the experience of jurisdictions that utilize a volume-based user fee for garbage
- Consider various models for a volume-based user fee for garbage in the Financial Plan

Action 13: Update Peel's Waste Collection By-Law and Design Standards

- Investigate how to best collect material from denser housing developments
- Update the Waste Collection By-Law based on the results of the investigation and to align with the Waste-Free Ontario Act, the Strategy for a Waste-Free Ontario and the Food and Organic Waste Framework
- Concurrent with the Waste Collection By-Law update, update the Waste Collection
 Design Standards Manual to account for denser housing developments and Peel's cartbased collection program based on the results of the investigation and to align with the
 Waste-Free Ontario Act, the Strategy for a Waste-Free Ontario and the Food and
 Organic Waste Framework
- Collaborate with the local municipalities to ensure that the requirements of the design standards are more effectively incorporated into the development application and approval process

Action 14: Review and assess Peel's programs, policies and services for improvement on a continuous basis

- Review operational processes, practices, and service delivery methods on a regular basis to identify opportunities for improved efficiency, effectiveness and customer service
- Collaborate with other municipalities and industry groups to maximize the impacts of our activities and share experiences, expertise and resources
- Review the Roadmap every four years and update it every eight years

Processing Capacity

Action 15: Construct an Anaerobic Digestion Facility to process Peel's Green Bin organic material

• Continue the development of the Council-approved Anaerobic Digestion Facility to meet Peel's long-term Green Bin organic processing needs

Action 16: Develop Mixed Waste Processing capacity to recover additional resources, including renewable and low carbon energy, from Peel's garbage

- Monitor policy, program and other developments affecting Mixed Waste Processing and its output products including, among other things, the provincial Food and Organic Waste Framework which is currently under development
- Create opportunities for tests and trials to increase the knowledge of and familiarity with the organic and low carbon fuel outputs of Mixed Waste Processing to aid the industry to solve technical challenges, and to support the development of markets
- Develop Mixed Waste Processing capacity to process the Region of Peel's garbage stream, subject to confirmation of provincial policy direction, product quality requirements and markets, and further refinement of diversion and cost estimates

Action 17: Update Peel's Infrastructure Plan to include Mixed Waste Processing capacity, future uses of Peel's existing waste facilities and other new waste management infrastructure

- Report back with recommendations for the future use of the Peel Integrated Waste Management Facility once the engagements with Infrastructure Ontario and the Greater Toronto Airport Authority are completed
- Prepare a development plan for Mixed Waste Processing capacity
- Prepare a development plan for other new or changing waste management infrastructure
- Report back with an updated infrastructure Plan that includes a recommended implementation approach

Waste Related Actions in the Proposed Made-in-Ontario Environment Plan

The Provincial government's proposed "Made-in-Ontario Environment Plan" focuses on four areas: protecting air, lakes, and rivers; addressing climate change; reducing litter and waste and keeping land and soil clean; and conserving land and greenspace. Below is a detailed list of the plan's proposed strategies and actions pertaining to reducing litter and waste.

Actions to Reduce Litter and Waste

- Expand green bin or similar collection systems in large cities and to relevant businesses.
- Develop a proposal to ban food waste from landfill and consult with key partners such as municipalities, businesses and the waste industry.
- Educate the public and business about reducing and diverting food and organic waste.
- Develop best practices for safe food donation.
- Work with other provinces, territories and the federal government to develop a plastics strategy to reduce plastic waste and limit micro-plastics that can end up in our lakes and rivers.
- Seek federal commitment to implement national standards that address recyclability and labelling for plastic products and packaging to reduce the cost of recycling in Ontario.
- Work to ensure the Great Lakes and other inland waters are included in national and international agreements, charters and strategies that deal with plastic waste in the environment.
- Work with municipal partners to take strong action against those who illegally dump waste or litter in our neighbourhoods, parks and coastal areas.
- Develop future conservation leaders through supporting programs that will actively clean up litter in Ontario's green spaces, including provincial parks, conservation areas and municipalities.
- Connect students with recognized organizations that encourage environmental stewardship so they could earn volunteer hours by cleaning up parks, planting trees and participating in other conservation initiatives.
- Work with municipalities and producers to provide more consistency across the province regarding what can and cannot be accepted in the Blue Box program.
- Explore additional opportunities to reduce and recycle waste in our businesses and institutions.
- Move Ontario's existing waste diversion programs to the producer responsibility model. This
 will provide relief for taxpayers and make producers of packaging and products more
 efficient by better connecting them with the markets that recycle what they produce.
- Investigate options to recover resources from waste, such as chemical recycling or thermal treatment, which have an important role along with reduction, reuse and recycling in ensuring that the valuable resources in waste do not end up in landfills.
- Encourage increased recycling and new projects or technologies that recover the value of waste (such as hard to recycle materials).

- Ensure new compostable packaging materials in Ontario are accepted by existing and emerging green bin programs across the province, by working with municipalities and private composting facilities to build a consensus around requirements for emerging compostable materials.
- Consider making producers responsible for the end of life management of their products and packaging.
- Cut regulatory red tape and modernize environmental approvals to support sustainable end markets for waste and new waste processing infrastructure.
- Provide municipalities and the communities they represent with a say in landfill siting
 approvals. While we work to reduce the amount of waste we produce, it is recognized that
 there will be a need for landfills in the future. The province will look for opportunities to
 enhance municipal say while continuing to ensure that proposals for new and expanded
 landfills are subject to rigorous assessment processes and strict requirements for design,
 operation, closure.

February 7, 2019

Norman Lee

Director, Waste Management Region of Peel



Waste Management Overview



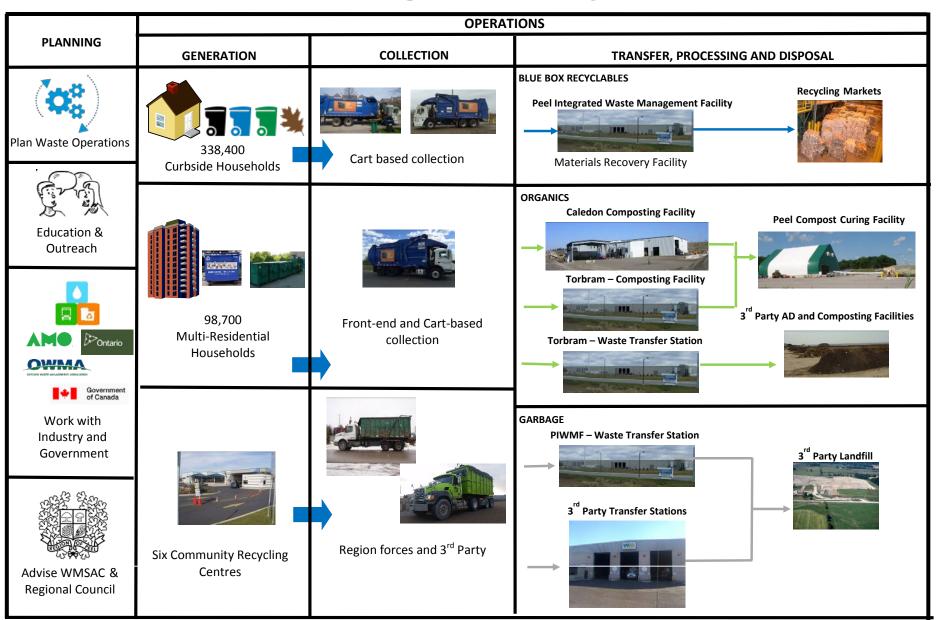
Today's Presentation

- 1. Recap of Committee Mandate
- 2. Brief overview of Waste Management in Peel
- 3. Federal and Provincial Policy Framework
- 4. Sustainable Materials Management and Circular Economy
- Long-Term Waste Management Strategy (Roadmap)
- 6. Key Areas of Focus for this Term of Council

Committee Mandate

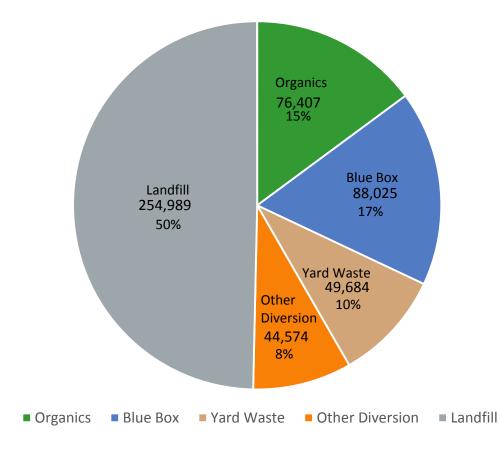
The mandate of the Waste Management Strategic Advisory Committee is to provide strategic guidance on the implementation of the waste initiatives identified in the long-term strategic plan, the Roadmap to a Circular Economy.

Peel's Waste Management System



Peel's 3Rs Diversion Rate



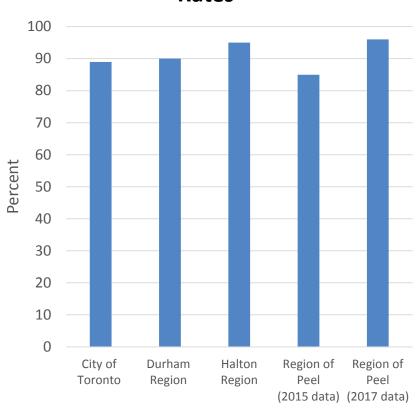


Other diversion programs:

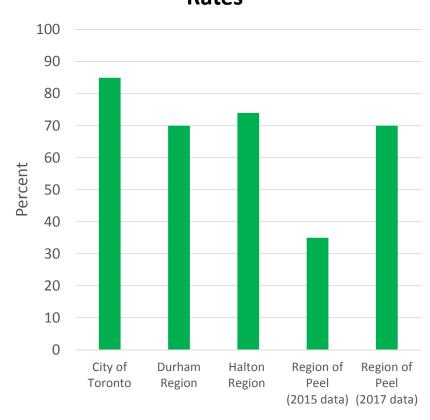
- Reuse
- Drywall
- Clean Rubble
- Scrap Metal
- White goods
- Used tires
- Grass cycling
- LCBO deposit return
- Municipal Hazardous and Special Waste
- Waste Electrical and Electronic Equipment

Blue Box and Green Bin Participation Rate

Blue Box Program Participation Rates



Green Bin Program Participation Rates



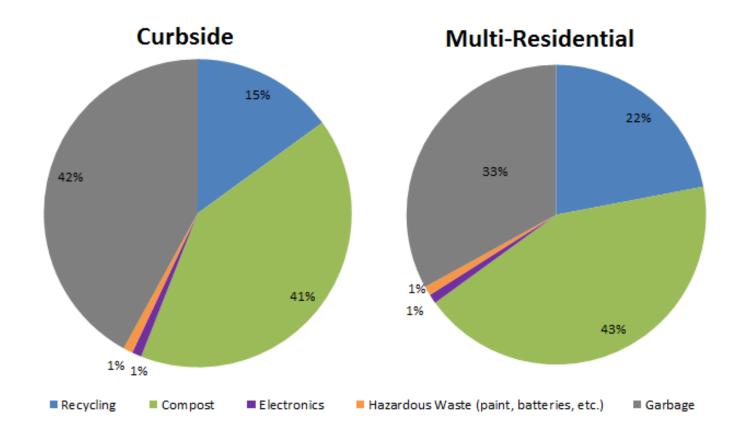


Capture Rate: 73%



Capture Rate: 53%

Peel Garbage Composition

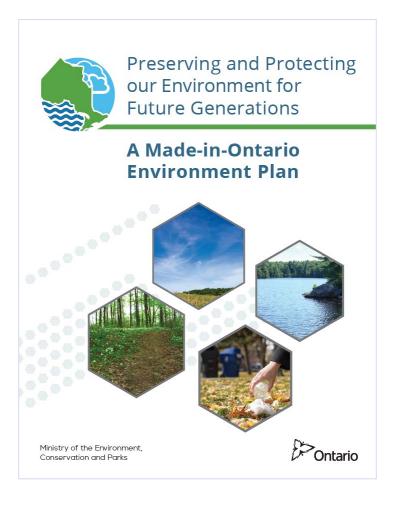


Provincial Framework



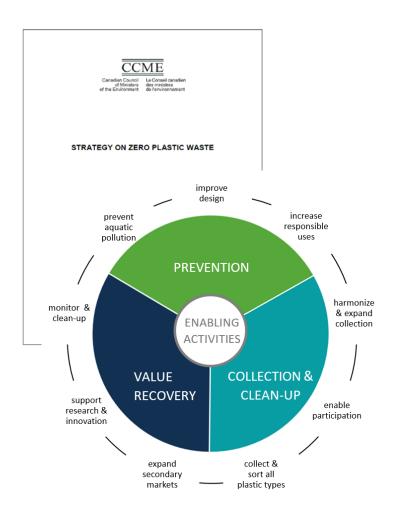


Provincial Framework



- With respect to reducing litter and waste, the Environment Plan seeks to:
 - Reduce and divert food and organic waste
 - Reduce plastic waste
 - Reduce litter
 - Make producers responsible
 - Recover the value of resources in waste
 - Develop clear rules for compostable products and packaging
 - Support end-markets

Federal Framework



- Canada-wide Strategy on Zero Plastic Waste released on November 23, 2018
- Sets Canada-wide waste reduction targets of 30% by 2030 and 50% by 2040 to reduce the amount of waste sent to disposal
- Action plan to be developed in 2019 in consultation with stakeholders

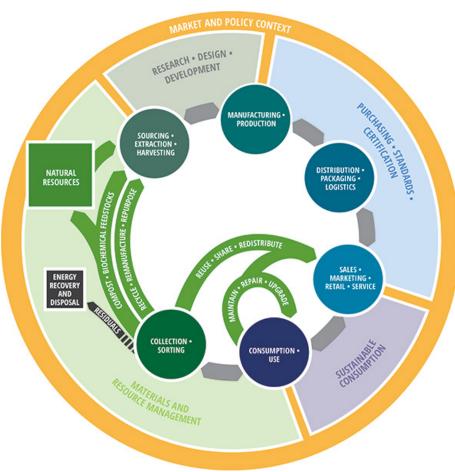
Roadmap Goals, Targets, and Objectives

- Aspirational Goals
 - A circular economy with zero waste from residential sources
 - Zero greenhouse gas emissions from residential waste management.
- Current Targets
 - 75% 3R's diversion by 2034
- Current Objectives
 - Minimize waste generation
 - Maximize the recovery of resources from our waste in a way that fosters the growth of the circular economy
 - Design and deliver waste
 management services that meet the
 needs of the customer in a cost effective manner



Sustainable Material Management and a Circular Economy

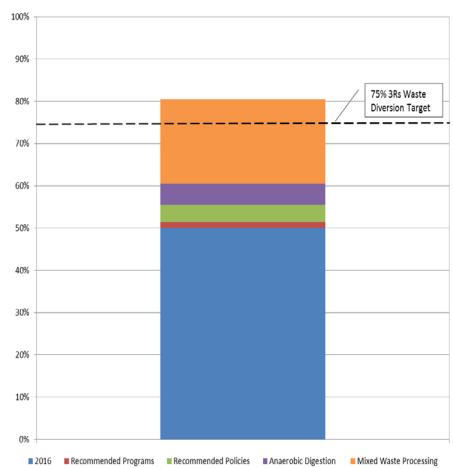




Programs, Policies, and Processing Infrastructure to Increase Diversion

- Existing 50%
- New programs 2%
- New policies 4%
- New processing 25%
 - Anaerobic digestion5%
 - Mixed wasteprocessing 20%

2034 3Rs Diversion Forecast



Programs to Increase Diversion

- Add diapers and pet waste to Green Bin organics program once Anaerobic Digestion facility is operational
- Textiles
- Carpets
- Mattresses
- Furniture

Policies to Drive Behaviour Change

- Advocate for Extended Producer Responsibility
- Update our communications, education and outreach
- Update our approach to enforcement
- Consider volume based user fee for garbage
- Update Waste Collection By-Law and Design Standards
- Update metrics

Processing Infrastructure to Increase Diversion (Integrated Infrastructure Plan)

Upgrade Blue Box Material Recovery Facility (MRF)

Construct an Anaerobic Digestion Facility

Build Yard Waste Transfer and Processing Capacity

Develop Mixed Waste Processing Capacity

- Material Recovery Facility Upgrades
 - Currently in the design-build phase
 - Will be complete in early 2020
- Anaerobic Digestion
 - Currently in the procurement process
 - Staff will report to Council at the end of the process in 2020 with a recommended award
 - The facility will be built by 2024

- Mixed Waste Processing
 - Staff is conducting studies on Mixed Waste Processing
 - Staff will present study results in early 2020
- Yard Waste Transfer and Composting
 - Staff is conducting studies on Yard Waste Transfer and Composting
 - Staff will present study results in early 2020

- Townhouse Conversions
 - Peel has converted 18,000 townhouses, 15,000 remain
 - Staff will present a plan in 2019

- Community Recycling Centres Optimization
 - Staff is reviewing CRC operations and fee policies to identify opportunities for improved customer service, environmental performance and financial effectiveness
 - Staff will present recommended changes in 2019

Education

- Staff is testing options/approaches.
- Staff will present recommended approach in 2019.

Enforcement

- Staff will review and pilot enforcement approaches in 2019.
- Staff will present recommendations in 2020.

Volume Based User Fees

- Staff will review options for volume based user fees.
- Staff will present recommended approach in 2020.



Thank you

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History of Energy From Waste in Peel

February 7, 2019

Norman Lee, Director Waste Management Region of Peel

Council Direction

 On September 13, 2018 Council heard a delegation from an energy from waste organization, and staff was asked to report back to Council with a history of energy from waste in Peel in early 2019.

History of Energy from Waste in Peel

1992-2012

• Approximately 50% of the Region of Peel's residual waste was sent to Algonquin Power energy from waste facility on Bramalea Road in Brampton, the rest of Peel's residual waste and the ash from incineration was landfilled under a 25-year landfill disposal contract.

2010

- In anticipation of the end of Peel's agreement with Algonquin Power, staff was directed to conduct a long-term disposal study which considered all available waste disposal technologies.
- The study assumed Peel would achieve its then-current diversion target of 60% and focused on a solution for the remaining residual waste.

2011

 Regional Council adopted the findings of the study and approved the development of a 300,000 tonne per year energy from waste facility using established thermal conversation technology.

History of Energy from Waste in Peel

2012-2014

• Staff completed detailed business case, issued a Pre-qualification document, and prequalified three teams.

2015

- Regional Council adopted a new 3R's target of 75 percent
- Regional Council terminated the procurement process for the Peel Energy Recovery Centre
- Ministry of the Environment ended its Feed-in-Tariff program which historically had bought electricity from energy from waste facilities

Currently

• Peel delivers up to 10,000 tonnes per year of residual waste to Emerald Energy (former Algonquin Power facility)

Roadmap

- Advanced thermal treatment may be considered for non-recyclable plastic waste
- Mixed waste processing studies will consider conversion of non-recyclable fraction to low carbon fuel or some other engineered fuels



Thank you

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REPORT Meeting Date: 2019-02-07 Waste Management Strategic Advisory Committee

DATE: January 24, 2019

REPORT TITLE: ANAEROBIC DIGESTION FACILITY PROJECT UPDATE

FROM: Janette Smith, Commissioner of Public Works

RECOMMENDATION

That Peel's Anaerobic Digestion Facility be built at 125 Orenda Road in the City of Brampton;

And further, that staff issue the Request for Proposals for the Anaerobic Digestion Facility identifying 125 Orenda Road in the City of Brampton, as the location of the Anaerobic Digestion Facility;

And further, that the owners and occupants of properties near 7500 Danbro Crescent in the City of Mississauga be informed that the Anaerobic Digestion Facility will not be built at the subject location;

And further, that the risk assessment of 7500 Danbro Crescent in the City of Mississauga (Resolution 2018-703) not be completed.

REPORT HIGHLIGHTS

- At the December 14, 2017 meeting of Regional Council, the Strategic Terms for the Anaerobic Digestion Facility ("AD Facility") Project were approved (Resolution 2017-975) including building the AD Facility at 7500 Danbro Crescent in the City of Mississauga ("Danbro Property").
- In July 2018, staff was directed to pause progress on the Danbro Property to investigate concerns by Contract Pharmaceuticals Limited, a neighboring property, and other property listings.
- Subsequently, in July 2018 staff was made aware that the property at 125 Orenda Road in the City of Brampton ("Orenda Property"), was for sale. This property was previously identified by staff as one of the preferred properties but was not available for purchase prior to the acquisition of the Danbro Property.
- On July 30, 2018 the Interim Period Approvals Committee approved the acquisition of the Orenda Property.
- The Orenda Property was acquired on December 3, 2018.
- The Orenda Property will be identified as the site for the AD Facility in the procurement process.
- Owners and occupants of properties near 7500 Danbro Crescent will be notified that the AD Facility will not be proceeding at that location.

5.3-2 ANAEROBIC DIGESTION FACILITY PROJECT UPDATE

DISCUSSION

1. Background

a) 7500 Danbro Crescent, Mississauga

The Region-owned property at 7500 Danbro Crescent ("Danbro Property") in the City of Mississauga was acquired on September 15, 2017 to be the site for the Region of Peel's Anaerobic Digestion Facility (Resolution 2017-331).

On the November 30, 2017 Waste Management Strategic Advisory Committee meeting, the Strategic Terms for the Anaerobic Digestion Facility Project was presented and approved by Regional Council ("Council") on December 14, 2017 (Resolution 2017-975). The Danbro Property was identified as the location of the Anaerobic Digestion Facility.

The Anaerobic Digestion Facility (the "AD Facility") procurement process to secure a design-build-operate-maintain contract began with the release of a Request for Prequalification on February 7, 2018 which closed on May 11, 2018. Responses were received from seven teams including leaders in construction, operations and Anaerobic Digestion technology.

In May 2018, Contract Pharmaceuticals Limited (the "Company"), a tenant of the property at 7600 Danbro Crescent, which is the neighbouring property and shares a boundary with Danbro, contacted the Ward Councillor to express concerns regarding siting of the AD Facility.

On July 12, 2018, Regional Council adopted the recommendations in a report from the Commissioner of Public Works entitled 'Anaerobic Digestion Facility Project Update' directing and authorizing staff to investigate the Company's concerns through a risk assessment and to report the results to Council (Resolution 2018-703). The Report stated that staff would continue to monitor property listings concurrent with the risk assessment and that active consideration would be given to the potential acquisition of a suitable alternative site should one become available.

b) 125 Orenda Road, Brampton

Subsequent to the July 12, 2018 meeting of Regional Council, staff was made aware that the property at 125 Orenda Road, Brampton ("Orenda Property") was for sale. The Orenda Property is located on the southeast corner of Orenda Road and Rutherford Road in a heavy industrial neighbourhood. The Orenda Property was previously identified by staff as one of the preferred properties meeting the Council approved AD Facility site selection criteria but was not available for purchase prior to the acquisition of the Danbro Property.

On July 30, 2018 the Interim Period Approvals Committee approved the acquisition of the Orenda Property (Resolution 2018-740). Following acceptance of the conditional offer by the seller, staff completed a full scope of due diligence investigations. The Orenda Property was acquired on December 3, 2018.

The Orenda Property has the necessary site area and other features required to deliver the project in accordance with the Strategic Terms approved by Council (Resolution

5.3-3 ANAEROBIC DIGESTION FACILITY PROJECT UPDATE

2017-975). A scan of properties within approximately 500 metres of the Orenda Property identified no current uses thought to be potentially incompatible with the AD Facility.

The Orenda Property is located within the City of Brampton's Queen Street Corridor Secondary Plan (Area 36), which envisions a transition of the area to mixed uses, however the current "M2" – Industrial zoning permits waste processing and waste transfer uses including an AD Facility.

Discussions with City of Brampton staff completed as part of the due diligence investigations have indicated support for the AD Facility at the Orenda Property, conditional on the Region working with Brampton staff to ensure that it will be appropriately designed and built to meet operational needs while also being aesthetically pleasing. The desire would be for the AD Facility to be a leading example of green industrial development, thereby encouraging other green developments in the area.

The Orenda Property is located outside of the Toronto Pearson Airport Primary Bird Hazard Zone but is located within the Secondary Bird Hazard Zone. Staff has consulted with the Greater Toronto Airports Authority and Transport Canada and both agencies have stated a willingness to support the AD Facility at the Orenda Property on the condition that the Region provide satisfactory evidence that the AD Facility will not be attractive to birds, specifically:

- Design and operational measures to minimize bird attraction;
- Studies of similar sites demonstrating the effectiveness of these measures; and,
- Plans for operational measures including monitoring and abatement.

Based on an assessment of the Peel Integrated Waste Management Facility, and other anaerobic digestion facilities processing organic waste, staff is confident that this condition can be satisfied. The monitoring, studies and other work required to satisfy the condition will be completed before the Project proceeds to the site approvals stage.

2. Proposed Direction

The Request for Prequalification process for the AD Facility has been successfully completed and four teams have been prequalified. The next step is to issue the Request for Proposals to design, build, operate and maintain the AD Facility. The Request for Proposals will identify the Orenda Property as the location of the AD Facility.

Since the AD Facility is no longer to be built at 7500 Danbro Crescent, Mississauga, the risk assessment for that property (as directed by Resolution 2018-703) will not be completed and owners and occupants of nearby properties will be notified that the AD Facility will not be built at that location.

5.3-4 ANAEROBIC DIGESTION FACILITY PROJECT UPDATE

Procurement Process Timelines

Staff anticipate that the procurement process for this project will take approximately 14 months to complete. The anticipated timelines are as follows:

Identification of prequalified proponent teamsJanuary 2019Issue of Request for ProposalApril 2019Close of Request for ProposalOctober 2019Completion of Evaluation and NegotiationDecember 2019Recommendation Report to Regional CouncilEarly 2020

Staff will monitor the development and implementation of the Queen Street Corridor Secondary Plan. Staff will engage City of Brampton staff at key milestones.

Staff will initiate steps to obtain the information required to satisfy Greater Toronto Airports Authority and Transport Canada requirements.

FINANCIAL IMPLICATIONS

Sufficient funds are available in the approved budget to carry out the report's direction.

The estimated operating impact of the Anaerobic Digestion Facility, expected to be between \$8.0 million and \$10.0 million per year, which includes both the additional operating cost and the financing costs related to debt issuance, and which is equivalent to a tax increase of approximately 1 percent, has been identified in the 10-year capital plan and will be included in the future operating budgets once the AD Facility becomes operational in 2024.

CONCLUSION

The Orenda Property was acquired on December 3, 2018, and has the necessary site area and other features required to deliver the AD Facility. The Orenda Property will be identified as the site for the AD Facility in the procurement process.

Janette Smith, Commissioner of Public Works

Approved for Submission:

putte Shith

D. Szwarc, Chief Administrative Officer

For further information regarding this report, please contact Norman Lee, Director Waste Management, extension 4703, norman.lee@peelregion.ca.

Reviewed in workflow by: Financial Support Unit