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# Climate Change **Action Plan**

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## ONTARIO'S FOOD AND ORGANIC WASTE FRAMEWORK:

# **Action Plan**

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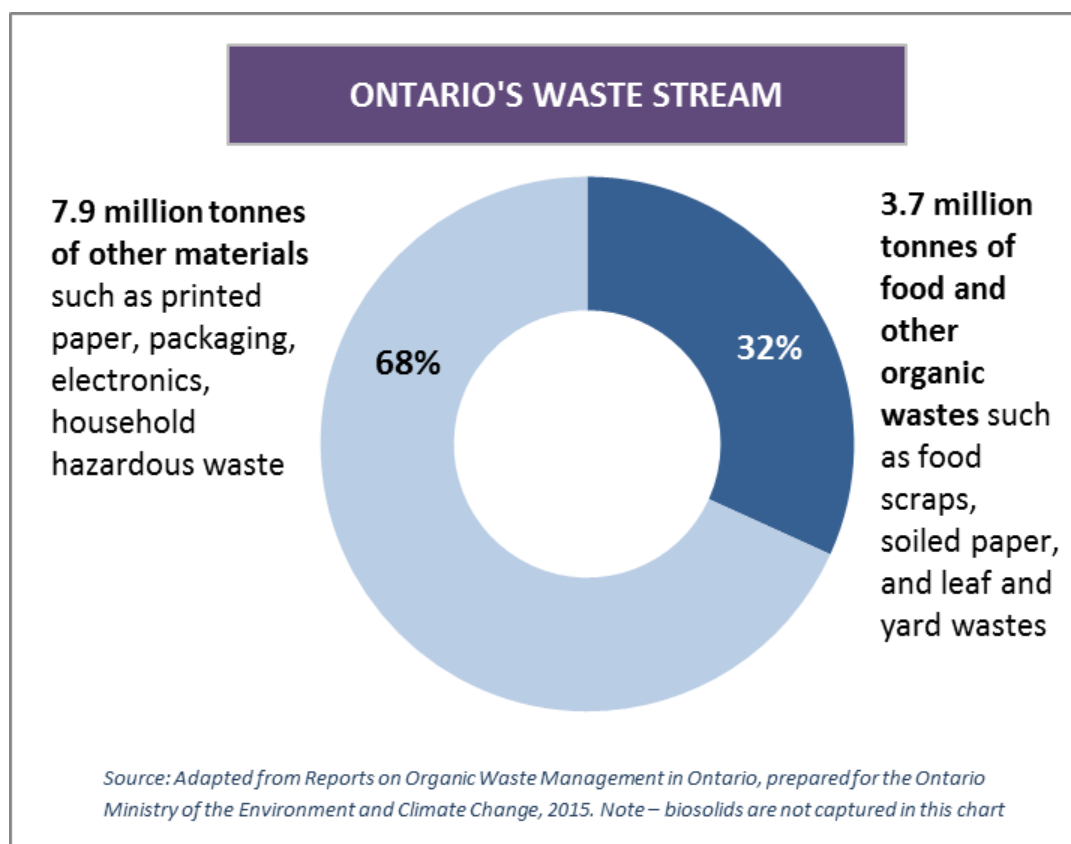
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# INTRODUCTION

The Province of Ontario is shifting to a *circular economy*<sup>\*</sup> — a system in which materials are never discarded, but reused or recycled into new products and reintegrated into the market.

Managing our resources more effectively will benefit Ontarians, our environment and the economy. It will help the province fight climate change and achieve its goals of a zero waste future with zero greenhouse gas emissions from the waste sector, as set out in the Strategy for a Waste-Free Ontario: Building the Circular Economy, released in February 2017.

Figure 1: Total Waste Generated in Ontario by Type (Estimated Tonnes)



<sup>\*</sup> Italicized terms in the Food and Organic Waste Framework are defined in the Glossary section. For non-italicized terms, the normal meaning of the word applies.

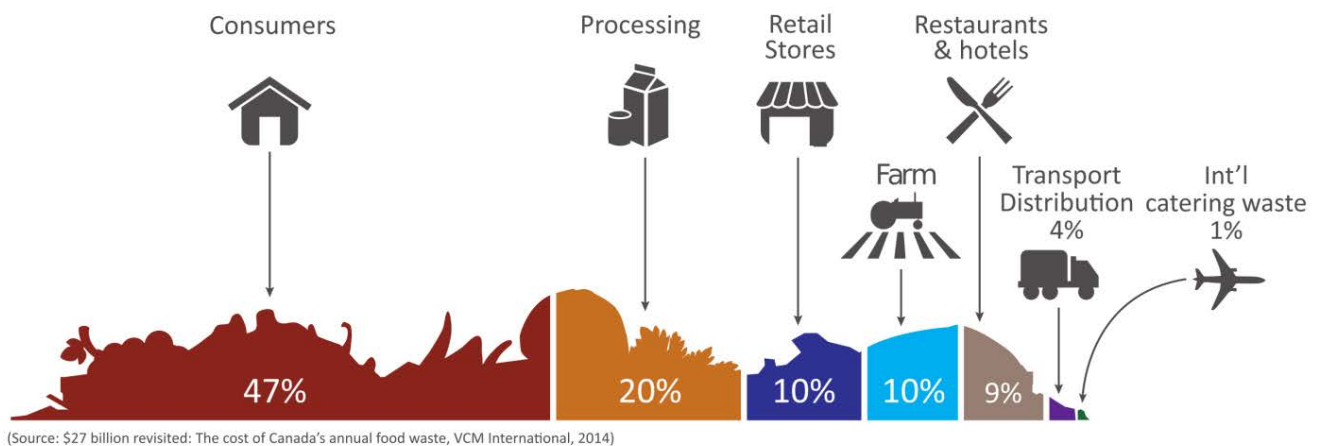
Addressing *food and organic waste* is a big part of the story. In a linear economy, large volumes of food and organic resources are wasted, with few opportunities or incentives to prevent waste before it occurs.

In 2015, Ontarians generated about 3.7 million tonnes of *food and organic waste*, which includes food that could have been eaten or repurposed, as well as unavoidable waste, such as food scraps and vegetable peelings. About 60 per cent of this was sent to landfill.<sup>1</sup>

The amount of food wasted each year is particularly staggering. In Canada, about \$31 billion worth of food is wasted annually. This equates to about \$868 worth of food wasted per person per year.<sup>2</sup>

Consumers are responsible for the largest share of *food waste*, at approximately 47 per cent of total *food waste*. The remaining *food waste* is generated along the supply chain, where food is grown, processed, transported and sold.

Figure 2: Value of Food Wasted by Sector in Canada

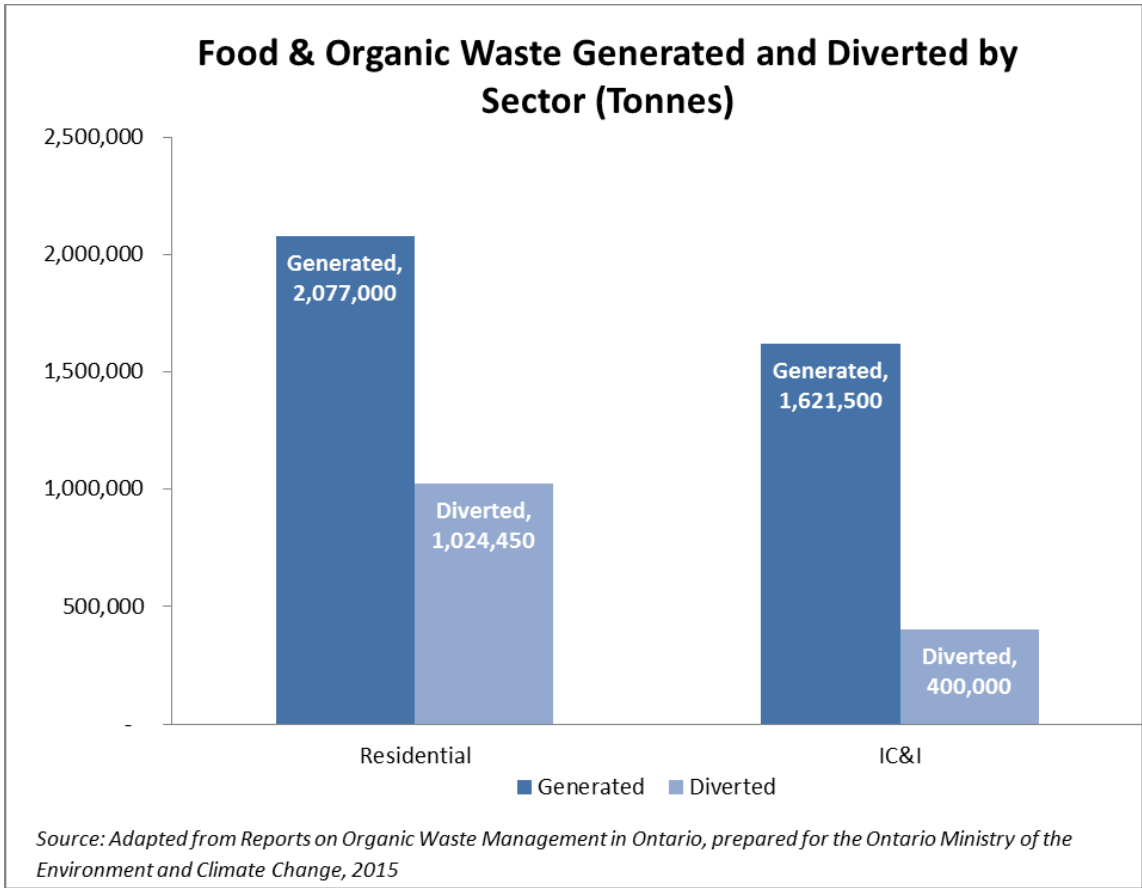


Source of graphic: [National Zero Waste Council](#), Accessed on September 26, 2017.

The residential sector generates about 55 per cent of all *food and organic waste* in Ontario. Municipalities have made good progress in keeping *food and organic waste* from being sent to disposal. In 2015, Ontario's municipalities recovered over one million tonnes of *food and organic waste* from the residential sector, including about 480,000 tonnes of green bin waste and 540,000 tonnes of leaf and yard waste.<sup>3</sup> This translates to a recovery rate of nearly 50 per cent.

The industrial, commercial and institutional (IC&I) sector generates almost 45 per cent of all *food and organic waste* in Ontario. The *food and organic waste* the IC&I sector generates is as diverse as the sector itself.

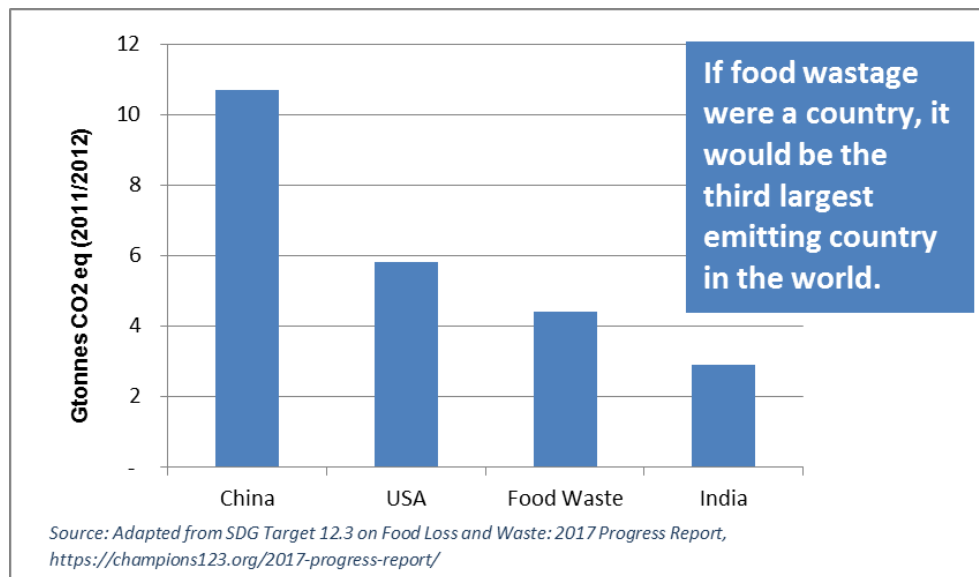
Figure 3: *Food and Organic Waste* in Ontario



Some establishments, such as offices, factories and public facilities, generate *food and organic waste* as a result of consumers, residents or employees going about their daily activities. For other sectors, *food and organic waste* is a result of their core purpose as establishments. For example, the food service, wholesale and retail sectors together account for about 72 per cent of all IC&I *food and organic waste* sent to disposal in Ontario each year.<sup>4</sup>

In 2015, Ontario’s IC&I sector collected and recovered about 400,000 tonnes of *food and organic waste*. This means that 75 per cent of *food and organic waste* generated in the IC&I sector is sent for disposal. Significant effort moving forward is needed in order to prevent, reduce and recover resources from *food and organic waste*.

Figure 4: Global Greenhouse Gas Emissions related to *Food Waste*



**There are serious environmental consequences to sending *food and organic waste* to disposal.**

It is estimated that about 2.3 million tonnes of *food and organic waste* was sent to disposal in 2015. When these valuable materials end up in a landfill, they contribute to climate change. As *food and organic waste* breaks down in an oxygen-deprived environment, it creates methane, a potent greenhouse gas. In 2015, greenhouse gas emissions from the waste sector accounted for 8.6 megatonnes of carbon dioxide, or approximately 5 per cent of Ontario's total greenhouse gas emissions from all sources.<sup>5</sup>

From farm to table, there are large amounts of land, energy, water and labour used across the food value chain. For illustrative purposes, if global *food waste* was a country, it would be the third-largest emitter of carbon dioxide equivalent, after the United States and China.<sup>6</sup>

Sending *food and organic waste* to landfill is ultimately unsustainable and puts additional strain on our environment by requiring new landfill space. Given projected population growth and economic trends, it is forecasted that Ontario will need 16 new or expanded landfills by 2050, if no progress is made to keep our resources out of landfills.<sup>7</sup>

## **Reducing *food and organic waste* has environmental and economic benefits.**

A *circular economy* presents important environmental and economic benefits.

Reducing *food and organic waste* preserves our natural resources and helps fight climate change. It also saves consumers and businesses money, while improving access to healthy and fresh food for Ontarians.

According to research conducted in the United Kingdom, every dollar spent on *food waste* prevention and reduction returns an average of \$14 in financial benefit for businesses.<sup>8</sup>

Turning *food and organic waste* into *compost* and *digestate* creates economic and environmental benefits, which can improve soil health, help reduce erosion, and improve water quality. Similarly, renewable natural gas can be produced from recovered *food and organic waste*, and their use can help reduce our dependence on greenhouse gas-intensive fossil fuels.

Collecting and recovering 1,000 tonnes of *food and organic waste* has been shown to generate 60 per cent more GDP and 40 per cent more jobs than disposal.<sup>9</sup> Current efforts to collect and recover resources from *food and organic waste* through household *food waste*, *organic waste*, and leaf and yard waste programs support approximately 1,700 direct and indirect jobs in Ontario, and generate over \$100 million in GDP.<sup>10</sup>

Further, keeping *food and organic waste* out of landfills can help us fight climate change by reducing greenhouse gas emissions. For example, doubling the province's current recovery rate of *food and organic waste* would lead to a reduction of an additional 1.1 megatonnes in greenhouse gas emissions, which would be equivalent to removing approximately 260,000 cars from Ontario roads each year, and bring us closer to our climate change goals.<sup>11</sup>

## **Keeping *food and organic waste* out of the disposal stream is a high priority for the province.**

To achieve our goals of zero waste and zero greenhouse gas emissions from the waste sector, the province will lead transformative change in how *food and organic waste* is managed.

However, in order to move Ontario towards a truly *circular economy*, efforts should not be limited to recovering nutrients and resources at the end-of-life stage. We must also prevent food from becoming waste in the first place. To build the province's *circular economy*, Ontarians have a role to play in preventing and reducing *food and organic*

waste, and collecting and reintegrating the materials that become waste into viable end-markets. To this end, both *waste reduction* and *resource recovery* activities are critical.

## Vision and Objectives

**Vision: A *circular economy* that moves towards zero *food and organic waste* and zero greenhouse gas emissions from the waste sector.**

The Food and Organic Waste Framework (“Framework”), including Part A (Food and Organic Waste Action Plan) and Part B (Food and Organic Waste Policy Statement) views *food and organic waste* as a resource rather than a waste. The Framework takes a systems approach to *food and organic waste* generation, management and recovery, recognizing that all stages of supply and production have a role to play in moving towards a *circular economy*.

In developing the Framework, the province considered a number of **key guiding principles**, including:

- Encouraging a change in behaviour to help prevent and reduce *food waste* in Ontario.
- Enhancing existing partnerships with stakeholders and building new relationships.
- Building on progress made in Ontario and learning from other leading jurisdictions.
- Collaborating across all levels of government to avoid duplication.
- Supporting an outcome-based approach.
- Using evidence to guide decision-making.
- Using regulatory and non-regulatory tools.
- Creating conditions that support sustainable end-markets.
- Increasing the use of innovative technologies.
- Enabling efficient and effective surplus food redistribution and *food waste* recovery systems.
- Recognizing the administrative impacts and costs to collect and recover organic resources.
- Increasing accountability.

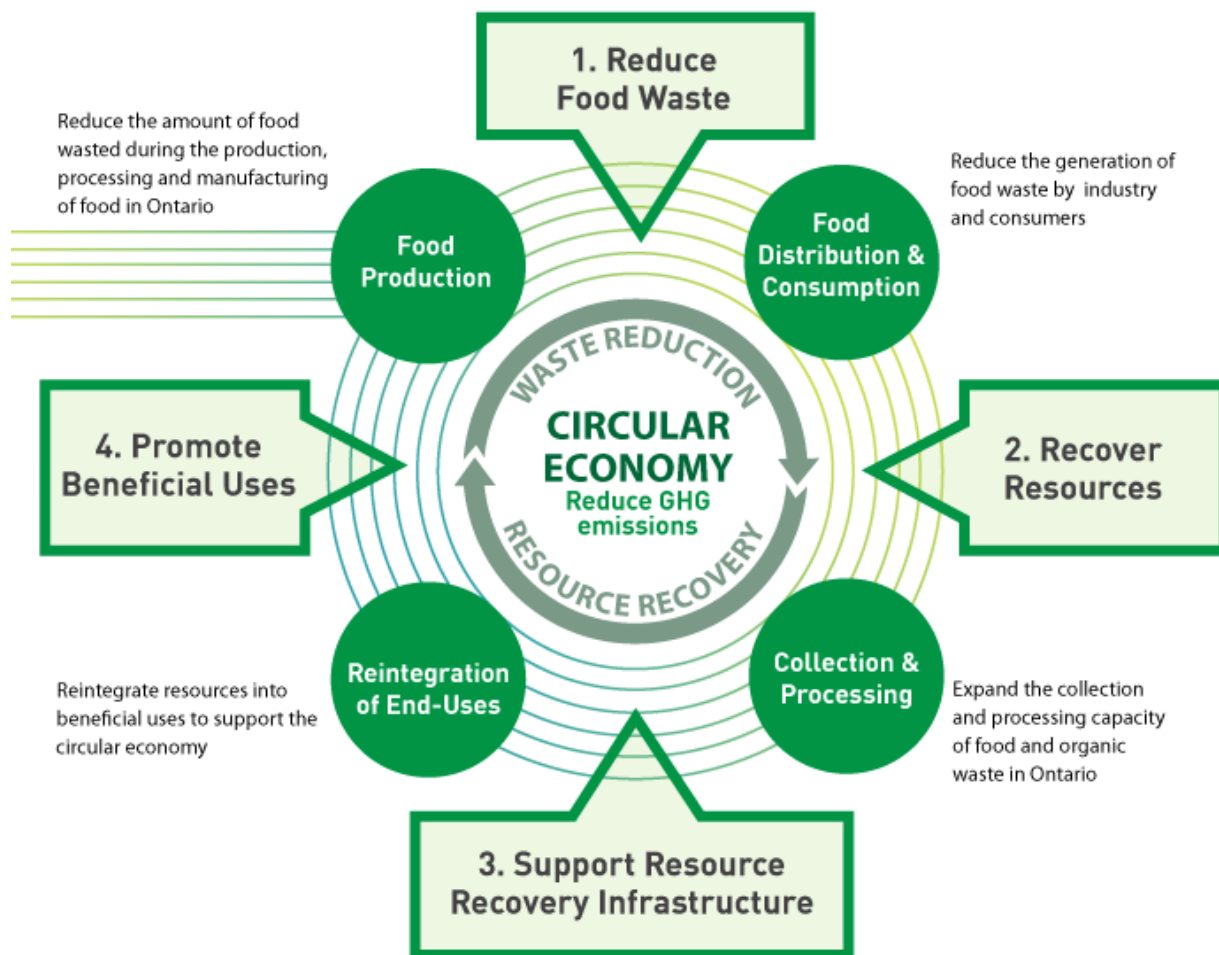
The Framework supports the vision set out in the Strategy for a Waste-Free Ontario: Building the Circular Economy, where waste is seen as a resource that can be recovered, reused and reintegrated to achieve a *circular economy*. It also supports the goals of a zero waste Ontario and zero greenhouse gas emissions from the waste sector.



The Framework strives towards the achievement of the following **objectives**:

1. **Reduce *food and organic waste***: Preventing food from becoming waste is a critical first step and has the greatest positive impact on the environment, the economy and society. Rescuing surplus food when it occurs further reduces *food waste* and ensures that edible food does not end up as waste.
2. **Recover resources from *food and organic waste***: Increasing *resource recovery*, in particular, from multi-unit residential buildings and the IC&I sector will help the province reach its goals of zero waste and zero greenhouse gas emissions from the waste sector.
3. **Support *resource recovery infrastructure***: Turning *food and organic waste* into valuable end-products recognizes the economic benefits of a *circular economy*. It is important that Ontario has sufficient infrastructure capacity and innovative technologies to process *food and organic waste* into valuable resources.
4. **Promote *beneficial uses of recovered organic resources***: Supporting end-products and sustainable markets for recovered organic resources is critical. This includes supporting *beneficial uses* which promote soil health, crop growth and enhance carbon storage. Promoting end-products like renewable natural gas and electricity can help replace carbon-intensive fossil fuels.

Figure 5: Food in a Circular Economy



This document outlines Ontario's Framework. Together with the Strategy for a Waste-Free Ontario: Building a Circular Economy and Ontario's Climate Change Action Plan, the Framework will help the province build a *circular economy* and fight climate change. The Framework consists of two complementary components:

- **Part A: Food and Organic Waste Action Plan** which outlines strategic commitments to be taken by the province to address *food and organic waste*.
- **Part B: Food and Organic Waste Policy Statement** under the Resource Recovery and Circular Economy Act, 2016, which provides direction to the province, *municipalities*, the IC&I sector, *owners* and *operators* of *resource recovery systems* and others to further the provincial interest in *waste reduction* and *resource recovery* as it relates to *food and organic waste*.

The Framework includes actions and policies that seek to prevent and reduce *food and organic waste*, rescue surplus food, collect and recover *food and organic waste*, and support *beneficial use* of recovered organic resources.

# ***FOOD AND ORGANIC WASTE ACTION PLAN***

Ministry of the Environment and Climate Change

# 1. Reduce Food Waste

## 1. Province to work with partners to develop promotion and education tools to support *food waste* prevention and reduction

Promotion and education is critical to preventing *food waste* from occurring in the first place. Preventing and reducing *food waste* also helps mitigate environmental impacts associated with food that is grown, processed, transported and offered for sale or sold to consumers – only to be thrown out.

Many Ontarians want to see increased awareness of *food waste*, ultimately leading to behavioural changes and creating a culture of *food waste* avoidance.

As such, the province will work with partners such as Foodland Ontario, *municipalities*, the Industrial, Commercial and Institutional (IC&I) sector, and non-profit organizations to develop educational tools and resources, which could be tailored for various audiences. These could include:

- Standardized promotion and education and guidance materials (e.g. best practices for meal planning and food storage, including tips on how to extend the life of food, such as freezing food where appropriate and safe).
- Demonstrating market opportunities for *imperfect produce* and culled products for producers and processors.
- Exploring opportunities to use digital tools to raise awareness and change behaviour (e.g. using social media, web-based platforms and applications that support *food waste* prevention).

The province will work with interested partners, build on existing efforts and consider any relevant national policies, initiatives or other successful *waste reduction* activities in other comparable jurisdictions.

## 2. Province to enhance and incorporate *waste reduction* and *resource recovery* activities within schools

The province intends to work with partners to raise awareness and take action to reduce *food and organic waste* and increase *resource recovery* within school communities. Potential actions could include:

- Supporting waste audits in schools which measure the amount of *food and organic waste* and related greenhouse gas emissions.

- Developing communications that will reach audiences in schools of all ages and extend into the broader community, including rural, remote and Northern communities.
- Developing and delivering workshops and skill-building sessions which bring together participants from all levels within the school community.
- Developing guidelines and training to support waste prevention and reduction in schools, especially as it relates to *food and organic waste*.

### **3. Province to work with the Government of Canada on preventing *food waste***

The province intends to work in co-operation with the Government of Canada to align efforts, where possible, on preventing and reducing *food waste* and greenhouse gas emissions from *food waste*.

The Government of Canada is currently investigating initiatives that will aim to reduce the amount of food being wasted in Canada. Environment and Climate Change Canada's Strategy on Short-Lived Climate Pollutants identifies the intent to consult on strategies to reduce avoidable *food waste* and increase *resource recovery* in order to reduce landfill methane emissions.

In addition, the Government of Canada is also responsible for establishing regulations regarding best before dates for food products. The Canadian Food Inspection Agency is currently undertaking a Food Labelling Modernization Initiative, which includes a review of date labelling formats to simplify their readability and to expand their use. Voluntary date labelling on products that are not subject to date labelling requirements is widely used. However, because the product is not required to have date labels, many different date label formats have evolved that can lead to consumer confusion. As part of the labelling initiative, the Canadian Food Inspection Agency has indicated that clear date labelling needs to be supported with consumer education to improve understanding and use of best before dates.

The province supports the Government of Canada's initiative to clarify current food labelling practices in an effort to reduce consumer confusion and ultimately *food waste*.

The province is working with the Government of Canada as it develops a proposed Food Policy for Canada which will help:

- Address *food waste*.
- Increase access to affordable food, improving health and food safety.
- Conserve soil, water, and air.
- Grow more high-quality food.

#### **4. Province to work with partners to support innovative approaches and tools to rescue surplus food**

A number of innovative initiatives have been launched by businesses, social enterprises, non-profit organizations and social agencies to rescue food which would otherwise be destined for disposal. Food service providers, retailers, wholesalers, and producers often donate fresh or prepared culturally-appropriate surplus food to social service agencies, community organizations, and social enterprises that have the capacity to receive, store, refrigerate, and prepare food. These recipients can utilize surplus food for a range of services and initiatives, such as the provision of emergency meals to those in immediate need of food, the development of value-added products, food skills training, or employment and training and job readiness programs related to the food industry.

While the ultimate aim is to have an Ontario where excess food is no longer produced or wasted, the rescue of surplus food can ensure a resource as valuable as food does not go to waste. There are existing laws and programs that support the redistribution of food in Ontario, specifically:

- The Ontario Community Food Program Donation Tax Credit for Farmers, under the Taxation Act, 2007, provides tax credits to persons that donate agricultural products to eligible programs.
- The Ontario Donation of Food Act, 1994 encourages donations, with certain limitations, and protects food donors from liability as a result of injuries caused by the consumption of donated food.

The province will work with partners across sectors to help ensure that surplus food does not become waste. This will help create opportunities for local organizations to meet immediate needs, and engage their communities on food issues. For example, through the 2017 Budget Talks process<sup>12</sup>, the province is providing \$600,000 to Second Harvest, a *food rescue organization*, to pilot a food rescue program aimed at preventing food from becoming waste. This initiative will build capacity for:

- Food related businesses to donate perishable surplus food.
- Social service organizations to safely transport fresh and nutritious food for distribution.

In addition to such efforts to make better use of surplus food, Ontario also needs to address the key drivers of individual and household food insecurity. The province is developing a Food Security Strategy with a vision where every person has dignified access to high-quality, safe, nutritious and culturally-appropriate food, to support them in leading healthy and active lives.

## **5. Province to develop food safety guidelines to support the safe donation of surplus food**

Food donation occurs where perishable and non-perishable food items are donated by individuals and organizations. Perishable food donation is most common when a grocery store or restaurant donates fresh produce or prepared foods to *food rescue organizations*.

Ensuring that surplus food is safe for human consumption is a common concern for organizations that support food rescue initiatives, such as food retailers and *food rescue organizations*. Food safety is important for perishable food donations and food may not be safe to donate if it has not been handled or stored properly.

Regulation 562 (Food Premises) made under the Health Protection and Promotion Act sets the requirements for operating a food premises, such as safe food handling and preparation, food storage, sanitation, dishwashing and hygiene practices. Food retailers and *food rescue organizations* must also follow these requirements. To support the regulation, the province is proposing to develop guidelines to promote the safe donation of surplus food.

While non-perishable food items are appropriate and most commonly associated with food donations, there is a clear need for more fresh vegetables, fruit, and protein. The guidelines could help identify which healthy food and beverages are most in demand and outline the food safety requirements for donors and for *food rescue organizations* to receive and store safely. The guidelines could also detail unacceptable food donations and examples of foods that are not considered appropriate for donation.

These guidelines, along with other ongoing efforts to support healthy food access and food security, can help improve the quality of foods available so families in need of assistance could have access to healthy and nutritious foods.

## **6. Province to support research aimed at reducing and recovering *food and organic waste***

To support the objectives of the Framework, the province will continue to support and partner with organizations on research related to *food and organic waste*. Two examples are:

- The Ministry of the Environment and Climate Change research programs and investments in innovation.
- The Ministry of Agriculture, Food and Rural Affairs (OMAFRA) research and knowledge mobilization programs which funds projects in collaboration with the agri-food sector, academic, and research institutions such as the University of Guelph Partnership.

## **7. Province to develop data collection mechanisms for measuring progress in *waste reduction and resource recovery of food and organic waste***

Reliable data is the foundation for supporting evidence-based decision-making and measuring progress. There is an opportunity to collect more information and data on *food and organic waste* to improve our current knowledge, including how much is generated and how it is managed. Filling these knowledge gaps through robust data and sound performance metrics is critical to building a better understanding of environmental and economic conditions and assessing policy and its outcomes.



Enhancing data collection will help to:

- Evaluate and assess our progress.
- Measure and focus efforts to prevent and reduce *food and organic waste* and assess effectiveness of behaviour change with regard to *food and organic waste* over time.
- Understand trends, gaps and opportunities to prevent *food waste* and increase the *resource recovery* of *food and organic waste*.
- Improve our understanding of the impacts of the province's policies, and foster continuous improvements.
- Improve transparency and accountability through greater availability of data for public use.

This is especially important in the IC&I sector, where there is limited available data to confirm the extent of current *waste reduction* and *resource recovery* efforts.

The province intends to work with stakeholders to develop mechanisms for creating baseline data related to *food and organic waste*. Once the baseline is established, it can be used to monitor and report on progress in *waste reduction* and *resource recovery*. In developing data collection mechanisms, the province would conduct consultations prior to putting any new requirements in place and would consider:

- Building on and, where appropriate, adopting relevant best practices and data collection initiatives for Ontario.
- Enhancing existing data reported by Ontario *municipalities* and *owners and operators of waste management systems*.
- Clarifying the scope of data that should be collected and the frequency of reporting.
- Considering measures to ensure confidentiality and reduce potential administrative burden on businesses.

## 2. Recover Resources from *Food and Organic Waste*

### 8. Province to amend the 3Rs Regulations to include *food and organic waste* and increase *resource recovery* across the IC&I sector

The IC&I sector presents some of the best opportunities to increase *resource recovery* and build a *circular economy*. *Resource recovery* costs in the IC&I sector are generally lower than in the residential sector. Investment in capacity related to increased *resource recovery* in these sectors has the potential to further improve economies of scale that may translate into additional opportunities in the residential sector.

Ontario's 3Rs Regulations regulate specified actors in the IC&I sector in relation to waste. The regulations target large IC&I actors and do not require the *resource recovery* of *food and organic waste*. O. Reg. 102/94 (Waste Audits and Waste Reduction Work Plans), requires the actors to prepare waste audits of the waste generated at a particular establishment. It also requires waste reduction work plans that include, to the extent reasonable, plans to reduce, reuse and recycle waste. O. Reg. 103/94 (Industrial, Commercial and Institutional Source Separation Programs) requires specified actors in the IC&I sector to develop a source separation program which includes "reasonable efforts" to ensure that separated waste is reused or recycled. Lastly, O. Reg. 104/94 (Packaging Audits and Packaging Reduction Work Plans) requires packaging audits and packaging reduction work plans.

The province intends to consult on amendments to the 3Rs Regulations to include *food and organic waste* to increase *resource recovery* across the IC&I sector. Amendments could consider:

- Different thresholds for establishments based on their sector and facility size, volume of *food and organic waste* generated and geographic population levels.
- Existing efforts by the IC&I sector to support *waste reduction* and *resource recovery*.
- The breadth of *food and organic waste* covered by the regulation.
- The appropriateness of source separation requirements for specific types of *food and organic waste*, and the role of education and awareness activities on how to source separate.
- Efforts to ensure a *beneficial use* for all recovered *food and organic waste*.
- The role of other processing technologies to recover organic resources from disposal streams for *beneficial uses*, where source separation is not feasible.

- Measures to promote the quality of recovered organic material streams, such as requirements to remove *food waste* from packaging or prohibitions on deliberate contamination of source separated streams.
- The need for data gathering and reporting to measure progress, and measures to promote accountability and transparency.
- Potential reduction of administrative burden and consideration of economic impact of new or expanded requirements on the IC&I establishments.

## 9. Province to ban *food and organic waste* from ending up in disposal sites

The province will develop, consult on, and implement a *food and organic waste* disposal ban regulation under the Environmental Protection Act. The regulation could prohibit the disposal of *food waste* and *organic waste* at waste disposal sites (e.g. landfills, incineration facilities) and support the *beneficial use* of recovered organic resources.

A disposal ban on *food and organic waste* could create new opportunities for *waste reduction*, surplus food rescue, and offer new approaches to *resource recovery* creating value at all levels of the value chain. A disposal ban could drive investment in *resource recovery systems*, create jobs and support innovation in the province. A disposal ban would significantly reduce our reliance on landfills.

In developing the proposed disposal ban the province would consider the breadth of *food and organic waste* covered and the following elements:

- What disposal sites could be impacted by the requirements including:
  - Open and active landfills.
  - Thermal treatment sites.
  - Transfer stations.
- How best to implement a disposal ban, allowing for time to build capacity, which could consider:
  - Time for implementation: The province could consider time needed to support the development of sufficient *food and organic waste* processing infrastructure and capacity to manage additional volumes being recovered before the disposal ban would come in effect.
  - Phased-in timelines and geographical application: Requirements could be phased-in over a number of years for rural, remote and Northern areas of Ontario.
  - Allowances and exemptions: Geographic-based exemptions could be considered (e.g. landfills serving rural, remote, Northern and Indigenous communities, and unorganized territories that do not have regional

processing facilities), and thresholds could be considered for compliance at disposal sites.

- Compliance and enforcement: The province has a number of compliance and enforcement tools under the Environmental Protection Act to enhance the implementation of the disposal ban, including inspection, administrative penalties, investigation and prosecution.
- To support the successful implementation of the disposal ban, the province could consider:
  - Requirements that also apply to waste generators, waste transporters, owners and operators of transfer stations and disposal sites.
  - Measures to combat potential illegal dumping of waste.

The province will conduct extensive consultations before putting in place any new requirements. Consultations will aim to address implementation and operational challenges, including the necessary time to plan for and build additional *resource recovery systems*, barriers for multi-unit residential buildings and challenges for rural, remote and Northern communities that could be impacted.

#### **10. Province to support *resource recovery of food and organic waste* in multi-unit residential buildings**

*Resource recovery* in multi-unit residential buildings in Ontario remains low, including for *food and organic waste*. Common factors for this include:

- Many buildings were built many years ago and designed to manage a single waste stream through a single “garbage” chute.
- These buildings often have limited accessibility to source separation services.
- There are costs associated with developing a multi-stream collection system, including *food waste*, *organic waste*, blue box materials, and residual garbage.

The province has heard from stakeholders that greater efforts are needed to increase *resource recovery* in multi-unit residential buildings, supported by a review of the Building Code.

The Building Code Act, 1992 and the Building Code govern the construction, renovation, demolition and change of use of buildings. The Building Code is a regulation under the act and sets out technical and administrative requirements, and also addresses building permit issuance and construction inspections. Enforcement of the Building Code is a local responsibility, primarily in the hands of local municipalities.

The province will review the Building Code to assess that the requirements for new construction enable and promote design and construction options that support the *resource recovery of food and organic waste* in multi-unit residential buildings.

#### **11. Province to develop best management practices to support effective use of public waste receptacles**

Waste receptacles can at times be confusing to use for the public. They are often designed and labelled differently resulting in confusion as to where to deposit materials. Clearer messaging can often result in improved *resource recovery* outcomes.

Although most Ontarians believe recycling is important, this intention does not always translate into action. To help close this “intention-action gap”, an approach beyond traditional educational campaigns can be beneficial. A behavioural sciences approach can help change behaviour and encourage proper recycling.

In an effort to improve the availability and quality of recycling in public spaces, the province will study best practices to support the effective use of public waste receptacles. To support the development of best practices associated with public waste receptacles, the province is working to apply knowledge and methodologies from the behavioural sciences to optimize bin labels to increase accurate recycling behaviour.

The province will examine whether a simple and inexpensive intervention such as the use of behaviourally designed labels and receptacle placement can improve the volume and quality of recovered resources. The province will consider the impacts of new labels that have incorporated behaviourally-based designs, using clear and direct messaging, modern and simple icons, and promoting deeper cognitive engagement. The placement of waste receptacles, when optimized according to analysis of public behaviours and preferences, could also help promote source separation and increase *resource recovery*. The province will make the study and best practices available for use by *municipalities* and the IC&I sector to improve recycling behaviour and the recovery of *food and organic waste*.

### 3. Support Resource Recovery Infrastructure

#### 12. Province to review existing approval processes and requirements for *resource recovery systems* using a modern regulator approach

The province will provide an effective and modern regulatory environment that aligns an activity's permission process with its environmental risk.

Ontario currently has regulatory requirements in place to ensure that *resource recovery systems* have the appropriate approvals and are following standards and practices that are protective of human health and the environment. The province intends to assess new approaches and processes to facilitate approvals, while ensuring appropriate consultation with communities and other interested stakeholders and continued protection of human health and the environment.

Potential changes and process enhancements to be explored could include, but are not limited to:

- Pre-determined setbacks and standards for small-scale and low-risk *food and organic waste* processing sites (e.g. community composting, on-site *food and organic waste* composting and processing, such as vermicomposting), with guidance for project developers and operators, as well as the ability to track and inspect sites.
- Updating the Checklist for Technical Requirements for a Complete Environmental Compliance Approval Submission for all medias (e.g. air, noise, waste – including *food and organic waste*), to reduce risk of incomplete applications.
- Support opportunities for innovative demonstration projects (e.g. waste pilot projects, pilots for innovative technology verification) to assist designing, assessing, or demonstrating the merits of a new technology. The province will consider changes to regulatory requirements associated with demonstration projects for processing *food and organic waste*, including considerations for the role of suitable small-scale and on-site processing activities.

In the 2015 Fall Economic Statement the province committed to implementing a one-year service standard for higher-risk Environmental Compliance Approval requests received after 2017, such as applications related to *food and organic waste* processing sites. This will include the development of a performance measure for meeting the service standard that recognizes the complexities of some approvals. Since the release of the 2015 Fall Economic Statement, the province has taken a number of steps to meet this commitment including:

- Development of an enhanced screening process of Environmental Compliance Approval applications to determine whether all necessary information has been submitted.
- Returning incomplete applications.
- For air and noise approvals, continue with the development of Environmental Activity and Sector Registry approvals for low-risk media applications
- Continued implementation of multi-media Environmental Compliance Approvals for site operations.

The province will continue on its path to becoming a modern regulator by using a risk-based approach focused on electronic service delivery and strategic application of resources. Further, the province will continue to work towards reducing regulatory burden and building an approval system that matches the level of regulatory oversight to the risk to the environment and human health. As such, the province will be completing a review of the approvals process for *resource recovery systems* and determine opportunities for streamlining.

### **13. Province to require standardized training for owners and operators of *resource recovery systems* that undertake composting and *anaerobic digestion***

To ensure the proper operation of *resource recovery systems*, minimize nuisance impacts and support high-quality end-products, the province will consider requiring *owners* and *operators* of *resource recovery systems* that undertake composting or *anaerobic digestion* to have training. Training would be developed based on associated environmental risks. Training requirements could be established through regulation or incorporated as a pre-requisite to obtaining or renewing an Environmental Compliance Approval.

*Resource recovery systems* that include composting or *anaerobic digestion* facilities would be required to have an “operator-in-charge” who has completed the certified training. Other operators at the facilities would be encouraged to complete the training. Training could also be developed and in some cases required for small-scale and low-risk *food and organic waste* processing sites (e.g. community composting, on-site *organic waste* composting and processing).

The province would establish the basic elements of the training curriculum, while the design and delivery of the training program could be undertaken by a third party. Specific components of the training program could include organic processing system components, maintenance, emergency operations, and applicable standards for end-products.

#### **14. Province to review its *D-Series Land Use Compatibility Guidelines* to support the development of *resource recovery systems***

Processing capacity is the critical link in supporting widespread *resource recovery*. When improperly sited or designed, however, *resource recovery systems* can create land use conflicts between neighbouring land uses (e.g. residential areas) that create issues and can hinder *resource recovery*.

While supporting the development of additional *resource recovery* capacity, the province recognizes that further considerations are needed to avoid nuisance and negative impacts on nearby communities as part of the development and implementation of the Framework.

The *D-Series Land Use Compatibility Guidelines* provides direction for land use planning authorities on how to decide whether new development or land uses are appropriate to protect people and the environment. These guidelines identify considerations and criteria to influence buffers, separation distances and other control measures for land use planning proposals to prevent or minimize *adverse effects* from the encroachment of incompatible land uses.

The province will review its *D-Series Land Use Compatibility Guidelines* to ensure that land use planning guidance is up-to-date and to provide further clarity to help determine compatibility of major *resource recovery systems* with adjacent land uses during the planning stages of a facility.



A review of the *D-Series Land Use Compatibility Guidelines* could include:

- Information on how to identify, review and assess the compatibility and proximity of sensitive land uses to *food and organic waste* facilities.
- Consideration of relevant influence areas, buffers and setbacks for *food and organic waste* processes, such as composting, *anaerobic digestion*, rendering, pyrolysis and other treatment.
- Requirements for studies and feasibility analyses to identify and address nuisance impacts as they relate to organic-related odour issues.

Reviewing and considering revisions to the *D-Series Land Use Compatibility Guidelines* will help provide the province, *municipalities*, other planning authorities and *owners* and *operators* of *resource recovery systems* with modern land use planning guidance that reflects the opportunities and pressures faced when siting *resource recovery systems* in Ontario. Revised guidance will assist in the appropriate siting and design for additional *resource recovery systems* needed to ensure that any disposal ban on *food and organic waste* can be successfully implemented.

The review of the *D-Series Land Use Compatibility Guidelines* will build on the land use planning guidance provided in the Food and Organic Waste Policy Statement, as well as the Facility Approval and Siting Considerations included in *Ontario's Compost Quality Standards* and the *Guideline for the Production of Compost in Ontario*.

## 4. Promote *Beneficial Uses*

### 15. Province to support healthy soils with strong standards and clear requirements for the use of soil amendments, while protecting the environment and human health

Given the right conditions, *food and organic waste* can be recovered and reintegrated into the economy. For this to happen, greater effort is needed to support the development of viable and sustainable markets for the end-products created by *resource recovery systems*.

#### A. Province to review regulatory approaches related to soil amendments

Following appropriate *resource recovery* processes, *food and organic waste* can be used to make valuable end-products. Soil amendments that include *compost*, *digestate* (from *anaerobic digestion*) and biochar (from pyrolysis) can be applied to land by farmers, residents, *municipalities* and landscaping and horticulture industries.

The province recognizes that soil amendments need to be suitable for *beneficial uses*, particularly for farms, to support the long-term agricultural productivity of the land and the production of nutritious food for generations to come. The province's existing standards and requirements for production and use of *compost* and the nutrient management framework for the land application of *biosolids* aim to ensure that soil amendments do not pose any negative impacts to the environment or human health.

*Ontario's Compost Quality Standards* and the *Guideline for the Production of Compost in Ontario* enable the composting of a broad range of materials and provide guidance for *compost* facility operators, while protecting the environment and human health. Under *Ontario's Compost Quality Standards*, there are three categories of *compost* (AA, A and B), and each have quality standards for metals, pathogens, foreign matter and maturity. *Compost* meeting the AA and A standards is exempt from provincial approvals for transport and use. Other organic resources can be applied to land through an Environmental Compliance Approval or as a Non-Agricultural Source Material on agricultural land, for which a plan may be required.

In addition to satisfying the province's quality standards and restrictions on use, all *compost* end-products sold in the Canadian marketplace must also meet the safety, microbial quality, efficacy, and labelling requirements in the federal Fertilizers Act and regulations, administered by the Canadian Food Inspection Agency.

To support continuous improvement, the province is proposing to review approaches and guidance related to soil amendments, with a focus on addressing specific issues raised by stakeholders, while following best-practices and protecting the environment and human health. Risk-based quality standards will support consistent and safe end-products that have a *beneficial use*. As additional *food and organic waste* processing capacity is developed in Ontario, there will be a need to expand and diversify the end-uses of soil amendments to support demand.

### **B. Province to promote the on and off-farm end-use of soil amendments made from recovered organic resources**

The province will work to further promote the *beneficial use* of soil amendments, such as *compost*, *digestate* and *biosolids*, where appropriate, for site reclamation and soil remediation activities. The province is already implementing the use of soil amendments to remediate sites through Environmental Compliance Approvals (e.g. mine reclamation activities), and will continue to promote the use of soil amendments for this use going forward.

The province will also work with stakeholders (e.g. conservation authorities) to provide information on best practices related to the use of soil amendments, including information for end-users on how *compost*, blended and manufactured soils can be used (e.g. types of crops, landscaping activities, horticulture), and when they should be used (i.e. before planting). The aim of this action is to support demand for soil amendments, through the availability of resources and tools to make informed decisions. The province's proposed excess soil reuse regulation would align with this direction.

Further, in conjunction with other jurisdictions and partners, the province will work towards consistent management of future soil blending and manufacturing activities, including the manufacture of soils and soil blends using organic soil amendments and other recycled materials. Soil blending to improve soil characteristics using added *compost*, *digestate*, or other soil amendments on-site is being done by conservation authorities and development sites for activities such as tree planting, which could enhance soil moisture holding capacity and help improve soil health.

To support this activity, the province will examine the need for new standards for mixing excess soil with soil amendments such as *compost* to create new end-products and to promote the *beneficial use* of blended materials, for a variety of uses.

### **C. Province to promote the use of soil amendments as part of the Agricultural Soil Health and Conservation Strategy**

The province, in collaboration with its soil health partners, is developing an Agricultural Soil Health and Conservation Strategy for Ontario, which proposes actions to achieve the vision, goals, objectives and concepts presented in the 'Sustaining Ontario's Agricultural Soils: Towards a Shared Vision' discussion document.

Globally, and in Ontario, agricultural soil is at risk from many threats:

- More demands on soils to grow food and bioproducts as a result of increasing global population.
- Adherence to older cropping, tillage and other practices that can degrade soil health.
- Focus on short-term economic gain from cultivated land rather than considering a balanced approach, with longer-term soil health investments and benefits.
- More frequent extreme weather and flooding due to climate change, which can speed up soil degradation.

As a result, many of Ontario's valuable soils are estimated to be losing organic matter, and are at risk of being degraded and eroded. That's why the province along with farm organizations, agri-food businesses, academia, conservation organizations and the Government of Canada are working together to develop this Agricultural Soil Health and Conservation Strategy. It will provide farmers, citizens and the province with a roadmap for protecting and improving agricultural soil so it can remain productive well into the future.

One of the basic principles for improving soil health is to increase soil organic matter, through the application of manure, *compost*, *digestate* and other soil amendments. It not only builds soil carbon, but also increases biological activity and soil structure, which provide a *beneficial use* to crop production and the environment. However, such organic soil amendments are often not available where they are needed at an affordable cost. The Agricultural Soil Health and Conservation Strategy is expected to include recommendations for building soil organic matter, as well as enabling actions which will support the objectives and actions in the Framework.

### **16. Province to support development of renewable natural gas including consideration for linkages to food and organic waste**

The province will support markets for biogas through actions to fight climate change. The Climate Change Action Plan provides financial support to encourage the use of

cleaner, renewable natural gas and other low-carbon substitutes in the industrial, transportation and building sectors.

*Anaerobic digestion* is a process that creates biogas and *digestate* from organic materials like *food and organic waste*, including manure. The biogas created consists primarily of methane and is considered a renewable form of energy that can be used to generate electricity or produce renewable natural gas.

Natural gas for its part is comprised largely of methane. This makes any *food and organic waste* a potential source of methane for renewable natural gas. This renewable natural gas can be directly substituted for conventional fossil-based natural gas.

In 2016, Ontarians consumed over 24.5 billion cubic meters of natural gas in 2016, resulting in over 46 megatonnes of carbon dioxide equivalent emissions. Renewable natural gas is a low-carbon fuel that does not add new carbon to the atmosphere. In fact, renewable natural gas can reduce our greenhouse gas emissions when substituted for fossil natural gas and is compatible with conventional natural gas infrastructure and equipment.

#### **17. Province to support green procurement practices, including the use of end-products, such as *compost* and *digestate***

As increased *food and organic waste* processing is developed, there needs to be a corresponding increase in the availability of markets for the processed end-products such as *compost* and *digestate*.

As signalled in the Strategy for a Waste-Free Ontario: Building the Circular Economy, the province will continue to use its existing procurement policies and practices to encourage and support the purchasing of green products and services, where applicable, including end-products made from recovered organic resources.

The province will lead by example and continue to use its existing procurement practices to support the purchasing of green products and services, where applicable, including end-products made from recovered organic resources in a variety of end-uses. In addition, the province will continue to review its existing procurement policies to ensure procurement rules enable the achievement of government objectives.

## 5. Timelines

### Timelines for Action Plan

The following table outlines implementation **timelines** for the Action Plan:

ACTION		CURRENTLY UNDERWAY	SHORT-TERM (2018-2020)	LONG-TERM (2021 – beyond)
1.	Province to work with partners to develop promotion and education tools to support <i>food waste</i> prevention and reduction		X	
2.	Province to enhance and incorporate <i>waste reduction</i> and <i>resource recovery</i> activities within schools		X	
3.	Province to work with the Government of Canada on preventing <i>food waste</i>	X		
4.	Province to work with partners to support innovative approaches and tools to rescue surplus food	X	X	
5.	Province to develop food safety guidelines to support the safe donation of surplus food		X	
6.	Province to support research aimed at reducing and recovering <i>food and organic waste</i>	X	X	
7.	Province to develop data collection mechanisms for measuring progress in <i>waste reduction</i> and <i>resource recovery</i> of <i>food and organic waste</i>		X	
8.	Province to amend the 3Rs Regulations to include <i>food and organic waste</i> and increase <i>resource recovery</i> across the IC&I sector		X	X

ACTION	CURRENTLY UNDERWAY	SHORT-TERM (2018-2020)	LONG-TERM (2021 – beyond)
9. Province to ban <i>food and organic waste</i> from ending up in disposal sites		X (consulting 2018-2019)	X (phased-in beginning 2022)
10. Province to support <i>resource recovery</i> of <i>food and organic waste</i> in multi-unit residential buildings			X
11. Province to develop best management practices to support effective use of public waste receptacles		X	
12. Province to review existing approval processes and requirements for <i>resource recovery systems</i> using a modern regulator approach		X	
13. Province to require standardized training for <i>owners</i> and <i>operators</i> of <i>resource recovery systems</i> that undertake composting and <i>anaerobic digestion</i>		X	
14. Province to review its <i>D-Series Land Use Compatibility Guidelines</i> to support the development of <i>resource recovery systems</i>		X	
15. Province to support healthy soils with strong standards and clear requirements for the use of soil amendments, while protecting the environment and human health	X		
A. Province to review regulatory approaches related to soil amendments		X	
B. Province to promote the on and off-farm end-use of soil amendments made from recovered organic resources		X	X

ACTION	CURRENTLY UNDERWAY	SHORT-TERM (2018-2020)	LONG-TERM (2021 – beyond)
<b>C.</b> Province to promote the use of soil amendments as part of the Agricultural Soil Health and Conservation Strategy		X	X
<b>16.</b> Province to support development of renewable natural gas including consideration for linkages to <i>food and organic waste</i>		X	X
<b>17.</b> Province to support green procurement practices, including the use of end-products, such as <i>compost</i> and <i>digestate</i>	X	X	



# MEASURING SUCCESS

Success will depend on the ability to gather data and assess and measure progress. As a province, we need to know how resources are being used, managed and reintegrated into the economy to set priorities and track our success.

To monitor and evaluate progress, the province has identified a number of performance measures, including:

## **Move towards zero *food and organic waste***

- Reduce *food and organic waste* sent to disposal – as demonstrated by declining tonnes or volume of *food and organic waste* sent to disposal supporting the province’s visionary goal of zero waste – aimed at preventing the need for traditional end-of-life waste management solutions.
- Reduce *food waste* across the food supply chain – as demonstrated by *waste reduction* across the IC&I sector.

## **Reduce greenhouse gas emissions from *food and organic waste***

- Reduce greenhouse gas emissions from *food and organic waste* – as demonstrated by declining tonnes of greenhouse gas emissions from the waste sector (contributing to the overall provincial visionary goal of zero greenhouse gas emissions from the waste sector).

## **Increase *resource recovery***

- Increase *resource recovery* of *food and organic waste*:
  - The residential sector, as measured by increased access to collection services, including those for single-family dwellings and *multi-unit residential buildings*; and
  - The IC&I sector, as measured by increased *resource recovery* of *food and organic waste* across this sector.

## **Support evidence-based decision-making**

- Improve understanding of *food and organic waste* and its value to improve decision-making – as demonstrated by an increase in available data and the timely collection and reporting of this data; along with support for academic research.

## **Raise awareness among stakeholders and the public**

- As demonstrated by the development of tools to support keeping *food and organic waste* out of disposal, and the implementation of learning activities for children in schools.

**Ensure adequate *resource recovery* capacity for *food and organic waste***

- As demonstrated by the additional *resource recovery* capacity to meet the demand of increased *food and organic waste* being recovered.

# GLOSSARY

*Adverse effect:* means one or more of:

- i. impairment of the quality of the natural environment for any use that can be made of it,
- ii. injury or damage to property or to plant or animal life,
- iii. harm or material discomfort to any person,
- iv. an *adverse effect* on the health of any person,
- v. impairment of the safety of any person,
- vi. rendering any property or plant or animal life unfit for human use,
- vii. loss of enjoyment of normal use of property, and
- viii. interference with the normal conduct of business.

(As defined in the *D-Series Land Use Compatibility Guidelines*.)

*Anaerobic digestion:* means the decomposition of organic matter by bacteria in an oxygen-limiting environment (as defined in Regulation 347 under the Environmental Protection Act). The biogas generated through *anaerobic digestion* can be used to fuel electrical generators, or it can be further processed into renewable natural gas. The *digestate* may also be used as a soil amendment that is most commonly used in agricultural operations.

*Beneficial use:* means the use of organic resources recovered from *food and organic waste* to deliver nutrients, organic matter, or moisture to improve soil fertility, soil structure or to help build soils where they do not exist. Use of recovered organic resources for landfill cover is not considered a *beneficial use*. The generation of energy or alternative fuels from recovered *food and organic waste* is not considered a *beneficial use*. The recovery of nutrients, such as *digestate* from *anaerobic digestion*, is considered a *beneficial use* where the *digestate* is used to build new or improve existing soils.

*Biosolids:* means the residue from a sewage treatment works following treatment of sewage and removal of effluent.

*Circular economy:* means an economy in which participants strive to minimize the use of raw materials, to maximize the useful life of materials and other resources through *resource recovery*, and to minimize waste generated at the end of life of products and packaging (as defined in the Resource Recovery and Circular Economy Act, 2016).

*Compost*: means waste treated by aerobic decomposition of organic matter by bacterial action for the production of stabilized humus. *Compost* may be used as a soil amendment that is most commonly used in agricultural, horticultural and landscaping operations, as well as by residents in home gardens.

*Compostable products and packaging*: means products and packaging made that are intended to be managed at end of life through composting, *anaerobic digestion*, or other processes that result in decomposition by bacteria or other living organisms.

*D-Series Land Use Compatibility Guidelines*: means the environmental land use planning guides which provide environmental considerations and requirements for industrial land use, sensitive lands, sewage and water services, and private wells (<https://www.ontario.ca/page/environmental-land-use-planning-guides>).

*Digestate*: means the solid or liquid material that results from the treatment of *anaerobic digestion* materials in a mixed *anaerobic digestion* facility.

*Director*: means a Director appointed under section 5 of the Environmental Protection Act for the purposes of s.20.3 of the Act.

*Educational Institution*: means an operator of an educational institution to which section 14 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Food and organic waste*: has the same meaning of *food waste* and *organic waste* when used together.

*Food rescue organization*: means a non-profit organization that rescues, gleans, transports, prepares and distributes excess or surplus food from food wholesalers, food processors, food retailers, grocery stores and restaurants.

*Food waste*: means the edible parts of plants and animals that are produced or harvested but that are not ultimately consumed.

*Guideline for the Production of Compost in Ontario*: means the guideline developed by the Ministry of the Environment and Climate Change to assist proponents of composting facilities, ministry staff and others in the siting, design, and approval of composting facilities. It also provides guidance on the production of compost based on engineering principles, practical experience, and current legislation, to protect public health and the environment (<https://www.ontario.ca/page/guideline-production-compost-ontario>).

*Hospital*: means an operator of a public hospital to which section 13 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Hotel and motel:* means an owner of a hotel or motel to which section 12 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Imperfect produce:* refers to whole and fresh fruits and vegetables that do not meet conventional grade and other non-food safety standards set by packers or retailers whether due to the size, shape or appearance of the item (for example, the presence of blemishes or discolouration), but are otherwise safe to consume and are not affected by rot, mold, insect damage or other contamination.

*Large manufacturing establishment:* means an owner or operator of a large manufacturing establishment to which section 15 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Local municipality:* means a *single-tier municipality* or a *lower-tier municipality* (as defined in the Municipal Act, 2001).

*Lower-tier municipality:* means a municipality that forms part of an *upper-tier municipality* for municipal purposes (as defined in the Municipal Act, 2001).

*Mixed waste processing:* means *resource recovery* processes that recover *food waste* or *organic waste* from waste streams where *food and organic waste* is co-mingled with other wastes.

*Multi-unit residential building:* means an owner of a building to which section 10 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Municipalities:* are geographic areas whose inhabitants are incorporated (as defined in the Municipal Act, 2001).

*Northern Ontario:* means the territorial districts of Algoma, Cochrane, Kenora, Manitoulin, Nipissing, Parry Sound, Rainy River, Sudbury, Thunder Bay and Timiskaming and The Regional Municipality of Sudbury (as defined in O. Reg. 101/94 under the Environmental Protection Act).

*Office building:* means an owner of a building or group of buildings to which section 9 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Ontario's Compost Quality Standards:* means standards developed by the Ministry of the Environment and Climate Change for aerobic composting of organic waste

materials, supported by regulatory amendments (<https://www.ontario.ca/page/ontario-compost-quality-standards>).

*Operator*: means the person in occupation or having the charge, management or control of a *resource recovery system*.

*Organic waste*: means inedible parts of plants and animals, as well as other organic material that may be processed along with *food waste*. Examples of *organic waste* can include but are not limited to leaf and yard waste, *compostable products and packaging*, soiled paper, diapers and pet waste.

*Owner*: means a person that is responsible for the establishment or operation of a *resource recovery system*, or the person that owns the land in or on which a waste disposal site is located.

*Resource recovery*: means the extraction of useful materials or other resources from things that might otherwise be waste, including through reuse, recycling, reintegration, regeneration or other activities. This includes the collection, handling, and processing of *food and organic waste* for *beneficial uses*. Although energy from waste and alternative fuels are permitted as waste management options, these methods are not considered *resource recovery*. The recovery of nutrients, such as *digestate* from *anaerobic digestion*, is considered *resource recovery*.

*Resource recovery system*: means any part of a *waste management system* that collects, handles, transports, stores or processes waste for *resource recovery* purposes, but does not include disposal.

*Restaurant*: means an owner of a restaurant to which section 11 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Retail shopping complex*: means an owner of a complex to which section 6 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Retail shopping establishment*: means an owner of an establishment to which section 5 of O. Reg. 103/94 under the Environmental Protection Act applies as it read immediately before the day this Policy Statement was issued.

*Single-tier municipality*: means a municipality, other than an *upper-tier municipality*, that does not form part of an *upper-tier municipality* for municipal purposes (as defined in the Municipal Act, 2001).

*Southern Ontario*: means the parts of Ontario other than *Northern Ontario* (as defined in O. Reg. 101/94 under the Environmental Protection Act).

*Upper-tier municipality*: means a *municipality* of which two or more *lower-tier municipalities* form part for municipal purposes (as defined in the Municipal Act, 2001).

*Urban settlement areas*: means urban areas within *municipalities* (such as cities, towns, and villages) that are built up areas where development is concentrated and which have a mix of land uses.

*Waste management systems*: means any facilities or equipment used in, and any operations carried out for the management of waste including the collection, handling, transportation, storage, processing or disposal of waste, and may include one or more waste disposal sites.

*Waste reduction*: means the minimization of waste generated at the end of life of products or packaging, including through activities related to design, manufacturing and material use (as defined in the Resource Recovery and Circular Economy Act, 2016).

## ENDNOTES

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<sup>1</sup> Reports on Organic Waste Management in Ontario, prepared for the Ontario Ministry of the Environment and Climate Change, 2015.

<sup>2</sup> VCMI, Food Waste in Canada - \$27 Billion Revisited, 2014

<sup>3</sup> Resource Productivity and Recovery Authority, [2015 Datacall](#)

<sup>4</sup> Reports on Organic Waste Management in Ontario, prepared for the Ontario Ministry of the Environment and Climate Change, 2015

<sup>5</sup> National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada, Part 3, Environment and Climate Change Canada

<sup>6</sup> [Food Wastage Footprint and Climate Change, Food and Agriculture Organization of the United Nations, 2015](#)

<sup>7</sup> Ministry of the Environment and Climate Change, 2017

<sup>8</sup> [The Business Case for Reducing Food Loss and Waste, Champions 12.3, March 2017](#)

<sup>9</sup> Reports on Organic Waste Management in Ontario, prepared for the Ontario Ministry of the Environment and Climate Change, 2015

<sup>10</sup> Reports on Organic Waste Management in Ontario, prepared for the Ontario Ministry of the Environment and Climate Change, 2015

<sup>11</sup> Ministry of the Environment and Climate Change, 2017

<sup>12</sup> [2017 Ontario Budget](#)