STRATEGY*matters* INC.

Technical Memorandum No.1
Single-use and Takeaway Reduction Strategies

TABLE OF CONTENTS

PURPOSE **2**

EXECUTIVE SUMMARY **3**

REGIONAL, NATIONAL & PROVINCIAL GOVERNMENTS **4**

THE EUROPEAN UNION 4
THE UNITED KINGDOM 9
FRANCE 17
CANADA 20
ONTARIO 24

MUNICIPAL GOVERNMENTS **30**

VANCOUVER, CANADA 30
OTHER CANADIAN MUNICIPALITIES 33
BERKELEY, CALIFORNIA 37
NEW YORK CITY, NEW YORK 42
SANTA CRUZ COUNTY, CALIFORNIA 44
SAN FRANCISCO, CALIFORNIA 47
PORTLAND, OREGON 48
SAN DIEGO, CALIFORNIA 49
OTHER US INITIATIVES 52

EUROPEAN GOVERNMENT-LED INITIATIVES **54**

SIGNIFICANT CORPORATE INITIATIVES **57**

UNIVERSITY INITIATIVES **60**

OTHER INITIATIVES **61**

NON-PROFIT INITIATIVES 61
CAMPAIGNS 64
OTHER NATIONAL & REGIONAL GOVERNMENT INITIATIVES 66
INDIA *66*
COSTA RICA *67*
TAIWAN *68*
MUNICIPAL GOVERNMENTS 68
BUSINESSES 69

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PURPOSE

Task 1 of the agreed scope of work for informing *Single-use and Takeaway Items Reduction Strategies* is intended to provide City of Toronto staff with a broad overview of reduction initiatives being implemented or proposed by national, regional and municipal governments, by producers and businesses, and by not-for-profit organizations and non-governmental organizations (NGOs).

For the purposes of this project, the reduction of single-use and takeaway items is broadly defined to include mechanisms intended to:

- Reduce the distribution and use of single-use products and packaging;
- Reduce the quantities of these materials leaking uncontrolled into the environment; and
- Reduce the quantities of these materials entering into Toronto's solid waste management systems.

At least 112 countries, states or cities are reported to have imposed some form of ban on single-use plastics. These bans vary greatly and include bans that:

- Target a single plastic product (*e.g.*, bags, straws, etc.) or a wider range of products;
- Focus on a limited range of generators (*e.g.*, city property only), as well as others that may apply across entire jurisdictions; and
- May be considered simply aspirational goals or be supported by potentially strong enforcement powers.

The profiles included in this report provide only a partial overview of the broad range of reduction initiatives already underway internationally or that are in the early stages of policy making and implementation. More extensive information is provided for those jurisdictions and initiatives considered to be leaders in regard to policy, regulation and implementation or which demonstrate innovative approaches potentially applicable to Toronto. Briefer summaries (known to be incomplete) of actions being taken in a wide array of other jurisdictions and many other initiatives for which there is limited information at this time is also provided in this technical memorandum.

The broad range of examples provided will help to:

- Demonstrate to Toronto stakeholders that the City's reduction efforts consider and are consistent with similar policies and actions being taken in other jurisdictions;
- Provide details on innovative ideas and approaches to help the City identify those potentially applicable to Toronto; and
- Provide additional insight on how major producers are responding to reduction policy initiatives in other jurisdictions.

City staff has identified the following priorities for more detailed analysis:

- Significant government policy and regulatory initiatives which, if implemented vigorously, have the potential to promote reduction of these items. The examples included provide the City with insights into some of the boldest public policy thinking on this issue to date.
- Municipalities that have already implemented or are proposing to implement reduction policies and initiatives specifically targeted at single-use and takeaway items.

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- Voluntary initiatives by industry, entrepreneurs and NGOs that have already been implemented, or are in the planning or testing phase, specifically targeted at single-use and takeaway items.

While related initiatives intended to increase the recovery and recycling of these items are not the focus of this project, some noteworthy examples are referenced briefly where these are:

- Closely integrated with the reduction initiatives; and
- Where they also have the potential to significantly divert targeted single-use and takeaway items from entering municipal waste management systems.

EXECUTIVE SUMMARY

Public concern with the environmental and health impacts of plastic waste in general, and with the growth in the generation of single-use and takeaway packaging, in particular, is sparking an upsurge in government, business and NGOs activities to stem the tide.

Regional, national and provincial levels of government are developing and implementing more aggressive policies and regulations, most of which still focus primarily on increasing the recycling of, and recovering of value from, used products and packaging. There are increasing signs, however, that policy makers are shifting their attention to minimizing the distribution and use of single-use disposable items. Notably, these policies are most advanced in countries where strong regulatory frameworks already exist to make producers fully responsible for the management of waste products and packaging that they supply to the market.

Many of the initiatives to reduce single-use disposable waste items at the source are still in the development and early implementation phases (except for the more widespread adoption of policies targeted at plastic carrier bags and, increasingly, polystyrene food service packaging). As a result, there is little hard data available on their effectiveness in reducing the generation and use of these items. However, the trajectory of developments is clear. Examples of these initiatives can now be found around the globe.

Businesses, led by leading multi-national consumer products companies, are also making significant commitments to reducing the use of plastics in their products and to increasing the use of recyclable, reusable or compostable materials. In some cases, it is hoped that these actions will obviate the need for government regulation while in others these actions can be traced directly to increasingly strong corporate commitments to promoting a more circular economy.

As always, effective advocacy campaigns led by civil society groups and clever entrepreneurs introducing innovative alternative products and processes that generate less waste are pushing governments in the direction of taking action to reduce single-use disposable waste.

This report provides a representative sample of the quickening pace of innovation.

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REGIONAL, NATIONAL & PROVINCIAL GOVERNMENTS

The EUROPEAN UNION

Overview

The European Union (EU) is currently 28 member states with a total population of 508 million and ranks as the second-largest economy by gross domestic product. The EU is widely regarded as the leading jurisdiction for progressive waste management policies and the birthplace of Extended Producer Responsibility (EPR) polices and legislation. EU innovations in waste management and EPR are being adopted or considered around the globe.

In May 2018, the European Commission proposed legislation for a Directive on the reduction of the impact of certain plastic products on the environment. In October 2018, the Committee on the Environment, Public Health and Food Safety (ENVI) of the European Parliament further strengthened this proposal before forwarding it to the European Council (made up of the heads of state or government of the EU member states, along with the President of the European Council and the President of the European Commission, and which defines the European Union's overall political direction and priorities).

Current Status

The European Parliament approved the Directive on March 27, 2019.

Policy Approach

An EU Directive is a legal instrument requiring member states to transpose the requirements of the Directive into national legislation.

Rationale

As stated in the Commission proposal: "*The measures laid down in this Directive should fully pursue circular approaches that prioritise safe, non-toxic re-usable products without any hazardous substances and re-use systems over any single-use product. All measures should, first and foremost, aim at a reduction of waste generated, and promote the prevention of waste as this is at the pinnacle of the waste hierarchy enshrined in Article 4 of Directive 2008/98/EC of the European Parliament and of the Council. Since any single-use product is prone to have a negative impact on climate or the environment due its short life cycle, priority needs to be given to prevention and re-use of products which can deliver high savings of CO2 and of valuable raw materials. This Directive will contribute to achieve the United Nations Sustainable Development Goal 1235 to ensure sustainable consumption and production patterns*."

Objectives

"*The objective of this Directive is to prevent and reduce the impact of certain plastic products on the environment, in particular the aquatic environment, and on human health as well as to promote the transition to a circular economy with innovative business models, products and materials, thus also contributing to the efficient functioning of the internal market*."

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Key Drivers

This initiative flows from the EU Circular Economy package presented in December 2015 - intended to help to prevent waste and, where this is not possible, significantly improve recycling of municipal and packaging waste. Its broader objectives include: "*phase out landfilling and promote the use of economic instruments, such as Extended Producer Responsibility schemes. The new legislation strengthens the "waste hierarchy", i.e. it requires Member States to take specific measures to prioritize prevention, re-use and recycling above landfilling and incineration, thus making the circular economy a reality*."

The rationale set out for the regulation includes:

- About three quarters of the marine litter in the world's seas is plastic.
- It is estimated that 4.8 to 12.7 million tonnes of plastic, or 2- 5% of plastic waste generated, enter the oceans each year.
- On European beaches, the European Commission estimates that plastics make up 80–85% of marine litter by count, and that single-use plastics account for about half of all marine litter by count.
- Most of the plastic in the oceans originates from land-based sources, except in the North-East Atlantic where sea-based litter is equally important.
- Besides being a major threat to marine and costal biodiversity, marine litter induces socio-economic impacts. Degradation as a result of marine litter is estimated to cost the EU economy between €259 million and €695 million per year, affecting mainly the tourism and recreation sector (up to €630 million) and the fisheries sector (up to €62 million). Both sectors are also a source of marine litter.
- According to a 2017 Eurobarometer survey, a large majority of Europeans are concerned about the impacts of everyday products made of plastic on their health (74%) and on the environment (87%).

The Commission proposal focused on the top 10 single-use plastics items which constitute 70% of all items found on EU beaches and in the oceans (as well as on fishing gear).

Policy Tools Applied

Where alternatives are readily available and affordable, some single-use plastic products will be banned from the market. The ban will apply to plastic cotton buds, cutlery, plates, straws, drink stirrers and sticks for balloons, which will have to be made exclusively from more sustainable materials instead. Single-use drinks containers made with plastic will only be allowed on the market if their caps and lids remain attached during and after use.

For products without straight-forward alternatives, the focus is on limiting their use through national reduction in consumption, design and labelling requirements and waste management/clean-up obligations for producers.

- Consumption reduction targets: Member States will have to reduce the use of plastic food containers and drinks cups. They can do so by setting national reduction targets, making alternative products available at the point of sale, or ensuring that single-use plastic products cannot be provided free of charge. Bans of designated items are not mandated at the EU level; these powers remain at the national government level.

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- Extended produced responsibility requirements: Producers will help cover the costs of waste management and clean-up, as well as awareness raising measures for food containers, packets and wrappers (such as for chips and candies), drinks containers and cups, tobacco products with filters (such as cigarette butts), wet wipes, balloons, and lightweight plastic bags. The industry will also be given incentives to develop less polluting alternatives for these products.
- Collection targets: Member States will be obliged to collect 90% of single-use plastic drinks bottles by 2025, for example through deposit refund schemes.
- Labelling Requirements: Certain products will require clear and standardized labelling indicating how waste should be disposed, the negative environmental impact of the product, and the presence of plastics in the products. This will apply to sanitary towels, wet wipes and balloons.
- Awareness-raising measures: Member States will be obliged to raise consumers' awareness about the negative impact of littering of single-use plastics and fishing gear as well as about the available re-use systems and waste management options for all these products.

Items Targeted

- Per capita reductions under Article 4 in single-use food containers and cups including:
    - Food containers, *e.g.*, receptacles such as boxes, with or without a cover, used to contain food that is intended for immediate consumption from the receptacle either on-the-spot or takeaway without any further preparation, such as food containers used for fast food, except beverage containers, plates and packets and wrappers containing food
    - Cups for beverages

- Single-use plastic products covered by Article 5, the restriction on placing on the market:
    - Cotton bud sticks, except for swabs intended and used for medical purposes
    - Cutlery (forks, knives, spoons, chopsticks)
    - Plates
    - Straws, except for straws intended and used for medical purposes
    - Beverage stirrers
    - Sticks to be attached to and to support balloons, except balloons for industrial or other professional uses and applications that are not distributed to consumers, including the mechanisms of such sticks
    - Products made of oxo-degradable plastic
    - Expanded polystyrene food and drinks containers used to contain food intended for immediate consumption from the receptacle without further preparation

- Single-use drinks containers - Under Article 6 all member states must ensure that containers made with plastic will only be allowed on the market if their caps/lids remain attached during and after use.

- Standardized labelling requirements under Article 7 indicating how waste should be disposed, the negative environmental impact of the product, and the presence of plastics

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in the products for sanitary towels, wet wipes, cigarette filters, some packets and wrappers, and drinks cups. As regards hazardous substances, requiring labels to mention the presence of chemicals of concern, and banning the use of hazardous chemicals in sanitary towels and tampons.

- Single-use plastic products covered by Article 10 on awareness raising:
    - Food containers, *e.g.*, receptacles such as boxes, with or without a cover, used to contain food that is intended for immediate consumption from the receptacle either on-the-spot or takeaway without any further preparation, such as food containers used for fast food, except beverage containers, plates and packets and wrappers containing food
    - Packets and wrappers made from flexible material containing food intended for immediate consumption from the packet or wrapper without any further preparation
    - Beverage containers, *e.g.*, receptacles used to contain liquid such as beverage bottles including their caps and lids
    - Cups for beverages
    - Tobacco products with filters and filters marketed for use in combination with tobacco products
    - Wet wipes, *e.g.*, pre-wetted personal care, domestic and industrial wipes
    - Balloons, except balloons for industrial or other professional uses and applications, that are not distributed to consumers
    - Lightweight plastic carrier bags as defined in Article 3(1c) of Directive 94/62/EC
    - Sanitary towels (pads) and tampons and tampon applicators

Performance Metrics

Member states are required to meet or exceed the requirements set out in the Directive:

- Member States required to reduce the consumption of single-use drinks cups and food containers by at least 25% by 2025, and to reduce plastic cigarette filters waste by 50% by 2025 and by 80% by 2030.
- By 2025: (i) a requirement for PET beverages to be made from at least 25% recycled plastics calculated as an average for all PET bottles placed on the national market; and (ii) a requirement to achieve an annual 77% separate collection rate by weight for single-use beverage bottles with a capacity of up to three liters, including their caps and lids
- By 2029: required to achieve an annual 90% separate collection rate by weight for single-use beverage bottles with a capacity of up to three liters, including their caps and lids
- By 2030: a requirement for PET beverages to be made from at least 30% recycled plastics, calculated as an average for all PET bottles placed on the national market.
- By 2026: a requirement to achieve a measurable quantitative reduction in the consumption of the single-use plastic products listed in Part A of the Annex in comparison to 2022
- Requiring EPR schemes for plastic cigarette filters to cover the costs of waste collection, transport and treatment, including clean-up and awareness raising costs.
- Extending EPR requirements to include the obligations to cover the costs of litter clean-up to companies that import or sell single-use plastic products or packaging in Europe.

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- Requiring the Commission and the Member States to set up, by 2020, a Union-wide programme for cleaning up plastic waste in the oceans.
- Requiring the Commission to develop guidelines on the functioning of deposit-refund schemes, and to review the directive five years after its transposition, setting, if appropriate, binding quantitative consumption reduction targets at EU level.

How it Works

This Directive will enter into force on the twentieth day following its publication in the *Official Journal of the European Union*.

Member States must then bring into force the laws, regulations and administrative provisions necessary to comply with this Directive within 2 years after entry into force of the Directive, with an additional year allowed for implementing requirements placed on beverage containers under Article 6.

Monitoring and Enforcement

Each individual state must establish monitoring and enforcement consistent with national laws and policies but the Directive requires that: "*Member States shall lay down the rules on penalties applicable to infringements of national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive. Member States shall, by … [2 years after entry into force of this Directive], notify the Commission of those rules and those measures and shall notify it of any subsequent amendment affecting them*."

Projected Impacts

Commission Staff prepared an impact Assessment of the proposed Directive (SWD(2018) 254 final - PART 1/3).

This included environmental, economic and social impact assessments. One example drawn from this report includes:

(i) Projected percentage reduction by count and by item (millions of items) modelled under four different scenarios

Item	Marine litter, millions of items, predicted in 2030	Scenario 2a	Scenario 2b	Scenario 2c	Scenario 2d
Cigarette filters	4,778	-693	-2,628	-2,628	-3,703
Wet wipes	775	-112	-112	-112	-388
Straws	372	-102	-330	-372	-372
Cotton buds	95	-12	-62	-62	-62
Drinks bottles	182	-34	-23	-157	-157
Sanitary towels	252	-30	-37	-37	-90

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Drinks cups and lids	146	-27	-113	-113	-132
Crisp packets	74	-11	-41	-41	-41
Food containers	64	-18	-50	-50	-58
Cutlery	18	-5	-14	-18	-18
Stirrers	20	-5	-18	-20	-20
Grand Total	**6,776**	**-1,049**	**-3,426**	**-3,609**	**-5,041**

Lessons Learned

The legislation proposed by the European Commission was widely opposed by affected industries. Significant efforts were made to block or amend the proposal as it moved through the regulatory process which included review by the Committee on the Environment, Public Health and Food Safety (ENVI) of the European Parliament before it was forwarded to the European Council for ratification. None of the industry proposals were accepted and in several cases the restrictions and targets proposed by the Commission were increased at each stage of the review.

THE UNITED KINGDOM

Overview

The United Kingdom (UK) is undertaking a comprehensive review of its packaging waste management strategies in response to:

- The EU Circular Economy Package (CEP) and the revised Packaging Directive targets set for the recycling of packaging waste for 2025 and 2030
- The UK national Resources and Waste Strategy
- The need to adopt new national legislation in the event of Brexit or, in the alternative, to meet its obligations under EU legislation in the event that Brexit is delayed

This includes simultaneous consultation on four related government initiatives:

- Consultation on Reforming the UK Producer Responsibility System
- Introducing a Deposit Return Scheme in England, Wales and Northern Ireland
- Consistency in Household and Business Recycling Collections in England
- Plastic Packaging Tax

While the primary focus of these proposals is on improving recycling and waste diversion rates, key elements will directly and indirectly promote reduction of single-use and takeaway packaging.

Current Status

The EU CEP requires EU Member States to transpose these requirements into national law by the end of 2022. The UK Government's stated intention is to make the necessary legislative changes for a reformed packaging producer responsibility system by 2021, with a new system to be operational from 2023. This will allow businesses two years to transition and adapt their activities to comply with the reformed regulations.

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Policy Approach

Government regulations including:

- Revisions to the UK packaging producer responsibility regulations;
- Budget proposal to place a tax on plastic products with less than 30% recycled content;
- Mandatory deposit/return system for designated beverage containers; and
- Harmonizing municipal recycling systems.

Voluntary industry and NGO initiatives including:

- The UK Plastics Pact which brings together the whole of the plastics packaging value chain behind a common vision and ambitious set of targets to be achieved by 2025 including to "*eliminate problematic or unnecessary single-use packaging through redesign, innovation or alternative (reuse) delivery models*."
- Numerous packaging reduction and reuse initiatives being piloted or more broadly implemented by retailers, institutions and entrepreneurs.

Rationale

In presenting a 25-year plan for the environment in 2018, the Prime Minister pledged that "the UK would eradicate all 'avoidable' plastic waste in the UK by 2042". The national budget bill for 2019 also included a commitment to eradicate all "avoidable" plastic waste in the UK by 2042.

As stated in the national consultation document *Consultation on Reforming the UK Producer Responsibility System:* "*Our ambitions have increased too and recent months have seen a rise in the public consciousness when it comes to the need to tackle packaging waste. We want unnecessary and difficult to recycle packaging to reduce substantially, we want more packaging designed to be recyclable, we want more packaging waste to be recycled and we want more packaging to be made from recycled material. We also want fewer packaging items to be littered and for it to be easier for people and businesses to recycle their packaging waste. Reforming the packaging waste system fits with these ambitions and the commitments made by all national governments in the UK."*

Items Targeted for Reduction

If the UK remains a member of the EU it will be required to meet the requirements of Directive on the reduction of the impact of certain plastic products on the environment. If the UK chooses to leave the EU, the government has pledged to transpose EU regulations into UK law and to meet or exceed their minimum requirements. Therefore, items targeted for reduction in the UK would need to include those identified in the assessment of the EU Directive.

How it Would Work

The following summarizes briefly the key elements of these government policy proposals most likely to influence reduction. It also provides some examples of the reduction initiatives being piloted or implemented by other stakeholders

Government Regulations

Reforming the Packaging EPR System

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This consultation seeks views on measures to reduce the amount of unnecessary and difficult to recycle packaging and increase the amount of packaging that can and is recycled through reforms to the packaging producer responsibility regulations. It also proposes that the full net costs of managing packaging waste are placed on those businesses who use packaging and who are best placed to influence its design, consistent with the polluter pays principle and the concept of extended producer responsibility.

Key guiding principles set by government which reference reduction include:

- Businesses will be incentivised *to reduce unnecessary and difficult-to-recycle packaging*, and to design and use packaging that is recyclable.
- Businesses will bear the full net cost of managing the packaging they handle or place on the market at end of life. Subject to this consultation, *this should include the cost of collection, recycling, disposal, the clear-up of littered and fly tipped packaging*, and communications relating to recycling and tackling littering.
- All packaging should be labelled as recyclable or not recyclable to make it easier for people to recycle and dispose of packaging waste; *with the labelling scheme addressing packaging that may be collected via alternative routes such as a deposit return system (DRS)*

Key outcomes expected from a revised packaging EPR scheme include:

- For unnecessary packaging, that is packaging items that can be removed altogether or where less packaging could be used, to be reduced
- For packaging materials that are difficult to recycle to be reduced or no longer used (such as black plastic, PVC and Polystyrene (PS))
- In conjunction with a potential DRS, for less packaging to be littered

Following this consultation, the government intends to establish appropriate metrics and to agree on definitions for recyclable packaging, unnecessary packaging and difficult to recycle.

Litter Reduction

It is estimated that in 2016/2017 it cost local authorities in England £682 million to keep the streets clean; it cost Welsh local authorities £54 million in 2017/18 and Scottish local authorities £53 million in 2014. Highways authorities and private landowners also incur costs for clearing up littered items. Litter has many ‘hidden’ costs too, from restricting local economic growth to harming the environment and wildlife. A range of measures are being implemented across the UK to reduce littering and increase enforcement action against offenders.

Promotion and Education

It is proposed that a proportion of producers’ fees should be allocated to support national and local recycling communications in each nation. Separately, stakeholders have suggested that producers should be required to fund recycling campaigns and support local authorities to invest in service-related communications. Stakeholders also have suggested that funding for communications could be levied as a separate fee on producers.

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Deposit Return System

An estimated 14 billion plastic drinks bottles, 9 billion drinks cans and 5 billion glass bottles are generated each year in the UK and recent packaging recycling rates demonstrate that there are significant improvements to be made in drinks container recycling, especially in relation to recycling of containers whilst 'on-the-go'. Litter has been highlighted in the consultation as a serious issue which needs targeted policy action to address, with disposable drinks containers, or parts of them, regularly featuring among the most commonly found items on UK beaches. Coupled with the growing awareness of plastic waste in the oceans, the importance of encouraging behaviour change to stop littering at source and, ideally, promote the capture of valuable resources is clear.

A DRS would see a deposit added to the price of drinks in in-scope drinks containers at the point of purchase, which would be redeemed when consumers return their empty drinks containers to designated return points.

Where consumers choose not to return their drinks containers to a designated DRS return point, DRS material would end up in curbside collections, *and the deposit value would fall to local authorities, should they choose to redeem it*. A funding formula is proposed whereby *local authorities could be paid the deposit amount on drinks containers by the deposit management organization* (DMO) without having to physically return them via a designated return point.

One option under consideration, known as the 'all-in' model, would not place any restrictions on the size of drinks containers in-scope of a DRS. This would target a large amount of drinks beverages placed on the market. The second option, known as the 'on-the-go' model, would restrict the drinks containers in-scope to those less than 750ml in size and sold in single format containers. This model would target drinks beverages most often sold for consumption outside of the home (while 'on-the–go').

Consistency in Household and Business Recycling Collections

This consultation is concerned with measures to improve the quantity and quality of what is recycled both at home *and at work*.

It is estimated that about 2 million businesses and other organisations produce municipal waste (*i.e.*, they generate *waste which is similar in nature to household waste*). Municipal waste is a combination of household waste and household-like waste, (*e.g.*, paper, packaging and food waste) produced by businesses – it does not include construction and demolition waste, industrial waste or other wastes that are not similar in nature to household waste.

The consultation highlights the lack of current drivers to encourage for businesses to invest in recycling services to divert materials from municipal waste management services. Proposals for changing this include introducing requirements for:

- All *affected businesses and organisations to segregate dry recyclable materials* from residual waste so that these can be collected for recycling.

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- *All affected businesses and organisations to separate their food waste* to be collected and recycled or composted.
- Measures to reduce costs of waste collection for businesses and organizations.
- Measures to improve the availability of *data and information on business waste and recycling*.

Plastics Packaging Tax

(While focused on promoting increased recycled content in plastics packaging, it is expected that the economic impact of this policy will both reduce the use of plastics and encourage the increased diversion of these materials from municipal waste management systems.)

The consultation documents note that using recycled plastic is often more expensive than using new plastic, despite its lower environmental impacts. Significant variations in the price of new plastic over time can also discourage businesses from committing to using recycled plastic instead of new plastic in the long term. The government wants to encourage the sustained use of more recycled plastic in the production of plastic packaging to help tackle plastic waste. This will help to drive the treatment of plastic waste up the waste hierarchy so that more plastic is recycled rather than being sent to landfill or incineration, to improve resource productivity and make more plastic waste a useful and valued resource.

Plastic packaging is typically only used for a short period of time and then disposed of, and accounts for 44% of plastic used in the UK, but 67% of plastic waste. The tax will apply to businesses that produce or import plastic packaging which uses insufficient recycled content, taking effect from April 2022. The tax will be set at a rate that provides a clear economic incentive for businesses to use recycled material in the production of plastic packaging, which will create greater demand for recycled plastic and in turn stimulate increased levels of collection and recycling of plastic waste.

This tax will complement the reformed Packaging Producer Responsibility regulations. The Packaging Producer Responsibility reforms will encourage businesses to design and use plastic packaging that is easier to recycle and discourage them from creating plastic packaging that is difficult to recycle, which will increase supply of easier-to-recycle plastic. The government believes that together the tax and Packaging Producer Responsibility regulations will provide business with the right incentives to recognise the impact of their plastic packaging decisions and drive the development of more sustainable packaging.

The government proposes that the tax would apply to all plastic packaging manufactured in the UK and unfilled plastic packaging imported into the UK. It would only apply to plastic packaging (as defined by the tax) with less than 30% recycled content.

The tax would be charged on the full weight of the packaging product, at a flat rate set per tonne of packaging material. The government is consulting on these questions:

- defining products within the scope of the tax
- setting a threshold for recycled plastic content

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- the approach to the fee rates
- the precise point at which the tax is charged and who will be liable to pay
- how to minimize administrative burdens for the smallest operators and/or low volumes of production or import
- the treatment of imports and exports
- promoting compliance and preventing opportunities for tax avoidance or evasion
- how business can demonstrate the recycled content of their products in an efficient and effective manner

Disposable Cups

Many of those who responded to the government's call for evidence on using the tax system or charges to tackle single-use plastic waste specifically highlighted disposable cups containing plastic as a problematic item, highlighting that they are difficult to recycle due to their plastic lining and are often littered. As reported in the 2018 Budget, the government concluded that a levy on all cups – for both hot and cold drinks - would not at this time be effective in encouraging a decisive shift from disposable to reusable cups across all beverage types. While the Budget noted that businesses are already taking steps to limit their environmental impact, it stated that the government expects industry to go further and will return to this option if sufficient progress is not made. In the meantime, the government is considering alternative options to tackle the environmental impact of cups, including:

- Reforming the packaging producer responsibility system, implementing measures to reduce the environmental impacts of disposable cups through strong incentives for businesses to provide cups that are easy to recycle, and setting targets to encourage higher levels of recycling for disposable cups. This consultation seeks evidence on whether disposable cups (drinks containers filled at the point of sale), which are often littered and difficult to recycle, should be included in scope of a DRS.
- There are a number of reprocessing facilities that can recycle disposable cups in the UK, with enough capacity and facilities to recycle all plastic lined paper cups for coffee currently used in the UK. It is unclear if this capacity could cover paper cups used for other beverage types. Disposable cups, however, are not routinely collected for recycling, though some businesses are beginning to take steps to increase facilities for collection. There is therefore justification for including disposable cups in a DRS and it would be possible to do so. This could see recycling rates of these containers increase.
- Disposable cups are not collected as part of most international DRS systems and further analysis is needed to assess the additional infrastructure and associated cost required to include these containers in a DRS.

<u>Voluntary industry and NGO initiatives</u>

The UK Plastics Pact

The UK Plastics Pact, led by Waste and Resources Action Programme (WRAP), is the first of an expected global network of such pacts being supported by the Ellen MacArthur Foundation's New Plastics Economy initiative.

The Plastics Pact has been developed in association with and supported by major consumer brands that also operate in Ontario (*e.g.*, P&G, Unilever, Coca-Cola, Danone, etc.) and by many other companies with similar businesses as the signatories in the UK (*e.g.*, major retailers). It sets out a comprehensive range of targets and actions required to meet them including prevention, harmonized collection systems, minimum recycled content and high recycling targets.

The Pact brings together the whole of the plastics packaging value chain behind a common vision and ambitious set of targets to be achieved by 2025:

- Eliminate problematic or unnecessary single-use packaging through redesign, innovation or alternative (reuse) delivery model.
- 100% of plastics packaging to be reusable, recyclable or compostable.
- 70% of plastics packaging effectively recycled or composted.
- 30% average recycled content across all plastic packaging.

The Pact is supported by a "roadmap" on how these targets will be achieved. In essence the plan is to:

- Have the entire plastics packaging chain take more responsibility for its own waste.
- Stimulate innovative new business models to reduce the total amount of plastic packaging produced and eliminate difficult to recycle plastics.
- Build a stronger recycling system by ensuring plastic packaging can be effectively recycled and made into new products and packaging.
- Promote on-pack labelling on recyclability.
- Increase domestic markets and reduce export of collected plastic waste.
- Ensure consistency across UK recycling municipal recycling programs.

The immediate focus of the Pact will be on identifying the priority projects that will deliver greatest impacts in the short and long term such as overcoming barriers to increasing the amount of recycled content used in new packaging, developing reusable packaging and working with partners to overcome the issue of un-recyclable black plastic.

Corporate Initiatives

A wide range of innovative corporate pilots are underway in the UK, including efforts such as:

- eliminating sale of water in plastic bottles by some major retailers and coffee chains;
- retailer pilots experimenting with shopping aisles dedicated to selling products with no plastics packaging and others testing consumer acceptance of purchasing loose fruits and vegetables with no pre-packaging and no plastic bags provided;
- installing water fountains and refill stations in coffee retailer chains;
- eliminating plastic bags;

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- overcoming barriers to recycling black plastics, etc.

Some examples of these initiatives are described in more detail later in this report.

Performance Metrics

To be established by regulation following the completion of the consultation process. Some of the specific outcomes to be addressed in the regulation include:

- For more packaging to be designed to be recyclable
- For unnecessary packaging, that is packaging items that can be removed altogether or where less packaging could be used, to be reduced
- For packaging materials that are difficult to recycle to be reduced or no longer used (such as black plastic, PVC and Polystyrene (PS))
- For more packaging to be recycled – this means that, by 2030, 70% of all packaging placed on the UK market will be recycled
- Reduction in litter

Monitoring and Enforcement

Under the current EPR regulations, registration fees paid to the regulator are restricted to compliance monitoring of registered businesses and compliance schemes. Government is considering increasing these fees to cover enforcement activities of businesses that are obligated under the regulations but who are not registered (otherwise known as 'free riders').

Regulator registrations fees would continue to be levied as a separate fee on obligated businesses. However, rather than these rates being established in the regulations, the regulator (Department of Environment, Food & Rural Affairs) would have the flexibility to review and consult on these rates on the same basis as it does for the charges that apply to all of its other regulated regimes.

Results to date

The consultation process will close on May 13, 2019 and a summary of the responses to this consultation will be published and placed on the government websites at www.gov.uk/defra , www.gov.wales and www.daerani.gov.uk/consultations .

Lessons Learned

The UK EPR system for packaging has been in place since 1997 and is most notable for the low costs incurred by producers and the disjointed and relatively poor performing municipal recycling programs relative to other member countries of the EU. The comprehensive package of reforms under consideration are intended to enable the UK to meet or exceed the requirements of the EU *Circular Economy Package* and the *Directive on the reduction of the impact of certain plastic products on the environment*.

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FRANCE

Overview

EPR regulations for packaging and products were implemented in the mid-1990's. While the EPR law obligates producers to take physical and financial responsibility for separate collection and recycling/treatment of waste produced by their products, in practice operational management of collection and sorting remains with municipalities.

President Macron promised during the last national election to recycle 100% of plastics by 2025. Over the last decade, however, some initiatives have also been directed to waste reduction initiatives, in particular to food wastes and plastics.

Key drivers for the initiative

EU policies and regulations have been the key driver to date, but domestic factors have underpinned the increasing focus on reduction, well ahead of the EU *Circular Economy Package* and *the Directive on the reduction of the impact of certain plastic products on the environment*:

- Public concern with uncontrolled leakage of plastics into the environment
- Competitive pressures within the national EPR compliance scheme leading to the introduction of financial incentives and penalties designed to reduce the quantities of packaging produced and to design for recycling.

Items targeted for reduction

- A partial ban on plastic bags
- Plastic plates, cups and disposable tableware
- Straws and potentially other single-use items
- All consumer packaging (within the context of the national EPR for packaging legislation)

Policy tools applied

Regulations governing the distribution of designated items

- Ban on bags with a capacity "smaller than 10 litres and with a thickness less than 50 microns" – otherwise known as the "common plastic bag".as of July 1, 2016.
- Authorising use of only "*domestically compostable bags made in full or in part from bio-sourced materials*" to replace plastic fruit and vegetable packaging in January 2017.
- Requiring marking on reusable bags stating that this is "*a bag that can be reused and should not be discarded in the environment*".
- Requiring that all plastic cups, cutlery and plates can be composted and are made of biologically-sourced materials set to take effect in 2020
- Requiring the approved national packaging compliance scheme Eco-Emballages (now re-named Citeo) to include in its annual report descriptions of reduction and reuse plans and activities undertaken by its members.
- Requiring producer responsibility organizations (PRO) to apply progressive measures to incent producers to make changes in their packaging choices and to promote recycling through a penalties/bonuses approach to fee-setting.

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- Applying a lower value-added tax (VAT) on bottles made of recycled plastic, and increase the VAT on bottles that aren't, as an incentive for consumers to buy the former. This is scheduled to begin in 2019.

How it Works

The ban on specified disposable plastic bags is already in place.

A 2016 decree, set to take effect in 2020, requires that all plastic cups, cutlery and plates be compostable and are made of biologically-sourced materials. The new law is set to take effect in 2020 and will be part of France's *Energy Transition for Green Growth Act* to tackle climate change. It also requires disposable tableware to be made from 50 percent compostable material, a number that will rise to 60 percent in 2025.

The government is proposing to ban single-use plastic goods, such as straws, by 2020. A sustainable agriculture bill including an amendment to ban plastic straws is now under consideration in the Senate.

The government expects to launch the recycled plastic tax initiative in 2019. The stated goal is that up to 10 percent of the product's price would be subtracted or added to the VAT, depending on whether or not it's made of non-recycled plastic.

Under the EPR program for packaging, since 2012, the producer fee schedule has used a combination of a material specific fee per weight and a fee per unit, modified by the application of penalties and bonuses. Since 2018, the government has required the use of this fee setting approaching, including these elements (for 2018):

- 80% penalty for having a second package as part of the product sold to consumers
- 50% penalty for using materials disruptive to recycling
- 100% penalty for non-recyclable materials
- 10% credit for 50%+ recycled content in paper and cardboard containers
- 4% credit for communicating source reduction and/or recyclability practices
- 8% credit on for source reduction
- 8% credit for improvement of recyclability
- 8% credit for including sorting instructions on pack

Monitoring and Enforcement

The Environment and Energy Management Agency (ADEME) is a public institution under the joint supervision of the Ministry of Ecological and Solidarity Transition and the Ministry of Higher Education, Research and Innovation. It participates in the implementation of public policies in the fields of environment, energy and sustainable development. This includes monitoring and oversight of producer responsibility regulations, including the accreditation of PRO compliance schemes.

Performance Metrics

France will be required to meet the minimum requirements set out in the EU *Circular Economy Package* and the *Directive on the reduction of the impact of certain plastic products on the environment.*

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Results to date

France had previously set a target to reduce the total amount of packaging material by 100,000 tonnes between 2007 and 2012. It has been reported that 106,905 tonnes less packaging material was produced during that period.

Lessons Learned

France was the first jurisdiction to require that PROs incentivize stronger efforts by producers to reduce packaging, to design for recyclability, and to remove problematic materials that interfere with the recycling of other materials. While some producers and packaging experts claim that the complicated fee structure employed has had only a minimal effect on achieving these goals to date, this could also be a function of the scale of incentives and penalties applied up to now rather than the approach itself. The eco-design, awareness raising, and penalty provisions have continued to evolve since first introduced and the methodology allows for the financial incentives to be changed over time to drive better outcomes.

Adoption of similar approaches to modulating producer fee rates are now under consideration in the UK and Germany.

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CANADA

Overview

The Canadian Council of Ministers of the Environment (CCME) approved in principle on November 23, 2018 a Strategy on Zero Plastic Waste. The strategy is intended to build on the momentum created by the Canadian-led Ocean Plastics Charter to significantly reduce plastic waste while placing this issue within the context of working towards a circular economy model.

Key issues highlighted in the strategy document include:

- While over 60% of municipal waste comes from businesses and institutions, most recycling collection is focused on single family households through curbside collection programs.
- Overall less than 11% of plastics are collected for recycling with the rest ending up in landfills, incinerators or the environment.
- Expanding, modernizing and harmonizing collection systems across Canada provides an opportunity to address these issues and increase public participation in recycling.
- All partners in the system need to collaborate to identify the most efficient, convenient and cost-effective strategies for collecting more plastic resins and types from all regions, including urban, rural and remote and from all types of residential buildings, as well as businesses (including farms), institutions and public spaces.
- Canadians are increasingly aware of plastic pollution and the difficulties of recycling plastics. Inconsistent labels and the introduction of plastic alternatives (*i.e.*, compostable plastics), contribute to confusion and uncertainty over where and how to recycle.
- Strengthening standards, including for procurement, such as by improving requirements for labelling and recycled content in consumer products, plays a role in helping Canadians use and recycle plastics in the best possible way.

The CCME subsequently launched a consultation on the Canada-wide Action Plan on Zero Plastic Waste.

An Action Plan will be developed by the federal, provincial and territorial governments in collaboration with a variety of organizations, stakeholders and other interested parties and will define key actions required to support the priority results areas. Various means, such as technical workshops, webinars and on-line engagement may be used.

Key drivers for the initiative

This initiative is intended to build on Canadian and international efforts to reduce plastic waste and marine litter, such as those outlined in the Ocean Plastics Charter recently launched at the G7 Leaders' Summit in Charlevoix, Quebec. CCME has also done considerable work in waste management policy that will act as a stepping stone for this new initiative.

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Items targeted for reduction

While the priority focus of these initiatives is on promoting increased collection, recycling and recovery of used plastics, specific reduction goals are called out in the Charter:

- Working with industry towards 100% *reusable*, recyclable, or, where viable alternatives do not exist, recoverable, plastics by 2030.
- Taking into account the full environmental impacts of alternatives, significantly reducing the unnecessary use of single-use plastics.
- Using green public procurement to reduce waste and support secondary plastics markets and alternatives to plastic.
- Working with industry towards reducing the use of plastic microbeads in rinse-off cosmetic and personal care consumer products to the extent possible by 2020, and addressing other sources of microplastics.

Policy tools applied

Use the convening power of the federal government to bring key stakeholders together to promote comprehensive, coordinated action program that promotes the full suite of management options.

To consider direct federal action on developing national standards for, among others, product design, composability, recyclability and removal of toxic substances.

Provide leadership examples in government procurement processes.

How it Works

Currently in the early discussion phase but specific goals and objectives have been identified in the Charter that could directly or indirectly promote reduction if implemented:

- Improve collection, management and other systems and infrastructure.
- Working with industry and other levels of government, to recycle and *reuse* at least 55% of plastic packaging by 2030 and recover 100% of all plastics by 2040.
- Increasing domestic capacity to manage plastics as a resource, *prevent their leakage into the marine environment from all sources*, and enable their collection, reuse, recycling, recovery and/or environmentally-sound disposal.
- Encouraging the application of a whole supply chain approach to plastic production toward greater responsibility and *prevent unnecessary loss, including in pre-production plastic pellets*.
- Accelerating international action and catalyzing *investments to address marine litter in global hot spots and vulnerable areas* through public-private funding and capacity development for waste and wastewater management infrastructure, innovative solutions and coastal clean-up.
- Working with relevant partners, *in particular local governments, to advance efforts to reduce marine litter and plastics waste*, notably but not exclusively in small island and remote communities, including *through raising awareness*.

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- Strengthening measures, such as market-based instruments, *to prevent plastics from entering the oceans*, and *strengthening standards for labelling* to enable consumers to make sustainable decisions on plastics, including packaging.
- Supporting industry leadership initiatives and fostering knowledge exchange through existing alliances and other mechanisms.
- Promoting the leadership role of women and youth as promoters of sustainable consumption and production practices.
- Support platforms for *information sharing to foster awareness and education efforts on preventing and reducing plastic waste generation*, plastics pollution and *eliminating marine litter.*
- Assessing current plastics consumption and undertaking prospective analysis on the level of plastic consumption by major sector use, while *identifying and encouraging the elimination of unnecessary uses*.
- Promoting the *research, development and use of technologies to remove plastics and microplastics from waste water* and sewage sludge.
- Guiding the development and appropriate use of new innovative plastic materials and alternatives to ensure they are not harmful to the environment.
- Coastal and *shoreline action*.
- Encouraging campaigns on marine litter in G7 countries with youth and relevant partners to *raise public awareness*, collect data and *remove debris from coasts and shorelines* globally.

Monitoring and Enforcement

The need to develop more effective monitoring and enforcement mechanisms is highlighted as are the goals of harmonizing provincial, national and international mechanisms.

Performance Metrics

The Charter establishes an aspirational goal to recycle and reuse at least 55% of plastic packaging by 2030 and recover 100% of all plastics by 2040

The CCME has set an aspirational goal of zero plastic waste within the context of achieving Canada's broader aspirational waste reduction targets, which are to reduce the amount of waste Canadians send to disposal from a baseline of 706 kg per person in 2014:

- to 490 kg per person by 2030 (a reduction of 30%); and
- to 350 kg per person by 2040 (a reduction of 50%).

In September 2018, the Government of Canada committed to *diverting at least 75% of the plastic waste from government operations* by 2030.

Results to Date

An initial consultation meeting was held February 20, 2019. CCME documents and related presentation materials identified these priority areas and key milestones:

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"Ten priority areas for action have been identified based on Canadian's and stakeholders' views about plastic waste and findings from evidence-based analysis:"

1. Product design	*2. Single-Use Plastics*	3. Collection Systems	4. Markets	5. Recycling Capacity
6. Consumer Awareness	7. Aquatic Activities	8. Research & Monitoring	*9. Clean-up*	10. Global Action

Timelines presented for this process were:

- June 2019 Action Plan Phase 1 (Results for priority areas 1-5)
- Winter/Spring 2020 Action Plan Phase 2 (Results for priority areas 6-10)
- Implementation of the CCME Action Plan on Zero Plastic Waste (no dates specified)

Lessons Learned

Participants in the February 2019 workshop report that discussions focused primarily on product design questions, especially regarding improving recyclability, harmonizing plastics collections programs across Canada, the need for improved collection and sorting infrastructure, and the potential role of chemical recycling and recovering energy from waste plastics.

In comparison to the profiles for the EU, UK and France, the CCME effort gives primary focus to increasing waste diversion, recycling and recovery and to exploring opportunities for promoting voluntary actions and potentially, federal standard setting. It is worth noting that the CCME has promoted similar efforts for achieving its aspirational waste management goals, including the voluntary *National Packaging Protocol* (NAPP) in 1988. This approach focused primarily on the light weighting of packaging which was endorsed by producers as they increasingly transitioned from traditional packaging materials (glass, metal, paper) to plastics and composite packaging.

It is likely that federal actions will be limited to using its procurement policies and contracting for facilities management to achieve its goal of diverting 70% of plastic wastes from government operations.

In the area of waste, CCME has generally focused on setting aspirational goals and encouraging provinces to take actions to meet them.

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ONTARIO

The Province of Ontario is in the process of changing its waste management policies. Three inter-related, potentially significant policy developments have the potential to impact the distribution and use of single-use and takeaway items in Ontario:

- *The Resource Recovery and Circular Economy Act 2016* (RRCEA)
- Preserving and Protecting our Environment for Future Generations: A Made in Ontario Environment Plan
- Reducing Litter and Waste in Our Communities: Discussion Paper

The potential relevance of each of these to the distribution, use and management of single-use and takeaway items is summarized briefly:

The *Resource Recovery and Circular Economy Act* 2016 (the "RRCEA" or the "Act") includes regulatory powers to:

- Prescribe materials that could be designated for collection and management;
- Identify persons responsible for meeting obligations with respect to products and packaging sold to consumers in Ontario; and
- Require responsible persons to meet clear outcomes and be accountable for recovering resources and *reducing waste associated with the designated materials*.

Policy Approach	The RRCEA gives the Government of Ontario the legal authority to promote a system of resource recovery and waste reduction defined as being in the "provincial interest" through the development and implementation of: • Resource Recovery and Waste Reduction Policy Statements • Regulations made under the Act.
Stated Objectives	It is in the provincial interest to drive both increased resource recovery and waste reduction to improve waste management within Ontario, reduce related environmental impacts and promote significant behavioural changes by producers and generators including: • Minimizing the generation of wastes; • Increasing the durability, reusability and recyclability of products and packaging; and • Decreasing hazardous and toxic substances in products and packaging
Items Targeted	Products already designated under the existing *Waste Diversion Transition Act* include: • Packaging and printed paper (PPP) • Used tires • Waste electrical and electronic equipment (WEEE) • Municipal Hazardous & Special Wastes (MHSW) Products identified in the *new discussion* paper, include: • Used mattresses, small and large appliances, power tools, rechargeable batteries, fluorescent bulbs and textiles.
Current Status	Legislation enacted in 2016

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	Transition of programs mandated under the *Waste Diversion Ontario Act* to the RCREA are underway for Tires, WEEE & MHSW Consultation related to PPP launched March 2019

The Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan (the Environment Plan) addresses a broad range of environmental issues with some specific references to waste:

- Reducing and diverting food and organic waste from households and businesses.
- Reducing plastic waste.
- Reducing litter in our neighbourhoods and parks.
- Increasing opportunities for the people of Ontario to participate in waste reduction efforts.

Policy Approach	A consultation document describing the need for clear rules, strong enforcement mechanisms, monitoring and transparent reporting. Expected to be enshrined in new legislation.
Stated Objectives	*Waste specific*: • Reduce plastic waste: o 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. o 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. o 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. • Reduce litter in our neighbourhoods and parks o Establish an official day focused on cleanup of litter in Ontario o Work with municipal partners to take strong action against those who illegally dump waste or litter in our neighbourhoods, parks and coastal areas. o Explore additional opportunities to reduce and recycle waste in our businesses and institutions o Consider making producers responsible for the end of life management of their products and packaging
Items Targeted	No specifics but references to: • Plastic waste • Compostable products • Litter
Current Status	Released November 29, 2018 for a 60-day consultation period which has now closed. More than 1,400 comments were received and are being considered by the Ministry. Date for completing this process is not known.

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The *Reducing Litter and Waste in Our Communities: Discussion Paper* (the Discussion Paper) describes the steps the government proposes to take to make waste reduction, reuse, and recycling easier for the people of Ontario, not only at home or at work, but also throughout our communities.

Policy Approach	A consultation document requesting stakeholder input on potential actions that the government could take. Expected to result in new policy statements and regulations under the RRCEA.
Stated Objectives	*Overarching:* Goal for Ontario to strive to decrease the amount of waste going to landfill, increase the province's overall diversion rate, and reduce greenhouse gases from the waste sector. Confirms overall waste diversion targets of 50 per cent diversion by 2030, and 80 per cent diversion by 2050. *Reduction related*: • Litter reduction: o Move to a full producer responsibility approach for waste o Where feasible, give producers responsibility for the collection and diversion of recyclables in parks and public spaces • Education and awareness around the impacts of litter and waste • Increase opportunities to reduce waste: o some of greatest opportunities for improvement in the reduction and diversion of waste in Ontario lie with businesses and institutions o require large businesses and institutions to identify the amount and types of waste they generate, develop waste reduction work plans, separate certain wastes at the source and make reasonable efforts to ensure that separated wastes are sent for reuse or recycling o businesses that develop products and packaging are best positioned to make decisions that reduce waste or increase the resources that can be recovered from their products • Reduce plastics going to landfills or waterways o the province will support existing shoreline and other clean-up projects for plastic litter and pollution from our waterways and land, including through a day of action on litter and through the support of other sustained efforts o working with other levels of government as well as industry to better manage plastic waste, including single-use plastic waste

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	○ work with other provinces, territories and the federal government on the development of an action plan to implement a Canada-wide strategy • Asking for input on two specific questions: ○ Would a ban on single-use plastics be effective in reducing plastic waste? ○ What are your views on reducing plastic litter through initiatives such as deposit return programs?
Items Targeted	No specifics but references to: • Plastic waste • Compostable products • Litter
Current Status	Submissions in response to Discussion Paper due April 20th,. Municipal and other stakeholders pressing for immediate action to transition printed paper and packaging materials under the RRCEA

Taken together these three initiatives may prove effective at increasing materials recycling rates in the province and provide some basis for requiring producers to take actions related to reduction. However, there is a clear signal in the Discussion Document that many reduction efforts should be initiated at the federal level, except for those initiatives targeted at litter reduction.

Key Drivers for these Initiatives
The *RRCEA* was enacted to

- replace the *Waste Diversion Transition Act* (WDA);
- transition programs mandated under the WDA to individual producer responsibility;
- require producers to take full financial and operational responsibility for products supplied into Ontario;
- create the *Resource Productivity and Recovery* Authority (RPRA); and
- enable a wide range of new regulatory mechanisms for managing waste in Ontario.

Specific to reduction, the Act states that there is "*provincial interest in having a system to drive both increased resource recovery and waste reduction which aims to improve management of waste within Ontario to reduce related environmental impacts and to promote significant behavioural changes on the part of producers and generators including:*

(a) Minimizing the generation of wastes
(b) Increasing the durability, reusability and recyclability of products and packaging
(c) Decreasing the use of hazardous and toxic substances in products and packaging"

The Environment Plan is principally focused on policies related to climate change, air and water protection but also outlines the government's priorities on litter reduction and waste management.

The Discussion Paper addresses in more detail the waste-related commitments set out in the Environment Plan and asks for stakeholder input on these priorities:

- Reducing and diverting food and organic waste from households and businesses.

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- Reducing plastic waste.
- Reducing litter in neighborhoods and parks.
- Increasing opportunities for the people of Ontario to participate in waste reduction efforts.

Policy Tools Applied
The tools most relevant to advancing reduction initiatives reside in the RRCEA and include:

Policy Statements – The tool by which the province will provide further provincial direction to (1) help coordinate decision-making across multiple sectors and actors; (2) require provincial ministries, producers, municipalities and those that operate resource recovery systems to consider the provincial interest and be consistent with policy statements; (3) establish principles for accessibility and convenient recycling services; (4) set guidance for management of materials; (5) facilitate sustainable packaging; and (6) for reuse and recycling methods.

Regulations enacted under the RRCEA - Requiring all of a regulated community to (1) register and report to the RPRA; (2) establish standards, regulatory requirements, guidelines, best practices, and certification; (3) set timelines for transition of programs from the *WDA* to the *RRCEA*; and (4) set waste management targets and other requirements for designated wastes.

How it Works
For the purposes of this project, the key opportunities to influence reduction and the key steps to implement them include:

- Requiring Stewardship Ontario, the industry funding organization for PPP, to submit a wind-up plan to the RRCEA.
- Development and enacted of a new regulation for PPP and modification of Ontario Reg. 101/94 pertaining to the responsibility for municipalities to provide Blue Box services.
- An expected transition period during which municipalities transfer financial and operational control for the management of PPP to obligated producers.
- After transition, producers will be required to meet province-wide targets established in the PPP regulation.

Monitoring and Enforcement
The RPRA has powers to provide robust oversight, compliance and enforcement of producer responsibilities, requiring all of the regulated community to register and report, and to provide independent, graduated compliance and enforcement.

Performance Metrics
Will be established within the material and product specific regulations.

Results to date
Still in early consultation phase. The Municipal 3Rs Collaborative (M3RC) is advocating for the regulation to come into force by the third quarter of 2020; municipal governments would then

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begin to transition by the fourth quarter of 2021; and all municipal Blue Box programs would be fully transitioned by the end of the third year (2024).

Lessons Learned

While the Discussion Document is broadly supportive of municipal advocacy positions, timelines for implementation have not been included. If the PPP regulation process is not initiated in 2019, it is unlikely to be enacted before the next provincial election expected in June 2022.

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MUNICIPAL GOVERNMENTS

Vancouver, Canada

Overview

The City of Vancouver houses a population of about 631,490 individuals. In May 2018, the City adopted a Zero Waste 2040 plan, a long-term strategic vision for Vancouver to achieve the goal of zero waste by 2040. The Single-Use Item Reduction Strategy is recommended as a priority action in the Zero Waste 2040 Plan.

Policy Approach	Strategy, "Single-use Item Reduction Strategy 2018-2025"
Stated Objectives	The reduction of plastic and paper bags, foam cups and take-out containers, cups, other take-out containers, straws and utensils from now until the year 2025.
Key drivers	• Vancouver identified that it cost $2.5 million to collect and manage waste from parks or streets and to service litter bins • Citizen complaints and inquiries on single-use items and litter, and requests for taking action on bags or other materials • Compliance with Vancouver's the Zero Waste 2040 and "Green City" initiatives. Single-use items reduction is an early priority under the Zero Waste 2040 initiative • The Great Canadian Shoreline Cleanup statistics
Items Targeted	City Council amendments adopted on June 5, 2018 require that: • Foam cups and containers will be banned as of June 1, 2019 • Plastic straws will be banned on June 1, 2019 o Persons with disabilities will be consulted on the plastic straw ban, in addition to civic agencies, community health groups and other organizations so that accessibility and health care needs are accommodated in the by-law and implementation plan • There will be by-law requirements that prohibit business license holders from distributing single-use utensils unless requested by customers In addition to the items ban, business license holders must have reduction plans that significantly reduce the number of disposable cups and plastic/paper shopping bags that they distribute, with options to: • Distribute no disposable cups or plastic/paper shopping bags; • Distribute no free disposable cups or free plastic/paper shopping bags; or, • Other mechanisms that achieve a reduction target set by the City, to be proposed and finalized through consultation. Between 2021 and 2025, Vancouver also plans to evaluate the need (and potentially introduce regulation) for a requirement for single-use

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	cups, take-out containers, straws and utensils to be recyclable or compostable
Policy tools applied	The City used its authorities under the Vancouver Charter to: • Require businesses to prompt customers • Require in-store recycling • Impose business license fees • Ban distribution • Ban disposal in solid waste system
How it works	Currently developing by-laws and engaging in consultation. Timelines suggested for implementation allow for: • Developing educational materials • Education, outreach & dialogue • Allows time for using up inventory The June 5, 2018 amendments also added the following actions to staff's agenda: • Issuing a Request for Expressions of Interests for "Made in Vancouver" single-use solutions such as a city mug program or reusable straws • Report on annual reduction targets expected to be made as a result of the reduction plans for plastic and paper bags and disposable cups under the upcoming by-laws • If these by-law targets are not met, the city will implement a full distribution ban on single-use bags and cups • By-law amendments to be developed to require compostable packaging to be approved compostable at the local compost facility • By-law amendments to require minimum 40% post-consumer content for paper-based packaging • Report on increased business license fee for large businesses in which distribution of single-use items is pervasive **Enforcement**. The by-law is intended to include fines, but the city plans to enforce it based on education, similar to the approach that they took when they introduced the food scraps program. Further plans regarding enforcement have yet to be determined.
Performance Metrics	No performance metrics have been set at this time. Canadian Shoreline Cleanup data will be used to assess effectiveness and internal staff expertise on waste management will be used to assess the litter problem and mitigation required
Results to date	No results yet as the by-laws have yet to be written
Lessons Learned	The Bring Your Own Container pilot to be launched alongside Vancouver's single-use initiative ran into challenges with the Ministry of Health and has required the assistance of the local health authority. A new directive is required from the Ministry of Health on sanitizing

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	containers and the New York State health code may be used as a model. City staff also highlighted the level of effort required, and the number of staff members needed to manage the scope of work required to support a transition plan: • Staff must conduct research, engage stakeholders as well as help businesses make changes to their operations. • Clear timelines for the work must be established. • The initiative should be launched once everything is ready to go (*i.e.*, research on compostable items in local facilities, research on how by-laws will impact businesses, communication materials, etc.). A 12-month period should be sufficient but no less In helping businesses make the transition: • If implementing composting alternatives, be very clear which materials can be composted in local facilities and assist Council and businesses understand that as soon as possible • Provide the correct information to packaging suppliers as soon as possible. Packaging suppliers are key stakeholders. Many businesses turn to them for advice on how to comply with by-laws and what are acceptable alternatives. If there is a vacuum of information, other parties will fill that vacuum. • Multicultural communities should be provided language-appropriate materials and some research should be conducted into their supply chain. Chinese and South East Asian businesses have different supply chains to others.
Social Media and Other Campaigns	Vancouver plans to launch a social media campaign, language-appropriate tools and resources to support the transition, outreach to affected businesses, and a Zero Waste Ambassadors volunteer program. Social media campaigns will focus on behaviour change, encouraging customers to bring their own cups and exploring new opportunities to support new business models for reusable cup exchange networks like those in Germany and New York. Under the communications and engagement campaign, the city will include the option of providing funding for outreach to support the transition for food providers and small businesses. The city has engaged other municipalities (through the B.C. Union of Municipalities) and the province in the initiative to encourage province-wide action on the issue.
Current Status	City Council approved the Strategy on June 5, 2018. City staff are now conducting technical research into compostable packaging and whether local composting facilities can successfully process compostable single-use items.

	The City is also doing stakeholder consultations on by-law details and implementation plans. No by-laws have yet been adopted, enforced or measured for impact. It is doubtful that the June 1, 2019 timeline for the implementation of the ban of foam cups and plastic straws is a realistic one.

Other Canadian Municipalities

Victoria, British Columbia (P: 85,795)	**Policy Approach**. A by-law that bans plastic bags and charges for paper and reusable bags was adopted on July 1, 2018, with enforcement starting on January 1, 2019. **Items Targeted**. Victoria's ban applies to any bag used to transport items from a store or restaurant, including plastic, biodegradable, compostable or paper. Customers must request checkout bags. **Drivers**. (1) Reducing the creation of waste and associated municipal costs; (2) better stewardship of municipal property, including sewers, streets and parks; and (3) promoting responsible and sustainable business practices consistent with the values of the community. **How it works**. Paper or reusable alternatives can be provided for a minimum fee ($0.15 per paper bag, rising to $0.25 on July 1, 2019). Plastic or other bags that customers bring with them are also allowed. The by-law provides a number of exemptions for special uses such as bulk food, live fish, fresh or frozen meat, dry cleaning, fresh flowers, linens or household newspaper delivery. Small paper bags are also exempt. By-law provides for phased implementation (6 months) and phased enforcement (12 months). Fines are as follows: if the violation is by a corporation, not less than $100.00 and not more than $10,000.00; or if the violation is by an individual, not less than $50.00 and not more than $500.00 for every instance that an offence occurs or each day that it continues. See the by-law for a specific fine schedule. **Campaigns and Outreach**. The city provides educational materials, a comprehensive toolkit for businesses. It conducted two seminars before implementation. Presentation to Council can be found here. **Challenges**. The ban has already been challenged in court by the Canadian Plastic Bag Association who asserted that the city does not have the power to enact the by-law without provincial approval. The City of Victoria prevailed in the B.C. Supreme Court.

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Halifax, Nova Scotia (P: 403,290)	**Policy Approach**. Halifax is taking action to ban single-use plastic bags in collaboration with the 10 largest Nova Scotia municipalities. On November 21, 2018, the Halifax Regional Council recommended staff to collaborate with the commercial sector to develop a voluntary reduction through education of single-use items, including plastic bags, utensils, cups, containers and straws. The voluntary approach was suggested to take advantage of the existing momentum to address single-use plastics and to build on the leadership within the ICI sector at local, national and global scales. However, a by-law for the prohibition of single-use plastics is to be developed, in tandem with education and engagement efforts on the voluntary strategy, should the voluntary strategy fail to make an acceptable measurable difference. On January 15, 2019, the Halifax Regional Council voted in favour of an amended motion directing staff to collaborate with the 10 largest Nova Scotia municipalities and to draft a by-law as soon as possible but no later than December 2019 "to eliminate the distribution of single-use plastic bags without first attempting a voluntary approach."
Montreal, Quebec (P: 1.705 mill)	**Policy Approach**. Implemented By-Law Prohibiting the Distribution of Certain Shopping Bags in Retail Stores (passed in August 2016; in effect January 1, 2018). **Items targeted**. The targets are bags made of petroleum-based plastic less than 50 microns thick, biodegradable bags (that can be decomposed by microorganisms) and oxo-degradable or oxo-fragmentable plastic bags (degrade into smaller pieces but are not compostable). The city aims to encourage a behavioural change in the use of these bags and to reduce the bags' environmental impacts. **Drivers**. Montreal is acting to ban bags on the basis of the success of a voluntary code of good practices for the use of shopping bags in Quebec and given voluntary measures put in place by businesses. **How it works**. The targeted bags are prohibited from distribution (whether free-of-charge or for a fee) altogether. However, the by-law is silent on paper or reusable bags. It exempts plastic bags used exclusively to carry food products like fruits, vegetables, bulk snacks, ready-to-eat foods, meat, fish, etc. Fines are as follows: • In the case of an individual: (1) for a first offence, a fine of $200 to $1,000; (2) for a subsequent offence, a fine of $300 to $2,000. • In the case of a corporation: (1) for a first offence, a fine of $400 to $2,000; (2) for a subsequent offence, a fine of $500 to $4,000.

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	FAQ site can be found here and here. The latter link provides support for the ban versus the implementation of a fee, including city branches that provided the relevant analysis; however, the analysis itself is not provided.
Calgary, Alberta (P: 1.239 mill)	**Policy Approach**. Calgary is developing a single-use waste reduction strategy. The city is currently considering whether or not to develop programs to reduce single-use items. If approved by Council, Calgary will conduct consultations and consider experiences from other world regions in developing programs for Calgary. By January 2019, Calgary made a What We Heard report available from a public engagement conducted in October and November 2018, and the project team began developing recommendations for the scoping report. By Spring 2019, Calgary plans on having a scoping report presented to the Standing Policy Committee (SPC) on Utilities and Corporate Services. **Social Media and Other Campaigns**. The City has launched Plastic Free YYC, a set of initiatives that engage all community sectors and help to gather intel to use in Calgary's mission to promote a plastic-free city. They include Ban the Bag YYC, Last Straw Calgary and ReConstruct YYC (addressing construction and demolition waste; still under development).
Prince Edward Island (Province) (P: 153,244)	**Policy Approach**. On June 14, 2018 Private Member's Bill, Bill 114, the Plastic Bag Reduction Act, received Royal Assent in the province of Prince Edward Island. The bill will see a ban on single-use grocery bags and require people to pay for a paper bag, if needed. **Drivers**. The Act seeks to reduce single-use checkout bags, waste and environmental damage, and to promote responsible and sustainable business practices in the province. **How it works.** The Act contains virtually identical definitions to the City of Victoria by-law. Businesses are prohibited from offering any type of checkout bag, unless the customer specifically asks, and then they may only provide a paper bag or a reusable bag and must charge for it. A minimum charge of $0.15 per paper bag or $1.00 per re-useable bag is required (rising to $0.25 and $2.00 respectively starting January 1, 2019). Businesses are prohibited from denying or discouraging the use of re-useable bags provided by the customer. A number of exemptions are provided for various specialized uses (such as bulk foods, live fish, fresh or frozen meat, dry cleaning, fresh flowers, linens, or household newspaper delivery) as well as for bulk packaged bags intended for use at home or at a business (*e.g.*, dog waste bags, bin liner bags, or sandwich baggies). An exemption is also applied to Small Paper Bags.

	Additionally, an exemption is provided for a bag that has been returned to the business for the purpose of being re-used by other customers, and businesses are permitted to use up stocks of bags purchased prior to First Reading of the by-law.
Wood Buffalo, Alberta (P: 71,589)	**Policy Approach**. A by-law banning single-use bags made of less than 2.25 mils (.571 millimeter) thick polyethylene; and/or pulp or paper, that are used in any retail establishment. It includes: • door hanger bag for holding flyers, coupons or other advertisements; • decorative paper or plastic gift bags used to transport goods; • biodegradable bags composed of, in whole or part, biodegradable plastic, oxo-biodegradable plastic, PLA-starch, polylactide, or any other plastic resin composite that is intended to degrade at a faster rate than non-biodegradable plastic film. The regulations aim to reduce the negative effects of plastic and paper bags on the environment. Fines are as follows: • for a first offence, $250; • for a second offence, $500; and • for a third offence, 1,000. Educational brochures were provided for businesses. Implementation required one dedicated full-time employee in Fort McMurray over one to two years. Very few retailers chose to use thicker bags. **Effectiveness**. There has been a visible improvement since the regulations were implemented with large numbers of consumers deciding to stop using those bags; however, it may have led to an increase in the purchase of reusable bags that are not reused.
Mississauga, Ontario (P: 721,600)	**Policy Approach.** On June 20, 2018, the Mississauga City Council passed a motion to request that the Federal Government develop a national strategy to reduce plastic pollution. The motion also indicated efforts by the City of Mississauga to educate and promote the reduction of waste, with a focus on single-use waste, with all internal staff. The City also significantly committed itself to reduce the use of non-recyclable, single-use plastics from use/purchase within internal operations, where feasible. Additionally, Mississauga will work with the Region of Peel to champion its single-use plastic waste reduction initiatives at city facilities. The City also held a townhall on March 9, 2019 to discuss action on plastic pollution.

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Markham, Ontario (P: 328,965)	**Policy Approach**. Markham is also considering banning single-use waste at the source. Since it has yet to develop a reduction strategy and proposal, it is less useful as an example for the City's purposes. The city is currently at the ideation stage of the initiative and believes it will conduct focus groups to gauge public receptivity to the changes. The city found that this public engagement and feedback approach worked well for their textiles initiative. The City of Markham has so far banned e-waste and textiles from curbside collection and staff is considering a strategy to ban single-use plastics to present to City Council. Items to be targeted for reduction are shopping bags, straws and fast food service ware using the city's powers of business licensing, by-law creation and even developments powers (*i.e.*, failing to release letters of credit until an inspection determines that the business is recycling).

Berkeley, California

Overview

The City of Berkley is found in northern California, Alameda County, and is the home of the University of California, Berkeley. It has a population of about 122,324. Berkeley has a long history of leadership in environmental protection, having adopted the first curbside recycling program and polystyrene foodware ban in the United States, as well as one of the first commercial organics collection programs.

Policy Approach	Ordinance, "Single-Use Foodware and Litter Reduction"
Current Status	City Council passed the ordinance on January 22, 2019 and accessory disposable foodware are now to be provided on request. Ratified on February 19, 2019.
Stated Objectives	The reduction of single-use disposable foodware and accessories

Key Drivers	• Berkeley's Zero Waste and Climate Action goals. The production, transportation, consumption, and disposal of single-use foodware is a major contributor to street litter, storm water pollution, ocean pollution, GHG emissions, recycling program contamination, and waste sent to landfill.
	  o This type of waste constitutes 2/3 of the street litter found in a street litter survey and is primarily concentrated in business district.
	  o Single-use disposables are costly and challenging to divert from landfills.
	• Storm water litter requirements. California requires that cities eliminate litter to storm water in the Bay Area by 2022 in accordance with the California State Water Board's Trash Amendments. This state law sets serious fines for non-compliance. It has driven a lot of policies in California focused on waste reduction and resource conservation.

	• Environmental Consciousness. The high environmental consciousness of Berkeley residents, students, businesses, civic institutions, and elected officials is based on a long history of similar Berkeley initiatives to reduce waste and the current surge in public awareness and concern over plastic pollution. • Human health. Reducing toxins, phthalates and carcinogens in food packaging which migrate into food.
Items Targeted	Foodware items including takeout containers, cutlery, cups, straws, lids, condiment packages and other packaging related to single-use foodware
How it works	The ordinance takes a phased approach to charge for take-out food ware, to ensure equity across businesses in Berkeley: • Immediately upon the ordinance's passing, accessory disposable foodware (cutlery, cups, straws, lids, etc.) will only be provided upon request or at self-serve stations • Starting in January 2020, foodware will be required to be Biodegradable Products Institute Certified Compostable and food vendors will charge $0.25 for disposable hot and cold cups • Starting in July 2020, food vendors offering eating on the premises may only use reusable foodware for eating in and arrange for either on-site or off-site cleaning The ordinance will be fully implemented by January 1, 2022. Movie theatres are included in the requirement for conversion to compostables if reusables are not possible. Items with no reasonable alternatives are exempt until acceptable/compliant items are found.
Costs and other considerations	The ordinance was the result of the work of a coalition which included the Berkeley Ecology Center, Clean Water Action's ReThink Disposable and Upstream. • ReThink Disposable works with restaurants on reducing waste primarily for in-house dining and has direct technical expertise on what works for businesses. They provided case studies showing how much waste can be reduced in restaurants as well as on the costs savings that can be achieved. • Upstream provided its expertise on municipal ordinances drafting as well as advice with respect to the state health code. • An expert from the City of San Francisco's Department of the Environment, Jack Macey, also contributed his expertise. Jack is a resident of Berkley and in charge of the zero waste programs for the City of San Francisco. The City of Berkeley staff has considered that the following costs will have to be incurred in order to implement and run the program:

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	• Funding for a City-wide education program and onsite technical assistance for businesses to help them transition to the requirements of the ordinance; • Funding for grants and/or loan administration to help defray business' up-front costs of purchasing reusable foodware and reconfiguring kitchens; • Staff time to develop fact-sheets and FAQs for businesses; • Staff time to research possible methods to require compostable containers for pre-packaged prepared foods; • Staff time to work with recognized industry organizations to identify accepted standards for items that comply with compostability and health concerns in order to develop an approved list of compliant items; • Funding for a City-wide program to educate consumers on proper sorting of waste to ensure compostable disposables end up in the compost stream; • Funding to improve collection of compostable single-use foodware through increased service and quantity of city bins in high-traffic food take-out establishments; • Compliance enforcement costs to require customer-facing in-store compost bins for front-of-house compost collection; • Funding for development of a pilot program for standardized reusable to-go container system and/or establishment of a City-wide reusable container program; • Staff time to assess impacts of charges on low-income, transient stakeholders; • Staff time to review health codes and provide clarity on acceptable practices for Bring Your Own (BYO) containers, including creation of a guidance document and feasibility study; • Staff time to work with businesses to support BYO containers initiatives; • Staff time to assess best alternatives to disposable plastic straws that are deemed acceptable for the disabled community, including the possible purchase of reusable silicone straws to be distributed by the City through the disabled community, commissions, and other sanctioned methods; • Staff time to coordinate with the Alameda County Waste Management Authority (StopWaste.org) to ensure the ordinance language is consistent with existing ordinances such as the Alameda County Reusable Bag Ordinance, including a review of the Reusable Bag Ordinance for consideration of the disposable container charge amount; • Staff time to examine best practices of local communities in Alameda County and cities bordering the City of Berkeley.

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	• Implement phased-approach to charge: phase one for hot beverage containers/lids, phase two later for food containers after analyzing results of phase one implementation and pilot program
Enforcement	Enforcement will be pretty soft. Businesses will have a good grace period after which the city send letters and offer additional resources hoping to have compliance without punishment. Enforcement will take a complaint-based approach.
Performance Metrics	Berkeley is currently engaging a PhD student at the University of California and the Goldman School of Public Policy to collect baseline data and do evaluation of the initiative. Economic cost, savings, environmental benefits resulting from storm water litter reduction, GHG emission mitigation, oil extraction, etc. might be considered in the evaluation. City staff did not wish to create their own evaluation or assessment of the ordinance given the large additional expense of this step.
Results to date	No results to date.
Lessons Learned	• Berkeley decided against their initial plan on having a charge on takeout containers after they visited a number of restaurants who expressed concerns regarding food contamination and liability, as well as slowdown in the production line when there's a high volume of orders. It is also not feasible to ask residents to bring their own food containers everywhere. • Berkeley believes that a city-wide container sharing program would be beneficial and is currently looking into starting a pilot reusable container program. • Free technical assistance to be provided to help food establishments plan operations and equipment changes • Small grants or loans to be provided to help defray the up-front costs of purchasing reusable foodware and re-configuring kitchens • Private off-site washing/cleaning services to be allowed in lieu of on-site cleaning. • Certain establishments are exempt from the 100% reusable requirement on a case-by-case basis, if they can prove it was impossible to implement all requirements due to unique considerations, so long as a good faith effort is made to do the most possible to achieve goals of ordinance. • Compostable items can be used in any case where use of reusables is determined non-implementable by City. • City-wide funded education program for businesses to transition to the requirements of the ordinance. • Provide fact-sheet/FAQ for businesses

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	• When doing education or outreach with businesses, it was helpful to have ReThink Disposable's materials proving that costs savings can be achieved in implementing this initiative while at the same time reducing waste.
Social Media and other campaigns	City will be rolling out programs for (1) technical assistance to help businesses comply; and (2) mini grants for start-up costs of the changes. Developed in response to challenges reported by businesses and what they perceived to be customers carriers.
Previous Bans	**Polystyrene**. Berkey adopted one of the first polystyrene bans through an ordinance passed in 1989, which helped put a stop to fast food industry switching to polystyrene containers for hamburgers and cold cuts. This ban prohibited restaurants, retail food vendors, from using, purchasing, or possessing any food packaging made of polystyrene foam for take-out food. *How it works*. At least fifty percent by volume of each restaurant or retail food vendor's packaging, used for take-out food, needs to be degradable or recyclable. Restaurants are required to obtain from each of its suppliers a written statement signed by their supplier stating that the supplier will not supply polystyrene foam food packaging to that vendor. Retail vendors are required to separate their food packaging used in their take-out food operations from other food packaging. Containers for take-out food operations must be labeled and indicate that they contain no polystyrene. Berkeley requires all restaurants and retail food vendors to give written documents to the city manager on the type of containers they use. *Fines*. If businesses are found non-compliant, they are given a $100 fine for the first offense, a $200 fine for the second offense in the same year, and no more than $500 for each subsequent violation in the same year. Exemptions are granted for businesses that experience undue hardship, have no suitable alternatives, or contracts existing prior to September 22, 1987. The ordinance places a specific ban on the city purchasing any polystyrene food packaging, including those used for city sponsored events. **Bag reduction strategy**. Berkeley also piloted the bag reduction strategy that has become state law in California. This strategy bans plastic bags and charges for paper bags. The aim of the strategy was to reduce disposable bags overall and encourage consumers to bring their own bags.

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New York City, New York

Overview

New York City houses a population of 8.623 million people. After many years in court, the city has finally received the green light to proceed with its polystyrene ban as of January 1, 2019.

Policy Approach	Local Law 142 (2013), which amended section 16-324 and added section 16-329 of the New York City Administrative Code (Ad. Code), establishes a prohibition on the use of expanded polystyrene single service articles and expanded polystyrene (EPS) loose fill packaging in New York City and establishes violations and penalties for businesses that continue to use these items in contravention of the law. Food service establishments, mobile food commissary, or stores are prohibited from possessing, selling, or offering polystyrene products.
Key drivers	In 2001, the Fresh Kills Landfill, the only disposal destination within NYC, closed. This forced the city to become more reliant on private transfer stations. The public system handles waste from residences, government buildings, and some non-profits. All other waste generated by commercial businesses are collected by private companies. Both landfills, and waste to energy plants are typically located outside the city. New York City littering fines doubled in 2017 to $100 for a first offense. The New York Department of Sanitation (DSNY) collected approximately 28,500 tons of expanded polystyrene in Fiscal Year 2014 and estimated that approximately 90 percent of that was from single-use food service products like cups, trays and containers. EPS is a major source of neighborhood litter and hazardous to marine life. EPS foam is lightweight, can clog storm drains and end up on beaches and in the New York Harbor. Containers break down into smaller pieces that marine animals can mistake for food. EPS contaminates and has a detrimental effect on the city's organics program. During the collection process, foam can break down into small pieces that get mixed in with and contaminate organic material, rendering it unmarketable for anaerobic digestion or composting. EPS is already banned in cities across the country, including Washington, DC, Minneapolis, San Francisco, Oakland, Portland, Albany, and Seattle. In total, more than seventy cities have banned foam and businesses large and small have shifted to alternative products that are biodegradable or otherwise recyclable.
Items Targeted	As of January 1, 2019, New York City stores, food service establishments, and mobile food commissaries may no longer offer, sell or possess single-use foam food containers such as foam takeout clamshells, cups, plates, bowls and trays. Additionally, manufacturers

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	and stores may no longer sell or offer for sale loose fill foam packaging ("packing peanuts") in the city. **Exceptions** • Foam containers used for prepackaged food that have been filled and sealed prior to receipt by the food service establishment, mobile food commissary, or store. • Foam containers used to store raw meat, pork, fish, seafood or poultry sold from a butcher case or similar retail appliance [*sic*] • Foam blocks used as protective packaging in shipping are not covered under this law
Policy tools applied	DSNY initiative on the basis of the non-recyclability of polystyrene foam. Local Law 142 of 2013 under the New York City Administrative Code requires the Commissioner of this department to determine the recyclability of single-use food and beverage containers
How it works	This ban was effective as of January 1, 2019**.** Affected businesses, agencies, and non-profits have a six-month warning period lasting through June 30, 2019. Following the warning period, Notices of Violation will be issued and civil action may be taken. Beginning July 1, 2019**,** establishments found in violation of the foam ban will receive fines for each Notice of Violation issued within a 12-month period in the following amounts: • $250 for the first offense • $500 for the second offense • $1,000 for the third and subsequent offenses Affected establishments should be prepared to receive inspectors, at least annually as part of routine inspections or 311 investigations, from one or more of the following agencies: • NYC Department of Sanitation • NYC Department of Health and Mental Hygiene • NYC Department of Consumer Affairs Small businesses with less than $500,000 in gross income for the most recent tax year and non-profits may apply for temporary hardship exemptions from the Department of Small Business Services (SBS) *if they can prove* that the purchase of alternative products not composed of foam would create a financial hardship.
Performance Metrics	Performance metrics are not known
Results to date	No results yet
Lessons Learned	New York has attempted to pass this ordinance twice, prevailing only on the second attempt. The first EPS ban took effect in July 2015 but resulted in a lawsuit against the city: *Restaurant Action Alliance v. New York City Department of Sanitation*, 100734/15 (Sup. Ct., N.Y. County 2015).

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	The lawsuit by restaurants and plastics manufacturers claimed that polystyrene foam was recyclable and that the Sanitation Commissioner's conclusion that it was not was not adequately explained. In September 2015, the judge in the case sided with the plastic manufacturers which led the city to stop enforcing the ban shortly after. As a result of the decision, the DSNY conducted a more thorough study that assessed whether EPS containers were recyclable in an environmentally effective or economically feasible manner. It concluded that they were not and announced that it would go forward with the EPS ban in January 1, 2019. The same restaurants and businesses sued the city again. This time, however, the judge ruled in favour of the city, indicating that the Commissioner had presented sufficient evidence to justify her decision that foam could not be recycled in a manner that was "environmentally effective and economically feasible," pursuant to the 2013 statute. The evidence included a review of information submitted by the industry petitioners in the case, consultation with experts on economics and post-consumer plastics recycling, and extensive research and visits to recycling facilities. This allowed the ban to take effect in January 2019. Note that the more in-depth study submitted by the DSNY to the court in the EPS industry's second legal challenge, the Commissioner of Sanitation indicated that Toronto was the most comparable city in North America to New York (see at p. 33; other cities in Canada were cited for evidence in subsequent pages) and used the Toronto experience with the recyclability of EPS containers as evidence before the court.
Social Media and Other Campaigns	New York provides access to educational materials, free trainings, or educational site visits at nyc.gov/dsnybusinessresources to help businesses ensure that they understand the law and to help them transition away from foam products.
Current Status	The ban was just put in place early this year.

Santa Cruz County, California

Overview

Santa Cruz County encompasses a 29-mile coastline and houses a population of about 65,021.

Polystyrene Bans	**Policy Approach**. Santa Cruz County first addressed the problem of polystyrene foam containers with the passage of an "Environmentally Acceptable Packaging and Products Ordinance" enacted in 2008. This law specifically banned the use of polystyrene foam in food service, and further required that "all to-go food serviceware shall be compostable or recyclable." There were no exceptions to this ban.

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	The ban was expanded to prohibit the sale of all expanded polystyrene products in stores on April 17, 2012, including products such as polystyrene cups, plates, bowls, coolers and beach toys while exempting certain products where polystyrene is used for insulation or flotational purposes and is completely encased by more durable material (*e.g.*, boats, surfboards, etc.). **Drivers**. The drivers were the reduction of landfill waste and the lessening the environmental impact of litter, particularly as it concerns the oceans. Polystyrene foam was criticized as being impossible to break down and hazardous to the environment and marine life. The City of Santa Cruz sits next to the Monterey Bay National Marine Sanctuary, and over 56,000 pieces of plastic and plastic foam were picked up on the shores of the bay. **Enforcement**. Enforcement of the polystyrene ban in Santa Cruz is based on public complaints. Fines are $100 for the first offense and the offender is given the choice of paying the fine or buying $100 worth of containers made from recyclable materials. Food vendors can apply for a one-year exemption from the ban if they show that the ordinance creates "undue hardship" or "practical difficulty." Public Works sent letters to more than 300 restaurants and cafes across the city to alert them of the upcoming ban. **Effectiveness**. The 2012 ordinance was implemented as a result of the success of the 2008 ordinance. After more than three years, the city observed significant changes, including near-universal compliance by local businesses and a reduction of polystyrene packaging waste in the landfill and in litter along county roads, streams and beaches. While it includes provisions for fines, nothing more than a little arm-twisting was required, and this only rarely. Polystyrene foam all but disappeared.

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Compostable Food Serviceware Ordinance	**Policy Approach**. Recently, as of January 1, 2017, Santa Cruz County also implemented a further ordinance requiring that all to-go food serviceware must be compostable or recyclable in the unincorporated areas of Santa Cruz County. Acceptable compostable products must meet the requirements of the Biodegradable Products Institute. The ordinance also banned plastic straws and stir sticks. **Items targeted**. As of January 1, 2017, the county required that all to-go food service ware be recyclable or compostable, including straws, stir sticks, cups, cutlery, hot cup lids and to-go containers. **Drivers**. The driver for this further ordinance was the fact that some plastic products are challenging, not because of their composition, but because of their shape and size. For example, straws and stir sticks tend to slip through the gaps in automated sorting machines, making them difficult to recycle. These items are now banned in Santa Cruz County with this new ordinance as a result. However, paper and wooden stirrers are allowed. These rules applied to restaurants, grocery stores, farmers markets, food trucks, special events and any other business or events where food is sold to go.
Small Plastic Bottles in Hotels Ban	**Policy Approach.** Ordinance Banning single-use personal care bottles in hotels. **Items Targeted**. The ordinance bans small single-use plastic personal care bottles in hotels, motels and vacation rentals in the country, including unincorporated areas like Aptos, California The ordinance applies to about 30 hotels and motels and about 75 vacation rentals. The ban will take effect on December 31, 2020 to give the hospitality industry time to make the switch and use up the small plastic bottles they already have. **Current status**. The ordinance was approved by the County Board of Supervisors on November 20, 2018. As of February 26, 2019, the Santa Cruz Board of Supervisors has also directed the Santa Cruz Department of Public Works to research a policy prohibiting entities in the unincorporated area from providing customers with plastic to-go food service ware as well as local measures that can address tobacco waste and other plastic pollution issues. Further information has not been provided by the Santa Cruz County staff but requests for information can be made.

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San Francisco, California

San Francisco (population of 884,363) implemented the first ordinance to ban EPS taking out food packaging which went into effect in June 1, 2007 and affected 4,500 food establishments.

Polystyrene Bans[1]	**Items Targeted**. The ordinance targeted containers, bowls, plates, trays, cartons, cups, lids, straws, forks, spoons, knives, napkins as well as plastic wraps. It exempted aluminum products and polystyrene foam coolers and ice chests intended for reuse. It also provided a hardship waiver for any businesses experiencing difficulties complying with the ordinance. However, there were cost exemptions for EPS, and foam products were not permitted even under the "undue hardship" provision. The Berkeley and Oakland foodware ordinances were used as examples. In 2016, the Board of Supervisors voted to expand the ban to include the sale of non-recyclable non-compostable polystyrene food service ware, egg cartons, meat trays, and packing materials, as well as coolers, pool or beach toys, and floats or buoys that are not encapsulated in a more durable material. San Francisco now has the most comprehensive ban in the nation. The ban was effective January 1, 2017. **Costs and Efforts**. To implement the ordinance, the city did significant outreach, targeting certain neighborhoods and visiting or directly contacting affected establishments (this took about four years). It worked in partnership with many stakeholders including neighborhood associations, volunteers, retailers (including Restaurant Depot) and the Golden Gate Restaurant Association. The city's compostable program was well underway at the time that the ordinance was implemented and businesses indicated that they had achieved significant costs savings by switching to compostable materials. **Effectiveness**. The city did litter audits in 2007, 2008 and 2009 and noticed a 41% decrease in polystyrene litter during those years, with decreases in EPS litter being as high as 36% a year after implementation.[2] The aim of the ordinance was to protect health and safety of city residents and the city's natural environment, waterways and wildlife. Contrary to Portland's EPS ordinance, San Francisco's went further in that it not only banned the use of EPS foodware, it also specified alternative products that had to be compostable, biodegradable or recyclable.

[1] Most of the information in this section is taken from Linda D. Nguyen's, "An Assessment of Policies on Polystyrene Food Ware Bans", San Jose State University Master's Theses and Graduate Research (Fall 2012) and it is based on Ms. Nguyen's interview with San Francisco city staff.

[2] See HDR/BVA Engineering and MGM Management. (2007, June). The City of San Francisco Streets Litter Audit. (prepared for City and County of San Francisco); HDR, BVA Inc. and MGM Management. (2008, July 4). The City of San Francisco Streets Litter Re-Audi 2008. (Prepared for City and County of San Francisco).

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Portland, Oregon

Portland houses a population of 647,805 and is one of the most advanced cities in the US in terms of its efforts to ban a variety of items, most recently foodware accessories at fast food or other types of restaurants.

Foodware Accessories Ban	**Policy Approach.** In December 2018, the Portland City Council unanimously approved an ordinance to reduce the automatic distribution of single-use plastics in Portland. Since Portland has already banned polystyrene and plastic grocery bags, the new ordinance repeals the existing code for Single-use Plastic Checkout Bags and Polystyrene Foam Food Containers and replaces it with Code Prohibitions and Restrictions on Single-use Plastic. The ordinance will go into effect on July 1, 2019. **Items targeted.** Items targeted for reduction were plastic straws, stirrers, utensils, and individually packaged condiments. **Local Divers**. The local drivers of this policy were elected officials and activists, including Surfrider Foundation, recycling advocates and the anti-litter group SOLVE who were concerned with litter in the city. SOLVE supplied the composition data from litter cleanup that Portland used as evidence for the necessity of the ordinance. Portland also used data from international beach litter cleanups by the Surfrider Foundation. *Waste reduction vs. mitigating GHG emissions*. Portland staff also consulted with Berkeley on its single-use foodware reduction initiative. However, Portland rejected Berkeley's approach to requiring dishwashing by food service establishments on the basis that waste reduction was not likely to be significant as sit-down food service establishments already generate less waste than fast food service establishments. Berkeley's approach was deemed to be more beneficial from a GHG emissions mitigation perspective. Portland's Climate Action Plan does not involve litter as an item of concern since it is not a big source of GHG emissions. **How it works**. The ordinance will multiply the impact of the city's grassroots #DitchTheStrawPDX campaign, and include restrictions on plastic service ware (*i.e.*, straws, stirrers, utensils and condiment packaging) in food and beverage orders as follows: • By request policy: for dine-in situations • Ask first policy: in fast food, take-out and delivery situations (consumer must be asked and must confirm before being given the plastic service ware).

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	The city avoided a ban on these items to accommodate people with disabilities under the *Americans with Disabilities Act*. Portland also leaned on its previous plastic bans (see polystyrene and foam container ban and single-use plastic bag ban[3]) with respect to its approach on notification, enforcement, fees and timing. The City plans to track compliance evaluation through notifications successfully delivered, responses to complaints and efforts to comply. Portland uses Sustainability at Work to provide technical assistance to businesses. It is planning on spreading awareness by way of newsletters, mailings and partners, community events, volunteer programs, etc. To develop this policy, Portland held public conversations regarding single-use plastics. These strategies were found to be more effective on waste-reduction. **Lessons learned**. Portland has purposefully avoided introducing alternatives, such as compostable materials, since it is still questionable whether they are the environmentally preferable option to single-use plastics. The city sought to avoid the problem faced by Seattle and San Francisco who opted for compostable materials but found that they posed the same problems as regular plastics because they often do not break down in water or even in land. Furthermore, these items cannot be composted in Portland compost program: see study. See the research on BAN List 2.0 regarding the composability of biodegradable plastics.

San Diego, California

San Diego is the second largest city in California, hosting a population of 1.42 million. Like New York City, it has recently launched an ordinance banning polystyrene foam and faced a lawsuit from restaurants and industry for taking this action.

Polystyrene Ban	**Policy Approach**. San Diego's Polystyrene Foam and Single-use Plastics Ordinance took effect on February 23, 2019. The ordinance regulates products made from polystyrene foam and the distribution of certain single-use straws and utensils. **How it works**. As of February 23, 2019, food vendors may provide plastic straws and plastic utensils only upon request or at self-serve stations. City facilities will ban all polystyrene foodservice ware, trays,

[3] Portland, Oregon reported a 491% increase in the use of paper bags one year after banning plastic bags thinner than 4 mils in 2011: see https://www.portlandoregon.gov/bps/article/419700

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	egg cartons, coolers, ice chests or pool or beach toys. These items may not be distributed at large unless encased within other material. As of May 24, 2019, no person is allowed to distribute egg cartons, food trays, or food service ware (including bowls, plates, trays, cups, lids, and other similar items, including containers for eating in, takeout food, or leftovers) made in whole or in part of polystyrene foam. A one-year phase-in period will be provided for businesses with revenues of less than $500,000. Waivers are provided for potential hardship. The ordinance includes fines associated with violations, but the City of San Diego will not be hiring additional staff to monitor restaurants' adherence to the ordinance. It has created a reporting mechanism for those who violate the ordinance. **Drivers**. Data from volunteer beach cleanups was one of the main drivers of the initiative. A team of 10-12 non-profits, including 5 Gyres and the Surfrider Foundation, worked closely with the city council members that championed the ordinance. EPS is also not biodegradable, cannot be recycled and there are marine and human health impacts and financial costs to its pickup. They used this study on the recyclability of EPS containers (this study was done independently of the City of San Diego), as well as data from beach litter clean-ups, to go forth with this policy. Additionally, they used information from Caltrans (the California Department of Transportation), as well as studies from the EPA, the American Academy of Pediatrics regarding potential health impacts, 5 Gyres research and evidence from the City of Santa Monica's EPS ordinance since its implementation. However, San Diego also did a study on the recyclability of EPS containers (a copy has been provided to the consultants for this project) through a third-party contractor. **Costs and efforts**. The city has created a website explaining the changes, sent emails to affected businesses and mailed bilingual fliers to more than 8,500 businesses. It also runs a website which provides a list of recommended options or alternatives for vendors. **Challenges**. San Diego has already been the subject of a lawsuit with respect to this ordinance. The lawsuit states that the relatively large size of the economy in San Diego, which is the second largest city in California and eighth largest in the country, made blocking the city's legislation a priority for the association. The lawsuit claims that San Diego failed to properly analyze the ban's effects on the environment. It also claims that evidence before the city when it adopted the ordinance uniformly showed that a ban on expanded polystyrene, which is recyclable, will not reduce litter or

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	trash but rather substitute it with replacement products that have far greater environmental impacts and result in increased litter and trash, or that it may harm homeless people by increasing costs at subsidized soup kitchens.

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Other US Initiatives

San Anselmo, California (P: 12,580)	**Policy Approach**. San Anselmo has also proposed an ordinance regulating single-use food serviceware that has currently passed the first reading by Town Council in November 13, 2018. **Drivers**. The main driver for the ordinance appears to be Town Council's goal of achieving zero waste by 2025. Additionally, 80% of single-use plastic becomes marine or street litter. Food and beverage packaging constitutes 67% of the litter that enters the San Francisco Bay. Since China closed its borders to several types of trash in January 1, 2018, the city has taken it upon itself to find solutions to this litter problem. **How it works**. The ordinance, if passed, will aim to do the following: • Encourage food vendors, schools and the Town government to use reusable food serviceware and not disposables. • Prohibit all food vendors, schools and the Town from providing prepared food to customers in disposable food serviceware that uses any forms of polypropylene or polystyrene. • Require the use of wooden utensils, unlined paper containers and paper straws that are accepted by Marin's compost facility, or aluminum disposable food serviceware. • Food vendors may charge a "take-out fee" to customers to cover the cost difference. • Ban the sale of EPS coolers, ice chests and food serviceware after 1/1/19. • Provide exemptions for emergencies, organizations that package prepared foods outside the Town, and for hardship. The proposed ordinance provides for a warning and then fines for violations after January 1, 2019 ranging from $100 to $1000, depending on the type and number of violations.
Monterey, California (P: 28,639)	In November 2018, Monterey passed an ordinance that banned the use of plastic straws, utensils, stirrers and cup lids at all food establishments within the city.
Alameda, California (P: 79,177)	An ordinance bans restaurants from providing single-use straws, except upon request by customers. All to-go disposable foodware (containers, bowls, plates, trays, cartons, cups, lids, straws, utensils, etc.) must be compostable and food vendors are encouraged to provide reusable foodware. Alameda implemented its reusable bag ordinance in January 2013 and has seen dramatic results.
Malibu, California (P: 12,877)	An ordinance bans restaurants from providing plastic straws, stirrers, and utensils. Non-plastic alternative straws, stirrers, and utensils can be provided only upon request by customers. City events and facilities are also banned from providing plastic straws, stirrers, and utensils.
Mount Pleasant, South Carolina	Mount Pleasant's ban, which takes effect mid-April 2019, bans single-use plastic bags, plastic straws as well as polystyrene foam

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(P: 86,668)	containers. The ordinance passed by Mount Pleasant creates some exceptions, however, for plastic bags such as dry-cleaning bags, garbage or pet waste bags, newspaper bags and bags provided by medical professionals. There are also a number of foam product exceptions.
Charleston, South Carolina (P: 110,861)	The City Council of Charleston, the largest city in South Carolina, banned plastic bags, straws and foam containers on November 27, 2018. They used the mechanism of an ordinance whose provisions kicked in right away upon passing. However, businesses will have until January 1, 2020 to discontinue their use of straws, plastic bags and foam containers. Drivers were waterways pollution, threats to human health and the ecosystem as well as the region's tourism industry.
Other EPS ban ordinances in the US	Other US ordinances banning polystyrene foam can be found here and here.

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EUROPEAN GOVERNMENT-LED INITIATIVES

Frieburg Cup – Frieburg, Germany https://freiburgcup.de/	The City of Freiburg, Germany, created the Freiburg Cup in November 2016. The Freiburg Cup is a hard plastic to-go cup with a disposable lid that customers can obtain for a €1 deposit and return to any one of the 100 participating businesses across the city. **Drivers**. (1) Preventable source of waste that is not recyclable; (2) cups are voluminous and quickly fill street waste bins; and (3) a source of litter. Deutsche Umwelthilfe (Environmental Action Germany) calculated that 28 billion disposable cups are consumed every year in Germany.[4] **How it works**. Freiburg preferred using a voluntary scheme with a deposit mechanism for two main reasons: (1) it was simple; and (2) it allowed progressive involvement of cafes and citizens. ASF, the public company in charge of waste collection and treatment, waste prevention and cleaning services, spent about four months looking into alternatives and options. They focused on choosing the right cup and getting cafes on board. Economic limitations made ASF choose a single-use, yet recyclable coffee cup lid; however, it chose a light but solid plastic cup with an attractive design made in Southern Germany. ASF provides coffee cups free of charge to the cafes and shops, along with posters and stickers to promote the cup. The system remains voluntary. Customers pay €1 deposit when checking out a cup, which they can get back if they return the cup. Cafes and shops must wash the cup before a new customer can reuse it. Participating stores have an identifying green sticker in the window. When the cup is returned, the stores disinfect and reuse it. The cup can be reused up to 400 times. So far, the initiative has been successful although about 15% of cups have been lost. **Campaigns and Media**. In addition to choosing the cup, ASF held public meetings with café owners in the months prior to the launch to understand their needs and concerns. They found that many were interested in the initiative. The cup was launched at an event jointly organized with ASF, garnering massive media coverage and thus bringing the topic high in the agenda. **Effectiveness**. The Campaign temporarily started with 15 cafes. After four weeks, 45 were involved and the number grew to 60 after two

[4] Details on the FreiburgCup initiative are taken from a case study by Ferran Rosa, "The Story of FreiburgCup: How a city is ditching disposable coffee cups", Zero Waste Consumption & Production, Zero Waste Europe 2018, online: <https://zerowasteeurope.eu/downloads/case-study-2-the-story-of-freiburgcup/>.

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	months. As of 2018, 105 cafes, thus between 60 to 70% of the cafes in Freiburg, had joined. The system remains balanced internally and there is no need to compensate the cafes. 15% of the cups have been unredeemed, likely taken by tourists and students. The cup has managed to achieve Freiburg's three main goals, but the level to which the FreiburgCup has managed to reduce the use of single-use cups is unclear as ASF has not tracked or measured the change in their consumption. Cafes, however, find the system very advantageous because they save on disposable cups while not having to pay anything to opt-in to having FreiburgCups at their locations. **Challenges**. Having takeaway coffee has become a habit for many customers and having access to a sustainable alternative is not sufficient to make people change their habits. A voluntary scheme that does not include incentives for consumers to opt for reusable cups may not be enough to incentivize a behavioural change. In fact, consumers are taxed in that they must return the reusable cups (which involves carrying them for a lot longer, at times more than one trip, and thinking about disposal locations), a burden that does not apply with single-use cups. Despite the savings, some cafes are reluctant to participate given that they fear being at a disadvantage with competitors. This means that the cost of the cups is borne exclusively by the city. This has hindered the possibility of having a fully reusable cup with a reusable lid and makes the project dependable on the city's political will. FreiburgCup thus provides an important case study in assessing whether a voluntary program whose costs are borne entirely by a municipality would be a successful one or at least more successful than alternatives mandating fees or bans of single-use cups. **Other possibilities**: Cupforcup, which operates in several cities in North Rhineland, or Recup, originally from Munich, have managed to find solutions to have a fully reusable cup.
ECOBOX – Luxemburg https://ecobox.lu/de/	ECOBOX is an initiative of the Luxembourg Ministry of Sustainable Development and Infrastructure and developed by the SuperDrecksKëscht® in cooperation with Horesca. Similar to reCIRCLE (see below, Significant Corporate Initiatives), ECOBOX allows consumers to check out a reusable container at a restaurant or other food service establishment for a €5 deposit fee and to return it for either a refund or to take out another professionally-cleaned takeout container. Participating businesses obtain an ECOBOX logo that they display on their establishment in order to attract waste-conscious consumers. The ECOBOX project was first launched in Luxembourg City with institutions that have shown interest in participating.

Balearic Islands, Spain	On January 29, 2019, the Balearic parliament approved the Waste and Polluted Soils Law targeting waste reduction. The law bans the use of plastic bags, cutlery, plates, straws, cotton buds and sweet sticks [sic]. It also bans the use of products containing microplastics or nanoplastics as well as non-rechargeable, non-reusable lighters, shavers, printer tones and cartridges.
Tiffin Project, Belgium http://tiffin.be/tiffin/ Das Tiffin Projekt, Germany	Born in Vancouver but now discontinued due to pressure from health authorities (ran from 2012-2015), the Tiffin Project continues in Belgium and Germany. In Brussels, Belgium residents are connected with restaurants willing to accommodate reusable containers. Residents sign up for the Tiffin Project online and receive a reusable, stainless steel container in either of the two available styles (deep bowl or shallow, divided dish), both of which come with sealing lids. The containers can be used when the residents take out food and they even get a 5% discount at the till. The Tiffin Project was inspired by the system in India where hundreds of thousands of people get meals delivered to their workplaces in stackable metal boxes called tiffins.
Hamburg, Germany (P: 1.81 mill)	In February 2016, the City of Hamburg introduced a niche plastic ban on non-recyclable plastic coffee pods and disposable packaging in its council buildings.

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SIGNIFICANT CORPORATE INITIATIVES

Why this is Relevant

A wide variety of stakeholders could potentially be impacted as the City implements its proposed reduction programs and policies. Corporate experiences with voluntary reduction initiatives implemented in other jurisdictions may provide inspiration and some key lessons learned.

Loop by TerraCycle – Various Locations https://loopstore.com/	Loop constitutes a coalition of the world's biggest consumer brands (Procter & Gamble, Nestlé, PepsiCo, Unilever, Coca Cola, etc.) to provide a multi-brand shopping platform with products in fully reusable packaging. Loop customers order their items off of Loop's website. These items are then delivered to them in reusable tote bags. Customers pay a small refundable deposit for the packaging of each item. Once finished with the products, the customers can put them back in the tote and have the tote collected by Loop for reuse or refilling. Not much is known of the Loop project so far although attempts have been made to contact TerraCycle and inquire on the project. TerraCycle is currently focusing on designing the program and is not providing further information to interested parties.
GO Box – Portland (OR), San Francisco (CA) https://www.goboxpdx.com/	Developed as a Master's project, GO Box is a subscription fee-based service for reusable takeout containers, and it operates through an app. Customers are charged about $18 a year for their membership and restaurants pay a $0.20 fee for each GO Box transaction. GO Box employees deliver reusable containers for takeout food to food vendors by bike. Consumers pay a subscription to GO Box and use an app to check out containers when they purchase takeout food from vendors. They can check the containers back in through the app when the container is returned to an approved GO Box return location. GO Box has enjoyed success in areas of Portland that feature a cluster of food trucks and also works well in business districts. There are about 70 participating food service establishments that use GO Box. Restaurants enjoy the marketing advantage of being associated with GO Box.
reCIRCLE – Switzerland https://www.recircle.ch/	reCIRCLE is a private initiative that provides reusable takeout containers to private partners, including restaurants, kiosks or food trucks. Consumers pay a

	deposit for the reCIRCLE takeout container when they use it to take out food and can get the deposit back when they return the container to a reCIRCLE partner. The reCIRCLE partner is then responsible for sanitizing the container for further use. reCIRCLE partners with various Swiss cities on waste reduction campaigns and relies on city funding as well as city support to gain credibility with local businesses. Cities write to restaurants informing them of reCIRCLE's work, which allows reCIRCLE to more easily reach out to businesses and partner with them. Swiss cities also support reCIRCLE financially during the initial phase of providing a free trial period for the containers to local businesses, as this requires a sizeable financial investment.
GreenToGo – Durham, North Carolina https://durhamgreentogo.com/	GreenToGo is a project launched by the non-profit Don't Waste Durham. Similar to GO Box, customers pay a $25 yearly subscription to have their takeout orders put in reusable containers at partnering vendors. The customers drop off the boxes in bins around the city of Durham where they get picked up by GreenToGo staff using carbon-neutral transportation. The boxes are then washed and sanitized by a commercial kitchen before being redistributed to restaurants. Durham County Health Department officials were involved in the initial planning meetings for the company and helped with the design of GreenToGo. This has given the company credibility with the restaurant community and provides assurance of compliance with health code requirements. Both GO Box and GreenToGo use Eco-Takeout containers made from BPA-free number five plastic.
RECUP – Germany https://recup.de/	Founded in 2016, RECUP has already been officially launched in Munich, Berlin, Cologne, Ludwigsburg Oldenburg, Rosenheim, Wasserburg, with more cities to follow. Customers can leave a deposit in order to take out a RECUP coffee cup and get the deposit back when the cup is returned to a RECUP partner. RECUP partners give discounts to customers that choose the RECUP. In March 2017, RECUP also joined with JustSwapIt, a Berlin deposit system, and continued together under the RECUP brand. RECUP also won a tender

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	with the Department of the Environment and Energy and was selected as the official deposit system of the city of Hamburg.
OZZI – North America, incl. McGill http://agreenozzi.com/	The OZZI is a machine system developed to collect reusable containers while streamlining the dirty containers into existing washing operations. Upon collection, OZZI gives the user of the returned container a token so that they can get another container the next time they take out food. The OZZI machine also performs a list of self-checks on a daily basis and it is also monitored for workability. As a result, the machine requires minimal staff monitoring and employee interaction while reducing waste generated from takeout containers. OZZI is designed for college and university campus dining centers as well as all facets of business and industry, healthcare, hotels, restaurants, food courts, supermarkets, quick service, sports and entertainment venues. It is currently being used in McGill University.
Vessel Works – Boulder, CO https://vesselworks.org/press	Following a successful pilot run in New York City, Vessel Works has launched in Boulder its insulated stainless-steel mug that keeps beverages hot or cold. When visiting participating locations, customers can check out a Vessel mug out for free using an app and later drop the mug off at a kiosk. The mugs are easy to track and store and Vessel cleans them at their commercial facility. It tracks the mugs back to each café to maintain inventory.
CupClub – London, UK https://cupclub.com/	CupClub created an award-winning reusable cup that uses only half of the carbon dioxide equivalent of disposables and ceramics (including PE lined, polystyrene and compostable PLA cups) and holds both hot and cold drinks. Cups are tracked with RFID technology, and people are given both soft and hard incentives to return the cups. The company manages the returnable packaging service through cloud-based IoT software.
London Refill https://refill.org.uk/	London Refill is a UK pilot project on the elimination of plastic water bottles and suppling water stations for use by the public. Participants currently include major public institutions (National Gallery, Tate Modern), Costa Coffee chain stores (a major coffee retailer now owned by Coca-Cola), and a variety of smaller shops.

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Unilever Love Beauty and Planet https://www.lovebeautyandplanet.com/	This range of programs launched in the US market in 2018 and it uses only packaging that is made from 100% recycled materials and that is also 100% recyclable. The brand also contributes $40 per tonne of carbon to a carbon tax fund, which helps to reduce carbon emissions and fund initiatives that encourage higher recycling rates and the creation of recycling communities.
MIWA – Prague, Czech Republic http://www.miwa.eu/	MIWA (short for "Minimum Waste") creates a system that simplifies and improves the distribution and sales of plastic-free goods and that helps to prevent packaging waste. Customers use a shopping app to order products. Producers or wholesalers use clean, empty capsules in packaging when delivering goods to consumers. These capsules are recollected and sent to a washing center before being sent back to producers or wholesalers for reuse in packaging.

UNIVERSITY INITIATIVES

MyCup, University of Brighton https://eat.brighton.ac.uk/ethics/mycup/	MyCup is a reusable cup scheme encouraging staff, students and visitors to avoid disposable cups. If a customer wants to buy a MyCup, an e-coffee bamboo cup for 4.5 pounds at the campus outlet, they get a free drink and do not pay tax on the purchase. Customers also get a stamp each time they refill a MyCup and get a free drink on their 11th refill.
University of British Columbia	"Zero Waste Foodware Strategy (Draft)" was released by the Vancouver Campus of UBC in February 2019. The Strategy draft is developed as an addendum to the UBC Zero Waste Action Plan. Actions pursuant to it may include a mugshare cup exchange program to support cafes and encouragement of "to stay" café spaces with seating for customers. UBC also has a campus MugShare program as part of the Refill Initiative of Common Energy, an on-campus student-run sustainability organization. Anyone on campus can borrow a reusable mug for a fully refundable $2 deposit. The program has partnered with 7 on-campus cafes.
Guelph University	Students at Guelph can take a course called ICON where learn about the problem of plastic pollution and try to find real world solutions to that problem.

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OTHER INITIATIVES

NON-PROFIT INITIATIVES

Canadian	
WWF Canada	World Wildlife Fund (WWF) Canada is Canada's largest international environmental organization with the aim of wilderness preservation and the reduction of human impact on the environment. They work in places that are unique and ecologically important to help nature, wildlife and people thrive. The Great Canadian Shoreline Cleanup is a conservation partnership of Ocean Wise® (a not-for-profit organization based in British Columbia and focused on ensuring health and flourishing oceans) and WWF Canada, presented by Loblaw Companies Limited.
The Great Canadian Shoreline Cleanup	The Great Canadian Shoreline Cleanup is a national conservation program that facilitates and conducts Canadian shoreline cleanups with volunteers. Citizen science data collected by Shoreline Cleanup volunteers is shared with the International Coastal Cleanup to help support scientific research on marine and coastal pollution. The organization aims to promote understanding of shoreline litter issues by engaging Canadians to rehabilitate shoreline areas through cleanups.
The UofT Trash Team	The UofT Trash Team is a creation of the Rochman Lab at the University of Toronto. The Team seeks to increase scientific and environmental literacy on plastic pollution as well as to engage the community in solutions to the problem. The team works with national and international stakeholders to increase waste literacy and facilitate the use of scientific evidence in decision-making. The Great Canadian Shoreline Cleanup is a partner of the UofT Trash Team. The Rochman Lab is part of the Department of Ecology & Evolutionary Biology at the University of Toronto and it is led by assistant professor and leading, international researcher/academic on the issue of microplastic pollution in marine environments, Dr. Chelsea Rochman. The lab's research focuses on ecological, ecotoxicological, and environmental chemistry and physiology tools to

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	investigate the sources, fate and ecological implications of mixtures of contaminants in freshwater and marine habitats. So far, the lab's focus has been on plastic debris as it contains a complex mixture of contaminants.
Earth Rangers	Earth Rangers a conservation organization for children based in Ontario, Canada. Its mission is to educate children about the importance of biodiversity and empower them to protect animals and their habitats. Children participate in a variety of free educational and engaging programing at school, at home or in their communities. The organization currently has over 175,000 members in every province and territory. This year, it launched a "mission" that kids could go on to reduce plastic waste in their lives.
EcoSchools	EcoSchools is a program initially developed by the Toronto District School Board for its schools but which has now expanded across the province. EcoSchools is a voluntary certification program that aims to turn children into environmental leaders and to build environmentally-responsible school communities. EcoSchools certifies K-12 schools in environmental learning and action (teacher trainings, support school board environmental representatives, develop educational resources, etc.); creating a network of schools, school boards and community partners; building strong EcoTeams with training sessions and tools; embedding ecological literacy into the curriculum and daily practices. With respect to plastic pollution, students at several schools such as the Adam Beck Junior Public School, have decided to go litterless and find alternatives to single-use plastics for a number of weeks.
StrawlessToronto @StrawlessTO	StrawlessToronto is a Toronto branch of the international #BreakFreeFromPlastic campaign. The movement aims to reduce the use of single-use plastics in Toronto. It runs a number of hashtags on social media including #StrawlessSelfies and #StopSuckingTO
StopPastics.ca	StopPlastics is a Toronto grassroots movement that advocates for a ban on plastic bags in Toronto as a first step to reducing plastic waste. Though the City of Toronto's 5-cent fee on grocery bags by major

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	grocery chains has achieved some measure of success, this is not deemed sufficient and StopPlastics advocates for the implementation of a total ban on plastic bags.
International	
Clean Water Action's ReThink Disposable	ReThink Disposable is a program of Clean Water Action that provides tools to businesses, communities and governments to help them with their transition away from single-use plastics. ReThink Disposable's data and research was critical to the drafting of the Berkeley ordinance on the reduction of single-use foodware and litter.
Upstream	Upstream is an American think-tank that generates innovative solutions to plastic pollution. Upstream works with cities, communities, stadiums and heritage institutions to devise solutions to throwaway plastic and to accelerate the infrastructure of reuse. Upstream was critical to the drafting of Berkley's recent ordinance on single-use foodware and litter reduction. Upstream is currently working with Berkeley to come up with a reusable container program given the ban on single-use foodware that will be in effect as a result of the ordinance. Upstream is also currently working on a plastic policy toolkit, which will be made public upon completion. A release date has not yet been determined.
Association of Cities and Regions for Sustainable Resource Management (ACR+)	ACR+ is an international network of cities and regions sharing the aim of promoting sustainable resource management and accelerating the transition to a circular economy. Key activities include facilitating the exchange of experiences between members, sharing technical and policy information to the network. Ongoing projects include awareness-raising campaigns such as The European Week for Waste Reduction, operational instruments to measure waste data and material resource performances, supporting local authorities with developing strategies towards a circular economy, cooperation and capacity building of public authorities with regards to waste management and sustainable lifestyles.
Boomerang Bags, Australia	Boomerang Bags is an Australian initiative that uses donated fabric to make bags, and then distributes those bags to people who need reusable bags. This initiative helps to reduce both textile and plastic

	waste. There are currently 860 communities worldwide that participate in the initiative.

CAMPAIGNS

#BreakFreeFromPlastic	#BreakFreeFromPlastic is now a coalition of 1,300 organizations around the globe and currently has European, Asian and US branches. Each of the branches employ separate staff and engages in separate operations. Its brand audits, which included the Greenpeace brand audit of September 2018, have been impactful. Global brands now recognize that the plastic pollution problem is harmful to their reputation and something that must be resolved. Rethink Plastic, an alliance of leading European NGOs representing thousands of active groups, supporters and citizens in every EU member state, is part of the #BreakFreeFromPlastic campaign.
#NoExcuseForSingleUse	A number of businesses including NU Grocery, the Boston Tea Party café in London (UK), LUSH cosmetics, the Italian food-to-go brand Coco di Mama and others are taking part in #NoExcuseforSingleUse whereby they pledge to go plastic-free and report measures they've taken to this end. PADI's Project Aware is also helping support the campaign.
#DitchTheStrawPDX Portland, Oregon	The Portland chapter of the Surfrider Foundation launched the #DitchTheStrawPDX campaign to encourage a reduction in the use of straws in Portland. As a result of the campaign, certain Portland restaurants voluntarily adopted a straw-upon-request policy upon the campaign's launch.
"No Straw November" First Step https://pledge.ourhands.org/ U.S. Aquariums, various	The Aquarium Conservation Partnership (ACP), comprised of 22 aquariums in 17 different US states, started the First Step campaign and No Straw November on November 2018 to push 500 businesses to commit to only serving plastic straws upon request. As part of this initiative, the ACP has already worked with businesses like United Airlines, the Chicago White Sox, and Dignity Health hospitals and they hope to commit another 500 businesses by April 2019. The ACP has also partnered with the U.N. and European Commission to create a global coalition of 200 aquariums that will campaign against plastic.

	The campaign also lobbies cities and regional governments to pass ordinances that encourages businesses to use fewer straws.
"on vas sense el cabàs?" (Where are you going without a basket?) Tiana, Catalunya	This initiative was carried out in 2011 to reduce waste generation involving citizens and local traders by offering them two-handled baskets. The objective was to change shopping habits and avoid the use of disposable plastic bags. Each partner establishment was given 10 baskets which they loaned to clients who purchased goods from them. The clients paid 5 euros and this amount was refunded when they returned the baskets in good condition.
"Plastic-free Aberporth" Aberport, Wales	This is a resident-led campaign to raise awareness of plastic pollution. It has gotten citizens engaged, with the village's general store selling milk in glass bottles while a pub replaced plastic drinking straws with paper ones.

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Other National & Regional Government Initiatives

Targeted Material	Jurisdictions
Broad ban on use or sale of plastics such as carrier bags, plastic plates, plastic cups, plastic spoons, cling film, and microbeads	Indian state of Karnataka; Costa Rica (all public institutions); Taiwan;
Carrier Bags	Australia, California, Chile, China, Columbia, Ethiopia, France, Ireland, Kenya, Morocco, Netherlands, New Zealand, Panama, Rwanda, South Korea, UK, Vanuatu, Wales
Straws	Seychelles;
Bottles	Vanuatu
Cups	
Utensils	
Expanded polystyrene	

INDIA

Overview

The national Plastic Waste Management Rules, 2016 (the "Rules"), apply to every waste generator, state, local body, manufacturer, importer and producer. Following the expiry of a two-year period provided for comments and to allow obligated parties to prepare, individual states started using the powers under the Rules.

In March 2018, the State of Maharashtra notified producers resident in the state of new regulations for the manufacture, usage, sale, storage and transport of products made from plastics. The regulations specify mandatory labelling and minimum buy-back prices for some types of plastics and bans the sale of others. Other states have begun to develop their own unique approaches to implementing the Rules.

The UN Environment agency has described the policy as "unprecedented". It was announced during a World Environment Day summit hosted by the Indian prime minister, Narendra Modi. UN Environment chief Erik Solheim lauded India as providing "global leadership" on the plastics issue.

Policy Approach	The National Plastic Waste Management Rules, 2016, establish a regulatory framework for the management of plastic waste generated in the country. The Rules set out responsibilities for plastic waste minimization and recycling for producers, state and local governments. The Rules are primarily focused on implementing EPR for plastics but include specific elements to drive reduction.
Stated Objectives	The Indian national government has stated that the overarching goal of this initiative is to ban all single-use plastics by 2022
Items Targeted	• Producers, Importers and Brand Owners are responsible for: o Phasing out the manufacture and use of non-recyclable multilayered plastic in two years' time. o On or after six months of the rules being published in the Official Gazette, no producer shall manufacture or

	use any plastic or multilayered packaging for packaging of commodities without registering with the State Pollution Control Board or the Pollution Control Committees. o Each carry bag made from compostable plastics shall bear a label “compostable” and shall conform to the Indian Standard: IS or ISO 17088:2008 titled as Specifications for “Compostable Plastics”. • Every person responsible for organizing an event in an open space that involves service of food stuff in plastic or multilayered packaging shall segregate and manage the waste generated during these events in accordance with the Municipal Solid Waste (Management and Handling) Rules • Shopkeepers and street vendors willing to provide plastic carry bags for dispensing any commodity shall register with the local body upon the payment of a fee, the size of which will depend on the registrant’s sale capacity. Registered shop keepers must display in a prominent place that plastic carry bags are only given on payment.
Current Status	The State of Maharashtra has been aggressive in the implementation of the Rules and even temporarily closed manufacturing plants by several major multi-national companies operating in the state. Industry groups are now promoting the formation of Producer Responsibility Organizations at either the state or national level. A patchwork of different policies may evolve across the 29 individual states if there is not some intervention to promote a single national approach.

COSTA RICA

Overview

On June 15, 2018 Costa Rica announced an ambitious and innovative project to become the number one country in the world with an integrated national strategy to eliminate single-use plastics. The country officially launched its national strategy to replace the consumption of single-use plastics with renewable and water-soluble alternatives.

Policy Approach	The development of policies and legislation requiring all sectors to commit to actions oriented to replacing single-use plastic through 5 key strategies: 1) municipal incentives; 2) policies and institutional guidelines for suppliers; 3) replacement of single-use plastic products; 4) research and development; and 5) investment in strategic initiatives. This initiative is led by the Government of Costa Rica through the Ministries of Health and Environment and Energy with technical and financial assistance from the United Nations Development Program

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	(UNDP) and supported by local governments, civil society, and various private sector groups.
Stated Objectives	To have Cost Rica become the first country to eliminate single-use plastics by 2021.
Items Targeted	All single-use plastics (which are not designated essential) for which there are alternatives.

TAIWAN

Overview

Taiwan has well-established EPR policies for the management of used products and packaging and is now focusing on promoting reduction. The government has already banned free plastic shopping bags in major retail outlets, including supermarkets and convenience stores and is now extending the ban to smaller businesses, including bakeries and drinks kiosks.

Policy Approach	Introducing a regulation to ban the use of a wider range of designated single-use plastic items.
Stated Objectives	Product-specific targets will be set by regulation. For example, according to the Taiwanese Environmental Protection Administration (EPA), a Taiwanese person currently uses an average of 700 plastic bags annually. The EPA aims to reduce the number to 100 by 2025 and to zero by 2030.
Items Targeted	Major chain restaurants must stop providing plastic straws for in-store use from 2019, a requirement that will be expanded to all dining outlets in 2020. Consumers will have to pay extra for all straws, plastic shopping bags, disposable utensils and beverage cups from 2025. The regulation will ban, at a minimum, the sale to consumers of straws, cups and shopping bags by 2030.
Current Status	There are incremental bans on the use of plastic bags already in place. Targets are currently being set for the reduction of other single-use items.

Municipal Governments

Targeted Material	Jurisdictions
Broad ban on use or sale of plastics such as carrier bags, plastic plates, plastic cups, plastic spoons, cling film, and microbeads	New Delhi, India; San Pedro La Laguna, Guatemala;
Carrier Bags	Boston, Buenos Aires, Coles Bay, Tasmania; Jersey City, Hoboken, Honolulu; Mexico City; Montreal; São Paulo; San Francisco (on city properties); Santa Monica, Washington DC
Straws	Glasgow, Scotland; Neuchâtel, Switzerland; Berkley, Davis, Fort Meyers, Malibu, Miami Beach, New York (proposed), Oakland, Richmond, San Luis Obispo, Seattle (USA); Los Angeles (USA)
Bottles	San Francisco (on city properties)

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Cups	
Utensils	
Expanded polystyrene	San Francisco, Seattle, Los Angeles, Portland, New York, Berkeley, Manhattan Beach, Culver City, Malibu, San Diego, Laguna Beach, Palo Alto, Santa Cruz (City), Santa Monica

Businesses

Targeted Material	Jurisdictions
Broad ban on use or sale of plastics such as carrier bags, plastic plates, plastic cups, plastic spoons, cling film, and microbeads	**IKEA** has pledged to phase out single-use plastic products from its stores and restaurants by 2020.
Carrier Bags	Swiss retailers charge customers five centimes for the bags – resulting in an 84% drop in demand at check-out counters between 2016 (417,781,000 bags) and 2017 (66,112,000 bags). **LIDL** trialing removing all bags from stores in Wales Retailers, **Iceland, Morrison** and other UK retailers trialing sale of produce with no plastic packaging
Straws	Alaska Airlines, Bon Appétit Management Company, Hilton Hotels, Walt Disney World's Animal Kingdom (USA); Costa Coffee, MacDonald's, London City Airport, Marriott Hotels, Pizza Express, Pret-a-Manger, Wagamama (UK); Royal Caribbean Cruise; Starbucks, Hyatt Hotels (global)
Bottles	**Hilton Hotels** (Europe, Middle East & Africa); Evian reusable water bottle Eurostar will phase-out plastic water bottles from its business lounges during 2019, in a move that will reduce the organization's plastics footprint by more than 100,000 bottles annually Soft drinks firms **Danone Waters** and Lucozade Ribena Suntory called for a zero-waste plastic packaging value chain by 2030 and also urged corporates to aim for at least a 70% proportion of recycled content in their soft drink bottles by 2025
Cups	Chiltern Railways has rolled out a coffee cup recycling scheme across 32 UK stations, in partnership with waste solutions provider Simply Cups
Utensils	
Expanded polystyrene	**Walmart** commitment to eliminate EPS from all private brand products by 2025.
Other Initiatives	The New Plastics Economy Global Commitment was launched in October 2018, initially uniting 250 organisations across the plastics value chain. Includes businesses, governments, investors and non-profits working together to help the industry eliminate single-use packaging materials, increase the amount of reused or recycled plastics in new products and innovate to

	ensure 100% of plastic packaging can be reused, recycled, or composted by 2025. **Amazon** has launched a service that enables customers to choose a set delivery day and 'group' their orders, which will help the company reduce its packaging footprint and optimize its delivery routes. **Adidas, Dow Chemical Company and McDonald's** are among the 18 big-name businesses to have co-founded a new alliance aimed at creating frameworks to measure, map and reduce plastic and microplastic pollution across the globe **Marks & Spencer (M&S**) has pledged to install take-back bins for hard-to-recycle plastics across the UK by the end of 2019. **Unilever** has pledged to reduce packaging weight by one-third and halving the waste associated with product disposal by 2020 Unilever has pledged to ensure that all of its plastic packaging is fully reusable, recyclable or compostable by 2025 (since endorsed by 10 other major multi-national brand owners) through an integrated program of marketing products with lees plastics, better plastics and no plastics. **Diageo** has pledged to reduce its total packaging weight by one-fifth by 2020. **Adidas, Dow Chemical Company and McDonald's** are among the 18 big-name businesses to have co-founded a new alliance aimed at creating frameworks to measure, map and reduce plastic and microplastic pollution across the globe. The Plastic Leak Project (PLP), will see businesses, consultants, charities and NGOs work together to develop a set of metrics enabling any organization to assess where plastic pollution is being leaked into nature within its value chain. **Starbucks** is testing new straw-less lids it designed, developed and manufactured, starting this fall as part of the company's new plans to eliminate single-use plastic straws by 2020. **Evian** has pledged to become a "truly circular" company and unveiled designs for its first range of reusable drinks bottles. **Nestlé** has identified the plastic material types that it will avoid using in new product packaging and immediately begin phasing out from existing packaging having determined that effective recycling schemes are unlikely to be established for Polyvinyl Chloride (PVC), Polyvinyliden Chloride (PVDC), Polystyrene (PS), expanded Polystyrene (ePS), Regenerated Cellulose and non-recyclable plastics/paper combinations and, as such, these materials will be discontinued for packaging purposes. **Ben & Jerry's** which operates more than 600 'scoop shops' across Europe and the US, will remove all plastic cutlery and straws from its stores by April, swapping them for wooden cutlery and paper straws.

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STRATEGY*matters* INC.

TECHNICAL MEMORANDUM 2
Single-Use and Takeaway Items Reduction Strategy
Policy Evaluation Approach

Table of Contents

INTRODUCTION & BACKGROUND 2

Initiative Background 2
Initiative Objective 2

METHODS AND EVALUATION APPROACH 3

Task 2 Methodology-Generation Process 3
Task 1 Key Learnings 3
Phase 1 Consultations Outcome 4
Task 2 Overview 4
Task 2 Evaluation Process 5

TASK 2 – ANALYSIS & RESULTS 5

Step 1 – Selection of Priority Items 5
Step 2 – Testing Items against Criteria 10

CONCLUSION 12

INTRODUCTION & BACKGROUND

Initiative Background

In response to the growing media and public attention to the environmental impact of single-use and takeaway items, and following the direction given by City Council in July 2018, the City of Toronto ("the **City**") is undertaking a Single-Use and Takeaway Items Reduction initiative with the aim of reducing the distribution and use of these items in Toronto. The City's approach is to be contrasted with policies designed to reduce litter or to reduce the amount of of single-use and takeaway items. Though the City's focus has been on takeaway single-use items, as part of this initiative, the City has also considered a broad array of items, including non-take-out single-use and semi-durable items.

As part of this initiative, the City retained an external consultant, Strategy Matters Inc. (the "**Consultant**"), to develop a set of considerations for selecting approaches to reduction. The Consultant's work to this end was split into three different tasks, with a fourth task dedicated to meetings and consultations with Solid Waste Management Services staff to inform progress throughout the project (the "**Project**").

As part of this initiative, the City's Solid Waste Management Services Division is also undertaking a two-part public consultation process to inform its decision-making on reduction. Phase 1 public and stakeholder consultations were held between September 20 and October 28, 2018 and involved 20,512 participants. Stakeholders included food and restaurant establishments, retail and manufacturing groups, academics and non-governmental organizations, and accessibility organizations. Participating residents and taxpayers demonstrated a keen interest in the reduction of all single-use and takeaway items presented, which included paper bags, cutlery, straws, to-go drink cups, expanded polystyrene foam (EPS) takeout containers and black plastic takeout containers.

Solid Waste Management Services will continue consulting with the public and stakeholders in a second phase of consultation, which will be held later in 2019. Staff will report back to the Infrastructure and Environment Committee in early 2020 on the outcome of the Phase 2 consultation. This report will also outline recommended elements of a proposed Single-use and Takeaway Item Reduction Strategy for Toronto.

Initiative Objective

Using the expertise of members of staff, the insights gained from a review of similar initiatives in other jurisdictions, a review of initiatives and the experience of the Consultant, the Consultant developed a range of potential single-use and takeaway items that could be prioritized for reduction, along with criteria for evaluating these items' impacts on a set of environmental, social, financial, nuisance and other criteria. This work provides the foundation for the next Task of the Project, which will develop a final set of policies and programs aimed at reduction and reflect the results of testing the mechanisms available for reduction against a set of legal, budgetary and public policy considerations.

METHODS AND EVALUATION APPROACH

Task 2 Methodology-Generation Process

Task 2 of the Project proposes a policy evaluation approach and criteria to determine the single-use and takeaway items that should be prioritized for reduction in Toronto. The items to be prioritized for reduction were selected based on their impacts across a number of criteria, which were developed on the basis of key learnings from Task 1 of the Project.

Task 1 Key Learnings

Under Task 1 of the Project, the Consultant conducted a broad jurisdictional scan with the aim of providing summaries of promising initiatives to reduce single-use and takeaway items at the source in other jurisdictions.

The scan included both national and municipal initiatives, in Canada as well as world-wide. It also considered private and not-for-profit initiatives as well as advocacy campaigns. With respect to each initiative, where information was available, the Consultant considered the initiative's policy approach, objectives, items targeted, current status, costs and challenges. This information was then used as the basis for developing a Toronto-based approach that is consistent with and which absorbs lessons and innovations of other jurisdictions.

The scan revealed a clear upsurge in government, business and non-for-profit activities directed at the reduction at source of single-use and takeaway items in jurisdictions around the world. Canadian initiatives at the federal, provincial and municipal level were observed to be evaluating and implementing more aggressive policies and regulations on single-use items. However, most Canadian initiatives at this time appear to be directed towards increasing the recyclability of, or value recovery (including energy) from, plastics and single-use products and packaging.

Most of the initiatives to reduce single-use disposable waste items at the source were observed to be in their infancy or development stage. This was particularly true of other Canadian initiatives, many of which were found to be at the consideration stage. As of the writing of this memorandum, Montreal, Quebec and Victoria, British Columbia have variations of bans on plastic bags but have yet to develop more comprehensive reduction strategies. Vancouver, British Columbia is undergoing a consultation on by-law details and implementation plans on its comprehensive Single-use Item Reduction Strategy. Halifax, Nova Scotia is considering restrictions on single-use materials, with a preliminary focus on plastic bags.

Due to the infancy of other promising international initiatives, such as by Berkeley or San Diego, California, the Consultant found little hard data of the programs' effectiveness in reducing the generation and use of single-use and takeaway items. The Consultant furthermore observed that many of the initiatives to reduce these items had faced civic or legal challenges. This was particularly the case for large cities such as New York City, New York and San Diego, California whose EPS bans were met with lawsuits led by industry groups and restaurant associations.

Notably stronger policies aimed at reducing single-use and takeaway items at the source were observed in jurisdictions where strong regulatory frameworks already exist to make producers fully responsible for the management of waste products and packaging supplied to the market. These included the European Union and various cities and counties in California.

There is also a rise in private initiatives proposing to address the issue of single-use and takeaway items by providing reusable alternatives in innovative ways. In some cases, it is hoped that these actions will obviate the need for government intervention, while in others government action is encouraging corporate initiatives to develop a more circular economy.

Phase 1 Consultations Outcome

With the exception of paper bags, participants in the Phase 1 consultations expressed an interest in reducing a range of single-use and takeaway items including plastic bags, cutlery, straws, to-go drink cups, EPS foam takeout containers and black plastic takeout containers.

Stakeholders participating in Phase 1 consultations expressed support for mandatory, voluntary or a combination of voluntary and mandatory approaches to reducing these materials. They also provided feedback with respect to most frequently used items and the likelihood of using reusable alternatives. Stakeholders recommended that accessibility and equity issues be considered in designing programs and policies so that additional burdens are not placed with certain members of the community. While there was strong support for the reduction of plastic straws, this item was also identified to be a vital accessibility device for some individuals living with a disability.

Feedback received from the Phase 1 consultation included a stakeholder preference that the City of Toronto demonstrate leadership in waste reduction in its own operations. Programs in Toronto, however, should be harmonized or consistent with regulations in other jurisdictions. Any reductions strategies must consider environmental, economic, accessibility and equity impacts. A phased approach would also encourage people and businesses to adapt to changes.

Task 2 Overview

Task 2 of the Project proposes as well as undertakes a policy evaluation approach to determine the most appropriate single-use and takeaway items to be prioritized for reduction in the City of Toronto and the means of reduction. It establishes a process with the following aims:

- Establishing (and maintaining) a long-list of items that could potentially be addressed under the program.
- Completing a preliminary screening of these items to identify priorities for which there is a strong, moderate or weak case for reduction.
- Assessing the potential impact of the **priority items only** against key environmental, costs and social criteria.
- Identifying the range of mechanisms available to the City to promote reduction in the distribution and use of these items. This includes, making a preliminary assessment of the viability and potential effectiveness of these measures.

To accomplish these aims, an evaluation team composed of City staff the Consultant (the "**Evaluation Team**") was assembled. Members of this team had expert knowledge of:

- The City of Toronto solid waste management system and related aspects (collection, recycling, litter management, etc.).
- The legal authority of the City of Toronto to implement the proposed actions.
- Experience from other jurisdictions with similar initiatives.
- How senior levels of government, producers and other affected stakeholders are responding in other jurisdictions.
- Global trends promoting stronger efforts to reduce the impacts of single-use plastics and takeaway packaging at the source.

- Public demand for City of Toronto action to promote reduction reflected in the City of Toronto public consultation and political direction given.

Task 2 Evaluation Process

Following staff's comments from their review of Technical Memorandum 1, the Consultant drafted a policy evaluation approach which outlined the following considerations:

- a broad list of single-use, takeaway and semi-durable items that could be targeted for reduction;
- a thorough list of possible environmental, financial, nuisance, social and other impacts generally related to single-use or takeaway items; and
- an exhaustive list of tools and mechanisms that could potentially be applied to most effectively reduce items as observed from the case studies in the Task 1 jurisdictional scan.

The Evaluation Team then met and used the revised draft to establish a list of priority items to be targeted for reduction based on a number of preliminary criteria. These priority items were then tested by the Evaluation Team against the wider set of impacts criteria.

Under Task 3, Evaluation Team discussions on the tools and mechanisms available to the City for reduction will set the stage for the development of specific policies and programs as well as possible elements for inclusion in a City by-law.

In determining items' contribution or impact on the selected criteria, the Evaluation Team noted the absence of rigorous data on each of the selected criteria. The Team especially observed that it currently lacked access to data with respect to the following criteria, though this data could be obtained at some later time:

- The quantity and types of single-use and takeaway packaging waste entering the city's wastewater management system, including wastewater treatment facilities
- Compatibility/nexus with existing divisional official plans/priorities
- Consumer behavioural changes related to reducing waste generated within the city (i.e., industrial, commercial and institutional wastes) but not entering the City of Toronto-managed waste management system (as in not all waste generated in the city is managed by the City, whereas waste is also managed by private haulers and processors)

To inform evaluations of the other criteria, the Evaluation Team used all data available from both City and third-party datasets, including data from the Great Canadian Shoreline Cleanup. Third party data was deemed acceptable for the purposes of this exercise, which sought to develop a more holistic picture of the impacts of the most problematic single-use and takeaway items. Any flaws in the methodology by which this data was generated were to an extent mitigated using a broad range of criteria against which each of the priority items was tested.

TASK 2 – ANALYSIS & RESULTS

Step 1 – Selection of Priority Items

The Evaluation Team used the following preliminary screening criteria to narrow down the list of single-use and takeaway items to those items for which there was a *prima facie* case for prioritizing for reduction:

- What is the relative use of product by public and stakeholders per Phase 1 consultation surveys (conducted in 2018)?
- What is the level of public and stakeholder interest in reduction?
- Can the item be managed under the City of Toronto's Blue Bin recycling or Green Bin organics programs?
- Is the item a contributor to street or freshwater litter in the City of Toronto?
- Has the potential for significant reduction been demonstrated in other jurisdictions?
- Is there sufficient data available for this type of product?

Items for which there was insufficient data or insufficient motivation for reduction at this time were put on a "Watch List" and may become prioritized for reduction at a later date as Project experience is gained and as more data becomes available.

Chart 1. Priority items selection

As a result of this approach, the Evaluation Team selected the following items for prioritization based on their perceived level of impact (strong, moderate or weak) on the preliminary criteria:

Strong	Moderate	Weak	Watch List

Single-use and Takeaway Items	
Item	**Priority and Rationale**
Single-use take-out EPS (i.e., cups, clamshells, plates, etc.)	• High public interest in reduction; low use of product (per surveys/polls) • Data available for both litter and audits • Alternatives available • Challenges with recovery of this material • Other jurisdiction addressing this material
Black plastic	• Substantial public interest in reduction • Not currently recycled in Toronto • Contributor to litter (along with all plastic containers) • Alternatives available
Plastic food containers	• High public interest in reduction • Contributor to litter (along with all plastic containers) • Alternatives available • Have been addressed in other jurisdictions
Hot cups	• High public interest in reduction • High use of product (per surveys/polls) • Data available for both litter and audits • Contaminant in recycling stream

Other Single-use Items and Packaging	
Item	**Priority**
Cigarette filters	• Number one or two litter item in litter audits • Major interest item from public stakeholders • Beyond scope of single-use and takeaway items at this time
Cigarette packaging	• Beyond scope of single-use and takeaway items at this time
Wet wipes	• Waste water issue • Identified through consultation but beyond scope of single-use and takeaway items at this time
Cotton bud sticks	• Identified through consultation but beyond scope of single-use and takeaway items at this time

Semi-durable/ Emerging product watch	
Item	**Priority**
Disposable razors	• Identified through consultation but beyond scope of single-use and takeaway items at this time • Can have multiple uses
Hotel toiletry accessories	• Identified through jurisdictional scan but beyond scope of single-use and takeaway items at this time
Other “semi-durable” products	• To be identified

Cold cups (incl. lids)	• Reduction for cups not differentiated between hot and cold
Plastic Bottles	• Substantial public interest in reduction (per surveys/polls) • Good data quality for both litter and audits • Other jurisdictions have modelled programs to address this
Beverage stirrers	• Data from audits not available for this item • Public interest lower priority for this item
Paper containers	• Could be addressed in the future • Public interest lower priority for this item
Plastic bags	• High public interest coupled with high use, but ready to use alternatives, per surveys • Problematic recycling material • Good data from litter and audits • Other jurisdictions are tackling • 2012 experience shows fee is effective
Paper bags	• Medium/low public interest to reduce, med/low use • Alternative to plastic bags, but focus is on reduction
Plastic straws	• High public interest in reduction • Instructed to address by Council • Accessibility issues identified • Other jurisdictions are addressing • Not a recyclable material
Paper straws	• Data from audits not available for this item • Public interest not focused on this item

Balloon sticks	• Identified through consultation but beyond scope of single-use and takeaway items at this time
Balloons	• Identified through consultation but beyond scope of single-use and takeaway items at this time
Tampon applicators	• Identified through consultation but beyond scope of single-use and takeaway items at this time

Plastic cutlery	• Public use of this item and interest in reduction is moderate • Present in water and street litter
Condiment packets	• Receive similar to straws and cutlery, could be dealt with the same way
Plastic plates	• Data from audits not available for this item • Public interest not focused on this item

Step 2 – Testing Items against Criteria

The Evaluation Team generated a detailed list of criteria to test against the items. They included the following:

- The item is a **contributor to**:
  - the quantity of litter in Toronto waterways (WLit)
  - the quantity of street litter (SLit)
  - the quantity of waste entering COT waste management system (Wst)
  - contamination of Blue Bin recycling program (BBc)
  - contamination of Green Bin organics program (GBc)
  - Greenhouse gas emissions (GHG)
- The item is a **contributor to costs**:
  - Litter clean-up based on prevalence of the item in the litter stream (L$)
  - Blue Bin recycling program based on prevalence in the program (BB$)
  - Green Bin organics program based on prevalence in the program (GB$)
  - Marketability of recovered material (Mk$)
  - Current commercial availability of alternative products (AltAv)
  - Current/estimated volume managed (Vol)
  - Operational compatibility (i.e., EPS crumbles in truck, etc.) (OpC)

The Evaluation Team, however, created a "Gaps List" to identify items for which there was insufficient data currently available to conduct assessments:

- The quantity of waste entering the city's wastewater management system, including wastewater treatment facilities
- Compatibility/nexus with existing divisional official plans/priorities (e.g., bottled drink minimization)
- Consumer behavioural changes related to reducing waste generated within the city (i.e., industrial, commercial and institutional wastes) but not entering the City of Toronto-managed waste management system (as in not all waste generated in the city is managed by the City, whereas waste is also managed by private haulers and processors)

As a result, the items were not tested against the Gaps List at this stage of the Project.

Condiment packets were also excluded from testing under this step of the evaluation process despite their moderate impact score in the preliminary rankings. This was due to a lack of data on this item as well as an absence of public comments during the consultation process.

Feedback from the Phase 1 consultations also suggested that the City's reduction approach should equalize the impacts of its single-use item and takeaway waste reduction initiative to households and businesses alike so that one area does not bear a greater burden than the other. While this was originally included as a criterion under this step of Task 2, it was dropped from this list given the challenges of testing the priority items against this requirement as a criterion.

Chart 2. Testing against criteria

Each of the priority items was ranked based on perceived impact on each criterion. Items marked as having a weak case for reduction or as being on a watch list were not carried forward into Chart 2. Despite a moderate impact ranking on the preliminary criteria, condiment packets were not carried forward for testing in this chart given the lack of data and public comments on the item.

High	Medium	Low	Unknown

Single-use and Takeaway Containers													
Item	**WLit**	**SLit**	**Wst**	**BBc**	**GBc**	**GHG**	**L$**	**BB$**	**GB$**	**Mk$**	**AltAv**	**Vol**	**OpC**
Single-use take-out EPS (i.e., cups, clamshells, plates, etc.)													
Black plastic													
Plastic food containers													
Hot cups													
Cold cups (incl. lids)													
Plastic bottles													
Plastic bags													
Paper bags													
Plastic straws											*[1]		
Plastic cutlery													

[1] The ranking reflects the fact that there are no acceptable alternatives at this time for some individuals with disabilities.

CONCLUSION

Under Task 2 of the Project, the Evaluation Team narrowed down the list of items to be prioritized for reduction to single-use takeout EPS, plastic food containers, hot cups, plastic bags and plastic straws. It also considered moderate-impact items such as black plastic, cold cups, paper bags, plastic utensils, other utensils, condiment packets, cigarette filters, plastic bottles and wet wipes.

The strong-impact and moderate-impact items were tested against a long list of criteria. Strong impact items, except for plastic straws, received the highest rating against criteria. The reduction of plastic straws posed accessibility concerns and did not have a drastic impact against the various criteria. This indicates that plastic straws are prioritized for reduction at least in part based on a nuisance value. Plastic bottles were deemed to be less impactful than other moderate-impact items given the high marketability of plastic bottle material. Paper bags were not deemed impactful, but they were prioritized due to ease of reduction and desired behavioural change in public's use of reusable grocery bags.

Future meetings have been scheduled to undertake work on Task 3 of the Project. This task will evaluate and develop with City staff recommendations on specific programs and elements for a proposed Reduction Strategy. The Evaluation Team will additionally consider public and stakeholder support, behavioural change impacts, and accessibility concerns, among other things, in determining policies and programs under Task 3 of the Project.

The Evaluation Team's in-person evaluation process of the priority items and criteria demonstrated that the methodology was robust and can allow for subsequent evaluations should available data or City priorities change. Phase 2 consultations to be held later in 2019 will engage stakeholders and residents on providing feedback on proposed policies and programs for reduction. This may result in these policies and programs being refined to reflect feedback from this stage of the consultation process. Data may also emerge to determine whether items on watch list should be prioritized for reduction. Additionally, data might also become available demonstrating the impacts of various items on which there is currently little or no data.

If implemented, the project to reduce single-use and takeaway items will be consistent with and reflect lessons learned from similar initiatives to reduce single-use and takeaway items. It will also reflect the feedback received from residents and stakeholders to reduce the impact of single-use and takeaway items in the City of Toronto.

STRATEGY*matters* INC.

Single-use and Takeaway Reduction Strategies
Final Recommendations Report

TABLE OF CONTENTS

INTRODUCTION & BACKGROUND 2

PROJECT BACKGROUND 2
Purpose 2
Public Consultations 2
The External Consultant 3
WHY REDUCTION, WHY NOW 4
Canada's Waste Problem 4
Reduction Challenges 5
The Scale of the Challenge Ahead 5
Toronto's History of Reduction 6

OVERVIEW OF TASK 1 AND 2 RESULTS 7

SUCCESSFUL STRATEGIES IN OTHER JURISDICTIONS 7
POLICY EVALUATION METHODOLOGY 8

TASK 3 ANALYSIS & RECOMMENDATIONS 10

OVERARCHING RECOMMENDATIONS 10
ITEM-SPECIFIC RECOMMENDATIONS 12
High Priority Actions 12
Moderate Priority Actions 20
Watch List and Future Recommended Actions 26

CONCLUSIONS 29

SUMMARY CHART OF FINAL RECOMMENDATIONS 30

APPENDIX 33

A – RESULTS FOR RANKINGS FOR TECH MEMO 2 (STEPS 1 AND 2) 33
B – RESULTS FOR RANKINGS FOR TECH MEMO 3 (STEP 3) 38

INTRODUCTION & BACKGROUND

PROJECT BACKGROUND

PURPOSE

The City of Toronto's waste diversion programs currently face challenges resulting from the on-going proliferation of new packaging materials and compositions, contamination of diversion streams and severe restrictions for international recycling commodity markets.

In response to these challenges, in July 2018, Toronto City Council directed the Solid Waste Management Services (SWMS) to:

- Develop a policy which would restrict plastic straws in the City of Toronto by the end of the first quarter of 2019;
- Consult with affected businesses, community health groups and other organizations prior to the submission of the proposed policy which would restrict plastic straws and report to the Public Works and Infrastructure Committee at its first meeting in 2019; and
- Accelerate the proposed work plan aimed to reduce the use of single-use or takeaway packaging or products by completing pre-consultation with residents and stakeholders by fall 2018 to identify items for targeted reduction and solicit input on policy tools with a report back in January of 2019.

This direction seeks to align itself with the "Final Long Term Waste Management Strategy" adopted by City Council in July 2016. This strategy aims to reduce the amount of waste generated in Toronto and promoting the reuse of what is possible rather than simply looking towards material substitution and promoting increased recyclability. Additionally, it aims to have more items diverted through the City's diversion programs (Blue Bin or Green Bin). The strategy specifically expressed Council's endorsement of "an aspirational goal to work towards a circular economy and zero waste future to align with the Provincial goal as part of the *Waste-Free Ontario Act*." Direction from City Council in July 2018 accelerated efforts under this strategy to address single-use and takeaway items as soon as the years 2019 to 2021.

Though the federal and provincial governments have made announcements that they will be addressing various single-use and takeaway items, City of Toronto actions will endeavour to be aligned with these initiatives when they are implemented. It is considered unlikely, however, that these initiatives will have significant impacts within current City of Toronto timelines under Council direction.

PUBLIC CONSULTATIONS

Pursuant to this direction from Council, SWMS is undertaking a two-part public consultation process to inform its decision-making on reduction. Phase 1 consultations were held in the fall of 2018 and engaged the general public and other stakeholders such as restaurant establishments, retail groups, academics, non-government and accessibility organizations in identifying opportunities to reduce the generation of single-use and takeaway items in Toronto.

The consultations sought to determine the single-use or takeaway items that should be addressed by future policies or programs, the preferred methods or approaches to reduce these items, and additional opportunities to promote reuse. These consultations will continue into their second phase in the fall of 2019 where recommended methods for reduction will be presented to various public and stakeholders for feedback.

The consultations revealed a consistent support for mandatory measures and voluntary approaches to reduce single-use and takeaway items. There was strong support for mandatory approaches to reduce plastic bags, expanded polystyrene foam (EPS) and black plastic takeout containers. Other items received support for mandatory or a combination of voluntary and mandatory approaches to reduction (with the exception of paper bags). There was also support for employing combinations of voluntary or mandatory approaches to reduction.

Consistent with feedback received during the Phase 1 consultations, a proposed strategy to reduce single-use and takeaway items will prioritize policies and programs that:

- Address materials that are not recyclable or not effectively recycled in Toronto's Blue Bin Recycling program;
- Target materials that are known to contribute to street and freshwater litter;
- Reflect survey and polling data on preferred approaches and materials to target;
- Achieve a measurable environmental impact; and
- Are harmonized or consistent with policies and programs being developed in other jurisdictions, nationally, provincially and at municipal levels across Canada.

THE EXTERNAL CONSULTANT

As part of this initiative, in early 2019, SWMS retained an external consultant, Strategy Matters Inc. (the "**Consultant**"), to develop considerations and suggest recommended approaches to achieving reduction of single-use and takeaway items. The Consultant's work to this end was split into three different tasks, with a fourth task dedicated to meetings and consultations with SWMS staff to inform progress throughout the project (the "**Project**").

For the purposes of this Project, the reduction of single-use and takeaway items is broadly defined to include mechanisms intended to:

- Reduce the distribution and use of single-use and takeaway items;
- Reduce the quantities of these materials entering into Toronto's solid waste management systems;
- Reduce the quantities of these materials leaking into the environment; and
- Increase the likelihood of behavioural change for City of Toronto residents to reduce the use of single-use and takeaway items.

The Consultant first conducted a broad jurisdictional scan identifying global public policy and private sector initiatives and innovations in the reduction of single-use and takeaway items. Secondly, using the combined expertise of members of SWMS staff and the Consultant (the "**Evaluation Team**"), as well as insights gained from a review of similar initiatives in other jurisdictions, the Consultant identified a range of potential items that could be prioritized for reduction, along with criteria for evaluating these items' impacts against a set of environmental, social, financial, nuisance and other criteria.

This work provides the foundation for this Technical Memorandum, which proposes, with the benefit of feedback from SWMS staff, recommendations on policies and programs that could be implemented for items seen as high or moderate priority for the City of Toronto. It also proposes future research to address a number of items that were placed on a watch list and that may need to be addressed in the near future. The recommendations made in this report reflect actions that can be implemented under existing City powers and also consider the legal, budgetary and other constraints to the City's ability to implement programs to reduce single-use and takeaway items.

WHY REDUCTION, WHY NOW

Significant growth in the generation of single-use plastics and takeaway packaging globally is being driven by a multitude of factors including:

- Continuing concentration of populations in major urban centers
- Related lifestyle changes:
  - Proliferation of single and two-person households
  - Aging population
  - Increasing time poverty
  - Convenience and lower costs of prepared food and drinks
  - Growth in consumer use and falling costs of home (and office) delivery (for takeout food, groceries, books and household goods)
  - Reduced size of dwellings and kitchen space
- Product and packaging innovations

Together, these and other factors lead consumers to favour products, product packaging and product delivery systems that offer lower costs and convenience. Day-to-day observation suggests that, for the majority of residents in the city, these factors trump waste management and environmental considerations when they make their purchasing decisions.

While this Project encompasses all forms of single-use and takeaway packaging, including paper bags and hot cups, a cursory review of this report will illustrate the dominance of plastics as the fastest growing component of this subset of waste. Relentless innovation in the use of plastics, combined with relatively lower input costs for petroleum feedstocks, has made plastics the preferred choice over glass, paper and metal alternatives in a huge array of products. While there are clear environmental and cost benefits to producers and consumers from the use of this material, it is equally clear that at the end-of-life stage, effective recovery, reuse and recycling of used plastics products and packaging has proven challenging on a global scale.

By way of example only, the UK television series entitled "Hugh & Anita's War on Plastics" provides an in-depth analysis of the use of plastics in the average UK household. A key focus of the program was to better understand the mindset of an everyday shopper and how they can be motivated to reduce single-use plastics. A key learning from the program is that "green" purchasing ranks significantly behind cost and convenience for the average consumer:

- "*In detailed studies of 22 homes, residents had amassed 15,774 single-use plastic items. Almost one-half, or 7,145 of these items, were from the kitchen – mainly in the form of single-use plastic packaging for food and drinks."*
- *When asked why they purchase single-use plastics, residents responded that it was either more convenient, cheaper or both."*

Data further demonstrated that, where pre-packaged products were offered next to an option to purchase the same product in loose form, the pre-packaged format was priced significantly cheaper, and consumers continued to purchase the pre-packaged version at a ratio of 8:1.

CANADA'S WASTE PROBLEM

As with the UK, the waste problem in Canada is acute and highlights the need for reduction at source measures in addition to making improvements in recyclability and implementing producer responsibility regulations. According to a recent report from Deloitte, only 9% of Canada's waste is actually recycled (includes recycling rates for Industrial, Commercial and Institutional sector which is lower than residential recycling rates), while 4% is incinerated with energy recovery, 86% is landfilled, and 1% is leaked into the environment. Deloitte also found that the amount of plastic

that was discarded in the waste bin in 2016 was 12 times higher than the amount of plastic that was recycled.

A CBC Marketplace investigation early this year revealed how challenging it is for regular Canadians to purchase food that is not wrapped in plastic when shopping in grocery stores. The investigation tracked two families in Toronto to determine why supermarkets are not doing more to reduce plastic waste. Other single-use items like beverage hot cups also pose an acute problem given their rates of consumption. In 2010, Canadians used an estimated 1.5 billion disposable coffee cups, equivalent to more than half a million trees.

REDUCTION CHALLENGES

Recent federal consultations on the plan for Moving Canada to Zero Plastic Waste indicated some key concerns related to reduction including limited alternatives to plastic packaging, and lack of industry involvement in finding solutions by creating accessible, affordable and environmentally-sound plastic. Additionally, it was suggested that government should work with industry to reduce plastic production and consumption. It was also noted that more attention and information is being given on "recycling" rather than the other "Rs": reducing and reusing. There is also a dearth of information on the lifecycle of plastics which potentially leads to the overuse of this material.

There's also been criticism that policy options such as bans only address a small fraction of the total plastic waste stream and are incapable of solving the much larger and systemic problem of global plastic pollution. There have also been suggestions that imposing taxes or banning disposal of single-use and takeaway items in municipal landfills could prove even more effective. These and other options, however, present significant operational challenges for other stakeholders and do not directly influence the design and production of single-use and takeaway items.

THE SCALE OF THE CHALLENGE AHEAD

Despite the growing public and media concern on the proliferation of single-use items, particularly plastics, the forces driving increased use of these items are only likely to accelerate in the City of Toronto. As a proxy for this measure forecasts for growth in the use of plastics going forward can provide some sense of the scale of the challenge ahead.

The amount of plastic produced, littered and incinerated globally is set to rise "dramatically" by 2030. In the next 11 years, it is predicted a further 104 million tonnes of plastic will leak into ecosystems and the overall CO2 emissions generated throughout the plastic life cycle will increase by 50%, as plastic incineration trebles and alternatives are introduced.

Plastics account for 6% of global oil demand and therefore make a significant contribution to global greenhouse gas (GHG) missions. It is projected that by 2050, the plastic industry will account for 13% of global GHG emissions and that disposable plastic found in packaging and fast-moving consumer goods are the largest and fastest-growing segment of the plastics economy. Throwaway plastic is estimated to make up 40% of the demand for plastic.

While this Project has illustrated the range of usually small-scale reduction initiatives that are being undertaken globally, reversing the trend of increasing distribution and use of single-use and takeaway items will require a comprehensive suite of initiatives and engagement by all levels of

government, business and consumers. Without this level of engagement, it will be challenging to stem the tide of single-use and takeaway waste.

TORONTO'S HISTORY OF REDUCTION

The City of Toronto has been a leader in taking actions on problematic single-use and takeaway items. On November and December 2009, City Council adopted "Potential Changes to the Waste Diversion Act, 2002, and the Blue Box Program Plan and Impacts on Hot Drink Cup and Plastic Take-out Food Containers", including direction to defer any further work with respect to policies and Bylaw development related to plastic take-out food containers and hot drink cups until after Provincial policies have been established. A fee of $0.05 was imposed on distribution of new plastic shopping carryout bags in Toronto as of 2009 but later rescinded in 2012. On June 19, 2013, the Public Works and Infrastructure Committee adopted the item PW24.2, "Options to Reduce the Use and Disposal of Shopping Carryout Bags in Toronto."

Since 2006, Toronto has offered residents the option of renting H2O to Go trailers to have access to water taps at events around the City. Additionally, the City implemented a prohibition on the sale or distribution of plastic water bottles at all City of Toronto facilities and operations in 2012. Recent efforts to identify a food service provider at City Hall also considered waste reduction and diversion requirements. In 2018, the City of Toronto became the first Canadian municipality to join the Ellen MacArthur Foundation, an international non-governmental organization dedicated to progressing the circular economy including a strong focus on recovery and reduction of plastic waste. Also in 2018, the City of Toronto drafted a motion for the Federation of Canadian Municipalities calling on the Federal Government to develop a comprehensive plastics waste strategy.

Currently, SWMS's Unit for Research, Innovation and a Circular Economy is working with the Purchasing and Materials Management Division and other City Divisions to reduce the use of single-use packaging items resulting from City procurements. This work will include identifying where single-use packaging items are currently being generated (or may be introduced) then seek opportunities to introduce alternative requirements to reduce single-use packaging item generation where suitable alternatives exist. This work supports the City's zero waste aspirations as set out in the Council-approved Long Term Waste Management Strategy. It also supports ongoing work underway in the implementation of the City's Framework for Integrating Circular Economy Approaches into City Procurement Processes to Support Waste Reduction and Diversion.

OVERVIEW OF TASK 1 AND 2 RESULTS

SUCCESSFUL STRATEGIES IN OTHER JURISDICTIONS

Under Task 1 of the Project, the Consultant conducted a broad jurisdictional scan with the aim of identifying promising initiatives to reduce single-use and takeaway items at the source in other jurisdictions. The scan considered national, regional and municipal initiatives in Canada as well as world-wide. For each initiative, the Consultant considered the initiative's policy approach, objectives, items targeted, current status, costs and challenges.

Private and not-for-profit initiatives as well as advocacy campaigns were also noted in order to identify initiatives that promote reduction that could be achieved more swiftly and cost-effectively with the support of the City of Toronto.

The scan revealed a clear upsurge in government, business and non-for-profit activities directed at the reduction at source of single-use and takeaway items in jurisdictions around the world. It was observed that most Canadian initiatives at this time appeared to be directed towards increasing the recyclability of, or value recovery (including energy) from, plastics and single-use products and packaging. Canada's Moving to Zero Waste Plan as well as Ontario's initiatives were observed for alignment but did not influence the work on the Project given Council direction to take action in Toronto by 2021 regardless of any proposed federal or provincial action on single-use and takeaway items.

Most of the initiatives to reduce single-use disposable waste items at the source were observed to be in their infancy or development stage. This was particularly true of other Canadian initiatives, many of which were found to be at the consideration stage. As of the writing of this memorandum, many cities across Canada have variations of bans on plastic bags but have yet to develop more comprehensive reduction strategies. Vancouver, British Columbia has drafted bylaws on EPS cups and takeout containers, and is considering the full details of a proposed bylaw to ban plastic straws under its comprehensive Single-use Item Reduction Strategy. Montreal, Quebec, and Halifax, Nova Scotia are considering bans or restrictions on single-use materials.

Due to the infancy of other promising international initiatives, such as by Berkeley and San Diego, California, the Consultant found little hard data of the programs' effectiveness in reducing the production and use of single-use and takeaway items. The Consultant furthermore observed that many of the initiatives to reduce these items had faced civic or legal challenges. This was particularly the case for large cities such as New York City, New York and San Diego, California whose EPS bans were met with lawsuits led by industry groups and restaurant associations. Likewise, as of the writing of this memorandum, the plastic bag ban of Victoria, British Columbia was defeated in the British Columbia Court of Appeal.

Notably stronger policies aimed at reducing single-use and takeaway items at the source were observed in jurisdictions where strong regulatory frameworks already exist to make producers fully responsible for the management of waste products and packaging that they supply into the market. These included the European Union and various cities and counties in California.

POLICY EVALUATION METHODOLOGY

To evaluate potential policies to reduce single-use and takeaway items within the City of Toronto, the Consultant developed a methodology to review and evaluate the basis for Toronto action on a long list of items that could potentially be addressed under the program. This methodology was informed by information gathered during Task 1 of this Project, which consisted of lessons on items targeted and approaches to reduction observed in other jurisdictions.

Along with City staff, the Consultant developed a ranking for items identified as problematic single-use and takeaway items for which there was a case for reduction. The Evaluation Team then ranked these items on the basis of their being high, medium or low priority for action for reduction. The City of Toronto determined the following to be **high priority items**:

- Single-use takeout EPS, which includes cups, clamshells and plates
- Plastic food containers
- Hot cups
- Plastic bags and
- Plastic straws

The Evaluation Team determined the following to be **medium priority items**.

- Black plastic
- Cold cups (plastic; including lids)
- Plastic bottles
- Paper bags
- Plastic cutlery
- Condiment packets

The Evaluation Team determined the following to be items, among others, should be placed on a **watchlist** for potential future reduction:

- Cigarette filters
- Cigarette packaging
- Wet wipes
- Cotton bud sticks
- Balloon sticks
- Paper containers
- Tampon applicators

The full list of items and rationale for promoting reduction are set out in the attached in Appendix A.

The Evaluation Team then addressed the potential impacts of the high and medium priority items only against key environmental, costs and social criteria. First, a range of mechanisms available to the City of Toronto to promote reduction in the distribution and use of single-use and takeaway items were identified. They included the following:

- City of Toronto-managed promotion and education (P&E) programs
- City of Toronto incentives to entrepreneurs to provide alternative products and reduction services (i.e., reusable cups)
- City of Toronto partnership with reusable take-out container or cup initiatives
- Require companies and institutions to have waste reduction plans
- Provide item to consumers only on request or by asking first

- Using City licensing authority to require companies and institutions to provide reusable alternatives
- Link specified reduction actions to City licencing requirements
- Charge a fee to consumer for use
- Fine the distribution of the item
- Ban the distribution of the item in the City of Toronto
- Voluntary pledge program (i.e., pledges to reduce use of item or switch to products of different material)

The Evaluation Team then assessed the viability and potential effectiveness of any of these measures for the high and medium priority items based on the following criteria:

- Public support for this action
- Likelihood of behavioural change resulting from this action
- Equal access to the public
- Equity of impacts on the public
- Health-related benefits and potential challenges associated with the action
- The likelihood of GHG emissions resulting from this measure of reduction[1]
- Waste disposal reduction
- Reduced litter in water as a result of the action
- Reduced street litter as a result of the action
- Rank as to cost effectiveness as high, medium and low and identify and who bears these costs
    - Costs to the City of Toronto
    - Costs to consumers
    - Costs to business

The Evaluation Team's full assessment of each of the high and medium priority items against these criteria is set out in the attached in Appendix B.

This memorandum provides recommendations for actions to promote reduction that result from this evaluation and which consider the outcome of the recent Phase 1 consultations. **Any final recommendations in this report are subject to final internal review and evaluation by the City solicitor.**

[1] It was observed that all reduction measures would have an impact on lowering GHG emissions associated with extraction, production, transportation, and disposal of plastic and other single-use and takeaway items as well as reduce food waste issues associated with the use of single-use and takeaway items.

TASK 3 ANALYSIS & RECOMMENDATIONS

OVERARCHING RECOMMENDATIONS

In order to address Council's direction to SWMS in undertaking this work as well as some of the key challenges in establishing a reduction-focused initiative in a city as large as Toronto, the success of this initiative would be aided by the following considerations.

1. Clearly place product-specific initiatives within a broader City of Toronto single-use and takeaway items reduction policy framework.
   Public and stakeholder consultations concerning the reduction of single-use and takeaway items in Toronto were initiated in September 2018.

   The methodology developed during this Project for establishing near-term priorities for City of Toronto reduction initiatives identified 11 potential items with a high or moderate case for action. The public case for taking these initial steps would be further strengthened by placing these initiatives within the context of a higher-order vision or objective statement intended to guide the City's overall reduction campaign.

2. Support these initiatives with public-facing P&E campaigns to explain to residents why reduction is critical and how they can participate.
   Further enhance, develop and implement P&E programs outlining Toronto's waste reduction goals and objectives. Educate residents on why and how the near-term priority on single-use and takeaway items reduction initiatives fit within Toronto's Long Term Waste Management Strategy's broader goals and objectives.

   A key component of this effort should be clarifying for residents how and why reduction differs from, but supports and complements, recycling and composting. Residents may not know the difference between reduction and recycling and why the targeted items cannot simply be placed in the Blue Bin. As well, the effort should increase awareness of alternatives to commonly-used single-use and takeaway items such as plastic bags or options available to residents who wish to use reusable alternatives such as their own water bottles, coffee mugs or takeaway containers.

   In addition to pledge programs for reduction, a number of voluntary strategies for reduction have been observed in other jurisdictions that can be implemented in Toronto while the mandatory or other measures included these report are being developed and put into effect. They include the following:
   - Brag about your Bag" and similar promotion and adaptation of reusable bags, mugs, etc., campaigns;
   - Voluntary agreements between governments and producers/retailers, especially where there is a back-stop policy intervention if agreements are not effective in delivering change; or
   - Promoting a voluntary code of practice for the management of single-use and takeaway items and monitoring subscription to the code.

3. Harmonize with other orders of government, to the degree possible, while demonstrating local, national and international leadership.
   The City of Toronto aims to reduce the distribution and use of single-use and takeaway items in a way that is "*harmonized or consistent with policies and programs being developed nationally and locally to address single-use or takeaway items*". In line with this goal, Toronto should consider testing whether each specific initiative under consideration should be structured as bylaws or program requirements whose effect varies depending on provincial and federal regulations that may be implemented in the future related to single-use and takeaway items.

4. Align and act as if the federal government's plastic reduction initiatives will be implemented as announced.
   Toronto intends to move forward while acknowledging that there is an evolving federal plastics strategy. On June 10, 2019, the federal government announced its plans to tackle the reduction at source of single-use plastics. While the full list of items to be targeted has yet to be finalized pending further scientific research, key elements of the announcement included:
   a. A preliminary list of items to be targeted for reduction that includes plastic bags, plastic straws, stir sticks, plates, and cutlery. Federal government announcements also mentioned cotton swabs, balloon sticks, and EPS fast food containers and cups.
   b. A projected effective date is anticipated sometime in 2021.
   c. *Final standards/regulations that will align, where appropriate, with the actions of the European Union.*

   While it is not certain that the federal announcements will be implemented, in keeping with the City's desire to align with national reduction initiatives, proposed local actions should consider and reflect these initiatives where possible. As such, Toronto should continue to monitor and participate in the development of the federal action plan on single-use plastics. Additionally, Toronto initiatives should, if possible, harmonize with reduction at source initiatives in Vancouver, Montreal and Prince Edward Island, among other places, in an effort to set the stage for national regulation along the same lines.

ITEM-SPECIFIC RECOMMENDATIONS

HIGH PRIORITY ACTIONS

Single-use takeout EPS[2]

Rationale for Reduction	• Single-use takeout EPS was qualified as being of high priority for reduction due to high public interest in reduction, the availability of alternatives, challenges in the recovery of this material and given other jurisdictions' bans on this material • EPS containers were the least used materials according to Phase 1 consultations. However, they received the most support for reduction from the Phase 1 consultations as well as the lowest opposition to reduction. Likewise, EPS containers also received the highest levels of support for mandatory approaches to reduction. • This item is easily replaceable by standard plastic food containers or, in some applications, with fiber containers. Though it has been reported that there are lower environmental impacts in producing or transporting EPS containers than in producing and transporting plastic containers, EPS containers tend to blow away more easily in the natural environment and break down into smaller pieces therefore contributing to litter • Many jurisdictions, including New York City, Vancouver, San Diego, Berkeley, Santa Cruz, etc., have opted to outright ban this item o A lot of bans come either with a phased-in approach or include a hardship waiver o Though good data has not been kept in the effectiveness of these bans, litter audits completed in 2007, 2008 and 2009 in San Francisco found a 41 percent decrease in EPS litter in streets over the three-year period following its 2006 EPS disposable food service ware ban. Reduction in EPS litter was as high as 36% just a year following implementation. o Santa Cruz County implemented a further ordinance in 2012 to expand its 2008 EPS ordinance on the basis that it observed significant changes, including near-universal compliance by local businesses and a reduction of polystyrene packaging waste in the landfill and in litter along county roads, streams and beaches. • Vancouver will ban foam cups and containers as of January 1, 2020 and the federal government has placed this item on a preliminary ban list. As such, a ban in Toronto would encourage harmonization in regulation across Canada
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was generally high public support for a range of tools and mechanism for the reduction of this item. • There were also low costs to consumers of any reduction measures. • Accessibility issues were rated at a medium or medium to high for most reduction measures.

[2] This item includes cups, clamshells, plates, and other items

	• The likelihood of behavioural change was also rated as medium to high
Challenges	• Both San Diego, California and New York faced legal challenges following the ban of EPS containers. New York's ban was upheld in 2018 but San Diego's was launched in March 2019 and it is still before the courts.
Final Recommendations	• **Ban the distribution of takeout EPS cups and containers** in the City of Toronto similar to initiatives in other jurisdictions, and consider a phased-in approach or hardship waiver, or both
Advocacy	• Advocate for strong penalty/modulated fee provisions under the expected *Resource Recovery and Circular Economy Act, 2016* Paper Products & Packaging ("**RRCEA PP&P**") regulation to incentivize producers to make alternative material choices • Require producers to fund efforts on behalf of municipalities or community organizations to effect local waste reductions
Voluntary Measures	• Given the availability of alternatives for this item, it is recommended that this go forward to a ban. This item is not ideal for voluntary agreements as most places that supply these containers are small or fast food restaurants scattered widely around Toronto and hard to reach

Plastic Food Containers

Rationale for Reduction	• Plastic food containers were classified as a high priority item for reduction given high public interest in their reduction, contribution to litter, alternatives available and regulation in other jurisdictions • There is a high and growing use among Toronto citizens and a practical necessity for this item given Toronto work culture demands • Phase 1 consultations revealed that plastic containers of any colour are one of the most frequently used materials in Toronto (being used every day or almost every day) there were low levels of interests by respondents to the consultations in using reusable food containers
Policy Evaluation	• The policy evaluation methodology revealed that there may be less stakeholder than public support for the reduction of this item given the potential impact to local businesses • There were also less behavioural changes expected to result from the reduction of this item and low likelihood of impacts on litter • There were no specific accessibility issues associated with this item • Bans on the distribution of the item would increase costs to businesses but not likely to consumers. All mechanisms to reduce this item will likely result in medium to high costs for the City • Reusables initiatives were noted as raising concerns of potential cross-contamination or improper food handling and storage • This item could be addressed well through a City partnership approach
Challenges	• Residents are generally opposed to fees on this item given hardship as containers are taken out due to time poverty and work culture demands preventing grocery shopping, cooking and cleaning at home

Final Recommendations	• **Promote behavioral changes by educating the public on bringing their own containers to food establishments as well as making this practice socially acceptable:** o Initiate a targeted consultation process with major restaurant, food service, hotel, etc. associations and vendors of reusable container systems to establish minimum threshold sizes for providing reusable dishware for use within City of Toronto-licensed facilities o Assess the viability of a "right to refill" bylaw to allow consumers to use their own reusable containers for takeaway food orders o Work with Toronto Public Health to research and identify any food safety/health concerns associated with consumer use of reusables (including creating a guidance document and feasibility study) o Develop a City-approved poster/sticker/communications piece of a sufficiently large size (see ECOBOX in Luxembourg) for establishments to advertise to consumers acceptance of reusable containers o Initiate a campaign targeted at behavior change (i.e., partnering with social media influencers) to make bringing your own container to food establishments "cool" and more socially acceptable • Undertake a pilot program similar to GO Box or reCIRCLE or Green OZZI (or equivalent) to assess consumer acceptability of reusable alternatives and operational viability at scale under City of Toronto conditions by City restaurants, food establishments and grocery stores • Research and explore partnerships with local reusable start-ups such as Wisebird
Voluntary Measures	• Voluntary agreements for restaurants to advertise bring your own container options in menus or other places around their establishment, including by offering discounts (e.g., Kupfert & Kim offers $0.35 discounts for bringing your own container) • Voluntary agreement with major grocery stores that offer food counters to offer eating with reusable dishware on site (e.g., similar to Whole Foods) • Voluntary agreements for restaurants to provide reusables on site

Hot Cups

Rationale for Reduction	• Hot cups were classified as a high priority item for reduction given the high public interest in reduction, high use, contamination of the recycling stream and data from both litter and waste audits • The wax lining on coffee cups makes these cups not recyclable in Toronto at this time • Hot cups are one of the most frequently used materials in Toronto; however, they also received the highest levels interest from respondents to the Phase 1 consultations for willingness to use reusable items. There was also strong support for the reduction of

	this item through mandatory measures; however, the focus was on voluntary reduction programs • Educational campaigns alone are not likely to drive widespread behavioural change given the pervasive use of the item. Likewise, providing reusable cups at participating locations without imposing a fee on single-use hot cups is also not likely to drive reduction given the convenience of this item • Fees are also more likely to incentivize businesses to participate in reduction efforts, including the development of and participating in reusable cup programs • Other jurisdictions, including Berkeley, California, have imposed fees on these cups
Policy Evaluation	• The policy evaluation methodology revealed that there was low public interest in banning this item but medium to high interest in all other reduction measures • Consumers would incur costs if a fee was imposed but businesses would benefit from a consumer fee o However, given the prevalence of reusable mugs and reusable cups often offered by coffee shops, there is a high likelihood that consumers will be able to avoid the fee • Given high consumption rates due to the item's convenience, monetary incentives on bringing your own mug were seen as providing less of a positive impact on litter or behavioural change • A ban of the item was also seen as leading to higher costs for businesses.
Challenges	• Following Toronto's imposing a fee on plastic bags in 2009, there was widespread concern with the windfall gained by retailers from collecting these fees. • This criticism should be addressed in the drafting of any bylaws imposing fees, given that the proposed fees under this reduction strategy are higher than the $0.05 fee that applied to plastic bags
Final Recommendations	• **Impose a fee on single-use hot cups** to incentivize patrons to use reusable cups . Specific actions to achieve this goal include: o Assess the viability of a "right to refill" bylaw for application to major take-away food and beverage outlets o Promote and/or partner with a company on the development of reusable cups ▪ Research whether to develop a universal cup or to encourage competition in styles. Allow sufficient time for the development of reusable cups (four months at minimum) ▪ Provide stickers for store windows to promote acceptance of reusable cups by participating establishments ▪ Consider piloting of deposit return system for reusable takeaway cups/mugs for interested establishments which may be more effective in promoting consumer participation and a higher rate of return for the cups than a yearly fee

	• Escheats (deposits collected from consumers that do not return the cup) can be used by vendors to offset the cost of cleaning/managing reusable cups
Advocacy	• Given the high rates of use of this item, advocate for mandatory modulated fees under RRCEA PP&P regulation to incentivize producers to develop and adopt recyclable cup formats and targets to encourage higher levels of recycling for disposable cups
Voluntary Measures	• Convene a process to secure voluntary agreements or consider "challenges" to major franchise and independent chains (Starbucks, Aroma Espresso, Dark Horse, Jimmy's Coffee, Tim Hortons, etc.) on a voluntary code of practice, particularly one that sets minimum reduction targets by increasing the use of reusable cups for on-premise sales o Smaller chains can be targeted first as they are more likely to adopt progressive policies to distinguish themselves in the market o Retailers can consider offering incentives to consumers for bringing their own mugs as many Toronto establishments now do o Retailers can consider advertising the initiative so consumers know of incentives for bringing their own mugs • Research the possibility of voluntary agreements with retailers to have a portion of the fees pledged by retailers to environmental initiatives or collected for redistribution as grants to reusable initiatives by Toronto start-ups, in a similar fashion to the use of the funds collected from the federal regulatory charge on carbon

Plastic Straws

Rationale for Reduction	• Plastic straws were classified as a high priority item for reduction given explicit Council direction to SWMS to develop a policy which would restrict plastic straws in the City of Toronto by the end of the first quarter of 2019 • Plastic straws also received high support for reduction from the Phase 1 consultations. They also received strong support for mandatory approaches to reduction. Respondents also reported a high willingness to use reusable alternatives to plastic straws • Various jurisdictions, including the EU, and France have banned this item. Though the full details of the ban have yet to be developed, Vancouver is likewise looking to ban this item by April 2020. The federal government has also proposed banning this item
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was high public support for reduction, especially for P&E programs, with a lower priority on a ban • Mandatory measures such as bans or fees would be more likely, especially as compared to voluntary measures, to result in behavioural changes • However, it would be highly inequitable to impose a ban, a mandatory fee, or to fine the distribution of this item. Given the

	accessibility implications for individuals with disabilities, a mandatory measure such as a fine on businesses or a ban might impose high costs on businesses associated with staffing, planning and educating with respect to the accessibility issues involved • For consumers without disabilities, there are generally low costs associated with any measure taken to reduce this item • There might also be health impacts on banning straws, especially with using reusable straws if they are not regularly cleaned
Challenges	• Plastic straws have been identified as a vital accessibility device for some individuals living with a disability. As such, any policies to reduce this item should ensure there is no increased burdens on those affected • Feedback from the disability community revealed that a ban with an ask-first or by-request exemption for individuals with medical or disability needs would put the onus on these individuals to disclose their medical needs or disability o This concern would be mitigated if an ask-first or by-request policy applied to every consumer, and would not lead to an inference that the consumer requesting the straw or being asked for a straw had a medical need or disability o A ban with an ask-first or by-request exemption for individuals with disabilities or medical needs is also highly likely to result in a Human Rights complaint • Vancouver is additionally reporting challenges with a ban due to the business model of certain stores such as bubble tea shops
Final Recommendations	• **Restrict the distribution of plastic straws in the City of Toronto by requiring establishments to either ask consumers first or have consumers request a straw** no later than December 31, 2021 (consistent with proposed federal government timing) with a back-stop policy increasing measures to regulate this item to go in effect as of that date if a certain level of reduction is not achieved • As an interim step, develop and implement a bylaw requiring Toronto-licensed vendors to implement policies to provide plastic straws only on customer request or, alternatively, to ask the customer in advance if one is desired • Identify commercially available alternatives to plastic straws that are deemed acceptable for health and safety as well as for use by persons with disabilities • Monitor progressive restrictive regulations and actions by the federal government for the possibility of adopting similar actions in Toronto at a future date should this effort prove effective
Voluntary Measures	• Develop a voluntary agreement with businesses or retailers to implement ask-first or by-request policy and to monitor the effectiveness of this agreement by the federal 2021 target date

Rationale for Reduction	• Plastic bags were classified as a high priority item for reduction due to high public interest in reduction coupled with high use, challenges in recycling, data from litter and waste audits, regulation in other jurisdictions and given Toronto's success with the fee on bags • Phase 1 Consultations revealed that this is one of the top three most used items in the City. This item also received strong support for reduction, with a focus on mandatory approaches. Respondents expressed high willingness to use reusable alternatives to single-use plastic bags • 127 countries have adopted some type of regulation on these bags • Montreal implemented a ban on plastic bags with a thickness of less than 50 microns in January of 2018 • Following the implementation of a 22 euro cents tax at checkout in 2002, Ireland saw almost instant effects with consumption dropping by 94%.The government has ensured that the revenue from the tax goes into different programs aimed at environmental protection • China's ban of single-use plastic bags in grocery stores and shops around the country also was reported to have led to a 66% reduction in the use of plastic bags • Behavioural change is far more likely with this item given that innovations in reusable bags now allow them to fold in pocket sizes and to be carried without a perceivable added load • Postconsumer content requirements on plastic bags as a fallback option would also be beneficial for local producers of these bags.
Policy Evaluation	• The policy evaluation methodology revealed that there was high public support • Bans, fines and fees come with additional costs to consumers, given that consumers might be required to purchase plastic bags as garbage liners or for other uses, particularly in the event of a ban. A ban would result in costs to businesses while a fee would result in a revenue for them • Bans, fees or requiring the use of reusables would likely encourage substantial behavioural change as residents are already accustomed to reusable bags and fees on this item, and some retailers have continued with the fee despite Council rescission • The health impacts of any measures would be low • There were no particular accessibility concerns with respect to measures to reduce this item
Challenges	• With respect to a ban or high fee on consumers, there are convenience issues associated with consumers also running out of or forgetting to bring reusable bags on grocery runs
Final Recommendations	• **Ban plastic bags of less than 50 microns in thickness and of oxo-degradable or oxo-fragmentable plastic bags** o Provide an exemption for plastic bags with a minimum post-consumer recycled content of 80%[3], subject to a $0.15 fee

[3] Example set by Andorra. However, Colombia and Mozambique have a 40% recycled content standard on plastic bags generally; Spain sets a 50-70% recycled plastic content on bags of thickness equal to or greater than 50 microns,

	on distribution to consumers, so that these bags can be used by residents as garbage or Green bin organics bin liners
Voluntary Measures	• Research the possibility of voluntary agreement with retailers to have a portion of the fees collected for redistribution as grants to reusable initiatives by Toronto start-ups

available for €0.10; Italy set a 30% standard for bags of over 200 microns. Source: <https://www.unenvironment.org/resources/report/legal-limits-single-use-plastics-and-microplastics>.

MODERATE PRIORITY ACTIONS

Black Plastic

Rationale for Reduction	• Black plastic was classified as being of moderate priority for reduction given the substantial public interest in reduction, it not being currently recycled in Toronto, contribution to litter and availability of alternatives • This item received strong support for reduction during the Phase 1 consultations, with a focus on mandatory approaches to reduction
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was high public and support for the reduction of this item • It was observed that this item would benefit strongly from P&E campaigns given that the public may still be unaware of the challenges with black plastic • Mandatory measures were seen as ideal in driving reduction • There were no perceived accessibility issues and very low health issues associated with reducing this item • There were low to medium costs on businesses for reducing this item, but high costs to the City given P&E campaigns to switch to material that is not black plastic
Challenges	• The primary barrier to sorting and recycling these materials in the City's Blue Bin recycling program is the limitation of existing sorting equipment at the City-contracted material recovery facility (MRF). There are also limited markets seeking this material at the volumes generated in Toronto. • Producers should be given adequate time to fix the problem with the inability to sort black plastics in the MRF under the RRCEA PP&P regulation, noting that progress was being made in other jurisdictions
Final Recommendations	• **Ban the distribution of black plastic single-use and takeaway items** (including utensils and catering trays) in the City of Toronto that cannot be optically/mechanically sorted in material recovery facilities contracted by the City by no later than December 31, 2021
Voluntary Measures	• Enter into a binding agreement with major producers/suppliers of black plastics to reduce their use and distribution to a minimal level within an acceptable transition timetable

Cold Cups[4]

Rationale for Reduction	• Cold cups were classified as being of moderate priority for reduction as the City does not wish to differentiate reduction for hot and cold cups. It should be noted, however, that PET (polyethylene terephthalate) cold cups have reasonable value in recycling markets • This item received substantial support for reduction during the Phase 1 consultations, with a focus on voluntary reduction programs
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was lower interest in reduction for this item than for hot cups though impacts were rated as equal overall

[4] This refers to plastic cold cups, including their lids. Wax lined cold cups are not accepted in Toronto's Blue Box.

	• A mandatory fee was assessed with costs to consumers but also driving higher behavioural change as well as having the greatest impact on waste, water or street litter • There were no health issues or apparent accessibility issues associated with this item
Challenges	• Many hot mugs already purchased or in use by residents have narrow tops, while many cold cups have wide tops to accommodate the ice cubes that frequently come with cold drinks. As a result, there may not be ready access to reusables for this item as there is for hot cups
Final Recommendations	• **Require business license holders of a minimum size (to be determined by City staff) to have reduction plans** available for audit by the City of Toronto on the amount of single-use plastic cold cups and lids that they distribute • Conduct research on a reusable cup design that can be used for both hot and cold drinks o If the reusable design proves workable, require vendors to charge a $0.15 fee on single-use cold cups • Since plastic cold cups and lids are currently accepted in the City's Blue Bin recycling program but not collected at a high rate, the City should investigate the viability of co-collecting hot and cold cups and lids (as per recommendations on hot cups above)
Advocacy	• Advocate for the RRCEA PP&P regulation to require producers to participate in the collection and recycling costs of these cups, wherever they are generated, as well as the development of public education campaigns on the reduction of these kinds of cups
Voluntary measures	• Voluntary agreements to start a bring-your-own cup campaigns for these cups and consider offering incentives to consumers for bringing their own cups as many Toronto establishments now do with a back-stop policy to go into effect to impose a fee on this item if substantial reduction has not been achieved by 2021 o Retailers can consider advertising the initiative so consumers are aware of incentives for bringing their own cups • Voluntary agreements to start using only PET cold cups with the straw portion to be replaced by a redesign of the lid • If a fee is charged, as with hot cups, research the possibility of promoting a voluntary agreement with retailers to have some of this fee collected to be used for grants and other incentives for reusable initiatives by Toronto start-ups

Paper Bags

Rationale for Reduction	• Paper bags were classified as being of moderate priority for reduction given low to medium public interest in reduction, low to medium public use of the item, the City's focus on reduction and alternatives available to carry-out bags • Paper bags were the only material not to receive majority strong support for reduction from the Phase 1 consultations; they also received the highest level of support for voluntary action • However, many respondents indicated that they were very willing to use an alternative reusable item to a plastic bag (65%)

	• A $0.15 fee on paper bags would harmonize Toronto's single-use reduction strategy with that of Prince Edward Island o Victoria, British Columbia's bylaw also imposed a $0.15 fee on single-use paper bags but the bylaw was recently defeated at the Court of Appeal due to Victoria having acted outside of its statutory authority in failing to seek provincial approval of the bylaw.
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was medium to high public interest in the reduction of this item o The lower interest in reduction might result from a perception that paper bags are biodegradable and that this quality alone makes them more environmentally friendly than paper bags • Mandatory reduction measures were seen as resulting in greater behavioural change but as also having high to medium costs on the City, consumers and businesses • Regulation of this item would drive medium to high improvements in waste, water and street litter • Reduction of this item would drive higher GHG reduction given the weight of paper bags and resulting emissions from transportation • There were no observed accessibility issues associated with reduction of this item
Challenges	• Studies have found that paper bags can be more environmentally harmful than plastic bags. • Previous plastic bags bans have also led to dramatic increases in the use of paper bags.[5] • A fee supports behavioural change and lessens the possibility of a legal challenge following a plastic bag ban if there is no parallel regulation on paper bags.
Final Recommendations	• **Impose a fee** to ensure consistency in reducing use of all single-use and takeaway items with an exemption made for small paper bags (e.g., for bagels, breakfast sandwiches, etc.)
Voluntary Measures	• Research the possibility of voluntary agreement with retailers to have a portion of the fees collected for redistribution as grants to reusable initiatives by Toronto start-ups • Voluntary agreement with retailers to offer a discount on groceries for bringing their own bags (Whole Foods currently offers $0.10 off per bag)

Plastic Utensils

Rationale for Reduction	• Plastic utensils were classified as being of moderate priority for reduction given the wide public use of this item and moderate interest in reduction, as well as their presence in water and street litter • 68% of the respondents to the Phase 1 consultations indicated that, one of the main reasons for their consumption of single-use and takeaway items was "Shop/restaurant gives them to me without asking"

[5] Portland, Oregon reported a 491% increase in the use of paper bags one year after banning plastic bags thinner than 4 mils in 2011. Source: <https://www.portlandoregon.gov/bps/article/419700 >.

	• Most residents take away food to their homes or offices where they have access to reusable utensils. It is likely that, due to the convenience of plastic utensils, many residents are not turning their minds to this fact when ordering takeout food
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was overall medium public for the reduction of this item • Mandatory measures were more likely to drive behavioural change but were also associated with high costs on the City, consumers and businesses • While a ban would drive a higher reduction in waste, water and street litter, there was medium reduction for other mandatory measures including a by-request or ask-first bylaw. • Non-mandatory measures (P&E, volunteer pledges, City incentives or partnerships) would drive the lowest improvement; this would be problematic given prevalence in waste, water and street litter units. Convenience would outweigh concern for environment.
Final Recommendations	• **Implement an ask-first or by-request bylaw on the distribution of plastic utensils** no later than December 31, 2021 • Additionally, establish baseline estimates on the number of plastic utensils distributed in the City of Toronto as of the date of implementation of the bylaw and determine a mechanism to track the continued use of this item after that date. If no significant reduction is observed, amend the bylaw to include provisions to: o Impose fees on the distribution of plastic utensils; and o Ban the distribution of pre-packaged sets containing multiple utensils (knife, fork, spoon, often with condiments included).
Voluntary Measures	• Work with major producers/suppliers to develop a code of practice that would incorporate a wider range of actions tailored to the unique needs of restaurant formats that would lead to meaningful reduction in the unnecessary distribution of these items. • Develop a voluntary agreement with businesses or retailers to implement ask-first or by-request policy and to independently monitor the effectiveness of this agreement by the federal 2021 target date with a back-stop policy increasing measures to regulate this item to go in effect as of that date

Condiment packets

Rationale for Reduction	• Condiment packets were classified as being of moderate priority for reduction given that they are wasted or improperly disposed in the same manner as straws and cutlery and can also be reduced similarly • As with plastic utensils, most citizens consume takeaway food at their offices or homes where there they have access to a variety of condiments • This item is also associated with food waste resulting from excessive condiment packets typically collecting in fridges
Policy Evaluation	• The policy evaluation methodology exercise revealed that there was overall medium public for the reduction of this item • The scoring was, however, identical to that of plastic utensils, above

	• There are greater GHG impacts associated with this item given food waste from extra condiment packets provided to consumers without their asking • Most reduction measures, except for P&E and voluntary pledges, would result in medium to high impacts on waste, water and street litter
Final Recommendations	• **Implement an ask first or by-request bylaw on the distribution of condiment packets** and monitor the effectiveness of this agreement by the federal 2021 target date with a back-stop policy increasing measures to regulate this item to go in effect as of that date • Conduct research on requiring City of Toronto licensed facilities above a minimum size to provide reusable self-serve dispensers for common condiments on premises
Voluntary Measures	• Consider including references to these items in food waste reduction P&E communications • Implement voluntary reduction approaches for these packets, including retailers offering discounts for non-use

Plastic Bottles

Rationale for Reduction	• Plastic bottles were classified as being of moderate priority for reduction given substantial public interest in reduction, appearance in both litter and audits, and reduction programs in other jurisdictions
	• Many residents carry reusable water bottles around the City
	• Apps like Quench help residents locate the nearest water refill station
	  o Toronto has already developed Blue W stickers that identify places in Toronto where residents can fill up water bottles
	• Mobile refill stations (such as The Green Stop) are receiving support for concerts or other events held across Canada
	  o The City of Toronto has its own H2O to Go water stations that can be developed and expanded for use including for Toronto parks in the near term
	• Plastic water bottles are no longer sold at City facilities to promote reduction

Policy Evaluation	• The policy evaluation methodology revealed that there was medium to high public support for reducing this item • Health concerns were noted with respect to access to drinking water during heat wave emergencies • All measures, except for P&E, voluntary pledges and fines on distribution were seen as achieving medium to high reductions on litter and having medium to high impacts on behaviour • There were overall low costs to consumers and medium costs, on average, to businesses on measures to reduce this item
Final Recommendations	• **Incorporate a water refill function in the TO Waste app or support an existing water refill app (such as Quench) to inform residents of nearby water refill stations** o Promote/support the development of new refill stations (beyond coffee shops to include gas stations, service centers, malls, public events, etc.)

	o Promote Blue W stickers for refills by residents • Assess the viability of a "right to refill" bylaw in takeaway food and beverage outlets • Fund and develop more H2O to Go water stations for use in emergencies as well as for street, concerts or other events in Toronto • Explore a partnership with Toronto Water on the development of the above as well as any other programs
Advocacy	• Advocate for high (long-term 90%), bottle-specific collection targets in the RRCEA PP&P regulation as per the EU Directive • Track the introduction of packaging changes in Europe in response to regulations requiring that caps and lids remain attached and promote the adoption of similar technologies by Canadian Beverage Association members

WATCH LIST AND FUTURE RECOMMENDED ACTIONS

Fast-moving consumer goods, both products and packaging, are constantly evolving with a clear industry trend towards increased use of plastics and multi-laminates in design and manufacture. However, growing recognition of the global crisis of plastic waste is beginning to spark innovations in product design and alternative product delivery systems with the overall goal of using better plastic, less plastic or no plastics.

The City of Toronto should work in partnership with vendors, non-government organizations (NGOs) and government agencies in other jurisdictions to continuously monitor these developments with a focus on identifying and disseminating information on commercially available alternatives to the items it is seeking to displace.

Further research should also be undertaken on other single-use and takeaway packaging items (and possibly "similar" products and packaging) that could be added to the Reduction Strategy over time. These would include:

Compostable alternatives

Rationale for Reduction	• As the criticism of reduction initiatives at the start of this memorandum indicated, there may still be a need for single-use or semi-durable plastic items for a variety of useful reasons including health and convenience. • The biodegradables market is rapidly expanding and innovations in materials may result in items that provide significant improvements in timely degradation under practical municipal composting conditions over currently in use items that cannot be fully reduced (i.e., plastic containers).
Challenges	• The City's future reduction strategy seeks to prioritize reduction or reuse over ensuring that the items are recyclable or compostable. As a result, research of compostable alternatives is not a priority for this Project. • Additionally, there are noted uncertainties around producer claims that these alternatives are in fact biodegradable/compostable. In fact, various reports (see also) have highlighted the issue with supposed biodegradable items. These compostables are also not widely collected and far more likely to end up in the natural environment where they often do not biodegrade for considerable lengths of time. • There is also ongoing discussion under the RRCEA regarding extending producer responsibility to items managed in the Green Bin.
Research & Monitoring Recommendations	• The City should monitor developments in compostable or biodegradable alternatives for those items that cannot currently be reduced due to a lack of available alternatives and/or given hardship to consumers or businesses (i.e., plastic containers, hot cups, utensils, straws, etc.). • If such alternatives are found to be superior to these items in terms of their environmental impact or other uses (e.g., accessibility) and are compatible with waste diversion services offered by both the City of Toronto and the private sector, they should be required for use by businesses licensed by the City of Toronto.

Cigarette Filters

Rationale for Reduction	• Often the most prevalent item in litter in any waste audit, cigarette butts are now increasingly linked to water pollution. Questions are also being raised as to whether filters are used for any purpose other than as a marketing device
Final Recommendations	• Advocate for inclusion of this material as an obligated material under the evolving RRCEA PP&P regulation (perhaps as part of a basket of items that are hybrid packaging/products designed for single-use and immediately discarded such as coffee pods, etc.) o Establish performance metrics to reduce cigarette filter waste by 50% in line with EU regulation • Advocate for producers of all products that constitute litter to pay their fair share of prevention, clean-up and awareness-raising costs • Closely monitor national and international policies addressing this item

Wet Wipes

Rationale for Reduction	• In addition to being wrapped in plastic packaging, an estimated 90% of the wipes themselves contain some form of plastic. • The Bristol city region (UK) estimated that 16 tons of waste wet wipes were flushed into its sewage treatment facilities over a 3.5-day period. • Alternative products include reusable cotton pads, damp cloths, cleansing foam to pre-moisten paper tissues, micro-fiber cloths and reusable baby wipes.
Research & Monitoring Recommendations	• The City of Toronto should: o (1) research the current sales and projected growth rates of these products; o (2) estimate the total quantities generated in the City (including from the development of fatbergs, congealed masses of non-biodegradable matter found in sewer systems); and o (3) determine the waste and cost impacts of these products on City wastewater treatment facilities. • Wet wipes should be referred to Toronto Water for inclusion as a category in future litter composition studies, with recommendations and potential support for SWMS

Cotton Buds

Rationale for Reduction	• UK consumers are estimated to use on average 35+ mostly single-use plastic/cotton buds per capita per year • Improper disposal (flushing down toilets rather than disposing with solid waste), pollutes inland waterways and the marine environment; showing up as a top-ten item in UK beach surveys • Cotton buds are also easily ingested by marine animals and seabirds. • Non-plastic alternatives are widely available

Research & Monitoring Recommendations	• Continue monitoring developments locally, nationally and internationally addressing reduction of this item • Voluntary agreements could be set in place with a back-stop policy if an agreement is not having a set effect by a certain date

Balloon sticks

Rationale for Reduction	• While risking being labelled "party poopers", EU legislators did not shrink from the challenge of reducing plastic wastes related to balloons (which also rank as a top-ten item in EU beach waste audits). • While alternatives to plastic sticks to hold the balloon itself are obvious, the benefits of reducing the release of helium inflated balloons has perhaps been less widely understood
Research & Monitoring Recommendations	• Continue monitoring developments locally, nationally and internationally addressing reduction of this item

Fishing Gear

Rationale for Reduction	• While known to be a significant contributor to ocean debris, no information is currently available as to the quantities of plastics waste that recreational and commercial fishing adds to the pollution of Toronto's lakefront and waterways • The EU has implemented regulations on this item • Fishing nets also comprise 46% of the trash found in the Great Pacific Garbage Patch with the majority of the rest of the trash made up of fishing gear (i.e., ropes, oyster spacers, eel traps, crates and baskets)
Research & Monitoring Recommendations	• Partner with the federal government or fisheries groups to determine commercial fishing locations and come up with a SWMS/City of Toronto statement in support of federal action on extended producer responsibility regulation for this item

CONCLUSIONS

In summary, it is proposed that SWMS take a multi-faceted approach to promoting the reduction of single-use and takeaway items in the city of Toronto including:

- Restricting the distribution and use of items:
  - that cannot be managed in the Blue Bin or Green Bin programs;
  - that are significant contributors to land and freshwater litter;
  - for which there are commercially available alternatives; and
  - where similar actions have proven successful in other jurisdictions.
- Providing incentives for producers and distributors to make better choices by:
  - Requiring that they first ask their customers if they want targeted single-use items or that they wait until they are asked before providing them to their customers.
  - Incorporating stronger incentives to promote reduction within the new packaging and printed paper regulations being developed under the RRCEA.
  - Developing with industry codes of practice to provide reusable and refillable alternatives in food and beverage establishments where the scale of these operations allows.
  - Establish "right-to-refill" policies to allow customers to choose to use their own reusable cups and refillable food containers.
- Educating consumers and businesses on the need for and opportunities to reduce:
  - Through enhanced education programs highlighting why targeted items cannot be effectively managed in the City's waste diversion programs and how these items actually disrupt these efforts.
  - Investigating and modifying if possible, any unnecessary/unintended health and safety policies or regulatory impediments that might prevent consumers form choosing to refill their own containers.
  - Monitoring the ongoing development and promoting the adoption of reusable alternatives.
- Accelerating behavioral changes in consumer and business practices by:
  - Providing direct financial incentives for consumers to avoid the use of targeted items and/or to choose reusable alternatives.
  - Encouraging the re-investment of a portion of the funds raised by incentive fees applied by producers/distributors to support the wider adoption of reusables and the increased recycling of the single use items that remain in use.
  - Setting clear timelines that encourage and provide adequate time for producers/distributors to develop their own solutions to reduce the use of problematic single-use plastics and takeaway packaging before taking more aggressive action.
- Actively support the wider use of alternative products and delivery systems by:
  - Providing research and development assistance to entrepreneurs and NGOs that want to bring innovative alternatives into the Toronto market.
  - Promoting the use of alternative items and delivery systems through the City's procurement policies.
  - Expanding the number of City of Toronto water refill stations and their wider use in City facilities, parks and community events.
- Advocating for the provincial and federal governments to adopt similar or stronger policies and regulations to drive reduction efforts across Ontario and Canada – including within the City of Toronto.

DISCLAIMER: Information and recommendations provided in this report, as well as any references to legal frameworks, legal developments or law suits in any jurisdiction, are not intended to be legal advice and do not create a solicitor-client relationship between the City of Toronto and any of the drafters of this report.

- Building on this project by continuously monitoring and evaluating the waste impacts of and potential for reducing the distribution and use of:
    - Miscellaneous "disposable-by-design" products such as razors, hotel toiletry accessories, plastic toothpicks, plastic floss sticks, plastic tampon applicators, coffee pods, home delivery packaging systems, etc.
    - Other short-life packaging which can similarly disrupt Blue Bin and Green Bin waste diversion programs such as other types of short-life black plastic containers; multi-material/multi-plastic pumps & sprays; tea bags made with plastic; primarily paper packaging formats which then include plastic liners, separators & cushioning; etc.

Our specific recommendations are summarized briefly in the following chart.

SUMMARY CHART OF FINAL RECOMMENDATIONS

High Priority Items	
Single-use Takeout EPS	• **Ban the distribution of takeout EPS cups and containers** in the City of Toronto similar to initiatives in other jurisdictions, and consider a phased-in approach or hardship waiver, or both
Plastic Food Containers	• **Promote behavioral changes by educating the public on bringing their own containers to food establishments as well as making this practice socially acceptable:** o Initiate a targeted consultation process with major restaurant, food service, hotel, etc. associations and vendors of reusable container systems to establish minimum threshold sizes for providing reusable dishware for use within City of Toronto-licensed facilities o Assess the viability of a "right to refill" bylaw to allow consumers to use their own reusable containers for takeaway food orders o Work with Toronto Public Health to research and identify any food safety/health concerns associated with consumer use of reusables (including creating a guidance document and feasibility study) o Develop a City-approved poster/sticker/communications piece of a sufficiently large size (see ECOBOX in Luxembourg) for establishments to advertise to consumers acceptance of reusable containers o Initiate a campaign targeted at behavior change (i.e., partnering with social media influencers) to make bringing your own container to food establishments "cool" and more socially acceptable • Undertake a pilot program similar to GO Box or reCIRCLE or Green OZZI (or equivalent) to assess consumer acceptability of reusable alternatives and operational viability at scale under City of Toronto conditions by City restaurants, food establishments and grocery stores • Research and explore partnerships with local reusable start-ups such as Wisebird

Hot Cups	• **Impose a fee on single-use hot cups** to incentivize patrons to use reusable cups. Specific actions to achieve this goal include: o Assess the viability of a "right to refill" bylaw for application to major take-away food and beverage outlets o Promote and/or partner with a company on the development of reusable cups ▪ Research whether to develop a universal cup or to encourage competition in styles. Allow sufficient time for the development of reusable cups (four months at minimum) ▪ Provide stickers for store windows to promote acceptance of reusable cups by participating establishments ▪ Consider piloting of deposit return system for reusable takeaway cups/mugs for interested establishments which may be more effective in promoting consumer participation and a higher rate of return for the cups than a yearly fee • Escheats (deposits collected from consumers that do not return the cup) can be used by vendors to offset the cost of cleaning/managing reusable cups
Plastic Straws	• **Restrict the distribution of plastic straws in the City of Toronto by requiring vendors licensed by the City to either ask consumers first or have consumers request the straws** no later than December 31, 2021 (consistent with proposed federal government timing) with a back-stop policy increasing measures to regulate this item to go in effect as of that date if a certain level of reduction is not achieved • As an interim step, develop and implement a bylaw requiring Toronto-licensed vendors to implement policies to provide plastic straws only on customer request or, alternatively, to ask the customer in advance if one is desired • Identify commercially available alternatives to plastic straws that are deemed acceptable for health and safety as well as for use by persons with disabilities • Monitor progressive restrictive regulations and actions by the federal government for the possibility of adopting similar actions in Toronto at a future date should this effort prove effective
Plastic Bags	• **Ban plastic bags of less than 50 microns in thickness and of oxo-degradable or oxo-fragmentable plastic bags** • Provide an exemption for plastic bags with a minimum post-consumer recycled content of 80%, subject to a $0.15 fee on distribution to consumers, so that these bags can be used by residents as garbage or Green bin organics bin liners
Moderate Priority Items	
Black Plastic	• **Ban the distribution of black plastic single-use and takeaway items** (including utensils and catering trays) in the City of Toronto that cannot be optically/mechanically sorted in material recovery facilities contracted by the City by no later than December 31, 2021

Cold Cups	• **Require business license holders of a minimum size (to be determined by City staff) to have reduction plans** available for audit by the City of Toronto on the amount of single-use plastic cold cups and lids that they distribute • Conduct research on a reusable cup design that can be used for both hot and cold drinks o If the reusable design proves workable, require vendors to charge a $0.15 fee on single-use cold cups • Since plastic cold cups and lids are currently accepted in the City's Blue Bin recycling program but not collected at a high rate, the City should investigate the viability of co-collecting hot and cold cups and lids (as per recommendations on hot cups above)
Paper Bags	• **Impose a fee** to ensure consistency in reducing use of all single-use and takeaway items with an exemption made for small paper bags (e.g., for bagels, breakfast sandwiches, etc.)

Plastic Utensils	• **Implement an ask-first or by-request bylaw on the distribution of plastic utensils** no later than December 31, 2021
	• Additionally, establish baseline estimates on the number of plastic utensils distributed in the City of Toronto as of the date of implementation of the bylaw and determine a mechanism to track the continued use of this item after that date. If no significant reduction is observed, amend the bylaw to include provisions to:
	  o Impose fees on the distribution of plastic utensils; and
	  o Ban the distribution of pre-packaged sets containing multiple utensils (knife, fork, spoon, often with condiments included).

Condiment Packets	• **Implement an ask first or by-request bylaw on the distribution of condiment packets** and monitor the effectiveness of this agreement by the federal 2021 target date with a back-stop policy increasing measures to regulate this item to go in effect as of that date • Conduct research on requiring City of Toronto licensed facilities above a minimum size to provide reusable self-serve dispensers for common condiments on premises

Plastic Bottles	• **Incorporate a water refill function in the TO Waste app or support an existing water refill app (such as Quench) to inform residents of nearby water refill stations**
	  o Promote/support the development of new refill stations (beyond coffee shops to include gas stations, service centers, malls, public events, etc.)
	  o Promote Blue W stickers for refills by residents
	• Assess the viability of a “right to refill” bylaw in takeaway food and beverage outlets
	• Fund and develop more H2O to Go water stations for use in emergencies as well as for street, concerts or other events in Toronto
	• Explore a partnership with Toronto Water on the development of the above as well as any other programs

APPENDIX

A – RESULTS FOR RANKINGS FOR TECH MEMO 2 (STEPS 1 AND 2)

STEP 1 – SELECTION OF PRIORITY ITEMS

The Evaluation Team used the following preliminary screening criteria to narrow down the list of single-use and takeaway items to those items for which there was a *prima facie* case for prioritizing for reduction:

- What is the relative use of product by public/stakeholders per 2018 surveys?
- Can the item be managed under the City of Toronto Blue Bin or Green Bin programs?
- Is the item a contributor to street or freshwater litter in the City of Toronto?
- Has the potential for significant reduction been demonstrated in other jurisdictions?
- Is there sufficient data available for this type of product?
- What is the level of stakeholder interest in reduction?

Items for which there was insufficient data or insufficient motivation for reduction at this time were put on a "Watch List" and may become prioritized for reduction at a later date as Project experience is gained and as more data becomes available.

Chart 1. Priority items selection

As a result of this approach, the Evaluation Team selected the following items for prioritization based on their perceived level of impact (strong, moderate or weak) on the preliminary criteria:

Strong	Moderate	Weak	Watch List

Single-use and Takeaway Items	
Item	**Priority and Rationale**
Single-use take-out EPS (i.e., cups, clamshells, plates, etc.)	• High public interest in reduction; low use of product (per surveys/polls) • Data available for both litter and audits • Alternatives available • Challenges with recovery of this material • Other jurisdiction addressing this material
Black plastic	• Substantial public interest in reduction • Not currently recycled in Toronto • Contributor to litter (along with all plastic containers) • Alternatives available
Plastic food containers	• High public interest in reduction • Contributor to litter (along with all plastic containers) • Alternatives available • Have been addressed in other jurisdictions
Hot cups	• High public interest in reduction • High use of product (per surveys/polls) • Data available for both litter and audits • Contaminant in recycling stream
Cold cups (incl. lids)	• Reduction for cups not differentiated between hot and cold
Plastic Bottles	• Substantial public interest in reduction (per surveys/polls) • Good data quality for both litter and audits • Other jurisdictions have modelled programs to address this

Other Single-use Items and Packaging	
Item	**Priority**
Cigarette filters	• Number one or two litter item in litter audits • Major interest item from public stakeholders
Cigarette packaging	• Beyond scope of single-use and takeaway items at this time
Wet wipes	• Waste water issue • Identified through consultation but beyond scope of single-use and takeaway items at this time
Cotton bud sticks	• Identified through consultation but beyond scope of single-use and takeaway items at this time
Balloon sticks	• Identified through consultation but beyond scope of single-use and takeaway items at this time
Balloons	• Identified through consultation but beyond scope of single-use and takeaway items at this time

Semi-durable/ Emerging product watch	
Item	**Priority**
Disposable razors	• Identified through consultation but beyond scope of single-use and takeaway items at this time • Can have multiple uses
Hotel toiletry accessories	• Identified through jurisdictional scan but beyond scope of single-use and takeaway items at this time
Other “semi-durable” products	• To be identified

Beverage stirrers	• Data from audits not available for this item • Public interest lower priority for this item
Paper containers	• Could be addressed in the future • Public interest lower priority for this item
Plastic bags	• High public interest coupled with high use, but ready to use alternatives, per surveys • Problematic recycling material • Good data from litter and audits • Other jurisdictions are tackling • 2012 experience shows fee is effective
Paper bags	• Medium/low public interest to reduce, med/low use • Alternative to plastic bags, but focus is on reduction
Plastic straws	• High public interest in reduction • Instructed to address by Council • Accessibility issues identified • Other jurisdictions are addressing • Not a recyclable material
Paper straws	• Data from audits not available for this item • Public interest not focused on this item
Plastic cutlery	• Public use of this item and interest in reduction is moderate • Present in water and street litter
Condiment packets	• Receive similar to straws and cutlery, could be dealt with the same way
Plastic plates	• Data from audits not available for this item • Public interest not focused on this item

Tampon applicators	• Identified through consultation but beyond scope of single-use and takeaway items at this time

STEP 2 – TESTING ITEMS AGAINST CRITERIA

The Evaluation Team generated a detailed list of criteria to test against the items. They included the following:

- The item is a **contributor to**:
  - the quantity of litter in Toronto waterways (WLit)
  - the quantity of street litter (SLit)
  - the quantity of waste entering COT waste management system (Wst)
  - contamination of Blue Bin recycling program (BBc)
  - contamination of Green Bin organics program (GBc)
  - GHG emissions (GHG)
- The item is a **contributor to costs**:
  - Litter clean-up based on prevalence of the item in the litter stream (L$)
  - Blue Bin recycling program based on prevalence in the program (BB$)
  - Green Bin organics program based on prevalence in the program (GB$)
  - Marketability of recovered material (Mk$)
  - Current commercial availability of alternative products (AltAv)
  - Current/estimated volume managed (Vol)
  - Operational compatibility (i.e., EPS crumbles in truck, etc.) (OpC)

The Evaluation Team, however, created a "Gaps List" to identify items for which there was insufficient data currently available to conduct assessments:

- The quantity of waste entering COT wastewater management system
- Wastewater treatment facilities
- Compatibility/nexus with existing divisional official plans/priorities (e.g., bottled drink minimization)
- Behavioural change related to reducing waste not entering the COT waste management system

As a result, the items were not tested against the Gaps List at this stage of the Project.

Condiment packets were also excluded from testing under this step of the evaluation process despite their moderate impact score in the preliminary rankings. This was due to a lack of data on this item as well as an absence of public comments during the consultation process.

Feedback from the Phase 1 consultations also suggested that the City's reduction approach should equalize the impacts of its single-use item and takeaway waste reduction initiative to households and businesses alike so that one area does not bear a greater burden than the other. While this was originally included as a criterion under this step of Task 2, it was dropped from this list given the challenges of testing the priority items against this requirement as a criterion.

Chart 2. Testing against criteria

Each of the priority items was ranked based on perceived impact on each criterion. Items marked as having a weak case for reduction or as being on a watch list were not carried forward into Chart 2. Despite a moderate impact ranking on the preliminary criteria, condiment packets were not carried forward for testing in this chart given the lack of data and public comments on the item.

High	Medium	Low	Unknown

Single-use and Takeaway Containers													
Item	**WLit**	**SLit**	**Wst**	**BBc**	**GBc**	**GHG**	**L$**	**BB$**	**GB$**	**Mk$**	**AltAv**	**Vol**	**OpC**
Single-use take-out EPS (i.e., cups, clamshells, plates, etc.)													
Black plastic													
Plastic food containers													
Hot cups													
Cold cups (incl. lids)													
Plastic bottles													
Plastic bags													
Paper bags													
Plastic straws											*[6]		
Plastic utensils													

[6] The ranking reflects the fact that there are no acceptable alternatives at this time for some individuals with disabilities.

B – RESULTS FOR RANKINGS FOR TECH MEMO 3 (STEP 3)

Step 3 – For each of the ***priority items*** selected under Task 2 of the Project, identify the range of tools or mechanisms that the City could choose to apply to promote reduction and assess their potential impacts.

Include all potential tools or mechanisms that could be applied:

- COT-managed promotion and education programs (P&E Programs)
- COT incentives to entrepreneurs to provide alternative products and reduction services (i.e., reusable cups) (COT incentives)
- COT partnership with reusable take-out container or cup initiatives (COT partners)
- Require companies and institutions to have waste reduction plans (Waste reduction plans)
- Provide item to consumers only on request or by asking first (BR/AF)
- Use licensing authority to require companies and institutions to provide reusable alternatives (Require use of reusables)
- Link specified reduction actions to City licencing requirements (City license requirement)
- Charge a fee to consumer for use (Mandatory consumer fee)
- Fine the distribution of the item (Fine)
- Ban the distribution of the item in the COT (Ban)
- Voluntary pledge program (Voluntary pledge) (i.e., pledges to reduce use of item or switch to products of different material)

Rate the perceived effectiveness of each of these mechanisms regarding:

- Public support for this action (Pub)
- Likelihood of behavioural change (Bhav)
- Equal access to the public (EAcc)
- Equity of impacts (IAcc)
- Health benefits (Hlth)
- GHG reduction (GHG)
- Waste disposal reduction (Wst)
- Reduced litter in water (WLit)
- Reduced street litter (SLit)
- Rank as to cost effectiveness as high, medium and low and identify and who bears these costs
    - Costs to COT (COT$)
    - Costs to consumers (Con$)
    - Costs to business (Biz$)

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Priority Item 1. Single-use take-out EPS (i.e., cups, clamshells, plates, etc.)

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	M	M	M	M	L	Y	M	L	L	M	L	L
COT partners	M	L	M	M	L	Y	M	L	L	M	L	M
Waste reduction plans	H	M	M	M	L	Y	M	M	M	M	L	M
By request/Ask first	H	H	H	M	M	Y	M	M	M	M	L	M
Require use of reusables	H	H	H	M	L	Y	H	L	L	M	L	H
City license requirement	H	M	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	M	H	H	M	L	Y	M	M	M	M	H	L
Fine distribution of item	M	L	M	M	L	Y	M	M	M	H	L	M
Ban distribution	H	H	H	M	M	Y	H	H	H	H	L	M
Voluntary pledge	H	L	H	H	L	Y	L	L	L	M	L	L

Priority Item 2. Plastic food containers

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	L	M	L	M	Y	L	L	L	M	L	L
COT partners	H	L	M	L	M	Y	L	L	L	M	M	M
Waste reduction plans	H	M	H	M	L	Y	L	L	L	M	L	M
By request/Ask first	M	M	H	M	M	Y	M	L	L	M	L	M
Require use of reusables	H	H	H	M	M	Y	H	L	L	M	L	H
City license requirement	H	M	M	M	L	Y	M	L	L	M	L	M
Mandatory consumer fee	M	H	M	M	L	Y	H	M	M	M	H	L
Fine distribution of item	M	M	L	L	L	Y	M	M	M	H	L	H
Ban distribution	M	H	H	M	L	Y	H	H	H	M	L	H
Voluntary pledge	H	L	H	H	L	Y	L	L	L	M	L	L

Priority Item 3. Hot cups

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	L	M	M	L	Y	M	L	L	M	L	M
COT partners	H	M	M	M	L	Y	M	L	L	M	L	M
Waste reduction plans	M	M	M	L	L	Y	M	L	L	M	L	M
By request/Ask first	M	L	H	M	M	Y	L	M	M	M	L	M
Require use of reusables	H	M	H	M	M	Y	M	L	L	M	M	H
City license requirement	H	M	H	M	L	Y	M	M	H	H	L	M
Mandatory consumer fee	H	H	H	M	L	Y	M	H	H	M	H	L
Fine distribution of item	M	M	M	L	L	Y	M	L	L	H	L	M
Ban distribution	L	H	H	M	M	Y	H	H	H	M	M	M
Voluntary pledge	H	L	H	H	L	Y	L	L	L	M	L	L

Priority Item 4. Plastic straws

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	M	M	M	M	L	Y	L	L	L	M	L	M
COT partners	M	L	M	M	L	Y	L	L	L	M	L	M
Waste reduction plans	M	L	H	H	L	Y	L	L	L	M	L	M
By request/Ask first	M	M	H	M	M	Y	M	M	M	M	L	M
Require use of reusables	M	M	H	L	L	Y	L	L	L	M	L	M
City license requirement	M	M	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	M	H	H	L	L	Y	M	H	H	M	H	L
Fine distribution of item	M	L	L	L	L	Y	L	M	M	H	L	H
Ban distribution	M	H	H	L	M	Y	M	H	H	M	L	H
Voluntary pledge	M	L	H	H	L	Y	L	L	L	M	L	L

Priority Item 5. Plastic bags

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	H	L	Y	L	L	L	H	L	L
COT incentives	H	M	M	M	L	Y	L	L	L	M	L	L
COT partners	L	L	M	M	L	Y	L	M	M	M	L	L
Waste reduction plans	M	M	M	M	L	Y	M	M	M	M	L	M
By request/Ask first	H	M	H	M	L	Y	M	M	M	M	L	M
Require use of reusables	H	H	H	M	L	Y	M	H	H	M	M	H
City license requirement	H	M	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	H	H	H	M	L	Y	H	H	H	M	H	L
Fine distribution of item	M	M	L	L	L	Y	M	M	M	H	M	M
Ban distribution	H	H	H	M	L	Y	H	H	H	H	M	H
Voluntary pledge	H	L	H	M	L	Y	L	L	L	M	L	L

Moderate Item 1. Black plastic

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	M	M	M	M	L	Y	M	L	L	M	L	L
COT partners	M	M	M	M	L	Y	L	L	L	M	M	M
Waste reduction plans	M	M	H	M	L	Y	L	L	L	M	L	M
By request/Ask first	M	L	H	M	L	Y	M	L	L	M	L	M
Require use of reusables	H	H	H	M	L	Y	M	M	M	M	L	H
City license requirement	M	H	H	M	L	Y	M	L	L	M	L	M
Mandatory consumer fee	M	H	H	L	L	Y	M	L	L	M	H	L
Fine distribution of item	H	M	M	M	L	Y	L	M	M	H	L	M
Ban distribution	H	H	H	M	L	Y	H	L	L	H	L	M
Voluntary pledge	M	L	H	M	L	Y	L	M	M	M	L	L

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Moderate Item 2. Cold Cups (plastic) (incl. lids)

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	L	M	M	L	Y	M	L	L	M	L	M
COT partners	M	M	M	M	L	Y	M	L	L	M	L	M
Waste reduction plans	M	M	H	M	L	Y	M	L	L	M	L	M
By request/Ask first	M	L	H	M	L	Y	L	M	M	M	L	M
Require use of reusables	M	M	H	M	L	Y	M	L	L	M	M	H
City license requirement	M	M	H	M	L	Y	M	M	H	H	L	M
Mandatory consumer fee	M	H	H	M	L	Y	M	H	H	M	H	L
Fine distribution of item	L	M	M	L	L	Y	M	L	L	H	L	M
Ban distribution	L	H	H	M	L	Y	H	H	H	M	M	M
Voluntary pledge	M	L	H	H	L	Y	L	L	L	M	L	L

Moderate Item 3. Paper bags

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	H	L	Y	L	L	L	H	L	L
COT incentives	H	M	M	M	L	Y	L	M	M	M	L	L
COT partners	M	L	M	M	L	Y	L	M	M	M	L	M
Waste reduction plans	M	M	M	M	L	Y	M	M	M	M	L	M
By request/Ask first	H	M	H	M	L	Y	M	M	M	M	L	M
Require use of reusables	H	H	H	M	L	Y	M	H	H	M	M	H
City license requirement	H	M	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	H	H	H	M	L	Y	H	H	H	M	H	L
Fine distribution of item	M	M	L	L	L	Y	M	M	M	H	M	M
Ban distribution	H	H	H	M	L	Y	H	H	H	H	M	H
Voluntary pledge	H	L	H	M	L	Y	L	L	L	M	L	L

Moderate Item 4. Plastic utensils

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	L	M	M	L	Y	L	L	L	M	L	M
COT partners	M	L	M	M	L	Y	L	L	L	M	M	M
Waste reduction plans	M	M	H	M	L	Y	L	L	L	M	L	M
By request/Ask first	L	M	H	M	L	Y	M	M	M	M	L	M
Require use of reusables	M	H	H	M	L	Y	M	L	L	M	L	H
City license requirement	M	H	H	M	L	Y	L	L	L	M	L	M
Mandatory consumer fee	M	H	H	M	L	Y	H	M	M	M	H	L
Fine distribution of item	M	M	M	L	L	Y	M	M	M	H	M	M
Ban distribution	L	H	H	M	L	Y	H	H	H	H	M	H
Voluntary pledge	M	L	H	M	L	Y	L	L	L	M	L	L

Moderate Item 5. Condiment packets

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	L	M	M	L	Y	M	M	M	M	L	M
COT partners	M	L	M	M	L	Y	M	M	M	M	M	M
Waste reduction plans	M	M	H	M	L	Y	M	M	M	M	L	M
By request/Ask first	L	M	H	M	L	Y	M	M	M	M	L	M
Require use of reusables	M	H	H	M	L	Y	H	H	H	M	L	H
City license requirement	M	H	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	M	H	H	M	L	Y	H	M	M	M	H	L
Fine distribution of item	M	M	M	L	L	Y	M	M	M	H	M	M
Ban distribution	L	H	H	M	L	Y	H	H	H	H	M	H
Voluntary pledge	M	L	H	M	L	Y	L	L	L	M	L	L

Moderate Item 6. Plastic bottles

High	Medium	Low	Unknown

Item	Pub	Bhav	EAcc	IAcc	Hlth	GHG	Wst	WLit	SLit	COT$	Con$	Biz$
P&E program	H	L	H	M	L	Y	L	L	L	H	L	L
COT incentives	H	M	M	M	L	Y	M	L	L	M	L	M
COT partners	M	M	M	M	L	Y	M	M	M	M	L	M
Waste reduction plans	M	M	H	M	L	Y	M	M	M	M	L	M
By request/Ask first	M	L	H	M	L	Y	M	L	L	M	L	M
Require use of reusables	H	M	M	M	M	Y	H	M	M	M	M	H
City license requirement	M	M	H	M	L	Y	M	M	M	M	L	M
Mandatory consumer fee	M	M	H	M	L	Y	H	M	M	M	H	L
Fine distribution of item	M	L	M	L	L	Y	L	L	L	H	L	M
Ban distribution	H	H	H	M	M	Y	H	H	H	H	M	M
Voluntary pledge	H	L	H	H	L	Y	L	L	L	M	L	L