



Navigating disposables & reusables

A guide to reducing the impact of single-use packaging in the food-to-go sector.

Contents

1. The problem with plastics & moving towards reusables

- The problem with plastics
- Legislation
- Reducing plastics in the business
- Navigating bio-plastics: case study (Better Food)
- Bio-plastics
- How to encourage reusables
- Case study: Boston Tea Party

2. Takeaway packaging

- Navigating takeaway packaging
- Understanding disposables: takeaway containers
- Disposable coffee cups
- Reusable coffee cups
- Disposables: cutlery, stirrers and straws
- Reusables: stainless steel straws

3. Alternatives to bottled water

- Join the Refill Revolution
- Create a water station
- Bottled water alternatives

4. Waste

- Understanding waste collections: general waste
- Understanding waste collections: recycling & food waste



1.

The problem with plastics
& moving towards reusables



1.1 Introduction

[Click the Refill logo to return to the contents page](#)



City to Sea is an environmental not-for-profit campaigning to stop plastic pollution – from the city to the sea. Our award-winning campaigns are focused tackling the single-use plastic items found most commonly on our beaches, by providing practical, solutions-focused initiatives and advocating reduce and reuse over single-use.

Refill is our biggest campaign to date – what started as a pilot in Bristol in 2015 has now grown to a global movement. Our mission was simple - to prevent plastic pollution by making it easier to reuse and refill your water bottle on the go than to buy a single-use plastic bottle.

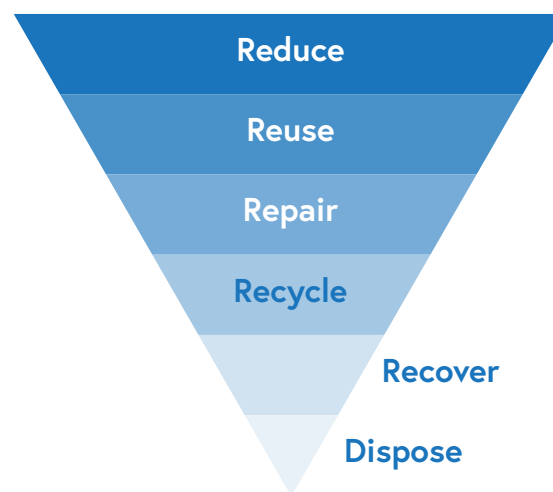
The campaign is now set to expand and become the one-stop shop for avoiding single-use plastic and switching to reusables. The expanded concept will include places that are happy for customers to bring reusable containers for refills of hot drinks; lunches & food-to-go; fruit and vegetables; toiletries; & all other grocery and household refills.

We're working with more than 30,000 Refill Stations, predominantly in the food-to-go sector, covering everyone from Pret and Costa to thousands of smaller independent businesses.

As public concern about plastic pollution grows, we've seen a huge increase in the number of enquiries from the businesses we work with, the media and also the public - all wanting to find out more about single-use packaging and what the most sustainable options are.

The ever-changing landscape of disposable materials

In 2018, the Sustainable Restaurant Association produced their comprehensive guide, [Plastics Unwrapped](#), advising businesses on reducing plastics and explaining the waste streams for many alternative materials. Since then, many more products and initiatives have been developed as organisations and businesses look to tackle plastic pollution. We understand that this can be a minefield – navigating terms like compostable, biodegradable and eco-friendly.



The rise of the reusable

At City to Sea, we are concerned with stemming the flow of plastic pollution – from city to sea. This means we have to consider whether a product contributes to marine pollution in addition to other environmental impacts.

As an organisation, we would always advocate reuse over single-use and believe we need to transition from our current disposable culture to one that values its resources and understands the impact of our choices. Where ever possible we would encourage organisations to consider the waste hierarchy and the need to reduce before all else.

As a result, we have put together this guide to help you understand more about the materials and end-of-life scenarios for a range of takeaway food and drink packaging. As well as providing advice on how to increase the use of reusables.

This is intended as a guide and is subject to change as new information, research and legislation become available. Please check for the latest findings.

1.2 The problem with plastics



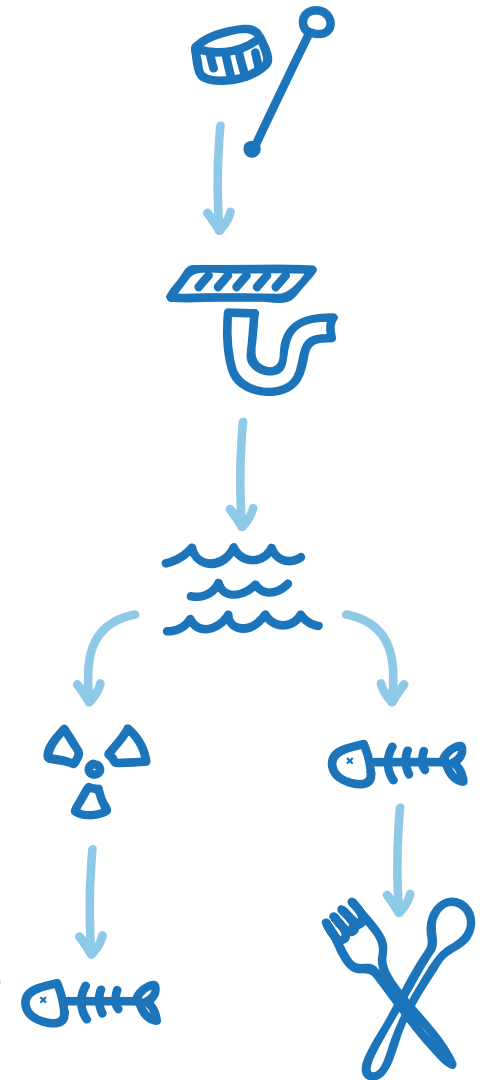
Plastic has many benefits: it is lightweight and virtually indestructible, as well as being cheap to produce and transport. That's why countless industries have seen plastic as a miracle material. However, the downsides are that:

- It is made from oil and is linked with the fossil fuel industry.
- Unlike aluminium, the design of many plastic polymers means they are unlikely to be recycled.
- Many plastics get downcycled into other materials like plastic piping and furniture which can't be recycled afterwards.
- Currently 2/3 of UK plastic recycling is exported abroad for processing, which can mean it ends up in countries with less stringent environmental regulations, leading to burning or unregulated landfilling.
- Litter in towns such as plastic bottle tops, stirrers, cutlery and straws can fall down the storm drains and then end up in rivers and finally the sea.
- Once in the marine environment plastic breaks down into microplastics and can leach chemicals. Microplastics also attract pollutants (POPs) in the sea. All of which are then ingested by marine life.
- Plastic is being found in fish that humans consume so it is coming back into the food chain.

Less than **10%** of plastic waste has been recycled.

Globally, we now produce over **300 million tonnes** of plastic every year – half of which is single use.

100,000 marine mammals and turtles and **1 million** sea birds are killed by plastic pollution annually.

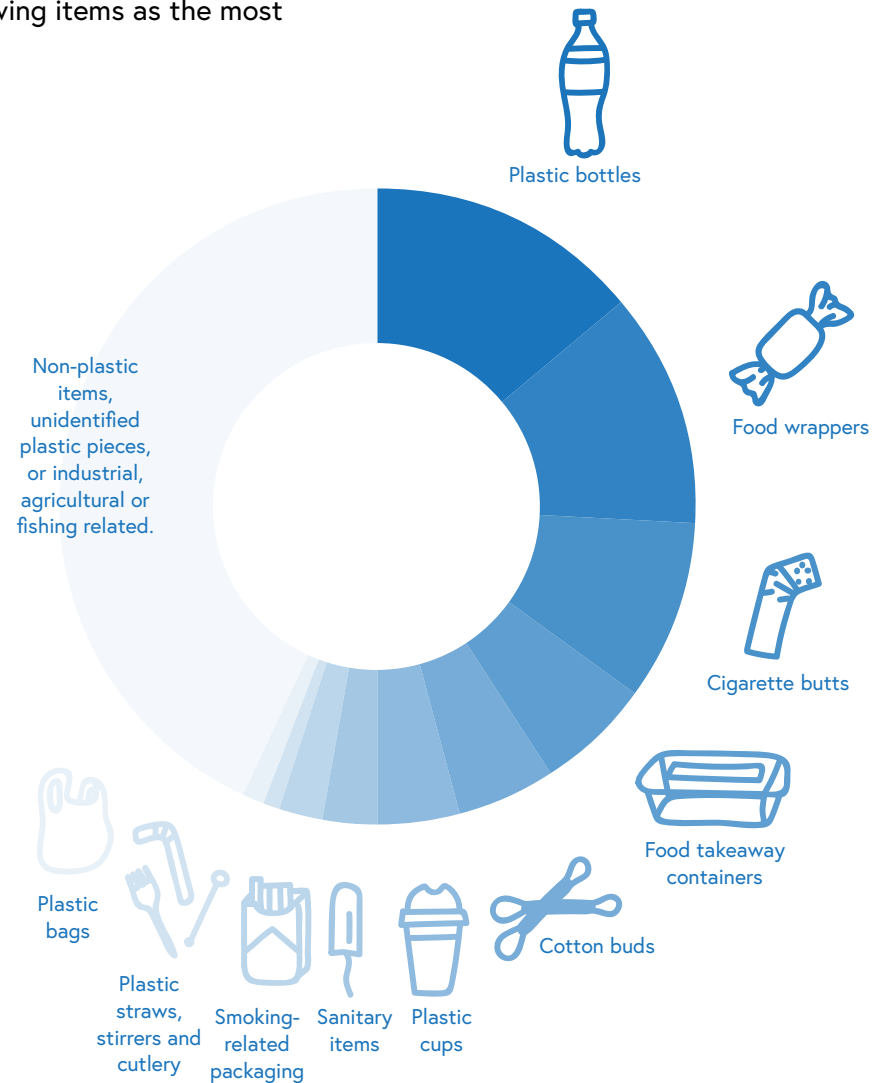


1.2 The problem with plastics



A [recent study](#) by Earth Watch and Plastic Ocean UK identified the following items as the most prevalent as litter in UK and European rivers.

PLASTIC CATEGORY	PERCENTAGE OF ALL IDENTIFIABLE PLASTIC LITTER ITEMS FOUND IN THE FRESHWATER ENVIRONMENT
Plastic bottles	14%
Food wrappers	12%
Cigarette butts	9%
Food takeaway containers	6%
Cotton bud sticks	5%
Cups	4%
Sanitary items	3%
Smoking-related packaging	2%
Plastic straws, stirrers and cutlery	1%
Plastic bags	1%



1.3 Legislation



The EU and the UK Government have responded to the 'plastic problem'. The EU has committed to banning oxo-degradable plastics, expanded polystyrene and all plastic cutlery, plates, stirrers and straws by 2021. The focus is to move away from the current linear economy model of make-use-dispose to adopting a circular economy approach which means items are easier to reuse, repair or recycle. In the UK, the Government has committed to banning straws, stirrers and cotton buds by April 2020. The [Waste and Resources Strategy](#) includes measures to tax producers of plastics with less than 30% recycled plastic content, and it may well also ban similar items to the EU regardless of Brexit. We can expect a lot of changes in 2019, as these consultations and legislation develop.

Furthermore, there are industry initiatives, including the Ellen MacArthur [New Plastics Economy Global Commitment](#) and the [UK Plastics Pact](#), which hundreds of big producers, supermarkets and recyclers have signed up to, with the aim that by 2025:

Problematic or unnecessary single-use items will be eliminated through re-design, innovation or reuse models

70% of plastic packaging will be effectively recycled or composted

30% of packaging will be recycled content

100% of packaging will be reusable, recyclable or compostable

A CIRCULAR ECONOMY FOR PLASTICS



Sources: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

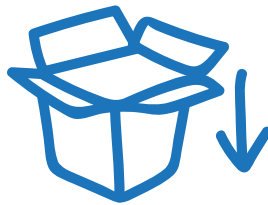
1.4 Reducing plastics in the business: case study



As well as the environmental impacts, plastic packaging is often hard to recycle and any single-use packaging including cardboard costs money to dispose of. Here are some tips to reduce single-use packaging in your business:



1) Swap film for reusable boxes



2) Work with suppliers to reduce packaging

- Identify the biggest items of waste packaging and work on these one at a time.
- Request reusable boxes.
- If they can't replace it, ask them to take it back for processing.

These actions will help create change throughout the supply chain.



Poco – case study

When ordering from suppliers they tell them

"We are cellophane free and we do not want any packaging at all."

With their micro-herb supplier they provide reusable Tupperware for filling up each week and this has inspired the business to look at going to a permanent reuse model for all of their catering customers.

[Visit site](#)

1.5 Bio-plastics explained

A plastic revolution or a load of rubbish?

Compostable bioplastics have been touted as the solution to our single-use, throw-away lifestyle, allowing consumers to enjoy takeaway coffees guilt-free. Turns out, it's not that simple.

The issue of bio-plastics is complicated – not only for consumers, but for also for many small businesses who have been trying to do the right thing by making the switch from plastics to bioplastic alternatives.

Although interpreted and sometimes marketed as such, compostable plastic takeaway packaging wasn't actually designed to be the solution to plastic pollution. Instead it was designed to tackle food waste being contaminated with plastic packaging.

What are bioplastics?

To be called a bioplastic, a product has to be either biodegradable or made from plant-based materials. But being made from a plant doesn't mean a product will degrade like a plant, and being biodegradable doesn't mean a product will break down with food waste in the kitchen. In reality, most bioplastics need to be composted at very high temperatures over a period of several weeks in an industrial composter, and not at home in our garden compost as many of us think.

We don't currently have the right infrastructure to compost bioplastics in the UK. The industrial composters that can break down compostable plastics are called in-vessel composters and there are currently only around 18 in the UK. These sites only accept waste that's guaranteed not to be contaminated by oil-based plastics, which means the shipments need to come from closed environments (like festivals) which can guarantee the plastics have been kept separate.

Ultimately, due to the way we usually use bioplastics – as takeaway food containers and packaging – they end up in the bin and then in landfill. The other issue is that as they need certain conditions to biodegrade, they can still contribute to marine pollution if they become litter.

If compostable plastics are to become a viable alternative to oil-based plastics, there is a lot of work for the bioplastics and waste industries to do so they can better work together. Find out more about the issue [here](#).



1.6 Bio-plastics

Home compostable, oxo-degradable or biodegradable plastics sound like the obvious alternative to plastics whether it is for bags, balloons, disposable cups or cutlery. However, they aren't as natural or as straightforward as a decomposing banana!



Oxo-degradable plastics

These are actually petroleum-based plastics that break down into lots of little pieces in contact with air and sunlight. Yes that's right – they turn into micro-plastics deliberately! Thankfully the EU has agreed to ban these by 2021.



Home-compostable plastics

The home-composting certification means a material will degrade within 28 to 60 days in a home composter at 20-30 degrees.



Compostable or biodegradable plastics

Clear PLA (food boxes and coffee cup liners) and white CPLA (cutlery, coffee cup lids) are derived most commonly from corn starch and sugar cane. In order to be compostable they have to be tested and meet the criteria of EN13432 which means they will break down in 90 days in an industrial in-vessel composter. They will not compost in a home-composter as it does not get hot enough.

Compostable plastics do not degrade if they become litter or end up in the sea because the conditions are not right.

They will also not get composted if they end up in a home composter or council food waste collection. In order to be composted they require a pre-organised collection to one of the in-vessel composters in the country that accepts compostables.

Tip:

If you do want to offer compostables, you can look at offering a bring back scheme through Vegware.



Compostable or home-compostable plastics do not degrade if they become litter or end up in the sea because the conditions are not right.

They will also not get composted if they end up in a kerbside food caddy or council food waste collection. This is because solid materials are pulled out at the depackaging process, which removes plastics and packaging to ensure a good quality compost.

In order to be industrially composted they require a preorganised collection to a facility that will accept them. *Vegware has a list of facilities that they are working with.

1.7 Navigating bio-plastics: case study



CASE STUDY: Better Food Company

Better Food Company is a small chain of certified organic supermarkets with non-organic cafés within them.

Three years ago they switched to compostable plastic tubs for their café deli section. (They can't use them in the supermarket as the tubs aren't certified organic due to the potential GMO content.)

In 2019, the team became aware that there is no suitable bin in customers' homes for these compostable deli pots to actually get composted in. So they actually need to go in the general waste bin for waste-to-energy or landfill.

Consequently, the team are now looking at RPET – recycled PET plastic – because this comes from either post-factory or post-consumer recycled sources. Lucy Gatward explains

"We hope it will bolster the market for post-consumer plastic, which in turn will encourage a higher demand and greater incentive for councils to collect and sell it on."

Furthermore, to encourage reuse in the shop and cafe, Better Foods asks customers to leave fruit punnets in the shop, offers discounts for reusable coffee cups and lunch tubs, and has an ever growing selection of low- or no-packaging goods available.

[Visit site](#)

1.8 How to encourage reusables



Reusable items offer a solution to many of the issues presented by single-use items such as resource usage, littering and lack of appropriate disposal facilities. They also save food businesses money on purchasing disposables.

To help normalise the carrying of reusables, we are developing the Refill app to signpost people to all the places that accept reusable cups and tubs. Here are 3 behaviour change tips to help change the social norms:



Tell people that you approve

As humans we look for confirmation and approval of our actions (authority bias), so prominent signage about reusables overcomes people's fear and discomfort.

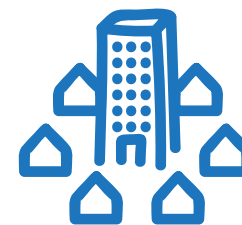


Charges are more effective than discounts

A small fee will have a bigger impact than a discount.

Research by Poortinga et al in Cardiff found that a charge of 25p had a greater impact than the same discount. Many cafés have started charging 10p to get their customers thinking.

Bristol University has seen a 62% increase in usage of reusable cups since they charged 25p.



Work with local offices and companies

If your regular customers come from an office nearby, suggest they ask their employer to encourage or provide reusables that can be washed in the office dishwasher.

Reusable drop-off schemes are being developed and trialled so people don't need to carry an item around all day – they drop off at another participating venue. Trials include Shrewsbury Cup, S.mug, Fetchhcup, HuskeeSwap, CupClub and Starbucks doing a trial at Gatwick.

1.9 Case study – Boston Tea Party



Boston Tea Party

Boston Tea party, an independent coffee shop chain in the South West, has taken the lead on the reusable cup movement.

After they only had a 2.9% uptake on their 25p discount for takeaway reusable cups they explored different options introducing a latte levy. However, as that meant they would still be supplying single-use cups, that were invariably ending up in general waste bins around town centres, it didn't feel that it was a bold enough move to really tackle the disposable culture. So after months of forecasting and business planning they launched the 'No excuse for single-use' campaign.

Customers can now only buy takeaway hot drinks in reusable cups, so for those who don't have a cup with them, they offer a refundable hire scheme. Reusable cups are also available to buy at cost price.

This has had an impact on their takeaway business, with a 24% reduction in sales. However, they have also won new customers and their drink-in trade has increased.

At Boston Tea Party they have had a lot of enquiries from other coffee shops, event venues and universities keen to follow suit and eager for shared cup schemes amongst other shops, to lessen the financial risk. BTP are working with these to provide information to help facilitate others to make the change too.

As part of Boston Tea Party's commitment to go single-use plastic free they have also replaced cling film with reusable Tupperware boxes for their cakes.

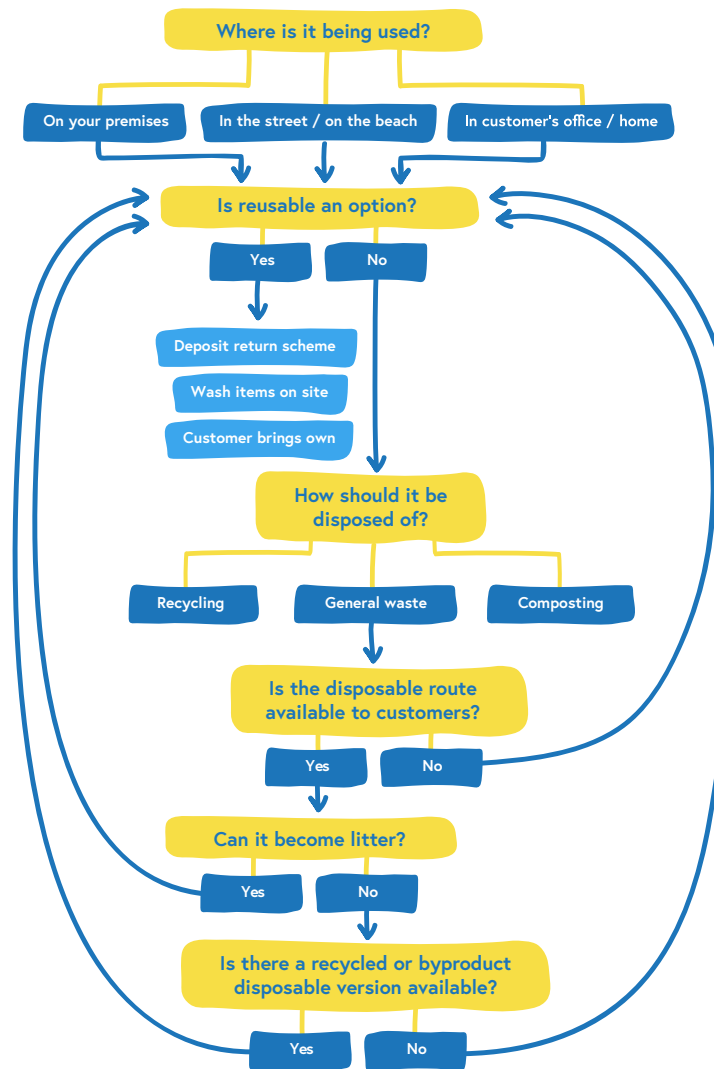
Although the initial investment in boxes was high, they have calculated that it would be a significant saving in single-use cling film.



2. Takeaway packaging

2.1 Navigating takeaway packaging

To help make sense of the packaging options we suggest you follow this flow diagram.

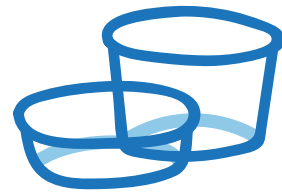


2.2 Understanding disposables - takeaway containers

Disposable food packaging comes in an array of materials from plastic to cardboard. As with any single-use item, these require a constant stream of resources, energy and transportation to produce. This is why we advocate encouraging your customers to bring reusables.

Tip:

Choose recycled materials e.g. recycled plastics and paper. Or items that are by-products from other industries e.g. bagasse (a by-product from the sugarcane industry).



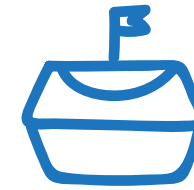
Plastic
salad box



Recycled
plastic box



Plastic
hot-food box



Polystyrene
burger box

MATERIAL	Virgin PET plastic	Recycled PET made from factory off-cuts or post-consumer plastics	Virgin polypropylene plastic	Virgin polystyrene plastic
WASTE STREAMS	Recycling	Recycling	Recycling / reuse	General waste. Polystyrene can't currently be recycled.

Litter and marine litter scenarios: All plastics will eventually break down into microplastics. Polysterene does this much quicker.

Recycling plastics: Plastics must be clean and free from food to be recycled.

Street bins: If takeaway pots are eaten on the street their end-of-life will depend on the bin set-up and where waste is sent. A general waste bin could go to landfill or incineration for waste-to-energy.

Continued...

2.3 Understanding disposables - takeaway containers



Tip:

Use a big sign and a discount to encourage people to bring their own box. Suggesting they set up a reusable box at work will make it easier for them to have access to a reusable box on a week day.



Bioplastic box



Compostable
soup box with
bioplastic lid



Kraft
cardboard box

Did you know?

Cardboard with food on it can't be recycled in the cardboard recycling stream.

MATERIAL	Sugar cane or corn PLA	Virgin wood pulp with a sugar cane or corn PLA lining and lid	100% recycled cardboard oil-based plastic or PLA lining
LINING	PLA bio-plastic	PLA bio-plastic	Oil-based or PLA bio-plastic
WASTE STREAMS	Separate stream to an industrial in-vessel composter	Separate stream to an industrial in-vessel composter	General waste or in-vessel composter if it has a PLA lining

Litter and marine litter scenarios: Bioplastics or compostable plastics do not degrade unless they are heated to 60 degrees for 90 days.

Recycling cardboard boxes: Cardboard must be clean and free from food to be recycled.

Street bins: If takeaway pots are eaten on the street their end-of-life will depend on the bin set-up and where waste is sent. A general waste bin could go to landfill or incineration for waste-to-energy.

Continued...

2.3 Understanding disposables - takeaway containers



Tip:

Use a big sign and a discount to encourage people to bring their own box. Suggesting they set up a reusable box at work will make it easier for them to have access to a reusable box on a week day.



Cardboard
pizza box



'Bagasse' box



Aluminium
boxes with a
cardboard lid

MATERIAL	Virgin wood pulp or recycled cardboard	By-product from sugar cane production	30% recycled aluminium with a paper lid with a thin plastic coating
LINING	None	None	None
WASTE STREAMS	Cardboard recycling if not too contaminated – depends on the borough	Home composting	Recycling

Did you know?

Cardboard with food on it can't be recycled in the cardboard recycling stream.

Did you know?

Bagasse degrades the most easily but can last overnight with liquids/curries in, although it may discolour.

Did you know?

Virgin aluminium ore is mined through strip mining which is very energy intensive and polluting.

Litter and marine litter scenarios: Only bagasse and cardboard pizza boxes will actually completely degrade if they become litter or marine litter.

Recycling cardboard boxes: Cardboard must be clean and free from food to be recycled.

Street bins: If takeaway pots are eaten on the street their end-of-life will depend on the bin set-up and where waste is sent. A general waste bin could go to landfill or incineration for waste-to-energy.

2.4 Disposable coffee cups



Tip:

If you offer disposable coffee cups look at where customers can drop these in for recycling – Costa, Greggs and other high street brands offer a recycling scheme.



Standard
disposable
coffee cup



Compostable
disposable
coffee cup

Tip:

If you offer compostable coffee cups, ask your cup provider if you can offer a bringback service. Get these sent to an industrial composter – they can't go in household composters or kerbside food collections.

MATERIALS	Virgin wood pulp Plastic lining	Virgin wood pulp PLA lining
WASTE STREAMS	Single waste stream collection for coffee cups	Separate stream to an industrial in-vessel composter

Litter and marine litter scenarios: The paper may disintegrate but the plastic and bioplastic linings will not and will become microplastics. Bioplastics or compostable plastics do not degrade unless they are heated to 60 degrees for 90 days.

Recycling coffee cups: Schemes are in operation around the country, although they do not get recycled back into coffee cups which means virgin materials are required to produce coffee cups.

Street bins: If coffee cups are thrown away on the street their end-of-life will depend on the bin set-up and where waste is sent. A general waste bin could go to landfill or incineration for waste-to-energy.

2.5 Reusable coffee cups

If you are considering selling reusable coffee cups, here is some information on the options currently available.

Tip:
To encourage reuse, clearly incentivise people with signs at the till. Levies on disposable cups will have a bigger impact.



Plastic reusable coffee cup



Bamboo reusable coffee cup



Recycled coffee cup – R cup



Rice husk reusable coffee cup



Glass reusable coffee cup



Stainless steel cup



Cups from coffee grounds

MATERIALS	Virgin plastic	Bamboo – product from chopsticks Melamine (plastic) Silicone lid	Recycled single-use coffee cups and plastic	Rice husk sand natural starch Byproduct from rice production Silicone lid	Borosilicate (toughened) glass Cork or plastic band	Stainless steel Some have plastic elements	Spent coffee grinds Plastic
WASTE STREAMS	Recycling (if material is suitable)	Some suppliers offer a take back scheme	Elements can be replaced by manufacturer Suitable for recycling	Separate stream to an industrial in-vessel composter	General waste if breaks	Potentially accepted for kerbside recycling depending on the components	Some brands will replace
CAN IT GO IN THE DISHWASHER?	Yes	Yes	Yes	Yes	Yes if has a plastic band, not with a cork band	No	Yes

The environmental impacts of reusables

You may have seen articles questioning the environmental impacts of reusables and china cups. It is true that the initial production of a reusable is more resource, energy and carbon intensive. It therefore requires the item to be used many times (20-100) to have a lower environmental impact to a disposable, which of course is the point.

This is why we are committed to encouraging people to use reusables through the development of the Refill App.

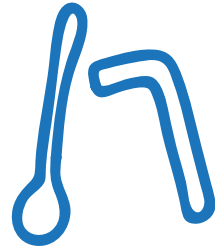
2.6 Disposables: Cutlery, stirrers and straws

Tip:

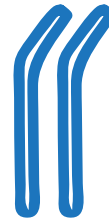
Stop offering straws and only give away if requested. There are some people who still require plastic straws for accessibility.



Plastic cutlery



Bioplastic cutlery



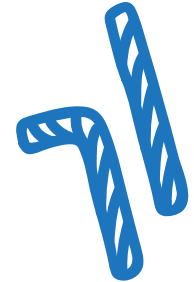
Oxodegradable straws



REPA



Wooden cutlery



Paper straws

Tip:

Get FSC certified wood and paper items to ensure the item comes from managed forests. And look for European sources where possible.



MATERIAL	Virgin plastic	Sugarcane or corn starch PLA	Oxo-degradable oil-based plastic	REPA – bi-product sea shells from sea food industry	Virgin wood	Virgin paper
WASTE STREAMS	General waste as most can't be recycled	Separate waste collection to an in-vessel composter	General waste	Would need to be approved to be accepted by an in-vessel composter and sent as a separate waste stream	Would need to be approved to be accepted by an in-vessel composter and sent as a separate waste stream Home composting Biomass boiler	Compost

Litter and marine litter scenarios: Due to the light nature of straws and cutlery their littering potential is high. Paper is the only material that will actually disintegrate.

Bioplastics or compostable plastics do not degrade unless they are heated to 60 degrees for 90 days.

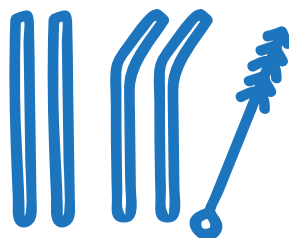
Street bins: If cutlery and straws are thrown away on the street their end-of-life will depend on the bin set-up and where waste is sent. A general waste bin could go to landfill or incineration for waste-to-energy.

2.7 Reusables: stainless steel straws



Tip:

As reusable straws are more expensive than disposables we recommend changing your straw policy so they aren't offered with all drinks. If you do want to provide a straw, reusables can be offered with a deposit that covers their cost.



Stainless steel straws

MATERIAL	Stainless steel
ORIGIN	Stainless steel
WASTE STREAMS	Designed for reuse
DISHWASHER SAFE?	Yes



Bamboo straws

Bamboo
Fast growing material
Designed for reuse
Yes

Did you know?

Did you know that the UK is banning all plastic straws and stirrers by 2020. The EU is also banning all oxo-degradable plastics, cutlery, plates and expanded polystyrene by 2021. Signatories to the **UK Plastics Pact** are aiming to remove these items by 2020.



3.

Alternatives to
bottled water

3.1 Join the Refill Revolution

Refill is an award-winning campaign to prevent plastic pollution, making it easier to reuse and refill than to buy single-use plastic.

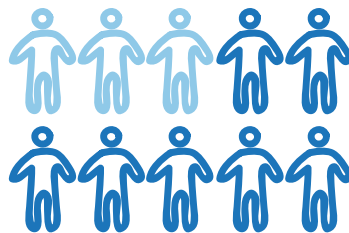
The campaign works by connecting people who are looking for water, with thousands of local business, transport hubs and public spaces where they can refill for free via a location-based app.

Participating cafés, bars, restaurants, banks, galleries, museums and other businesses simply sign up to the app and put a sticker in their window – alerting passers-by that they're welcome to come on in and fill up. We're working on plans to expand the campaign to cover more than just drinking water and become the one-stop-shop to avoid single-use plastic.

There are now more than 30,000 Refill Stations on the app in the UK alone – including railway stations, airports and high street chains such as Costa, Pret and Wetherspoons. The Refill app has been downloaded over 250,000 times and we estimate Refill will have saved over 100 million single-use bottles from entering our waste stream by the end of 2019.

Find out how to get involved with the campaign and take advantage of some of the benefits for your business.

7 out of 10 people would view a business more favourably if it provided free drinking water. ¹



2 out of 3 people would: ²



- Be more likely to make a purchase from a business whilst refilling.
- Be more likely to return to make a future purchase.
- Choose to make a purchase from a participating business over a competitor.
- Be more likely to use a reusable water bottle if they knew a business would willingly fill it up.

Source for stats: (¹) Water, Water Everywhere 2018 (Keep Britain Tidy & Brita) (²) Plastics Survey 2018(City to Sea & One Poll)



3.2 Create a water station

In a 2018 Brita survey, 73% of people said they would be more likely to refill if there was a water station and they didn't need to ask staff for water.

How to set one up

- **Water vessel.** This can be as simple as a water jug or a glass water dispenser with a tap.
- Adding value to your business. **Water dispensers with fruit or cucumber** in add value to your business and your overall customer experience.
- **Glasses.** If you offer glasses, washable ones are preferable to disposables.

Hygiene:

Remember to **refresh the water regularly** throughout the day and keep fresh, clean glasses on hand. Treat your water station as you would the rest of your business with regards to hygiene.

Although this may sound like extra work...

64% of consumers would be more likely to return for future purchases if they could refill their water bottle.

62% of consumers would choose a business that offered free refills over a competitor.

73% of consumers would view a business more favourably if it gave free tap or filtered water on request.

Source for stats: Water Water everywhere report, 2018 (Keep Britain Tidy & Brita)



3.3 Bottled water alternatives



We are regularly asked about the alternatives to plastic bottled water. We have compared them considering the issues with plastic bottles e.g. bottle tops and their littering potential.

Of course as single-use items they all require a constant supply of raw materials, water and chemicals for production. Plus they transport heavy water around the country which has a negative carbon impact.

Littering & Marine Litter Potential: According to the Earth Watch and Plastics Ocean UK report, the most prevalent plastic item found in UK and European waterways was plastic bottles*. Every one of these materials has the potential to become litter and marine litter. The paper Ch2oose bottle is the only one designed to safely break down if it becomes marine litter, although due to its composition it can't be recycled.



Plastic bottle

Cans

Tetra Pak cartons

Glass

Paper bottles (Ch2oose)

	Plastic bottle	Cans	Tetra Pak cartons	Glass	Paper bottles (Ch2oose)
MATERIAL	Oil	Up to 68% recycled content and plastic lining	Virgin paper, aluminium and plastic lining	Sand, lime ash and soda. Recycled content varies from 0 - 100%	Recycled paper and a waterproof liner
PLASTIC LID?	Yes	Some do / some don't	Yes	Metal or plastic lid	Metal lid
PROS	PET is easiest plastic to recycle Light weight	Aluminium is infinitely recyclable	Light weight	Reusable. Infinitely recyclable	Using waste material with a non-plastic or PLA liner
CONS	There are lots of challenges with plastics recycling in the UK Water bottles need to be made from recycled plastic to stimulate the demand for recycled plastics	32% of virgin aluminium is sourced from strip mines	Hard to recycle all the materials Not made from recycled materials	Heavy Not all glass bottles are made from recycled content	Can't recycle afterwards
WASTE STREAMS	Recycling	Recycling	Depends on local authority	Recycling	General waste

* <https://earthwatch.org.uk/images/plastic/PlasticRiversReport.pdf>



4.

Waste

4.1 Understanding waste collections: general waste

General waste



Landfill

With limited land available for landfilling in the UK, this should be a last resort for materials. Food waste should not be going to landfill as it leaches methane, a dangerous greenhouse gas.

Mechanical biological treatment (MBT)

These plants will take all waste and recycling in one bin, which means low recycling rates (around 5% and probably only cans) and most materials going to waste-to-energy plants. Food waste will be contaminated so won't be used for agricultural compost. Check the rates and processes with your contractor.

Waste-to-energy incineration

Energy is sent to the national grid from the burning of waste. This is the where most general waste will go to avoid landfill.

This is a good solution for things that can't be recycled e.g. packaging but is a waste of recyclable materials that end up in general waste bins.

Incineration

Some areas have older incinerators which simply burn waste and do not extract any energy from it.

Tip:

To reduce costs for waste, look at waste streams that you can reduce or avoid by going reusable.



4.1 Understanding waste collections: recycling & food waste



Recycling



Single-stream collections

The highest recycling rates are achieved through single waste stream collections and are increasingly being adopted for hard to recycle items like coffee cups and crisp wrappers.

Mixed recycling facility (MRF)

These plants accept dry mixed recycling e.g. non-contaminated plastics, card and cans in one bin and then sort onsite. Avoiding contamination with food and glass is important.

Food waste



Anaerobic digestion

For food waste this is the most common process for household and business food waste. Anaerobic digestion uses micro-organisms in a vessel without oxygen. This process can't break down dry materials, so most plants have a de-packaging process which will remove all plastics, compostable plastics, cardboard.

In-vessel composters

These use air and heat to break down food and garden waste so can tolerate compostable packaging, if it has been pre-tested and organised. Significantly less in this country.

Tip:

Your ideal waste scenario is to have at least three bins: recycling, general and food waste collections.

Tip:

Terracycle offers collections for hard to recycle materials like crisp packets and confectionary wrappers that are funded by brands.



Navigating disposables & reusables

A guide to reducing the impact of single-use packaging in the food-to-go sector.

This is intended as a guide and is subject to change as new information, research and legislation become available. Please check for the latest findings.

About Refill

Refill is an award-winning campaign to prevent plastic pollution, making it easier to reuse and refill your water bottle on the go than to buy a single-use plastic bottle.

The campaign works by connecting people who are looking for water, with thousands of local businesses, transport hubs and public spaces where they can refill for free via a location-based app. Participating cafés, bars, restaurants, banks, galleries, museums and other businesses simply sign up to the app and put a sticker in their window – alerting passers-by that they're welcome to come on in and fill up their bottle.

We estimate Refill will have saved over 100 million single-use bottles from entering our waste stream by the end of 2019. In 2020, City to Sea, the organisation behind Refill, will be rolling the campaign out internationally and expanding to cover more than just drinking water. Get in touch to find out how to get involved.

www.refill.org.uk

About City to Sea

We're an environmental not-for-profit campaigning to stop plastic pollution – from the city to the sea. Our vision is for the world's waterways and coastlines to be strewn with sticks, sand and seaweed... not plastic!

Our award-winning campaigns are focused on tackling the single-use plastic items found most commonly on our beaches by providing practical, solutions-focused initiatives and advocating reduce and reuse over single-use.

Working with communities, corporates and retailers we're inspiring and empowering everyone to tackle plastic pollution – by connecting our actions to our oceans.

www.citytosea.org.uk

City to Sea Unit D, Albion Dockside Bldg Hanover Place Bristol BS1 6UT Tel: 0117 422 4522

City to Sea is a Registered Community Interest Company, No. 09948596

Acknowledgements

This report was written by Livvy Drake (Sustainability & Behavioural Change Consultant) and the City to Sea team.

We would like to thank the following organisations and groups for their input and comments which have helped shape the report including *Better Food Co*, *Poco Tapas Bar*, *Boston Tea Party* & *Eunomia Research & Consulting*.



www.refill.org.uk



www.citytosea.org.uk