

THE RECYCLING STRATEGY FOR CARDIFF 2022-2025: Cleaner and Greener

Reaching
70% and
Beyond



This document is available in Welsh /
Mae'r ddogfen hon ar gael yn Gymraeg



**One
Planet
Waste**



**CRYFACH
TECACH
GWYRDDACH**

**STRONGER
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Foreword

The science is clear that we will soon be facing a point of irreversible and catastrophic climate change, unless we take drastic action now. Clearly, in an emergency, a business-as-usual approach is no longer sufficient and we cannot escape the fact that, as a city, Cardiff is emitting more than its fair share of carbon.

Nowhere is this more apparent than in the amount of waste we produce. It is, perhaps, the most visual example of our climate footprint and driving up recycling will make a major contribution to the planet as it conserves natural resources, reduces demand for raw material, saves energy and cuts emissions.

Tackling climate change will require bold leadership from Government at all levels, innovation and a step change in behaviour across the private sector and, crucially, small but important changes in how we live our lives.

We can be proud that Wales is playing a leadership role in designing and implementing some of the most sustainable recycling and waste strategies in the World. We are currently the third best nation for recycling worldwide with Cardiff performing well in relation to other core cities in the UK. We recognise, however, that we lag behind other authorities in Wales in terms of our recycling performance.

There are some major challenges we must recognise and address if we are to improve Cardiff's recycling performance.

- The amount of waste we are producing is increasing.
- We are not recycling as much as we can. A massive 70% of items inside our general waste could be recycled, either through kerbside collections or at the household recycling centres. Instead, this is sent to the incinerator.
- We are not recycling correctly. Including items which can't be recycled, such as food and nappies, in our green bags means that 30% of our recycling has to be sent to the incinerator.

This approach is fundamentally unsustainable. It's bad for the environment and it is bad for the public purse. We simply cannot continue to collect incorrectly presented waste at everyone's doorstep, have it sorted out or burnt.

There is a much more sustainable way of managing our waste, that vastly reduces our carbon footprint and respects the earth's valuable resources. This strategy sets out that approach.

We must reduce the amount we use and re-use wherever we can. This means segregating our recycling so it can be re-purposed and developing a circular economy where we properly manage waste as a valuable resource.

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We have undertaken extensive consultation and engagement with residents on what a new approach might look like, and conducted pilots in different parts of the city. We know that there is support to making these changes, but we appreciate that these changes will not always be easy. Doing the right thing rarely is.

This strategy sets out what we can do, together, to:

1. Reduce our carbon footprint and help tackle climate change;
2. Make better use of materials and create a circular economy that will provide more jobs and a more sustainable economy;
3. Help make our streets cleaner by presenting waste properly so that it can be collected quickly and effectively.



Councillor Caro Wild
Climate Change

At the heart of these changes will be our brilliant workforce who work tirelessly every day, in freezing winters and scorching summers, to clean up our city. As part of this strategy we will ensure that we continue to support staff and create the right working environment.

This strategy sets out the positive changes needed to make Cardiff a Stronger, Fairer and Greener City.

We need everyone to get behind it.



Executive Summary

Cardiff is already one of the best cities for recycling in the UK and Europe. The purpose of The Recycling Strategy for Cardiff (2021-25) is to drive up our recycling performance even further.

This Strategy reaffirms our commitment to achieving the Welsh Government's statutory recycling targets and sets our intention to move 'Beyond Recycling' by keeping resources in use and avoiding waste. It also sets out how we will more effectively manage the city's waste to help meet the aims of our 'One Planet' strategy and support the transition to net zero Carbon by 2030.

The strategy focuses on three key areas of intervention:

1. Improving the recycling performance of the Council's Trade waste service.
2. Expanding the residential recycling service to include new segregation streams.
3. Diverting recyclable materials from the residual (non-recyclable) waste stream.

We know that there are a number of challenges facing us. Many of the challenges facing Cardiff, as a large urban area, are unique in a Welsh context. Issues such as a diverse housing stock, transient populations, a high proportion of businesses and a regular programme of major events present Cardiff with a range of challenges.

Alongside this, we know that the quality of our recycling is currently poor. Around 30% of the material within our green bags should not be there, meaning that materials that could be recycled have been contaminated and must therefore be burnt. That's almost 10,000 tonnes of valuable recycling material lost in 2021.

Worse still, if recycling bags contain material that shouldn't be there, such as food, it can be attacked by seagulls and other animals, creating an unsightly mess. Our dedicated team of waste collectors and committed network of volunteers work hard to clear Cardiff streets, but their job is made so much harder if we do not recycle properly.

Currently, we also provide over 27 million single use plastic bags a year for recycling. This simply needs to stop. Moving forward, the Council will need to provide re-useable containers which will be suitable for use across our diverse housing stock, in addition to encouraging the correct presentation of waste.

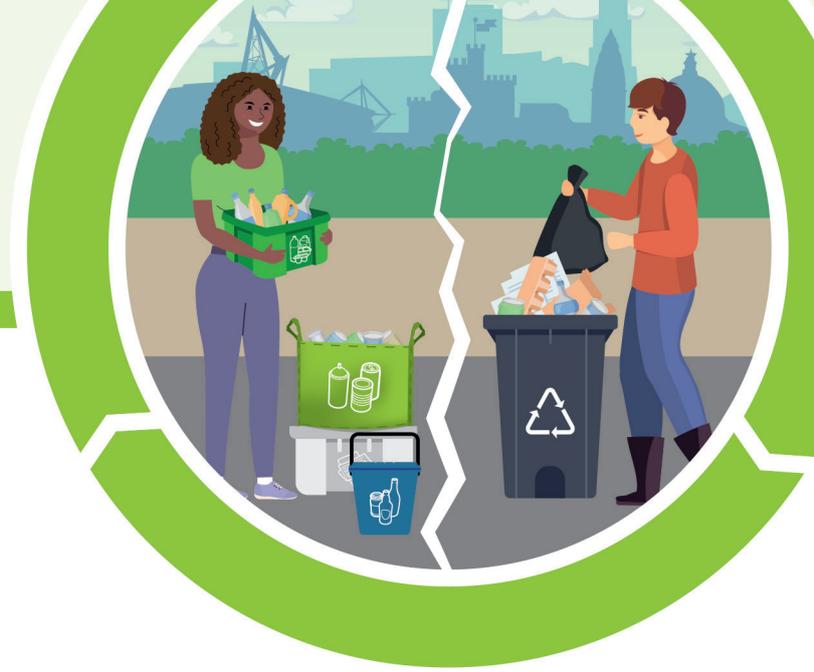
Finally, we know that 70% of the material within the general waste collected from the pavements could be recycled. We need to work with residents, alongside reviewing our collection methodology, to ensure that all of this material is recycled in the correct way.

Taken together, failing to recycle properly is bad for the environment, bad for the public purse and is bad for our local neighbourhoods. All these issues can be addressed by improving the quality of material by taking the actions set out in this strategy.



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1. Aims, Objectives & Actions

The Aims of the Recycling Strategy are to:

1. Improve material quality
2. Increase recycling participation and capture priority materials
3. Increase opportunities for communities and residents to recycle
4. Make use of all available data, to develop targeted actions
5. Reduce single use plastics
6. Encourage and support the prevention, reuse and repair of materials
7. Contribute towards developing a circular economy within Wales

Alongside the aims and objectives of the Strategy, there are a number of core actions, which will help deliver Cardiff's vision. These are set out in Table 1 below.

Table 1: Final Strategy Objectives and Actions

Aims	Objectives
Improve Material Quality	Expand the recycling service to offer separate collection of glass ** (bottles and jars), fibres (paper and card) and containers (cans and plastics)
	Reduce compostable garden waste contamination, through education and enforcement strategies, and a full service methodology review
Increasing Recycling participation and capture of priority materials	Review Trade practices to improve performance and comply with non-domestic waste regulations. This will include changing collection methodology and targeting recycling contracts
	Relaunch an enhanced 'Really Rubbish' Campaign with schools and commercial trade to promote recycling services (and composting in Schools).
	Review recycling in flats and rented accommodation to increase performance, working with relevant partners such as Rentsmart Wales and WRAP Cymru
	Permanently adopt and enforce a no mixed bag/ bag sorting policy at Household Waste Recycling Centres.
	Review site layout and signage, booking in system and effective customer engagement at Household Waste Recycling Centres.
	Increase cleansing recycling performance through segregation of litter-picked waste and recycling litterbins
	Review residual waste provision and introduce measures to increase participation in food waste service

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Increase opportunities for communities and residents to recycle	Implement static and mobile recycling facilities within local communities
	Expand Markets & collection opportunities for additional materials – Absorbent Hygiene Products (nappy and incontinence waste)/coffee pods/tetrapak/plastic film
Make use of all available data, to develop targeted actions	Undertake a Composition Analysis to determine the materials to target
	Monitor Participation to inform targeted activity
	Progress the Pink Sticker Campaign based on the principal of educate first, with removal of bins where there is repeat contamination
	Review all recycling contracts, to ensure minimum recovery rates are being met (where specified) and identify improved recovery
Reduce single use plastics	Implement re-usable containers for recycling
	Single use plastics strategy
	Expand water re-fill across the City, promoting re-usable bottles
Encourage and support the prevention, reuse and repair of materials	Wastesavers Reuse Centre at Lamby Way
	Collaborate on community activities such as Benthylg/Repair Café Wales
	CLARE Wales Repair Directory
	Develop a Zero Waste Map
Contribute towards developing a circular economy within Wales	Develop a business case for a re-use/repair/education hub within the City
	Work with partners- such as CLARE Wales- to develop regional solutions
	Continue existing processing partnerships, such as Prosiect Gwyrdd
	Take an active role in supporting the 'Dyfodol Gwyrdd Glân', / 'Clean Green Future' collaborative partnership for Welsh Local Authorities and the Welsh Government – seeking regional processing solutions for materials such as Absorbent Hygiene Products





2. National Context

The Recycling Strategy for Cardiff is framed by a range of legislative influences and national events (e.g. the COVID-19 pandemic) which shape and determine the waste produced and how it is processed.

This section of the strategy sets out the national context, recognising the contextual changes which can impact waste production, collection and end markets.

2.1 Legislative Drivers

The importance of the environment and the conservation of natural resources is increasingly recognised and supported by national and international policy and regulation, which aims to reduce the environmental impact of consumption and the production of materials.

In Wales, at the national level, there are two key policy documents to consider: Towards Zero Waste - The Waste Strategy for Wales (2010); and Beyond Recycling - A Strategy to make the Circular Economy in Wales a Reality (2021). These documents establish the key statutory performance requirements for local authorities in Wales, in support of the Welsh Government's long-term ambition for a sustainable and waste free Wales. Other relevant Welsh Government and Central Government policies and legislative acts relating to sustainable development, improved environmental outcomes and addressing climate change include:

- The Waste (England and Wales) Regulations 2011
- Towards Zero Waste – The Waste Strategy for Wales (2010)
- Waste (Wales) Measure 2010
- Well-being of Future Generations (Wales) Act 2015
- Environment (Wales) Act 2016
- Climate Change Strategy for Wales

The Wellbeing of Future Generations Act is of particular importance in Wales with the sustainable development principles- as expressed through the Five Ways of Working- considered as part of the development of this strategy. The strategy also includes actions that are designed to improve economic, social and environmental outcomes.

2.2 Towards Zero Waste, a Circular Economy and Beyond Recycling

The Welsh National Waste Strategy, "Towards Zero Waste" was launched on 21 June 2010. The strategy set out a series of challenging statutory recycling targets, as outlined in Table 2 below.

Table 2: Statutory Recycling Targets

Target for LA Collected Waste	2019/20	2024/25
Minimum overall recycling	64%	70%
Maximum level of landfill	10%	5%
Maximum level of energy from waste	36%	30%
Biodegradable Landfill Allowance	33557t	-

Nationally, impressive progress has been made towards the targets, and Wales ranks as number 1 recycling nation in the UK, 2nd in Europe and 3rd in the World. Significant progress has also been made with regards to reducing reliance on landfill.

Although Cardiff has made substantial strides forward, in 2021/22 the city fell short of the 64% recycling target. As a result, the Council is now working closely with the Welsh Government to review a series of options to help improve recycling performance.

Looking to build upon the success of the previous strategy, the Welsh Government published their Circular Economy Strategy for Wales – Beyond Recycling, on 2 March 2021.

The national aim is to move to a circular economy in Wales, where waste is avoided and the things we use are kept in use as long as possible. This is an important part of the action needed on climate change. Welsh Government, and by extension Cardiff Council, is seeking to make the process of managing waste 'Cleaner, Greener, Fairer', through 6 core themes and 8 headline actions. The 8 headline actions are as follows:

1. Support businesses in Wales to reduce their carbon footprint and become more resource efficient
2. Provide the tools to enable community action
3. Phase out unnecessary, single use items especially plastic
4. Eradicate avoidable food waste
5. Procure on a basis which prioritises goods and products which are made from remanufactured, refurbished and recycled materials or come from low carbon and sustainable materials like wood
6. Strive to achieve the highest rates of recycling in the world
7. Reduce the environmental impact of the waste collection from our homes and businesses
8. Take full responsibility for the full lifecycle our waste

In addition to the themes and headline actions, the strategy sets a number of significant targets for Welsh Local Authorities:





Table 3: Beyond Recycling Targets

By 2025	26% reduction in waste
	Zero waste to landfill
	50% reduction in avoidable food waste
	70% recycling
By 2030	33% reduction in waste
	60% reduction in avoidable food waste
By 2050	One planet resource use
	62% reduction in the waste
	Zero waste
	Net zero carbon

Note: All waste reduction targets are set against a 2006-07 baseline

As the Welsh Government looks ‘Beyond Recycling’ to waste reduction and the circular economy, it is imperative that this strategy sets out not only how to achieve the current recycling targets, but also how the city will adapt to these new requirements in the future. Consideration must therefore be given to improving the

quality of materials collected, waste minimisation through behavioural change and supporting community re-use and repair, the greener collection of materials and how we will work together with residents, partners and neighbours to meet wider goals and agendas.

2.3 Climate Change

Beyond Recycling, the Welsh Government strategy to make the circular economy a reality makes clear that:

‘We are still in the midst of a climate emergency: globally, we are experiencing unprecedented climate events; we are on track for temperature rises above 2°C; one million species are threatened with extinction due to climate change and the overexploitation of natural resources; and there is increasing evidence of the adverse impacts that plastic is having on the environment and living organisms. Here in Wales, we are already feeling the effects with flooding and other extremes of weather becoming more commonplace. These challenges bring important opportunities to positively shape our future.’

Climate change is significantly impacted by unsustainable consumption and disposal practices. The circular

economy approach is key to tackling over-consumption, whilst also instigating social and economic improvements for Wales. Small changes made across a city can have a big impact when it comes to slowing the negative impact of climate change.

By recycling material in 2020/21, Cardiff’s residents avoided 36,000 tonnes of CO₂ emissions being released into the atmosphere (www.myrecyclingwales.org.uk). Increasing the city’s recycling rate, and reducing waste sent to energy recovery facilities throughout the life span of this strategy will continue to further reduce CO₂ emissions and help make Cardiff a net zero city by 2030.

3. Local Context

3.1 Current Service Provision

Cardiff provides the following services as part of its household waste and recycling collection scheme:

- Weekly collection of mixed, dry recyclables in green, single use bags. There is no limit to the amount of bags that are collected per property.
- Weekly collection of food waste using a brown 25 litre kerbside caddy. Kitchen caddies, and biodegradable kitchen caddy liners are provided free of charge.
- Compostable garden waste is collected within a 240L green bin, or 90L white re-useable sack (in areas where wheeled bins are not suitable). Up to 2 green bins, or 5 re-useable sacks will be collected per property. Garden Waste is collected fortnightly in the spring/summer, and less often in the winter. There is no annual charge for the collection of garden waste, though additional or replacement containers are chargeable.
- Non-recyclable waste is collected in a 140L wheeled bin, or up to 3 black bags for properties that cannot have a wheeled bin. Residual waste is collected fortnightly. Additional capacity is provided, via a recycling officer assessment. No additional bags next to bins are collected, and bin lids must be fully closed.
- Hygiene waste (child nappies, incontinence pads and associated changing waste) is collected fortnightly, on the opposite week to non-recyclable waste. Residents need to sign up to this service.

- Bulky waste collections can be booked in advance via the contact centre, mobile app or website. Items that can be fully recycled, with high recovery rates and limited disposal fees, are collected free of charge. Non-recycled items are collected at a pricing structure of up to 2 items for £12.50, increasing to a maximum of 6 items.

In addition to the above, Cardiff Council provides two Household Recycling Centres, one at Lamby Way and one at Bessemer Close. The Recycling Centres have recycling facilities for over 20 items. Residents must book to visit, and are limited to 26 visits per year as standard (by car). Van bookings are further restricted to 12 visits per year, and 1 per month. Mixed bags of waste are not accepted. Residents must sort waste before arrival, and we will explore the opportunity to provide facilities to allow them to sort waste on site.

A trade weighbridge service is also provided at Bessemer Close, which is a chargeable outlet for businesses to recycle and dispose of a variety of materials.

What happens to the material collected?

Cardiff works in partnership with neighbouring local authorities, to process and sort material within our own boundaries.

Food waste is taken to an Anaerobic Digestion plant, run by Welsh Water. Here, food waste breaks down without oxygen aided by heat. Through the anaerobic digester, gases produced are harnessed to make heat and electricity whilst creating a fertiliser from any remaining product to be used in agriculture.



Mixed dry recyclables are taken to the Council's Materials Reclamation Facility (MRF) at Lamby Way, Rumney. Through a mixture of machine and hand sorting, materials are separated and baled to move onwards to processors to be recycled into new products. You can find out where your recycling goes at www.myrecyclingwales.org.uk

The MRF is run effectively by a dedicated team of staff, working in a challenging environment. This challenge is further exacerbated by the level of incorrect items that are placed into green recycling bags. While the equipment and staff are able to deal with commonly misplaced items such as flexible plastic, they are not able to deal with dirty contamination such as food waste and nappies. Not only do these reduce the quality of material, and impact the machinery, they also have a negative impact on the environment our staff work in.

In addition, as the City has grown and amounts of recycling collected increased, space and ability to process all recyclable material has become a challenge. Infrastructure change is needed, and the Council is working with WRAP Cymru and Eunomia to complete a review to ensure our recycling facilities are fit for the future.

Garden waste is taken to a composting site at Lamby Way, where it is turned into soil improver through an open windrow process. The material is delivered to site, where it is then shredded, piled into windrows and regularly turned. The whole process is natural, with natural heat generated

and breaking down the material. At the end of the process, the material is separated into different size fractions via a trommel screen, and moved on to the product market. The compost is also provided to a number of community facilities and schools on request, such as the new Railway Gardens site and to fill Love where you Live community planters.

Non-recyclable waste is taken to an Energy Recovery Facility - run by Viridor - where it is used as fuel for energy recovery. The facility generates 250GWH of electricity for the national grid, which is enough to fuel 68,000 homes. Energy recovery works by burning waste at high temperatures, under carefully controlled conditions. The electricity produced is fed into the national grid. The process also produces 'bottom ash' which can be recycled as aggregate material as well as transporting remaining metal on to metal processors.

You can see a short video of the journey of Cardiff's waste here:

Cardiff's Waste Journey / Siwrnai Gwastraff Caerdydd (English) - YouTube
or visit www.youtube.co.uk and search 'Cardiff's waste journey'

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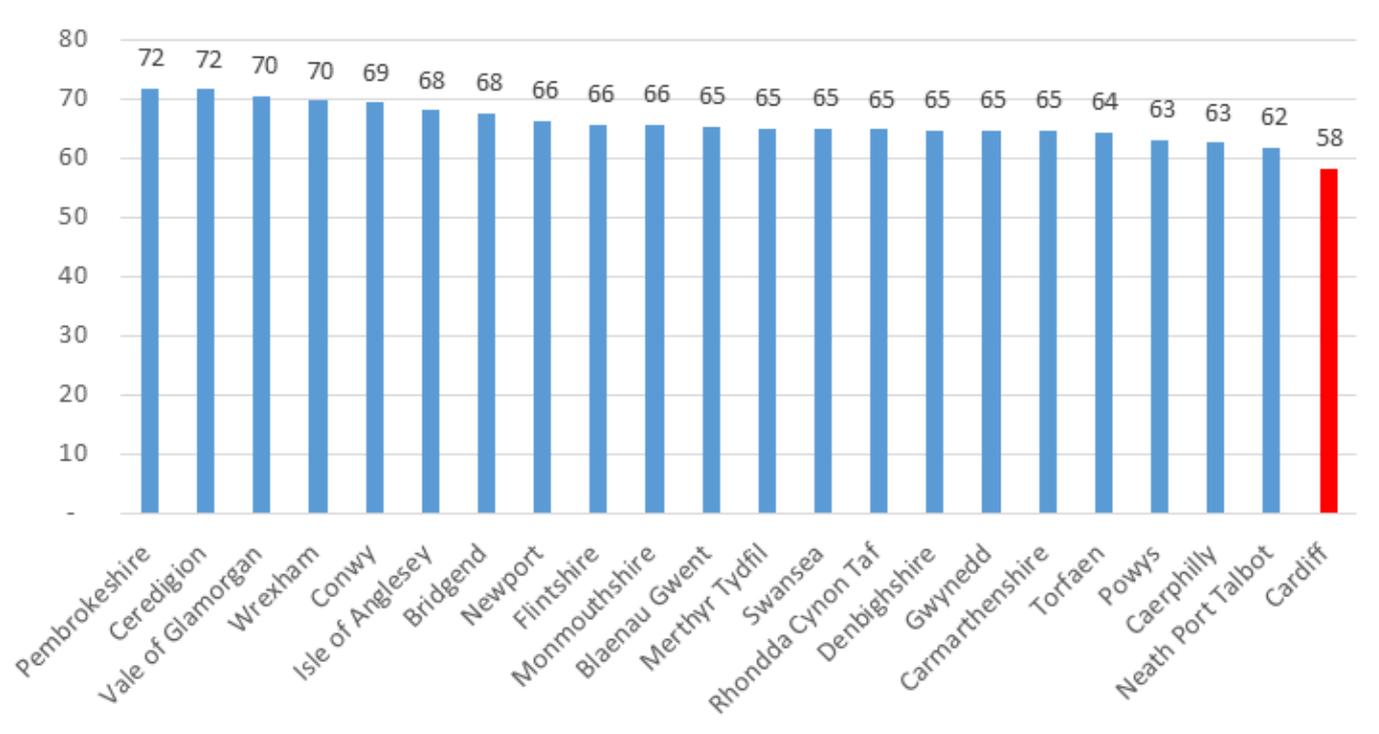


3.2 Current Performance and Comparisons

On 26 November 2021, the final validated 2019-20 Local Authority Recovery Target (LART) figures from Natural Resources Wales (NRW) were published. The figures are produced under NRW's duties as the Monitoring Authority as specified in the Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales)

Regulations 2011. As Figure 1 shows, Cardiff did not meet the 2019-20 statutory minimum target for the percentage of municipal waste which must be recycled, Measure 2010. Cardiff's recycling performance in 2019-20 was validated at 58.14%, nearly 6% below the statutory target of 64%.

Figure 1: Wales Recycling Performance 2019-20



The Council understands the need to deliver another step change in performance. However, as the largest authority in Wales, with the biggest urban mass and highest density of businesses, there are very specific characteristics that make meeting the statutory recycling targets

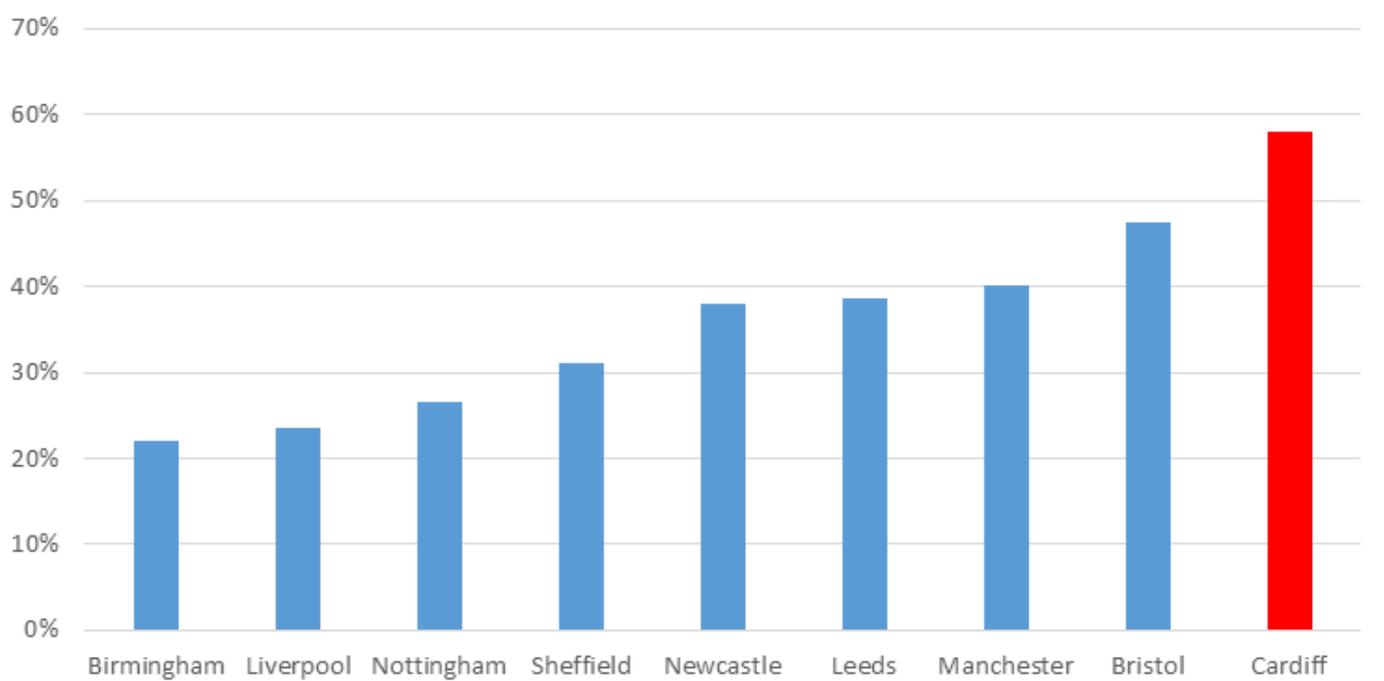
challenging. Larger, more urban cities, will naturally face greater challenges when it comes to increasing recycling performance. When compared to core cities across the UK, Cardiff's kerbside recycling performance compares very well (see Figure 2).



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Figure 2: Urban City Recycling Performance



Note: The data for English authorities only includes household waste, whereas Welsh data incorporates all municipal waste (i.e. cleansing and Trade waste).

Despite falling short of the Welsh Government's target, Cardiff has areas of strength. In 2021/22, Cardiff saw a 9% increase in food waste collected from the kerbside and a 4% reduction overall in the amount of waste collected from the kerbside. Improvements to the operating of the Household Recycling Centres now sees recycling performance at over 87% with a 74% reduction in non-recyclable waste since the implementation of new controls.

A recent compositional analysis of green bags across the City found that there was 41.4% contamination in dry recycling bags collected from flats compared with 23.7% contamination in green bags collected from households.

The compositional analysis (Appendix 6) also indicates that there are still large volumes of food waste and recycling

entering the residual waste stream. Waste collected from flats had the highest proportion of recyclable materials with 51.9% of the residual waste stream containing target recyclable material. Residual waste collected from households contained 42.5% target recyclable material (a large proportion of which was food waste). Whilst there is less recyclable material in household collected waste than there is in the flats collected waste, it is evident that there is still a significant amount of target material going to waste.

It is therefore essential that as well as improving material quality, we increase the amount of material segregated for recycling at the kerbside.

3.3 Achievements to Date

Whilst Cardiff has not yet met the 64% target, Cardiff Council remains fully committed to working collaboratively to improve recycling performance and to meeting both the 64% and 70% statutory performance target by 2024/25. Improvements to waste management and recycling performance are a fundamental part of the city's strategy.

The approach being taken is to look at the whole life of recycling materials; from supporting resident participation and behaviours, implementing efficient and effective collections to supporting ongoing participation, and managing how and where materials are recycled to deliver a circular economy and to reduce the associated carbon impacts.

A number of improvements have been introduced since the last strategy enabling the majority of aims set out in the Waste Strategy for Cardiff 2018-21 to be achieved. A full gap analysis has been undertaken, comparing performance against the objectives set out in the last strategy, attached at Appendix 1. The most significant achievements include:

- Introducing a segregated recycling trial at 4000 properties, consisting of separate containers, fibres and glass collections (following on from a separate glass collection pilot)
- Expanding the wheeled bin service where possible, reducing the number of single use bags provided for residual waste.
- Introducing a 4 day collection week, involving:
 - Rezoning the city and increasing round efficiency
 - Removing double shifting of vehicles and staff, meaning better opportunity for vehicle maintenance.
 - Removing the confusion around Bank Holiday Monday collections
 - Improving Value for Money
- Establishing a Reuse Facility at Lamby Way Recycling Centre in Partnership with Wastesavers (September 2021). Since opening, this facility has diverted 67t from the household recycling centres for re-use
- Introducing new controls at the Recycling Centres to facilitate an increase in recycling performance from 73% to 87%, including a no mixed bag policy, improved signage and recycling availability and booking system. This means that Cardiff is now has one of the best recycling performance for a Recycling Centre across Wales.
- Expanded Trade skip service to facilitate recycling skips.
- Developed new recycling infrastructure at hubs to facilitate small electrical items, printer cartridges, batteries and CDs/DVDs/Books recycling (collecting over 500KG so far).
- Continued to work with WRAP Cymru to undertake a review of potential waste collection systems, comparative costs and benefits.
- Commenced a full trade waste, and material processing review with WRAP Cymru.
- Introduced 12 electric vehicles to the service fleet, with 5 more eRCVs on order.
- Introduced a system to facilitate the recycling of materials collected during community litter picks.
- Implemented the 'Pink Sticker' campaign to highlight recycling containing non-recyclable materials. This supports the engage, educate, empower and enforce model for behaviour change, to improve behaviours towards recycling and reduce recycling contamination.



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- Allowed asbestos to be accepted at Recycling Centres to tackle the negative impact of asbestos contamination on garden waste recycling. In 2019/20, 30 tonnes of garden waste was contaminated by asbestos with the requirement to dispose at specialist landfill sites.
- Implemented trials to improve recycling participation and quality in blocks of flats, while building relationships with Bristol Council, Swansea Council and WRAP Cymru to collaboratively develop further improvements.
- Engaged with 3326 residents through community engagement activity- including 845 school children- through the Really Rubbish Campaign between June 2021 and June 2022,.
- Ran mobile recycling facilities throughout the City,

3.3 Achievements to Date

Whilst the above measures have been introduced, there has not been a significant improvement in Cardiff's recycling performance since 2016/17. This is partly due to Covid delaying the progress and visibility of some of these changes, and partly due to the fact that increasing performance is inhibited by a number of challenges.

In section 5, the strategy outlines how we will improve performance through a myriad of actions, but first it is important to contextualise the plan of action by outlining the challenges faced by an urban authority. These can be categorised into 4 key areas:

- Flats and Houses of Multiple Occupancy (HMO's)
- Socio-demographic variables
- Trade and events
- Housing and population growth

Flats and HMOs

Approximately 30% of the total number of properties in Cardiff are flats, normally serviced by communal bin arrangements. Improving the quality and quantity of recycling from flats is recognised nationally as a challenge with no identified blueprint to resolve this issue. In addition, Cardiff also has a high volume of registered Houses of Multiple Occupancy (HMOs) serviced by the kerbside collection scheme. HMOs present a unique set of challenges for local communities and the Local Authorities. In areas with a greater number of HMOs such as those areas near University campuses, the density of

the local population is higher, and, therefore, the demand for services like waste and recycling is greater. HMO households are also frequently associated with lower recycling levels and excess waste and present specific challenges in engaging with residents

The scale of the challenge is underscored by fact that there are 50,000 flats in Cardiff. This is higher than the entire housing stock of authorities such as Anglesey, Denbighshire, Ceredigion, Merthyr, Blaenau Gwent, Torfaen and Monmouth (StatsWales 2019 data).

Of these flats, 42,000 are in blocks of 4 or more, with communal collection arrangements. The high proportion of flats and HMOs creates very specific issues. People who live in flats recycle much less than those who live in houses, though there is a lack of substantive evidence about exactly why this is, or how it might be improved¹.

The fact that 30% of the housing stock is comprised of flats may contribute towards Cardiff's disproportionately high recycling reject rate. At present, 8% of dried mixed recycling (DMR) is rejected in Cardiff, compared with a Wales average of 2%. The Council is committed to working with WRAP Cymru to undertake further analysis of the composition of recyclables collected from flats, to scrutinise this assumption. It is acknowledged that although 30% of Cardiff's housing stock is flats, the waste collected from flats does not contribute 30% of total arisings, due to the reduced occupancy level per dwelling. Nevertheless, this is a key area of challenge.

¹ Making Recycling work in Flats - Resource London.

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Socio-Demographic Variables

The levels of poverty in parts of Cardiff are high in comparison to other authorities in Wales. If the Southern Arc of Cardiff (comprised of the electoral divisions of Adamsdown, Butetown, Caerau, Canton, Ely, Grangetown, Llanrumney, Riverside, Rumney, Splott, Trowbridge) was considered a single local authority, with a population of 170,000, it would be by far and away the most deprived local authority in Wales. Many of these wards are also multi-cultural with high levels of transient population. As noted in the recent House of Commons Briefing Paper - Household Waste Recycling², housing mix and multi-occupation are an identified barrier to recycling rates across Britain. As the report notes "Recycling rates are falling in areas where there is an increase in multi-occupancy dwellings. Rates also tend to be lower where there are challenges with social deprivation, urban classifications, education, language and residential stability." All of these factors are prevalent in the Southern Arc of Cardiff and affect levels of participation in recycling.

There are also approximately 70,000 students registered to study at Cardiff Universities, resulting in a large student population within the city. The high academic calibre of the region's Universities combined with Cardiff's many amenities, affordability and friendliness makes the city an attractive place for students to live. As a result, the student population is projected to grow significantly over the next five years, and investment in education and engagement will need to grow to meet the increased demand.

For many students, this will be the first time they have lived away from their family home and are navigating the new responsibilities that come with independence. Second and third year students and post-graduates often choose to reside in private housing within the community

The Council, the Universities, the Student Unions and the third sector work in partnership to provide education and engagements programmes and targeted interventions to address these issues on an annual basis as new students move into the community.

Trade Waste

Cardiff Council offers a trade waste collection service, which has been built on providing a reliable and responsible service to Cardiff's businesses. It has a loyal customer base, with a consistent number of around 3,000 customers, representing around 30% of businesses within the city.

The provision of trade waste collections is not a statutory requirement, and it is therefore a variable factor in achieving recycling targets across local authorities. Trade waste makes up over 9% of Cardiff's total waste collected, in comparison to the Wales average of just under 4%.

A high level analysis suggests the entire removal of this service would see an immediate improvement in Cardiff's recycling rate of 3.7% (WRAP High Level Analysis of WasteDataFlow). However, Cardiff Council does not consider eliminating trade waste to help achieve the statutory recycling target as an appropriate or sustainable intervention. On the contrary, Cardiff recognises the high potential recycling gain available within the city's trade waste stream, and has identified a list of short and long term actions to grow this potential. The Council also recognises the need for the Council to lead by example, to engender a significant improvement in recycling right across the private trade waste collection sector in the city.

The Council is working with partners to complete a full trade review to understand the opportunities to improve recycling in this area. At present trade is recycling around 42% of waste collected, thus impacting upon the city's overall recycling performance. However, it is clear, there is scope to significantly improve this figure in line with the emerging Non-Domestic Waste Regulations, and in doing so increase the overall recycling performance of the city by at least 3%.



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² Household recycling in the UK - House of Commons Library (parliament.uk)

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Housing and Population Growth

Cardiff's population has increased steadily over the past 30 years (by about 2,400 people per year) but much more rapidly since 2001 (by about 3,500 per year). The 2021 census recorded a population of 362,400.

Welsh Government projections indicate that the number of households in Cardiff will increase by 37% between 2008 and 2026 from 136,741 to 187,302 households. According to the Welsh Government projections, this is driven partly by in-migration (particularly net international migration), partly by natural population increase (more births and fewer deaths), and partly by a decline in average household size with over three quarters of the growth being for 1 and 2 person households. (Cardiff's Local Development Plan 2006-2026).

It is important to note that Cardiff's Local Development Plan (LDP) is currently being reviewed, with a view to preparing a replacement LDP to cover the period 2021-26. Various elements of the original evidence base will need to be updated, to take account of issues such as land availability and policy and contextual changes since the adoption of the former plan. For the time being, the projections available in the current adopted LDP have been used to provide some context to the challenge.

Table 4: Population growth projected over the course of this strategy

Year	LDP Population	% increase	LDP Households	% increase
2020	381023		164126	
2021	384679	0.9%	166413	1.3%
2022	388329	0.9%	168700	1.3%
2023	392024	0.9%	170987	1.3%
2024	395795	0.9%	173274	1.3%
2025	399666	0.9%	175561	1.3%
2026	403684	1%	177845	1.3%

Source: LDP Edge Scenario C

This growth will inevitably lead to increases in the levels of waste required to be collected. The Council will need to ensure, through the relevant planning processes, that adequate external storage is provided for the separation

of waste materials, with additional consideration for future proofing should collection services change. In addition, the impacts on collection round sizes, additional vehicles and staffing will need to be considered.

4. Delivering the Aims & Objectives of the Strategy

4.1 Improve Material Quality

Action Plan for Dry Recycling

Cardiff Council has been supported through the Welsh Government Collaborative Change Programme (CCP) to investigate the impact of various recycling and waste collection options, in terms of both cost and performance. We will expand this work further to review the carbon impacts of each option. In addition, the CCP has provided ongoing support in relation to high-level analysis of the data reported within waste data flow, alongside a full trade waste and material processing review. These pieces of

work have provided the Council with long-term service change options and also identified areas of improvement that can be made in the short to mid-term.

As illustrated by Table 5, the outcome from the approach to kerbside modelling showed a limited uplift to recycling and recovery rates and the need for a range of further interventions if Cardiff is to meet statutory recycling targets. The Council is clear, however, that the current recycling collection service cannot remain as is, as material quality needs to be significantly improved.

Table 5: Summary of Modelling Results

Options	Option Details	Performance change compared to Baseline* – (% MSW Recovered)	Option cost – Compared to Baseline cost (£000)
Option 1	Kerbside sort with food on same vehicle	1.60%	-£1,373
Option 2	Kerbside sort (paper/card mixed) with food separate	1.60%	-£666
Option 3	Separate glass (caddy), separate fibres and containers in reusable sacks on a One Pass vehicle	1.40%	-£113

Notes relating to Table 5:

- 'Baseline cost' – is what the service cost at the time of the modelling i.e. the 'business as usual cost'.
- Option cost' refers to the difference between the baseline or business as usual cost and the proposed option cost.
- 'As is' - material from kerbside collected as identified in section 2.1, collected via our standard Refuse Collection Vehicles
- 'Kerbside sort' - separate containers for glass, paper, cardboard, plastic bottles, tubs, trays and tins/cans. Collected on a kerbside sort vehicle with multiple stillages. Material is bulked and reprocessed with limited need for sorting of material
- 'Fibres' - paper and cardboard
- 'Packaging' - metal tins/cans, plastic tubs, bottles and trays
- One pass- a refuse collection vehicle, with a 70%/30% split at the rear to keep 2 materials separate, and a pod for glass at the front



WRAPs High Level Analysis of the Waste DataFlow document indicates that, currently, just over 30% of MRF inputs are rejected, with 18% being non-target material, and 12% lost as part of the processing.

Co-mingled (mixed) reject makes up 8% of the total non-recyclable (residual) waste arisings, which is 6% higher than the Welsh average. To put this into context, based on 2019/20, approximately 10,000 tonnes of material were lost to reject. Assuming that 60% of this material could have been recycled, if it had been segregated correctly, an additional 6,000 tonnes of material would have been gained. Given that an additional c2000t of recycling equates to approximately 1% increase in performance, without contamination an additional 3% could potentially be achieved towards the overall recycling performance.

Whilst the above is a crude calculation, it is still clear that there is much to be gained by changing the way in which recycling is currently collected and processed. There is therefore a need to move towards segregation of materials collected in order to improve material quality and secure end market destinations for the recyclables collected. Further to this, Beyond Recycling highlights the need for high quality material to feed reprocessing and remanufacture within Wales.

The CCP modelling further suggests that by introducing reusable containers - as well as separate material streams - contamination significantly reduces. There are a number of assumptions as to why this would be. Providing a container that needs to be returned to a property is likely to reduce the temptation of placing 'unclean' material into the container, such as nappies and food waste. The Council's current recycling collection allows an 'out of sight, out of mind' culture, where bags are removed from the kerbside. Furthermore, segregating materials and providing open containers will make it easier for collection crews to identify and reject any incorrect materials. The current single stream services - food waste and glass bottles and jars -

report extremely low contamination rates, demonstrating the benefits of reusable containers and segregated material collections.

There is, currently, a separate recycling collection pilot running, within 4 areas of the City. Residents in these areas are using a reusable sack for containers, a reusable sack for packaging and a caddy for glass. Initial results have been extremely promising, with contamination levels in the region of just 5% and material quality significantly improved.

A range of vehicles have been trialed in these pilot areas, which has provided key data on a range of improvements that need to be made. During the Autumn 2022, we will have a multi stream collection vehicle in these areas, which will be capable of collecting 4/5 recycling materials at a time. At this stage, we will be able to expand the pilot further into the City, building on lessons learnt from the first phase of the pilot.

Based on the results of this trial - and further modelling in partnership with WRAP and the WLGA - Cardiff will produce a business case for a new improved recycling collection to be delivered across the City over the coming years.

Whilst the model is not yet finalised, it will meet the aims of the strategy to improve material quality, increase participation and reduce single use plastic sacks, which are not a sustainable option. It will also take into account public consultation and the growing appetite for more sustainable services. Public consultation was undertaken in Spring 2022 and received 3,305 responses. 85% of respondents agreed that there is a need to improve material quality. The majority were in favour of either a 3 stream or kerbside sort model (48.8% and 19.2% respectively), but 32% said that different options should be considered for different parts of the City. Full results can be found in Appendix 7.

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Whatever the agreed future design model, it will need to provide sufficient material feedstock to develop a circular economy within Wales. Improved material quality is essential to achieving this objective, and it is evidenced that optimum material quality is achieved through increased segregation of waste. In addition, the service will need to be sufficiently future proofed, to allow for the collection of additional materials in the future, as packaging changes and recycling markets update.

We acknowledge that change will result in uncertainty for a period of time. By recruiting extra front-line staff, we will be able to strengthen education and enforcement activity, which will be key to delivering these strategic changes and supporting communities through them.

Action Plan for Compostable Garden Waste

Between 2017/18 and 2019/20, an average of 700 tonnes of garden waste was rejected each year. Where loads are rejected, it has a negative impact on recycling performance, and also on costs of service. In 2019/20, contaminated garden waste cost the authority an estimated £140,165.

Furthermore, whilst 90% of the materials rejected could have been good quality garden waste, where just a few residents contaminate their bin with non-recyclable items, ultimately they jeopardise all the materials collected by that vehicle on that day.

As garden waste collections became more regular following the Covid 19 pandemic, an extensive education programme took place to advise residents what can and cannot go into the green wheeled bin (or garden waste sack in bag areas). The programme was successful, with loads that have been historically rejected from certain areas accepted. The programme was successful in part due to the constant presence of the team in target areas, alongside the delivery of a letter to each property reminding them of the correct items to place into the bin. However, it is resource and cost intensive and is unlikely to be sustained for the long term.

Contamination remains a problem, particularly where residents hide non-target materials underneath garden waste, as the crews are then unable to identify the contamination. Often, crews do not see the contamination until the bin is tipped into the back of the vehicle, by which time it is too late.

The current collection methodology allows 'hidden' contamination to take place. As such, the Council intends to undertake a full service review of compostable garden waste collections. This will include benchmarking with other Local Authorities, analysing contamination rates associated with alternative collection methods to identify whether infrastructural changes would help to reduce contamination.



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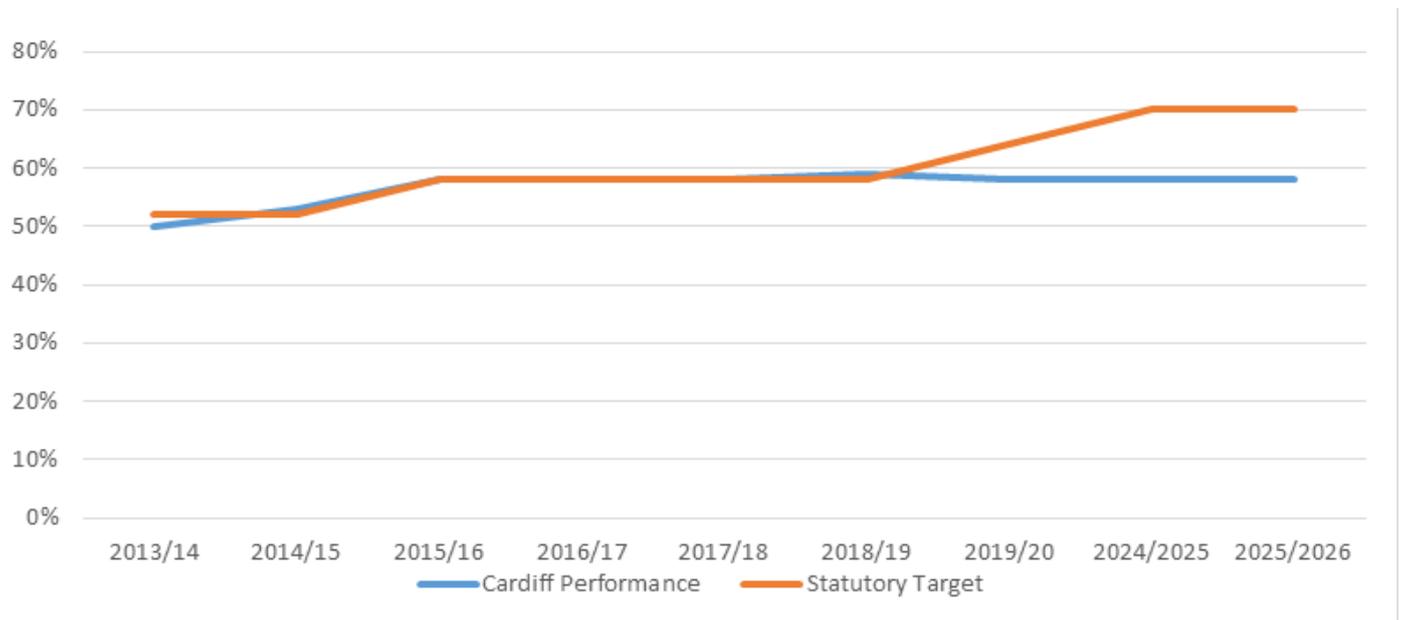




4.2 Increase Recycling Participation and Capture

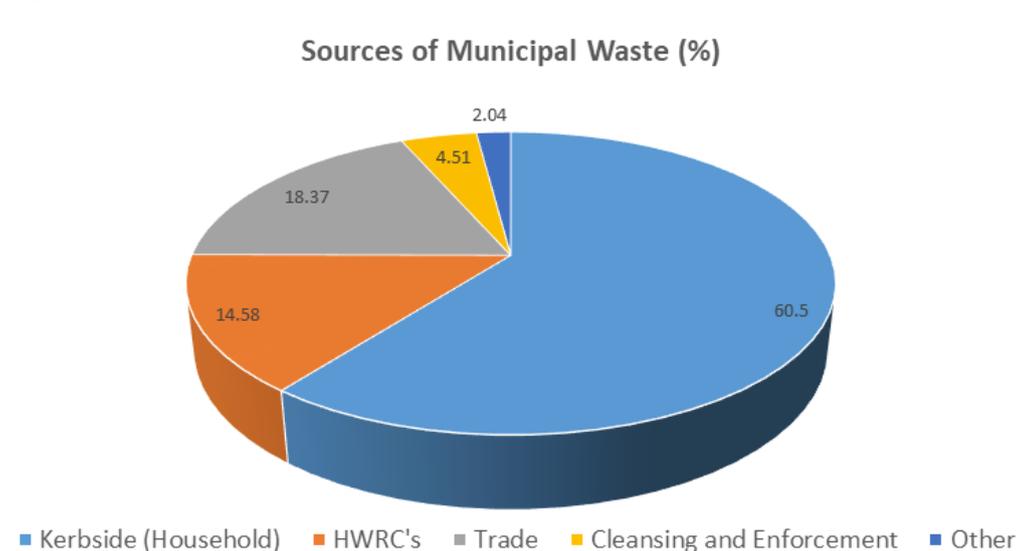
Cardiff’s Local Authority Recycling Target (LART) performance for 2020/21 was circa 58%. Although unverified, performance remained at 58% for 2021/22. The graph below illustrates that performance has remained relatively stable since 2016/17, with the stepped performance increase up to 64% not having been achieved.

Figure 3: Cardiff Recycling Performance 2016/17 – 2020/21



In order to build on the current recycling performance, it is important to identify the sources of waste collected throughout the city. This enables focus to be placed on key areas of opportunity.

Figure 4: Cardiff Municipal Waste Composition (%)



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Household Waste

As Figure 4 above illustrates, kerbside household collections represents the highest proportion of waste collected. Opportunities to improve in this area include:

- improving the quality of the material collected.
- encouraging regular public participation in all available kerbside recycling schemes, and with food waste in particular).
- targeting and capturing, key priority materials for collection.

After reject, Cardiff collects 100kg/hh/yr of food waste, ranking 11th in Wales. The Wales total is 97kg/hh/yr. There is potential for improvement, with the highest performing Welsh authority collecting 129kg/hh/yr. If Cardiff were able to achieve 129kg/hh/yr it would add another 2.1 percentage points to the municipal recycling rate.

As well as improving the performance of recycling collections, a review of Cardiff's residual waste collections will also be undertaken. This will consider whether the provision of a fortnightly service, of 140L per household capacity, is appropriate in terms of balancing the specific urban challenges faced by a capital city with the need to achieve improved recycling performance. In particular the Council needs to encourage more food waste to be removed from the residual waste and put into the food recycling caddy.

Modelling has been undertaken on all of the options outlined in Table 5. Less frequent residual waste collections result in a significant increase in the recycling rate uplift ranging from 3.5-3.7%. The Council will now carry out further analysis to consider what capacity is needed and which waste streams and areas to target.

The number of flats throughout the city is a real challenge in terms of recycling performance. Flats have not been included within the modelling outlined, however, it is clearly an area of potential to be explored, yet one where little data and guidance exists. A composition analysis of waste from flats has been started, and this will be used to help inform a number of trials in flats. The trials will explore how

different collection methods and educational initiatives can increase the quality (and quantity) of materials collected for recycling. In addition, a toolkit for property management companies will be developed, to work in partnership to improve recycling facilities at targeted blocks of flats. This toolkit will include a review of current bin provision, bin store design and layout, and signage and communication tools.

Trade Waste

Trade waste collections offer a significant opportunity to improve current recycling performance. At present, it is estimated that 40% of material collected is recycled. If the Council's trade waste service was to simply reduce its residual arisings by 50%, it would deliver a 1.8% increase in overall recycling performance. However, if the Council is able to divert priority recyclable material (estimated at 60%) from the residual waste, and into the recycling streams, it could lead to a potential performance increase of 4.2%³.

Working with partners, a full trade review will be undertaken to identify potential improvements and to ensure compliance with the Non-Domestic Waste Regulations which are due to be implemented by the Welsh Government over the coming years. The Business Waste Regulations require waste producers, and collectors of waste to separate key priority materials for recycling.

As a contracted trade collector for over 3000 businesses throughout the city, the Council will support the implementation of the Non Domestic Waste Regulations. In the interim, and in lieu of the regulations being in place, a trial of separate collection of 3 waste streams from businesses will be undertaken, in readiness for a change across the whole city. In addition, all customers who are currently contracted for a residual waste collection only will be contacted to encourage recycling and where these discussions aren't successful, consideration will be given to suspension of the contract. As part of this, work will be undertaken to address incorrect presentation of material, through increased targeted intervention with customers. This will include a review of processing methods currently used, to ensure as much recycling as possible is being captured. For example, the thorough post sort of material collected from within contracted, mixed skips alongside



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³ High level analysis of WasteDataFlow Returns- WRAP Cymru

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the removal of mixed skips on 'ad hoc' occasions. Instead customers will be offered the option of providing a skip for a single material stream.

Some work has already begun to progress these actions. Following the return of customers after lockdown, contracts were renewed for customers who were encouraged to implement source separation for recycling. Customers have also been offered separate services for food waste, glass, paper, card, metal and plastic. For customers with residual only contracts, this was a mandatory requirement in order for collections to restart.

Between April and Dec 2021, the number of customers with glass collections has increased by 245%, food by 25% and recycling collections by 10%.

Since July 2021, Trade Waste have ceased to provide mixed waste skips to any one-off customers. The team are now requesting customers to organise separate skips for different waste streams (such as rubble, soil, garden waste etc) which can be diverted to a recycling facility. Since this change the Trade Waste skip service has provided 150 single waste stream skips to one-off customers (from July 2021 to Jan 2022), all of which have been diverted to be recycled.

Schools

91% of respondents to the recycling waste strategy consultation, believed that it was important tap into the enthusiasm of young people, to make long term changes. The Really Rubbish Campaign will be relaunched to encourage recycling and composting in schools. Linking with the Love Where You Live Campaign and Trade Services, the Waste Strategy Team will offer comprehensive support to Schools. This will include school talks, online resources and provision of support for community growing schemes. The campaign has engaged with 845 children since being invited to return to schools, following the Covid 19 pandemic.

Alongside school workshops, the campaign will also link with partnership projects via Child Friendly Cities.

Household Waste Recycling Centres (HWRC's)

The city's Household Waste Recycling Centres are already performing at levels in excess of 80%. To maintain this high level of performance, the current booking system will be retained.

The Council has completed a full signage, and appearance review, based on recommendations from the WRAP Cymru Assessment Report of 2021 which identified that 'signage which is easily readable and readily understood encourages site users to recycle with confidence'. To further extend this, digital signage has also been introduced at HWRCs, which are being used to feedback on recycling performance, and can be used dynamically to respond to any issues on site, resident's feedback etc.

Whilst work to identify and appropriate HWRC site in the North of Cardiff is ongoing, no suitable locations have yet to be identified, and the provision at existing sites in Cardiff currently exceeds demand.

The Council continues to run mobile recycling centres across local communities. The site at Ty Glas, whilst not a permanent solution, initially proved popular with over 500 visitors. This demand, however, reduced over time to just 184 visits per event. Whilst the site has generated 135t of recycling, analysis identifies that this is material diverted from the existing sites rather than additional material. Nevertheless, the initial demand for this service suggests that there are benefits to running pop up sites within the Community and opportunities for future events and locations are being explored. In particular, opportunities are being explored for sites that allow safe pedestrian access.

The recycling and waste strategy consultation also identified that 77% of respondents use a Household Recycling Centre. 91% felt that the number of slots available per year was sufficient for their needs and 52% would like to see increased opportunities to donate items rather than recycle.

Other Waste

As 2025 approaches, all contributions to the city's overall waste arisings will need to be interrogated, no matter how small. To support this, further recycling segregation will be introduced, through the Council's cleansing and enforcement teams, including provision of single stream recycling litter bins, exploring the potential of increased split caged vehicles and ensuring fly-tipped waste is segregated wherever possible.

4.3 Increase Opportunities for Communities & Residents to Recycle

In order to increase recycling performance, recycling needs to be as easy and accessible as possible. WRAP's National Recycling Tracker survey 2020 identified that 15% of respondents believed that local council's do not collect enough things for recycling. This was mirrored in the results of the recycling and waste strategy consultation, which identified that 77% of respondents would like to see additional materials collected from the kerbside, whilst 82% would like to be able to recycle items in their local community.

In response the Council will seek to expand the range of, and opportunities to, recycle additional material. Current examples include work with Podback to explore the viability of kerbside coffee pod collections; and the recent diversion of Absorbent Hygiene Product (AHP) waste for recycling at a specialist plant. New facilities have also been introduced to make it easier 'to do the right thing' in relation to the recycling of items such as small electrical items, textiles, batteries, and tetra paks.

At present there are a number of barriers to recycling such items. Firstly, during 2020/21 there has been a significant increase in demand for bulky waste collections. This has resulted in long lead times for collections and necessitated a review of the items collected. A policy decision was made to remove the collection of smaller items from the bulky waste collection service to reduce demand on the service and reduce lead times for the collection of larger bulky items that present storage issues at home. Secondly, control measures, such as the booking system introduced

at HWRC's as a result of COVID-19 will be reviewed. Whilst there are ample slots available, the booking system may deter use of the site, as there is an annual visit limit of 26 visits per year. Thirdly, bicycles are not currently allowed to access the recycling centres. This is standard practice across the industry, however, there is appetite to enable sustainable travel while recycling.

As a first step towards addressing the above, the Council has implemented a pilot of 4 community recycling zones, with over ½ tonne of material collected over a period of only a few months. Following the success of this pilot, we are looking to expand these recycling zones across the City Hubs. These locations will be on accessible public transport and cycling routes where possible, and integrated within communities so that walking to recycle may even be possible.

The city's two Household Waste Recycling Centres currently have sufficient capacity to meet the current need. However, given the predicted levels of growth in population in the city in Cardiff's Local Development Plan, the Council will continue to review the need for an additional Household Recycling Centre.

The Council will also explore the possibility of pop-up recycling/repair centres, to facilitate the reuse, repair and recycling of items such as small domestic appliances, which can be hard to dispose of, and are very damaging to the environment.



4.4 Make Use of all Available Data to Develop Targeted Actions

Cardiff has set out its vision to be a 'Smart City'. This involves using data to improve decision making, provide better services and promote innovation. This approach will also be adopted across the Council waste and recycling services.

Work will be undertaken to identify new sources of data, within the recycling services operation, that can be utilised in line with the open data strategy. This includes areas such as education and enforcement action statistics, as well as promoting the open data available in relation to recycling and material destinations, including Stats Wales and information published from waste data flow at www.myrecyclingwales.org.uk. This will provide confidence in the transparency of the recycling process, which is identified as an action within the 'Building on our recycling record' core theme within the Beyond Recycling Welsh Government strategy.

In order to increase participation and capture, it is important to understand what is currently being collected. For this reason, the Council has worked with WRAP Cymru to undertake a programme of compositional analysis of kerbside collected, and flats collected, residual and recycling waste. The results show current capture rates of priority materials, and provide clear evidence for areas of focus. For example, despite providing free weekly collections of food waste, there remains a surprisingly high volume of food waste in the residual waste stream for both flats and households (see Section 4.3 and Appendix 6).

In addition, dashboard data from tools such as Power BI will be utilised to clearly map out further areas of focus. The data dashboard will be linked to the integrated collections software, to drill down into issues such as contamination.

Regular participation monitoring will also be undertaken throughout the city, in line with WLGAs Capturing Recycling- A guide to behavioural change strategy. The participation monitoring exercises will identify residents not taking part in recycling services, with appropriate interventions taking place with an education focus, moving into enforcement for continued non-participation without reasonable explanation.

The Council will continue to work closely with WRAP to support and promote the national 'Be Mighty Recycle' Campaign. In addition to the promotional materials, the campaign offers the opportunity to share data and identify best practice methodologies, as well as helping to identify target demographics.

Existing technologies will also be utilised to help the Council work smarter. In-cab devices are already utilised to log contaminated bins and bags. This data in turn is used to help target residents with letters advising them of which items need to go into which container. Where residents continue to present incorrect items, there is follow up with further education and ultimately enforcement (see Appendix 2 - The Pink Sticker Campaign).

The Council will continue to collaborate with other local authorities for recycling contracts of materials such as WEEE and textiles, whilst ensuring what is collected 'works harder' and provides the maximum recovery rates. Disposal/recycling contracts will be regularly reviewed to ensure minimum recovery rates are being met (where stipulated) and benchmarking of neighbouring local authorities to identify if improved opportunities are available.

4.5 Reduce Single Use Plastics (SUPs)

The removal of single use plastics is a topical issue. In March 2019, the EU Parliament approved a new law banning single-use plastic items such as plates, cutlery, straws and cotton bud sticks. A ban on supplying plastic straws, stirrers and plastic-stemmed cotton buds came into force in England on Thursday 1 October 2020.

Welsh Government undertook a consultation on the ban of single use plastics between July and October 2020. If the proposals are implemented in Wales, a range of single use, hard to recycle and commonly littered plastic items, such as straws, cotton buds, polystyrene food and drinks containers would be banned, subject to any exemptions.

The One Planet Cardiff Strategy proposes a wide range of ambitious actions that will begin to form the basis of a delivery plan to achieve Carbon Neutrality. Within this, there is a commitment to reduce the Council's use of Single Use Plastics, and the Council is committed to developing and implementing an action plan for Single Use Plastics. The action plan for Cardiff will focus on the following:

1. Identifying all Single Use Plastics Purchased:

This will involve a review of procurement processes with a view to avoid SUP's (unless there is a clear medical or other legitimate requirement) and understand the carbon impacts on the procurement process. This will include reviewing the provision of plastic sacks for Dried Mixed Recycling (DMR) and non recyclable waste. In 2021/22, 27 million single use plastic sacks were provided.

2. Promoting Reuse, Recycling of Plastics: Through both internal and external communications, the Council will encourage the recycling of plastic bottles as well as the reuse and prevention of single use plastics by promoting sustainable alternatives. This could include reusable coffee cups and water bottles, as well as other reusable

item (carrier bags, straws etc). The national deposit return scheme agenda will be supported by responding in favour to consultations, as well as reviewing the opportunity for 'reverse vending' within our communities.

3. Promoting Refill: Cardiff is already working with Refill to support the concept of refill stations. Participating businesses display 'refill' stickers in their windows to let people know they offer free tap water and that there is no need to feel uncomfortable or embarrassed asking for it. Participating organisations also appear on the Refill app, making the nearest Refill point easy to locate. Those who sign up to the app can refill their water bottles for free, and also earn points each time they refill to get a free gift to help towards a more 'refillable life'. There are currently over 10,000 Refill Stations across the UK. All of the Council's libraries/hubs have now registered with Refill and several of the high-street coffee shop chains are also registered with them. Where the water utility infrastructure is compatible the Council will seek funding with a view to installing refill stations in the city's hubs. We will also look to expand re-fill into the public realm, for example in parks, the City Centre and district shopping hubs.

4. Working with Partners: The Council has already undertaken a partnership arrangement with Keep Wales Tidy and Terracycle to remove, collect and recycle plastics from our waterways and bay area. The Council will commit to support, work with and promote like-minded campaigns to reduce the negative impacts of single use plastics. The Government's initiative to ban single use disposable cups from stadiums will be supported, and the idea of a re-useable 'Cardiff' cup in Cardiff's stadia will also be taken forward. Work will also take place with partners to identify regional solutions and to help support a circular economy in Wales.



5. Difficult Materials: The opportunity to recycle difficult materials such as car tyres, single use coffee cups; polystyrene mattresses etc will continue to be explored. The recycling of car tyres, carpets, UPVC window frames, hard plastics and mattresses is already in place at the Household Waste Recycling Centres. A polystyrene recycling trial has been undertaken, but due to the volume

to weight ratio of the material, a viable recycling collection method is currently not available in the market place. Nonetheless, this opportunity will be kept under review. Options for coffee-pod recycling in partnership with Podback are currently being explored, as well as working with partners to recycle AHP (Absorbent Hygiene Products such as nappies).

4.6 Encourage the Prevention, Reuse and Repair of Materials

We will develop digital and smart solutions to improve resource efficiency by investigating the possibility of a 're-use' network within our buildings. The intention will be to encourage the re-use of office furniture and equipment. In addition, the Council is partners of Resource Efficiency Wales' repair network, to signpost residents to repair options.

The Beyond Recycling strategy states *'In order to move to a circular, low carbon economy we will need to reduce the amount of waste produced by households, businesses and the public sector so that unnecessary waste is prevented, products are re-used and repair and remanufacturing are a core part of our society'*

Through blanket communication campaigns and targeted outreach events the Council will provide advice to residents on what they can do to reduce waste in their homes. For example, utilising national campaign materials such as Love Food Hate Waste to promote the reduction of food waste. The re-use shop at Lamby Way Household Recycling Centre has also recently been launched to encourage residents to pass on items that still have life in them.

In addition to promoting waste reduction, reuse will be supported. The benefits of providing a real nappy incentive to residents will be investigated, utilising knowledge from other local authorities to develop a Cardiff real nappy scheme.

The partnership with Benthyc Cymru & Repair Café Wales will be continued to deliver mobile events across the city and remove any barriers to borrowing by providing home deliveries. In addition, opportunities to include new repair/re-use facilities within community regeneration schemes will be explored. Initiatives such as community fridges, food redistribution and community composting delivered through partnership with Llanrumney Hall and Green Squirrel will continue to be supported. Re-fill Cardiff will also be supported to expand their scheme across Cardiff, and to develop a digital 'zero waste' map to identify areas where residents can access re-fill, community borrowing, repair café and food redistribution opportunities across the city.

The Council also awaits the introduction of emerging legislation, such as Extended Producer Responsibility and Deposit Return Scheme. Whilst deposit return scheme will aid in encouraging users to recycle an item, it may bring about circular change in terms of encouraging re-use & refill of containers, for those who may not wish to pay a deposit on packaging material.

Extended producer responsibility will incentivise the design of packaging to making it easier to recycle. This is anticipated to further reduce the amount of 'hard to recycle' material currently within our waste streams.

4.7 Contribute Towards Developing a Circular Economy within Wales

Although Cardiff recognises the importance of increasing its recycling rates to meet statutory targets, it is important not lose sight of the wider national objective of One Planet, Zero Waste Wales by 2050.

Increasing participation and capturing priority material supports this objective. However, Cardiff will work to support the wider vision by actively prioritising messaging and actions around waste minimisation, re-use and repair, through businesses, residents and corporately through the Council own internal operations.

Much of the Council's corporate vision in this regard is outlined in the One Planet Cardiff Strategy. The actions outlined within section 5 are intrinsically linked to the majority of the 6 core themes set out in the Beyond Recycling strategy. There are a number of further actions the Council will take, such as continuing the partnership with other local authorities in the Anaerobic Digestion and Energy Recovery facilities, as well as the development of a solar panel farm at Lamby Way.

As stated in Beyond Recycling *'The Government cannot bring about the transition to a circular economy alone.'* It is understood that individual actions play a big part in this transition and the Council will work to empower everyone to make changes that suits them, appreciating the benefit that small changes can make.

The role of our community development co-ordinator will be expanded in line with the Caru Cymru initiative, to become involved with waste reduction, re-use and repair. This will enable the prevention of issues associated with poor Local Environmental Quality, including littering and fly-tipping.

The Council will work with young people to develop the waste strategy and tap into their enthusiasm. The existing 'Really Rubbish' campaign will be re-invigorated, and re-branded, to promote circular economy within schools. Work will continue with the Council's child friendly city teams in making young person's ideas a reality, through initiatives such as the expansion of Terracycle points throughout the city and the community mural at the Recycling Centre designed by children.

The Council will prioritise re-used materials in public sector purchases, by investigating the ability of setting up a re-use network within our buildings. The Council will also support all elements in the delivery of the litter prevention, and fly-tipping strategies, being a key partner of Caru Cymru and driving through community cohesion and behavioural change.



4.8 Action Plan and Key Dates

The three main actions anticipated to deliver the maximum increase in recycling performance are:

1. Improving the recycling performance of the Council's Trade waste service.
2. Expanding the residential recycling service to include new segregation streams.
3. Diverting recyclable materials from the residual waste stream.

As the above will involve significant changes, they are unlikely to be fully implemented until 2024-25. However, several steps will be taken before this date to incrementally increase Cardiff's recycling performance, and to lay the foundations for the planned changes. The changes will be made on a phased approach, based on local knowledge and data.

For example, in Quarter 3 2022, we will expand the separated recycling collection scheme into further areas. The expansion will involve the provision reusable sacks for the collection of segregated recyclables, as well as a bespoke multi stream collection vehicle, where all material can be collected on the same collection vehicle. The detail from the expanded collection will help to inform the business case for city wide roll out of segregated recycling collections in 2024-25. Alongside the trial, we will continue to expand recycling services through the promotion of our AHP service, introduction of coffee pod, battery and small electrical item recycling and through the expansion of community based recycling facilities.

In relation to Trade Waste, we have already commenced the trial of segregated collections using a one-pass vehicle. Furthermore, the Trade Waste Team is working with both existing and new customers to encourage recycling over residual waste. As such, we hope to see some immediate improvements in trade waste recycling performance.

In addition to the above, several improvements have been implemented in 2021, which will help to immediately improve Cardiff's recycling performance. These include:

- Recycling of AHP waste
- Opening of a Reuse Shop at Lamby Way
- Working with Corporate Partners to ensure reuse and recycling of office furniture
- Segregation of cleansing waste to increase recycling

A summary of the main actions for implementation can be found in Appendix 5.

5. Working with Stakeholders to Deliver the Strategy

5.1 Working Together

Managing waste is not limited to the Local Authority, it is something that all residents and businesses in Cardiff contribute to, and therefore we all have a role to play in ensuring the city's waste is managed in a responsible way, for our own benefit and for that of generations to come. The city is at its best when we work together. Communication and consultation with relevant stakeholders is key, as is working with neighbouring authorities to identify best practice and regional solutions.

The recently opened Re-Use Shop at Lamby Way HWRC is a prime example of what can be achieved by working together. The shop has been introduced through working in partnership with Wastesavers to establish a convenient and environmentally friendly way to give items a new home, instead of disposal. The re-use shop will enable the resale of household items which in turn will benefit the city's recycling rate through waste minimisation. It will provide access to furniture and items for the community at low cost (with associated social benefit), and although likely modest in value, will generate income for re-investing into the service and into the community.

The Re-Use Shop at Lamby Way also provides a clear example of fulfilling the 5 ways of working, as set out in the Future Wellbeing of Generations Act, by thinking of long term prevention in terms of allowing accessibility to affordable goods, collaboration with other local authorities for benchmarking and Waste Savers for delivery.

The Council is also committed to the 'involvement' of local communities and key stakeholders when making decisions. Opportunities for feedback will be available to all throughout the duration of this strategy. The Council will continue to involve residents in the key decisions that need to be made on the journey towards 70% and a circular economy. Following on from the public consultation survey results (Appendix 7), focus groups will be held with key representatives from the community to consider how services can meet the needs of the 32% who felt that different options need to be considered for different areas.



5.2 Community Engagement

Working with residents and understanding the city's communities is integral to influencing better decisions, when seeking to continuously improve Council services.

The Council's Waste Management services work with a comprehensive network of passionate volunteers through the Love Where You Live Campaign. The volunteers and community groups understand the specific needs of their local community and make a considerable impact by offering advice and advocating appropriate Council services to their neighbours.

The relationship with members of the community opens a dialogue with the Council, and provides an opportunity to identify need, map resource and plan future improvements.

Cardiff Council will continue to work together with community groups and volunteers to encourage residents to feel part of their community, engage with community activity and to feel empowered to help each other. In particular, the Council will seek to engage the local community in the Waste Strategy for Cardiff by:

- Working with partners and the community to facilitate the reuse and repair of items
- Providing recycling facilities at easier to reach locations for harder to recycle materials (e.g. facilities for recycling small domestic appliances at local hubs)

- Providing opportunities for community litter pickers to segregate materials for recycling
- Offering Schools a comprehensive recycling led service to further maximise recycling and to encourage recycling behaviours.
- Responding to qualitative feedback, for example through the implementation of focus groups, tracking comments on social media/neighbourhood conversations
- Working with schools and local businesses to empower them to:
 - promote behaviours that align with the waste hierarchy,
 - encourage the transfer of pro-environmental behaviours from home into the school or workplace environment

In addition, and in recognition of Cardiff citizens improving the city's recycling performance and reducing their carbon footprint, the Council will look to fund 'Love Where You Live' initiatives to improve the environment where people live; be it through community supported planters, child friendly play lanes, improvements to parks or maintaining unloved spaces. The aim is to have a City and planet loved by everyone.

5.3 Behavioural Change Strategies

There is an emerging shift in consumer culture and growing environmental awareness (A Litter and Fly-Tipping Free Wales, Consultation Document WG41821). Cardiff will need to harness this awareness, utilising the good will that is prevalent within some communities.

The Council will therefore develop communication, educational and behavioural change programmes that further enhance the measures already in place. Whilst blanket approaches have a place within the city, the Council will make use of all available data to undertake targeted campaigns, based on segmentation data identifying the most effective approach for the area.

As mentioned previously, we will link into toolkits and campaigns such as:

- WLGA's Capturing Recycling
- The Pink Sticker Campaign
- Love Food Hate Waste
- Be Mighty Recycle

The council will also make further use of hyper-localism through communications, for example 'Roath Recycles' to enhance community and locality-based benefits when it comes to sustainable waste management.

With regards to recycling, the focus will continue to be on education and behavioural change, with enforcement as a last resort. When all communication and engagement routes have been exhausted the Council will use the powers under S46 of the Environmental Protection Act 1990 to take enforcement action against residents who are not following policies for recycling. The Council will retain a zero-tolerance approach to other waste and littering offences such as fly-tipping (See Appendix 3: The Waste Education and Enforcement Strategy for further details).

To help address the challenges of changing behaviour in flats and rented accommodation, the Council will work closely with relevant partners, such as Rentsmart Wales to try to strengthen licensing conditions. In addition, the Council will work with landlord associations and letting agents to help distribute recycling messages and infrastructure to hard to reach groups.

Cardiff Council has committed to running a climate crisis behaviour change campaign and recycling will play a key part in this, due to the fact it is a meaningful area where everyone can contribute.

Each communications initiative and service change will be based on delivering value for money, and will seek to collaborate with surrounding authorities, and partners, to adopt best practice, as it exists.



6. Monitor, Measure & Review

6.1 Measure and Review

The Waste Strategy for Cardiff will be reviewed on an annual basis, to monitor progress against the action plan. Costs and progress towards waste and recycling targets will be monitored by Cabinet and the Environment Scrutiny

Committee. As this is a multi-year strategy, with changes anticipated in the material markets, developments in technology and the ongoing development of Cardiff itself, the Waste Strategy will be reviewed every three years.

6.2 Post Service Change Review and Monitoring and Measurement

To understand the impact of any change of service, key metrics will be developed to monitor progress. This information will be captured and analysed by the waste and recycling team and reported to the relevant Cabinet Member, Cabinet and Scrutiny Committee. For

each major service change, there will also be a review of service standards (see Appendix 4) to ensure the needs of customers are still being met whilst improving recycling performance.

6.3 Key Performance Indicators

The service has a number of Key Performance Indicators which underpin the work undertaken. These will continue to be used to monitor performance on a quarterly and annual basis.

The Key Performance Indicators include:

- The percentage of municipal waste collected and prepared for re-use and/or recycled.

- The percentage of waste collected at recycling centres that has been prepared for re-use or recycled.
- The number of education and enforcement actions per month relating to improving recycling behaviour by citizens.

Appendices

- Appendix 1: Waste Strategy Gap Analysis
- Appendix 2: The Pink Sticker Campaign
- Appendix 3: The Waste Education and Enforcement Strategy 2021
- Appendix 4: Service Standards 2021
- Appendix 5: Action Plan Summary
- Appendix 6: WRAP Compositional Analysis Report 2021



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FAIRER
GREENER

