





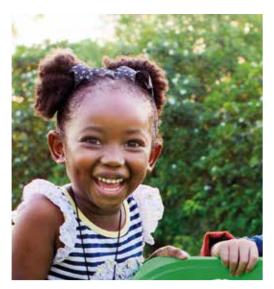


CAERPHILLY COUNTY BOROUGH COUNCIL

DRAFT WASTE AND RECYCLING STRATEGY

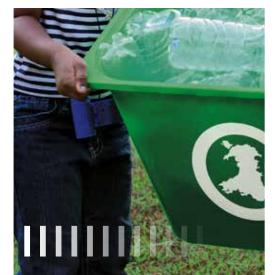
2023-2028













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Councillor Chris MorganCabinet Member for Waste, Leisure and Green Spaces

Council has gained a positive reputation for being a high performing recycling authority. However, over recent years, our performance has slipped and despite some interventions, our performance has continued to drop over the past three years. Since the Covid pandemic, we have seen a significant change in behaviours and we are now producing and reporting much higher quantities of residual (non-recyclable) waste. At present, we have the highest level of residual waste per person in Wales.

Whilst we accept our current collection system is simple to operate and favoured by our residents, it is clear the current model of delivery is no longer fit for purpose, both environmentally and financially. We have challenging national recycling targets set by Welsh Government, and the wider climate change and decarbonisation agendas, set by both UK and Welsh Governments. Furthermore, as a council we have declared our own climate emergency.

We collect over 29,000 tonnes of residual waste from properties each year and we know that over 40% of the waste that is currently placed in residual bins, can be recycled, or composted. Our recovery rates for food waste collection are presently the lowest in Wales and this too, is playing a significant part in our overall current "below target" recycling performance.

This strategy sets out plans on how we aim to drive up our recycling performance and our wider green credentials, taking us back to where we belong, as one of the highest performing waste authorities in Wales.

This strategy also reaffirms our commitment to achieving the Welsh Government's statutory recycling targets and sets our intention to move beyond them, supporting our transition to net zero Carbon by 2030.

The strategy focuses upon three key elements of interventions:

- 1. Diverting recyclable materials from the residual waste stream.
- Expanding recycling collection through new segregation streams, to ensure the material collected is of a higher quality and a valuable resource.
- 3. Improving the performance, offer and overall resident experience at our household waste recycling centres (HWRCs).

We have many challenges ahead, but working together with our residents, we will improve our performance through a combination of changing our collection methodology and adapting our collective behaviours.

I am confident that *Team Caerphilly* will mobilise, bound together with a shared purpose, towards making our county borough cleaner and greener, for today and for our future.



This strategy sets out the significant changes we intend to implement in order to increase overall recycling performance across Caerphilly county borough.

The strategy sets out our position within a national context. It outlines the current service offer and key areas we need to improve and change which include reducing our municipal waste arisings, through a change in the frequency of residual waste collection, improving food waste capture and participation, introducing new measures at household waste recycling centres and exploration of varying collection methods for recycling to improve material quality. It is important to understand the size, scale, and complexity of the challenges ahead.

The strategy explores key areas of data to set out our current performance as well as setting out the rationale for the interventions proposed.

It is also important to highlight the success of the many interventions made to date, to improve recycling rates. Clearly this demonstrates our ongoing commitment to improvement and innovation.

We are acutely aware that we face a unique set of challenges in Caerphilly. We are also mindful that to make sustainable change, we need our residents to work with us and importantly, understand why each of us needs to adapt our behaviours. To understand forensically, the

motivations and barriers to recycling, we have commissioned behaviour change experts to cross match quantifiable waste data provided by WRAP consultants (Waste and Resources Action Programme).

We intend to use this combined valuable suite of evidence to create and design bespoke recycling service changes underpinned with bespoke behaviour change campaigns.



It is clear the council cannot do this alone. A collective effort from all stakeholders and the wider community is essential to achieving sustained success, and within this strategy we have set out our plans for strengthening those key relationships.

Overall, the strategy highlights our current position, the challenges ahead, proposed interventions, overall timescales and key milestones towards achieving the 70% recycling target and importantly, moving beyond it.



The overarching aim of the Waste and Recycling Strategy is to offer a roadmap for Caerphilly county borough council to meet the Welsh Government statutory recycling targets of 70% and beyond, with an overall aspiration to become the highest performing local authority area in the UK.

As well as improving recycling performance, we aim to reduce the overall amount of waste produced, as well as maximise the amount of waste than can be reused, in accordance with the reduce, reuse, recycling hierarchy. This strategy supports the Council's Corporate Plan, decarbonisation aspirations, climate emergency commitments and circular economy ambitions.

To achieve the aims of the strategy, the following key objectives have been set:

- Reduce overall municipal waste arisings (and the amount of residual waste requiring disposal).
- Encourage and maximise waste reduction, repair and reuse.
- Optimise our contribution to renewable energy initiatives through increased public participation in the food waste recycling collection service.
- Improve the quality of (dry) recyclable material collected at the kerbside and capture priority materials.
- Increase participation in food waste recycling (and overall organic waste recycling).

- Increase the opportunities for residents and communities to recycle.
- Develop and enhance our household waste recycling centres (HWRCs) and reuse infrastructure to stimulate the circular economy in Wales.
- Reduce the council's use of single use plastics and encourage others to do the same.
- Make use of all available data, to develop targeted actions to further enhance performance.
- Explore further possibilities of working collaboratively with Welsh councils in the realm of recycling.



The following table outlines focussed actions designed to ensure all objectives are met:

Table 1: Key Objective and Associated Actions

Objective	Actions
Reduce Municipal Waste Arisings.	Reduce the frequency of residual waste collections to 4 weekly (whilst providing additional support for those with special circumstances (including households that produce Absorbent Hygiene Products (AHP) such as disposable nappies and incontinence products).
	Implement a range of measures across HWRCs to maximise recycling, including improved face to face engagement with residents, the introduction of a booking system, a 'pre-sort' requirement and a mixed bag waste ban.
	Work with WRAP to review the collection and disposal opportunities available to our residents for garden waste.
	Areas to be considered include:
	 Charge for kerbside collection of garden waste Undertake kerbside collections in the growing season only
	Develop and promote home composting
Encourage and maximise	Promote our existing network of reuse and repair facilities.
waste reduction, repair and reuse.	Explore and secure opportunities to provide more facilities for reuse, repair and borrow. Develop and promote the network of facilities available.
	Explore and secure outlets for those difficult to recycle components of the waste stream, working with local authority/regional groups/collaborate with private sector and third sector organisations to develop sustainable reprocessing markets.
Optimising our contribution to renewable energy	Enhance the recovery of methane capture from our organic waste arisings through increased food waste participation rates.
initiatives.	Introduce reconfigured/optimised collection service routes that are more fuel efficient, effective and timely for residents and operatives. As well as a phased introduction of green vehicles.
Improve the quality and amount of dry recycling collected at kerbside.	Using technology within the cab to target our engagement and education activity, using a range of advisory literature/graphics to reiterate what, and how to recycle.
	Implement a whole population communications and engagement campaign, including articles in bespoke waste editions of the council's newsletter (Newsline).
	A change to our existing residual and recycling collection.
	Explore opportunities to negotiate improved contract recovery rates and endeavour to secure alternative service providers, outlets and end markets for our dry recycling.
	Review the latest Welsh Government/WRAP Compositional Analysis of our waste arisings and maximise the use of the data.

Objective	Actions
Increase participation in the food waste recycling service (and overall organic waste recycling).	Using data captured from the behavioural study, bags/food waste liners and other interventions will be considered to increase food waste recycling participation, supported with a communications campaign to emphasise the importance of food waste recycling for the environment, climate mitigation and energy security. • Mash for Cash initiative regular monthly prizes Other seasonal campaigns: • Pumpkin Recycling • Christmas Recycling • Feed me till I want no more to coincide with the Six Nations 2023 • World Champion Recyclers to coincide with the Rugby World Cup 2023
	Regular articles within bespoke editions of Newsline, including Manage your Wasteline explaining what happens to our food waste and the benefits of its recovery locally, nationally and globally.
	Compliment this awareness raising programme with a series of dovetailed messages on Food Waste Minimisation using the <i>Love Food Hate Waste</i> campaign and narrative with a local flavour.
	Review the latest WG/WRAP compositional analysis of our waste arisings, and our current recycling contracts and maximise opportunities to improve recovery rates.
	Maximise the use of intelligence from the behaviour change study.
Increase the opportunities for the community to recycle.	Maintain and enhance the network of 'recycle on the go' facilities across the County Borough (targeting high profile locations for visitors, commuters, and shoppers to recycle).
	Enhance the recycling offer at our corporate establishments and educational premises and capture better quality feedstock.
Develop and enhance our infrastructure to stimulate Resource Efficiency and the	Review our existing HWRC offer to ensure it is fit for purpose to support the maximisation of reduce, reuse and recycling opportunities.
circular economy in Wales.	Continue existing processing partnerships and contracts, such as Prosiect Gwyrdd.
	Take an active role to support the <i>Dyfodol Gwyrdd Glan/Clean Green Future</i> collaborative partnership for Welsh Local Authorities and materials such as Absorbent Hygiene Products.
	Enhance and acquire sites to support our overall infrastructure needs.

Objective	Actions
Reduce the use of single use plastic.	Enhance the profile of our Plastic Free Town status at Caerphilly Town and promote activities associated with reuse and refill.
	Develop more Plastic Free Towns across the county borough.
	Deliver a programme of amnesty events for exchange of single use carrier bags for free 'bags for life'. Amnesties to be staged at supermarkets, town centres and corporate events.
	Enhance and promote the local public facilities for recovery of soft plastics/single use plastic.
Increase recycling and food waste from businesses within the county borough.	Planning and implementation of actions to comply with the requirements of the Business, Public and Third sector recycling regulations that are scheduled to be introduced 1st October 2023.
	We are currently collecting 3217 tonnes of commercial waste, of which 2200 is residual, so we need to explore opportunities to recycle more of this waste mass.
Increase engagement and	Consult with residents regarding our proposed collection changes.
education with the public, community groups and schools.	Implement a comprehensive education programme to support increased participation and engagement with recycling and most notably the food waste service.
	Promote the network of reuse and recycling facilities available locally for our residents.
	Develop representative task groups to work on environmental and waste resource management matters, including our school community.
	'It's our future please don't throw it away' principle still applies.
	Work with the council catering service to improve the capture of recycling from the school community waste stream.
Make use of all available data, to develop targeted	Use the findings of the compositional analysis to further refine specific materials to target.
actions.	Undertake a behavioural analysis to establish the barriers and motivations towards recycling.
	Monitor participation to inform targeted education and enforcement activity, via the use of in-cab technology and other sources of data, based on the principal of educate first.
Collaborative working on recycling markets.	Explore and secure reprocessing outlets and develop regional contracts specifically for the range of difficult to recycle/specialist materials (wood, mattresses, textiles, electrical goods, etc.). Working in partnership with other local authorities and organisations including Welsh Government's DYFODOL Team, ERP, Resource Efficiency Wales, the third sector and the private sector.



The Caerphilly Waste and Recycling Strategy is aligned to several key Welsh and European policies and legislative drivers linked to sustainable development, tackling climate change and enabling improved environmental outcomes.

These include but are not limited to:

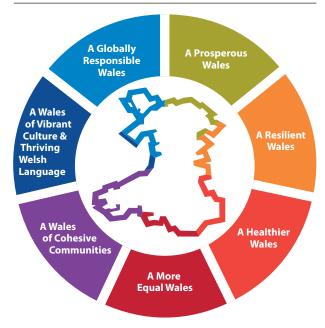
- EU Waste Framework Directive.
- The Waste (England and Wales) Regulations 2011.
- Towards Zero Waste: Our Waste Strategy, 2010.
- Waste (Wales) Measure 2010.
- Wellbeing of Future Generations (Wales) Act 2015.
- Environment (Wales) Act 2016.
- EU 2030 Climate Framework.
- Climate Change Strategy for Wales.
- Watse (Circular economy) (Amendment) Regulations 2020.
- Beyond Recycling A Strategy to make the Circular Economy in Wales a reality, 2021.
- Extended Producer Responsibility Regulations.
- Deposit Return Scheme Regulations.
- Proposals for enforcing Business, Public and Third Sector Recycling Regulations, Consultation Document (released November 2022).
- The Environmental Protection (Single-use Plastic Products) (Wales) Bill, 2022.

The Strategy has been further shaped by major national events including the Coronavirus Pandemic, which has impacted the way waste is produced and managed.

4.1 THE WELLBEING OF FUTURE GENERATIONS ACT, 2015

In 2015, the Welsh Government published the Wellbeing of Future Generations Act (Wales). The Act places a duty on all public bodies in Wales to ensure that they are working to improve the economic, social, environmental, and cultural wellbeing of Wales.

The Act puts in place 7 wellbeing goals



Additionally, there are 5 ways of working that public bodies need to think about how they have applied the sustainable development principle. This Strategy demonstrates how the five ways of working have been embedded throughout our strategic intent and overall approach to recycling and waste management across the county borough.

To demonstrate our commitment to the 5 ways of working, we will seek to ensure that we:

- Work to prevent any increase in waste arisings, and engage with our communities to maximise waste reduction, reuse and recycling.
- Look to embed long-term thinking about the role of recycling and waste management and its impact on our planet.
- Integrate the Strategy and its actions with other Council strategies, the ongoing work of our partners and other organisations to address the climate emergency.

- Continue to work in partnership and collaborate with our partners across the region to develop innovative approaches towards waste prevention and recovery.
- Involve our local communities in shaping our services and to engage with them throughout, reinforcing the importance of their role in helping us deliver the overall aims and objectives of the strategy.

4.2 THE NATIONAL WASTE STRATEGY

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 for Local Authorities to deliver. These are as outlined below:

Table 2: Welsh Government national statutory waste and recycling targets

	2010/12	12/13	15/16	19/20	24/25
Minimum levels of reuse and recycling/composting (or AD)	40%	52%	58%	64%	70%
Minimum proportion of reuse/ recycling/composting from source separation	80%	80%	80%	80%	80%
Maximum level of landfill	-	-	-	10%	5%
Maximum level of energy from waste	-	-	42%	36%	30%
Minimum levels of preparing for reuse (excluding Waste Electrical and Electronic Equipment [WEEE])	-	0.4%	0.6%	0.8%	1.0%

Through the Waste (Wales) Measure 2010, the Welsh Government (WG) made recycling targets from 2012-13 and beyond, statutory targets. This status allows Welsh Government to levy financial penalties against Council's that fail to achieve them.

The statutory targets are weight based and have increased gradually over time. In the current national waste strategy *Beyond Recycling A Strategy to make the Circular Economy in Wales a reality*, the Welsh Government has stated that they will work with Local Authorities and other key partners to develop further future recycling targets in line with their pathway to zero waste and achieving 100% recycling by 2050. Welsh Government indicate that they will put in place

further minimum statutory recycling targets for Local Authorities beyond 2025, potentially at a level of 80% by 2033, to support the trajectory to achieve zero waste (100% recycling) by 2050.

Welsh Government have stated that they want to develop future targets collaboratively to ensure they are based on the capability of the services that are being delivered. In response to this, WRAP Cymru and the Welsh Local Government Association are currently undertaking a Performance and Efficiency project analysing the data that is held to help inform future target setting. The Council is actively participating in this project, the results of which will help inform and deliver this Strategy.



Collections Blueprint

Welsh Government's collection blueprint sets out a recommended service profile for the collection of waste from households, including the following central policies:

- Weekly separate collection of dry recyclables via 'kerbside' sort' with materials being collected separately in boxes and/or in reusable sacks, with two or more boxes provided per household, and recyclables being sorted into separate compartments on the collection vehicle by collection staff at the kerbside during the weekly collection process.
- A separate weekly collection of food waste.
- The use of modern, lightweight, multi compartment vehicles for single pass collection of dry recyclables and food waste.
- Fortnightly collection of residual waste and reduced residual waste capacity, and no side waste policies enforced.



4.3 CLIMATE CHANGE

In 2019, Wales became the first UK nation to declare a 'climate emergency'.

In Beyond Recycling: A Strategy to make the Circular Economy in Wales a reality, the Welsh Government make it clear that:

"We are still in the midst of a climate emergency: globally, we are experiencing unprecedented climate events: we are on track from 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 organism. 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 waste disposal processes. The circular economy approach is key to tackling over consumption, whilst also instigating social and economic improvements for Wales.

In Wales municipal recycling rates have increased from just 4.8% in 1998-1999, to more than 65% in 2021-22. This increase has made a significant difference to emissions, saving around 400,000 tonnes of CO² per year from being released into the atmosphere. The Welsh Government has set a target for the country to achieve net zero emissions by 2050 and is investing £2 billion to support communities, businesses, and organisations in their collective efforts to tackle climate change.



5.1 CAERPHILLY COUNTY BOROUGH COUNCIL'S CORPORATE PLAN

Caerphilly county borough council's corporate plan spans the period 2018-2023 and is focussed upon creating a better place to live, work and invest in. An updated version of the plan is due to be considered by Council in May 2023. The draft plan incorporates a specific objective to *maintain a cleaner greener environment* with a specific outcome to achieve Welsh Government's challenging waste and recycling target.

5.2 HOUSING AND POPULATION GROWTH

The 2021 Census identifies a population for Caerphilly county borough of 175,900, which is a decline of 2,900 people compared to the 2011 Census. There has, however, been a 2.4% increase in the number of households over the last Census period, with the 2021 Census indicating that there were 76,300 households with at least one usual resident, compared to 74,500 households in 2011.

It is important to note though that whilst the Census data is key to Planning Strategy and Policy, the Authority's Council Tax Team presently account for 80,441 domestic (Council Tax) properties and 5,419 Non Domestic (Commercial) establishments within the county borough.

Welsh Government 2018-based projections, which are trend based, suggest an increase in population of 1% between 2020 and 2035, driven primary by net-migration into the county borough. These projections indicate that the

number of households in Caerphilly county borough will increase by 2,400 between 2020 and 2035, driven largely by an increase in singleperson households.

However, it is important to note that Caerphilly's second Replacement Local Development Plan, which is currently being prepared, will seek to make provision for an increase of around 10,700 people (4,100 working age) and 6,750 dwellings over this period, in order to accommodate the Cardiff Capital Region City Deal's aspiration of an additional 25,000 jobs across the region and to reflect the county borough's position within the Cardiff, Newport and the Valleys National Growth Area as set out by Future Wales.

5.3 CLIMATE CHALLENGE

In 2019 the Council declared a climate emergency and committed to becoming carbon neutral by 2030. As part of these efforts, a Decarbonisation Strategy has also been adopted which will enhance the Council's work in reducing carbon emissions and investing in efficiency measures across its portfolio. 'Reduce, Produce, Offset, Buy' aims to tackle the climate emergency by reducing the amount of carbon going into the atmosphere, as well as creating financial and social benefits, through reducing energy bills for the Council and its tenants.

Minimizing our carbon footprint will necessitate the delivery of more resource efficient working systems as well as delivering more initiatives that stimulate the circular economy. Providing cleaner air and improving the quality of the aquatic and terrestrial environments are key objectives that link to the better management of waste. The Authority's Decarbonisation Action Plan includes actions for key service areas to contribute to.

For the Waste Management functions this includes:

- Investigate opportunities for reducing (no gain) final waste disposal systems.
- Life Cycle Analysis design out single use product/packaging.
- Procure goods that are less impacting on the environment.
- Repair First /Recycle last.

The Authority's Decarbonisation Strategy dovetails with the Welsh Government's 'Beyond Recycling' mantra with the core principles centring on:

- Reduce the amount of energy we use.
- Produce our own green electricity and heat.
- Offsetting carbon emissions.
- Buy goods with carbon implications in mind, carefully procuring appropriate goods and services.

The Authority's Waste Team has developed a platform upon which to develop its carbon friendly working systems. This includes contracts for the operation of a renewable energy system involving methane capture and recovery from an old brown field (landfill) site and the supply of feedstock in the form of kerbside collected food waste to contribute to a local anaerobic digestion facility (AD). Both projects capture significant quantities of the most powerful and potentially damaging of greenhouse gases with the AD facility presently generating enough power to generate electricity for 2000 households all year round.

5.4 CURRENT SERVICE PROVISION FOR RESIDENTS

5.4.1 WASTE COLLECTIONS

The Authority provides a range of household waste and kerbside recycling collection offers to residents:

- Weekly kerbside collection of mixed, dry recycling in a brown 240L wheeled bin. Additionally, a small proportion of the county borough utilise 55L boxes and/or single use sacks. First issue and replacement wheeled bins and boxes are supplied to residents at a fee, £27.85 and £6.68 respectively.
- Weekly kerbside collection of food waste using a 23L food waste caddy. Caddies are supplied free of charge with the option of having a small 5L internal caddy in addition to a 23L external caddy. Biodegradable bags are not currently offered to residents, we will continue to promote alternative methods of lining the caddy with paper.
- Garden waste is collected in reusable sacks on a weekly basis. It is co-collected with food waste on a twin pack vehicle. There is no annual charge for garden waste collections, and we collect all year round. First issue and replacement sacks are supplied to residents at a fee of £3.34. There is a limit of 4 sacks per household to effectively manage capacity of the rounds.
- Residual waste is collected fortnightly in a 240L wheeled bin, or a maximum of 4 black bags per fortnight for those who do not want to purchase a wheeled bin. Bin lids must be closed with a supplementary zero side waste policy in place. Additional capacity is available for residents with medical needs, children in nappies or a large family in a single household.
- On request and subject to fulfilling strict eligibility criteria, extra capacity is available for residents producing larger quantities of waste, (family size, medical conditions or nappy waste where 2 of more children are in full time nappies). This waste is collected fortnightly alongside the residual waste collection service.
- A chargeable collection for bulky waste, (i.e. furniture is provided). Collections can be booked up to 30 days in advance. This service is accessed through a self-service online form, face to face appointments or via the telephone to the contact centre. The pricing structure is £17.47 for up to 3 items, £22.93 for 4 items, £28.39 for 5 items and £33.85 for 6 items. More than 6 items require a bespoke

quotation. The pricing structure is subject to ongoing review to ensure the sustainability of the service offering.

5.4.1.1 Compliance with Collection Blueprint

The Welsh Government Blueprint relies on the collection of recyclables that are presented part-segregated by residents. The material is then further sorted by operatives at the point of collection. The current co-mingled recycling collection service operated by the Authority is the only element of the collection services that is not blueprint compliant, although other key principles of the blueprint have been adopted i.e., weekly food waste collection and fortnightly residual collection with a no side waste policy.

5.4.2 HOUSEHOLD WASTE RECYCLING CENTRES (HWRCS)

Caerphilly has 6 Household Waste Recycling Centres (HWRCs) located across the county borough. These are located in Rhymney, Penmaen (Blackwood), Penallta (Pen-y-Bryn), Full Moon (Cross Keys), Aberbargoed and Trehir



waste are taken to Bryn Recycling for secondary sorting under a framework contract to recover the recyclable element.

Whilst this contract was performing favourably, over recent years the gate fee has gradually increased and our recovery rates have declined from 70% recovery in 2018/19 to 57% in 2021/22. This alone has had a negative effect of circa 1% on our overall recycling rate.

Commercial Waste is not permitted at the sites. A van and trailer permit system is in place for domestic usage. Permits are processed and issued electronically. Those who are not digitally enabled have the option to obtain a printed permit via a face-to-face appointment.

Whilst we continue to invest to improve the infrastructure at the HWRCs, some of the sites have a limited potential to meet the needs and aspirations of our residents and their expectations for a modern resource efficient and friendly service offer. We recognise the need to innovate and re-design our services to ensure we meet future Welsh Government legislative requirements, as well as providing services that are sustainable, efficient and provide social and economic value.

To this end, we have recently applied to Welsh Government for funding to redevelop our busiest Household Waste Recycling Centre at Trehir in the Caerphilly Basin (population catchment 60,000). This site has the potential to offer a modern reuse and recycling facility, where recovery rates are maximised and contribute to the decarbonisation objectives of the Authority and Welsh Government by reducing the amount of car miles travelled, estimated to save over 184,000 car miles per year.

In October 2022, with financial support from Welsh Government, the council opened its first Reuse Shop. Within a short time, this new drop off facility has been successful in the salvage, reuse and resale of more than 13,000 items. As well as generating income levels of approximately £1,000 a week, the amount of waste having to be disposed of has also been reduced.

This facility is centrally located complements our existing Furniture Revival complex in the north of the county borough which specialises in the collection and resale of reusable bulky household furniture. The two sites form the cornerstones of an evolving reuse and repair network which augurs well for the circular economy locally and across the region and country. These facilities have also created additional employment within the county borough.

5.4.3 COLLECTING TRADE WASTE FROM COMMERCIAL PREMISES

The Authority presently provides a trade waste collection service (sacks and wheeled bins) for 1,176 businesses, and this represents a quarter of the business premises operating across the county borough. The latest annual reporting figure confirmed 3,217 tonnes of waste was collected and disposed of.

Whilst we are awaiting specific figures on this part of the waste stream, we understand that there is scope to improve recovery rates from this part of the waste mass. Whilst Dry Mixed Recycling lends itself quite readily to recycling collections, the food waste generated from food premises is more challenging as the size of food caddies can be impractical for cafés, pubs and restaurants to facilitate.

5.5 WHAT HAPPENS TO THE MATERIAL WHEN IT'S COLLECTED OR DISPOSED?

5.5.1 RESIDUAL (REFUSE) WASTE

Caerphilly has a long-term contract partnership with neighbouring authorities as part of the Prosiect Gwyrdd consortium to dispose of its residual waste collected from the kerbside. This is a 25-year contract which commenced on 1st September 2015. In 2021/22 33,792.44 tonnes of residual waste was delivered to Viridor as part of this contract. The waste is directly delivered by refuse collection vehicles to the Full Moon Waste Transfer Station, Cross Keys, to be prepared for transporting to an Energy from Waste Facility (EfW) operated by Viridor in Lamby Way, Cardiff. The facility generates 250 GWh of electricity for over 60,000 homes. The energy is generated by thermal treatment of the waste in a controlled system. A by-product of this process is the bottom ash, which can be used as aggregate material as well as transporting metal on to metal processors.



5.5.2 ORGANIC WASTE (FOOD AND GARDEN)

Food waste is taken to a local Anaerobic Digestor (AD) operated and controlled by Bryn Power. The AD process breaks down the food without oxygen. Gases are produced and harvested to create heat and electricity, whilst other valuable by products include a liquid bio-fertiliser that can be utilised in agriculture as well as a solid residue soil conditioner that is used by landscape gardeners and local communities in allotment and horticultural projects.

Garden (grass and shrub cuttings, leaves etc.) waste is taken to Bryn Recycling for processing through an open windrow process. The organic waste is shredded, mixed, and placed into windrows. The windrows are turned regularly to improve oxygen, distribute heat to regulate the temperature and distribute moisture. As a result, the process generates soil conditioner and compost that is used by community groups and commercial landscapers.

The current contract for organic waste processing commenced on 1st April 2018 and expires 31 March 2033 with THE option to extend for a further 5 years. In 2021/22 9,676 tonnes of organic waste was collected at the kerbside, which contributed to around 12% of our overall recycling performance.

5.5.3 KERBSIDE RECYCLING COLLECTION (DRY MIXED RECYCLING)

Our kerbside collection vehicles directly deliver over 18,000 tonnes of dry recycling material per annum to the Full Moon Waste Transfer Station, Cross Keys, where it is bulked up and transported to a Material Recovery Facility. This service contributes around 19% of our overall recycling rate. There is currently a short term 2 year contract in place which commenced in December

2021 with an option to extend by a further 2 years. Our mixed dry recycling is managed by brokers, Newport (Shropshire) Recycling, who manage the appropriate treatment and processing of the collected materials. The end reprocessing points vary depending on the market conditions and capacity. Presently, our dry mixed recycling is taken to facilities in West London (Bywaters), Avonmouth (SUEZ) and Shotton (UPM). The dry mixed recycling is sorted both mechanically and manually.

You can find out where your recycling goes at www.myrecyclingwales.org.uk

5.6 CURRENT PERFORMANCE AND COMPARISONS

Caerphilly's recycling performance is outlined below alongside the Welsh Government statutory targets.

As Graph 1 illustrates, Caerphilly has historically performed well against Welsh Government targets, however, over the last 3 years recycling performance has declined. Performance for 2019/20 of 62.51% and 2020/21 of 61.90%, both fell below the statutory target of 64%.

On April 1st, 2019, the proof of residency rules was implemented at household waste recycling centres and there is a correlation with the downturn in recovery rate and the introduction of the proof of residency rules.

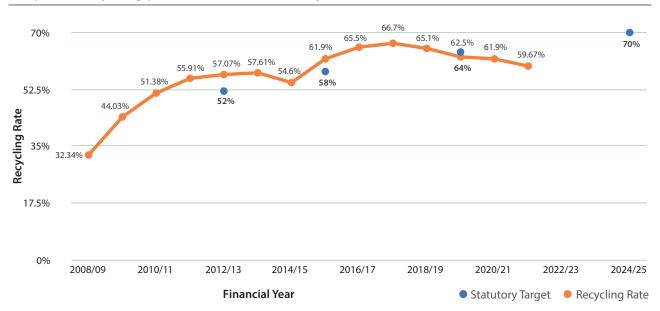
Whilst benefiting from a decrease in waste tonnage into the HWRCs, the recovery rates have fallen proportionately, indicating that the material that was coming to us from cross border contained a significant portion of easy to recycle material. This trend has continued with the continuing enforcement of the rules at the HWRCs.

In 2020/21, whilst we continued to offer the range of kerbside collections, the dry recycling tonnages increased but at the same time the residual tonnage increased considerably too, which compromised our recovery rates. Additionally, in the midst of the pandemic, the limited availability of end markets (notably the textile reprocessing facilities), further affected our recycling endeavours and we also suffered further from the performance of the contractor who delivers a secondary sort service for our HWRC general waste and street cleansing arisings.

There were no performance improvements made during 2021/22, with performance falling a further 2.23% from 2020/21 to 59.68%. During this period, a major fire at our contractor's multimillion pound MRF facility resulted in the loss of DMR and a reduction of approximately 0.40% on the 2021/22 recovery rate.

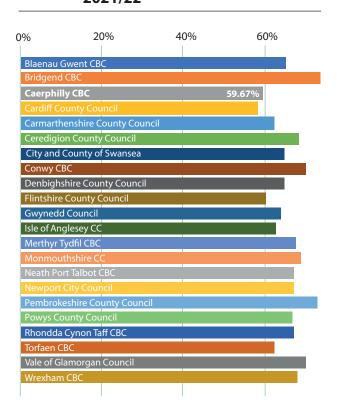
Caerphilly's performance for 2021/22 alongside other Welsh Local Authorities is illustrated in the graphs on pages 15 and 16.

Graph 1: Recycling performance trend analysis



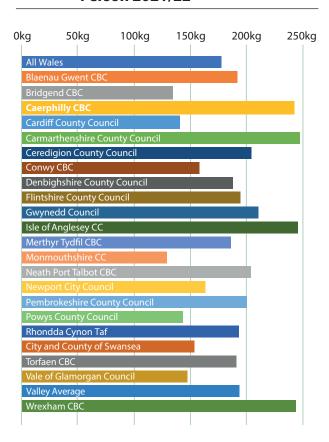


Graph 2: All Wales Average Reuse, Recycling and Composting Rate 2021/22



Caerphilly has the third highest level of residual waste per person in Wales at 243kg (all Wales average is 178kg and valley authority average is 194kg). As a percentage the Authority has the second highest overall residual waste rate in Wales at 40.32%.

Graph 3: All Wales Residual Weights Per Person 2021/22

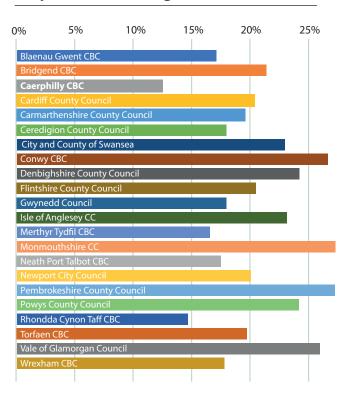


Currently the amount of Dry Mixed Recycling tonnage we capture puts us 4th in the league table and 8th in terms of recovery rates for this portion of the waste mass. However, there is a still more of this material to reclaim and reprocess and the data below confirms another 15% is potentially recoverable from the residual waste mass.

Our organics performance (Graph 4) only contributes 12.53% to our overall statutory recycling target which is the lowest organics capture rate in Wales and an area that needs to be targeted.



Graph 4: All Wales Organic Rates 2021/22



5.7 SO WHAT DOES THIS INFORMATION TELL US?

One key area for improvement is food waste. We are presently lowest in the performance league table for this fraction. The All-Wales waste arising survey undertaken in May and December have calculated that over a 12-month period, there is potentially 9,105 of food waste to capture in our residual bins.



In November 2022 WRAP Cymru selected consultants SLR to undertake a comprehensive performance assessment of our waste recycling services. The council is working with WRAP and SLR to model some alternative systems that are in operation across the UK that could integrate here. Details of the proposals have yet to be ratified. The results of the work are expected in the New Year.

All Wales Waste Compositional Analysis

In 2022 the All-Wales Waste Analysis was commissioned by Welsh Government and WRAP.

The data arising from the summer and winter analysis provides some helpful messages.

Table 3

Tonnes of residual waste	29,504
Tonnes of food waste in residual mass	9,105
Tonnes of recyclate in residual mass	4,109

This reveals that there is approximately 44% of recyclable material in our residual bins.

Therefore, to improve our overall performance, we need to extract the food waste and recycling material that is currently being presented in the residual waste bin for collection.



5.8 SO HOW COULD WE DO THIS?

Many councils have reduced residual (refuse) collections, including Conwy Council and Blaenau Gwent Council.

The data collected from Conwy and Blaenau Gwent provides evidential data that supports the recovery rate we are proposing.

	Blaenau Gwent		Conwy	
Date	Residual frequency	Recovery %	Residual frequency	Recovery %
2014/15	2 Weekly	50.3%	2 Weekly	59.1%
2015/16	2 Weekly	48.7%	2 Weekly	59.7%
2016/17	3 Weekly	56.8%	3 Weekly	62.6%
2017/18	3 Weekly	56%	3 Weekly	63.7%
2018/19	3 Weekly	59.3%	3 Weekly	64.9%
2019/20	3 Weekly	65.3%	4 Weekly	69.3%
2020/21	3 Weekly	64.3%	4 Weekly	70.2%
Current	3 Weekly	64.9%	4 Weekly	70.2%



However, we are aware that Blaenau Gwent cannot attribute any performance benefits directly to reduced residual collection alone, as the change wasn't made in isolation. It was made in parallel with a change to the recycling service collection model, further supported with presorting requirements at their HWRCs a couple of years later. Whereas Conwy's change to residual collection was made in isolation, with no changes made to their overall recycling model.

We have formulated the recovery rate data detailed below using the data we have obtained from the WRAP analysis, supported with other local authority data.

This data suggests a significant increase in our recovery rates could be achieved if we reduce our residual frequency. This is of particular significance as we are within the top 3 highest residual waste tonnages per household.

As our overall tonnage for dry recycling collection is performing very well, our organics data suggest we are very low when compared against the All Wales performance table (bottom third). Moving to either 3 weekly or 4 weekly residual collection, will decrease our residual output and greatly increase our food waste output. Both of which will have a significant effect on our performance figures as demonstrated below:

Collection	Recovery Rate
2 Weekly (current)	59.68% (actual 2021/22)
3 Weekly	64.06% (potential)
4 Weekly	66.44% (potential)



This section details the actions that will be undertaken to deliver each of the objectives which underpin the strategy.

6.1 REDUCING MUNICIPAL WASTE ARISINGS

6.1.1 REDUCE GENERAL WASTE KERBSIDE COLLECTION FREQUENCY

There is a clear link between the reduction of frequency of general waste collections and improved recycling performance. We have assessed the impact of reducing the frequency of collections from 2 weekly to 3 weekly and from 2 weekly to 4 weekly. Noting that for 4 weekly collection additional support for those with special requirements such as households that produce Absorbent Hygiene Products (AHP) would be required, e.g. disposable nappies and incontinence products.

We anticipate that a 4 weekly collection regime would reduce tonnage collected at the kerbside by approximately 11,338 tonnes and provide an increase of 6.76% to our recycling performance. The implementation date for such a service change could be delivered in Autumn 2023. However, this would be preceded by an extensive engagement and communications programme for residents and operational staff. It is important to note that our neighbouring Authorities including Rhondda Cynon Taff, Merthyr, Newport and Cardiff are also planning a collection frequency change.

Table 4: Comparison of 3 and 4 Weekly
Residual Collection Performance

Service Change	Performance benefits
Residual waste frequency (3 weekly)	Additional 4.38%
Residual waste frequency (4 weekly)	Additional 6.76%

6.1.2 REDUCE GENERAL WASTE TAKEN TO HOUSEHOLD WASTE RECYCLING CENTRES

The current household waste recycling centre's recycling performance is heavily reliant on secondary sort practices which comes at a significant cost. We need to improve the levels of on-site recycling to minimise cost, whilst ensuring we continue to achieve high recovery rates.

The Authority has commissioned a detailed modelling analysis with WRAP to analyse the composition of our general waste containers on our 6 sites to establish best practice on HWRCs across other councils. Additionally, consideration is being given to various options to reduce residual waste, enhance recycling and recovery rates, recognising the impact of proof of residency, acknowledgment of changes to site layouts and the potential for new signage.

It is recognised that the following areas will yield positive results in reducing the levels of general waste taken to our HWRCs.

- Booking system.
- Implement a "pre-sort" requirement (including a mixed waste bag ban policy).

In line with systems utilised by other Local Authorities, the Council is considering a digital booking system to access the network of HWRCs, which would be aligned to the change to residual waste collections. Combined with the introduction of new user stipulations, such as pre-sort waste requirement and mixed waste bag ban policy, this can assist with the control of current levels of misuse, reduce congestion, and facilitate a better overall user experience. These measures should help us improve recovery performance and whilst we are likely to receive a spike in usage, (as a consequence of reduced residual collection frequency), the new stipulations will reduce deposits of residual waste. Furthermore, the combination of measures will deflect a significant amount of commercial waste traffic, which will mainly be redirected to private sector waste disposal outlets and out of our waste stream.



In the short-term, whilst awaiting the report from WRAP, we recognise there are some other interventions that will improve the overall user experience. These include further training for staff to encourage better engagement with service users, improved signage and communication, review of site layouts, and a targeted communication strategy and tighter supervision. Whilst this may not have a direct impact on performance (as the material is currently recovered via a secondary sort) it will lay the foundations for future measures and interventions.

Table 5: HWRC Proposals and Performance Benefits

Service Change	Performance Benefits
Implementation of a Booking system	Additional 1.5%
Pre-sorting requirements	Additional 1.5%

6.2 ENCOURAGE AND MAXIMISE WASTE REDUCTION, REPAIR AND REUSE

Repair and reuse are fundamental parts of the circular economy, maximising the lifespan of products to keep them in circulation for longer and increasing their rate of usage, so that the maximum value is obtained from the resources invested in the design, manufacture and distribution of those products.

Moreover, with a cost of living crisis, a repair and reuse enterprise focus has shifted from waste diversion and avoidance as its primary function to supporting our local communities and those who need our services most. This further emphasises the Council's ethos of having a social and welcoming heart.

Notwithstanding, encouraging waste reduction, repair and reuse is an integral part of the strategy. We will continue to promote our existing network of repair and reuse facilities and explore and secure opportunities to provide more facilities for repair and reuse.

Further potential exists to collaborate with other industry leaders in this space such as *Benthyg Cymru - Wales' Library of Things* and *Repair Cafe Wales*. A model that allows customers to borrow any item that they need for a small fee, saving money on purchasing and space in their homes.

6.3 OPTIMISING OUR CONTRIBUTION TO RENEWABLE ENERGY INITIATIVES

This year we have introduced an incentivisation scheme to reward regular participation in the food waste service and are continuing with participation monitoring for this. We have also commenced a targeted monitoring and engagement initiative to ascertain the reasons for non-participation. A short survey will be

carried out to establish barriers to recycling. This information will then be used to carry out some targeted behaviour change programmes, forming part of the suite of interventions resulting from the PWC behavioural study which has been commissioned.

There is a significant benefit to be had from recycling food waste, as it offers an opportunity through the recycling process, to recover methane from our organic waste and generate electricity. Through increasing participation and encouraging more residents to become involved in this process, we can further maximise the renewable energy benefits recycling food has.

Whilst we continue to promote alternative methods of lining food waste caddies we are also looking to provide free of charge bio-bags to residents to increase participation levels in the weekly food waste recycling service.

We are heavily focused on reconfiguring and optimising our current collection service routes. The aim is to develop routes that are more fuel efficient, effective, and timely for residents and operatives. The routes for the service have been optimised and will be introduced as part of the residual waste frequency changes.

Table 6: Food Waste Interventions and Performance Benefits

Service Change	Performance Benefits
Food waste liners and incentivisation	Additional 1%
Monitoring/ engagement/ enforcement	Additional 1% - 2%

6.4 IMPROVE THE QUALITY OF (DRY) RECYCLABLE MATERIAL COLLECTED AT KERBSIDE

Whilst general participation levels across the dry recycling collection service are good, the quality of the recycled material is compromised, as it is contained within a closed vessel making a visual inspection difficult. The quality of the material has been problematic for us over previous years and has hindered our ability to obtain an outlet to mechanically sort the material.

This financial and operational risk is being carried by the Council within the context of an increasingly volatile competitive market. This risk must be addressed as part of our overall strategy.

Our recycling collection method does not currently comply with the Welsh Government's preferred blueprint model which relies on the separate collection of materials at the kerbside.

In December 2022, work began with the government consultants, Waste and Resource Action Programme (WRAP) to identify and model different collection method changes for the Authority and the potential performance benefits yielded from of these changes. Additionally, the latest composition analysis of our kerbside general waste will further assist to inform decisions on how to maximise recycling performance and quality.

One recommendation made by WRAP to improve the quality of materials collected at the kerbside is to change the recycling collection method to multi-stream/source segregation. These methods fall in line with Welsh Government's preferred collections blueprint. However, a recycling service change is a medium-term consideration that will be analysed in detail.

The Council will also seek to explore opportunities to negotiate improved contract recovery rates and endeavour to secure alternative suppliers and end markets for our dry recycling, as part of this recycling collection assessment, to reduce the risk exposure to the Council.

Table 7: Recycling Collection Interventions and Performance Benefits

Service Change	Performance Benefits
Kerbside sort	Additional 1% - 2%
Multi-stream	Additional 1% - 2%
Maintain current system with strict monitoring / behaviour change	Additional 1% - 2%

6.5 INCREASE PARTICIPATION IN THE FOOD WASTE RECYCLING SERVICE AND THE AMOUNT OF ORGANICS RECYCLED OVERALL

An incentivisation scheme complimented by a specific communications campaign to emphasise the importance of food waste recycling for the environment, climate mitigation and energy security, has already commenced, which includes:

- Mash for Cash initiative regular monthly prizes
- Other seasonal campaigns:
- Pumpkin Recycling
- Christmas Recycling
- Feed me till I want no more coincide with the Six Nations 2023
- World Champion Recyclers coincide with the Rugby World Cup 2023

Targeted monitoring through 'door knocking' has commenced and the second phase of this campaign will continue early 2023. The aim of the pilot is to monitor participation, conduct surveys to establish barriers to recycling food waste, which will further inform the behaviour change analysis taking place.

All awareness raising schemes will be complimented with a series of dovetailed messages on food waste minimisation, using the Love Food Hate Waste campaign and narrative. Additionally, regular articles will feature in bespoke editions of Newsline, Manage your Wasteline, explaining what happens to our food waste and the benefits of its recovery locally, nationally, globally.

Table 8: Food Waste Interventions and Performance Benefits

Service Change	Performance Benefits
Food waste liners and incentivisation	Additional 1%
Monitoring/ engagement/ enforcement	Additional 1% - 2%

6.6 INCREASE THE OPPORTUNITIES TO RECYCLE ON THE GO (24HRS/365)

The Council already has a network of 'recycling on the go' facilities to encourage residents to recycle outside of the home. It is our intention as part of this strategy to enhance the network of these facilities across the county borough (targeting high profile locations for visitors, commuters, and shoppers to recycle).

We will also enhance the recycling offer at our corporate establishments and educational premises (to lead by example) and capture improved quality feedstock. All schools across the county borough have recently been provided with new internal recycling containers to encourage participation and promote awareness. We will continue to review and enhance this provision as part of our overall communications and engagement plans.

6.7 DEVELOP AND ENHANCE OUR INFRASTRUCTURE TO STIMULATE A RESOURCE EFFICIENCY AND CIRCULAR ECONOMY IN WALES

The Council works closely with the Circular Economy Division of Welsh Government. The objective is to develop new and modern HWRC provision across the county borough, offering reuse and recycling capacity for a wider range of materials and providing a professional 'meet and greet' experience for service users.

An application for funding for the development of Trehir, Caerphilly, is being carefully considered and progressed with Welsh Government.

6.8 REDUCE SINGLE USE PLASTIC

Single-use plastics, or disposable plastics, are used only once before they are thrown away or recycled. In 2022, the Welsh Government introduced *The Environmental Protection (Single-use Plastic Products) (Wales) Bill*. The legislation would mean it is an offence an offence to supply or offer to supply littered and unnecessary disposable single-use plastic products including cutlery, plates, stirrers and drinking straws to consumers in Wales. The legislation would provide local authorities with the power of enforcement.

To reduce single use plastic, the Council will undertake a variety of public engagement and awareness activities including:

- Enhance and promote the local public facilities for recovery of soft plastics/single use plastic.
- Enhance the profile of our Plastic Free Town Status at Caerphilly Town and promote activities associated with reuse and refill.
- Regeneration, Planning and Procurement departments to support and facilitate eco activities at local business premises.
- Incorporate 'refill station' at the new interchange at Caerphilly.
- Develop more Plastic Free Towns and Communities across the county borough.
- Deliver a programme of amnesty events for exchange of single use carrier bags for free 'bags for life'.



6.9 TRADE WASTE

The Council presently collects and disposes of 4,356 tonnes of waste from commercial premises, we need to explore the potential to recycle more of this waste mass which in turn could contribute towards our target attainment.

We also need to plan to comply with the requirements of the Business, Public and Third sector recycling regulations that are programmed to come in on 1st October 2023. The proposals are currently being consulted upon with a deadline February 2023. This legislation, if implemented, will set a requirement to separate a wide range of materials. This could place a considerable burden upon the Authority to offer a bespoke source separated collection from trade waste premises. At this stage it is difficult to forecast if this regulation will contribute to an improvement in our recycling figures.

It is proposed to separate the trade waste collection from the residual waste collection and undertake a review of the service.

Table 9: Trade Waste interventions and performance benefit

Service Change	Performance benefits
Implementation of separate commercial collections	Additional 1%

6.10 MAKE USE OF ALL AVAILABLE DATA, TO DEVELOP TARGETED ACTIONS

In order to ensure evidence based decision making takes place, it is important to ensure we have current and varied data that represents the whole service, both quantitatively and qualitatively. We are currently capturing key data on public behaviour around recycling across Caerphilly county borough; a waste compositional analysis; waste collection and HWRC modelling.

It is proposed, during 2023/24, to install digital real-time technology to allow us to gather an accurate and timely picture of participation rates, contamination rates, missed bins, etc. This will further enhance the broad evidence base we already have to further assist our decision-making process and inform our communications and engagement approach.

6.11 COLLABORATIVE WORKING ON SECURING RECYCLING MARKETS

The recycling market is hugely volatile and unpredictable, and can pose significant logistical challenges, especially for difficult to recycle materials.

The Council will seek to explore and secure reprocessing outlets and develop regional contracts specifically for the range of difficult to recycle/specialist materials (wood, mattresses, textiles, WEEE etc.). Additionally, develop partnerships with other local authorities and organisations including Welsh Government's DYFODOL Team, ERP, Resource Efficiency Wales, the third sector and the private sector.



To deliver the objectives and overall aim of the strategy, a series of key milestones have been identified. These milestones include key political decision-making timelines, as well as proposed implementation dates of key interventions including the proposed changes to household waste recycling centres, changes to residual waste collection frequency and evaluation and implementation of changes to recycling collection methods.

The tasks are phased to incrementally increase our recycling performance and lay the foundations for further changes. The estimated timeframes capture key elements associated with each milestone, such as consultation and engagement, development of infrastructure, procurement of vehicles/containers and the conclusion and evaluation of data collation and analysis.



Table 10: Timetable and Key Milestones

PWC behavioural analysis	December 2022 - April 2023	
WRAP options appraisal	January 2023 - April 2023	
Finalise draft strategy and approach	January 2023 - February 2023	
Political approval - draft strategy	February 2023 - June 2023	
Political approval key actions following evaluation of behaviour analysis	March 2023	
Consider the possible roll-out of food waste liners and other interventions	June 2023	
Consideration of options and draft reports following WRAP reports (to also include finalisation of compositional analysis)	April - July 2023	
Political decisions on recycling collections following WRAP reports	July - December 2023	
Draft/final 2024/2025 budget considerations	December - February 2024	
Infrastructure feasibility and delivery	January 2023 - 2024	
Mobilisation of move to separate recycling collection	December 2023 - June 2024	
Implement separate recycling collections	June 2024 - August 2024 (earliest) June 2027 (latest)	
Implement HWRC changes	December 2023 - October 2024	
Implement green waste changes	June 2024 - August 2024	
Engagement and communication residual changes	March 2023 - September 2023	
Residual changes roll-out	October 2023 - November 2023	
HWRC booking system and pre sort	September 2023 - November 2023	
Separate trade waste collection implemented	September 2023 onwards	
Trade waste review	January 2024 - March 2024	
Communication and engagement programme	From January 2023 onwards	
Contract review	April 2023 - June 2024	
Review of staffing	January 2023 - June 2023	
Evaluation and further refinement	January 2025 - March 2028	



WORKING WITH STAKEHOLDERS TO DELIVER THE STRATEGY

anaging our waste in a sustainable way is not limited solely to the Council. It is an area that all businesses and residents have a social, moral and financial responsibility to actively contribute towards. As such, we each have a role to play in ensuring our waste is managed responsibly, not only for our benefit but for the benefit of our future generations.

Communication and consultation with relevant stakeholders are key components of this strategy and understanding barriers surrounding recycling behaviour is fundamental to tailoring our services and improving our overall performance.



Working closely with our contractors and liaising with local authorities both nationally and internationally to identify best practice and the exploration towards regional solutions is another key consideration in our journey towards achieving a 70% recycling rate and beyond.

The Council is committed to the involvement of local communities and key stakeholders when making decisions. Opportunities for feedback will be available throughout the duration of this strategy. The Council will continue to involve residents in the key decisions that need to be made in the journey towards the 70% recycling rate and beyond.

8.1 BEHAVIOURAL CHANGE STRATEGIES

In the UK, 70% of UK food waste (post-farm gate) comes from households, equivalent to a value of over £14 billion a year and 25 million tonnes of GHG emissions. With that in mind, Caerphilly county borough council will focus a significant resource on improving food waste participation.

Caerphilly county borough council has worked closely with WRAP Cymru for a number of years on behaviour change and recently participated in the UK Food Survey in December 2021.

It is important to note that *The UK Household*Food Waste tracking survey Winter 2021:
Behaviours, attitudes, and awareness, highlighted a sharp decrease in reported levels of food waste, due in part to the food consumption and disposal behaviours people adopted during lockdown.



The latest finding, an average of 19.3% is marginally down from June 2021 (19.7%) but still demonstrates that food waste is back in line with the levels recorded in 2018. Based on the latest estimates, almost 3 in 10 UK citizens (29%) classify as having higher levels of food waste.

18 to 34 year olds and those with younger children aged 0-10 years are more likely to classify as having higher levels of food waste. The same is true of those who feel under time pressure, eat more meals out and takeaways, follow a diet (e.g. Atkins, intermittent fasting) and purchase a ready-made food kit or fruit and veg box.

To gain a deeper insight into the behaviours and perceived barriers on a local level, Caerphilly county borough council has engaged with Price Waterhouse Cooper (PWC) to develop a bespoke data gathering programme. A series of engagement sessions, data mapping, and evidence review are underway and the work will culminate in a series of recommendations that will inform the strategy.

Engagement sessions have been undertaken with Authority staff and external organisations representing the private sector and third sector to explore opportunities.

The council will work with partners to develop communication, educational and behavioural change programmes to complement the existing blanket approaches:

- Mash for Cash food waste incentive scheme.
- Love Food Hate Waste.
- Global Recycling Day.
- Be Mighty Recycling.
- Door knocking campaigns.

The interventions will be targeted geographically and according to the segmentation models applied to existing datasets to identify household characteristics that may predict poor compliance.

Following the results of the PWC work, the Council will consider engaging a team of behavioural change advisors who will engage with the local community in encouraging sustainable management. Using the results of the PWC study as well as targeted data from in cab technology, the teams will look at working with residents to reduce municipal waste arisings and improve recycling performance. Whilst this will be an education first strategy, the Council will consider a more formal targeted enforcement programme if deemed necessary.

Table 11: Food Waste Interventions and Performance Benefits

Service Change	Performance Benefits
Food waste incentivisation and liners	Additional 1%
Monitoring/ Engagement/ enforcement	Additional 1% - 2%

8.2 COMMUNICATIONS AND COMMUNITY ENGAGEMENT

Caerphilly council has a proven track record of delivering large scale campaigns to increase recycling participation and reduce contamination levels. These campaigns have been strengthened through working with partners, such as WRAP and Keep Wales Tidy, to broaden our reach and deliver a unified message.

Planned and targeted integrated communications campaigns will play a vital part in driving the behaviour change, in tandem with the changes to the service delivery.

Improved communication cuts across a number of strategy areas and has an overarching impact on service delivery and performance. Using the behaviour change insight, campaigns will be developed on a hyper local level and targeted appropriately depending on the set of perceived barriers or challenges.

- The Council will develop a communications strategy to communicate all elements of fundamental changes.
- Roll out wider community engagement programmes including a door knocking, targeted to low participation areas.
- Strengthen relationships with community and eco groups to deliver key messages and gathering insight.

The targeted campaigns will be underpinned by performance data and participation levels and will be adjusted according to the data during the lifecycle of the campaign.

A key part of effective communication is the wider community engagement. Caerphilly

council is committed to ensuring high quality, citizen focussed services for the communities that comprise our county borough. Meaningful engagement will ensure that we are focussing on further strengthening the relationship between the Council and the community - residents, businesses, voluntary and community groups. All consultation will follow the Council's Consultation and Engagement Framework 2020-2025.



8.3 WORKING WITH SCHOOLS

Environmental education is provided to children in schools through the National Curriculum. However, the council compliments this with a variety of engagement activities including classroom and assembly workshops, presentations, competitions, and support with litter picking events. The waste management team also participate in the annual *Crucial Crew* event, which is in a multi-agency, interactive, fast paced event for children aged 10 to 11 to discuss personal safety issues.

We have 86 Council maintained schools in Caerphilly county borough, 71 of those schools and 80 canteens participate in the Council's food or recycling services. The remaining schools utilise private contractors.

In 2021/22, 53 schools participated in a battery recycling collection service which is operated by the Council in partnership with the European

Recycling Platform (ERP). The annual competition offers schools the opportunity to compete against each other to win cash prizes.

In 2019/20, the waste team were successful in an application for Welsh Government Circular Economy Funding. Part of the funding was utilised to provide all schools within the borough with internal recycling containers in a bid to further promote and encourage waste segregation and recycling.

Pupils from local schools also played a big role in the opening of the Council's reuse shop and several pupils attended the launch event. Plans are now underway to develop the facility to include an education centre to further strengthen the relationship with schools and provide further opportunities to educate and engage.

The Council recognises the importance of continuing to engage with schools and pupils by creating effective educational programmes to further build upon the strong foundations that have been laid.

8.4 WORKING WITH STAKEHOLDERS

A wider sense of responsibility forms a key part of the behaviour change strategy that Caerphilly aims to strengthen.

The authority has cultivated strong partnerships with those who share the vision for improved circular economy and a greener place to live, work and visit.

Established partners include:

- WRAP UK.
- WRAP CYMRU.
- Furniture Revival (Rhymney) part of Groundwork.
- Bryn Group.
- Biffa Waste Services.
- Hazrem
- Waste savers
- Resource efficiency Wales
- Trade Unions
- ERP (recycle our Waste Electrical and Electronic Equipment and fund the school's battery recycling competition).
- University of South Wales.
- Schools and education settings.

The latest addition to join the network is Wastesavers, who have been awarded the contract to run the flagship Penallta Reuse Shop. The reuse shop will enable the resale of household items. Promoting the circular economy of items will also support residents amidst the cost of living crisis.

The Reuse Shop 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 Wastesavers for delivery.

As part of the changes and improvements partners will be consulted and contribute valuable insight to shape service delivery models. Caerphilly will also be seeking to strengthen relationships with partners and develop new ones, with a view to amplifying the role they play in developing strategies and wider campaigns.



8.5 SERVICE STANDARDS

The Waste Management Department works to a set of service standards designed to protect public health and maintain and enhance the quality of the local environment. The standards endeavour to meets the needs and aspirations of our residents and comply with the environmental protection and health and safety legislation. The service standards are included as Appendix 2.



9.1 QUARTERLY REVIEW

This strategy will be reviewed on a quarterly basis to monitor progress against the action plan and key milestones. Officers and elected members will monitor progress against statutory recycling targets and service standards. Officers will work with members of the Environment and Sustainability Scrutiny Committee and Cabinet to ensure members are aware and have the opportunity to examine progress against the actions needed to ensure the objectives of the strategy are met.

9.2 KEY PERFORMANCE INDICATORS

We already use a variety of performance indicators to monitor how well our services are performing in meeting the needs of service users and to measure their efficiency and value for money. Throughout the year our various Committees focus on a set of key indicators of performance (KPIs) that relate to the delivery of our priorities. Challenging targets are also set for each indicator, as we have a policy of striving to ensure that the services we provide perform amongst the best in Wales, and our targets are set accordingly.

Table 12: Service Performance Measures

Service Measures	Frequency
Municipal waste collected and prepared for re-use/recycling	Quarterly
Average working days to collect bulky waste	Quarterly
Average working days to clear fly-tipping	Quarterly
Number of missed waste/recycling collections	Quarterly
Missed waste/recycling collections as a % of total collections	Quarterly
Vehicle availability % (residual, recycling, green)	Quarterly
Kilogram of resident waste generated per year per person	Annually
% Highways inspected of a high/acceptable standard of cleanliness	Annually
Public opinion survey	Biennial
Food waste participation numbers	Annually
Recycling participation numbers	Annually

9.3 POST SERVICE CHANGE REVIEW

To understand the impact of any service change or enhancement, key metrics will be developed to monitor progress and performance. The information will be captured by the Waste Management Team and reported to the Cabinet Member, Cabinet and Scrutiny committees as appropriate.

For each service change, there will also be a review of the service standards to ensure that their needs are being met.

Table 12 highlights the interventions alongside the anticipated performance increase. These are based on the implementation dates set out in Section 7 Key Milestones and as such may capture part-year impacts.

Table 12: Interventions and Overall Performance Benefit

Year	Intervention	Anticipated performance increase (based on a full year)	Projected recycling performance (based on part year)	Projected total recycling performance (annual year forecast) based on latest annual return of 59.68% (21/22)	Projected total recycling performance (part year rate forecast)
2022/23	Food incentivisation and liners	1%	1%	60.68%	60.68%
2023/24	Implementation of a booking system at HWRCs	1.5%	0.75%	62.18%	61.43%
2023/24	Pre-sorting requirements at HWRCs	1.5%	0.75%	63.68%	62.18%
2023/24	Monitoring/ engagement and enforcement - using in cab technology and behaviour change advisors	Between 1% - 2%	Between 0.5% - 1%	Between 64.68% and 65.68%	Between 62.68% and 63.18%
2023/24	Change to 4 weekly residual collection frequency	6.76%	3.38%	Between 71.44% and 72.44%	Between 66.06% and 66.56%
2023/24	Implement separate commercial service	1%	0.5%	72.44% or 73.44%	Between 67.06% and 67.56%
2024/27	Change to the recycling collection method	1% - 2%	Unable to quantify as date outside the timeline	1% = 73.44% or 74.44% 2% = 74.44% or 75.44%	



APPENDIX 1

WRAP, 2022, HOUSEHOLD FOOD WASTE: CAERPHILLY COUNTY BOROUGH COUNCIL

Project code: PFU-001

Research date: December 2021- April 2022

Date: 05/07/2022

Written by: Marcel Torode & Tom Quested (WRAP)

This report looks at the composition of food waste in the residual and separate food waste stream, as well as responses to a food waste questionnaire in Caerphilly county borough.

WRAP's vision is a world in which resources are used sustainably.

Our mission is to accelerate the move to a sustainable, resource efficient economy through re-inventing how we design, produce and sell products; rethinking how we use and consume products; and redefining what is possible through re-use and recycling.

Find out more at www.wrap.org.uk

1 Introduction

This report provides a short summary of the detailed waste compositional analysis conducted on behalf of WRAP in Caerphilly. The waste analysis focused on household food waste in the residual and separate food waste stream.

Alongside data from eleven other local authorities, the data presented here will be used to provide a detailed assessment of household food waste in the UK. This will be the most detailed food waste composition study for UK households since 2012/13. This information is invaluable, both nationally and locally, for helping to reduce the amount of food waste by households in Wales and the rest of the UK. It can also support Wales' ambition to eradicate avoidable food waste, halving it by 2025¹ by providing a detailed analysis of the types of food wasted and indicating behavioural drivers in Wales.

The previous study in 2012/13 provided a wealth of information, including:

- Household Food and Drink Waste in the UK 2012.
- Household Food and Drink Waste: A Product Focus.
- Household Food and Drink Waste: A People Focus.

In addition, many other studies have benefited from this data. This insight has been supporting the *Love Food Hate Waste* campaign, changes to the retail environment that can support household food waste prevention (via the Courtauld Commitment) and the design and implementation of behaviour change interventions.

Welsh Government (2021) Beyond Recycling: A strategy to make the circular economy in Wales a reality

2 Method

2.1 Waste Composition Analysis

Data was collected in Caerphilly county borough council between 6th and 17th December 2021 by Resource Futures, a specialist contractor. In total, samples were taken from 151 households, residual waste was presented at 146 households while separate food waste containers were presented at 83 households on the first week of sampling. The same households were revisited on the second week of sampling to collect another set of food waste containers, with 75 households presenting a container.

Household samples were identified using a demographic classification from the Office of National Statistics (Output Area Classification)². Sampling design was undertaken at a UK level to ensure that data collected from all 12 local authorities was proportional to the overall demographic makeup of the UK. As a result, the samples taken in Caerphilly county borough may not be fully representative of the overall demographic make-up of the local authority.

A standard category list for sorting food items was agreed between WRAP and Resource Futures, which has been used across all local authorities. This list allows for edible and inedible items to be identified, and a comparison to previous studies³.

In the analysis of the food waste data, the percentage composition of different categories has been calculated as well as the kilograms per household per week and per year (kg/hh/wk and kg/hh/yr). High level categorisation has been used to give an overall picture of the composition of the types of food wasted. More detailed categories provide an insight into specific food items and an assessment of the edibility percentage of commonly found items.

2.2 Questionnaire

In total, 151 households answered the questionnaire in Caerphilly county borough between 8th November to 3rd December 2021. The questionnaires were carried out by Censuswide, a sub-contractor working with Resource Futures.

Questions were designed by WRAP to enable insights into food waste behaviours and attitudes.

An analysis of all respondents has been carried out here to enable as much of this data to be utilised, rather than only using questionnaires from those households which also took part in the waste composition analysis. Some key questions have been identified and presented in this report.

3 Results

3.1 Waste Composition Analysis

This analysis indicates that 6.6 kg/hh/wk of residual waste is produced by the 146 households who presented their residual waste container. Food waste made up 25.5% of the residual waste stream which translates to 1.6 kg/hh/wk or 84.4 kg/hh/yr for residents that presented their residual waste container.

Separate food waste collections were set out by 55% of residents (83 hh) in week 1 of sampling, and by 49.7% (75 hh) in week two. For the households that set out their separate food waste container, 3.5 kg/hh/wk of material was collected in these separate collections. Of this, 88.5% was food, which translates to 3.1 kg/hh/wk and 161 kg/hh/yr. Therefore 11.5% of the separate food waste sample was non-food items such as caddy liners and contamination.

The combined food waste in the residual and separate food waste stream was 3.25 kg/hh/wk, averaging overall the 151 households sampled. Specifically, 50% (1.6kg/hh/wk) of food waste was found in the residual stream with the other 50% collected separately.

The composition of food waste in both the residual and separate food waste stream together shows that by weight fresh vegetables and salads make up the largest proportion of food waste at 28% (Figure 1). The single largest contribution to this category is potato, which make up 15.1% of the total sample (Table 1). The second largest proportion of food waste was fresh fruit making up 12% of all food waste (Figure 1), of which bananas made up the largest contribution (4.1% of the total sample, Table 1).

² Office for National Statistics, About the area classifications - ONS

³ WRAP, 2018, Household food waste: restated data for 2007-2015

Figure 1: Percentage Composition by Weight of High-Level Food Categories

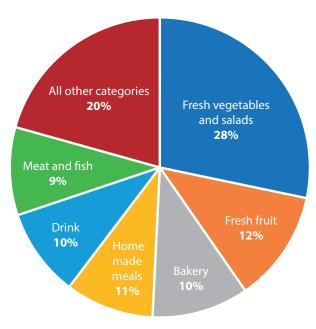


Table 1: The 10 Detailed Categories Making Up the Highest Proportion of Food Waste Analysed

Category 2 items	Composition	Edible per category
Potato (all chips in processed)	15.1%	100%
Standard bread	8.1%	100%
Tea	7.5%	0%
Composite meal	7.0%	100%
Poultry (chicken/ turkey/duck)	4.4%	43.9%
Banana	4.1%	15.8%
Mixed food from multiple categories	3.4%	100%
Potato (including all chips)	2.9%	100%
Pork/ham/ bacon	2.9%	94.5%
Carrot	2.0%	75.7%
Total	57.3%	73%

An additional analysis was also undertaken of the ten detailed categories making up the largest proportion of the food waste stream, looking specifically at their edibility (Table 1). These ten categories make up 57% of all the food waste analysed, with the preliminary analysis indicating that 73% of these food items wasted were edible. Table 1 shows that potatoes make up the largest proportion of the food waste analysed (15.1%). Standard bread (8.1%), tea (7.5%) and composite meals (7%) follow as the next items making up the highest proportion of the analysed food waste. Although providing just a snapshot of the overall edibility of food wasted, this indicates that over half of food thrown away could be avoided.



3.2 Questionnaire Responses

Responses to certain questions are presented here to give insight into the attitudes and behaviours of residents.

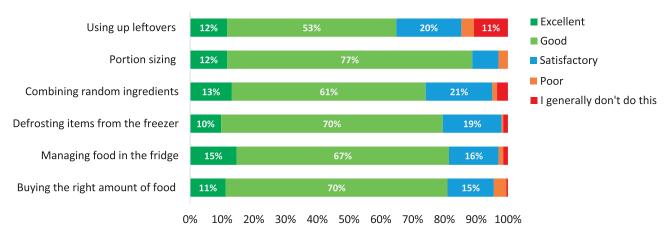
In Caerphilly county borough, 94% of respondents said that food waste is an important national issue, with 91% saying that everyone has a responsibility to minimise the food they throw away. This indicates that most respondents are engaged with food waste as an issue.

Residents were asked to assess how good they were at performing certain food waste prevention behaviours (Figure 2). All of the behaviours presented in Figure 2 are performed by more than half of residents to a good or excellent level. Further analysis will be undertaken to look at the association between certain behaviours and the food waste produced by a household.

The questionnaire also asked residents how they stored certain items. Potatoes were only stored in the fridge by 7% of residents. As storing potatoes in the fridge has been shown to extend their product life⁴, optimal storage could be encouraged to reduce the waste of this frequently discarded item.

⁴ WRAP, 2022, Reducing household food waste and plastic packaging.

Figure 2: Responses to the question 'How good or not would you say you/your household are at each of the following?'



The y axis indicates the behaviour asked about in the question, in the questionnaire a more detailed description was given to residents of the behaviour. The exact percentage is shown for responses with more than 10% of the sample.

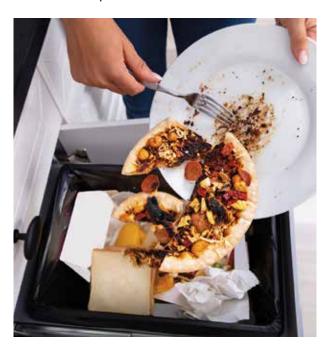
4 Summary and Conclusions

The results here provide indicative insights into the amount and type of food waste produced in Caerphilly county borough council. It should be noted that the sample may not be representative of the local authority, as sampling was designed at a UK level.

This study shows that 50% of food waste was collected separately in Caerphilly county borough, which translates to 1.62 kg/hh/wk. This indicates that the separate food waste collections are being utilised well, although they are slightly lower than the Welsh average (1.75 kg/hh/wk)⁵.



Fresh vegetables and salads and fresh fruit make up the largest proportion of food waste, while potatoes make up the largest proportion of the specific food items. Questionnaire responses indicate that residents commonly undertake food waste reduction behaviours. However, potatoes could be stored in the fridge more frequently to increase their product life.



Of the ten specific food items which formed 57% of the food waste analysed, 73% was edible. This indicates that a large proportion of food wasted could be avoided. Given that most residents see food waste as an important issue, this suggests that food waste reduction campaigns would be well received.

⁵ Data used from 19/20. 20/21 food waste data was impacted by the coronavirus pandemic with lockdowns increasing meals consumed in homes, subsequently increasing household food waste yields compared to years without a lockdown.

SERVICE STANDARDS FOR RECYCLING, REFUSE AND CLEANSING

- We provide a fortnightly kerbside refuse collection service to all residents within the county borough.
- We provide a kerbside recycling collection service on a weekly schedule to all residents within the county borough.
- We provide a kerbside collection of garden waste up to a maximum of 4 bags free of charge every week of the year.
- We provide a kerbside weekly food waste recycling caddy collection service.
- We offer a bulky garden waste collection service which is a request-based service and is subject to a charge based on the amount of material requiring disposal.
- We offer a fortnightly hygiene collection service alongside the refuse collection on a request basis.
- We offer a fortnightly nappy collection service alongside the refuse collection on a request basis (subject to eligibility criteria - 2 children in full time nappies of pre-school age).
- We offer assisted collections to those residents with disability/physical impairments (request /assessment basis) i.e. a 'pull out' collection service (refuse, recycling food and garden) for residents who are unable to move their own receptacles (subject to eligibility criteria).
- We operate facilities for residents to drop off their household waste and recyclables free of charge at one of our six HWRCs.
- We clean the network of adopted roads and streets all year round. The frequency of visits to an area depends on the land category (in general town centres are visited daily, suburban residential areas weekly, high speed and traffic sensitive roads twice per year) all in accordance with the standards set out in the Code of Practice on Litter and Refuse.
- The routine street cleansing patrol involves emptying of litter bins, litter clearance and removal of detritus by physical and mechanical means.



- We undertake a mechanical sweep of the road network to remove detritus from the highway.
 Each adopted road in the county borough is patrolled by a mechanical sweeper at least twice a year.
- We empty litter and dog waste bins at a frequency of at least once per 10 days although in certain high footfall areas we empty more frequently.
- We respond to service requests promptly and subject to incident assessment we endeavour to clear up/resolve within 5 working days.
- We offer a larger bin to households with 6 or more people permanently living in one household. Residents can swap their 240-litre refuse bin for a 360 litre. Alternatively, residents can keep their 240-litre bin and have an additional 140 litre bin delivered.
- We can on request arrange a collection service to commercial customers operating within the county borough for waste and recycling.
- We provide educational talks/visits to schools, community groups etc. on a request basis.
- We work in partnership with relevant organisations/agencies and volunteers on environmental improvement initiatives where resources are available.

ACHIEVEMENTS TO DATE

Our commitment to tackle waste has seen Caerphilly county borough move from a position of recycling less than 5% of municipal waste in 1997/98 to a recycling rate of 59.68% reported in 2021/22. Whilst there has been a slight decline in our performance over recent years due to several factors including the impact of the pandemic, issues with secondary sorting and market volatility we believe we have created a strong foundation for managing and reducing waste arisings in Caerphilly county borough.

Several service changes have been introduced over recent years. These include:

- The introduction of a proof of residency scheme at our 6 HWRCs which has deflected cross border traffic and contributed to a 26% decrease in tonnages received at our HWRC sites (reduce initiative).
- The rejuvenation and transformation of a former industrial unit into a Reuse Shop adjacent a Household Waste Recycling Centre. The Reuse shop has already reused/redistributed 13,696 items in the first 3 months of operation (1/9/22 to 11/12/22). Once this facility becomes more established, we anticipate a further increase in our reuse activity and in turn an improvement of our waste diversion target.
- The introduction of Food Waste Incentive Schemes to continue to help us promote awareness of the importance of recycling this most important of waste fractions.
- The introduction of a digital solution for the bulky collection service.
- The introduction of an improved digital solution for the processing of ancillary service requests (nappies, large family bin, hygiene waste and assisted collection).
- Further refinement of our waste collection rounds through ongoing route optimisation.
- Adoption of the Be Mighty Campaign in support of Welsh Government's aim for Wales to become the world number 1 in recycling. This includes regular multimedia press releases, re-branding of waste collection fleet and the installation of new signage at all 6 HWRCs.
- Regular public engagement events and

- roadshows. The Waste Recycling Advisory
 Team has set up stall in town centres and
 supermarkets specifically this year promoting
 our *Mash for Cash* food waste incentive
 campaign and recently attended all the
 Christmas Markets in our towns, villages and
 community centres.
- Attained funding for the installation of improved signage and layout at Household Waste Recycling Centres to promote the user experience and increase recycling opportunities.
- Obtaining over a million pounds of funding from the Resource Efficiency and Circular Economy Fund. £27,298 received to digitise waste services, £50,000 to upgrade and automate the weigh bridge at full moon waste transfer station, £89,000 to upgrade recycling containers in schools and corporate buildings, £500,000 to develop Penallta Reuse Shop, £500,000 to upgrade and improve the infrastructure across our network of Household Waste Recycling Centres.
- Provision of new recycling containers for all schools.
- Becoming one of only a few local Authorities in the country to run a school collection service for portable batteries and a complimentary competition. Annually, we have 50 - 60 schools participating in the Battery Recycling Initiative. Prizes consist of *Amazon* vouchers provided by the European Recycling Platform (ERP) and are awarded to the winners before the summer break.
- Registration to WARP IT, a WRAP initiative for the reuse/redistribution of office furniture.
- Caerphilly Town is the first in the county borough to be awarded Plastic Free Community status by a national marine conservation charity in recognition of the work it has done to start reducing the impact of single-use plastic on the environment. We plan to roll this out to other towns and communities.
- Commitment made to the Courthald 2030 Agreement.

APPENDIX 4

FURTHER READING

Wales National Waste Composition Initial Results Phase 1, 22 September 2022.



Mae'r ddogfen hon ar gael yn Gymraeg, ac mewn ieithoedd a fformatau eraill ar gais. This document is available in Welsh, and in other languages and formats on request.