

Carmarthenshire Waste Strategy

2021-2025

carmarthenshire.gov.wales/recycling

Contents

| | |
|---|-----------|
| 1. Introduction and Background..... | 4 |
| 2. Challenges..... | 4 |
| 2.1. Budget | 4 |
| 2.2. WG Strategy | 4 |
| 2.3. Vehicle fleet..... | 5 |
| 2.4. Public and Environmental | 5 |
| 3. Current Service Configuration and Performance | 5 |
| 4. Welsh LA Collections Picture | 8 |
| 5. WG Future Policy and the Circular Economy | 9 |
| 6. Material Quality..... | 10 |
| 7. Service comparison and performance..... | 11 |
| 8. Nantycaws Eco-Park Development | 13 |
| 9. Waste Kerbside Service Review Project | 14 |
| 10. Future Kerbside Service Options | 15 |
| 10.1. Short term – interim options..... | 16 |
| 10.2. Long term options | 16 |
| 11. Kerbside Collections Infrastructure | 17 |
| 12. Absorbent Hygiene Collections..... | 17 |
| 13. Garden Waste | 18 |
| 14. Fly-tipping | 19 |
| 15. Kerbside Modelling Results..... | 19 |
| 15.1. Interim options | 21 |
| 15.2. Long term options | 21 |
| <i>Option 1 – Twin Stream</i> | <i>21</i> |
| <i>Option 2 – Three Stream</i> | <i>21</i> |
| <i>Option 3- Blueprint.....</i> | <i>21</i> |
| 16. Kerbside Carbon Impact..... | 22 |
| 17. Kerbside Employment..... | 24 |
| 18. Wellbeing of Future Generations Act (Wales)..... | 24 |
| 19. Welsh Government Funding | 25 |
| 20. Ultra Low Emission Vehicle (ULEV) Waste Strategy..... | 26 |
| 21. Public Engagement | 26 |
| 22. Household Waste Recycling Centre Infrastructure | 27 |
| 23. Conclusions | 27 |
| 23.1. Current service | 28 |
| 23.2. Future service configuration | 29 |

| | | |
|-------|---|-------------------------------------|
| 23.3. | HWRC Conclusions..... | Error! Bookmark not defined. |
| 23.4. | Kerbside Risks and considerations | 31 |
| 24. | Finance | 32 |
| 25. | Recommendations | 34 |
| 26. | Next Steps | 34 |
| 27. | Strategy programme timeline..... | 35 |

1. Introduction and Background

Carmarthenshire County Council currently provides waste services to approximately 91,000 households through the delivery of a fortnightly residual general waste collection and co-mingled kerbside recycling service as well as a weekly food collection. Kerbside bulky and garden waste are offered as chargeable services, in addition to a network of Bring-sites available for glass recycling in the main with provision for textiles and small electrical items at busier sites.

Carmarthenshire is different to many local authorities in that it sorts its own dry mixed recycling (DMR) via a council-owned, but independently operated Teckal Company, CWM Environmental (CWM). CWM not only processes DMR from CCC, but also from other LAs, as well as its own DMR from commercial businesses in the region.

With early success in householder recycling and incremental improvements in performance year on year Carmarthenshire have a history of exceeding recycling targets. However, in 2018-19 the Council's recycling performance was at 59% presenting a significant risk of failing the statutory recycling target of 64% due the following year 2019/20. To ensure performance improvement the Authority undertook a series of policy changes, targeted at our Household Waste Recycling Centres HWRC's and kerbside residual waste. As a result of these changes performance increased to 64.66% in 2019/20, exceeding the target by a small margin.

Whilst the current service model has enabled the authority to exceed the statutory 64% target, further change is required to meet the 70% target from 2024/25. The Council is now in a position where it is developing its future waste strategy and collection methodology to meet future targets and ensure that we are working towards reducing the carbon impact of the service in line with our future carbon reduction ambitions. This strategy sets out the considerations and measures proposed for future improvement of the waste service in order to achieve 70% recycling by 2024/25 and the expected 80% target by 2030.

2. Challenges

2.1. Budget

The Council, like many others, is under increasing financial pressure due to Welsh Government funding cuts combined with reform and reductions to the Welsh Government's Single Revenue Grant for Environmental Services, which has been a key source of core funding for the Council's Waste Services for many years. This financial picture has been further compounded this year due to our ongoing response to COVID-19, placing extreme pressure on already creaking service budgets. These funding pressures are in a context of challenging statutory performance targets, with the next target of 70% looming, combined with the potential for the Welsh Government to levy fines of £200 for every tonne by which an authority misses those targets, which for Carmarthenshire is approximately £164,000 per recycling percentage point below the target. This means that the Council needs to continue to both ensure a cost-efficient waste and recycling service whilst increasing recycling performance.

2.2. WG Strategy

The sustainable development of municipal waste collections forms part of the Welsh Governments key aspirations and they have developed a national waste strategy for Wales: Towards Zero Waste (2010). This contains specific legislation to deliver a more sustainable approach to waste and resource management. As part of this strategy WG have developed The Collections Blueprint (2011)

with the aim to encourage Local Authorities to develop more sustainable approaches to the collection of residual wastes, recyclables, and food wastes. This included separate collection of high-quality materials with low levels of contamination and ability to attract high market prices. The Blueprint includes a preference for:

- Kerbside sorting/collections of both dry materials and food waste on a single trip onto Resource Recovery Vehicles (RRVs).
- Weekly collections of dry recyclables.
- Weekly collections of food wastes.
- Restricted residual waste collections.

The Blueprint is currently being revised by WG and it is proposed it will advocate the kerbside collection of textiles, waste electrical and electronic equipment (WEEE) and the separate collection of plastic film. It is also probable that it will recommend that absorbent hygiene products (AHP) are separately collected. Combined with this is the new *Beyond Recycling Strategy*, essentially a review of the Towards Zero Waste Strategy suggests Councils will need to set a likely target to recycle 80% of municipal waste by 2030 and will also explore alternative targets around carbon and specific waste types.

2.3. Vehicle fleet

Our waste collection fleet is due for renewal in October 2021 at the earliest assuming a 5-year renewal programme. Whilst we could extend this by a maximum of three years, it will become economically and operationally difficult beyond this and it is likely that it will become a necessity to replace by 2024, which would commit our chosen methodology for another 5 to 7 years, taking us to potentially up to 2030. It is anticipated that by 2030, we will have to recycle 80% of our waste.

2.4. Public and Environmental

Given what has been outlined above, the service needs to focus on the requirement for significant public behavioural change which is promoted and fostered by the council collection methodology and service delivery. Underpinned by our other services such as Household Waste Recycling Centres, Bulky Waste Collections and a maximising re-use and repair outlets. As well as making a step-change in the council's approach to dealing with non-conforming behaviours from householders which impact on Carmarthenshire's potential to achieve excellence in sustainable management of wastes. The fiscal impact of missing targets has been identified above, but something which is equally important is the reputational risk of failure would pose to the Authority. Failure to meet targets, may negatively impact public behaviour and perpetuate the problem further.

As a result, it is essential that the Council considers the options for our future waste service delivery approach now to meet these challenges and ensure a high performing, sustainable, climate conscious service and waste fleet.

3. Current Service Configuration and Performance

As summarised above Carmarthenshire currently deliver the following waste services for residents:

Recycling-

- Weekly food waste recycling

- Fortnightly co-mingled collection for dry recyclables (blue sack) such as paper, cardboard, plastics, and metal cans
- Glass, WEEE and Textiles at one of the 126 Community Bring Sites located across the County
- Fortnightly Garden Waste subscription service
- 4 HWRC's – Trostre, Nantycaws, Whitland and Wern Ddu

Disposal –

- Non-recyclables (Black Bag) collected every fortnight alternating with the blue sacks
- Bulky Waste Collection – chargeable request service
- General Disposal at one of 4 HWRCs

Waste collections are managed and operated from three different depots in the county based in Trostre, Carmarthen and Glanamman. Materials are taken to Nant Y Caws where recycling is sorted at CWM's Materials Recycling Facility (MRF) and refuse is bulked for haulage to Energy from Waste (EfW). CWM also operates two waste transfer stations (WTS) at Trostre and Wern Ddu where collected materials are tipped locally prior to bulk haulage to Nant Y Caws, although temporary arrangements are currently in place as a result of the fire at Nantycaws.

The Waste Performance Statistics are as follows:

| <u>2018/19</u> | <u>2019/20</u> |
|---|---|
| 88,922t Municipal Solid Waste | 78,174t Municipal Solid Waste |
| 58.95% Total Recycling Rate | 64.66% Total Recycling Rate |
| Ranking of 22nd out of 22 Welsh Authorities | Ranking of 17th out of 22 Welsh Authorities |
| 19,164t Total Black Bag collected at Kerbside | 18,495t Total Black Bag collected at Kerbside |
| 13,064t Blue Bag Recycling at Kerbside | 13,824t Blue Bag Recycling at Kerbside |
| 7,051t Food Waste Recycling Kerbside | 8,277t Food Waste Recycling Kerbside |
| 1,354 Kerbside Garden Waste | 1,459t Kerbside Garden Waste |
| 10,831t Residual HWRCs | 5,654t Residual HWRCs |
| 1,888t Blue Bag Recycling HWRCs | 1,504t Blue Bag Recycling HWRCs |
| 14,441t Other Dry Recycling at HWRCs | 18,867t Other Dry Recycling at HWRCs |

Following the submission and reporting of 2018/19 Local Authority recycling figures, upon request from WG, WRAP Cymru were asked to engage all authorities that WG identified as likely to fail, or at risk of failing the 2019/20 targets. Carmarthenshire's combined estimated performance was falling under the required target of 64%. As such, interventions were recommended by WRAP to be necessary to ensure statutory target compliance and avoid financial penalties. To address this the Authority implemented several remedial actions:

From the 1st April 2019 a new Household Waste Recycling Centre (HWRC) policy was introduced, which included residency checks, prohibition of commercial type vehicles and changes to opening times. The aim was to reduce non-Carmarthenshire household waste from being deposited.

This policy was effective in reducing waste however this only resulted in performance increasing to 62% so additional in year measures were necessary to boost recycling performance. As a result, the following was implemented:

7th October 2019 - the Authority implemented increased restriction to the black bag system and HWRC residual sorting controls. These measures were successful in improving performance to 64.44%, meeting the target of 64%.

As outlined above Carmarthenshire's waste collection system is based upon alternating collection of refuse and recycling utilising the same fleet each week, with glass being collected via a network of Community Bring Sites. While this has allowed for cost-effective collections, it is recognised that the Authority needs to move towards a recycling-led system to increase performance to 70% recycling by 2025 and beyond, as well as realising wider socio-environmental benefits set out in Welsh Government policy.

Currently with the service operating the alternative weekly collection methodology and with the increasing performance of kerbside recycling, the service is witnessing an ever-widening gap of workload imbalance between the two-core material streams on alternative weeks – residual (black bag), and dry recycling (blue bag). In practical terms we are seeing more blue bags at the kerbside and fewer black bags, which of course is the behaviour that we desire. In practical terms, it is impossible to balance the workloads between the alternative week collections under the current regime.

We are witnessing daily recycling collection reaching capacity without completing the full route, whilst the black bag collections on the alternative week are completing early. This is not an effective use of resource in the long term. In practical terms for recycling collections, it is leading to streets, properties and in some cases whole areas left uncollected on their scheduled collection day due to route over capacity. This leads to complaints, service requests and member lobbying. The service in its current form is no longer fit for purpose to deliver its principal function of collecting all waste set out on a given day.

Another weakness to our current collection methodology is the split-county nature of collections and how routes are organised. At present in periods of disruption or vehicle breakdowns, our set up based around depot locations is prohibitive for support and contingency arrangements to be made. This is because the collections are spread throughout the county based on tonnage demand and that 1/3 of the county collects the alternative material on any given week. Meaning if a vehicle were to encounter issues in the north of the county, support is unlikely to be available until the next collection day, and only if a spare vehicle is available with crew working overtime. As part of our review, we seek to zone the county to improve collections efficiency and strengthen support and contingency arrangements.

In 2017 Carmarthenshire County Council commissioned a waste analysis survey to identify the recyclable element of residual waste disposed of through the kerbside residual waste collections. The overall recyclability of the residual waste relates to all the items present that could have been accepted into the kerbside recycling schemes currently running in Carmarthenshire. Results from this study are presented in Table below.

| Service | % Recyclables placed in Residual Waste (black bag) |
|-----------------------|---|
| Blue Bag Recyclable | 14.5% |
| Food Waste Recyclable | 25.8% |

| | |
|-------------------------|--------------|
| Garden Waste Recyclable | 5.8% |
| Total | 46.1% |

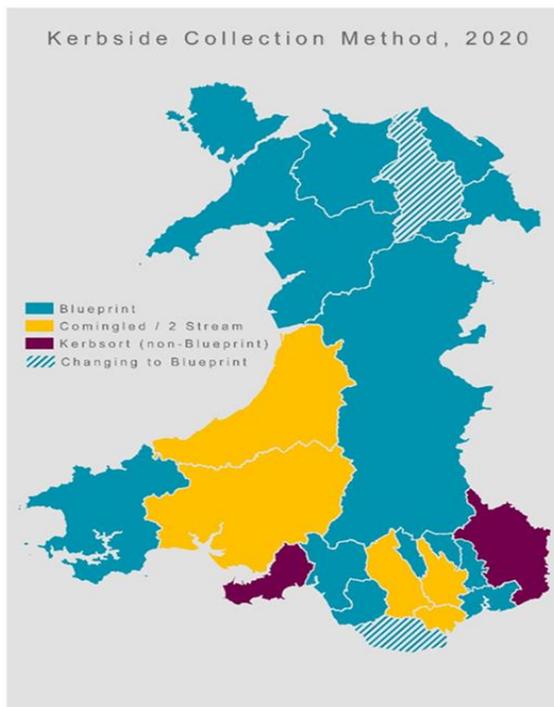
Results from the survey showed that the overall recyclability of the content of the residual waste bag was 46.1%, meaning that almost half of all residual waste presented at the kerbside could be recycled if it was clean and placed in the recyclable waste stream.

4. Welsh LA Collections Picture

The Collections Blueprint (2011) was developed to encourage Local Authorities to develop more sustainable approaches to the collection of residual wastes, recyclables, and food wastes. This included separate collection of high-quality materials with low levels of contamination and able to attract high prices.

After twenty years of progress Wales is now a high recycling society, with high quality collection infrastructure, a well-developed re-processing infrastructure and a worldwide reputation for achievement.

Welsh Ministers have set the objective of the country having a circular economy, to realise the economic, social, and environmental benefits which are within reach. Collaboration between Welsh Ministers and Local Authorities is closer than ever and there is a sense of true partnership as we move forward. The Welsh Government strategies outline the approaches being taken now and planned for the next few years.



As noted above the Welsh Government within their Municipal Sector Plan have set out a recommended Blueprint service profile for the collection of waste from households. They state that it provides a system that, if adopted across the whole of Wales, would result in high rates of high-quality recycling, significant long term cost savings and improved sustainable development outcomes.

The infographic below presents the collections profiles for all Authorities across Wales, with 17 Authorities now either fully compliant with blueprint or with source separated collections in some way.

The Blueprint is being revised and it is anticipated it will advocate the kerbside collection of additional items to include textiles, small waste electrical and electronic equipment (WEEE) and the separate collection

of plastic film. These additional streams have not been currently modelled within Carmarthenshire and would likely increase capture and recycling of these materials increasing the performance of the presented Kerbside Sort option detailed below.

5. WG Future Policy and the Circular Economy

Welsh Government new future strategy “Beyond Recycling” looks to build upon the successes of the former “Towards Zero Waste” strategy and deliver a circular economy in Wales, where waste is avoided and the things we use are kept in use as long as possible. The aim of this is to support the transition to an innovative, low carbon economy. WG look to create opportunities for circular economy jobs, skills, and qualification development. Providing a more circular and reliable supply of affordable materials for businesses and improving resource efficiency. Helping to address the climate emergency by reducing greenhouse gas emissions associated with making products.

Contained within this strategy are six core themes set out in the graphic here:

These themes are detailed into the intended aims and activities seen alongside:

As can be seen, this strategy places significant focus upon standardised collection across Wales, specifically the Blueprint design of the separate collection of recyclable materials. This aims to underpin the quality of material available in Wales, which can drive innovation for the use of recycled materials in product development.



| | |
|---|---|
| <p>Build on our recycling record</p> <ul style="list-style-type: none"> A standardised and consistent recycling collection is important. Recycling must be easy and accessible to domestic and non-domestic premises. Investment in recycling infrastructure needs to support longer term aims such as re-use, repair and remanufacture. The value of recylate and confidence in the recylate market needs to be increased  | <p>Investing in infrastructure</p> <ul style="list-style-type: none"> To enable a zero waste and low carbon Wales, accessible regional and community hubs are needed to deal with priority materials. Resource efficient transportation for waste management is needed, including in rural areas. Young people, schools and circular economy stakeholders should be represented and engaged in the approach.  |
| <p>Driving innovation and material use</p> <ul style="list-style-type: none"> Innovation needs to be stimulated to develop circular economy appropriate solutions, and create a strong economy Opportunities to shorten supply chain should be taken improve business resilience Focus should be on promoting the most appropriate materials for purpose, determined via an assessment  | <p>Supporting prevention and re-use</p> <ul style="list-style-type: none"> To achieve prevention and re-use, future policy needs to create an economic and cultural shift. Education is key Working with communities and social enterprises is essential to support the growth of the re-use and repair sectors Donation of surplus equipment should be carried out by all sectors – private, voluntary and public Wasted food needs to be tackled and surplus recognised as a resource.  |
| <p>Enabling communities and businesses</p> <ul style="list-style-type: none"> Communities need to be encouraged and supported to take collective action. Businesses need to be provided with support to innovate, adapt and showcase their actions towards a circular economy. The concept of Zero Waste Towns is welcomed but needs detail to have meaningful impact.  | <p>Using government levers</p> <ul style="list-style-type: none"> Improving resource efficient procurement within the public sector is a positive first step towards a more circular economy As a large primary producer of waste, resource efficiency in the construction sector is an essential focus. Extended producer responsibility (EPR) is key to promoting more responsible changes at a design level and the effective introduction of a Deposit Return Scheme (DRS) in context of an already high recycling nation will need careful design.  |

In addition to the requirements for municipal waste segregation, there is the aim through business recycling regulations due in 2021 to ensure that the commercial waste in Wales is also collected in an equivalent manner. This will mean that there will be a responsibility on commercial waste contractors to offer source segregated collections to their customers. Therefore, should the decision be taken by Carmarthenshire County Council to not proceed with a Blueprint-based household

collection in the future, CWM would need to operate two different systems for the household and commercial waste it collects.

To deliver the aims of this strategy Welsh Government launched a Circular Economy fund to support a shift towards a circular economy driving further increases in recycling and decarbonisation in addition this fund directly supports post-COVID-19 green response and recovery to improve resilience in Wales. Carmarthenshire have been successful in obtaining funding to develop our circular economy ambitions within the County. We are in the process of delivering these WG supported projects delivering the re-use, repair, and re-manufacture of waste streams. The projects include:

- Re-use village at Nantycaws
- Repair workshop and shop in Llanelli town centre
- Commercial recycling centre at Nantycaws
- Paint re-use facility

These projects add vital pieces of the jigsaw to Carmarthenshire's contribution to Wales becoming a world leader in recycling. However, it is still required to develop our domestic waste collections to supplement these developments so that we can deliver against the objectives contained within the WG strategy.

To further our aspirations surrounding the circular economy the Council are currently finalising a Circular Economy Strategy and Action Plan, developing a framework to enable the Council to deliver positive environmental, social and economic co-benefits for the communities of Carmarthenshire. This Strategy and Action Plan will be focused upon supporting the development of Circular Economy project exemplars which promote community cohesion through repair and re-use initiatives and waste minimisation.

It should be recognised that the 70% minimum recycling target in 2025 is a steppingstone to support the transition to zero waste in 2050 and wider decarbonisation of the economy. As such, whilst delivery against the 70% minimum target is an important initial milestone, consideration should be given to the trajectory beyond the target and beyond recycling in terms of moving material higher up the waste hierarchy.

6. Material Quality

In volatile and failing material markets such as we have been seeing for mixed paper and certain plastics over the last 2 years, quality becomes king. Those Authorities who produce clean, dry, and uncontaminated material streams will find their materials easier to place in sustainable demand-led UK markets directly with re-processors to command the highest rebates and provide certainty of off-take. Although it can often seem counterintuitive, when markets are failing and material values reduce, off takers demand even higher material quality.

Uncertainty of future exports due to us leaving the EU will influence markets in the future. Even though we do not export large quantities, across the UK, this will influence UK re-processors; they may therefore place even more emphasis on quality in the future.

Materials of a lower quality and those which are contaminated are more likely to be supplied to the export markets, especially when the market prices are high and therefore incentivise such exports. However as explained below, export markets are often unsustainable, the environmentally sound management of waste cannot always be guaranteed, the exact end destination information

(including that of residues) can be difficult to obtain, and such exports may yield higher carbon impacts.

Changes in the global market for recycled materials are increasingly restricting the trade in lower quality and mixed recyclate, with some countries phasing it out altogether. This trend is set to continue, with further changes to restrict export of material such as those associated with the Basel convention amendments 2019. As kerbside sort brings with it the ability to collect high quality recyclable material, this provides greater resilience to minimise the impact of global market changes. Conversely for mixed recycling, it means that even in the short-term caution is required when using the current costs achieved for recyclate as a gauge for future cost/benefit projection.

7. Service comparison and performance

Identified in the map above was the collection methodology of all 22 Welsh Local authorities. The table below presents their 2019/20 performance against collection methodology.

| Authority | Average Reuse, Recycling & Composting Rate | Collection methodology |
|--------------------------------|---|-------------------------------|
| Pembrokeshire County Council | 71.65% | Blueprint |
| Ceredigion County Council | 71.57% | Co-mingled |
| Vale of Glamorgan Council | 70.35% | Blueprint |
| Wrexham CBC | 69.62% | Blueprint |
| Conwy CBC | 69.32% | Blueprint |
| Isle of Anglesey CC | 68.00% | Blueprint |
| Bridgend CBC | 67.58% | Blueprint |
| Newport City Council | 66.36% | Blueprint |
| Flintshire County Council | 65.58% | Blueprint |
| Monmouthshire CC | 65.57% | Three Stream (non-blueprint) |
| Blaenau Gwent CBC | 65.31% | Blueprint |
| Merthyr Tydfil CBC | 64.99% | Blueprint |
| City and County of Swansea | 64.97% | Three Stream (non-blueprint) |
| Rhondda Cynon Taff CBC | 64.78% | Co-mingled |
| Denbighshire County Council | 64.76% | Co-mingled |
| Gwynedd Council | 64.74% | Blueprint |
| Carmarthenshire County Council | 64.66% | Co-mingled |
| Torfaen CBC | 64.40% | Three Stream (non-blueprint) |
| Powys County Council | 63.05% | Blueprint |

| | | |
|------------------------|--------|------------|
| Caerphilly CBC | 62.51% | Co-mingled |
| Neath Port Talbot CBC | 61.74% | Blueprint |
| Cardiff County Council | 58.14% | Co-mingled |

As can be seen from the table above in the most part the highest performing Authorities in Wales are compliant with Welsh Government Blueprint collections.

The most recent Authority to move to the Blueprint compliant collection methodology was in November 2019. Despite initial reservations from the public regarding the service delivery in this authority area, their performance increase has been strong when comparing to their previous collection methodology.

Their change to their service at the began in Nov 2019, so presented is the Oct-Dec 18 to Oct-Dec 19, and Jan-Mar 19 to Jan-Mar 20 comparison.

| RECYCLING RATES | Apr 18 - Jun 18 | Jul 18 - Sep 18 | Oct 18 - Dec 18 | Jan 19 - Mar 19 | Apr 19 - Jun 19 | Jul 19 - Sep 19 | Oct 19 - Dec 19 | Jan 20 - Mar 20 | Change O-D 18 to O-D 19 | Change J-M 19 to J-M 20 |
|------------------------------------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------------|-------------------------|
| | Total Municipal Waste | 19,533 | 18,398 | 16,688 | 16,426 | 18,292 | 18,155 | 15,115 | 14,596 | -9% |
| Total Recycling, Reuse, Composting | 11,768 | 11,203 | 10,124 | 10,926 | 12,611 | 12,666 | 10,982 | 11,145 | +8% | +2% |
| Recycling Rate | 60.2% | 60.9% | 60.7% | 66.5% | 68.9% | 69.8% | 72.7% | 76.4% | +12.0 | +9.8 |

From above it can be discerned that following service change an increase in the overall recycling rate was achieved. It should be noted that the recycling rates in this Authority saw an increase in Jan-Mar 2019, this is related to them changing their management of residual waste to EfW and being able to claim IBA as recycling. However, the overall impact of change on their kerbside recycling service is presented below.

| Kerbside Summary | Apr 18 - Jun 18 | Jul 18 - Sep 18 | Oct 18 - Dec 18 | Jan 19 - Mar 19 | Apr 19 - Jun 19 | Jul 19 - Sep 19 | Oct 19 - Dec 19 | Jan 20 - Mar 20 | % Change O-D 18 to O-D 19 | % Change J-M 19 to J-M 20 |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------------|---------------------------|
| | Food | 1,299 | 1,328 | 1,389 | 1,337 | 1,413 | 1,635 | 2,017 | 2,096 | 45% |
| Dry Recycling | 2,755 | 2,836 | 2,853 | 2,681 | 2,844 | 3,140 | 3,066 | 3,158 | 7% | 18% |
| Residual | 3,770 | 3,708 | 3,890 | 3,802 | 3,601 | 3,702 | 2,360 | 2,096 | -39% | -45% |

At the kerbside this authority witnessed an increase of 57% food and 18% dry recycling combined with a 45% drop in residual waste. This evidences that the change in approach of kerbside collections, with the combination of source segregated materials and restricted residual waste led to significant performance improvements. In addition to the quantity of recycled material collected at the kerbside the collection methodology delivered significant improvement in the contamination of material. This authority witnessed a drop from 13-15% contamination and rejected material to a figure below 1%. This not only delivers cost benefits, but also drives confidence from the end market in the quality of material collected.

8. Nantycaws Eco-Park Development

The move to a weekly Blueprint compliant model will necessitate the development of new depot and transfer infrastructure at present this has been modelled on a centralised depot located at Nantycaws. The move to such a collection method and development of infrastructure at this location could provide the key to unlocking wider ambitions to develop the site as an eco-park facility. With plans having the potential for regional and commercial benefits with the further opportunity to provide charging facilities for electrically powered commercial vehicles serving the regional transportation sector.

The possibility for a strategic regional waste facility coupled with the opportunity to attract industrial interest for a manufacturing, processing and service industry base whilst potentially having the ability to provide waste derived/renewable energy supply as part of the site infrastructure is quite unique in West Wales.

There are five broad classifications of potential use for the Nantycaws site in the context of an eco-park development. These are:

- Waste management, processing and recycling for the County and the South West Wales region, including circular economy processing and associated projects.
- Energy production and distribution; solar, wind and waste combustion processes could be used to generate electricity. The electricity would be used to feed power to the site facilities and proposed industrial units as well as providing a source for charging electric commercial/private vehicles. Surplus energy could be supplied directly into the local grid network.
- Commercial units for general industrial use; This would take the form of infrastructure enabled site for the sale of serviced industrial plots or a combination of plots and completed industrial units for sale or letting.
- Commercial fleet facility – there is scope to construct a centralised depot facility for Carmarthenshire’s waste operation at the facility. This aspect could be expanded to undertake fleet maintenance for the wider council fleet and potentially for other partner agencies in this respect that operate their fleets of vehicles.
- ULEV Vehicle recharging/refuelling infrastructure – there is the potential to develop regional recharging/refuelling infrastructure for the local authority fleet in addition to commercial organisations and partner agencies.

As such, the opportunity for strategic development at the Nantycaws site could help to unlock wider benefits for the Authority and the region, including the opportunity for an Eco Park facility. Such a regional scheme would offer increased opportunities for Local Authorities and businesses to collaborate around services, helping drive innovation in resource efficiency.

Aside from our waste kerbside collections methodology another key piece of the jigsaw to unlock our ambitions, will be the development of road infrastructure access into NYC. To deliver this element an overall package of development will need to be progressed in partnership with Welsh Government.

Whilst the NYC proposals are very much at high level outline stage at this time the potential for truly developing this site for the purposes set out above offer an exciting and rare opportunity to introduce a circular economy recycling base in the West Wales area whilst helping to address our collective carbon and waste reduction ambitions for the future. However, any wider development

will need to be supported by a change in our collection methodology to ensure quality material that can create the base for circular economy product development.

9. Waste Kerbside Service Review Project

To understand how the Council’s service could be developed in the future to maximise cost efficiency and increase recycling performance, a thorough service review project has been undertaken. The Council are working with support of Wrap Cymru funded through the Welsh Government’s Collaborative Change Programme to review potential options for the future.

A project steering group has been convened with representation from the Executive Board, and officers from the Finance, Communications and Environment Departments and CWM Environmental. The purpose of the group is to act as a consultative and advisory group to provide views, advice, scrutiny, and evaluation of the project proposals as they develop. With the overall aim to develop recommendations to be presented for decision for implementation by the service.

The project has been undertaken in two distinct phases:

Phase 1 - Current service modelling and future kerbside collections options modelling and develop interim performance measures

Phase 2 - Cost benefit analysis of a number of future scenarios to ascertain the costs, recycling performance, environmental benefits, employment opportunities, collection infrastructure requirements and impacts upon CWM Environmental associated with each scenario in comparison to the ‘business as usual’ baseline.

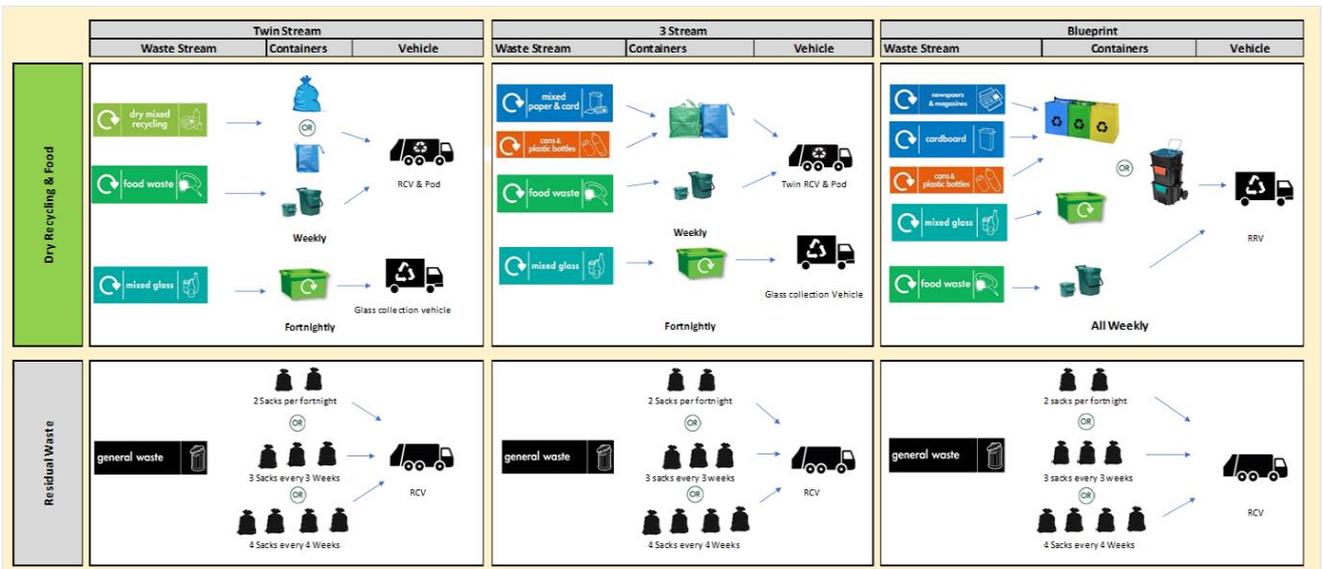
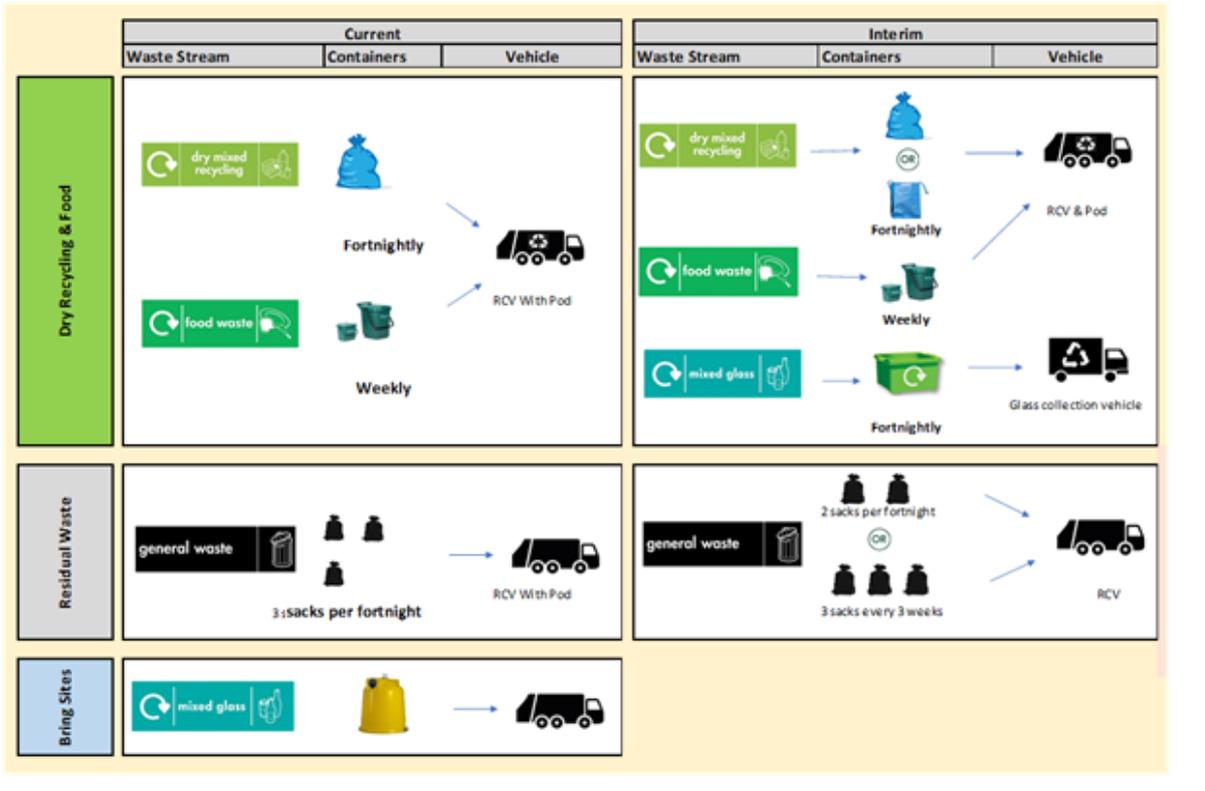
In terms of cost and potential impact on recycling performance, the collection at the kerbside and treatment of waste from households has a greater impact than any other part of the service. There is a range of viable options for collecting dry recyclables, food waste and residual waste at the kerbside, all of which have different impacts on what happens downstream in terms of treatment and recycling.

The future service and policy developments that have been considered are listed below:

| | | |
|--|---|--|
| Waste containment Single-use sacks Re-usable sacks Boxes Trolley box | Recycling frequency Weekly Fortnightly | General waste collection frequency Fortnightly Three-weekly Monthly |
| Recycling materials collected Glass Paper and Card Cans Tetrapak Plastics Food Textiles Batteries | General waste restrictions 2 black bags per week 1.5 black bags per week 1 black bag per week | Recycling material presentation Twin Stream -Co-mingled Three Stream Kerb-sort - Fully Separated |

10. Future Kerbside Service Options

Three main recycling collection options have been developed for the purposes of the modelling process, ensuring that the Council has the best possible opportunity to deliver the most cost-effective service and improve recycling performance as part of any service change. Several options were modelled, these are detailed in the following schematics:



10.1. Short term – interim options

As an addition to the current baseline service, to consider an option that could be implemented prior to the procurement of a new fleet, an interim option was modelled whereby glass would be collected on a separate round every fortnight or co-collected.

10.2. Long term options

Option 1 Twin Stream –



Recycling Collection Method: A weekly collection of dry recyclables collected co-mingled in one container alongside food waste by one vehicle with two separate compartments. A separate fortnightly/three weekly glass collection co collected with residual waste.

Containment: Two options for containment of dry recycling is being modelled; Re-usable sacks and single use sacks.

Residual Waste: three options for residual waste are to be modelled with frequency set at two weekly, three weekly or every 4 weeks. With capacity restrictions of one sack per week across all options.

Option 2 Three Stream –



Recycling Collection Method: A weekly collection of dry recyclables, collected in three containers and placed in separate compartments of a vehicle. Paper and Card in one container and Cans and Plastics in another with a separate fortnightly glass collection.

Containment: Dry recycling in re-usable sacks

Residual Waste: three options for residual waste are to be modelled with frequency set at two weekly, three weekly or every 4 weeks. With capacity

restrictions of one sack per week across all options.

Option 3 Blueprint Kerbside Sort –



Recycling Collection Method: A weekly collection of dry recyclables collected in approximately 4 containers and collected separately on one vehicle including a weekly glass service.

Containment: Two options for containment of dry recycling is being modelled; dry recycling collected in separate re-usable sacks or in stackable wheeled boxes.

Residual Waste: three options for residual waste were to be modelled with frequency set at two weekly, three

weekly or every 4 weeks. With capacity restrictions of one sack per week across all options.

With the number of collection systems modelled and all the sub-variants (such as differing refuse frequency and different potential transfer station configurations), a total of 47 different modelled options were produced.

From discussions at the Waste Service Review Project Group between officers and members, it was felt that restricting residual collection frequencies to 4 weeks was unlikely to prove acceptable in the short-term. In addition, through modelling and qualitative assessment the benefits of a single depot in the long term would provide the most viable solution for the service. The results in the section below present service costs and performance for the optimal 3-weekly refuse options, as well as the projected changes to recycling performance

The project has also considered options for reducing cost and improving performance of every other element of the Council's waste management system, including transfer stations, HWRC site provision, bulky waste, re-use, bring bank recycling and engagement and enforcement activities.

Commingled services, Three Stream and kerbside sort services are delivered in quite diverse ways, and these differences need to be considered as part of the decision-making process. Table 1 summarises some of the key advantages, disadvantages, and risks of each collection service and alongside cost has driven the shortlisting of options.

11. Kerbside Collections Infrastructure

As part of the review, it has been essential for an assessment as to the suitability of the current waste transfer infrastructure to be adapted for potential future service delivery options. In all future options we have modelled a shift to a weekly recycling service, and it has been identified that some of the current waste transfer infrastructure will not be fit for purpose with this additional demand from increased frequency.

CCC's current collection infrastructure is based and has been developed on the current comingled alternative weekly collection system to accommodate the limitations of our transfer stations. The County is split into three geographical collection zones – West, South, and North. Due to the limitations on space and capacity in our transfer stations, two areas operate a DMR collection on a given week, whilst the other area operates a residual collection. The following week, the pattern reverses. Consequently, a move to a weekly DMR would be impossible under the current infrastructure provision without significant reconfiguration.

The reconfiguration of our transfer stations would be more significant in the case of a kerbside sort collection system. This high-level assessment of CCC's current facilities found it would be possible to extend operations at Wern Ddu, but that the Trostre site would not be large enough to sustain any of the collection options considered by CCC with the current HWRC on site as well.

The best option assessed for delivery of new service was the development of a new centralised depot and transfer station at Nantycaws. This option delivers the best operational, strategic and cost benefits to the Authority in the long term.

12. Absorbent Hygiene Collections

To maximise recycling capture and overall performance, Carmarthenshire like many other Welsh Local Authorities have restricted the capacity of residual waste that Householders can place out for collection. Currently, residents are restricted to 3 black bags every fortnight and following implementation of this restriction we have experienced significant improvements in our capture of

recycling materials from the black bag. To improve performance further and facilitate greater recycling from the black bag further restrictions of residual waste are deemed necessary.

However, it is recognised that adherence to the restricted residual policy is difficult for households who have children in nappies or because of anyone with a medical condition or disability giving rise to incontinence.

Carmarthenshire County Council currently offers a restricted Hygiene Waste Collection for 1,800 customers directly related to healthcare waste. This service is managed and provided by our contractor Natural UK.

By January 2022, the Council will be rolling out an expanded AHP service to all households. This subscription-based free service is available to all who have a need and request it. The service will capture the material for treatment and recycling providing further capture of recycling and enable the authority to consider further restrictions or reduced collection frequencies of black bag waste.

13. Garden Waste

The Council approved the introduction of a fortnightly chargeable, subscription service in October 2016. This fortnightly collection system for garden waste, provides residents with 240 litre wheeled plastic bins, replacing the previous service of chargeable compostable bags.

The service has increased year on year during its first 4 years of existence. This past season has seen a dramatic increase, with customer numbers doubling on the previous year. This increase is thought to be mainly due to COVID-19 travel restrictions and the enforced HWRC closures, with residents using the service as an alternative. There were 10,891 customers signed up for the 2021 season, with a service capacity of 11,000 customers based upon our current resource base.

The service is demand led based on customer requests. There is no specified control currently in place in terms of customer capping depending on capacity for certain rounds. At present therefore the service accepts all new customers regardless of location and capacity must be expanded accordingly. When this happens, the service must review if there is a need for additional resources (vehicles and crew).

There is subsequently a financial lag until the additional vehicle has sufficient customers to pay for the additional resource. This is an inherent issue, if there are to be no in-season caps on the number of service subscriptions that the Council will allow. Based on current customer levels and resource, the service is set to break even in 2021.

The viability and performance of the service will be reviewed annually at the end of the collection season.

For the 2022 season the following options will need to be explored:

- Allow unfettered expansion in terms of customers.
- Alternatively, consider capping the number of customers to match the available established resource.
- Allow surplus from “in-profit” years to be ring fenced and taken forward to the following financial year to cover any operating cost deficit in the following year.
- Remove the current 15% discount for a single full payment and apply a 10% discount. This would improve service viability and could go part way to sustaining additional resources when customer numbers grow.

14. Fly-tipping

As part of the public engagement exercise, the issue of Fly-tipping resulting from the proposed changes to residual waste collections is a common issue. We are currently developing and finalising our Local Environment Quality Strategy. The overall vision and overarching objective of the strategy is to maintain, enhance and improve the quality of the built and natural environment through the reduction of litter, blight and fly tipping, thereby creating a healthy and safe environment in Carmarthenshire.

Operational arrangements are currently in place, and we have an extremely robust recording mechanism, but as part of our proposals we need to review the resource base to provide timely action across the County. In addition to this the creation of new Waste Warden posts are being considered to deal with kerbside waste transgressions, tackling fly-tipping and issues relating to early and excessive presentation of waste.

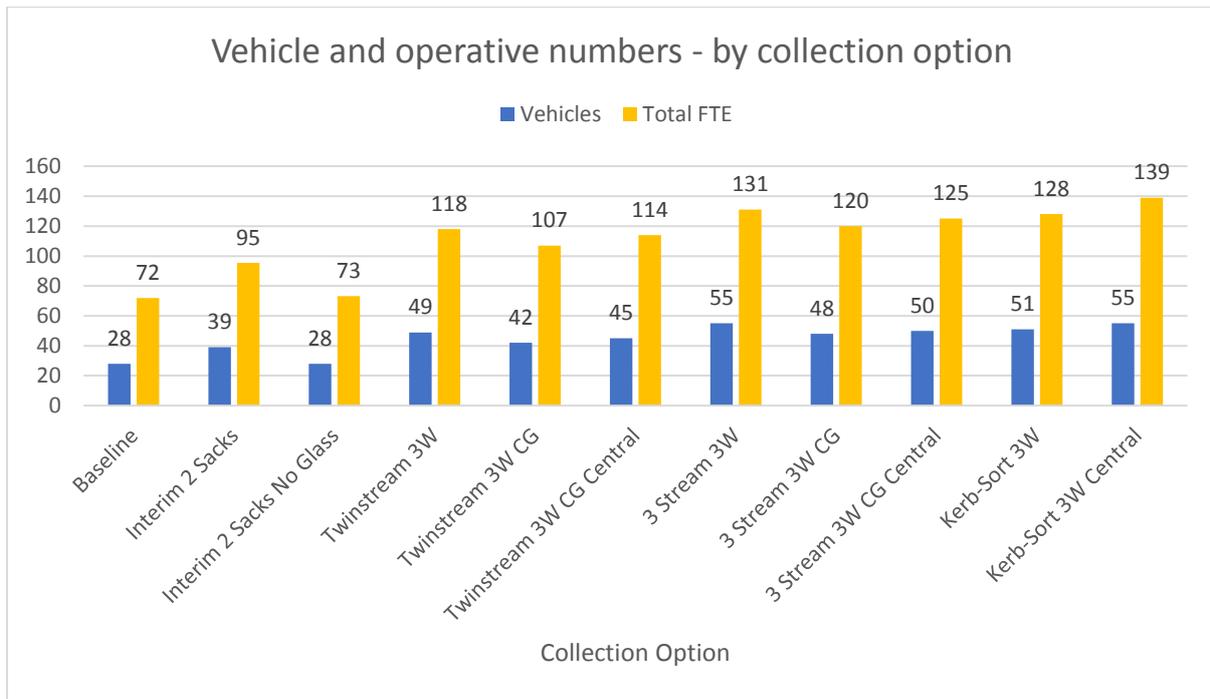
15. Kerbside Modelling Results

The modelling of different collection options was the initial starting point for the project. Officers recognised that to increase recycling of household-collected materials to achieve the 70% target by 2025, the optimal collection configuration needs to be identified to inform the procurement of the next fleet of vehicles.

The kerbside collection of glass is essential if the authority is to achieve the 2025 recycling target of 70%. Current levels of glass yields are similar to those seen in other authorities; it is accepted that a reasonable amount of Carmarthenshire's Bring Site glass would be commercial in origin. It is known that the amount of glass within the residual waste stream – at 4.6% is considerably higher than authorities that collect glass at kerbside. To optimise its overall recycling rate, Carmarthenshire needs to divert as much glass as possible from the residual stream into recycling. In addition, the options presented with 3-weekly refuse perform better as householders will be driven to recycle more, particularly food waste.

With the number of collection systems modelled and all the sub-variants (such as differing refuse frequency), a total of 47 different modelled options were produced. From work and engagement with the Waste Service Review Project Group it was agreed to undertake a shortlisting of potential options that provide a realistic route forward for service delivery, based on cost, performance, and qualitative assessment. As indicated above, it was felt that restricting residual collection frequencies to 4 weeks was unlikely to prove acceptable in the short-term. The results below therefore show collection costs for the optimal 3-weekly refuse options combined with a centralised depot location, indicating projected changes to recycling performance

The following graph shows the number of vehicles and operatives required by each of the potential options:



All the options significantly increase the staffing and vehicle base, due to the nature and collection frequency of our current service.

The following graph shows the costs of the central depot for twins-stream, three-stream and kerb-sort options and is a net figure inclusive of all processing and material income. The graph also shows the projected increase in recycling rate.



Increasing recycling collection frequency to weekly increases costs but is deemed necessary in the long term as the authority tries to promote a recycling-led service, and address issues with material and operational imbalance between recycling and residual, which is only likely to grow as recycling performance increases.

All options modelled have full-service costs higher than the baseline. A brief evaluation of each of the options is below:

15.1. Interim options

The most cost-effective option for interim collections is to limit black bags to two per fortnight and retain the current system of collecting glass via Bring Sites. This, however, only increases the authority's recycling rate by a projected 1.8 percentage points and would potentially result in Carmarthenshire incurring fines for failing its overall 2025 target. With significant amounts of glass still in the residual waste stream, an additional, separate glass collection can be added: this increases the overall recycling rate by 2.5 percentage points but increases full system costs by £757kpa.

Maintaining a fortnightly collection of recycling will not address the issue of material and operational imbalance between recycling and residual, which is only likely to grow as recycling performance increases. For a longer-term option, the authority needs to assess its service delivery and the importance the resident places on recycling.

15.2. Long term options

Option 1 – Twin Stream

As would be expected, the change of co-mingled collections from fortnightly to weekly sees cost increase considerably. The lower collection costs compared to blueprint are offset from higher processing costs. The 3-weekly collection of glass in a pod on the refuse vehicles proves to be cheaper than a separate, stand-alone collection, while the use of reusable sacks is cheaper than provision of single-use sacks. The slight increase in recycling from weekly collections, combined with the new glass collection and the restriction of residual waste to 3 sacks every 3 weeks sees the recycling rate increase by 3.2 percentage points

With less separation at kerbside, a twin-stream service would see higher collection speeds resulting in fewer collection operatives employed by the authority. The need to separate the materials at the MRF requires higher numbers of agency operatives being utilised by CWM to sort material and will mean the material collected will not be of the highest possible standard.

Option 2 – Three Stream

The high capital and running costs of the vehicles for three-stream collections makes it the most expensive option modelled. This is consistent with the outputs from previous modelling exercises in other authorities. As with twin-stream, the co-collection of glass in a pod on the refuse vehicles is the lowest cost option. The recycling rate for three-stream collections sees performance increase by 2.9 percentage points. This option at the costliest and resource intensive whilst not providing necessary recycling improvements has been discounted for potential service delivery.

Option 3- Blueprint

A kerb-sort collection is seen to exhibit the lowest full system cost for all the weekly recycling options. As well as being the lowest-cost option, it is the only collection system where all recyclables and food are collected on the same vehicle on a weekly basis. While the slower collection methodology results in increased resource requirements and subsequently increases collection costs, the lower processing costs acts to reduce the overall cost. This has a resultant increase of 3.2 percentage points to the overall recycling rate.

Although the modelled full system results show kerb-sort to be only £75,000 per annum cheaper than twin-stream, the total figure includes the assumption that CWM would lose all trade DMR opportunities resulting in the loss of £167kpa profit. In reality, it is highly likely that not all trade DMR would be lost and that a solution could be found to mitigate loss of business.

16. Kerbside Carbon Impact

In February 2019 members unanimously resolved to declare a climate emergency and committed to become a net zero carbon local authority by 2030. In planning for our future service delivery, it is essential that we analyse and consider the carbon impact of our proposed future service approach. To fully understand the carbon impact on each of the potential options carbon modelling has been undertaken by Wrap Cymru.

| Carbon Impacts by Collection Option (tonnes CO2) | | | | | |
|---|--------------------------|--------------------------|------------------------------------|---|--|
| Activity | Collection Option | | | | |
| | Baseline | Interim (2 Sacks) | Interim (2 Sacks, No Glass) | Twinstream (3 Weekly, Combined Glass, Central Depot) | Blueprint (3 Weekly, Central depot) |
| Benefit from recycling | -7962 | -8565 | -8434 | -8782 | -9533 |
| Organic treatment | -1222 | -1492 | -1492 | -1577 | -1577 |
| Collection (fuel) | 1028 | 1289 | 1098 | 1819 | 1583 |
| Transfer | 29 | 33 | 29 | 33 | 76 |
| MRF | 105 | 112 | 112 | 115 | 22 |
| Rejected Material | 456 | 480 | 480 | 473 | 18 |
| Shipping | 1461 | 1546 | 1546 | 1589 | 440 |
| Residual Waste Disposal/Treatment | -53 | -46 | -48 | -43 | -49 |
| Total | -6157 | -6644 | -6709 | -6373 | -9021 |

The carbon impacts modelling indicates that a move to blueprint collections will result in the annual saving of 2,864 tonnes per annum of CO2 compared to the current service. Over 1500 tonnes is a direct saving from the fact that blueprint collections will enable more materials to be recycled closed loop. A further 1,000 tonnes would be saved from the cessation of shipping. Of further note, the blueprint collection has a carbon benefit of 2,312 tonnes over the current service with residual sacks limited to two per fortnight, which is the equivalent of taking over 2,000 cars of the road in the UK or the equivalent to 1,435 homes combined energy usage for one year.

Crucially, in relation to decarbonisation, economic studies have shown that whilst there is an increased cost in the short term associated with the investment needed, there is a saving in the longer term as the continuation of the status quo costs more in the medium to long term. Carbon budgeting brought in by the Environment (Wales) Act also means that if carbon savings are not delivered in one area, then they will need to be delivered by another to meet delivery against the carbon budgets.

Welsh Government have recently published new guidance for the reporting of public sector carbon emissions. This is to support Welsh Government’s ambition for a Net Zero Carbon public sector by 2030.

Although the measurement of emissions from overall domestic waste collected by the Council is not directly measured, we are required to report on domestic waste that is sent to landfill, as well as emissions from our fleet mileage.

A move to blueprint collections will result in demonstrable carbon savings in both our waste sent to landfill, and by the reduction emissions by our recycling fleet. This will enable us to show proactive progress in reducing emissions in these areas, in anticipation of Welsh Government setting a carbon budget for the public sector.

Whilst the Council is committed to significantly further reduce its carbon footprint, it recognises that however energy/carbon efficient its services become it will inevitably still have a residual carbon footprint. This situation is acknowledged by the “Net” in the Net Zero Carbon equation as it enables this residual carbon footprint to be compensated for by the generation of renewable energy and/or via carbon offsetting (such as by the planting of trees).

This can be summarised thus:



The action of carbon offsetting can come at a significant cost to the Authority. So, we are assessing the cost of offsetting the Carbon benefit generated across the different options using the Government Department for Business, Energy and Industrial Strategy (BEIS) traded sector carbon values for policy appraisal.

This measure is used to analyse the cost of offsetting carbon that would be required to achieve our carbon target ambitions. The cost of offset per tonne of CO2 is presented below.

| Year | BEIS £/tCO2e |
|------|--------------|
| 2024 | £65.11 |
| 2025 | £74.46 |
| 2026 | £83.82 |
| 2027 | £93.17 |
| 2028 | £102.53 |
| 2029 | £111.88 |
| 2030 | £121.24 |

The carbon impact of the wider waste collection service is not currently included within our calculations for Net Zero Carbon. Full carbon cost implications are currently being assessed but it can be predicted that the cost to the Authority to offset the equivalent carbon saving compared to the current service if a change to blueprint collections was not adopted could potentially be sizeable over the 7 years of the service design profile, should this method of offset be adopted.

The total Carbon Savings of the Blueprint option of 9,021tCO2e is the equivalent of:

- **25** - 500kW wind turbines or,
- **107,000** – individual solar PV panels or,
- **2,000** – cars taken off the road.

All of the above modelling has been predicated on the utilisation of a diesel-powered fleet. The opportunity to further develop Nant Y Caws based upon a change to blueprint would allow for the use of a ULEV collection fleet, thereby having a much greater impact and is one in which the Authority wishes to explore. From ULEV trials and operating tests for waste fleet vehicles 32t CO₂e can be saved per vehicle per year. In maximising our use of ULEV vehicles in the proposed service change significant additional carbon savings can be made, increasing the net benefit to the economy and further supporting our overall Carbon Performance toward Net Zero Carbon.

Finally, to assess the net carbon economic benefit to Carmarthenshire we have used the National Social Value Measurement Framework for Wales. This metric is used to assess the impact of the carbon reduction on the local economy. Results show that there would be a £186k per annum net economic benefit to Wales from the Blueprint option compared to the next highest carbon performing option.

17. Kerbside Employment

The move to Blueprint collections will have a considerable beneficial impact in job creation within the county. Compared to the current service, Blueprint collections would see 67 new full-time positions for collections operatives (27 drivers and 30 loaders) within the authority. This additional staffing base would be directly employed by the Authority delivering towards the Wellbeing of Future Generations Act in delivering economic benefit for the long term within the County.

Given the uncertainty of the national and local economy following the response to COVID-19 local job growth will be an effective tool in lowering local unemployment rates in a potentially economically distressed community, the employment ambitions set out in this strategy will deliver a much-needed boost to the local economy.

The development of strategic and local infrastructure set out in this report will also deliver longer term economic growth and activity by building better connections and opportunities for innovative business development in the County, securing long term economic and employment growth.

18. Wellbeing of Future Generations Act (Wales)

Meeting the needs of the present, while protecting the needs of the future. The Well-Being of Future Generations Act makes this a statutory duty for every council in Wales.

The Act applies to all areas of local government activity and requires significant consideration when developing future strategy and service delivery. In developing our strategy, we must take a longer-term view of our proposed development and decision making. In developing our future waste collection strategy consideration has been given to the social, economic, environmental, and cultural impact of our actions on future generations.

The evidence supports the view that the Collections Blueprint model is the most effective to encourage the achievement of a Prosperous Wales through the development of ‘a low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and productively’ and, delivers a Globally Responsible Wales by ensuring that any changes made ‘improve the environmental well-being of Wales and make a positive contribution to global well-being’.

Higher quality material is more likely to be produced by the Blueprint collection system supporting the retention of material within the Welsh and UK economies resulting in; economic and social benefits and supporting the objectives of the Well-Being of Future Generations (Wales) Act 2015; also delivering improved resilience to materials market downturn.

The blueprint is the option which delivers most effectively against the Sustainable Development Principle, it is understood that the initial cost of service change is costly and will warrant significant consideration. However, the investment in the strategy and operational development of our waste collections service will deliver long term benefits. With long term improvements in the economic, social, environmental, and cultural well-being of Wales.

The Council has specifically included in the Corporate Strategy the objective “Looking after the Environment now and for the future”, specifically to address the aims highlighted above of the Well-Being of Future Generations (Wales) Act. The delivery of a sustainable collections model, which addresses wider carbon reduction and economic benefits is a key area of delivery against this corporate objective.

19. Welsh Government Funding

Given that we are at a low-cost base for collection under the current regime due to the operation of a single collection fleet, any switch to an alternative system to accommodate a weekly collection of Dry Recycling is going to be costly from a fleet and resource perspective.

However, up to now there has been a history of capital financial support from Welsh Government for Local Authorities in undertaking waste service change to Blueprint compliant collections. With the applications for funding to support service change in other authorities, the process has been based on submitting a bid via the Collaborative Change Programme Capital Bid process. To understand if similar support would be available to Carmarthenshire, conversations and meetings have taken place with Welsh Government.

We have been working with colleagues in Welsh Government to develop the opportunity for support funding, developing and submitting a business case for consideration.

As a result of this exercise and business case, the WG have recognised the considerable opportunities associated with the potential plans outlined for improving the collection of high-quality materials alongside support for their processing and use. Not just in waste and resource efficiency, but also in renewable energy, transport, and regional economic development.

In July we received in-principle support funding approval for £14.3m from the WG and the Minister for Climate Change based upon:

- a) Up to £6m for the proposed infrastructure associated with a change to a Blueprint-compliant collection service and the wider creation of an Eco Park in Southwest Wales; and
- b) Up to £8.3m for the procurement of ULEV collection vehicles.

Work is ongoing with WG to provide a detailed cost plan and spend programme for this work, combining council resources and WG funding in order to deliver this ambitious service and infrastructure development.

20. Ultra Low Emmsion Vehicle (ULEV) Waste Strategy

In 2019 the Council declared a climate emergency and it was agreed that the council would aim for net zero emissions by 2030. The future waste service design presents a real opportunity for achieving this ambition. The Councils objective combined with current WG waste fleet aspirations mean that the Council has the opportunity to develop and maximise its ULEV fleet capacity.

The WG have stated support of up to £8.3m for the procurement of ULEV collection vehicles to support the future service delivery proposals. As transport emissions make up a large part of the Councils overall emissions, this strategy can deliver significant benefits to our overall carbon emissions.

The development of the Eco- Park and centralised depot at Nantycaws presents a real opportunity to develop new charging infrastructure for the proposed Waste fleet and can unlock wider commercial charging potential.

The Carbon assessment savings presented above has been predicated on a diesel fleet configuration, the proposal of a mixed diesel and ULEV fleet will have significantly increased carbon savings and environmental benefits.

21. Public Engagement

For us to shape our future services and respond to how our residents would best utilise our service, it has been essential to undertake a Public Engagement exercise. The engagement was designed to gather public opinion on the waste and recycling services that are currently provided and to understand the barriers to recycling that certain people may still face, but critically it was aimed to assess public attitudes towards proposed changes to the service.

The engagement exercise ran for a period of 6 weeks from 24th June to 7th July 2021 with over 4,000 respondents. A summary below presents the results of this exercise.

- 82% of respondents either agree or strongly agree that weekly recycling is a necessity.
- 80% of respondents either agree or strongly agree that a kerbside glass recycling service would make it easier for them to recycle more.
- 52% of respondents do not have any concerns about the proposal to limit black bag collections to three sacks every three weeks. Of the comments outlining concerns, many of these will be addressed through our service change proposals. Such as kerbside glass, textiles, and nappy waste collections. Other comments were around waste storage and fly tipping concerns which will need to be addressed in our future engagement exercises and service commencement planning.
- 67% of respondents would like to see additional recyclable material collected at the kerbside with small electrical appliances, textiles, batteries and glass being the main supported materials.
- 50% of respondents would find “source segregated” recycling collections either easy or very easy to use, with only 24% of respondents saying they would find it difficult or very difficult to use. Further engagement work is necessary to support this group and understand and develop procedures to support the use of such as system.

In conclusion the engagement exercise provided overall a very positive response to our proposals with a majority of respondents supporting the major changes we propose. There will be further development work and refinement of the service delivery model required to address some concerns. However, the issues raised are mainly addressed through our current proposals and were provided to the public prior to engagement via a FAQ on the service changes set out.

In terms of our engagement exercise 82% of people noted their motivation for recycling being “to do my bit for the environment” and 57% identifying “to address climate change” as a motivating factor. It should be recognised that the strategy proposal we have outlined will contribute maximum benefit to the environment, providing a service focussed on tackling climate change and delivering the greatest carbon saving of all options available to us.

This process of engagement will be an ongoing facet of service change. The Waste section are working in conjunction with the Media and Marketing team to develop and deliver a robust engagement programme throughout the process.

22. Household Waste Recycling Centres

In addition to the kerbside collection services, the Council provide four Household Waste Recycling Centres located at Whitland, Wernddu, Nanycaws and Trostre.

The HWRC’s currently operate spring/summer and autumn/winter opening times 7 days per week.

April – September: 8.30am – 6.00pm.

October – March: 8.30am – 5.00pm.

With the exception of Whitland which is open Wed-Sunday but open all bank holiday Mondays.

The current and historic performance of our HWRC network is as follows:

| | 2018/19 | 2019/20 | 2020/21 |
|--|---------|---------|---------|
| HWRC residual waste (t) | 10,831 | 5,654 | 3,077 |
| HWRC recycling (t) | 29,290 | 20,324 | 12,059 |
| HWRCs Recycling Performance | 73% | 78% | 80% |
| Contribution to overall Recycling rate | 56% | 40% | 23% |

In 2018 the council undertook a policy review of our HWRC provision due to falling site performance, increased residual waste, commercial waste increases, waste increasing from out of county sources and recyclable waste not being segregated and simply deposited in black bags. These issues were coming at a significant financial cost to the Authority and impacting recycling rates. To address this the council implemented:

- Prohibition on commercial waste at HWRC’s – 1st April 2019
- Residency Checks – 1st May 2019
- Permit system – 1st May 2019
- Black Bag sorting – 1st October 2019

These actions reduced residual waste by almost 50% over the year. However, it also impacted recycling deposited at site, mainly in the form of rubble which is currently under review by WG whether this item should be included within recycling rate calculations.

As part of the blueprint approach WG state that high recycling HWRCs are a necessity, with an indication of an 80% recycling target specifically for HWRCs being recommended. The current network provision and site policies in place are deemed suitable and sufficient to achieve this WG aspiration, and achieve our corporate ambitions moving forward of providing high quality value for money services and improving our environmental impact.

The site tonnages and contribution to overall recycling rate significantly reduced in 2020/21 financial year due to our response to COVID-19. With the closure of facilities for a period of 12 weeks and with site restrictions on re-opening in order to maintain social distancing.

As part of our response to COVID-19 we implemented an online booking system to manage customer flow and maintain and protect the Health and Safety of the public and workforce. We are currently reviewing this practice and are engaging the public on their views whether it would be both beneficial and preferred to retain this system.

23. Conclusions

23.1. Current service

Currently the kerbside service is extremely cost effective and performing reasonably against the current statutory target of 64%. However, as detailed throughout this report the need for change and investment in service delivery is now a necessity in the immediate term.

To ensure future performance and a change in public behaviour to a more resource efficient and recycling focused society, there is a need to address the frequency of recycling collections. Currently Carmarthenshire is the only Authority in Wales which does not deliver a weekly dry recycling service and collect glass at the kerbside. With 46% of the contents of our black bag waste being recyclable and almost 5% of this being glass, the need to address this for cost and resource efficiency is necessary.

A recycling service should be designed to maximise public acceptance and participation. A weekly recycling service is deemed a requirement to bolster the significance of recycling within the public conscience to ensure continuous and successful participation.

As noted, the current configuration of the service means that recycling and residual wastes are collected on the same vehicle on alternating weeks and on differing weeks across the county. Whilst this has been efficient and effective to date, this in practice offers a level of inflexibility to the service with changes and increased recycling having a disproportionate effect.

Presently, the service is becoming increasingly imbalanced between the two streams. With recycling performance gains at the kerbside witnessed over the past 2 years, the current configuration has put the recycling service at and frequently beyond capacity, leading to missed collections, overtime and catch-up resources needing to be deployed. Given that increasing recycling performance at the kerbside is a necessity, and combined with housing and population growth, service change is necessary to address this imbalance and to safeguard the ability for growth and performance improvement. In this respect a move to a weekly recycling collection is believed necessary irrespective of the final kerbside methodology adopted.

As noted, material quality is a growing and significant focus within recycling markets. Our current service fluctuates between 13-20% contaminated materials within the recycling stream. It is worth noting that this means the Authority currently pays a sorting fee, only to then pay an additional fee for standard disposal on top for the rejected material. More importantly, is that the non-requested material can contaminate the target recyclable materials, thereby limiting the ability for the

Authority to recycle everything possible and reducing the overall quality of the end products, as such the material commanding a lower price when marketing.

With increasing volumes at the kerbside contained within mixed single use blue bags it is becoming increasingly difficult to identify and effectively address contamination. This is limiting the education and enforcement process for recycling compounding the issue further. Enforcement at the scale of contamination we are now seeing is not effective with the enforcement resource we have available. Kerbside-sort would more lend itself to education through direct rejection of materials at the kerbside.

Glass Bring Sites have to date meant an extremely efficient service; however, we are experiencing increasing issues of fly-tipping at these sites and still have almost 5% of our residual waste is Glass. This combined with public pressure for a kerbside collection means that the need to address this is now required.

The design and implementation of a waste kerbside collection service demands a long-detailed lead in time. The service affects all 91,000 households every week so the scale of disruption can be significant. The collection routing, service design, vehicle procurement and delivery are all resource intensive matters, meaning a long-term view is required. However, the results of the engagement exercise shows that there is support for future service change with the expansion and increased frequency of kerbside recycling services high on the agenda for the residents of Carmarthenshire.

23.2. Future service configuration

To deliver service improvement and address the operational issues and performance improvements required in the immediate term, it is proposed that we undertake a phased approach to service change. This approach will mean that the Council can fully develop a business case for longer term change, with the focus on economic development underpinned by kerbside collections and supported by Welsh Government financial backing. The need for this phased approach is outlined below.

Short Term Interim – Weekly Co-mingled Dry Recycling and food with 3 weekly residual and separate glass collections.

The need for weekly collection of dry materials combined with kerbside glass collections and increased restrictions on residual waste is required to ensure we deliver against statutory targets. However, there are issues that need to be addressed in the immediate term. Given that full-service change would necessitate infrastructure development which can be a lengthy process, an option utilising our current arrangements and resources is proposed.

A phased service model of weekly collection of recyclable materials that encompasses these aspects would deliver:

- A solution to address the imbalance between the current alternating recycling and residual collections
- Align Carmarthenshire with all other 21 Authorities which collect dry recycling weekly
- Greater resilience in the service, with manageable and sustainable workloads with capacity for future growth and greater ability to manage operational challenges, such as severe weather, staff shortages and vehicle breakdowns.
- Improvement in the quality of recycling
- Minimal disruption to public in short term, whilst maximising performance.
- A focus on the recycling of materials rather than residual waste
- Improved customer service satisfaction, through the reduction in missed collections and the requirement for additional resource.
- Increased recycling performance

- Reduced waste to landfill/residual treatment
- Greater carbon efficiency over current methodology from the increased dry and food waste recycling capture and reduced residual waste.
- Deliver a steppingstone approach to the longer-term strategy, taking the public on a journey of recycling improvement.
- Earlier introduction of a kerbside glass collection service.
- Supports CWMs current business plan and ensures reasonable time for change and adaptation for commercial segregated collections to take place.
- Will enable full public consultation on longer term strategy

Longer term - Blue Print

More than targets or policy, the climate emergency requires all authorities to seek out services with the lowest carbon impacts, which, over the longer-term, the Blueprint methodology does more than any other. From modelling the Blueprint offers the cheapest method of collection and is the only option that WG would consider supporting financially.

Given that the next service change will need to see the Authority through potentially two target years of 2024/25 – 70% and 2030 - 80% (*proposed target*) and our carbon reduction ambitions by 2030, looking to the longer term is essential in-service design.

The move to kerb sort might be a challenging message to the public in the lead up to the changes; however, it is a common misconception that they will not use, or even learn to like, the system. Experience across Wales obtained from Wrap Cymru has shown that opposition to kerb sort has been consistent in the run up to service change and – particularly in the age of social media, a lot is raised about how the system, more specifically, how any residual restriction will not work. What has also been consistent is the almost complete disappearance of objection post-service change when householders realise that separating recycling is not difficult and that residual restriction is completely achievable when the dry and food collection facilities are effectively used.

The blueprint service configuration also delivers all the above and additionally:

- Sustainable re-usable containers, cutting down plastic waste and the costs attributed to their purchase, delivery, and ongoing uncontrollable demand and subsequent provision.
- The blueprint delivers the greatest material quality, delivering wider circular economy benefits.
- It offers greater security and resilience to global recycling market fluctuations. With shorter supply chains, predominantly in the UK and with the long-term aim of all being in Wales.
- The move to weekly co-mingled is broadly the same cost as blueprint. However, future policy is likely to preclude co-mingled collections as a viable option due to the move to zero waste and the circular economy.
- It is compliant with WG policy and is the only service option available that could attract WG funding. Subsidising the cost of the service and unlocking potential economic growth within the county.
- The ability to provide and adapt collections for additional materials at the kerbside such as small domestic electrical appliances (SDA), textiles, batteries, and longer-term plastic film.
- Highest kerbside recycling performance against other collection methodologies, as witnessed across Wales following service change.

- Greater service resilience operationally with the availability of national spare vehicle support. Meaning in periods of vehicle shortage viable vehicle contingency measures are in place.
- The service model provides instantaneous feedback to resident on the recycling content – perpetual improvement of quality of material and self-priming education process through kerbside rejection.
- The all-Wales blueprint materials marketing support has consistently achieved above market incomes for source segregated material and has always secured UK-based reprocessing
- Is the option that delivers most against the Wellbeing of Future Generations act, our Zero Carbon ambition, the Environment Act (Wales) and importantly WG waste strategy – towards zero waste and beyond recycling.

23.3. Kerbside Risks and considerations

Any service change comes with its risks and challenges, the interim option will enable us to address and mitigate some of these. However, challenges and issues will remain that will require consideration and management, a summary of these are:

- WG Funding – although WG have suggested that any business case based upon the blueprint will be looked upon favourably, there is no guarantee of funding to support service change, but recent discussions with WG has secured agreement for funding in principle, subject to specific caveats.
- We have limited capacity for additional vehicles parking within our current depot configuration so a short-term solution will need to be investigated.
- Extending the life of our current vehicles may lead to additional down time which will require consideration of resources by our Transport Maintenance Unit (TMU)
- TMU – servicing arrangements are based upon current service configuration. Staffing and servicing arrangements will need to be identified for any additional fleet. In addition, the need to upskill staff in the TMU for the maintenance of ULEV vehicles will be essential.
- Charging Capacity for ULEV vehicles will need to be developed. We are currently working with WG, CWM and WWU to understand capacity and development opportunities.
- In any service change there is public objection initially along with operational challenges. With support provided from Wrap Cymru who have experienced many service changes across Wales we expect to minimise this impact.
- Communication and public engagement will be key to successful service change.
- Project management – there will be a requirement for additional support resources within the service to deliver the programme of, procurement, infrastructure development, operational change, and public engagement.
- Operative training, new job profiles and safe working practices will require union engagement, but we will provide more permanent and sustainable jobs within the service.
- Brexit – potential delays and additional costs for vehicle procurement, including risks associated with components and material supplies.
- There is currently a shortage of resource in terms of drivers and loaders within the industry and wider for drivers across the haulage industry. This will be an ongoing risk for the foreseeable future and resource/succession planning will be key.
- Vehicle technology – the development of ULEV vehicles is currently growing fast and we have recently loaned a full-scale electric refuse collection vehicle for a few days to assess its

effectiveness. However, the market is very limited at present; there are two likely routes for the future – rechargeable battery powered electric vehicles and hydrogen powered vehicles. Both are emerging technologies and there is the risk of obsolescence as technology improves.

24. Finance

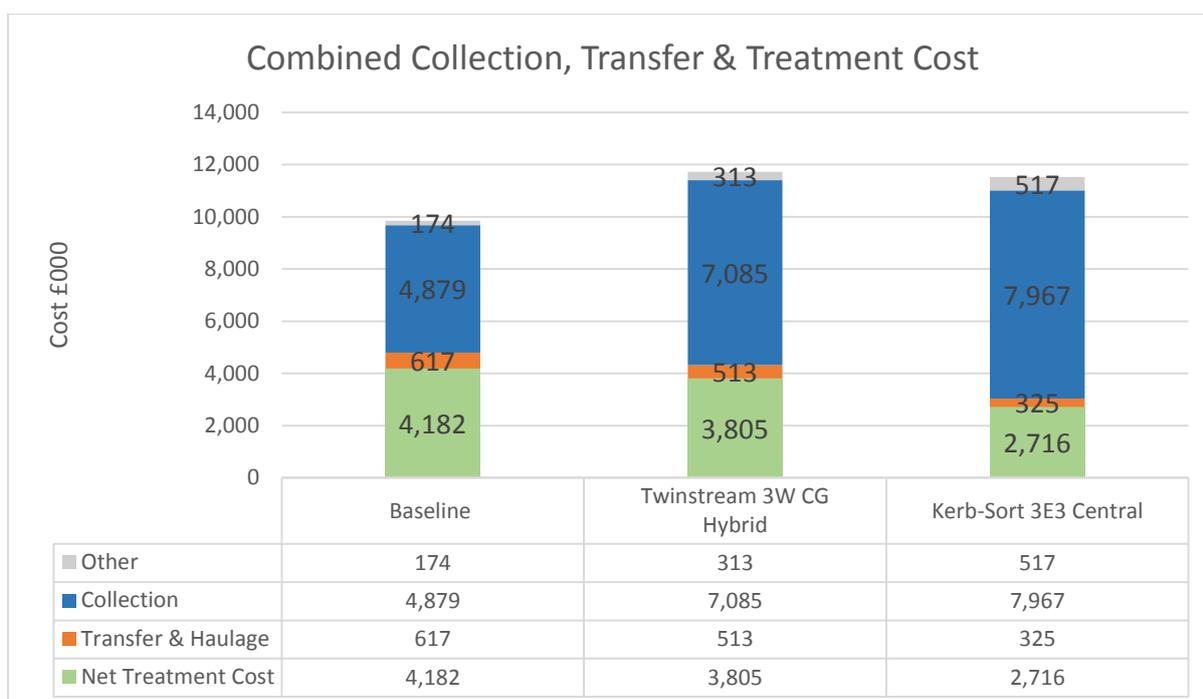
Given the current low-cost service (single fleet on alternative weekly collections), all modelled options result in increased annualised costs from the baseline £9,852mpa and there is currently £6m within the fleet replacement programme budgeted for 2021-22.

On further refinement of the modelled options and assuming that the comingled weekly service is implemented in the interim period the following service costs are:

| Item | Baseline | Interim | Blueprint |
|---|---------------|----------------|----------------|
| Vehicles (Collection) | 28 | 42 | 55 |
| Operatives (Collection) | 72 | 107 | 139 |
| Collection (£k) | 4,879 | 7,085 | 7,967 |
| Transfer (£k) | 617 | 513 | 325 |
| Treatment (£k) | 4,182 | 3,805 | 2,716 |
| Bring (£k) | 174 | 80 | 80 |
| Other (£k) | 0 | 233 | 437 |
| Total Option Cost (£k) | 9,852 | 11,716 | 11,525 |
| Cost net of AHP @ £233k, as already accounted for | 9,852k | 11,483k | 11,292k |

Costs are annual totals that include annualised capital cost

It should be noted that within the interim and Blueprint models £233k for AHP service costs have been accounted for. In addition, within the Blueprint model it is based on the assumption of current service efficiency and that CWM will incur losses of £167k from a reduction in commercial contracts, with detailed service configuration necessary there is likely to be further cost savings on refinement of these assumptions.



To deliver the **interim service model** the net service cost increase from the baseline will be £1.63m per year. With the proposed timeline this would equate to a figure of £2.4m for an 18-month service programme. This position is potentially unsustainable long term, so the Welsh Government funding support and investment is essential for our long-term strategy.

During this interim period, the Authority would define the capital funding and spending plan with Welsh Government following their approval of our business case in July 2021. We are currently working on the detailed costings of the proposed Blueprint option with the intended delivery in March 2024 at the earliest.

Without the WG funding the long-term Blueprint strategy will cost an additional £1.44m per year from the baseline (£11,292k vs £9,852k). The current planned capital outlay for the blueprint strategy is:

| | Item | Cost |
|---|---|--------------------|
| 1 | Containers for blueprint collections | £645,754 |
| 2 | Development of Nant Y Caws as central depot and bulking/baling facility | £4,881,963 |
| 3 | Reconfiguration of Nant Y Caws MRF | £250,000 |
| 3 | Diesel fleet for blueprint collections | £8,220,000 |
| | Total | £13,997,717 |

As outlined above the WG are willing to support the transition to blueprint compliant collections. This support is predicated on the maximisation of ULEV vehicles within the fleet. The current capital cost of ULEV vehicles is considerably more than that traditional diesel vehicles, however, they deliver considerable fuel savings over the duration of the service life cycle. The Authority has received £14.3m in capital support in principle for service change and we are currently developing the full-service cost approach.

Following the approval of our business case submission to WG and the in-principle funding support, initial costing projections based on the funding level support will result in a marginal increase in annualised costs due to the increased capital costs of ULEV vehicles.

The full future costed service plan with Wrap Cymru and WG is still in development and the detail costings will need to incorporate the fuel savings from ULEV vehicles and identify full infrastructure and resource costs for the operation life cycle. On our initial costings it is expected the future full-service cost will be £9.97mpa compared with current operating costs of £9.85m an additional £125k per year on current service design, on the principle that all other additional costs will be funded by WG as outlined in their proposals above.

For illustrative purposes the initial estimated annualised costs for the blueprint service based upon maximisation of ULEV vehicle capacity has been separated out into Capital and Revenue cost:

| Item | Capital | Revenue |
|--------------------------|---------------|---------------|
| Fleet | £10.8m | |
| Containers | £645k | £408k |
| Depot infrastructure | £4.9m | |
| Treatment infrastructure | £500k | |
| Labour | | £4.33m |
| Fleet maintenance | | £617k |
| Fuel | | £557k |
| Transfer and treatment | | £2.62m |
| TOTAL | £16.8m | £6.17m |

25. Recommendations

For the reasons set out and contained within this report, the service seeks approval for the following recommendations:

- To approve the direction of travel for service delivery set out of an interim solution followed by a longer term service change. Including the interim proposals of:
 - the move to weekly recycling collections.
 - the change to three weekly residual collections.
 - the separate collection of glass at the kerbside (3-weekly in the interim).
- To commence the procurement of the additional vehicles required for the interim solution.
- To develop the programme of longer term service change for delivery in 2024 of
 - The move to Welsh Government "Blueprint" compliant recycling collections
 - Weekly Glass recycling as part of the kerbside sort collection methodology.
 - Additional material collections – textiles, Small Domestic Appliances and batteries.
- To accept that the current Household Waste Recycling Centre provision (4 sites) is adequate to meet the needs of the population.

26. Next Steps

Due to our corporate ambitions to engage with communities in shaping our services for the future and to fully comply with Wellbeing of Future Generations Act, following the initial engagement we will need to ensure the ongoing engagement of the public to ensure service acceptance and address concerns. There are many issues that residents, officers, and members are likely to raise through this

process and a programme of engagement is essential for any major change programme to be successful.

A lead project manager has been appointed and work can progress on developing the project team and governance to support delivery of this strategy. A temporary team will be created within the division and will review the potential need for increased resource capacity within corporate teams such as media and marketing and procurement/risk to support the delivery and implementation of this strategy, this will be funded by the Waste Strategy Implementation Reserves.

Procurement of vehicles for the interim solution needs to be undertaken in earnest, with routing and service design for the three weekly black and glass collections commencing in September 21. This work delivers the necessary improvements in recycling performance and will dictate our capacity for the utilisation of ULEV vehicles in the short term.

Finalise the long-term resource requirements and service design proposals based upon public engagement exercise. Develop the final service costings (aided by Wrap Cymru) based upon WG funding support.

27. Strategy programme timeline

Kerbside Strategy Timeline



| Table 1 | | | |
|--|---|--|--|
| Recycling System | Advantages | Disadvantages | Risks |
| Twin Stream – Comingled Collection Dry recyclables collected mixed in one container (i.e. blue bags) with separate containers for glass and food waste. | <ul style="list-style-type: none"> • Most dry recyclables and food waste can be collected on one vehicle. • The system is simple for residents to understand; the same as currently used. • Fewer vehicles required to operate service. • High current participation rates and elevated levels of service-user satisfaction. • Addition of kerbside glass | <ul style="list-style-type: none"> • MRF costs for sorting the materials. As the material may be of a lower quality, this can decrease its market value. • Controlling quality of material and contamination by residents is difficult. • A percentage of material collected will be rejected at the MRF. • Non-target material can reduce quality of target material leading to rejects. • Uncertainty of destination of material's/markets with reduced quality material | <ul style="list-style-type: none"> • Greater risk of noncompliance with the Waste Regulations requirements and WG policy preference for separate collection. • Uncertainty on whether a co-mingled system can deliver 80%+ recycling • likely to exceed the Control of Noise at Work Regs for glass. |
| Three Stream – Dry Recyclables collection in three containers – Fibres, Cans & Plastic and Glass and separate food. | <ul style="list-style-type: none"> • As material is split into three streams, material quality is easier to control than with fully co-mingled and material values higher. • Reduced sorting requirements • Slight change to current collection system • Addition of kerbside glass | <ul style="list-style-type: none"> • MRF costs will still be required for sorting some of the materials. • A percentage of material can still be rejected. • Residents will be required to sort material • More vehicles required than both other options • Additional Containers required or two types of single use bags • Often most expensive service configuration • Reduced material captures per vehicle increasing fleet requirement | <ul style="list-style-type: none"> • Still noncompliance with the Waste Regulations requirements and WG policy preference for separate collection. • Materials market for mixed fibres can be volatile. • New system for Carmarthenshire which will require user acceptance to be successful. • Potential for multiple collection days for differing materials |
| Kerbside Sort – Dry recyclables collected in 4 containers plus food collected on the same vehicle | <ul style="list-style-type: none"> • The potential highest income generated due to quality of material being collected. • The service likely to be more resilient to changes in materials markets due to the quality of material collected. • All dry recyclables and food waste can be collected on one vehicle – a single pass • Complies with WG preferred Collections Blueprint and Waste Regulations • More local council jobs created • Limited sorting costs & Lifetime vehicle costs are lower. • Contamination can be left in container - instant education for public • Only option likely to receive capital support from WG | <ul style="list-style-type: none"> • Additional containers need to be stored by residents. • Residents must sort dry recyclables into more separate containers. • Larger number of vehicles required. • Collections are slower as material needs to be sorted, therefore collection rounds are smaller. • If contamination not retrieved by household, this could cause street cleansing issues. • Capital investment required for containers and sorting facilities to maximise the income from material. • Change in collection service for residents | <ul style="list-style-type: none"> • New system for Carmarthenshire which will require user acceptance to be successful. • Impacts on participation rates are unknown and therefore greater uncertainty exists regarding performance. • Significant operational change will entail greater management and workforce transformation and change in working practice. • Impact to CWM and their trade recycling contracts. • Potential for increased traffic congestion at busy locations (to be assessed) |