A summary of recycling - Copeland Borough Council.

1) Why do we provide a recycling service?

Kerbside collections of recyclable materials have been a statutory requirement under sections 45 and 46 of the Environmental Protection Act for a number of years. New legislation in the form of The Waste (England and Wales) (Amendment) Regulations 2012 (the result of the Waste Framework Directive (WFD) (part 5, regulation 13) brought an additional requirement into effect in January 2015. This change requires public and private waste collectors to provide separate collections of paper & card, plastic, metals and glass for recycling. The aim is to increase the quality and quantity of recycled material by reducing contamination. This applies to councils unless they can provide evidence that it is not technically, practically, economically or environmentally feasible to do so. The council is required to carry out a self-assessment of its recycling collection services known as a “TEEP” assessment in order to ascertain whether it is meeting the requirements.

While the Council currently provides a separate kerbside collection for recyclables, only 3 of the 5 mandatory materials are collected.

2) Background, current service and national context

The black box recycling scheme, which was introduced in 2003 was initially externally funded and operated by a non for profit organisation called Doorstep Recycling. This organisation ran into financial difficulties in 2006 and subsequently the Councils own in house team took over the operation and have continued to collect, increasing the extent of the service to over 90% of homes in the Borough since then.

The main method of kerbside collection is through the use of 55 litre boxes. This system has been widely used across the UK and because material is separated as it is loaded into the vehicle by the collection crew, is acknowledged as the means for collecting high quality recyclable material. This in turn provides an assurance that even when recyclable markets are at their lowest point, the highest level of income per tonne can be received.

The kerbside service offered by Copeland is currently underutilised by residents with recent surveys identifying participation levels of around 25% of homes included in the scheme actually taking part. The data indicates that the highest levels of recycling are being achieved from more affluent areas of Copeland, however more work is being
carried out in this area and the intention is to use the data to help design the best overall system for any future operations.

The best system would consider the residents and their ability to use the service, the collection crew, the legalities linked to national and European directives, the type of vehicles and finally the costs of any changes.

3) Current performance

Like all authorities across England and Wales, Copeland Borough Council is obliged to provide quarterly collection data for all “controlled” waste streams to the Government (Defra) via a national database called “Wastedataflow”. This is used to calculate waste and recycling performance at both local and national levels. While data for 15-16 is yet to be verified, the Council’s recycling rate is 34.6%. Of this figure 6.9% comes from the kerbside service, 8.7% from bring sites and 19% from green waste. Almost 65% of all waste collected comes from residual collections.

It should be noted that while the UK as a whole has a target of achieving 50% recycling of all waste by 2020, targets have not been set for individual authorities.

Copeland’s performance in terms of recycling is below average in comparison to the best performing authorities. The UK’s recycling rate in 2014 was 45% with the best performing authorities achieving rates of over 65% (South Oxfordshire 67%, Vale of White Horse 66% and Rochford 65%). There are however authorities with recycling rates as low as 17% (London Borough’s of Lewisham and Newham).

In Cumbria, only Barrow has a lower recycling rate than Copeland, Carlisle, South Lakes and Eden all recycle between 43 and 45% and Allerdale around 40%.
4) Recycling fleet position

The current service is delivered using two aging 18 tonne and one 12 tonne kerbside multi-compartment collection vehicles each of which has a crew of 3, (1 HGV driver and 2 operatives). Two of the current fleet of three kerbside collection vehicles came to the end of their 7-year lease term in January 2015 and the third Copeland owned vehicle was due to be replaced in the last financial year as an approved capital project. An extension has been agreed on the leased vehicles to capitalise on the opportunity to review the service in accordance with the new regulations and to develop the new service in line with current best practice in terms of kerbside recycling.

The development of the new service has been delayed by the Fleet review and how vehicles are to be procured. This delay has however allowed the waste team, time to research best practice and gather data on recycling services in operation elsewhere that will be used in developing the most appropriate service for Copeland. The following section outlines the process that is needed to determine the best solution for Copeland.

5) National guidance and support

Guidance has recently been developed by WRAP for local authorities to meet the requirement of the new regulations in the form of a ‘route map’. The aim of this route map is to help local councils develop their own systems and identify in terms of the new guidance how they reached their decision making process.

The document also makes a strong recommendation that whatever form of kerbside recycling solution is selected the evidence used to implement any system must be clearly documented. The route map guidance goes on further to say that councils that follow a rational proportionate process to decide on what action they need to take, and put in place a process to review their approach will have a good level of assurance.

An important part of the route map process is a step by step guide for local authorities, this 7 step process is designed to ensure that when local authorities are implementing changes they give full consideration to the aims of the WFD and make full use of the guidance in such a way that it provides a structured pathway towards compliance and alleviates both the need, and potential expense for the use of waste consultancy firms.

A strong theme throughout the guide is the need to carry out a series of tests that are commonly referred to as the “necessity test” and the “TEEP test”. The necessity test is designed initially to test the viability of separate collections in a particular area, viability in this instance may mean is a separate collection of recyclables necessary to facilitate or improve recovery? In most cases the likely outcome from this test will be that separated material sent for recovery would be of a higher quality than a full, or part co-mingled system which in turn would subsequently support the life cycle thinking aspirations of the WFD. Following on from the necessity test however is the TEEP test, this is a test that allows councils to give consideration to their decision making process in terms of how feasible any changes are in terms of their technical, economic, environmental and practicalities.
Route map overview has a 7 step process to follow

1) Review what materials are collected and how.
2) Appraise how collected materials are managed.
3) Apply the waste hierarchy to materials to assess options.
4) Apply the necessity and TEEP tests to paper, glass, and cans, plastic and metal collections.
5) Propose and agree a future approach for all materials
6) Retain evidence to support the rationale for your decision
7) Set up regular reviews to ensure continuing compliance

Issues to consider in meeting the requirements of TEEP include the local recycling infrastructure available, the current methodology deployed by a local council, the geographical nature of an area, the composition of material available in a particular area or the economic impact any changes may have on a particular area.

The completion of the TEEP and necessity tests will initially provide support and ultimately enable local councils to proceed with its kerbside recycling operations in the knowledge that it is compliant.

6) Operational information.

To support the decision making process in terms of procuring the correct type of vehicles and containers to deliver the new recycling service, work has been ongoing with the current kerbside rounds to try and identify the various operational risks and benefits of what essentially are the two main types of collection systems used across the UK. Details of these are outlined in tables 1 and 2 below.

- **Kerbside multi sorting**, this system is popular because the design of the truck allows for a broad range of materials to be collected for recycling, therefore this meets the requirements of the Waste Framework Directive. This system normally collects food waste, paper, cardboard and glass in their own individual type of stillage or compartment but plastic and cans are mixed together as these are both lightweight and are easily separated at the materials recovery facility. To aid performance in terms of tonnes collected in any given day there is a limited amount of compaction of the plastic, cans and cardboard but the paper and glass are collected and transported without any compaction. Within Cumbria at the moment there is only one local authority, South Lakeland District Council actually using this type of system.

<table>
<thead>
<tr>
<th>Pro's of kerbside sorting</th>
<th>Cons of kerbside sorting</th>
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<tbody>
<tr>
<td>Lightweight vehicle so low fuel usage.</td>
<td>When compared to part co-mingled system the payload is low, therefore more trips to the transfer station may be required.</td>
</tr>
<tr>
<td>High number of separated materials so easily</td>
<td>The sorting of the material takes time.</td>
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Table 1
Part co-mingled, this system is also popular and in a similar way to how a standard refuse collection vehicles operates the part co-mingled system normally makes use of some form of compaction which allows a higher tonnage of materials to be collected in one particular load. This system is used in Allerdale for the mixed collections of glass, cans and plastic. These are easily separated and have relatively few issues associated to cross contamination. In terms of marketing the material even when market and resale value have been at their highest there is, and never has been any actual resale value for this material. The scheme is however very popular with residents and as a consequence of this popularity it does have the ability to remove a large proportion of the waste material away from the refuse collection rounds which in turn are then able to collect from more homes in a given day so although there is no cashable saving there is an opportunity for improving the efficiencies of the refuse collection fleet.

<table>
<thead>
<tr>
<th><strong>Pro’s of part co-mingled</strong></th>
<th><strong>Cons of part co-mingled</strong></th>
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<tbody>
<tr>
<td>Higher payload potential through larger trucks with compaction systems in place.</td>
<td>Limited market for mixed materials at local level which leaves the council exposed to risk in the event of any changes, or refusal to accept the material.</td>
</tr>
<tr>
<td>Vehicles could be used for refuse collection – greater resiliency for waste services</td>
<td>Financial return on mixed material is lower.</td>
</tr>
<tr>
<td>Simple for residents –less separation.</td>
<td>Subject to type of container provided for the customer there is an increased risk to contamination issues.</td>
</tr>
<tr>
<td>Speed of service –no sorting for operatives.</td>
<td>Heavy vehicles so high fuel use.</td>
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Subject to amount of separation this system may meet Waste Framework Directive requirements.

7) Refuse collection and links to recycling

The refuse collection rounds operated by Copeland Borough Council are constantly being evolved to reflect the increased numbers of homes and developments being built across the district and subsequent increased tonnages of waste being collected. The number of properties in the Borough has increased by around 1000 properties since 2010. These additional properties have simply been absorbed into the services, enabled by efficiency changes such as the move to fortnightly and lane end collections. It should however be noted that this figure is the equivalent of 1 days' work for either a refuse or recycling vehicle and crew and further changes to improve the efficiency of the rounds continue to be implemented.

With the number of new properties anticipated to be built in the Copeland in the next few years it is clear that improved levels of recycling are absolutely necessary to ensure the service can be operated with the current level of resources for longer. Increased recycling would reduce black bin waste displacing waste from a refuse service which struggles to cope with the existing demands placed upon it.

As well as the displacement of recycling material away from the refuse fleet, the collection of a broader range of materials would generate higher levels of participation which would improve customer satisfaction and also provide the local authority with new income streams.

8) Income from recycling

The financial value of recyclate is split into two areas, the first being from the sale of materials collected which is delivered and sold to local merchants. The second is the receipt of a payment called the recycling credit from Cumbria County Council, which is a national scheme designed to reflect the saving that waste disposal authorities like Cumbria County Council would make if they had handled the materials as waste.

• Sales to local merchants

Although the market for recyclables has suffered a decline in the last year the Council still achieved income from sale of materials of just under £77k in 2015-16. This figure includes income from both the kerbside and bring site collected material.

Recyclable materials are traded in a global marketplace and there are many influencing factors. The main manufacturing base for electrical goods is the Far East, therefore that is where the demand for cardboard packaging exists and why cardboard collected in the UK is predominantly sent for recycling to China. Individual material values fluctuate almost
daily meaning income levels over the year can vary significantly. Budgeted income for 2015-16 was set at £134,000 as this was broadly based on income levels of that amount from 2012-13.

The recycling materials markets have historically been volatile and difficult to manage. There are a small number of significant periods where markets have collapsed and in some cases the materials streams have taken a considerable time to recover.

In 2008 the global downturn lead to a collapse of all material prices, a small number of local authorities who were collecting co-mingled materials were forced to send their recycling for direct disposal which meant a loss of both sales income and recycling credits and an additional cost for the disposal. In Cumbria most collection authorities managed to secure some value for their materials but this was incredibly low and resulting income was a fraction of the original budget forecast. Over recent years there has been a series of peaks and troughs on both a global and national level which usually feed down to a local level.

- Recycling credits
  The Environmental Protection Act 1990 introduced a duty on Waste Disposal Authorities, in Cumbria the County Council (CCC) pay recycling credits to Waste Collection authorities for diverting household waste away from the waste stream for the purpose of recycling which helps avoid the cost of disposal that CCC would normally face. The Clean Neighbourhoods & Environment Act 2005 s49 introduced a more flexible and localized approach towards the payment of recycling credits which led to payments being made for a short period of time as the Cumbria Recycling Rewards Scheme, this scheme significantly increased the cost of recycling and composting for CCC and the recycling credit system.
was reintroduced. The payment of recycling credits to Waste Collection Authorities remains a duty on Waste Disposal Authorities where agreement cannot be reached or where the default scheme is most appropriate.

The payment for the year 2015/16 was £64.08 per tonne and while CCC have yet to confirm the levels of income for the current year, the payment is increased by 3% per annum in line with the statutory guidance. CCC have however been looking at alternative methods of rewarding Waste Collection authorities which may lead to a reduced level of income for every tonne of recycling material that is collected. In some areas elsewhere in the UK recycling credit payments have been withdrawn altogether.

To put the recycling credit income into context, the Council received £565,570 in 2015/16. This relates to:-

<table>
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<th>Service</th>
<th>Cost per tonne</th>
<th>Cost per household in the Borough per year (33,160 h/h)</th>
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<tbody>
<tr>
<td>Bring sites</td>
<td>£141,617</td>
<td></td>
</tr>
<tr>
<td>Kerbside</td>
<td>£113,165</td>
<td></td>
</tr>
<tr>
<td>Green waste</td>
<td>£310,788</td>
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</tbody>
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In total therefore income from recycling in 2015-16 amounts to £642,500.

Even after sales income has been secured and recycling credit payments are received each and every tonne of recycling carry’s a cost to the council.

The future of kerbside recycling is a high risk business in terms of finance, legalities and reputation.

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<tr>
<td>Recycling</td>
<td>£31.75</td>
<td>£3.81</td>
</tr>
<tr>
<td>Green waste</td>
<td>£4.93</td>
<td>£2.60</td>
</tr>
<tr>
<td>Domestic waste</td>
<td>£39.70</td>
<td>£19.89</td>
</tr>
</tbody>
</table>

The above costs are based on draft 15/16 outturn and shows direct costs only. SLA’s or central charges are not included as these figures are not available.

9) The waste hierarchy.
The waste hierarchy promotes a series of stages linked to helping improve the environment, these 5 stages are listed below.

- **Prevention**, through its ability to remove any materials from the collection stream altogether this is the key to improving the efficiencies and effectiveness of any collection system, it does however present us with the most difficult stage to successfully accomplish. There are a number of reasons for this but to actually prevent any form of waste (whether it be residual refuse or recycling) entering the collection stream there normally has to be a lifestyle change from the customer.

  Unlike the ‘feel-good’ and ‘doing their bit for the environment’ changes a customer will make whilst recycling, the issue of prevention and its focus on making changes to purchasing habits in particular are often seen as an imposition on a person’s freedom of choice. Recycling does inflict a set of changes to how a customer will dispose of their waste but it normally does not inflict such a degree of change that it causes any resentment from customers.

  A significant amount of work has gone into this area of the hierarchy with food and drink suppliers reducing the amount of packaging around their products. The thickness and weight of everyday items like plastic and glass drinks bottles, drinks cans and yogurt pots for example has reduced over many years.

- **Reuse**, this stage is normally associated to the re-use of goods such as furniture and other household goods. There is scope for large tonnages to be removed from the collection systems we operate but nationally the best examples of re-use have been developed in partnership with groups such as social housing and non for profit recycling operators.
The legislation brought in recently to limit the number of plastic carrier bags being issued by shops and supermarket is an example of where reuse is being promoted, at an operational level however the reduced number of carrier bags being used as a secondary type of containment alongside a blue sack or a bin has led to more loose refuse being presented for collection crews.

- **Recycle**, while recycling is widely regarded as being the best environmental option this is at the lower end of the waste hierarchy. Although a recycling system is relatively easy to implement and develop, the success is by and large based on achieving high levels of public participation. Recycling also leads to reduced tonnages collected by the refuse fleet and improved levels of income through sales of materials and financial reward from Cumbria County Council through the recycling credit payments system.

Green waste composting is also a form of recycling, it should be noted however that home composting is a better environmental option than kerbside collections such as those that the Council provides which through its ability to help customers easily dispose of large amounts of garden waste material is a very popular service.

- **Other recovery**, this is where material is recycled through more bespoke systems such as incineration or anaerobic digestion where energy is sourced from the process of handling the materials.

In Cumbria the majority of the refuse collected by the 6 district councils is delivered into two waste treatment plants where waste is shredded, dried and aerobically composted for 14-16 days which reduces the weight of the waste by around a third. At the end of the process the dried material can be sold to be used as a fuel or sold as a relatively low quality product into the recycling market.

- **Disposal**, reflects the material being sent for direct disposal and is the least preferred option.

10) **Key issues to consider.**

- The increased, but undoubtably unpopular use of stage one (prevention) of the waste hierarchy would reduce costs but still retain our legal position as a waste collection authority. This may require either a change of direction or additional resources or both.

- Operational hazards such as noise levels must be considered in developing the new service

11) **The immediate future – actions**
• Once the fleet extension is agreed a decision must be made on the method of collection and the type of vehicle to be used to ensure compliance with the TEEP regulations.

• The cost of the service will need to be fully understood since the configuration of vehicles needs to differ from those currently used.

• Promotion of recycling in general and the new service in particular is a priority to ensure effective engagement and regular participation in the service. In recognition of this priority, a budget of £16,500 (50 pence per household) has been included in the waste recycling budget for 2016-17 to develop an engagement and promotional campaign for prevention, re-use and recycling.

• Increasing general participation in recycling is a key priority. While the original plan was to concentrate all recycling communications for 2016-17 on the new service, a general engagement campaign must be started as soon as possible to encourage more people to recycle. This general campaign can ultimately be absorbed into a specific campaign for the new service. With only 25% of households using the service regularly, significant strides can be made based on the existing services.

• To procure the most appropriate collection containers and recycling vehicles and implement the new system.