

Municipal Waste Minimisation & Management Strategy

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Version 1.0

11.12.14

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1. Introduction and background

The purpose of this document is to set out how waste collected by the council is to be minimised and managed across the Bradford District.

The collection and management of Bradford's municipal waste, the majority of which is household waste (Council collected wastes also known as Municipal Solid Waste - MSW) is a key frontline Council service to the public which touches every household in the district on a weekly basis. The quality and public satisfaction levels with this service influences many residents' view of the Council as a whole.

The strategy also sets out present performance levels of existing waste management arrangements, and considers the need for any changes to ensure the successful and sustainable management of the Council's collected waste.

The Council's current contracts for waste treatment come to an end in 2017, therefore, this strategy also considers the issue of procuring new waste treatment services to succeed the present arrangements.

This strategy is designed to replace the current Municipal Waste Management Strategy (MWMS) which was adopted by the council in 2005. This recommended the procurement of a long term 25 year waste Public Finance Initiative (PFI) solution for the district's municipal waste and paved the way for the subsequent waste treatment procurement project. The removal of the PFI financial support by government resulted in this project being unaffordable. This new strategy considers what further actions the council could take to move the management of its waste to more sustainable levels, minimise waste, boost recycling and thus reduce the amount of residual waste that requires treating via a waste treatment procurement exercise.

2. Need for a new strategy

2.1 Revise waste predictions

Predicting the quantities of waste to be managed (known as waste flows) in future years requires a detailed model in order to make those predictions, as waste volumes are not static. Levels of economic activity, population growth, new housing, methods and policies associated with refuse collection and recycling performance will all impact on the amount and type of residual waste to be managed. Appendix 1 provides a summary of the Waste Flow Model (WFM).

Any procured waste treatment contract to succeed the interim contracts when they expire in 2017 is likely to be for a minimum of 10 years (this is discussed in more detail in Section 5.2), so the time horizon for predictions can be set from 2017 to at least to 2027. The WFM attempts to make these predictions.

Table 1 below is derived from the Waste Flow Models to predict the amount of suitable residual waste that requires treatment, and therefore represents the tonnes which would be included in the procurement for waste treatment facilities.

Note: Scenario 0 is the base case ie where we are now with no further changes. Scenario 1 assumes implementation of a Collection Policy to limit residual waste capacity and maximise recycling.

Table 1 Waste Flow Model – Predictions of Residual Waste Volumes Requiring Treatment.

Year	Contract year	Scenario 0 (Base Case) tonnes	Scenario 1 (Waste Collection Policy) tonnes
2017/18	1	130798	124161
2018/19	2	131940	125236
2026/27	10	134592	127754

The WFM predicts the implementation of a Waste Collection Policy will have positive benefits of:

- reduce tonnes of residual waste by 5%, reducing the cost of expensive waste treatment (equivalent to a saving on treatment costs of circa £600kpa); and
- encouraging greater use of kerbside recycling bin and thus improve recycling levels.

The WFM should be updated annually to take account of actual performance and service changes, in order to accurately predict waste types/volumes going forward, thereby assisting decision making and the procurement processes.

2.2 Improve performance

Since the 2005 strategy was developed the composition of Bradford’s waste has changed. This needs to be understood as future predictions will need to be made to assist formulation of waste strategies, including the procurement for new waste treatment facilities required from 2017.

Bradford’s Residual Waste Composition

Recent waste analysis work undertaken by a specialist company called Waste Research Limited (WRL) has concluded that overall Bradford seems to have a high level of residual waste, with on the one hand properties having multiple residual waste bins, and quantities of side waste, and on the other low levels of kerbside recycling. WRL consider the kerbside recycling capture rates to be low (except for garden waste), when compared with other similar areas within the UK. The results of the waste analysis work including the composition of Bradford’s waste is shown in Appendix 2.

The above conclusions from WRL will require the Council to:

1. target recycling messages to the poorer performing areas and consider more innovative ways to try and bring about a behavioral change in these (less affluent) areas; and
2. limit capacity for presenting residual waste to encourage better use of the recycling bin and thus reduce levels of residual waste by having a suitable Waste Collection Policy.

Following the implementation of recycling improvements arising from the Department of Communities and Local Government (DCLG) funding (a service change), a new waste analysis exercise will be undertaken in 2015 to understand the impact of these changes on residual waste composition and recycling performance, which will assist both decision making and the procurement processes.

2.3 Respond to Climate Change

The issues around Climate Change are now well documented, and waste management practices can have a significant impact on climate change and energy. It is now known that sending waste to landfill generates greenhouse gas emissions – particularly biodegradable waste which releases methane (a powerful greenhouse gas) as it decomposes. Any procurement of waste treatment facilities must aim to significantly reduce waste disposal to landfill, thereby avoiding damaging methane production, and have a climate change benefit, such as generating power (renewable energy) and heat from waste.

The Climate Change Act 2008 contains two of the most challenging legal targets the government faces: an 80% cut in carbon emissions (from the 1990 baseline) by 2050 (including a reduction of at least 34% by 2020); and 15% renewable energy production by 2020. The UK Carbon Plan was published in December 2011 which establishes how the targets contained in the Climate Change Act will be met. To support Climate Change targets and incentivise the energy production industry, the government operates various Environment Programmes administered by Ofgem. The production of energy from waste (EfW) is classed as energy generated from a renewable source, which opens a number of financial incentives for waste treatment operators. Reliance by the council on EfW treatment provides the council with an opportunity to help meet its carbon reduction targets. These possibilities are summarised in Appendix 10 along with information on other local strategies aimed at reducing the Council's impact on Climate Change.

2.4 Enable new treatment/disposal procurement

The central core of the 2005 strategy was the development of a waste PFI type solution to meet the district's longer term waste treatment needs. The ending of the Waste PFI treatment project renders this strategy invalid, and therefore a new one is required which covers the procuring of new waste treatment facilities (to succeed the cancelled waste PFI) when the present contractual arrangements for waste treatment come to an end in 2017. In addition several changes in national and EU waste policy since 2005, also need to be taken into account in looking at the future strategy (Appendix 3 provides a summary of the main waste policy developments).

At national policy level the concept of the Waste Hierarchy remains a core component in moving the management of waste up the hierarchy to more sustainable levels (see fig 2 in Appendix 3). To assist in achieving more sustainable management of waste, there are a number of targets set for 2020 (see 4.1 and 4.2) which will need to be taken full account of in any new procurement:

- to recycle and compost Household Waste (HHW) – at least 50 per cent by 2020; and
- to recover value from MSW (including reusing, recycling, composting or energy recovery) of 75 per cent by 2020.

3. Where are we now?

3.1 Current waste services

The Council has statutory responsibilities for the following waste management services:

- household waste and recycling collection services for residents at the kerbside;
- provision of Household Waste Recycling Centres (HWRCs) across the district;
- community recycling sites known as Bring Sites;
- management of recycling and/or disposal of collected wastes, including bulky waste and electrical goods;
- maintaining street cleanliness; and
- maintaining closed council-owned landfill sites.

In addition to the above, the Council also provides the following waste operations:

- trade waste services;
- clinical waste collections; and
- chemical advisory services.

These services are described in more detail in Appendix 4. The key point to note is that the present contracts for treating and disposing of the Council's collected household waste (known as the interim contracts) expire in 2017.

3.2 Recent Service Improvements

Pursuant to a successful bid in 2012 to the DCLG, Bradford has implemented some service improvements, most notably increasing kerbside collections of recyclables from 4 weekly to 2 weekly frequency, and now including plastic bottles. The full effect of these improvements will not be felt till 2015, it is forecast to increase the Council's upstream recycling rate from 26% (2013) to 32% (2017).

3.3 Current Waste Performance Levels

The waste service performance is measured against a number of performance indicators. There are currently three key waste performance monitoring indicators which the council records; NI 191, 192 and 193.

NI191 - Total residual household waste per household

NI192 - Percentage of household waste sent for reuse, recycling or composting

NI193 - Percentage of municipal waste sent for landfill

These indicators with further analysis are reproduced in Appendix 5.

The key performance messages are that Bradford:

- needs to reduce the amount of residual waste collected;
- needs to increase the amount of kerbside recycling collected.

The other key message from the data in Appendix 5 shows in recent years overall waste has been declining, however increasing economic activity as the district pulls out of recession, along with predicted increases in population and housing (as illustrated in Table 2 below) will all serve to increase waste and thus put an upward pressure on NI 191 and on waste treatment/disposal budgets.

Table 2 – Population and Household Data for Bradford

Year	Households	Population	Average persons per household
2001	193,967	470,800	2.43
2011	208,838	523,115	2.50
2013	210,193	532,648	2.53
2021	215,576	568,945	2.64

These trends also have operational and financial implications for the council’s waste collection services, which will require regularly re organizing of refuse collection rounds, and increasing the number of rounds to service a growing housing stock.

Waste Collection Performance

In respect of waste collection efficiency, Appendix 5 shows the critical factor is the number of bins emptied by the refuse crews per working day. There has been a significant productivity improvement over a 4 year period. The daily average now stands at 2,111 bins with an increase of over 300 bins (17%) per crew per day over this period.

4. Where do we want to get to?

4.1 Vision, Aims and Objectives

Our **vision** is that waste is regarded as a resource and managed in a sustainable manner to meet the current and future needs of Bradford District’s communities.

Long term ambitions for Bradford District were agreed in 2000 and set out in the 2020 Vision as a route map towards a transformed district. Current work on developing a New Deal for the Bradford District is based on four broad outcomes priorities:

Good Schools and a Great Start for All Our Children
Better Skills, More good jobs and a Growing Economy
Better Health, Better Lives
Safe, Clean and Active Communities

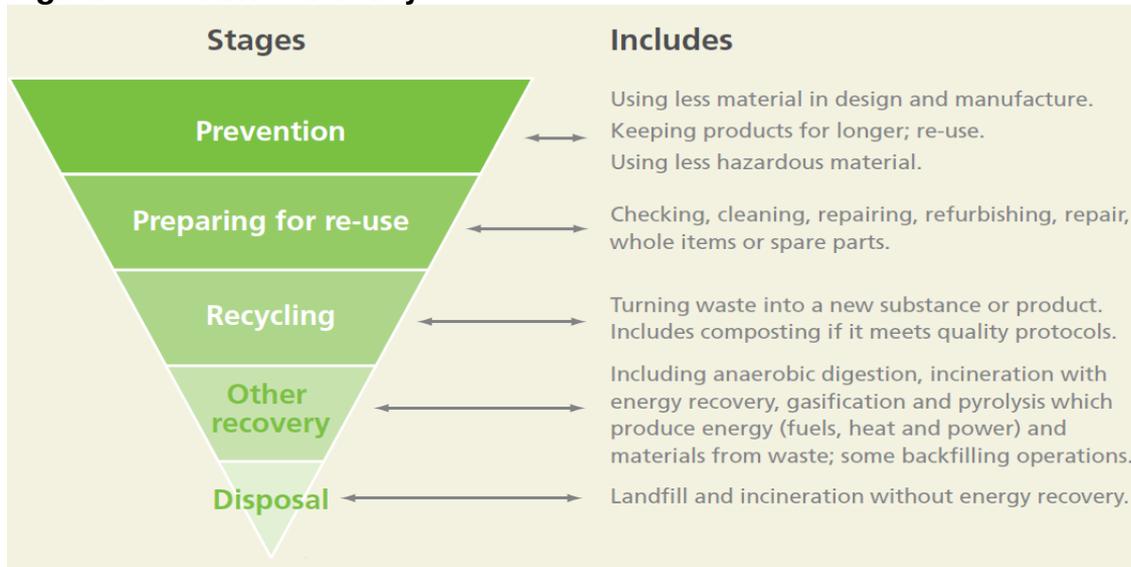
A **key aim** within the current Community Strategy the document that sets out the upcoming priorities in achieving the long term vision for 2020 is “to create a greener, cleaner, and more sustainable environment which makes best use of our resources and positively affects climate change”. This outcome is fundamentally influenced by the quality of its refuse, cleansing and waste management services where the following commitments are made:

“We will use resources efficiently, minimising energy and water use, re-using as much as possible and expanding the use of renewable energy and locally sourced fuels. This will involve new approaches to managing waste in order to minimise waste, maximise recycling and reduce waste going to landfill.”

Our **strategic objective** is to minimise and manage waste at the highest possible stage of the 'waste hierarchy' taking account the need to achieve the best balance of

- environmental protection and
- economic benefit

Figure 1 – Waste Hierarchy



4.2 Performance targets

That the performance requirements based on % by weight to be achieved by 2020 to:

- divert from landfill at least 80%:
- recycle at least 60%: and
- recover value from at least 75%

of the council's collected wastes are incorporated into the council's upstream recycling strategies, and the services to be procured for treating residual waste, along with publicity aimed at reducing waste per capita and encouraging waste reuse.

5. How will we get there?

5.1 Upstream waste minimisation

This section considers the actions the council itself should take to reduce waste growth pressures, and bring about behaviour change to manage waste more sustainably and improve waste reuse, and recycling amongst residents.

5.1.1 Waste Minimisation Plan

The cost of treating and disposing of the council's collected waste for 2013/14 was around £13m. Reducing the levels of residual waste will provide cost savings, therefore the council must develop, adopt and maintain a Waste Minimisation Plan. Waste Minimisation (or Waste Prevention) is mainly concerned with the top levels of the waste hierarchy of

waste reduction and reuse. The council itself needs to be an exemplar for the district and its residents to follow. National government has published a waste prevention document (December 2013) setting out the government's aims, and what actions it will undertake to create the conditions for waste prevention across all sectors of the economy. Being an exemplar is seen by government as a key role for councils to perform.

Community Engagement

The success of the waste reduction and reuse messages will largely depend on the level of involvement by the public and the communities they live in. Although the council's communications can be high level district wide messages, there is, given the differing local communities, a need to tailor messages for the specific target audience. The council's Neighbourhood Service is well placed to advise on and facilitate this, e.g. to promote the idea of "community champions", who lead by example, deliver messages, and give local feedback on the waste services. Special provision will be needed to cover the significant student, transient and ethnic groups, if the messages are to reach all of the district.

In developing such messages, the Council should also take the opportunity to deliver a wider message to the public about caring for their neighbourhoods, taking personal responsibility for reducing waste, preventing littering and fly tipping, and promoting pride in their local communities.

Reuse

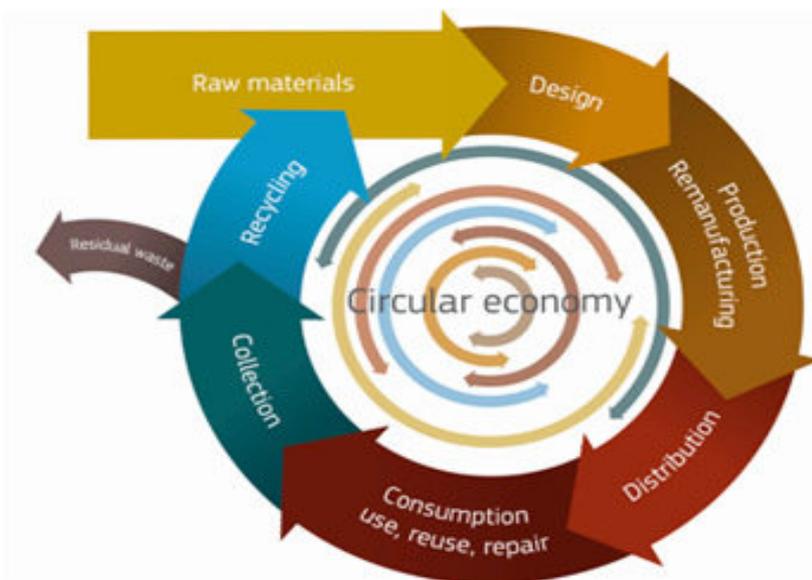
Product reuse not only has the benefit of reducing waste, but has both economic and social benefits of creating employment and often placing money into the pockets of social enterprises and charities (third sector).

Consumer Products

There are now other factors coming into play which will influence the composition and quantity of our household waste. For example business are now designing out waste in product packaging, the Courtauld Commitments are a good example of this in action, as is forthcoming national legislation to reduce the use of disposable carrier bags in favour of reuse types (a 5p charge on all single use carrier bags is expected by Autumn 2015).

Business are also now designing products for re use at the end of life, with supporting take back schemes, and post code locators to help consumers find their nearest local reuse centres. The overall aim is to limit the impacts on the environment over the life of a product. It is estimated that 80% of the environmental impact of a product is determined at the design stage. Eco labeling will identify those products with high recyclable content, enabling consumers to make informed choices. The drive towards low carbon economies, and the concept of the circular economy will see businesses seeking to optimize material reuse, and move away from generating a waste. The old linear model of a product produced, used and then disposed of is slowly giving way to a circular model of keeping products in use for longer, and at end of life are designed to facilitate recovery of spent materials for reuse. The circular economy is about the reuse of materials and products, with recycling regarded as the least favoured option behind product design, repair, remanufacture and reuse. Below is a visual representation of the circular model.

Figure 2 - Circular Model



5.1.2 Communication, Education and Awareness Raising

The levels of success of the council's upstream recycling initiatives will depend on the public's buy in. Without their continued and increased support, the costly residual waste will not be limited. Communication, education and awareness raising are all very much interlinked and viewed as key to the success of upstream recycling and waste reduction and reuse.

Communication activity undertaken in recent years is summarised in Appendix 6. The council must work hard at promoting education and raising awareness of the waste hierarchy in the district, and explaining how Bradford's recycling service works in simple understandable terms. Such activities to be resourced include:

- Simple clear instructions leafleted to householders explaining what the kerbside recycling service;
- Explaining why waste reduction, reuse and recycling is needed, and importantly explaining what happens to our recyclates;
- Face to face engagement (door knocking, roads shows, exhibitions, use of neighbourhood service);
- General messaging in council buildings (leaflets, posters in council public areas);
- General messaging in external areas (on street advertising, adverts at HWRCs, items in local media – press, radio);
- Internal staff briefings (payslip messages, intranet, Pride at Work publication);
- Full use of social media;
- Elected member briefings (use of member Bulletin).
- Education in schools (including school visits, provision of lesson plans for teachers)
- Clear identification on bins of what they can be used for.

5.1.3 Waste Collection Policies

Many councils have adopted waste collection policies which state that only household waste which is properly contained within the designated residual waste bin (wheelie bin) will be removed (emptied) and that no side waste, or bins with raised lids will be emptied in order to limit residual waste and encourage use of recycling systems.

The benefits to Bradford of adopting similar policies are:

- increases in recycling; and
- reduced levels of residual waste.

The implementation of such a waste collection policy will not be without difficulty and needs to be done in conjunction with strong positive messages and advice on recycling. There will also need to be the consideration of appropriate enforcement where there is continued non compliance with such policies.

There are mixed views on the efficacy of alternate week collection of residual waste both from National and Local Government. Bradford's current policy is the provision of a weekly collection of residual household waste. In addition, the Council secured a £4.6m grant from the Department of Communities and Local Government's (DCLG) £250m fund which has provided 82 English councils with support to extend or re-introduce weekly residual waste collections. A condition of receiving financial support is that weekly residual collections are maintained for the duration of the scheme, which is time limited to 2017.

5.1.4 Incentives and Penalties

In order to encourage behaviour to reduce residual waste and increase recycling, a system of incentives could be considered. Current evidence on the benefits of reward schemes is, however, mixed.

Incentives appear to work best when linked to communities as opposed to individuals and there is merit in trialing such programmes to gauge local impact.

On the other side of the coin, fines or penalties for throwing away rubbish (rather than recycling it), so called "pay as you throw", has not received support and the power to fine/charge for what you throw, available to councils in the Climate Change Act 2008, was withdrawn in the 2012 Localism Act.

5.1.5 Third Sector delivery

Community and Voluntary Sector groups are well placed to deliver upstream waste minimisation projects and activities. The Council needs to maintain regular dialogue with third sector organisations to provide support for their reuse and recycling activities (particularly more fringe recyclates, eg cooking oil that are not collected at the kerbside by the council), development of business cases and associated funding bids, and to explore possible opportunities for joint working.

5.1.6 Recommendations

The following recommendations are made:

:

- that the council fully incorporates the “waste hierarchy” into its policies and day to day activities;
- the council develops, adopts and maintain a Waste Prevention Plan;
- the council promotes strong waste reduction, reuse and recycling policies amongst its own staff, and presents itself as an exemplar for others to follow;
- a communications plan is developed to educate and raise awareness of waste issues generally within the district, but also recognises the need for community specific messages, or specific messages related to policy changes;
- a Waste Collection Policy which aims to limit residual waste capacity and encourage recycling at the kerbside is adopted;
- an implementation plan, including enforcement practices to support the Waste Collection Policy will be required for the waste services going forward, adopting those of a high standard, such as those of Environmental Health, is a necessity;
- a close eye is kept on the development and performance of incentive schemes used by other councils to reduce waste and increase recycling, which Bradford may wish to adopt in the future;
- regular dialogue with the Third Sector is maintained by the council;

5.2 Downstream effective treatment and disposal

However well minimization strategies work, there will inevitably be residual waste collected. This needs to be treated and disposed of in the most effective manner, balancing economic and environmental outcomes. In February 2014 Bradford’s Executive considered a report into the ending of the waste PFI waste treatment project, and decided to develop a new waste strategy (this document) and to establish the parameters of a new procurement to secure an affordable, dependable and sustainable long term waste treatment/ disposal solution for the district from 2017.

5.2.1 Scope of the Procurement

The procurement scope would be for the provision of waste treatment facilities only.

5.2.2 Soft Market Test (SMT)

In the context of the waste PFI credit withdrawal announced to Bradford and Calderdale councils by DEFRA in February 2013, which ultimately brought the PFI waste treatment project to an end, it was deemed necessary and appropriate that the councils undertook some detailed work in the waste market place to identify both levels of interest and the present and near future position on alternative waste treatment options which the market was willing to provide, should Bradford decide (either in partnership with Calderdale, or not) to embark on a new procurement for waste treatment facilities. This exercise known as a ‘Soft Market Test’ (SMT) was undertaken in the summer and autumn of 2013, the results of this are shown in Appendix 7.

The SMT sought to understand the appetite in the waste market for providing waste treatment facilities. During the SMT exercise the councils gave no indication of a

technology preference for waste treatment. There were 16 expressions of interest from the waste market.

5.2.3 Technology Options

The preferred technology offered by the market was Thermal Treatment (TT) based on conversion of waste to energy. Any variations to this were only around the nature of the TT and whether the waste needed to be pre treated (PT) for fuel preparation or not, and if yes, there were some small variables around the way the fuel preparation was achieved.

Pre Treatment (PT)

Pre treatment (PT) is required to produce a more homogeneous waste feedstock. This requires some physical changes to the waste (mainly through size reduction) to aid feeding of the waste into a furnace or chamber. PT typically involves the removal of oversized items and non-burnable fractions, and recovery of some marketable recyclables such as metals. The intensity of any PT varies depending on the specification of waste which an individual Thermal Treatment (TT) plant requires. Specifications at this time remain unknown, but are not expected to be too onerous.

Thermal Treatment (TT)

Existing merchant Energy from Waste (EfW) facilities, or those in development, tend to have a conventional moving grate type furnace. This type of technology is tried and tested extensively both in the UK and abroad and as such tends to be the default technology for most large TT facilities.

The majority of SMT participants favoured the tried and tested, and thus bankable moving grate type furnace.

5.2.4 Solution Options

The solution options received through the SMT exercise can be categorised as follows:

1. bespoke whole solution within the district;
2. semi-merchant off-site Thermal Treatment (council provides the anchor contract for the facility);
3. merchant off-site Thermal Treatment;
4. spare capacity at Local Authority procured PFI facilities.

These options are detailed further in Appendix 7.

Conclusion

Taking into account the relative merits and de-merits of the options above, on balance, it is considered that a solution based on the Option 3 model – a solution comprising an offsite merchant Thermal Treatment requiring Pre Treatment of the waste - would provide the best overall balance between cost, security (outlet), performance (diversion and recycling), deliverability (commercial, financial and technical), flexibility. Given that this will not require a large capital investment on behalf of any successful bidder, the balance of contract flexibility, security and cost, a 10 year contract term with an option to extend up to 15 years is viewed as offering overall best value.

A summary of the key advantages and disadvantages of each of the proposed solution packages arising from the SMT is given in Appendix 8.

5.2.5 Procurement Options

Following on from the SMT and the conclusions drawn, consideration of how such an option(s) is/are procured needs to be made. An overview of the 4 principal procurement routes currently available is set out below.

A The Open Procedure

Under this procedure the Council's requirements and terms would need to be fully specified in the tender. Bidders would be required to submit a single fully priced tender. There is no opportunity for discussions or negotiations. This procedure is generally only suitable for simple procurements.

B The Restricted Procedure

Under this procedure bidders are required first to pre-qualify. Only tenderers who pre qualify are provided with the Council's detailed requirements and given the opportunity to submit a tender. There is no opportunity for discussions or negotiations.

C The Competitive Dialogue Procedure

The Council can engage in dialogue with the bidders in order to identify and develop a solution that best meets their requirements. This procedure is flexible - dialogue may be conducted in one or more stages and at each stage the Councils can chose how many bidders to take through to the next stage. When the remaining solutions have been sufficiently developed, dialogue is closed and final tenders are requested. Once final tenders have been received, scope for changes is limited. Such a process can provide a quicker procurement, and is something which should be pushed hard if tight deadlines are to be achieved. This procedure should only be used for the award of complex contracts.

D The Negotiated Procedure

As with the Restricted and Competitive Dialogue Procedures, in the Negotiated Procedure, tenderers are required to pre-qualify and only those who pre qualify are provided with the Council's detailed requirements and given the opportunity to submit a tender. Following pre-qualification, there is a negotiation with the pre-qualified group of tenderers prior to submission of final tenders. Once final tenders have been received, scope for changes is limited. This procedure has a number of parallels to the Competitive Dialogue Procedure which has largely replaced it since it was introduced in 2006. The Negotiated Procedure may only be used for the rare instances where the contract is particularly complex and where the Competitive Dialogue Procedure is not appropriate.

Conclusions

Whilst any new procurement is not expected to be as complex or as long as the waste PFI procurement, it will not be a simple enough procurement to rely on the Open or Restricted Procedures. It is considered that some degree of dialogue will be required to agree the legal, commercial, technical and financial elements of solutions and therefore that the procurement option C - Competitive Dialogue Procedure would appear to be the most appropriate procurement route. The new procurement would be significantly less complicated and involve fewer stages than the PFI procurement and it is believed could be completed within 12 -18 months.

5.2.6 Other Key Messages

Contract term

The SMT revealed that the waste market viewed a contract term of 10 years to be the minimum needed to both encourage them to bid (possible investment decisions), and provide the council with a near optimal gate fee, therefore the Council should procure a waste treatment contract for its residual waste of 10 year duration, with flexibility to extend up to 15 years in order to secure better value for money and greater certainty for both the contractor and the council.

Waste Tonnages

Using the Base Case in the Waste Flow Model (WFM) as an example, the net result is the procurement should be for a maximum of 130,000 tonnes from year 1 (2017) to 135,000 tonnes in year 10 (2027 – see Table 1). Any Guaranteed Minimum Tonnages (GMT) under the contract should not include trade waste tonnes and should be set no higher than 80% of the total contract tonnes available as predicted by the Waste Flow Model, is regarded as prudent. However as illustrated Appendix 1, if other collection policies come into play as modeled as Scenario 1, then the procurement will need to take account of a lower available tonnage as predicted by the WFM.

Contract Performance

The following 4 key performance targets are viewed as absolute performance targets which should feature in the procurement, and any subsequent contract.

The contractor must:

1. accept all of the council's waste delivered to the delivery point, or agreed alternative (contingency) delivery point, at all the agreed days/times (the contractor may be the only outlet the council has for its waste, failure to have an outlet will result in suspending refuse collections);
2. ensure every council refuse collection vehicle delivering waste to the delivery point or contingency delivery point is turned around within 15 minutes (if refuse vehicles experience excessive turnaround times, this delay will prevent them completing their days work resulting in customer complaints);
3. divert away from landfill at least 80% of the waste delivered by the council;
4. recover value from at least 75% of the waste delivered.

Note – given how crucial number 1 above is to the council, it is advised that, notwithstanding any contractor contingency arrangements, the council puts in place its own emergency contingency arrangements, which will sit outside of the procurement contract.

Contract Management

Good contract management throughout the operational phase of the contract is essential to realizing the benefits of the new procurement. Contract management issues are considered in more detail in Appendix 9.

Changes in Law

Waste policy seems to be under constant development as shown in Appendix 7, such policy as incorporated into UK law could impact on the contract, given the length of time of such a contract, provisions will need to be incorporated to deal with future changes in law which impact upon it.

Partnering

Looking at the other neighbouring councils in West Yorkshire, Leeds have completed their waste PFI procurement and signed a bespoke contract with Veolia, the same applies in Wakefield where they have a waste PFI contract with Shanks. Kirklees have a long standing waste treatment contract with SITA. Further afield, Greater Manchester have an established waste PFI contract with Viridor, and North Yorkshire are currently trying to salvage their waste PFI contract with their preferred bidder AmeyGespa.

The conclusion is that there is little or no scope for partnership working on a new waste treatment procurement, and therefore, unless Calderdale make any new approach to Bradford, this aspect would seem closed.

Governance

A governance structure for the procurement will require the approval of the council Executive. The Executive is responsible for ensuring that decision making arrangements are open, transparent and accountable. The procurement project itself will need to ensure compliance with Bradford Council's constitutional and decision making structures; and have regard for the principles of public law, accountability, Best Value and quality assurance.

To avoid over engineering the governance, consideration for using existing arrangements where ever possible should be made, such as union consultation using existing industrial relations framework (level 3), or member liaison using existing scrutiny committees. However what ever is agreed, it must be fit for purpose.

Procurement Team

This procurement project is likely to take around 18 months to complete, and the work involved should not be underestimated. To deliver the project and support the governance, the council will need to establish the resources and funding needed to deliver the procurement, including those officers to be involved in a procurement team, the team roles and any external resources/specialists support.

Evaluation

The procurement for waste treatment facilities will award the contract to the Bidder that proposes the most economically advantageous solution for the Council. This may not necessarily be the Bidder that proposes a solution which offers the lowest cost. The evaluation approach and criteria (both qualitative and quantitative) will need to be agreed and submitted to the Executive for approval before the procurement process can begin.

Risk Management

Risk Management is about having effective strategies in place to control risks. These strategies may reduce the likelihood of a risk arising; or reduce the likely impact of the risk if it should arise; or eliminate the risk.

The procurement will follow the Council's own internal risk management guidelines for strategic projects, in order to meet the specific needs of the project and its governance

structure. Allocation of managing risk will be part of the roles identified for the project team, and regular reporting of the risk identified and their status will form part of the governance of the project.

Affordability

The SMT exercise itself did not provide any reliable costings, but indicative costs for waste delivered to the proposed treatment facility gate ranged from £75 - £105/tonne, and when factoring other costs including transport, the whole system cost to the council ranged from £85 - £122/tonnes. Clearly the levels of affordability will require testing and agreeing with Finance, however the true costs will only be known when any solution being bidden as part of the procurement has been fully worked up.

5.2.7 Recommendations

It is recommended that:

- the Council should adopt this strategy document as soon as possible in order to trigger the commencement in early 2015 of a new procurement for a waste treatment solution to ensure that a robust and affordable contract is secured prior to the expiry of the current interim contracts in 2017;
- the alternative waste treatment solution should consist of an offsite merchant TT requiring PT (Option 3 – the PT may be on BBL);
- the Competitive Dialogue Procedure would be the most appropriate procurement route;
- that an affordability envelope for the whole system cost be agreed with Finance;
- the new procurement should be based on revised Waste Flow Model data and identified scoped in waste (as contained in Appendix 1);
- any Guaranteed Minimum Tonnage based on the WFM, be set no higher than 80% of the maximum tonnes available;
- added performance requirements (eg additional recycling) should be subject to value for money (ie commercially driven rather than fixed performance targets);
- 4 key performance targets relating to 1. waste acceptance, 2. turnaround times, 3. landfill diversion and 4. value recovery are featured in the procurement and any subsequent contract;
- the contract term should be 10 years + up to 5 year option to extend;
- given the length of contract term, changes in law provisions will need to be incorporated into the contract;
- a governance structure to be agreed and documented to manage the procurement;
- a project team with appropriate resources and support be agreed to deliver the procurement;
- part of the Council's existing BBL site to be made available (leased) to bidders to the contractor for PT purposes only if they so require;
- the procurement scope must not conflict but work with other internal service policies and aims;
- the council should develop its own contingency arrangements to be used as a last resort should there be a failure of the contract to receive the council's waste;
- trade waste tonnages should not be included in any contractual guaranteed tonnages from the council to any procured waste treatment contractor; and,
- a review of the trade waste service be undertaken in 2015 as to its long term prospects.

Appendices

Appendix 1: Waste Flow Model

It can be seen from this table that from 2007/8 there has been a steady reduction in collected waste by around 3 or 4 percent each year. This reduction has taken place despite the fact that from 2001 – 2013 numbers of households in the district has increased by 17,000, and population by 62,000. It is assumed that this reduction is a result of the economic downturn from 2009, and steady increases in recycling, and other influences in waste reduction and reuse. However the total waste arisings are beginning to increase again as illustrated in Table A below.

Table 3: Recent Trends for Collected Waste in Bradford

Year	Kerbside Collected Household Waste	Collected Trade Waste	HWRC Household Waste	Other Waste	Total Waste Arising	Annual % Change
2006/07	166,187	41,067	40,332	30,657	278,243	4.67
2007/08	162,499	37,135	41,972	26,805	268,411	-3.53
2008/09	157,452	36,703	39,650	26,270	260,075	-3.11
2009/10	157,792	30,051	36,191	23,136	247,170	-4.96
2010/11	154,735	26,431	34,804	20,097	236,067	-4.49
2011/12	153,563	24,782	35,054	14,462	227,861	-3.48
2012/13	152,453	19,354	34,508	16,981	223,296	-2.00
2013/14	154,356	19,284	32,077	20,303	226,020	+1.22

Waste Flow Model – Predicting to 2027

The Waste Flow Model (WFM) produced by Jacobs Consultancy is very complex and has numerous pages to it. This model is held electronically as a series of spreadsheets, only a small amount of its content is reproduced in this Appendix.

Introduction

This briefing note summarises the assumptions made to develop waste flow sensitivity models for two kerbside waste collection scenarios:

- Base Case – Scenario 0
- The impact of the Bin Policies on residual waste flows; - Scenario 1.

Benchmarking

To help estimate the effect on the residual stream of implementing bin policies, benchmarking with other local authorities has been carried out. The benchmarking group was selected using the Office of National Statistics (ONS) area classification that divides authorities into socio-economic groupings¹. For Bradford the ONS grouping 'Centres with Industry' was used (containing a total of 21 authorities), and residual waste yields in Bradford were compared to those authorities in the group that also operate bin policies aimed at reducing residual waste capacity (see Table B).

¹ONS groupings assign local authorities into groups which have key population characteristics in common such as housing type and age distribution see <http://www.ons.gov.uk>.

Table 4: Comparison of Residual Waste Arisings - Authorities from ‘Centres with industry’ ONS Grouping (using 2012/13 data from WasteDataFlow for kerbside collected household yields²

Authority	Kerbside collected Residual (kg/hhd/yr)	Kerbside collected Recycling (kg/hhd/yr)	Kerbside collected Garden (kg/hhd/yr)	Total kerbside collected (kg/hhd/yr)
Rochdale MBC (WCA)	435.4	146.2	91.8	673.5
Pendle Borough Council (WCA)	428.1	171.7	120.4	720.3
Hyndburn Borough Council (WCA)	364.7	155.8	111.4	632.0
Burnley Borough Council (WCA)	513.8	134.5	106.9	755.2
Kirklees MBC (UA)	431.7	129.1	124.0	684.8
Derby City Council(UA)	441.3	143.1	97.0	681.4
Nottingham City Council (UA)	514.9	96.6	57.9	669.4
Bradford (UA)	612.7	74.1	40.4	727.2

The literature suggests that bin policies aimed at reducing residual waste capacity can raise awareness of volumes of waste generated and promote the segregation of material for recycling and have an overall waste reduction effect. References include WRAP guidance on the performance of recycling schemes^{3 4}, a University of Southampton research paper⁵ and the collated findings in the Household Waste Prevention evidence review⁶.

The following points can be made;

1. such bin policies can result in less total waste collected at the kerbside, 3-4% reduction in weight is can reported
2. WRAP report reductions of 4-13% in weight of the residual waste bin collected at kerbside (a combination of less waste overall as noted in 1. above and movement of recycling from residual bin into the recycling bin), depending on inclusion of green waste in the residual bin and there may be diversion to HWRCs.

Modelling assumptions

This section summarises the assumptions made in the waste flow modelling.

Base Case Scenario 0 is as is in 2014, with no bin policies. Scenario 1 - assumes a waste collection policy is commenced in 2015/16.

Model Outcomes

² The figures in this table differ from nationally reported NI191 figures. NI191 figures report the amount of residual household waste per household (kg/hhd/yr); calculated as the total amount of household waste (as defined in NI192) minus household waste sent for recycling, composting or reuse. This calculation will include household waste collected at HWRC sites, bulky collections, etc and also deduct any additional recycling and composting achieved through the Bradford interim waste treatment contract.

³ Analysis of kerbside dry recycling performance in the UK 2008/09, WRAP, September 2010

⁴ Alternate Weekly Collections Guidance, Final Report, WRAP 2007

⁵ The impact of alternate weekly collections on waste arisings, ID Williams and C Cole 2013

⁶ WR1204 Household Waste Prevention Evidence Review, October 2009

Table C below shows, for Bradford the comparison on levels of residual waste which would require treatment between Scenario 0 and Scenario 1. With a waste collection policy aimed at reducing residual capacity, it predicts an estimated 5% (circa 6,000 tonnes) reduction in overall waste requiring expensive treatment.

Table 5: Residual Waste Predictions

Year	Contract year	Scenario 0 (Base Case) tonnes	Scenario 1 (Waste collection policy) tonnes
2017/18	1	130798	124161
2018/19	2	131940	125236
2026/27	10	134592	127754

6,000 tonnes at an estimated whole system treatment cost of say £100/tonne would produce a saving of £0.6m pa.

Appendix 2: Results of Waste Analysis

From 2008 to 2011 the Council completed a number of waste composition analyses. The composition analysis involves taking physical samples from the household residual waste bin from properties regarded as representative of what is known as ACORN groups. The ACORN (A Classification Of Residential Neighbourhoods) profile sorts households into five broad categories 1 to 5 with 1 the most affluent householders and 5 the least affluent. This is then applied to the overall blend of ACORN groups for the district in order to arrive at an overall model for the district as a whole. These studies were undertaken by a specialist company Waste Research Limited (WRL).

Table 6: Summary of waste composition analyses of kerbside collected residual waste arisings in Bradford (kg per household per week)

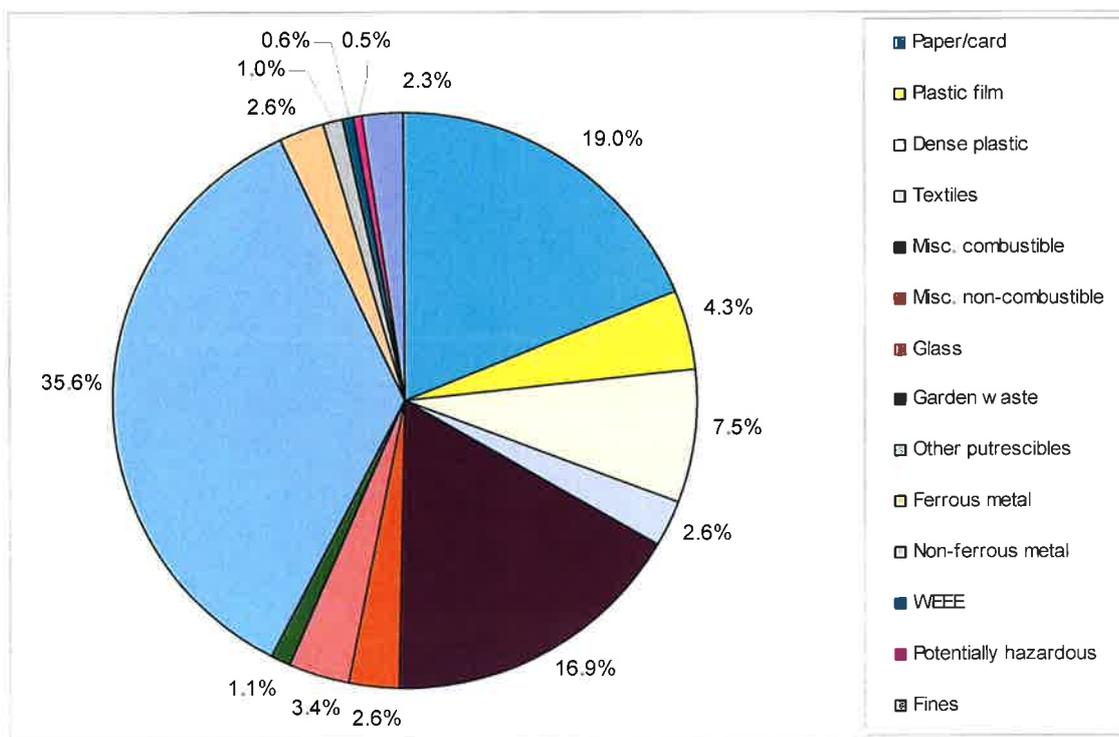
Date of Analysis	Feb-08	Jul-08	Nov-08	Mar-09	Jun-10	Sep-10	Feb-11	Change Feb-08 to Feb-11
Category	kg/hh/wk	%						
Paper / Card	3.89	3.64	2.55	3.27	3.88	2.59	2.78	+ 28
Plastic Film	0.81	0.88	0.86	0.63	0.83	0.68	0.63	+ 22
Dense Plastic	1.30	1.27	1.13	1.22	1.36	1.15	1.10	+ 15
Textiles	0.35	0.51	0.36	0.46	0.29	0.17	0.38	- 8
Misc. Combustible	1.94	1.96	1.77	1.79	2.41	2.23	2.47	+ 27
Misc Non-Combustible	0.86	0.68	0.14	0.66	0.21	0.10	0.37	- 57
Glass	1.06	0.90	0.83	0.97	1.32	0.73	0.50	- 53
Garden Waste	0.29	1.82	0.67	0.20	1.53	0.46	0.16	- 45
Other Putrescible	5.97	5.94	4.13	5.24	6.33	5.98	5.21	-13
Ferrous Metal	0.53	0.36	0.47	0.48	0.49	0.38	0.38	- 28
Non-Ferrous Metal	0.19	0.18	0.15	0.18	0.21	0.12	0.15	- 21
WEEE	0.22	0.21	0.08	0.13	0.05	0.14	0.09	- 59
Potentially Hazardous	0.09	0.08	0.03	0.02	0.22	0.03	0.07	- 22
Fines	0.27	0.21	0.26	0.46	0.34	0.38	0.33	+ 22
Bradford Total	17.77	18.64	13.43	15.71	19.47	15.14	14.62	- 18

Table 7: Summary of kerbside residual waste composition from each ACORN sample area and modelled figures for Bradford in February 2011 (% by weight)

ACORN Category	1	2	3	4	5	Modelled for Bradford
Category	wt %					
Paper/card	18.78	16.40	23.39	17.16	16.97	19.02
Plastic film	4.89	4.66	4.61	4.00	3.96	4.29
Dense plastic	8.58	6.86	6.42	8.11	7.78	7.54
Textiles	1.86	2.84	0.38	2.41	5.85	2.61
Misc. combustible	9.97	11.04	12.22	23.67	17.41	16.90
Misc. non-combustible	2.68	15.22	2.15	2.51	0.60	2.57
Glass	3.15	3.44	3.93	3.51	2.87	3.44
Garden waste	4.05	4.45	0.87	0.40	0.43	1.11
Other putrescibles	35.88	28.27	39.44	31.27	38.16	35.57
Ferrous metal	2.48	1.86	3.22	2.21	2.66	2.61
Non-ferrous metal	1.46	1.33	1.25	0.50	1.11	1.00
WEEE	0.91	0.33	0.32	0.58	0.81	0.58
Potentially hazardous	2.15	0.01	0.31	0.32	0.27	0.48
Fines	3.16	3.30	1.50	3.38	1.12	2.28
Total	100.00	100.00	100.00	100.00	100.00	100.00
Missed Recyclable/compostable	18.99	19.27	18.33	12.79	14.64	15.45
Further Potentially Recyclable/compostable	44.18	36.45	44.26	43.81	46.48	44.58
Potentially biodegradable content	66.21	57.71	70.75	63.55	67.75	66.60

The above table is also reproduced below as a pie chart (see Figure 4).

Figure 3: Pie Chart – Residual Waste Composition



The samples were undertaken by a company who specialize in this area called Waste Research Limited (WRL). From the data in the reports WRL made a number of interesting conclusions:

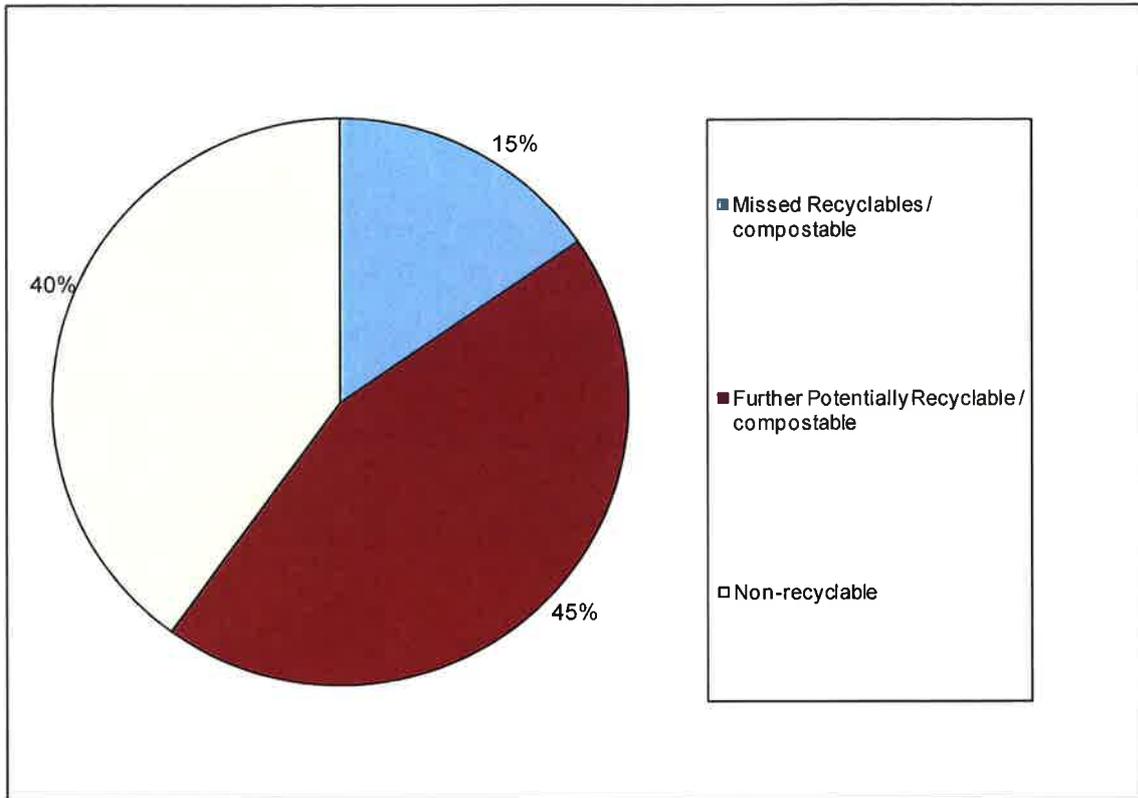
- Consistently across all analysis phases, three waste fractions remain the largest within the residual waste bin; paper, putrecibles (such as kitchen waste), and miscellaneous combustibles (such as contaminated paper and plastic fractions).
- The modelled weight arising for Bradford of 14.62 kg/hh/wk, is considered high when compared with other similar areas within the UK
- The area that generated most waste was ACORN 5 which had a high weight arising of 17.79kg/hh/wk - the lowest was in the ACORN 1 at 11.56kg/hh/wk.
- the level of missed targeted dry recyclables (all sample areas are provided with a kerbside collection for; paper/card, glass and cans) for each ACORN site in kg/hh/wk shows that ACORN 5 site has more dry recyclables in the residual waste than any of the other area and ACORN 1 has the least amount of dry recyclables than any of the other area.
- WRL considers the waste arisings in ACORN areas 4 and 5 (16.03 and 17.79kg/hh/wk respectively) to be high for the type of kerbside schemes operating in Bradford. It was noted that some of the houses in these areas put out more than one residual waste bin and residents are allowed to put out additional side waste, this may partly account for the higher than typical weight arisings observed in Bradford particularly when comparing the levels with typical figures from other areas of the UK. The high waste arising figure may in part be due to the high number of people living in one household.
- WRL suggest that households in a less affluent demographic profile dispose of more refuse per week which is likely to be due to larger families living in one household where higher waste arisings would be expected and does not necessarily indicate an increase in waste per person.
- The table below shows the differences in the level of missed targeted recyclables (glass, paper/card and cans) that reported to the residual waste for each ACORN area in kg/hh/wk. This seems to indicate that certain areas are not as good as others in recovering targeted recyclables from the waste, for example ACORN 5 has the highest level of dry recyclables in the residual waste and ACORN 1 has the lowest level. WRL suggest Bradford should aim to reduce the level of missed recyclables by targeting lower ACORN groups.

The table and pie chart below show the level of missed targeted dry recyclables in kg/hh/wk for the five ACORN sites and the modelled result for Bradford for February 2011

Table 8: Missed Dry Recyclables

ACORN Group	1	2	3	4	5	Modelled
Targeted Dry Recyclables	kg/hh/wk					
Paper/card	1.25	1.26	1.49	1.25	1.63	1.40
Glass	0.35	0.31	0.39	0.49	0.45	0.42
Cans	0.13	0.17	0.21	0.31	0.45	0.27
Total	1.73	1.75	2.09	2.05	2.53	2.10

Figure 4: Missed Dry Recyclables



The overall modelled composition of the kerbside collected residual waste in Bradford is depicted in the above pie chart, and indicates that 15% of the total residual waste is missed targeted recyclables and compostables (all sample areas are provided with a kerbside collection for; paper/card, glass and cans). A further 45% by weight is potentially available for recycling or composting depending on available markets for the material. New analysis should be undertaken following any major changes to the collection services. It will be interesting for example to see how this picture will change (improve), when the DCLG funding to improve our kerbside recycling services is fully rolled out and bedded in. In order to test this, a further waste composition analysis should be carried out in 2015. This information will also be important for informing bidders to a future procurement.

Table 7 below compares the modelled residual waste weight arisings in Bradford for paper/card, plastics and putrescibles (February 2011) with figures from Merseyside and Northumberland. This shows that only putrescibles is higher when compared with the Merseyside figures but all levels are significantly higher when compared with the figures from Northumberland. However, it should be noted that collections of residual waste in Northumberland are alternate weekly.

Table 9: Comparison of Residual Waste

Category	Paper and Card	Plastics	Putrescibles
Authority	Weight Arisings (kg/hh/wk)		
Bradford	2.78	1.73	5.37
Merseyside	3.42	1.95	4.49
Northumberland	1.16	1.00	4.62

The results based on the modelled composition show the Net CV to be 9.10MJ/kg.

Modelled biodegradable content of 66.60% for kerbside residual waste in Bradford is close to the Government's stated figure of 68% for MSW.

Appendix 3: Policy Development

EU Landfill Directive

As a Member State of the European Union, the UK is obliged to comply with the 1999 Landfill Directive of reducing waste to landfill. The remaining target year is 2020, when the amount of municipal waste sent for landfill disposal must reduce to no more than 35 per cent of that produced in 1995 (1995 is a base year when the vast majority of the nation's municipal waste was landfilled). The government's view is that nationally the nation will meet the 2020 target. Bradford as a result of its upstream recycling performance, and the performance of the interim contracts, is already meeting this target. In 2013/14 we landfilled slightly over 20% of our household waste (see Figure 2 and Table 4 in Chapter 3)

National Waste Strategy

The government's original National Waste Strategy (2000) was updated in 2007 and set the following waste targets for the UK:

- to reduce the amount of HHW not reused, recycled or composted in 2000 by 29 per cent by 2010 with an aspiration to achieve a 45 per cent reduction on 2000 levels by 2020;
- to recycle and compost HHW – at least 40 per cent by 2010, 45 per cent by 2015 and 50 per cent by 2020; and
- to recover value from MSW (including reusing, recycling, composting or energy recovery) - 53 per cent by 2010, 67 per cent by 2015 and 75 per cent by 2020.

Whilst the 2007 National Waste Strategy places emphasis on recycling, composting and recovery, it does not set specific targets for UK local authorities to achieve.

In June 2011 the government carried out a full review of waste policy in England, looking at:

- the most effective ways of reducing waste arisings;
- maximising cost benefits from waste and recycling, and
- how waste policies affect local communities and individual households.

In conducting their Review in 2011, the government has been guided by an updated waste hierarchy (see Figure 1 in 4.1), which is both a guide to sustainable waste management and a legal requirement of the revised EU Waste Framework Directive, enshrined in law through the Waste (England and Wales) Regulations 2011. The hierarchy gives top priority to waste prevention, followed by preparing for re-use, recycling, other types of recovery (including energy recovery), and last of all disposal (e.g. landfill). Led by the Department for Environment, Food and Rural Affairs (DEFRA) the Review spanned Government Departments including Energy and Climate Change (DECC) and Communities and Local Government (DCLG). It was expressly positioned within the Government's broader strategic priorities: tackling the deficit; protecting the environment and addressing climate change; progressing localism and the 'big society'.

The 2011 Waste Review also announced the end of Landfill Allowance Trading Scheme (LATS) requirements for local authorities effective from 2013 (this was a significant fiscal driver in diverting waste away from landfill, and given considerable weight in the 2005 MWMS). Government considered that LATS was no longer an effective fiscal tool, and

that the Landfill Tax escalator was now the main fiscal driver for diverting waste from landfill to ensure the UK meets EU targets in 2020. The review announced that Landfill Tax would increase to at least a floor target £80 per tonne by 2014/15. The 2014 budget statement has confirmed that Landfill Tax will continue to rise in line with RPI from 2015, when it is anticipated to rise to £82.50.

Current government policy is contained in the Waste Management Plan for England, published in December 2013, and seeks to fulfill the obligations of Article 28 of the revised Waste Framework Directive as far as England is concerned, which requires measures to ensure that by 2020 at least 50% by weight of wastes from households is prepared for reuse or recycling. All local councils, including Bradford must contribute to meeting these national targets. However the plan itself does not bring forward any new policies, but brings together under one roof various current waste policies. The plan does continue to support the waste hierarchy as reproduced above.

The revised EU Waste Framework Directive

The revised EU Waste Framework Directive (2008/98/EC) as transposed into English law through the Waste (England and Wales) (Amendment) regulations 2012 becomes effective on 1st January 2015. The aim is to provide the collection of high quality recyclates, and will require councils to collect at least paper, metals, glass and plastics at the kerbside by way of separate collection, unless there are valid reasons why it is Technically, Environmentally, and Economically Practicable to do otherwise (the TEEP test).

Currently Bradford collects from households recyclates of mixed paper and card, glass and cans, and before the end of 2014 will have fully rolled out collection of plastic bottles also. The method of collection will provide for separate containment for paper from the co mingled glass, cans and plastics where practicable at the kerbside, which is then collected into a twin bodied refuse collection vehicle to keep the paper separate from the co mingled glass, cans and plastics. This collection method is viewed by the council as providing high quality recyclates of the type required by the legislation. The council must ensure that it has gathered and will maintain the required documentation to demonstrate on going compliance with the legislation.

Future EU Waste Policy Development

Waste policy seems to be under constant review by the European Union (EU). Various EU directives, once approved, must be transposed into domestic law by individual member states including the UK.

In July 2014 the EU published a set of documents that set out the proposed next generation of waste policy development.

Recycling - it is proposed that:

- by 2020 a target for recycling and preparing for re use of municipal waste (note the current target relates just to household waste) will be a minimum of 50% by weight;
- By 2030 the above 50% target shall increase to 70%.

Moving the definition from just household waste to municipal means this target will apply to a new range of wastes currently collected by the council, such as trade waste, and other wastes similar in nature to household waste, including bulky waste and street litter.

Landfilling – it is proposed that:

- by 2025 there will be no landfilling of recyclable waste (eg paper, glass, cans, plastics);
- by 2025 there will be no landfilling of biodegradable waste (eg food waste)
- by 2030 only residual waste to a maximum of 5% of municipal waste can be landfilled.

It remains to be seen if the above will be approved by the EU, and if so, will they have been amended or not, and will there be any derogations applicable (extension of time) to the UK. However such changes in law will impact on future plans and policy of the council as well as any procured contract for waste treatment. It will be important for any such contract to contain provisions to cater for changes in law that impact upon it.

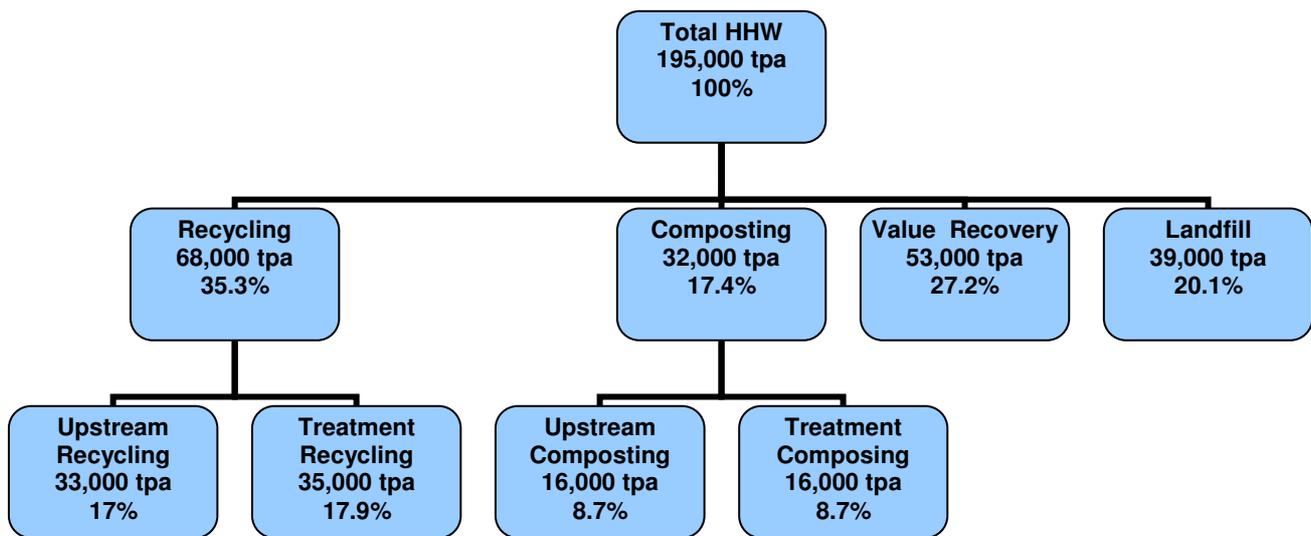
Appendix 4: Current Waste Services

Introduction

Bradford Metropolitan District covers an area of 141 square miles and produces around 223,000 tonnes per annum of municipal waste, which includes household waste, recyclables, street cleansing waste and Council collected trade waste.

Figure 5 below gives a representation of the Management of council collected household waste in 2013/14 (tpa = tonnes per annum)

Figure 5: Management of Collected Household Waste



For clarity upstream recycling/composting is that which the council achieves itself via its household collections at the kerbside, or via that deposited by the public at Household Waste Recycling Centres and Bring Sites, whereas treatment recycling/composting is that achieved via a third party treatment facility provided as part of the interim contracts. Value recovery is that tonnage from which energy is extracted via the same treatment contracts.

Residual Waste Collection

The residual waste collection service for households is delivered via 28 operational collection rounds, using 3 axle 26 tonne gross weight refuse collection vehicles with a driver and two loaders. The rural areas of the district are serviced with 2 rounds operating on smaller and narrower 2 axle vehicles of a driver and loader, with a gross weight up to 11 tonne.

The typical receptacle for residual waste is a 240l wheeled bin, which was introduced to Bradford in 1998.

Recycling Collections

In 2012, Bradford Council applied to the Department for Communities and Local Government (DCLG) for funding to retain weekly residual waste collection services, and improve its collection of recyclables from households, improve waste containment, handling and round efficiency. The Council was successful in this bid application and was awarded £4.6m to make the following service improvements:

- i. retain the discretionary monthly collection of green garden waste, but change the collection container from a green sack to a 240L wheeled bin. This service improvement makes it easier for residents to contain and move garden waste and makes it easier and safer for waste collection operatives to place materials into Refuse Collection Vehicles (RCVs) and improves the efficiency of collection.;
- ii. enhance the collection of paper, glass and cans by including plastic bottles in the range of material that can be placed in the grey recycling wheeled bin;
- iii. increase the overall collection frequency of the recycling wheeled bins from monthly to fortnightly.

The above service improvements commenced in Summer 2013, and when fully implemented by end of 2014, are forecast to increase the Council's upstream recycling rate from 26% (2013) to 33% (by end of the DCLG period in 2017).

Operationally the collection of recyclables is made via 14 collection rounds, using split bodied 26t refuse collection vehicles, plus 5 green waste collection rounds.

Household Waste Recycling Centres (HWRCs)

The Council currently provides household waste and recycling services to the district's residents at eight locations across the district, accepting waste that is not normally collected from households by the refuse collection service, and a wide range of recycling containers. In 2013 a residents' only permit scheme was introduced.

Materials accepted at HWRCs include; residual waste, paper, cardboard, metal, glass, green waste, wood, plastics, cartons, tyres, shoes, textiles, oil, paints, carpets, mattresses, plaster board, bricks and rubble, polystyrene and electrical equipment. Certain sites, with prior notice, also accept from residents' tyres, gas bottles and bonded asbestos waste.

Bring Sites

Bring sites are a network of mini-recycling sites which provide a series of recycling banks often located in public areas such as supermarket car parks where the public can deposit their recyclable items. Typical banks provided include bottles, textiles, plastics, paper, cans etc. There are some 60 such sites across the Bradford district.

Street Cleansing Collections

In 2012 the street cleansing service moved from waste into the Neighbourhoods Service. These services include street litter, litter bins, mechanical road sweepings, gully emptying, litter bins, and removal of fly tipping. The movement to the Neighbourhoods Service helps the council to work more closely with local residents to maintain street and neighbourhood cleanliness, in line with Corporate Plan priorities.

However the management of deposited street cleansing waste is undertaken by the waste service. Such deposits total some 11,000 tonnes per year.

Maintaining closed landfill sites

The waste service is also responsible for looking after the legacy of previous council landfilling within the District, including site restoration and maintenance, and environmental control measures for managing landfill gas and leachates.

This aftercare will continue for many years into the future and includes environmental monitoring, which involves the collection of field data via monitoring equipment, its subsequent collation, interpretation and reporting, to the Environment Agency.

Currently a landfill gas flaring system is operating at both the Sugden End and Manywells closed landfills, along with leachate pumping. Progressive capping and restoration continues at these sites, while other sites such as at Wilson Road, Low Moor are now fully restored but still require routine monitoring and land management.

Trade Waste Collections

The council operates a trade waste collection service to local businesses. The trade portfolio has some 3000 customers, collecting around 18,000 tonnes per annum of trade waste plus around 800 tonnes of recyclables via 7 collection rounds using a wide range of receptacles from small sacks, to wheeled bins, skips and large containers.

Clinical Waste Collections

The council has a duty to collect clinical wastes arising in the home and may offer trade waste collection contracts to collect clinical wastes from commercial establishments. The council collects approximately 25 tonnes of clinical waste each year from both households and commercial establishments which require specialized treatment and disposal.

Chemical Advisory Service

The chemical advisory service which also incorporates the clinical waste collection service provides to householders within the district an inspection, consignment, and transportation to correctly collect and dispose of small quantities of unwanted hazardous wastes that may be found at domestic premises, such as:

- Chemicals;
- Pharmaceuticals;
- Herbicides;
- Poisons;
- Chemical reagents;
- Unidentified powders and liquids.

Contracts

To support the above services, there are several contracts in place for the treatment of recyclables and residual waste, the main one being the interim contracts for the treatment and disposal of residual waste. The interim treatment contracts will operate until 2017, the procurement of new waste treatment arrangements to succeed the interim contracts will commence in 2015.

The interim contracts are with local waste treatment providers, principally Associated Waste Management (AWM), whose main site is Canal Road. The location allows the majority of the Bradford based refuse rounds to deposit directly at Canal Road, whereas the Keighley based rounds continue to use Keighley transfer station, which then transfer loads articulated loads into AWM. The process at AWM plant is a mixture of manual and mechanical separation of waste into various fractions, including a recyclate fraction, a compostable fraction, a burnable fraction, aggregates, and a residual fraction. The recyclate fractions are sent to specialised reprocessing merchants, composting material

goes to a remote composting contractor, the residual waste for which no further recovery is possible, is sent to landfill. The burnable fraction is classed as a refuse derived fuel, and is exported to energy from waste plants to generate power (value recovery). The illustration in Waste Flows below shows how tonnages makeup of “treatment” of Bradford’s residual waste.

Note the above data was reported as part of a committee report to the Environment and Waste Management Overview and Scrutiny on 2nd September 2014.

Appendix 5: Performance of Waste Services

Performance Indicators

Table 10 below provides a definition of these Performance Indicators, and benchmarks the Council against other councils in the region.

Table 10: Performance Indicators (year 2012/13)

	N191 Total Residual Household Waste per Household (kg/household)	N192 Percentage HH waste sent for Reuse, Recycling or Composting	N193 Percentage of Municipal Waste Sent To Landfill
Calderdale MBC	323.13	60.61%	16.45%
Craven District Council	343.47	45.15%	-
Barnsley MBC	361.50	49.77%	31.41%
East Riding of Yorkshire Council	383.32	56.23%	38.24%
Harrogate Borough Council	397.30	36.47%	-
Leeds City Council MBC	413.59	41.95%	54.50%
Sheffield City Council	439.78	27.39%	6.67%
Bradford City MDC (MBC)	451.39	51.80%	21.80%
Ryedale District Council	458.13	51.97%	-
Kingston-upon-Hull City Council	460.01	48.54%	45.84%
Scarborough Borough Council	488.33	40.89%	-
Hambleton District Council	488.72	45.24%	-
Selby District Council	550.16	43.27%	-
Rotherham MBC	553.76	41.47%	31.42%
Wakefield City MDC	591.96	39.54%	64.64%
Kirklees MBC	609.62	32.48%	5.21%
Doncaster MBC	639.68	41.18%	50.91%

From the above data, Bradford's 2012/13 NI 191 value at 451kg/household is well short of the best (323kg). In terms of NI 192 and 193 the % levels of recycling, composting and diverting waste away from landfill, Bradford is performing well. This is in no small measure to the added value created by the current interim contracts. Similar levels of recycling, composting and landfill diversion should be anticipated in any longer term waste treatment contracts.

Table 11: Waste Arisings

Municipal waste is the total amount of waste that the authority handles; this includes waste from trade, domestic and operational sources.

Tonnes	2010/11	2011/12	2012/13	2013/14
Municipal Waste Arisings	235,320	228,947	226,310	222,837
Household Waste Arisings	199,668	196,750	197,058	194,859

Household waste is waste which arises from domestic properties and includes Waste and Recycling collected from dwellings, Waste and Recycling delivered by residents to Household Waste Recycling Centres. Recycling delivered to Recycling Bring sites and litter collected by the Council from around the district.

The recent trend for Municipal waste has been a downwards one, this reflects a wider national situation and can be attributed to both economic activity, public awareness and reduced packaging in manufacturing, but as economic activity recovers this is likely to see an upward pressure on waste arisings from 2013.

Table 12: Population

	2010/11	2011/12	2012/13	2013/14
No. of Domestic Properties	208,840	209,490	210,210	211,070
Population	506,800	512,600	523,100	524,619

The number of properties and population has continued to increase steadily, and this itself creates an upward pressure on waste arisings..

Table 13: Kilos per Property/Person

KG	2010/11	2011/12	2012/13	2013/14
Total Kilos of Household Waste per property	956	939	937	923
Kilos of Household Waste per person	394	384	377	371
Kilo's of residual Household Waste per Household (NI 191)	632.79	565.65	451.4	454.4

Despite the increase in properties and population the average amounts of waste pro rata has continued to fall. The service has by and large managed to contain the growth in properties within the existing service resource although some modest growth was approved in the 2012/13 budget.

The increase in NI 191 is due to re-classification of mechanical sweeping waste now being classed as residual waste.

Table 14: Kerbside Collection Performance

Tonnes	2010/11	2011/12	2012/13	2013/14
Waste Collected at Kerbside (tonnes)	160,515	153,563	151,961	153153
Recycled At the kerbside (Tonnes)				
Paper & Card	8428	8492	7895	7644
Glass, Cans & Plastic	6163	6209	6207	7553
Garden Waste	8124	7873	8402	7878
No. of Properties Collected per day per round (ave.)	1,800	1,870	2,100	2,111

Last year there was a slight rise in the amount of waste collected at the kerbside. In line with the national trend, Bradford has experienced a long standing downward movement for domestic waste. There is a fall in paper and card collected at kerbside, but this is in keeping with national trends as people generally consume less due changes in social activities and the improving economic climate.

Green waste is always seasonal and variable dependant on the weather, particularly during the key growing seasons.

Operationally the critical factor is the efficiency of the collection crews, and there has been a significant productivity increase as demonstrated above, with an increase of over 300 bins per crew per day, over a 4 year period.

Table 15: Household Waste Recycling Centres Performance

Tonnes	2010/11	2011/12	2012/13	2013/14
Total Waste arisings at HWRCs (tonnes)	34,804	35,054	34,602	32077
Sent to landfill/treatment	11811	10086	9437	8787
Waste Recycled (tonnes)				
Garden Waste	8259	8632	8728	8415
Dry Recycling	12016	12096	12578	11148
Rubble	3570	4335	3719	3727

The total waste handled by this service has remained fairly constant over the first three years, with a significant dip in 2013/14. This is due in no small part to the introduction of the permit scheme.

However, improvements to the facilities and greater awareness by the public for the need to recycle and reuse unwanted items, the service is still showing significant levels of diversion from landfill, even before treatment of the residual waste.

Table 16: Disposal Performance

Tonnes	2010/11	2011/12	2012/13	2013/14
Waste direct to landfill	123,555	51,847	2,594	593
Waste to treatment	51,512	115,972	161,550	164,998
Waste recycled via treatment	22,594	39,935	55,769	59,199
Waste to Energy Recovery	2,864	37,116	59,423	61,275
Total waste to Landfill	149,609	90,768	48,952	45,117

The most striking changes in the service over the past four years, has been the reduction in the total amount of waste sent direct to landfill. This has fallen from 123,000 tonnes to 593 tonnes in 4 years. The primary reason for this has been the introduction of the waste treatment contract.

Table 17: Recycling Percentages (Overall) Domestic

	2010/11	2011/12	2012/13	2013/14
Kerbside recycling	14.9%	14.7%	14.8%	15.07%
HWRC recycling	66.9%	71.3%	72.6%	72.61%
Total domestic waste to recycling/composting (Ni 192) – (Ni82a +Ni82b)	33.8%	39.8%	51.8%	50.80%

Total domestic waste to Energy Recovery Ni (82c)	0.9%	13.2%	26.2%	27.8%
Total Domestic waste to landfill (Ni 82d)	65.3%	47%	22%	23.12%

The table above reflects the large improvements in the service's ability to divert waste from landfill. Recent comparisons with Yorkshire & Humber authorities has shown that Bradford lies in 3rd place for waste diverted from landfill, though these figures are still provisional.

Note the above data was reported as part of a committee report to the Environment and Waste Management Overview and Scrutiny on 30th September 2014.

Appendix 6: Summary of Recent Waste Communications Campaigns to the Public

Did you know?

The main objective of this campaign was to raise awareness of specific materials which often get overlooked and to increase the capture rate for kerbside collection services offered by the Council. This scheme included the following marketing communications.

- Market research;
- Outdoor advertising (posters, billboards, bus sides and rears);
- Radio advertising;
- Website;
- Residents newsletters;
- Press releases and advertisements;
- Hand delivered leaflet distribution;
- Wheelie bin stickers;
- Roadshows and forums (featuring a recycle roadshow vehicle and a recycle wagon livery);
- Local and regional events;
- Promotional merchandise; and
- Third party tie-ins.

The “Did you know?” scheme won an industry award for raising awareness of aerosol recycling. In the Can Do Awards of 2009 the scheme won Best Local Authority Recycling Aerosol Campaign from the British Aerosol Manufacturers Association.

Stop it!

This scheme targeted Bradford’s reluctant and non-recyclers and identified a need for simple, basic information on recycling services available within the District.

The most cost effective way to ensure all residents saw our recycle message on a continual regular basis was to place a sticker on all residual household waste bins in Bradford. Matching large signs were pasted to the sides of all refuse collection vehicles. These red circular bin stickers were attention-grabbing and attractive. They were visible on bins from a distance and helped to increase awareness about recycling. The bin sticker was a permanent reminder to people to STOP before they put recyclable materials in their residual waste bin.

Stop the excuses...start recycling!

This scheme is targeted at residents who have not considered recycling before and tells them to re-think and start recycling straight away. The scheme included the following marketing communications.

- Local press advertisement (Telegraph & Argus, Keighley News);
- Local radio advertisement;
- Posters;
- Bus adverts;
- Website;
- Incommunities (Social Housing) Magazine;
- Recycle roadshow at Holmewood Gala; and Seasonal campaigns

Appendix 7: Soft Market Test Exercise

In summer of 2013 a desk top study was undertaken to identify a range of local, national and international providers of waste treatment solutions who were then invited to engage in the SMT exercise with the Councils. This involved inviting participants to a face to face meeting with the Councils to discuss in high level terms the nature of their proposed solutions, and to test their level of interest in a future procurement. It is important to note that in undertaking this exercise, the councils did not indicate any waste treatment technology preference, or other criteria beforehand, but did identify to participants the following key parameters likely to feature in any replacement procurement:

- the proposal must offer value for money and certainty of cost;
- the proposal must divert significant quantities of waste from landfill;
- the proposal must deliver additional recycling performance but only to the extent it is commercially viable;
- the preferred contract start date of 2017;
- the preferred contract term would not be long term (substantially less than 25 years)
- the preference for a new solution to work with the existing upstream kerbside collection regimes; and
- the council being willing to lease part of its Bowling Back Lane (BBL) site to be developed as part of a new waste treatment solution if required (see item on Sites below).

The level of interest was very good, resulting in 16 (sixteen) meetings with providers of waste treatment solutions.

The SMT being both detailed and recent make it relevant for the purpose of informing the future procurement of waste treatment solutions. What follows is an assessment of the information arising from the SMT, with recommendations for the procurement process.

Sites

In considering the SMT and future procurement, the issue of possible location for waste treatment technology is an important factor, and whether the council can make any site(s) available. Bradford has two operational waste facilities, a description of these sites, and their suitability for waste treatment facilities is discussed below.

Bowling Back Lane, Bradford (BBL)

The BBL site is owned by Bradford Council and is currently an operational waste transfer station combined with a HWRC, co-located on a 4.3ha site within an industrial area and employment zone with good transport links both in the immediate vicinity and with the M606 and M62 motorways to the south. Some domestic dwellings do exist in the vicinity, in particular a travellers' camp which shares part of the southern boundary of the site. The site is mainly rectangular in shape, falls slightly from south to north and occupies a prominent and visual position within the townscape.

This site is considered as having enough sufficient available space to accommodate a pre treatment facility, and thus could be a key development site in any new procurement. Therefore, should BBL be required by a Contractor as part of a new waste treatment solution, only part of the site will need to be made available for lease to the Contractor. This would allow the council to continue managing kerbside recyclates and non-burnable waste at this site, for which infrastructure already exists for this purpose, and it also does

not preclude the council from redeveloping other areas on Bowling Back Lane for further depot purposes.

Royd Ings Keighley

The Royd Ings site in Keighley is owned by the council, and is an operational waste transfer station on a 1 hectare operational area. The site at 1.0 ha is not regarded as large enough to accommodate both existing facilities and a waste treatment facility also.

It is expected that this site will remain wholly with the council, and continue to operate (as it does today - 2014) as Waste Transfer Station (WTS) to enable continued management of kerbside recycling, and non-burnable waste for which infrastructure already exists; and export of residual waste to any off site waste treatment facility.

Overview of SMT Solutions

Pre Treatment (PT)

The SMT participants indicated that PT to create a fuel is achieved using conventional well established waste separation technologies often used in Material Recycling Facilities (MRF). MRFs will typically include bag splitters, shredders, trommel screens, magnets, eddy current separators and near infrared scanners (NIR scanners) to achieve the required PT in order to achieve a suitable fuel specification also known as Refuse Derived Fuel (RDF) for the TT plant. Such plants are not large (estimated at a maximum of surface area 5000 square meters, and height of 20m), or particularly expensive to build, a payback period of 10 years is regarded by the market as both reasonable and affordable.

In respect of Bradford, PT could be achieved by:

- a contractor (a) providing and operating a PT facility at Bowling Back Lane and/or (b) relying on existing third party PT facilities in the district/sub region; or
- the council (a) providing and operating their own PT facility at BBL or (b) relying on existing third party PT facilities in the District.

Thermal Treatment (TT)

Typically, an Energy from Waste (EFW) will provide a front end waste reception and storage area, which is then fed into a furnace operating continuously 24/7, which heats water to raise steam to drive a turbine to generate the electricity. The waste heat, as hot water, can either be cooled and reused or provide hot water for a local district heating scheme, in which case the facility will be reclassified as a Combined Heat and Power plant (CHP). Flue gasses from the combustion process pass through various Flue Gas Treatment (FGT) scrubbers and filters before leaving the facility via a tall chimney stack. Such gaseous emissions are constantly monitored to ensure compliance with strict limits set by the Waste Incineration Directive.

Other forms of EfW employ much the same layout and operation, only the furnace element (i.e. the combustion process itself) is different. Alternatives to moving grate furnaces are fluidised bed, where the furnace bed is made of sand, through which air is forced upwards to burn the waste in suspension (in mid air) to achieve a total combustion of the waste. Other forms of combustion take place in a chamber with reduced or no oxygen atmospheres called Gasification (and Pyrolysis). Combusting waste in this way by heating it in reduced oxygen environments produces a 'syngas' which can be combusted to raise

steam to drive a turbine to produce power in much the same way as a conventional EfW. The ability to move to a CHP scheme is again very much the same as for other types of EfW.

Solution Options

Option1: Bespoke Whole Solution on Bowling Back Lane (BBL)

This would involve the design, build, finance and operation of a bespoke waste facility that deals with all of the councils' waste on BBL (which is owned by the council but leased to the contractor for the duration of the contract). This would require a major capital investment (circa £150m) and a lengthy contract term (circa 25 years). As the site is owned by Bradford Council, the facilities would revert to the council at the end of the contract/ site lease. Such facilities typically have an operational life (with proper maintenance) of approximately 40 years. There is a 3-5 year lead time from contract award to operational commencement, and given the level of capital investment is similar to a PFI solution but without the financial benefit of the credits. Given that the PFI solution was unviable without the benefit of the credits, such a solution is likely to be too expensive for the council, and is therefore not regarded as a viable option for the council..

Option 2: Semi-Merchant Off-site Thermal Treatment

These facilities currently do not exist in the regional market, and their development would be dependent upon the council awarding a minimum 10 - 15 year contract, regarded as an anchor contract which would then trigger the investment needed to construct and operate the facility. As a merchant facility, the council would not have control of the facility during the operational period and the facility would not revert back to the council at the end of the contract term. Development of such facilities would require a minimum 3 year lead time from contract award to operational commencement taking it beyond the present interim contract period (2017). The council's existing waste transfer operations would be required to deliver waste to the off site facility. Because of the risks in achieving funding, and long lead times, this option is not regarded as being attractive.

Option 3: Merchant off-site Thermal Treatment requiring Pre Treatment

Most of these TT facilities are either operational or in construction. They require the waste to have undergone some (though not regarded as too onerous) PT prior to arriving at the facilities in question. PT could take place either on BBL or off-site, although options off-site are somewhat limited. WTS operations are required to deliver waste to the TT facility, which can be remote to Bradford. There is some flexibility in the duration of the contracts but a 10- 12 year term (with an option to extend say up to 15 years) appears to attractive to the market, and offer best value in terms of a competitive price without an unduly long contract term. There is typically a 1- 3 year facility development period from contract award, but should facilities not be ready by 2017, the market does appear willing to make interim arrangements for the council's waste. Although not without some risks in terms of a 2017 start, such an arrangement does offer the prospect of a robust and affordable medium to long term solution for the council, and is thus regarded as the preferred solution option.

Option 4: Spare Capacity at Local Authority Procured PFI Facilities

All of these facilities are part of bespoke PFI projects developed for other authorities and are either operational or in construction. Many of these facilities include PT. There is,

however, only limited available capacity at each of these facilities of circa 30-40,000 tonnes per annum (tpa), therefore individually they would not be able to offer a total solution for all the council's waste. Transfer station operations are required to deliver waste to the facilities in question. It is unclear whether such councils would prefer to align any contract with their PFI contract term which is typically 25 years, though they may accept a shorter term if they believe their waste arising may rise over time (we would fill the capacity gap in the early years of their contract). Although other councils have not indicated any level of pricing, it is highly likely that such pricing would be a fairly expensive option as it would be similar to option 1 above. Also it is clear from the SMT responses from local councils that they are less than enthusiastic about pursuing this, so deliverability would also be a concern. This is viewed as an unlikely option, or one that is unlikely to deliver best value for Bradford.

Appendix 8: Benefits and Disadvantages of Waste Treatment Options

Options		Companies	Benefits	Disadvantages
1.	Bespoke whole solution on Bowling Back Lane (BBL)	7 companies offered this	<ul style="list-style-type: none"> • Minimum transport costs. • Designed to meet the Council's needs. • Within the Council's influence. • Sustainable solution which treats waste as close as possible to its source. • Reverting asset at end of contract term. • Community benefits, jobs, business rates, local suppliers etc. • Life expectancy up to 40 years. 	<ul style="list-style-type: none"> • Long-term commitment (c. 25 years) and lack of flexibility. • BBL is unavailable as a contingency site in the event of facility unavailability. • Requires a GMT or exclusivity of waste. • New or revised planning permission and environmental permit required, which has cost and/or timetable implications.
2.	Semi-merchant off-site Thermal Treatment (TT) - Councils are anchor contract	2 companies offered this	<ul style="list-style-type: none"> • BBL remains available as a contingency site in the event of facility unavailability. • Planning permission achieved. • Currently, these facilities don't appear to require pre treatment (TBD by environmental permit). 	<ul style="list-style-type: none"> • Long-term commitment (c. 25 years) and lack of flexibility. • Not bespoke to the Councils requirements. • Non-reverting asset at end of contract term. • Uncertainty due to lack of environmental permit. • Will require a tonnage commitment. • Not yet funded or built.
3.	Merchant off-site TT requiring Pre Treatment (PT) on BBL or off-site	<p>On BBL: 5 companies offered this</p> <p>Off-site: 3 companies offered this</p>	<ul style="list-style-type: none"> • Offer flexibility of contract term with contracts of around 15 years offering best value. • Some of these facilities are currently operational or in construction therefore offering a degree of certainty – cost and deliverability. • BBL remains available as a contingency site in the event of TT unavailability. • TT facilities are large and benefit from economies of scale, which is reflected in the gate fee. 	<ul style="list-style-type: none"> • TT facilities are not local; transport and costs to these sites will be significant. • Negative carbon impact of long distance transport. • Will require a tonnage commitment. • Risk on some offtake contracts if the legislation changes on export of RDF.
4.	Merchant off-site TT but limited tonnage (30-40k)	7 companies offered this	<ul style="list-style-type: none"> • Most risks are the responsibility of the Contractor. • BBL remains available as a contingency site in the event of TT unavailability. • Does not require separate MRF. 	<ul style="list-style-type: none"> • Not bespoke to the Councils' requirements. • Small capacity availability at each facility. • Bradford would have to manage multiple Contractors. • Will require a tonnage commitment. • Contract term and availability is uncertain due to lack of response from local authorities.

Appendix 9: Contract Management

1 Need for Contract Management

Contract management throughout the operational phase of the contract is needed for a number of reasons which are important to the client (ie the council):

1. to protect the client's (council's) contractual position;
2. to manage risks, and ensure the agreed risk position for the client is maintained;
3. to ensure payments or deductions made to the contractor are based on measured quality and performance of the service delivered;
4. to identify areas of performance failure by the contractor via monitoring and what remedies are available to correct failures, which may include contractual penalties; and
5. that the contract continues to meet the original aims of the Client.

Contract Management activities can therefore be broadly grouped in three areas:

- **Service delivery** – contract management ensures that the service is being delivered as agreed, to the required level and quality of agreed performance specification, and is clear what is not acceptable performance;
- **Relationship management** - keeps the relationship between the council and the appointed contractor, aiming to resolve or ease tensions and identify problems early;
- **Contract administration** - handles the formal governance of the contract and changes to the contract documentation, including invoices verifying, cost monitoring, and management reporting.

Figure 6: below is a visual representation of the key aspects of Contract Management (CM)



Obligations of the Contractor

The contractor to aid effective contract management will be required to have in place:

- performance monitoring procedures;
- a quality management system;
- mechanisms for managing any sub contractors and contingencies with third parties;
- a reporting procedure; and
- a robust performance auditing process.

In addition to the above there will be a need for an interface between the Council's Contract Management Team, Such an interface will:

- discuss and, whenever possible, resolve minor operational issues;
- discuss day to day service provision with both the end users and service provider representatives; and
- Ensure all parties are clear as to the level of service required of each other.

2 Contract Management within Waste Services

Currently within the waste services, is a separate small contract management team, which manages several contracts needed to support the service (eg contracts with recycling merchants) and manages the interim waste treatment contracts. This service has a proven track record over a number of years of successful management of contractual relations, performance and administration. It is envisaged that at least one staff member from this team will be involved in the procurement to ensure a level of knowledge transfer.

The interim contracts will only remain in place until the new waste treatment solution becomes operational, at which point this additional freed up resource will be available to manage the new contract, it is therefore anticipated that this team may be able to contract manage the new waste treatment contracts. However as this new contract will be more complex compared to the interim contract, with more performance monitoring and reporting, there is likely to be a shortage of resource within this team to successfully contract manage the new contract. An assessment of the resources needed for this team to undertake this task successfully will need to be made.

3 Conclusions

1. Given the size in monetary terms, and the various performance elements and risks that will feature in any new waste treatment contract, for the contract to operate successfully for the council, contract management will need to be provided from contract award.
2. The foundations for good contract management will be laid during the procurement stage of the project.
3. The Contract Manager (or senior member at least) from the waste services existing contract management team should be involved in the procurement in order to gain an understanding of the contract requirements so that this can be transferred into the contract management phase.
4. Consideration of additional resources to the existing contract management team within waste services is given.

Appendix 10: Summary of renewable energy incentives

Ofgem Environment Programmes

Renewable Obligation Certificates	ROCS are green certificates issued by the Authority to operators of accredited renewable generating stations for the eligible renewable electricity they generate. Operators can then trade the ROCs with other parties, with the ROCs ultimately being used by suppliers to demonstrate that they have met their obligation. There are renewables obligations on UK electricity suppliers to source an increasing proportion of electricity they supply to customers from renewable sources.
Renewables Levy Exemption Certificates	Renewables LECS are electronic certificates issued monthly to accredited generating stations, for each Megawatt/hour (MWh) of renewable source electricity generated. LECs are subsequently used by electricity suppliers to claim the Climate Change Levy Exemption on non-domestic supply.
Feed-in Tariffs	FITs are for smaller energy generation schemes (photovoltaic, wind, hydro and Anaerobic Digestion) where the total installed capacity does not exceed 5 MW (or 2kW in the case of Combined Heat and Power). The FIT scheme is available through licensed electricity suppliers. FIT schemes have opened up low-carbon electricity generation beyond the traditional energy companies by making it more cost effective for communities and householders to buy the units.

Locally there are two strategy documents aimed at reducing the Council's impact on Climate Change.

Our District, Our Climate, Our Responsibility

In December 2011, the Council adopted a climate change framework to localise national targets and set actions to reduce Greenhouse Gas (GHG) arisings within the District. Bradford has committed to adopt a minimum target of a 40% reduction in District-wide carbon emissions by 2020, using 2005 as a baseline year. In 2011 approximately 3 million tonnes CO₂e per year (or 5.8 tonnes CO₂e per person per year) was sourced in Bradford. To hit our 2020 target Bradford's emissions needs to be reduced to 1.8 million tonnes CO₂e per year (or 3.5 tonnes CO₂e per person per year – note CO₂ e stands for carbon Dioxide Equivalent).

Low Emission Strategy

In June 2013 a Low Emission Strategy for Bradford was released for public consultation. This document primarily focuses on road transport emissions stating that "approximately 40% of NO_x emissions and 25% of particulate emissions arises in urban areas was from road transport, and is the major contributing factor to poor air quality". Moving waste long distances (waste miles) will generate traffic and impact negatively on local air quality, increasing particulates and Nox levels. In procuring new waste treatment facilities, impact on air quality, and waste miles travelled, needs to be included as part of the evaluation criteria for any new contracts (known as the Proximity Principal).

Appendix 11: Environmental and Economic Cost of Waste

In economic terms, in 2013/14 Bradford Council spent £13m on treatment and disposal of the waste produced by its residents. However the environmental cost is much more difficult to quantify.

Managing waste uses energy to collect and transport it, this uses fossil fuels which when burned emits greenhouse gases. Also when biodegradable waste is landfilled it gives off greenhouse gases as it decomposes. Methane emissions from biodegradable waste in landfill account for 40% of all UK methane emissions and 3% of all UK greenhouse gas emissions. (Methane is a greenhouse gas which is 23 times more damaging than carbon dioxide).⁷

The environmental impact of items that we use in our daily lives does not just begin when they are thrown away. It is important to think of the whole life cycle of material. Starting with raw material extraction from the earth, processing of the raw material, the manufacturing process and transport are all stages in the process that use energy and emit greenhouse gases. For each tonne of material over the lifetime of a product there are multiple tonnes of greenhouse gases that are emitted. This is even before an item becomes a waste.

Waste disposal places a burden on the environment and at the same time valuable resources that could be used to make alternative products or energy may be lost at the same time. Recycling means that less raw materials need to be used which extends the life of raw material reserves and can also reduce the overall amount of energy needed to obtain materials. Recyclable materials can need less intensive processing than virgin raw material and so use less energy. Recycling can also help to reduce greenhouse gases and mean that waste production is reduced. The vast majority of life cycle studies have shown that recycling is environmentally preferable to incineration or landfill⁸. Minimising the distance over which waste and recyclable materials need to travel can also reduce the impact on the environment from transport activities.

It is therefore important that the council promotes the waste hierarchy to reduce, reuse and recycle waste, that it employs efficient collection systems to minimise travel, and includes in any contract evaluation for waste treatment, the environmental costs.

⁷ Waste Strategy for England 2007

⁸ Environmental Benefits of Recycling, WRAP, 2006 and 2010 update

Abbreviations

ACORN	A Classification of Residential Neighbourhoods
AD	Anaerobic Digestion
AWC	Alternate Weekly Collections
BPEO	Best Practicable Environmental Option
CAS	Chemical Advisory Service
CHP	Combined Heat & Power
CV	Calorific Value
DCLG	Department for Communities & Local Government
DECC	Department of Energy & Climate Change
DEFRA	Department of Environment Food & Rural Affairs
EfW	Energy from Waste
EU	European Union
FITs	Feed In Tariffs
HWRC	Household Waste Recycling Centre
IAA	Inter Authority Agreement
JWA	Joint Working Agreement
LATS	Landfill Allowance Trading Scheme
LECs	Levy Exemption Certificates
MRF	Material Recycling Facility
MSW	Municipal Solid Waste
MWMS	Municipal Waste Management Strategy
NI	National Indicator
NOx	Nitrous Oxides
Ofgem	Office of Gas & Electricity Markets
PFI	Private Finance Initiative – PFI Credits later known as Waste Infrastructure Credits (WIC)
PT	Pre Treatment
PPS	Planning Policy Statements
RDF	Refuse Derived Fuel
ROCs	Renewable Obligation Certificates
RPI	Retail Price Index
RUDP	Replacement Unitary Development Plan
TT	Thermal Treatment
TUPE	Transfer of Undertakings Protection of Employment
UNESCO	United Nations Educational Scientific & Cultural Organisation
WCA	Waste Collection Authority
WDA	Waste Disposal Authority
WFM	Waste Flow Model
WRAP	Waste Recycling Action Programme
WRL	Waste Research Ltd
WS2000	Waste Strategy 2000
WTS	Waste Transfer Station

Glossary of Terms

A Classification of Residential Neighbourhoods (ACORN)

Acorn is a tool which categorises the United Kingdom's population into demographic types. It has been built by analysing significant social factors and population behaviour to provide precise information and in-depth understanding of the different types of people and communities across the UK. Acorn segments households, postcodes and neighbourhoods into 6 categories, 18 groups and 62 types

Affordability Envelope

Is a financial model which sets the ceiling for costs for a service being procured, and forms part of the evaluation process. A bid exceeding an affordability would normally fail (pass/fail criteria).

Anaerobic Digestion

A process where biodegradable material is encouraged to break down in the absence of air. Materials are placed into an enclosed vessel and in controlled conditions the waste breaks down into gas and solids.

Anchor Contract

The securing of a business contract, which is of sufficient size to trigger significant investment decisions to invest in a large infrastructure project to service the contract.

Bankable

A project which requires bank funding, which is forthcoming from lenders.

Benchmarking

Benchmarking is the process of comparing performance using a specific indicator, to compare performance against others.

Best Value

A legal obligation on local authorities to give high quality services and to seek continuous improvement in them. Government vision for ensuring services are efficient and of high quality to be responsive to the needs of citizens, not the convenience of service providers.

Best Practicable Environmental Option

Practicable Environmental Option (BPEO) assessment is a method for identifying the option that provides the "most environmental benefit" or "least environmental damage". It assesses the "performance" of different options in a range of criteria such as environmental impact, safety risk, technical feasibility and cost.

Biodegradable Municipal Waste

Waste collected by the Waste Collection Authority, including trade wastes and Civic Amenity wastes. Material that can be broken down usually by micro-organisms into basic elements. The Government has declared that municipal wastes is 68% biodegradable.

Biological Treatment

Any biological process that changes the properties of waste (e.g., anaerobic digestion or composting).

Bring Sites

A network of mini-recycling sites, e.g., bottle banks, textile banks, etc., located in public areas such as supermarket car parks where the public can deposit their recyclable items.

Calorific Value

The amount of heat produced by the complete combustion of a material or fuel. Measured in units of energy per amount of material.

Carbon Footprint

A carbon footprint is the amount of greenhouse gas emissions caused by an organisation, event, product or individual. It is usually expressed in equivalent tons of carbon dioxide (CO₂).

Circular Economy

A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

Civic Amenity Waste

In Bradford, civic amenity sites are referred to as Household Waste Recycling Centres. Civic Amenity Waste is household waste, normally delivered by the public direct to sites provided by the local authority. Consists generally of bulky items such as beds, cookers and garden waste as well as recyclables.

Clinical Waste

Waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practices, which may present risk of infection. Local authorities have a duty to collect clinical wastes arising in the home and may offer trade waste collection contracts to collect clinical wastes from commercial establishments such as those above.

Combined Heat & Power

Combined Heat & Power (CHP) generates electricity whilst also capturing usable heat that is produced in this process. in one single, highly efficient process

Commercial Waste

Waste arising from premises that are used wholly or mainly for trade, business, sport, recreation or entertainment (excluding industrial waste), for which a Local Authority may have waste collection arrangements in place, in which case it will become municipal waste.

Co-mingled

Co-mingled waste is a when a mixture of waste is collected together for example plastics and metals maybe collected together with paper and card.

Composting

The biological process in which organic wastes, such as garden and kitchen waste are converted into a stable granular material which can be applied to land to improve soil structure and enrich the nutrient content of the soil.

Controlled Waste

Is used to describe waste that must be managed and disposed in line with waste management and other related regulations. It includes municipal, commercial and industrial waste. It can be from a house, school, hospital, shop, office, factory or any other trade or business. It may be solid or liquid; scrap metal, old newspapers, a used plastic bottle, etc. It does not need to be hazardous or toxic to be a controlled waste.

Courtauld Commitment

The Courtauld Commitment is a voluntary agreement aimed at improving resource efficiency and reducing the carbon and wider environmental impact of the grocery sector. Phase 3 was announced in May 2013 and runs until December 2015.

The Courtauld Commitment supports the UK governments' policy goal of a 'zero waste economy' and the objectives of the Climate Change Act to reduce greenhouse gas emissions by 34% by 2020 and 80% by 2050.

Delivery Point

An identified waste facility, where waste is delivered to by waste collection vehicles.

Derogations

Some EU policy implementation dates can be extended by what is known as a derogation.

Dry Recyclable Material

Clean contaminant free materials such as glass, paper, metals and plastics which have been segregated from the residual waste stream.

Energy Recovery from Waste

Includes a number of established and emerging technologies, though most energy recovery is through incineration technologies. Many wastes are combustible, with

relatively high calorific values. This energy can be recovered through, for instance, incineration with electricity generation. All modern incinerators, known as energy from waste plants, are highly fuel efficient, providing both electricity and heat and also known as combined heat and power.

Environment Agency

Established in 1996, it combined the functions of former local waste regulation authorities, the National Rivers Authority and Her Majesty's Inspectorate of Pollution. Intended to promote a more integrated approach to waste management and consistency in waste regulation. The agency is responsible for issuing and inspection of licensed/permitted waste facilities, including those used to manage municipal wastes.

Evaluation Approach

This is setting the criteria for evaluating bids as part of a procurement, the evaluation approach is usually agreed and fixed before bids are received, and remains so throughout the procurement phase.

Flytipping

Flytipping refers to dumping waste illegally. It is the illegal deposit of any waste onto land or waste dumped or tipped on a site with no licence/permit to accept waste.

Gasification

A type of Pyrolysis, where waste is combusted in a low or zero oxygen atmosphere.

Gate Fee

A gate fee or tipping fee is the charge levied upon a given quantity of waste received at a waste processing facility often paid at the gate or weighbridge.

Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases. The main greenhouse gases are Carbon Dioxide, Methane and Nitrous Oxide. Greenhouse gases affect the temperature of the Earth, and are contributed to causing climate change.

Hazardous Waste

Hazardous waste, previously known as Special Waste, is controlled waste which is considered so dangerous or difficult to keep, treat or dispose of that special provision needs to be made by regulations.

Household Waste

Household waste includes waste from refuse collection rounds, bulky waste collection, hazardous household waste collection (including clinical wastes) and separate garden waste collection, plus waste from services such as street sweeping, litter and household waste recycling centres.

Household Waste Recycling Centres

In Bradford, civic amenity sites are referred to as Household Waste Recycling Centres. There are 8 sites in the Bradford district where members of the public can bring household waste such as furniture, carpets, electrical and garden waste for recycling.

Incineration

This is the controlled burning of waste, either to reduce its volume, or its toxicity. Energy recovery from incineration can be made by utilising the calorific value of paper, plastic etc to produce heat or power. Current flue-gas emission standards are very high. Some ash can be recycled or landfilled, other require specialist treatment.

Industrial Waste

Waste arising from factories and industrial plants.

Inert Waste

Waste which, when deposited into a waste disposal site, does not undergo any significant physical, chemical or biological transformation and that complies with the criteria set out in Annex III of the EC Directive on the Landfill of Waste.

Jacobs Consultancy

Jacobs Consultancy is a specialised management, technical and consulting division of Jacobs Engineering

Kerbside Recycling Collection

A system whereby recyclable material is collected from separate containers presented by householders to either the boundary of their property or the kerb outside their property.

Landfill

Landfill is the disposal of waste in disused quarries or aggregate workings, where it is buried. These sites are subject to strict controls to prevent contamination of water supplied with leachate and to control the emission of greenhouse gases, such as methane, from the rubbish as it decomposes. This has been the main method of disposal for rubbish in the UK. The EU has set strict targets to reduce the amount of biodegradable landfill, which contributes to greenhouse gas emissions.

Landfill Aftercare

The monitoring of the physical and chemical condition of closed landfill sites to ensure that these sites do not pollute or damage the environment.

Landfill Gas Flaring

Flaring is a method of controlling landfill gas by burning. The purpose of flaring is to dispose of the flammable constituents, particularly methane, safely and to control odour nuisance, health risks and adverse environmental impacts.

Landfill Gas & Leachate

Leachate and landfill gases are produced when putrescible materials begin to break down in landfill sites. Leachate is the liquid produced in a landfill site as waste decomposes. Leachate from a landfill usually contains both dissolved and suspended material. Gases are also produced as waste decomposes the main landfill gas is Methane.

Landfill Tax

A tax levied by Central Government on every tonne of waste disposed of at landfill.

Landfill Tax Escalator

This is the increase in the amount of landfill tax per tonne paid each year determined by the government.

Local Development Framework

A local development framework is the spatial planning strategy. This is the plan for the future development of the local area, drawn up by the local planning authority in consultation with the community.

Manual Handling

Manual handling involves the use of the human body to lift, lower, fill, empty, or carry loads, in terms of this document this can refer to the handling of both bins and waste.

Materials Recycling Facility

A system whereby waste is sorted for recycling, re-use and composting prior to disposal, or further treatment.

Merchant Facility / Plant

A site where a waste merchant stores, processes and / or treats waste.

Municipal Waste

Includes all waste under the control of local authorities. It includes all household waste, street litter, waste delivered to Council recycling points, Council office waste, HWRC site waste, and some commercial waste from shops and smaller trading estates where local authority waste collection agreements are in place.

Particulates

Particulates are microscopic solid or liquid matter suspended in the atmosphere.

Payment Mechanism

This is an integral part of a contract and is the tool used by the client to monitor and scrutinise performance against targets, and ultimately authorise payments (and possible performance deductions) to a contractor in exchange for services/performance provided.

Pre Treatment

Pre Treatment is the treatment of waste before it goes to landfill, this could include treatment methods such as sorting or thermal or biological processes.

Prevention

Combined efforts to reduce and re-use waste to prevent it entering the waste stream and having to be recycled, treated or disposed of.

Producer Responsibility

Producers and others involved in the distribution and sale of goods taking greater responsibility for those goods at the end of the product's life.

Proximity Principle

Suggest that waste should generally be disposed of as near to its place of production as possible.

Putrescible Waste

putrescible solid wastes contain organic matter having the tendency to decompose. Putrescible waste includes household food waste and garden waste. This kind of waste will easily decompose and breakdown.

Pyrolysis

The process of heating waste in the absence of air to break the waste down into three separate fractions of gas, solid and liquid. The gas can be used for energy recovery from tyres and waste plastics.

Recycling

Involves the reprocessing of wastes, either into the same product or a different one. Many non-hazardous industrial wastes such paper, glass, cardboard, plastics and scrap metals can be recycled. Special wastes such as solvents can also be recycled by specialist companies or by in-house equipment.

Recycling Merchant

A company that trades in recyclable waste e.g. scrap metal.

Reduction

Achieving as much waste reduction as possible is a priority. Reduction can be accomplished within a manufacturing process involving the review of production processes to optimise the utilisation of raw (and secondary) materials and recirculation processes. It can be cost effective in terms of lower disposal costs, reduced demand for raw materials and energy costs. It can be carried out by householders through actions such as home composting, re-using products and buying goods with less packaging.

Refuse Derived Fuel

Refuse Derived Fuel (RDF) is produced from combustible components of municipal solid waste. The waste is shredded, dried and baled and then burned to produce energy.

Replacement Unitary Development Plan

Every Local Authority must produce a Development Plan for their area which sets out planning policies to guide development, such as housing or employment, but also restrain development in special areas such as a Special Protection Area.

Regional Self-Sufficiency

Dealing with wastes within the region or country where they arise.

Residual Waste

The term Residual Waste refers to the waste that cannot be or is not separated for recycling or composting

Re-use

Can be practised by the commercial sector with the use of products designed to be used a number of times, such as reusable packaging. Householders can purchase products that use refillable containers, or re-use plastic bags. The processes contribute to sustainable development and can save raw materials, energy and transport costs.

Side Waste

Excess waste that is left at the side of an already full bin.

Soft Market Testing

Soft market testing is the exercise for the purpose of gathering expressions of interest, it does not constitute a formal procurement process.

Spacial Strategy/Policies

This relates to town planning, and provides a broad vision and framework for development and investment into the region, and covers a wide range of topics including waste.

Sustainability

Meeting the needs of the present without diminishing the ability of future generations to meet their needs. In particularly in terms of Environment, Social and Economic needs.

Sustainable Waste Management

Means using material resources efficiently, to cut down on the amount of waste we produce. Where waste is generated, dealing with it in a way that actively contributes to the economic, social and environmental goals of sustainable development.

Thermal Treatment

Thermal treatment is a term given to any waste treatment technology that involves high temperatures in the processing of the waste.

Third Sector

The voluntary and charity sector is also known as the third sector.

Trade Waste

Waste collected by the Council from businesses in the district, some of which is part of Municipal Waste.

Transfer Station

A site to which is delivered for sorting prior to transfer to another place for recycling, treatment or disposal.

Treatment

Involves the chemical or biological processing of certain types of waste for the purposes of rendering them harmless, reducing volumes before landfilling, or recycling certain wastes.

Transfer of Undertakings Protection of Employment (TUPE)

TUPE refers to the "Transfer of Undertakings (Protection of Employment) Regulations 2006" as amended by the "Collective Redundancies and Transfer of Undertakings (Protection of Employment) (Amendment) Regulations 2014". The TUPE rules apply to organisations of all sizes and protect employees' rights when the organisation or service they work for transfers to a new employer.

Unitary Authority

A local authority that provides the full range of local government services. Bradford is a unitary authority.

Upstream Recycling

Upstream recycling is where the manufacturer "designs for the environment". For example designing products with less packaging.

Waste

This is the wide ranging term encompassing most unwanted materials and is defined by the Environmental Protection Act 1990. Waste includes any scrap material, effluent or unwanted surplus substance or article that requires to be disposed of because it is broken, worn out, contaminated or otherwise spoiled. Explosives and radioactive wastes are excluded.

Waste Arisings

The amount of waste generated in a given locality over a given period of time.

Waste Collection Authority

A local authority charged with the collection of waste from each household in its area on a regular basis. Can also collect, if requested, commercial wastes from businesses.

Waste Disposal Authority

A local authority charged with providing disposal sites to which it directs waste collection authorities for the disposal of their controlled waste, and with providing civic amenity facilities. Bradford MDC is both a Waste Collection Authority and a Waste Disposal Authority.

Waste Hierarchy

This is a framework which suggest that the most effective environmental solution may be to reduce the amount of waste generated; where that is not practicable, to re-use products, either for the same or different purpose; failing that, value should be recovered from waste through recycling, composting or energy recovery from waste; only if none of these offer an appropriate solution should waste be disposed of.

Waste Management Licensing/Permitting

Licences/permits are required by anyone who proposes to deposit, recover or dispose of waste. The licensing system is separate from, but complementary to, the land use planning system. The purpose of a licence and the conditions attached to it is to ensure that the waste operation that it authorises is carried out in a way that protects the environment and human health.

Waste Transfer Station

A transfer station is a building or processing site for the temporary deposition of waste. Transfer stations are often used as places where local waste collection vehicles will deposit their waste cargo prior to loading into larger vehicles.