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| **SUBJECT:** | Recycling Review |
| **DIRECTORATE:** | Operations |
| **MEETING:** | Cabinet |
| **DATE:** | 3rd December 2014 |
| **DIVISION/WARDS AFFECTED**: | All |

**PURPOSE:**

1. To seek Cabinet agreement on the proposed way forward for the Recycling Review including the decision on the future of recycling collections in Monmouthshire to align with the revised Waste Framework Directive (rWFD) requirements for separate collections (subject to conditions) by January 2015.

**RECOMMENDATIONS ON PROPOSED WAY FORWARD:**

2. The recommendations are:

I. That the existing method kerbside collection of dry recycling materials be continued subject to further Review given the lack of a strong evidence base on the "necessity" to change with a report to be brought forward in summer-autumn 2015;
II. That food and garden waste kerbside collections should be split on demonstration of a robust business case, with food waste to be treated via AD and garden waste via open windrow; the former of which is the subject of a separate Cabinet report (3rd Dec AD MoU Report) and the latter (garden) is subject to a study as part of the wider Recycling Review; and
III. That MCC should explore the opportunities for community benefit from local provision specifically focusing on reuse at CA sites and community composting

**KEY ISSUES**

3. Over the past 18 months, MCC has carried out a strategic review of the recycling and waste service, in response to changes in EU and UK law and Welsh Government (WG) policy and guidance including WG's preference for kerbside sort collections.

4. The key **legislative and policy setting** for the review has been the following:

    - the revised Waste Framework Directive and the Waste (England and Wales) Regulations 2011 including the requirement to provide separate collections of glass, metals, plastics and paper, by January 1st 2015, where it is:
        i. ***Necessary*** to ensure waste undergoes recovery operations in accordance with the waste hierarchy and to protect human health & the environment, and to facilitate or improve recovery; and
        ii. where it is ***technically, environmentally and economically practicable*** (TEEP) to do so; and
        iii. to promote 'high quality' recycling.
    - The Waste (Wales) Measure 2010 and supporting regulations, WG's policy and guidance including WG's clear policy preference for 'separate collections', and its intimation that it may stop the provision of the Sustainable Waste Management Grant to those authorities that do not comply.
    - WG's stated aim in the Environment Bill White Paper to also require LAs to provide separate collections for food waste, card and wood, where necessary and TEEP.

5. For clarity, 'separate collections' means the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility where a waste stream is kept separately by type and nature so as to facilitate a specific treatment. There is debate over what constitutes 'separate collection' and has been the subject of legal argument in the UK and the England Wales Waste Regulations were amended as a result of legal challenge.

6. MCC strives to be a high performing and legally compliant authority and this Review is central to our determination to be compliant and continually assess the necessity and practicability of any change as knowledge and understanding grows. The legislation and guidance makes it clear that if LAs are not kerbside sort then they must demonstrate with sound evidence and process the quality of the materials collected and why a change is not TEEP (technically, environmentally or economically practicable).

7. The review has been managed by MCC officers in line with the Project Plan presented to Select Committee in 2012. The review has formed part of Welsh Governments (WG) Collaborate Change Programme (CCP) which was established to support LAs to ensure legislative compliance and have plans in place to achieve the Statutory Recycling Target of 70% by 2024/25. To facilitate the CCP WG appointed WRAP (Waste Resources Action Programme), who lead on the liaison with LAs, to act as a critical friend and commission projects and pay

for bespoke pieces of research to inform the Reviews. Importantly the review has been steered by a strategic member steering group. This was set up to:

- Providing feedback to Strong Communities Select Committee on the review
- Agreeing project plans for the review as a whole and individual workstreams
- Receiving reports on workstreams, comment and make recommendations
- Receiving final report prior to submission for cabinet
- Champions for the review and engage in engagement and consultation processes
- Reviewing delivery against agreed project plan
- Identification and management of political and community risks

8. The review work was split into several workstreams:

    - *Service Visioning:* Determining a vision for the future service.
    - *Stakeholder Engagement:* Aimed to align the review with the ethos of 'Your County Your Way', by ensuring that constructive and appropriate stakeholder engagement formed the basis of the review.
    - *Collection Options and Cost Modelling:* Aimed to model 6 different future service configuration options so that their viability can be assessed in terms of environmental and financial efficiency and citizen acceptability.
    - *Material Management:* Aimed to establish the best way, both economically and environmentally, that materials can be sustainably managed so as to ascertain the most appropriate treatment method for each material in order to aid future service design.

**Key Findings**

**Service Visioning**

9. Members were tasked with forming a 'vision' for the future of the service, i.e. a set of priorities, which could be used to help develop a future service.

10. To help with this process, a 'Visioning Day' was held where external parties, including MCC contractors, WG, regulators, government advisors and also local Social Enterprises and Friends of the Earth groups presented to the member steering group what they considered to be the purpose of the service.

11. Following this members determined 'what good looks like' for the recycling and waste service. Three clear priorities emerged:

    - Economic value of resources/recyclates are maximised
    - Communities, businesses and members of public are stimulated and supported to do more for themselves; and
    - General public is informed and engaged with the service.

    framed by two important elements:

    - the service is sustainable and environmentally efficient; and
    - Economic benefit/value of service is maximised and is affordable.

12. Officers then translated the vision into an evaluation matrix, which is broken down to three levels, giving more tangible evidence based descriptions. Members have weighted the three levels to arrive at an agreed weighting for the whole matrix. This weighting has not been changed since, and will be used to assess the final options. The weightings (and therefore priorities for assessment) are contained in the matrix at appendix 1.

**Stakeholder Engagement**

13. Stakeholder engagement has been a key strand of the review. The service affects every household every week and the input of householders and other stakeholders has been critical. 'Stakeholder mapping' was undertaken, which identified a number of key stakeholders including residents, community groups, waste team and crews, councillors, contractors, Welsh Government, government agencies (such as WRAP and Waste Awareness Wales), and reprocessors. The mapping also identified how each group should be engaged with. The various pieces of engagement undertaken have been outlined in appendix 2.

14. The key piece of engagement undertaken was with householders. A baseline survey, undertaken face to face and online, which received over 2,000 responses, gave an overview of public attitudes towards the recycling and waste service. The full survey results are shown in appendix 3, but headline results are show below:

- Service satisfaction levels have retained their high level in comparison to 2011 levels. The following percentage of respondents were either very or quite satisfied with the provision of the different services:
    i. Residual waste (grey bag) collection: 80%, compared to 88% in 2011;
    ii. Red and purple bag collection: 96%, compared to 92% in 2011;
    iii. Food waste collection: 93%, compared to 91% in 2011;
    iv. Garden waste collection: 71%, compared to 91% in 2011;
- The most important factor to residents in terms of how a recycling and waste service is provided is ensuring environmental harm is minimised (49% of respondents stated this);
- Same day collections would not encourage residents to recycle more (65% of respondents stated this);
- Residents would not like to be provided with collection services for laptops (and similar), mobile phones, household batteries, textile, clothes or shoes (over 60% of respondents stated this for each material);
- Residents do not believe that the recycling and waste service needs to be improved (35% of respondents stated this), but if it were to be improved, they would like facilities to be provided at HWRCs for reusing waste (27% or respondents stated this).
- Householders are not interested in doing more themselves to manage their waste (36% of respondents stated this). However, having a community composting scheme near their home was also popular with householders (33% of respondents stated this).

15. In addition to the survey, three engagement events were carried out, and facilitated by Andy Middleton. These explored wider waste issues with attendees, including how to change the face of the recycling and waste service in the face of austerity measures. Ideas were gleaned from attendees, and organised into a number of 'themes', these are shown in appendix 4. Attendees and those that had expressed a wish to attend were then asked to vote on which theme they would like us to most focus on, with the most popular response being to improve reuse facilities (40% of respondents). On this basis, a piece of work has been commenced, looking at the feasibility of setting up a reuse shop, possibly located at the Llanfoist transfer station. Additionally, it is planned to recommence the drive to set up a community composting site within Monmouthshire.

16. In terms of engagement moving forwards, it is intended to build on the events undertaken to facilitate a recycling and waste engagement network, with the intention of feeding into the planned corporate engagement online hub. Once a preferred way forward has been determined further public consultation will be required to inform modelling on participation and recycling rates, appropriate messages for communications and for determining a baseline of public opinion on recycling to plan for further improvements in the service.

**Collections Options Modelling and Appraisal**

17. One of the key aspects of the review has been the need to model MCC's current kerbside collection service (baseline), against WG's preferred 'collections blueprint'. The WG collections blueprint high level modelling states that kerbside sort is a more viable economic and environmental service model and will deliver significant savings over other collection models. This work, along with the material management workstream is central to testing the necessity and TEEP of change.

18. Due to the number of potential ways of delivering collection services a consultative and inclusive process was used to narrow the options down to the final 6. This is detailed in appendix 5.

19. The modelling that has been undertaken is at a high level, and looks to ascertain between the 6 options, which is the most financially viable moving forwards. Members need to have confidence that this modelling and any recommendation falling from it, will only form an Outline Business Case which would be subject to further assessments and tender processes followed by a submission of a Final Business Case before an absolute decision is made on any form of collection change.

20. The final six collections options are detailed below (a diagrammatical version of the below is show in appendix 6):

*Table 1:*

| | |
|---|---|
| Option 1: | *Dry recycling:* Twin stream, collected in 26 tonne, split back collection vehicles.<br>*Garden and food waste*: Collected separately in 26 tonne, split back collection vehicles.<br>*Residual waste:* Collected separately in 26 tonne collection vehicles.<br>*Nappies:* Collected separately in pick-ups. |
| Option 2: | *Dry recycling:* Twin stream, collected in 26 tonne, split back collection vehicles, but with nappies collected in pod on front;<br>*Garden and food waste:* As option 1;<br>Residual waste: As option 1;<br>*Nappies:* Collected separately on same vehicle as dry recycling. |
| Option 3: | *Dry recycling:* Twin stream but with glass collected separately. Collected in 26 tonne, split back collection vehicles, with glass collected in pod on front;<br>*Garden and food waste:* As option 1;<br>*Residual waste:* As option 1;<br>*Nappies:* Collected separately in pick-ups |

| | |
|---|---|
| Option 4: | *Dry recycling and food waste:* Twin stream but without glass. Collected in 26 tonne, split back collection vehicles, with food collected in pod on front;<br>*Garden waste, residual waste and glass:* Collected in 26 tonne, split back collection vehicles, with pod on front; 1 compartment used for each material.<br>*Nappies:* Collected separately in pick-ups |
| Option 5: | Dry recycling and food waste: As option 4.<br>*Garden:* Collected separately in 15 tonne collection vehicles.<br>*Residual waste:* Collected separately in 26 tonne collection vehicles.<br>*Nappies and glass:* Collected in small, 7.5 tonne plastic bodied vehicle. Glass collected in rear of vehicle, and nappies collected in pod on front of vehicle. |
| Option 6: | *Dry recycling and food waste:* Kerbside sort (as per WG blueprint). Collected in 12 tonne vehicles, with all materials collected as separate streams, except cans and plastics which are collected together in one compartment.<br>*Garden:* Collected separately in 15 tonne collection vehicles.<br>*Residual waste:* Collected separately in 26 tonne collection vehicles.<br>*Nappies:* Collected separately in pick-ups |

21. The modelling considers 'whole life costs', so treatment costs (the process after collection e.g. composting, anaerobic digestion, energy from waste etc.) have also been determined for each collection option. Additionally, a piece of work was undertaken to determine what affect each collection option would have on the requirements of the transfer stations (where materials are bulked up before onwards transport to the markets), as any collection change would require investment, reconfiguration and building works to allow the collection option to function to full efficiency.

**Cost Modelling Results**

22. Note: The models do not show FINAL determined costs. It is a high level model that shows indicative costs based on the vehicles used and method of treatment. They are used to show a comparison between collection methods, rather than determined budgetary values. Should there be a preference, then a final business case would be undertaken.

23. Note: A number of current costs are not included in the model because they are not expected to change between the options, these are:
    - Management and maintenance costs for the transfer stations. Any costs associated with these sites are expected to be in addition to current costs.

- Treatment costs for residual waste.

**Splitting of Food and Garden Waste**

24. All of the options that were modelled had the assumption that food and garden waste was to be split. This is due to an in principal decision being taken to do so and which has verbally been discussed with Members at Select Committee previously. This decision was taken due to the potential environmental and financial benefits of treating this waste separately. Under such a proposition, food waste would be treated through anaerobic digestion, and garden waste through open windrow. The potential for joining a regional AD partnership, with associated benefits, is the subject of a separate Cabinet report presented to Cabinet on 3rd December 2014.

25. As part of the Recycling Review WG have funded via WRAP a study into garden waste being treated via open windrow within County. Currently to achieve PAS 100 certification standards (and therefore to contribute towards our recycling figures) garden waste is hauled to and treated out of County. This is a material which is best managed locally and the study will assess suitable sites and also provide MCC with advice on capital outlay and ongoing revenue costs and benefits to inform whether open windrow could be pursued in the County. Open windrow capacity for garden waste which meets PAS 100 standards is in short supply in South Wales so could prove a cost effective opportunity for the Council. The review will be reported as part of the wider Recycling Review paper later in 2015.

**Dry Recycling Options Cost Modelling**

26. NB:- As we wanted Members to be fully informed of progress with the review we are showing figures below which are still subject to review and challenge and are likely to change. The options modelling has taken WRAP over six months and demonstrates the complexity of collection modelling and the importance of accurate data.

27. The recycling collection options were modelled against the current service inclusive of planned changes to split food and garden waste (as shown in table 2 above). Table 4 below shows the high level results. Revenue costs are shown at the top of the table and capital costs are shown at the bottom.

*Table 2: (please note this is a high level model, and whilst based on MCC costs cannot be used as a basis to inform the entire budget and expenditure profile of the current service)*

| | Current* | Option 1 | Option 2 | Option 3 | Option 4 | Option 5 | Option 6 (kerbsort) |
|---|---|---|---|---|---|---|---|
| **Revenue:** | | | | | | | |
| Staff | 1,252,055 | 1,321,361 | 1,330,628 | 1,425,320 | 1,521,219 | 1,776,236 | 1,693,002 |
| Vehicles | 1,172,923 | 1,261,282 | 1,428,514 | 1,479,354 | 1,676,709 | 1,405,774 | 1,088,058 |
| Containers | 391,183 | 391,183 | 391,183 | 466,577 | 466,577 | 466,577 | 164,333 |
| Dry Processing | - | 734,048 | 734,048 | 345,913 | 345,913 | 345,913 | 247,318 |
| Material Income/ Sales | - | -661,490 | -661,490 | -629,055 | -629,055 | -629,055 | -715,670 |
| Organics Processing | 294,622 | 294,622 | 294,622 | 294,622 | 294,622 | 294,622 | 294,622 |
| Garden Waste Charge | -230,000 | -230,000 | -230,000 | -230,000 | -230,000 | -230,000 | -230,000 |
| Supervision & Overheads | 831,918 | 900,573 | 910,963 | 895,945 | 913,210 | 917,907 | 858,538 |
| **Total** | **3,712,701** | **4,011,579** | **4,198,467** | **4,048,675** | **4,359,193** | **4,347,973** | **3,400,200** |
| *Difference from current** | | 298,878 | 485,766 | 335,974 | 646,493 | 635,273 | -312,501 |
| **Capital:** | | | | | | | |
| Containers | - | - | - | - | - | - | 1,396,023 |
| Depot | See table 3 | 3,480,000 | 3,480,000 | 1,925,000 | 1,925,000 | 1,925,000 | 782,000 |
| **Total** | | 3,480,000 | 3,480,000 | 1,925,000 | 1,925,000 | 1,925,000 | 2,178,023 |

*Current service: This is the cost of an optimised current service (i.e. the service after all collection rounds have been made efficient – a process currently being undertaken), but also with the assumption that garden and food waste is collected and treated separately.

28. For more information on what makes up the values in table 4 above, see appendix 7.

29. Capital costs, points to note:

    a. For option 6 the capital cost for containers is derived from purchasing a 'trolley box system' for every household, which cost £35 each, the revenue is associated with purchasing replacement boxes.
    b. The depot capital cost associated with each service option results from required changes to the transfer stations, associated mainly with the onsite sorting/bulking of dry recycling materials. See below for details on this.
    c. The above table does not take into account the revenue consequential of prudential borrowing. This is important as all other service configurations require capital investment and whilst in theory are showing a revenue saving, once the borrowing figure is included may not prove as financially beneficial as currently indicated by WRAP. Finance colleagues have begun work on assessing relevant options to determine a longer term business case for 2015 Review.

30. In terms of the potential material income associated with each collection method, average price per tonnes are as per those received by Conwy CC (who collect materials separately) were used. These prices are a guide only.

31. It must be stated that no income or cost has been put against the current service for dry recyclables processing. This is because MCC currently has a £0 per tonne haulage and gate fee rate with Biffa. The Biffa Contract expires in 2016. However, when this contract ends it is estimated that there may be a gate fee of around £20 - £30 per tonne for the material, which could result in a processing charge of around £200,000 to £300,000. This is currently unbudgeted for within the waste budget and would have to feature as a pressure in the MTFP.

32. Members must note that with any collection method there is a recycling processing risk and this will feature strongly in the final report on the future of collections in Monmouthshire. Currently our risk is based on there being MRF capacity at a cost which is affordable to the authority. This does mean MCC has little say in what happens to the material, but it has brought contract security and we have not had to manage or market the material thereby reducing staff costs. With other collection methods the risk comes in managing the materials ourselves, not having the benefit of it being combined with larger volumes, managing the risk profile of volatile markets and needing to invest in staff to manage the process. On the plus side though it gives the Council far more control over the material and a benefit when the market is positive. Therefore the risk profile of what MCC is prepared to accept, particularly during these particularly austere financial times will be strong feature in the further reports to be brought forward for further member consideration. Members of Strong Communities Select Committee recognised that the authority had benefitted from strong MRF contracts and were concerned about the risk of managing material directly given the low volumes and also lack of expertise to undertake a market trading role.

**Transfer Station Costs and Potential Material Income**

33. A separate piece of work evaluated the different options in terms of how materials were dealt with at the transfer stations, depending on the collection option. The work is currently being peer reviewed and subject to change, but initial cost results are shown in table 2, and details of the results are shown below. Options considered in the work included bulking material only and sending to an external Materials Recycling Facility (MRF), undertaking some sorting on site (small MRF), or operating a fully automated MRF. See appendix 8 for a more detailed description of the options.

34. The costs shown in table that are attributed to the transfer stations ('dry processing' costs in the revenue section and 'depot' in the capital section), as well as the potential material income, have been derived from what was determined to be the most economically viable method of processing the materials, per method of collection. This was determined from the transfer station assessment work that was undertaken.

35. The methods chosen are as follows:

- Option 1 and 2: Construction of a fully automated Materials Recycling Facility in Llanfoist, and alterations to Five Lanes depot.
- Option 3, 4 and 5: Construction of a manual Materials Recycling Facility in Llanfoist, and alterations to Five Lanes depot.
- Option 6: Basic sort and baling operation in Llanfoist, and alterations to Five Lanes depot.

36. Consideration was given to just separating the red and purple bags and, selling the red bags as a 'paper mix' and sending the purple bags to a MRF. However, the initial results determined that this was not the most cost effective way of dealing with the material, so it has not been included in the results above. However, maintaining the paper collection in red bags has proven to improve the quality of the paper outputs from the MRF. A more detailed explanation of the methods, including a breakdown of infrastructure and revenue costs, and the potential material income generation, for each of the above, is given in appendix 9.

**Other Options Considered**

37. A number of 'variants' of the six main options were considered for modelling, headline results for these are shown below:

38. *Seasonal garden waste collections:* There is a potential saving available with this option, however, it is only significant for options 5 and 6, where garden waste is collected by a stand-alone vehicle. This is with these options the vehicles can be 'stood down', whereas for the other options food would still need to be collected.

d. For options 1 to 4 the potential saving (compared to full year collections) is around £27,000
e. For options 5 and 6 the potential saving (compared to full year collections) is £114,000.

39. Officers though appreciate the political sensitivity of reducing the service frequency given an annual charge is now applied to the service. This option will only be taken further if there is early Member support for it to be considered.

**Drop in Participation if Change Collection Method**

40. *Kerbside sort (option 6), but with a 10% decrease in participation:* MCC is aware that Councils which switched from comingled collections to kerbsort face a risk of reduced participation. This is due to the highly acknowledged fact that comingled collections collect a higher yield of recyclate from its residents. With specific reference to Monmouthshire given the high performance any service change has to be perceived as a risk. The most significant costs associated with this are an increase in disposal costs, due to materials being put back in the refuse collection, and the risk of fines should the reduction in tonnage collected result in MCC not meeting its targets.

- Based on 1000 tonnes being disposed of via Energy from Waste rather than recycled, this would increase disposal costs by around (net) £60,000
- A 10% reduction in kerbside dry recycling collected tonnages would not put MCC at risk of failing the recycling targets at present (on the assumption that other tonnages stay the same). However it would do so when the target increased to 64% in 1919/20. It is anticipated (based on current tonnages) that MCC's total recycling rate would be 1.4% below the target, resulting in a potential annual fine of £104,000. Appendix 10 gives further information on this. This could result in the kerbside sort option becoming less competitive in comparison to current collections.
- However, it must be noted here that, even if the tonnage of dry recycling drops, this may be mitigated enough by, for example, the recycling tonnage due from Prosiect Gwyrdd, to ensure that MCC's overall recycling rate remains above the fine threshold.

**Public Satisfaction, Performance & Council Priorities**

41. MCC is in a very fortunate position with its recycling services. We are one of the highest performers for recycling in the UK and for the first two quarters of 2014-15 a recycling rate of 67% has been achieved (please note that performance always drops in winter months due to the lack of garden waste). Often services are changed because of a failure in performance. Monmouthshire is not in that situation and therefore it is recognised that a very strong case for change would need to be presented. The EU Directive calls for 'quality' and also '*quantity'* in recycling. Whilst we are fully investigating the quality issue, it cannot be argued that MCC does not achieve quantity given that we are such a high performer. The draft guidance from WG does not answer how to reconcile the quality versus quantity debate.

42. In addition quantitative feedback and also qualitative from recent public consultation events have demonstrated that the waste and recycling service is well regarded by the citizens of Monmouthshire. As evidenced in paragraph 14 the levels of satisfaction are high and this can be substantiated by the high participation levels in the service. It can be foreseen that the public would question why the Council was embarking on a major investment for change when the current service was performing highly and is well regarded. The Council will consider this risk and align the priority of any change to a front line public facing service with the other corporate priorities the Council needs to deliver.

**Key Points to Note from the Results:**

43. Separation of food and garden waste gives a tangible financial benefit (please see separate Cabinet report 3/12/14 on AD MoU for full details). The reduction in treatment costs from using this method outweighs the increase in collection costs resulting from the need to use different vehicles.

44. In terms of cost modelling of dry recycling options, the most viable alternative options in comparison to the present service are:
    a. The 'twin stream' option (option 1), whereby MCC continues to collect red and purple bags as at present, but they collected and processed separately in a MRF at Llanfoist. Although, alternative means of processing would be further reviewed.
    b. The Kerbside sort option (option 6), whereby most materials are collected separately, and a small sorting operation is run in Llanfoist to separate cans and plastics.

**Material Management**

45. As stated in point 4 (page 1), the Waste Framework Directive requires local authorities to collect paper, metals, plastics and glass separately where:

i) necessary to ensure waste undergoes recovery operations in accordance with the waste hierarchy and to protect human health & the environment, and to facilitate or improve recovery; and
ii) where it is technically, environmentally and economically practicable (TEEP) to do so; and
iii) to promote 'high quality' recycling.

46. For MCC to be required to move to separate collections for a particular material, both the necessity and TEEP tests must be satisfied.

**Necessity**

47. Under the necessity test, MCC must consider whether it actually needs to separate materials further in order to achieve high quality recycling. A simple benchmark for this test comparing the quality of MCC's materials, at the point that they are recycled, with 'good' kerbside sort authorities. Unfortunately, terms such as 'high quality' and 'good kerbside sort authority' are not defined in the legislation or the draft WG statutory guidance. MCC consider these to be fundamental points when considering whether we should switch from what is a highly effective, performing and efficient service which enjoys high levels of public satisfaction at this time.

48. WG have determined that LAs should seek to achieve the best overall environmental outcome, and that where possible, should look to achieve 'closed loop' recycling. This for example, would mean to turn a glass bottle back into a glass bottle and not into road aggregate.

49. There is confusion among local authorities on how to address the necessity question, and what to compare collections to. As a starting point MCC officers compared the top destinations for MCC's recycling in 2012/13, to those used by Welsh kerbside sort authorities. The full results are shown in appendix 11. The results show, that MCC's end destinations are comparable to kerbside sort authorities for a number of materials. For example, the top three end destinations for MCC's glass are all closed loop manufacturers, and over 90% of glass went to these three manufacturers. With MCC's paper, although this is being sent to China, it is also being processed in a closed loop manner (comparable with kerb side sort authorities).

50. Although the above is compelling, it is important that MCC has a full understanding of the quality of its recyclable material, before a full conclusion can be made on the necessity test. The MRF regulations, which came into force in October 2014 will assist with this. The regulations require MRFs to undertake detailed sampling on material as it is received, and again after it has been through the sorting process. It will enable MCC to ascertain the true quality of its material, and how it is, or isn't, affected by the MRF process. MCC will then be in a better position to compare the quality of the material it provides to reprocessors to that of kerbside sort authorities.

51. Traditionally due to lack of sampling robustness MCC has reported the average MRF contamination rate which is then deduced from our recycling performance. Currently this is between 8-10% of inputs. Initial indications from Biffa indicate that our material is of a very high quality and could in fact prove a positive for MCC's recycling performance. However, a full assessment on the quality of MCC material to demonstrate whether we meet the necessity test of supplying the market with quality materials will need at least 6 months of data. Given that the regulations have only been in place since the 1st October, it is not anticipated that this work will be completed until around June of 2015.

52. In addition to the above, WRAP have been commissioned by WG to undertake a study whereby they sample the dry-recycling material of a number of authorities, from point of collection, through every stage of the process to the final point of the process where the material is recycled. MCC is to be one of the lead authorities on this piece of work, and will receive initial results by Christmas. This, combined with the MRF sampling will better enable MCC to conclude on the necessity test.

**TEEP Test**

53. If it is found that it is necessary for MCC to collect certain materials separately, it will also need to be considered whether it is TEEP to do so.
    a) Technically practicable: Given that separate collections operate in counties similar to Monmouthshire – such as Conwy, it is likely to be concluded that such collections are also practicable within Monmouthshire.
    b) Economically Practicable: The benchmark for whether collections are economically practicable is that they must not be 'excessive' in comparison to non-separate collections. The final whole life costs of the different options will need to be assessed fully to determine this. The Council will also need to consider the "cost of change" in light of other investment priorities that need to be delivered; and
    c) Environmentally Practicable: As part of the finalising of the options MCC will undertake an environmental assessment of the key options in conjunction with WRAP, this will assist with ensuring any potential service change is environmentally practicable.

**Local Government Measure 2009**

54. In addition to the necessity and TEEP tests, MCC is subject to the requirements under schedule 2 of the Local Government Measure 2009. Under this, MCC must "Make arrangements to secure continuous improvement in the exercise of its functions". In doing so, the authority must have "regard in particular to the need to improve the exercise of its functions in terms of;

- Strategic effectiveness;
- Service quality;
- Service availability;
- Fairness;
- Sustainability;
- Efficiency; and
- Innovation.

55. Any decision to alter the service must also be justified when considering the above points. Welsh Government are currently considering how the LG measure requirements align with the much anticipated Separate Collections Guidance given that the requirements of the EU Directive must be balanced against the purpose of LG as set out in this measure by WG. Further consideration will need to be given (and will be done so over 2015) to how we apply these 7 requirements to the service and will be included in the final review, but examples include:
    - *Strategic Effectiveness:* where does the service sit within Council priorities and is it currently meeting LA and national performance targets. Is there a major strategic case for investment in change compared to other Council priorities;
    - *Service Quality: does the service meet the needs of its residents, satisfaction ratings, participation ratings etc. The necessity test (quality of materials can also be applied here)*

**Further Work**

56. As mentioned above, although the Review has made significant progress, with high level results being received, a number of aspects of the project need to be finalised before a full business case can be developed.

57. Over the next six to 8 months the following work will be completed on the review:
    - Assessment of necessity to change – following data collection from MRF regulations and WRAP work;
    - Assessment of TEEP of options (particularly economic), and narrowing down to two final options, to proceed to outline business case; and
    - Alignment of Local Government Measure and EU waste framework directive requirements.

58. In addition to the above as referenced in para.25, work is to be undertaken on open windrow within Monmouthshire . The potential of such a local site would allow MCC to minimise processing costs for garden waste, process the waste locally, and potentially receive

material from other local authorities. WG have since commissioned a piece of work on MCC's behalf that will assess the potential of the site, and two other areas within Monmouthshire (to be determined). This piece of work is due to be completed by March 2015.

59. As a result of the engagement work that highlighted an appetite for a 'reuse' shop in Monmouthshire, a piece of work looking at the potential for this at the Llanfoist site will be undertaken by MCC officers. Officers will also look to progress with the community composting initiative.

60. With regards to the modelling it is being proposed that the existing method of collection continue subject to further review due to:

- The need to have 6 months' worth of MRF regulations data to evidence the "quality" of MCC materials;
- WRAP's work on material management will not have been completed;
- The transfer station capital requirements is being reviewed;
- More work is needed on material income opportunities and risk profiles;
- More engagement needed with the recycling market directly to determine interest in the different options being considered and financial return MCC could expect;
- The need to soft market test the existing MRF contract;
- Health and safety assessment on collections option;
- WG not having published final guidance;
- Public engagement on collection options; and
- A full financial model needs to be developed to demonstrate the cost effectiveness of any preferred option to inform a long term business case

61. The report has identified key issues and risks which need consideration and addressing prior to a final recommendation. These are:

I. What risk is MCC prepared to take on income generation on sale of recyclates? i.e. if we had to spend more (collections costs) to bring in more income rather than rely on a MRF (and an external organisation experienced in such management) what level of return would need to be provided for assurance purposes?
II. What risks are MCC prepared to take with a collection change given that the service is high performing and not at risk of failure of targets?

III. If the review demonstrates that the current service is EU compliant in terms of separate collections requirement but a financial benefit (no matter how small) could be achieved by a switch, what would the preference be?
IV. Change over potentially 2016-17 at a time when MCC could be facing a reorganisation – is a service change a priority?
V. What risk are we prepared to take with our residents who value and use the current service effectively and have indicated that they do not want a change?

62. To reiterate, the key recommendations to come from this report are as follows:

I. That the existing method kerbside collection of dry recycling materials be continued subject to further Review given the lack of a strong evidence base on the "necessity" to change with a report to be brought forward in summer-autumn 2015;
II. That food and garden waste kerbside collections should be split on demonstration of a robust business case, with food waste to be treated via AD and garden waste via open windrow; the former of which is the subject of a separate Cabinet report (3rd Dec AD MoU Report) and the latter (garden) is subject to a study as part of the wider Recycling Review; and
III. That MCC should explore the opportunities for community benefit from local provision specifically focusing on reuse at CA sites and community composting

**REASONS**

63. 'Separate collections' for glass, paper, plastics and metals are required by January 2015 subject to necessity and TEEP tests. Current data does not evidence that MCC is not compliant with the rWFD framework, but in the spirit of the Directive, given that we do not offer kerbside sort source separated collections the Council will continue to review and pending further evidence and data will report to Cabinet in 2015 with a full costed business case on the proposed way forward.

**FINANCIAL IMPLICATIONS:**

64. There are no immediate financial implications from this report.

65. Whilst indications on savings have been referenced in the report no figures for savings feature within the current MTFP as it would be premature to do so. The figures provided do not also take fully into account the capital investment required. However if a change was proposed the Business Case, in line with the principles on capital investment would need to explore the implications of using any savings

to enable borrowing to fund this capital expenditure or make such a strong case that other schemes contained within the capital programme were displaced.

**LEGAL IMPLICATIONS:**

66. Legal Advice has been sought from external specialist waste management lawyers (Thomlinson Kiddle Law). They have advised that MCC should continuously review its service provisions to ensure legal compliance and to promote continuous improvement. In particular, further work is required to ensure MCC makes a proper analysis of all the relevant material; that MCC continues to consider policy with rigour and an open mind; and reconsiders its position as new information comes to light.

67. In particular, MCC ought to continuously review its service provisions to ensure that it meets its legal obligations including:

- the general obligation to encourage separate collection so as to facilitate recovery;
- the general obligation to introduce separate collection so as to facilitate recycling;
- the obligation to introduce separate collection for paper, metal, plastic and glass so as to facilitate recycling of these waste streams; and
- the obligation not to mix waste of specific type or nature with other waste or other material with different properties,

subject always to the principle of proportionality (subject to the Article 10(2) of the revised Waste Framework Directive necessity and technical, environmental and economic practicability tests). Considering that the aim of separate collection is high quality recycling, the introduction of a separate collection system may not be necessary if the aim of high quality recycling can be achieved just as well with a form of co-mingled collection.

68. Members are advised that there is a risk that MCC may be legally challenged for its decision to continue with its current practices. It particular, it may be challenged in relation to the interpretation of the separate collection obligations. However to mitigate this risk the Council has followed a robust, inclusive process solely based on evidence and data. It has also committed to keep the issue under Review and to bring more detailed data to Members in 2015 once all necessary work has been completed.

**EQUALITY AND SUSTAINABILITY IMPACT ASSESSMENT:**

69. As this is an update report there are no equality and sustainability impacts. However the Business Case when presented will have undertaken a full equalities and sustainability impact assessment.

**CONSULTEES**

Cabinet
Senior Leadership Team
Head of Service
Chief Internal Auditor
Head of Finance
Head of Legal Services
Strong Communities Select Committee (meeting of 18th Nov)
WRAP
Welsh Government

**REPORT AUTHORS**

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| Appendix 1: Evaluation Matrix **Level 1 Criteria ('Vision')** | **Weight** | **Level 2 Criteria** | **Weight** | **Level 3 Criteria** | **Weight** |
|---|---|---|---|---|---|
| Economic benefit/value of service is maximised | 35.00 | Value of resources is maximised. | 17.92 | Income is generated from valuable materials/resources. | 9.54 |
| | | | | Cost of disposing of non-valuable materials/resources is minimised. | 8.38 |
| | | Cost of service delivery is minimised. | 17.08 | An economically efficient service profile. Is adopted. | 6.70 |
| | | | | Contracts and partnerships are designed to offer best value for Monmouthshire. | 10.38 |
| The service is sustainable and environmentally efficient*. | 19.25 | Material management is undertaken in a sustainable and environmentally efficient way* | 9.33 | Materials are managed in a way that facilitates high quality recovery and recycling in terms of application of the waste hierarchy and/or product life cycle thinking. | 4.33 |
| | | | | Ecological footprint is minimised (One Wales: One Planet by 2050). | 2.17 |
| | | | | Resource security is ensured. | 2.83 |
| | | Waste operations do not endanger human health or the environment* | 9.92 | An environmentally efficient service profile is adopted. | 3.17 |
| | | | | No fly tipping resultant from waste operations. | 2.08 |
| | | | | No litter caused by waste operations – ie keep streets clean. | 2.17 |
| | | | | Service delivery method meets national health and safety standards | 2.50 |
| Communities, businesses and members of public are stimulated and supported to do more for | 20.08 | Community schemes are supported and facilitated. | 6.08 | Community reduction is maximised. | 1.50 |
| | | | | Community reuse is maximised. | 1.67 |
| | | | | Community recycling is maximised. | 1.67 |
| | | | | Community composting is maximised. | 1.25 |
| | | Businesses are motivated to engage in reducing, reusing and recycling waste. | 5.33 | SMEs are supported to maximise reduction, reuse and recycling. | 2.83 |
| | | | | Manufacturers and businesses in Monmouthshire are driven to consider and implement resource management practices in all aspects of production. | 2.50 |
| | | Householders are | 8.67 | Home composting is maximised. | 3.75 |

| | | | | | |
|---|---|---|---|---|---|
| themselves. | | encouraged to do more in the home. | | Reduction and reuse of materials within the home environment is maximised. | 4.92 |
| General public is informed and engaged with the service. | 25.67 | Service well communicated to public | 13.67 | Public understand how to get maximum use out of the services available. | 6.25 |
| | | | | Public understand reasons and benefits for sustainable resource management. | 7.42 |
| | | Positive public acceptance of service | 12.00 | High participation in services | 5.83 |
| | | | | High recycling rates achieved | 6.17 |

***Includes requirement to apply separate collections if necessary and 'technically, economically and environmentally practicable' (TEEP) to meet the sustainability and environmental aspects.**

**TEEP definition:**

'Technically Practicable' means that the separate collection may be implemented through a system which has been technically developed and proven to function in practice (e.g. H&S, capture rates, recycling rates overall, quality etc.);

'Environmentally Practicable' should be understood such that the added value of ecological benefits justify the possible negative environmental effects of separate collection (e.g. additional emissions from transport);

'Economically Practicable' refers to a separate collection which does not cause excessive cost in comparison with the treatment of non-separated waste stream, considering the added value of recovery and recycling and the principle of proportionality.

**Appendix 2: Methods of engagement**

Some of the primary means of engagement were as follows:

f. Residents: A baseline public questionnaire was undertaken, the responses to which gave a perspective on current attitudes on the recycling and views on the current service. Additionally, 'engagement events' were held, facilitated by Andy Middleton, these looked at wider waste and recycling issues and sought ideas for how these could be addressed.

g. Community Groups: Community groups such as Friends of the Earth and Homemakers took part in the MCC visioning day, additionally a special engagement event aimed at community groups was held and facilitated by Andy Middleton, to look at how services could be looked at differently.

h. Waste teams and crews: Both crews and officers have been involved in the review throughout. Officers have worked on various aspects, including modelling and material management and crews have been key involved with developing options and determining preferred vehicles.

i. Councillors: The key means of engaging with members was through the member steering group. This group have taken the lead in steering the review, and have been influential in forming a future vision for the service and viewing best practice elsewhere. Community councillors were engaged through being invited to attend the engagement events as discussed above. Regular meetings have been held with the group over the period of the review, additionally the group have visited best performing authorities in both comingled and kerbsort collections. In addition to the above, an update on the review was taken to the Strong Communities Select Committee in October 2013.

j. Contractors: MCC's main contractors – Viridor, Homemakers and Biffa were all invited to attend the visioning day, Viridor and Homemakers took up this invite. They gave opinions on their views of the future of the services. Additionally, both have been engaged on an ad hoc basis at different stages of the review – for example when looking at transfer station requirements.

k. Welsh Government: WG have been fully informed from the outset of the review and have received updates from MCC officers and also through the CCP programme. There is a gap in the monitoring authority NRW being engaged in the review but this is due to delays at a national level on how the regulations are to be monitored and therefore NRW are not yet geared up to engagement with LAs in a proactive manner.

l. Government agencies (eg WRAP & NRW): WRAP have been heavily engaged throughout the review, providing assistance and advice in terms of collections modelling and determining of options. Additionally, WRAP have been involved in drawing up various pieces of work, including the transfer station assessments and looking at the potential to set up an open windrow site. It is recognised that there is a weakness in engaging with the Monitoring Authority for the Regulations which implement the rWFD. NRW have been appointed as MA, but are yet to determine how they undertake this role. MCC did offer to WG that we would be willing to be pilots to work with NRW to inform their thinking, but this was not taken up. Therefore engagements with NRW are required in the future.

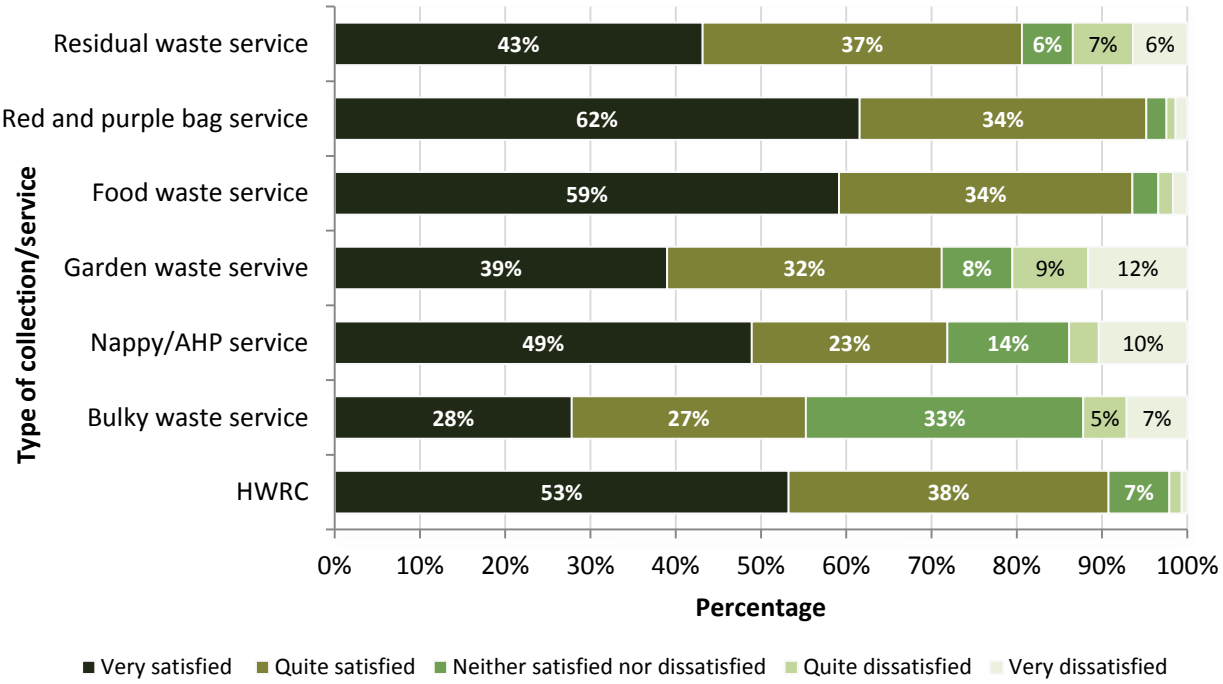
Reprocessors: MCC aimed to engage with reprocessors in order to see their requirements in terms of how materials are presented to them. This is deemed to be key in order to help determine required collection methods. This area of engagement has been more difficult, the reprocessors that were asked to speak at the visioning day declined to do so, and it has proved more difficult to do so otherwise. This engagement is ongoing.

**Appendix 3: Resident survey results:**

The resident survey showed that the majority of households used the kerbside collection service on a regular basis. 91% of respondents stated to use the residual waste service on a fortnightly basis, 88% and 78% respectively stated to use the red and purple bags and food waste service on a weekly basis. 29% of residents stated to use the garden waste collection service weekly.

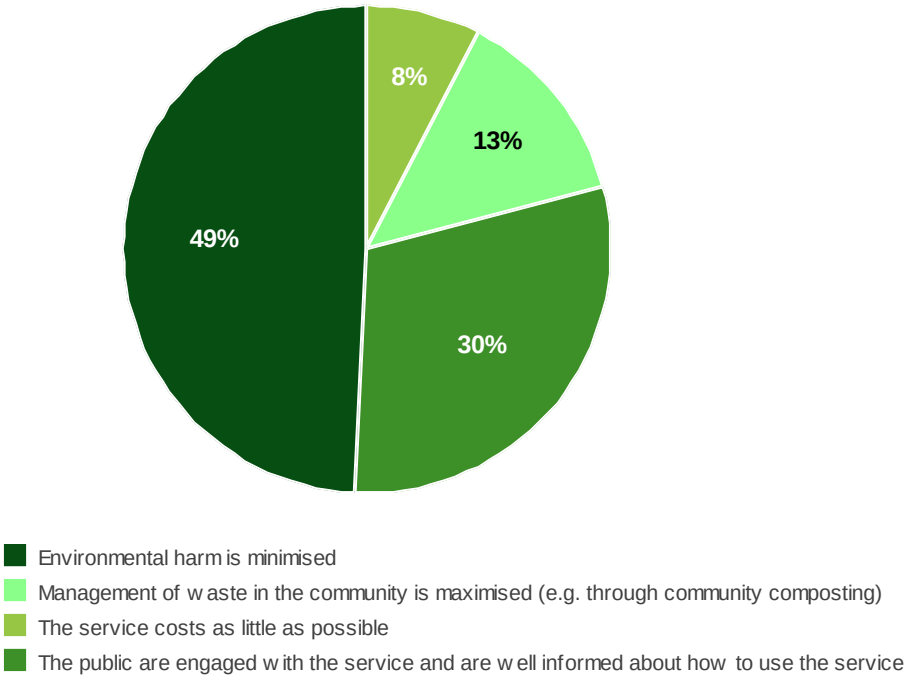
Respondents were how satisfied they are with the services. As figure 2.2.1 shows, for the majority of services over 70% of respondents were quite or very satisfied with the service. The red and purple bag and food waste collection services both have satisfaction rates of over 90%.

*Figure 2.2.1: How satisfied are you with the HWRCs and kerbside collection services?*




In an exercise separate to this piece of work, Members were asked to determine a 'vision' for the future of the recycling and waste service, they came up with 4 factors, residents were then asked which of these four factors were most important to them in terms of how a service is designed. As figure 2.2.2 shows, 49% of respondents stated that ensuring environmental harm is minimised is most the most important factor.

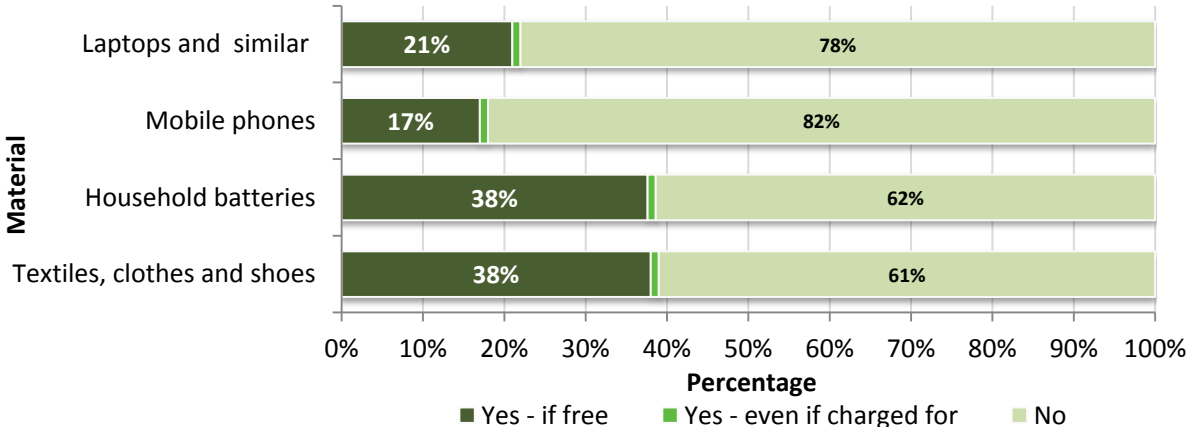
*Figure 2.2.2: Which strand of the member's vision do you consider to be most important in terms of how a recycling and waste service is provided?*




Respondents were subsequently asked if having their recycling and rubbish all collected on the same day would encourage them to recycle more. 65% of respondents stated that it would not, with 28% saying it would.

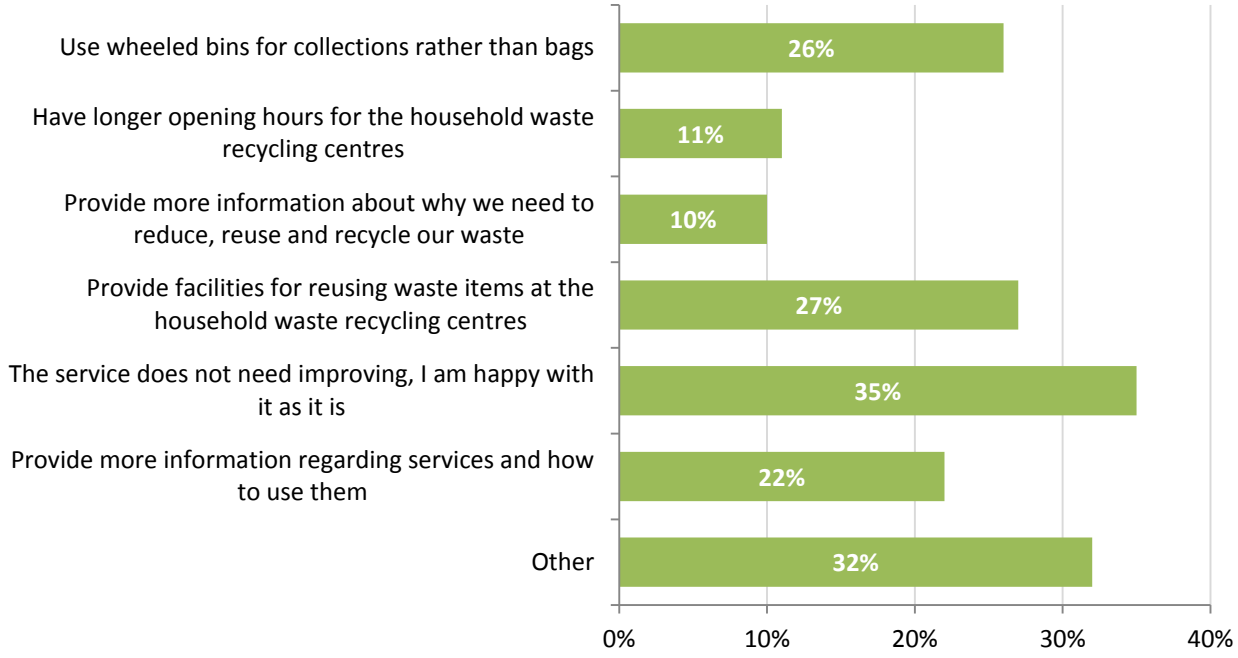
Respondents were asked if they would like to be provided with a kerbside collection for a number of other materials. As figure 2.2.3 shows, over 60% of respondents stated that they would not like a collection for any of the materials. Where respondents would like a collection, less than 2% would be willing to pay for it.

*Figure 2.2.3: Would you like to be provided with a kerbside recycling collection for the following materials?*



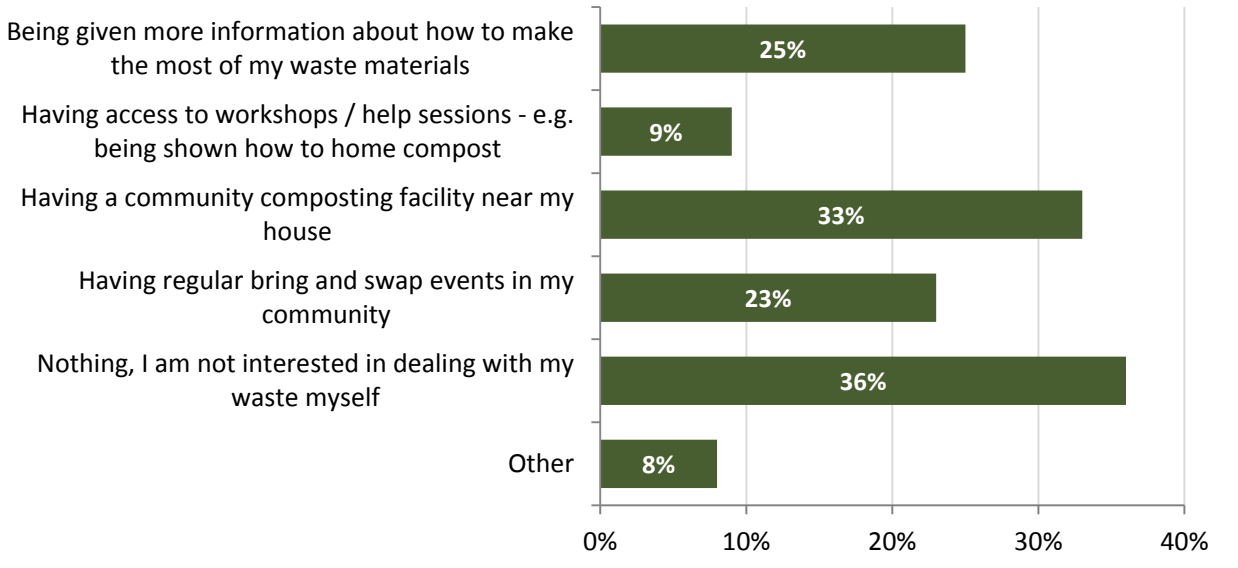

Respondents were asked how they felt the recycling and waste service could be improved. As figure 2.2.4 shows, 35% of respondents did not feel that the service needed improving. Where respondents did feel it could be improved, providing reuse facilities at HWRCs was the most popular response. In the 'other' category, the most popular response was to provide a free or reduced cost garden waste service (7% of respondents).

*Figure 2.2.4: How could we improve our recycling and waste service?*




Finally, residents were asked what MCC could do to help them manage more of their waste themselves. As figure 2.2.5 shows, 36% of residents said that they were not interested in dealing with their own waste, whereas 33% of residents felt that having a community composting scheme near their house would help them.

*Figure 3.7: What would help you to manage more of your waste at home and / or in the community?*



**Appendix 4: Themes for improvement from engagement events:**

| | Theme | Ideas |
|---|---|---|
| 1 | Improve reuse facilities | • Garage/ street events<br>• Pop-up shops<br>• Reuse workshops at schools<br>• HWRCs |
| 2 | Improve/change kerbside collections | • Residents running services? – re-localising recycling services to individual towns of communities.<br>• Periodical textile collection<br>• Create jobs in Monmouthshire - doing more for ourselves.<br>• Reducing garden waste collections to seasonal.<br>• Community bins? – end of kerbside collections? |
| 3 | Education | • Back to basics – eg how to use up food. Integrate resource management into teachings<br>• Welsh Bacc problem solving – children to consider waste and resource problems?<br>• Educate about sites such as Freecycle<br>• Spread One Planet across the county. |
| 4 | Rebranding and information provision | • Rebrand waste as a resource<br>• Create trust in information provision – MCC to be open and honest.<br>• Information clear and easy to use.<br>• Promote services – help people understand what MCC does.<br>• Recycling figures at entry to towns.<br>• Information on service cost – how much and what does it go towards. |
| 5 | Influencing manufacturing and production processes | • Improve links with supermarkets – look for ways for them to reduce packaging.<br>• Packaging – push for use of paper and card rather than polystyrene, reduce plastic film use.<br>• Possibility of tiered business rates? |
| 6 | Incentives and enforcement | • Incentives:<br>• Best recycling town competition.<br>• Time banking?<br>• Financial incentives for those that recycle.<br>• Enforcement:<br>• Fines for fly tipping and other litter offences. |

**Appendix 5: Consultation process undertaken to determine final collection options:**

the following process was used to narrow the options down to the final 6 that were modelled:

m. **October 2013:** A number of service delivery assumptions were determined, based on aspects of the service that did not need to be altered, or where changes had already been decided upon:

   i. Garden and food waste was to be modelled as being collected separately. This is due to an in principal decision already having been made to separate this material.
      1. Garden waste would be treated by open windrow;
      2. Food waste would be treated by anaerobic digestion;
   ii. There would be no other change to the food, nappy and residual waste collections. Including the containers used.
   iii. Garden waste would be modelled primarily as a weekly, charged for, collection, but that consideration would be given to seasonal collections.
   iv. Dry recycling would still be collected weekly, but that the following means of separating materials would be considered:
      1. 'Twin stream': Similar to present, but red and purple bags are kept separate on collection and treated separately.
      2. 'Twin stream' but with glass collected separately: As 'twin stream' but glass is collected separately to plastics and tins/cans. Extra reusable bag to be used for glass.
      3. Kerbside sort (as per WG blueprint): All materials collected, stored, and processed separately. Materials are to be collected in a 'trolley stacker box'.

n. **Early November 2013:** A 'working group' was formed from waste and transport officers, as well as collections supervisors and crews, and representatives from WRAP.

o. **November 2013:** A vehicle workshop was held, whereby the working group were presented to by leading vehicle manufacturers and viewed up to date demo vehicles. Subsequently a list of over 40 possible collection configurations was drawn up by the group.

p. **December 2013:** The working group reduced the list of options to 15. This was based on health and safety, viability of vehicle use within Monmouthshire, limiting the number of times a house has to be visit to collect all streams, limiting the number of different vehicle types (so to ensure vehicle flexibility), and ensuring the service provided is as easy to use as possible for householders.

q. **December 2013:** Further consideration was given to the options, and the working group reduced the short list of 15 to the final 6.

## Appendix 6: Final list of options that were modelled

| | | | | | |
|---|---|---|---|---|---|
| **Baseline - As is** | Weekly - 24t Open back RCV<br>Open backs, co-mingled | Weekly* -24t Open back RCV<br>Garden and food mixed | Fortnightly - 24t RCV<br>Residual | W - Pickup<br>Nappies | |

## Options - Where garden waste is collected weekly

| | | | | | |
|---|---|---|---|---|---|
| 1 | **Dry recycling using split backs** | Weekly - 26t RCV split back<br>Paper, card 32%<br>Glass, Metal, Plastics 68% | Weekly - 26t RCV split back<br>Garden 41%<br>Food 59% | Fortnightly - 26t RCV<br>Residual | W - Pickup<br>Nappies |
| 2 | **Dry recycling and nappies using 3 pod vehicle** | Weekly - 26t RCV split back with pod<br>Nappies 2%<br>Paper, card 33%<br>Glass, Metal, Plastics 66% | Weekly - 26t RCV split back<br>Garden 41%<br>Food 59% | Fortnightly - 26t RCV<br>Residual | |
| 3 | **Dry recycling using 3 pod vehicle** | Weekly - 26t RCV split back with pod<br>Glass 8%<br>Paper, card 32%<br>Metal, Plastics 61% | Weekly - 26t RCV split back<br>Garden 41%<br>Food 59% | Fortnightly - 26t RCV<br>Residual | W - Pickup<br>Nappies |
| 4 | **Dry recycling and food using 3 pod vehicle** | Weekly - 26t RCV split back with pod<br>Food 13%<br>Paper, card 31%<br>Metal, Plastics 56% | Weekly - 26t RCV split back with poc<br>Napp 8%<br>Glass 32%<br>Garden 61% | Fortnightly - 26t RCV<br>Residual | |
| 5 | **Dry recycling and food using 3 pod vehicle** | Weekly - 26t RCV split back with pod<br>Food 13%<br>Paper, card 31%<br>Metal, Plastics 56% | Weekly - 26t RCV<br>Garden | Fortnightly - 26t RCV<br>Residual | W - PBUV - single back with pod<br>Glass 80%<br>Nappies 20% |
| 6 | **Kerbside sort (WG blueprint)** | Weekly - RRV - Romaquip 12 tn<br>Plastic, Metal 54%<br>Paper 16%<br>Card 12%<br>Glass 7%<br>Food 11% | Weekly - 26t RCV<br>Garden | Fortnightly - 26t RCV<br>Residual | W - Pickup<br>Nappies |

**Appendix 7: Options – revenue cost breakdown:**

| Revenue | |
|---|---|
| Crews | Include costs for collection crews, and cover (25% addition to standard crews). |
| Vehicles | Includes leasing of vehicles, maintenance, fuel, and tax and insurance. Also includes cost of spare vehicles (20% addition to standard fleet) |
| Containers | Revenue cost of containers – single use plastic bags (including wastage), and replacement rates for container (where applicable). |
| Dry processing | Costs for processing of materials at transfer stations – eg electric. See appendix 9 for more information. These are costs above the current costs (these are not included in the model). |
| Material income | Potential material income attributed to collection method. Based on rates received by Conwy CC. See appendix 9 for more information. |
| Organics processing | Treatment costs for kerbside organics waste. |
| Garden waste charge | Anticipated income from garden waste |
| Supervision & overheads | Cost of supervisory staff, back office and management staff and central recharges. Based on the 2014 restructure. |

**Appendix 8: Transfer station options that were considered:**

In addition to the collection options modelling, a piece of work was carried out by LRS, a consultancy working on behalf of WRAP. LRS looked at the different collection options, and undertook an assessment of what would be required from the transfer stations for each collection option. There were a number of options that could be considered per collection option – ranging for example from purely bulking material, to having sophisticated sorting operations on site.

The list below gives an overview of the different options:

1. **Bulk only:** Whereby, material is bulked at both Five Lanes and Llanfoist and sent on to a commercial sorting facility (Material Recycling Facility/MRF), or to a reprocessor. The options in terms of processing would depend largely on how the material is collected. For example, paper collected separately could be bulked and sent to a reprocessor directly, however if such paper is co-collected with card, it would need to be sent to a MRF to be further sorted.
2. **Manual MRF:** A sorting facility (ie a MRF) is operated at Llanfoist, and material from Five Lanes is bulked at Five Lanes then transported to Llanfosit. Material would be sorted at the facility and sent to reprocessors. 'Manual' means that a lot of the sorting is done by hand, rather than by machines. The MRF could be configured to different levels of sorting – eg minimal sorting, whereby paper is not sorted and sold as 'mixed fibres', to where for example paper is sorted into different grades (where possible).
3. **Automated MRF:** Similar to the manual MRF, but more technology is used. Tends to be more expensive to construct and operate, but there is potential for better sorting, so better returns in terms of material value.
4. **Basic bale and sort operation:** This is aimed at kerbside sort collections, whereby only sorting of cans and plastics is required. The system is basically a mini MRF, with a facility for baling materials for selling to reprocessors.

Each of the methods above were adapted slightly to the relevant collection system – i.e. less sorting at the transfer stations was required for options 3, 4 and 5, than 1 and 2, because glass had already been sorted by householders**.**

The work is currently being peer reviewed, so cost tables for all of the options have not been included in this report. However, the options that were determined at a high level to be most economically viable are detailed in appendix 9.

**Appendix 9: Overview of transfer station options relevant to collections options:**

For the differing collection options, the most economically viable, in terms of the revenue that is achievable (ie the option with the potential for the greatest return), was modelled as part of the overall collection service cost modelling.

An explanation of this, is given below.

Note: this information is currently being peer reviewed, so is subject to change.

**Option 1 and 2: 'Twin Stream' collection**

Best transfer station option: Fully automated Materials Recycling Facility (MRF), located at Llanfoist:

Although a number of options for dealing with twin stream material were considered, including bulking and selling to an external MRF (as present), or operating a manual MRF, a fully automated MRF was deemed to be the most economically beneficial option in Monmouthshire's case.

This was determined when considering aspects such as looking at the sites and buildings available for use, the cost of equipment and the tonnage that Monmouthshire produces.

The MRF would be used to sort both fibres (papers) and the containers (glass, plastics and cans). This would maximise the income that could subsequently be received. The fibres bag (red bag) would be run put through the MRF at a separate time to the containers (purple bag), to ensure cross contamination is minimised, and therefore quality of material is maximised.

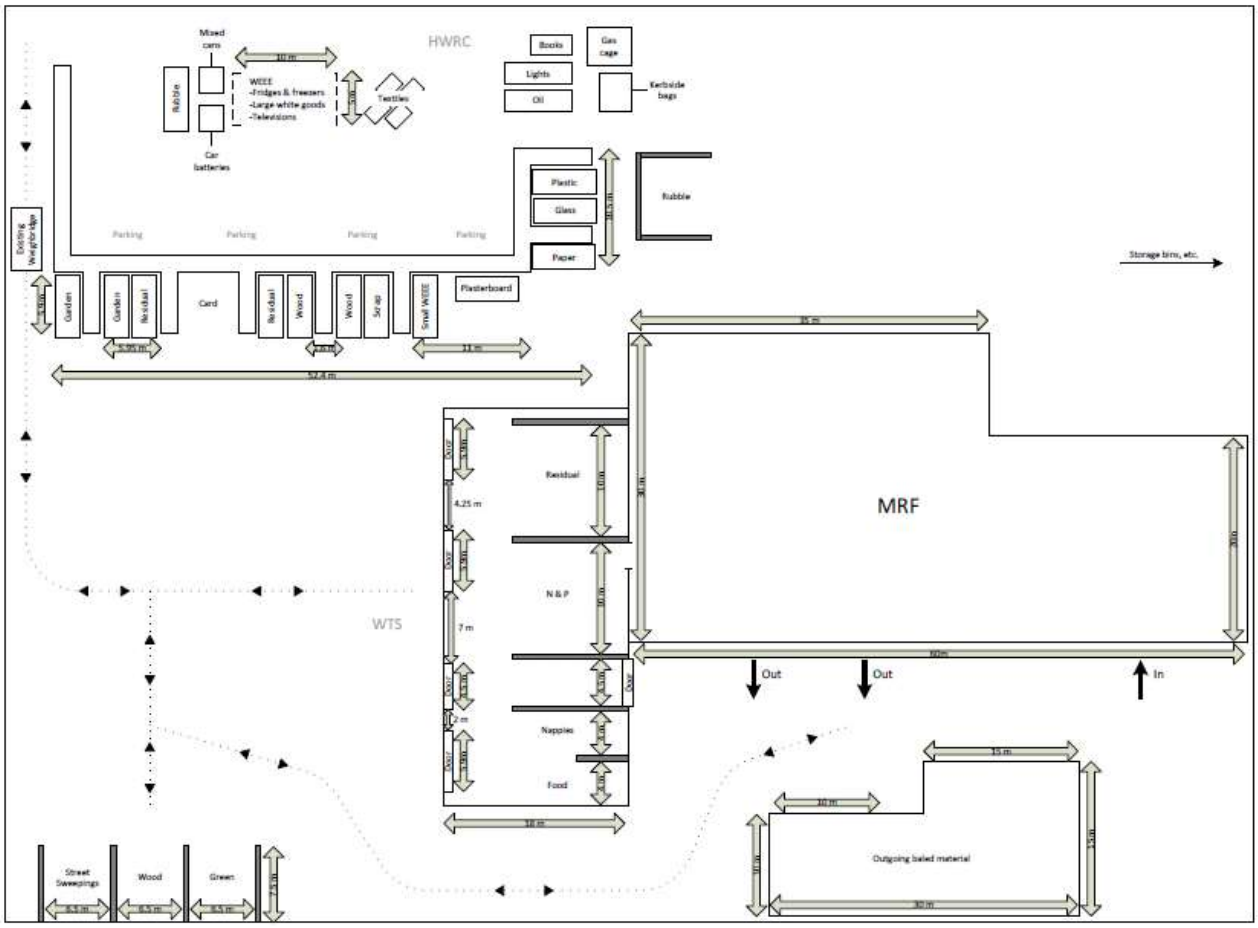
The materials would be sorted into the following streams:

- Paper: Sorted into 'news and pams' (high grade), corrugated card and a mixed paper (ie all other paper).
- Plastics: Not sorted into types, sold as mixed plastics.
- Glass: Not sorted into types, treated as mixed glass.
- Tins/cans: Ferrous and non-ferrous (aluminium) metals would be separated and sold separately.

How would this method work in practice?

- A MRF would be built on the site of the old transfer station in Llanfoist. The current transfer station would be used as a bulking area for materials.
- The current Five Lanes transfer station would be used as a bulking station, from which materials would be transferred on to Llanfoist. A small amount of infrastructure work will also need to undertaken on the Five Lanes to ensure that it is fit for purpose.
- Pieces of equipment such as 'bag splitters', eddy currents and magnets (for separating plastics, ferrous and non-ferrous metals), and a trommel (for separating glass), would be used for separating the materials.
- Materials would all be separated and baled at the Llanfoist site, ready for onwards sale to reprocessors.

The plan below, shows at a high level, how Llanfoist could be developed to accommodate the MRF:




Note: N and P refers to the storage of high grade paper.

Estimated cost of the option:

Capital:

| Building and Infrastructure (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| New MRF building & extending conceted area for bale storage | £1,000,000 | £20 | £50,000 |
| MRF civils | £50,000 | £20 | £2,500 |
| External storage bay | £20,000 | £20 | £1,000 |
| Rubble bay | £15,000 | £20 | £750 |
| Sub total | £1,085,000 | Sub total | £54,250 |

| Equipment Cost (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| MRF | £1,750,000 | £20 | £87,500 |
| Baler | £250,000 | £15 | £16,667 |
| Loading shovel | £55,000 | £6 | £9,167 |
| FLT | £23,000 | £6 | £3,833 |

| | | | |
|---|---|---|---|
| Bale clamp truck | £30,000 | £6 | £5,000 |
| Optical sorter | £250,000 | £6 | £41,667 |
| Sub total | £2,358,000 | Sub total | £163,833 |

| Building and Infrastructure (Five Lanes) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| Adding bay walls to WTS | £12,000 | £20 | £600 |
| New asbestos storage area | £25,000 | £20 | £1,250 |
| Covered food bay in skip storage area | £40,000 | £20 | £2,000 |
| Concreting skip storage area | £75,000 | £20 | £3,750 |
| Green waste bay in skip storage area | £10,000 | £20 | £500 |
| Sub total | £162,000 | Sub total | £8,100 |
| Total Capital Expenditure | £3,605,000 | | |
| Total Depreciation per year | | | £226,183 |

Revenue expenditure:

Note: the below does not include revenue operating costs for Five Lanes – these will not significantly alter from present, so are not included.

| Operating Costs (Llanfoist) | |
|---|---|
| Wages (inc on costs) | £202,679 |
| Agency staff (2) @ 15% of wages | £50,670 |
| Electricity & other site costs (3) | £75,000 |
| Equipment Repair &Maintenance @ 2.5% | £58,950 |
| Fork Lift Truck & loading shovel fuel | £7,500 |
| Baling wire | £15,892 |
| Waste disposal | £213,866 |
| Contingency on above @ 5% | £31,228 |
| Infrastructure (Llanfoist) Repair & Maintenance @ 1% | £10,850 |
| Total Operating Costs | £666,635 |
| Intersite logistics | £67,563 |
| Total: | £734,198 |

Potential Income generation:

The table below details the potential income generation from using the automated MRF option. The price per tonne used are the average price per tonne (including haulage) as received by Conwy County Council over the past 18 months. The prices are conservative, so there may be the potential for a greater income generation.

| | Tonnes | Material Value (£/t). | Total Income (£) |
|---|---|---|---|
| Corrugate cardboard | 951 | £55 | £52,305 |
| News and pams | 1,763 | £70 | £123,410 |
| Mixed papers | 2,330 | £70 | £163,100 |
| Mixed glass | 2,709 | | 0 |
| Mixed rigid plastic | 1,353 | £75 | £101,475 |
| Mixed domestic film | 403 | £0 | 0 |
| Ferrous | 420 | £105 | £44,100 |
| Aluminium | 253 | £700 | £177,100 |
| | | Total | £661,490 |

It is not felt that by separating by this method that either glass or plastic film would have a value, hence there being £0 income put against them.

**Option 3, 4 and 5: 'Twin Stream' but with glass collected separately**

Best transfer station option: Manual Materials Recycling Facility (MRF), located at Llanfoist:

The available options for processing the materials collected in this method are similar to those open to the pure twin stream collections. That is, materials could simply be bulked and sent to an commercially operated MRF, or MCC could operate its own MRF – either a more simple manually one, or an automated MRF (as per the above).

The work looking at these options determined that the most economically viable option for dealing with materials where glass had already been separated from other containers was to run the manual MRF, whereby a lot of the materials are separated by hand. Through this method, a combination of 'hand picking' stations and equipment such as magnets are used.

In terms of use of the manual MRF, consideration was given to separating fibres, however it was deemed to be more economically viable to not do so, and to only separate containers.

By this method, the materials would be separated and sold in the following streams:

- Paper: No sorting, sold as mixed fibres.
- Plastics: Not sorted into types, sold as mixed plastics.
- Glass: Not sorted into types, sold as mixed glass.
- Tins/cans: Aluminium and ferrous cans separated and sold separately.

How would this work in practice?

- As with the automated MRF, the manual MRF would be built in Llanfoist, with material bulked at Five Lanes and transported to Llanfoist.

- It would work very similarly to the automated MRF (as above), however, as there would be less of a sorting operation, more of the work would be done manually on 'picking lines', rather than by machines.

The layout of the site at Llanfoist would be similar to that shown in the plan for the automated MRF (as above).

Estimated cost of the option:

Capital:

| Building and Infrastructure (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| New MRF building & extending conceted area for bale storage | £1,000,000 | £20 | £50,000 |
| MRF civils | £30,000 | £20 | £1,500 |
| External storage bay | £20,000 | £20 | £1,000 |
| Rubble bay | £15,000 | £20 | £750 |
| Sub total | £1,065,000 | Sub total | £53,250 |

| Equipment Cost (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| MRF | £495,000 | £20 | £24,750 |
| Baler | £175,000 | £15 | £11,667 |
| Loading shovel | £55,000 | £6 | £9,167 |
| FLT | £23,000 | £6 | £3,833 |
| Sub total | £748,000 | Sub total | £49,417 |

| Building and Infrastructure (Five Lanes) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| Adding bay walls to WTS | £12,000 | £20 | £600 |
| New asbestos storage area | £25,000 | £20 | £1,250 |
| Covered food bay in skip storage area | £40,000 | £20 | £2,000 |
| Extending side of WTS building | £75,000 | £20 | £3,750 |
| Concreting skip storage area | £75,000 | £20 | £3,750 |
| Green waste bay in skip storage area | £10,000 | £20 | £500 |
| Sub total | £237,000 | Sub total | £11,850 |
| Total CAPEX | £2,050,000 | | |
| Total Depreciation per year | | | £114,517 |

Revenue expenditure:

Note: the below does not include revenue operating costs for Five Lanes – these will not significantly alter from present, so are not included.

| Operating Costs (Llanfoist) | |
|---|---|
| Wages (inc on costs) | £114,291 |
| Agency staff (2) @ 15% of wages | £28,573 |
| Electricity & other site costs (3) | £50,000 |
| Equipment R&M @ 2.5% | £18,700 |
| FLT & loading shovel fuel | £7,500 |
| Baling wire | £8,409 |
| Waste disposal | £56,381 |
| Contingency on above @ 5% | £14,193 |
| Infrastructure (Llanfoist) R&M @ 1% | £10,650 |
| Total Operating Costs | £308,696 |
| Intersite logistics | £37,366 |

Potential income generation:

The table below details the potential income generation from using the automated MRF option. The price per tonne used are the average price per tonne (including haulage) as received by Conwy County Council over the past 18 months. The prices are conservative, so there may be the potential for a greater income generation.

| | Tonnes | Material Value (£/t) | Total Income (£) |
|---|---|---|---|
| Mixed rigid plastic | 1353 | £75 | £101,475 |
| Mixed domestic film | 403 | | £0 |
| Ferrous | 420 | £105 | £44,100 |
| Aluminium | 253 | £700 | £177,100 |
| Fibres | 5044 | £50 | £252,200 |
| Glass | 2709 | £20 | £54,180 |
| | | Total | £629,055 |

It is not felt that plastic film would have a value, hence no income has been attributed to it.

**Option 6: Kerbsort**

Due to the large amount of kerbside separation of waste for this method of collection, the method of use for the transfer station that was deemed most financially viable was to undertake a simple sort operation.

The operation would only look to separate plastics, ferrous and non-ferrous (aluminium) metals. Card would be sorted from paper at source, so paper would not need to go through the process. It is the belief of WRAP that this would mean that the remaining paper would achieve a high income value (that of news and pams).

By this method, the materials would be separated and sold in the following streams:

- Paper: Collected and sold separately. Sold as 'news and pams' (high grade);
- Card: Collected and sold separately;
- Plastics: Not sorted into types, sold as mixed plastics;
- Glass: Not sorted into types, sold as mixed glass;
- Tins/cans: Aluminium and ferrous cans separated and sold separately.

How would it work in practice?

- As with the other methods, the simple sort machinery would be located in Llanfoist, and Five Lanes would be used as a bulking station, from where material would be transported to Llanfoist.
- In the costings below, it has been estimated that the barns that are currently on the Llanfoist site would be of a suitable size to carry out the sorting operation, so no extensions would be required.
- With this method, the majority of sorting would be done at kerbside, so would only require 'baling' at the transfer stations. The sorting equipment would only be set up to sort plastics from ferrous and non-ferrous metals.:

Costings of option:

Capital:

| Building and Infrastructure (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| MRF civils | 35,000 | 20 | 1,750 |
| External bays (green / street sweeping) | 15,000 | 20 | 750 |
| External bays (rubble) | 15,000 | 20 | 750 |
| Sub total | 65,000 | Sub total | 3,250 |

| Equipment Cost (Llanfoist) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| Baler | 150,000 | 15 | 10,000 |
| Sorting line | 300,000 | 20 | 15,000 |
| ECS | 35,000 | 20 | 1,750 |
| Loading shovel | 55,000 | 6 | 9,167 |
| FLT (with turner forks) | 25,000 | 6 | 4,167 |
| Bale clamp truck | 30,000 | 6 | 5,000 |
| Sub total | 595,000 | Sub total | 45,083 |

| Building and Infrastructure (Five Lanes) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Adding bay walls to WTS | 12,000 | 20 | 600 |
| New asbestos storage area | 25,000 | 20 | 1,250 |
| Extending side of WTS building | 75,000 | 20 | 3,750 |
| Concreting skip storage area | 75,000 | 20 | 3,750 |
| Green and glass bay in skip storage area | 15,000 | 20 | 750 |
| Installation of card compactor | 7,000 | 20 | 350 |
| Card bay | 5,000 | 20 | 250 |
| Sub total | 214,000 | Sub total | 10,700 |

| Equipment Cost (Five Lanes) | Cost (£) | Depreciation Period (yrs) | Depreciation per year (£) |
|---|---|---|---|
| Compactor | 13,000 | 6 | 2,167 |
| For lift truck | 25,000 | 6 | 4,167 |
| Sub total | 38,000 | Sub total | 6,333 |
| Total CAPEX | 912,000 | | |
| Total Depreciation per year | | | 65,367 |

Revenue expenditure:

Note: the below does not include revenue operating costs for Five Lanes – these will not significantly alter from present, so are not included.

| Operating Costs (Llanfoist) | |
|---|---|
| Wages (inc on costs) | 70,097 |
| Agency staff (2) @ 15% of wages | 17,524 |
| Electricity & other site costs (3) | 25,000 |
| Equipment R&M @ 2.5% | 14,875 |
| FLT & loading shovel fuel | 12,000 |
| Baling wire | 12,616 |
| Waste disposal | 32,738 |
| Contingency on above @ 5% | 9,243 |
| Infrastructure (Llanfoist) R&M @ 1% | 650 |
| Total Operating Costs | 194,743 |
| Intersite logistics | 52,875 |

Potential Income generation:

The table below details the potential income generation from using the automated MRF option. The price per tonne used are the average price per tonne (including haulage) as received by Conwy County Council over the past 18 months. The prices are conservative, so there may be the potential for a greater income generation.

| | Tonnes | Material Value (£/t) | Total Income (£) |
|---|---|---|---|
| Mixed rigid plastic | 1,353 | £75 | £101,475 |
| Mixed domestic film | 403 | | £0 |
| Ferrous | 420 | £105 | £44,100 |
| Aluminium | 253 | £700 | £177,100 |
| Glass | 2,709 | £20 | £54,180 |
| News & Pams (all paper) | 4,093 | £70 | £286,510 |
| Card | 951 | £55 | £52,305 |
| | | Total | £715,670 |

It is not felt that plastic film would have a value, hence no income has been attributed to it.

**Appendix 10: Option 6 (with 10% decrease in participation) – Risk of being fined.**

There are concerns that any move to a kerbsort style collection may potentially lead to a reduction in participation, and therefore tonnage collected. Consideration was given to the potential impact on MCC reaching its recycling targets, and subsequent possible fines for failing to do so.

The table below shows how a decrease in the tonnage of recycling collected would affect recycling rates, and at what point MCC would incur a fine from WG

| | Current | -10% | -25% | -50% | -75% |
|---|---|---|---|---|---|
| **Tonnages** | | | | | |
| Kerbside dry | 10,182 | 9,164 | 7,637 | 5,091 | 2,546 |
| Other dry (HWRC, bulky collection etc) | 8,331 | 8,331 | 8,331 | 8,331 | 8,331 |
| Organics | 11,696 | 11,696 | 11,696 | 11,696 | 11,696 |
| Residual | 16,444 | 17,462 | 18,989 | 21,535 | 24,080 |
| | | | | | |
| **Total Municipal Waste:** | 46,653 | 46,653 | 46,653 | 46,653 | 46,653 |
| | | | | | |
| **Recycling rate:** | | | | | |
| Kerbside dry | 21.8% | 19.6% | 16.4% | 10.9% | 5.5% |
| Other dry (HWRC, bulky collection etc) | 17.9% | 17.9% | 17.9% | 17.9% | 17.9% |
| Organics | 25.1% | 25.1% | 25.1% | 25.1% | 25.1% |
| Residual | 35.2% | 37.4% | 40.7% | 46.2% | 51.6% |
| Total recycling rate: | 64.8% | 62.6% | 59.3% | 53.8% | 48.4% |
| | | | | | |
| **Recycling targets:** | | | | | |
| 2015/16: 58% | 6.8% | 4.6% | 1.3% | -4.2% | -9.6% |
| 2019/20: 64% | 0.8% | -1.4% | -4.7% | -10.2% | -15.6% |
| 2024/25: 70% | -5.2% | -7.4% | -10.7% | -16.2% | -21.6% |
| | | | | | |
| **Potential Fine (per annum):** | | | | | |
| 2016 to 2019 | £0 | £0 | £0 | £415,983 | £961,612 |
| 2020 to 2024 | £0 | £142,977 | £470,354 | £1,015,983 | £1,561,612 |
| 2025 onwards | £524,726 | £742,977 | £1,070,354 | £1,615,983 | £2,161,612 |

Note: The above does presume that there will be no over improvements in recycling rates elsewhere in the service – eg at the CA sites, or through Prosiect Gwyrdd. It may be that although there will be a reduction in kerbside recycling, increases elsewhere mean that overall rates do not actually decrease.

## Appendix 11: Comparison of end destination

| | | Kerbsort | | | Monmouthshire CC only | | |
|---|---|---|---|---|---|---|---|
| | | Company | Tonnage | % of total tonnage | Company | Tonnage | % of total tonnage |
| Glass | 1 | Recresco Limited | 12756 | 45% | Recresco Limited | 1550 | 48% |
| | 2 | Quinn Glass Ltd | 4644 | 16% | Ardagh Glass Limited | 980 | 30% |
| | 3 | Glass Recycling ( U K) Ltd | 3363 | 12% | Glass Recycling ( U K) Ltd | 491 | 15% |
| | 4 | O-I Manufacturing Ltd | 2792 | 10% | Viridor Waste Management Ltd | 209 | 6% |
| | 5 | Viridor Waste Management Ltd | 977 | 3% | Llanwrtyd Community Transport Project | 2 | 0% |
| | Total to top 5 | | 24532 | | | 3232 | |
| | Total tonnage | | 28330 | | | 3233 | |
| Paper and card | 1 | Upm Kymmene (Uk) Ltd | 16151 | 34% | Zhejian JinDong Paper Co Ltd | 3173 | 49% |
| | 2 | DS Smith | 7136 | 15% | Lee & Man Paper Mfg Ltd | 1225 | 19% |
| | 3 | Palm Paper | 6769 | 14% | Mark Lyndon Paper Enterprises | 711 | 11% |
| | 4 | Aylesford Newsprint | 6106 | 13% | PT Pakerin, JK Kertopaten No3, Surabaya, Indonesia. | 399 | 6% |
| | 5 | Saica Paper Uk Ltd | 1795 | 4% | Smurfit Kappa Recycling | 219 | 3% |
| | Total to top 5 | | 37956 | | | 5727 | |
| | Total tonnage | | 46937 | | | 6504 | |
| Metals | 1 | European Metal Recycling Ltd | 1286 | 23% | Rob Morris Environmental Ltd | 281 | 66% |
| | 2 | Jeremy Mark Freeth | 792 | 14% | Novelis UK Ltd | 71 | 17% |
| | 3 | Amg Resources Ltd | 633 | 11% | Sheppard ( Group ) Ltd | 36 | 8% |
| | 4 | Morris & Co | 508 | 9% | Alutrade Ltd | 18 | 4% |
| | 5 | Northern Trading | 443 | 8% | EUROKEY RECYCLING LTD | 12 | 3% |
| | Total to top 5 | | 3662 | | | 419 | |
| | Total | | 5510 | | | 428 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **tonnage** | | | | | | |
| **Plastics** | **1** | J & A Young ( Leicester ) Ltd | 2575 | 21% | Aws Eco Plastics | 385 | 48% |
| | **2** | Eurokey Recycling Limited | 1494 | 12% | Biffa Polymers Limited | 109 | 14% |
| | **3** | Aws Eco Plastics | 1231 | 10% | Monoworld Ltd | 64 | 8% |
| | **4** | Jayplas | 673 | 5% | Visy Recycling Europe Ltd | 43 | 5% |
| | **5** | Northern Trading | 600 | 5% | Nampak Plastics Europe Limited | 36 | 5% |
| | **Total to top 5** | | 6573 | | | 637 | |
| | **Total tonnage** | | 12364 | | | 795 | |