## Appendix 6 - Collection Modelling Results for Huntingdonshire District Council

This appendix provides the cost, operational and performance implications of each scenario for Huntingdonshire District Council. Table 1 illustrates the current collection service operated across the District.

Table 52: Current collection service (baseline)

|  | Collection | Frequency | Container | Vehicle |
| :--- | :---: | :---: | :---: | :---: |
| Residual | Residual | Fortnightly | 240 I Wheeled Bin | RCV 20m³ |
| Dry Recycling | Co-mingled | Fortnightly | 240 I Wheeled Bin | RCV 20m³ |
| Organics | Co-mingled food and <br> garden waste | Fortnightly | 240 Wheeled Bin | RCV 20m³ |

The description of each scenario (1-5) is in section 3 'Collection Modelling' of the main report. Any sensitivity analysis, in the form of an additional scenario is also described in section 4 within the relevant scenario results.

## Annualised collection costs

Table 53: Annualised collection costs for current service and scenarios 1-5

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3a | Scenario 4 | Scenario 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Current service | Separate food waste | Separate food waste + restricted residual | Twin-stream recycling, 3WC with residual, separate food, garden as is | Twin-stream recycling, fortnightly collection, separate food, garden as is | Kerbside Sort recycling with food, monthly residual, charged garden |
| Annualised dry recycling collection cost | £1,908,780 | £1,908,780 | £1,908,780 | £3,420,704 | £3,518,386 | £6,638,083 |
| Annualised garden waste collection cost | £1,760,012 | £1,760,012 | £1,760,012 | £1,760,012 | £1,760,012 | £1,607,672 |
| Annualised food waste collection cost | - | £2,269,745 | £2,375,182 | Co-collected with DMR and residual | £2,375,182 | Co-collected with DMR |
| Annualised residual waste collection cost | £2,125,389 | £1,833,100 | £1,840,064 | £1,777,896 | £1,845,092 | £1,302,999 |
| Total gross collection cost | £5,794,182 | £7,771,638 | £7,884,038 | £6,958,613 | £9,498,673 | £9,548,754 |
| Difference from Baseline | - | £1,977,456 | £2,089,856 | £1,164,431 | £3,704,491 | £3,754,572 |

[^0]
## Vehicle and container requirements

Table 54: Vehicle and container requirements for current service and scenarios 1-5

|  | Dry recycling |  |  | Garden waste |  |  | Food waste |  |  | Residual |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vehicle type | No. vehicle s | Container type | Vehicle type | No. vehicle s | Contain er type | Vehicle type | No. vehicle s | Container type | Vehicle type | No. vehicl es | $\begin{gathered} \text { Containe } \\ r \\ \text { type } \\ \hline \end{gathered}$ |
| Baseline | $\begin{aligned} & \hline \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \\ & \hline \end{aligned}$ | 8 | 240L | $\begin{aligned} & \hline \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \\ & \hline \end{aligned}$ | 8 | 240L | N/A | 0 | N/A | RCV 20m³ | 9 | 240L |
| Scenario 1 | $\begin{aligned} & \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 8 | 240L | $\begin{aligned} & \text { RCV } \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 8 | 240L | $\begin{gathered} \text { Dedicated } \\ 7.5 \mathrm{t} \end{gathered}$ | 20 | Kitchen caddy $+23 \mathrm{~L}$ | RCV 20m³ | 8 | 240L |
| Scenario 2 | $\begin{aligned} & \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \\ & \hline \end{aligned}$ | 8 | 240L | $\begin{aligned} & \text { RCV } \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 8 | 240L | $\begin{gathered} \text { Dedicated } \\ 7.5 \mathrm{t} \end{gathered}$ | 21 | Kitchen caddy $23 \mathrm{~L}$ | RCV 20m³ | 8 | 180L |
| Scenario 3 | ```REL + front pod (75%/25 %)``` | 10 | $\underset{\mathrm{L}}{240 \mathrm{~L} \& 180}$ | $\begin{aligned} & \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 8 | 240L | Collected with DMR | 0 | Kitchen caddy $+23 \mathrm{~L}$ | RCV 20m ${ }^{3}$ | 6 | 240 L |
| Scenario 4 | $\begin{gathered} \text { REL } \\ 65 \% / 35 \% \end{gathered}$ | 12 | $\begin{gathered} \text { 240L \& } \\ 180 \mathrm{~L} \end{gathered}$ | $\begin{aligned} & \mathrm{RCV} \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 8 | 240L | $\begin{gathered} \text { Dedicated } \\ 7.5 \mathrm{t} \end{gathered}$ | 21 | $\begin{gathered} \hline \text { Kitchen caddy } \\ + \\ 23 \mathrm{~L} \\ \hline \end{gathered}$ | RCV 20m³ | 8 | 180L |
| Scenario 5 | $\begin{gathered} \text { Side } \\ \text { loading } \end{gathered}$ $21 \mathrm{~m}^{3}$ | 34 | $\begin{aligned} & \text { 50L box } \\ & (\times 3) \end{aligned}$ | $\begin{aligned} & \text { RCV } \\ & 20 \mathrm{~m}^{3} \end{aligned}$ | 7 | 240L | Collected with DMR | 0 | $\begin{gathered} \hline \text { Kitchen caddy } \\ + \\ 23 \mathrm{~L} \\ \hline \end{gathered}$ | RCV 20m³ | 5 | 240L |

## Tonnes collected and kerbside recycling rate

Table 55: Tonnes collected and kerbside recycling rate ${ }^{52}$ for current service and scenarios 1-5

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Residual | 24,506 | 20,186 | 16,914 | 17,668 | 17,670 | 18,666 |
| Dry recycling | 15,921 | 15,921 | 17,379 | 17,379 | 17,379 | 17,379 |
| Food | 0 | 5,373 | 6,980 | 6,981 | 6,980 | 7,784 |
| Garden | 18,929 | 17,663 | 17,663 | 17,663 | 17,663 | 11,481 |
| Contamination | 2,218 | 2,431 | 2,638 | 1,882 | 1,882 | 1,008 |
| K/S recycling rate | $57 \%$ | $63 \%$ | $68 \%$ | $68 \%$ | $68 \%$ | $65 \%$ |
| Total | $\mathbf{6 1 , 5 7 4}$ | $\mathbf{6 1 , 5 7 4}$ | $\mathbf{6 1 , 5 7 4}$ | $\mathbf{6 1 , 5 7 4}$ | $\mathbf{6 1 , 5 7 4}$ | $\mathbf{5 6 , 3 1 8}$ |
| Difference between <br> kerbside recycling tonnage | 0 | 4,107 | 7,172 | 7,174 | 7,172 | 1,794 |

${ }^{52}$ Note that kerbside recycling rate will differ from local authority recycling rate, which will be influenced by other waste collected and recycled / disposed by the local authority

Figure 1: Tonnes collected and kerbside recycling rate


Annual gross collection cost comparison to current service
Figure 2: Annual gross collection cost comparison to current service (baseline)


Please note, that in Scenario 3 food waste is collected on an RCV with a pod, and in scenario 5, food waste is collected in a dedicated compartment of a sideloading kerbsider vehicle. Therefore, the cost of food waste collection cannot directly be extracted from the costings as the tonnage is split proportionality.

## Cost of change (additional CAPEX)

Operating cost savings are shown in the annualised KAT model results however no account has been taken of the residual value of any redundant vehicles. We have only accounted for the cost of new containers and vehicles not previously used in the Council. Any movement of bins or vehicles between different collection types has also not been accounted for.

Table 56: Additional CAPEX required to operate the service for scenarios 1-553

| Scenario <br> $\mathbf{1}$ | No. <br> additional <br> vehicles | Vehicle <br> type | Cost per <br> vehicle | Total cost <br> (vehicles) | No. <br> additional <br> containers | Container <br> type | Cost per <br> container | Total cost <br> (containers) | Total <br> additional <br> CAPEX <br> cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ |  |
| Garden <br> waste | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | $£ 1,522, \mathbf{3 3 6 . 8 3}$ |
| Food <br> waste | 20 | Dedicated <br> food | $£ 60,000$ | $£ 1,200,000$ | 77299 | Kitchen <br> caddy | $£ 4.17$ | $£ 322,336.83$ |  |
| Residual | 0 | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | $£ 0.00$ | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ |  |


| Scenario <br> $\mathbf{2}$ | No. <br> additional <br> vehicles | Vehicle <br> type | Cost per <br> vehicle | Total cost <br> (vehicles) | No. <br> additional <br> containers | Container <br> type | Cost per <br> container | Total cost <br> (containers) | Total <br> additional <br> CAPEX cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ |  |
| Garden <br> waste | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | 0 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ |  |
| Food <br> waste | 21 | Dedicated <br> food | $£ 60,000$ | $£ 1, \mathbf{2 6 0 , 0 0 0}$ | 77299 | Kitchen <br> caddy | $£ 4.17$ | $£ \mathbf{£ 2 2 2 , 3 3 6 . 8 3}$ |  |
| Residual | 0 | $\mathrm{n} / \mathrm{a}$ | $£ 0.00$ | $£ 0.00$ | 77299 | 1801 bin | $£ 18.05$ | $£ 1, \mathbf{3 9 5 , 2 4 6 . 9 5}$ |  |

${ }^{53}$ Note that this includes the Capex for new vehicles and containers only. It does not include any other costs associated with a change of service, for example take back of redundant containers, procurement, communications, enforcement or other infrastructure requirements such as additional depot space. However if the overall costs of the service have increased, the annualised costs will have more overheads included within them (as this is a percentage applied on top of the total annual service costs), which may account for some of these elements.

| Scenario 3 | No. additional vehicles | Vehicle type | Cost per vehicle | Total cost (vehicles) | No. additional containers | Container type | Cost per container | Total cost (containers) | Total additional CAPEX cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry | 10 | REL + pod | £215,000 | £2,150,000 | 77299 | 1801 bin | £18.05 | £1,395,246.95 | £3,867,583.78 |
| Garden waste | 0 | n/a | n/a | £0.00 | 0 | n/a | n/a | £0.00 |  |
| Food waste | 0 | n/a | n/a | $£ 0.00$ | 77299 | Kitchen caddy | £4.17 | £322,336.83 |  |
| Residual | 0 | n/a | $£ 0.00$ | £0.00 | 0 | n/a | n/a | £0.00 |  |

$\left.\begin{array}{|c|c|c|c|c|c|c|c|c|}\hline \text { Scenario 4 } & \begin{array}{c}\text { No. } \\ \text { additional } \\ \text { vehicles }\end{array} & \text { Vehicle type } & \begin{array}{c}\text { Cost per } \\ \text { vehicle }\end{array} & \begin{array}{c}\text { Total cost } \\ \text { (vehicles) }\end{array} & \begin{array}{c}\text { No. } \\ \text { additional } \\ \text { containers }\end{array} & \begin{array}{c}\text { Container } \\ \text { type }\end{array} & \begin{array}{c}\text { Cost per } \\ \text { container }\end{array} & \begin{array}{c}\text { Total cost } \\ \text { (containers) }\end{array} \\ \hline \text { Dry } & 12 & \text { REL } 65 / 35 \% & £ 250,000.00 & £ 3,000,000 & 77299 & 1801 \text { bin } & £ 18.05 & £ 1, \mathbf{c} 195,246.95 \\ \hline \text { CAPEX costal }\end{array}\right]$

| Scenario 5 | No. additional vehicles | Vehicle type | Cost per vehicle | Total cost (vehicles) | No. additional containers | Container type | Cost per container | Total cost (containers) | Total additional CAPEX cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry | 34 | Sideloading | £150,000.00 | £5,100,000 | 231897 | 501 (x3) | $£ 2.98$ | £691,053.06 |  |
| Garden waste | 0 | n/a | £0.00 | £0.00 | 0 | n/a | n/a | £0.00 | £6,113,389.89 |
| Food waste | 0 | n/a | n/a | $£ 0.00$ | 77299 | Kitchen caddy | $£ 4.17$ | £322,336.83 |  |
| Residual | 0 | n/a | $£ 0.00$ | £0.00 | 0 | n/a | n/a | £0.00 |  |

## Collection cost per household vs recycling performance

Figure 3: Collection cost per household vs recycling performance


## Quantitative assessment

Table 57: Quantitative scored assessment of scenarios 1-5 based on a 50:50 weighting of cost (annual) and tonnes recycled

| Huntingdonshire | Separate food (weekly) | Separate food plus restricted residual (180) fortnightly) | Two stream <br> (fibres <br> separate), <br> 3W rolling <br> basis with <br> residual, <br> separate <br> food \& free <br> garden | Two stream (fibres separate), separate food, garden 'as is', restricted residual (180I fortnightly) | Kerbside sort (including food) plus monthly residual and charged garden |
| :---: | :---: | :---: | :---: | :---: | :---: |


| Category | Weighting | Considerations | Guide | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Financial | 50\% | Annual cost | Annual cost in addition to Baseline. Score as deviation from the baseline. | £0 | £1,977,456 | £2,089,856 | £1,164,431 | £3,704,491 | £3,754,572 |
|  |  |  |  | 10.0 | 4.7 | 4.4 | 6.9 | 0.1 | 0.0 |
| Recycling performance | 50\% | Tonnes recycled per annum | Tonnes recycled (dryrecycling, food andgardenexcluding contamination)inaddition to baseline | 0 | 4107 | 7172 | 7174 | 7172 | 1794 |
|  |  |  |  | 0.0 | 5.7 | 10.0 | 10.0 | 10.0 | 2.5 |
|  |  |  | Total score unweighted | 10.0 | 10.5 | 14.4 | 16.9 | 10.1 | 2.5 |
|  |  |  | Weighted score | 5.0 | 5.2 | 7.2 | 8.4 | 5.1 | 1.3 |
|  |  |  | Rank | 5 | 3 | 2 | 1 | 4 | 6 |

## RAG (Red, Amber, Green) assessment

|  | Meets 1 or less of the requirements set out within the National Resources and Waste Strategy |
| :--- | :--- |
|  | Meets less than half of the requirements set out within the National Resources and Waste Strategy |
|  | Meets at least half of the requirements set out within the National Resources and Waste Strategy |
|  | Meets the majority of the requirements set out within the National Resources and Waste Strategy |

Table 58: RAG assessment of the scenarios compared to the requirements within the national Resources and Waste Strategy

| Resources and <br> Waste <br> Strategy <br> proposal | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |


| Collection of <br> a core set of <br> materials | PTT and cartons are collected at the kerbside |
| :--- | :--- |


| Effective collection system to preserve material quality | All materials collected comingled. Risk associated with collecting glass with fibres (paper and card) | All materials collected co-mingled. Risk associated with collecting glass with fibres (paper and card) | All materials collected comingled. Risk associated with collecting glass with fibres (paper and card) | Fibres <br> (paper and card) collected separately to glass and other containers (metals and plastics) | Fibres (paper and card) collected separately to glass and other containers (metals and plastics) | All materials collected separately |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |


| Weekly <br> separate food <br> waste <br> collection | No but could <br> be added to <br> the service <br> profile as a <br> separate <br> collection at <br> additional <br> cost |  |
| :--- | :--- | :--- |


| Free garden <br> waste <br> collection to all <br> households <br> with a garden | Yes to all households with a garden | Charged <br> garden waste <br> service |
| :--- | :--- | :--- |


| Resources <br> and Waste <br> Strategy <br> assessment |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## Key assumptions

## Garden waste

The following assumption was applied in order to calculate the potential tonnage that could be collected through a charged garden collection scheme. The number of subscribers is based on benchmarking/rurality and that approximately $65 \%$ of the 'free tonnage' would be collected through the free garden waste service. Of the remaining $35 \%$ tonnage (not collected) we assume $15 \%$ is diverted into the residual collection and of the remaining $85 \%, 50 \%$ lost within the system to home composting, $35 \%$ to HWRC green waste composting.

| Assume 50\% take up of service, tonnage as follow: | Huntingdonshire |  |
| ---: | ---: | ---: |
| Free tonnage collected as garden | $65 \%$ | 11481 |
| 15\% of the difference in tonnage (35\%) moves to residual | $15 \%$ | 927 |
| 85\% of the difference in tonnage is lost (i.e. home composting, <br> $H W R C)$ | $85 \%$ | 5255 |

## WRAP ready reckoner

The model uses the percentage of households in Social Groups D and E in a local authority area (derived from the 2011 Census) as a measure of deprivation and applies it to the following formulas:

- For areas with fortnightly residual waste collection (i.e. alternate weekly collection): $=2.1614-(\%$ Social Groups D and E $\square 2.2009) \pm 0.40$ kg/hh/week

| WRAP ready reckoner | $\mathrm{kg} / \mathrm{hh} /$ week |
| :--- | :--- |


| LA | Social Grade D \& E 2011 <br> (\%) |  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: | ---: | :---: |
| Huntingdonshire | $19.3 \%$ | 2.1614 | 0.424773 | 1.73663 | 2.1366263 | 1.3366 <br> 3 |


|  |  | Tonnage/year |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number of households | Medium | High | Low | Medium High |
| Huntingdonshire | 77,299 | 6980 | 8588 | 5373 | 7784 |

## KAT outputs

Type of Collection

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scenario Name | Baseline | Separate food waste | Restricted residual | 3 weekly | 2 stream, restricted residual | Kerbside sort | Vehicle capacity sensitivity | Vehicle utilisation sensitivity |
| Dry recycling | Kerbside comingled or single stream | Kerbside co- <br> mingled <br> or single <br> stream | Kerbside comingled or single stream | Cocollected dry recyclable $s$ and compost | Cocollected 2 dry recyclable streams | Kerbside sorted (more than 2 streams) | Kerbside sorted (more than 2 streams) | Kerbside <br> sorted <br> (more <br> than 2 <br> streams) |
| Garden waste | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream | Kerbside comingled or single stream |
| Food waste | select from list | Kerbside comingled or single stream | Kerbside comingled or single stream | Cocollected dry recyclable s and compost | Kerbside comingled or single stream | select from list | select from list | select from list |
| Dry recycling | select from list | select from list | select from list | Kerbside comingled or single stream | select from list | select from list | select from list | select from list |
| Refuse | Refuse collection | Refuse collection | Refuse collection | Refuse collection | Refuse collection | Refuse collection | Refuse collection | Refuse collection |

Collection Frequency

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Dry recycling | every <br> fortnight | every <br> fortnight | every <br> fortnight | every 3 <br> weeks | every <br> fortnight | once a <br> week | once a <br> week |  |
| Garden waste | every <br> fortnight | every <br> fortnight | every <br> fortnight | every <br> fortnight | every <br> fortnight | every <br> fortnight | every <br> fortnight | every <br> fortnight |
| Food waste | select <br> from list | once a <br> week | once a <br> week | every 3 <br> weeks | once a <br> week | select <br> from list | select <br> from list | select <br> from list |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | select <br> from list | select <br> from list | select <br> from list | once a week | select <br> from list | select <br> from list | select <br> from list | select <br> from list |
| Refuse | every fortnight | every fortnight | every fortnight | every 3 weeks | every fortnight | monthly | monthly | monthly |

Collection Vehicle

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario <br> 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | RCV, 20m3 | RCV, 20 m 3 | RCV, 20 m 3 | $\begin{gathered} \text { REL + front } \\ \text { pod } \\ 75 \% / 25 \% \\ 22 \mathrm{~m} 3 \text { total } \end{gathered}$ | $\begin{gathered} \text { REL } \\ 65 \% / 35 \% \\ , \\ 21 \mathrm{~m} 3 \\ \text { total } \end{gathered}$ | side <br> loading, lift, 21m3 | side <br> loading, lift, 28m3 | side <br> loading, lift, 21m3 |
| Garden waste | RCV, 20m3 | RCV, 20 m 3 | RCV, 20m3 | RCV, 20m3 | RCV, 20m3 | RCV, 20 m 3 | RCV, 20m3 | RCV, 20 m 3 |
| Food waste | select from list | Dedicated food 7.5T GVW | Dedicated food 7.5T GVW | $\begin{gathered} \hline \text { REL + front } \\ \text { pod } \\ 75 \% / 25 \% \\ 22 \mathrm{~m} 3 \text { total } \end{gathered}$ | Dedicated food 7.5T GVW | select from list | select from list | select from list |
| Dry recycling | select from list | select from list | select from list | Dedicated food 7.5T GVW | select from list | select from list | select from list | select from list |
| Refuse | RCV, 20m3 | RCV, 20m3 | RCV, 20 m 3 | RCV, 18m3 | RCV, 20 m 3 | RCV, 20 m 3 | RCV, 20m3 | RCV, 20 m 3 |

Collection crew size including driver

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 3 | 3 | 3 | 4 | 3 | 3 | 3 |  |
| Garden waste | 3 | 3 | 3 | 3 | 3 | 3 | 3 |  |
| Food waste | \#DIV/0! | 2 | 2 | 4 | 2 | 3 |  |  |
| Dry recycling | \#DIV/0! | \#DIV/0! | \#DIV/0! | 2 | \#DIV/0! | \#DIV/0! | \#DIV/0! | \#DIV/0! |
| Refuse | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 |

Number of households served

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 | $\mathbf{7 7 , 2 9 9}$ | 77,299 |
| Garden waste | 68,368 | 68,368 | 68,368 | 68,368 | 68,368 | 77,299 | 77,299 | 77,299 |
| Food waste | 0 | 77,299 | 77,299 | 77,299 | 77,299 | 0 | 0 | 0 |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 0 | 0 | 0 | 77,299 | 0 | 0 | 0 | 0 |
| Refuse | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 | 77,299 |

## Percentage set out

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ |
| Garden waste | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $75 \%$ | $40 \%$ | $40 \%$ |  |
| Food waste | select <br> from list | $45 \%$ | $55 \%$ | $75 \%$ | $55 \%$ | $55 \%$ | $55 \%$ | $50 \%$ |
| Dry recycling | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list | $55 \%$ | select | select <br> from <br> from <br> list | select <br> from <br> list | select <br> from <br> list |
| Refuse | $80 \%$ | $80 \%$ | $85 \%$ | $90 \%$ | $85 \%$ | $90 \%$ | $90 \%$ | $90 \%$ |

Percentage set out (2nd stream)

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list | $55 \%$ | $75 \%$ | $75 \%$ | 75\% | 75\% |
| Garden waste | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list |
| Food waste | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list | $55 \%$ | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list |
| Dry recycling | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list | select <br> from list |

## Average Participation

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $85 \%$ | $85 \%$ | $87 \%$ | $87 \%$ | $87 \%$ | $87 \%$ | $87 \%$ | $87 \%$ |
| Garden waste | $82 \%$ | $82 \%$ | $82 \%$ | $82 \%$ | $82 \%$ | $44 \%$ | $44 \%$ | $44 \%$ |
| Food waste | $100 \%$ | $55 \%$ | $65 \%$ | $87 \%$ | $65 \%$ | $65 \%$ | $65 \%$ | $65 \%$ |
| Dry recycling | $100 \%$ | $100 \%$ | $100 \%$ | $65 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |

## Average Capture

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $75 \%$ | $75 \%$ | $80 \%$ | $50 \%$ | $80 \%$ | $76 \%$ | $76 \%$ | $76 \%$ |
| Garden waste | $114 \%$ | $256 \%$ | $256 \%$ | $256 \%$ | $256 \%$ | $273 \%$ | $273 \%$ | $273 \%$ |
| Food waste | $100 \%$ | $73 \%$ | $80 \%$ | $48 \%$ | $80 \%$ | $0 \%$ | $0 \%$ | $0 \%$ |
| Dry recycling | $100 \%$ | $100 \%$ | $100 \%$ | $27 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |

Tonnes collected excluding contamination

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 15,921 | 15,921 | 17,379 | 11,855 | 17,379 | $\mathbf{2 5 , 1 6 3}$ | $\mathbf{2 5 , 1 6 3}$ | 25,163 |
| Garden waste | 18,929 | 17,663 | 17,663 | 17,663 | 17,663 | 11,481 | 11,481 | 11,481 |
| Food waste | 0 | 5,373 | 6,980 | 10,179 | 6,980 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 2,327 | 0 | 0 | 0 | 0 |
| Refuse | 24,506 | 20,186 | 16,914 | 17,668 | 17,670 | 18,666 | 18,666 | 18,666 |
| Dry recycling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Garden waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Food waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Tonnes of contamination collected

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 1,385 | 1,385 | 1,512 | 531 | 756 | 503 | 503 | 503 |
| Garden waste | 833 | 777 | 777 | 777 | 777 | 505 | 505 | 505 |
| Food waste | 0 | 269 | 349 | 458 | 349 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 116 | 0 | 0 | 0 | 0 |

Utilisation of each

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling <br> (small) | N/A | N/A | N/A | $74 \%$ | $95 \%$ | N/A | N/A | N/A |

Compartment in 2 stream

| Saseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $5 a$ | Scenario <br> $5 b$ | Scenario <br> $5 c$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling <br> (large) | N/A | N/A | N/A | $100 \%$ | $100 \%$ | N/A | N/A |  |
| Garden waste <br> (small) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Garden waste <br> (large) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Food waste <br> (small) | N/A | N/A | N/A | $39 \%$ | N/A | N/A | N/A | N/A |
| Food waste <br> (large) | N/A | N/A | N/A | $100 \%$ | N/A | N/A | N/A | N/A |
| Dry recycling <br> (small) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dry recycling <br> (large) | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Tonnes of biodegradable material collected

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 8,727 | 8,727 | 9,528 | 11,855 | 9,528 | $\mathbf{1 7 , 3 1 1}$ | $\mathbf{1 7 , 3 1 1}$ | 17,311 |
| Garden waste | 18,929 | 17,663 | 17,663 | 17,663 | 17,663 | 11,481 | 11,481 | 11,481 |
| Food waste | 0 | 5,373 | 6,980 | 2,327 | 6,980 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 2,327 | 0 | 0 | 0 | 0 |

Number of collection vehicles required

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 7.9 | 7.9 | 7.9 | 4.7 | 11.7 | 33.2 | 33.2 |  |
| Garden waste | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 6.8 | 6.8 |  |
| Food waste | 0.0 | 19.7 | 20.6 | 4.8 | 20.6 | 0.0 | 6.8 |  |
| Dry recycling | 0.0 | 0.0 | 0.0 | 20.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Refuse | 8.3 | 7.4 | 7.1 | 5.8 | 7.1 | 4.1 | 0.0 | 4.1 |

Collection limited by weight or volume

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: | :---: | :---: |
| Dry recycling | volume | volume | volume | weight | volume | volume | volume | volume |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Garden waste | volume | volume | volume | volume | volume | volume | volume | volume |
| Food waste | volume | weight | weight | volume | weight | volume | volume | volume |
| Dry recycling | volume | volume | volume | weight | volume | volume | volume | volume |
| Refuse | weight | weight | weight | weight | weight | weight | weight | weight |

Number of loads collected per vehicle per day

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 1.4 | 1.4 | 1.6 | 1.1 | 1.0 | 1.4 | 1.0 | 1.9 |
| Garden waste | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 | 1.0 | 1.0 | 1.0 |
| Food waste | 1.0 | 0.4 | 0.5 | 2.0 | 0.5 | 0.5 | 0.5 | 0.5 |
| Dry recycling | 1.0 | 1.0 | 1.0 | 0.2 | 1.0 | 1.0 | 1.0 | 1.0 |
| Refuse | 1.1 | 1.0 | 0.9 | 1.2 | 0.9 | 1.7 | 1.7 | 1.7 |

Number of households passed per vehicle per day

|  | Baseline | Scenario <br> $\mathbf{1}$ | Scenario <br> $\mathbf{2}$ | Scenario 3 | Scenario <br> $\mathbf{4}$ | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 980 | 980 | 980 | 1,101 | 660 | $\mathbf{4 6 5}$ | $\mathbf{4 6 5}$ | 443 |
| Garden waste | 916 | 916 | 916 | 916 | 916 | 1,129 | 1,129 | 1,129 |
| Food waste | 0 | 785 | 751 | 1,063 | 751 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 751 | 0 | 0 | 0 | 0 |
| Refuse | 932 | 1,045 | 1,085 | 889 | 1,085 | 889 | 889 | 889 |

Number of households collected from per vehicle per day

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 735 | 735 | 735 | 825 | 495 | 349 | 349 | 332 |
| Garden waste | 687 | 687 | 687 | 687 | 687 | 451 | 451 | 451 |
| Food waste | 0 | 353 | 413 | 798 | 413 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 413 | 0 | 0 | 0 | 0 |
| Refuse | 746 | 836 | 922 | 800 | 922 | 800 | 800 | 800 |

Pass rate

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> $\mathbf{5 b}$ | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 203 | 203 | 203 | 236 | 141 | 103 | 103 | 98 |
| Garden waste | 183 | 183 | 183 | 183 | 183 | 226 | 226 | 226 |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Food waste | 0 | 135 | 129 | 228 | 129 | 0 | 0 | 0 |
| Dry recycling | 0 | 0 | 0 | 129 | 0 | 0 | 0 | 0 |
| Refuse | 189 | 178 | 184 | 180 | 184 | 180 | 180 | 180 |

Productive time

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 290 | 290 | 290 | 280 | 280 | 270 | 270 | 270 |
| Garden waste | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Food waste | 340 | 350 | 350 | 280 | 350 | 340 | 340 | 340 |
| Dry recycling | 340 | 340 | 340 | 350 | 340 | 340 | 340 | 340 |
| Refuse | 296 | 353 | 353 | 296 | 353 | 296 | 296 | 296 |

Non-productive time

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | 130 | 130 | 130 | 140 | 140 | 150 | 150 | 150 |
| Garden waste | 120 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| Food waste | 80 | 70 | 70 | 140 | 70 | 80 | 80 | 80 |
| Dry recycling | 80 | 80 | 80 | 70 | 80 | 80 | 80 | 80 |
| Refuse | 124 | 67 | 67 | 124 | 67 | 124 | 124 | 124 |

Percentage of targeted materials collected

|  | Saseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $64 \%$ | $64 \%$ | $70 \%$ | $44 \%$ | $70 \%$ | $66 \%$ | $66 \%$ | $66 \%$ |
| Garden waste | $94 \%$ | $210 \%$ | $210 \%$ | $210 \%$ | $210 \%$ | $121 \%$ | $121 \%$ | $121 \%$ |
| Food waste | $0 \%$ | $40 \%$ | $52 \%$ | $41 \%$ | $52 \%$ | $0 \%$ | $0 \%$ | $0 \%$ |
| Dry recycling | $0 \%$ | $0 \%$ | $0 \%$ | $17 \%$ | $0 \%$ | $0 \%$ | $0 \%$ | $0 \%$ |


| Annual cost for containers |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Baseline | Scenario $1$ | Scenario $2$ | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| Dry recycling | £221,691 | £221,691 | £221,691 | £311,106 | £439,166 | £299,432 | £299,432 | £802,258 |
| Garden waste | £196,077 | £196,077 | £196,077 | £196,077 | £196,077 | £221,691 | £221,691 | £221,691 |
| Food waste | £0 | £89,415 | £89,415 | £217,474 | £89,415 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |


|  | Baseline | Scenario | Scenario | Scenario 3 | Scenario | Scenario <br> 5a | Scenario <br> 5b |
| :---: | :---: | ---: | ---: | ---: | ---: | ---: | :---: |
| Refuse | $£ 264,360$ | $£ 264,360$ | $£ 259,332$ | $£ 264,360$ | $£ 264,360$ | $£ 264,360$ | $£ 264,360$ |

Total capital cost of containers

|  | Baseline | Scenario $1$ | Scenario 2 | Scenario 3 | Scenario 4 | $\begin{gathered} \text { Scenario } \\ 5 a \end{gathered}$ | $\begin{gathered} \text { Scenario } \\ \text { 5b } \end{gathered}$ | $\begin{aligned} & \text { Scenario } \\ & \text { 5c } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $\begin{gathered} \mathrm{£} 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{array}{r} \mathrm{f}, 422,30 \\ 2 \\ \hline \end{array}$ | $\begin{gathered} \mathrm{£1,422,30} \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} £ 1,744,63 \\ 8 \\ \hline \end{gathered}$ | $\begin{gathered} \text { £2,817,54 } \\ 9 \\ \hline \end{gathered}$ | £690,667 | £690,667 | $\begin{gathered} £ 2,318,97 \\ 0 \\ \hline \end{gathered}$ |
| Garden waste | $\begin{gathered} \hline £ 1,257,97 \\ 1 \\ \hline \end{gathered}$ | $\begin{array}{r} \hline £ 1,257,97 \\ 1 \\ \hline \end{array}$ | $\begin{gathered} \mathrm{£1,257,97} \\ 1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,257,97 \\ 1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,257,97 \\ 1 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ |
| Food waste | £0 | £322,337 | £322,337 | $\begin{gathered} \mathrm{£} 1,395,24 \\ 7 \end{gathered}$ | £322,337 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |
| Refuse | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{array}{r} \hline £ 1,422,30 \\ 2 \end{array}$ | $\begin{gathered} \text { £1,395,24 } \\ 7 \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,422,30 \\ 2 \\ \hline \end{gathered}$ |

Annual capital cost of collection vehicles

|  | Baseline | Scenario <br> $\mathbf{1}$ | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $£ 281,013$ | $£ 281,013$ | $£ 281,013$ | $£ 192,570$ | $£ 537,405$ | $£ 913,589$ | $£ 974,494$ | $£ 940,459$ |
| Garden waste | $£ 281,013$ | $£ 281,013$ | $£ 281,013$ | $£ 281,013$ | $£ 281,013$ | $£ 245,886$ | $£ 245,886$ | $£ 245,886$ |
| Food waste | $£ 0$ | $£ 214,962$ | $£ 225,710$ | $£ 192,570$ | $£ 225,710$ | $£ 0$ | $£ 0$ | $£ 0$ |
| Dry recycling | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ |
| Refuse | $£ 316,139$ | $£ 281,013$ | $£ 281,013$ | $£ 210,760$ | $£ 281,013$ | $£ 175,633$ | $£ 175,633$ | $£ 175,633$ |

Are vehicles used for more than one collection

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> 5a | Scenario <br> 5b | Scenario <br> 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | No | No | No | No | No | No | No | No |
| Garden waste | No | No | No | No | No | No | No | No |
| Food waste | select <br> from list | No | No | No | No | No | No | No |
| Dry recycling | select <br> from <br> list | select <br> from <br> list | select <br> from <br> list | No | select | select | select | select |
| from |  |  |  |  |  |  |  |  |
| from |  |  |  |  |  |  |  |  |
| from |  |  |  |  |  |  |  |  |
| Refuse | No | No | No | No | No | from <br> list | No | No |

Total capital cost of vehicles

|  | Baseline | Scenario | Scenario 2 | Scenario 3 | Scenario 4 | $\begin{gathered} \text { Scenario } \\ 5 a \end{gathered}$ | $\begin{gathered} \text { Scenario } \\ 5 b \end{gathered}$ | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $\begin{gathered} \hline £ 1,568,72 \\ 0 \end{gathered}$ | $\begin{array}{r} \hline £ 1,568,72 \\ 0 \end{array}$ | $\begin{gathered} \text { £1,568,72 } \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,075,00 } \\ 0 \end{gathered}$ | $\begin{gathered} \text { £3,000,00 } \\ 0 \end{gathered}$ | $\begin{gathered} f 5,100,00 \\ 0 \end{gathered}$ | $\begin{gathered} \text { £5,440,00 } \\ 0 \end{gathered}$ | $\begin{gathered} f 5,250,00 \\ 0 \end{gathered}$ |
| Garden waste | $\begin{gathered} £ 1,568,72 \\ 0 \end{gathered}$ | $\begin{array}{r} \text { £1,568,72 } \\ 0 \end{array}$ | $\begin{gathered} £ 1,568,72 \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,568,72 } \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,568,72 } \\ 0 \end{gathered}$ | $\begin{gathered} £ 1,372,63 \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,372,63 } \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,372,63 } \\ 0 \end{gathered}$ |
| Food waste | £0 | $\begin{array}{r} \hline £ 1,200,00 \\ 0 \end{array}$ | $\begin{gathered} \text { £1,260,00 } \\ 0 \end{gathered}$ | $\begin{gathered} \hline £ 1,075,00 \\ 0 \end{gathered}$ | $\begin{gathered} \text { £1,260,00 } \\ 0 \end{gathered}$ | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |
| Refuse | $\begin{gathered} \text { £1,764,81 } \\ 0 \end{gathered}$ | $\begin{array}{r} £ 1,568,72 \\ 0 \end{array}$ | $\begin{gathered} £ 1,568,72 \\ 0 \end{gathered}$ | $\begin{gathered} £ 1,176,54 \\ 0 \end{gathered}$ | $\begin{gathered} £ 1,568,72 \\ 0 \end{gathered}$ | £980,450 | £980,450 | £980,450 |

Annual vehicle operating costs

|  | Baseline | Scenario <br> $\mathbf{1}$ | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $£ 1,081,59$ <br> 7 | $£ 1,081,59$ <br> 7 | $£ 1,081,59$ <br> 7 | $£ 965,890$ | $£ 1,955,24$ <br> 3 | $£ 4,173,12$ <br> 5 | $£ 4,173,12$ <br> 5 | $£ 4,289,76$ <br> 4 |
| Garden waste | $£ 986,863$ | $£ 986,863$ | $£ 986,863$ | $£ 986,863$ | $£ 986,863$ | $£ 876,996$ | $£ 876,996$ | $£ 876,996$ |
| Food waste | $£ 0$ | $£ 1,511,82$ <br> 2 | $£ 1,584,65$ <br> 9 | $£ 962,559$ | $£ 1,584,65$ <br> 9 | $£ 0$ | $£ 0$ | $£ 0$ |
| Dry recycling | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ |
| Refuse | $£ 1,188,37$ <br> 7 | $£ 990,559$ | $£ 999,784$ | $£ 1,002,13$ <br> 5 | $£ 999,784$ | $£ 663,850$ | $£ 663,850$ | $£ 663,850$ |

Annual overheads

|  | Baseline | Scenario <br> $\mathbf{1}$ | Scenario 2 | Scenario 3 | Scenario 4 | Scenario <br> $\mathbf{5 a}$ | Scenario <br> $\mathbf{5 b}$ | Scenario <br> $\mathbf{5 c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | $£ 324,479$ | $£ 324,479$ | $£ 324,479$ | $£ 289,767$ | $£ 586,573$ | 51,251,93 <br> 8 | £1,251,93 <br> 8 | $£ 1,286,92$ <br> $\mathbf{8}$ |
| Garden waste | $£ 296,059$ | $£ 296,059$ | $£ 296,059$ | $£ 296,059$ | $£ 296,059$ | $£ 263,099$ | $£ 263,099$ | $£ 263,099$ |
| Food waste | $£ 0$ | $£ 453,546$ | $£ 475,398$ | $£ 288,768$ | $£ 475,398$ | $£ 0$ | $£ 0$ | $£ 0$ |
| Dry recycling | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ | $£ 0$ |
| Refuse | $£ 356,513$ | $£ 297,168$ | $£ 299,935$ | $£ 300,641$ | $£ 299,935$ | $£ 199,155$ | $£ 199,155$ | $£ 199,155$ |

Annual gross collection cost

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario | Scenario | Scenario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5c |  |  |  | 5a |  |  |  |  |
| Dry recycling | $£ 1,908,78$ | $£ 1,908,78$ | $£ 1,908,78$ | $£ 1,759,33$ | $£ 3,518,38$ | $£ 6,638,08$ | $£ 6,698,98$ | $£ 7,319,41$ |
|  | 0 | 0 | 0 | 3 | 6 | 3 | 9 | 0 |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | $\begin{gathered} \text { Scenario } \\ 5 a \\ \hline \end{gathered}$ | Scenario 5b | $\begin{gathered} \text { Scenario } \\ 5 \mathrm{c} \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Garden waste | $\begin{gathered} \text { £1,760,01 } \\ 2 \end{gathered}$ | $\begin{gathered} £ 1,760,01 \\ 2 \end{gathered}$ | $\begin{gathered} \hline £ 1,760,01 \\ 2 \end{gathered}$ | $\begin{gathered} \text { £1,760,01 } \\ 2 \end{gathered}$ | $\begin{gathered} £ 1,760,01 \\ 2 \end{gathered}$ | $\begin{gathered} \text { £1,607,67 } \\ 2 \end{gathered}$ | $\begin{gathered} \text { £1,607,67 } \\ 2 \end{gathered}$ | $\begin{gathered} £ 1,607,67 \\ 2 \end{gathered}$ |
| Food waste | £0 | $\begin{gathered} \hline £ 2,269,74 \\ 5 \end{gathered}$ | $\begin{gathered} \hline £ 2,375,18 \\ 2 \end{gathered}$ | $\begin{gathered} \hline £ 1,661,37 \\ 2 \end{gathered}$ | $\begin{gathered} \hline £ 2,375,18 \\ 2 \end{gathered}$ | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |
| Refuse | $\begin{gathered} \hline £ 2,125,38 \\ 9 \end{gathered}$ | $\begin{gathered} £ 1,833,10 \\ 0 \end{gathered}$ | $\begin{gathered} \hline £ 1,840,06 \\ 4 \end{gathered}$ | $\begin{gathered} \hline £ 1,777,89 \\ 6 \end{gathered}$ | $\begin{gathered} \hline £ 1,845,09 \\ 2 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,302,99 \\ 9 \\ \hline \end{gathered}$ | $\begin{gathered} \hline £ 1,302,99 \\ 9 \end{gathered}$ | $\begin{gathered} \hline £ 1,302,99 \\ 9 \\ \hline \end{gathered}$ |

Annual gross collection cost per tonnes collected

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | £110 | £110 | £101 | £142 | £194 | £259 | £261 | £285 |
| Garden waste | £89 | £95 | £95 | £95 | £95 | £134 | £134 | £134 |
| Food waste | £0 | £402 | £324 | £156 | £324 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |
| Refuse | £87 | £91 | £109 | £101 | £104 | £70 | £70 | £70 |

Annual gross collection cost per household served

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | £25 | £25 | £25 | £23 | £46 | £86 | £87 | £95 |
| Garden waste | £26 | £26 | £26 | £26 | £26 | £21 | £21 | £21 |
| Food waste | £0 | £29 | £31 | £21 | £31 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |
| Refuse | £27 | £24 | £24 | £23 | £24 | £17 | £17 | £17 |

Annual gross collection cost per targeted tonne collected

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | $\begin{gathered} \text { Scenario } \\ 5 b \end{gathered}$ | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | £120 | £120 | £110 | N/A | N/A | £264 | £266 | £291 |
| Garden waste | £93 | £100 | £100 | £100 | £100 | £140 | £140 | £140 |
| Food waste | £0 | £422 | £340 | N/A | £340 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |

Annual gross collection cost per household participating

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dry recycling | £29 | £29 | £28 | N/A | N/A | £99 | £100 | £109 |
| Garden waste | £31 | £31 | £31 | £31 | £31 | £47 | £47 | £47 |
| Food waste | £0 | £53 | £47 | N/A | £47 | £0 | £0 | £0 |
| Dry recycling | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 |

Annual tonnes of material collected - Collection A

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newspaper and magazines | 3,784 | 3,784 | 4,131 | 4,131 | 4,131 | 4,131 | 4,131 | 4,131 |
| Other paper | 3,395 | 3,395 | 3,680 | 3,680 | 3,680 | 3,680 | 3,680 | 3,680 |
| Corrugated card | 1,467 | 1,467 | 1,552 | 1,552 | 1,552 | 1,552 | 1,552 | 1,552 |
| Non corrugated card | 81 | 81 | 164 | 164 | 164 | 164 | 164 | 164 |
| Plastic film | 398 | 398 | 529 | 0 | 529 | 529 | 529 | 529 |
| Plastic bottles | 713 | 713 | 788 | 0 | 788 | 788 | 788 | 788 |
| Plastic - other dense | 1,009 | 1,009 | 1,116 | 0 | 1,116 | 1,116 | 1,116 | 1,116 |
| Glass flint | 1,383 | 1,383 | 1,524 | 0 | 1,524 | 1,524 | 1,524 | 1,524 |
| Glass brown | 1,384 | 1,384 | 1,433 | 0 | 1,433 | 1,433 | 1,433 | 1,433 |
| Glass green | 1,384 | 1,384 | 1,471 | 0 | 1,471 | 1,471 | 1,471 | 1,471 |
| Steel cans | 628 | 628 | 681 | 0 | 681 | 681 | 681 | 681 |
| Aluminium cans | 295 | 295 | 310 | 0 | 310 | 310 | 310 | 310 |
| Foil containers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soil and other organic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-compostable kitchen waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Food waste | 0 | 0 | 0 | 2,327 | 0 | 7,784 | 7,784 | 7,784 |
| Compostable garden waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Collection B

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newspaper and magazines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other paper | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Corrugated card | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non corrugated card | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic film | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic bottles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic - other dense | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass flint | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass brown | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass green | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Steel cans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aluminium cans | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Foil containers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soil and other organic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-compostable kitchen waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Food waste | 1,266 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Compostable garden waste | 17,663 | 17,663 | 17,663 | 17,663 | 17,663 | 11,481 | 11,481 | 11,481 |

Collection C

|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newspaper and <br> magazines | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |
| Other paper | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Corrugated <br> card | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non corrugated <br> card | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plastic film | 0 | 0 | 0 | 529 | 0 | 0 | 0 | 0 |
| Plastic bottles | 0 | 0 | 0 | 788 | 0 | 0 | 0 | 0 |
| Plastic - other dense | 0 | 0 | 0 | 1,116 | 0 | 0 | 0 | 0 |
| Glass flint | 0 | 0 | 0 | 1,524 | 0 | 0 | 0 | 0 |
| Glass brown | 0 | 0 | 0 | 1,433 | 0 | 0 | 0 | 0 |
| Glass green | 0 | 0 | 0 | 1,471 | 0 | 0 | 0 | 0 |
| Steel cans | 0 | 0 | 0 | 681 | 0 | 0 | 0 | 0 |
| Aluminium cans | 0 | 0 | 0 | 310 | 0 | 0 | 0 | 0 |
| Foil containers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soil and other organic | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-compostable kitchen waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Food waste | 0 | 5,373 | 6,980 | 2,327 | 6,980 | 0 | 0 | 0 |
| Compostable garden waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Collection D

| Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b | Scenario 5c |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newspaper and <br> magazines | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other paper | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Corrugated <br> card | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non corrugated <br> card | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic film | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic bottles | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plastic - other <br> dense | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass flint | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass brown | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Glass green | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


|  | Baseline | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5a | Scenario 5b |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scenario 5c |  |  |  |  |  |  |  |
| Steel cans | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aluminium cans | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Foil containers | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soil and other <br> organic | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-compostable <br> kitchen waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Food waste | 0 | 0 | 0 | 2,327 | 0 | 0 | 0 |
| Compostable <br> garden waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 |


[^0]:    ${ }^{51}$ Commingled organics

