

Wiltshire Council

Cabinet

19 November 2024

Subject: Future waste collection service design

Cabinet Member: Cllr Dominic Muns, Cabinet Member for Waste and Environment

Key Decision: Key

Executive Summary

This paper summarises the outcome of technical modelling commissioned to examine the impacts of the introduction of separate collections of food waste collections and adding flexible plastics to current collection services, as required by law from 2027, and recommends further changes alongside these to ensure best value and improve service performance.

These assessments demonstrate that making changes to Wiltshire Council's current recycling collection scheme can provide service cost mitigation. This will also ensure that the council delivers 'efficient and effective' recycling collection services in the context of new government funding schemes and contributes to a reduction in carbon emissions.

A decision on recycling collection methodology is necessary to inform service specifications for waste collections, waste transfer, and recycling sorting contracts, and ensure that new arrangements are secured to replace current contracts that expire in 2026.

Proposal

Cabinet is recommended to approve:

- 1) The adoption of a Three Stream recycling collection service during the next contract period, with Wiltshire residents to be provided with an additional recycling container to allow paper and cardboard to be kept separate from mixed dry recyclables and glass at the point of collection; and
- 2) The delegation of the progression of options relating to the future Material Recovery Facility service to the Director for Environment and Cabinet Member for Waste and Environment, in consultation with the Waste Transformation Programme Board.

Reason for Proposals

The recommended future waste collection service design follows intensive work to model a range of potential options and compare their environmental and financial performance, and account for the provision of new statutory services to

comply with requirements under the Environment Act 2021. The Three Stream recycling collection method (Option 2) delivers compelling financial and environmental performance outcomes and can be supported by existing infrastructure. The proposed future collection method also limits the direct impact on residents and provides an opportunity for a significant reduction in carbon emissions.

**Parvis Khansari,
Corporate Director Place**

Wiltshire Council

Cabinet

19 November 2024

Subject: Future waste collection service design

Cabinet Member: Cllr Dominic Muns, Cabinet Member for Waste and Environment

Key Decision: Key

Purpose of Report

1. To seek approval for a change in kerbside recycling collection method based on the modelled outcomes, for implementation by 2028, following statutory introduction of food and flexible plastics collection by 2027.
2. To advise Cabinet of changes needed for the Materials Recovery Facility (MRF) services following decisions on service design.

Relevance to the Council's Business Plan

3. The waste service elements considered in this paper are fundamental in delivering the Business Plan mission statement '*We take responsibility for the environment*'.
4. The collection system review adopts the Business Plan mission statement '*We ensure decisions are evidence-based*'.
5. The waste service elements under consideration directly support the specific Business Plan aims to:
 - a. Reduce waste to landfill.
 - b. Increase recycling.

Background

6. The Council needs to comply with new statutory requirements under the Environment Act 2021 (EA21) and must offer households a regular collection of the following recyclable items:
 - (a) glass;
 - (b) metal;
 - (c) plastic (including flexible plastics by April 2027);
 - (d) paper and card;
 - (e) food waste (by August 2027);
 - (f) garden waste (charges for collection may be applied).
7. Apart from food waste and flexible plastics, the Council currently provides a kerbside collection of these items from Wiltshire households.

8. As well as specifying the material types to be collected, Section 57 of the EA21 currently prescribes how local authorities should collect household recycling. The Act states that each recyclable waste stream must be collected separately, unless it is not technically or economically practicable to collect those recyclable waste streams separately or collecting those recyclable waste streams separately has no significant environmental benefit.
9. However, in 2021 the government confirmed that it intended to make amendments to the legislation, to allow all councils in England to retain the flexibility to collect the recyclable waste streams in the most appropriate way for their authority area.
10. No changes to the legislation have so far been implemented and no statutory guidance has been published to confirm this position. Therefore, the exact details and implementation timeline remain unclear.

Main Considerations for the Council

11. Wiltshire Council obtained support from WRAP, the government funded advisory charity, who appointed specialist technical consultancy WSP to conduct modelling to determine the best service configuration for the county.
12. The assessment has been carried out in a number of stages as detailed in the following report, and included modelling of 6 different collection options (further details in Appendix 1):
 - Enhanced Baseline (including collection of food and flexible plastics, plus improvements to Materials Recovery Facility)
 - Option 1a - Multi Stream (fortnightly)
 - Option 1b - Multi Stream (weekly)
 - Option 2 – Three Stream
 - Option 3 – Twin Stream (separate fibre)
 - Option 4 – Single Stream
13. A modelling exercise was conducted using raw operational and cost data provided by the Council and its contractors, such as collection fleet size, vehicle types, collection rounds data, commodity sales income, recycling contamination levels, disposal gate fees, staffing costs, etc. Where no information was available, mutually agreed assumptions were made, including recycling participation rates.
14. The modelling sought to use a standard set of key criteria to enable like-for-like comparison between each option modelled, including those shown in table 1 below:

Table 1 – Key assessment criteria

Assessment criteria	
Service Revenue Costs	The total revenue costs of collection, sorting, treatment and disposal of kerbside collected waste and recycling, net of any income received from the sale of recyclable materials and garden waste subscriptions
Revenue costs of capital borrowing	Capital borrowing is required to fund initial purchase of collection vehicles and new containers, to complete MRF infrastructure works, and to fund ongoing costs of replacement containers. The revenue costs associated with this borrowing, including Minimum Revenue Provision (MRP) and interest are calculated based on the required capital borrowing
Kerbside recycling performance	The proportion of kerbside collected waste which is ultimately recycled. Note: this is different to the published NI192 recycling rate, which covers all household waste arising in Wiltshire, such as waste taken to Household Recycling Centres, which is not considered in this exercise
Carbon emissions	The net carbon dioxide equivalent emissions resulting from the collection and management of kerbside collected waste and recycling

15. For modelling of food waste collections, it is assumed that residents will be provided with a 7-litre kitchen caddy and 23 litre kerbside caddy for food waste. We anticipate that a roll of strong disposable “survival” bags will be issued to residents to place their flexible plastics into, before placing their filled bags into existing mixed recycling containers for collection. These survival bags and their contents will then be extracted at the Materials Recovery Facility (MRF) for recycling prior to sorting of the other mixed recyclables, and therefore avoiding the risk of flexible plastics wrapping round sorting equipment.
16. It should be noted that the Council is due to be provided with New Burdens Funding to cover the additional capital and revenue costs of collecting food waste. This will apply to all options. As final figures are yet to be received from government, for the purposes of modelling this has not been included in the figures presented.
17. The high-level modelling results for the current service (Baseline) and the modelled high-level impacts of adding food and flexible plastics to the service are detailed in table 2 below. ***Bold italicized text*** indicates variance from Baseline.

Table 2 – Annual performance of *Baseline* and *Enhance Baseline* services

Option	Service Revenue Costs (£m per annum)	Revenue cost of capital borrowing (£m per annum)	Total revenue cost (£m per annum)	Kerbside Recycling Rate	Carbon Emissions (tCO2e)
Baseline	28.594	3.714	32.308	37.7%	7,800
Baseline (with collection of food and flexible plastics)	29.892 +1.298	4.884 +1.170	34.776 +2.468	51.1% +13.4%	2,000 -5,800

18. Table 2 demonstrates that whilst significant improvements in both carbon emissions and recycling performance can be expected from the introduction of these two new recycling streams, this is likely to come at a significant additional revenue cost to the Council, including an extra £1.298m for provision of the service and £1.170m in respect of costs of increased capital borrowing, totalling an overall annual revenue cost increase of £2.468m according to the modelling.

19. The six alternative options for collection and sorting of dry recyclables were also assessed against the enhanced baseline:

Table 3 High-level financial modelling results. ***Bold italicized text*** shows the estimated change in costs compared to Baseline (with food and flexibles).

Option	Service Revenue Costs (£m per annum)	Revenue cost of capital borrowing (£m per annum)	Total revenue cost (£m per annum)
Enhanced Baseline (with collection of food and flexible plastics, plus necessary improvements to Materials Recovery Facility)	29.612 -0.280	5.047 +0.163	34.659 -0.117
Option 1a Multi Stream (fortnightly)	27.475 -2.417	5.459 +0.575	32.934 -1.842
Option 1b Multi Stream (weekly)	27.735 -2.157	6.240 +1.356	33.975 -0.801
Option 2 Three Stream	27.759 -2.133	6.278 +1.394	34.037 -0.739
Option 3 Twin Stream (separate fibre)	29.544 -0.348	5.842 +0.958	35.386 +0.610
Option 4 Single Stream	30.667 +0.775	4.331 -0.553	34.998 +0.222

20. Table 3 demonstrates that, when service revenue costs and revenue costs of capital borrowing are combined, both *Option 3 Twin Stream (separate fibre)* and *Option 4 Single Stream* are expected to cost Wiltshire Council more than simply adding

collections of food waste and flexible plastics to the current collection service; therefore, these options were not taken forwards for further consideration.

21. The Council's ability to implement any changes to a recycling collection service relies on the availability of necessary infrastructure, including depots from which to operate collection vehicles, Waste Transfer Stations (WTS) to receive and temporarily store collected waste for on wards transport to treatment facilities, and the Materials Recovery Facility (MRF) for sorting collected mixed dry recyclables.
22. Until Council-owned waste transfer infrastructure is developed during the later stages of the Depot and Operational Infrastructure Programme, the Council is reliant on the current contractor-provided facilities, including Amesbury WTS, which is unable to facilitate tipping of the Multi Stream vehicles required for Options 1a or 1b.
23. Therefore, due to the current depot and operational infrastructure constraints, neither Option 1a Multi Stream (fortnightly) or Option 1b Multi Stream (weekly) are considered as being deliverable at this time, so have been discounted from further assessment activity.
24. The final two options remaining for consideration are *Enhanced Baseline* and *Option 2 Three Stream*. These are presented alongside the *Baseline (with food and flexibles)* in the table 4 below which sets out a range of performance criteria which have been assessed. These have been colour coded for each criterion to show best performers (dark green) and worse performers (yellow).

Table 4 – Detailed impacts comparison of remaining options

Metric	Baseline (with collection of food and flexible plastics)	Enhanced Baseline (with collection of food and flexible plastics, plus improvements to Materials Recovery Facility)	Option 2 Three Stream
Performance Outcomes			
Kerbside Recycling Rate	51.10%	52.80%	52.80%
Carbon emissions (tCO2e)	1,969	412	498
Financial Outcomes			
Service revenue costs (net of income) £m per annum	29.892	29.612	27.759
Revenue costs of capital borrowing £m per annum	4.884	5.047	6.278
Total revenue cost £m per annum	34.776	34.659	34.037
Collections Outcomes			
Typical number of containers (excluding optional garden waste & flexible plastics sack)	4	4	5
Number frontline operatives	375	375	394
Number vehicles	151	151	158
Recycling & Treatment Outcomes			
MRF Reject rate	22.50%	16.30%	4.90%
Tonnage requiring sorting at MRF	30,770	29,443	8,334
MRF process complexity	High	High	Low
Number additional transfer station bays required	1	1	2

25. The present service configuration results in a larger tonnage of material collected for recycling being rejected through the sorting process, leading to increased disposal costs, lost commodity sales income, and reduced recycling rate.

26. The Enhanced Baseline would only be achievable with further capital investment in the Sands Farm MRF; however, since opening, the MRF has been unable to achieve the

performance standards anticipated due to sub-optimal performance of the sorting equipment, leading to some target materials remaining in the material rejected by the sorting process, alongside non-target contamination.

27. Considerable attention from both the Council and contractor has been focused on attempts to improve the MRF performance. At present, MRF operational time (availability) equates to between 60-80% per month, against an industry standard of 95%. In addition to suppressing the recycling rate, this can occasionally lead to Wiltshire's recycling needing to be diverted to other facilities, resulting in lost commodity sales income. Despite Council-led education of residents (the industry-recognised "Recycling-Let's sort it!" campaign), and contractor-led technical adjustments to MRF equipment, the performance currently remains below industry standards.
28. Collecting paper and cardboard separately from mixed plastics, metals, and cartons (*Option 2 Three Stream*) would largely resolve the current issues, as the MRF sorting process can be simplified. Whilst the investment in the current MRF results in an improved reject rate for the *Enhanced Baseline*, the modelled reject rate performance for *Option 2 Three Stream* is significantly lower, since there is evidence that more separation at the kerbside reduces contamination, and the simplification of the MRF process should reduce the tonnage of target material missed by sorting equipment. Detail is provided in the confidential **Appendix 4**.
29. Table 4 demonstrates that both recycling rate and carbon emissions performance could also be improved if either the *Enhanced Baseline* or *Option 2 Three Stream* option was implemented. The carbon emissions performance improvement results from more material being successfully recycling and less waste being sent for disposal. See **Appendix 3** for more details.
30. Three Stream recycling collections (Option 2) would result in residents being issued with an additional container to allow paper and card to be kept separate from mixed plastic and metal containers and cartons. However, 10% of households (22,600) already opt to use two blue lidded wheeled bins and who would be unlikely to require an additional container, 8% of households (17,745) use communal recycling facilities, and 3% of households (6,667) use weighted sacks in place of a blue lidded wheeled bin due to storage or space constraints at their property. It is acknowledged that a small proportion of households may be unable to store an extra wheeled bin. In such circumstances alternative containers will be made available, which may include weighted sacks or smaller wheeled bins.
31. To mitigate additional containers on the street on collection day, officers will carefully consider new collection rounds with the council's service providers and seek to avoid the collection of multiple waste streams on the same day wherever possible, for example minimising instances where residual waste and recycling are collected on the same day.
32. Both options would require one additional bay at the Waste Transfer Station(s) to bulk food waste, and *Option 2 Three Stream* would require one further bay to bulk the separated recycling streams. This would result in bulky waste streams currently managed at the WTS being displaced to other tipping points, at a cost to the Council (these costs are captured in the modelled figures).

33. Despite *Option 2 Three Stream* requiring more capital investment (due to additional vehicle and container needs) than in the *Enhanced Baseline*, resulting in higher revenue costs of capital borrowing, the service revenue savings are significant. Option 2 has the lowest total annual revenue cost (£0.739m lower than simply adding food waste and flexibles to the current service).

Recommendation

34. Based on the evidence assessed, Officers recommend that Cabinet approve the adoption of Three Stream recycling collections during the next contract period, with residents being asked to present recycling in one wheeled bin for paper and cardboard, a second wheeled bin for mixed plastics, cans, cartons, and bagged flexible plastics, and continued use of the existing box for glass.

Risks that may arise if the proposed decision and related work is NOT taken

35. If the proposed decision is not taken by Cabinet in November 2024, to ensure the council can discuss detailed delivery plans with its chosen Providers to meet the implementation dates for delivery of new statutory services, it shall be reliant on contract change processes which will likely lead to higher cost services. Additionally, budget uncertainty for these high value (~£20m) contracts will remain until the change process is complete, impacting the Council's ability to balance budgets. As demonstrated in Table 3, the modelled annual revenue costs (including interest on capital borrowing) for adding these to current services are £0.739m more than the recommended option.

36. If there is a delay in the decision being taken, officers may have insufficient time to negotiate new transfer station contract specifications prior to commencing the next contract term in July 2026. If the contractor is unwilling or unable to change the configuration of waste transfer stations, this could result in either service continuity issues or make it necessary to change the recommendation to a different option, resulting in a less efficient service and failure to mitigate the costs of complying with new requirements under EA21.

37. The packaging Extended Producer Responsibility (pEPR) scheme administrator, which will oversee additional revenue funding coming to the council, can make deductions of up to 20% where a Council is deemed to be operating either inefficiently (higher than expected costs) or ineffectively (lower than expected performance). Continuing with the current recycling collection and sorting services increases the likelihood of such a deduction being made.

Risks that may arise if the proposed decision is taken and actions that will be taken to manage these risks

38. The outcomes presented are based on a theoretical modelling exercise that have been tested against known realities, local considerations and overall deliverability, but it is possible that external factors may affect the outcome.

39. Under the Three Stream option, existing waste transfer stations and the Sands Farm MRF will need to be reconfigured. Early conversations have been held with the waste

transfer station operator regarding what could be achieved at current facilities, and which have informed the options appraisal.

40. There is a risk that one vehicle compartment fills up more quickly than other compartments, resulting in time lost travelling to tip a partially full vehicle and reduced service efficiency. However, the ability to compact both material streams (e.g. containers and fibres) on the vehicles operated under a Three Stream option reduces the risk.
41. There is a modest reputational risk associated with requiring residents to separate more of their recycling i.e. requesting that paper and cardboard is kept separate from plastics, metals, cartons and glass. A robust communications campaign will be needed alongside changes to services to ensure residents understand why the changes are occurring, and to reinforce the environmental and financial benefits of further separating their waste for recycling.
42. It is anticipated that, in most cases, the additional recycling container provided to residents would be a wheeled bin. It is likely that this will look tidier at presentation points than the use of boxes/sacks and prevent windblown litter; however, some residents may struggle to store additional bins. Alternative container types will be made available, and it may also be possible to offer smaller wheeled bins to residents to further mitigate this risk.
43. The introduction of a new recycling service poses opportunity for reputational risks, when high profile public-facing services are amended or changed, and new arrangements typically take some time to settle in. The level of change relating to the recommendation is limited compared with most other options considered, with residents being issued with a single additional container to separate their paper and card from containers (plastics, cans, and cartons) and no requirement to retrieve redundant containers. Glass would continue to be collected using the box provided. Additional staffing resources will be allocated for service change and a comprehensive communications programme will be launched alongside the changes to further mitigate this risk.

Safeguarding Implications

44. There are no implications on Adults or Children's Safeguarding arising from this proposal.

Public Health Implications

45. Due to an ageing population (with an expected 43% increase of our over-65 aged population by 2040) the use of wheeled bins as identified in *Option 2 Three Stream* rather than boxes is likely preferred due to their manoeuvrability for most elderly residents. However, as detailed in the report, collection services will need to be designed to mitigate the impact of additional containers presented on pavements and footways to ensure reasonable access is maintained for the public, including vulnerable residents. The report also confirms that alternative containers and/or service arrangements will be provided to those residents unable to use or accommodate an additional bin.

46. The forecast reductions in carbon emissions achieved through additional material sorting by residents could be considered as being beneficial to residents' mental wellbeing as represents a tangible action to help tackle climate change and contribute to mitigating both local and global impacts.

Procurement Implications

47. The collection method decision will directly inform the specifications of future contracts for waste transfer, MRF, and waste collection services and the procurement of replacement waste collection vehicles and containers needed to facilitate the new collection method.
48. The option adopted will directly influence the route to market for MRF services beyond 2026. Detail is provided in the confidential **Appendix 4**.
49. All procurement activity connected to this decision will be conducted through the Waste Transformation Programme and will be undertaken in partnership with the Procurement Team.

Equalities Impact of the Proposal

50. An Equalities Impact Assessment (EQIA) for the proposed change has been completed.
51. The main outcomes are the need to continue offering alternative waste containers to households which cannot accommodate wheeled bins and the need to continue offering assisted collections for residents who are unable to present bins at their property boundary.

Environmental and Climate Change Considerations

52. Carbon emissions associated with contracted waste collections and waste treatment are accounted for within the Council's Scope 3 emissions.
53. The modelling process identifies that a significant improvement in the waste service's carbon emissions performance is set to be achieved once food waste is separately collected for recycling, and flexible plastics are included in collections of mixed dry recycling, due to the significant carbon savings achieved by recycling these waste streams.
54. The recommended Three Stream option is anticipated to achieve further reductions in carbon emissions compared with simply adding the two new recycling schemes to the current service.
55. The modelling assumes the use of diesel-powered collection vehicles. Further carbon savings may be achievable if alternative fuelled waste collection vehicles can be introduced. This will be considered when reviewing the business case for procuring the replacement fleet and following data gathered from the use of the first electric RCV on the fleet from December 2024.

Workforce Implications

Service revenue costs	28.594	29.892	29.612	27.475	27.735	27.759	29.544	30.667
Revenue costs of capital borrowing	3.714	4.884	5.047	5.459	6.240	6.278	5.842	4.331
TOTAL	32.308	34.776	34.659	32.934	33.975	34.037	35.386	34.998

62. A comparison between the modelled revenue figures and the Council 2023/24 Waste budget is detailed in the table 6 below:

Table 6 – Comparison of modelled revenue costs and income against budget		WSP Baseline Figures £m	Waste Budget 2023/24 £m	Explanation of Variance
Service revenue costs	Collection Costs (Inc overheads)	13.612	14.913	£0.7m indexation not accounted for in modelled costs. Variance in fuel price cost of £0.4m.
	Recycling/ Composting (including transfer)	6.032	6.270	
	Residual Waste Treatment	17.329	18.401	£0.2m MBT transfer costs not included in model. £0.6m MBT gate fee variance. £0.2m Lakeside EfW gate fee variance.
Total Revenue Expenditure		36.973	39.584	
Revenue Income	Recycling	-2.880	-3.450	This budget was reduced by £0.5m in 24/25 to reflect actual income
	Garden Waste	-5.501	-5.478	
Total Revenue Income		-8.380	-8.928	
Total Revenue Baseline		28.594	30.656	

63. These costs relate only to the collection and management of the core kerbside collected waste streams (residual, garden waste, and dry recycling), and do not include costs of ancillary services such as bulky household waste collections.

64. Capital costs identified in the modelled baseline figures are detailed in table 7 below, along with what is currently included in the Council's Capital Programme, capital bids will be prepared for the items not currently included:

Table 7 – Comparison of modelled capital costs against budget

	WSP Baseline Figures	Waste Capital	Explanation of Variance

	£m	Programme £m	
Vehicles – Initial Purchase	22.660	0.872	Current budget relates only to replacement of older vehicles which are outside scope of this exercise.
Containers – Initial Purchase	-	-	
Containers – Annual Cost	0.513	0.605	Variance in unit price & delivery costs
MRF infrastructure works	-	-	
Total Capital Baseline	23.173	1.477	

65. The revenue costs of capital borrowing have been calculated by the Finance Team using the current interest rate of 3.8%, with both interest and Minimum Revenue Provision (MRP) being calculated over the useful life of all assets (vehicles, containers, and infrastructure).
66. The annual revenue costs of capital borrowing (interest and MRP) presented in this report use the figures for the first year following implementation (assumed 2028/29). These costs are likely to reduce over the course of the contract; therefore, the figures presented are considered conservative. A breakdown of these costs is included at **Appendix 2**.
67. DEFRA Capital New Burdens grant funding of £4.990m has been received towards the transitional costs for the introduction of weekly food waste collections. This has not been accounted for within the cost of borrowing calculations, meaning the overall cost of borrowing is expected to be lower, due to less capital borrowing required.
68. DEFRA have also advised that additional revenue funding will be provided to waste collection authorities to support their transition to providing new separate weekly collections of food waste, alongside ongoing revenue funding to support delivery of these services. The levels of revenue funding have not yet been confirmed.
69. Following the approval of this report all financial implications will be built into the Capital and Revenue budgets for the relevant years. An update of the funding from government will also be included in future financial reports to Cabinet.

Legal Implications

70. Legal services participate in the Waste Transformation Programme under which this decision is being progressed.
71. Specific legal support is being provided regarding the development of future contracts for waste transfer, MRF, and waste collection services, which are to be directly influenced by this decision.

Overview and Scrutiny Engagement

72. Overview and Scrutiny Chair and Vice chair to be briefed ahead of the Cabinet meeting.

Report Author: Martin Litherland, Head of Service Waste Management,
martin.litherland@wiltshire.gov.uk, Tel: 01225 718524

Appendices

Appendix 1 – Vehicles and containers for each option

Appendix 2 – Revenue costs of capital borrowing calculations

Appendix 3 – Carbon emissions calculations

Appendix 4 – **CONFIDENTIAL (Part 2)** – Impact on Waste Service Delivery Plan

Appendix 1 – Brief synopsis of each option

Option	Residual waste	Garden waste	Food waste	Flexible plastics	Dry recycling	Typical total number of containers *
Baseline (current service)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	Not collected	Not collected	240ltr bin for dry recycling 55ltr box for glass Fortnightly	3
Baseline (with food and flexibles)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	240ltr bin for dry recycling 55ltr box for glass Fortnightly	4 (+ disposable sack for flexibles)
Enhanced baseline (with food and flexibles & improved sorting)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	240ltr bin for dry recycling 55ltr box for glass Fortnightly	4 (+ disposable sack for flexibles)
Option 1a Multi Stream (fortnightly)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	55ltr box for glass, 55ltr box for plastics and cans, weighted sack for paper and cardboard. Fortnightly	5 (+ disposable sack for flexibles)
Option 1b Multi Stream (weekly)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly on same vehicle as dry recycling	Disposable plastic sack Weekly	55ltr box for glass, 55ltr box for plastics and cans, weighted sack for paper and cardboard. Weekly	5 (+ disposable sack for flexibles)
Option 2 Three Stream	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	55ltr box for glass 240ltr bin for cans and plastics 240ltr bin for paper and card Fortnightly	5 (+ disposable sack for flexibles)

Option 3 Twin Stream (separate fibre)	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	240ltr bin for paper and card 240ltr bin for cans, plastics and glass Fortnightly	4 (+ disposable sack for flexibles)
Option 4 Single Stream	180ltr bin Fortnightly	180ltr bin Fortnightly (optional)	23ltr bin (+5ltr kitchen caddy) Weekly	Disposable plastic sack Fortnightly	240ltr bin for all recycling (including glass) Fortnightly	3 (+ disposable sack for flexibles)

*NOTE: The figures shown for “Typical total number of containers” excludes a bin for garden waste, which will remain a chargeable ‘opt-in’ service. Currently, 33% of Wiltshire households subscribe to the fortnightly garden waste collection scheme.

Appendix 2 – Revenue costs of capital borrowing calculations

Total Capital Costs

1. The total initial capital cost is calculated by summing the vehicle, container and infrastructure works, as shown in the below table 8.

Table 8 – Total initial capital costs

Cost	Baseline £m	Baseline (with food & flexibles) £m	Enhanced Baseline (improved sorting) £m	Option 1a Multi Stream (fortnightly) £m	Option 1b Multi Stream (weekly) £m	Option 2 Three Stream £m	Option 3 Twin Stream (separate fibre) £m	Option 4 Single Stream £m
Vehicle purchase	22.660	26.355	26.355	25.705	30.500	29.605	26.500	23.025
Container purchase	0	2.051	2.051	3.569	3.569	6.293	6.293	2.051
Infrastructure works to MRF	0	0	0.900	1.400	1.400	1.400	1.850	0
Total capital cost	22.660	28.406	29.306	30.674	35.469	37.298	34.643	25.760

2. The additional capital costs required to implement both the collection of flexible plastics and separate weekly collections of food waste are estimated to be £5.746m. The Council has already received £4.990m in New Burdens capital funding, specifically allocated to the introduction of new food waste collections in 2027. Therefore, the remaining £0.756m would need to be raised by borrowing.

Calculation of Revenue costs of Capital Borrowing

3. The total revenue costs of capital borrowing are formed by adding the costs of interest to the MRP (Minimum Revenue Provision) costs, as shown in Table 9 below.

Table 9 – Total revenue costs of capital borrowing

Cost (2028/29 figure)	Baseline £m	Baseline (with food and flexibles) £m	Enhanced Baseline (improved sorting) £m	Option 1a Multi Stream (fortnightly) £m	Option 1b Multi Stream (weekly) £m	Option 2 Three Stream £m	Option 3 Twin Stream (separate fibre) £m	Option 4 Single Stream £m
Annual interest on capital borrowing	0.881	1.103	1.137	1.187	1.369	1.448	1.345	0.975
Annual MRP	2.833	3.781	3.91	4.272	4.871	4.83	4.497	3.356
Total revenue costs of capital borrowing	3.714	4.884	5.047	5.459	6.240	6.278	5.842	4.331

Appendix 3 – Carbon emissions calculations

1. Carbon equivalent emissions have been modelled by WSP to include both the emissions associated with collecting and transporting the waste (through fuel usage estimates) and the emissions associated with recycling, treating, or disposing of the waste.
2. Table 10 below breaks down the modelled carbon emissions by type of disposal method and fuel usage for each option.

Table 10 – Modelled carbon emissions by source

Option	Tonnes CO2 equivalent rounded to nearest 100t								
	Food waste	KS Recycling inc. Flexibles	EfW	EfW (output from MBT)	Metals output from MBT	Landfill output from MBT	Garden Waste	Road fuel	Total annual emissions*
Baseline	0	-14,800	6,100	5,100	-300	5,200	2,100	4,400	7,800
Baseline (with food & flexibles)	-1,800	-15,300	5,000	3,900	-200	4,000	2,100	4,400	2,000
Enhanced Baseline (food & flexibles plus improved sorting)	-1,800	-16,500	4,600	3,900	-200	4,000	2,100	4,500	400
Option 1a Multi Stream (fortnightly)	-1,800	-16,500	4,100	4,300	-200	4,300	2,100	3,800	0
Option 1b Multi Stream (weekly)	-1,800	-16,500	4,100	4,300	-200	4,300	2,100	4,000	200
Option 2 Three Stream	-1,800	-16,500	4,200	4,200	-200	4,300	2,100	4,300	500
Option 3 Twin Stream (separate fibre)	-1,800	-16,500	4,300	4,100	-200	4,200	2,100	4,100	200
Option 4 Single Stream	-1,800	-16,500	4,800	3,800	-200	3,800	2,100	4,500	400

*Note numbers will not add up to the total due to rounding.

3. The data in table 10 demonstrates that the current service (baseline) is a net emitter of carbon emissions, but that the introduction of food waste and flexible plastics recycling is anticipated to have a positive impact in significantly reducing carbon emissions.

