

Appendix A1

Waste Collection Methodology Review.

Political Cabinet – 27th February 2018
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Reason for Review.

- Current collection vehicle fleet needs to be re-procured.
- Method of collection will determine exactly what vehicles need to be procured.

3 Key Options to Consider.

- Source Separated Collections of Recyclable Wastes.
- Co-mingled Collections of Recyclable Wastes.
- Frequency of Residual Waste Collections.

Benefits of Source Separation of Recyclables

- **It's the current service.**
- Less contamination.
- More £value per tonne of recyclables.
- No need for separate processing contract (additional costs).
- No need for TEEP compliance assessments.
- Allows for additional waste streams to be collected by the same vehicle at no extra cost (WEEE, Textiles, Food etc).

Down side of Source Separated Collections

- Bespoke vehicles required.
- Health and Safety implications.
- Increased Littering.
- Capacity governed by size of box.
- Street Scene issues.
- Wet Paper.

Benefits of Co-mingled Collections

- Allows for the standardisation of vehicle fleets.
- Reduced Health and Safety risks.
- Reduced risk of littering and spillage.
- Less collection staff required.
- Improved street scene.
- Protects the recyclables.

Down side of Co-mingled Collections.

- Increases in contamination.
- Less £income per tonne.
- Restricts collection of additional items (WEEE, Textiles Food etc). Additional vehicles will be required to collect these streams.
- Separate processing contract (MRF) required introducing a new cost to the service.
- **Change to the current service.**
- Initial service implementation costs. (Bins)

Residual Waste Frequency

3 weekly +

- Drives more recyclables out of the residual waste stream into the recycling and food waste collection services.
- Reduction in waste collection costs.
- Reduction in waste disposal costs.
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- Unpopular with residents. Always seen as 'service cuts'.
- Services and all collection dates changed.
- Moving to a 3 weekly collection will require public engagement/consultation.

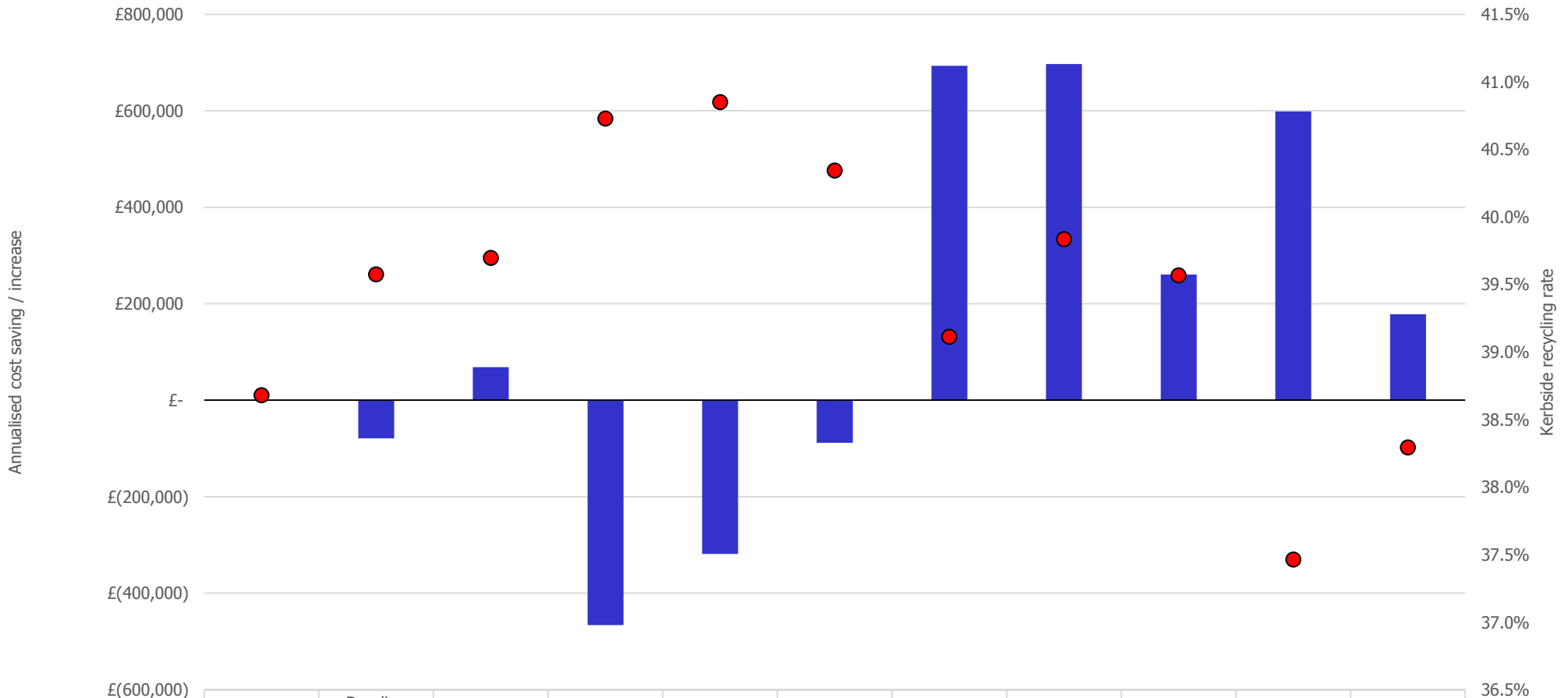
Options

Option number	Option name	Residual		Dry recycling		Food		Garden	
		Frequency / vehicle	Container	Frequency / vehicle	Container	Frequency / vehicle	Container	Frequency / vehicle	Container
0	Baseline	Fortnightly - RCV	180 l wheeled bin	Weekly - RRV	x2 kerbside boxes	Weekly - collected with dry recycling in RRV	Food waste bin and kitchen caddy	Weekly - RCV	240 l wheeled bin, subscription
0+	Baseline PLUS	Fortnightly - RCV	180 l wheeled bin	Weekly - RRV	x3 kerbside boxes				
1a	Multi-stream with co-mingled recycling at flats	Fortnightly - RCV	180 l wheeled bin	Weekly - RRV	Low-rise: x3 kerbside boxes Flats: co-mingled				
1b	Multi-stream and 3 weekly residual	Three weekly - RCV	180 l wheeled bin	Weekly - RRV	x3 kerbside boxes				
1c	Multi-stream and 3 weekly residual, flat co-mingled	Three weekly - RCV	180 l wheeled bin	Weekly - RRV	Low-rise: x3 kerbside boxes Flats: co-mingled				
1d	Multi-stream recycling with smaller (140 l) residual bin	Fortnightly - RCV	140 l wheeled bin	Weekly - RRV	x3 kerbside boxes	Fortnightly - RCV			
2a	Co-mingled recycling	Fortnightly - RCV	180 l wheeled bin	Fortnightly - RCV	240 l wheeled bin	Weekly - collected separately in dedicated food waste vehicles	Food waste bin and kitchen caddy		
2b	Co-mingled recycling with smaller (140 l) residual bin	Fortnightly - RCV	140 l wheeled bin	Fortnightly - RCV	240 l wheeled bin				
2c	Co-mingled recycling and 3 weekly residual	Three weekly - RCV	180 l wheeled bin	Fortnightly - RCV	240 l wheeled bin				
3a	Two-stream (fibres separate)	Fortnightly - RCV	180 l wheeled bin	Fortnightly - 50/50 split back RCV	240 l wheeled bin for containers and 55 l box for fibres				
3b	Two-stream (fibres separate) and 3 weekly residual	Three weekly - RCV	180 l wheeled bin	Fortnightly - 50/50 split back RCV	240 l wheeled bin for containers and 55 l box for fibres				

Options appraisal

Category	Weighting	Considerations	Guide	Baseline	Baseline PLUS	Option 1a	Option 1b	Option 1c	Option 1d	Option 2a	Option 2b	Option 2c	Option 3a	Option 3b	
Financial	25%	Annualised net cost	Annualised net cost in addition to Baseline. Score as deviation from the maximum (0 points) and minimum (10 points) annualised net costs calculated for each option.	6.0	6.7	5.4	10.0	8.7	6.7	0.0	0.0	3.8	0.8	4.5	
Recycling performance	15%	Tonnes recycled per annum	Tonnes recycled (dry recycling, food and garden, excluding contamination). Sliding scale from maximum (10 points) to minimum (0 points) tonnes recycled.	3.7	6.3	6.6	9.6	10.0	8.5	4.8	6.9	6.1	0.0	2.4	
Compliance	5%	High level TEEP compliance assessment	Consideration of TEEP, kerbside sort scores 10 points, twin stream scores 5 points and fully comingled scores 0. Options collecting doorstep properties via kerbside sort system and flats comingled score 8 points.	10.0	10.0	8.0	10.0	8.0	10.0	0.0	0.0	0.0	5.0	5.0	
Employment	5%	Number of staff employed	Points for reduction/increase in jobs scored by the number of jobs affected. Score as deviation from the maximum staff employed (10 points) to the minimum (0 points).	8.6	9.6	9.3	9.1	8.9	10.0	0.9	1.1	0.0	3.2	2.6	
Air quality assessment	5%	Impact of collection vehicles on air quality	Assesment of the monetised air quality damage from collection vehicles, measured by CO ² and Nox emissions (£ per annum)	2.5	2.7	2.7	10.0	10.0	2.6	0.0	0.0	8.7	0.5	7.9	
Health and safety	15%	Health and safety of collection crew	Glass collection noise assessment - daily personal noise exposure (LEP, d) derived on basis of number of loading events.	0.0	4.1	4.1	4.1	4.1	4.1	10.0	10.0	10.0	7.7	7.7	
			Safety of crews from other road users whilst loading collection vehicle - no options are considered 'high risk', kerbside sort scores 5 points (medium risk), comingled/twin stream scored 10 points (low risk) to reflect vehicle loading	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0
				The variables below are qualitative. There is not an extensive empirical evidence base to draw on in regard to scoring the impact of any one option over the other. As a result, the scores are by necessity more subjective than any of the variable scores detailed above. They are important issues for BWC and Bristol City Council, as such, it is important to understand what the issues for each collection option are in respect to the variable. Once the option specific issues are understood then mitigation measures could be developed and put in place to maximise the quality and efficiency through the service delivery.											
Street scene	15%	Impact on fly tipping and street scene in terms of numbers and type of containers provided to households and effect on street cleansing requirement	Potential impact on flytipping - assessed by litres of residual waste capacity available per week (e.g. 180 litre wheeled bin fortnightly is 90 litres residual waste capacity per week). Sliding scale from the highest weekly equivalent residual capacity which scores 10 points, to the lowest which scores 0 points.	10.0	10.0	10.0	0.0	0.0	3.3	10.0	3.3	0.0	10.0	0.0	
			Perceived impact of collection type on street scene, accounting for street cleanliness following collection - co-mingled scores 10, twin stream scores 5, multi-stream scores 0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	5.0	5.0	
			Total number of containers for kerbside properties, accounting for the types of containers in use and their perceived impact on street scene (excl garden). Wheeled bin = 3 points, Box = 1 point each, Food bin (plus indoor caddy) = 1 point.	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0	
Public opinion	15%	Public opinion of the collection system.	Number of households passed per vehicle per day. This aims to provide an assessment of the speed of dry recycling collections at street level. Score as deviation from the highest (10 points) to the lowest (0 points).	1.1	0.4	0.4	0.0	0.0	0.1	10.0	9.1	9.1	3.4	3.0	
			Materials collected (Multi-stream scores 10 as peripheral items remain available for collection, co-mingled and twin stream score 0 as peripheral items will no longer be collected)	10.0	10.0	10.0	10.0	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
100%				Total Score (unweighted)	45.4	49.9	46.7	60.0	56.8	50.3	29.0	28.6	38.1	25.1	34.3
				Weighted Score	5.3	5.9	5.6	7.1	6.7	6.0	4.3	4.2	5.2	3.0	4.0
				Rank	6	4	5	1	2	3	8	9	7	11	10

Annualised cost comparison and kerbside recycling rate



	Baseline Res-2wkly-180l Multi-wkly	Baseline PLUS Res-2wkly-180l Multi-wkly	Option 1a Res-2wkly-180l Multi-wkly (flats-comingled)	Option 1b Res-3wkly-180l Multi-wkly	Option 1c Res-3wkly-180l Multi-wkly (flats-comingled)	Option 1d Res-2wkly-140l Multi-wkly	Option 2a Res-2wkly-180l Comingled-2wkly	Option 2b Res-2wkly-140l Comingled-2wkly	Option 2c Res-3wkly-180l Comingled-2wkly	Option 3a Res-2wkly-180l Twin-2wkly	Option 3b Res-3wkly-180l Twin-2wkly
■ Annualised cost saving		-£79,148	£68,669	-£466,331	-£318,514	-£88,275	£693,420	£696,893	£260,424	£598,695	£178,328
● Recycling rate	38.7%	39.6%	39.7%	40.7%	40.8%	40.3%	39.1%	39.8%	39.6%	37.5%	38.3%



Capital Implications of each option.

