Belfast City Council

Options Appraisal: Final Results

resourcefutures

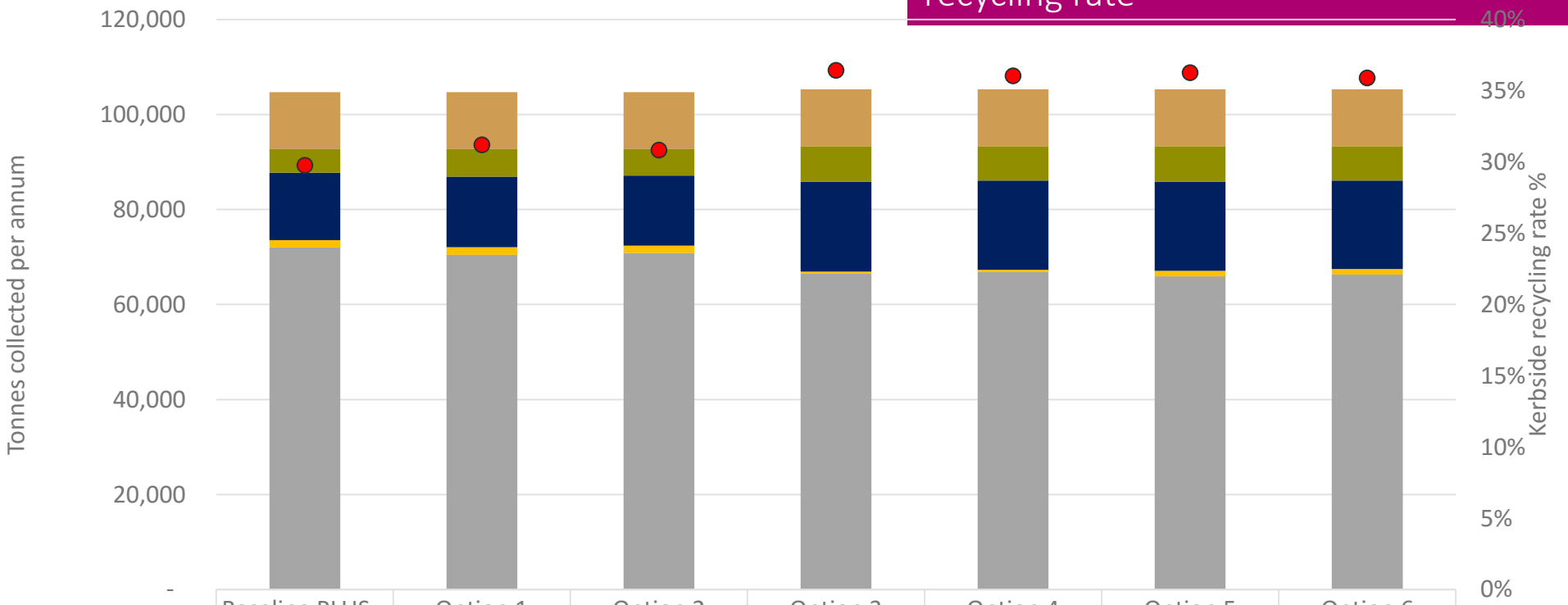
Introduction

- Options appraisal – identify optimal service profile for Belfast
  - Cost effectively maximise recycling performance
- Follows WRAP's Recycling Gap Study for Northern Ireland
- Resource Futures commissioned to review potential options in detail
- Results to support *Resourceful Belfast*

Options modelled

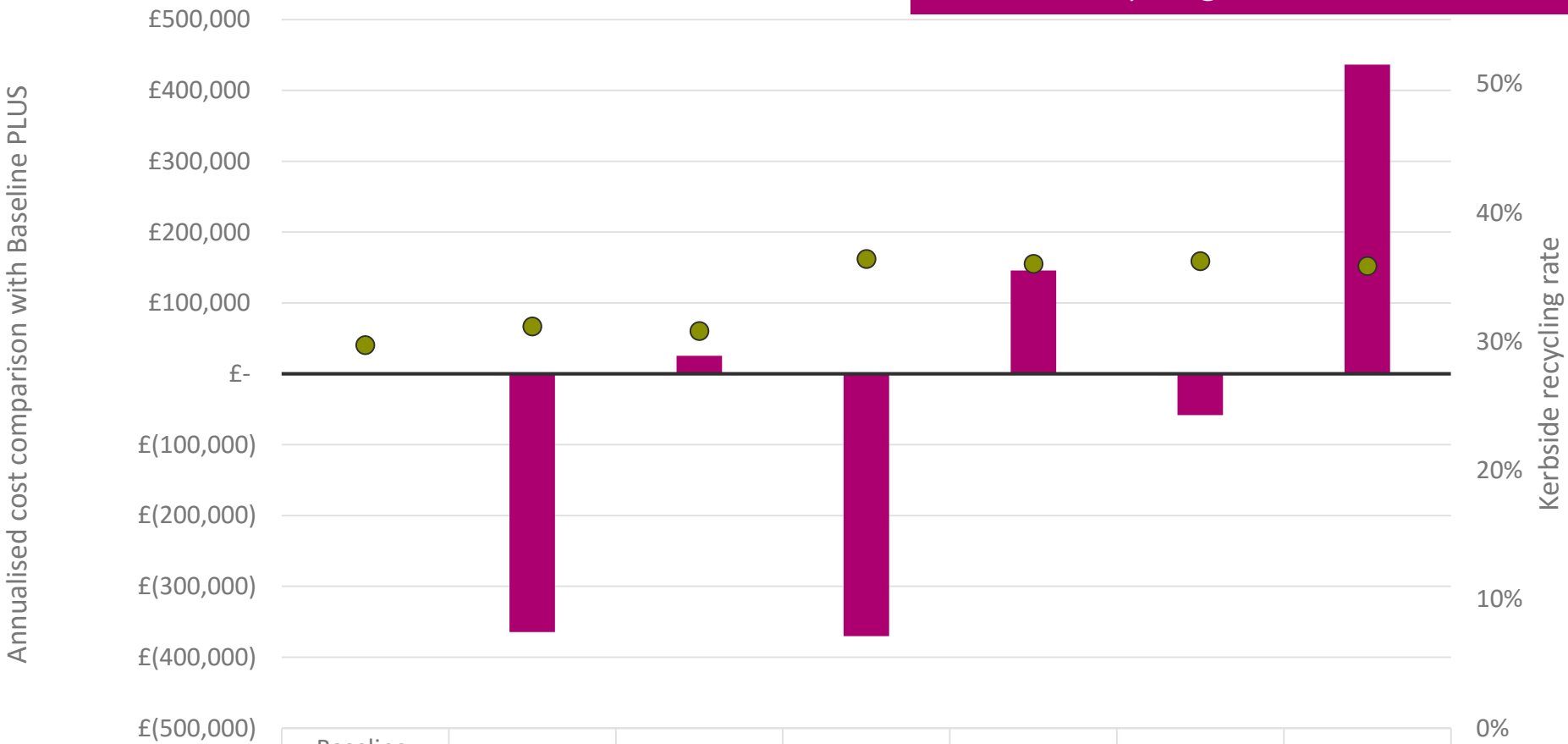
Option	Area	Residual	Dry recycling	Food	Garden
Baseline	Inner city	240 litre – fortnightly	x2 55 litre boxes plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre – fortnightly – comingled	240 litre – fortnightly - mixed food and garden	
Option 1	Inner city	240 litre – three weekly	x2 55 litre boxes plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre – fortnightly – comingled	240 litre – fortnightly - mixed food and garden	
Option 2	Inner city	180 litre – fortnightly	x2 55 litre boxes plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre – fortnightly – comingled	240 litre – fortnightly - mixed food and garden	
Option 3	Inner city	240 litre – three weekly	Stack box plus food bin – weekly – kerbside sort with food waste		None
	Outer city				240 litre – fortnightly
Option 4	Inner city	180 litre – fortnightly	Stack box plus food bin – weekly – kerbside sort with food waste		None
	Outer city				240 litre – fortnightly
Option 5	Inner city	240 litre – three weekly	Stack box plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre (containers including glass) and 180 litre bin (fibres) – fortnightly – twin stream	Food bin - weekly - separate	240 litre – fortnightly
Option 6	Inner city	180 litre – fortnightly	Stack box plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre (containers including glass) and 180 litre bin (fibres) – fortnightly – twin stream	Food bin - weekly - separate	240 litre – fortnightly

Tonnages collected and kerbside recycling rate



	Baseline PLUS	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Garden	11,988	11,988	11,988	11,988	11,988	11,988	11,988
Food	4,956	5,801	5,590	7,446	7,228	7,446	7,228
Dry recycling	14,206	14,875	14,708	18,911	18,732	18,746	18,570
Contamination	1,523	1,584	1,569	473	470	1,168	1,162
Residual	72,022	70,446	70,840	66,460	66,860	65,930	66,330
Recycling rate	29.75%	31.20%	30.84%	36.42%	36.05%	36.27%	35.89%

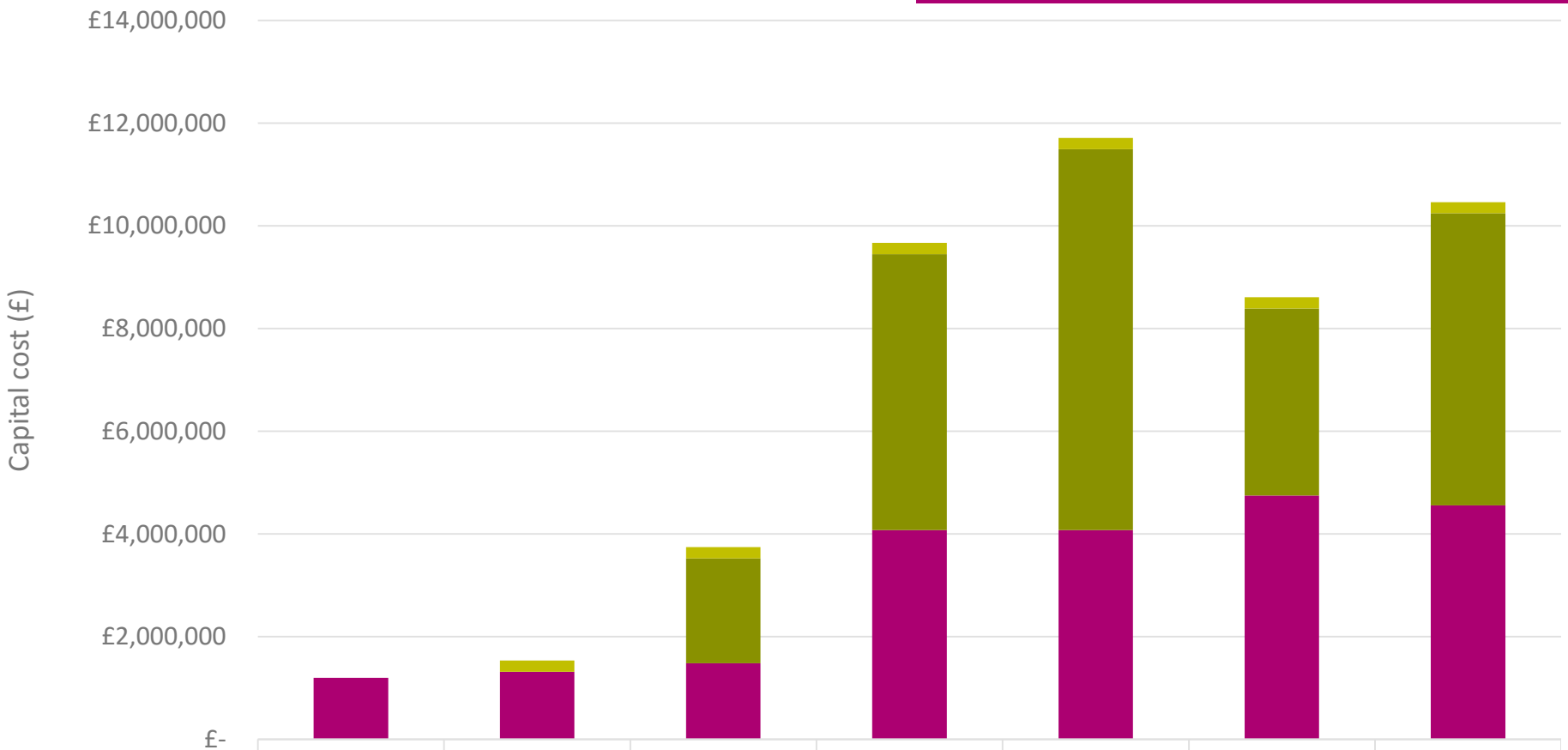
Annualised cost comparison and kerbside recycling rate



	Baseline PLUS	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Cost saving / increase		-£364,371	£25,564	-£370,214	£146,021	-£58,245	£436,361
Recycling rate	29.75%	31.20%	30.84%	36.42%	36.05%	36.27%	35.89%

resourcefutures

Single year roll-out capital costs



	Baseline PLUS	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Communications		£218,795	£218,795	£218,795	£218,795	£218,795	£218,795
Containers		£-	£2,041,893	£5,373,207	£7,415,100	£3,645,269	£5,687,162
Vehicles	£1,200,000	£1,320,000	£1,485,000	£4,077,706	£4,077,033	£4,747,706	£4,557,033

Options appraisal

	Category	Weighting	Considerations	Guide	Baseline PLUS	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Monetary scoring	**Financial**	**100%**	Annualised net cost	Annualised net cost in addition to Baseline. Score as deviation from the baseline i.e. Cost savings score 6-10 points, cost increases score 0-4 points	5.4	9.9	5.1	10.0	3.6	6.1	0.0
60%				**Weighted Score**	**5.4**	**9.9**	**5.1**	**10.0**	**3.6**	**6.1**	**0.0**
				Monetary rank	**4**	**2**	**5**	**1**	**6**	**3**	**7**
Non-monetary scoring	**Recycling performance**	60%	Tonnes recycled per annum	Tonnes recycled (dry recycling, food and garden, excluding contamination) in addition to baseline. Maximum additional tonnes = 10 points, baseline = 0 points.	0.0	2.1	1.6	10.0	9.4	9.8	9.2
	Public acceptability	30%	Public acceptability in relation to changes required for each option	Considers collection frequency, method and type / number of containers used and change in container capacity. Sliding scale from baseline score, which scores 10 points.	10.0	2.0	4.3	3.7	6.0	2.9	5.2
	Legislative compliance	10%	High level TEEP compliance and food waste assessment	Asssessment of TEEP risk: co-mingled = 0 points, twin stream = 5 points, multi-stream = 10 points. Additional point for options that include a change to separate food waste from garden waste, except for options that already receive maximum points from multi-stream recycling.	5.0	5.0	5.0	10.0	10.0	8.0	8.0
40%		**100%**		**Total Score (unweighted)**	**15.0**	**9.1**	**10.8**	**23.7**	**25.5**	**20.6**	**22.4**
				Weighted Score	**3.5**	**2.4**	**2.7**	**8.1**	**8.5**	**7.5**	**7.9**
				Non-monetary rank	**5**	**7**	**6**	**2**	**1**	**4**	**3**
Overall scoring (including monetary and non-monetary criteria)				**Weighted Score**	**4.6**	**6.9**	**4.1**	**9.2**	**5.6**	**6.7**	**3.2**
					5	**2**	**6**	**1**	**4**	**3**	**7**

Preferred options analysis

Option	Area	Residual	Dry recycling	Food	Garden
Option 1	Inner city	240 litre – three weekly	x2 55 litre boxes plus food bin – weekly – kerbside sort with food waste		None
	Outer city		240 litre – fortnightly – comingled	240 litre – fortnightly – mixed food and garden	
Option 3	Inner city	240 litre – three weekly	Stack box plus food bin – weekly – kerbside sort with food waste		None
	Outer city				240 litre – fortnightly

- Roll out of three weekly residual collections
  - Planned transition to reflect size of local authority, consultation, communications before/during/after campaign;
  - Most positive public response from simultaneous changes to recycling services.
- Contractual constraints
  - Service delivery model for inner / outer city recycling
- Infrastructure requirements
  - Depot and bulking/transfer requirements

Preferred options – waste regulations compliance

- EU Waste Framework Directive (2008/98/EC) – ”separate collections”
- **Inner city:** deemed to be compliant for both Options 1 and 3
- **Outer city**: Option 1 more challengeable

	Outer city – Options 1 and 3
Necessary?	The modelling demonstrates Option 3 would achieve a higher yield of the four materials compared to Option 1, however, it should be noted that Option 3 includes the introduction of glass to the kerbside collections. The model assumes 75% of glass collected from households is diverted from residual collections, with the remaining 25% from the current HWRC/bring bank network. An additional uplift in dry recycling yield within the modelling can also be attributed to the equivalent weekly container capacity for this option, through the introduction of stacked boxes collected weekly. Based on a comparison of Options 1 and 3 for the outer city area, the higher yield per household achieved by multi-stream collections in Option 3 would indicate a multi-stream collection would be necessary to ensure waste is recycled.
Technically practicable?	Yes. Inner city areas demonstrate separate collections would also be technically practicable in outer city areas.
Environmentally practicable?	Yes. Based purely on a higher yield of the four materials in Option 3, compared to Option 1, a multi-stream system is deemed to provide a better environmental outcome.
Economically practicable?	Potentially. Whilst modelling for Option 3 indicates separate collections through a multi-stream system could be delivered for outer city areas without an excessive annualised cost increase, Option 3 requires more than £6 million of capital for vehicles and containers (investment in infrastructure as described in Section 4.3 may also be required) if the whole city is rolled out in a single financial year.

- Options appraisal identifies Option 3 as preferred option:
  - Greatest annualised financial saving (although initial capital expenditure is high)
  - Greatest increase in recycling performance
  - ‘Most acceptable’ in terms of three weekly residual collections
  - Compliant with waste regulations
  - Most applicable to circular economy approach
- Consideration of commissioning options
- Funding available for capital investment?
- Service change planning – dedicated team and potential for phased roll out to mitigate risk / spread financial cost