

# THE DESIGN AND IMPLEMENTATION OF DUAL STREAM RECYCLING COLLECTION IN LICHFIELD AND TAMWORTH

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## 1. Background

This report was commissioned by Lichfield District Council ('Lichfield') and Tamworth Borough Council ('Tamworth') (together 'the Councils') to review the planning and implementation of a new dual stream recycling service which was rolled out in April and May 2022. The report seeks to focus on lessons learned in advance of future major changes to waste collections being introduced at a national level, for example, to include separated food collections and increased recycling rates.

The report is structured as follows

- Section 1 Background
- Section 2 Context
- Section 3 Strategy
- Section 4 Procurement of the Blue Bags
- Section 5 Twin Track Vehicle Sizing
- Section 6 Implementation
- Section 7 Commentary on Specific Areas of Implementation
- Section 8 Conclusions and Recommendation

Lichfield and Tamworth have a joint waste service and a shared service team which manages the in-house collection of household waste. Although led by Lichfield and Tamworth, the move to using a new service for dry mixed recyclable material ('DMR') collection was also followed by three other Councils in the County: Cannock Chase District Council; East Staffordshire Borough Council; and South Staffordshire District Council.

The report is based on information provided and it may be that other data exist which were not made available as part of this process at the time of the analysis.

The report does not seek to make legal or financial policy statements or recommendations outside of a general intention to support the Councils in the future planning of strategic change.

## 1. CONTEXT

The Councils are Waste Collection Authorities and are therefore responsible for the collection of household residual waste ('black bag waste'). Under an agreement with the Waste Disposal Authority ('WDA'), being Staffordshire County Council, the Councils also collect and dispose of DMR placed in kerbside bins and bags by householders.

As set out below, the rationale for changing the collection policy of the Councils was driven by both financial and strategic factors.

The Councils had a contract with Biffa Waste Management Services for disposal of fully comingled DMR (comprising glass, plastics, metals, paper and card) but this was due to expire in March 2022. The Councils had been informed that they faced significant increases in costs if they were to retain a fully comingled collection policy. Finance was therefore a key driver for change.

In addition, there was a strategic drive by the Chief Executives and Leaders of all the Districts and Boroughs in Staffordshire to harmonise as much as possible the collections of DMR across the County. The move was supported by Staffordshire County Council (who has the statutory responsibility of disposing of DMR) and

which, through financial incentives, delegated the collection and transport of DMR to the Districts and Boroughs.

Also, through the UK's Resources and Waste Strategy ('RWS'), Councils will be required to implement changes to collection processes of which three in particular will have an impact on the Councils' services:

- a. Separation of food waste using separate food containers;
- b. Improved recycling levels and quality (i.e. reduced contamination); and
- c. A scheme to make producers pay for waste generated by their products ("Extended Producer Responsibility").

There is therefore a strategic imperative to improve recycling and to prepare for future changes in waste collection.

The new service introduced in April and May 2022 was a 'dual stream' DMR collection service for which the key features (for most households) are:

- Fortnightly collections of DMR from households;
- A dual stream approach collecting household recycling by use of:
  - A 240 litre blue bin for the collection of glass, plastics and metals;
  - An 81 litre blue bag for the collection of paper and card<sup>1</sup>;
- New 'twin track' vehicles to collect the dual stream materials separately in one vehicle.

Households in rural areas received a purple bin rather than a blue bag because of access issues. Communal properties (e.g. flats) continue to comingle their DMR in one receptacle.

## 2. STRATEGY

The Councils were facing steep increases in the prices charged by third party recycling companies ('off takers') for the disposal of comingled DMR waste.

Comingled DMR waste is costly to separate because most machine driven separation processes cannot easily remove clean paper and card materials from glass bottles and metal (e.g. cans and/or foil) which diminishes the value of separated materials and/or makes it harder to re-process them. As a result, many Councils have moved to a dual stream recycling approach where paper and/or card is collected in one receptacle and glass, plastics and metal in another.

The Councils do not currently collect food waste separately (it is to be placed in the black, residual waste, bin). Garden waste collection is available for an annual fee.

A strategic review paper by Frith Resource Management<sup>2</sup> in October 2019 ("Frith Report") set out a number of options for Lichfield (and Tamworth) to consider their future waste collections. At the time the Councils had a

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<sup>1</sup> <https://www.lichfielddc.gov.uk/recycling-bins-waste/guide-bins-goes-bin/3> and <https://www.tamworth.gov.uk/blue-bin>  
<sup>2</sup> *Service Change and Delivery Options*, Frith Resource Management, October 2019

policy of fully ‘co-mingling’ all DMR material streams. This means that a single 240 litre bin was used by householders for mixed recyclates: glass, metal, plastics, paper and card.

Although the move to dual stream recycling would appear to be largely financially driven, the Frith Report sought to identify the best qualitative collection options for dry mix recyclates given national recycling policies.

The Frith Report concluded that an option based around a dual-stream collection based on properties having two bins for DMR<sup>3</sup> would be the most cost effective, but the report also suggested that each of the bins would be collected every four weeks with a fortnightly collection pattern for properties.

It is not clear when the decision to move from the ‘two bins, four weekly’ proposal to the ‘bin and bag fortnightly’ proposal was made. The Frith report is dated October 2019, and, by January 2021, the Joint Waste Committee (‘JWC’) was considering six options as set out in Table 1.

*Table 1: Excerpt from Tamworth And Lichfield Joint Waste Committee Paper, 25<sup>th</sup> January 2021*

In order to expedite decision making a preliminary appraisal of the options still available to the Districts has recently been undertaken. The options included in the appraisal are as follows:

1. Retain commingled collections and responsibility for disposal.
2. Retain commingled collections and transfer responsibility for disposal to the County Council.
3. Introduce dual stream collections using an additional bin for paper/card and retain responsibility for disposal.
4. Introduce dual stream collections using an additional bin for paper/card and transfer responsibility for disposal to the County Council.
5. Introduce dual stream collections using a bag for paper/card and retain responsibility for disposal.
6. Introduce dual stream collections using a bag and transfer responsibility for disposal to the County Council.

Appendix B of the January 2021 paper included a detailed SWOT analysis for each of the six options, but did not at that time make a recommendation. Many (but not all) of the later problems with the implementation of the service were correctly identified as ‘weaknesses’ in the SWOT analysis of Option 5 (see Annex 1).

Notably, the January 2021 paper stated “Residents would present glass/cans/plastic in the existing blue bin and card/paper in a 70 litre hessian bag”. It is not clear how the move from a ‘70 litre’ bag to an 81 litre bag – which was the capacity finally procured - was proposed and authorised.

In May 2021 a further report to the JWC recommended Option 5 which was a strategy likely to be pursued by all the Districts in the County area.

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<sup>3</sup> So three bins in total: Black bin, DMR 1 bin and DMR 2 bin.

Cabinet papers for Lichfield and Tamworth in June and July 2021 set out the options and made a recommendation to adopt a bag and bin twin track solution (Option 5) for adoption in April 2022 (albeit the recommendation remained conditional on receiving additional funding from the County Council as WDA).

*Table 2: Excerpt from Lichfield Cabinet Report, 6 July 2021 and Tamworth Cabinet Report 30 June 2021*

Option 5 does substantially reduce the capital cost of the additional container as residents are provided with a bag instead of a bin, this is the system currently in place in both Stafford and Newcastle. The downside to this option is that there would be a significant increase in operational costs as it is much slower to collect a bin and a bag from each property thus extra crews would be required. The vehicles are more expensive as they are multi compartmental. The Districts would benefit from a lower gate fee and income from both the Recycling Credit and the sale of the materials but this option would have a significant impact on the revenue budget.

The Cabinet reports did not set out in detail the implementation plans for the change in service. Interviews conducted as part of this report suggested that a similar scheme introduced a year earlier in both Stafford Borough Council and Newcastle Under Lyme Borough Council was working well and, perhaps, as a consequence, the new DMR service was not piloted within the Councils' area. It later emerged that the services in Stafford and Newcastle Under Lyme had operational differences, and the blue bags were of a different (larger) size. Not running any pilots was a bold move and this decision would have benefitted from being scrutinized and tested through the JWC. It is not clear from the documents provided if running a pilot was considered.

The Cabinet Reports were largely focused on the financial impact of the change to service and the relationship with the WDA. Risks reported to Cabinet were largely financial, as can be seen from Table 3.

*Table 3 Tamworth Cabinet report 8 July 2021*

**LEGAL/RISK IMPLICATIONS BACKGROUND.**

	Risk Description	How it is Managed	Severity
A	The JWS does not enter into an agreement for the continued disposal of waste.	Regular communication with the WDA	Likelihood: Green Impact: Red Severity of Risk: Yellow
B	The JWS are required to extend the current comingled disposal at increased costs while new service arrangements are put in place	Liaise with contractor to manage cost increases Negotiate support from WDA	Likelihood: Yellow Impact: Yellow Severity of Risk: Yellow
C	A shared agreement on collection and disposal cannot be agreed between WCAs and WDA	Ongoing liaison. Clarity about what no agreement would look like – handed back comingled disposal.	Likelihood: Yellow Impact: Yellow Severity of Risk: Yellow
D	Increase in the number of loads being rejected which lowers the Recycling Rate.	Communication campaign Regular bin checks	Likelihood: Yellow Impact: Green Severity of Risk: Green
E	The service is not compatible with the proposals adopted in the National Waste Strategy.	Further review of the service	Likelihood: Green Impact: Red Severity of Risk: Yellow
f	The WDA prescribes the tipping locations for option 2 and the locations are further to travel and therefore increase the cost to the Council	To work with the WDA to identify the most favourable tipping locations, and any tipping away payments due	Likelihood: Yellow Impact: Yellow Severity of Risk: Yellow

The Cabinet report did not mention any particular challenging implementation issues, although the summary Options Appraisal provided (see Annex 2) did see 'public dissatisfaction with change' as a risk area.

### 3. PROCUREMENT OF THE BLUE BAGS – CONFIDENTIAL REDACTED

- Woven PP Blue coated 140gm fabric, 3% UV stab
- Weighted flat base of 450gr
- 81 litre capacity (dimensions 45x45x40cm)
- Top flap the same size as the base, with velcro along all 3 sides, with a white area on the top of the flap, central, for an address to be written on in marker pen.
- Two long carry handles at the top from the sides and one tipping handle across the base

#### 4. TWIN TRACK VEHICLE SIZING

Central to the new DMR collection strategy was a new ‘Twin Track’ vehicle which contained two compacting units, one for paper and card and the other for other dry mixed recyclates.

The vehicles, provided by Dennis Eagle, are split on a 35% plus 65% basis with the smaller side for paper and card. It is not clear how this size was selected (or whether other vehicles and configurations were considered) but the selection does seem to reflect the tonnage data provided.

The strategy for the new DMR collection was put in place in 2021. As can be seen in Table 6, it is possible at the time that the split was correct for the waste collected by reference to 2019/20 – which might have been the latest data available. Certainly the data from 2020/21 does not suggest that different split was necessary.

Table 6: Volumes of Paper and Card collected kerbside as a proportion of all DMR collected

DMR: Kerbside Collection				
	ALL DMR	Paper	Card	
2019/20	tonnes	tonnes	tonnes	
Lichfield	10,683	3,562	826	
% of All DMR		33.3%	7.7%	41%
Tamworth	7,767	2,440	673	
% of All DMR		31%	9%	40%
2020/21				
Lichfield	11,568	3,099	1,013	
% of All DMR		26.8%	8.8%	36%
Tamworth	8,268	2,125	880	
% of All DMR		25.7%	10.6%	36%
2021/22				
Lichfield	10,652	2,925	1,095	
% of All DMR		27.5%	10.3%	38%
Tamworth	7,743	1,978	693	
% of All DMR		25.54%	8.95%	34%

The relative proportions of waste matter: as soon as either side is full, the entire vehicle is taken off round and driven to the Biffa Transfer Station (“BTS”) in Aldridge for tipping.

It is not clear how or when the analysis to justify the selection of vehicles was undertaken. Other specifications are available in the market, and capacity is a product of both tonnage and compaction density. Given the fact that once one side of the vehicle is full it is effectively not available, modelling of capacity would have been helpful. A pilot project would have assisted with this issue.

It is understood that four of the twin track vehicles are leased and therefore could be replaced over time to reflect emerging waste patterns.

## 5. IMPLEMENTATION

Cabinet papers show that the decision to roll out dual stream recycling was taken in mid 2021 following earlier discussions with the JWC.

The presentation to the Project Team dated 15 November 2021 refers to the creation of the project team, risk register, and members' working group. If Cabinets gave agreement to the new dual stream regime as early as June 2021, then the interval in setting up a project team until November could have had consequences on the later roll out, particularly given the original timetable of having bags delivered by 1 March 2022.

It would appear from evidence collected that sufficient advance thought had been given to aspects of the implementation roll out namely the distribution of new bags, letters distributed to individual residents, and a change awareness campaign. Project Team minutes (21 January 2022) refer to plans for informing the public of the future change (e.g.: through social media, personalised letters, and leaflets) based on similar approaches used in Stafford for their DMR change plan. These plans seem well thought through given Stafford's experience.

Implementation plans including risk registers were created and shared with relevant committees. A number of the key risks were identified in the SWOT analysis, but it is not clear whether the service team could respond to the actual roll out challenges in the implementation period as they happened.

A key issue to determine is whether there was a series of related or unrelated events which mean that the service could not be ruled out smoothly. In summary, although implementation planning was in place, the following sequence of events conspired to disrupt the service:

- The blue bags were delivered late, leading to
- Collection operatives diverted to delivering bags to properties, leading to
- Missed collections, leading to
- Public disquiet and complaints.

Although the implementation plan was adjusted to take into account the delays in delivery of the blue bags, the actual demands of delivering the bags (combined with the press release mentioned above) led to a failure in service between 4 April and 30 May.

Data provided as part of this report shows a pattern of missed collections over the period (Figure 2).



Figure 2: Missed collections (all rounds, refuse and recycling).

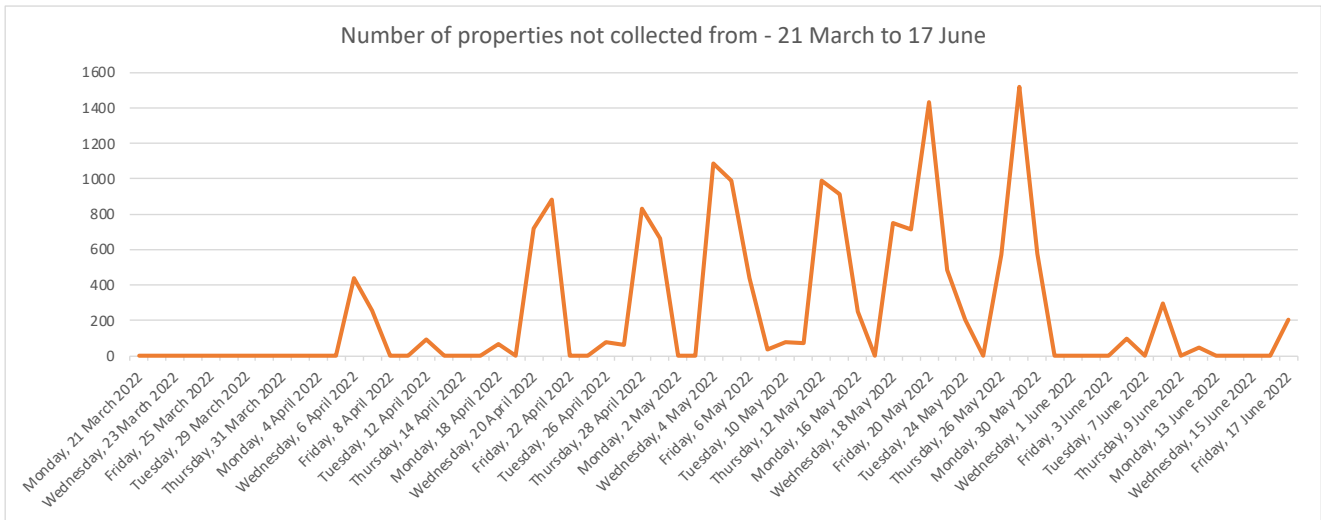


Figure 2 shows a pattern of missed collections getting gradually worse from early April and culminating in peaks towards the end of May. This correlates with the period when bag distribution was taking place (and which completed on 27 May). Missed collections affected both refuse (black bag) and DMR rounds, which may indicate some co-dependencies in the service (e.g., staffing).

A further trend which can be seen from the data is that most missed collections occurred on Wednesday, Thursday and Fridays – which are the rounds in Lichfield. See Table 7.

Table 7 – Top 20 days for missed collections by property

Day	Total Properties	Missed Properties	% missed
Friday, 27 May 2022	22776	1522	6.68%
Friday, 20 May 2022	22167	1433	6.46%
Wednesday, 4 May 2022	20963	1088	5.19%
Thursday, 5 May 2022	20323	990	4.87%
Thursday, 12 May 2022	20567	988	4.80%
Thursday, 21 April 2022	20308	884	4.35%
Thursday, 28 April 2022	20569	829	4.03%
Friday, 13 May 2022	22740	913	4.01%
Wednesday, 18 May 2022	21063	750	3.56%
Thursday, 19 May 2022	20347	715	3.51%
Wednesday, 20 April 2022	20911	718	3.43%
Monday, 30 May 2022	18780	577	3.07%
Friday, 29 April 2022	22711	663	2.92%
Thursday, 26 May 2022	20588	569	2.76%
Monday, 23 May 2022	20133	485	2.41%
Wednesday, 6 April 2022	20714	441	2.13%
Friday, 6 May 2022	22104	439	1.99%
Wednesday, 8 June 2022	19190	296	1.54%
Monday, 16 May 2022	18642	251	1.35%
Thursday, 7 April 2022	20192	253	1.25%

This pattern of information was not readily available in consolidated form until requested for analysis in this report. This could point to a weakness in the implementation phase in that the importance of data collection, monitoring and trend analysis is not fully recognised.

## 6. COMMENTARY ON SPECIFIC AREAS OF IMPLEMENTATION

### a. New Vehicles and Driver Training

The twin track vehicles used to collect the bin and new bags had to be especially ordered in and drivers and loaders trained in their operations. The design of the vehicles was such that 35% of the capacity it was given over to paper and card and 65% of the capacity was given over to glass, plastic and mixed metals. The loading system is a commonly used bin lifting and tipping process which continued to work well for the blue bins.

The blue bags, however had to be first emptied into a separate blue bin on the paper and card side of the twin track truck which when full would then be tipped into the vehicle.

The manufacturers of the new twin track vehicles, Dennis Eagle, came to site to assist with short term mechanical glitches and to ensure drivers were trained. To enable the change to the fleet quickly, the existing contract with SFS was extended by 12 months and 12 vehicles were exchanged for 9 twin track vehicles (5 purchased and 4 leased).

The twin track vehicles are larger than the previous recycling collection vehicles and somewhat less manoeuvrable: this created some new driver training requirements but also led to a decision to use purple bins (rather than a blue bag) for paper and card in rural areas where the new twin track vehicles would struggle to attend properties accessed by narrow lanes.

### b. Round Review

The new service takes longer for an operative to attend each property because of the additional time used in emptying a blue bin and a blue bag. Two receptacles per property also suggested that operatives could only attend the recycling from one property at a time where previously they could possibly have managed two wheeled bins (from two properties) at once.

To assist in the design of new rounds, consultants from Biffa were commissioned to undertake a collection round review to design both efficient rounds and make recommendations on numbers of staff. Biffa suggested two additional crews with vehicles based on their national experience.

There is some debate as to whether the inputs used by Biffa reflected the workforce and capabilities of the Councils' staff, and any over estimation in efficiency (including tipping off time at the BTS) would have led to delays and missed collections. There is merit in revisiting the structure and pattern of rounds using data gathered on the DMR service since 1 June 2022 (assuming this is the start of a more stable period).

### c. Public Information Campaign

Residents were sent an individual letter in March 2022 explaining the move to a bin and bag system and the requirements to separate paper and card from other dry mixed recyclables. The letter was clear, personalised and for the most part understood. Social media supplemented the messaging.

Unfortunately, once problems started occurring, public responses on social media became hostile. A key issue was a press release on 25<sup>th</sup> April which made a public announcement that the procured blue bags were not of the correct size. Although this in itself should not have made a material difference under normal circumstances,

the fact that the press release came in the middle of a turbulent roll out did spark additional negative public comment.

#### **d. Staffing**

Although historically the Councils seem to have had good retention of staff, there is considerable pressure on the availability of HGV drivers. A national shortage and wage inflation led, at the point of implementation, to two drivers leaving the service.

This meant that there was a shortage of drivers for four weeks during a critical part of the implementation of the service roll out. A decision to increase the salaries of the driver workforce to the top of the council scale will have undoubtedly contributed to a better retention of drivers going forward.

A collection round was observed on 20th of June accompanied by a team supervisor and Lichfield's Operations Director. The crew were informative, informed and friendly, interacting well with each other, with me as a guest and with members of the public. In their comments to me, their view was that the initial problems had passed, and the round had settled down.

A further interaction with the crews occurred at the BTS where, having come off the exit weighbridge, the vehicle was reported as not being fully functional. Again, the crew were informative, informed and friendly. A replacement vehicle was requested and arrived within 15 minutes. When I arrived back at the depot some 20 minutes later I observed the malfunctioning vehicle entering the depot.

On the basis of my site visit and collection round attendance, I would conclude that the operational staff are motivated, attentive and informed.

#### **e. Management of the Implementation Programme**

The planned roll out benefitted from having a detailed implementation plan and risk register but I'm not clear that any assumptions (specified or implicit) were tested or scrutinised through the JWC.

A key consideration is whether – at the point when implementation began to go wrong – the programme was managed in an active way and mitigation actions followed as set out in the risk register. It is insufficient to simply create risk registers and implementation logs. In a materially changing environment, it is vital to have staff with experience of managing change and have both the governance and executive structures in place to support real time decision making and data to test assumptions.

By early May, it was clear that the implementation was not going well with the key factors creating problems being staff shortages, late delivery of bags, rounds taking longer because of uncertainty on routes, and the collection times themselves taking longer. In addition, growing pressure from social media criticising the Council for its poor roll out of the new service led on the 5th May to a member briefing meeting held at Lichfield to discuss the dual stream recycling implementation project. At that point (or soon after) the relevant cabinet member for the service resigned.

One of the challenges of implementation was that residents were concerned that the blue bag was not of sufficient size for them to put in all their paper and card. As mentioned above, the logic applied was probably that paper and card represented 1/3 of the dry mixed recyclables with glass and paper representing 2/3. On that logic an 81 litre bag (being c.1/3 of 240 litres) should have been sufficient for most residents.

Residents were allowed to request a second blue bag free of charge and the Council (LBC) was intending to issue these additional blue bags once the initial roll out had been completed. A key decision to stop rolling out

initial bags and concentrate on issuing second bags to those customers who already had their first bag may have contributed to a further delay in the wider roll out of the programme.

I have been informed that the initial bag roll out was complete by the 27th of May which meant a full service was available to customers from the 30th of May for both blue bags and purple bins. This excludes multi-occupancy properties where the roll out is not finalised.

#### **f. Data**

The service collects data but does not seem to regularly assemble and analyse data from rounds to inform past understanding and future services.

The exception is the number of missed property collections which is discussed above. The Bartec system is used to track collections and this data is extremely useful and should be a source for better trend analysis and service reviews.

For this report the percentage of properties with missed collections were tracked to see if this evidenced an initial deterioration and recovery of service. This information can be seen graphically in Figure 1. Although the data existed in Bartec, it had not been collated in this way by the service to show the pattern in Figure 1.

The implication of this is that although empirically it would seem that the service has gone through a hiatus while the new system was implemented, the service does not track (or perhaps interpret) the data to evidence trends and patterns which might lead to better informed – and earlier – decisions.

#### **g. Transportation And Tipping Off**

Two further issues escalated problems encountered as part of the implementation: the distance from the BTS, and the effectiveness of the BTS operated by Biffa in Aldridge, Walsall.

The first of these issues is as a result of the natural geography of Lichfield and Tamworth. The depot in Burntwood is at the western border of the two Councils' areas which means that when collections are being made in the east of Tamworth, a 37 mile round journey is necessary for vehicles to tip off at the BTS. As noted above if either side of the twin track vehicle becomes full then the vehicle must tip off before it can continue its round. This journey time would add to pressures on the teams and lost productivity.

A solution which may be investigated for the long term is the use of an additional transfer station or construction of a new transfer loading station for the aggregation of dry mixed recyclables. Given the large geographic area covered, the siting of such a transfer station needs careful consideration.

The second issue is the efficiency of the reception point (BTS) in Aldridge operated by Biffa. Full vehicles need to go to Aldridge and, under the previous comingled system, would have crossed a single weighbridge for inbound traffic and a single weighbridge for the outbound traffic. Recycling vehicles will thus be weighed in and weighed out with a single tip off of comingled recyclates.

The complexity of the new service is that because of the layout at the BTS, vehicles have to follow a more complex process: weighed in as full; tip off one of the sides of the twin track; depart the facility still containing the other half full; re-enter the BTS to be re-weighed; tip off the second half; and then weighed again on the way out.

Given the number of vehicles going through the BTS at any time this would lead to additional queuing and duplication of effort and a consequent increased in turnaround times. Turnaround times at the BTS were reported (to me in interviews) as being as high as 45 minutes during the initial implementation of this service.

A further point based on observations is that the weighbridge services are not modernised, relying on physical weighbridge tickets completed at the time of entry and departure with the delay as observed of circa 5 minutes to prepare each ticket. Modern weighbridge systems use technology to identify the vehicles, digital weighbridges to record the weighing data, and web services to collate and transmit that data on behalf the customers leading to a much more rapid turnaround time.

These tip-off delay risks issues were not on the risk register provided<sup>4</sup> but given the observations above, should have been foreseeable. A pilot scheme would have identified the potential addition delays at BTS.

On reletting the DMR contract it would be useful to ensure Biffa (or their successor) provide a modernised weighbridge system and/or add a third weighbridge onsite to enable more efficiency in weighing of tip off tonnage.

## 7. CONCLUSIONS AND RECOMMENDATIONS

### Lessons Learned

- a. It is not clear how the process through which a bag and bin option was developed. Not all meetings of the JWC are minuted (e.g. informal discussions), and no evidence has been provided showing the development of the bag and bin (Option 5) between the Frith Report 2019 and the JWC paper in January 2021. It is therefore recommended that all JWC meetings are minuted at least to the level of key decisions and key action points.
- b. No evidence has been provided as to why an 81 litre bag with dimensions of 45cm by 45cm by 40cm was selected. It is possible to determine that the relationship between the bag and the 240 litre blue bin is that of a 1/3 and 2/3 split which is in accordance with the Twin Tack collection vehicles and DMR figures supported by Table 6<sup>5</sup>. As the Councils seek to introduce new changes as part of the RWS (e.g., food waste), such an audit trail would be useful to ensure decisions are sound and planning is in place.
- c. A project team was established which met on 15 November, 31 January and 8 March. Minutes from these meetings show that the project team were working through the elements of the implementation plan. The delay in delivery of bags was clear by 8 March but it does not seem clear that the implementation plan was adjusted to take the emerging delay into account. References to the risk register in the meeting only referred to staffing risks and made no mention of delay in delivery of bags (which was identified as a red risk). Going forward a more active management of active risks should be built into all project implementation meetings. including acquiring and analysing data to test key assumptions.

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<sup>4</sup> Risk Register 22 June 2022

<sup>5</sup> It is also noted that a benefit of the bag chosen was that it could be placed inside the blue bin for collection.

- d. A decision was taken to fully implement the change to DMR collections in a short window of April to May 2022. It is unusual to have such a ‘big bang’ approach to major change, and even though Stafford had proven a similar system worked there, it is not apparent that a gap analysis was undertaken to identify potential variances in the proposed Lichfield and Tamworth service.
- e. Given the fact that twin track collection vehicles have to be tipped off when either side is full (a foreseeable risk to service), data should be collected to monitor DMR tonnages, compaction rates, and fill rates so adjustments can be made to rounds.
- f. Oversight and governance of the day-to-day roll out appears to be reactive which may be the result of the senior service team largely acting in self isolation and without clear escalation routes for when issues were emerging. The intervention by chief executives and portfolio holders were helpful but by the time this happened the situation was already not ideal and there was public backlash. It is recommended that through future periods of major changes in waste collection (for example the introduction of food waste and extended producer responsibility) greater oversight is given to implementation and mobilisation activities.
- g. A significant factor underpinning the issues which this service suffered in the roll out appears to be the lack of real time interpretable data. This is a major issue, and it is strongly recommended that a greater emphasis is placed on data management and interpretation and for this to be used in the prediction and management of foreseeable implementation issues.
- h. Although not related to this project directly the geographic area is a challenge and unnecessary avoidable delays are created by the travel times between the Burntwood depot and the East of the collection region (Tamworth). It is recommended that consideration is given to procuring a transfer loading station in the East of the geographic region to allow local tip off of DMR which can then be bulked up and taken to the BTS. This would also enable the waste streams to be delivered separately to the BTS thus avoiding the multiple weighing in issue (although it could instead move the problem to the new transfer station).
- i. Although only partly related to this study, the geographic position of the BTS in Walsall is some considerable distance away from the collection area and this combined with somewhat old fashioned practices at the BTS (most notably the absence of digital weighbridges and the need to cycle twice round the weighbridges to tip off) creates unnecessary delay. It is recommended that, at the next contracting opportunity, Councils insist that the BTS receives investment to modernise (through the contractor) and if not, alternative arrangements are found.
- j. The introduction of mandated food waste collection is a foreseeable, forthcoming and major upheaval for waste collection authorities. To ensure a safe roll out of this major change, the Staffordshire councils should form a working group with the County Council to explore the implementation of food waste collections, education of consumers in sorting compatible waste into the new food waste container, the provision of vehicles, arrangements for the collection and disposal of food waste, and the economics and operational impact of such a change.

## Conclusion and Key Recommendations

The implementation of the new dual-stream recycling service suffered from a number of concurrent unfortunate events. Combined together these events led to a public perception of a poor service, initial hostility to a new method of collecting recycling, and a period of incomplete collections.

Many – but not all – of the potential problems had been foreseen through the Frith Report and subsequent risk registers and implementation plans maintained by the service team. However, as ever with such monitoring, the key test is the service reaction when things do go wrong and how emerging issues are managed and resolved.

In early April 2022, when it started to become apparent that there were problems with the service, it took intervention by senior management and political leaders to make decisions, effectively instructing the service leads to do things differently. The issue of whether the day-to-day service leads had the requisite skills and confidence to actively lead the implementation programme is therefore a consideration, as is how key decisions were taken and by whom.

Looking ahead the Councils have to prepare for major changes driven by national waste policy through the RWS and more local challenges as the service is updated and modernised.

1. National policy changes
  - Separate collection of food waste which will entail a further roll out of a separate container and collection regime;
  - Extended producer responsibility which will change the composition of recycled waste collected;
  - An increasing emphasis on increasing recycling levels and reducing contamination; and
  - Potential tightening of export options as the UK seeks to reduce waste arisings.
2. Local service challenges:
  - The dual stream DMR collection is not yet rolled out to multi-occupancy properties;
  - Round reviews and staffing levels which remain above budget as a result of the DMR changes; and
  - Staffing recruitment and retention as there is still pressure on HGV driver availability

To be ready to plan and safely implement these changes, three key recommendations emerge:

1. Improve scrutiny of the joint waste service, using scenario planning, pilots and progressive implementation of major change;
2. Ensure the service team has sufficient skills, competences and confidence to implement major change programmes going forward; and
3. Increase the acquisition, use and interpretation of service data, including an increased focus on trend analysis and operational analytics.

8. ANNEXES



*Annex 1: Excerpt from Update to JWSC January 2021 (Appendix B, Detailed Options Assessment)*

Option 5 – Introduce dual stream collections using a bag for paper/card and retain responsibility for disposal

Description– Residents would present glass/cans/plastic in the existing blue bin and card/paper in a 70 litre hessian bag. The bin and bag would be collected together every fortnight using a split bodied refuse truck. This is except for the hard to reach properties and they would be provided with an additional bin for card/paper with collections taking place on alternate fortnights using a small refuse truck. The Districts would retain responsibility for the disposal of the dry recyclates.

Strengths	<ul style="list-style-type: none"> <li>• The Districts are likely to receive bids because the recycling would be collected as two separate streams.</li> <li>• Separating the dry recyclates into two streams improves quality and also decreases levels of contamination. In particular it helps to keep the paper and card clean which is a requirement of the re-processors. In a single bin the card and paper gets contaminated by leakage from the other materials and shards of broken glass.</li> <li>• Significantly lower gate fees than commingled collections.</li> <li>• The cost of buying bags is considerably lower than for bins.</li> <li>• The bag would be more popular than a bin especially for those residents living in smaller properties.</li> <li>• The bag would provide residents with extra recycling capacity (70 litres) which can be particularly useful at peak periods such as Christmas.</li> <li>• The Districts would continue to receive both Recycling Credits from the County Council and income from the sale of materials.</li> <li>• The service refresh should improve participation and compliance with service rules.</li> <li>• The number of rejected loads should be lower.</li> <li>• Higher income from the sale of materials because of improvements in quality and contamination levels.</li> <li>• Benefit from any upturn in market conditions.</li> <li>• The procurement exercise would evaluate the impact of travelling to all the tipping locations proposed by the bidders.</li> </ul>
Weaknesses	<ul style="list-style-type: none"> <li>• Lower collection productivity because the crews would have to empty both a bin and a bag at each property. As a consequence extra crews would be required to provide the recycling service resulting in higher operational costs.</li> <li>• Increase in vehicle lease costs because split bodied trucks are needed to undertake the collection of both waste streams at the same time. Split bodied trucks are more expensive to purchase and maintain than single bodied trucks. They also have a lower payload and need to be tipped off more often.</li> <li>• Split bodied trucks use more fuel than single bodied trucks.</li> <li>• Cost of purchasing and delivering the hessian bag bin. The estimated cost is £180k.</li> <li>• The bags have a much shorter life than bins and tend to go missing because they can be blown away after emptying and may be taken by residents when they move house. Therefore the replacement rate is much higher than for bins and there will additional delivery costs.</li> </ul>

	<ul style="list-style-type: none"> <li>• The bag is not completely waterproof causing the paper and card to get wet.</li> <li>• The use of the bag is more likely to cause litter.</li> <li>• The maximum level of permitted contamination in the paper/card is likely to be approximately 2% which would be tight to achieve.</li> <li>• The sorting of waste into two waste streams may cause some public dissatisfaction.</li> <li>• The use of bags has manual handling implications.</li> <li>• A full scale communication campaign would be required because of the service change.</li> <li>• The Districts would still be responsible for the gate fee.</li> <li>• The District has to pay for the cost of rejected loads.</li> <li>• Time and expense occurred in monitoring and procuring the contract</li> </ul>
Opportunities	<ul style="list-style-type: none"> <li>• The Extended Producer Responsibility scheme proposed in the National Waste Strategy may financially incentivise dual stream collections by rewarding Districts for achieving higher quality levels.</li> <li>• The Districts may gain greater support from both the Extended Producer Responsibility scheme and the County Council if it retains responsibility for disposal.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>• The Districts may not get many bids which would limit competition. This because of a lack of local processors and the Districts do not have the benefit of a transfer station.</li> <li>• The tipping location may be further than the current facility being used which would increase operational costs, despite the procurement exercise evaluating the impact of travelling distance.</li> <li>• The income received from the sale of materials is vulnerable to market volatility.</li> <li>• The proposed deposit return scheme could have an impact on infrastructure requirements, tonnage levels and the income from the sale of materials</li> <li>• Risk of contractual disputes with the provider.</li> <li>• The paper and card is at risk of rejection if it gets too wet in the bag.</li> </ul>

Annex 2 – Summary Original Options Appraisal (Used in 2021 for various meetings, including Cabinet Meetings in June and July 2021)

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Methodology	Commingled	Commingled	Dual Stream	Dual Stream	Dual Stream	Dual Stream
Container	Single Bin	Single Bin	Two Bins	Two Bins	Bin and Bag	Bin and Bag
Vehicle	Single body	Single body	Single body	Single body	Split body	Split body
Frequency	Fortnightly	Fortnightly	Alternate Four Weekly	Alternate Four Weekly	Fortnightly	Fortnightly
Disposal Responsibility	District	County Council	District	County Council	District	County Council
Strengths	<ul style="list-style-type: none"> <li>• Simple methodology</li> <li>• Popular with residents</li> <li>• High collection productivity</li> <li>• No extra crews required</li> <li>• Lower vehicle costs</li> <li>• Recycling credit and income from materials</li> <li>• No additional containers</li> <li>• Communication campaign not required</li> <li>• Less manual handling implications</li> <li>• Bin only- less litter and keeps materials dry</li> </ul>	<ul style="list-style-type: none"> <li>• Simple methodology</li> <li>• Popular with residents</li> <li>• High collection productivity</li> <li>• No extra crew required</li> <li>• Lower vehicle costs</li> <li>• No gate fees</li> <li>• No additional containers</li> <li>• Less manual handling implications</li> <li>• Bin only- less litter and keeps materials dry</li> <li>• Monitoring and contact issues dealt by County</li> </ul>	<ul style="list-style-type: none"> <li>• Higher material quality as card/paper separate</li> <li>• More income</li> <li>• High collection productivity</li> <li>• No extra crews required</li> <li>• Lower gate fees</li> <li>• Recycling credit and income from materials</li> <li>• Lower vehicle costs</li> <li>• Service refresh to boost recycling</li> <li>• Less rejections</li> <li>• Less manual handling implications</li> <li>• Bin only- less litter and keeps materials dry</li> </ul>	<ul style="list-style-type: none"> <li>• Higher material quality as paper/card separate</li> <li>• More income</li> <li>• High collection productivity</li> <li>• No extra crews required</li> <li>• No gate fees</li> <li>• Lower vehicle costs</li> <li>• Service refresh to boost recycling</li> <li>• Less rejections</li> <li>• Less manual handling implications</li> <li>• Bin only- less litter and keeps materials dry</li> <li>• Monitoring and contact issues dealt by County</li> </ul>	<ul style="list-style-type: none"> <li>• Higher material quality as card/paper separate</li> <li>• More income</li> <li>• Lower gate fees</li> <li>• Recycling credit and income from materials</li> <li>• Bags cheaper and extra recycling capacity</li> <li>• Less storage issues</li> <li>• Service refresh to boost recycling</li> <li>• Less rejections</li> </ul>	<ul style="list-style-type: none"> <li>• Higher material quality as card/paper separate</li> <li>• More income</li> <li>• No gate fees</li> <li>• Bags cheaper and extra recycling capacity</li> <li>• Less storage issues</li> <li>• Service refresh to boost recycling</li> <li>• Monitoring and contact issues dealt by County</li> </ul>
Weakness	<ul style="list-style-type: none"> <li>• Very high gate fees</li> <li>• Lower material quality and less income</li> <li>• Cost of rejected loads</li> <li>• Time and expense of monitoring contract</li> <li>• No additional capacity</li> <li>• No service refresh</li> </ul>	<ul style="list-style-type: none"> <li>• No income from Recycling Credit and materials.</li> <li>• Lower material quality</li> <li>• No additional capacity</li> <li>• No service refresh</li> <li>• Miss out on any EPR and County Council incentives for retaining disposal.</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of second bin</li> <li>• Storage of second bin</li> <li>• Public dissatisfaction with change.</li> <li>• No additional capacity as four week gap.</li> <li>• Time and expense of monitoring contract.</li> <li>• Communication campaign required.</li> </ul>	<ul style="list-style-type: none"> <li>• No income from Recycling Credit and materials</li> <li>• Cost of second bin</li> <li>• Storage of second bin</li> <li>• Public dissatisfaction with change.</li> <li>• No additional capacity as four week gap</li> <li>• Communication campaign required.</li> </ul>	<ul style="list-style-type: none"> <li>• Lower collection productivity</li> <li>• Extra crews required</li> <li>• Higher vehicle costs</li> <li>• Public dissatisfaction with change.</li> <li>• Cost of bag/short life</li> <li>• Litter issues with bag as short life</li> <li>• Manual handling issues</li> <li>• Time and expense of monitoring contract.</li> <li>• Communication campaign required.</li> </ul>	<ul style="list-style-type: none"> <li>• No income from Recycling Credit and materials</li> <li>• Extra crews required</li> <li>• Lower collection productivity</li> <li>• Higher vehicle costs</li> <li>• Public dissatisfaction with change.</li> <li>• Cost of bag/short life</li> <li>• Litter issues with bag</li> <li>• Manual handling issues</li> <li>• Communication campaign required.</li> </ul>

Opportunities	<ul style="list-style-type: none"> <li>EPR and County may incentivise retaining disposal.</li> </ul>	<ul style="list-style-type: none"> <li>County may take on responsibility for rejected loads</li> </ul>	<ul style="list-style-type: none"> <li>EPR incentive for better quality as no commingling</li> <li>EPR and County may incentivise retaining disposal.</li> </ul>	<ul style="list-style-type: none"> <li>EPR incentive for better quality as no commingling</li> <li>County may take on responsibility for rejected loads.</li> </ul>	<ul style="list-style-type: none"> <li>EPR incentive for better quality as no commingling</li> <li>EPR and County may incentivise retaining disposal.</li> </ul>	<ul style="list-style-type: none"> <li>EPR incentive for better quality as no commingling</li> <li>County may take on responsibility for rejected loads.</li> </ul>
Threats	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Market volatility affecting income</li> <li>Increase in rejections</li> <li>Deposit return scheme</li> <li>Contractual disputes</li> <li>EPR payments may be lower for commingling</li> </ul>	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Increase in rejections</li> <li>Deposit return scheme</li> <li>EPR payments may be lower for commingling and transferring disposal responsibility.</li> </ul>	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Market volatility affecting income</li> <li>Deposit return scheme</li> <li>Contractual disputes</li> <li>National Policy may limit gap between collections to two weeks.</li> </ul>	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Deposit return scheme</li> <li>EPR payments may be lower for transferring disposal responsibility</li> <li>National Policy may limit gap between collections to two weeks.</li> </ul>	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Market volatility affecting income</li> <li>Deposit return scheme</li> <li>Contractual disputes</li> <li>Risk of rejection if paper/card gets wet in bag</li> </ul>	<ul style="list-style-type: none"> <li>Increased distance to tipping locations.</li> <li>Deposit return scheme</li> <li>EPR payments may be lower for transferring disposal responsibility</li> <li>Risk of rejection if paper/card gets wet in bag</li> </ul>

*Annex 3: List of interviewees & Key data sources*

*Interviews:*

Councillor Doug Pullen, Leader, Lichfield District Council

Councillor Jeremy Oates, Leader, Tamworth Borough Council

Councillor Elizabeth Little, Cabinet Member for Waste and Recycling, Lichfield District Council

Councillor Stephen Doyle, Portfolio Holder, Tamworth Borough Council

Simon Fletcher, Chief Executive Officer, Lichfield District Council

Andrew Barrett, Chief Executive Officer, Tamworth Borough Council

Ben Percival, Operations Manager, Lichfield District Council

Nigel Harris, General Manager, Joint Waste Service

Darren Phillips, Operations Manager, Joint Waste Service

Victoria Woodhouse, Customer Relations and Performance Officer, Joint Waste Service

Various crew members on collection round (20 June 2022)

*Data Sources:*

Councils Cabinet Reports dealing with Dry Mixed Recyclables (2021)

I&G Scrutiny Meeting (24 February 2021)

Minutes of the Joint Waste Committee (Jan 2021 – May 2022)

DMR Briefing notes to Lichfield Leadership Team (June 2021)

DMR Briefing notes to Lichfield Cabinet (July 2021)

YPO Procurement Pack (ITT) for Blue Bag procurement including Specification

Contract with Cromwell Polythene Ltd for Blue Bags

Various other data provided (spreadsheets, day reports, presentations)