

## North Yorkshire County Council

### Business and Environmental Services

#### Executive Members

23 September 2022

#### Refuse Collection Vehicle Purchase

#### Report of the Assistant Director – Transport, Environment and Countryside Services

##### **1.0 Purpose of Report**

- 1.1 To seek approval from the Corporate Director Business and Environmental Services (BES) in consultation with Executive members to proceed with the procurement of up to nine Refuse Collection Vehicles (RCV) for North Yorkshire Council

##### **2.0 Background**

- 2.1 Richmondshire District Council currently operate three 12t kerbside recycling vehicles, five 26t narrow chassis collection vehicles (RCVs) and one 16t collection vehicle. The narrow chassis and lower weight vehicles are required due to tight access situations.
- 2.2 The current vehicles are hired with maintenance from Specialist Fleet Services , current annual budget for the 9 vehicles is £434,100 (See table 4.1)
- 2.3 There are some operational issues caused by maintenance problems with the RCVs but these are not critical and it is manageable until the expected delivery of the new vehicles.
- 2.4 There are severe maintenance issues with the Kerbside vehicles that are causing operational service delivery problems. These issues are managed locally but are a challenge for local staff and have affected service delivery and costs.
- 2.5 During the period 1 January 2022 to 31 July 2022 kerbside vehicles have been VOR for a period of 58 days in total, this equates to 12% downtime. The vehicles are becoming less and less reliable and downtime is increasing. The trend is likely to continue as the fleet ages and becomes less reliable.
- 2.6 When breakdowns occur the small fleet of kerbsiders has very little resilience. Breakdowns are managed by comingling recycle via refuse collection vehicles. During the period January 2022 to July 2022 breakdowns have resulted in a loss of income and increased gate fees estimated to be £25,000.
- 2.7 The future method of collection is being reviewed across the new authority. Feasibility work is being completed with WRAP over the next 6-9 months to help inform a decision about a harmonised collection service in the future.

- 2.8 Until an informed decision can be made about the future recycling collection method across the County, which will in turn determine the appropriate vehicles to procure, interim and medium-term arrangements are required to avoid service disruption of the waste and recycling services.
- 2.9 The proposed interim solution is to allow the de-fleeting of two of the unreliable kerbside vehicles and five of the 26 Tonne RCV's hire maintenance agreements in March 2023. The vehicles will be replaced on a temporary basis by transferring five RCV's and two twin pack vehicles from Scarborough and Harrogate, due to be replaced by Scarborough and Harrogate in February/March 2023. One kerbside vehicle and the 16Tonne RCV will continue on the current hire maintenance arrangements unless additional replacement vehicles for these vehicles can be sourced in the interim.
- 2.10 The interim solution will result in a reduction in lease costs, an estimated net saving of £162,000 is anticipated between April 2023 and December 2023 the anticipated delivery date for the new vehicles. However, due to the age of the vehicles it is anticipated that maintenance costs will increase significantly and hire vehicles may need to be sourced to ensure service delivery. These will impact on any net savings.
- 2.11 There are two proposed options for replacement of the three kerbside vehicles in the medium term.

#### **Option 1 - Replace the 3 kerbside vehicles on a like for like basis**

##### Pro's

- Replacement of the kerbside vehicles on a like for like basis will see no change in the current collection methods in Richmondshire.
- No disruption to services, residents recycling services will remain unchanged
- Collection income will remain the same
- Textiles will continue to be collected at the kerbside

##### Cons

- Lack of fleet versatility. In the event of breakdowns, kerbside collection vehicles cannot be replaced with RCV's and vice versa, this leads to increased vehicle down times, increased costs and service disruption.
- Replacing kerbside vehicles on a like for like basis would result in kerbside sort collection methods continuing until 2028/2029 (five-year life expectancy of the vehicles), unless vehicles were disposed of prior to their five-year life cycle however, this would have budget implications.
- Kerbside sort collections increase manual handling and labour intensity in comparison to twin streamed/co-mingled methods. Continuing with the kerbside sort collection for a further five years will be extremely unpopular with staff and have a negative impact on staff morale and retention.

#### **Option 2 - Replace the 3 kerbside vehicles with 3 x 26 tonne twin pack vehicles**

##### Pro's

- If the twin stream collection method is not the preferred choice across the new authority twin pack vehicles can be utilized as replacement vehicles elsewhere in NYC. Unlike kerbside collection vehicles, twin pack vehicles can be redeployed for the collection of twin stream co-mingled recycling, refuse and garden waste collections across NYC, as and when vehicles require replacement.
- The versatility of the twin pack vehicles reduces disruption to services when breakdowns occur.

- Two stream co-mingled collections via a twin packer vehicle would result in a reduction in sorting by the householder
- Containers for collection of recyclables will remain the same
- Collection days will remain largely the same.
- Reduced collection costs compared to kerbside sort. Collections via a twin pack vehicle are more efficient, payloads are greater which reduces travel time, mileage and trips to tip.
- Reduction in manual handling for collection crews
- Increase in staff morale and retention

#### Con's

- A change in collection method have some negative impact on residents
  - Textiles will no longer be recycled at the kerbside (Textile collection banks will remain at Bring banks sites across the district) 6.5 tonnes of textiles were collected at the kerbside in 2021-22.
  - Temporary disruption to services - collection days and rounds will be optimized due to the increased collection capacity of the twin pack vehicles. This may result in some resident's collection days changing; however, it is anticipated any changes to collection days will be minimal.
- Higher fuel costs - Twin pack vehicles do fewer MPG in comparison to smaller kerbside collection vehicles, optimization of rounds will mitigate some increased fuel costs.
- Higher sorting costs and a lower income for materials would mean overall net costs will be higher than current collection methods.

2.12 The recommended option is to replace the 3 x kerbside vehicles with 3 x 26 tonne twin pack vehicles. The proposal will result in minimum disruption to services, improve staff retention and morale and provide much needed fleet versatility and resilience.

2.13 Residual waste will always be collected in RCVs, therefore the proposal is to replace the 6 x RCVs on a like for like basis.

2.14 The expected delivery dates for vehicles ordered after an eight week procurement process is December 2023.

2.15 The leases on the current RCVs are to be extended until March 2023.

2.16 The current vehicles are maintained at Coundon a distance of 28 miles from their operating centre at a cost of £9248.75 per month for all vehicles or £1027 per vehicle per month. This cost is part of the lease cost. In-house maintenance could be provided at NY Highways Ltd (Northallerton) at a distance of 16 miles from their operating centre at an incremental cost of £25 per labour hour plus parts costs. To facilitate the maintenance of vehicles at NY Highways the capacity of the Northallerton workshop would need to be increased by the employment of additional technicians and possibly extended opening hours. The procurement process will guide maintenance options depending upon which method offers best value. This may mean a reduction in the stated maintenance costs in 4.1 that are based on £40 per hour, There is not visibility on the parts and labour proportions.

### 3.0 Sustainability

3.1 Alternative fuel vehicles have been considered but discounted but steps are being taken to engage with alternative fuel vehicle suppliers for future procurements.

3.2 Hydrogen Hybrid Electric Vehicles are not currently feasible due to the lack of fuelling infrastructure and chassis.

3.3 Electric vehicles have also been considered and discounted for a number of reasons.

- The range of pure EV vehicles are insufficient to deliver a full collection round on a single battery charge.
- A lack of charging infrastructure, providing the charging infrastructure would require significant capital investment.
- Procurement of eRCV's would require a significant increase in capital costs.
- Concerns remain regarding the reliability and lifespan of the vehicles, particularly around the lifespan of the battery, if batteries require replacement prior to the end of the vehicles expected life, there will be a large additional cost.
- The end of life value of the vehicle is unknown and could lead to higher lifetime costs.

3.4 A Climate Impact Assessment is in Appendix A.

#### 4.0 Estimated requirements and financial implications

##### 4.1 Vehicle Costs

	Current Annual Budget	Option 1 Annual purchase cost	Option 2 Annual purchase cost
Vehicle Budget	£355,100	£286,400	£310,400
R&M not covered by lease	£79,000	£142,200	£142,200
<i>Total</i>	<i>£434,100</i>	<i>£428,600</i>	<i>£452,600</i>
<b>Budget impact (Saving (-) / Shortfall (+))</b>		<b>-£5,500</b>	<b>+£18,500</b>

4.2 The maintenance costs included in the annual cost in option 1 and 2 are an estimate based on Scarborough Borough Council information.

4.3 The vehicles will be funded from existing revenue; however, there is a £18,500 revenue shortfall for option 2 or a £5,500 saving for option 1.

4.4 Lease and purchase options can be reviewed as part of the procurement process.

##### 4.5 Operational Costs

	Current Annual Budget	Option 1 Annual Cost	Option 2 Annual Cost
Gate Fees	£99,471	£77,694	£152,208
Income (subject to variation)	-£208,000	-£218,784	-£205,034
Additional Fuel Costs	n/a	0	£21,000
<i>Total</i>	<i>-£108,529</i>	<i>-£141,090</i>	<i>-£31,826</i>
<b>Budget impact (Saving (-) / Shortfall (+))</b>		<b>-£32,561</b>	<b>+£76,703</b>

4.6 Option 2 could produce a cost pressure of £76,703 compared to the budget, due to higher gate fees and greater fuel consumption of twin pack vehicles. It should also be noted that recyclate markets are volatile and prices fluctuate. For instance, the current forecast revenue for kerbside recyclate in 2022/23 is -£330,000, exceeding the budget of -£208,000.

4.7 In conclusion, changing to a twin stream collection method would see an overall budget impact of £18,500 additional vehicle costs and £76,703 additional operational costs. This is regarded as the worst case scenario, as difficult to quantify savings have not been accounted for including one off reduced lease costs, potential to maintain the waste fleet in-house, and forecast inflated recyclate revenue. If this is not the case, the additional costs of £18,500 would need to be from existing budget; however it should be noted that through LGR, the fleet management policy is being review which in turn will determine future fleet costs and budget requirements. Whilst the proposal could result in a modest additional cost, the benefits are that twin pack vehicles will be utilised once a harmonised approach is agreed, disruption to residents is kept to a minimum, reliability and public perception will improve, and crew manual handling is ameliorated.

## **5.0 Proposed Replacement Procedure**

5.1 Vehicle utilisation will be discussed with the requesting service prior to procurement. Telematics information will be used to review the justification for new and replacement vehicle(s).

5.2 All vehicle specifications will be agreed with the requesting service prior to procurement. The vehicles will normally be of a basic standard specification meeting the minimum criteria to undertake the duties required.

5.3 The specification of general vehicles will be agreed with the service in advance of the tender process. The assessment will include the cost of the vehicle and the fuel efficiency for the estimated mileage. The assessment will include a decision on best value regarding lease, hire, purchase, in-house or external maintenance.

## **6.0 Legal Implications**

6.1 The procurement method proposed will be agreed with Legal and Democratic Services.

## **7.0 Equalities Implications**

7.1 Due to the large number of vehicles involved, along with the number of employees who will be using these vehicles there may be a requirement to apply appropriate reasonable adjustments for the use of vehicles and this will be identified and addressed by the service upon order and receipt of the vehicle on a vehicle-by-vehicle basis.

7.2 An Equality Impact Screening Form is in Appendix B.

## **8.0 Recommendation**

8.1 It is recommended that The Corporate Director – BES, in consultation with Executive members, agree to authorise the commencement of a procurement process to purchase 5 x 26 Tonne RCV's, 1 x 18 Tonne RCV and 3 X 26 Tonne Twin Pack vehicles.

MICHEAL LEAH

Assistant Director Travel, Environmental and Countryside Services

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Amanda Dyson, Waste and Street Scene Manager, Richmondshire  
District Council

Background documents: None



## Climate change impact assessment

The purpose of this assessment is to help us understand the likely impacts of our decisions on the environment of North Yorkshire and on our aspiration to achieve net carbon neutrality by 2030, or as close to that date as possible. The intention is to mitigate negative effects and identify projects which will have positive effects.

This document should be completed in consultation with the supporting guidance. The final document will be published as part of the decision making process and should be written in Plain English.

If you have any additional queries which are not covered by the guidance please email [climatechange@northyorks.gov.uk](mailto:climatechange@northyorks.gov.uk)

### Version 2: amended 11 August 2021

**Please note: You may not need to undertake this assessment if your proposal will be subject to any of the following:**

Planning Permission  
Environmental Impact Assessment  
Strategic Environmental Assessment

However, you will still need to summarise your findings in the summary section of the form below.

Please contact [climatechange@northyorks.gov.uk](mailto:climatechange@northyorks.gov.uk) for advice.

Title of proposal	Vehicle Replacement of Refuse and Recycling Collection Vehicles
Brief description of proposal	Vehicle Replacement to purchased 1 x 18 Tonne RCV and 5 x 26 Tonne RCV's and 3 x 26 Tonne RCV's
Directorate	TBC
Service area	Waste
Lead officer	Andrew Sharpin
Names and roles of other people involved in carrying out the impact assessment	Amanda Dyson Ollie Braithwaite
Date impact assessment started	15.07.22

**Options appraisal**

Were any other options considered in trying to achieve the aim of this project? If so, please give brief details and explain why alternative options were not progressed.

Refuse collection operations account for a significant portion of our carbon and pollution emissions therefore consideration needs to be given to electric vehicles. The considerations are:-

- *Capital cost.* The capital cost of eRCVs is greater than a diesel. Even if lower operating costs offset this, it adds to the perceived risk of an eRCV solution.
- *Range.* While manufacturers are claiming ranges that would meet the needs of some of our rounds, electric RCV's can potentially achieve operational ranges of around 100 miles and between 6 to 9 hours of service these ranges would be reduced in Richmondshire due to the geography of the area. Range is dependent on the operational environment (as it does with diesel vehicles) the terrain in Richmondshire is predominantly hilly which will affect the range of the vehicle. We need to be cautious prior to adopting new technology in advance of extensive testing. We would need to be confident that a single battery charge could deliver a full collection round in a non-urban setting.
- *Reliability.* Although the drivetrain of an electric vehicle has fewer moving parts than a diesel vehicle, there are concerns about the reliability of the technology – particularly around the lifespan of the battery. If it turns out that batteries need to be replaced before the end of the vehicle's expected life, this would be a large additional cost.
- *Resilience.* Vehicles need to be available every day and we have to cover contingencies, such as what happens in the event of an overnight power outage, meaning we would be unable to run our collection services.
- *Charging infrastructure.* Charging a full fleet of eRCVs would require significant power infrastructure at the depot, including charging stations and this would be a significant capital project.
- *Maintenance.* Maintenance is critical to any RCV. While many parts (hydraulics, lifts etc) will be common, regardless of the powertrain, there is a cost in upskilling maintenance teams to be able to service electric vehicles.
- *End of life value.* As no eRCV has yet reached its 'end of life', one has never been sold or reconditioned. This forces a risk-based price on the sale of the vehicle, which again leads to higher assumed lifetime costs.

**What impact will this proposal have on council budgets? Will it be cost neutral, have increased cost or reduce costs?**

Purchasing new vehicles will increase budgets costs due to the rise in the cost of new vehicles since the last procurement. Currently vehicles are leased, costs equate to a £243,043.00 per annum for the hire and maintenance cost for 9 collection vehicles. The estimated projected costs for the replacement of these vehicles equates to an estimated £1.98 million

<p>How will this proposal impact on the environment?</p> <p>N.B. There may be short term negative impact and longer term positive impact. Please include all potential impacts over the lifetime of a project and provide an explanation.</p>	<p><b>Positive impact</b> (Place a X in the box below where</p>	<p><b>No impact</b> (Place a X in the box below where</p>	<p><b>Negative impact</b> (Place a X in the box below where</p>	<p>Explain why will it have this effect and over what timescale?</p> <p>Where possible/relevant please include:</p> <ul style="list-style-type: none"> <li>• Changes over and above business as usual</li> <li>• Evidence or measurement of effect</li> <li>• Figures for CO<sub>2</sub>e</li> <li>• Links to relevant documents</li> </ul>	<p>Explain how you plan to mitigate any negative impacts.</p>	<p>Explain how you plan to improve any positive outcomes as far as possible.</p>	
<p>Minimise <b>greenhouse gas emissions</b> e.g. reducing emissions from travel, increasing energy efficiencies etc.</p>	<p>Emissions from travel</p>	<p>x</p>	<p>x</p>		<p>Potential decrease due to new more efficient vehicles</p>		<p>Specification of electric bin lifts will reduce fuel usage and noise pollution</p>
	<p>Emissions from construction</p>		<p>x</p>		<p>N/A</p>		
	<p>Emissions from running of buildings</p>		<p>x</p>		<p>N/A</p>		
	<p>Emissions from data storage</p>		<p>x</p>		<p>N/A</p>		

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Other			x	Purchase of new vehicles ties us into fossil fuel usage	HVO trials will be ongoing when costs become sustainable and issues with the supply chain are resolved.	
Minimise <b>waste</b> : Reduce, reuse, recycle and compost e.g. reducing use of single use plastic		x		Current vehicles are not end of life and will be resold and reused.		
Reduce <b>water</b> consumption		x				
Minimise <b>pollution</b> (including air, land, water, light and noise)	x			New vehicles have tendency to reduce particulates and NOx		
Ensure <b>resilience</b> to the effects of climate change e.g. reducing flood risk, mitigating effects of drier, hotter summers		x				

<p>How will this proposal impact on the environment?</p> <p>N.B. There may be short term negative impact and longer term positive impact. Please include all potential impacts over the lifetime of a project and provide an explanation.</p>	<p><b>Positive impact</b> (Place a X in the box below where</p>	<p><b>No impact</b> (Place a X in the box below where</p>	<p><b>Negative impact</b> (Place a X in the box below where</p>	<p>Explain why will it have this effect and over what timescale?</p> <p>Where possible/relevant please include:</p> <ul style="list-style-type: none"> <li>• Changes over and above business as usual</li> <li>• Evidence or measurement of effect</li> <li>• Figures for CO<sub>2</sub>e</li> <li>• Links to relevant documents</li> </ul>	<p>Explain how you plan to mitigate any negative impacts.</p>	<p>Explain how you plan to improve any positive outcomes as far as possible.</p>
<p>Enhance <b>conservation</b> and wildlife</p>		x				
<p>Safeguard the distinctive characteristics, features and special qualities of <b>North Yorkshire's landscape</b></p>		x				
<p>Other (please state below)</p>		x				

**Are there any recognised good practice environmental standards in relation to this proposal?** If so, please detail how this proposal meets those standards.

Use of eRCVs to reduce emissions however, alternative fuels could also be considered to reduce emissions.

HVO in future Biofuels are considered to be less polluting than the fossil fuel equivalents and for this reason would be an action towards meeting the councils net-zero ambitions.

The easiest fuel available to switch the fleet over too would be HVO. HVO stands for Hydrotreated Vegetable Oil, and it is chemically similar to fossil fuel diesel. This means that HVO can be considered a drop-in for diesel with no requirements to alter storage or vehicles. All major truck OEMs approve 100% HVO use in their vehicles if it meets a certain standard.

For HVO the Greenhouse Gas (GHG) emissions savings compared to diesel are considered between 80-90%. This would reduce the emissions of the fleet.

Whilst HVO is less polluting and can be produced from virgin vegetable oils (including palm oil) or waste materials. This underlines the importance to have a sustainable source of HVO to ensure sure the fuel being supplied isn't having detrimental effects in its production.

**Summary** Summarise the findings of your impact assessment, including impacts, the recommendation in relation to addressing impacts, including any legal advice, and next steps. This summary should be used as part of the report to the decision maker.

Whilst the use of eRCVs is recognised currently there is no charging infrastructure in place, there are increased capital costs, they are not considered reliable enough and are unsuitable for the rurality and geography within Richmondshire at the present time.

HVO is currently more expensive than diesel. In a trial by Selby District Council the cost of HVO was between 5.18p & 35.00p/l (pence per litre) extra. The maximum price quoted by Selby was 165.26p/l of HVO. The price quoted for Richmondshire when enquired in April was 178p/l for HVO with a minimum order of 10,000 litres. HVO has remained higher than diesel and these increased costs are thought to be due to the Ukraine crisis and increased interest in the fuel as a cleaner alternative. Therefore, until the issues with the supply chain and the volatility of the market are resolved it is proposed to continue using diesel fuel in the short term due.

**Sign off section**

This climate change impact assessment was completed by:

<b>Name</b>	Amanda Dyson
<b>Job title</b>	Waste & Street Scene Manager
<b>Service area</b>	Waste & Street Scene
<b>Directorate</b>	Waste & Street Scene
<b>Signature</b>	
<b>Completion date</b>	14.07.22

**Authorised by relevant Assistant Director (signature):**

**Date:**

<b>Initial equality impact assessment screening form</b>			
<b>This form records an equality screening process to determine the relevance of equality to a proposal, and a decision whether or not a full EIA would be appropriate or proportionate.</b>			
<b>Directorate</b>	BES		
<b>Service area</b>	IPT		
<b>Proposal being screened</b>	Refuse Collection Vehicle Procurement		
<b>Officer(s) carrying out screening</b>			
<b>What are you proposing to do?</b>	Replace existing vehicles		
<b>Why are you proposing this? What are the desired outcomes?</b>	The vehicles are coming to the end of their lease terms and/or are no longer economically best value.		
<b>Does the proposal involve a significant commitment or removal of resources? Please give details.</b>	Significant use of funding however the commitment remains similar.		
<b>Impact on people with any of the following protected characteristics as defined by the Equality Act 2010, or NYCC's additional agreed characteristics</b>			
As part of this assessment, please consider the following questions:			
<ul style="list-style-type: none"> <li>To what extent is this service used by particular groups of people with protected characteristics?</li> <li>Does the proposal relate to functions that previous consultation has identified as important?</li> <li>Do different groups have different needs or experiences in the area the proposal relates to?</li> </ul>			
<b>If for any characteristic it is considered that there is likely to be an adverse impact or you have ticked 'Don't know/no info available', then a full EIA should be carried out where this is proportionate. You are advised to speak to your <a href="#">Equality rep</a> for advice if you are in any doubt.</b>			
Protected characteristic	Potential for adverse impact		Don't know/No info available
	Yes	No	
Age		X	
Disability		X	
Sex		X	
Race		X	
Sexual orientation		X	
Gender reassignment		X	
Religion or belief		X	
Pregnancy or maternity		X	
Marriage or civil partnership		X	
<b>NYCC additional characteristics</b>			
People in rural areas		X	
People on a low income		X	
Carer (unpaid family or friend)		X	

<p><b>Does the proposal relate to an area where there are known inequalities/probable impacts</b> (e.g. disabled people's access to public transport)? Please give details.</p>	<p>No</p>			
<p><b>Will the proposal have a significant effect on how other organisations operate?</b> (e.g. partners, funding criteria, etc.). <b>Do any of these organisations support people with protected characteristics?</b> Please explain why you have reached this conclusion.</p>	<p>No</p>			
<p><b>Decision (Please tick one option)</b></p>	<p>EIA not relevant or proportionate:</p>	<p>X</p>	<p>Continue to full EIA:</p>	
<p><b>Reason for decision</b></p>	<p>No impact on equalities.</p>			
<p><b>Signed (Assistant Director or equivalent)</b></p>				
<p><b>Date</b></p>				