

To: **EXECUTIVE**  
**14 NOVEMBER 2023**

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**WASTE COLLECTION VEHICLE PURCHASE**  
**Executive Director: Delivery**

**1 Purpose of Report**

- 1.1 The existing waste collection fleet is at full capacity and a new 26 tonne waste collection vehicle is required.

**2 Recommendations**

**That the Executive:**

- 2.1 **Agrees to the purchase of a new 26 tonne waste collection vehicle in 2023 for delivery in 2024 subject to funds being approved by Council.**
- 2.2 **Recommends that Council approves a Supplementary Capital Approval of £0.205m with the associated borrowing costs being accounted for within the figures in section 5.15.**
- 2.3 **Agrees to a trial of Hydrotreated Vegetable Oil for this vehicle subject to viability and a future report to the Executive.**

**3 Reasons for Recommendations**

- 3.1 Borough growth and an increase in households subscribed to the garden waste collection service has meant the existing garden waste rounds are beyond full capacity. A new vehicle will enable collection capacity to be increased for the garden waste service and also absorb some of the pressure the larger blocks of flats are putting on the refuse and dry recycling services.
- 3.2 The recommendation for a diesel vehicle is further explained within the body of the report.

**4 Alternative Options Considered**

- 4.1 Alternative fuel vehicle options were considered, however there are a number of significant risks to these at this time as outlined in 5.6 onwards.
- 4.2 Capping the garden waste subscriptions at 16,000 residents and moving to a renewal only service from the Autumn 2023. This is likely to cause complaints and result in garden waste being put into the green refuse bins although this option would avoid the need to purchase a truck in the short term.

**5 Supporting Information**

- 5.1 In 2019 the waste collection contract with SUEZ was extended, and a new collection fleet was purchased in 2019 for the refuse, dry recycling and garden waste services. The expectation at that time was that an additional 26 tonne truck would be required in the 23/24 financial year to accommodate borough growth. Those estimates were based on property forecasts from 2019. New properties were not completed as quickly as anticipated during the past four years and that delayed the need for a new vehicle slightly.

- 5.2 Since April 2019 the number of properties in the borough has increased by 3,600, with a further 740 expected to be completed by April 2024. Over the last four years the number of residents subscribing to the garden waste service has also increased from 12,800 up to 15,700. The garden waste service is carried out by two vehicles, each with a crew of 3. The increase of 2,900 properties have meant the properties those two vehicles collect from are now beyond a manageable level and a new vehicle is required.
- 5.3 Re-routing of garden waste collections has been done in some areas of the borough already to rebalance the workload and make collections as efficient as possible, and there is now no more work that can be done to reduce the property pass rate on certain days whilst keeping the service efficient. Currently refuse and recycling vehicles are helping collect garden waste once their usual round is complete. This isn't sustainable with the forecast housing growth.
- 5.4 With increasing numbers of large blocks of flats in central Bracknell needing weekly refuse and weekly dry recycling collections those services are also nearing capacity on some days of the collection cycle.
- 5.5 One new 26 tonne vehicle round is required for 2024/25. The proposal is that the vehicle is used across different services to relieve the pressure points; garden waste is the main service that is at full capacity with the existing two trucks. However, the vehicle would also be used for refuse and dry recycling where required.

### **Alternative Fuels**

- 5.6 The existing waste fleet is all diesel powered. Alternative options have been explored: Hydrotreated Vegetable Oil (HVO), Hydrogen, Bio methane and Electric.
- 5.7 HVO delivers a 90% reduction in carbon dioxide equivalent emissions when compared to diesel and can be used as a direct replacement for diesel, and no changes to vehicles are required. HVO can be added as a straight replacement for diesel or as a blend. Compared to diesel, HVO is 10% to 20% more expensive and due to the fuel having a lower calorific value there is a 5% to 10% drop in efficiency.
- 5.8 The main risks to HVO are around security of supply due to demand and making sure the source of the vegetable oil is known. The oil can either be from grown energy crops (palm oil) or from used cooking oils. If the oil is not sourced from sustainable sources, it can cause other environmental issues such as deforestation. The demand for HVO is increasing, which will only increase pressure on the supply chain.
- 5.9 A trial of HVO is recommended once a diesel truck is on the fleet in order to try and reduce emissions produced. A further report will be bought back to the Executive on the pros and cons prior to a trial commencing.
- 5.10 Hydrogen is another option that has been looked into and is a technology that is still advancing. The source of hydrogen used is important in terms of its carbon emissions; blue hydrogen is manufactured using fossil fuels and green hydrogen using renewable energy. An important consideration is storage. Hydrogen is not able to be stored in close proximity to residential property. At this time Hydrogen is not recommended as the Commercial Centre is very close to residential properties so storage would be a potential issue. Contingency arrangements would also be a concern as Hydrogen fuel stations are not readily available.

- 5.11 Bio methane is being used as an alternative fuel by some hauliers running fleets of large vehicles. This solution is more commonplace in delivery fleets and is the solution that Waitrose are increasingly using. This is not yet a proven alternative for domestic waste collection vehicles and needs further development.
- 5.12 Electric has also been considered; however, it is not recommended at this time. The use of electric waste collection trucks for domestic waste collections is still relatively new and it is felt the technology is not advanced enough for it to be considered as reliable as the diesel vehicles. Feedback from operational teams at other local authorities with electric trucks is that they have added operational pressures due to their limited range on a full charge. They only really become viable when there are one or two electric vehicles in a very large fleet of 30 or more diesel vehicles, or in very urban city type boroughs where mileage is minimal because the depot, the rounds and the tipping location are all very close together. The more rural and mixed urban/rural authorities report issues completing daily rounds. Not completing the collection rounds reflects badly on the waste collection service and risks reputational damage for the council. Longer term maintenance costs are also estimates and vehicle life on a domestic waste collection service is uncertain as there is not a long history of use. The battery would be very costly to replace, at circa £200k and the vehicle manufacturers estimate batteries last 5-7 years. The team aren't aware of a domestic waste service that has had an electric vehicle on their fleet long enough to know the true life of the battery and how much of its charging capacity it maintains in those latter years.
- 5.13 Having spoken to other local authorities and SUEZ, feedback has been that electric is not the right solution for HGVs, and other technology such as hydrogen and bio methane needs to be further developed. For electric vehicles to deliver the same reliability of service as a diesel vehicle two electric trucks would need to be purchased. Driver behaviour can influence range, however not enough to manage with one vehicle. The range of an electric collection vehicle is affected by too many external factors to make accurate estimates on achievable mileage, number of bin lifts and number of tips. The weight of bins and the external temperatures can hugely affect the productivity. In cold temperatures the vehicle range can drop by as much as fifty percent, so this would be a potential risk for up to six months of the year from November to April.
- 5.14 We do expect the technology on the alternative powered HGVs to move on in the coming years which would enable us to reconsider our fleet type again at the end of the current waste collection contract in 2027.
- 5.15 Electric vehicles are more expensive to purchase than diesel, the life of a diesel vehicle is at least 8 years and electric assumed to be a maximum of 7 years:

	<b>Diesel</b>	<b>Fully electric</b>
Capital £	205,000	900,000
Capital payments per annum £	37,085	178,882
Revenue £ (23/24 price)	130,000	135,000
Fuel per annum £ (current price)	13,000	1,800
<b>Annual cost £ (23/24 price)</b>	<b>180,085</b>	<b>315,682</b>

Lease costs have also been sought for comparison:

	<b>Diesel</b>	<b>Fully electric</b>
Lease cost per annum £	37,051	162,468
Revenue £ (23/24 price)	130,000	135,000
Fuel per annum £ (current price)	13,000	1,800
<b>Annual cost £ (23/24 price)</b>	<b>180,051</b>	<b>299,268</b>

- 5.16 Diesel vehicles are very similar in cost per annum to lease or to purchase. Electric is cheaper to lease than buy, however it would still be £119k more for electric trucks than a diesel vehicle per annum. If a diesel vehicle is purchased and used for BFC services for 8 years, it does then get sold on. For this a capital receipt of £5 -10k could be expected.
- 5.17 As well as costs shown above for electric vehicles there would also be the additional capital cost of £20-100k of installing the required charging points at the Commercial Centre as well as staff training for the maintenance.
- 5.18 Carbon dioxide equivalent emissions from an electric vehicle when out on the road are zero. A diesel vehicle on our garden waste collection service emits on average 26,500kg CO<sub>2</sub>e per annum. There are potential emissions from the production of the electricity to charge the electric vehicle, but this will vary depending on how the electricity is produced.
- 5.19 Lead times on new waste collection vehicles are up to 12 months depending on the type of vehicle purchased so there is a need to place an order as soon as practically possible to ensure delivery during 2024.
- 5.20 The garden waste service is chargeable, residents pay £60 for a 240 litre bin, £56 for a 140 litre bin annually (based on 23/24 fees) and both of these are reduced by half to those on income related benefits. The council can charge for the collection of garden waste to cover costs of running the service. In recent years the income has increased due to an influx of new customers, currently there are 16,000 households subscribed to the service. The ongoing revenue costs of the new vehicle could be offset by including a £75k saving as part of the 24/25 budget build process and also raising the annual charge by £5 per bin to generate an additional amount of approximately £70k per annum. A chart outlining the estimated cost of the garden waste collection service for 2024/25 is below:

	<b>Estimated cost for full year 2024/25 (£)</b>
Expenditure, incl bins, collection contract costs and printing/postage	891k
Council staffing	43k
Corporate recharges	106k
<b>TOTAL</b>	<b>£1,040,000</b>

- 5.21 Other local authorities' charges for garden waste collection services vary considerably. Some, like Bracknell Forest, charge a one-off fee for a wheeled bin that then becomes the resident's property, whilst others have the cost of the container provision included in the annual subscription charge. Below is a chart showing a selection of other Councils' fees for garden waste collection and their garden waste bin purchase costs where applicable:

Local Authority	Charge for bin	Subscription charge per annum (23/24)	Other info or options
<b>Bracknell Forest Council</b>	£42	£60 240l bin, £56 140l bin	biodegradable sacks £1.20 each
<b>Reading Borough Council</b>	£50	£67.20 for up to 2 bins	reusable sack - £24 per annum for 2, £15 to buy sacks
<b>Wokingham Borough Council</b>	NA	£80	biodegradable sacks £1.20 each
<b>Royal Borough of Windsor and Maidenhead</b>	NA	£75	
<b>Slough Borough Council</b>	£45	£50	
<b>West Berkshire Council</b>	no charge for 1st bin, additional bins £30 each	£58	£44 per annum for any additional bins collection charge
<b>Buckinghamshire</b>	NA	£55	
<b>South Oxfordshire District Council</b>	NA	£60	
<b>Hart District Council</b>	£40	£80 240l bin, £55 140l bin	

## 6 Consultation and Other Considerations

### Legal Advice

- 6.1 There are no specific legal issues arising from the recommendations in this report.

### Financial Advice

- 6.2 The financial implications are contained within the report. The ongoing annual revenue costs relating to the new vehicle (to be included in the 24/25 proposals, if approved) can be offset by the inclusion of a saving relating to income budgets and an annual price increase on the garden waste collection service.

### Other Consultation Responses

- 6.3 NA

### Equalities Impact Assessment

- 6.4 NA

### Strategic Risk Management Issues

- 6.5 There is a risk that the number of subscribers to the garden waste service could reduce, however this is considered unlikely as the kerbside collection is the most convenient way for residents to dispose of garden waste. DEFRA has also suggested that they may make garden waste collections free of charge, this would take the income away and service reconfiguration would be needed to contain the budget pressure.

### Climate Change Implications

- 6.6 The recommendations in Section 2 above are expected to increase vehicle related emissions, however an additional vehicle will allow the garden waste collection service to continue to be available for new customer so avoid an increase in garden waste going into the refuse stream. Composting of garden waste produces lower CO<sub>2</sub>e when compared to landfill or Energy from Waste.

### Health & Wellbeing Considerations

- 6.7 The accessible kerbside garden waste collection service enables people to get outside, do some gardening and dispose of the waste in responsible way. It is important to keep this service available to all. Contributing to recycling and composting are positive ways that all residents can influence climate change, knowing that their actions are contributing to improving the environment can be empowering and enhance wellbeing.

### Background Papers

Not applicable

### Contacts for further information

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