



Report sponsor: Sam Dennis, Director of Public Protection and Streetpride
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Grounds Maintenance – Parks Litter Bin Audit

Purpose

- 1.1 Streetprides Grounds Maintenance team currently manages the waste collection and maintenance of the 609 litter bins across Derby's public parks and communal spaces. Currently there are four members of staff (agency) that are assigned to emptying park litter bins on a weekly and daily basis based on the demands of the area. These areas are also litter picked and cleared of fly-tipped waste.
- 1.2 A litter bin audit was commissioned to determine the condition of the bin stock and explore options to increase overall litter bin capacity across Derby's parks.

Recommendation

- 2.1 To commission a 3 month trial of bin sensor technology and route optimisation software across a proportion of the bin stock to evaluate it's effectiveness in increasing available bin capacity.

Reason(s)

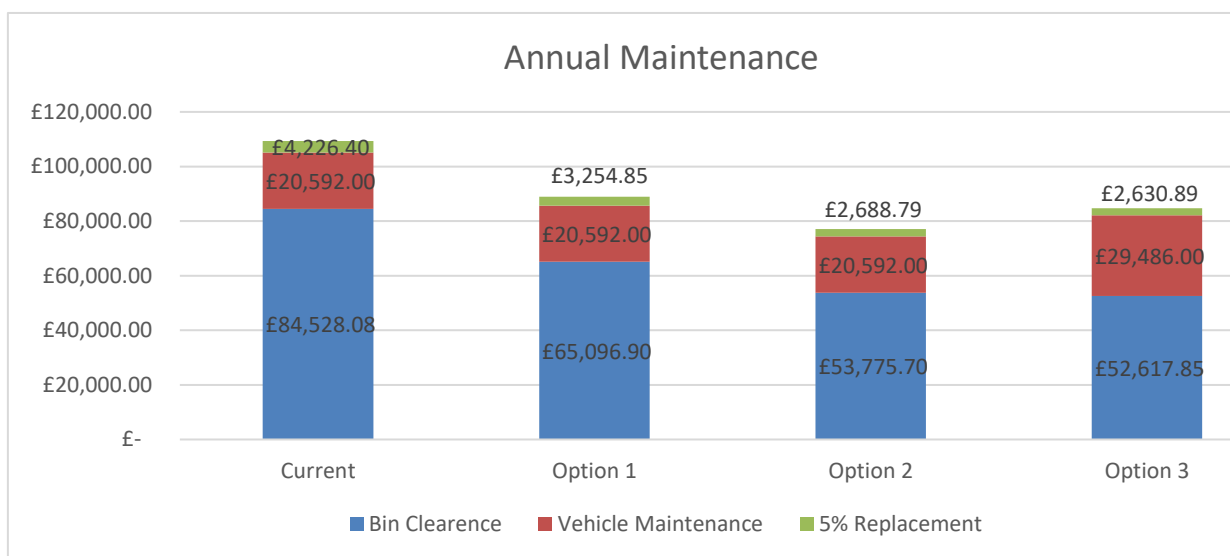
- 3.1 Efficient collection of waste, where the bins most in need of collection are collected soonest via a GPS optimised route, would see an increase in bin capacity in parks.
- 3.2 Efficient collections schedules, reducing unnecessary bin collection journeys, would see a reduction in the activities carbon footprint.
- 3.3 There are significant cost implications with replacing the park bin stock on mass to increase capacity. An intelligent waste collection programme would allow the current stock to be upgraded over a longer period of time (to larger bins) whilst achieving increased bin capacity early-on through intelligent led collections.
- 3.4 An intelligent led collection programme has the potential to reduce operating costs due to needing less personnel and vehicles.

Supporting information

- 4.1 At present, litter bins on parks are purchased and located by Parks, installed by Highways and then maintained and emptied by Grounds Maintenance. The average annual spend for the past 5 years has been £9,000, which mainly consists of replacing damaged bins. A report in 2015 indicated that over two thirds of the litter bins will require replacing due to metal fatigue and damage. This would result in a replaced cost of £158,400.
- 4.2 The number of litter bins on parks currently stands at 609. Most of these bins are the 70 Litre litter bins, which stands at 532, with an additional 15 360 Litter Bins that were installed back in 2015.
- 4.3 There has been a notable increase in park use throughout and following the Covid -19 pandemic which resulted in a 26% increase in fly tipping incidents in 2020/21 compared to 2019/20. This additional litter picking and fly-tipped waste clearance work puts additional pressure on the emptying of litter bins.
- 4.4 A number of options were initially appraised when looking into ways in which litter bin capacity could be increased. This was centred around increasing the physical capacity of the bins themselves and included the following lead suggestions:
1. Option One: To remove 440 70 Litre Litter Bins and replace them with 352 120 Litre Litter Bins.
 2. Option Two: To remove 440 70 Litre Litter Bins and replace them with 264 250 Litre Litter Bins.
 3. Option Three: To remove 440 70 Litre litter bins and replace them with 185 240 Litre Litter Bins and 70 360 Litre Litter Bins.
- 4.5 Each of the three options were costed out and included the initial purchase of the bins as well as installation.

Option	Total Cost
Option 1	£197,120
Option 2	£191,452.8
Option 3	£312,186.4

The maintenance costs, including bin clearance, vehicle maintenance and 5% annual replacement, were also captured which shows the current collection programme to be the least cost effective and Option 2, the most cost effective. This is primarily due to the number of numbers of personnel required to run each option.



4.6 A survey was carried out on the bins to ascertain their condition with the results as follows:

Bin requires replacement	26
120L	9
240L	3
70L	14
Functional with minor wear	300
120L	13
240L	29
360L	1
70L	257
Functional with significant wear	64
120L	3
70L	61
Great Condition	219
120L	13
360L	6
70L	200

Public/stakeholder engagement

5.1 During July and August 2021, a survey was carried out across park volunteer groups, to capture their opinions of what they feel is going wrong within their local spaces and Premier Parks. The results were collected from 38 participants and the data is as follows:

- 97% of participants agreed that overflowing Litter Bins were causing a problem on Derby City Parks.
- 73% of participants agreed that Litter Bins on parks were overflowing 'most of the time', if not all of the time. The remaining 26% believed it was only 'some of the time'.
- Nearly all the participants agreed that areas with high footfall were the lead causes with Litter, from: blocks of seating, cafes, sports and picnic areas. It is worth noting that areas where bins previously were positioned but had been removed often saw Dog Waste still being placed there.
- Nearly all the participants agreed that the Litter was a 'wide variety' of items. With such items including plastic bottles, alcoholic drinks, snack packs, food, dog waste and fast food.
- A wide variety of answers was given to 'other types of waste' being seen on Parks. These varied from BBQ sets, Fly Tipping and Drug related materials. Drug related materials was the highest scorer and constituted 28% of all logged answers.
- 86% of participants believed that the main problems with Litter Bins on Parks was that they were too small and not emptied regularly enough. The other 14% was split between concerns regarding the litter bins being vandalised as well as there not being enough signage to indicate where Litter Bins are positioned around parks.
- When discussing wider problems on parks, 28% of participants believed that there was a problem with social attitudes regarding litter, dog waste and fly tipping on parks. 60% agreed that it was a combination of problems and the remaining 12% believed it was ongoing vandalism, bin capacity and other specific reasons.

Some reoccurring comments that was identifiable from this survey was:

- More signage required to signpost waste carriers to Litter Bins.
- Relocate to Bins in areas in more need / higher footfall areas.
- Bins require emptying more.

Other options

- 6.1 After evaluating the options covered in this report, there appears to be a favourable choice in Option 2 due to its apparent lower running costs. This however, along with options 1 and 3 also introduces the following concerns:

1. Safety
 - a. The current 70 litre bins are emptied by hand. The larger bin options (options 1 and 2) would introduce much heavier loads and thus the manual handling risk to employees.
2. Convenience
 - a. Increasing the number of bins (of any size) comes with limitations due to vehicular access. Many bin locations aren't suitable to have vehicles drive to them as the footpaths are narrow leading to verge damage, especially in winter/wetter conditions, which can leave sites looking messy and even see vehicles get stuck.

Financial and value for money issues

- 7.1 Whilst the costs of an intelligent led solution are being explored, it is envisaged that the current two, two person teams could be reduced to one with an efficient collection programme in place. Alternatively, keeping the two teams could allow for an enhanced litter picking service owing to the reduced unnecessary traveling time spent.

Legal implications

- 8.1 None.

Climate implications

- 9.1 Park litter bins are currently each emptied depending on demand. This demand frequency is felt and decided upon through feedback from parks groups, internal departments, customer complaints, councillor enquiries etc.

Days per Week emptied	Qty of Bins	%
1	92	15%
2	297	49%
3	60	10%
4	27	4%
7	133	22%
Total	609	-

These bins are collected at the frequency regardless of whether they are full or not as the distance travelled to the bin would already have been made and each bin collection has a carbon footprint via vehicle emissions to site and to the tip.

Other significant implications

- 10.1 When reviewing the APSE 'State of the market survey' for street cleansing services 2020, and the 2021 market survey, both reports demonstrate street cleansing services are now driving towards innovative solutions to increase and maximise operational efficiencies. In the 2021 survey, the main efficiencies being proposed or worked towards included 'better use of technology to maximise efficiency', 'use of smart litter bins reducing emptying frequencies' and 'route optimisation'.

This report has been approved by the following people:

Role	Name	Date of sign-off
Legal		
Finance		
Service Director(s)		
Report sponsor		
Other(s)	Lee Wheatley	30/06/2022

Background papers:
List of appendices: