



Subject:	Litter Bin Sensors – Smart Cities Data Analytics Project
Date:	11 th May 2021
Reporting Officer:	Ryan Black, Director of Neighbourhood Services
Contact Officers:	Stephen Leonard, Neighbourhood Services Manager

Restricted Reports	
Is this report restricted?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
If Yes, when will the report become unrestricted?	
After Committee Decision	<input type="checkbox"/>
After Council Decision	<input type="checkbox"/>
Some time in the future	<input type="checkbox"/>
Never	<input type="checkbox"/>

Call-in	
Is the decision eligible for Call-in?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

1.0	Purpose of Report or Summary of main Issues
1.1	The purpose of this report is to update members on a proposal for a litter analytics research project that Open Spaces and Streetscene are supporting via the Council's City Innovation Section.
2.0	Recommendations
2.1	The Members of the Committee are asked to recommend that, in accordance with the Council decision of 4th May, the Chief Executive exercise her delegated authority to note the ongoing work in respect of this work and that future updates will be brought to committee as the project progresses.
3.0	Main report
3.1	Members will recall previous update to SP&R committee in 2017 on the Council's Smart Framework and Innovation Programme. This seeks to harness the talent of the city's digital SME sector, and our world-class university research, to support the Council, community

	<p>planning partners and local communities to create more innovative solutions to complex public policy challenges as identified in the Belfast Agenda. This work is part of a wider ambition to foster innovative methodologies and compliments the Council's parallel work on Social Innovation with local communities and our corporate commitment to service transformation.</p>
3.2	<p>A number of 'demonstrator' projects have taken place since 2017 including Waste Management analytics where the Council was awarded 20 hours of world-class 'big data' analytics expertise to analyse household recycling behaviour with the aim of providing insights that can assist in driving up recycling levels. Most recently Members will be familiar with the 'Amazing Spaces Smart Places' Small Business Research Initiative (SBRI) challenge.</p>
3.3	<p>There has continued to be strong support for the concept of a Smart framework, particularly from the local SME community as it provides opportunities to deploy proto-types and products in a real-world environment. Public sector partners recognise the potential to bring innovation to bear on existing challenges, and broad agreement that Belfast City Council has an important convening role to play in bringing a diverse range of partners together for a common social impact.</p>
3.4	<p>One such existing challenge facing local government relates to public realm litter bins in terms of suitable locations, sufficient numbers, appropriate type, public usage, how frequently they fill up, frequency of emptying, and routing practices.</p>
3.5	<p>Queen's University and local SME Litter Analytics approached Belfast City Council in 2020 to partner on a collaborative urban waste research project using data from bin sensors to predict how quickly litterbins fill up, and to see how variables such as public holidays or weather might affect this. Information generated could provide predictive modelling to support workforce planning and optimised routing.</p>
3.6	<p>The SME have been liaising with the Neighbourhood Services Manager with portfolio responsibility for Open Spaces and Streetscene and has identified the following locations for deploying the proto-type sensors;</p> <ul style="list-style-type: none"> • Parks - Falls Park and Botanic Park • Linear arterial route - Antrim Road

	<ul style="list-style-type: none"> • High street retail area - City centre
3.7	The pilot feasibility study is due to commence in Q1 of 2021/22, with sensors in situ for approximately 6 months. The duration of the project will be in the region of 6-12 months, with the approach and breadth dictated by the number of sensors obtained by the SME.
3.8	<p>The project will focus on general waste public realm litter bins in the first instance; however, the SME are interested in wider urban waste challenges including public behaviours.</p> <p>Therefore, depending on the success of the pilot, and funding that the SME can source, there may be scope to analyse public realm recycling behaviours. For example, to use data from a standard litter bin for a period, then install or label a dedicated recycling bin beside it for another period of time and see what the difference would be.</p>
3.9	It is hoped that the project will permit the development of 'Use cases' and insights to allow the Open Spaces and Streetscene team to consider emptying public realm bins in a more efficient manner saving resource and ensuring optimal deployment of infrastructure.
3.10	It will also supporting a local SME to develop their solutions, this will help them bid into larger funding opportunities and develop a market ready solution.
3.11	As the project progresses, future updates will be brought to this committee.
	<u>Financial & Resource Implications</u>
3.12	The costs with this project have been included within existing revenue budgets.
	<u>Equality or Good Relations Implications/Rural Needs Assessment</u>
3.13	None
4.0	Appendices – Documents Attached
	None