An Roinn Comhshaoil,
Aeráide agus Cumarsáide
Department of the Environment,
Climate and Communications

# THE NATIONAL LITTER POLLUTION MONITORING SYSTEM


## LITTER MONITORING BODY

# SYSTEM RESULTS 2020

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# TABLE OF CONTENTS

**LIST OF TABLES** ..... ii
**LIST OF FIGURES** ..... ii
**ACKNOWLEDGEMENTS** ..... iii
**OVERVIEW OF THE NATIONAL LITTER POLLUTION MONITORING SYSTEM** ..... 1
**CHAPTER 1:** Summary System's Survey Results for 2020 ..... 4
**CHAPTER 2:** How littered is the country? ..... 6
**CHAPTER 3:** What are the main constituent elements of Litter Pollution? ..... 10
**CHAPTER 4:** What are the main causes of Litter Pollution? ..... 14
**CHAPTER 5:** Assessment of Litter Pollution data by local authority type ..... 19
**CHAPTER 6:** Analysis of specific components of litter ..... 25
**CHAPTER 7:** Items for further attention under the NLPMS ..... 30
**CHAPTER 8:** Conclusion ..... 31
**APPENDIX A** ..... i
**APPENDIX B** ..... iv
**APPENDIX C** ..... x
**APPENDIX D** ..... xiv
**APPENDIX E** ..... xx

# LIST OF TABLES

Table 3-1 Detailed National Litter Composition 2019 to 2020 ..... 13

Table A.1 Local Authorities that Submitted Litter Quantification Survey Results for 2020 ..... ii
Table A.2 Local Authorities that Submitted Litter Pollution Survey Results for 2020 ..... iii

# LIST OF FIGURES

Figure 1-1 Participation of Local Authorities 2003 to 2020 ..... 4
Figure 2-1 Comparison of Litter Pollution Indices (LPI) 2019 to 2020 ..... 6
Figure 2-2 Litter Pollution Index 2004 to 2020 ..... 7
Figure 2-3 Comparison of Litter Pollution within Largely Urban and Rural Areas in 2020 ..... 8
Figure 3-1 Composition of Litter in 2020 Broken Down into Main Categories ..... 10
Figure 3-2 Comparison of National Litter Composition from 2019 to 2020 ..... 11
Figure 4-1 Causative Factors of Litter Pollution across all Local Authorities in 2019 and 2020 ..... 15
Figure 4-2 Causative Factors of Litter Pollution According to Local Authority Type in 2020 ..... 17
Figure 5-1 Comparison of Litter Pollution within Dublin Local Authorities 2019 to 2020 ..... 19
Figure 5-2 Comparison of Litter Pollution within County Councils 2019 to 2020 ..... 20
Figure 5-3 Comparison of Litter Pollution within City Councils 2019 to 2020 ..... 22
Figure 5-4 Comparison of Litter Pollution in Urban Areas from 2019 to 2020 ..... 23
Figure 5-5 Comparison of Litter Pollution in Rural Areas from 2019 to 2020 ..... 24
Figure 6-1 Cigarette Ends as a Percentage of the National Litter Composition ..... 25
Figure 6-2 Chewing Gum as a Percentage of the National Litter Composition ..... 26
Figure 6-3 Sweet Related Litter Analysed 2019 to 2020 ..... 27
Figure 6-4 Bank Slips as a Percentage of the National Litter Composition ..... 28
Figure 6-5 Plastic Shopping Bags as a Percentage of the National Litter Composition ..... 29

Figure C. 1 Comparison of Litter Composition within County Councils 2019 to 2020 ..... xi
Figure C. 2 Comparison of Litter Composition within City Councils 2019 to 2020 ..... xii
Figure C. 3 Comparison of Litter Composition within Dublin Local Authorities 2019 to 2020 ..... xiii

Figure D. 1 Causative Factors of Litter Pollution within Litter Pollution Index Category 2, 2019 ..... xvi
Figure D. 2 Causative Factors of Litter Pollution within Litter Pollution Index Category 2, 2020 ..... xvi
Figure D. 3 Causative Factors of Litter Pollution within Litter Pollution Index Category 3, 2019 ..... xvii
Figure D. 4 Causative Factors of Litter Pollution within Litter Pollution Index Category 3, 2020 ..... xvii
Figure D. 5 Causative Factors of Litter Pollution within Litter Pollution Index Category 4, 2019 ..... xviii
Figure D. 6 Causative Factors of Litter Pollution within Litter Pollution Index Category 4, 2020 ..... xviii
Figure D. 7 Causative Factors of Litter Pollution within Litter Pollution Index Category 5, 2019 ..... xix
Figure D. 8 Causative Factors of Litter Pollution within Litter Pollution Index Category 5, 2020 ..... xix

Figure E. 1 Comparison of Causative Factors in Urban Councils, 2019 to 2020 ..... xxi
Figure E. 2 Comparison of Causative Factors in Rural Councils, 2019 to 2020 ..... xxii
Figure E. 3 Comparison of Causative Factors of Litter Pollution within Urban Areas (2020) ..... xxiv
Figure E. 4 Comparison of Causative Factors of Litter Pollution within Dublin City Council 2019 to 2020 ..... xxv
Figure E. 5 Comparison of Causative Factors of Litter Pollution within Cork City Council 2019 to 2020 ..... xxvi

**Please Note: Individual percentage values illustrated in figures throughout this document are rounded and may, therefore, not total 100%.**

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1. The Department of Environment, Climate and Communications; and

2. The local authorities that provided us with their Litter Survey Results.

# OVERVIEW OF THE NATIONAL LITTER POLLUTION MONITORING SYSTEM

TOBIN Consulting Engineers were appointed to act as the Litter Monitoring Body (LMB) by the Department of Environment, Climate and Communications for the period May 1st 2020 to April 30th 2021, to continue the development of the National Litter Pollution Monitoring System (NLPMS).

The Sustainable Development Goals - National Implementation Plan 2018-2020, published in April 2018, is the Government's response to the United Nations Sustainable Development Goals (SDGs) and Agenda 2030.

The SDGs cover the three dimensions of sustainable development; economic growth, social inclusion and the protection of the environment. They aim to address inequalities, economic growth, decent jobs, cities and human settlements, industrialization, oceans, ecosystems, energy, climate change, sustainable consumption and production, peace and justice.

The Government's vision is for Ireland to fully implement the Sustainable Development Goals at home, and to contribute to their achievement internationally through our role as a responsible global citizen, so that no one is left behind.

The Government has adopted a 'whole-of-government' approach to SDG implementation at the national level, with the Minister for Environment, Climate and Communications leading on **SDG 12**. *Responsible Production and Consumption*. This SDG also includes issues such as responsible recycling, reducing all waste going to landfill sites and incinerator facilities, and the socially unacceptable issue of litter.

Of course, litter not only relates to **SDG 12**, it also relates to **SDG 13** *Climate Action,* **SDG 14** *Life below Water* and **SDG 15** *Life on land*. Because all of the SDGs are interlinked, an action like litter is far reaching in terms of environmental damage.

Local Authorities already play a key role in the area of recycling, waste collection and litter control. Carlow County Council in their capacity as one of Ireland's first SDG Champion Organisations has clearly linked the issue of litter into **SDG 12**.

Behavioural change will be a key driver in assisting Ireland to fully achieve all the SDGs and in particular change the damaging blight of littering across the country. Local Authorities through targeted messaging on the SDGs will play a pivotal role in this task.

In September 2020 the Government published a new national waste policy *A Waste Action Plan for a Circular Economy*. This is Ireland's new roadmap for waste planning and management. The circular economy can contribute to a number of Ireland's SDGs that are relevant to litter including **SDG12** *Responsible Consumption and Production*, **SDG13** *Climate Action*, **SDG14** *Life Below Water*, and **SDG15** *Life on Land.*

The ambition for Ireland is a circular economy where waste and resource use are minimised; the value of products and materials are maintained through good design, robustness and repair; and when a product has reached the end of its life, its parts are recycled to create

further useful products. The Plan addresses how we look at our resources more broadly, capturing and maximising the value of materials that may in the past have been discarded. The Plan also has an objective to support clear and robust institutional arrangements for the waste sector, including through a strengthened role for Local Authorities.

This System Results 2020 Report and the data gathered in its composition surveys allow for Local Authorities to gauge:

- The extent and the severity of litter pollution in each local authority area;
- The types, most likely sources and causes of litter pollution;
- The changes in litter levels from location to location and over time;
- The location of litter black spots; and
- The impact of new anti-litter measures.

Under the NLPMS, the **extent** and **severity** of litter pollution is measured using a Litter Pollution Index (LPI), which is on a scale of 1 to 5 as described below:

1. Unpolluted or litter free;
2. Slightly polluted;
3. Moderately polluted;
4. Significantly polluted; and
5. Grossly polluted.

Prescribed standards for each category of the LPI have been circulated to all local authorities in the form of area cleanliness rating photographs to ensure a consistent approach nationwide to measuring the extent of litter pollution in the surveyed areas. Examples of those photographs are contained in Appendix B of this report, together with an explanation of each LPI. They are also available via the litter website (www.litter.ie).

The area cleanliness rating[1] is then used in the calculation of the LPI for each survey location. The use of photographs ensures that area cleanliness ratings are consistently assigned by all local authorities. In 2020, the LMB continued to provide guidance to local authorities, thus ensuring that a consistent methodology for surveying is applied across the country to guarantee that reliable and comparable data is compiled.

A key feature of the national monitoring system is its focus on monitoring in areas that are polluted, or are likely to be polluted, i.e. where potential sources of litter are located. To this end, local authorities select the locations for their surveys using maps produced by specially designed Litter GIS software, as follows:

- 40% in "high risk" locations (e.g. in town or city centres) where the concentration of potential litter sources is greatest;
- 40% in random potential litter generating areas - chosen by the Litter GIS software; and
- 20% in locations chosen by local authorities, based on local knowledge of litter pollution.

[1] The Area Cleanliness Rating is determined using a visual inspection of the survey area and rating it according to prescribed standards.

Note that some local authorities do not have the resources to apply Litter GIS. In these instances, local authorities use local knowledge to select their 'high risk' and 'chosen' survey areas and then randomly choose 40% of their locations by identifying random areas on maps or by using a random function tool on Arc GIS.

Under the NLPMS, the **type** and **origin** of litter pollution is also measured by counting litter items while they remain on the ground. These surveys are called Litter Quantification Surveys (LQS). LQS are completed in the most heavily polluted areas (i.e. the clusters or 'black spots' identified by the Litter Generation Potential Maps) and as long after cleansing as possible to further increase the chances of a large sample size. The statistics obtained during the surveys are divided into several litter categories including, food, packaging, paper and plastic.

## Training

In 2020, the LMB continued to provide training, where required, on the implementation of the NLPMS to local authorities.

## Audit

The LMB undertook audits of five local authorities to ensure that the system is being implemented as designed. The local authorities audited were:

- Carlow County Council;
- Dublin City Council;
- Dún Laoghaire-Rathdown County Council;
- Roscommon County Council; and
- Westmeath County Council.

The Audit Report is available at www.litter.ie. The audits have revealed that, for the most part, these local authorities are implementing the system correctly.

The LMB also completed several additional 'spot check' audits on the 2020 results received, whereby photographs of survey locations received from local authorities are cross checked with the awarded LPI. These audits revealed that a small number of local authorities were not assigning the correct area cleanliness rating to an area in all surveys.

These audits allowed for reassessments of Litter Pollution Surveys (LPS) in collaboration with the relevant local authority, and where necessary, to apply a revised determination of the LPI assigned to the area under study.

It is considered for future year's surveys that local authorities should continue to submit photographs with the LPS; this will allow the LMB to continually audit the System. The LMB is satisfied that the results outlined in this report are accurate and reflective of the country as a whole.

## CHAPTER 1: SUMMARY SYSTEM'S SURVEY RESULTS FOR 2020

In 2020, 30 local authorities participated in the National Litter Pollution Monitoring System (NLPMS) Survey.

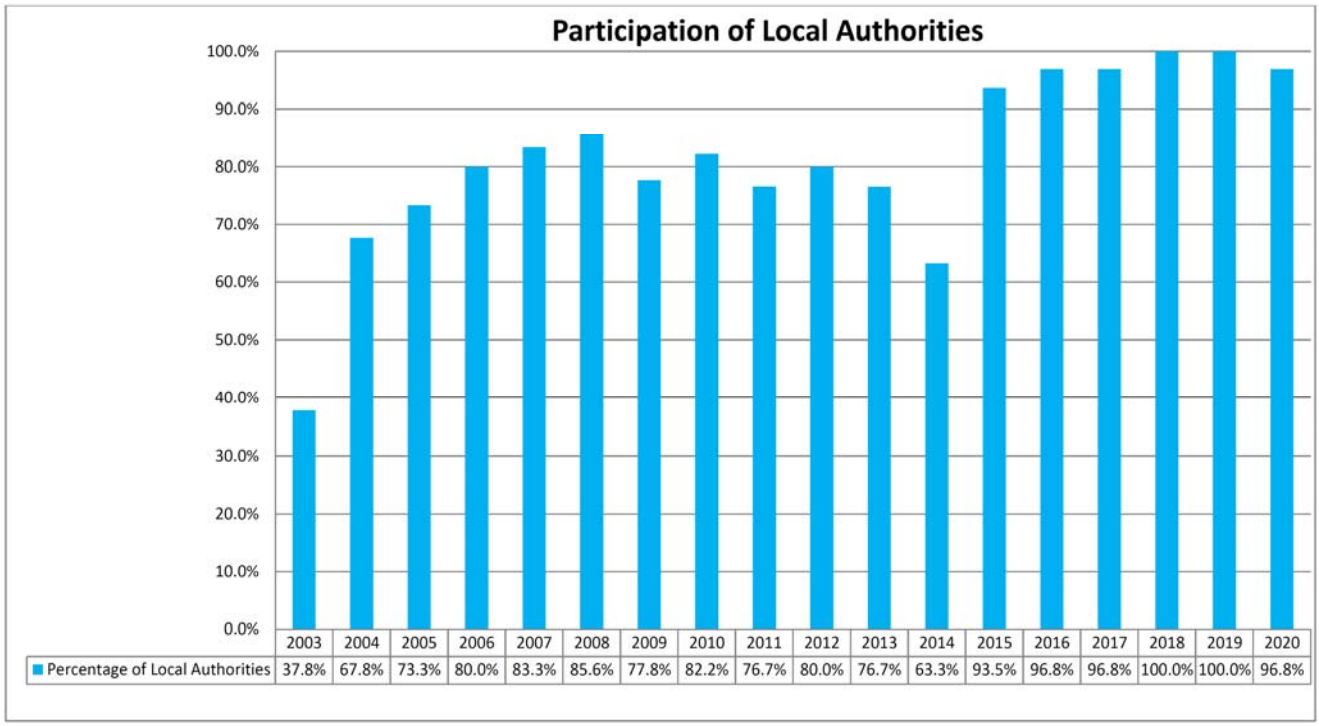



**Figure 1-1 Participation of Local Authorities 2003 to 2020**

Figure 1-1 shows the percentage of local authorities that have participated in the System annually since 2003.

The 2020 survey results provide reliable information on the extent, composition and causes of litter pollution in Ireland and facilitate analysis of any emerging trends in litter pollution. The results allow a full and more comprehensive comparison of year-on-year developments with regard to combating litter pollution. They also provide a snap shot of how our behaviours during the Covid 19 pandemic may have impacted on litter levels recorded in Ireland during 2020.

This NLPMS has set out to answer three key questions:

1. How littered is the country at local and national level?
2. What are the main constituent elements of litter pollution?
3. What are the main causes of litter pollution?

## How littered is the country at local and national level?

In 2020, 5274 Litter Pollution Surveys (LPS) were undertaken nationally.

- 23.2% of areas surveyed were unpolluted (LPI 1) in 2020. The percentage of unpolluted (LPI 1) areas has increased by 5.9%, from 17.3% in 2019.
- 57.3% of all areas surveyed in 2020 were slightly polluted (LPI 2), a decrease of 4.4% on 2019 (61.7%).
- 16.4% of all areas surveyed in 2020 were moderately polluted areas (LPI 3), a decrease of 1.6% on 2019 (18.0%).
- The percentage of significantly polluted areas (LPI 4) has remained at 2.7% in both 2019 and 2020.
- Grossly polluted areas (LPI 5) has increased slightly from 0.3% in 2019 to 0.5% in 2020.

## What are the main constituent elements of litter pollution?

- Cigarette related litter (46.5%), packaging items (21.9%), food related litter (11.0%), sweet related litter (9.5%), paper items (5.8%) and deleterious litter (2.9%) were the main litter constituents identified nationally.

## What are the main causes of litter pollution?

- Passing pedestrians (40.6%), passing motorists (23.7%), retail outlets (8.7%), gathering points (5.3%), places of leisure/entertainment (4.1%), schools/school children (4.0%), fast food outlets (4.0%), bus stops (2.5%) fly-tipping/dumping (2.4%), bring banks (2.0%) and Bank ATMs (1.1%) were identified as the main causative factors of litter nationally.

## CHAPTER 2: HOW LITTERED IS THE COUNTRY?

The 2020 dataset is obtained from 5274 LPS.

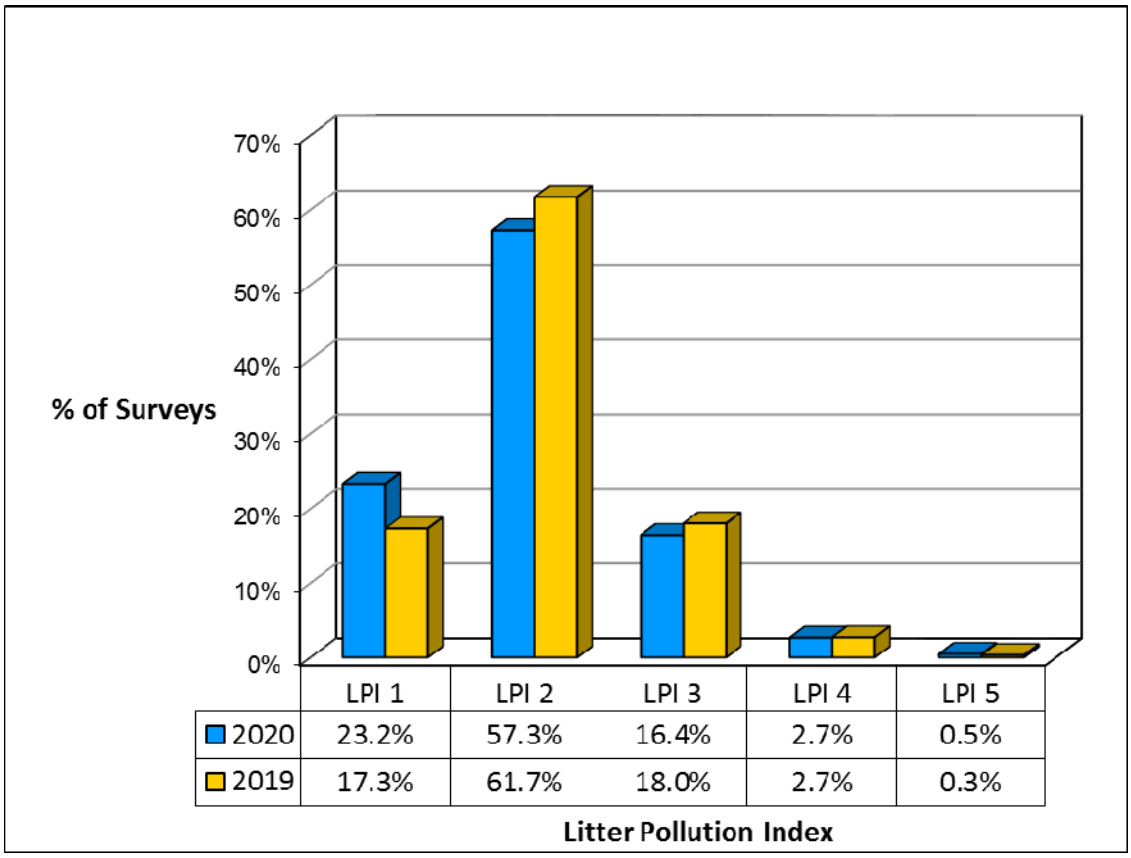



**Figure 2-1 Comparison of Litter Pollution Indices (LPI) 2019 to 2020**

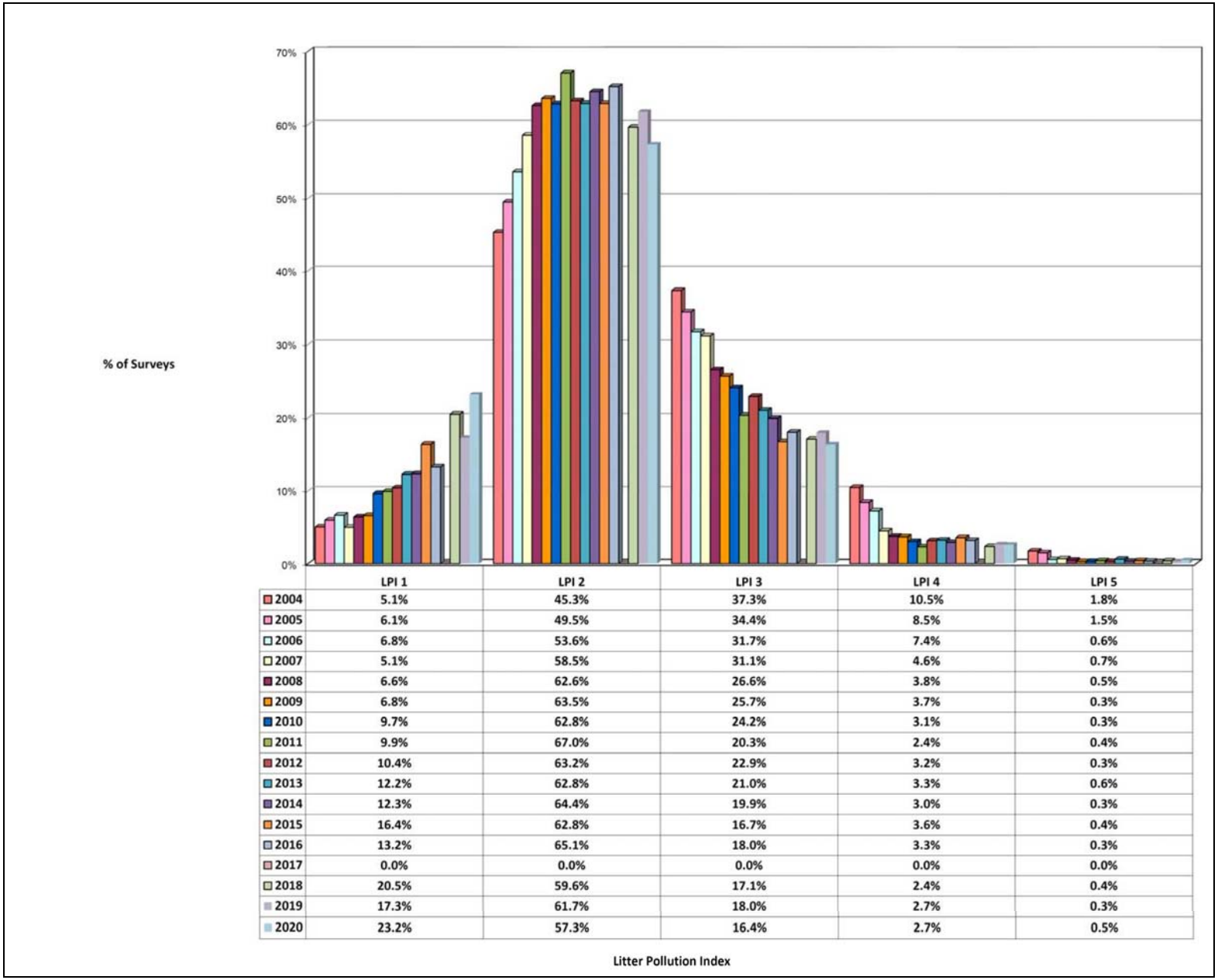
Figure 2-1 compares the 2019 and 2020 LPS results.

The NLPMS results indicate that the percentage of unpolluted (LPI 1) areas has increased from 17.3% in 2019 to 23.2% in 2020.

A comparison of the results from 2019 to 2020 indicates that the percentage of slightly polluted (LPI 2) areas has decreased from 61.7% in 2019 to 57.3% in 2020.

The percentage of moderately polluted areas (LPI 3) has decreased from 18.0% in 2019 to 16.4% in 2020. The percentage of significantly polluted areas (LPI 4) has remained the same at 2.7% in both 2019 and 2020. Grossly polluted areas (LPI 5) has increased slightly from 0.3% in 2019 to 0.5% in 2020.

The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined has increased (by 1.5%) from 2019 to 2020, thus demonstrating that there has been a decrease in litter pollution from 2019 to 2020.




| | LPI 1 | LPI 2 | LPI 3 | LPI 4 | LPI 5 |
|---|---|---|---|---|---|
| 2004 | 5.1% | 45.3% | 37.3% | 10.5% | 1.8% |
| 2005 | 6.1% | 49.5% | 34.4% | 8.5% | 1.5% |
| 2006 | 6.8% | 53.6% | 31.7% | 7.4% | 0.6% |
| 2007 | 5.1% | 58.5% | 31.1% | 4.6% | 0.7% |
| 2008 | 6.6% | 62.6% | 26.6% | 3.8% | 0.5% |
| 2009 | 6.8% | 63.5% | 25.7% | 3.7% | 0.3% |
| 2010 | 9.7% | 62.8% | 24.2% | 3.1% | 0.3% |
| 2011 | 9.9% | 67.0% | 20.3% | 2.4% | 0.4% |
| 2012 | 10.4% | 63.2% | 22.9% | 3.2% | 0.3% |
| 2013 | 12.2% | 62.8% | 21.0% | 3.3% | 0.6% |
| 2014 | 12.3% | 64.4% | 19.9% | 3.0% | 0.3% |
| 2015 | 16.4% | 62.8% | 16.7% | 3.6% | 0.4% |
| 2016 | 13.2% | 65.1% | 18.0% | 3.3% | 0.3% |
| 2017 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 2018 | 20.5% | 59.6% | 17.1% | 2.4% | 0.4% |
| 2019 | 17.3% | 61.7% | 18.0% | 2.7% | 0.3% |
| 2020 | 23.2% | 57.3% | 16.4% | 2.7% | 0.5% |

**Figure 2-2 Litter Pollution Index 2004 to 2020**

Figure 2-2 illustrates the Litter Pollution Index (LPI) ratings from 2004 to 2020. The percentage of unpolluted (LPI 1) areas has increased from 5.1% in 2004 to 23.2% in 2020 (an increase of 18.1%). The percentage of slightly polluted (LPI 2) areas has increased from 45.3% to 57.3% between 2004 and 2020 (an increase of 12.0%). The number of recorded moderately polluted (LPI 3) areas has shown a steady decrease between 2004 (37.3%) and 2019 (16.4%), with an overall decrease of 20.9%. The number of significantly polluted (LPI 4) areas has decreased from 10.5% in 2004 to 2.7% in 2020 (a decrease of 7.8%). The number of grossly polluted (LPI 5) areas has decreased from 1.8% in 2004 to 0.5% in 2020 (a decrease of 1.3%).

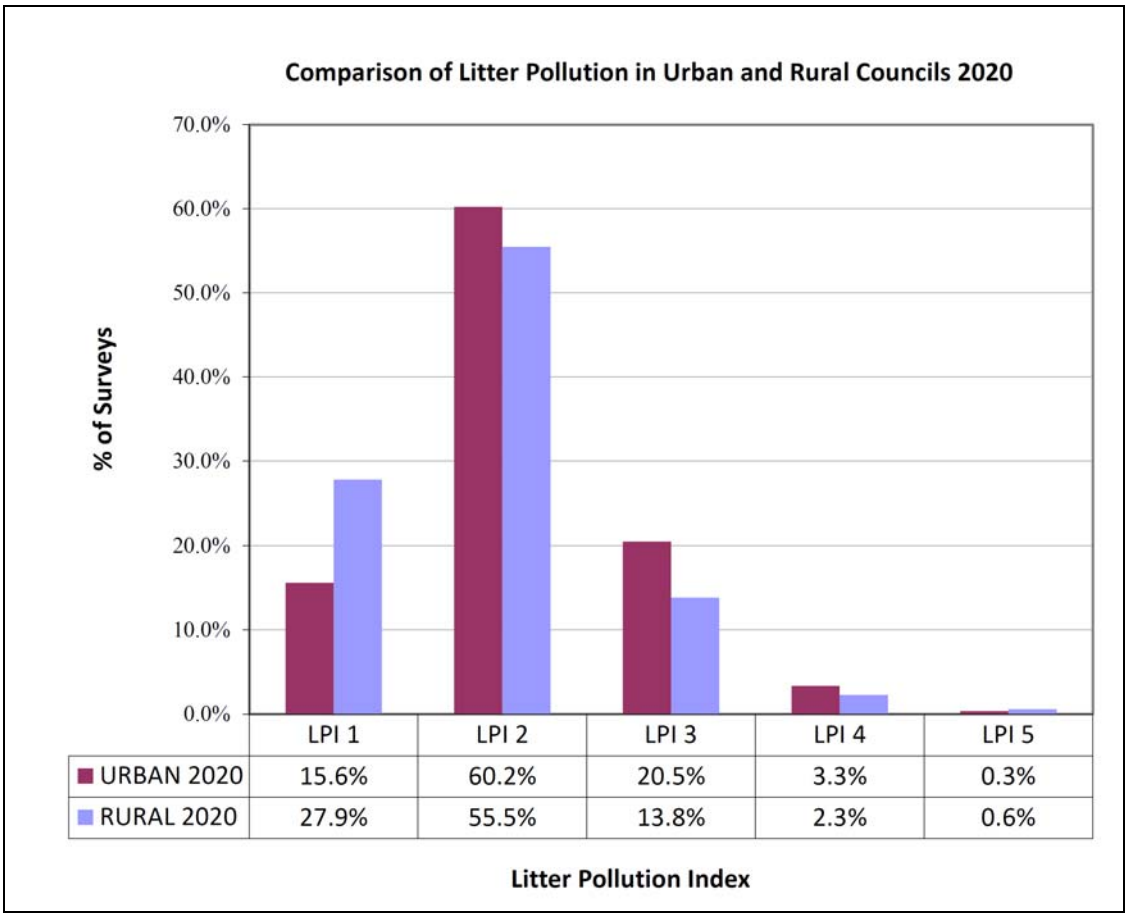



**Figure 2-3 Comparison of Litter Pollution within Largely Urban and Rural Areas in 2020**

A comparison of urban[2] and rural local authorities[3] is presented above in Figure 2-3.

In 2020, 15.6% of urban areas and 27.9% of rural areas were unpolluted (LPI 1). The percentage of slightly polluted areas (LPI 2) experienced in urban areas is 60.2%, and in rural areas is 55.5%. The percentage of moderately polluted (LPI 3) areas experienced in urban

[2] For the purpose of this Report urban local authorities include Cork City Council, Dublin City Council, Dún Laoghaire-Rathdown County Council, Fingal County Council, Galway City Council, Limerick City and County Council, South Dublin County Council and Waterford City and County Council.

[3] For the purpose of this Report rural local authorities include all other county councils (excluding Offaly County Council).

areas is 20.5%, with 13.8% experienced in rural areas. The percentage of significantly polluted (LPI 4) areas is 3.3% in urban areas and 2.3% in rural areas. Grossly polluted (LPI 5) areas are 0.3% in urban areas and 0.6% in rural areas.

Please refer to Figures 5-4 and 5-5 for further comparison of urban and rural litter pollution data from 2019 to 2020.

# CHAPTER 3: WHAT ARE THE MAIN CONSTITUENT ELEMENTS OF LITTER POLLUTION?

Local authorities also carried out 1331 **Litter Quantification Surveys (LQS)** (or item counts) to determine the composition of litter in their areas. A breakdown of the main constituents of litter pollution is highlighted in Figure 3-1 below.

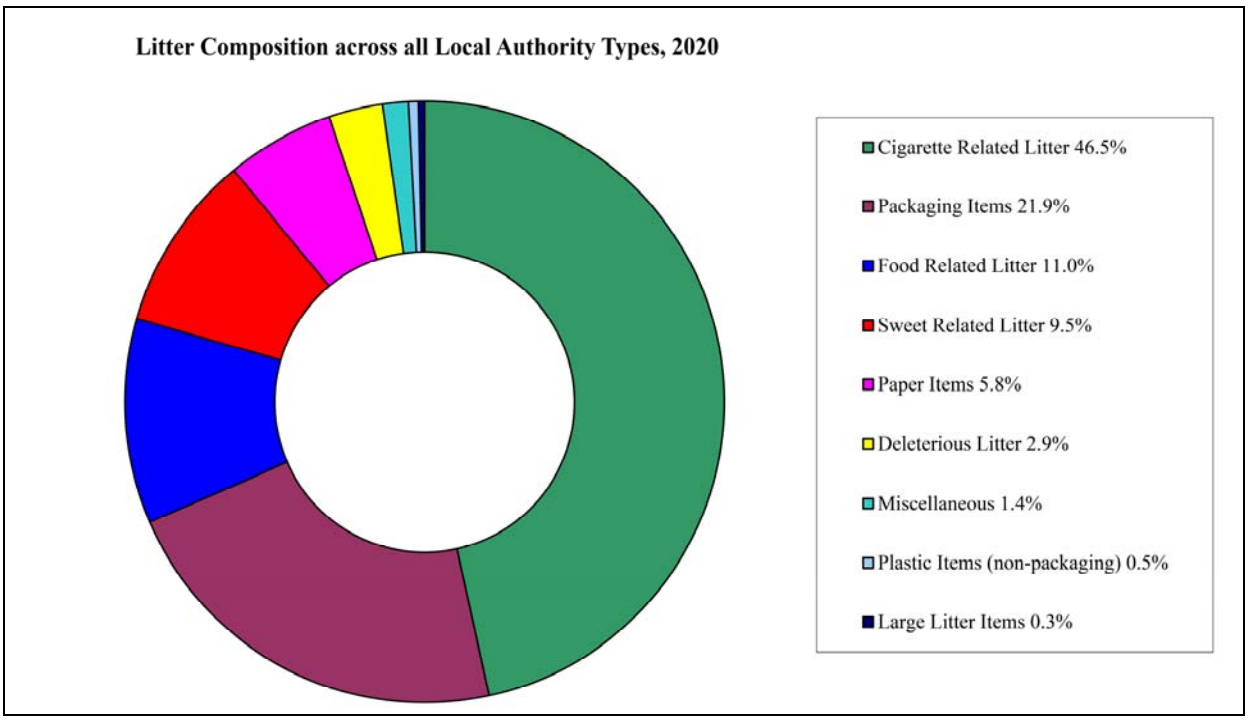



**Figure 3-1 Composition of Litter in 2020 Broken Down into Main Categories**

From the data in Figure 3-1, it can be seen that:

- **Cigarette related litter (46.5%)** continues to constitute the highest percentage of litter in the locations surveyed – this is comprised mainly of cigarette ends which constitute 43.3% of all litter items nationally.

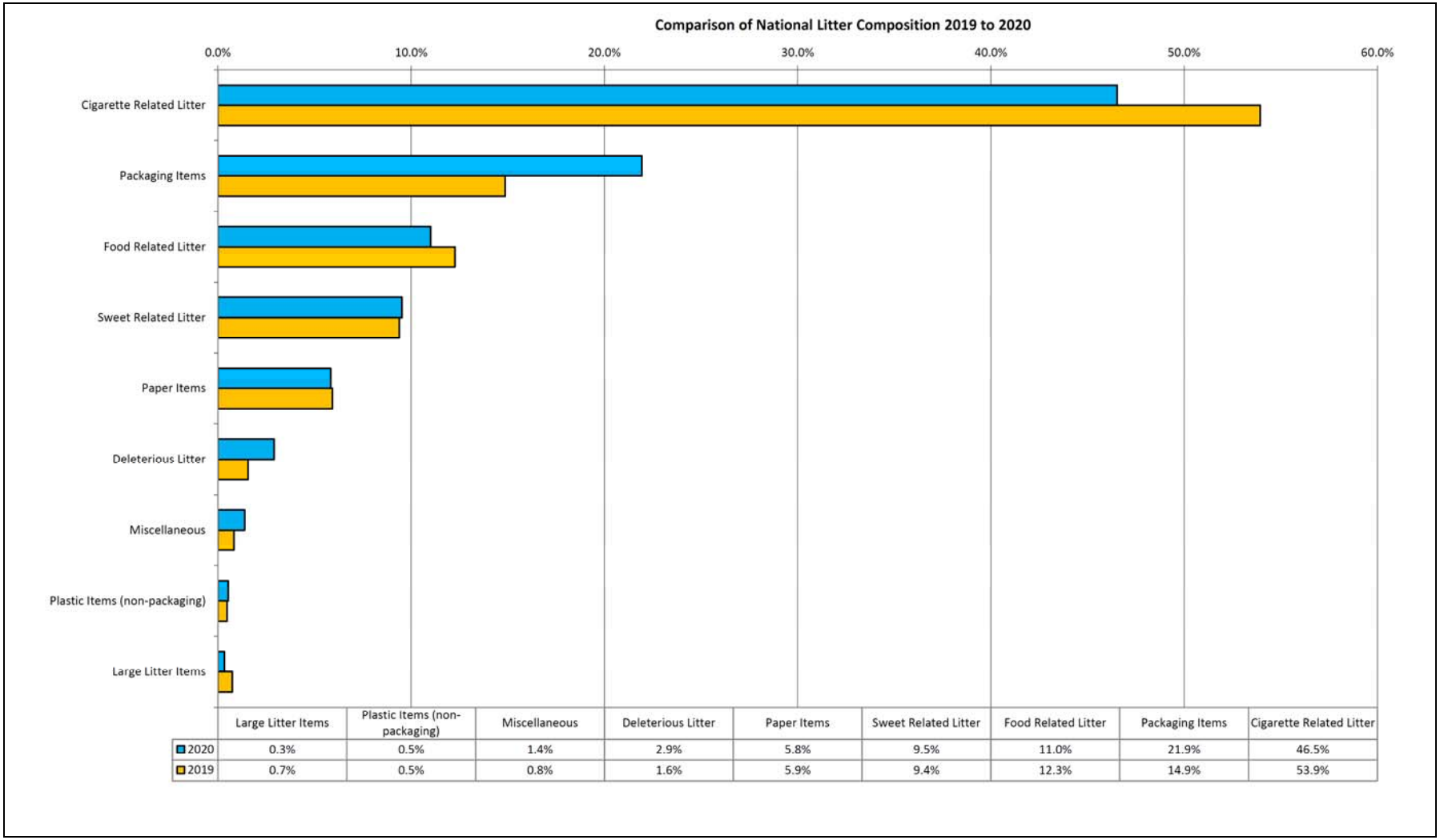
- **Packaging litter (21.9%)** is the second largest component of national litter pollution recorded. Bottle caps (2.5%), bottles (1.9%), drink lids (1.6%), drink cups (1.6%), beverage bottles (non-alcoholic) (1.6%), bags and wrappers (1.4%) beverage cans (alcoholic) (1.3%), beverage cans (non-alcoholic) (1.2%) and beverage bottles (alcoholic) (1.2%) are the main litter items in this category.

- **Food related litter (11.0%)** is the third largest category of litter pollution recorded. Chewing gum is the single largest litter component in the food related litter category, and the second largest component nationally, comprising 9.4% of all litter recorded in the LQS carried out in 2020.

- **Sweet related litter (9.5%)** is the fourth largest category of litter pollution recorded. Sweet wrappers (plastic/foil) (5.1%) is the largest litter component in the sweet related litter category in 2020.

## 3.1 Comparison of Litter Quantification Surveys (LQS) 2019 – 2020

Figure 3-2 below compares the results of the 2019 and 2020 LQS.




| | Large Litter Items | Plastic Items (non-packaging) | Miscellaneous | Deleterious Litter | Paper Items | Sweet Related Litter | Food Related Litter | Packaging Items | Cigarette Related Litter |
|---|---|---|---|---|---|---|---|---|---|
| 2020 | 0.3% | 0.5% | 1.4% | 2.9% | 5.8% | 9.5% | 11.0% | 21.9% | 46.5% |
| 2019 | 0.7% | 0.5% | 0.8% | 1.6% | 5.9% | 9.4% | 12.3% | 14.9% | 53.9% |

**Figure 3-2 Comparison of National Litter Composition from 2019 to 2020**

A comparison of the results of LQS carried out in 2019 and 2020 shows a relatively similar composition of litter. However, analysis reveals some differences in the relative quantities of certain components.

- The percentage of cigarette related litter has decreased by 7.4% since 2019.
- The percentage of packaging items increased by 7.0% since 2019.
- The percentage of food related litter has decreased by 1.3% since 2019.
- The percentage of sweet related litter items increased 0.1% since 2019.
- The percentage of paper items decreased by 0.1% since 2019.
- The percentage of deleterious litter has increased by 1.3% since 2019.
- The number of items recorded as miscellaneous litter has increased by 0.6% since 2019.
- There has been a decrease in large litter items (0.4%) since 2019.
- The percentage of plastic items (non-packaging) remained at 0.5% in 2019 and 2020.

Table 3-1 on the following page details the composition of litter in 2019 and 2020.

The greatest percentage change in litter composition is in the cigarette related litter which has decreased by 7.4% since 2019. This large decrease may be attributed to the Government's Covid 19 restriction measures and the temporary closure of many businesses during 2020.

Packaging items had the largest increase since 2019 (7.0%). This can be attributed to an increase in several items in this category including beverage bottles - non-alcoholic (1.0% increase), lids (e.g. bottles and jars) (0.8% increase), bottle caps (0.7% increase), beverage bottles – alcoholic (0.6% increase), drink cups (0.4% increase), bags and wrappers (0.4% increase), beverage cans - alcoholic (0.4% increase) and other plastic packaging (0.4% increase).

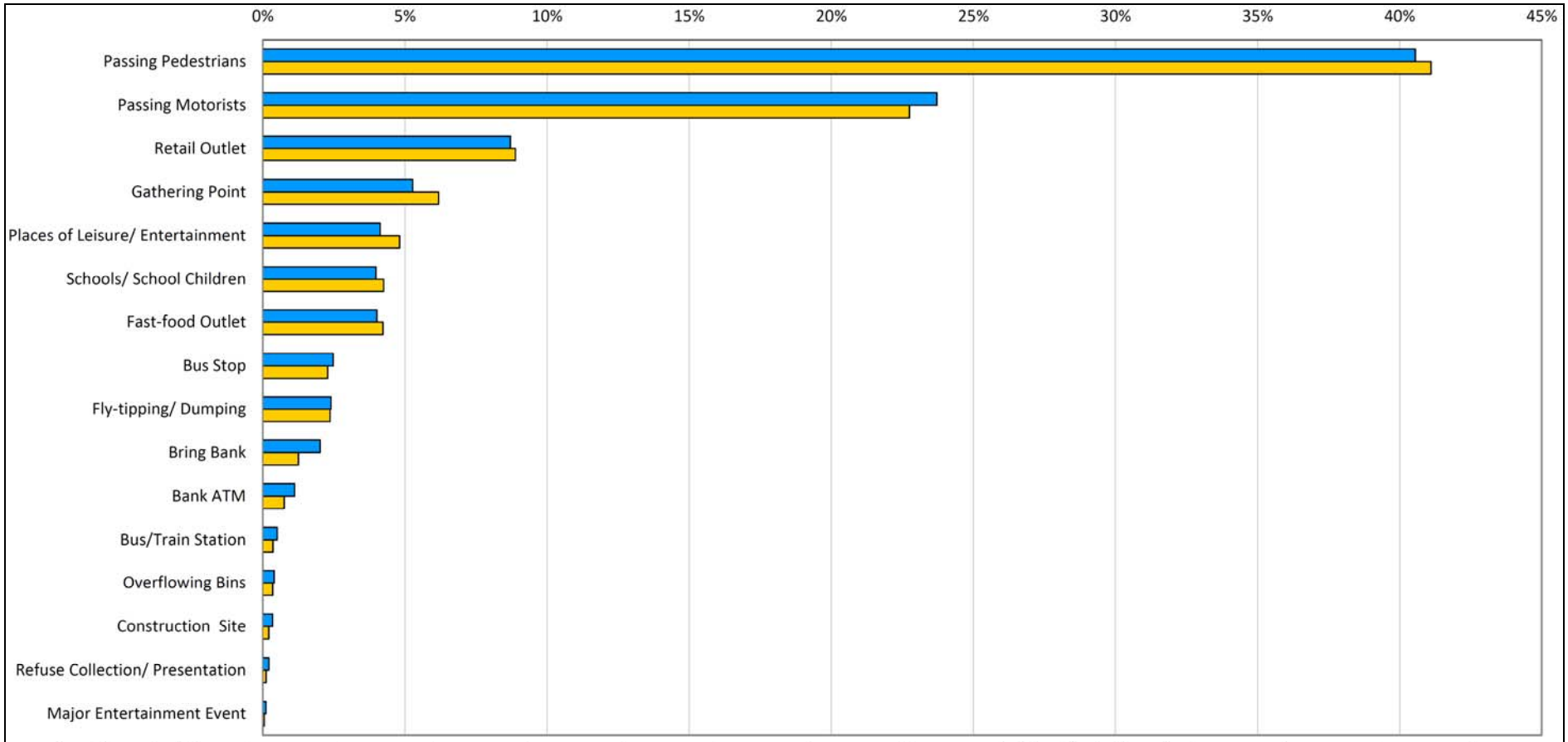
Refer to Appendix C for "Details of Litter Composition from 2019-2020 according to Local Authority Type".

| | Detailed National Litter Composition 2020 | | | Detailed National Litter Composition 2019 | |
|---|---|---|---|---|---|
| Cigarette Related Litter 46.5% | Cigarette ends | 43.3% | Cigarette Related Litter 53.9% | Cigarette ends | 50.9% |
| | Cigarette boxes and wrappers | 2.1% | | Cigarette boxes and wrappers | 1.7% |
| | Matches | 1.0% | | Matches | 1.1% |
| | Matchboxes and lighters | 0.1% | | Matchboxes and lighters | 0.3% |
| ood Related Litter 11.0% | Chewing Gum | 9.4% | Food Related Litter 12.3% | Chewing Gum | 10.6% |
| | Remnants of confectionery food items | 0.5% | | Remnants of confectionery food items | 0.3% |
| | Other food items | 0.4% | | Other food items | 0.2% |
| | Fast-food remnants | 0.2% | | Fast-food remnants | 0.3% |
| | Bread/ biscuits | 0.2% | | Bread/ biscuits | 0.5% |
| | Fruit/ vegetables | 0.2% | | Fruit/ vegetables | 0.4% |
| Packaging Items 21.9% | Bottle Caps | 2.5% | Packaging Items 14.9% | Bottle Caps | 1.8% |
| | Bottles | 1.9% | | Bottles | 1.6% |
| | Drink cups | 1.6% | | Drink cups | 1.2% |
| | Drink Lids | 1.6% | | Drink Lids | 1.3% |
| | Bags and wrappers | 1.4% | | Bags and wrappers | 1.0% |
| | Beverage Cans - Non-alcoholic | 1.2% | | Beverage Cans - Non-alcoholic | 1.2% |
| | Beverage Cans - Alcoholic | 1.3% | | Beverage Cans - Alcoholic | 0.9% |
| | Beverage Bottles - Alcoholic | 1.2% | | Beverage Bottles - Alcoholic | 0.6% |
| | Other paper packaging | 0.9% | | Other paper packaging | 0.7% |
| | Beverage Bottles - Non-alcoholic | 1.6% | | Beverage Bottles - Non-alcoholic | 0.6% |
| | Drinks cartons | 0.8% | | Drinks cartons | 0.6% |
| | Plastic film | 0.5% | | Plastic film | 0.5% |
| | Other plastic packaging | 0.9% | | Other plastic packaging | 0.5% |
| | Cardboard | 0.6% | | Cardboard | 0.4% |
| | Tin foil (not sweet wrappers) | 0.4% | | Tin foil (not sweet wrappers) | 0.3% |
| | Bags - shopping bags | 0.5% | | Bags - shopping bags | 0.3% |
| | Other metal litter items | 0.2% | | Other metal litter items | 0.1% |
| | Lids (e.g. from bottles, jars) | 0.9% | | Lids (e.g. from bottles, jars) | 0.1% |
| | Food cans | 0.2% | | Food cans | 0.1% |
| | Aeroboard | 0.0% | | Aeroboard | 0.0% |
| | Jars and other containers | 0.4% | | Jars and other containers | 0.1% |
| | Metal drums | 0.0% | | Metal drums | 0.0% |
| | Bags | 0.7% | | Bags | 0.5% |
| | Boxes | 0.2% | | Boxes | 0.2% |
| | Bags - other (e.g. fertiliser) | 0.1% | | Bags - other (e.g. fertiliser) | 0.1% |
| | Plastic sheeting (e.g. silage) | 0.0% | | Plastic sheeting (e.g. silage) | 0.1% |
| | Bubble-wrap | 0.1% | | Bubble-wrap | 0.1% |
| weet Related Litter 9.5% | Sweet Wrappers (plastic/foil) | 5.1% | Sweet Related Litter 9.4% | Sweet Wrappers (plastic/foil) | 5.2% |
| | Lollipop Sticks (wooden/plastics) | 1.4% | | Lollipop Sticks (wooden/plastics) | 1.2% |
| | Straws | 1.2% | | Straws | 1.6% |
| | Crisp Bags | 1.8% | | Crisp Bags | 1.5% |
| Paper Items 5.8% | Tissues | 2.1% | Paper Items 5.9% | Tissues | 1.9% |
| | Receipts | 1.5% | | Receipts | 1.5% |
| | Other paper items | 0.7% | | Other paper items | 0.7% |
| | Tickets (e.g. bus, lottery) | 0.6% | | Tickets (e.g. bus, lottery) | 0.7% |
| | Bank slips | 0.4% | | Bank slips | 0.8% |
| | Newspapers | 0.2% | | Newspapers | 0.1% |
| | Flyers and posters | 0.2% | | Flyers and posters | 0.2% |
| | Letters, envelopes and cards | 0.1% | | Letters, envelopes and cards | 0.0% |
| | Magazines/ brochures | 0.1% | | Magazines/ brochures | 0.1% |
| Deleterious Litter 2.9% | Dog fouling | 2.2% | Deleterious Litter 1.6% | Dog fouling | 1.3% |
| | Municipal Hazardous Waste (e.g. paint, solvents) | 0.0% | | Municipal Hazardous Waste (e.g. paint, solvents) | 0.0% |
| | Other deleterious items | 0.3% | | Other deleterious items | 0.0% |
| | Feminine hygiene products | 0.1% | | Feminine hygiene products | 0.1% |
| | Nappies | 0.2% | | Nappies | 0.2% |
| | Needles and syringes | 0.0% | | Needles and syringes | 0.0% |
| Large Litter Items 0.3% | Other large items | 0.1% | Large Litter Items 0.7% | Other large items | 0.3% |
| | Household refuse in bags | 0.2% | | Household refuse in bags | 0.4% |
| | Appliances (e.g. fridge) | 0.0% | | Appliances (e.g. fridge) | 0.0% |
| | Furniture | 0.0% | | Furniture | 0.0% |
| | Scrap cars | 0.0% | | Scrap cars | 0.0% |
| liscellaneous 1.4% | Miscellaneous Litter Items | 1.4% | Miscellaneous 0.6% | Miscellaneous Litter Items | 0.8% |
| lastic Items (Non-packaging) 0.5% | Plastic items | 0.5% | Plastic Items (Non-packaging) 0.4% | Plastic items | 0.5% |

**Table 3-1 Detailed National Litter Composition 2019 to 2020**

# CHAPTER 4: WHAT ARE THE MAIN CAUSES OF LITTER POLLUTION?

The breakdown of causative factors nationally in 2019 and 2020 for all local authorities is presented in Figures 4-1 and 4-2. It can be seen from these figures that the relative ranking of causative factors is similar from 2019 to 2020, with the greatest difference occurring between passing motorists (an increase of 0.9% since 2019) and gathering points (a decrease of 0.9% since 2019).




| | Major Entertainment Event | Refuse Collection/ Presentation | Construction Site | Overflowing Bins | Bus/Train Station | Bank ATM | Bring Bank | Fly-tipping/ Dumping | Bus Stop | Fast-food Outlet | Schools/ School Children | Places of Leisure/ Entertainment | Gathering Point | Retail Outlet | Passing Motorists | Passing Pedestrians |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 0.1% | 0.2% | 0.3% | 0.4% | 0.5% | 1.1% | 2.0% | 2.4% | 2.5% | 4.0% | 4.0% | 4.1% | 5.3% | 8.7% | 23.7% | 40.6% |
| 2019 | 0.1% | 0.1% | 0.2% | 0.4% | 0.4% | 0.8% | 1.3% | 2.4% | 2.3% | 4.2% | 4.3% | 4.8% | 6.2% | 8.9% | 22.8% | 41.1% |

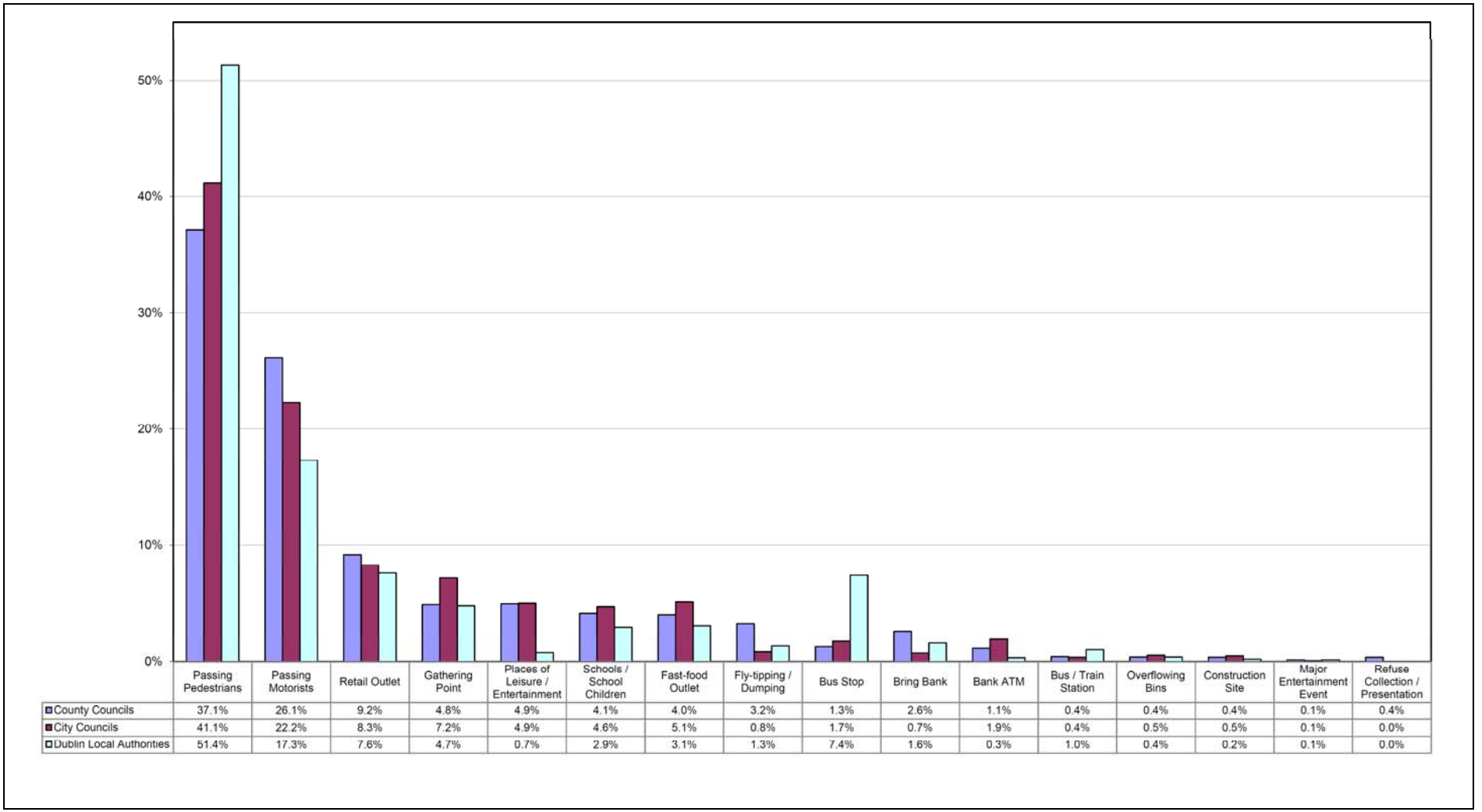
**Figure 4-1 Causative Factors of Litter Pollution across all Local Authorities in 2019 and 2020**

Figure 4-1 illustrates that:

- Passing pedestrians continue to constitute the greatest single causative factor of litter pollution, accounting for 40.6% across all local authorities.
- Passing motorists are the second largest causative factor accounting for 23.7% across all local authority types in 2020.
- Causative factors that have increased from 2019 to 2020 include passing motorists (from 22.8% to 23.7%), bus stops (from 2.3% to 2.5%), bring banks (from 1.3% to 2.0%), bank ATMs (from 0.8% to 1.1%), bus/train stations (from 0.4% to 0.5%), construction sites (from 0.2% to 0.3%) and refuse collection/presentation (from 0.1% to 0.2%).
- Causative factors that have decreased from 2019 to 2020 include passing pedestrians (from 41.1% to 40.6%), retail outlets (from 8.9% to 8.7%), gathering points (from 6.2% to 5.3%), places of leisure/ entertainment (from 4.8% to 4.1%), schools/ school children (from 4.3% to 4.0%) and fast food outlet (from 4.2% to 4.0%).

During the LPS, surveyors are asked for observations on the primary causes of litter pollution. Causative factors are expressed as a percentage of the total number of causative factors identified in all LPS. For each survey, there is usually more than one causative factor of the litter found, e.g. passing pedestrians, fast-food outlets and overflowing bins may all be contributing to litter pollution in a survey area.

The breakdown of causative factors found in each local authority type is presented in Figure 4-2.




| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Places of Leisure / Entertainment | Schools / School Children | Fast-food Outlet | Fly-tipping / Dumping | Bus Stop | Bring Bank | Bank ATM | Bus / Train Station | Overflowing Bins | Construction Site | Major Entertainment Event | Refuse Collection / Presentation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County Councils | 37.1% | 26.1% | 9.2% | 4.8% | 4.9% | 4.1% | 4.0% | 3.2% | 1.3% | 2.6% | 1.1% | 0.4% | 0.4% | 0.4% | 0.1% | 0.4% |
| City Councils | 41.1% | 22.2% | 8.3% | 7.2% | 4.9% | 4.6% | 5.1% | 0.8% | 1.7% | 0.7% | 1.9% | 0.4% | 0.5% | 0.5% | 0.1% | 0.0% |
| Dublin Local Authorities | 51.4% | 17.3% | 7.6% | 4.7% | 0.7% | 2.9% | 3.1% | 1.3% | 7.4% | 1.6% | 0.3% | 1.0% | 0.4% | 0.2% | 0.1% | 0.0% |

*City Council results also include the Limerick and Waterford county areas (i.e. these local authorities are now known as Limerick City and County Council and Waterford City and County Council).
**County Council results exclude Limerick and Waterford.

**Figure 4-2 Causative Factors of Litter Pollution According to Local Authority Type in 2020**

The national results for 2020 show that passing pedestrians are the most significant cause of litter pollution within all local authority types. It is also clear from Figure 4-2 that passing motorists, retail outlets, gathering points, places of leisure/entertainment, fast-food outlets and schools/school children are considerable sources of litter across all local authority types.

Survey results from 2020 show that the contribution of passing motorists, retail outlets, fly-tipping/dumping, bring banks and refuse collection/presentation are greater in County Councils than in other local authority types.

Gathering points, schools/school children, fast-food outlets, bank ATMs, overflowing bins and construction sites are more significant causative factors in City Councils than in other local authority types.

Passing pedestrians, bus stops and bus/train stations are more significant causative factors in Dublin Local Authorities than in other local authority types.

The data in Figure 4-2 indicates that the causes of litter pollution nationwide continue to remain relatively homogeneous, irrespective of local authority type. This is not unexpected, given that local authorities carry out their litter pollution and quantification surveys largely in areas where potential sources of litter (i.e. people) are located.

The homogeneous nature of the causative factors of litter pollution in Ireland is further illustrated by the ranking of these causative factors and the linking of them to the level of litter pollution in the locations surveyed – see Figures D.1 to D.8 in Appendix D. The percentage of causative factors varies with each category of LPI. The data is organised illustrating the 2019 and 2020 graphs under each litter pollution index (on the same page) to facilitate the comparison of the 2019 and 2020 results.

# CHAPTER 5: ASSESSMENT OF LITTER POLLUTION DATA BY LOCAL AUTHORITY TYPE

This chapter focuses on comparative data for litter pollution across different local authority types. LPS results for 30[4] local authorities have been returned to the Litter Monitoring Body (LMB) and analysed for 2020 – a list of local authorities is detailed in Appendix A.

Comparison of the 2020 LPS data for the different categories of local authorities is examined in Figures 5-1, 5-2, 5-3 and 5-4.

## 5.1 Comparison within Dublin Local Authorities

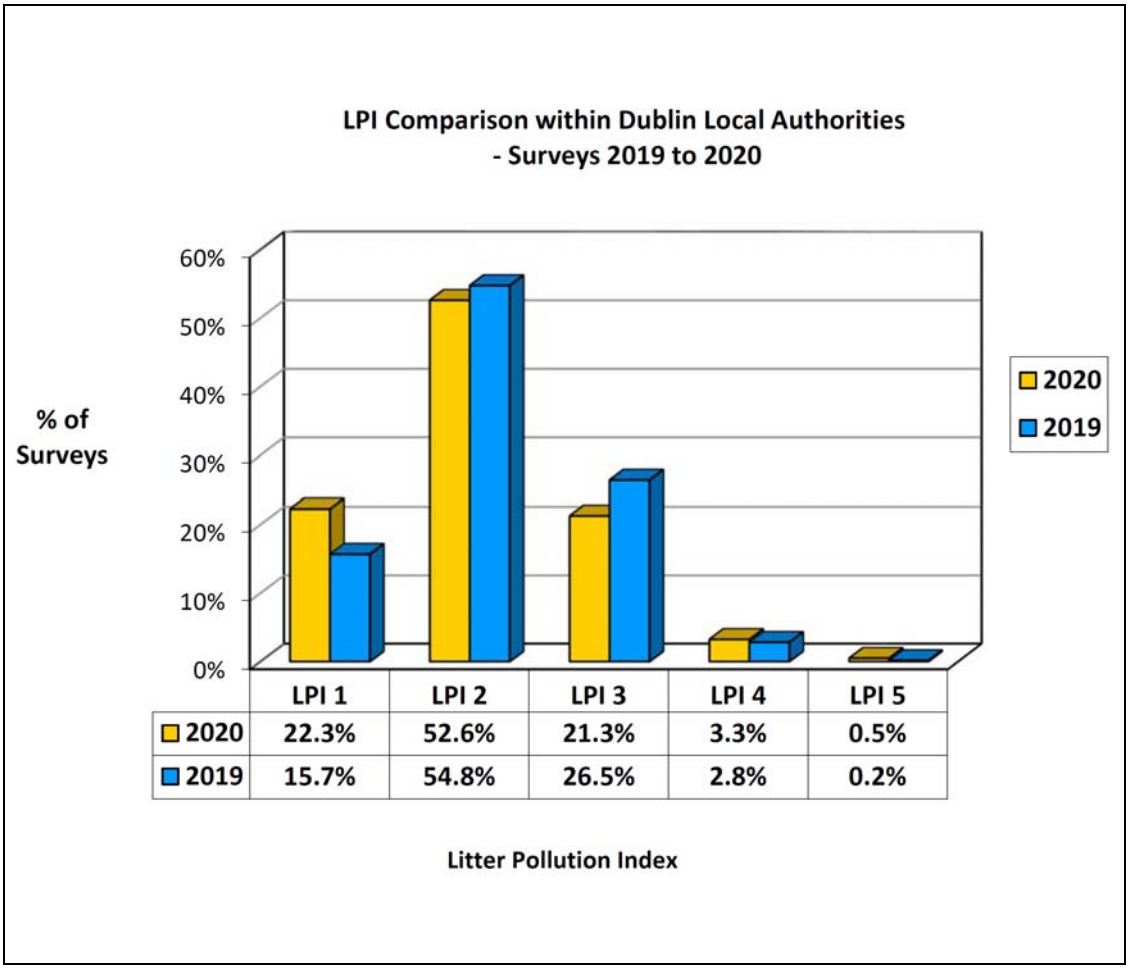



**Figure 5-1 Comparison of Litter Pollution within Dublin Local Authorities 2019 to 2020**

In comparing the litter pollution data for Dublin Local Authorities, Figure 5-1 illustrates the following:

- The percentage of unpolluted (LPI 1) areas increased from 15.7% in 2019 to 22.3% in 2020. This constitutes an increase of 6.6%.

[44] Offaly County Council did not submit results for 2020

- Slightly polluted (LPI 2) areas decreased from 54.8% in 2019 to 52.6% in 2020. This constitutes a decrease of 2.2%.
- Moderately polluted (LPI 3) areas decreased from 26.5% in 2019 to 21.3% in 2020. This constitutes a 5.2% decrease.
- Significantly polluted (LPI 4) areas increased from 2.8% in 2019 to 3.3% in 2020. This constitutes a 0.5% increase.
- Grossly polluted (LPI 5) areas increased by 0.3%, from 0.2% in 2019 to 0.5% in 2020.
- The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined, show an increase of 4.4% from 2019 to 2020.

Overall, the results show a decrease in the level of litter pollution in Dublin Local Authorities from 2019 to 2020. Furthermore, there was also a combined decrease, of 4.4%, in moderately polluted (LPI 3), significantly polluted (LP4) and grossly polluted (LP1 5) areas between 2019 and 2020.

## 5.2 Comparison within County Councils

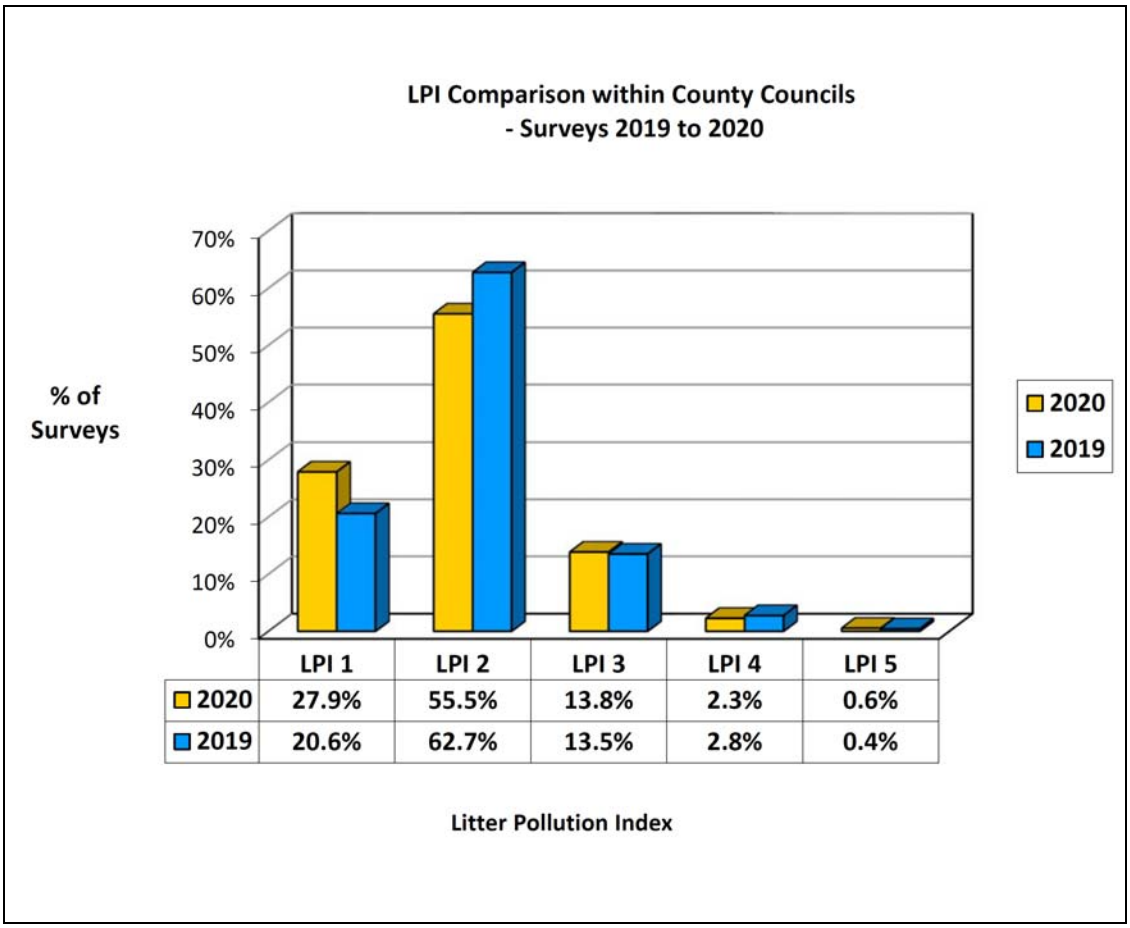



**Figure 5-2 Comparison of Litter Pollution within County Councils 2019 to 2020**

In comparing the litter pollution data for County Councils, Figure 5-2 illustrates the following:

- The percentage of unpolluted (LPI 1) areas increased from 20.6% in 2019 to 27.9% in 2020. This constitutes an increase of 7.3%.
- Slightly polluted (LPI 2) areas decreased by 7.2%, from 62.7% in 2019 to 55.5% in 2020.
- Moderately polluted (LPI 3) areas increased by 0.3%, from 13.5% in 2019 to 13.8% in 2020.
- Significantly polluted (LPI 4) areas decreased from 2.8% in 2019 to 2.3% in 2020. This constitutes a decrease of 0.5%.
- The percentage of grossly polluted (LPI 5) areas has increased from 0.4% in 2019 to 0.6% in 2020. This constitutes an increase of 0.2%.
- The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined, show a slight increase of 0.1% from 2019 to 2020.

Overall, these results show a slight decrease in the level of litter pollution in County Councils from 2019 to 2020. The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas, when combined, showed an increase of 0.1%. When combined, the percentage of moderately polluted (LPI 3), significantly polluted (LP4) and grossly polluted (LP1 5) areas remained the same between 2019 and 2020.

## 5.3 Comparison within City Councils

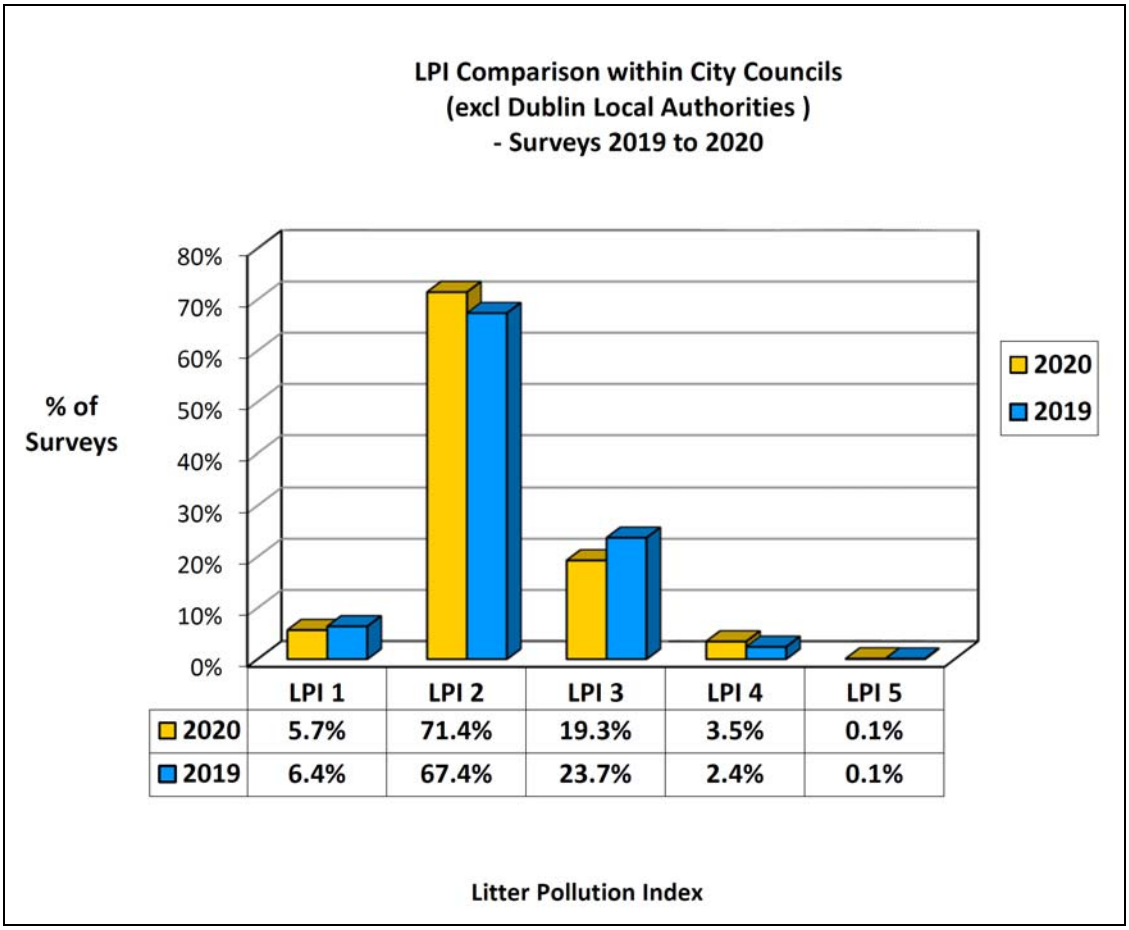



**Figure 5-3 Comparison of Litter Pollution within City Councils 2019 to 2020**

In comparing the litter pollution data for City Councils, Figure 5-3 illustrates the following:

- The percentage of unpolluted (LPI 1) areas has decreased from 6.4% in 2019 to 5.7% in 2020. This constitutes a decrease of 0.7%.
- Slightly polluted (LPI 2) areas have increased by 4.0%, from 67.4% in 2019 and 71.4% in 2020.
- The percentage of moderately polluted (LPI 3) areas has decreased by 4.4%, from 23.7% in 2019 to 19.3% in 2020.
- Significantly polluted (LPI 4) areas have increased from 2.4% in 2019 to 3.5% in 2020. This constitutes an increase of 1.1%.
- The percentage of grossly polluted (LPI 5) have remained the same at 0.1% in 2019 and 2020.
- The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined, shows an increase of 3.3% from 2019 to 2020.

These results show an overall decrease in the level of litter pollution in City Councils from 2019 to 2020. The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas, when combined, show an increase of 3.3%. These results also show there has been a decrease of 3.3% in moderately polluted (LPI 3), significantly polluted (LPI 4) and grossly polluted (LPI 5) areas, when combined, since 2019.

The percentage of unpolluted (LPI 1) areas increased in County Councils and Dublin Local Authorities from 2019 to 2020 but decreased in City Councils.

The percentage of slightly polluted (LPI 2) areas decreased in both County Councils and Dublin Local Authorities but increased in City Councils from 2019 to 2020.

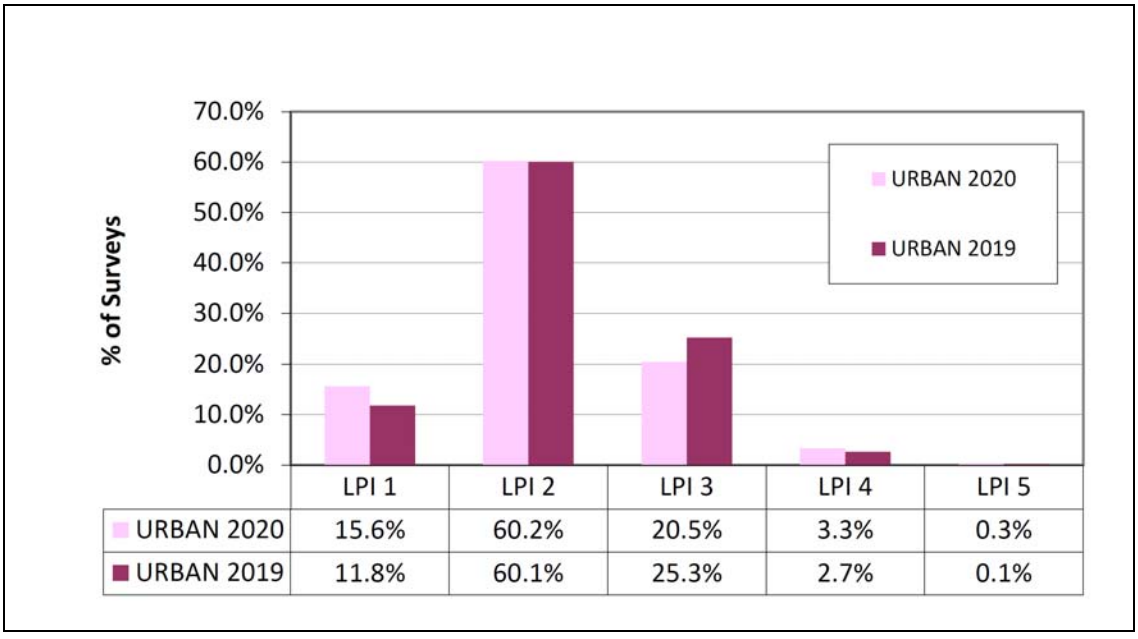
The percentage of moderately polluted (LPI 3) areas decreased in Dublin Local Authorities and City Council areas but increased in County Council areas from 2019 to 2020.

The percentage of significantly polluted (LPI 4) areas increased in Dublin Local Authorities and City Council areas but decreased in County Council areas from 2019 to 2020.

The percentage of grossly polluted (LPI 5) areas increased in Dublin Local Authorities and County Councils from 2019 to 2020. The percentage of LPI 5 areas remained the same in City Council areas from 2019 to 2020.

## 5.4 Comparison within Urban & Rural Areas[5]

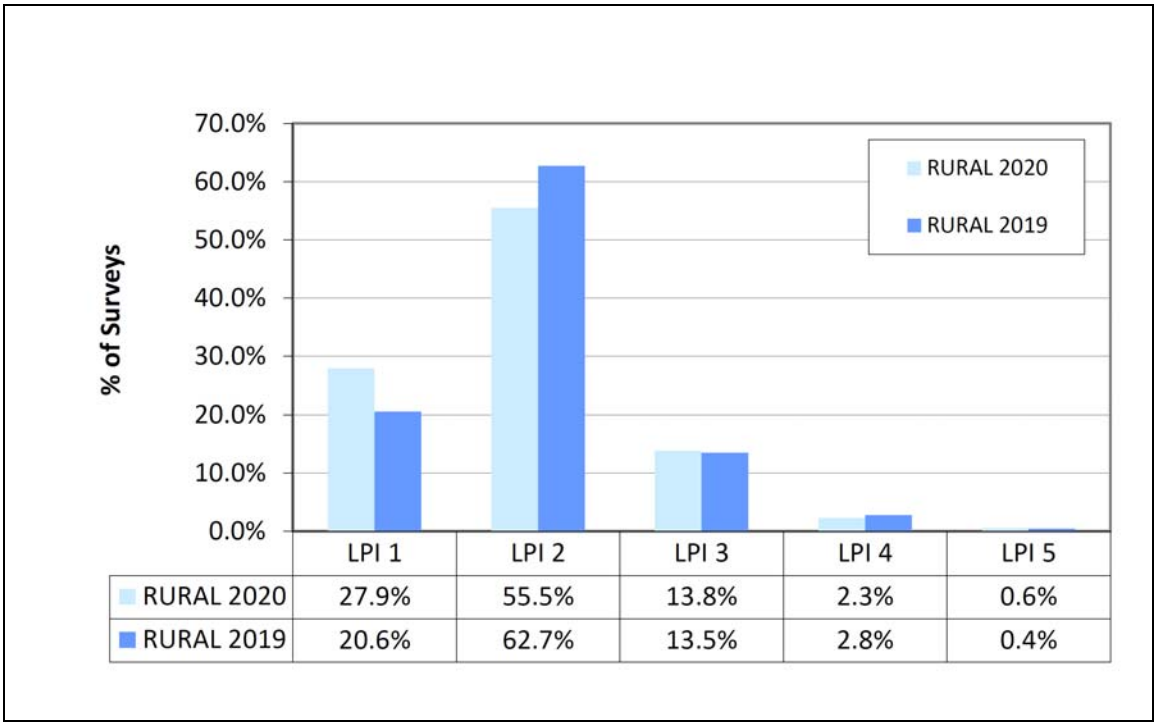
Figures 5-4 and 5-5 provide a comparison of litter pollution in rural and urban areas from 2019 to 2020.




| | LPI 1 | LPI 2 | LPI 3 | LPI 4 | LPI 5 |
|---|---|---|---|---|---|
| URBAN 2020 | 15.6% | 60.2% | 20.5% | 3.3% | 0.3% |
| URBAN 2019 | 11.8% | 60.1% | 25.3% | 2.7% | 0.1% |

**Figure 5-4 Comparison of Litter Pollution in Urban Areas from 2019 to 2020**

[5] For the purpose of this Report urban local authorities include Cork City Council, Dublin City Council, Dun Laoghaire-Rathdown County Council, Fingal County Council, Galway City Council, Limerick City and County Council, South Dublin County Council and Waterford City and County Council. For the purpose of this report, rural local authorities include all other County Councils (excluding Offaly County Council).




| | LPI 1 | LPI 2 | LPI 3 | LPI 4 | LPI 5 |
|---|---|---|---|---|---|
| RURAL 2020 | 27.9% | 55.5% | 13.8% | 2.3% | 0.6% |
| RURAL 2019 | 20.6% | 62.7% | 13.5% | 2.8% | 0.4% |

**Figure 5-5 Comparison of Litter Pollution in Rural Areas from 2019 to 2020**

The percentage of unpolluted (LPI 1) areas in urban areas has increased by 3.8%, from 11.8% in 2019 to 15.6% in 2020. The percentage of slightly polluted (LPI 2) areas has increased slightly from 60.1% 2019 to 60.2% in 2020. Moderately polluted (LPI 3) areas have decreased by 4.8%, from 25.3% in 2019 to 20.5% in 2020. Significantly polluted (LPI 4) areas have increased by 0.6%, from 2.7% in 2019 to 3.3% in 2020. Grossly polluted (LPI 5) areas have increased slightly by 0.2%, from 0.1% in 2019 to 0.3% in 2020.

In rural areas, the levels of unpolluted (LPI 1) areas have increased by 7.3%, from 20.6% in 2019 to 27.9% in 2020. The percentage of slightly polluted (LPI 2) areas has decreased by 7.2%, from 62.7% in 2019 to 55.5% in 2020. Moderately polluted (LPI 3) areas have increased by 0.3%, from 13.5% in 2019 to 13.8% in 2020. Significantly polluted (LPI 4) areas have decreased by 0.5%, from 2.8% in 2019 to 2.3% in 2020. Grossly polluted (LPI 5) areas have increased by 0.2%, from 0.4% in 2019 to 0.6% in 2020.

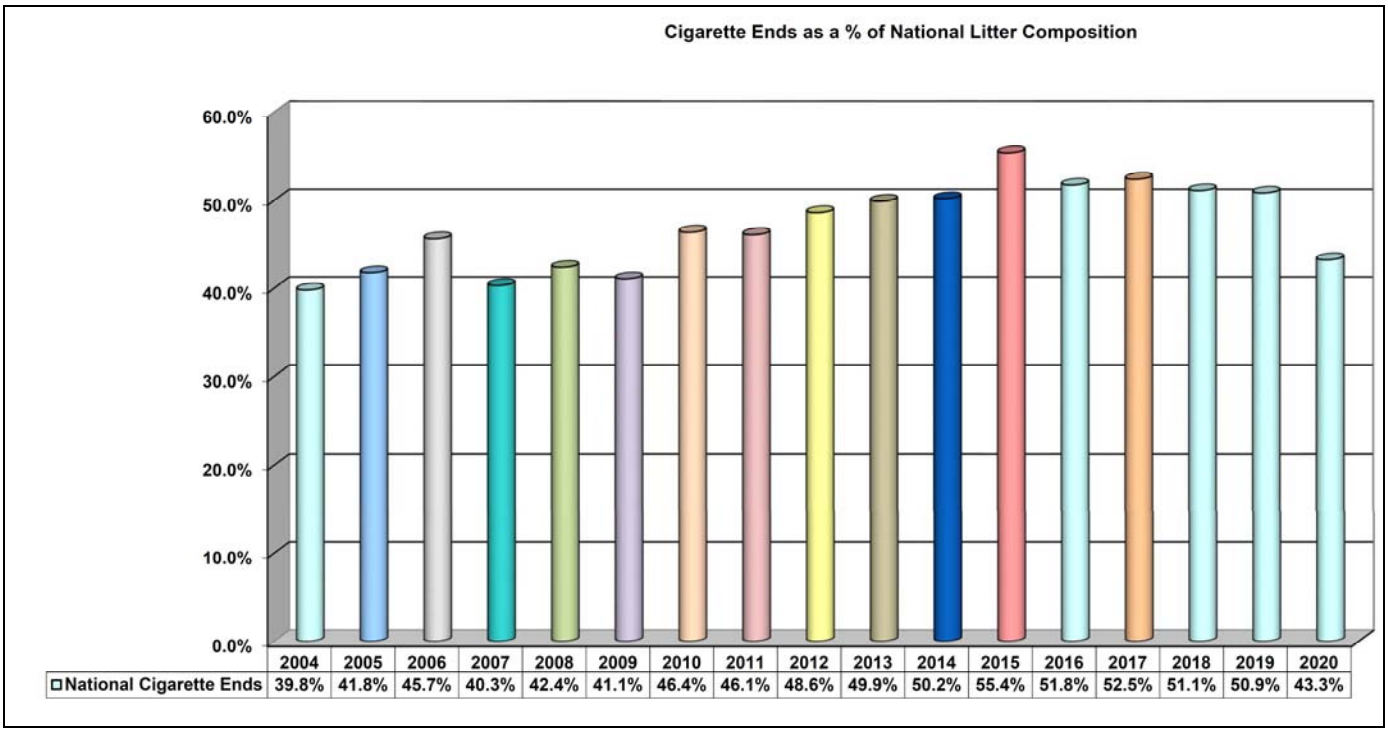
The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined, show that urban areas have shown an increase in cleanliness levels by 3.9% from 2019 to 2020. Rural areas have also shown a slight increase in cleanliness levels by 0.1% since 2019.

Refer to Appendix E "Comparison of Causative Factors of Litter Pollution within Urban and Rural Local Authorities".

# CHAPTER 6: ANALYSIS OF SPECIFIC COMPONENTS OF LITTER

## 6.1 Cigarette Related Litter

The percentage of national litter represented by cigarette related litter has decreased from 53.9% in 2019 to 46.5% in 2020, a decrease of 7.4% (see Table 3-1, page 13). Cigarette related litter continues to be the largest component of litter nationally in 2020.




| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| National Cigarette Ends | 39.8% | 41.8% | 45.7% | 40.3% | 42.4% | 41.1% | 46.4% | 46.1% | 48.6% | 49.9% | 50.2% | 55.4% | 51.8% | 52.5% | 51.1% | 50.9% | 43.3% |

**Figure 6-1 Cigarette Ends as a Percentage of the National Litter Composition**

Cigarette ends continue to be the biggest component of cigarette related litter. The percentage of cigarette ends, as a component of national litter, decreased (by 7.6%), from 50.9% in 2019 to 43.3% in 2020 (Figure 6-1).

## 6.2 Chewing Gum Litter

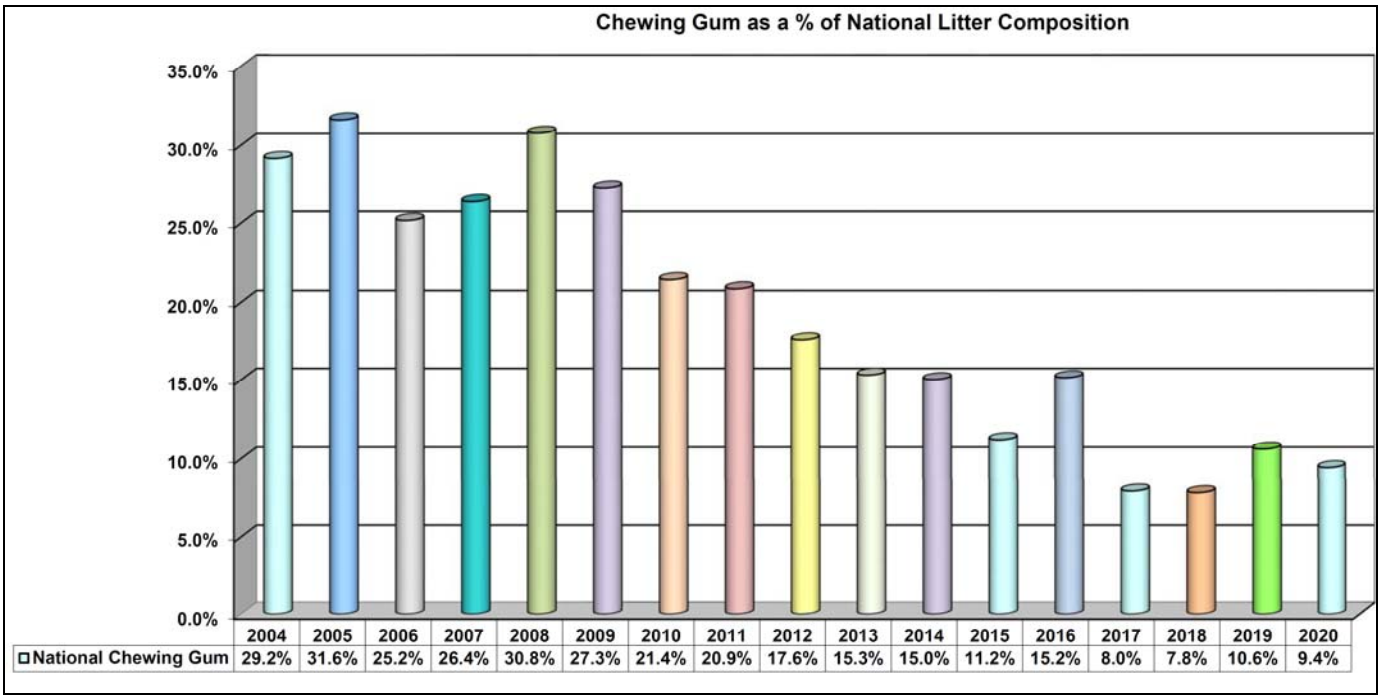



**Figure 6-2 Chewing Gum as a Percentage of the National Litter Composition**

Food related litter, and specifically chewing gum, continued to be a noticeable component of litter nationally in 2020. Figure 6-2 above illustrates trends in chewing gum related litter since 2004.

Chewing gum has remained the single largest item of litter in the food related litter category and the second biggest component of litter nationally over the past seventeen years.

Chewing gum litter in 2020 (9.4%) had decreased by 1.2% since 2019.

## 6.3 Sweet Related Litter

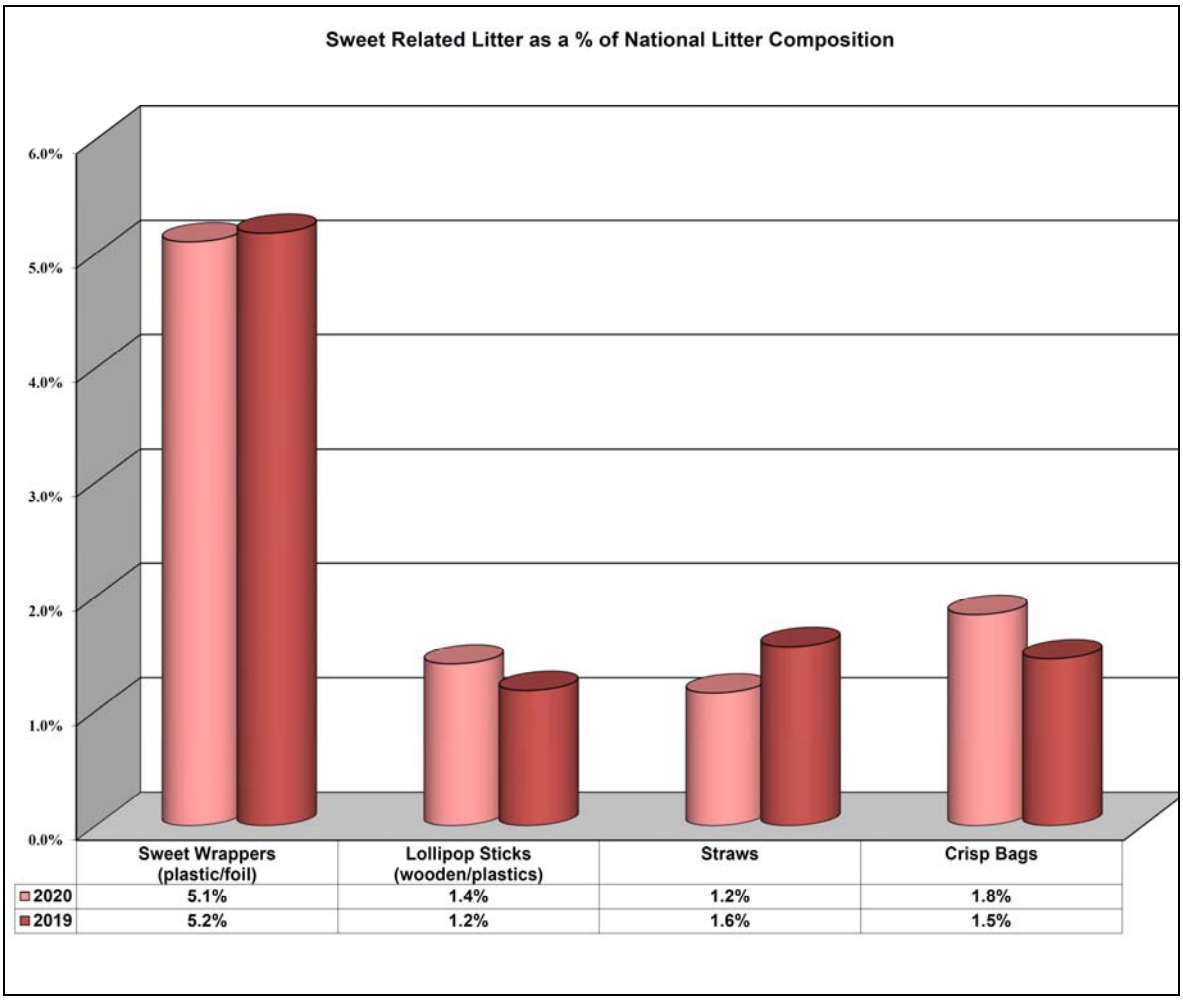


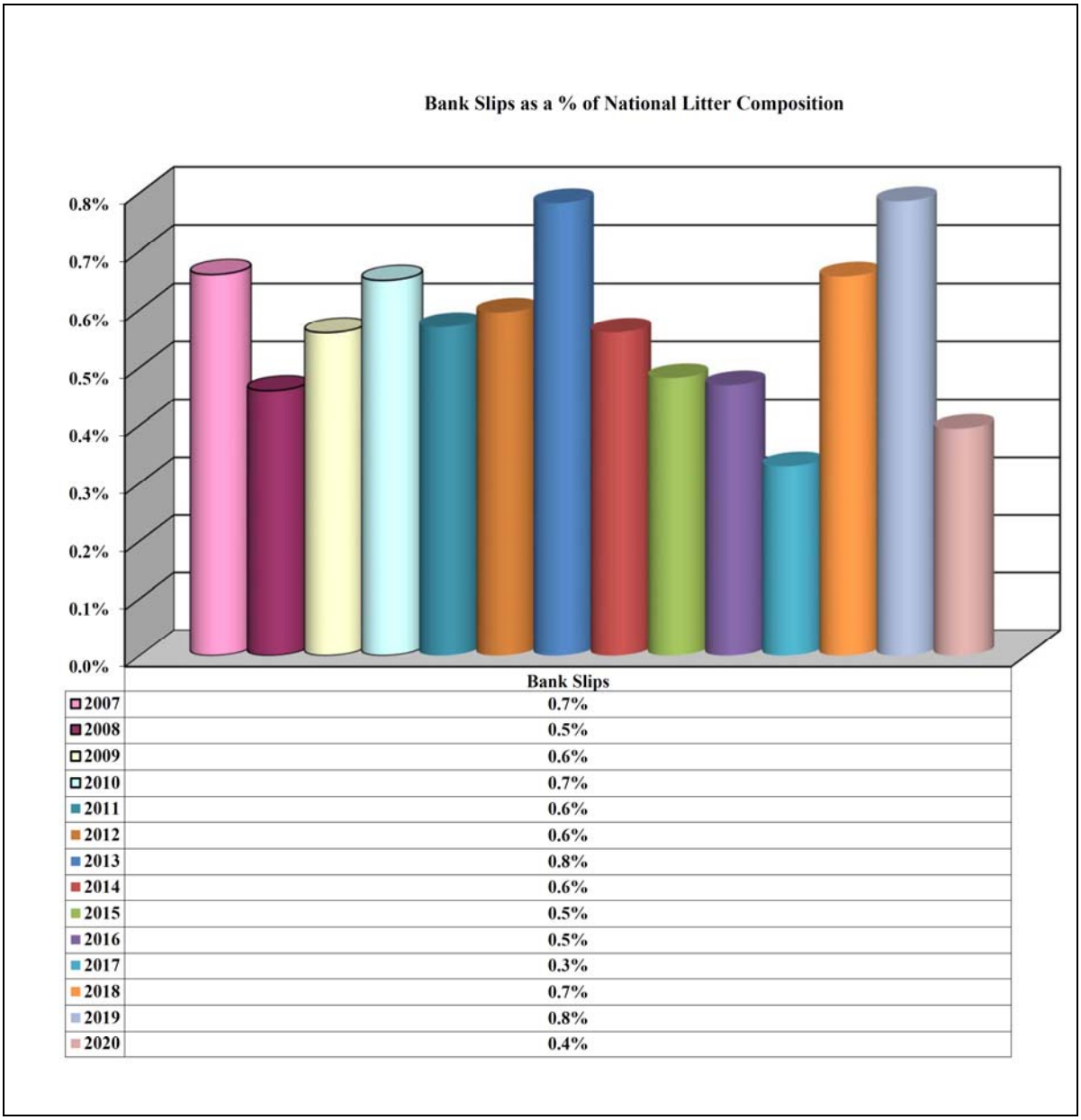

**Figure 6-3 Sweet Related Litter Analysed 2019 to 2020**

Sweet related litter, or sweet wrappers (plastic/foil) more specifically, continues to be a large component of national litter. The components of sweet related litter between 2019 and 2020 are presented in Figure 6-3 above.

Sweet related litter, as a component of national litter, increased from 9.4% in 2019 to 9.5% in 2020 (an increase of 0.1%). The results in Figure 6-3, illustrates that sweet wrappers (plastic/foil), are the highest component of litter in the sweet related litter category. The quantity of lollipop sticks (wooden/plastic) has increased by 0.2%, in 2020. Straws have decreased, by 0.4%, in 2020. Crisp bags also contribute to the sweet related litter category and have increased by 0.3% from 2019 to 2020.

## 6.4 Bank ATM Receipts

The NLPMS is also used to assess the impact of a protocol to tackle litter generated by ATM advice slips which was announced in January 2007 by the then Minister for the Environment, Heritage and Local Government and then Irish Banking Federation (IBF) on behalf of the retail banking groups with ATM networks.

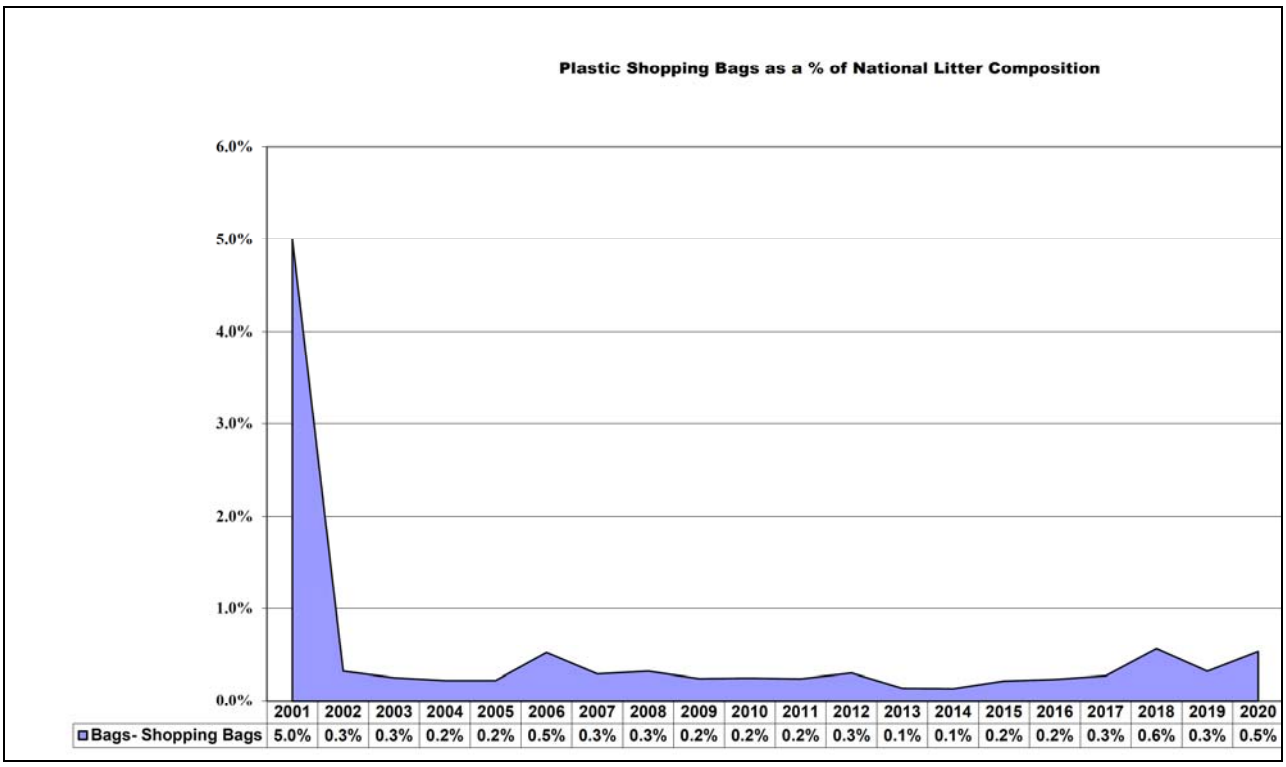



| | Bank Slips |
|---|---|
| 2007 | 0.7% |
| 2008 | 0.5% |
| 2009 | 0.6% |
| 2010 | 0.7% |
| 2011 | 0.6% |
| 2012 | 0.6% |
| 2013 | 0.8% |
| 2014 | 0.6% |
| 2015 | 0.5% |
| 2016 | 0.5% |
| 2017 | 0.3% |
| 2018 | 0.7% |
| 2019 | 0.8% |
| 2020 | 0.4% |

**Figure 6-4 Bank Slips as a Percentage of the National Litter Composition**

Figure 6-4 illustrates that bank slips, as a percentage of the national litter composition has decreased (by 0.4%) from 0.8% in 2019 to 0.4% in 2020. The NLPMS will continue to monitor the impact of this protocol.

## 6.5 Plastic Shopping Bags




| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bags- Shopping Bags | 5.0% | 0.3% | 0.3% | 0.2% | 0.2% | 0.5% | 0.3% | 0.3% | 0.2% | 0.2% | 0.2% | 0.3% | 0.1% | 0.1% | 0.2% | 0.2% | 0.3% | 0.6% | 0.3% | 0.5% |

**Figure 6-5 Plastic Shopping Bags as a Percentage of the National Litter Composition**

The NLPMS can be used as a tool to monitor the success of measures implemented to tackle specific issues. Prior to 2002, it was estimated that 1.3 billion shopping bags were issued annually. Because of incorrect disposal, many plastic bags ended up as a very visually intrusive form of litter pollution. Prior to the introduction of the NLPMS, it was estimated that plastic bags constituted 5% of litter. A plastic bag levy was introduced in March 2002 in order to tackle this issue. Results of the System indicated that plastic bags, as a component of national litter, responded positively and plastic bag litter began decreasing.

Between 2004 and 2006, levels of plastic shopping bags recorded by the System steadily began to climb again. The plastic bag levy increased, from 15c to 22c, in July 2007 in a further bid to reduce littering. The results of the System once again indicated that the measures were having a positive impact on littering; plastic shopping bags as a percentage of National Litter Composition reached an all-time low in 2014 (0.13%).

Figure 6-5 above illustrates the percentage of shopping bags as a percentage of the National Litter Composition from the period mid-2001 to 2020. The 2020 results show that the percentage of plastic shopping bags, as part of the National Litter Composition, has increased. The percentage of plastic shopping bag numbers recorded in the 2020 NLPMS surveys was similar to that recorded in 2006. The NLPMS will continue to monitor the level of plastic bag litter in Ireland and the impact of this levy.

# CHAPTER 7: ITEMS FOR FURTHER ATTENTION UNDER THE NLPMS

- The NLPMS will be used to continue to assess the impact of the protocol to tackle litter generated by ATM advice slips. This Protocol was announced in January 2007 by the then Minister for the Environment, Heritage and Local Government and the Irish Banking Federation (IBF) on behalf of the retail banking groups with ATM networks. The agreement currently operates between the Minister for Environment, Climate and Communications and the Banking and Payments Federation Ireland (BPFI).

- The NLPMS will be used to continue to assess the impact of the plastic bag levy, which was introduced in Ireland in March 2002 and which was increased from 15c to 22c in July 2007.

- The NLPMS will continue to monitor the level of cigarette related litter which is the largest litter component recorded nationally.

- The NLPMS will continue to monitor the level of chewing gum litter recorded which is the second largest litter component recorded nationally.

- The NLPMS will continue to monitor the causative factors of national litter pollution.

# CHAPTER 8: CONCLUSION

As a result of the Local Government Reform Act, 31 local authorities exist in Ireland. In 2020, 30 local authorities submitted their NLPMS survey results.

The constituent components and the causative factors of litter pollution nationally remain relatively constant across all local authority types from 2019 to 2020.

The percentage of cigarette related litter, food litter, paper litter and large litter items recorded in the 2020 surveys, have all decreased since 2019. Packaging items, sweet related litter, deleterious litter, miscellaneous litter and plastic items (non- packaging) recorded in the 2020 surveys, have all increased since 2019.

The national results for 2020 indicate that passing pedestrians are the most significant cause of litter pollution for every local authority type in Ireland. It is also clear that that passing motorists, retail outlets, gathering points, places of leisure/entertainment, fast-food outlets and schools/school children are considerable sources of litter across all local authority types.

Survey results from 2020 show that the contribution of passing motorists, retail outlets, fly-tipping/dumping, bring banks and refuse collection/presentation are greater in County Councils than in other local authority types.

Gathering points, schools/school children, fast-food outlets, bank ATMs, overflowing bins and construction sites are more significant causative factors in City Councils than in other local authority types.

Passing pedestrians, bus stops and bus/train stations are more significant causative factors in Dublin Local Authorities than in other local authority types.

The 2020 national litter monitoring system results indicate that the percentage of unpolluted (LPI 1) areas has increased from 17.3% in 2019 to 23.2% in 2020.

A comparison of the results from 2019 to 2020 indicates that the percentage of slightly polluted (LPI 2) areas has decreased from 61.7% in 2019 to 57.3% in 2020.

The percentage of moderately polluted areas (LPI 3) has decreased from 18.0% in 2019 to 16.4% in 2020. The percentage of significantly polluted areas (LPI 4) has remained the same at 2.7% in both 2019 and 2020. Grossly polluted areas (LPI 5) has increased slightly from 0.3% in 2019 to 0.5% in 2020.

The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined has increased (by 1.5%) from 2019 to 2020, thus demonstrating that there has been a decrease in litter pollution from 2019 to 2020.

Analysis of specific components of litter in 2020 resulted in the following observations:

- Cigarette related litter, and more specifically cigarette ends, continues to be the greatest component of litter nationally.

- Chewing gum continues to be the second largest litter component nationally. In 2020 it has decreased by 1.2%, from 10.6% in 2019 to 9.4% in 2020. The NLPMS will continue to monitor the level of chewing gum litter recorded nationally.

- Monitoring of plastic shopping bags, as a component of national litter, has indicated the number of plastic shopping bags responded positively to the introduction and increases in the levy in 2002 and 2007, respectively. Monitoring by the System recorded an all-time low in the levels of plastic shopping bags in the environment in 2014, after which time the level has slowly increased. In 2020, the percentage of plastic shopping bags recorded in the NLPMS surveys had increased to levels similarly recorded in 2006.

The degree, composition, causes and trends in litter pollution identified and discussed in this report are representative of the national picture in 2020, and will continue to be monitored into 2021.

The LMB is satisfied that local authorities are properly implementing the NLPMS. Local authorities will continue to be audited to ensure the System is being implemented as designed.

# APPENDIX A

# DETAILS OF LOCAL AUTHORITIES THAT CARRIED OUT SURVEYS IN 2020

## Litter Quantification Survey (LQS) Results

LQS results for 29 local authorities were returned to the LMB and analysed for 2020. These are detailed in Table A.1.

**Table A.1 Local Authorities that Submitted Litter Quantification Survey Results for 2020**

| **County Councils** |
|---|
| Carlow County Council |
| Cavan County Council |
| Clare County Council |
| Cork County Council |
| Donegal County Council |
| Galway County Council |
| Kerry County Council |
| Kildare County Council |
| Kilkenny County Council |
| Laois County Council |
| Leitrim County Council |
| Longford County Council |
| Louth County Council |
| Mayo County Council |
| Meath County Council |
| Monaghan County Council |
| Roscommon County Council |
| Sligo County Council |
| Tipperary County Council |
| Westmeath County Council |
| Wexford County Council |
| Wicklow County Council |
| |
| **City Councils** |
| Cork City Council |
| Galway City Council |
| Limerick City and County Council |
| |
| **Dublin Local Authorities** |
| Dublin City Council |
| Dún Laoghaire-Rathdown County Council |
| Fingal County Council |
| South Dublin County Council |

## Litter Pollution Survey (LPS) Results

LPS results for 30 local authorities were returned to the LMB and analysed for 2020. These are detailed in Table A.2.

**Table A.2 Local Authorities that Submitted Litter Pollution Survey Results for 2020**

| **County Councils** |
|---|
| Carlow County Council |
| Cavan County Council |
| Clare County Council |
| Cork County Council |
| Donegal County Council |
| Galway County Council |
| Kerry County Council |
| Kildare County Council |
| Kilkenny County Council |
| Laois County Council |
| Leitrim County Council |
| Longford County Council |
| Louth County Council |
| Mayo County Council |
| Meath County Council |
| Monaghan County Council |
| Roscommon County Council |
| Sligo County Council |
| Tipperary County Council |
| Westmeath County Council |
| Wexford County Council |
| Wicklow County Council |
| |
| **City Councils** |
| Cork City Council |
| Galway City Council |
| Limerick City and County Council |
| Waterford City and County Council |
| |
| **Dublin Local Authorities** |
| Dublin City Council |
| Dún Laoghaire-Rathdown County Council |
| Fingal County Council |
| South Dublin County Council |

# APPENDIX B

# AREA CLEANLINESS RATING PHOTOGRAPHS

## Area Cleanliness Rating 1 (Unpolluted)

This rating is only given to an area with no litter present i.e. the area may be freshly swept.

## Area Cleanliness Rating 2 (Slightly Polluted)

This rating is only given to an area with small litter items present, i.e. not visually intrusive.

## Area Cleanliness Rating 3 (Moderately Polluted)

This rating is given to an area with some large litter items present, i.e. visually intrusive.

## Area Cleanliness Rating 4 (Significantly Polluted)

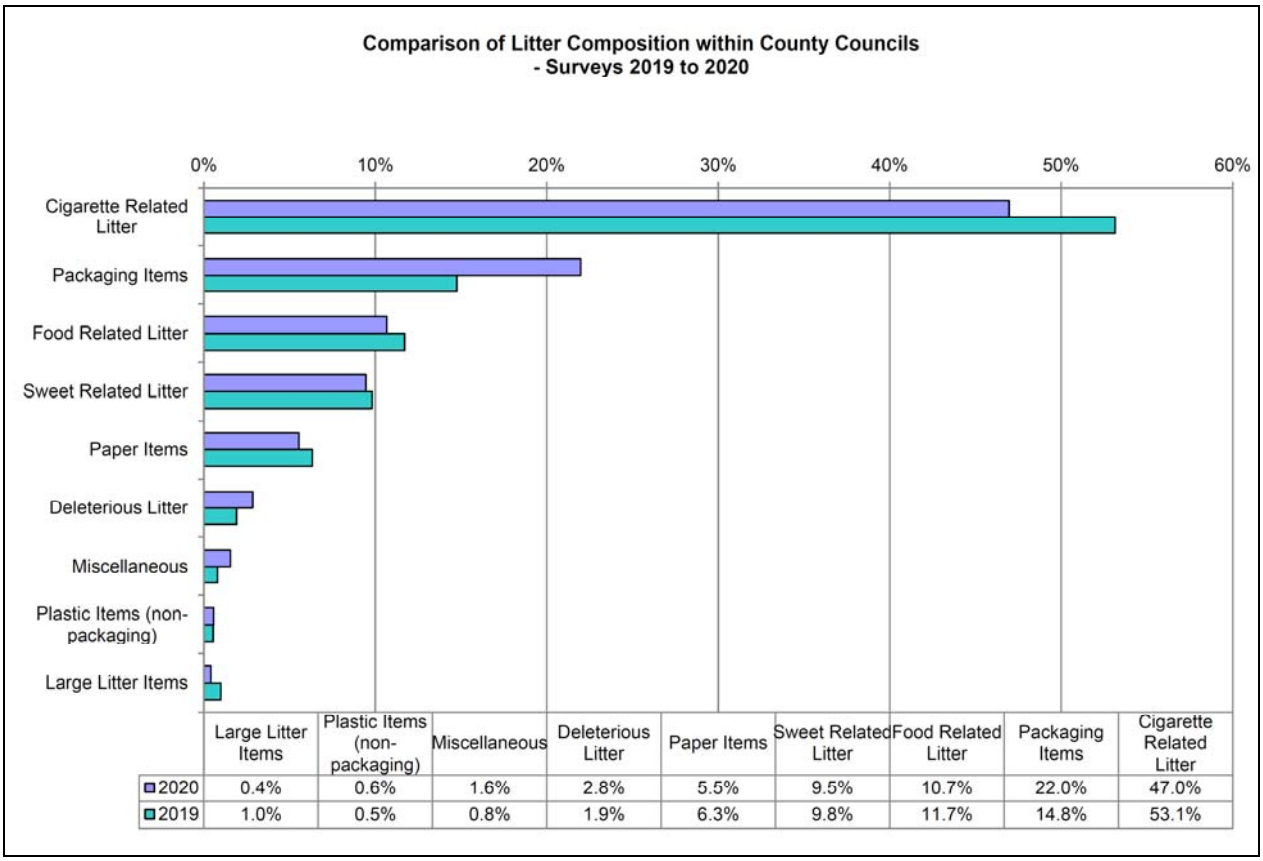
This rating is given to an area with large litter items present throughout the survey area.


## Area Cleanliness Rating 5 (Grossly Polluted)

This rating is given to an area, which is heavily littered throughout the survey area, i.e. after an event such as a concert/ festival or a fly-tipping/ dumping incident.

# APPENDIX C

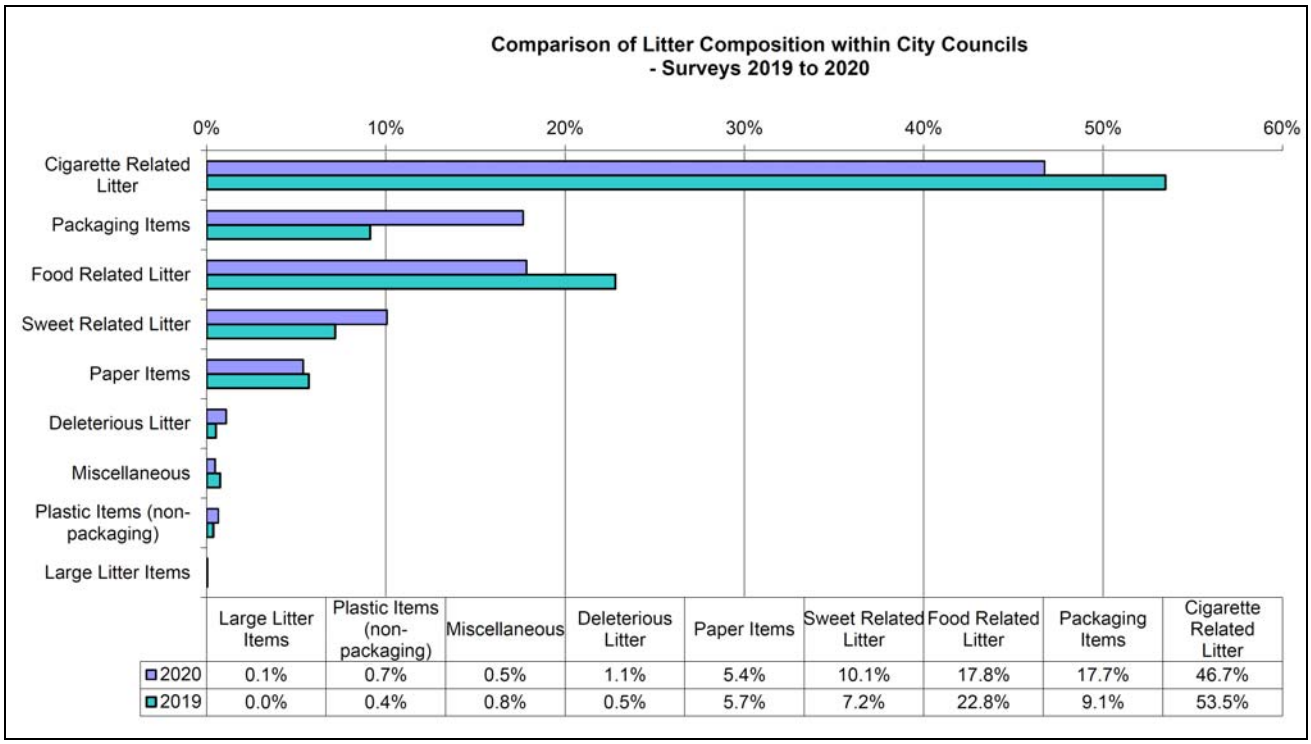
# DETAILS OF LITTER COMPOSITION FROM 2019 – 2020 ACCORDING TO LOCAL AUTHORITY TYPE




| | Large Litter Items | Plastic Items (non-packaging) | Miscellaneous | Deleterious Litter | Paper Items | Sweet Related Litter | Food Related Litter | Packaging Items | Cigarette Related Litter |
|---|---|---|---|---|---|---|---|---|---|
| 2020 | 0.4% | 0.6% | 1.6% | 2.8% | 5.5% | 9.5% | 10.7% | 22.0% | 47.0% |
| 2019 | 1.0% | 0.5% | 0.8% | 1.9% | 6.3% | 9.8% | 11.7% | 14.8% | 53.1% |

**Figure C. 1 Comparison of Litter Composition within County Councils 2019 to 2020**

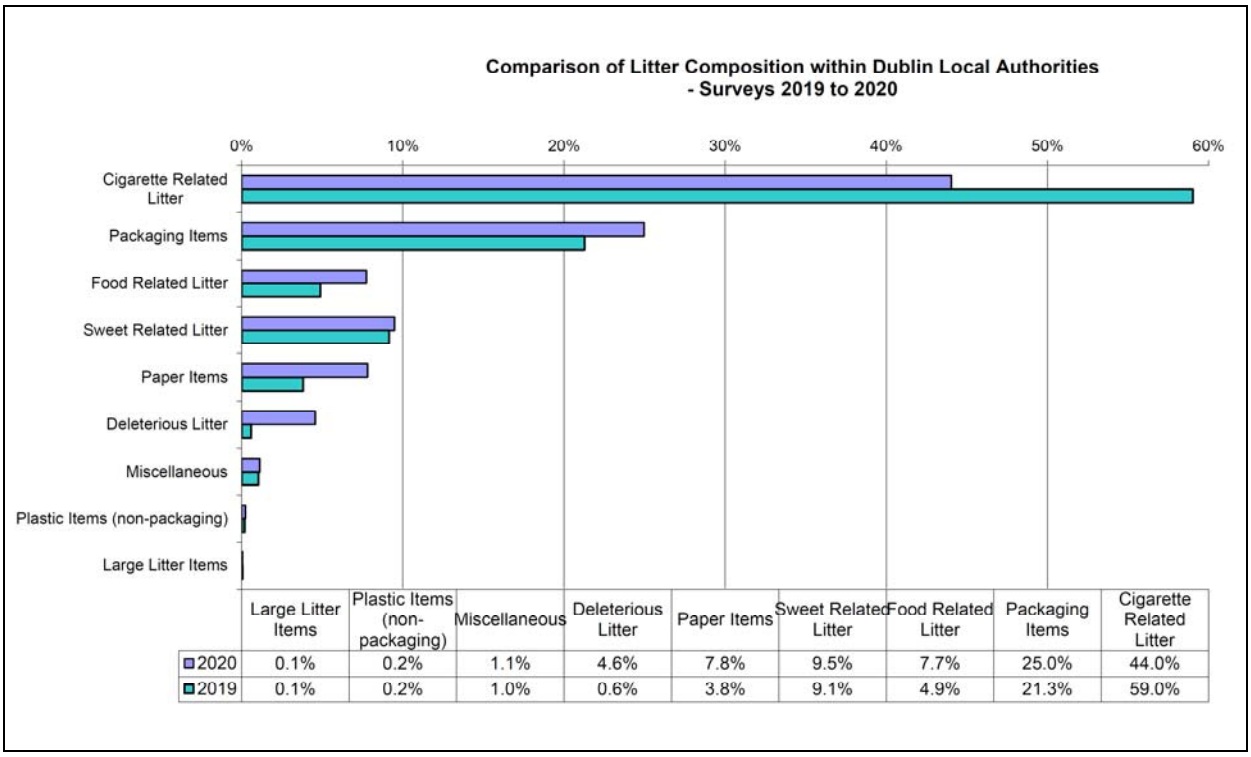
Figure C.1 compares the results of LQS within County Councils from 2019 to 2020. The main observations are that the percentage of cigarette related litter, food related litter, sweet related litter, paper items and large litter items have all decreased from 2019 to 2020. Packaging items, deleterious litter, miscellaneous litter and plastic items (non-packaging) have all increased from 2019 to 2020.




| | Large Litter Items | Plastic Items (non-packaging) | Miscellaneous | Deleterious Litter | Paper Items | Sweet Related Litter | Food Related Litter | Packaging Items | Cigarette Related Litter |
|---|---|---|---|---|---|---|---|---|---|
| 2020 | 0.1% | 0.7% | 0.5% | 1.1% | 5.4% | 10.1% | 17.8% | 17.7% | 46.7% |
| 2019 | 0.0% | 0.4% | 0.8% | 0.5% | 5.7% | 7.2% | 22.8% | 9.1% | 53.5% |

**Figure C. 2 Comparison of Litter Composition within City Councils 2019 to 2020**

Figure C.2 shows that within City Councils the percentage of cigarette related litter, food related litter, paper items and miscellaneous all decreased from 2019 to 2020. Packaging items, sweet related litter, deleterious litter, plastic items (non-packaging) and large litter items have all increased from 2019 to 2020.




| | Large Litter Items | Plastic Items (non-packaging) | Miscellaneous | Deleterious Litter | Paper Items | Sweet Related Litter | Food Related Litter | Packaging Items | Cigarette Related Litter |
|---|---|---|---|---|---|---|---|---|---|
| 2020 | 0.1% | 0.2% | 1.1% | 4.6% | 7.8% | 9.5% | 7.7% | 25.0% | 44.0% |
| 2019 | 0.1% | 0.2% | 1.0% | 0.6% | 3.8% | 9.1% | 4.9% | 21.3% | 59.0% |

**Figure C. 3 Comparison of Litter Composition within Dublin Local Authorities 2019 to 2020**

Figure C.3 shows that within Dublin Local Authorities the percentage of cigarette related litter decreased from 2019 to 2020. Packaging items, food related litter, sweet related litter, paper items, deleterious litter and miscellaneous litter have all increased from 2019 to 2020. Plastic items (non-packaging) and large litter items remained the same as in 2019.

Note: Cigarette related litter decreased in all local authority areas in 2020.

Packaging litter and deleterious litter increased in all local authority areas in 2020.

Food related litter and paper items decreased in County and City Council areas but increased in Dublin Local Authority areas in 2020.

Sweet related litter increased in Dublin Local Authority areas and City Council areas but decreased in County Councils in 2020.

Miscellaneous litter increased in both Dublin Local Authority areas and County Council area but decreased in City Council areas during 2020.

Plastic items (non-packaging) increased in County Council areas and City Council areas in 2020 but remained at the same level in Dublin Local Authority areas as per 2019.

Large litter items increased in City Council areas and decreased in County Council areas. Large litter items remained the same level in 2020 in Dublin Local Authority areas as per 2019.

# APPENDIX D

# COMPARISON OF CAUSATIVE FACTORS OF LITTER POLLUTION WITHIN LITTER POLLUTION INDEX CATEGORIES

In each category of LPI for 2020, passing pedestrians constitute the most significant causative factor of litter pollution. Figures D.1 – D.8 illustrate that as the degree of litter pollution increases (and the LPI value increases), this causative factor becomes, for the most part, a less significant contributor to litter pollution. Accordingly, in 2020 passing pedestrians constitute 42.9% of all causative factors in LPS of slightly polluted (LPI 2) areas; this percentage decreased to 36.6% for moderately polluted (LPI 3) areas and to 30.5% for significantly polluted (LPI 4) areas and to 17.1% for grossly polluted (LPI 5) areas.

Passing motorists constitute 24.3% of all causative factors in LPS of slightly polluted (LPI 2) areas; this decreases to 22.0% in LPS of moderately polluted (LPI 3) areas, then decreases to 19.5% in LPS of significantly polluted (LPI 4) areas. This causative factor further decreases to 17.1% in LPS of grossly polluted (LPI 5) areas.

Passing pedestrians, passing motorists and retail outlets tend to be the main causative factors in LPI 2 and LPI 3 areas where as in LPI 4 and LPI 5 areas; fly tipping/dumping and bring banks increase as significant causative factors.

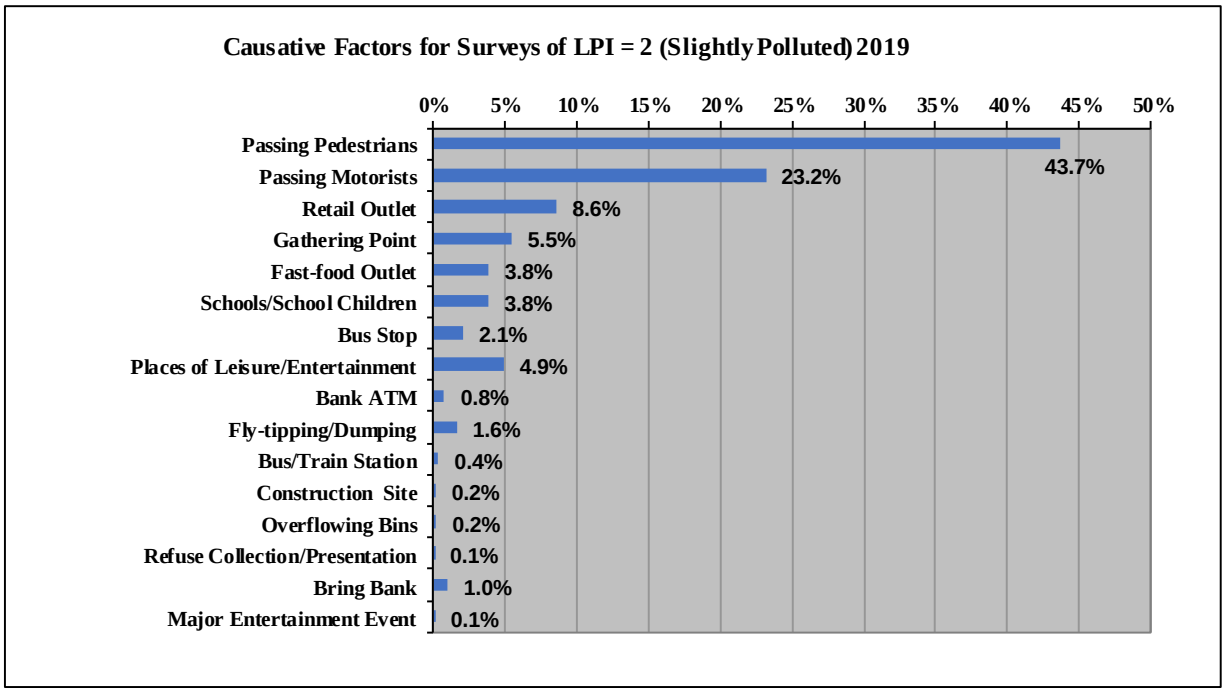



Figure D. 1 Causative Factors of Litter Pollution within Litter Pollution Index Category 2, 2019

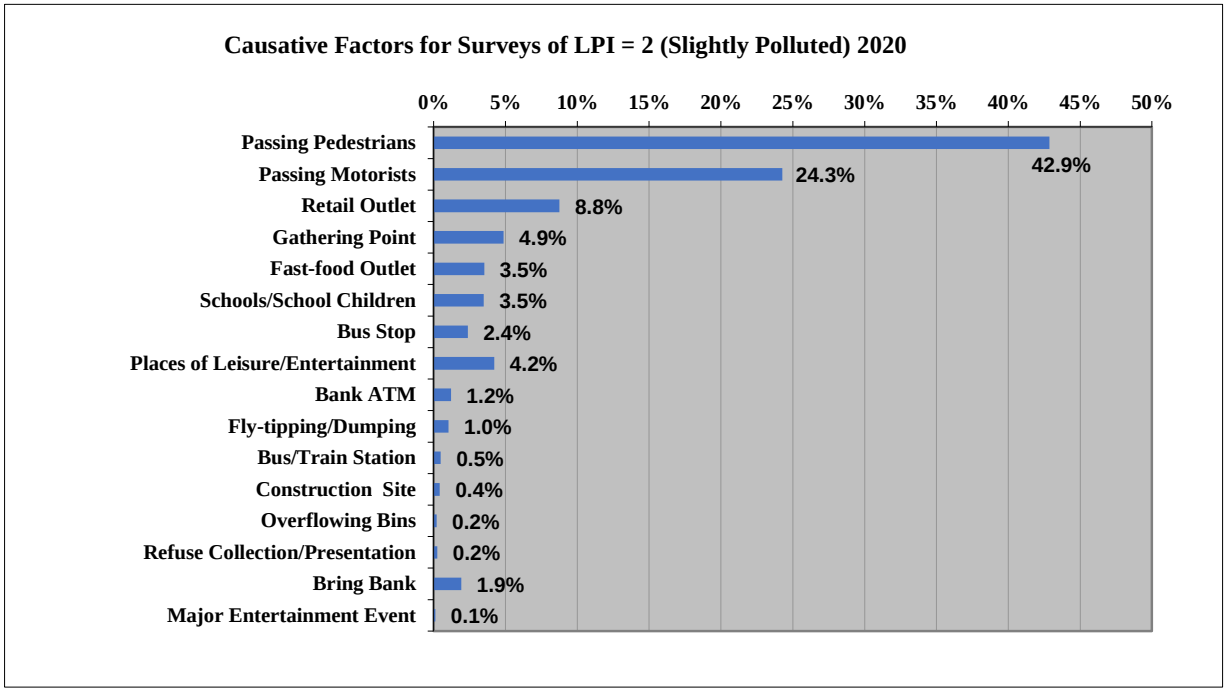



Figure D. 2 Causative Factors of Litter Pollution within Litter Pollution Index Category 2, 2020

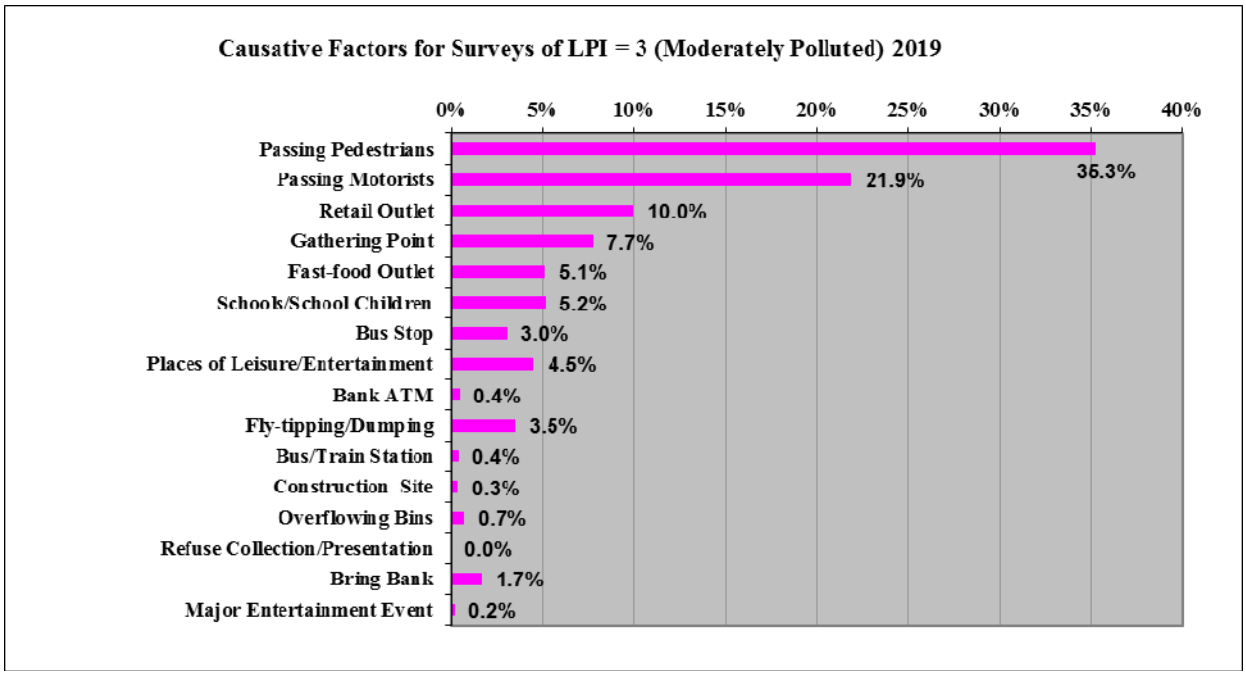



**Figure D. 3 Causative Factors of Litter Pollution within Litter Pollution Index Category 3, 2019**

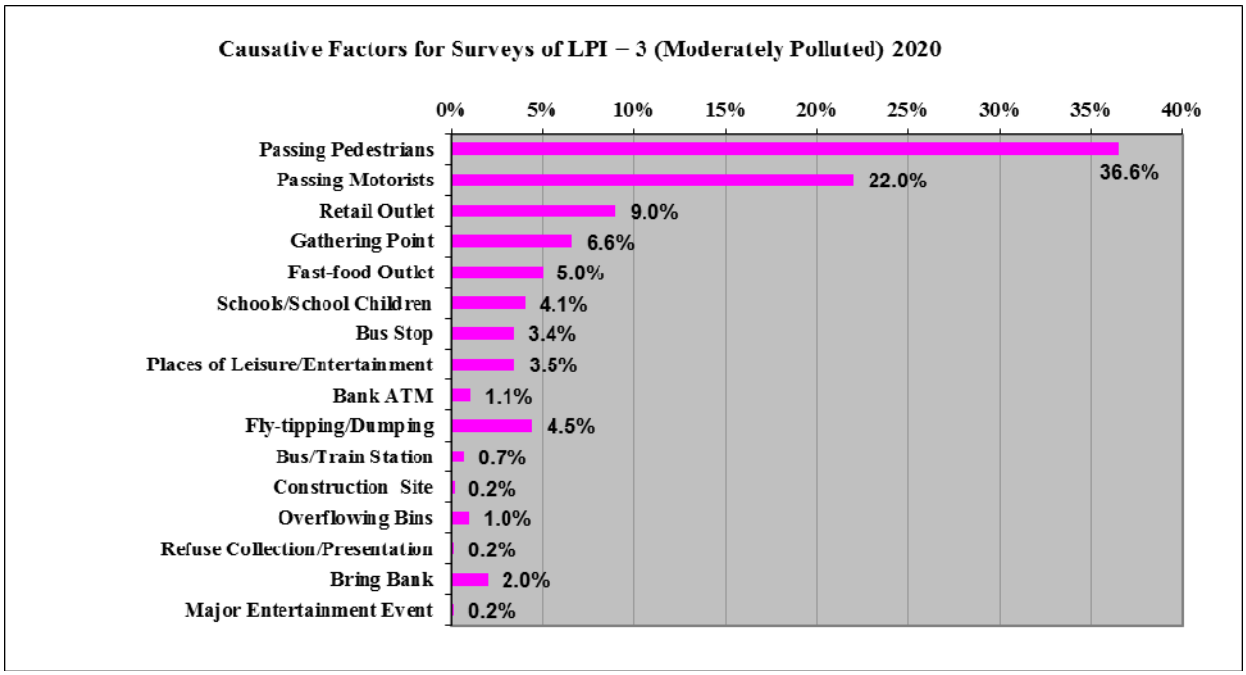



**Figure D. 4 Causative Factors of Litter Pollution within Litter Pollution Index Category 3, 2020**

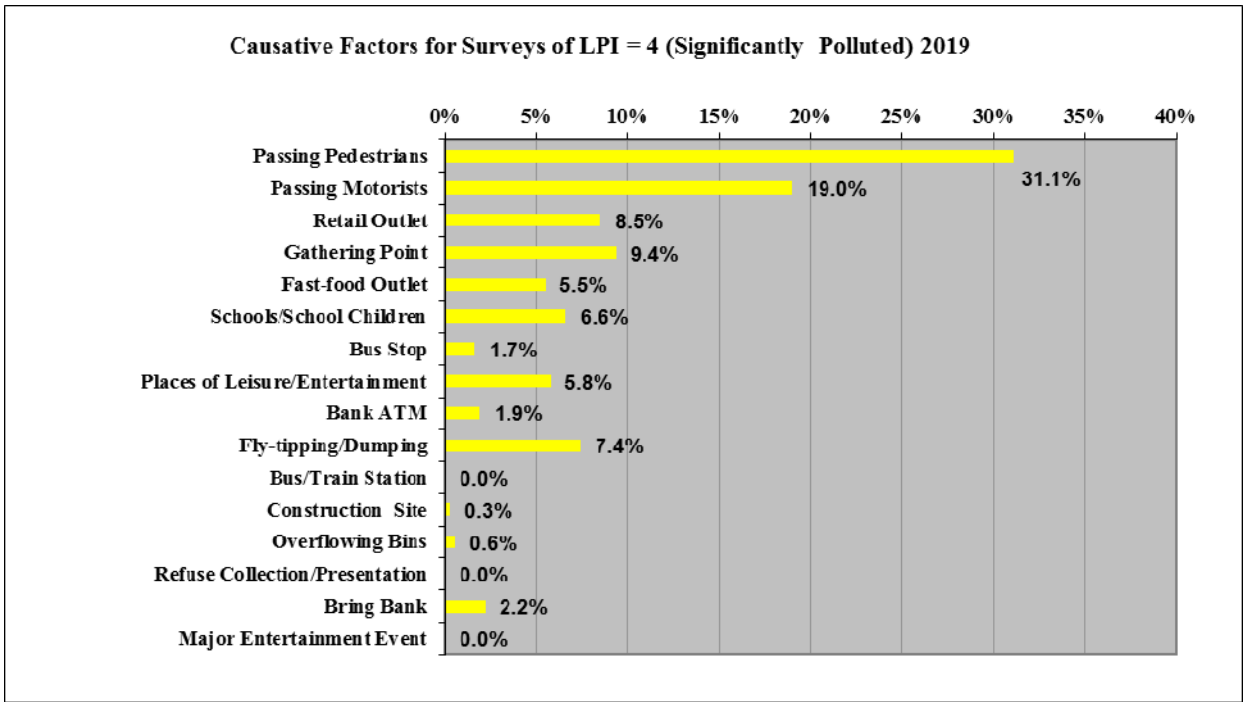



**Figure D. 5 Causative Factors of Litter Pollution within Litter Pollution Index Category 4, 2019**

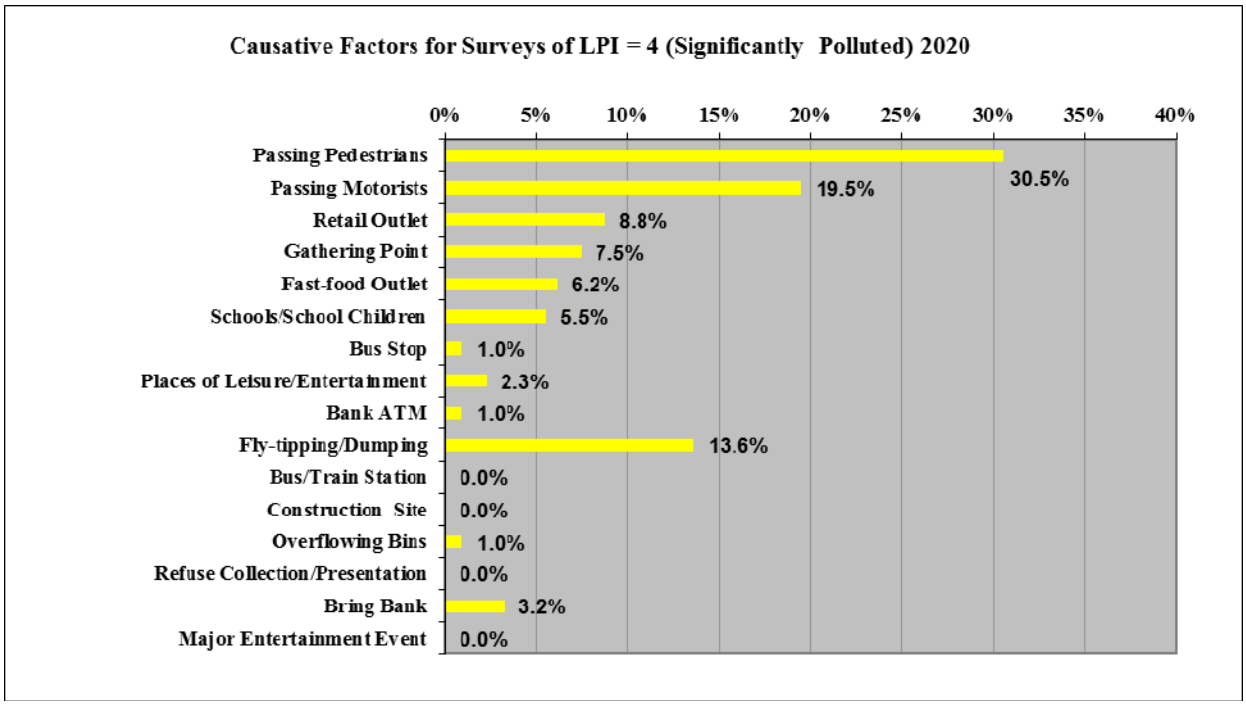



**Figure D. 6 Causative Factors of Litter Pollution within Litter Pollution Index Category 4, 2020**

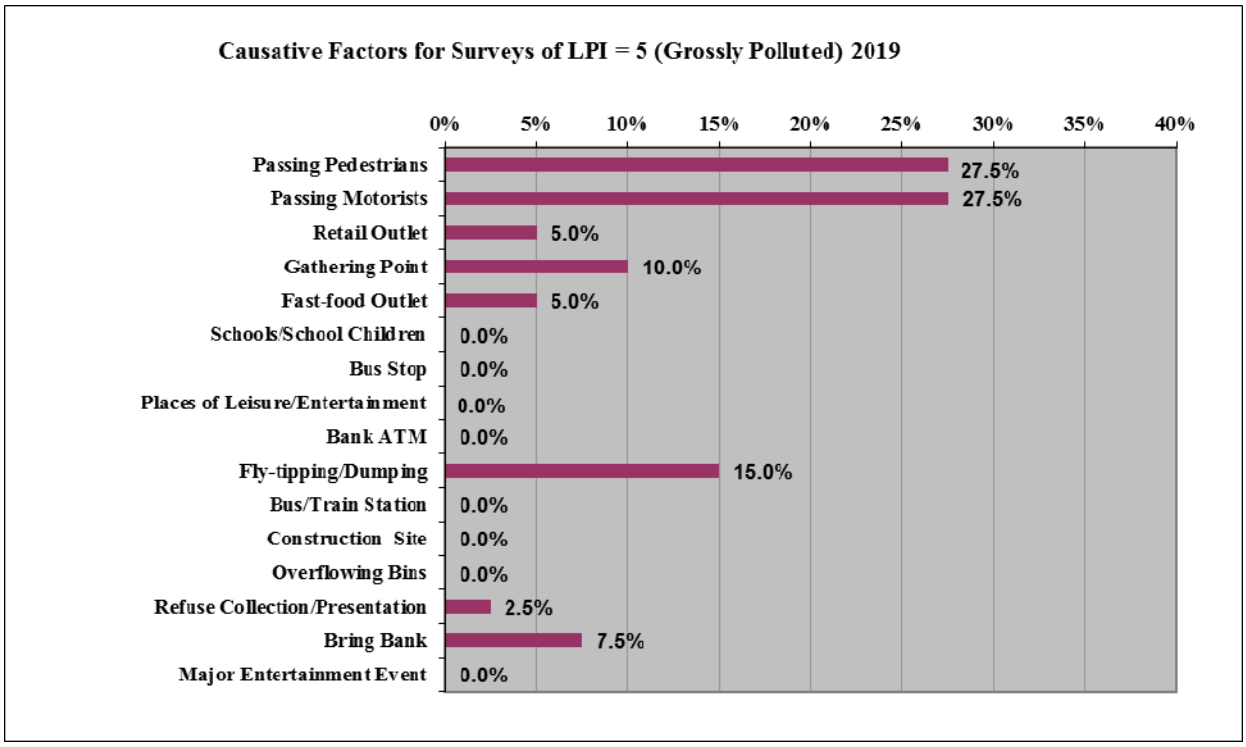



**Figure D. 7 Causative Factors of Litter Pollution within Litter Pollution Index Category 5, 2019**

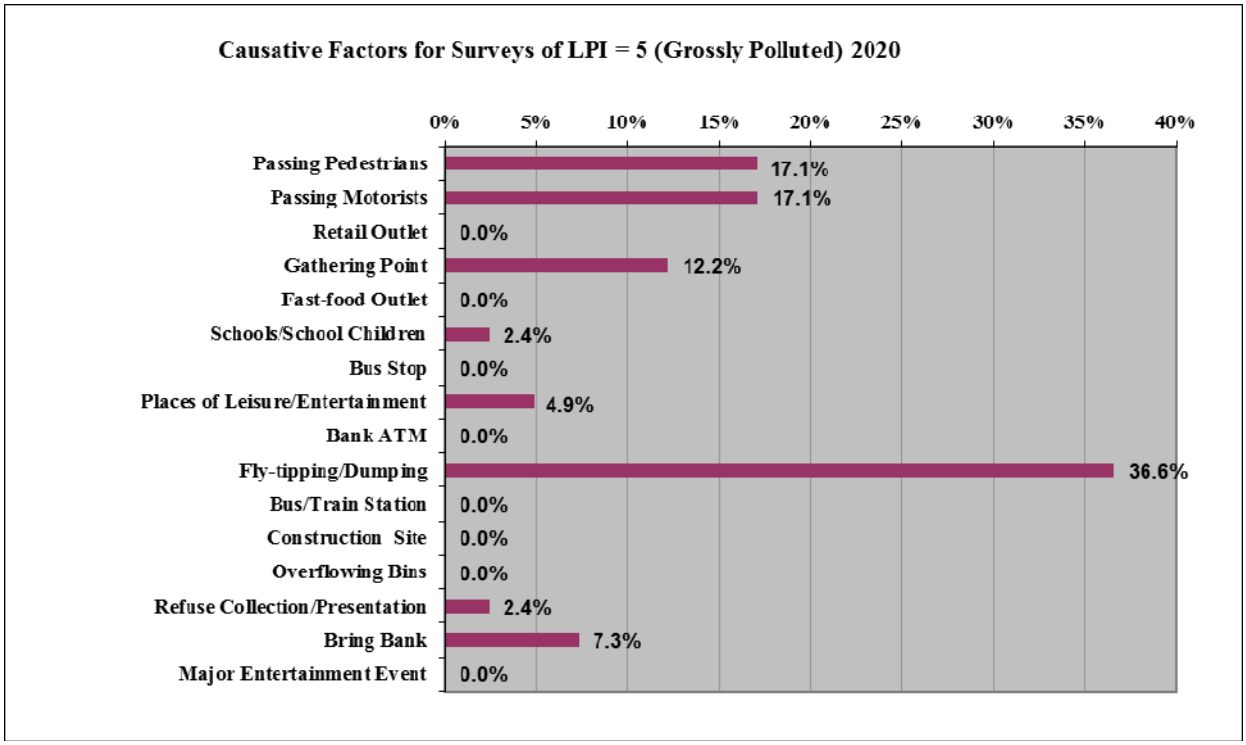
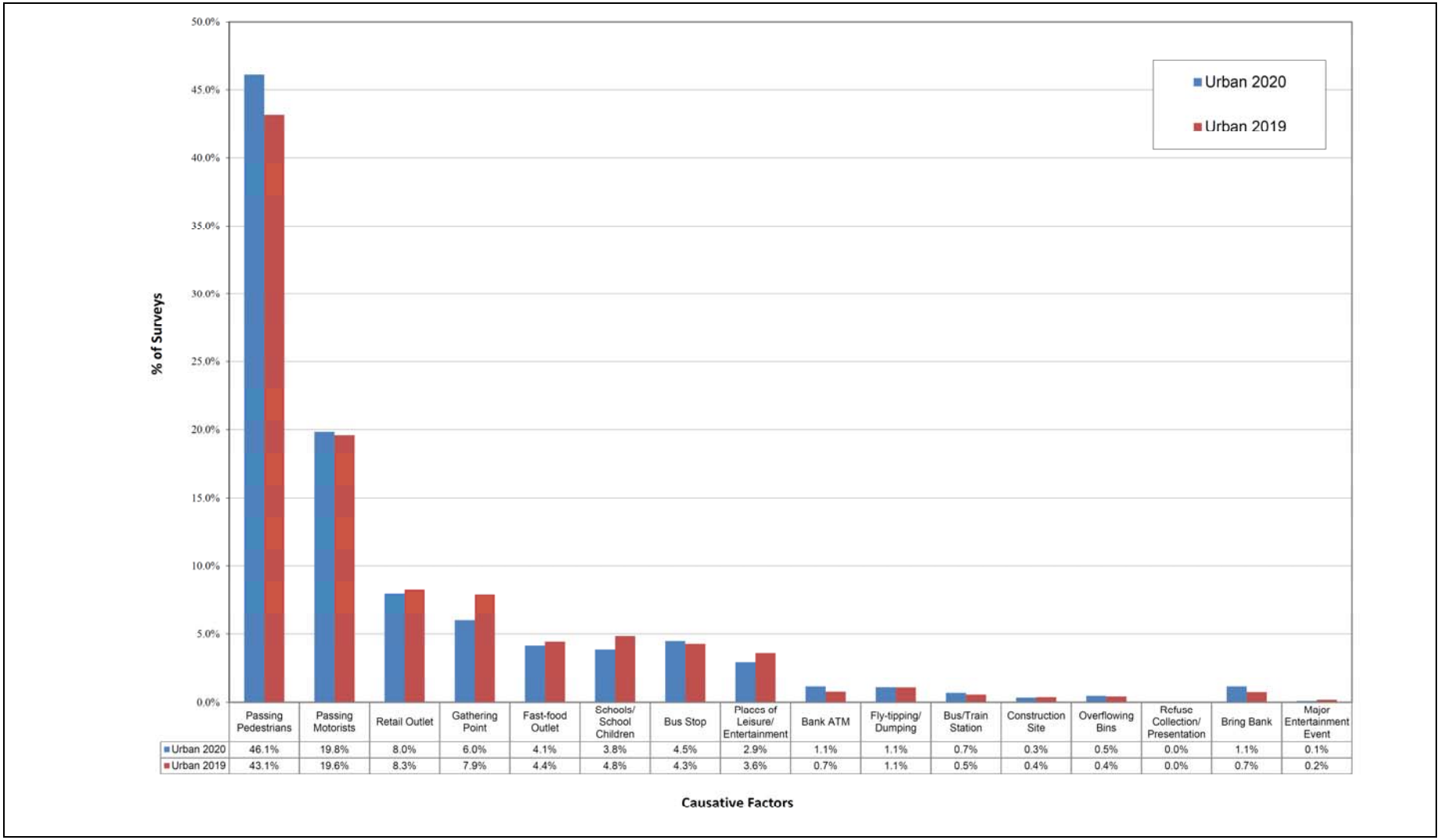



**Figure D. 8 Causative Factors of Litter Pollution within Litter Pollution Index Category 5, 2020**

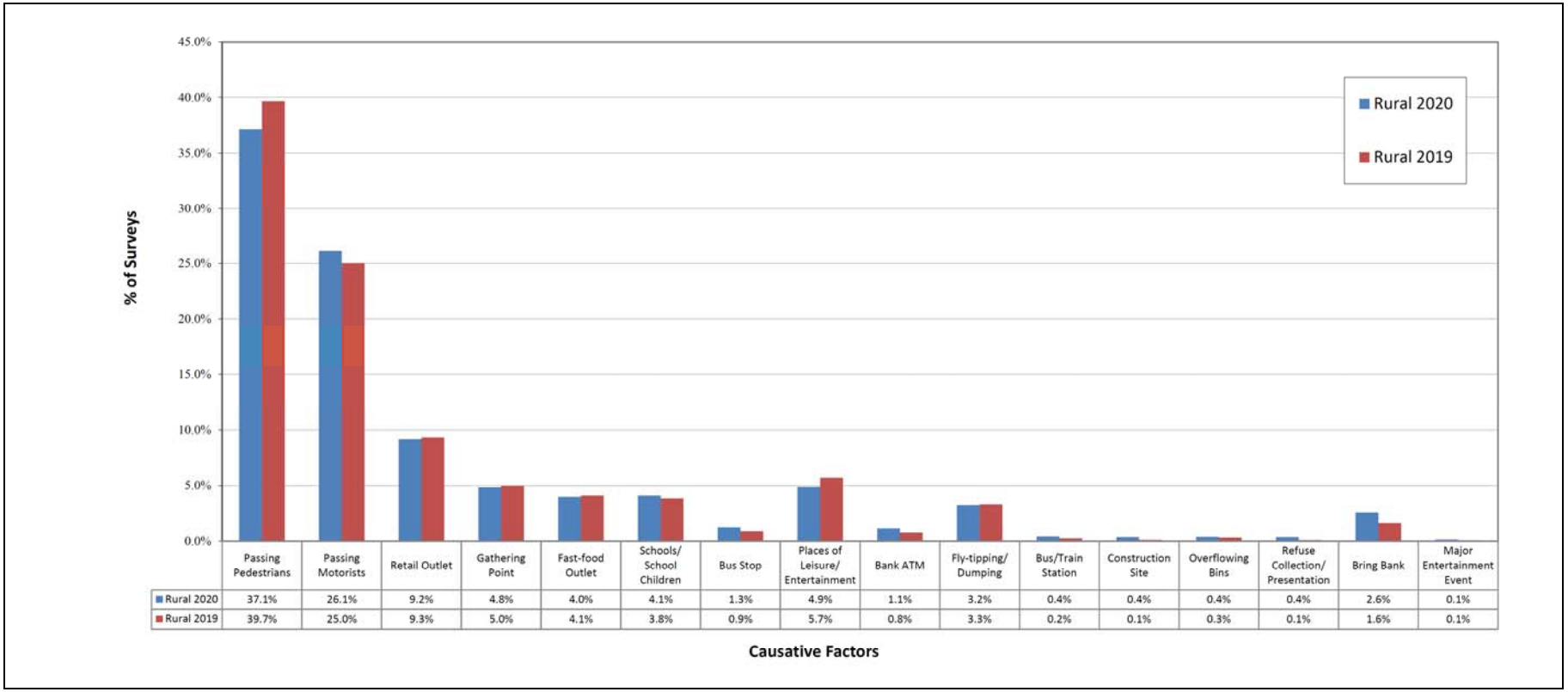
# APPENDIX E

# COMPARISON OF CAUSATIVE FACTORS OF LITTER POLLUTION WITHIN URBAN AND RURAL LOCAL AUTHORITIES




| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Fast-food Outlet | Schools/ School Children | Bus Stop | Places of Leisure/ Entertainment | Bank ATM | Fly-tipping/ Dumping | Bus/Train Station | Construction Site | Overflowing Bins | Refuse Collection/ Presentation | Bring Bank | Major Entertainment Event |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban 2020 | 46.1% | 19.8% | 8.0% | 6.0% | 4.1% | 3.8% | 4.5% | 2.9% | 1.1% | 1.1% | 0.7% | 0.3% | 0.5% | 0.0% | 1.1% | 0.1% |
| Urban 2019 | 43.1% | 19.6% | 8.3% | 7.9% | 4.4% | 4.8% | 4.3% | 3.6% | 0.7% | 1.1% | 0.5% | 0.4% | 0.4% | 0.0% | 0.7% | 0.2% |

**Figure E. 1 Comparison of Causative Factors in Urban Councils, 2019 to 2020**




| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Fast-food Outlet | Schools/ School Children | Bus Stop | Places of Leisure/ Entertainment | Bank ATM | Fly-tipping/ Dumping | Bus/Train Station | Construction Site | Overflowing Bins | Refuse Collection/ Presentation | Bring Bank | Major Entertainment Event |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural 2020 | 37.1% | 26.1% | 9.2% | 4.8% | 4.0% | 4.1% | 1.3% | 4.9% | 1.1% | 3.2% | 0.4% | 0.4% | 0.4% | 0.4% | 2.6% | 0.1% |
| Rural 2019 | 39.7% | 25.0% | 9.3% | 5.0% | 4.1% | 3.8% | 0.9% | 5.7% | 0.8% | 3.3% | 0.2% | 0.1% | 0.3% | 0.1% | 1.6% | 0.1% |

**Figure E. 2 Comparison of Causative Factors in Rural Councils, 2019 to 2020**

Figures E.1 and E.2 compare the causes of litter within urban and rural local authorities from 2019 to 2020.

In 2020, passing pedestrians are the single greatest cause of litter in both urban and rural areas; this is similar to previous yearly results.

Passing pedestrians, passing motorists, bus stop, bank ATMs, bus/ train stations, overflowing bins and bring banks have all increased as causes of litter pollution in urban areas from 2019 to 2020.

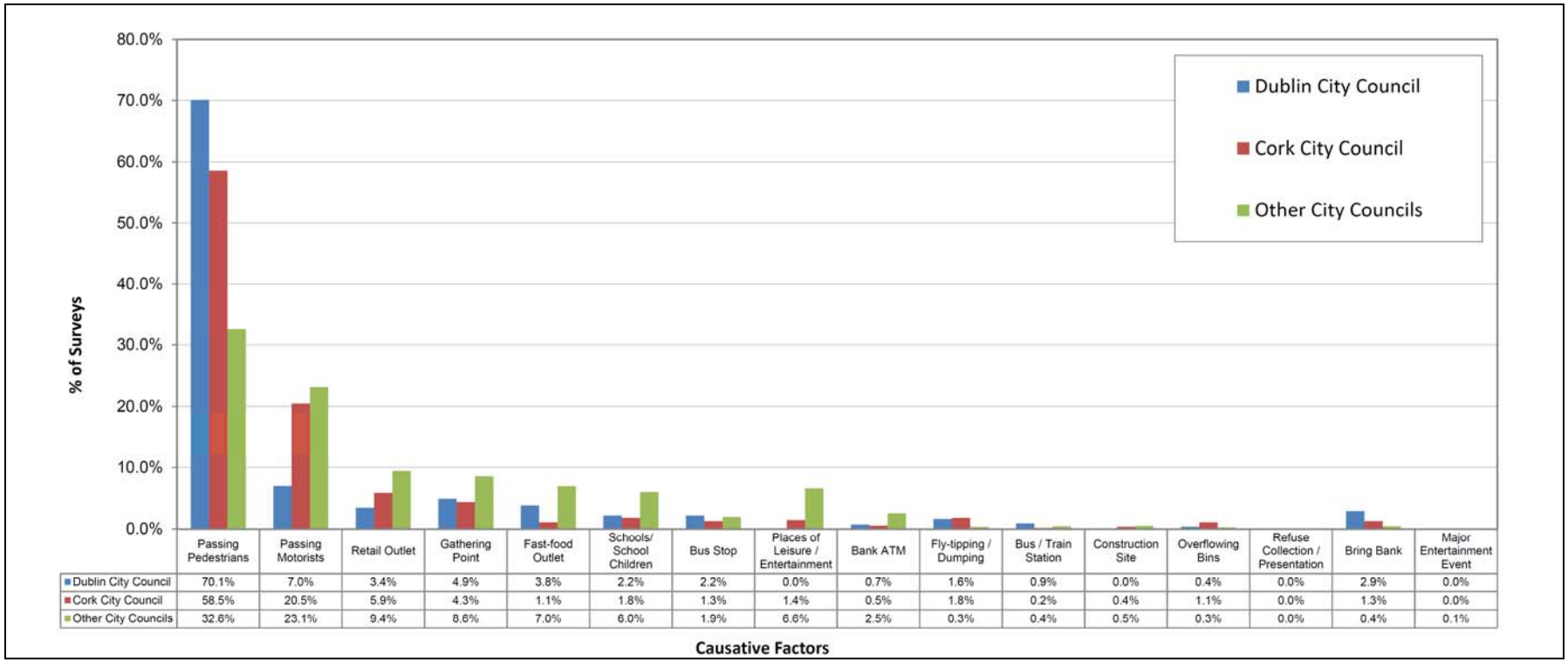
Retail outlets, gathering points, fast-food outlets, schools/ school children, places of leisure/entertainment, construction sites and major entertainment events have all decreased as causes of litter pollution in urban areas from 2019 to 2020.

Levels of litter pollution in urban areas from fly-tipping/dumping and refuse presentation/collection; have remained the same in 2020 as recorded in 2019.

In rural areas, passing motorists, schools/ school children, bus stops, bank ATMs, bus/train stations, construction sites, overflowing bins, refuse presentation/collection and bring banks have all increased as causes of litter pollution from 2019 to 2020.

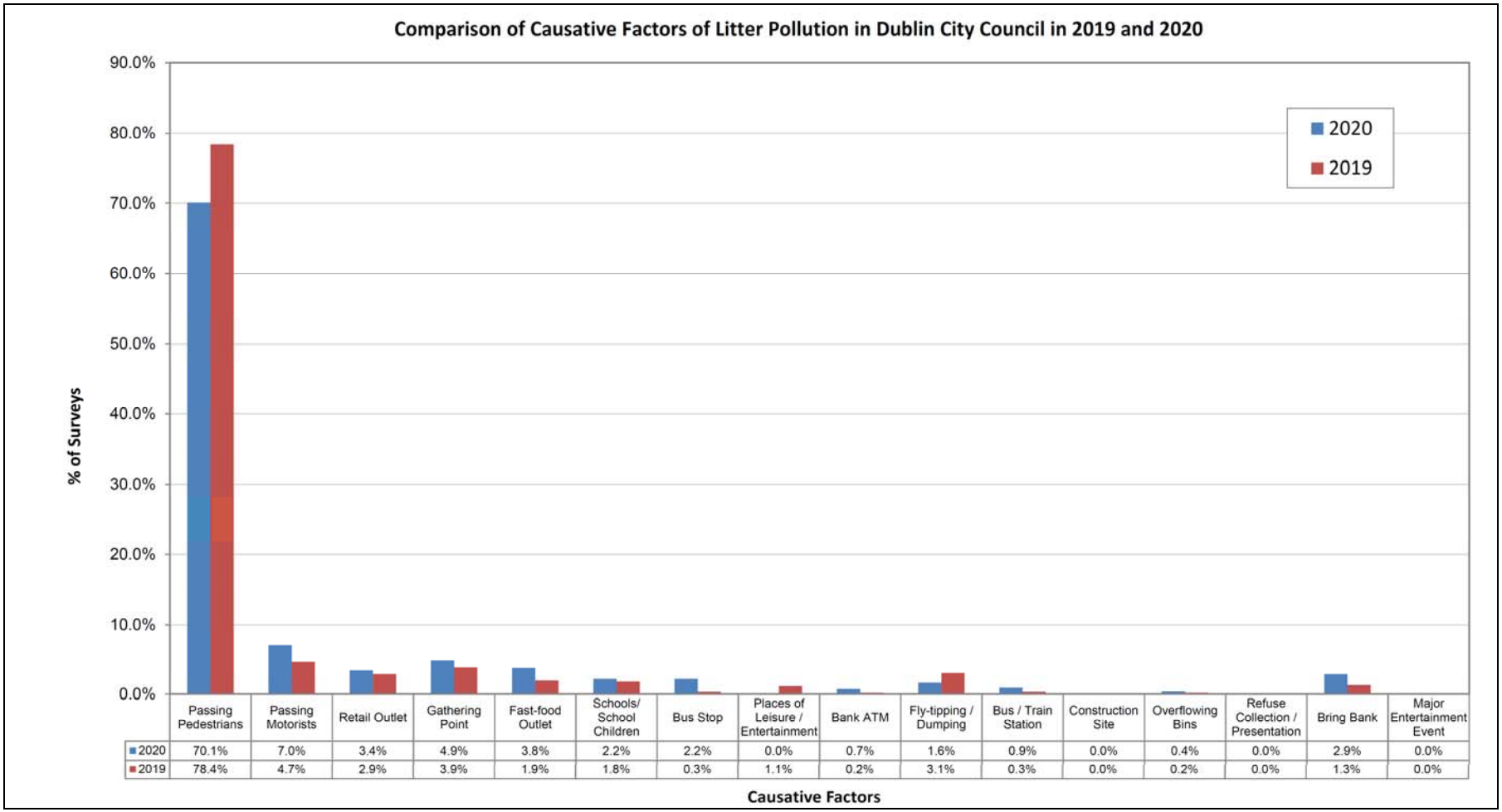
Passing pedestrians, retail outlets, gathering points, fast-food outlets, places of leisure/entertainment, fly-tipping / dumping have all decreased as causes of litter pollution from 2019 to 2020.

Levels of litter pollution in rural areas from major entertainment events have remained the same in 2020 as recorded in 2019.



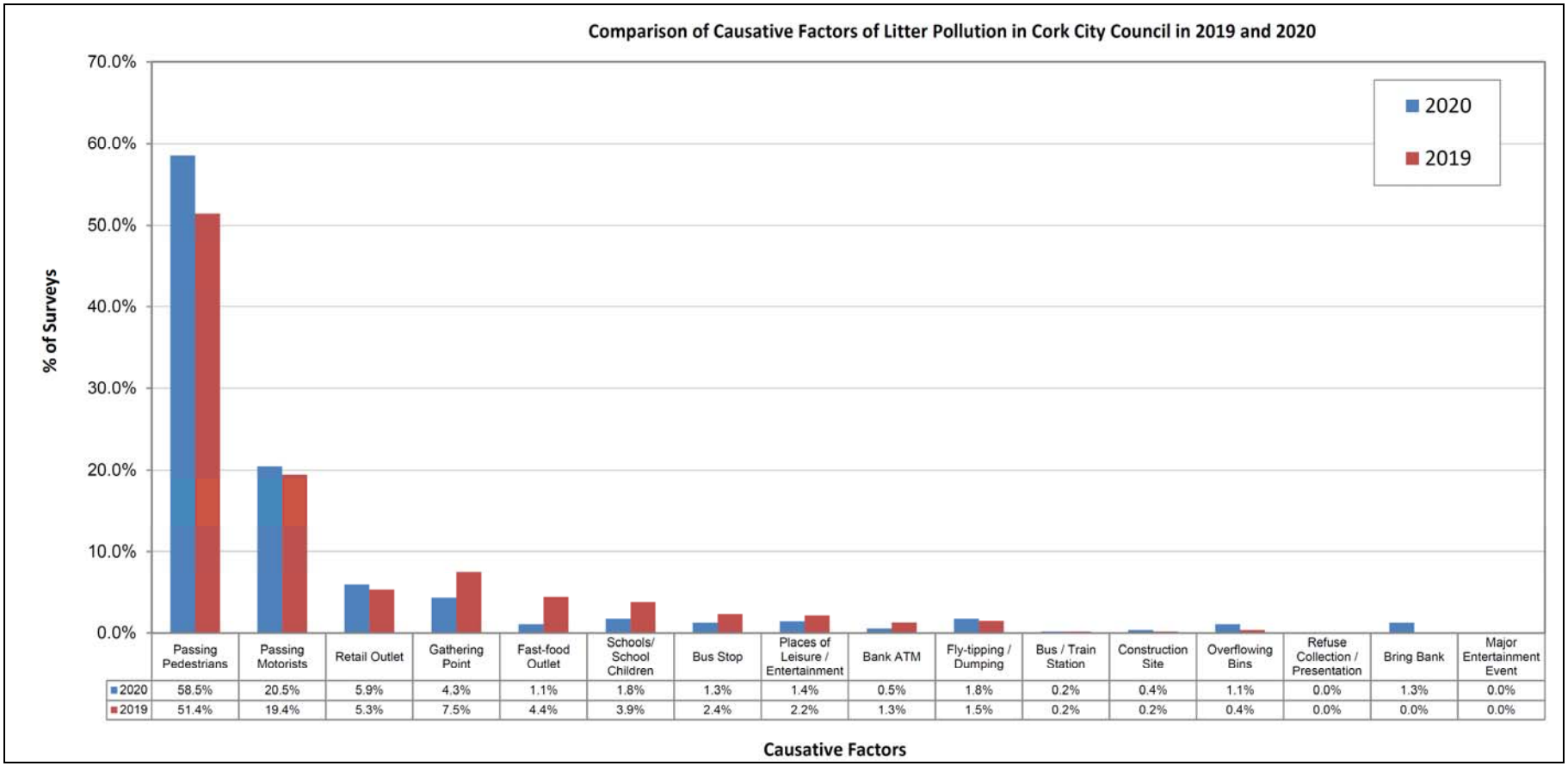

| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Fast-food Outlet | Schools/ School Children | Bus Stop | Places of Leisure / Entertainment | Bank ATM | Fly-tipping / Dumping | Bus / Train Station | Construction Site | Overflowing Bins | Refuse Collection / Presentation | Bring Bank | Major Entertainment Event |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dublin City Council | 70.1% | 7.0% | 3.4% | 4.9% | 3.8% | 2.2% | 2.2% | 0.0% | 0.7% | 1.6% | 0.9% | 0.0% | 0.4% | 0.0% | 2.9% | 0.0% |
| Cork City Council | 58.5% | 20.5% | 5.9% | 4.3% | 1.1% | 1.8% | 1.3% | 1.4% | 0.5% | 1.8% | 0.2% | 0.4% | 1.1% | 0.0% | 1.3% | 0.0% |
| Other City Councils | 32.6% | 23.1% | 9.4% | 8.6% | 7.0% | 6.0% | 1.9% | 6.6% | 2.5% | 0.3% | 0.4% | 0.5% | 0.3% | 0.0% | 0.4% | 0.1% |

**Figure E. 3 Comparison of Causative Factors of Litter Pollution within Urban Areas (2020)**




| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Fast-food Outlet | Schools/ School Children | Bus Stop | Places of Leisure / Entertainment | Bank ATM | Fly-tipping / Dumping | Bus / Train Station | Construction Site | Overflowing Bins | Refuse Collection / Presentation | Bring Bank | Major Entertainment Event |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 70.1% | 7.0% | 3.4% | 4.9% | 3.8% | 2.2% | 2.2% | 0.0% | 0.7% | 1.6% | 0.9% | 0.0% | 0.4% | 0.0% | 2.9% | 0.0% |
| 2019 | 78.4% | 4.7% | 2.9% | 3.9% | 1.9% | 1.8% | 0.3% | 1.1% | 0.2% | 3.1% | 0.3% | 0.0% | 0.2% | 0.0% | 1.3% | 0.0% |

**Figure E. 4 Comparison of Causative Factors of Litter Pollution within Dublin City Council 2019 to 2020**




| | Passing Pedestrians | Passing Motorists | Retail Outlet | Gathering Point | Fast-food Outlet | Schools/ School Children | Bus Stop | Places of Leisure / Entertainment | Bank ATM | Fly-tipping / Dumping | Bus / Train Station | Construction Site | Overflowing Bins | Refuse Collection / Presentation | Bring Bank | Major Entertainment Event |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 58.5% | 20.5% | 5.9% | 4.3% | 1.1% | 1.8% | 1.3% | 1.4% | 0.5% | 1.8% | 0.2% | 0.4% | 1.1% | 0.0% | 1.3% | 0.0% |
| 2019 | 51.4% | 19.4% | 5.3% | 7.5% | 4.4% | 3.9% | 2.4% | 2.2% | 1.3% | 1.5% | 0.2% | 0.2% | 0.4% | 0.0% | 0.0% | 0.0% |

**Figure E. 5 Comparison of Causative Factors of Litter Pollution within Cork City Council 2019 to 2020**

Figure E.3 allows for comparison of the various causative factors of litter pollution between urban areas. The 'Other City Councils' category comprises results from Galway City, Limerick City and County Council and Waterford City and County Councils. Overall, the causes of litter pollution vary somewhat with each category of urban area.

In Dublin City, passing pedestrians, bus stops, bus/train stations and bring banks are more significant causative factors of litter pollution than in the other urban categories. Fly-tipping / dumping and overflowing bins are more significant causative factors of litter pollution in the 'Cork City Council' category than in the other urban categories. Passing motorists, retail outlets, gathering points, fast-food outlets, schools/ school children, places of leisure/entertainment, bank ATMs, construction sites and major entertainment events are more significant causative factors of litter pollution in the 'Other City Councils' category than in the other urban categories.

In the Dublin City Council area, passing motorists, retail outlets, gathering points, fast-food, schools / school children, bus stop, bank ATM, bus/train stations, bring banks and overflowing bins have all increased as causative factors in comparison to 2019. For further detail, please refer to Figure E.4.

In the Cork City Council area, increases in litter from passing pedestrians, passing motorists, retail outlets, fly-tipping/dumping, construction sites, overflowing bins and bring banks all increased as causative factors in comparison to 2019. For further detail, please refer to Figure E.5.