



Comhshaol, Oidhreachta agus Rialtas Áitiúil
Environment, Heritage and Local Government

THE NATIONAL LITTER POLLUTION MONITORING SYSTEM

LITTER MONITORING BODY

SYSTEM RESULTS 2008

Prepared for:

The Department of the Environment, Heritage
and Local Government,
Custom House,
Dublin 1.



Prepared by:
The Litter Monitoring Body,
TOBIN Consulting Engineers
Block 10-4
Blanchardstown Corporate Park
Dublin 15

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 2008	4
CHAPTER 2: HOW LITTERED IS THE COUNTRY?.....	6
CHAPTER 3: WHAT ARE THE MAIN CONSTITUENT ELEMENTS OF LITTER POLLUTION?.....	9
CHAPTER 4: WHAT ARE THE MAIN CAUSES OF LITTER POLLUTION?	12
CHAPTER 5: ASSESSMENT OF LITTER POLLUTION DATA BY LOCAL AUTHORITY TYPE.....	17
CHAPTER 6: ANALYSIS OF SPECIFIC COMPONENTS OF LITTER.....	23
CHAPTER 7: CONCLUSION	28
CHAPTER 8: ITEMS FOR FURTHER ATTENTION UNDER THE NLPMS	29
APPENDIX A: Details of Local Authorities that Carried out Surveys in 2008.....	i
APPENDIX B: Area Cleanliness Rating Photos.....	vi
APPENDIX C: Details of Litter Composition from 2007 – 2008 According to Local Authority Type.....	xii
APPENDIX D: Comparison of Causative Factors of Litter Pollution within Litter Pollution Index Categories.....	xvii
APPENDIX E: Comparison of Causative Factors of Litter Pollution within Urban and Rural Local Authorities	xxiii

LIST OF TABLES

Table 3.1	Detailed National Litter Composition, 2008-2007	11
Table A. 1	Local Authorities that Submitted Litter Quantification Survey Results for 2008	ii
Table A. 2	Local Authorities that Submitted Litter Pollution Survey Results for 2008	iv

LIST OF FIGURES

Figure 2-1	Comparison of Litter Pollution Indices (LPI) 2007 – 2008	6
Figure 2-2	Litter Pollution Index 2004-2008	7
Figure 2-3	Comparison of Litter Pollution within Largely Urban and Rural Areas in 2008	8
Figure 3-1	Composition of Litter in 2008 Broken Down into Main Categories.....	9
Figure 3-2	Comparison of National Litter Composition from 2007 to 2008.....	10
Figure 4-1	Causative Factors of Litter Pollution across all Local Authorities, 2007 compared to 2008	13
Figure 4-2	Causative Factors of Litter Pollution According to Local Authority Type in 2008	15
Figure 5-1	Comparison of Litter Pollution within Dublin Local Authorities 2007 to 2008.....	17
Figure 5-2	Comparison of Litter Pollution within County Councils 2007 to 2008	18
Figure 5-3	Comparison of Litter Pollution within City Councils 2007 to 2008.....	19
Figure 5-4	Comparison of Litter Pollution within Borough & Town Councils 2007 to 2008	20
Figure 5-5	Comparison of Litter Pollution in Rural Areas from 2007 to 2008	21
Figure 5-6	Comparison of Litter Pollution in Urban Areas from 2007 to 2008	21
Figure 6-1	Chewing Gum as a Percentage of the National Litter Composition	23
Figure 6-2	Count of Chewing Gum during Pre, Mid and Post Campaign Surveys 2007.....	24
Figure 6-3	Count of Chewing Gum during Pre, Mid and Post Campaign Surveys 2008.....	25
Figure 6-4	Sweet Related Litter Analysed 2007, 2008	26
Figure 6-5	Plastic Bags as a Percentage of the National Litter Composition	27
Figure C. 1	Comparison of Litter Composition within County Councils 2007 to 2008.....	xiii
Figure C. 2	Comparison of Litter Composition within City Councils 2007 to 2008.....	xiv
Figure C. 3	Comparison of Litter Composition within Town and Borough Councils 2007 to 2008	xv
Figure C. 4	Comparison of Litter Composition within Dublin Local Authorities 2007 to 2008.....	xvi
Figure D. 1	Causative Factors of Litter Pollution within Litter Pollution Index category 2, 2007	xix
Figure D. 2	Causative Factors of Litter Pollution within Litter Pollution Index category 2, 2008	xix
Figure D. 3	Causative Factors of Litter Pollution within Litter Pollution Index category 3, 2007	xx
Figure D. 4	Causative Factors of Litter Pollution within Litter Pollution Index category 3, 2008	xx
Figure D. 5	Causative Factors of Litter Pollution within Litter Pollution Index category 4, 2007	xxi
Figure D. 6	Causative Factors of Litter Pollution within Litter Pollution Index category 4, 2008	xxi
Figure D. 7	Causative Factors of Litter Pollution within Litter Pollution Index category 5, 2007	xxii
Figure D. 8	Causative Factors of Litter Pollution within Litter Pollution Index category 5, 2008	xxii
Figure E. 1	Comparison of Causative Factors in Urban Councils, 2007 – 2008	xxv
Figure E. 2	Comparison of Causative Factors in Rural Councils, 2007 – 2008	xxvi
Figure E. 3	Comparison of Causative Factors of Litter Pollution within Urban Areas (2008).....	xxvii

ACKNOWLEDGEMENTS

We would like to thank the following organisations and individuals for their help in the preparation of this report:

1. The Steering Group for the Monitoring System, comprising:
 - ◆ Ms Maura Minogue, Cork City Council;
 - ◆ Mr Paul Daly, Waterford County Council;
 - ◆ Ms Bernie Lillis, Dublin City Council;
 - ◆ Mr Paddy Mathews, Fáilte Ireland;
 - ◆ Ms Fiona Quinn, Department of the Environment Heritage and Local Government; and
 - ◆ Mr Jonathan Cullen, Department of the Environment Heritage and Local Government;
2. The Department of the Environment Heritage and Local Government; and
3. The local authorities that provided us with their Litter Survey Results.

OVERVIEW OF THE NATIONAL LITTER POLLUTION MONITORING SYSTEM

The data produced by the National Litter Pollution Monitoring System surveys allow 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 national monitoring system, the **extent** and **severity** of litter pollution is measured using a Litter Pollution Index (LPI), which is a scale of 1 to 5 as described below:

1. Unpolluted or litter free
2. Slightly polluted
3. Moderately polluted
4. Significantly polluted
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 to this report together with an explanation of each LPI.

The area cleanliness rating¹ is then used in the calculation of the Litter Pollution Index for each survey location. The use of photographs ensures that area cleanliness ratings are consistently assigned by all local authorities. In 2008 the Litter Monitoring Body continued to provide training 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.

The national monitoring system is therefore biased towards measuring the nature and extent of litter pollution in those areas most likely to be littered i.e. largely in urban areas.

Under the national monitoring system, 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. Litter Quantification Surveys are completed in the most heavily polluted areas (i.e. the clusters or hotspots identified by the Litter Generation Potential Maps) and as soon before cleansing as possible to further increase the chances of a large sample size. The statistics obtained during the surveys are divided into a number of litter categories including, food, packaging, paper and plastic.

Training

In 2008 the Litter Monitoring Body continued to provide training on the implementation of the NLPMS to local authorities.

National Litter Seminar 2008

The National Litter Seminar was held in the Tullamore Court Hotel on the 22nd of October 2008. This Seminar was attended by 109 representatives from all local authority types.

The Seminar included presentations from the following:

- ◆ The Litter Monitoring Body;
- ◆ Ms. Fiona Quinn, Department of the Environment, Heritage & Local Government;
- ◆ Mr. Stephen McCarthy, Environmental Protection Agency (EPA);
- ◆ Mr. William Murphy, Coillte;
- ◆ Mr. Ian Davis, Protecting Uplands & Rural Environments (PURE);
- ◆ Mr. Richard Felton, Keep Britain Tidy;
- ◆ Mr. Mícheál O’Coileáin, Kerry County Council;
- ◆ Mr. Richard Guiney, Dublin City Business Improvement District (Dublin City BID);
- and
- ◆ Ms. Bríd Flynn, Cork City Council.

Workshops were a key element of the Seminar allowing local authorities to exchange information and best practices on various aspects of litter management planning.

The workshops focused on the theme of litter enforcement and litter initiatives. Litter enforcement included topics such as issuing and securing payment of fines, CCTV and tackling cigarette litter and dog fouling. Litter initiative topics included the control of election and referendum posters, event management and advertising campaigns. The workshops also dealt with community and business initiatives.

Audit

In 2009, the Litter Monitoring Body undertook audits of three local authorities to ensure that the system is being implemented as designed. The local authorities audited were:

- ◆ Cavan Town Council;
- ◆ Cavan County Council; and
- ◆ Leitrim County Council.

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

CHAPTER 1: SUMMARY SYSTEM'S SURVEY RESULTS FOR 2008

This report is based on an analysis of data received from 77 local authorities². Results were submitted by 75 local authorities in 2007, 72 in 2006, 66 in 2005, 61 in 2004 and 34 in 2003. Survey results in 2008 were submitted by over 86% of local authorities, including data from all local authority types (i.e. county councils, city, town and borough councils). The survey results provide reliable information on the extent, composition and causes of litter pollution in Ireland in 2008 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.

This National Litter Pollution Monitoring System 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?

- ◆ 6.6% of areas surveyed were litter free (LPI 1). The percentage of unpolluted (LPI 1) areas have increased by 1.5% from 5.1% in 2007 to 6.6% in 2008;
- ◆ 62.6% of all areas surveyed were only slightly littered (LPI 2), a 4.1% increase on 2007;
- ◆ The percentage of moderately polluted areas (LPI 3) has decreased by 4.5% on 2007 to 26.6%;
- ◆ The percentage of significantly polluted areas (LPI 4) has decreased by 0.8% on 2007 to 3.8%; and
- ◆ Grossly polluted areas (LPI 5) has decreased by 0.2% on 2007 to 0.5%.

² While 74 Local Authorities submitted Litter Quantification Surveys, an additional 3 Local Authorities submitted Litter Pollution Surveys but not Litter Quantification Surveys. Therefore results have been received from 77 Local Authorities. Further details are provided in Appendix A.

What are the main constituent elements of litter pollution?

- ◆ Cigarette related litter (46.1%), food related litter (31.8%) packaging litter (11.3%) and sweet related litter (5.8%) were the main litter constituents identified nationally.

What are the main causes of litter pollution?

- ◆ Passing pedestrians (37.6%), passing motorists (17.6%), retail outlets (9.9%), gathering points (8.1%) and fast food outlets (5.4%) were identified as the main causative factors of litter nationally.

CHAPTER 2: HOW LITTERED IS THE COUNTRY?

The national monitoring system results indicate that the percentage of unpolluted (LPI 1) areas have increased from 5.1% in 2007 to 6.6% in 2008. This indicates an overall improvement in the level of litter pollution from 2007 to 2008. This improvement is a reflection of anti-litter action at national level and by local authorities. A comparison of the results from 2007 to 2008 indicates that the percentage of slightly polluted (LPI 2) areas have also increased. There is a decrease in the percentage of moderately (LPI 3), significantly (LPI 4) and grossly polluted (LPI 5) areas.

The 2008 dataset is obtained from over 5,275 litter pollution surveys.

Figure 2.1 below compares 2007 and 2008 litter pollution survey results:

- ◆ The percentage of unpolluted (LPI 1) areas has increased from 5.1% in 2007 to 6.6% in 2008;
- ◆ There is also an increase (4.1%) in the slightly polluted (LPI 2) category, from 58.5% in 2007 to 62.6% in 2008;
- ◆ The percentage of moderately polluted (LPI 3) areas has significantly decreased from 31.1% in 2007 to 26.6% in 2008;
- ◆ The percentage of areas classified as significantly polluted (LPI 4) has decreased from 4.6% in 2007 to 3.8% in 2008; and
- ◆ The percentage of grossly polluted (LPI 5) areas has also decreased slightly to 0.5% in 2008 compared to 0.7% in 2007.

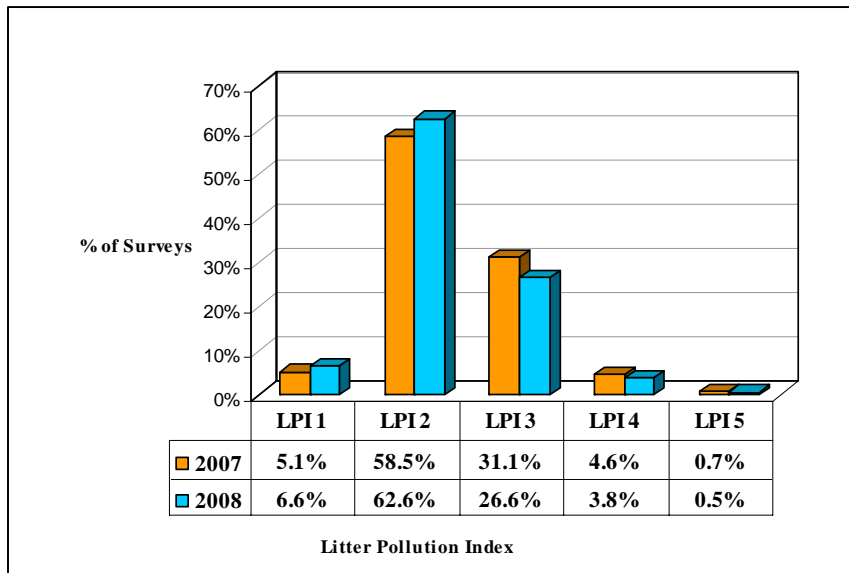


Figure 2-1 Comparison of Litter Pollution Indices (LPI) 2007 – 2008

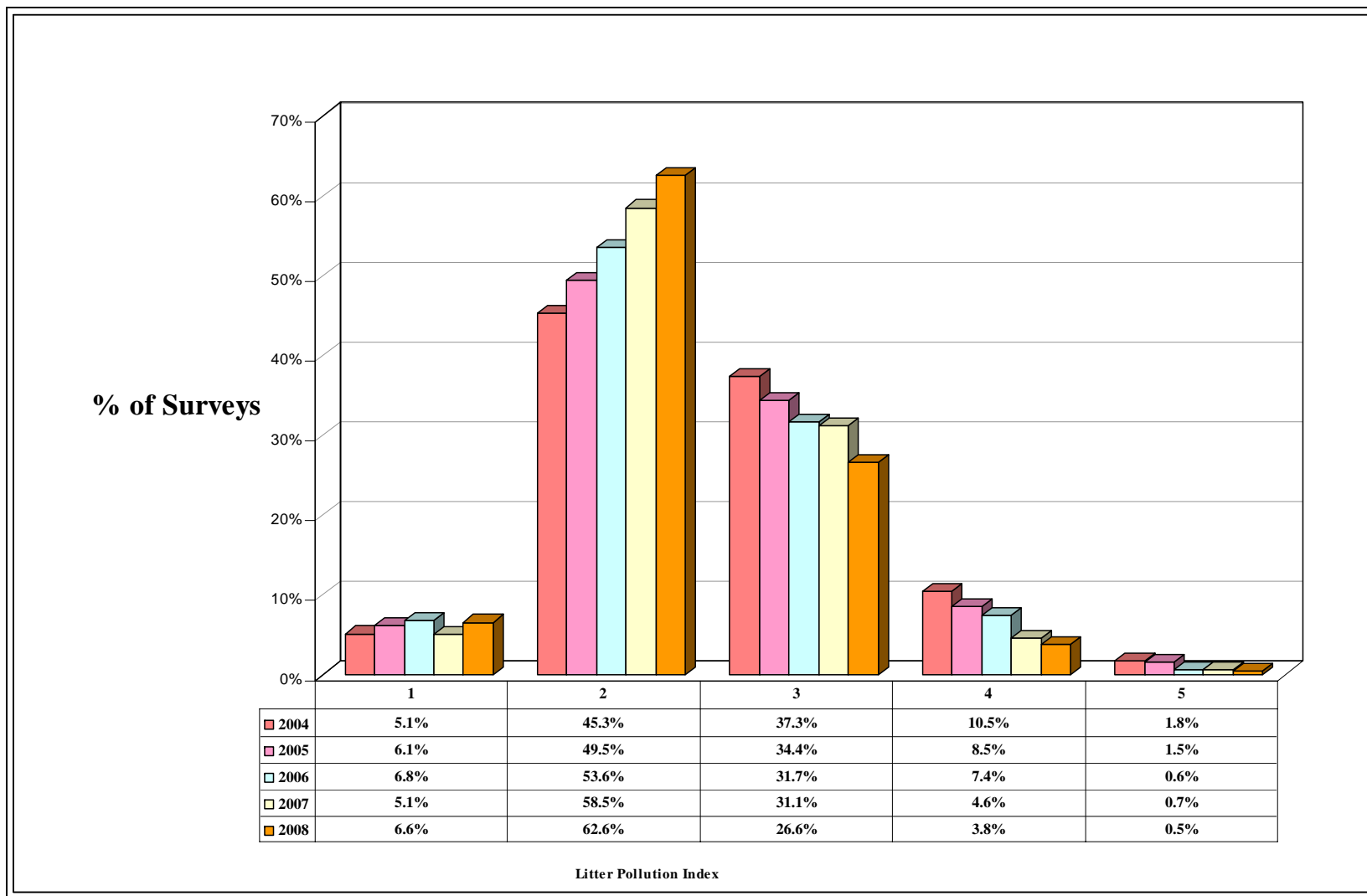


Figure 2-2 Litter Pollution Index 2004-2008

Figure 2.2 illustrates the Litter Pollution Index ratings from 2004 to 2008. The percentage of unpolluted (LPI 1) areas has increased from 5.1% in 2004 to 6.6% in 2008. The greatest percentage of unpolluted (LPI 1) areas was experienced in 2006 at 6.8%. The 2008 results show the highest percentage of slightly polluted (LPI 2) areas at 62.6%. The 2008 results also have the lowest percentage of moderately polluted (LPI 3) areas at 26.6%, significantly polluted (LPI 4) areas at 3.8% and grossly polluted (LPI 5) areas at 0.5%.

A comparison of urban and rural local authorities in Figure 2.3 below reveals a similarity in terms of the extent and severity of litter problems between these local authority types. In 2008, 7% of rural areas were unpolluted (LPI 1), compared to 6% of urban areas.

Overall, there are slightly more litter free (LPI 1) areas in rural areas than in urban areas. There is a difference between the degree of slightly polluted (LPI 2) areas, with 60% of rural areas considered slightly polluted compared to 64% of urban areas. The percentage of moderately polluted (LPI 3), significantly polluted (LPI 4) and grossly polluted (LPI 5) areas in urban and rural areas are similar.

(See Figure 5.5 and 5.6, p.20 for further comparison of urban and rural litter pollution data from 2007 to 2008).

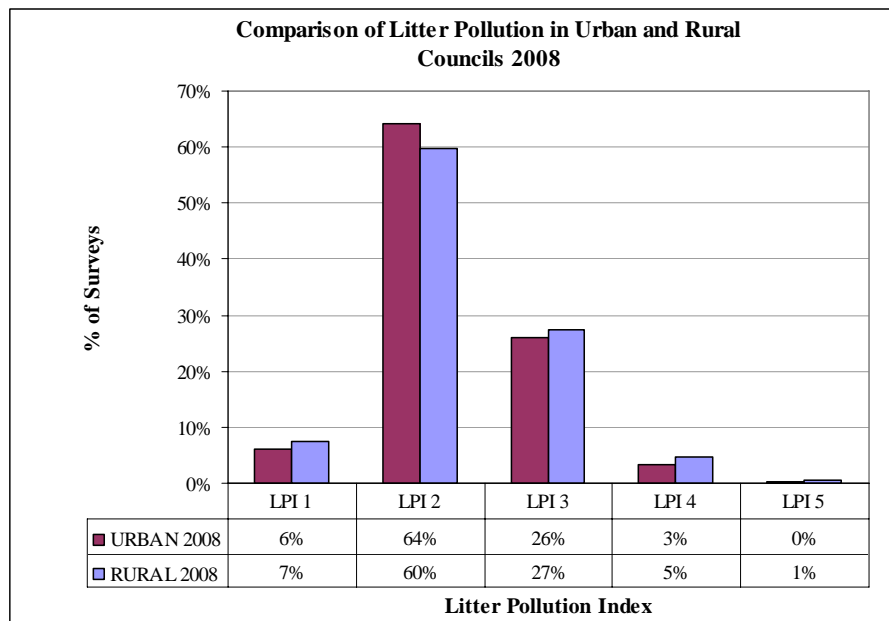


Figure 2-3 Comparison of Litter Pollution within Largely Urban and Rural Areas³ in 2008

³ Percentages are expressed as whole numbers and therefore totals for urban and rural local authorities may not add to exactly 100%.

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

Local authorities also carried out **litter quantification surveys** (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:

From the data below, it can be seen that:

- ◆ **cigarette related litter** continues to constitute the highest percentage (**46.11%**) of litter in the locations surveyed – this is comprised mainly of cigarette ends which constitute **42.42%** of all litter items nationally;
- ◆ **food related litter**, at **31.75%**, is the second largest category of litter pollution recorded. **Chewing gum** is the single largest litter component in the food related litter category, and also the second largest component nationally, comprising **30.79%** of all litter recorded in the litter quantification surveys carried out in 2008;
- ◆ **packaging litter (11.27%)** is the third largest component of national litter pollution recorded.

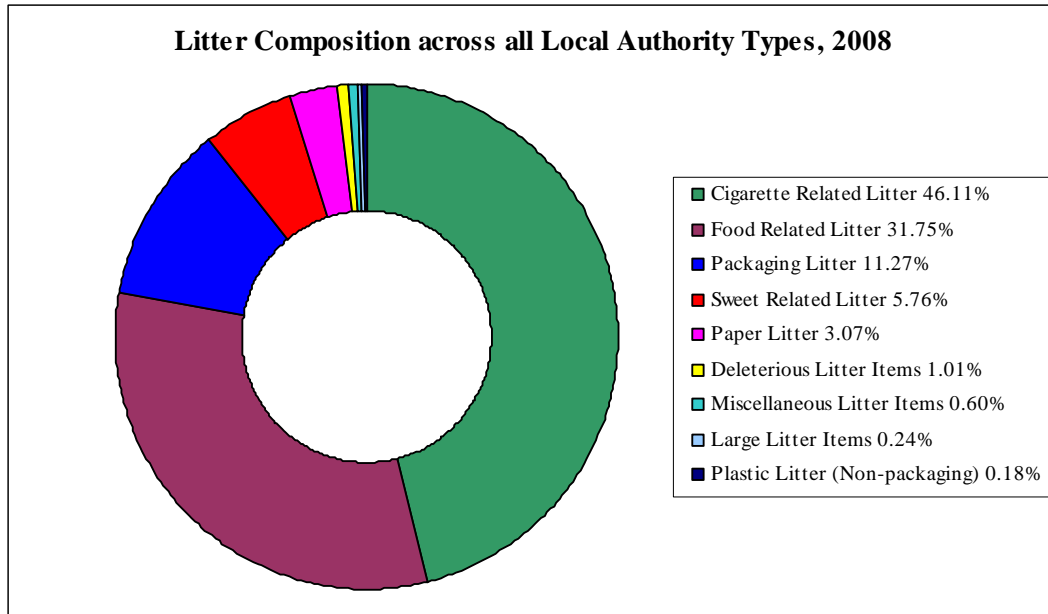


Figure 3-1 Composition of Litter in 2008 Broken Down into Main Categories

3.1 Comparison of Litter Quantification Surveys 2007 – 2008

Figure 3.2 below compares the results of the 2007/2008 surveys.

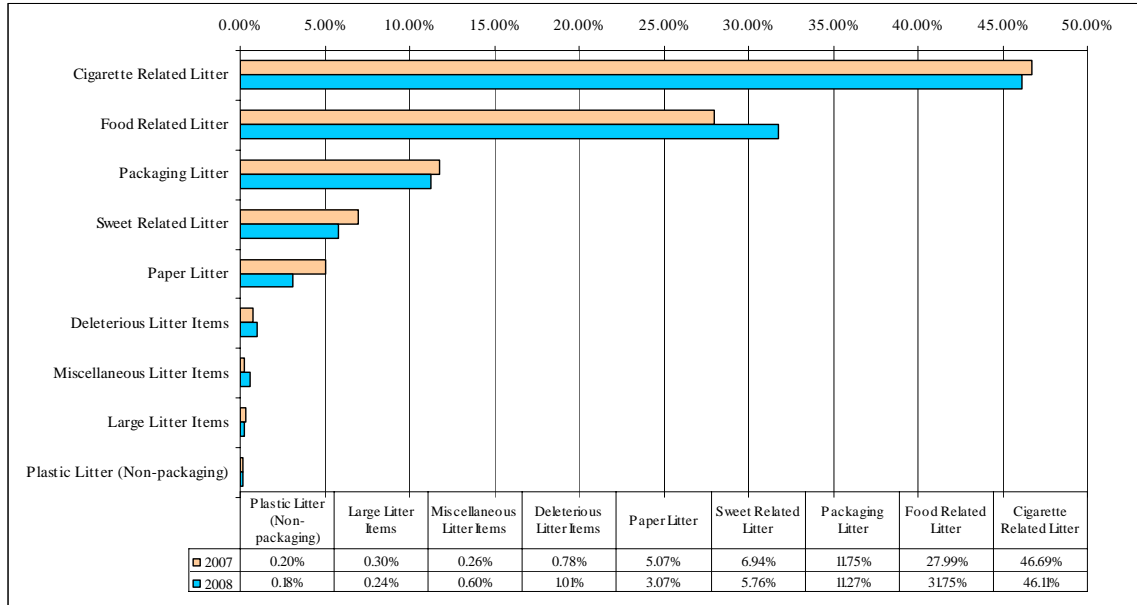


Figure 3-2 Comparison of National Litter Composition from 2007 to 2008

A comparison of the results of Litter Quantification Surveys carried out in 2007 and 2008 shows a similar composition of litter. However, analysis reveals differences in the relative quantities of certain components. The percentages of cigarette related, packaging litter, sweet related litter and paper litter have decreased. The percentage of food related litter has increased. There has been little change in the percentages of other litter categories. Table 3.1 on the following page details the composition of litter in 2008 and 2007.

The greatest percentage change in litter composition is in the food related litter category., specifically chewing gum litter has increased by 4.42% from 2007 to 2008.

Refer to Appendix C for “Details of Litter Composition from 2007-2008 According to Local Authority Type”.

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

The breakdown of causative factors nationally in 2007 and 2008 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 2007 to 2008.

Figure 4.1 illustrates that:

- ◆ Passing pedestrians continue to constitute the greatest single causative factor of litter pollution, accounting for 37.6% across all local authorities;
- ◆ Passing Motorists are the second largest causative factor accounting for 17.6% across all local authority types, similar to 2007 at 17.8%;
- ◆ Retail outlets have decreased as causative factors of litter pollution from 11.6% in 2007 to 9.9% in 2008;
- ◆ Additional causative factors that have increased from 2007 to 2008 include gathering points (from 6.6% in 2007 to 8.1% in 2008), places of leisure/entertainment (from 4.2% in 2007 to 5.0% in 2008) and bring banks (from 1.9% in 2007 to 2.4% in 2008).
- ◆ Causative factors that have decreased from 2007 to 2008 include fast food outlets (from 6.4% in 2007 to 5.4% in 2008), bank ATM (from 2.1% in 2007 to 1.9% in 2008), construction sites (from 2.0% in 2007 to 1.4% in 2008), fly-tipping/dumping (from 1.3% in 2007 to 0.9% in 2008) and overflowing bins (from 0.9% in 2007 to 0.5% in 2008).
- ◆ Causative factors that have remained relatively constant from 2007 to 2008 include bus stops, bus/train station, major entertainment events, schools/school children and refuse collection /presentation.

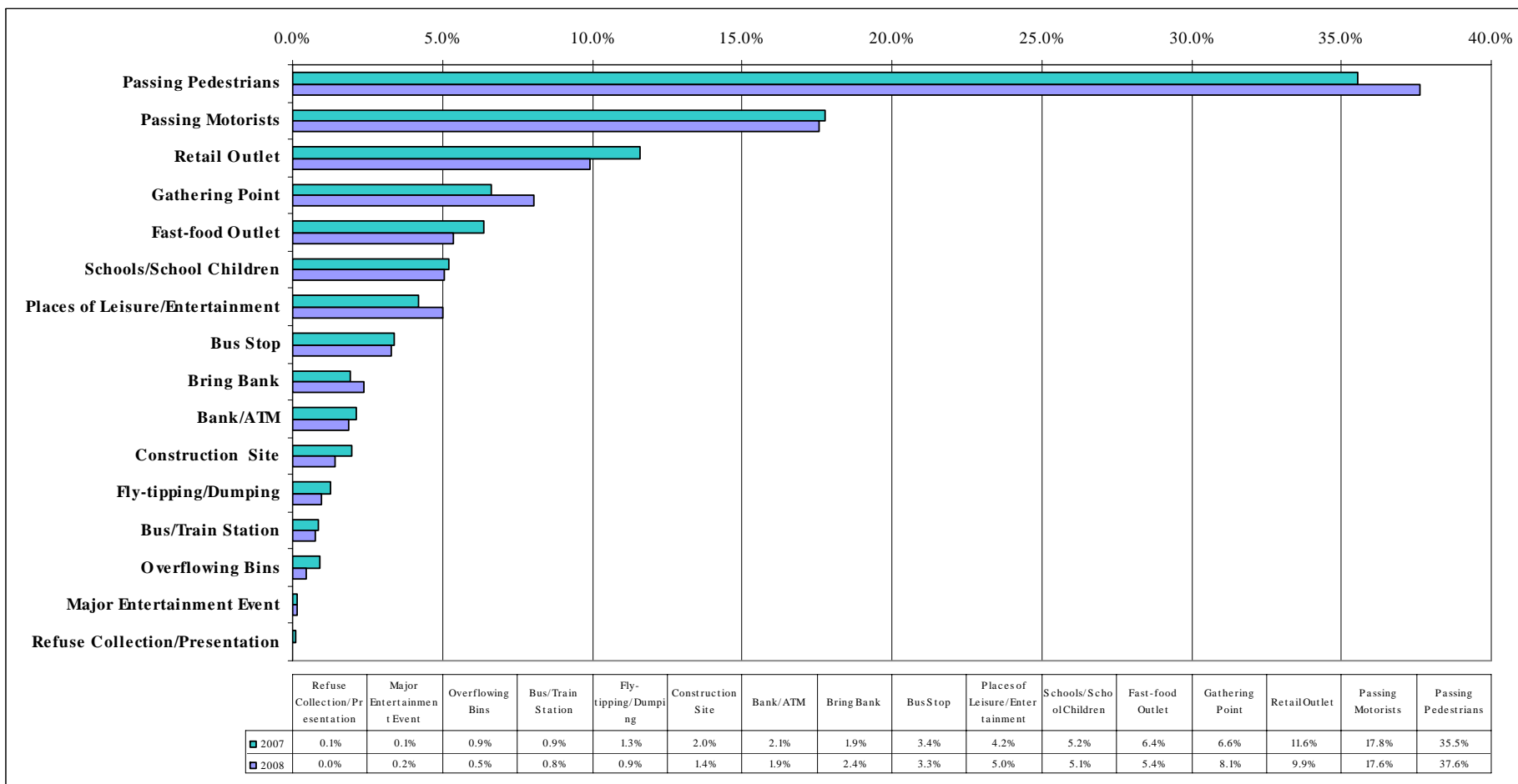


Figure 4-1 Causative Factors of Litter Pollution across all Local Authorities, 2007 compared to 2008

During the Litter Pollution Surveys, 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 Litter Pollution Surveys. 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 particular survey area.

The breakdown of causative factors found in each local authority type is presented in Figure 4.2 on page 15.

The national results for 2008 show that passing pedestrians are the most significant single cause of litter pollution for every category of local authority. It is also clear from Figure 4.2 that passing motorists, retail outlets, gathering points and fast food outlets are considerable sources of litter for all local authority types. Survey results to date show that the contribution of passing motorists, gathering points, bring banks, construction sites and fly-tipping, to litter pollution is greater in county councils than in other local authority types. Fast food outlets and schools/school children are more significant causative factors in City Councils than in other local authority types. Passing pedestrians, retail outlets, bus stops, bus/train station and bank ATM are more significant causative factors in Dublin Local Authorities than in other local authority types.

Figure 4.2 also illustrates that less significant causes of litter pollution in all types of local authority includes refuse collection/presentation, major entertainment events, overflowing bins, fly-tipping/dumping, bus/train stations and construction sites. This is similar to trends identified in the 2007 and 2006 national litter pollution monitoring system results. This data indicates that the cause of litter pollution nationwide continues 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.

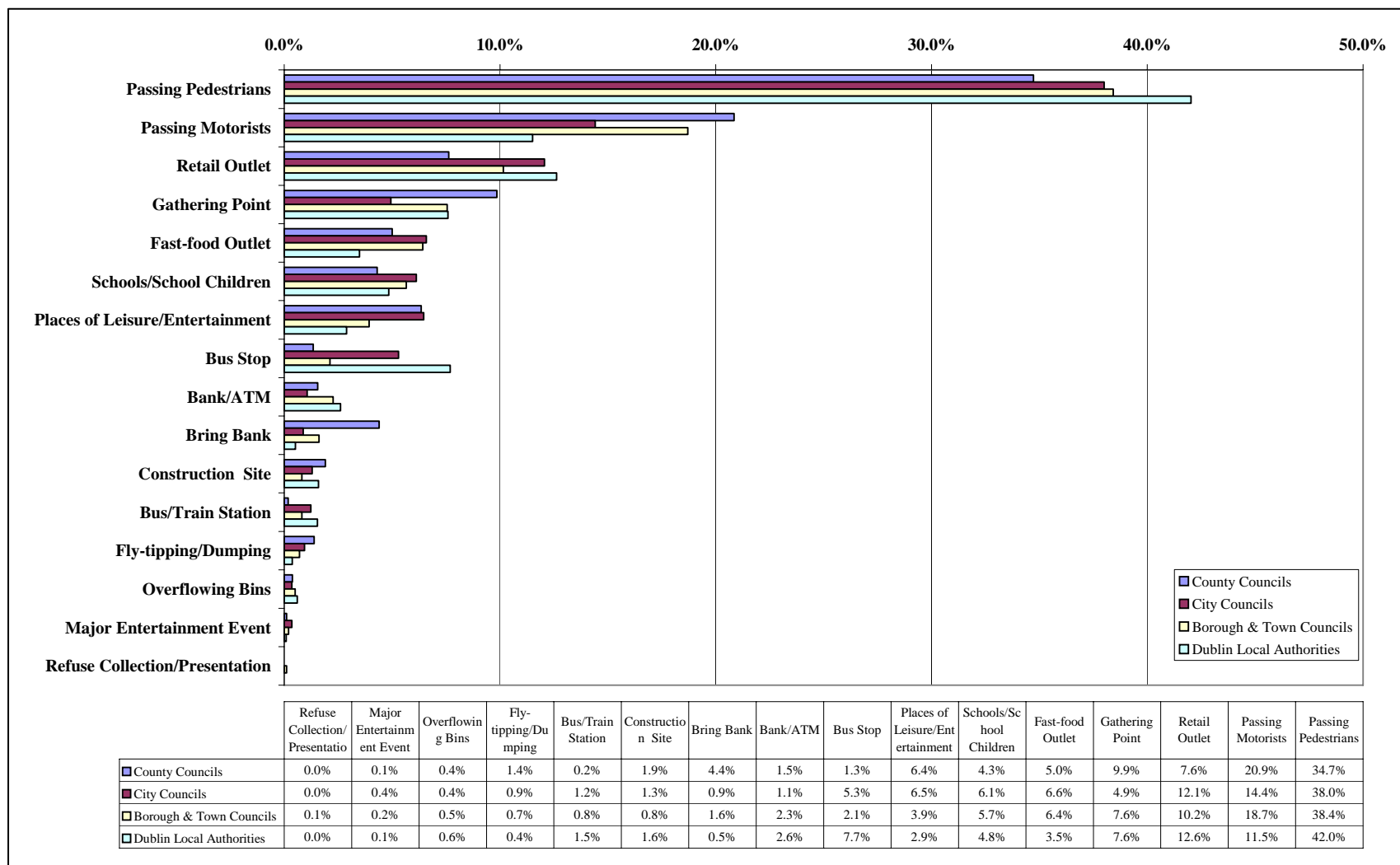


Figure 4-2 Causative Factors of Litter Pollution According to Local Authority Type in 2008⁴

⁴ Percentages are expressed to one decimal place and therefore totals for each category of local authority may not add to exactly 100%.

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 2008 and 2007 graphs under each litter pollution index (on the same page) to facilitate the comparison of 2008 and 2007 results.

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

This chapter focuses on comparative data for litter pollution for the different local authority types. Litter Pollution Survey results for 73 out of 90⁵ local authorities have been returned to the Litter Monitoring Body and analysed for 2008 - those local authorities are detailed in Appendix A.

Comparison of the 2008 litter pollution surveys 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

In comparing the litter pollution data for Dublin local authorities from 2007 to 2008, Figure 5.1 illustrates that the percentage of unpolluted (LPI 1) areas increased from 5.7% in 2007 to 9.2% in 2008; this constitutes an increase of 3.5%. Slightly polluted (LPI 2) areas increased significantly by 8.9%, from 50.8% in 2007 to 59.7% in 2008. Moderately polluted (LPI 3) areas decreased significantly by 12.0%, from 40.4% in 2007 to 28.4% in 2008. Significantly polluted (LPI 4) and grossly polluted (LPI 5) areas also decreased slightly by 0.2% and 0.3% respectively. This shows an improvement in the levels of litter pollution in 2008 in the Dublin Local Authorities.

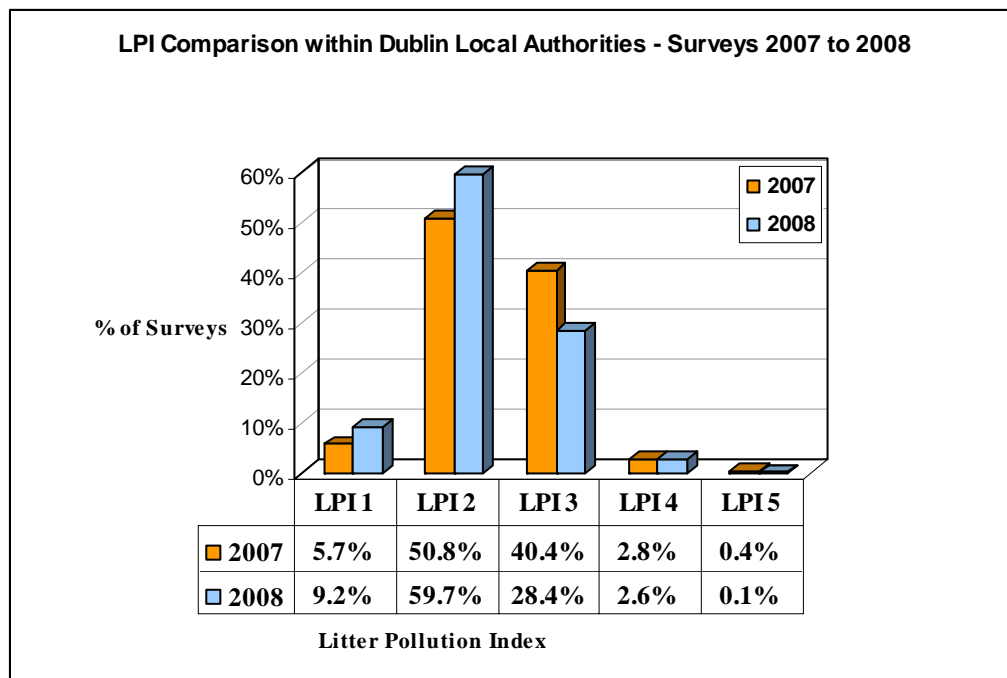


Figure 5-1 Comparison of Litter Pollution within Dublin Local Authorities 2007 to 2008

⁵ Note that there are 90 local authorities in Ireland as South Cork County Council (City) and South Cork County Council (Hinterland) have amalgamated as South Cork County Council (City & Rural).

5.2 Comparison within County Councils

The trend in litter pollution in County Councils from 2007 to 2008 is similar to the trend in the Dublin local authorities, in that unpolluted (LPI 1) areas have increased from 6.1% in 2007 to 7.4% in 2008 and slightly polluted (LPI 2) areas have increased from 59.1% in 2007 to 59.7% in 2008. Similar to Dublin Local Authorities, moderately polluted (LPI 3), significantly polluted (LPI 4) and grossly polluted (LPI 5) areas decreased from 2007 to 2008. Moderately polluted (LPI 3) areas decreased from 28.3% in 2007 to 27.4% in 2008. Significantly polluted (LPI 4) areas decreased from 5.3% in 2007 to 4.8% in 2008. Grossly polluted (LPI 5) areas also decreased from 1.2% in 2007 to 0.6% in 2008.

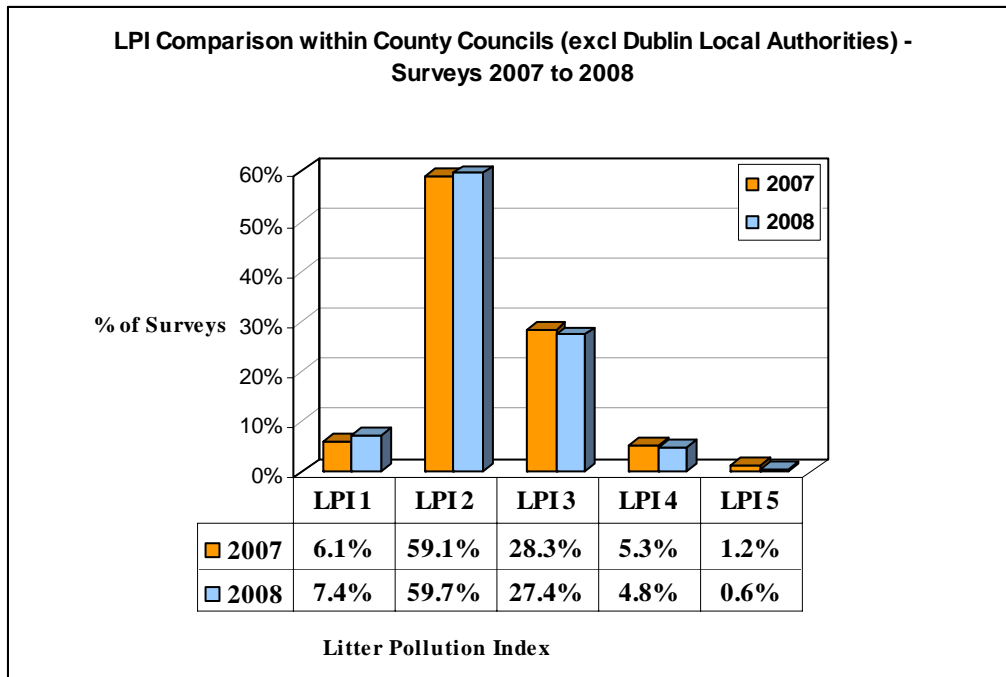


Figure 5-2 Comparison of Litter Pollution within County Councils 2007 to 2008

5.3 Comparison within City Councils

Figure 5.3 illustrates that the percentage of litter free (LPI 1) areas increased from 1.1% in 2007 to 1.4% in 2008. Slightly polluted (LPI 2) areas also increased slightly from 59.9% in 2007 to 61.0% in 2008. The percentage of moderately polluted (LPI 3) areas decreased from 31.9% in 2007 to 31.7% in 2008. Significantly polluted (LPI 4) areas also decreased from 7.0% in 2007 to 5.0% in 2008. However, the percentage of grossly polluted (LPI 5) areas increased slightly from 0.2% in 2007 to 0.8% in 2008.

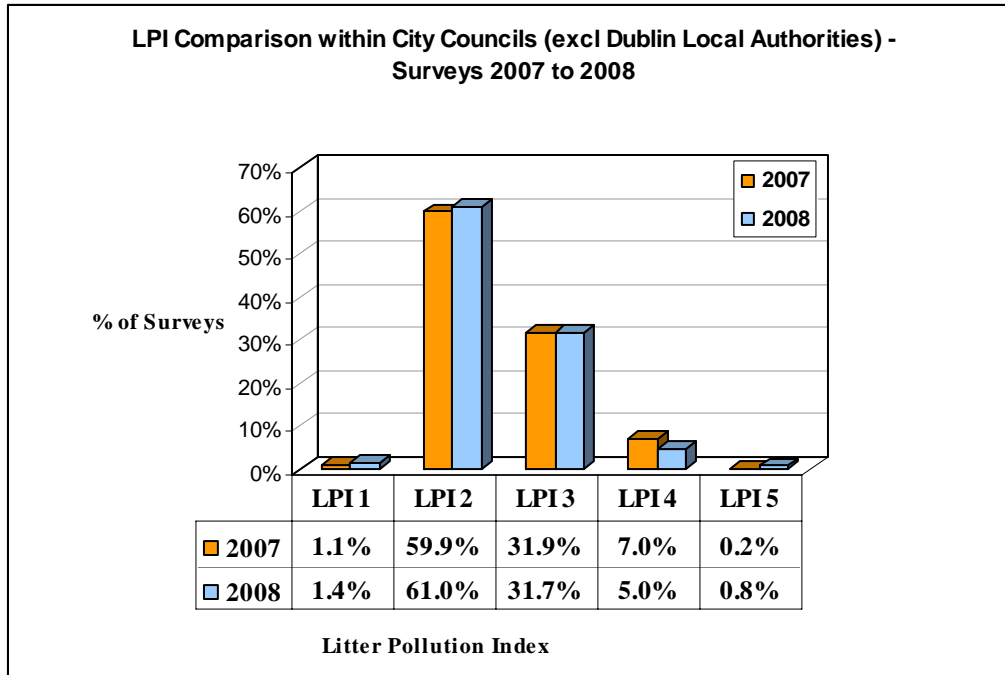


Figure 5-3 Comparison of Litter Pollution within City Councils 2007 to 2008

5.4 Comparison within Borough/Town Councils

In comparing the litter pollution data for Figure 5.4, it is clear that there has been an overall improvement in the level of litter pollution in Borough/Town Councils from 2007 to 2008. The level of unpolluted (LPI 1) areas has increased from 4.7% in 2007 to 6.1% in 2008. Slightly polluted (LPI 2) areas have also increased significantly from 64.5% in 2007 to 68.8% in 2008. The percentage of moderately polluted (LPI 3) have decreased by 3.7%, from 25.7% in 2007 to 22.0% in 2008. The percentages of significantly polluted (LPI 4) and grossly polluted (LPI 5) areas have also decreased by 1.7% and 0.1% respectively.

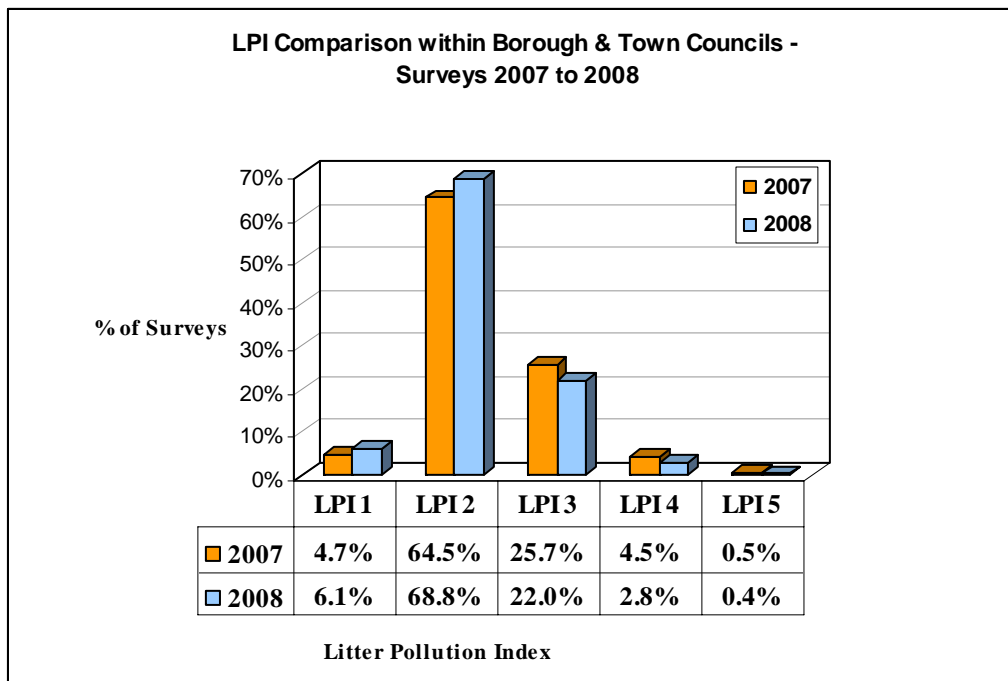


Figure 5-4 Comparison of Litter Pollution within Borough & Town Councils 2007 to 2008

The trend across all local authority types is similar in that the level of unpolluted (LPI 1) and slightly polluted (LPI 2) areas have increased, while at the same time the level of moderately polluted (LPI 3), significantly polluted (LPI 4) and grossly polluted (LPI 5) areas have decreased with the exception of City Councils which, experienced an increase in the level of grossly polluted (LPI 5) areas from 0.2% in 2007 to 0.8% in 2008.

5.5 Comparison within Urban & Rural Areas

Figures 5.5 and 5.6 below provide a comparison of litter pollution in rural and urban areas from 2007 to 2008.

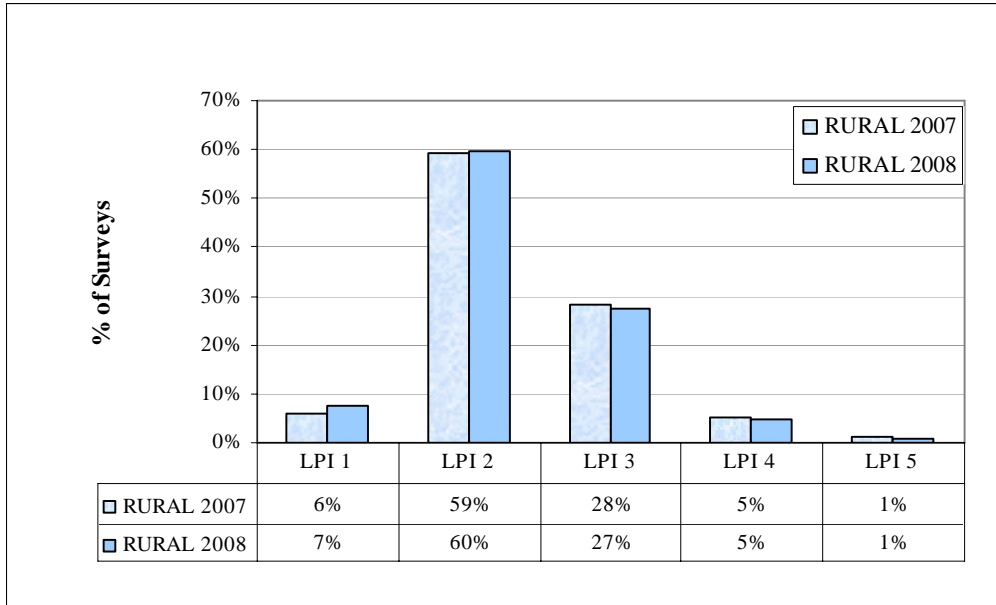


Figure 5-5 Comparison of Litter Pollution in Rural Areas from 2007 to 2008

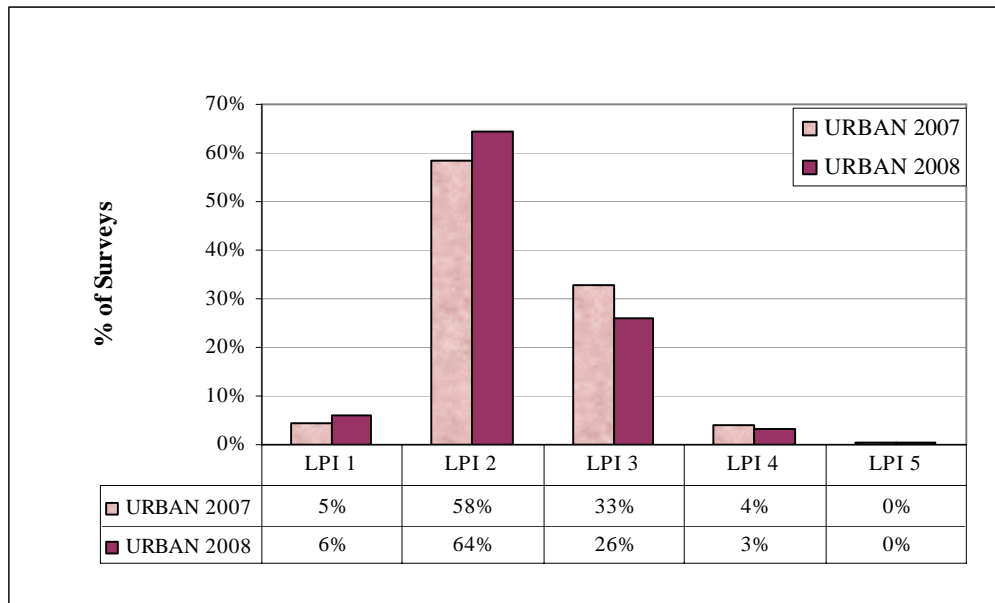


Figure 5-6 Comparison of Litter Pollution in Urban Areas from 2007 to 2008

In Rural areas the level of unpolluted (LPI 1), slightly polluted (LPI 2) and moderately polluted (LPI 3) areas has remained relatively similar from 2007 to 2008. The percentage of significantly polluted (LPI 4) and grossly polluted (LPI 5) areas has remained constant. The overall level of cleanliness in rural areas has improved with unpolluted (LPI 1) areas and slightly polluted (LPI 2) areas both experiencing an increase of 1% from 2007 to 2008.

Urban areas have also experienced an improvement in relation to the level of litter pollution. The percentage of unpolluted (LPI 1) areas increased slightly from 5% in 2007 to 6% in 2008. The percentage of slightly polluted (LPI 2) areas has increased by 6% from 58% in 2007 to 64% in 2008. The percentage of moderately polluted (LPI 3) areas has decreased significantly by 7% from 33% in 2007 to 26% in 2008. The percentage of significantly polluted (LPI 4) areas decreased by 1% from 2007 to 2008. Grossly polluted (LPI 5) areas have remained constant at 0%.

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 Chewing Gum Litter

The results of litter quantification surveys can be used to examine trends in chewing gum litter. Figure 6.1 below illustrates trends in chewing gum related litter since 2004.

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

There has been an increase in the percentage of chewing gum by 4.42% from 2007 to 2008 and overall chewing gum levels show only a slight improvement over a five year period from 2004 to 2008. The percentage of national litter represented by chewing gum has increased from 29.16% in 2004 to 30.79% in 2008, which represents an increase of 1.63%. Over the past five years, chewing gum represents an average of 28.6% of all litter items nationally.

This will continue to be analysed in forthcoming years.

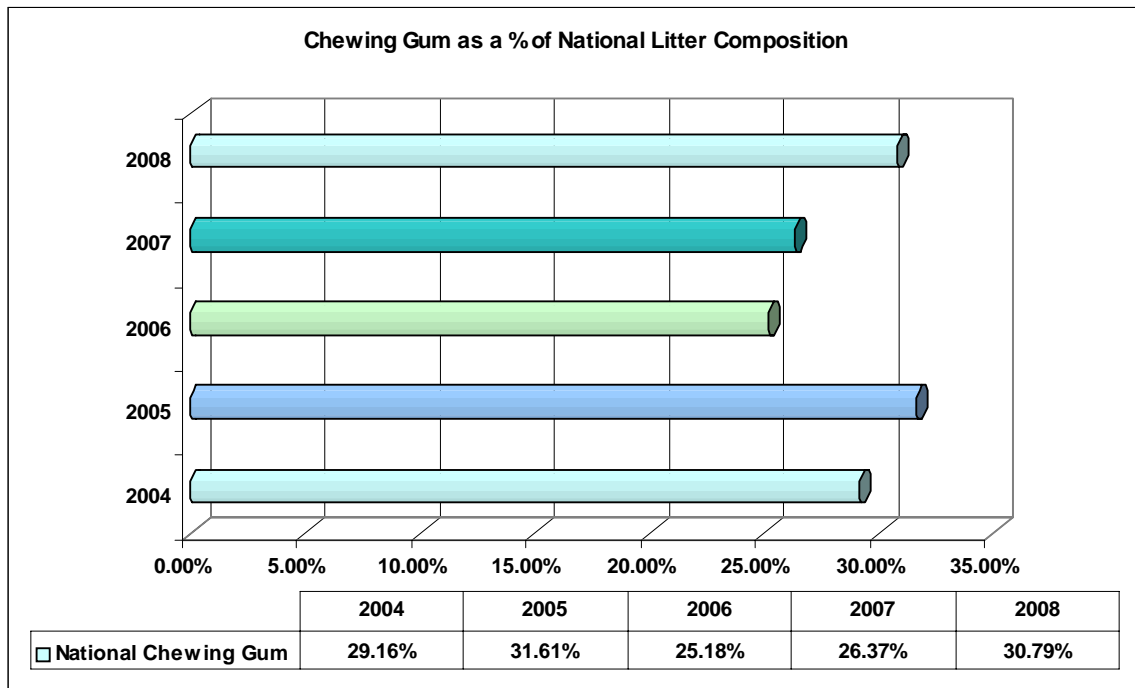


Figure 6-1 Chewing Gum as a Percentage of the National Litter Composition

Figures 6.2 and 6.3 highlight the results of the Gum Litter Taskforce Monitoring Campaign, which took place in the five city council areas in 2007 and 2008.

6.2 Gum Litter Taskforce (GLT)

The Gum Litter Taskforce (GLT) was established in 2006 following a Negotiated Agreement between the Department of Environment, Heritage and Local Government (DoEHLG) and the chewing gum industry. The GLT is charged with developing and implementing an action programme to tackle gum litter in a sustainable manner i.e. by changing behaviour, which in effect is the root cause of the issue. The success of this programme is currently being monitored in a number of ways, including using litter surveys.

The following City Councils have been monitoring the GLT Campaign using litter surveys in 2007 and 2008 and will continue to do so in 2009:

- Cork City Council;
- Dublin City Council;
- Galway City Council;
- Limerick City Council; and
- Waterford City Council.

This Monitoring Programme sets out to monitor and assess the effectiveness of the GLT awareness campaign using litter surveys. The surveys designed by the Litter Monitoring Body, identify the count of chewing gum litter in a specific survey location.

Figure 6.2 below provides an analysis of the count of chewing gum during the Pre, Mid and Post Campaign Surveys in 2007.

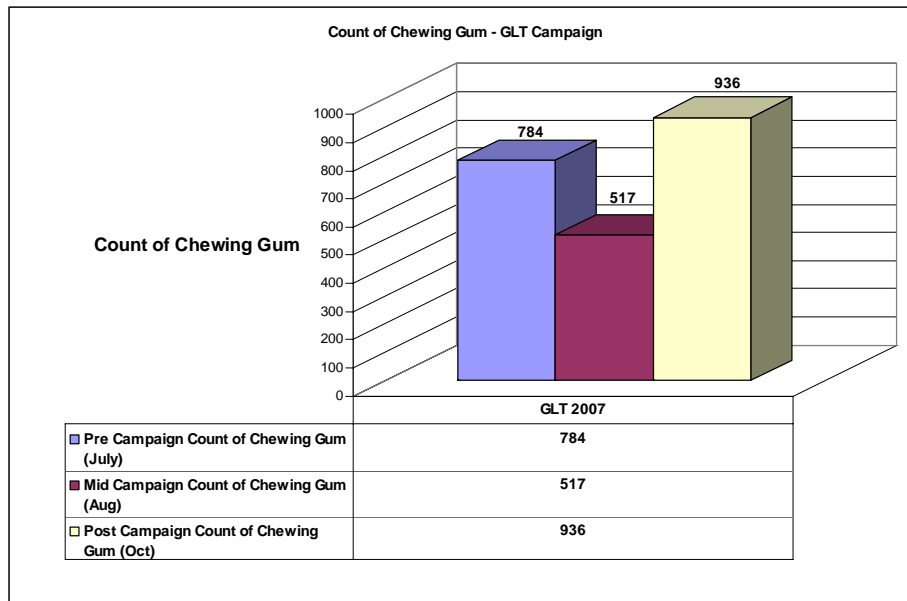


Figure 6-2 Count of Chewing Gum during Pre, Mid and Post Campaign Surveys 2007

Figure 6.2 illustrates that in 2007, the count of chewing gum litter in the Pre Campaign Survey was 784. In the Mid Campaign Survey this decreased to a count of 517, while in the Post Campaign Survey this increased to a count of 936. The difference between the Pre Campaign Survey and the Post Campaign Survey is an increase in the count of 152 pieces of chewing gum. This illustrates an increase of 19% in the count of chewing gum from the Pre Campaign Survey in 2007 when compared to the Post Campaign Survey in 2007.

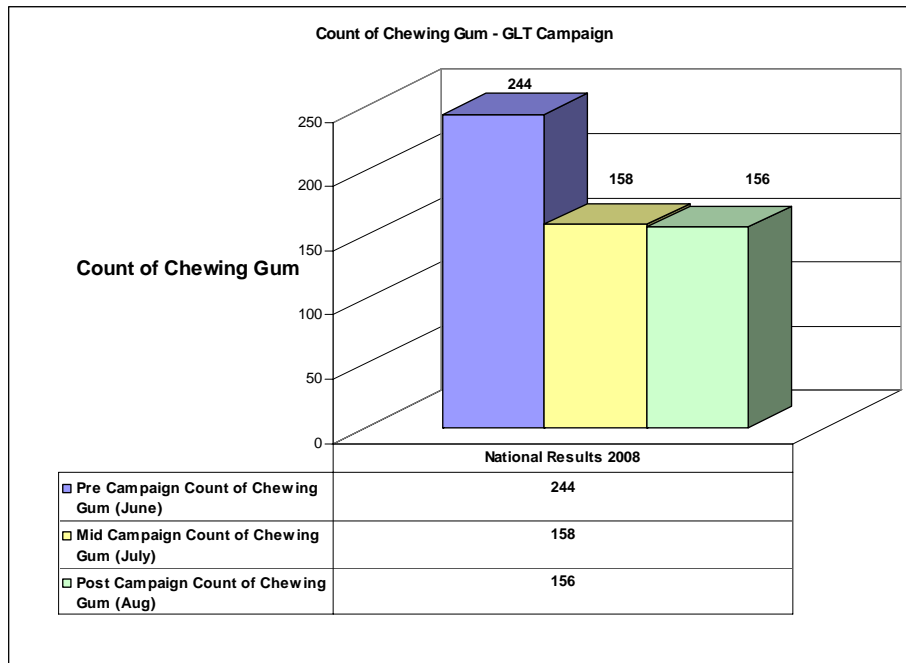


Figure 6-3 Count of Chewing Gum during Pre, Mid and Post Campaign Surveys 2008

Figure 6.3 above illustrates that in 2008, the count of chewing gum litter in the Pre Campaign Survey was 244. In the Mid Campaign Survey this decreased to a count of 158 and in the Post Campaign Survey this decreased further to a count of 156. The difference between the Pre Campaign Survey and the Post Campaign Survey is a decrease in the count of 88 pieces of chewing gum. This illustrates a decrease of 36% from the Pre Campaign Survey in 2008 when compared to the Post Campaign Survey in 2008.

The impact of the Gum Litter Campaign will continue to be monitored in 2009.

6.3 Sweet Related Litter

In 2006 a new litter category ‘sweet related litter’ was added to the Litter Quantification Surveys, this was to ensure that the “Miscellaneous” litter category was not utilised repeatedly. The results for 2007 and 2008 are presented in Figure 6.4 below.

The results in Figure 6.4 illustrates that sweet related litter has decreased by 1.18% in 2008 compared to 2007. Sweet wrappers (plastic/foil) are the highest component of litter in the sweet related litter category at 2.61% in 2008. This has reduced by 0.94% from 3.55% in 2007. Crisp bags also contribute significantly to this litter category at 1.48% in 2008. This has decreased slightly from 1.74% in 2007.

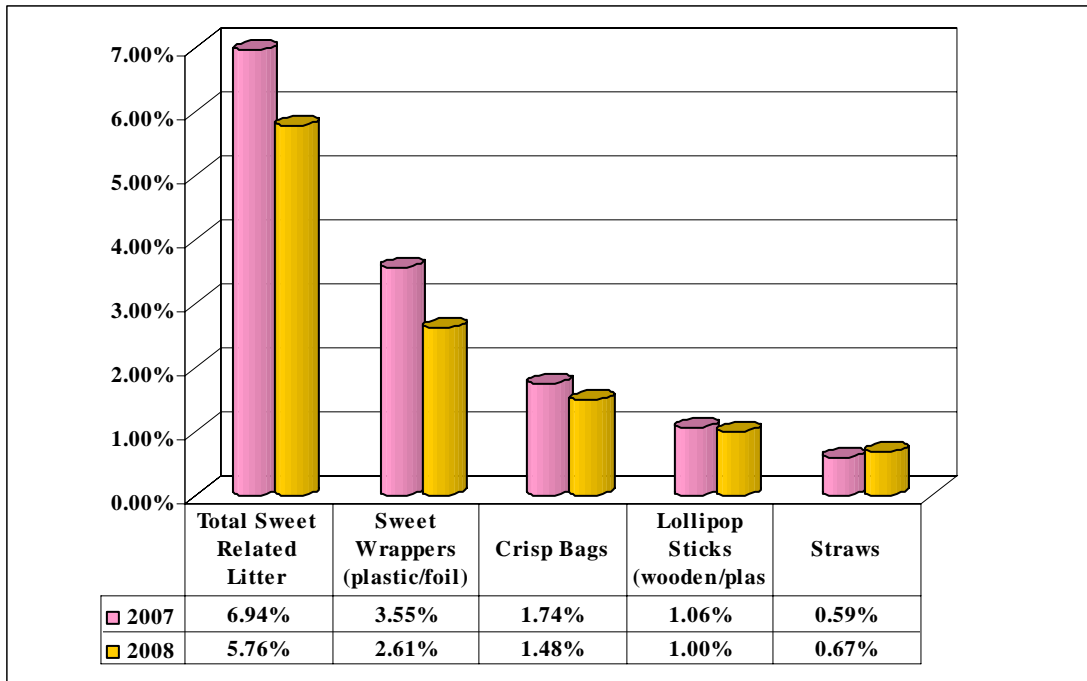


Figure 6-4 Sweet Related Litter Analysed 2007, 2008

6.4 Bank ATM Receipts

The Litter Monitoring System was used to assess the impact of a new Protocol to tackle litter generated by ATM advice slips which was announced in January 2007 by the 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 litter pollution survey results for 2008 suggest that “Bank ATMs” decreased slightly as a causative factor from 2.1% in 2007 to 1.9% in 2008. In addition the litter quantification surveys indicate that the quantity of bank slips have decreased from 0.66% in 2007 to 0.46% in 2008. The Litter Monitoring System will continue to monitor the impact of this protocol.

6.5 Plastic Bags

The results in Figure 6.5 illustrate the percentage of shopping bags as a percentage of the National Litter Composition since 2002. Prior to the introduction of the levy in March 2002, it was estimated that 1.3 billion shopping bags were issued annually, as a consequence of which, plastic bags ended up as a very visually intrusive form of litter pollution. The most recent survey data available for 2008 shows that plastic bags constitute 0.32% of litter pollution nationally compared to an estimated 5% prior to the introduction of the levy.

The plastic bag levy was increased from 15c to 22c in July 2007 in a further bid to reduce littering. There was a slight increase in plastic bags as a percentage of the National Litter Composition from 0.29% in 2007 to 0.32% in 2008. The percentage of plastic bags in 2008 is similar to the percentage of plastic bags in 2002 at 0.32%.

The Litter Monitoring System will continue to monitor the impact of this levy.

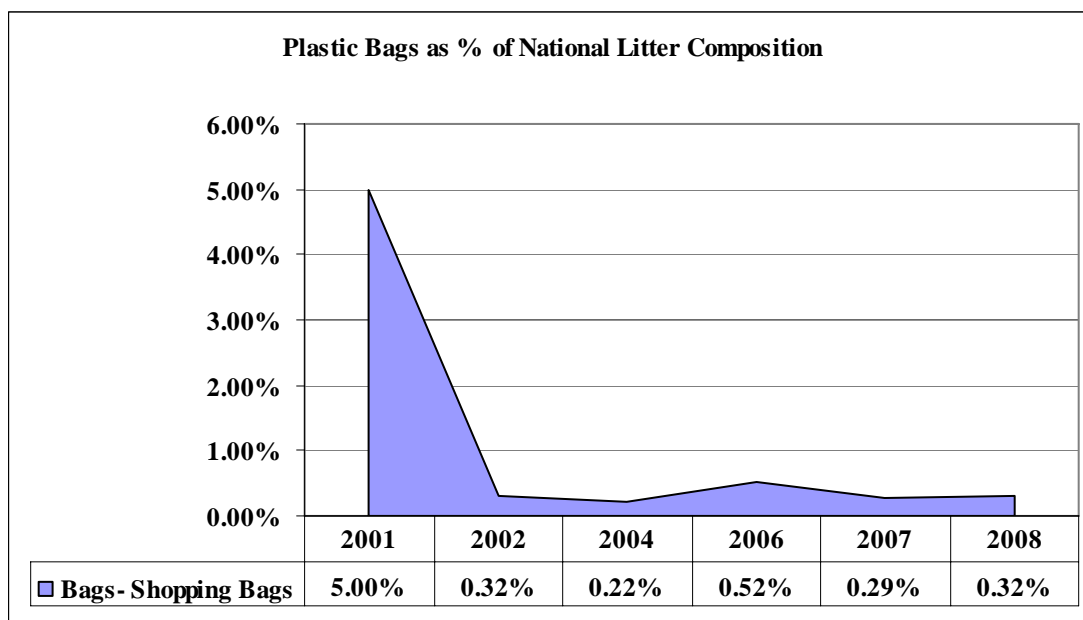


Figure 6-5 Plastic Bags as a Percentage of the National Litter Composition

CHAPTER 7: CONCLUSION

The data reveals that the extent and severity of litter pollution has improved nationally from 2007 to 2008. The percentage of unpolluted (LPI 1) areas increased considerably from 5.1% in 2007 to 6.6% in 2008. The constituent components and the causative factors of litter pollution remain relatively constant across all local authority types from 2007 to 2008.

The results of the National Litter Pollution Monitoring System survey carried out in 2008 have revealed that when litter free (LPI 1) and slightly (LPI 2) polluted areas are considered together, there is an increase of 5.6% from 2007 to 2008. This suggests that the severity of litter pollution is improving consistently in 2008. Over the last five years, the percentage of unpolluted (LPI 1) areas has increased from 5.1% in 2004 to 6.6% in 2008.

Passing pedestrians, gathering points, places of leisure/entertainment, bring banks and major entertainment events have increased as causative factors of litter in 2008 compared to 2007.

The number of local authorities carrying out litter pollution and quantification surveys in 2008 is 77, which has increased from 75 in 2007, 72 in 2006 and 66 in 2005. The degree, composition, causes and trends in litter pollution identified and discussed in this report are representative of the national picture, and will continue to be monitored into 2009.

The Litter Monitoring Body is satisfied that local authorities are properly implementing the National Litter Pollution Monitoring System and that the systems survey data accurately reflects national litter pollution levels. Local authorities will continue to be audited to ensure the System is being implemented as designed.

CHAPTER 8: ITEMS FOR FURTHER ATTENTION UNDER THE NLPMS

- ◆ In future surveys the Litter Monitoring System will continue to assess the impact of the Gum Litter Taskforce awareness campaigns.
- ◆ The Litter Monitoring System will be used, to continue to assess the impact of the Protocol to tackle litter generated by ATM advice slips which was announced in January 2007 by the 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 Litter Monitoring System 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.

APPENDIX A

DETAILS OF LOCAL AUTHORITIES THAT CARRIED OUT SURVEYS IN 2008

Litter Quantification Survey Results

Litter Quantification Survey results for 74 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2008⁶. These are detailed in Table A-1.

Table A. 1 Local Authorities that Submitted Litter Quantification Survey Results for 2008

County Councils
Carlow County Council
Cavan County Council
Clare County Council
Donegal County Council
Dun Laoghaire Rathdown County Council
Fingal County Council
Galway County Council
Kerry County Council
Kildare County Council
Kilkenny County Council
Laois County Council
Leitrim County Council
Limerick County Council
Longford County Council
Louth County Council
Mayo County Council
Meath County Council
Monaghan County Council
North Cork County Council
North Tipperary County Council
Offaly County Council
Roscommon County Council
Sligo County Council
South Cork County Council (City & Rural)
South Dublin County Council
South Tipperary County Council
Waterford County Council
West Cork County Council
Westmeath County Council
Wexford County Council
Wicklow County Council
City Councils
Cork City Council
Dublin City Council

⁶ Note South Cork County Council (City & Rural), West Cork County Council, Arklow Town Council and Westport Town Council returned Litter Quantification surveys but did not return Litter Pollution Surveys.

Galway City Council
Limerick City Council
Waterford City Council
Borough Councils
Clonmel Borough Council
Drogheda Borough Council
Kilkenny Borough Council
Sligo Borough Council
Wexford Borough Council
Town Councils
Arklow Town Council
Athlone Town Council
Ballina Town Council
Ballinasloe Town Council
Birr Town Council
Bray Town Council
Buncrana Town Council
Bundoran Town Council
Carlow Town Council
Carrickmacross Town Council
Carrick on Suir Town Council
Cashel Town Council
Castlebar Town Council
Castleblayney Town Council
Cavan Town Council
Clones Town Council
Dundalk Town Council
Dungarvan Town Council
Ennis Town Council
Enniscorthy Town Council
Killarney Town Council
Kilrush Town Council
Letterkenny Town Council
Listowel Town Council
Longford Town Council
Monaghan Town Council
Nenagh Town Council
Templemore Town Council
Thurles Town Council
Tipperary Town Council
Tralee Town Council
Westport Town Council
Wicklow Town Council

Litter Pollution Survey Results

Litter Pollution Survey results for 73 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2008⁷. These are detailed in Table A.2.

Table A. 2 Local Authorities that Submitted Litter Pollution Survey Results for 2008

County Councils
Carlow County Council
Cavan County Council
Clare County Council
Donegal County Council
Dun Laoghaire Rathdown County Council
Fingal County Council
Galway County Council
Kerry County Council
Kildare County Council
Kilkenny County Council
Laois County Council
Leitrim County Council
Limerick County Council
Longford County Council
Louth County Council
Mayo County Council
Meath County Council
Monaghan County Council
North Cork County Council
North Tipperary County Council
Offaly County Council
Roscommon County Council
Sligo County Council
South Dublin County Council
South Tipperary County Council
Waterford County Council
Westmeath County Council
Wexford County Council
Wicklow County Council
City Councils
Cork City Council
Dublin City Council
Galway City Council
Limerick City Council

⁷ Note Kells Town Council, Navan Town Council and Trim Town Council returned Litter Pollution Surveys but did not return Litter Quantification Surveys.

Waterford City Council
Borough Councils
Clonmel Borough Council
Drogheda Borough Council
Kilkenny Borough Council
Sligo Borough Council
Wexford Borough Council
Town Councils
Athlone Town Council
Ballina Town Council
Ballinasloe Town Council
Birr Town Council
Bray Town Council
Buncrana Town Council
Bundoran Town Council
Carlow Town Council
Carrick on Suir Town Council
Carrickmacross Town Council
Cashel Town Council
Castlebar Town Council
Castleblayney Town Council
Cavan Town Council
Clones Town Council
Dundalk Town Council
Dungarvan Town Council
Ennis Town Council
Enniscorthy Town Council
Kells Town Council
Killarney Town Council
Kilrush Town Council
Letterkenny Town Council
Listowel Town Council
Longford Town Council
Monaghan Town Council
Navan Town Council
Nenagh Town Council
Templemore Town Council
Thurles Town Council
Tipperary Town Council
Tralee Town Council
Trim Town Council
Wicklow Town Council

APPENDIX B
AREA CLEANLINESS RATING PHOTOS

Area Cleanliness Rating 1 (Unpolluted)

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



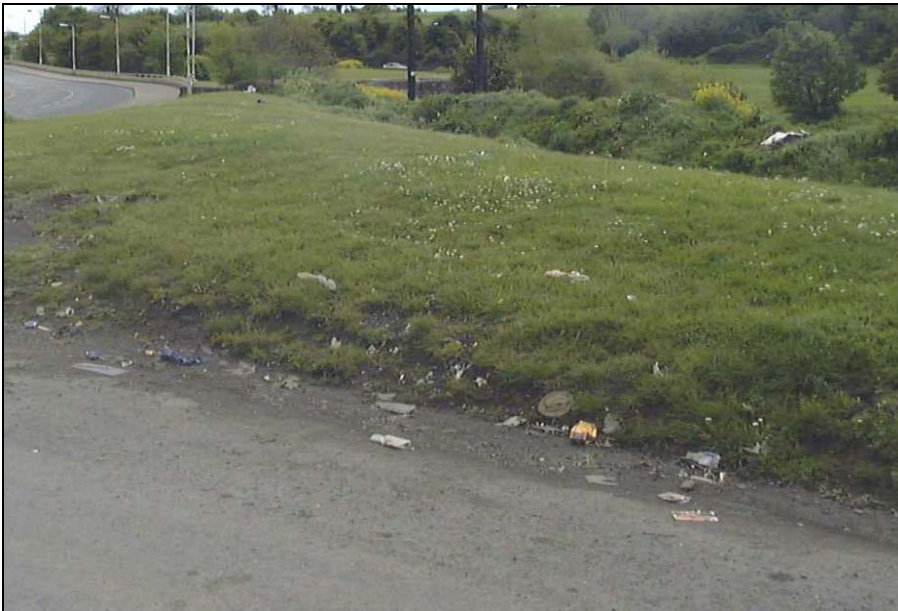
Area Cleanliness Rating 2 (Slightly Polluted)

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



Area Cleanliness Rating (Moderately Polluted)

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



Area Cleanliness Rating (Significantly Polluted)

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



Area Cleanliness Rating (Grossly Polluted)

This is given to an area, which is heavily littered throughout the survey area i.e. an event like a Concert/ Festival or fly-tipping.



APPENDIX C

DETAILS OF LITTER COMPOSITION FROM 2007 – 2008 ACCORDING TO LOCAL AUTHORITY TYPE

Figure C.1 compares the results of Litter Quantification Surveys within County Councils from 2007 to 2008; the main observations are that the percentage of cigarette related litter, sweet related litter and paper litter have decreased, while food related litter and packaging litter have increased.

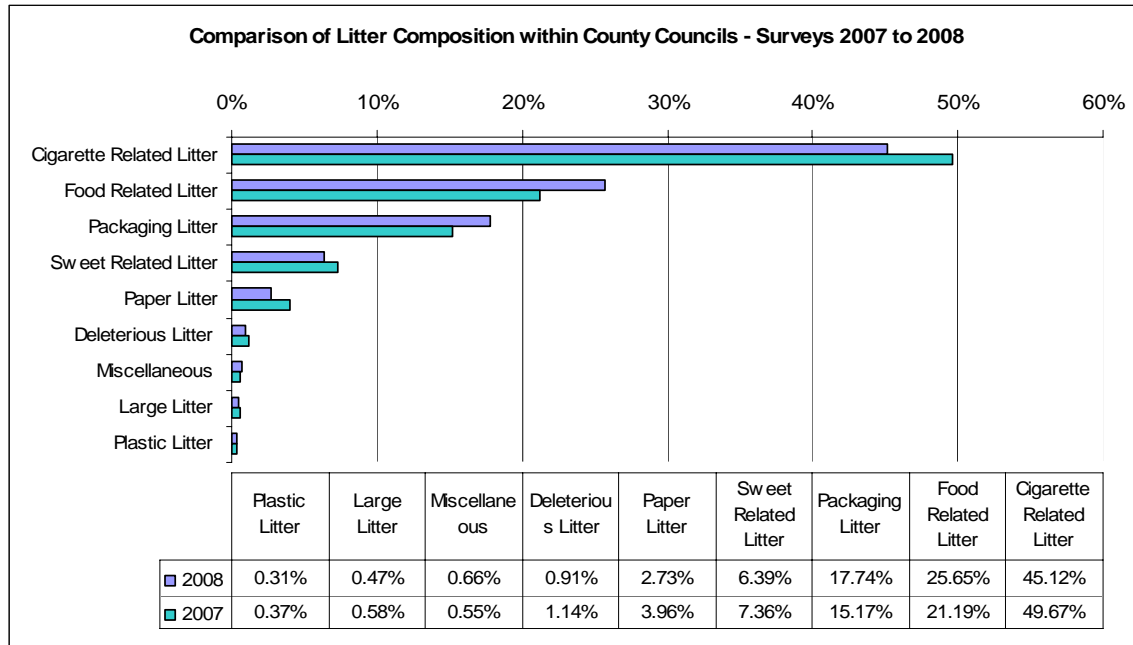


Figure C. 1 Comparison of Litter Composition within County Councils 2007 to 2008

Figure C.2 shows that within City Councils, the percentage of packaging litter, sweet related litter and paper litter have decreased while the percentage of cigarette related litter has increased from 2007 to 2008. The percentage of food related litter has remained relatively similar from 2007 to 2008 with only a decrease of 0.25%.

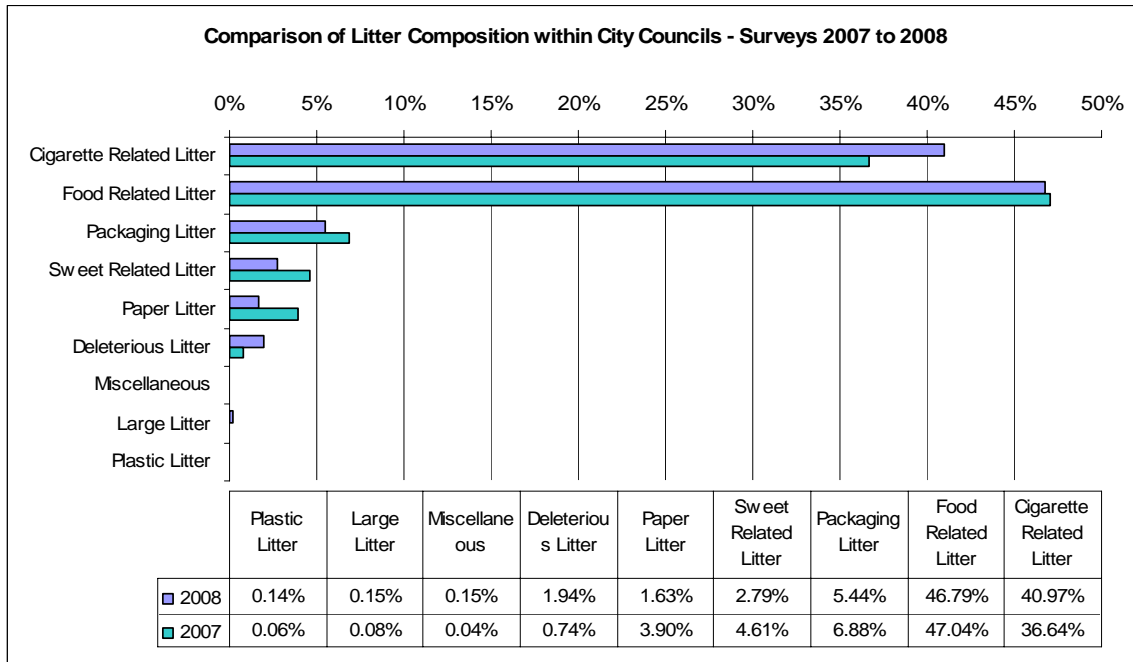


Figure C. 2 Comparison of Litter Composition within City Councils 2007 to 2008

Figure C.3 illustrates that within Town & Borough Councils, the percentages of sweet related litter and packaging litter have decreased, while the percentage of cigarette related litter has increased from 46.28% in 2007 to 48.03% in 2008. Food related litter has also increased from 31.48% in 2007 to 34.36% in 2008.

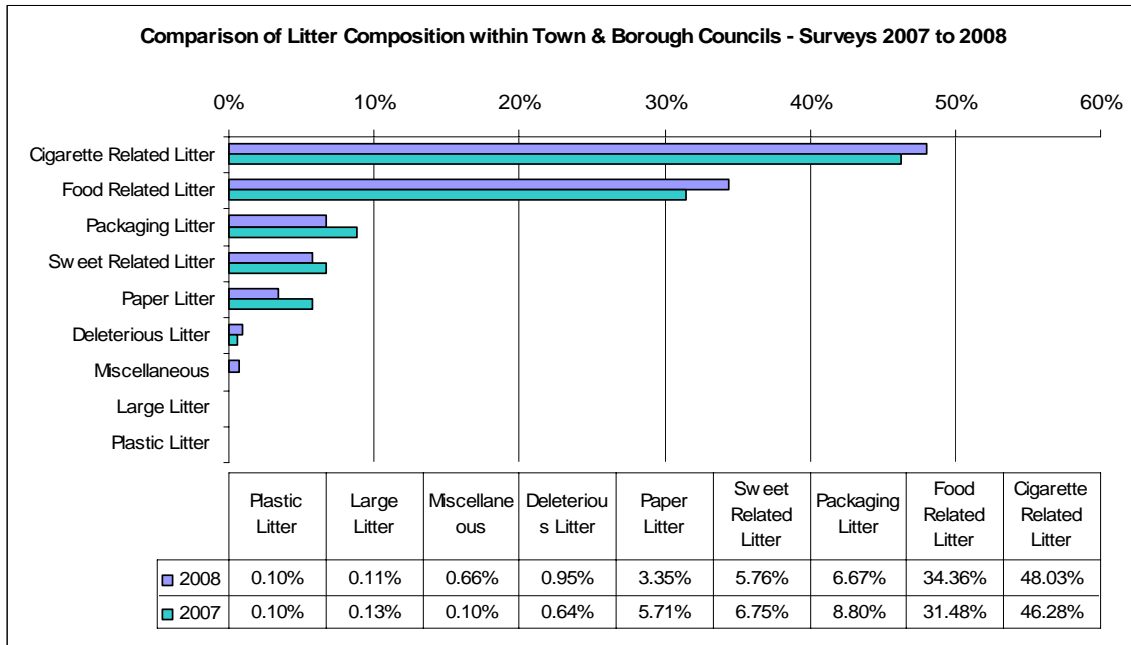


Figure C. 3 Comparison of Litter Composition within Town and Borough Councils 2007 to 2008

Figure C.4 shows that within Dublin Local Authorities, the percentage of cigarette related litter, food related litter and packaging litter has increased, while sweet related litter and paper litter have decreased. Note paper litter has decreased significantly from 9.11% in 2007 to 4.23% in 2008.

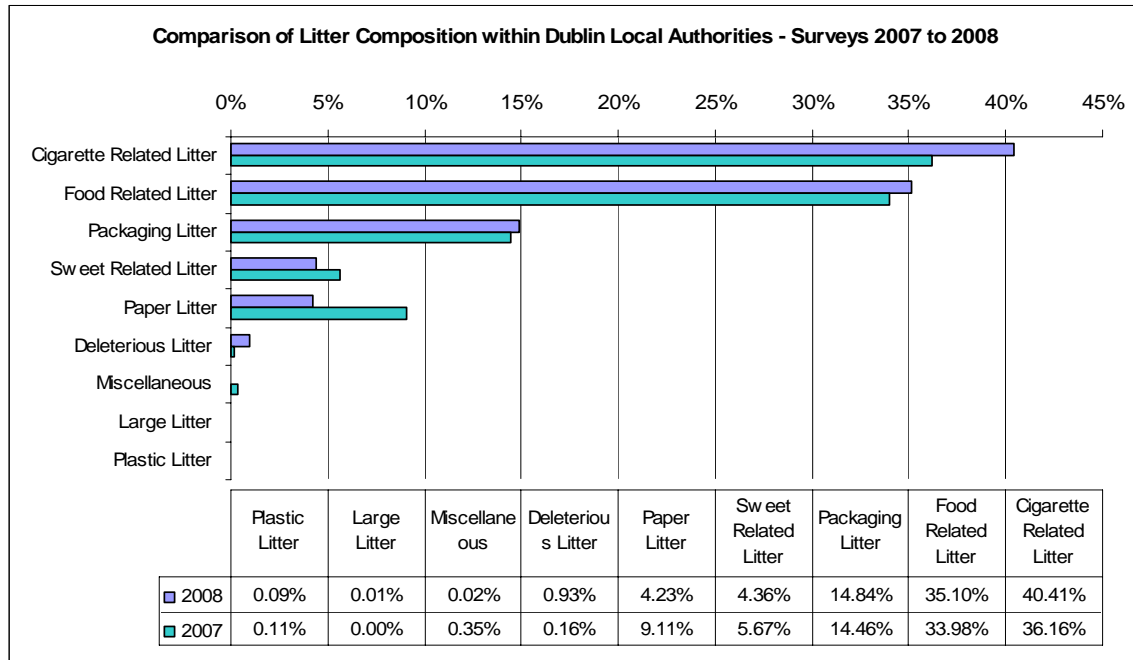


Figure C. 4 Comparison of Litter Composition within Dublin Local Authorities 2007 to 2008

Note that cigarette related litter increased in all local authority types, with the exception of County Councils, where a decrease of 4.55% was experienced. Food related litter has also increased in all local authority types with the exception of City Councils, which have experienced a slight decrease of 0.25% from 47.04% in 2007 to 46.79% in 2008. Paper litter and sweet related litter have decreased in all local authority types from 2007 to 2008.

APPENDIX D

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

In each category of LPI, 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 a less significant contributor to litter pollution. Accordingly, in 2008 passing pedestrians constitute 39.7% of all causative factors in litter pollution surveys of slightly littered (LPI 2) areas; this percentage decreased to 34.8% for moderately polluted (LPI 3) areas, to 30.7% for significantly polluted (LPI 4) areas and to 24.2% as the severity of litter pollution in the surveyed areas reached grossly polluted (LPI 5) areas.

Fly-tipping/dumping, bring banks and bus/train station all increase considerably as causes of litter as the degree of pollution increases from slightly polluted (LPI 2) to grossly polluted (LPI 5) areas. In 2008 fly-tipping/dumping constitute 0.4% of all causative factors in litter pollution surveys of slightly polluted (LPI 2) areas, this increases to 16.7% in litter pollution surveys of grossly polluted (LPI 5) areas. Bring banks increase from 1.3% in slightly polluted (LPI 2) areas to 7.6% in grossly polluted (LPI 5) areas. Bus/train stations increase from 0.7% in slightly polluted (LPI 2) areas to 1.5% in grossly polluted (LPI 5) areas.

Passing motorists have decreased as a causative factor in the grossly polluted (LPI 5) areas from 20.2% in 2007 to 16.7% in 2008, while retail outlets has increased significantly as a causative factor in the grossly polluted (LPI 5) areas from 3.9% in 2007, to 9.1% in 2008.

In the slightly and moderately polluted categories (LPI 2 and LPI 3 respectively), passing pedestrians, passing motorists, retail outlets and gathering points are significant causes of litter pollution; this is a similar trend to 2007 and 2006.

In the slightly polluted category (LPI 2), passing pedestrians, gathering points and places of leisure/entertainment increased as causative factors from 2007 to 2008. Bring banks contribute more to litter pollution than in any other category at 4.6% in significantly polluted (LPI 4) areas and at 7.6% in grossly polluted (LPI 5) areas, compared to 1.3% in slightly polluted (LPI 2) areas and 2.1% in moderately polluted (LPI 3) areas.

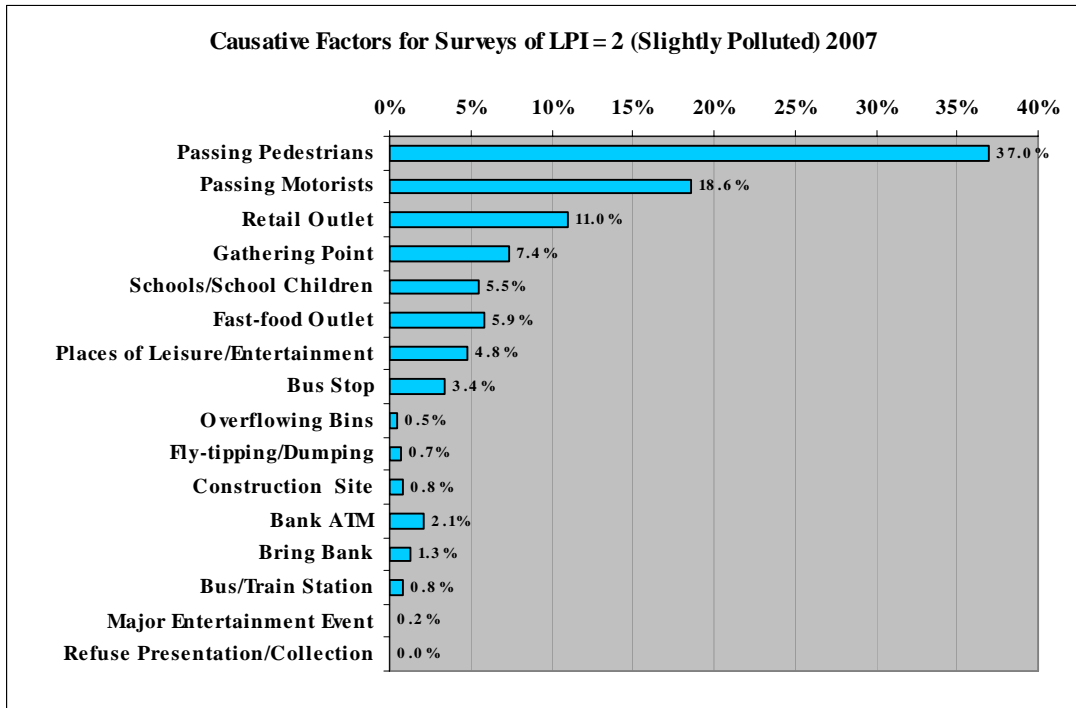


Figure D. 1 Causative Factors of Litter Pollution within Litter Pollution Index category 2, 2007

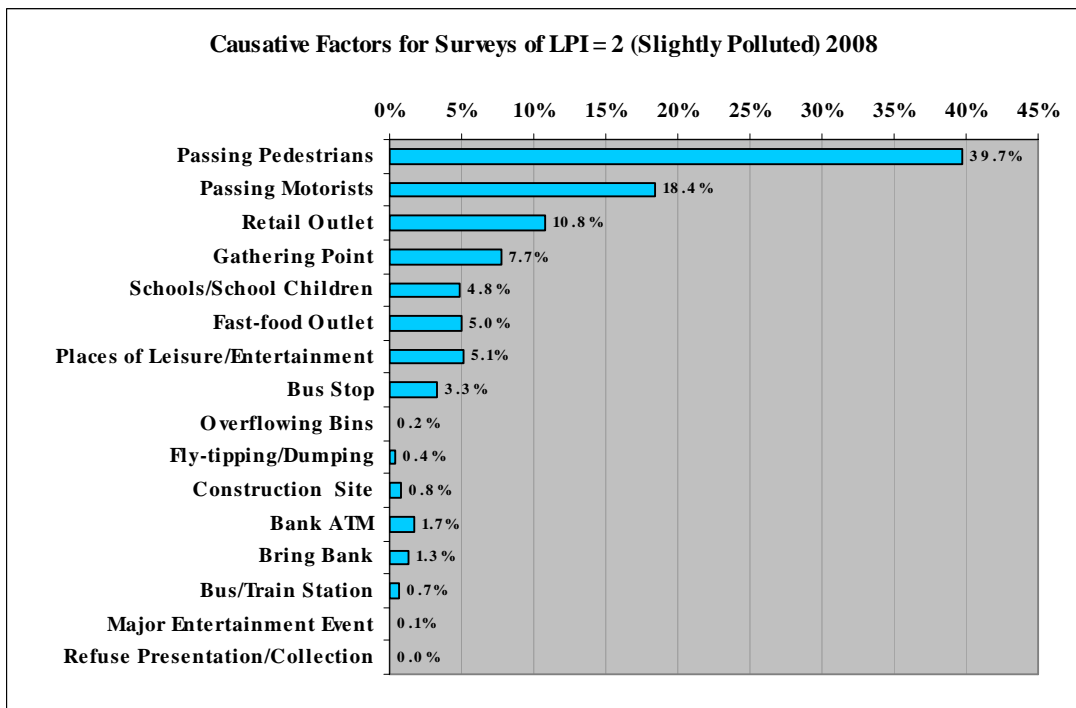


Figure D. 2 Causative Factors of Litter Pollution within Litter Pollution Index category 2, 2008

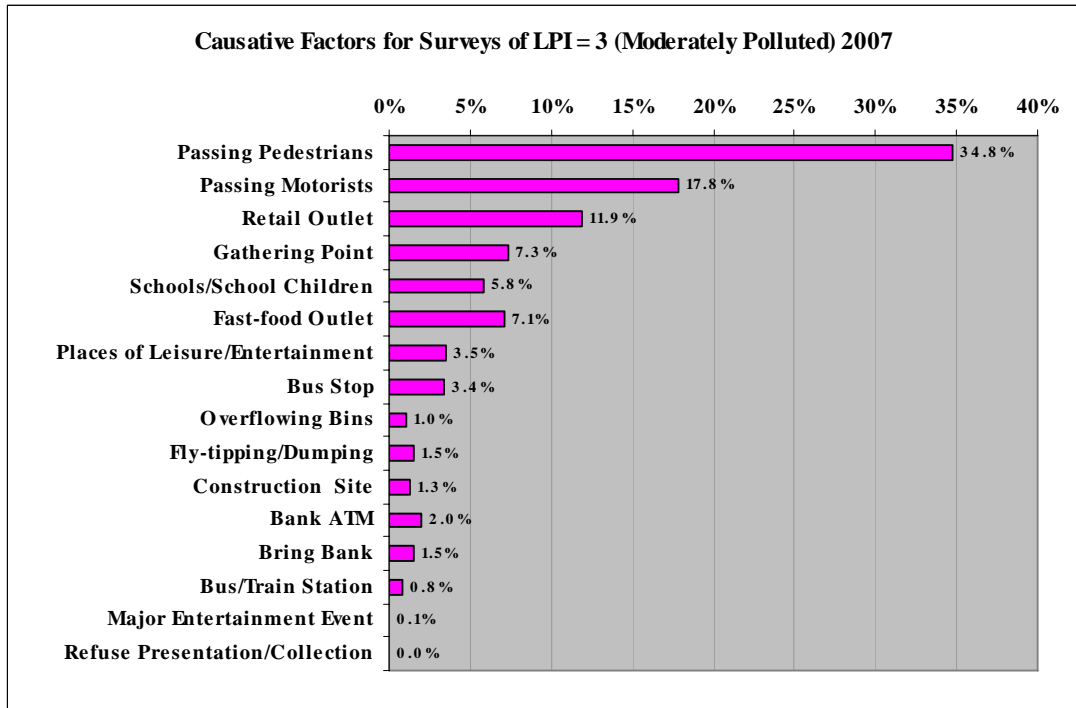


Figure D. 3 Causative Factors of Litter Pollution within Litter Pollution Index category 3, 2007

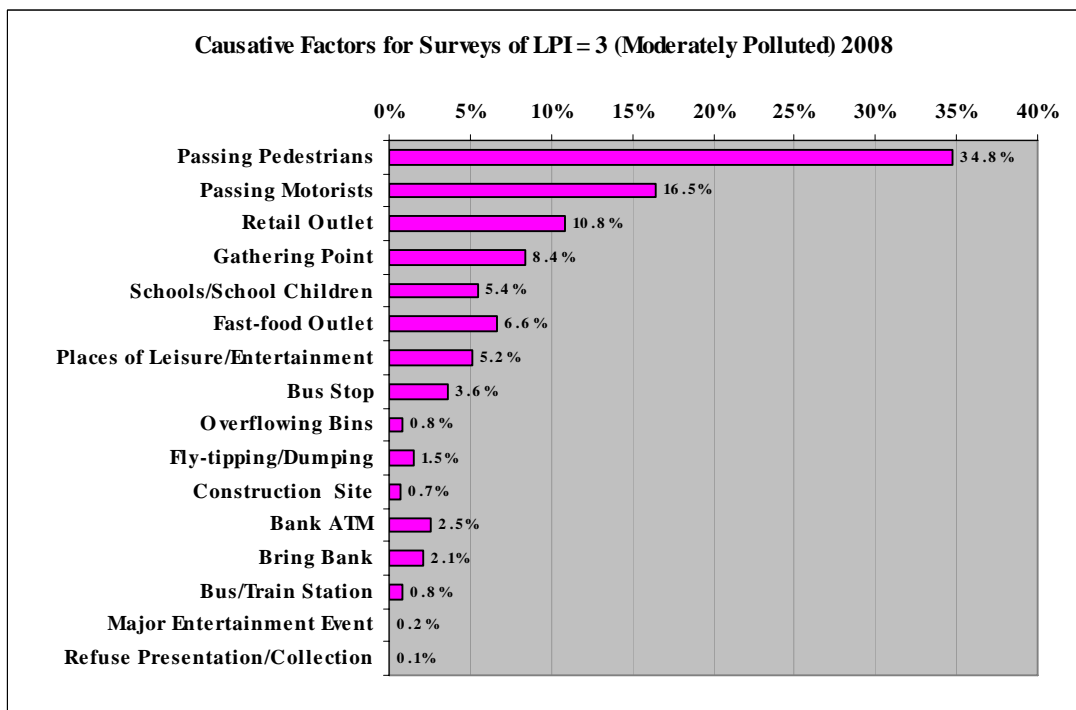


Figure D. 4 Causative Factors of Litter Pollution within Litter Pollution Index category 3, 2008

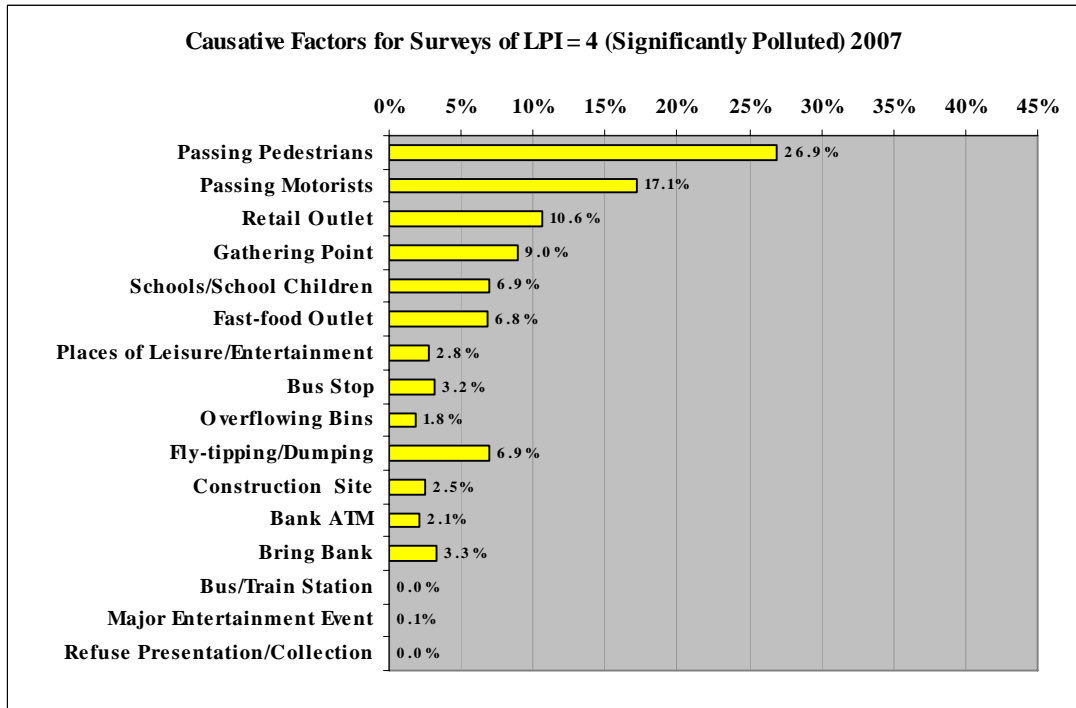


Figure D. 5 Causative Factors of Litter Pollution within Litter Pollution Index category 4, 2007

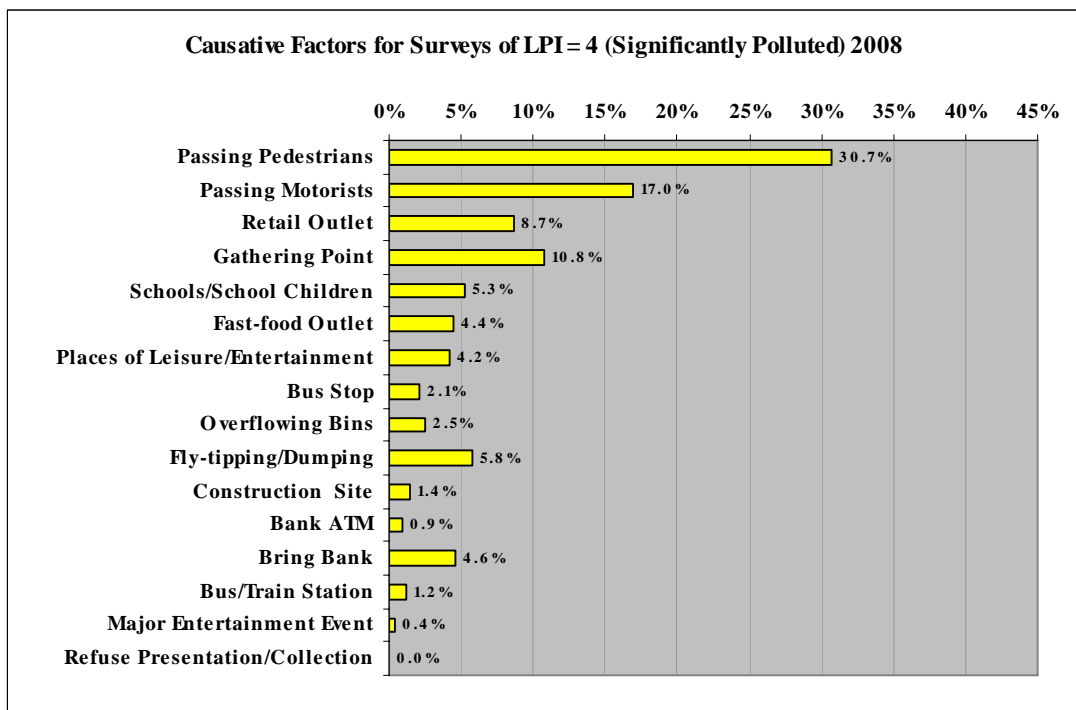


Figure D. 6 Causative Factors of Litter Pollution within Litter Pollution Index category 4, 2008

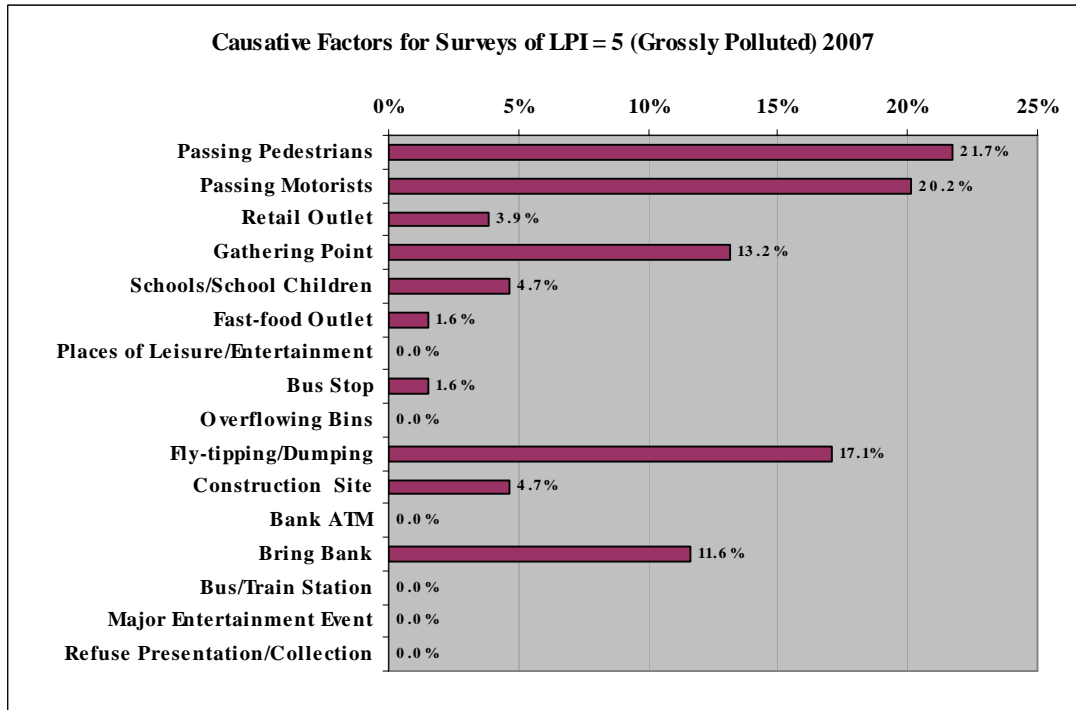


Figure D. 7 Causative Factors of Litter Pollution within Litter Pollution Index category 5, 2007

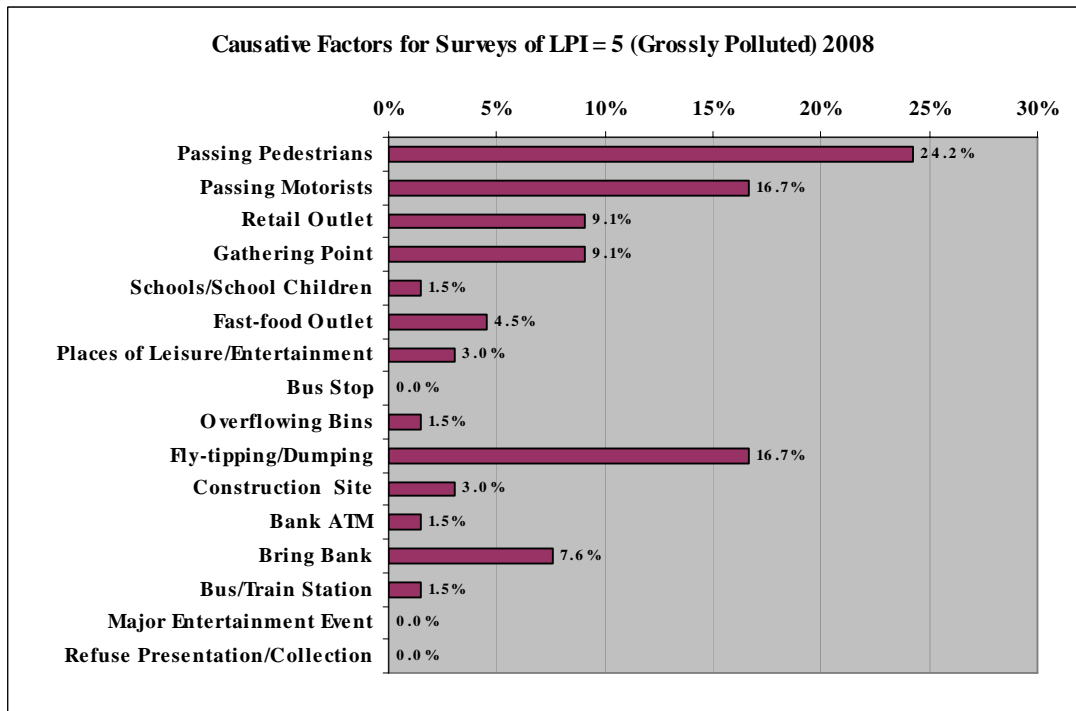


Figure D. 8 Causative Factors of Litter Pollution within Litter Pollution Index category 5, 2008

APPENDIX E

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

Figures E.1 and E.2, compare the causes of litter within urban and rural local authorities from 2007 to 2008. Passing pedestrians are the single greatest cause of litter in both urban and rural areas; this is similar to the 2007 and 2006 results. Figure E.1 indicates that passing pedestrians, gathering points, bus stops and bus/train station have become more significant causes of litter pollution in urban areas from 2007 to 2008. Passing motorists, retail outlets, fast food outlets, schools/school children and fly-tipping/dumping have decreased as causes of litter pollution in urban areas from 2007 to 2008. Places of leisure/entertainment, bank ATM, construction sites, bring banks, overflowing bins and refuse presentation/collection have remained relatively similar in urban areas from 2007 to 2008.

In rural areas, the causes of litter pollution are similar in 2007 and 2008. Passing pedestrians has increased as a causative factor in rural areas, at 32.4% in 2007 to 34.7% in 2008. Passing motorists has remained relatively constant as a causative factor of litter pollution in rural areas from 20.0% in 2007 to 20.9% in 2008. Gathering points, schools/school children, bus stops and major entertainment events became more significant causes of litter pollution in rural areas from 2007 to 2008. Retail outlets, fast food outlets, places of leisure/entertainment, construction sites, bus/train station and bring banks have decreased as causative factors from 2007 to 2008. Bank ATM, fly-tipping/dumping, overflowing bins and refuse collection/presentation have remained similar from 2007 to 2008.

Passing pedestrians, gathering points and bus stops have increased as causative factors in both urban and rural areas in 2008.

Figure E.3 allows for comparison of the various causative factors of litter pollution between urban areas of varying size and population. The ‘Other City Councils’ category comprises results from Galway, Limerick and Waterford City Councils. Overall, the causes of litter pollution vary somewhat with each category of urban area. Passing pedestrians (49.9%) are more significant in the ‘Dublin City Council’ category than in the other urban categories. Retail outlets and refuse collection/presentation are more significant in the ‘Cork City Council’ category than in the other urban categories. Gathering points are more significant in Other City Councils and Town & Borough Councils. This is similar to the 2007 and 2006 results. Schools/school children (9.0%) are more of a significant causative factor in Dublin City Council areas than in other urban areas in 2008. This increased slightly from 8.4% in 2007.

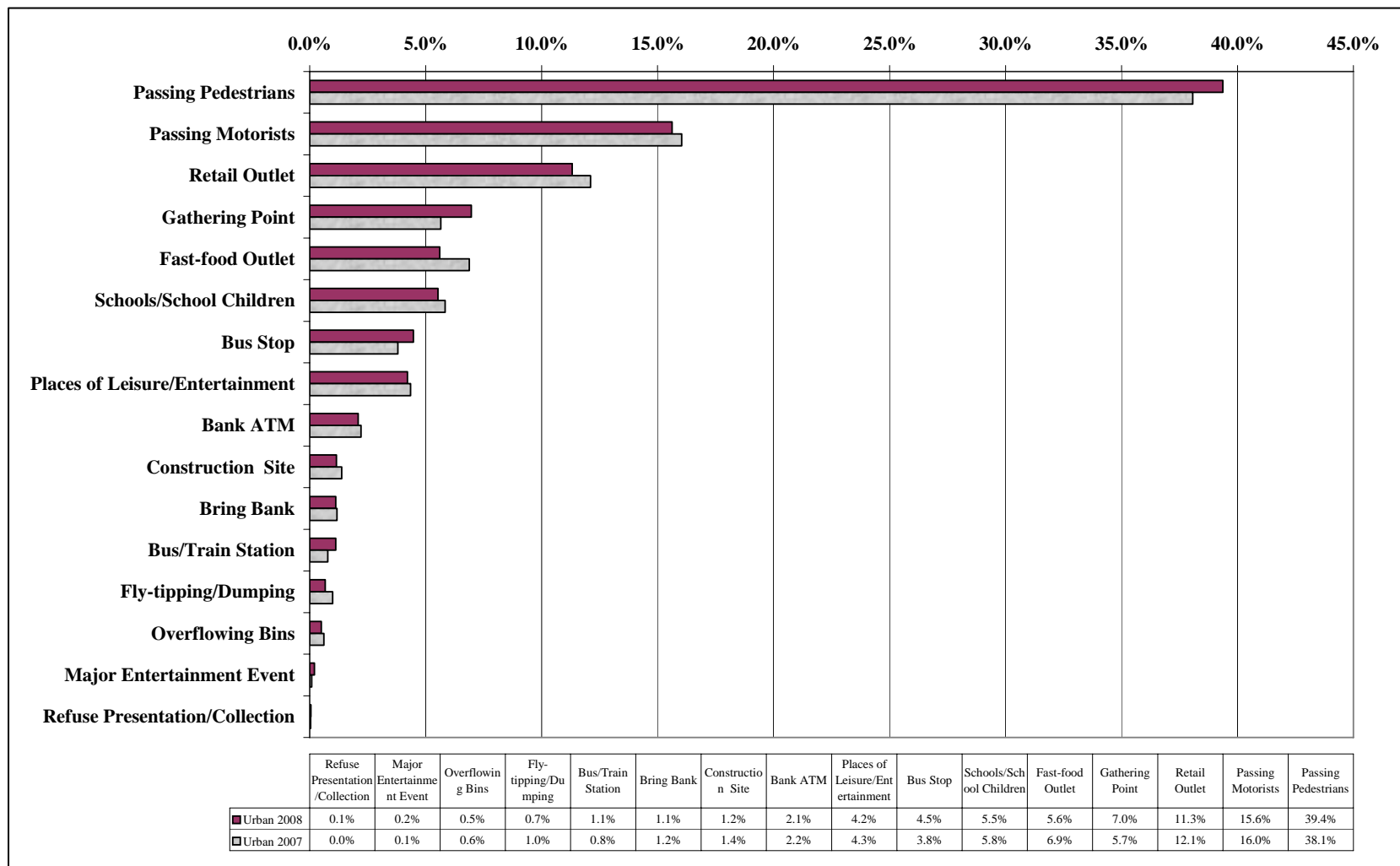


Figure E.1 Comparison of Causative Factors in Urban Councils, 2007 – 2008

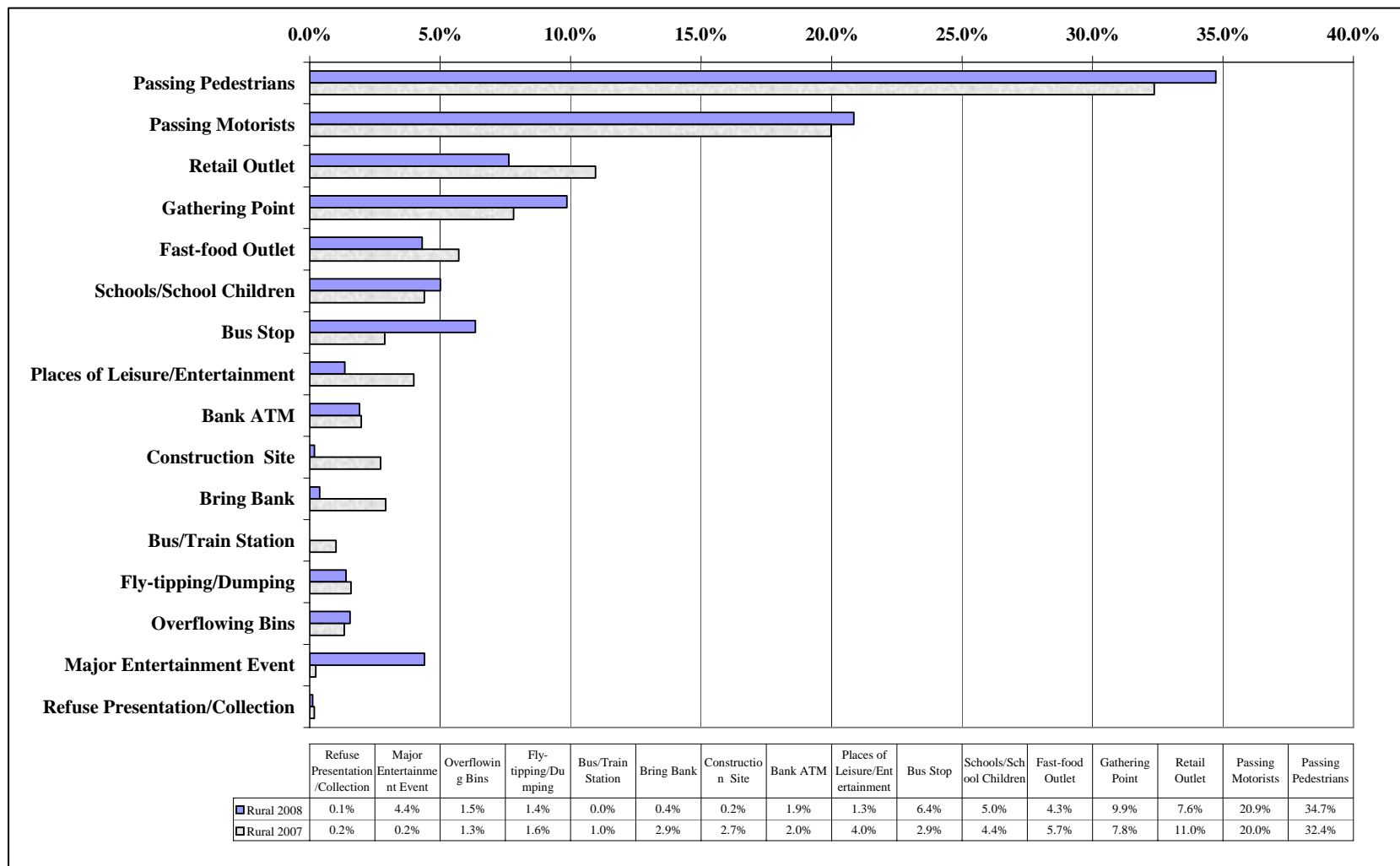


Figure E. 2 Comparison of Causative Factors in Rural Councils, 2007 – 2008

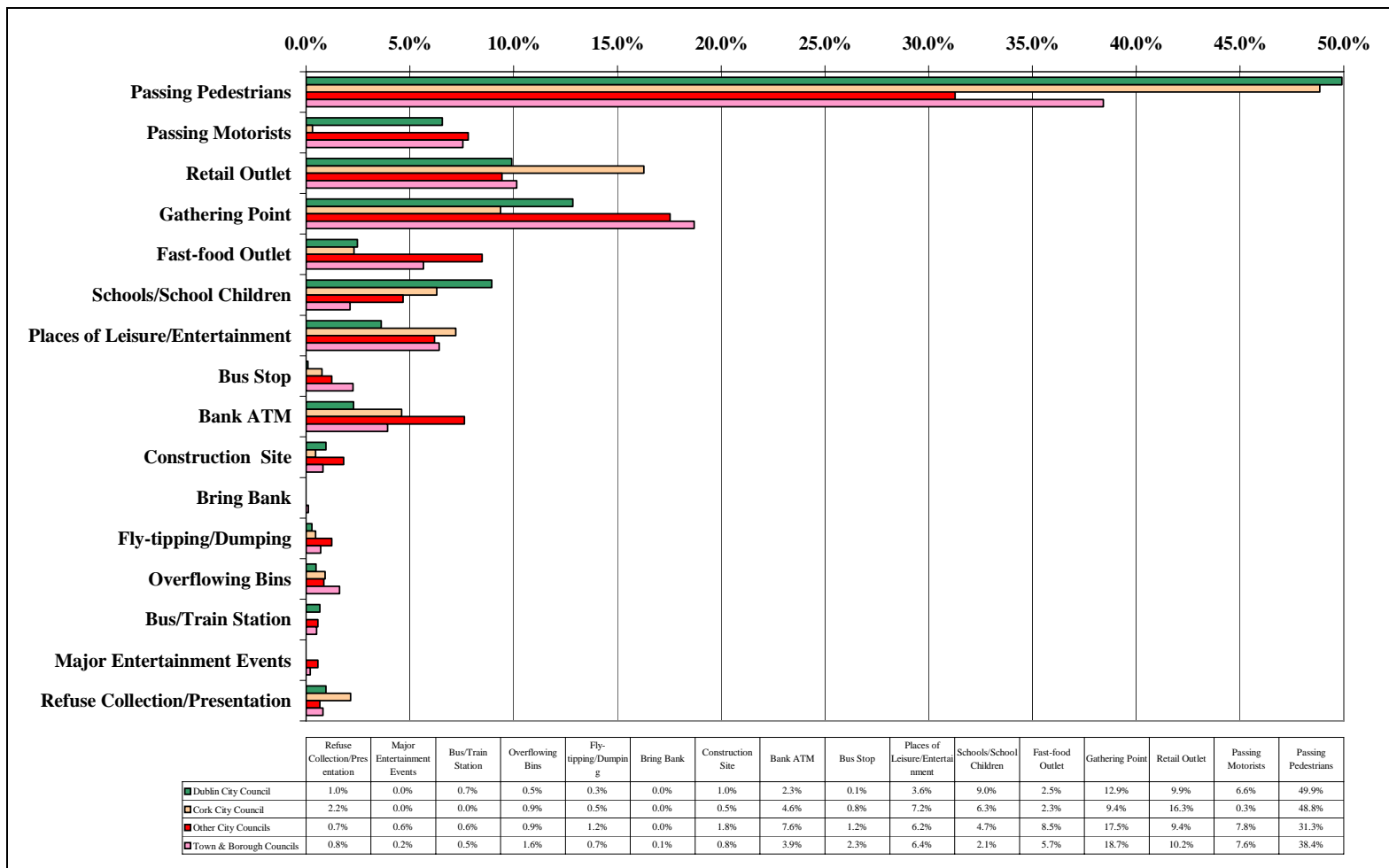


Figure E. 3 Comparison of Causative Factors of Litter Pollution within Urban Areas⁸ (2008)

⁸ Percentages are expressed to one decimal place and therefore totals for each category of local authority may not add to exactly 100%.

