



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government



THE NATIONAL LITTER POLLUTION MONITORING SYSTEM

LITTER MONITORING BODY

SYSTEM RESULTS 2013

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

ACKNOWLEDGEMENTS

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

1. The Department of the Environment, Community and Local Government; and,
2. 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; 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 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 2013 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.

Note that some local authorities do not have the resources to apply Litter GIS. In these instances local authorities randomly choose 40% of their locations by identifying random areas on maps or by using a random function tool on Arc GIS.

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 long after 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 2013 the Litter Monitoring Body continued to provide training, where required, on the implementation of the NLPMS to local authorities.

Audit

In 2013, the Litter Monitoring Body undertook on-site audits of four local authorities to ensure that the system is being implemented as designed. The local authorities audited were:

- ◆ Arklow Town Council;
- ◆ Dún Laoghaire-Rathdown County Council;
- ◆ Wicklow County Council; and,
- ◆ Wicklow Town 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.

The Litter Monitoring Body completed a number of additional ‘spot check’ audits in 2013, whereby submitted photographs are cross checked with the awarded LPI. These audits revealed that a number of local authorities were not assigning the correct area cleanliness rating to an area, specifically in assigning an area as “unpolluted or litter free” (LPI 1) that should be considered “slightly polluted” (LPI 2) or assigning an area as “slightly polluted” (LPI 2) that should be considered as “moderately polluted” (LPI 3). In some cases, however, the area cleanliness rating assigned to an area by the local authority was a higher index than appropriate.

These audits allowed for modifications to Litter Pollution Surveys (LPS) in collaboration with the relevant local authority, where necessary.

It is considered for future year’s surveys that local authorities should continue to submit photographs with the Litter Pollution Surveys (LPS); this will allow the Litter Monitoring Body to continually audit the System. The Litter Monitoring Body 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 2013

This report is based on an analysis of data received from 69 local authorities². Figure 1-1 shows the participation of local authorities since 2003.

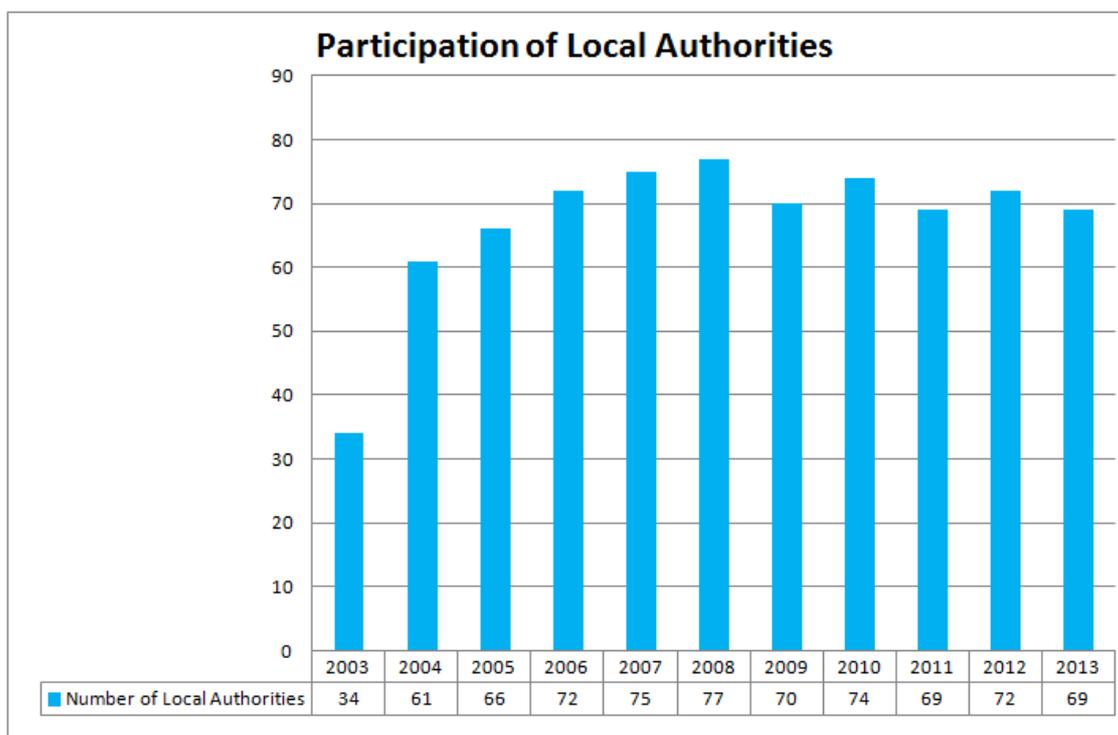


Figure 1-1 Participation of Local Authorities 2003-2013

The number of local authorities that participated in 2013 (69) represents 76.7% of local authorities, including data from all local authority types (i.e. county, city, town and borough councils). The survey results provide reliable information on the extent, composition and causes of litter pollution in Ireland in 2013 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?

² While 67 Local Authorities submitted Litter Quantification Surveys, an additional two Local Authorities submitted Litter Pollution Surveys but did not submit Litter Quantification Surveys. Therefore results have been received from 69 Local Authorities. Further details are provided in Appendix A.

How littered is the country at local and national level?

- ◆ 12.2% of areas surveyed were unpolluted (LPI 1) in 2013. The percentage of unpolluted (LPI 1) areas has increased by 1.8%, from 10.4% in 2012;
- ◆ 62.8% of all areas surveyed were slightly polluted (LPI 2), a 0.4% decrease on 2012;
- ◆ The percentage of moderately polluted areas (LPI 3) has decreased by 1.9%, from 22.9% in 2012 to 21% in 2013;
- ◆ The percentage of significantly polluted areas (LPI 4) has increased slightly by 0.1%, from 3.2% in 2012 to 3.3% in 2013; and
- ◆ Grossly polluted areas (LPI 5) have increased slightly by 0.3%, from 0.3% in 2012 to 0.6% in 2013.

What are the main constituent elements of litter pollution?

- ◆ Cigarette related litter (54.10%), food related litter (16.34%), packaging litter (12.23%) and sweet related litter (7.74%) were the main litter constituents identified nationally.

What are the main causes of litter pollution?

- ◆ Passing pedestrians (39.6%), passing motorists (19.74%), retail outlets (10.0%), gathering points (6.6%), places of leisure/entertainment (5.9%), fast food outlets (5.3%), and school children (4.3%) were identified as the main causative factors of litter nationally.

CHAPTER 2: HOW LITTERED IS THE COUNTRY?

The 2013 dataset is obtained from over 4,581 litter pollution surveys. The national monitoring system results indicate that the percentage of unpolluted (LPI 1) areas has increased slightly from 10.4% in 2012 to 12.2% in 2013.

A comparison of the results from 2012 to 2013 indicates that the percentage of slightly polluted (LPI 2) areas has decreased from 63.2% in 2012 to 62.8% in 2013. The percentage of moderately polluted areas (LPI 3) has decreased by 1.9%, from 22.9% in 2012 to 21% in 2013. The percentage of significantly polluted areas (LPI 4) has increased slightly by 0.1%, from 3.2% in 2012 to 3.3%. The percentage of grossly polluted (LPI 5) areas has increased by 0.3% from 0.3% in 2012 to 0.6% in 2013.

The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together has increased by 1.4% from 2012 to 2013, thus demonstrating there has been a slight decrease in litter pollution from 2012 to 2013.

Figure 2-1 below compares 2012 and 2013 litter pollution survey results.

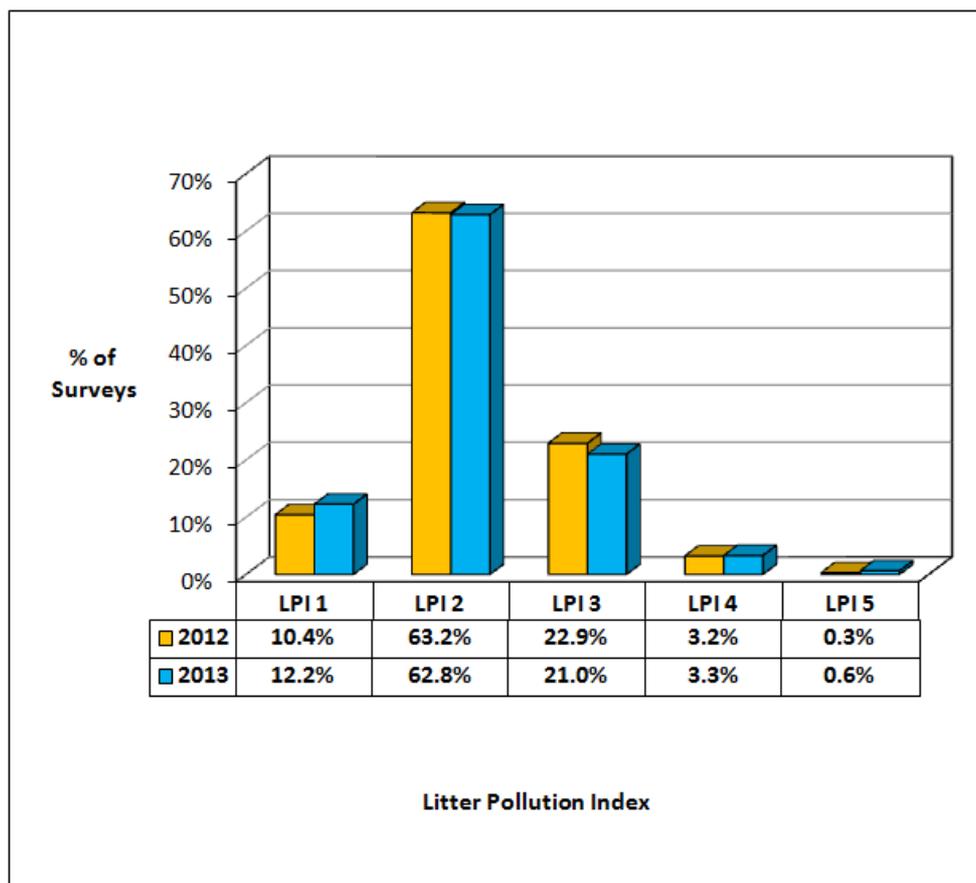


Figure 2-1 Comparison of Litter Pollution Indices (LPI) 2012 – 2013

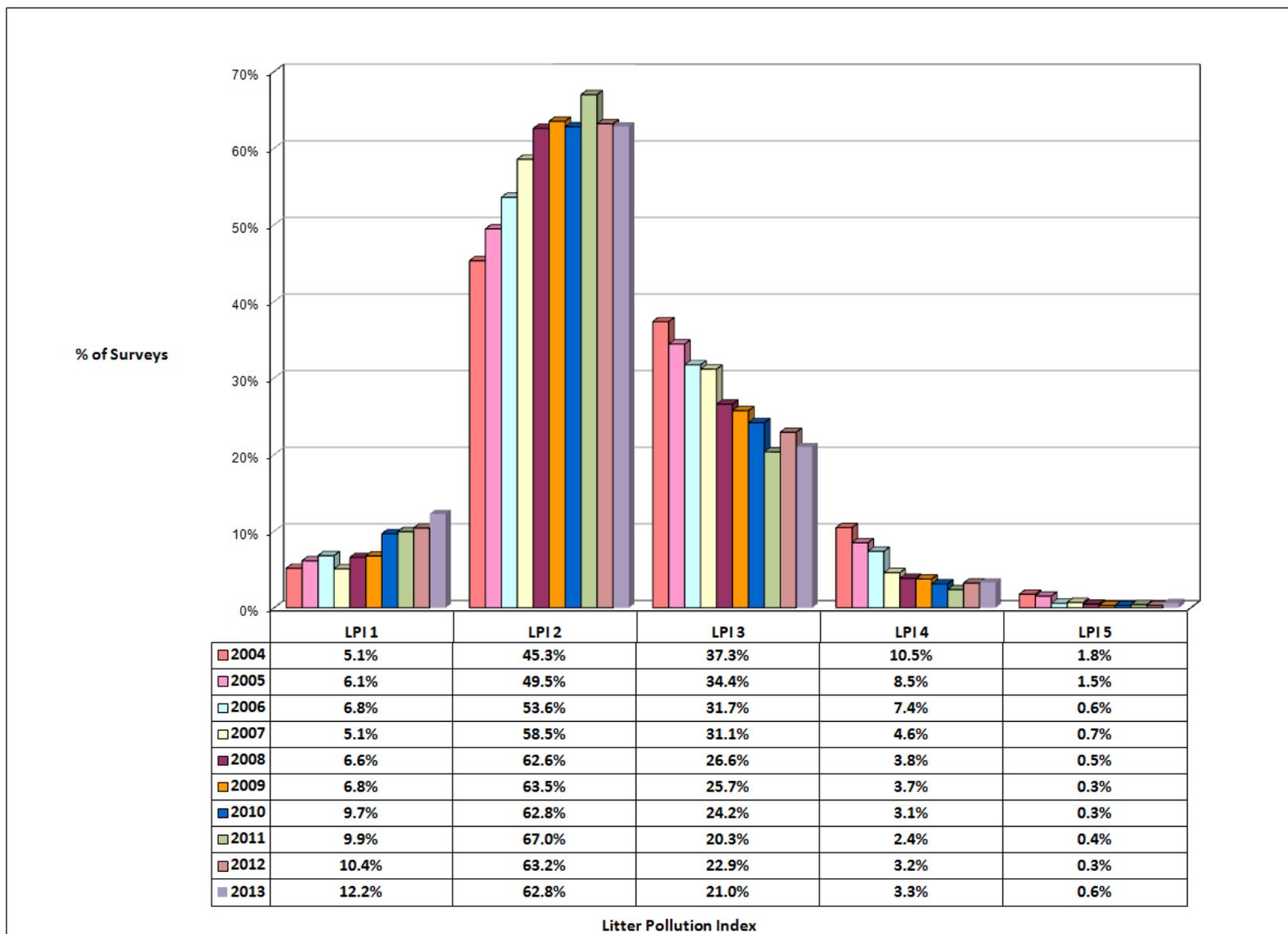


Figure 2-2 Litter Pollution Index 2004-2013

Figure 2-2 illustrates the Litter Pollution Index ratings from 2004 to 2013. The percentage of unpolluted (LPI 1) areas has increased from 5.1% in 2004 to 12.2% in 2013 (a 7.1% increase). The 2013 results had the largest percentage of unpolluted areas ever recorded by the system.

Figure 2-2 also shows the percentage of slightly polluted (LPI 2) areas increased steadily from 45.3% to 62.8% between 2004 and 2010 (an increase of 17.5%). Since 2010 the percentage of slightly polluted (LPI 2) areas has been unsettled, with 2013 figures now once again equal to figures recorded in 2010. The number of moderately polluted (LPI 3) areas, significantly polluted (LPI 4) areas and grossly polluted (LPI 5) areas showed a steady decrease between 2004 and 2010. The percentages recorded in 2013, however, were higher than those recorded in 2011, in all three of these categories.

A comparison of urban and rural local authorities is presented in Figure 2-3 below. In 2013, 12% of both urban and rural areas were unpolluted (LPI 1).

The percentage of slightly polluted areas (LPI 2) experienced in urban areas is 62%, and in rural areas is 64%. The percentage of moderately polluted (LPI 3) areas experienced in urban areas is 22% with 19% experienced in rural areas. The percentage of significantly polluted (LPI 4) areas is 3% in both urban areas and rural areas. Grossly polluted (LPI 5) areas experienced in urban and rural areas are 0% and 1%, respectively. Please refer to Figures 5-5 and 5-6 for further comparison of urban and rural litter pollution data from 2012 to 2013.

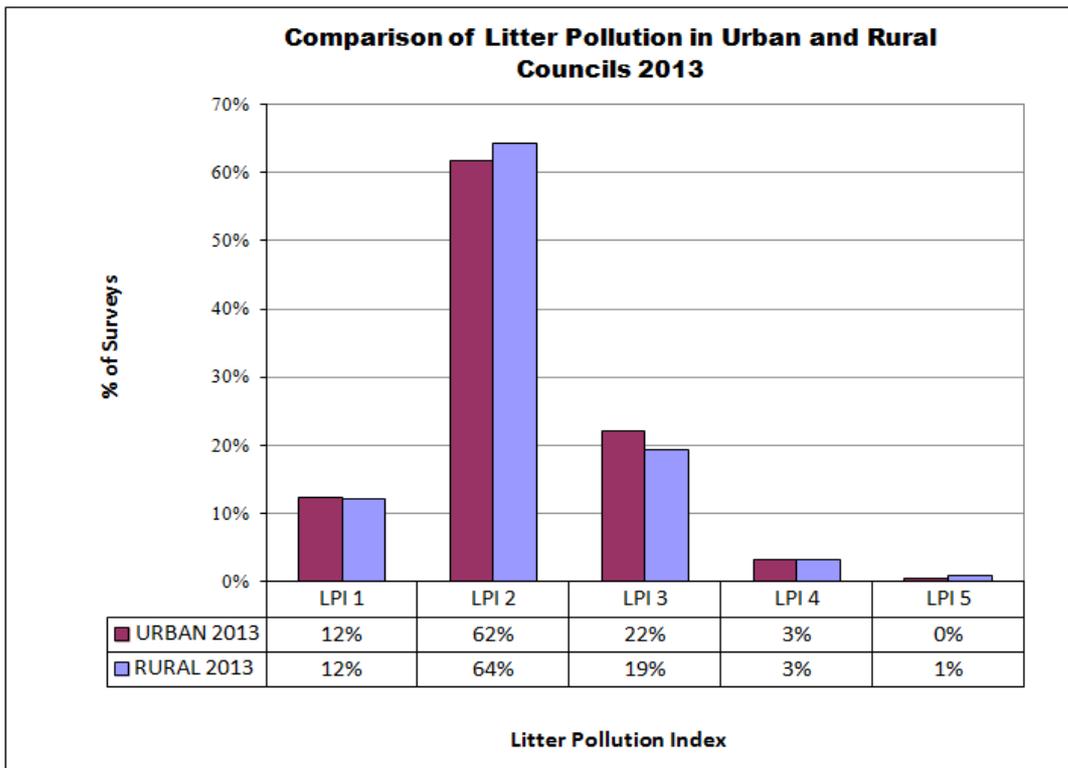


Figure 2-3 Comparison of Litter Pollution within Largely Urban and Rural Areas in 2013

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 (**54.10%**) of litter in the locations surveyed – this is comprised mainly of cigarette ends which constitute **49.90%** of all litter items nationally;
- ◆ **food related litter**, at **16.34%**, 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 **15.32%** of all litter recorded in the litter quantification surveys carried out in 2013; and
- ◆ **packaging litter (12.23%)** is the third largest component of national litter pollution recorded. Bags and wrappers (**1.32%**), bottle caps (**1.23%**) and bottles (**1.13%**) are the main litter items in this category.

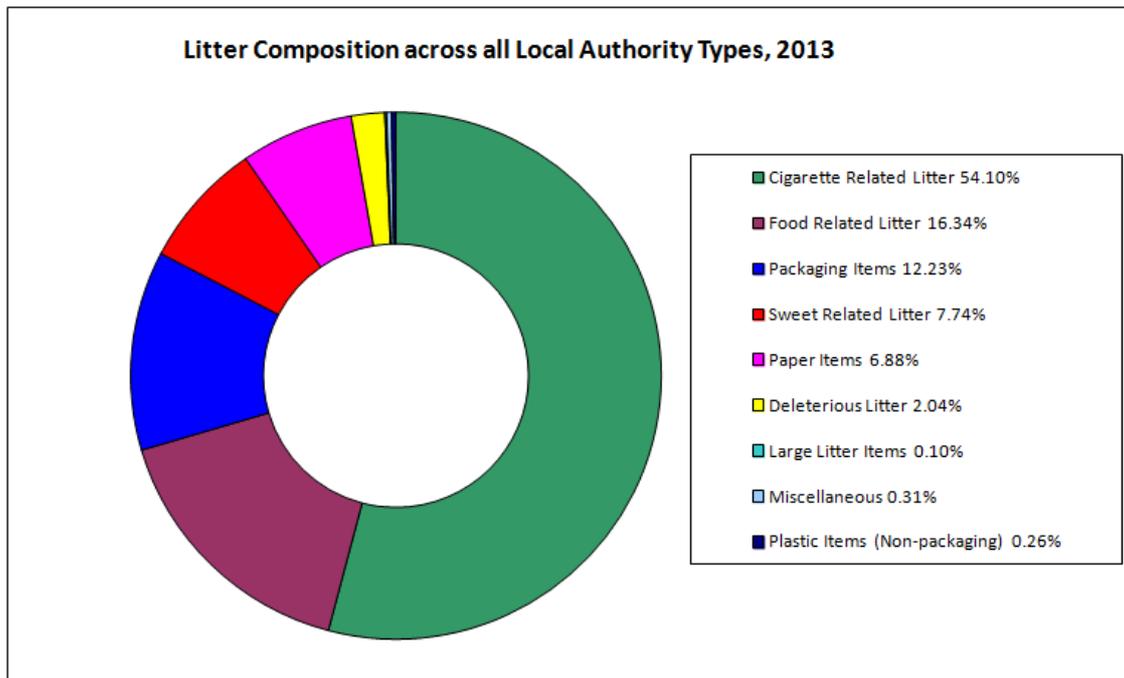


Figure 3-1 Composition of Litter in 2013 Broken Down into Main Categories

3.1 Comparison of Litter Quantification Surveys 2012 – 2013

Figure 3-2 herein compares the results of the 2012 and 2013 surveys.

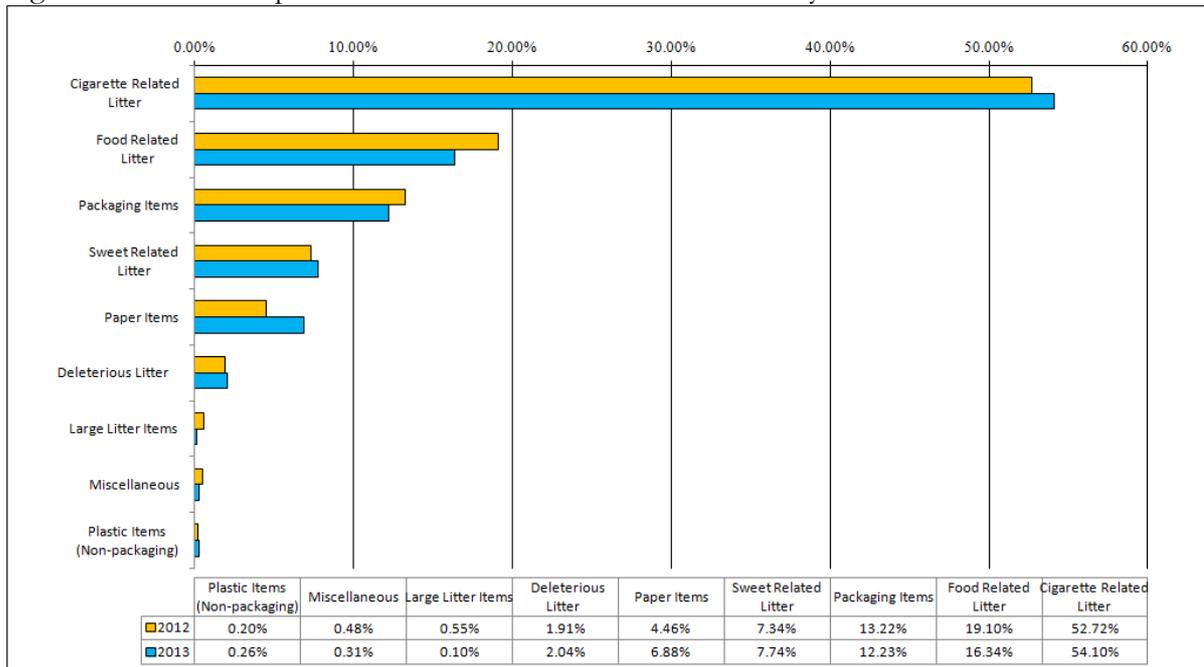


Figure 3-2 Comparison of National Litter Composition from 2012 to 2013

A comparison of the results of Litter Quantification Surveys carried out in 2012 and 2013 shows a relatively similar composition of litter. However, analysis reveals some slight differences in the relative quantities of certain components.

- ◆ The percentage of cigarette related litter has increased by 1.38%.
- ◆ The percentage of food related litter has decreased by 2.76% since 2012.
- ◆ The percentage of packaging items decreased by 0.99% since 2012.
- ◆ The percentage of paper items increased by 2.42%.

The rest of the litter components have remained similar with:

- ◆ Sweet related litter increasing slightly by 0.40% in 2013.
- ◆ Deleterious litter has increased slightly from 1.91% in 2012 to 2.04% in 2013.
- ◆ Large litter items have decreased by 0.45% in 2013.
- ◆ Miscellaneous litter items have decreased by 0.17% since 2013.

- ◆ Litter from plastic items (non-packaging) has increased very slightly from 0.20% in 2012 to 0.26% in 2013.

Table 3-1 on the following page details the composition of litter in 2012 and 2013.

The greatest percentage change in litter composition is in the food related litter category which has decreased by 2.76% in 2013. This decrease can be attributed to a decrease in chewing gum litter which has seen a decrease from 17.59% in 2012 to 15.32% in 2013, a decrease of 2.27%.

Table 3-1 overleaf also details the 1.38% increase in cigarette related litter experienced in 2013, specifically highlighting increases in cigarette ends, cigarette boxes and wrappers in 2013 when compared to 2012 figures.

Refer to Appendix C for “Details of Litter Composition from 2012-2013 according to Local Authority Type”.

Detailed National Litter Composition 2013			Detailed National Litter Composition 2012		
Cigarette Related Litter 54.10%	Cigarette ends	49.90%	Cigarette Related Litter 52.72%	Cigarette ends	48.62%
	Cigarette boxes and wrappers	1.94%		Cigarette boxes and wrappers	1.38%
	Matches	1.77%		Matches	2.23%
	Matchboxes and lighters	0.49%		Matchboxes and lighters	0.50%
Food Related Litter 16.34%	Chewing Gum	15.32%	Food Related Litter 19.10%	Chewing Gum	17.59%
	Fruit/ vegetables	0.28%		Fruit/ vegetables	0.33%
	Bread/ biscuits	0.25%		Bread/ biscuits	0.33%
	Other food items	0.23%		Other food items	0.31%
	Fast-food remnants	0.14%		Fast-food remnants	0.27%
	Remnants of confectionery food items	0.11%		Remnants of confectionery food items	0.27%
	Bags and wrappers	1.32%		Bags and wrappers	1.31%
	Bottle Caps	1.23%		Bottle Caps	1.37%
	Bottles	1.13%		Bottles	1.39%
	Drink cups	0.94%		Drink cups	0.91%
	Beverage Cans - Alcoholic	0.93%		Beverage Cans - Alcoholic	0.78%
	Drink Lids	0.93%		Drink Lids	0.69%
	Beverage Cans - Non-alcoholic	0.90%		Beverage Cans - Non-alcoholic	0.87%
	Other plastic packaging	0.78%		Other plastic packaging	0.33%
Packaging Items 12.23%	Drinks cartons	0.58%	Packaging Items 13.22%	Drinks cartons	0.64%
	Other paper packaging	0.57%		Other paper packaging	0.54%
	Beverage Bottles - Non-alcoholic	0.53%		Beverage Bottles - Non-alcoholic	0.74%
	Beverage Bottles - Alcoholic	0.52%		Beverage Bottles - Alcoholic	1.04%
	Tin foil (not sweet wrappers)	0.32%		Tin foil (not sweet wrappers)	0.26%
	Bags	0.28%		Bags	0.21%
	Cardboard	0.24%		Cardboard	0.47%
	Plastic film	0.23%		Plastic film	0.20%
	Lids (e.g. from bottles, jars)	0.22%		Lids (e.g. from bottles, jars)	0.10%
	Bags - shopping bags	0.14%		Bags - shopping bags	0.30%
	Other metal litter items	0.11%		Other metal litter items	0.08%
	Boxes	0.09%		Boxes	0.41%
	Food cans	0.05%		Food cans	0.20%
	Aeroboard	0.04%		Aeroboard	0.17%
	Bubble-wrap	0.07%		Bubble-wrap	0.08%
	Jars and other containers	0.04%		Jars and other containers	0.03%
	Plastic sheeting (e.g. silage)	0.02%		Plastic sheeting (e.g. silage)	0.03%
	Bags - other (e.g. fertiliser)	0.01%		Bags - other (e.g. fertiliser)	0.07%
	Metal drums	0.01%		Metal drums	0.01%
	Sweet Related Litter 7.74%	Sweet Wrappers (plastic/foil)		4.26%	Sweet Related Litter 7.34%
Crisp Bags		1.38%	Crisp Bags	1.38%	
Lollipop Sticks (wooden/plastics)		1.33%	Lollipop Sticks (wooden/plastics)	1.37%	
Straws		0.77%	Straws	0.71%	
Paper Items 6.88%	Tissues	1.38%	Paper Items 4.46%	Tissues	1.31%
	Receipts	1.75%		Receipts	1.11%
	Other paper items	1.20%		Other paper items	0.27%
	Bank slips	0.78%		Bank slips	0.60%
	Tickets (e.g. bus, lottery)	0.70%		Tickets (e.g. bus, lottery)	0.66%
	Letters, envelopes and cards	0.63%		Letters, envelopes and cards	0.08%
	Flyers and posters	0.24%		Flyers and posters	0.23%
Deleterious Litter 2.04%	Newspapers	0.11%	Deleterious Litter 1.91%	Newspapers	0.17%
	Magazines/ brochures	0.08%		Magazines/ brochures	0.04%
	Dog fouling	1.90%		Dog fouling	1.78%
	Nappies	0.07%		Nappies	0.08%
	Other deleterious items	0.04%		Other deleterious items	0.03%
	Municipal Hazardous Waste (e.g. paint, solvents)	0.02%		Municipal Hazardous Waste (e.g. paint, solvents)	0.01%
	Feminine hygiene products	0.01%		Feminine hygiene products	0.01%
	Needles and syringes	0.00%		Needles and syringes	0.00%
	Household refuse in bags	0.08%		Household refuse in bags	0.39%
	Other large items	0.02%		Other large items	0.04%
Large Litter Items 0.10%	Appliances (e.g. fridge)	0.00%	Large Litter Items 0.55%	Appliances (e.g. fridge)	0.09%
	Furniture	0.00%		Furniture	0.03%
	Scrap cars	0.00%		Scrap cars	0.00%
	Miscellaneous Litter Items	0.31%		Miscellaneous Litter Items	0.48%
Miscellaneous 0.31% Plastic Items (Non-packaging) 0.26%	Plastic items	0.26%	Miscellaneous 0.48% Plastic Items (Non-packaging) 0.20%	Plastic items	0.20%

Table 3-1 Detailed National Litter Composition 2012 to 2013

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

The breakdown of causative factors nationally in 2012 and 2013 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 2012 to 2013, with the greatest difference since 2012 occurring between passing motorists (increased by 1.1% since 2012) and fast-food outlets (decreased by 1.2%).

Figure 4-1 illustrates that:

- ◆ Passing pedestrians continue to constitute the greatest single causative factor of litter pollution, accounting for 39.6% across all local authorities.
- ◆ Passing motorists are the second largest causative factor accounting for 19.7% across all local authority types in 2013.
- ◆ In addition to passing pedestrians and passing motorists, causative factors that have increased from 2012 to 2013 include gathering points (from 6.0% in 2012 to 6.6% in 2013), places of leisure/entertainment (from 5.6% in 2012 to 5.9% in 2013), bus stops (from 2.4% in 2012 to 2.5% in 2013), fly-tipping/dumping (from 2.1% in 2012 to 2.2% in 2013), bring banks (from 1.1% in 2012 to 1.4% in 2013), bus/ train stations (from 0.5% to 0.7% in 2013), major entertainment events (from 0.2% in 2012 to 0.4% in 2013) and construction sites (from 0.1% in 2012 to 0.2% in 2013).
- ◆ Causative factors that have decreased from 2012 to 2013 include retail outlets (from 10.8% in 2012 to 10% in 2013), fast-food outlets (from 6.5% in 2012 to 5.3% in 2013), schools/ school children (from 4.9% in 2012 to 4.3% in 2013) and bank/ATM (from 1.4% in 2012 to 1.1% in 2013).
- ◆ Causative factors that have remained constant since 2012 include overflowing (0.4%) bins and refuse collection/ presentation (0%).

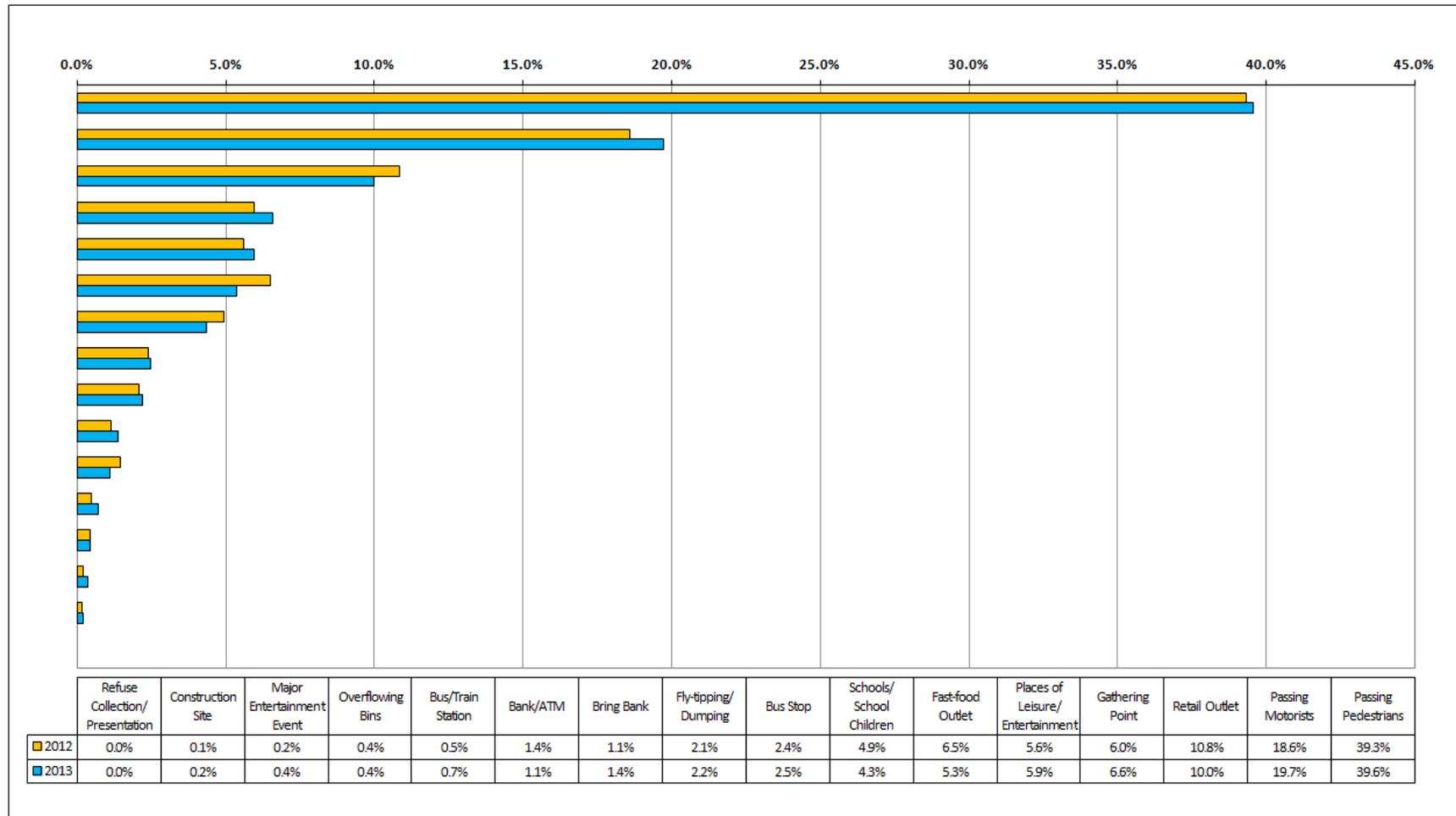


Figure 4-1 Causative Factors of Litter Pollution across all Local Authorities, 2012 compared to 2013

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 2013 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 and places of leisure/ entertainment are considerable sources of litter for all local authority types. Survey results to date show that the contribution of passing motorists, fly-tipping/ dumping and brink banks to litter pollution is greater in County Councils than in other local authority types. Passing pedestrians, gathering points, fast-food outlets, bus/ train stations and construction sites are more significant causative factors in City Councils than in other local authority types. Retail outlets, places of leisure/ entertainment, schools/ school children, bus stops and major entertainment events are more significant causative factors in Dublin Local Authorities than in other local authority types. Overflowing bins are more significant causative factors in Town & Borough Councils than in other local authority types. Bank/ ATMs are more significant causative factors in County Councils and Town and Borough Councils than other local authority types.

Figure 4-2 also illustrates that less significant causes of litter pollution in all types of local authority include major entertainment events, overflowing bins, construction sites, and refuse collection/presentation. This is similar to trends identified in the previous National Litter Pollution Monitoring System annual results. This data 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 2012 and 2013 graphs under each litter pollution index (on the same page) to facilitate the comparison of the 2012 and 2013 results.

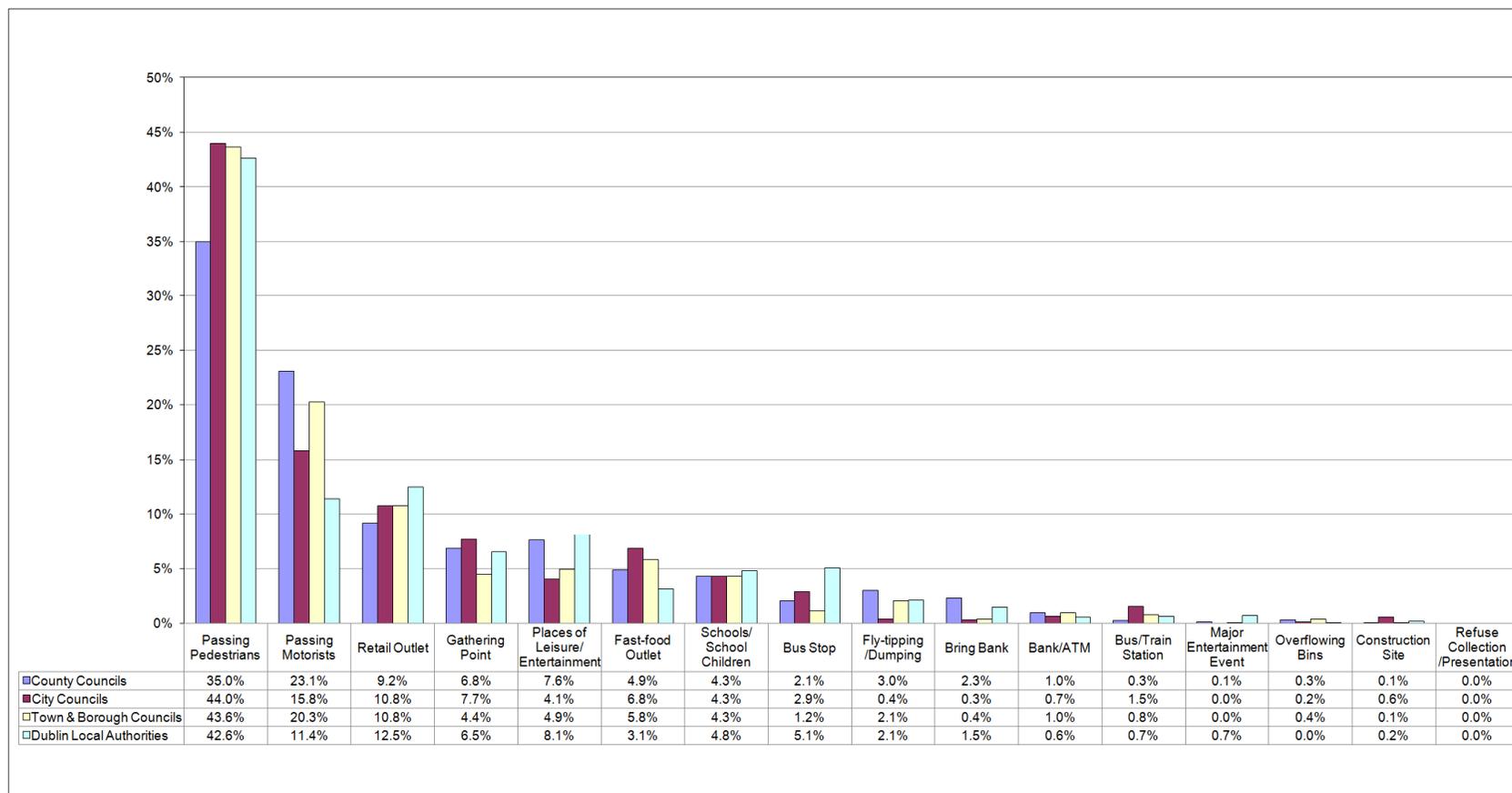


Figure 4-2 Causative Factors of Litter Pollution According to Local Authority Type in 2013

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. Litter Pollution Survey results for 69 out of 90³ local authorities have been returned to the Litter Monitoring Body and analysed for 2013 - those local authorities are detailed in Appendix A.

Comparison of the 2013 litter pollution survey 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, Figure 5-1 illustrates the following:

- ◆ The percentage of unpolluted (LPI 1) areas increased from 10.8% in 2012 to 13.5% in 2013. This constitutes an increase of 2.7%.
- ◆ Slightly polluted (LPI 2) areas decreased from 58.0% in 2012 to 50.0% in 2013. This constitutes a decrease of 8%.
- ◆ Moderately polluted (LPI 3) areas increased from 27.6% in 2012 to 31.7% in 2013. This constitutes a 4.1% increase.
- ◆ Significantly polluted (LPI 4) areas increased slightly from 2012 (3.4%) to 2013 (4.7%).
- ◆ Grossly polluted (LPI 5) areas decreased by 0.1%, from 0.2% in 2012 to 0.1% in 2013.
- ◆ The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together, show a decrease of 5.3% from 2012 to 2013.

Therefore these results show an overall deterioration in the level of litter pollution in Dublin Local Authorities from 2012 to 2013 with the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together showing a decrease. Subsequently there has been a combined increase of 5.4% in moderately polluted (LPI 3) and significantly polluted (LP4) areas in 2013. However, the percentage of grossly polluted (LP1 5) areas decreased by 0.1%.

³ 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).

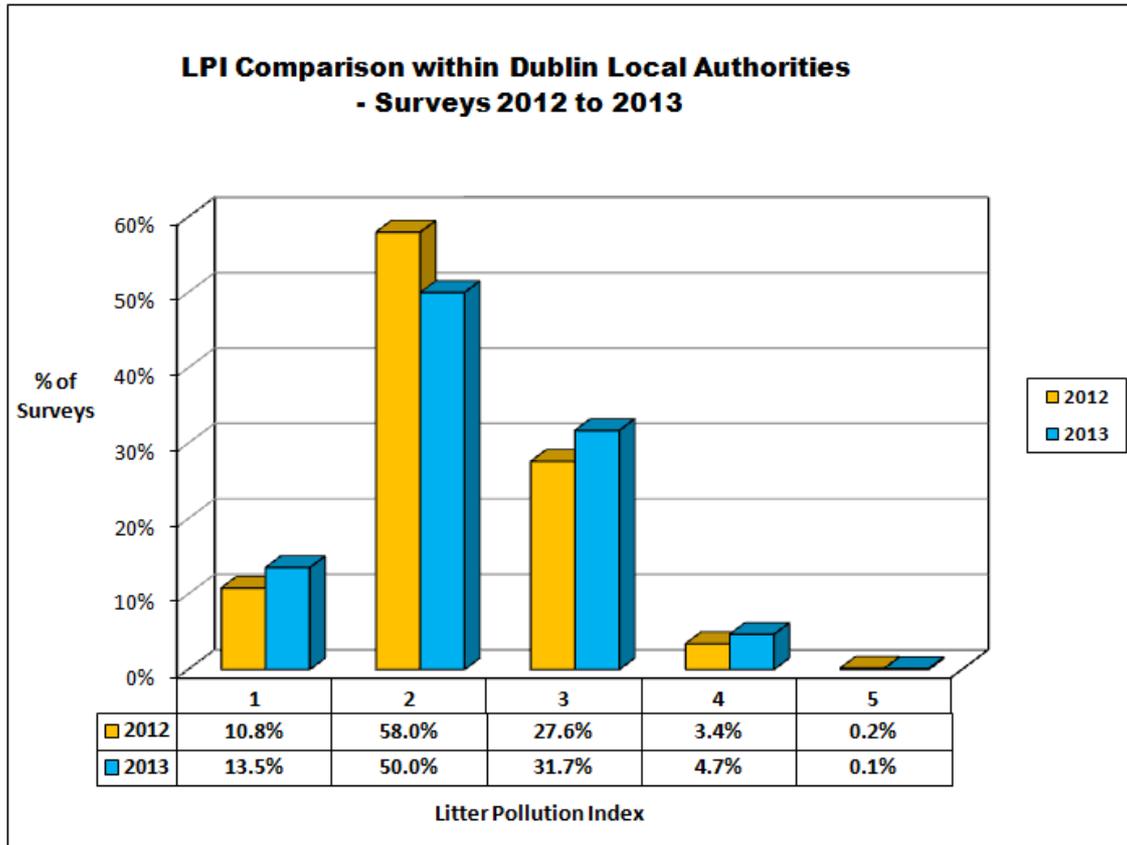


Figure 5-1 Comparison of Litter Pollution within Dublin Local Authorities 2012 to 2013

5.2 Comparison within County Councils

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

- ◆ The percentage of unpolluted (LPI 1) areas increased from 11.6% in 2012 to 12.1% in 2013. This constitutes a slight increase of 0.5%.
- ◆ Slightly polluted (LPI 2) areas increased by 1%, from 63.3% in 2012 to 64.3% in 2013.
- ◆ Moderately polluted (LPI 3) areas decreased by 1.9%, from 21.3% in 2012 to 19.4% in 2013.
- ◆ Significantly polluted (LPI 4) areas decreased very slightly from 3.4% in 2012 to 3.3% in 2013. This constitutes a decrease of 0.1%.
- ◆ Grossly polluted (LPI 5) areas increased by 0.5% from 2012 to 2013.
- ◆ The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together, show an increase of 1.5% from 2012 to 2013.

Therefore, these results show an overall improvement in the level of litter pollution in County Councils from 2012 to 2013 with the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together showing an increase. Moderately polluted (LPI 3) and significantly polluted (LP4) areas in 2013 showed a combined decrease of 2% when

compared to 2012. However, the percentage of grossly polluted (LPI 5) areas increased by 0.5% since 2012.

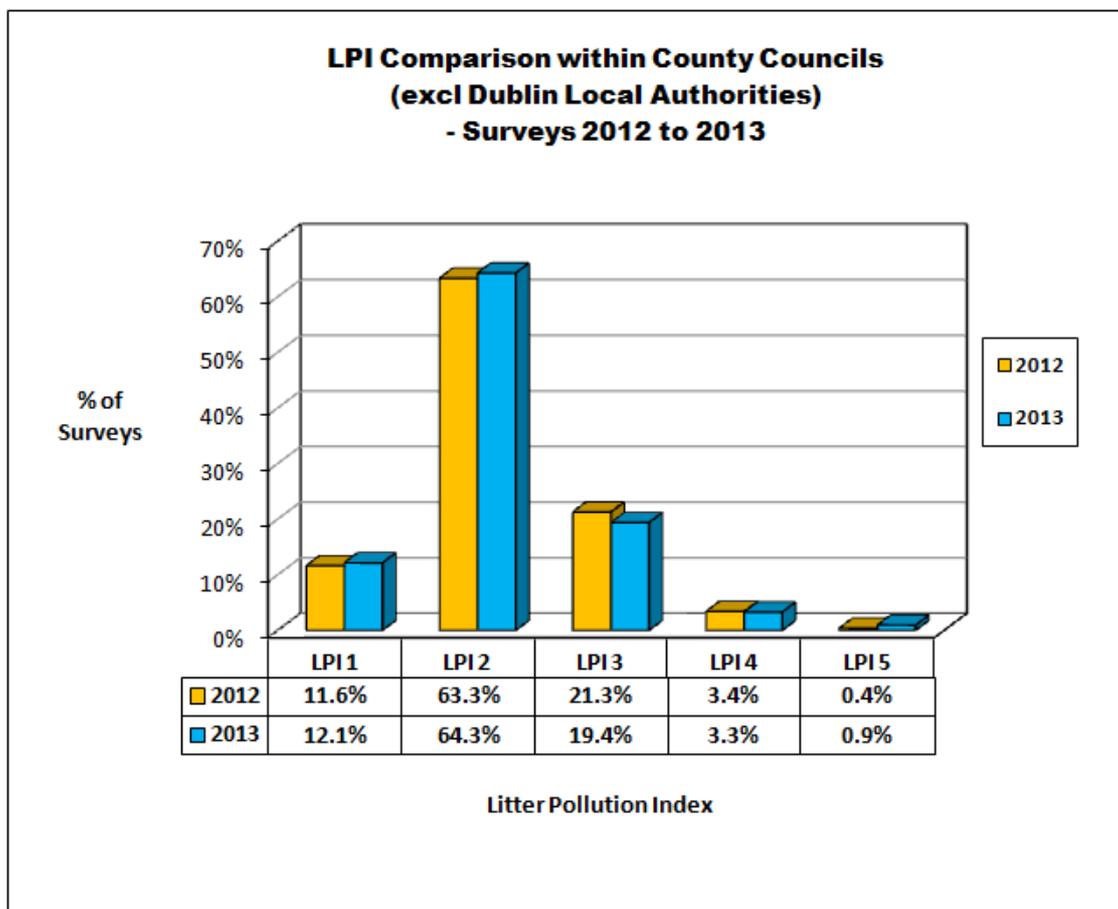


Figure 5-2 Comparison of Litter Pollution within County Councils 2012 to 2013

5.3 Comparison within City Councils

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

- ◆ The percentage of unpolluted (LPI 1) areas has increased from 1.3% in 2012 to 1.9% in 2013. This constitutes a decrease of 0.6%.
- ◆ Slightly polluted (LPI 2) areas have decreased from 71.0% to 2012 to 68.0% in 2013.
- ◆ The percentage of moderately polluted (LPI 3) areas has increased by 1.5% from 2012 to 2013.
- ◆ Significantly polluted (LPI 4) areas have also increased from 3.0% in 2012 to 3.9% in 2013, an increase of 0.9%.
- ◆ The percentage of grossly polluted (LPI 5) areas has remained constant at 0.5% since 2012.
- ◆ The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together, show a decrease of 2.4% from 2012 to 2013.

Therefore, these results show an overall deterioration in the level of litter pollution in City Councils from 2012 to 2013 with the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together showing a decrease. There has subsequently been an increase in moderately polluted (LPI3) areas and in significantly polluted (LPI 4) areas, with grossly polluted (LPI 5) areas remaining unchanged since 2012.

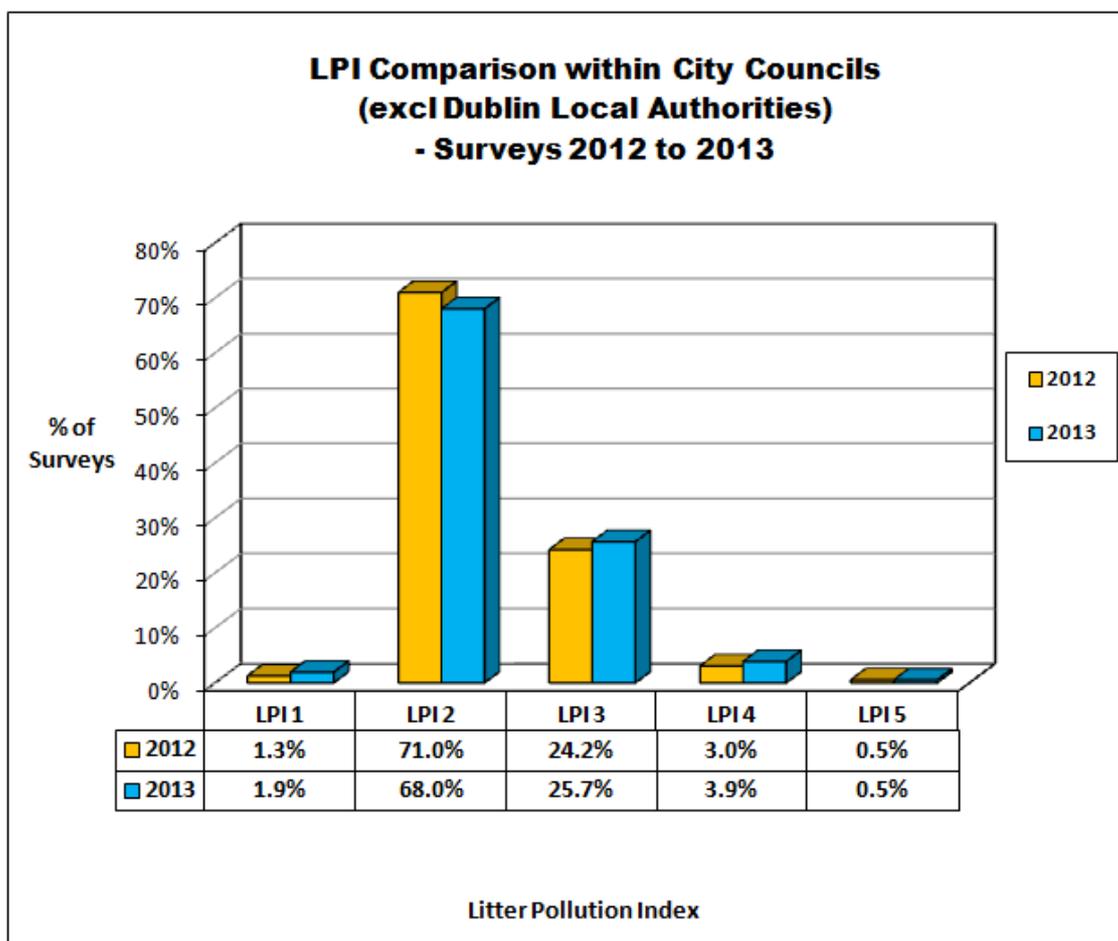


Figure 5-3 Comparison of Litter Pollution within City Councils 2012 to 2013

5.4 Comparison within Town & Borough Councils

In comparing the litter pollution data for Town and Borough Councils, Figure 5-4 illustrates the following:

- ◆ The percentage of unpolluted (LPI 1) areas has increased from 12.2% in 2012 to 16.3% in 2013. This constitutes an increase of 4.1%.
- ◆ Slightly polluted (LPI 2) areas also increased from 64.3% in 2012 to 67.2% in 2013. This constitutes an increase of 2.9%.
- ◆ The percentage of moderately polluted (LPI 3) areas decreased by 6.6%, from 20.5% in 2012 to 13.9% in 2013.

- ◆ Significantly polluted (LPI 4) areas have decreased by 0.7%, from 2.8% in 2012 to 2.1% in 2013.
- ◆ Grossly polluted (LPI 5) areas have increased slightly from 0.2% in 2012 to 0.5% in 2013.
- ◆ The percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together, show an increase of 7% from 2012 to 2013.

Therefore, these results show there has been an overall improvement in the level of litter pollution in Town and Borough Councils from 2012 to 2013 with the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas combined together showing an increase. Subsequently there has been a combined decrease of 7.3% in moderately polluted (LPI 3) areas and significantly polluted (LPI 4) areas. Grossly polluted (LPI 5) areas however, increased slightly.

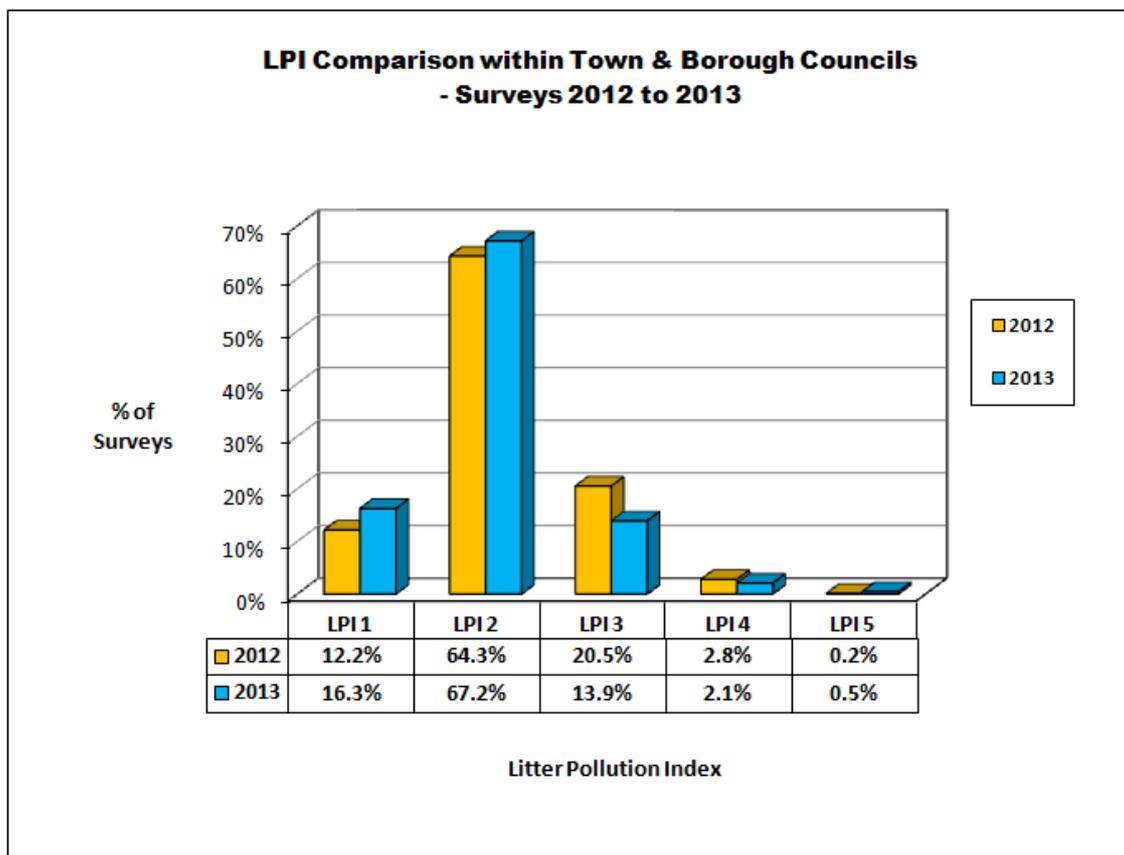


Figure 5-4 Comparison of Litter Pollution within Town & Borough Councils 2012 to 2013

The percentage of unpolluted (LPI 1) areas increased in all local authority types from 2012 to 2013.

County Councils (by 1%) and Town and Borough Councils (by 2.9%) experienced an increase in the percentage of slightly polluted (LPI 2) areas from 2012 to 2013, with Dublin Local Authorities and City Councils experiencing a decrease from 2012 to 2013 by 8% and 3%, respectively.

When the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas are combined together for each local authority, Dublin Local Authorities and City Councils show an overall disimprovement in cleanliness of 7.7% (5.3% and 2.4%, respectively) when compared to 2012. However, Town and Borough Councils and County Councils, when combined, show an improvement in cleanliness of 8.5% (7% and 1.5%, respectively) when compared to 2012. Therefore, on balance, there has been an overall improvement of 0.8% in the percentage of unpolluted and slightly polluted areas since 2012.

The percentage of moderately polluted (LPI 3) areas increased in Dublin Local Authorities (by 4.1%) and City Councils (by 1.5%), while County Councils and Town and Borough Councils experienced a decrease of 1.9% and 6.6%, respectively from 2012 to 2013.

Significantly polluted (LPI 4) areas also slightly increased in Dublin Local Authorities (by 1.3%) and City Councils (by 0.9%), while County Councils and Town and Borough Councils experienced a decrease of 0.1% and 0.7%, respectively from 2012 to 2013.

County Councils and Town & Borough Councils experienced an increase in the percentage of grossly polluted (LPI 5) areas from 2012 to 2013, with Dublin Local Authorities experiencing a slight decrease from 2012 to 2013 and City Councils remaining constant.

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 2012 to 2013.

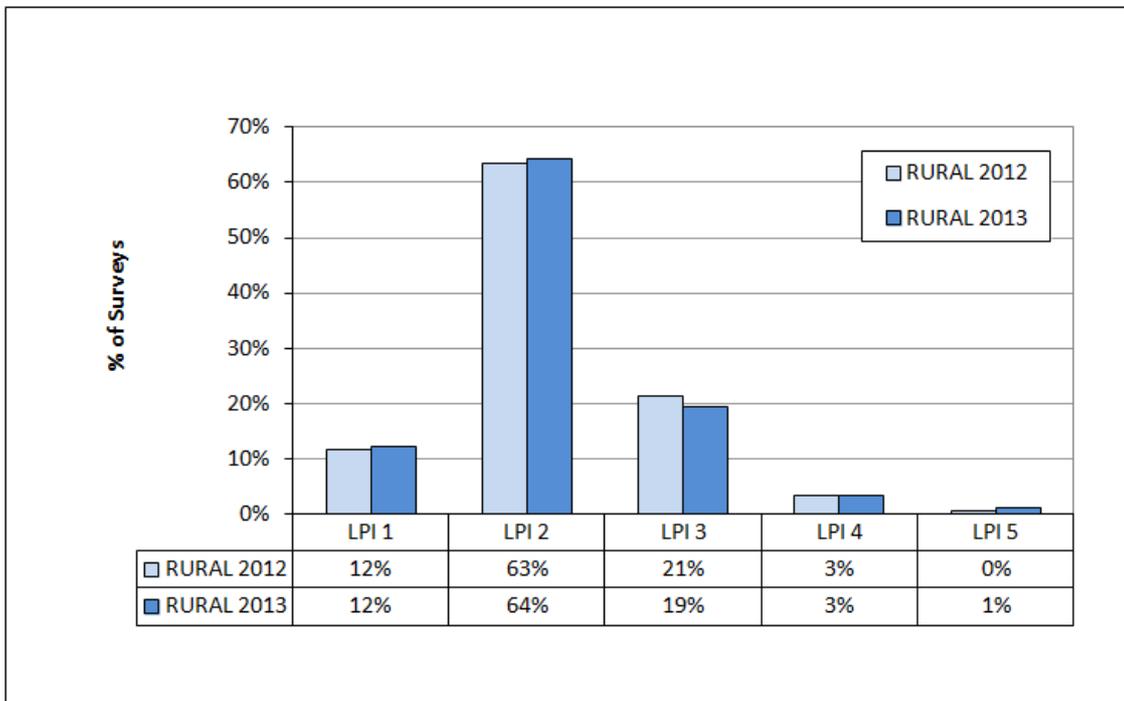


Figure 5-5 Comparison of Litter Pollution in Rural Areas from 2012 to 2013

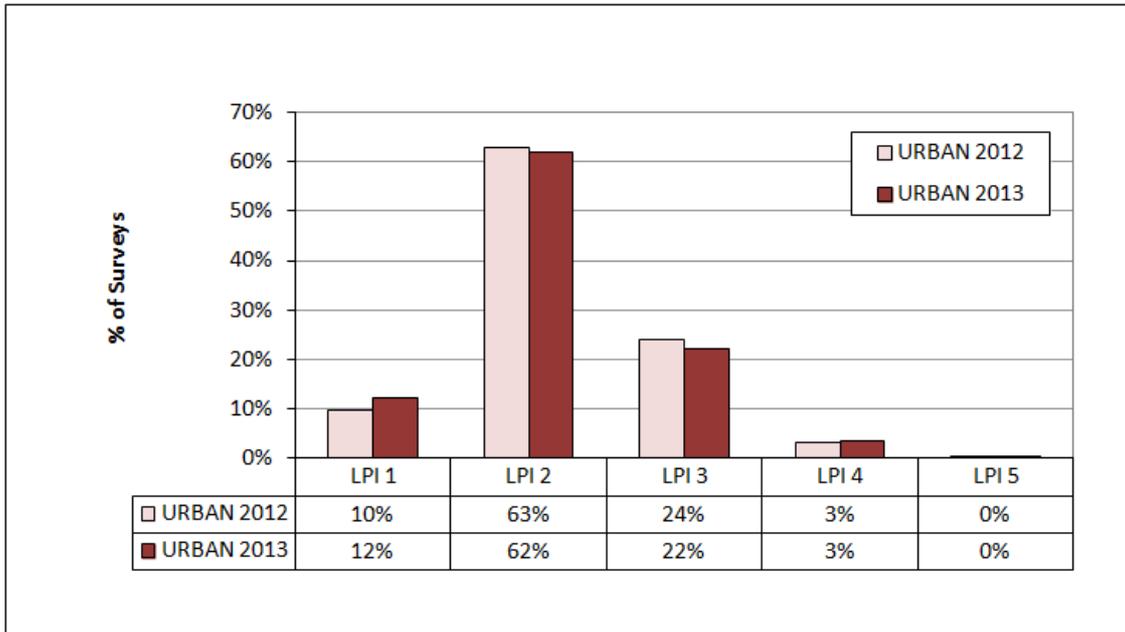


Figure 5-6 Comparison of Litter Pollution in Urban Areas from 2012 to 2013

In rural areas the levels of unpolluted (LPI 1) areas have remained constant at 12% since 2012. The percentage of slightly polluted (LPI 2) areas has increased by 1% since 2012 in rural areas. Moderately polluted (LPI 3) areas decreased by 2% from 2012 to 2013. Significantly polluted (LPI 4) areas have also remained constant from 2012 to 2013. Grossly polluted (LPI 5) areas have increased from 0% in 2012 to 1% in 2013.

In summary, as can be seen on Figure 5-5, the level of litter pollution in rural areas has remained similar when comparing 2012 and 2013 results.

The percentage of unpolluted (LPI 1) areas in urban areas has increased by 2% from 10% in 2012 to 12% in 2013. The percentage of slightly polluted (LPI 2) areas has decreased by 1%, from 63% in 2012 to 62% in 2013. Moderately polluted (LPI 3) areas have decreased by 2%, from 24% in 2012 to 22% in 2013. Significantly polluted (LPI 4) areas and grossly polluted (LPI 5) areas have remained constant at 3% and 0%, respectively from 2012 to 2013.

These results show that both rural and urban areas have experienced a slight improvement in cleanliness levels overall since 2012.

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 past nine years.

Chewing gum levels have decreased by 2.27% from 2012 to 2013. This decrease could possibly be due to a raised public awareness of appropriate chewing gum litter disposal following the recent Gum Litter Taskforce (GLT) Awareness Campaign launched in 2012. This National campaign involved outdoor advertising around the country, national radio advertising, in-store and around store advertising, point of sale materials and promotion of greater awareness of litter fines for irresponsible disposal of gum. Chewing gum levels show an improvement over a six year period from 2008 to 2013. The percentage of national litter represented by chewing gum has decreased from 30.79% in 2008 to 15.32% in 2013, which represents a decrease of 15.47%.

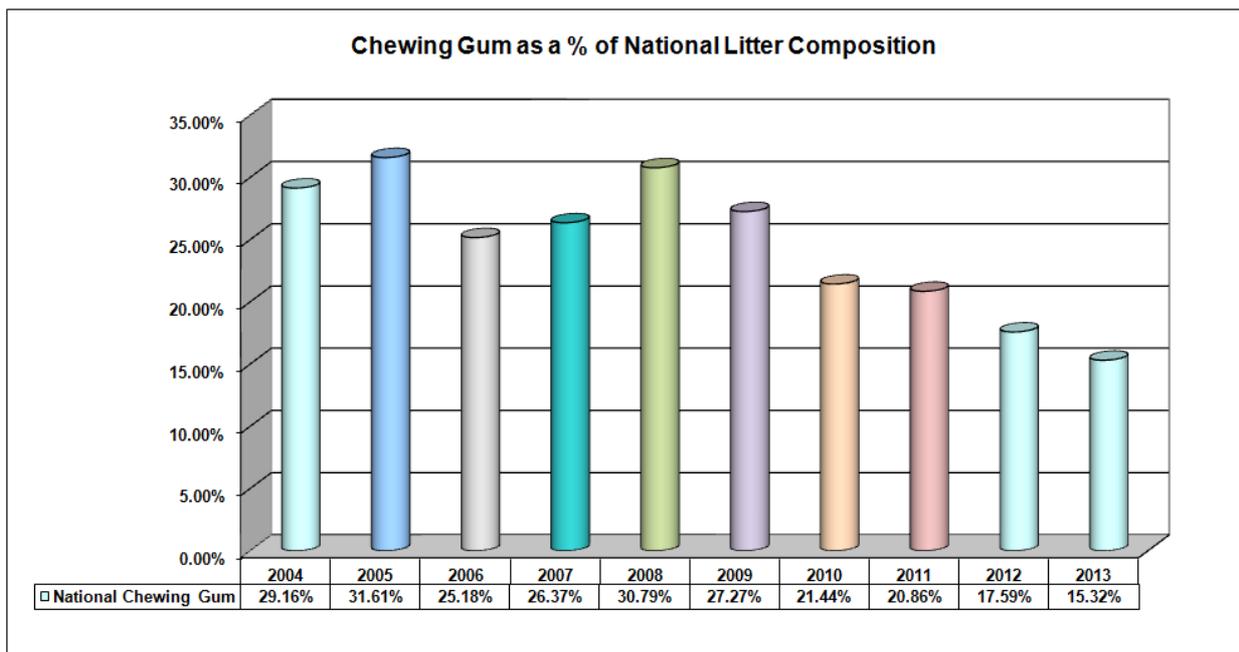


Figure 6-1 Chewing Gum as a Percentage of the National Litter Composition

6.2 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 2012 and 2013 are presented in Figure 6-2 below.

The results in Figure 6-2 illustrate that sweet related litter has increased by 0.40% in 2013 compared to 2012. Sweet wrappers (plastic/foil) are the highest component of litter in the sweet related litter category in 2013, increasing by 0.37% from 2012 to 2013. The quantity of straws has also increased (by 0.06%), although they remain the lowest component of sweet related litter. Lollipop sticks (wooden/plastic) also contribute to the sweet related litter category; however, they have decreased by 0.04% from 2012 to 2013. Crisp bags have remained constant at 1.38% since 2012.

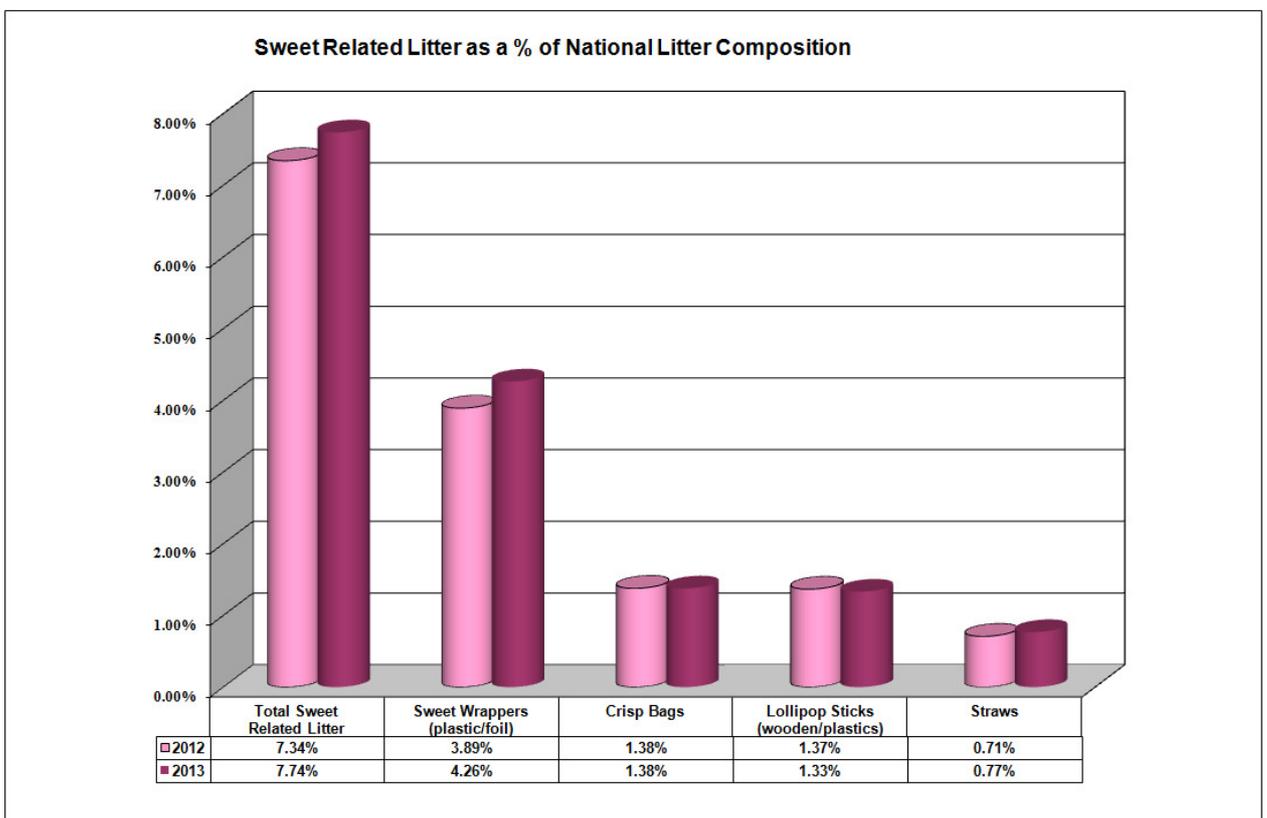


Figure 6-2 Sweet Related Litter Analysed 2012 to 2013

6.3 Bank ATM Receipts

The Litter Monitoring System 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 the Irish Banking Federation (IBF) on behalf of the retail banking groups with ATM networks.

The litter pollution survey results for 2013 suggest that ‘Bank ATM’s’ as a causative factor has decreased by 0.3%, from 1.4% in 2012 to 1.1% in 2013. The litter quantification survey results, however, illustrate that bank slips as a percentage of the national litter composition, have increased by 0.18%, from 0.60% in 2012 to 0.78% in 2013. This is the highest level since 2007, as illustrated in Figure 6-3.

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

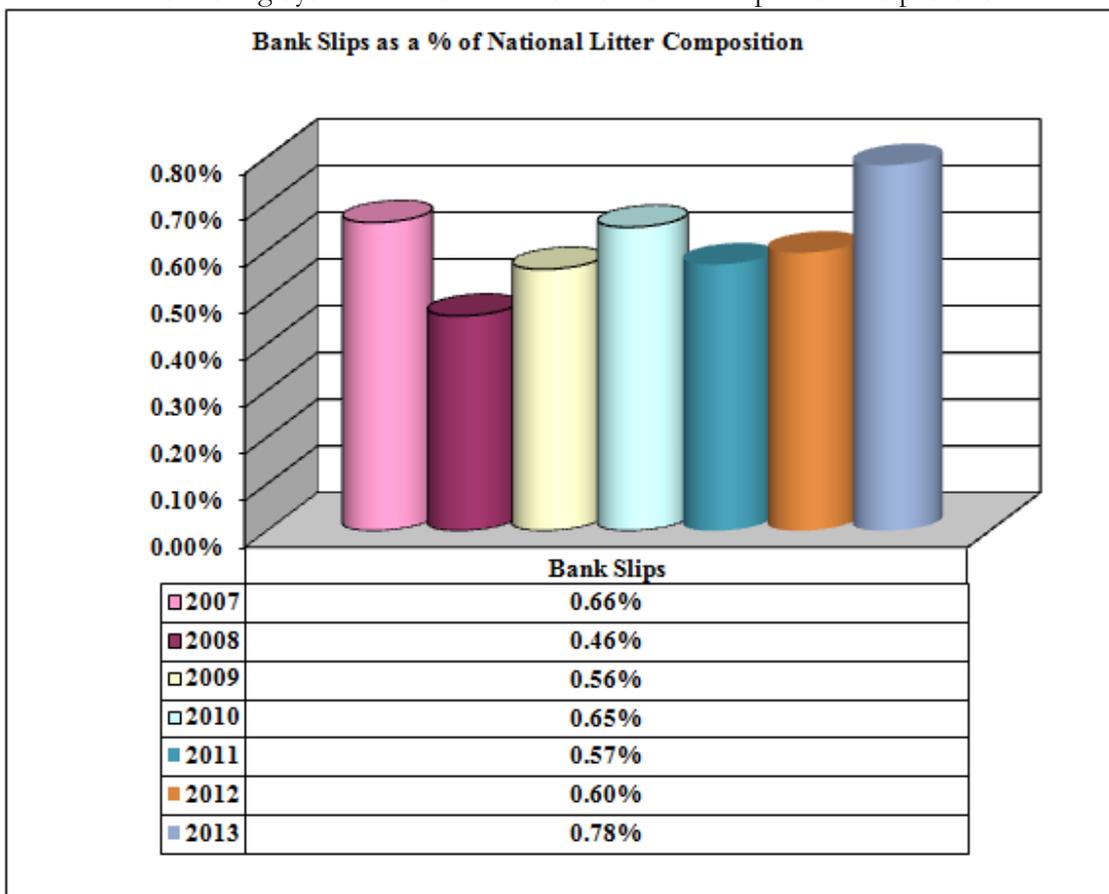


Figure 6-3 Bank Slips as a Percentage of the National Litter Composition

6.4 Plastic Bags

Figure 6-4 illustrates 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 this, plastic bags ended up as a very visually intrusive form of litter pollution. The plastic bag levy was increased from 15c to 22c in July 2007 in a further bid to reduce littering.

The most recent survey data available for 2013 shows that plastic bags constitute 0.14% of litter pollution nationally compared to an estimated 5% prior to the introduction of the levy. The 2013 results show that there was decrease in plastic bags during 2013 as a percentage of the National Litter Composition (from 0.30% in 2012 to 0.14% in 2013).

The Litter Monitoring System will continue to monitor the level of plastic bag litter in Ireland and the impact of this levy.

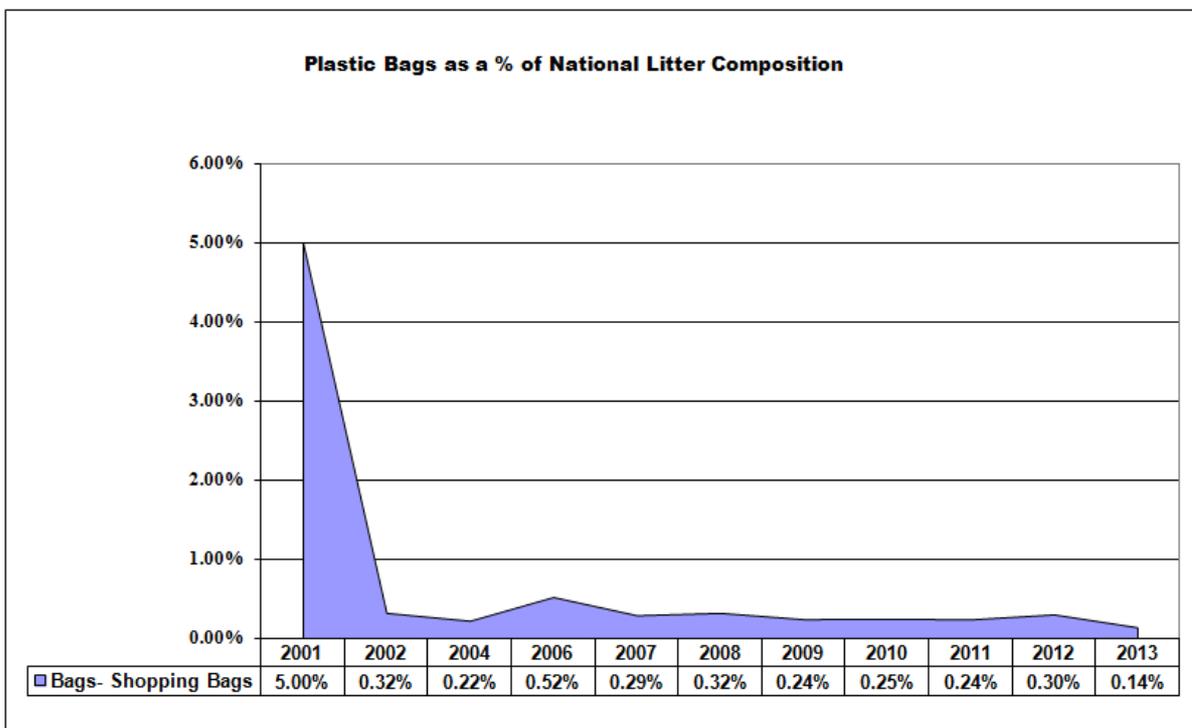


Figure 6-4 Plastic Bags as a Percentage of the National Litter Composition

6.5 Cigarette Related Litter

The percentage of national litter represented by cigarette ends has increased from 39.80% in 2004 to 49.90% in 2013, which represents an increase of 10.1%. The percentage of cigarette ends has increased by 1.28% from 48.62% in 2012 to 49.90% in 2013. Note that this is the highest percentage of cigarette related litter in the past nine years of surveys.

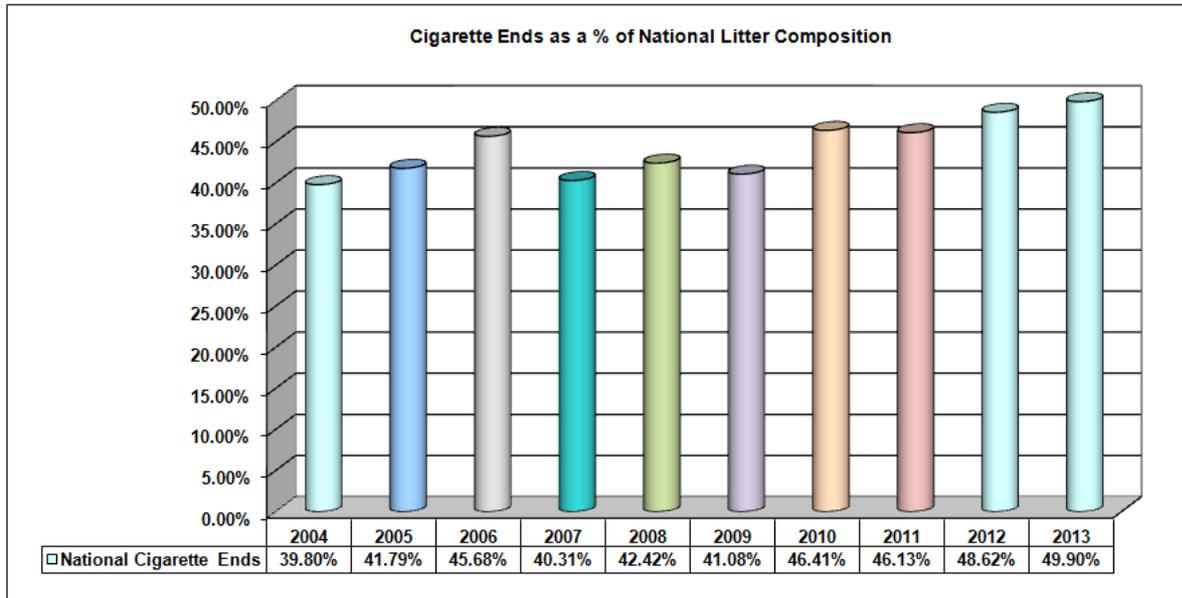


Figure 6-5 Cigarette Ends as a Percentage of the National Litter Composition

CHAPTER 7: ITEMS FOR FURTHER ATTENTION UNDER THE NLPMS

- ◆ The Litter Monitoring System 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 and subsequently renewed until 2014.
- ◆ 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.
- ◆ The Litter Monitoring System will continue to be used, to assess the impact of the Gum Litter Taskforce (GLT) Awareness Campaign.

CHAPTER 8: CONCLUSION

The constituent components and the causative factors of litter pollution nationally remain relatively constant across all local authority types from 2012 to 2013.

The percentage of cigarette related litter, sweet related litter, paper items, plastic items (non-packaging) and deleterious litter items have increased since 2012 while food related litter, packaging items, large litter items and miscellaneous items have all decreased.

The national results for 2013 show that passing pedestrians are the most significant single cause of litter pollution for every type of local authority. It is also clear that passing motorists, retail outlets, fast food outlets and gathering points are considerable sources of litter for all local authority types.

Survey results show that the contribution of passing motorists, fly-tipping and bring banks to litter pollution is greater in County Councils than in other local authority types. Passing pedestrians, gathering points, fast-food outlets, bus/train stations and construction sites are more significant causative factors in City Councils than in other local authority types. Retail outlets, places of leisure/entertainment, schools/ school children, bus stops and major entertainment events are more significant causative factors in Dublin Local Authorities than in other local authority types. Overflowing bins are more significant causative factors in Town & Borough Councils than in other local authority types. Bank/ATMs are equally significant causative factors in County Councils and Town & Borough Councils are more significant than in other local authority types

The percentage of unpolluted (LPI 1) areas increased from 10.4% to 2012 to 12.2% in 2013. This is the largest percentage of unpolluted areas ever recorded by the System. However, in 2013, there was a 0.4% reduction in slightly polluted (LPI 2) areas in comparison to 2012. The 2013 results also show decrease in moderately polluted (LPI 3) areas but an increase in significantly polluted (LPI 4) and grossly polluted (LP5) areas.

The number of local authorities carrying out litter pollution and quantification surveys in 2013 was 69 (i.e. 76.7%) which is a decrease of 3.3% on the 2012 local authority participation. 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 2014.

The Litter Monitoring Body is satisfied that local authorities are properly implementing the National Litter Pollution Monitoring System. 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 2013

Litter Quantification Survey Results

Litter Quantification Survey results for 67 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2013⁴. These are detailed in Table A-1.

Table A.1 Local Authorities that Submitted Litter Quantification Survey Results for 2013

County Councils
Carlow County Council
Cavan County Council
Clare County Council
Donegal County Council
Dún 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
Longford County Council
Louth County Council
Mayo County Council
Meath County Council
Monaghan 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
Waterford City Council
Borough Councils

⁴ Note Enniscorthy Town Council returned Litter Quantification surveys but did not return Litter Pollution Surveys.

Clonmel Borough Council
Drogheda Borough Council
Kilkenny Borough Council
Sligo Borough Council
Wexford Borough Council
Town Councils
Arklow Town Council
Athlone Town Council
Ballinasloe Town Council
Birr Town Council
Buncrana Town Council
Bundoran Town Council
Carlow Town Council
Carrickmacross Town Council
Carrick on Suir Town Council
Cashel 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
Listowel Town Council
Monaghan Town Council
Naas Town Council
Nenagh Town Council
Skibbereen Town Council
Templemore Town Council
Tipperary Town Council
Tralee Town Council
Tullamore Town Council
Westport Town Council
Wicklow Town Council

Litter Pollution Survey Results

Litter Pollution Survey results for 69 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2013⁵. These are detailed in Table A.2.

Table A.2 Local Authorities that Submitted Litter Pollution Survey Results for 2013

County Councils
Carlow County Council
Cavan County Council
Clare County Council
Donegal County Council
Dún 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
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

⁵ Note North Cork County Council, South Cork County Council (City & Rural) and West Cork County Council returned Litter Pollution Surveys but did not return Litter Quantification 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
Ballinasloe Town Council
Birr Town Council
Buncrana Town Council
Bundoran Town Council
Carlow Town Council
Carrickmacross Town Council
Carrick on Suir Town Council
Cashel Town Council
Castleblayney Town Council
Cavan Town Council
Clones Town Council
Dundalk Town Council
Dungarvan Town Council
Killarney Town Council
Kilrush Town Council
Listowel Town Council
Monaghan Town Council
Naas Town Council
Nenagh Town Council
Skibbereen Town Council
Templemore Town Council
Tipperary Town Council
Tralee Town Council
Tullamore Town Council
Westport Town Council
Wicklow Town Council

APPENDIX B

AREA CLEANLINESS RATING PHOTOGRAPHS

Area Cleanliness Rating 1 (Unpolluted)

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



Area Cleanliness Rating 3 (Moderately Polluted)

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



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