



AN ROINN COMHSHAOIL, OIÐHREACHTA AGUS RIALTAIS ÁITIÚIL

DEPARTMENT OF THE ENVIRONMENT, HERITAGE
AND LOCAL GOVERNMENT



THE NATIONAL LITTER POLLUTION MONITORING SYSTEM

LITTER MONITORING BODY

SYSTEM RESULTS

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OVERVIEW OF HOW THE NATIONAL LITTER POLLUTION MONITORING SYSTEM WORKS

The data produced by the National Litter Pollution Monitoring System surveys allow local authorities to gauge:

- ◆ the extent and severity of litter pollution in each local authority area,
- ◆ the types, most likely sources and causes of litter,
- ◆ 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 by 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 photographs to ensure a consistent approach nationwide to measuring the extent of litter pollution in the surveyed areas. Examples of such photographs are contained in Appendix II to this report with an explanation of LPI.

The area cleanliness rating is then used in the calculation of Litter Pollution Index for each survey location. The use of photographs ensures that area cleanliness ratings are consistently assigned by all local authorities. Further training by the Litter Monitoring Body in 2004 ensured that consistent and accurate area cleanliness ratings are assigned to each surveyed area. The Systems Audit conducted by the Litter Monitoring Body in 2004 and earlier years also confirmed that the area cleanliness ratings were being applied consistently by the audited local authorities.

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 determine 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.

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 largest sample size area (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 will be combined into a number of litter categories including, food, packaging, paper and plastic.

CHAPTER 1: SUMMARY SYSTEM'S SURVEY RESULTS FOR 2004

This report is based on an analysis of data received from 61 local authorities in 2004, compared to 34 local authorities in the 2003 survey. Given that there are 90 local authorities, the results do not fully represent the national situation. However data from two third's of all local authorities, which includes data from all local authority types, does afford a reliable overview reflecting clear patterns from which conclusions can be drawn.

Therefore the results for 2004 give the most accurate picture to date of national litter pollution levels, such that national and local trends are more readily apparent and will therefore facilitate a fuller and more comprehensive comparison of year-on-year developments with regard to anti-litter action.

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? and,
3. What are the main causes of litter pollution?

How littered is the country at local and national level?

- ◆ 5.1 % of areas surveyed were litter free (LPI 1), this is an increase of 0.7% on the 2003 results;
- ◆ Almost 45.3% of all areas surveyed were only slightly littered (LPI 2), a 4.2% decrease on 2003;
- ◆ The percentage of moderately polluted areas (LPI 3) has increased by 2.1% on the 2003 results to 37.3%;
- ◆ The percentage of significantly polluted areas (LPI 4) has increased slightly by 1.4% on the 2003 results to 10.5%; and
- ◆ Less than 1.8% of areas were grossly littered (LPI 5).

What are the main constituent elements of litter pollution?

- ◆ Cigarette related litter (48%), food related litter (31%) packaging litter (15%) and paper litter (4%) were the main litter constituents identified nationally.

What are the main causes of litter pollution?

- ◆ Passing pedestrians (36%), retail outlets (12.5%), passing motorists (12%) and gathering points (11.5%) were identified as the main causative factors of litter nationally.

CHAPTER 2: HOW LITTERED IS THE COUNTRY?

The national monitoring system results clearly indicate that the incidence of littering is still very high in Ireland despite the increased levels of anti-litter action at national level and by local authorities in recent years. A comparison of the results from 2003 to 2004 indicates that while the percentage of unpolluted areas (LPI 1) has increased, the percentage of slightly polluted areas (LPI 2) has decreased. Therefore overall there has been a slight disimprovement in results from the 2003 results.

However this result was not unexpected given that the % changes was small with double the survey data available compared to 2003. These trends will become more apparent when surveys data from all local authorities is available for comparative purposes over the next few years starting with 2005 when all local authorities are expected to survey their areas. The % changes from 2004 to 2003 may be due to more comprehensive data, which gives a more accurate representation of the national litter problem, rather than a worsening position.

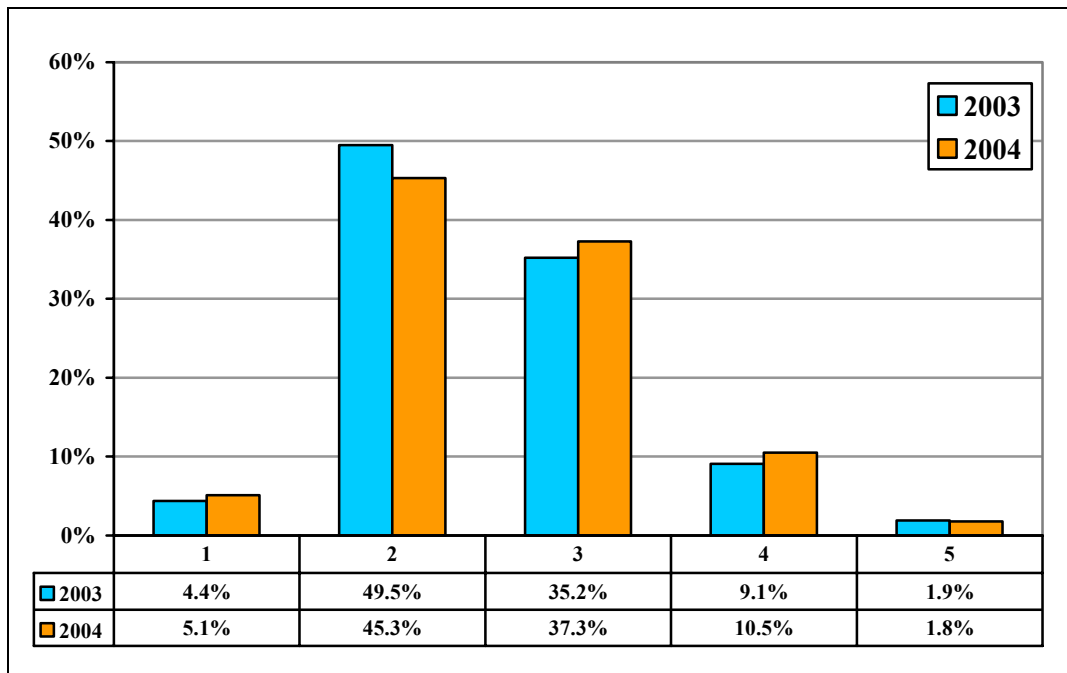


Figure 2-1 Comparison of Litter Pollution Indices (LPI) 2003 - 2004¹

Figure 2.1 above compares 2003 and 2004 litter pollution survey results

- ◆ The most significant development in the 2004 litter pollution survey is the increase in unpolluted areas (LPI 1) from 4.4% to 5.1%.
- ◆ There is a decrease in the slightly polluted (LPI 2) category, from 49.5% in 2003 to 45.3% in 2004.

¹ Percentages are expressed to one decimal place and therefore totals may not add exactly to 100%.

- ◆ The percentage of moderately polluted areas (LPI 3) account for 37.3 % of areas surveyed, a slight increase of 2.1% on 2003.
- ◆ The percentage of areas classified as significantly polluted (LPI 4) has increased from 9.1% in 2003 to 10.5%.
- ◆ The percentage of grossly polluted areas (LPI 5) is relatively unchanged at less than 2%.

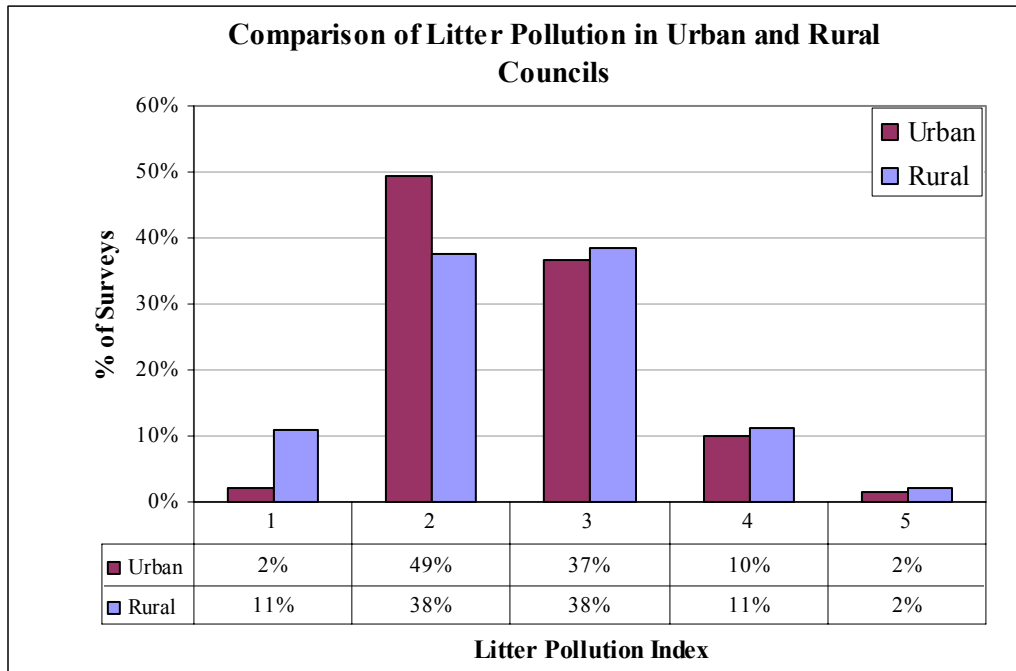


Figure 2-2 Comparison of Litter Pollution within Largely Urban and Rural Areas

A comparison of urban and rural local authorities on figure 2.2 above reveals a significant disparity in terms of the extent and severity of litter problems between these local authority types, with 11% of rural areas unpolluted (LPI 1) compared to only 2% in urban areas. This may be as a result of denser populations and the concentration of potential litter generators in urban areas.

The number of rural areas that submitted results in 2004 is 28 compared to 17 in 2003, thus the profile of litter pollution presented for rural areas in 2004 gives a more accurate picture than previous years data.

Overall, urban areas in 2004 are much more littered than rural areas.

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:

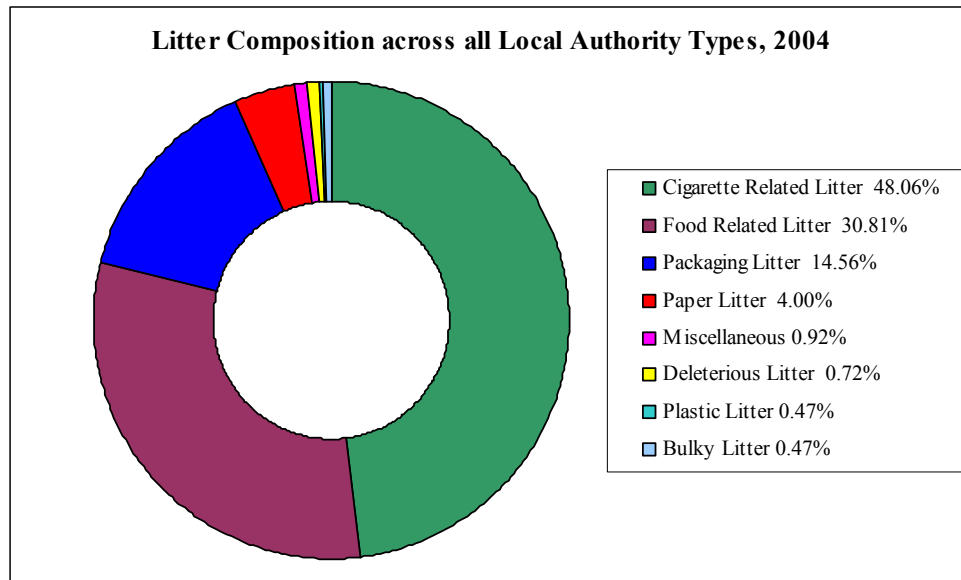


Figure 3-1 Composition of Litter in 2004 Broken Down into Main Categories

From this data, it can be seen that:

- ◆ **cigarette related litter** constitutes the highest percentage (**48.06%**) of litter in the locations surveyed,
- ◆ **food related litter**, at **30.81%**, 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 **29.16%** of all litter recorded in the litter quantification surveys carried out in 2004 compared to 28.26% in the 2003 surveys,
- ◆ **packaging litter (14.56%)** is the third largest litter component of national litter pollution recorded.

Other factors to note in relation to the composition of litter are:

- ◆ The incidence (i.e. the count) of cigarette related litter has increased by 16.8% in the Dublin Local Authorities in 2004 compared to 2003. This is in line with expected increases in cigarette littering incidents due to the Ban on Smoking in the Workplace. See Table 6.1 page 34 for a more detailed analysis. The percentage of cigarette related litter has decreased across the Dublin local authorities, from 72.5% in 2003 to almost 64% in 2004. The increase in food related litter has resulted in the percentage decrease in cigarette related litter.

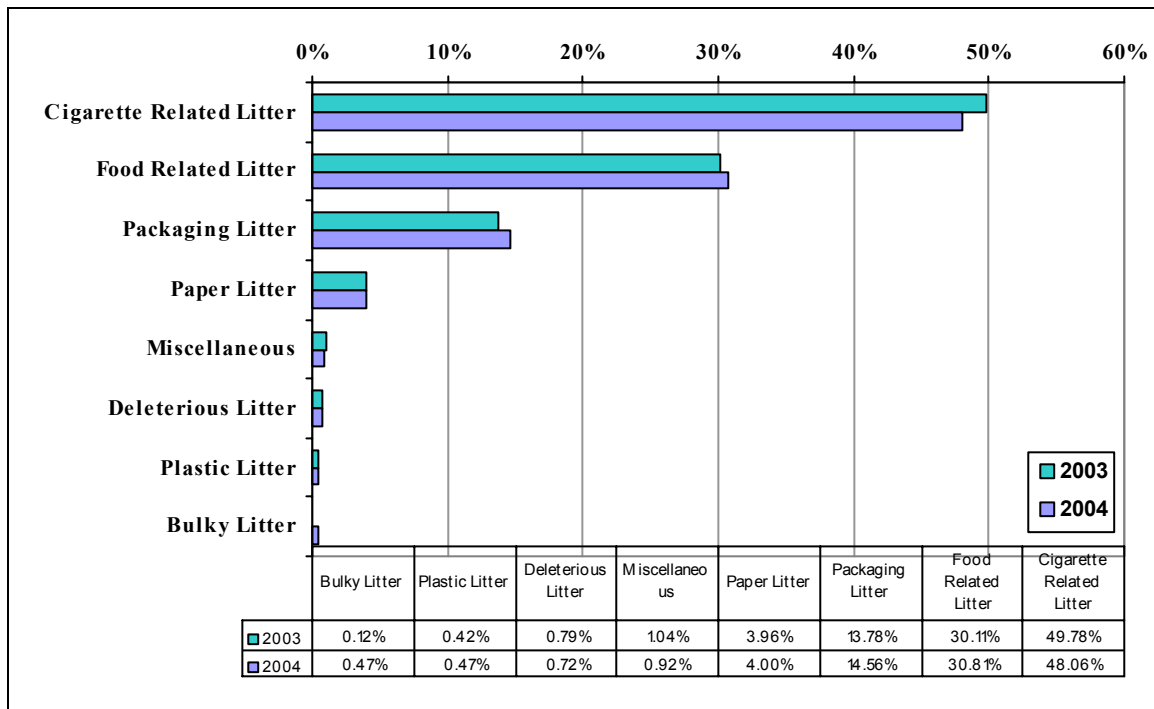


Figure 3-2 Comparison of National Litter Composition from 2003 to 2004

A comparison of the results of Litter Quantification Surveys carried out in 2003 and 2004 shows a similar composition of litter. However, analyses revealed differences in the relative quantities of certain components. The percentages of cigarette related litter has decreased slightly while the percentage of food related litter and packaging litter have both increased slightly. Table 3.1 on the following page details the composition of litter in 2004 and 2003.

Detailed National Litter Composition 2004			Detailed National Litter Composition 2003		
Cigarette Related Litter	Cigarette ends	39.80%	Cigarette ends	40.89%	
	Matches	4.57%	Matches	6.75%	
	Cigarette boxes and wrappers	2.51%	Cigarette boxes and wrappers	1.79%	
	Matchboxes and lighters	1.18%	Matchboxes and lighters	0.35%	
Food Related Litter	Chewing Gum	29.16%	Chewing Gum	28.26%	
	Fast-food remnants	0.48%	Fast-food remnants	0.13%	
	Remnants of confectionery food items	0.43%	Remnants of confectionery food items	0.83%	
	Other food items	0.30%	Other food items	0.40%	
	Bread/ biscuits	0.27%	Bread/ biscuits	0.25%	
	Fruit/ vegetables	0.16%	Fruit/ vegetables	0.24%	
Packaging Items	Other paper packaging	2.29%	Other paper packaging	2.18%	
	Bags and wrappers	2.18%	Bags and wrappers (Takeaway packaging)	2.00%	
	Other plastic packaging	1.63%	Other plastic packaging	1.56%	
	Plastic Bottles	1.00%	Plastic Bottles	1.21%	
	Beverage Cans - Alcoholic	0.82%	Beverage Cans – Alcoholic	0.55%	
	Beverage Cans - Non-alcoholic	0.77%	Beverage Cans - Non-alcoholic	1.08%	
	Drink cups (Takeaway Packaging)	0.72%	Drink cups (Takeaway packaging)	0.70%	
	Drinks cartons (Paper)	0.68%	Drinks cartons (Paper)	0.82%	
	Paper Bags	0.57%	Paper Bags	0.60%	
	Beverage Bottles - Non-alcoholic (Glass)	0.56%	Beverage Bottles - Non-alcoholic (Glass)	0.67%	
	Tin foil (not sweet wrappers)	0.45%	Tin foil (not sweet wrappers)	0.27%	
	Beverage Bottles - Alcoholic	0.45%	Beverage Bottles – Alcoholic (Glass)	0.43%	
	Bags - other (e.g. fertiliser)	0.38%	Bags - other (e.g. fertiliser)	0.12%	
	Lids (e.g. from bottles, jars)	0.31%	Lids (e.g. from bottles, jars) (Metal)	0.12%	
	Plastic film	0.29%	Plastic film	0.34%	
	Other metal litter items	0.23%	Other metal litter items	0.11%	
	Food cans	0.23%	Food cans	0.04%	
	Plastic Shopping Bags	0.22%	Plastic Shopping Bags	0.25%	
	Cardboard	0.18%	Cardboard	0.38%	
	Boxes	0.14%	Boxes	0.12%	
	Aeroboard	0.14%	Aeroboard (Paper)	0.07%	
	Bubble-wrap	0.11%	Bubble-wrap	0.11%	
	Jars and other containers	0.10%	Jars and other containers (Glass)	0.06%	
	Plastic sheeting (e.g. silage)	0.06%	Plastic sheeting (e.g. silage)	0.02%	
Metal drums	0.05%	Metal drums	0.00%		
Paper Items	Other paper items	1.04%	Other paper items	0.63%	
	Tissues	0.98%	Tissues	0.60%	
	Tickets (e.g. bus, lottery)	0.54%	Tickets (e.g. bus, lottery)	0.83%	
	Receipts	0.51%	Receipts	0.89%	
	Bank slips	0.41%	Bank slips	0.51%	
	Newspapers	0.20%	Newspapers	0.24%	
	Flyers and posters	0.20%	Letters, envelopes and cards	0.12%	
	Letters, envelopes and cards	0.07%	Flyers and posters	0.10%	
	Magazines/ brochures	0.06%	Magazines/ brochures	0.06%	
Miscellaneous Deleterious Litter	Miscellaneous Litter Items	0.92%	Miscellaneous Litter Items	1.03%	
	Dog fouling	0.51%	Dog fouling	0.73%	
	Other deleterious items	0.09%	Other deleterious items	0.00%	
	Nappies	0.07%	Nappies	0.03%	
	Municipal Hazardous Waste (e.g. paint, solvents)	0.03%	Municipal Hazardous Waste	0.00%	
	Feminine hygiene products	0.02%	Feminine hygiene products	0.01%	
	Needles and syringes	0.00%	Needles and syringes	0.01%	
Plastic Items	Plastic items	0.47%	Plastic items (Non packaging)	0.42%	
	Household refuse in bags	0.34%	Household refuse in bags	0.03%	
Large Litter Items	Other large items	0.06%	Other large items	0.02%	
	Appliances (e.g. fridge)	0.03%	Appliances (e.g. fridge)	0.00%	
	Scrap cars	0.02%	Scrap cars	0.01%	
	Furniture	0.02%	Furniture	0.06%	

Table 3-1 Detailed Comparison of National Litter Composition, 2003 – 2004

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

The breakdown of causative factors nationally in 2003 and 2004 for all local authorities is presented in Figures 4.1 and 4.2. The greater volume of surveys data available in 2004 confirms the relative ranking of causative factors identified in 2003. The % fluctuations in the comparative data for 2003 and 2004 was expected due to the larger volume of data available in 2004 and therefore is accurately representing the picture on the ground.

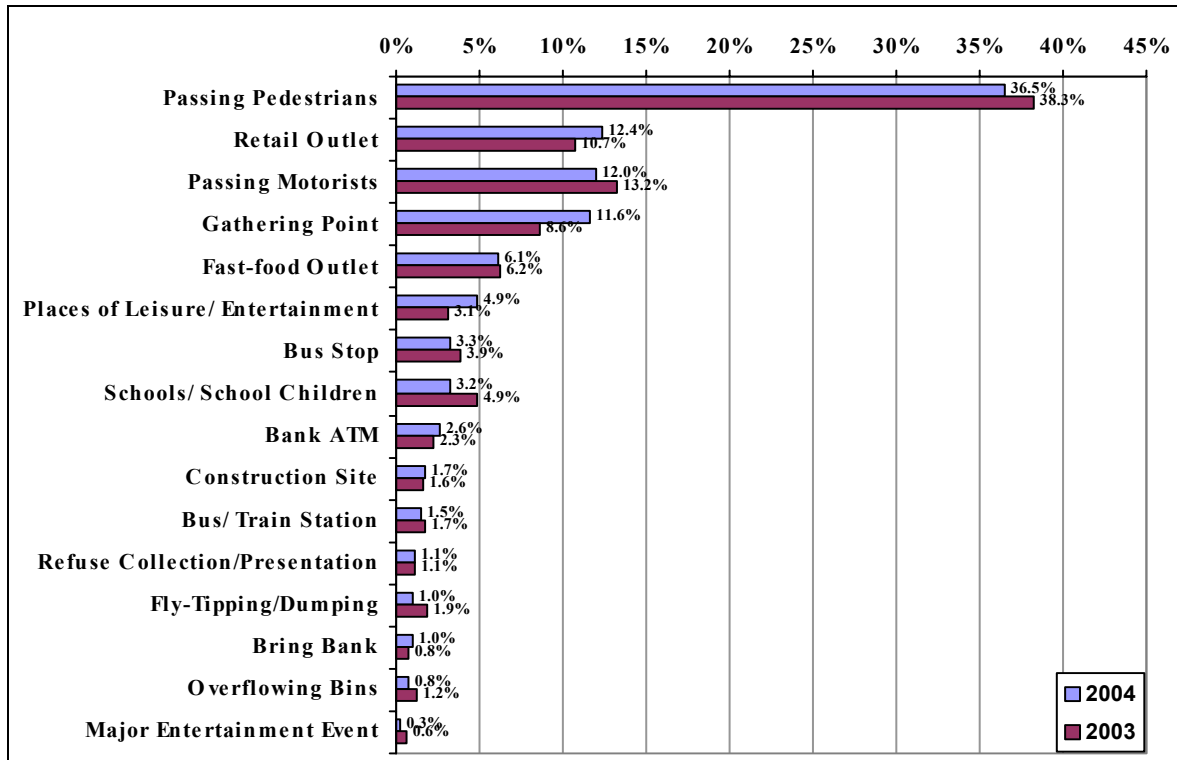


Figure 4-1 Causative Factors of Litter Pollution across all Local Authorities, 2004 compared to 2003

Figures 4.1 (p.11) and 4.2 (p.13) illustrate that:

- ◆ Passing pedestrians continue to constitute the greatest single causative factor of litter pollution, accounting to over 36% across all local authorities.
- ◆ Retail outlets (from 10.7% in 2003 to 12.5% in 2004) and gathering points (from 8.6% in 2003 to 11.5% in 2004) have increased as a causative factor, this is as a result of the Ban on Smoking in the Workplace as more people congregate outside this type of buildings to smoke since the Ban.
- ◆ Passing motorists (11.7%) are the second largest causative factor in County Councils (excluding Dublin), Borough and Town Councils, and City Council's.

During the Litter Pollution Surveys, surveyors are asked for observations on the primary causes of litter pollution. The main causative factors identified in Litter Pollution Surveys carried out in 2004 are set out in Figure 4.1. 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.

Figure 4.1 illustrates that passing pedestrians constituted 36.5% of all causative factors identified in 2004. Litter caused by passing pedestrians is described as “litter that cannot be explained under any of the other categories, but which clearly relates to pedestrians dropping litter while walking along, e.g. fast food outlet, schools/school children etc. Data is therefore compiled on the basis of the most obvious source of litter. The other causative factors are retail outlets, passing motorists and gathering points. Figure 4.1 illustrates an increase in retail outlets, gathering points and places of leisure/entertainment as sources of litter; most likely as a direct result of the Ban on Smoking in the Workplace.

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

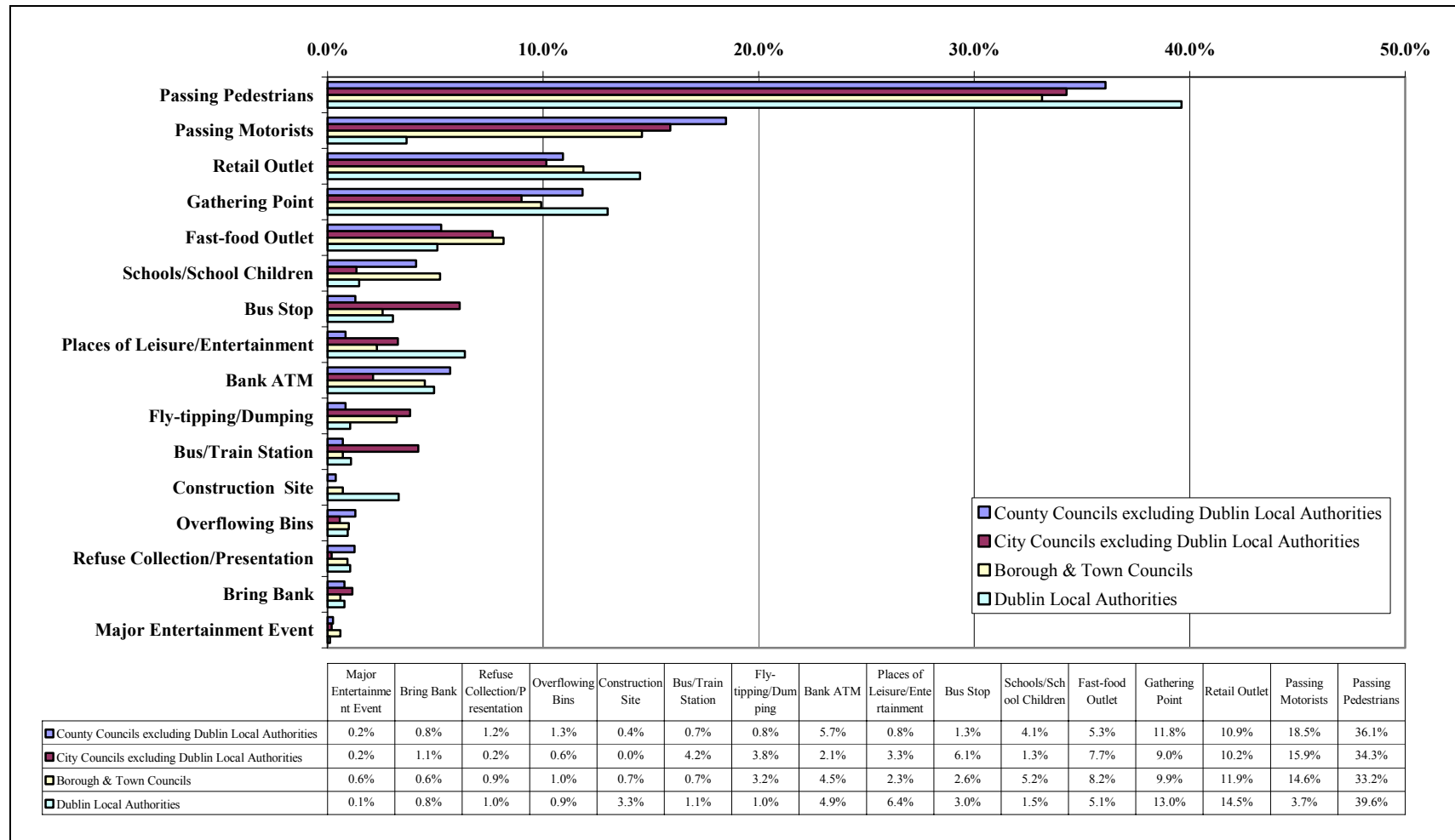


Figure 4-2 Causative Factors of Litter Pollution According to Local Authority Type² (2004)

² Percentages are expressed to one decimal place and therefore totals for each category of local authority may not add to exactly 100%.

The national results, 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 retail outlets, passing motorists, gathering points, fast food outlets, places of leisure/entertainment, bus stops and schools/schools children are significant sources of litter, although not necessarily in that order of ranking for every local authority type. Survey results to date show that the contribution of passing motorists to litter pollution is much greater in county councils than in other local authority types. Retail outlets and gathering points are of greater significance in Dublin local authorities. It is also of note that bus stops and bus/train stations are more significant causes of litter pollution in the Greater Dublin Area and in city council areas than in county and town/borough councils.

At the other end of the scale, surveys have found that major events, bring banks, refuse collection/presentation and overflowing bins are the least significant sources of litter pollution nationwide. This is similar to the 2003 results. By and large, this data indicates that the nature of litter pollution nationwide is rather homogenous, 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 homogenous nature of litter pollution in Ireland is further illustrated by the ranking of the causative factors linked to the level of litter pollution in the locations surveyed – see Figures 4.3 to 4.10 on the following pages. The percentage of causative factors varies with each category of LPI. The data is organised illustrating the 2004 and 2003 graphs under each litter pollution index (on the same page) so that comparison of 2003 and 2004 results is easily made.

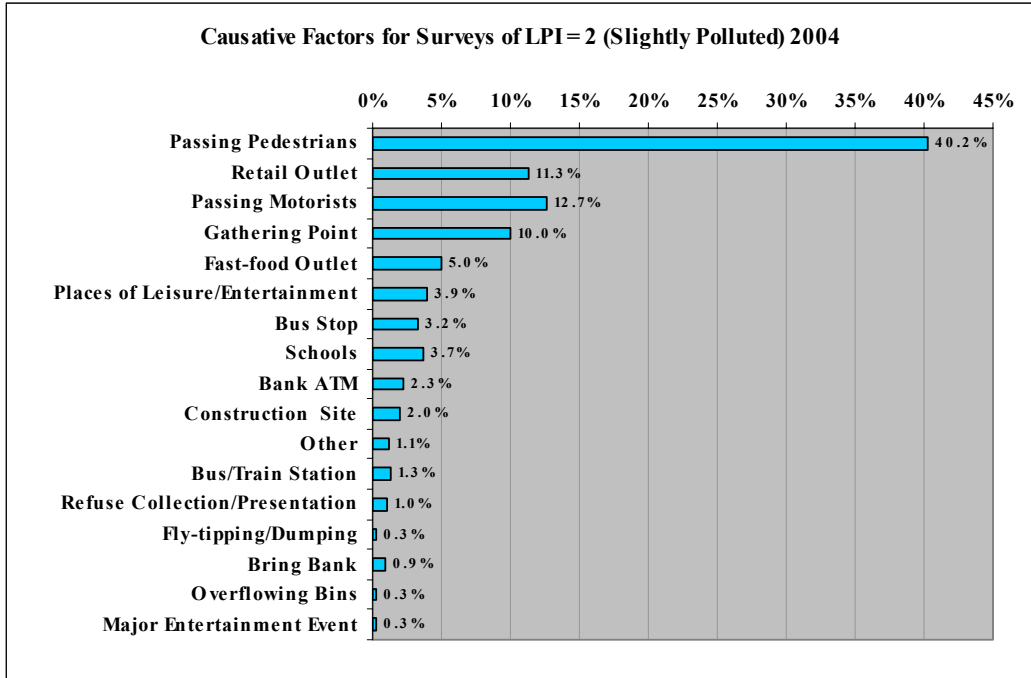


Figure 4-3 Comparison of causative factors of litter pollution within Litter Pollution Index category 2, 2004

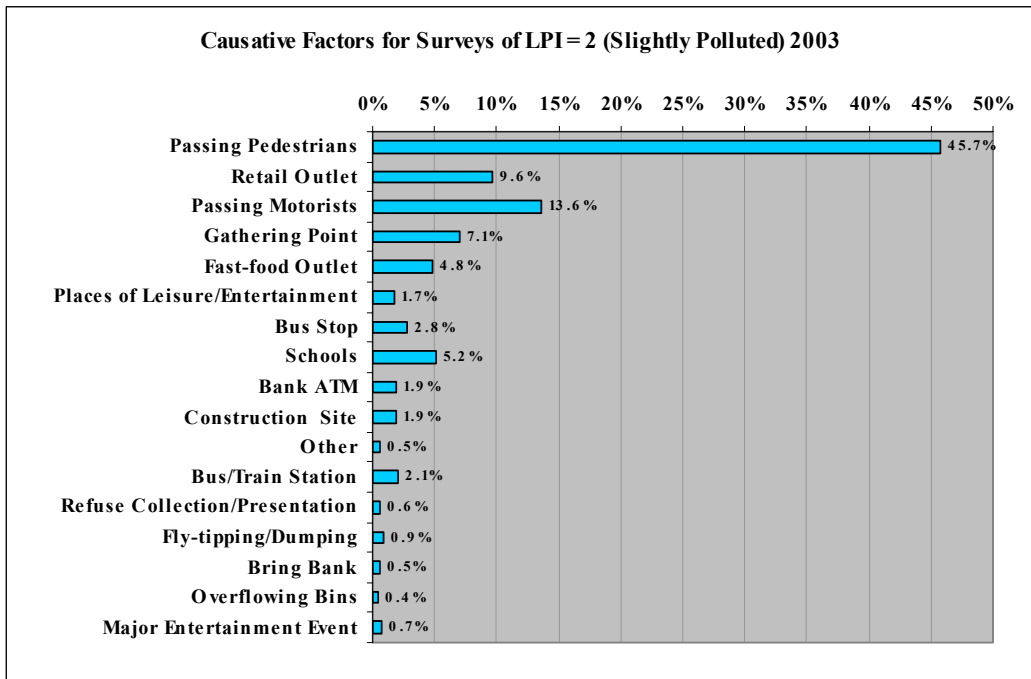


Figure 4-4 Comparison of causative factors of litter pollution within Litter Pollution Index category 2, 2003

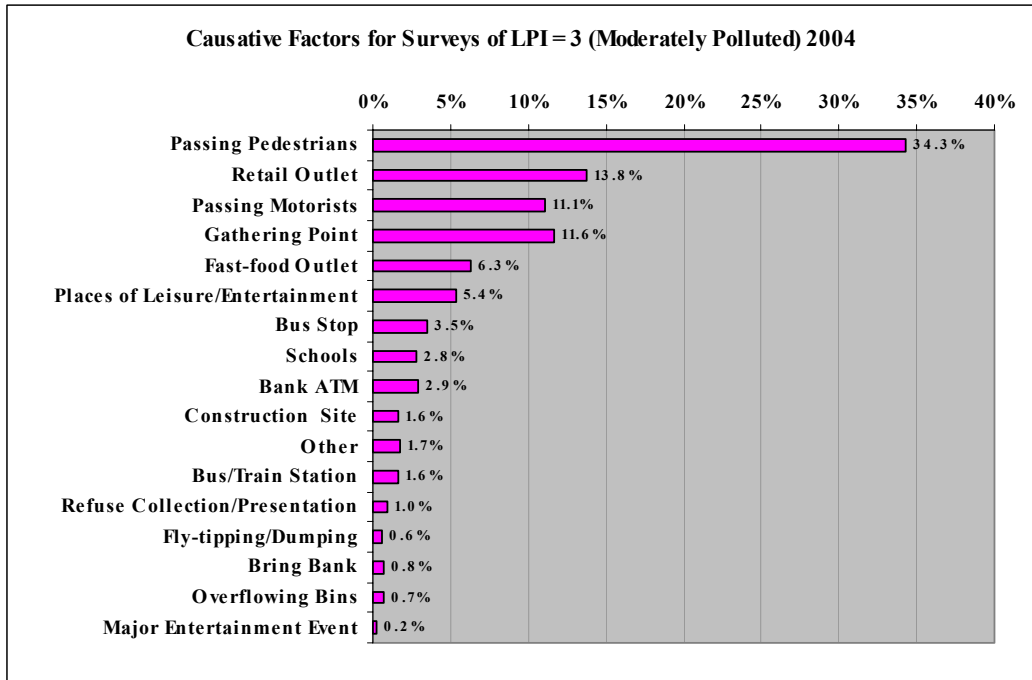


Figure 4-5 Comparison of causative factors of litter pollution within Litter Pollution Index category 3, 2004

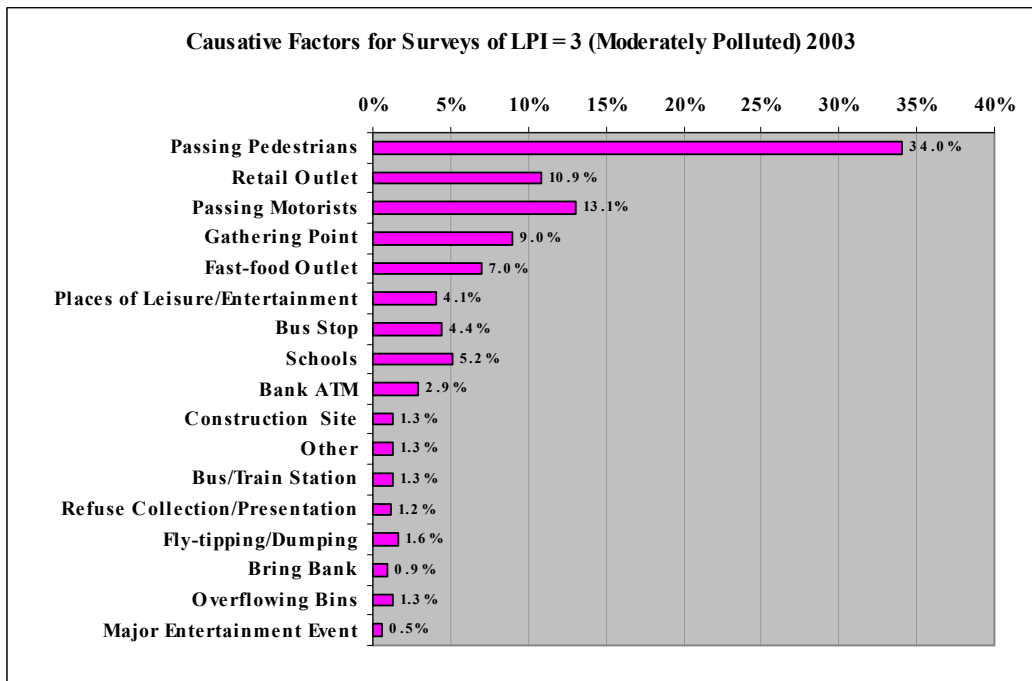


Figure 4-6 Comparison of causative factors of litter pollution within Litter Pollution Index category 3, 2003

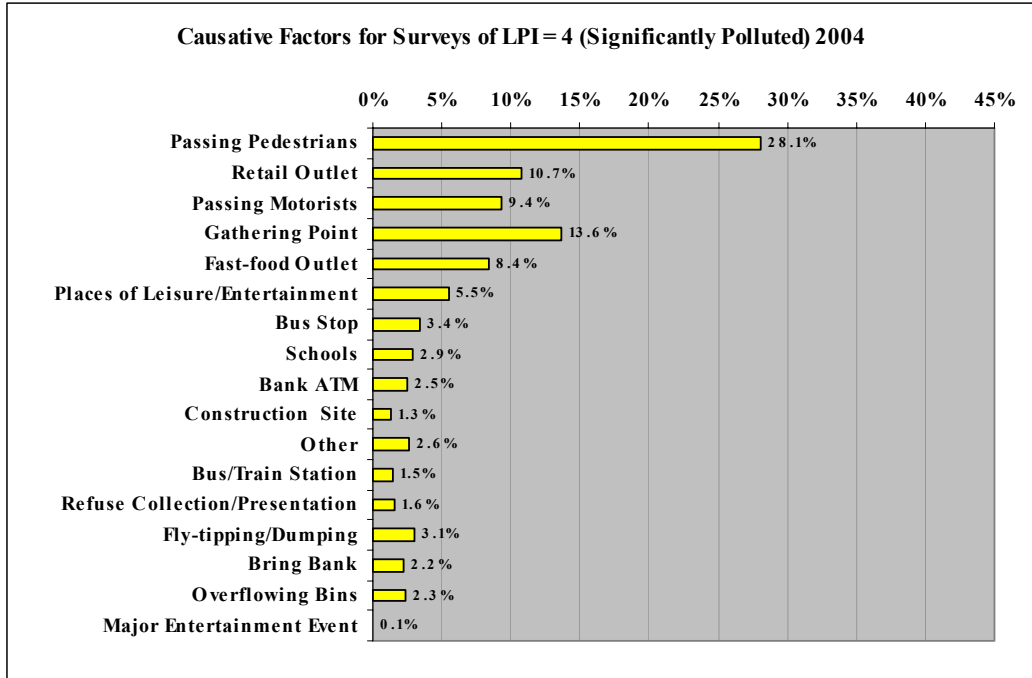


Figure 4-7 Comparison of causative factors of litter pollution within Litter Pollution Index category 4, 2004

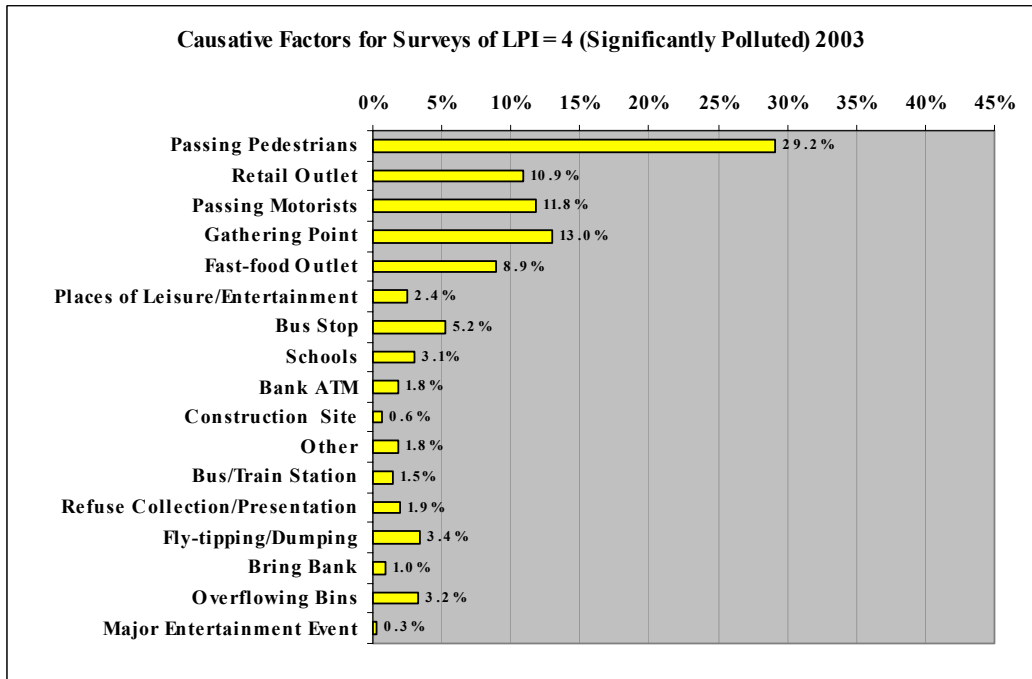


Figure 4-8 Comparison of causative factors of litter pollution within Litter Pollution Index category 4, 2003

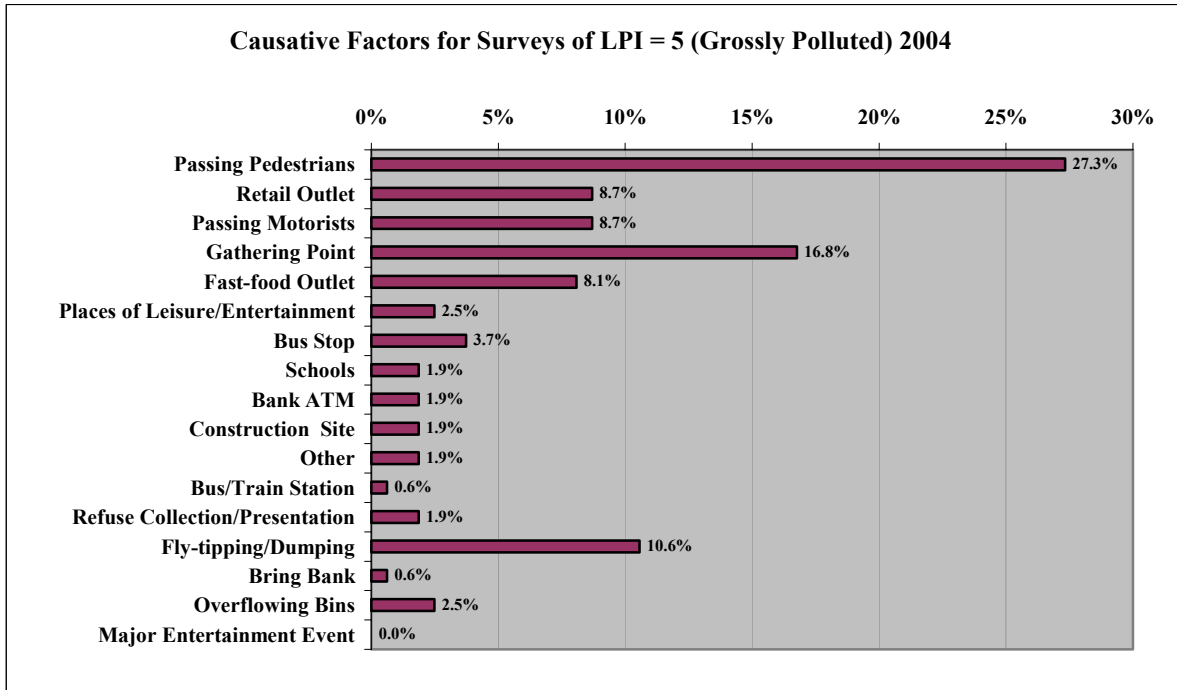


Figure 4-9 Comparison of causative factors of litter pollution within Litter Pollution Index category 5, 2004

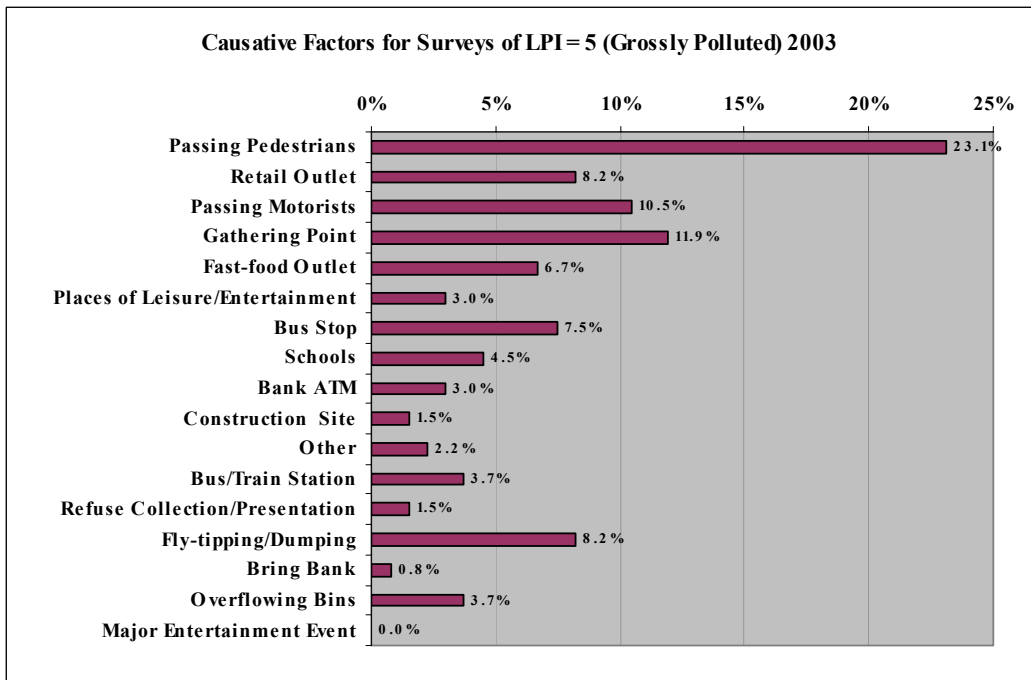


Figure 4-10 Comparison of causative factors of litter pollution within Litter Pollution Index category 5, 2003

In each category of LPI, passing pedestrians constituted the most significant causative factor of litter pollution. Figures 4.3 – 4.10 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, passing pedestrians constituted 40.2% of all causative factors in litter pollution surveys of slightly littered (LPI 2) areas; this percentage decreased to 27.3% as the severity of litter pollution in the surveyed areas reached the maximum ranking of grossly polluted (LPI 5). As the severity of litter pollution increases, other causative factors such as gathering points, retail outlets, passing motorists and fly-tipping/dumping become more predominant.

Gathering points, retail outlets and places of leisure/entertainment as causative factors have increased as sources of litter in most instances in all LPI categories, which can be affiliated to the Ban on Smoking in the Workplace.

In the slightly and moderately polluted categories (LPI 2 and 3 respectively), retail outlets passing motorists, and gathering points were significant causes of litter pollution, this is a similar trend to the 2003 results. In the significantly and grossly polluted categories (LPI 4 and 5), causative factors such as fast food outlets and gathering points became more apparent. In the grossly polluted category (LPI 5), incidents of fly-tipping and dumping contributed more to litter pollution (10.6% of causative factors) than in any other category. Gathering points as a causative factor constituted 16.8%, the second largest causative factor in this category.

Figure 4.11 (p.20) compares the causes of litter within urban and rural local authorities. Passing pedestrians are the single greatest cause of litter in both urban and rural areas, this is similar to the 2003 results. Passing motorists are a significant causative factor in rural area constituting 18.5%, this is not as significant a causative factor in urban areas constituting only 8.9%. The Litter Monitoring Body will examine this again next year to monitor if a trend is apparent. Bus stops area a greater causative factor of litter pollution in urban areas.

Figure 4.12 (p.21) 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 Limerick City and Galway City. Overall, the causes of litter pollution vary greatly with each category of urban area. Passing pedestrians constitute the largest causative factor of litter pollution in Dublin local authorities. In addition retail outlets and bus stops are a greater causative factor of litter pollution in the Dublin local authorities. Passing motorists and Bank ATMs are of greatest significance in the ‘Other City Councils’ category of urban areas.

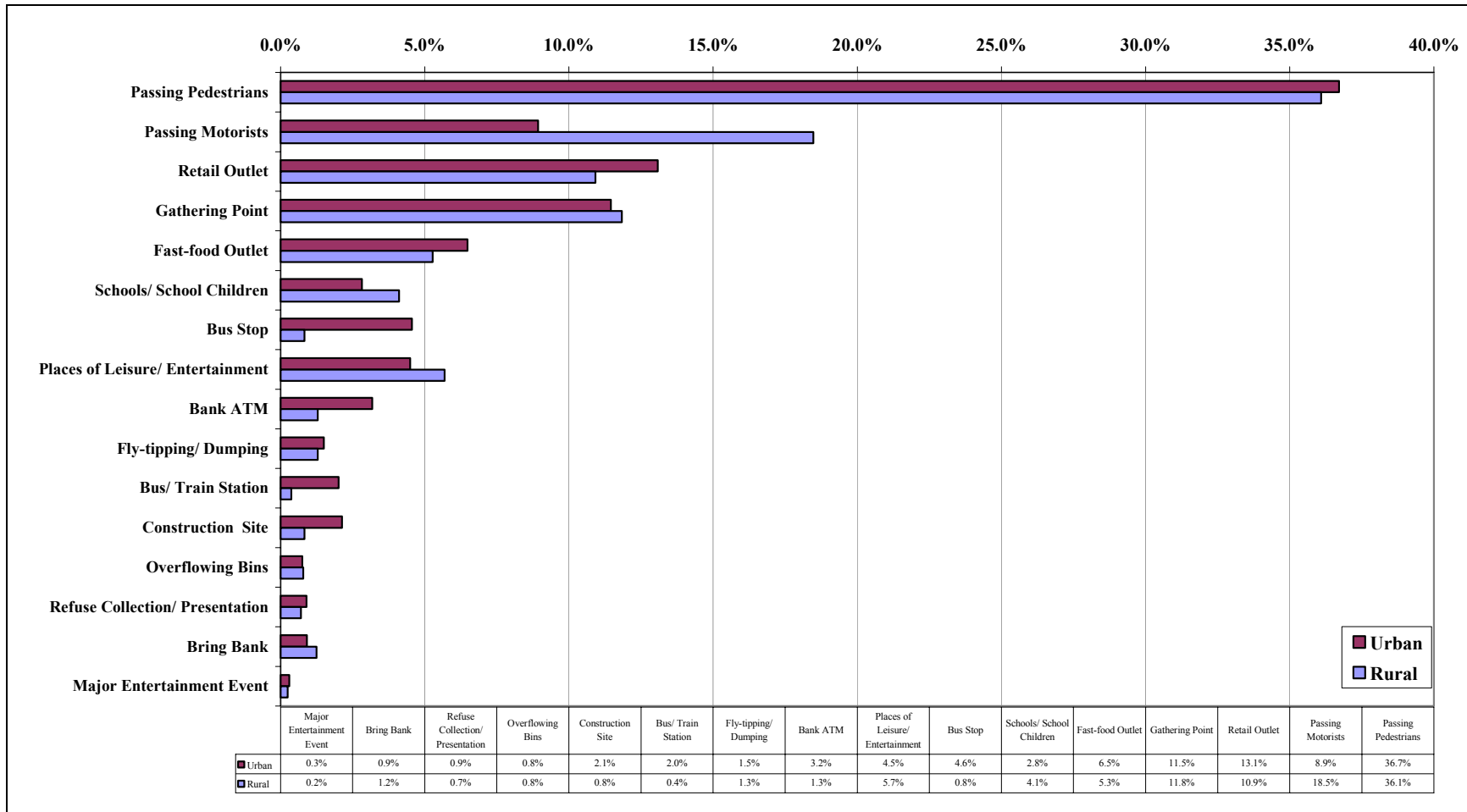


Figure 4-11 Comparison of Causative Factors in Urban and Rural Councils (2004)

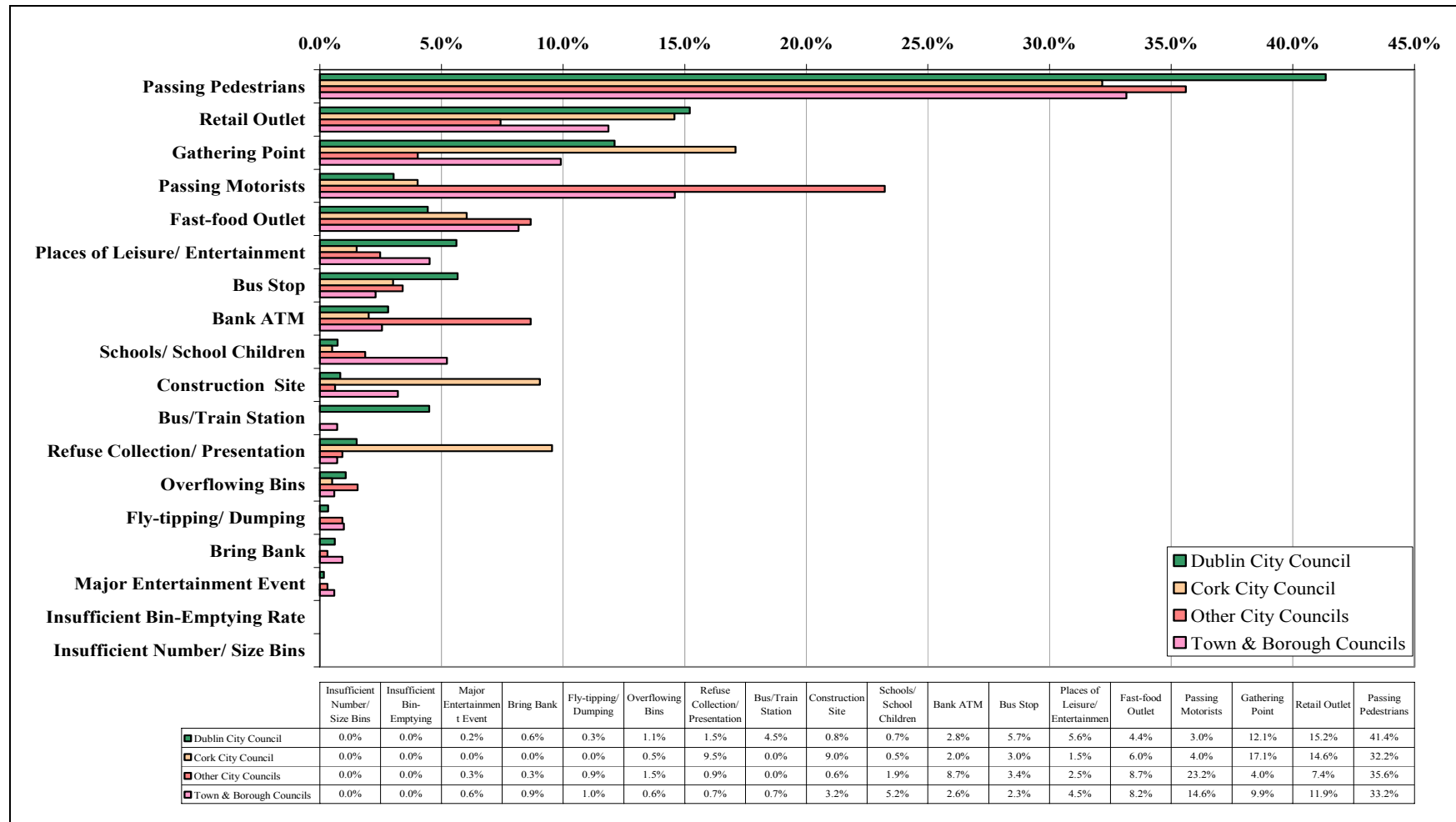


Figure 4-12 Comparison of Causative Factors of Litter Pollution within Urban Areas³ (2004)

³ Percentages are expressed to one decimal place and therefore totals for each category of local authority may not add to exactly 100%.

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 48 out of 90 local authorities have been returned to the Litter Monitoring Body and analysed for 2004 - those local authorities are detailed in Appendix I.

Comparison of the 2004 litter pollution surveys data for the different categories of local authorities is examined in Figures 5.1, 5.2, 5.3 and 5.4.

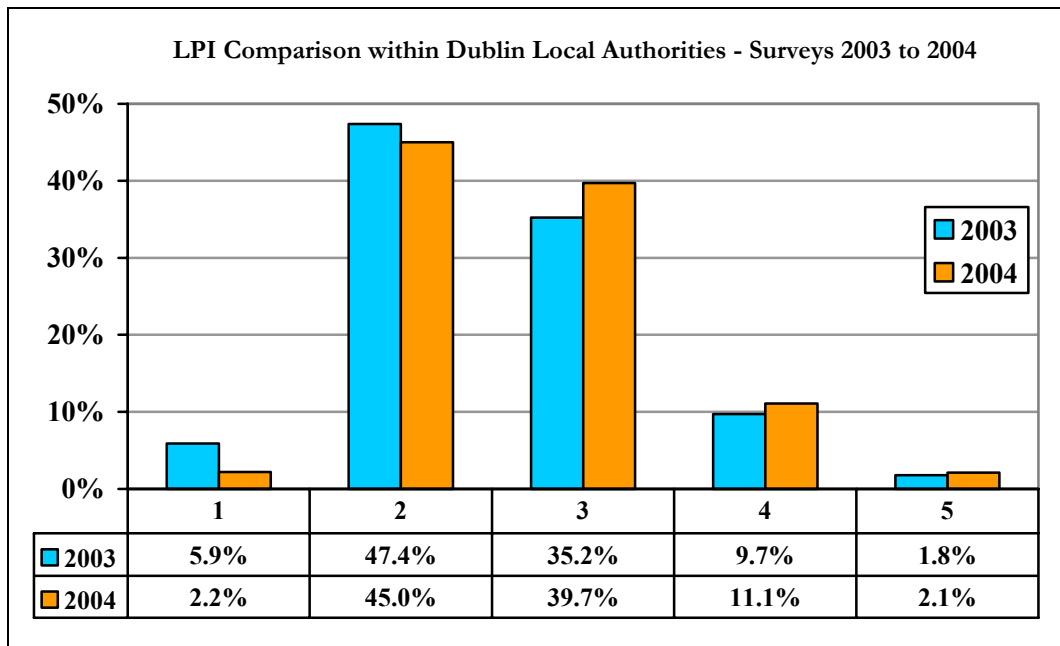


Figure 5-1 Comparison of Litter Pollution Indices (LPI) within Dublin Local Authorities 2003 – 2004

Comparative data for the Dublin local authorities as presented in Figure 5.1, clearly shows a different trend to the national trend in the percentage of unpolluted areas (LPI 1). The percentage for other litter pollution indices remains similar to that of the national data.

The percentage of unpolluted areas has decreased from 5.9% to 2.2% in this area. This is mainly due to the increase in food related litter in all Dublin local authority areas; which has increased to as much as over 35% in South Dublin County Council. This is largely due to an increase in chewing gum litter.

The incidence of cigarette related littering has increased by 16.82% when a count of cigarettes in Dublin local authorities is compared between 2003 and 2004. See Table 6.1 on pg. 34 for a detailed analysis. However the percentage of cigarette related litter has slightly decreased overall.

There is a slight decrease in the percentage of slightly polluted areas (LPI 2) and an increase in the percentage of moderately polluted areas (LPI 3) and significantly polluted (LPI 4) areas.

Comparative data for the Dublin local authorities as presented in Figure 5.1 above, indicate that there is a slight disimprovement in 2004. This is indicated by a decrease in unpolluted areas (LPI 1) from 5.9% in 2003 to 2.2% in 2004.

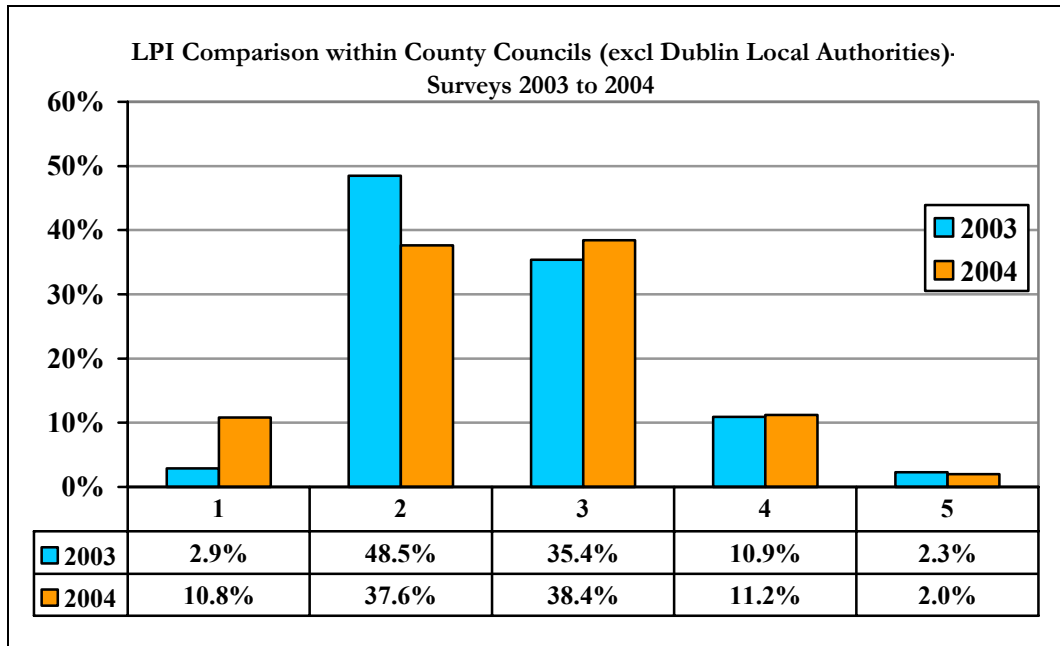


Figure 5-2 Comparison of Litter Pollution within County Councils 2003 to 2004

The change in the extent of litter pollution within County Councils from 2003 to 2004 is similar to the national trend. The percentage of unpolluted areas (LPI 1) has increased. The percentage of slightly polluted (LPI 2) areas has decreased and the percentage of grossly polluted areas (LPI 5) has also decreased slightly. The large increase in unpolluted areas is due to the fact that in 2004, 28 county councils submitted litter pollution survey data compared to 17 in 2003. Accordingly figure 5.2 above reflects a more accurate picture for the level of litter pollution in county council areas.

Overall the severity of litter pollution in the county council areas for 2004 has decreased significantly with a substantial increase in unpolluted areas (LPI 1) from 2.9% in 2003 to 10.8% in 2004.

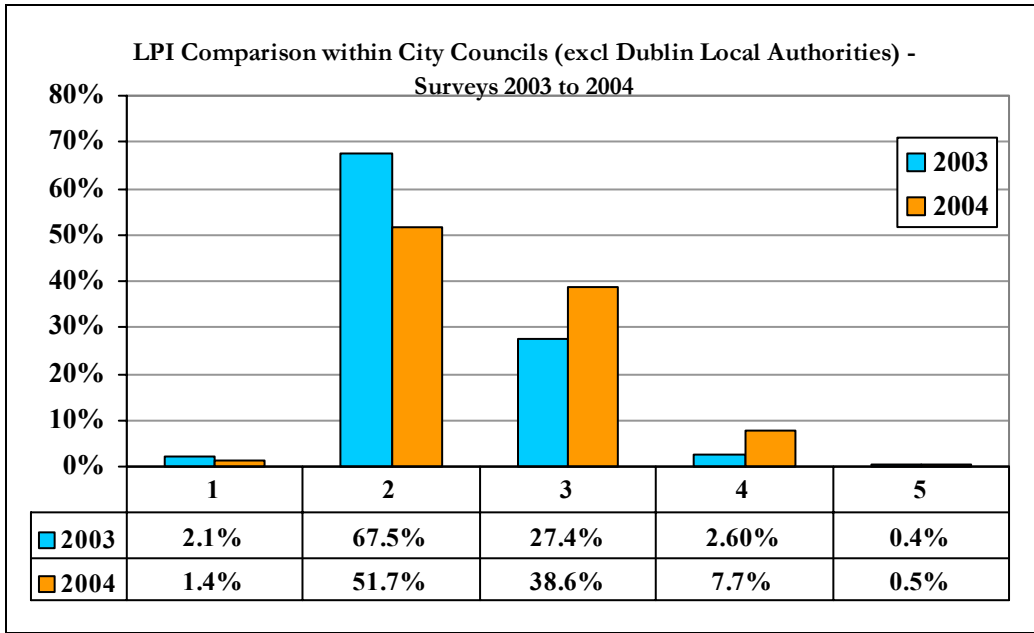


Figure 5-3 Comparison of Litter Pollution within City Councils 2003 to 2004

In Figure 5.3 above, survey results indicate that the profile of litter pollution within city councils (excluding Dublin) varies slightly from the national pattern. The percentage of unpolluted (LPI 1) areas has decreased from 2.1% in 2003 to 1.4% in 2004. The percentage of slightly polluted (LPI 2) areas has decreased and the percentage of moderately polluted (LPI 3) areas has increased. The decrease in the percentage of unpolluted (LPI 1) and slightly polluted (LPI 2) areas is a result of the Ban on Smoking in the Workplace, which was expected to hit hardest in the larger urban areas where premises affected by the Ban are most concentrated. It is also due to the increase in food related litter in City Council areas, which is largely as a consequence of an increase in chewing gum litter.

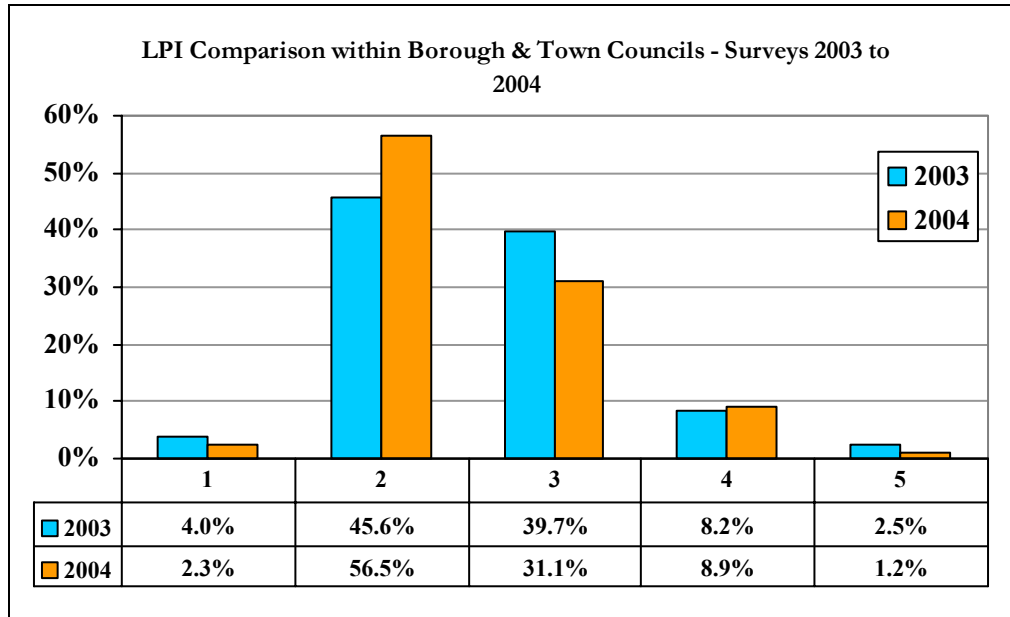


Figure 5-4 Comparison of Litter Pollution within Borough & Town Councils 2003 to 2004

As indicated by Figure 5.4 above, the severity of litter pollution has decreased in Town and Borough Councils from 2003 to 2004. Despite a decrease in unpolluted (LPI 1) areas of 1.7%, there has been a 10.9% increase in the percentage of slightly polluted areas (from 45.6% in 2003 to 56.5% in 2004). The percentage of grossly polluted (LPI 5) areas has decreased from 2.5% in 2003 to 1.2% in 2004.

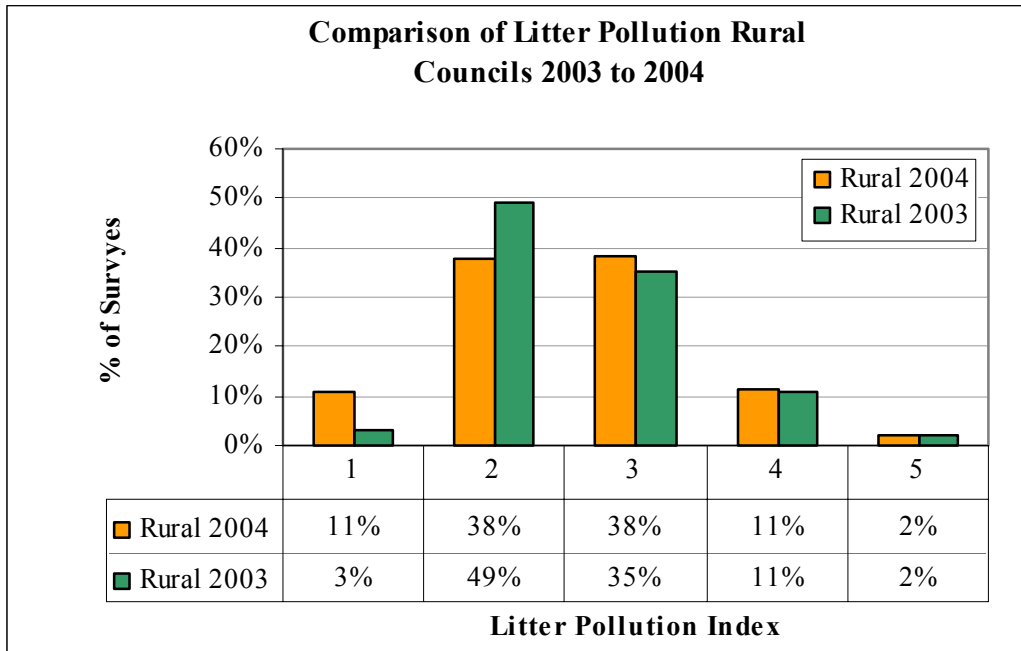


Figure 5-5 Comparison of litter pollution in Rural area 2003 to 2004

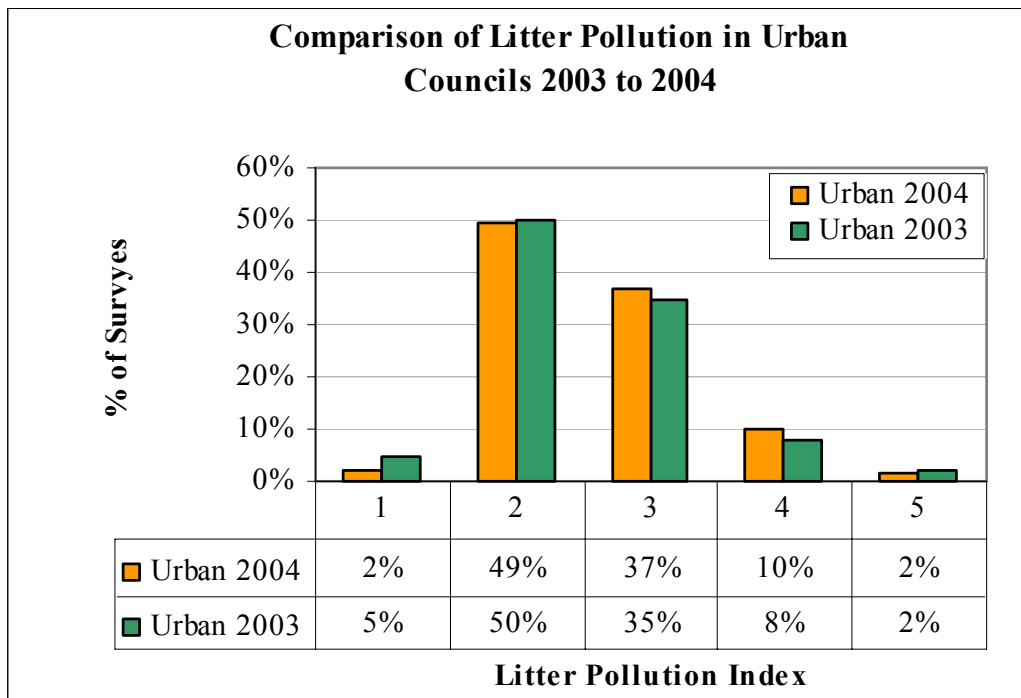


Figure 5-6 Comparison of litter pollution in Urban area 2003 to 2004

Figure 5.5 on the previous page shows a significant increase in unpolluted areas (LPI 1) in rural areas from 3% in 2003 to 11% in 2004. Figure 5.6 on the previous page illustrates a decrease in unpolluted areas (LPI 1) from 5% in 2003 to 2% in 2004. This is as a consequence of the Ban on Smoking in the Workplace leading to greater cigarette related incidence (see Table 6.1 on page 34) and the increase in food related litter in urban areas.

The increase in unpolluted areas (LPI 1) in rural regions from 3% in 2003 to 11% in 2004 is as a consequence of the increased number of surveys returned from county council areas in 2004 (28) compared to (17) in 2003. The Litter Monitoring Body will assess this trend in the coming years survey results.

The extent of litter pollution in moderately polluted (LPI 3), significantly polluted (LPI 4) and grossly polluted (LPI 5) areas remains similar in 2003 and 2004 in both urban and rural regions.

CHAPTER 6: THE IMPACT OF THE BAN ON SMOKING IN THE WORKPLACE

The results of litter quantification surveys can be used to examine trends in cigarette related litter since the introduction of the Ban on Smoking in the Workplace in Ireland as part of the Public Health (Tobacco) Act, 2002 (Section 47) Regulations. Figure 6.1 below compares the percentage of litter items that are cigarette related (and each of the components of this litter type) from 2003 to 2004.

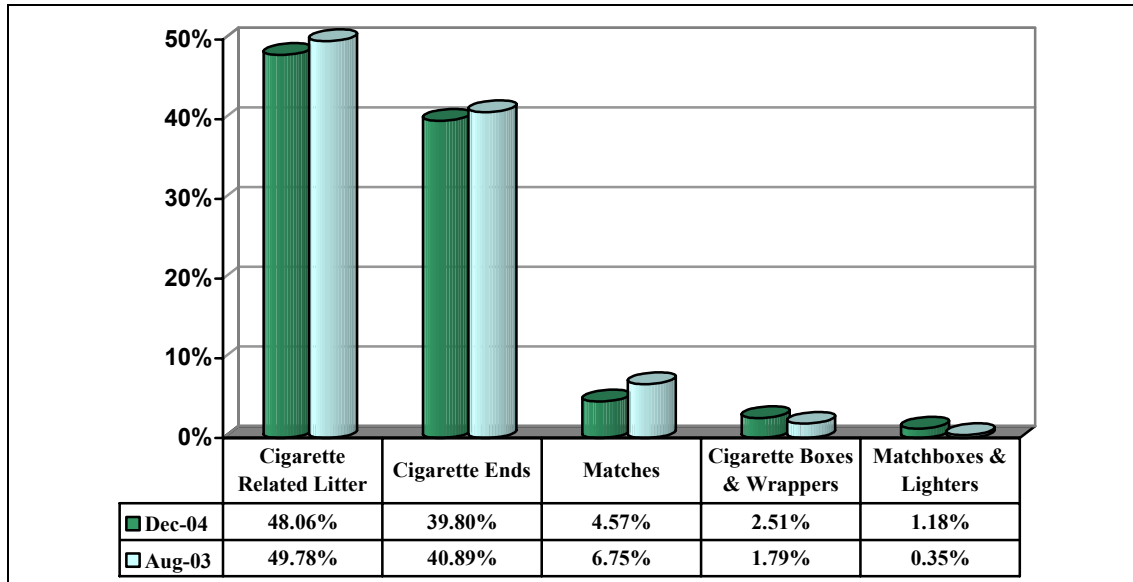


Figure 6-1 Cigarette related litter items as a percentage of National Litter Composition

The survey data on which this report is based was obtained from litter quantification surveys carried out in 2004 **after** the implementation of the Ban on Smoking in the Workplace. Figures 3.1 and 3.2 (on page 7 and 8) show that cigarette related litter has decreased slightly by 1.72%, and it can be seen from Table 3.1 (on page 9) that this is due to a reduction in the proportion of cigarette ends and matches being littered. **However when comparing the incidence of cigarette related; that is the count of cigarette related litter from 2004 to 2003 in the Dublin local authorities, this shows a 16.8% increase in the number of cigarette related litter dropped in 2004.** See Table 6.1 page 34 for a more detailed analysis.

Figure 6.1 is explained further by a number of factors.

- Firstly, litter quantification survey results were submitted by 58 local authorities in 2004, compared to 34 in 2003.
- Secondly, gathering points as a causative factor have become more significant (see Figure 4.1), and comments on the litter pollution survey forms indicate that cigarette related litter is concentrated at these locations.

- Litter quantification surveys were carried out at a range of locations, some of which were gathering points and other areas that may be less concentrated in cigarette related litter.
- In addition, figures from the “Smoke Free at Work” website indicate that there are 7,000 fewer smokers since the ban on smoking in the workplace has been introduced.
- In relation to other categories of litter, **there were significant increases in the percentage of food related litter experienced from 2003 to 2004 in City Council, Town Council and Dublin local authorities.** Figure 6.2 below illustrates the percentages of cigarette related litter in Dublin local authorities for 2003 and 2004.

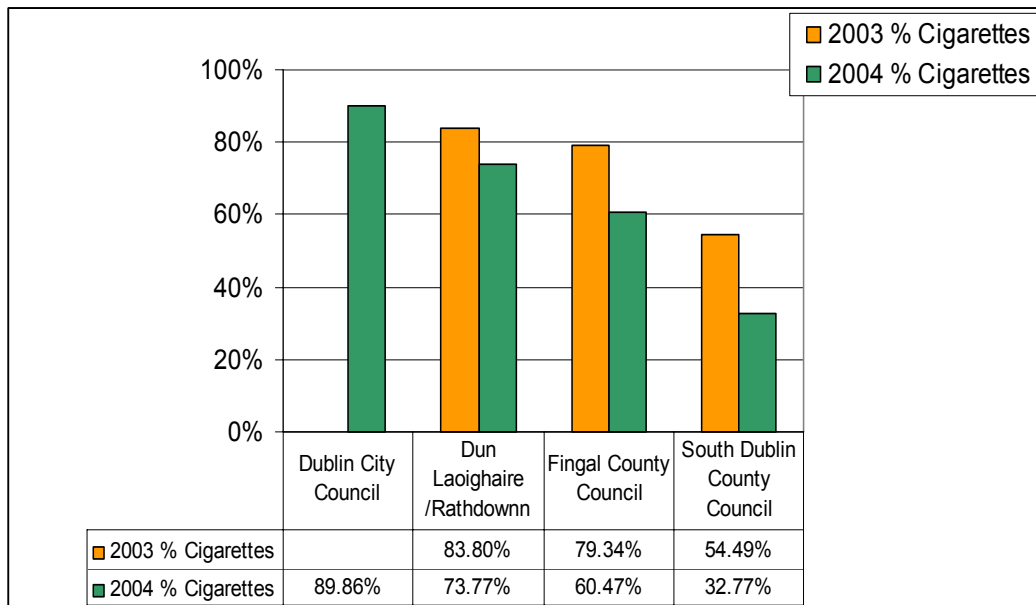


Figure 6-2 Cigarette related litter items in Dublin local authorities, 2004 compared to 2003

6.1 A Detailed examination of cigarette related litter in the Dublin local authorities

It is apparent that the percentage of cigarette related litter in Dublin local authorities has decreased from 2003 to 2004. However the percentage of cigarette related litter still constitutes over 60% of litter in all local authorities with the exception of South Dublin County Council. This decrease is attributed in a large part to the increase in the percentage of food related litter especially in South Dublin Council with an increase of over 35% in food related litter from 2003 to 2004, which is mainly due to chewing gum litter.

Dublin City Council

A comparison of the 2004 to 2003 is unavailable as litter quantification results were not completed in Dublin City Council for 2003. Local authority staff from Dublin City Council has indicated that cigarette receptacles are located on about 50% of business in Dublin City Council area and that this number has increased dramatically since the Ban on Smoking in the Workplace. Dublin City Council has also increased the number of cleaning personnel on the street especially in the evening shift.

Dun Laoighaire Rathdown County Council

Figure 6.2 above illustrates that the percentage of cigarette related litter in 2004 has decreased to 73.77% from 83.80% in 2003. The percentage is still quite high compared to other litter items. This may be due to a number of reasons, food related litter has increased by over 5%. In addition a number of cigarette related litter initiatives to tackle this component of litter has been introduced since the Ban on Smoking. Dun Laoighaire Rathdown County Council has introduced initiatives for publicans for monitoring cigarette litter outside their premises. Prizes are given to the most litter free areas outside public houses; this ensures that publicans are aware of their requirements to clean outside their premises.

Local authority staff from Dun Laoighaire Rathdown County Council have indicated that cigarette litter has increased outside pubs and restaurants since the Ban on Smoking in the Workplace.

Fingal County Council

Figure 6.2 on page 32 illustrates that the percentage of cigarette related litter in 2004 has decreased to 60.47% from 79.34% in 2003. This may be due to the fact that food related litter has increased by over 15% in Fingal County Council area. This is mainly attributed to an increase in chewing gum litter. Fingal County Council has introduced a number of cigarette related initiatives to tackle this component of litter since the Ban on Smoking including new awareness campaigns relating to cigarette related litter and the introduction of new bins in Swords with cigarette receptacles.

South Dublin County Council

Figure 6.2 on page 32 illustrates that the percentage of cigarette related litter in 2004 has decreased to 32.77% from 54.49% in 2003. The fact that food related litter has increased by over 35% in South Dublin County Council area may be a contributing factor to the decrease in the percentage of cigarette related litter.

Local authority staff from South Dublin County Council has suggested that cigarette litter has increased outside pubs and restaurants since the Ban on Smoking in the Workplace.

In relation to the incidence (the count) of cigarette related litter, the number of cigarette related litter counted in the Dublin local authority areas has increased from 5192 in 2003 to 6242 in 2004, see Table 6.1 below. **This equates to a 16.8% increases in the incidence of cigarette related litter in 2004 in the Dublin local authorities.**

This illustrates that although the percentage of cigarette related litter has fallen, the incidence of cigarette related litter has increased substantially as a result of the Ban on Smoking in the Workplace.

Table 6-1 Count of Cigarette Related litter in Dublin Local Authority Areas

Dublin Local Authorities Count of Litter	2004	2003
Fingal County Council	4220	3206
Dun Laoighaire Rathdown County Council	1195	1319
South Dublin County Council	827	667
Total	6242	5192

6.2 The Increase in Food Related Litter Across all Dublin Local Authorities

The increase in food related litter is apparent across all Dublin local authorities. See Figure 6.3 below.

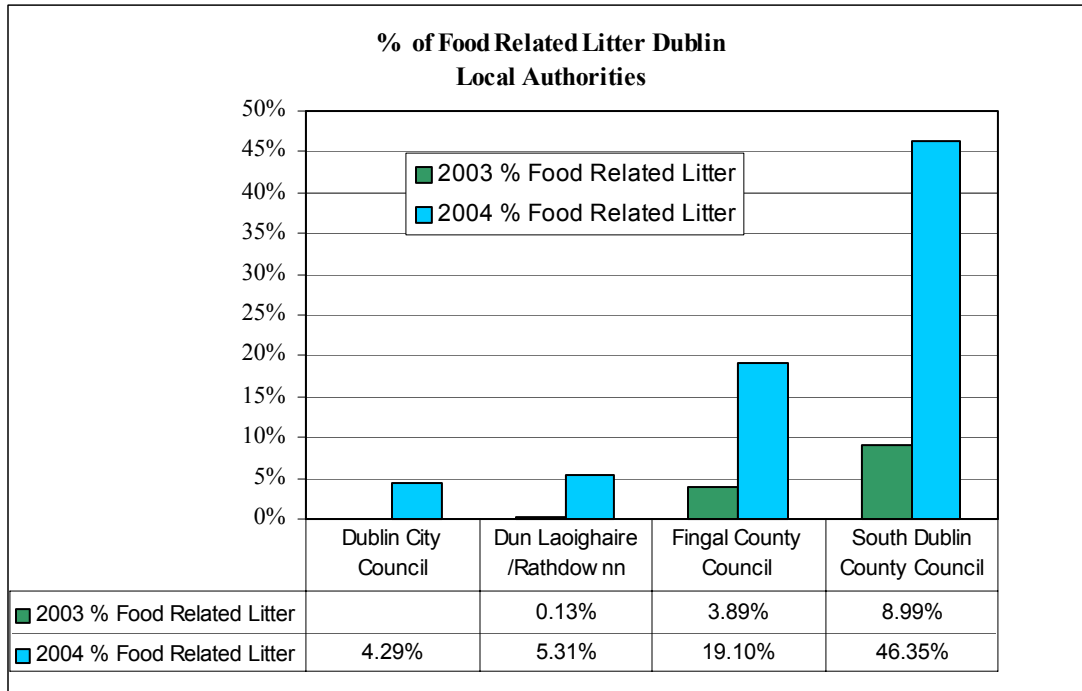


Figure 6-3 Food related litter items in Dublin local authorities, 2004 compared to 2003

It is apparent from Figure 6.3 above that food related litter has increased in all Dublin local authority areas. The main component of food related litter is chewing gum litter. The Dublin local authorities were not able to explain why this was the case, except that as more people are giving up smoking since the Ban on Smoking, perhaps they are chewing gum instead.

See Appendix III for a detailed account of litter composition across all local authority types.

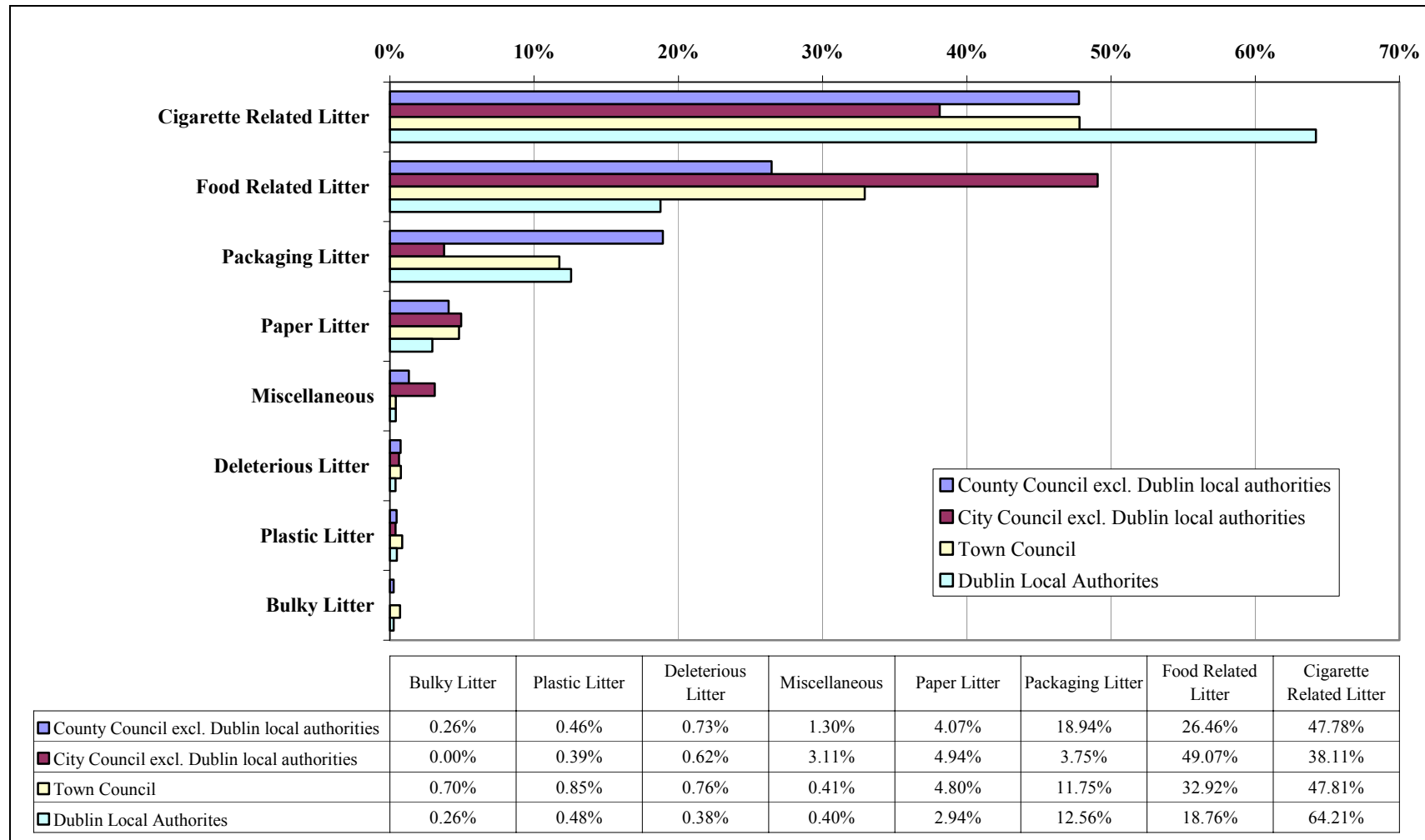


Figure 6-4 Comparison of Litter Composition between Local Authority Types (2004).⁴

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

Figure 6.4 on the previous page compares litter composition according to local authority type. Results from Dublin Local Authorities (Dublin City Council, Fingal, Dun Laoghaire Rathdown and South Dublin County Councils) are not included in the City Council and County Council categories. **Cigarette related litter has remained a greater component of litter in Dublin Local Authorities than in other local authority types.** Of note is that food related litter is a significantly greater component of litter in city councils (at 49.07%) than other local authority types. This is due to a high proportion of chewing gum litter in City Councils (46%). Packaging litter is more significant in county councils than in other local authority types. This is not attributed to any one individual packaging item in particular, but to an overall increased level of littered packaging items in county councils areas.

It is apparent from figure 6.4 on the previous page that the composition of litter is similar across local authority types with some variances from the national trend being noted. Cigarette and food related litter are the highest components of litter in all local authority types with bulky litter contributing to the lowest percentage of litter in all local authority types.

CHAPTER 7: CONCLUSION

This survey confirms the homogeneity of the litter problem nationally. The data reveals that the extent and severity, the constituent components, and the causative factors of litter pollution remain relatively constant across all local authority types from 2003 to 2004. The Litter Monitoring Body would expect these trends to continue into 2005 and subsequent years in all local authorities carrying out surveys of their areas.

Retail outlets, gathering points and places of leisure/entertainment have increased as causative factors in all LPI categories, this is due to the Ban on Smoking in the Workplace as these are the type of places people congregate to smoke since the introduction of the Ban. In the grossly polluted category (LPI 5), incidents of fly-tipping and dumping contributed to litter pollution more significantly than in any other category. In addition gathering points increases as a causative factor in the grossly polluted category.

The substantial increase in the number of local authorities carrying out litter pollution and litter quantification surveys in 2004 (61) compared to 34 in 2003 provides a fuller picture of the nature and extent of litter pollution nationally and provides more complete data to track the trends at national and local level that have been identified by the National Litter Pollution Monitoring System.

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

- ◆ Further monitoring of the Impact of the Ban on Smoking in the Workplace on litter, (see chapter 6);
- ◆ From 2005, the survey data will be readily able to reveal the impact of the introduction of the “Pay-by-Weight” charges from 1st of January 2005 on litter; (fly tipping etc); and
- ◆ For 2005 and subsequent years, the use of the National Litter Pollution Monitoring System to measure the impact of litter item subject to negotiated agreements, these include proposals for a tax on automated teller machine (ATM) receipts, chewing gum and fast food packaging.

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APPENDIX I
DETAILS OF LOCAL AUTHORITIES THAT CARRIED OUT SURVEYS IN 2004

Litter Quantification Survey Results

Litter Quantification Survey results for 58 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2004. These are detailed in Table A-1.

Table A-1 Local Authorities that Submitted Litter Pollution Survey Results for 2004

County Councils
Carlow County Council
Cavan County Council
Donegal County Council
Dun Laoghaire Rathdown County Council
Fingal County Council
Kerry 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 Tipperary County Council
Offaly County Council
Roscommon County Council
Sligo County Council
South Cork County Council (Rural)
South Cork County Council (City)
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
Galway City Council
Limerick City Council
Drogheda Borough Council
Kilkenny Borough Council
Sligo Borough Council
Wexford Borough Council

Town Councils
Arklow Town Council
Birr Town Council
Bray Town Council
Carlow Town Council
Carrickmacross Town Council
Castleblayney Town Council
Cavan Town Council
Clones Town Council
Dundalk Town Council
Dungarvan Town Council
Enniscorthy Town Council
Kells Town Council
Longford Town Council
Monaghan Town Council
Navan Town Council
Nenagh Town Council
New Ross Town Council
Templemore Town Council
Thurles Town Council
Trim Town Council
Tullamore Town Council
Wicklow Town Council

Litter Pollution Survey Results

Litter Pollution Survey results for 48 out of 90 local authorities were returned to the Litter Monitoring Body and analysed for 2004. These are detailed in Table A-2.

Table A-2 Local Authorities that Submitted Litter Quantification Survey Results for 2004

County Councils
Carlow County Council
Cavan County Council
Dun Laoghaire Rathdown County Council
Fingal County Council
Galway County Council
Kerry 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
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
City Councils
Cork City Council
Dublin City Council
Galway City Council
Limerick City Council
Drogheda Borough Council
Kilkenny Borough Council
Sligo Borough Council
Wexford Borough Council
Town Councils
Ballinasloe Town Council
Birr Town Council
Carlow Town Council
Carrickmacross Town Council

Castleblayney Town Council
Cavan Town Council
Clones Town Council
Dundalk Town Council
Dungarvan Town Council
Ennis Town Council
Kells Town Council
Longford Town Council
Monaghan Town Council
Navan Town Council
New Ross Town Council
Trim Town Council
Tullamore Town Council

APPENDIX II
AREA CLEANLINESS RATING PHOTOS

Area Cleanliness Rating 1 (Unpolluted)

Relates to an area, which gives the impression that it has just been freshly swept. **This is only given to area with no litter present.**



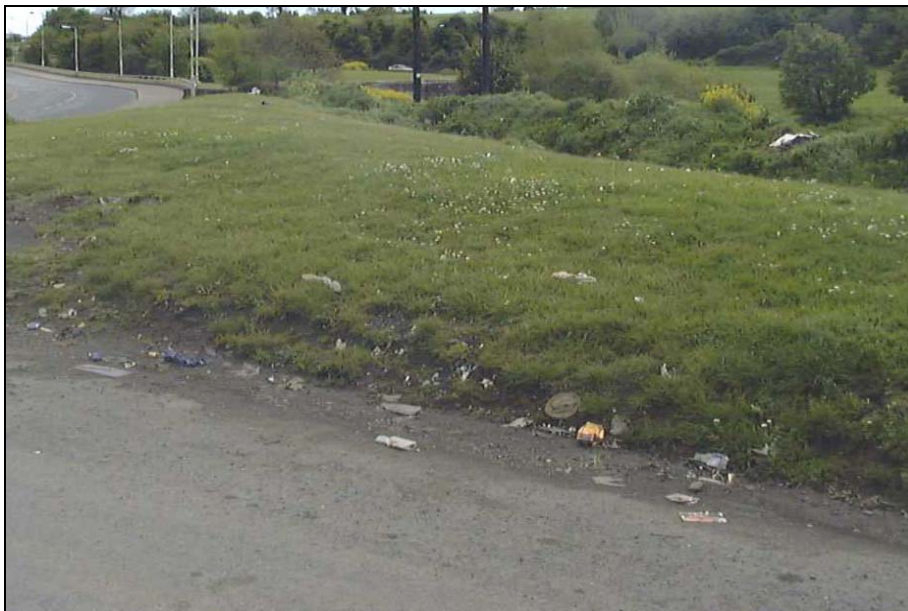
Area Cleanliness Rating 2 (Slightly Polluted)

This rating would be given to an area, which contains small amounts of litter as illustrated below. **This is only given to an area with small litter items present, i.e. not visually intrusive.**



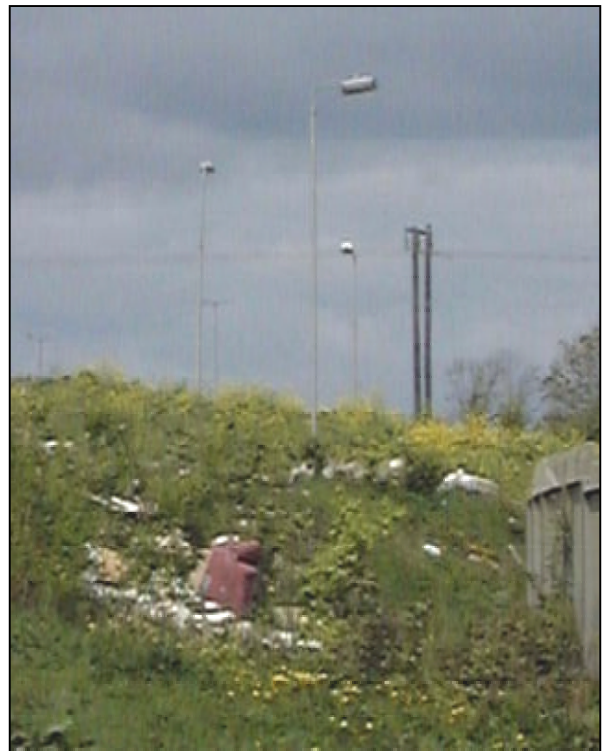
Area Cleanliness Rating 3 (Moderately Polluted)

This is assigned to an area, which contains litter items and quantities of litter, which quite obvious as highlighted below. **This is given to an area with some large litter items present, i.e. visually intrusive.**



Area Cleanliness Rating 4 (Significantly Polluted)

Areas with significant levels of litter pollution as illustrated below are given a rating of 4. This is given to an area with large litter items throughout the survey area.



Area Cleanliness Rating 5 (Grossly Polluted)

Areas with gross litter pollution as illustrated below are give a rating of 5. **This relates to a survey area after an event i.e. a Concert or Festival.**



APPENDIX III
DETAILS OF LITTER COMPOSITION FROM 2003 – 2004 ACCORDING TO
LOCAL AUTHORITY TYPE

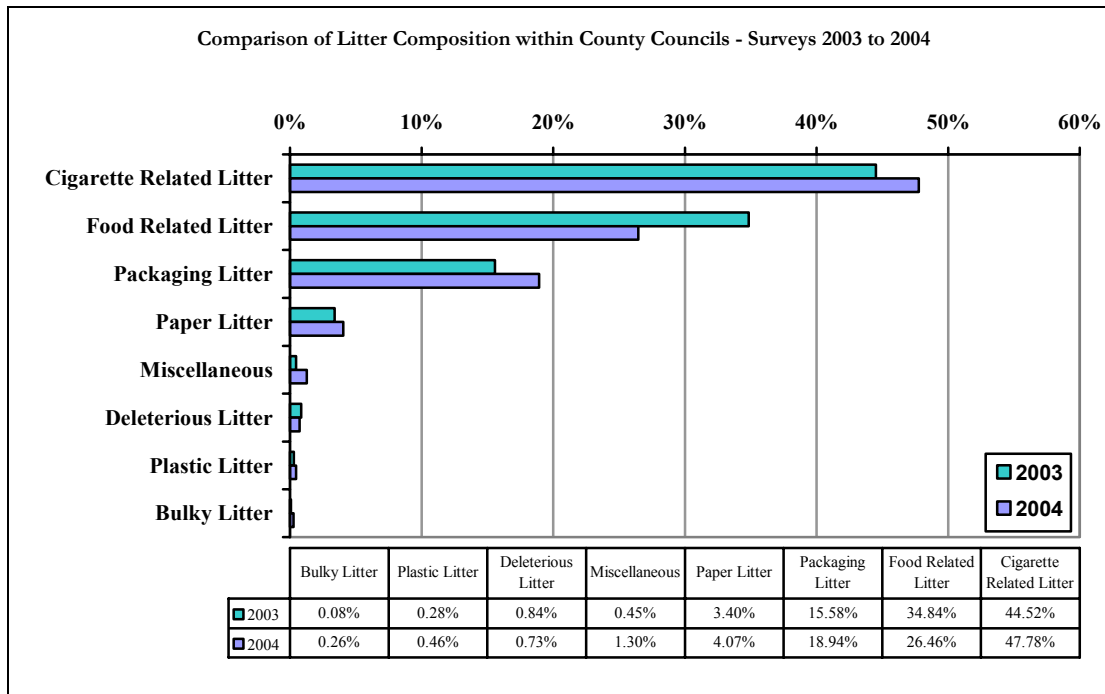


Figure A.1 Comparison of Litter Composition within County Councils 2003 - 2004

Figure A.1 compares the results of Litter Quantification Surveys within County Councils from 2003 to 2004; the main observations are that cigarette related litter, packaging litter and paper litter has increased while food related litter, and deleterious litter has decreased.

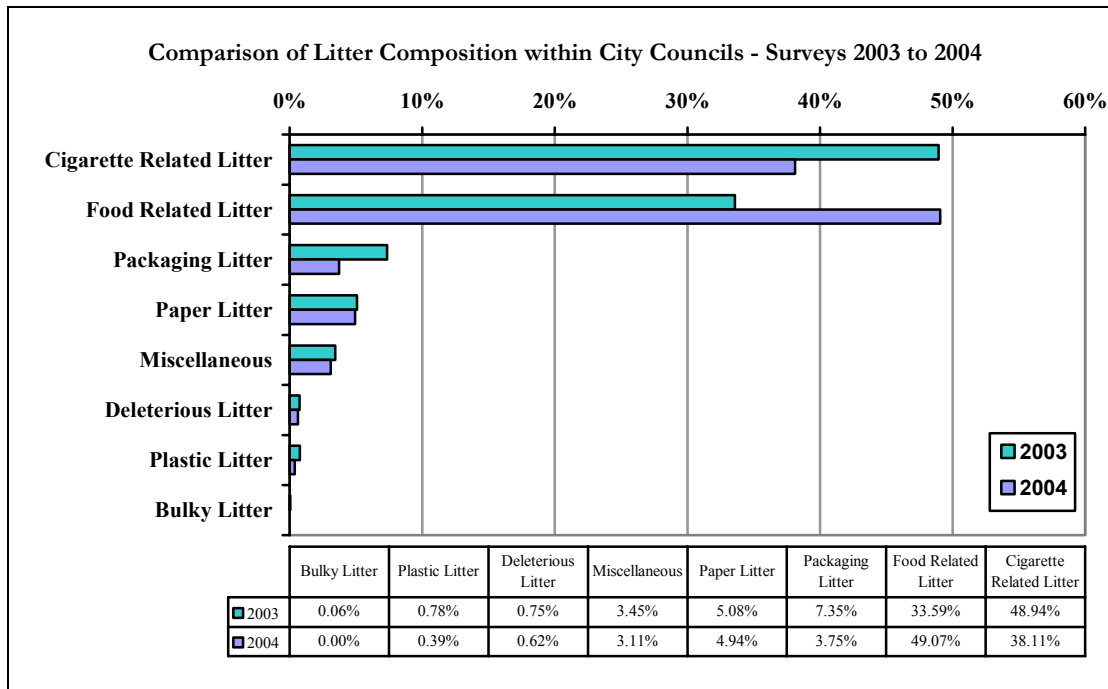


Figure A.2 Comparison of Litter Composition within City Councils 2003 to 2004

Figure A.2 shows that within city councils, the percentage of cigarette related and packaging litter decreased from 2003 to 2004, and the percentage of food related has increased.

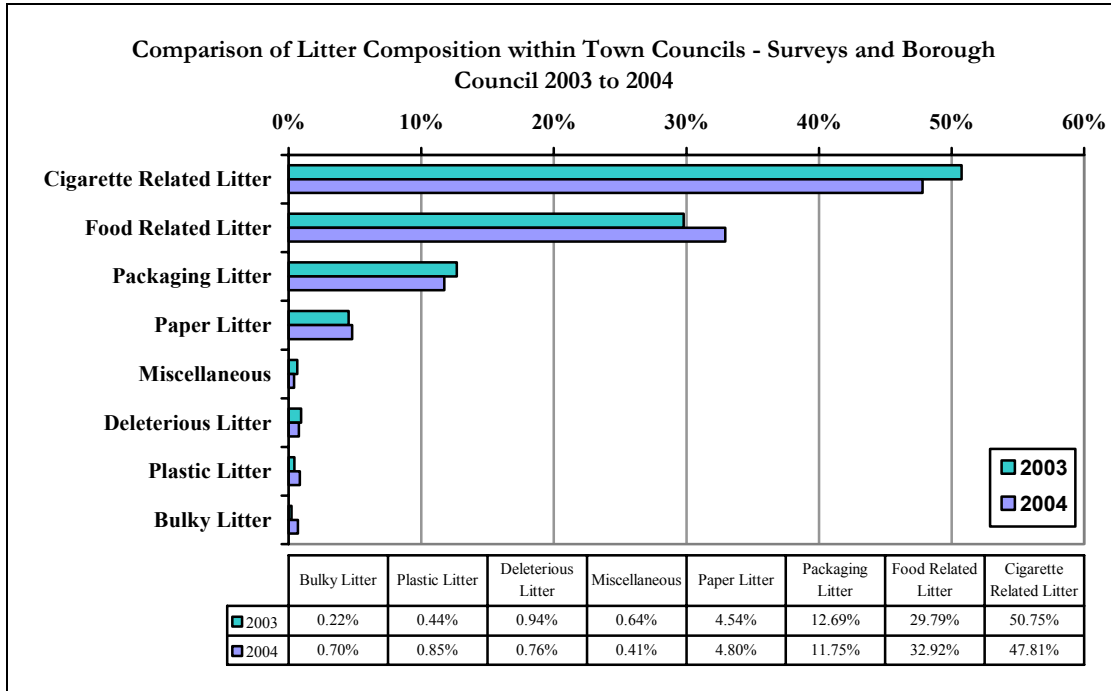


Figure A.3 Comparison of Litter Composition within Town and Borough Councils 2003 to 2004

Figure A.3 illustrates that the percentages of cigarette and packaging litter have decreased, and the percentage of food related litter and paper litter and has increased.

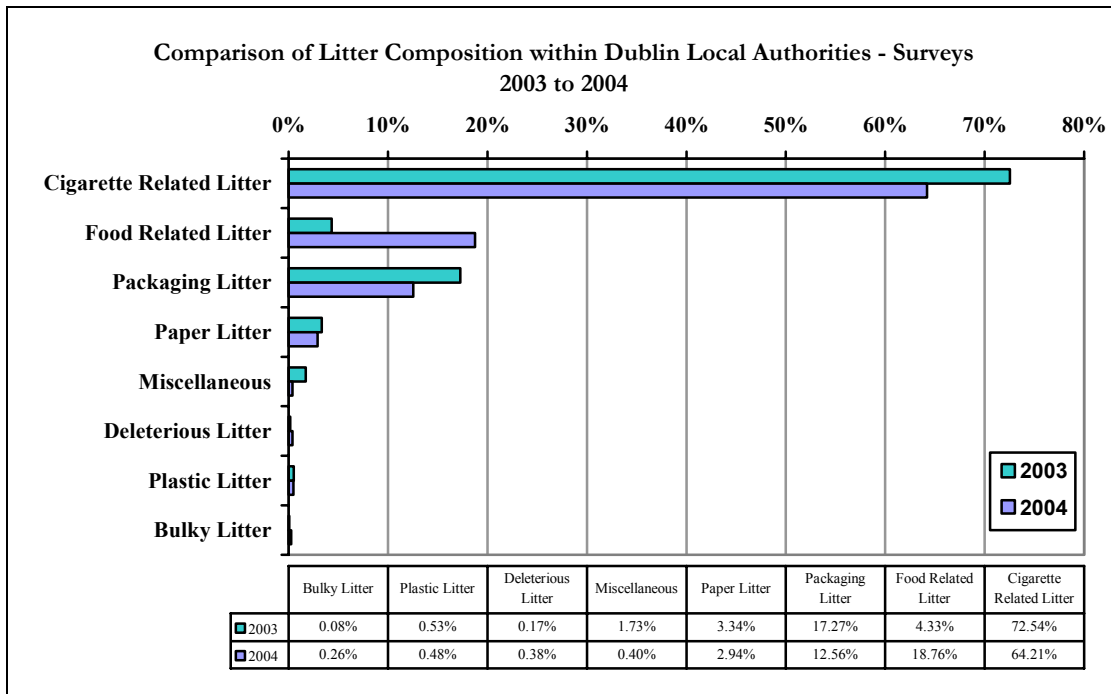


Figure A.4 Comparison of Litter Composition within Dublin Local Authorities 2003 to 2004

Figure A.4 shows that within Dublin Local Authorities, the percentage of cigarette related litter, packaging and paper litter has decreased and the percentages of food related litter, has increased.

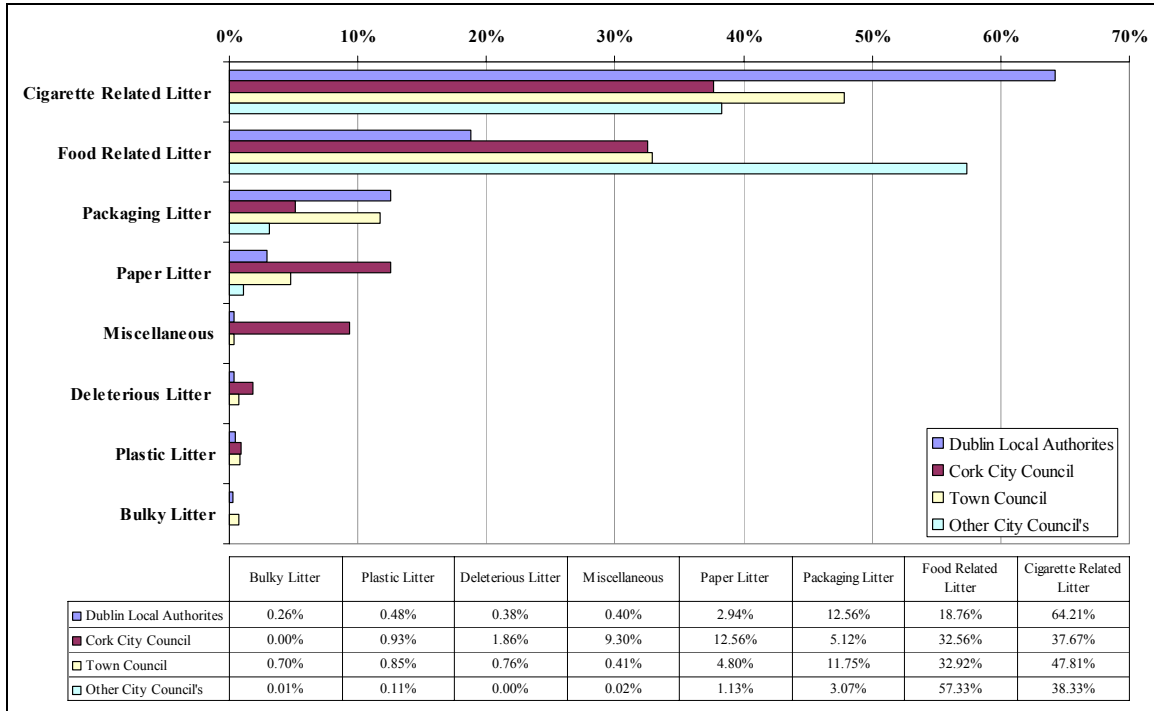


Figure A.5 Comparison of Litter Composition within Urban Councils (2004)

Figure A.5 compares the composition of litter within urban areas of varying size and population. The ‘Other City Councils’ category includes results from Galway City and Limerick City while the Dublin local authorities includes Dublin City Council, Fingal County Council, Dun Laoghaire/Rathdown County Council and South Dublin County Council. The graph in Figure A.5 indicates that there is no direct correlation between the size/population of the urban area and litter composition; similar trends are observed in each category, however cigarette related litter is a larger component of litter in the Dublin local authorities than any other local authority type.

