INCPEN

The Industry Council for research on
Packaging & the Environment

LITTER COMPOSITION SURVEY OF ENGLAND

KEEP BRITAIN TIDY

Love where you live

Survey carried out by Keep Britain Tidy

CONTENT

1. Introduction

1.1 Introduction to Keep Britain Tidy and INCPEN

Keep Britain Tidy is the leading expert on cleaner and greener places, and has 60 years of experience working in this area. All of the work we undertake is supported by researched knowledge, and our surveys help us to look at the issues, growing trends and to provide baseline figures that show increases or decreases in litter and related environmental quality activity. Keep Britain Tidy developed and has undertaken the Department for Environment, Food and Rural Affairs (DEFRA) commissioned annual Local Environmental Quality Survey of England (LEQSE) since 2001.

INCPEN – the Industry Council for research on Packaging and the Environment – was established in 1974 to study the environmental and social impact of packaging. It draws together an influential group of companies that operate throughout the supply chain and share a common interest in packaging, the environment and sustainable development.

INCPEN has campaigned against littering for many years and has been a member and supporter of Keep Britain Tidy since the 1970s. It has commissioned numerous pieces of research to better understand the issue. It encourages members and other companies to use the Tidyman logo or an adaptation of the Tidyman on products likely to be consumed outdoors. Anti-littering messages have been a key part of INCPEN's highly respected materials for schools.

INCPEN supports Keep Britain Tidy's view that preventing litter needs a comprehensive approach that includes educating people, provision of infrastructure, effective cleansing and law enforcement. .

1.2 Background to the project

Keep Britain Tidy has previously carried out a series of litter composition surveys on behalf of INCPEN. The survey was last carried out in 2008 and took place between August and October 2008. The previous surveys were done in 1996 and 2004 across 10 Local Authorities - 36 sites were selected across 12 land uses in each authority.

1.3 Survey aim and methodology

The aim of the survey is to provide detailed information about the current composition of litter in a representative range of locations across England. Keep Britain Tidy counted the litter dropped on a selection of sites that are surveyed as part of the annual Local Environmental Quality Survey of England (LEQSE). The LEQSE is carried out in three

tranches each year: April – July, August – November, December – March. Click here for the 2012/2013 LEQSE results and report.

The survey covers a range of Local Authorities from different regions. The sample has changed in 2013/14 to provide a more accurate reflection of litter composition across England. Rather than choosing defined land use types, the sites are selected randomly within each Local Authority. This means that a direct comparison with the results of previous surveys cannot be made.

The LEQSE gives an indication of how clean England is. It grades sites on a scale of A – D and records what types of litter are present, as well as collecting supplementary information about the location of litter. It therefore provides only an indication of how widespread a litter type is and does not indicate how much was actually present.

The surveys commissioned by INCPEN provide more information on how much litter is present by counting the number of littered items and recording the type.

This particular survey took place from December 2013 to March 2014, alongside the LEQSE survey carried out by a team of trained survey officers. The additional information for INCPEN was collected in 30 sites in 16 Local Authorities, giving a total of 480 sites. The breakdown by land use is shown in table 1.

Land Use Type	Number of sites
Main Retail and Commercial	7
Other Retail and Commercial	9
High Obstruction Housing	73
Medium Obstruction Housing	114
Low Obstruction Housing	69
Industry and Warehousing	18
Main Roads	28
Rural Roads	94
Other Highways	14
Recreation Areas	54
Grand Total	**480**

Table 1: Number of sites surveyed per land use

The full LEQSE methodology is available from Keep Britain Tidy.

2. Survey Results

2.1 Results by type of litter

The results have been grouped into 6 categories:

- Smokers' litter, including cigarette butts, smokers' materials and matches
- Food and food packaging
- Chewing gum, including solid gum, staining and wrappers
- Non-alcoholic drinks
- Alcoholic drinks
- Other, including tissues and dog faeces.

Table 2 shows the number of littered items by type. In total, 9,446 items of litter were counted across the 480 sites. The highest amount of litter – 3,321 items – was smokers' litter, accounting for 35.2% of the total. This was made up largely of cigarette butts, which accounted for 29.7% of the total.

Chewing gum was second – 2,405 items – and accounted for 26% of the total. This consisted predominantly of staining and solid gum, rather than the wrappers which were 1.3% of all litter.

Food packaging and food made up 16% and consisted mainly of confectionery litter. Non-alcoholic drinks-related items made up 9% of the litter recorded, while alcoholic drinks-related litter accounted for 2%.

12% of litter items fell into the 'other' category, which included packaging, tissues and dog faeces. 'Other packaging' includes items such as meat trays and cardboard sleeves, i.e. food packaging that is not related to confectionery, snacks or fast food; bottles relating to cleaning products; and protective packaging, such as bubble wrap and polystyrene packaging.

| Type of Litter	Number of items	% of overall litter items
Cigarette butts	2810	29.7%
Smokers' materials	445	4.7%
Matches	66	0.7%
Total smokers'	**3321**	**35%**
Confectionery packaging	913	9.7%
Snack packaging	189	2.0%
Discarded food and drink	171	1.8%
Fast food packaging	278	2.9%
Food packaging and food	**1551**	**16%**
Chewing gum staining	2179	23.1%
Solid chewing gum	106	1.1%
Chewing gum wrappers	120	1.3%
Total chewing gum	**2405**	**26%**
Non-alcoholic cans	226	2.4%
Non-alcoholic bottles	202	2.1%
Non-alcoholic cartons	51	0.5%
Non-alcoholic tops	241	2.6%
Non-alcoholic straws	85	0.9%
Non-alcoholic cups	33	0.3%
Total non-alcoholic drinks	**838**	**9%**
Alcoholic cans	107	1.1%
Alcoholic bottles	36	0.4%
Alcoholic tops	56	0.6%
Total alcoholic drinks	**199**	**2%**
Tissues	131	1.4%
Post Office related	96	1.0%
Supermarket bags	22	0.2%
Other bags	50	0.5%
Dog faeces	102	1.1%
Bagged dog faeces	20	0.2%
Clothing	55	0.6%
ATM	20	0.2%
Till receipts	75	0.8%
Newspapers	35	0.4%
Travel	19	0.2%
Lottery	13	0.1%
Other paper	62	0.7%
Other packaging	222	2.4%
Warehousing	10	0.1%
Other	200	2.1%
Other	**1132**	**12%**
Total Litter Count	**9446**	

Table 2: Number and percentage of litter items
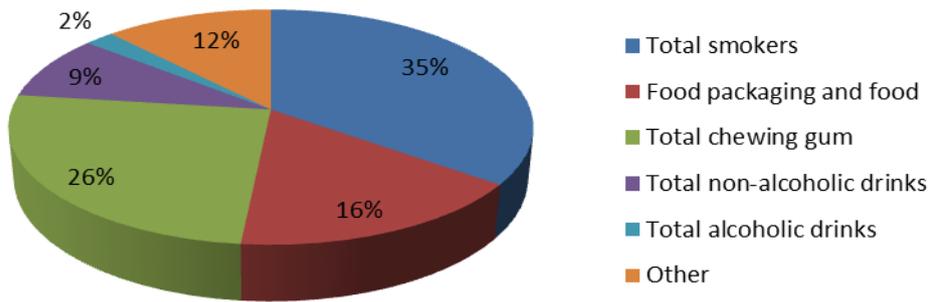
Figure 1: Total percentage make-up per litter category

Figure 1 shows that smokers' litter and chewing gum made up 61% of the total litter. Figure 2 shows the total count of litter per category as a bar chart.
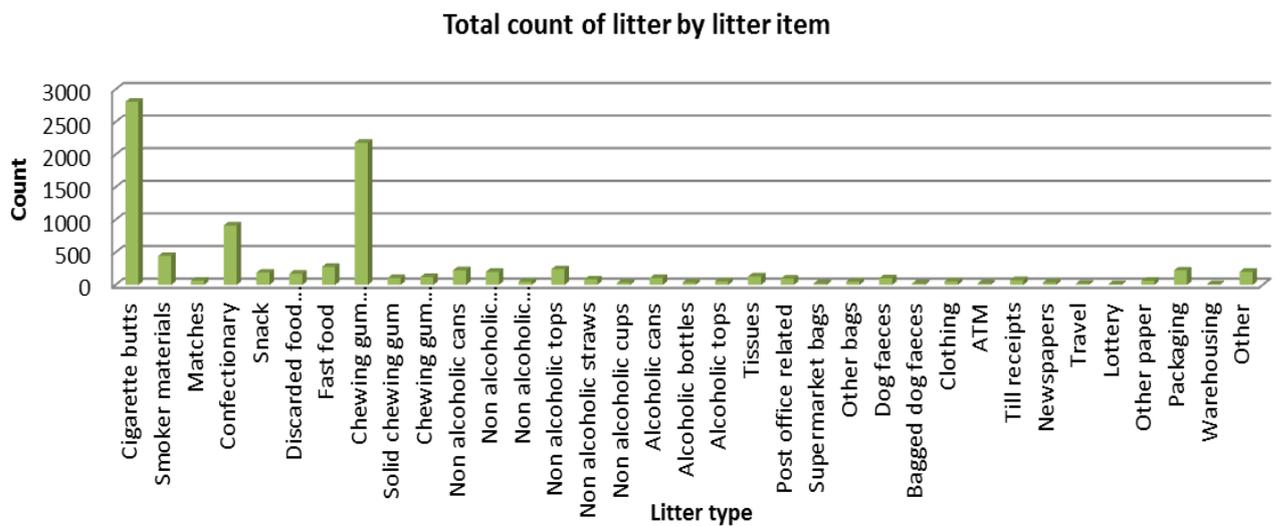

Figure 2: Total count per litter item

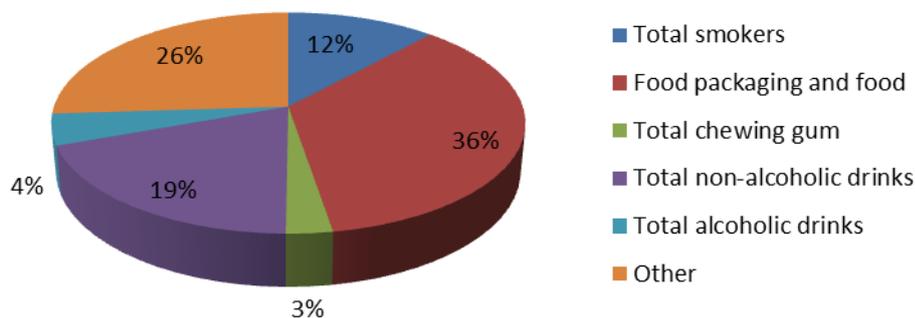## 2.2 Results excluding cigarette ends, chewing gum staining and solid gum

Type of Litter	Total Count	% of overall litter items counted
Smokers' materials	445	7.7%
Matches	66	1.1%
Total smokers' (without cigarette ends)	**511**	**8.9%**
Confectionery packaging	913	21.0%
Snack packaging	189	4.3%
Discarded food and drink	171	3.9%
Fast food packaging	278	6.4%
Food packaging and food	**1551**	**35.6%**
Chewing gum wrappers	120	2.8%
Total chewing gum (without gum litter and staining)	**120**	**2.8%**
Non-alcoholic cans	226	5.2%
Non-alcoholic bottles	202	4.6%
Non-alcoholic cartons	51	1.2%
Non-alcoholic tops	241	5.5%
Non-alcoholic straws	85	2.0%
Non-alcoholic cups	33	0.8%
Total non-alcoholic drinks	**838**	**19.3%**
Alcoholic cans	107	2.5%
Alcoholic bottles	36	0.8%
Alcoholic tops	56	1.3%
Total alcoholic drinks	**199**	**4.6%**
Tissues	131	3.0%
Post Office related	96	2.2%
Supermarket bags	22	0.5%
Other bags	50	1.1%
Dog faeces	102	2.3%
Bagged dog faeces	20	0.5%
Clothing	55	1.3%
ATM	20	0.5%
Till receipts	75	1.7%
Newspapers	35	0.8%
Travel	19	0.4%
Lottery	13	0.3%
Other paper	62	1.4%
Other packaging	222	5.1%
Warehousing	10	0.2%
Other	200	4.6%
Other	**1132**	**26.0%**
Total Litter Count (minus gum and cigarette ends)	**4351**	

Table 3 (above): Number and percentage of litter items, excluding cigarette ends, chewing gum staining and solid chewing gum

Cigarette ends and chewing gum are small items but they are the most difficult to clear up and are a high cost in Local Authorities' street cleaning departments. Many people don't think of them as litter.

Keep Britain Tidy carried out research with smokers in 2013 to understand how they viewed cigarette litter. Here are typical comments:

- It is litter, but it's a special type of litter and therefore different rules can apply
- It seems more acceptable to drop butts because:
  - It's on fire and therefore ideally needs putting out as a first priority; it's a fire risk isn't it?
  - It's small; it's only little; 'I don't drop any litter at all, ever, but you just do it because it's so small'
  - It's so common-place; it's everywhere; routine
  - Potentially very messy and smelly
  - Some people perceive it to be biodegradable and therefore acceptable to drop on the ground.

Figure 3: Total percentage make-up per litter category excluding cigarette ends, chewing gum staining and chewing gum litter

When cigarette butts and chewing gum (solid and staining) are removed, the results show that food packaging and food make up the largest proportion of litter recorded, accounting for 36% of the remaining litter.

3. Land Use Breakdown

3.1   Results by type of land use

Land use type	Number of sites visited	Percentage make-up of the sample	Total litter count	Percentage of total litter
Retail areas	16	3.3%	525	5.6%
Housing areas	256	53.3%	6470	68.5%
Industrial areas	18	3.8%	643	6.8%
Roads and Other **Highways**	136	28.3%	1483	15.7%
Recreation **a**reas	54	11.3%	325	3.4%
Grand Total	**480**		**9446**	

Table 4: Total number of sites visited per land use with associated litter count

There are 10 land use categories used in LEQSE, and these have been grouped into 5 categories for this survey - see Appendix 2 for land use definitions. They are representative of land types across England.

Retail areas make up 3.3% of the total sample; 5.6% of litter was found in Retail sites. Housing areas make up 53.3% of the total sample, with 68.5% of total litter. Industrial areas make up 3.8% and had 6.8% of the total litter. Roads and Other Highways make up 28.3% and have 15.7% of litter. Recreation areas make up 11.3% of the total sample but just 3.4% of the total litter.

3.2   Retail areas
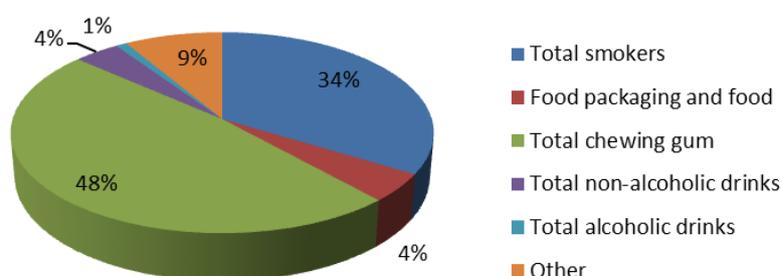
Figure 4: Percentage of litter in Retail areas

In Retail areas, chewing gum-related litter was nearly half (48%) of all litter recorded; this was higher than the average percentage across all land uses. Smokers' litter made up 34%, with 177 items. Retail areas tend to be areas with high footfall which can make cleansing difficult, leading to an increase in the build-up of smaller litter items such as cigarette litter and chewing gum.

3.3   Housing areas
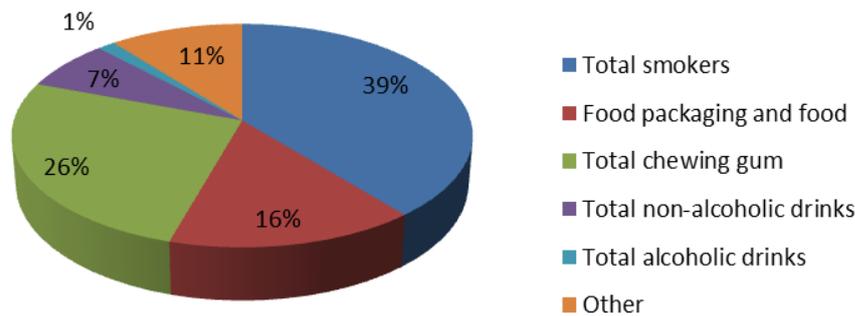
Figure 5: Percentage of litter in Housing areas

Housing areas make up the biggest proportion on the sample. The results are in line with the overall results across all land uses. Smokers' litter made up 39% with 2,524 items, followed by chewing gum-related litter which contributed 26% with 1,692 items. Alcoholic drinks-related was fairly low, making up just 1% of the total, with 91 items counted.

3.4   Industrial areas
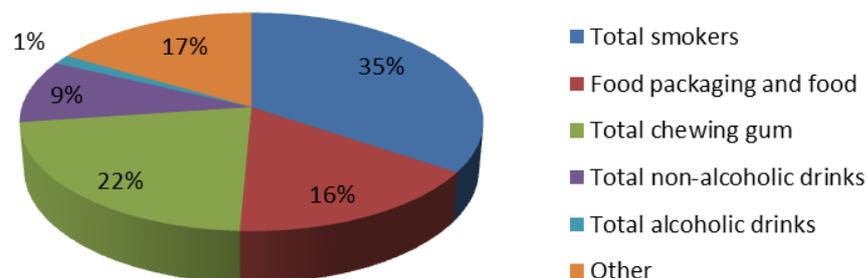
Figure 6: Percentage of litter in Industrial areas

Smokers' litter made up the largest amount of litter in Industrial areas at 35%, followed by chewing gum at 22% and food packaging at 16%. This is similar to the results across all land uses.

3.5   Roads and Other Highways
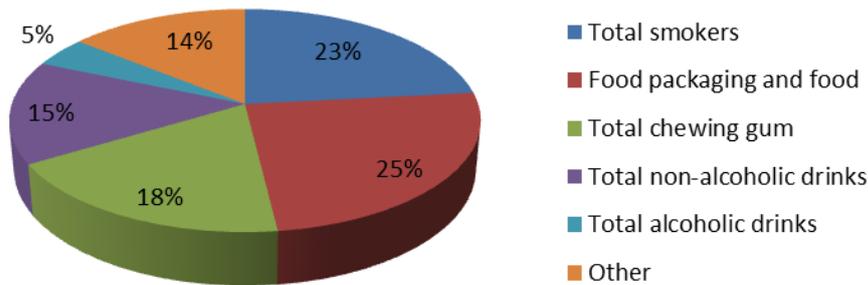
Figure 7: Percentage of litter on Roads and Other Highways

On Roads and Other Highways the results are very different to other land uses. Food packaging and food made up the largest percentage with 25% of litter, a count of 367 items. Smokers' litter made up 23%, followed by chewing gum-related at 18% of the total. Alcoholic drinks-related was low at 1% of litter counted, with 91 items. The 'other' category accounted for 14% with 211 items; this consisted of 53 packaging items, 28 dog faeces, 16 bagged dog faeces, 16 newspaper and 16 tissues.

3.6   Recreation areas
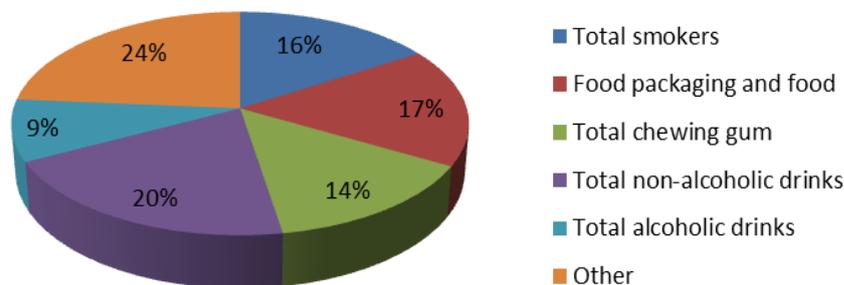
Figure8: Percentage of litter in Recreation areas

Recreation areas are also different to the national average. 'Other' litter items were the highest percentage at 24%. Non-alcoholic drinks-related was second making up 20% of the total litter seen. Food packaging was third at 17%.

4. Trends

4.1 Previous data

1996	2004	2008	2014
Type of litter	*Type of litter*	*Type of litter*	*Type of litter*
Chewing gum	Chewing gum	Chewing gum	Cigarette butts
Cigarette ends	Cigarette ends	Cigarette ends	Chewing gum staining
Matches	Sweet wrappers	Sweet wrappers	Confectionery pkg
Bits of paper	Cigarette related	Cigarette related	Smokers' materials
Sweet papers	Soft drink plastic bottles	Food and drink	Fast food packaging
Glass fragments	Gum wrappers	Soft drinks cans	Non-alcoholic tops
Plastic fragments	Soft drinks cans	Soft drink plastic bottles	Non-alcoholic cans
Tin foil	Snack packaging	Fast food packaging	Other Packaging
Gum wrappers	Fast food packaging	Soft drink bottle tops	Non-alcoholic bottles
Tickets	Post Office elastic bands	Snack packaging	Other

Table 5: Litter composition by rank in 1996, 2004, 2008 and 2014

In all previous surveys, chewing gum was the most littered item. In 2014, the most littered item was cigarette butts, followed by chewing gum staining. The reason for this may be that in past surveys chewing gum has included both solid gum and staining whereas they were split out in this survey. Otherwise there has not been a huge shift in the top ten items since 1996 - smokers' litter and chewing gum are still the major categories. Confectionery, classed as sweet papers and wrappers in the past, has remained prominent. Non –alcoholic drinks bottles and cans, classed as soft drinks cans/bottles in the past, also featured in 2004, 2008 and 2014.

5. Conclusions

Smokers' litter and chewing gum-related litter are the two most prominent categories of litter found in the surveys between December 2013 and March 2014. When these two items are removed, food packaging and food becomes the most prominent litter category, while non-alcoholic drinks-related packaging is also high.

However, with or without gum and cigarette ends, the prominence of the 'other' category in the results shows that that a piecemeal approach to the problem, focussing on just a selection of items, will not solve the littering issue in England.

Littering of all items needs to be tackled, with changes in people's behaviour crucial to the outcome. Addressing just some items will not make an area clean, and there is considerable evidence that even a very small amount of litter being present can encourage further littering.

Appendix 1 – Litter Types

- **Smokers' materials** – cigarettes and cigarette ends
- **Confectionery packaging** - sweet wrappers, chocolate wrappers, lollipop / iced lollipop sticks, chewing gum wrappers, etc., but not the confectionery itself
- **Non-alcoholic drinks related** – non-alcoholic drinks cans, bottles, cartons, identifiable bottle tops and ring-pulls, straws, labels from bottles, etc. However, if the item of non-alcoholic drinks related litter can be identified as arising from a fast-food outlet, then it should be classed as fast-food related litter
- **Snack packaging** – crisp packets, biscuit packaging, cake wrappers or containers, etc.
- **Fast food related** – packaging and paraphernalia related to ready to eat food and drinks
- **Alcoholic drinks related** – alcoholic drinks cans, bottles, wine cartons, identifiable bottle tops and ring pulls, labels from bottles, beer/spirit/shot glasses, etc.
- **ATM slips** – automated teller machine slips - receipts from hole-in-the-wall banking
- **Dog faeces** – instances of dog fouling
- **Bagged dog faeces** – whether the bag is on the ground or in a shrub/tree, etc.
- **Clothing** – including underwear, shoes, gloves, hats, and any other identifiable items of clothing even if ripped or damaged
- **Discarded food /drink** – small amounts of dropped/spilt food and drink such as orange peel, banana skins, chocolate, chips, burgers, kebabs, sandwiches, coffee, milkshake, etc.
- **Newspaper/magazines** – part or whole newspapers and/or magazines including those which have been purchased, those which are available free, supplements, and inserts
- **Packaging** – any packaging material which is deemed to have been dropped by a member of the public rather than originating from a commercial or domestic source.
- **Supermarket bags** – supermarket chain branded plastic or other material carrier bags, generally given free of charge to shoppers by most supermarkets
- **Other retail bags** – all other plastic or paper bags/carrier bags which do not carry supermarket branding
- **Solid gum**
- **Gum Staining**
- **Till receipts**
- **Travel related** – bus, train, tram and other public transport tickets, car parking pay-and-display stickers and parking fine tickets or sleeves.

- **Post Office** – small, thick elastic bands used by the Post Office, along with other associated items including delivery cards.

- **Warehousing** – waste which appears to have originated directly from storage and/or transport of goods and materials.

- **Paper tissues** – paper tissues or toilet paper which appears to have come into contact with bodily fluids.

Appendix 2 – Land Use Definitions

All land uses include publically accessible land which can be managed by either local authorities or private land owners.

Main Retail and Commercial Areas

This land use consists of the main town and city retail and commercial centres. Urban tourist 'hot spots', which are wholly or partially separated from a main town or city retail and commercial centre, are also included in this land use.

Main retail and commercial areas contain a choice of outlets in a range of different retail and commercial sectors (such as fashion clothing, financial services, restaurants, bars and entertainment), and will include national and international brand names. Normally, there is also a range of public facilities, including libraries, museums, law courts and places of worship.

Other Retail and Commercial Areas

This land use class covers retail and commercial areas which are primarily located outside main city and town retail and commercial centres (but excludes out-of-town or edge-of-town 'retail park/retail shed' developments, which are included with industry, warehousing and science parks).

Other retail and commercial areas usually contain a range of facilities that mainly meet the needs of local residents. Most premises contain individual private businesses, sometimes branches of regional chains (e.g. bakers), and occasionally national brand names. They can also be home to civic facilities, areas of office and hotel development, and areas of mixed retail, office, hotel and entertainment uses.

High Obstruction Housing Areas

Housing areas should be classified as 'high obstruction housing' if the proportion of dwellings with purpose-built off-street parking facilities is less than or equal to 50%. In these areas, there is a high risk of obstruction to mechanical channel sweeping operations, e.g. obstruction from parked cars. High obstruction housing areas can also include occasional small retail premises, offices, manufacturing, and warehousing sites.

This land use class includes various housing types, such as:

- terraced housing

- alleyways behind and between housing areas where there is direct access to properties

- flats and maisonettes with only limited off-street parking

-        semi-detached and short terraced dwellings with limited or no purpose made off-street vehicle parking, or parking provision which is not large enough for the use of modern vehicles.

Medium Obstruction Housing Areas

Housing areas should be classified as 'medium obstruction housing' if more than 50% of dwellings have purpose-made off-street parking/garaging facilities for up to 2 modern-day family cars.

This land use includes housing types such as:

-        private housing, often where passageways at the side of houses are too narrow for most current-day cars

-        council housing originally built with no off-street parking, where limited off-street parking has since been provided for some properties

-        modern developments with limited off-street parking

-        modern developments of flats with parking underneath

-        terraced housing with garage facilities or rear access parking for up to 2 cars.

Low Obstruction Housing Areas

This land use includes all types of housing where more than 50% of properties have purpose-made off-road garaging/parking within the property boundary for three or more cars. In these areas, there is generally a low risk of obstruction to mechanical channel sweeping operations.

The space available should be capable of accommodating all the parking requirements of residents (including, where applicable, boats and caravans, etc.) and most of the demand from visitors to the premises.

This category includes maisonettes and flats, as long as the parking is contained within the property boundary. In low obstruction housing areas, it is likely that there will be few or no vehicles parked on-street, and significant on-street parking is the exception rather than the rule.

'Industry' (Industry, Warehousing, Retail Sheds and Science Parks)

This class includes industrial and warehousing developments, out-of-town retail parks (including food and non-food developments), and science parks (containing offices, laboratories and manufacturing processes).

The following sub-types would be classified as 'industry, warehousing, retail sheds and science parks' sites: classic estates primarily dedicated to heavy industry and warehousing, retail sheds and areas with large retail units, hospitals, business/science parks and campus (such as university or college properties).

Main Roads

Main roads are all 'A' roads. However, if a main road is situated within main retail and commercial, other retail and commercial, or high obstruction housing area, then that transect should be recorded as that land use and not as a main road, due to the potential obstruction caused.

Rural Roads

This class comprises all highways that are located outside built up areas and are not included in the main roads or other highways land use classes, whether 'rural' in character or not.

Other Highways

Other highways are made up of the following:

-        Formal lay-bys, informal lay-bys, stub roads, underpasses, footbridges, un-metalled bridleways, metalled bridleways, narrow routes and alleyways, cycle ways and 'other' - this includes any other highway which is not listed above.

Recreation Areas

This land use is a combination of public open space and watersides. 'Public open space' includes parks, recreation areas, grassed areas, picnic sites, and paved areas, which are not classed as main or other retail and commercial locations. Officially signed and/or marked public footpaths and deconsecrated cemeteries should also be included in this land use category. 'Watersides' includes all publicly accessible areas adjacent to ponds, lakes, reservoirs, canals, rivers and estuaries.

Keep Britain Tidy