

Litter in lockdown

A study of litter in the time of coronavirus



A study by Cat Chapman & Karen Bomford for CPRE, the countryside charity

Thanks

This report is delivered by the Cleaner Counties Project which is funded by the Esmée Fairbairn Foundation, commissioned by CPRE, the countryside charity. Cleaner Counties was established in 2018 as a pilot project focused in the county of Essex to look at the way the statutory bodies with responsibility for litter and cleansing worked with a view to obtaining greater integration and efficiencies. This work was significantly affected by the coronavirus while at the same time litter was creating national headlines, so it was determined that a study would be carried out to examine the impact of the pandemic on litter at a national level but with a particular focus on those impacts seen at a local level in Essex by the partners of the Cleaner Counties project.

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1. Introduction

The coronavirus pandemic and resulting edicts from the government have radically affected our behaviour radically, in a way that nothing else compares to since the second world war. There are many impacts of this change, one of which is the way that we have deposited rubbish, whether through littering or fly tipping.

Our changed littering behaviour has been sufficiently extreme to create national news headlines on several occasions as well as a plethora of media articles. Over the past nine months, littering has occurred in new and different places, reduced in some locations, been seen in greater abundance in others and a new category of items has been littered like never before. Personal Protective Equipment (PPE), such as face masks and gloves, was previously only something that you would see in a healthcare or medical setting. It is now commonplace, and regularly seen abandoned or accidentally dropped by people while out and about.

Given the uniqueness of this situation, and the consequential littering and fly tipping, it was felt that we needed a better understanding of the nature and the extent of the problem and unusual behaviours. Through reviewing media articles, conducting our own research, speaking with local authority officers in Essex and consulting with the CPRE network, this report will:

1. Review a chronology of the key government advice or mandates that have an impact on our littering behaviour.
2. Endeavour to demonstrate how littering has changed during the pandemic and the impact that this has had on the environment.
3. Seek to understand the motivation behind the extraordinary littering behaviours.
4. Put forward recommendations for how the government can reduce littering and fly tipping problems in future.

2. Coronavirus timeline – critical dates that impact on littering

January and February 2020 saw the early signs of a virus with the potential to become a pandemic as it spread out from China and began to take hold in western Europe. The severity of the virus caused the government to hold its first COBRA (Cabinet Office Briefing Rooms) meeting on 2 March to respond to the national emergency which the coronavirus had become.

By 5 March, the number of known cases had exceeded 100. MPs were advised by the Chief Medical Officer that they should move into phase two of dealing with the virus, from 'containment' to 'delay'. The fall of the FTSE 100 by more than 18%, the Bank of England lowering its baseline interest rate from 0.75% to 0.25% then later in the month to 0.1% (the lowest level in history) and the provision of £330 billion from government to support businesses were clear indicators of the anticipated severity and breadth of impact of coronavirus.

13 March saw the first music festival cancellation (the BBC Radio 1 Big Weekend music festival due to take place at end of May) It was to become apparent that the stopping of music festivals would have a future impact on litter. On its own, the closure of this one festival was unlikely to have much influence but the aggregated cancellation of all the music festivals did have an impact on the behaviour of some of the thwarted and frustrated festival-goers and subsequent littering patterns. (See 'Fly camping' section 5.3.1.)

By mid-March, fewer people were travelling into work. This was particularly evident in London with commuter trains, normally jammed, being emptier and streets sparsely peopled even at rush hour. On 16 March, the Prime Minister advised against all non-essential travel and for people to work from home where possible. Additionally, everyone was encouraged to reduce contact with others by not visiting social venues such as clubs, pubs, theatres and restaurants. This resulted in the closing of theatres followed by the closure of cinemas, takeaway food and beverage outlets due to lack of

trade. Many cities and town centres became ghost towns, which, interestingly, had a positive impact on litter levels — local authorities reported a reduction in litter discarded on the streets and as a result a reduced the frequency of litter bin emptying. (See Urban Areas section 5.1.)

20 March saw the last day of school attendance for the majority of children for weeks and months to come, an unprecedented step in unprecedented times. Glastonbury Festival's 50th anniversary festival was also cancelled, leaving over 200,000 festival-goers disappointed.

The sword of Damocles finally fell on cafés, pubs and restaurants as they were ordered to close in an effort to stop the spread of coronavirus on 21 March. Five days later, under the newly-adopted Health Protection (Coronavirus, Restrictions) (England) Regulations, England was instructed to go into 'lockdown'. Other than key workers providing essential services, people were only permitted to leave home for essential journeys and one form of exercise each day. Although initially lockdown brought the benefit of less litter in towns and public places such as parks, the countryside and beaches, local authority waste and street cleaning staff were also reduced in number and so were unable to undertake the normal schedule of collection due to the coronavirus. It seemed that many people had understood the magnitude and the severity of the pandemic and heeded government advice to stay at home.

The lockdown also radically reduced travel. Road traffic levels fell by 73%, reflecting the level of use that there was in the 1950s. Inevitably, littering by road users also reduced. (See Roads, section 5.5.)

At the end of March councils closed Recycling Centres for Household Waste (RCHWs) as they struggled with reduced staff and prioritising other waste collection tasks. In the early part of lockdown this didn't have an impact on litter or fly tipping as people were not permitted to make non-essential journeys. However, later this behaviour was to change.

Easter weekend, 10-13 April, saw sunshine a plenty across the UK, which would normally draw crowds out to enjoy the long weekend and the sun. However, people obediently remained at home, leaving parks and countryside empty and beaches deserted as was widely reported by the papers. The environmental benefit of being undisturbed by humans meant not only were these open spaces litter-free but also slowly wildlife was beginning to reclaim them — deer on golf courses, birdsong more abundant in the skies with no planes, ducks and geese in towns and sheep wandering into railway stations!

It was unknown how the population would respond to the unprecedented step of 'confinement' of everyone for three weeks, but it would appear at this stage that the public were willing to obey instructions — the fear of death is quite a motivator! On 16 April the government announced that there would be a three-week extension to the nationwide lockdown; perhaps the initial obedience was a contributory factor in this decision.

The sun shone, 9 million people were being paid furlough funds to be at home and not go to work. New-found spare time and restricted freedoms resulted in neglected gardens being tended and DIY jobs undertaken. On the weekend of 18-19 April DIY stores won permission to reopen, with queues of up to two hours to get into stores such was the demand! Consequently, DIY waste that couldn't be put in the main 'black sack or bin' refuse was being created in abundance. (See Fly tipping section 6.)

On 18 April the government agreed that parks and cemeteries must remain open during lockdown. During the unseasonably warm weather parks in particular provided an important facility for fresh air and exercise. Parks also provided a venue for people not of the same household to meet in a socially distanced way. At the end of April, due to a reduction in the number of coronavirus cases, the Prime Minister announced that he would set out a comprehensive plan for easing the lockdown in early May. There was a sense of freedom being just around the corner, as if coming out from a period of darkness, and with the sun shining people were drawn out to the beaches, parks, national parks and countryside. The media coverage of the consequential littering was prolific. National Parks and open

spaces were inundated with visitors, which brought with it unforeseen amounts of litter. (See Open Countryside section 5.3.)

The Early May Bank Holiday, 8 May, saw the government urging people to abide by the rules of lockdown. However, many people, feeling that they had been released from a home imprisonment but unable to travel abroad, flocked to the beaches and other open spaces with variable respect for staying in their family group and social distancing, and varying respect for disposing of litter. (See Beaches section 5.4.)

The end of May saw the reopening of fast food outlets for takeaway food only. Many councils and some newspaper articles reported a rise in fast food-related litter, which had been absent for a few weeks. People had been deprived of their favourite fast food for many weeks, resulting in reports of 2-3-hour car queues waiting for a drive-thru McDonalds.

1 June saw significant steps in the lifting of the lockdown, allowing groups of up to six friends to reunite in outside spaces, leading to dinner parties in the parks and consequentially abundant littering. (See Local Parks section 5.2.)

Further restrictions were removed in mid-June as the remainder of the Health Protection (Coronavirus, Restrictions) (England) (Amendment No. 4) Regulations 2020 (SI 588) came into effect. This allowed the re-opening of English retail shops and some public-facing businesses. Although there were still exceptions to this, these were mainly places where people could meet socially indoors. Shopping not only had the effect of reopening the town centres but also provided people with a form of recreational activity rather than being limited to visiting parks, beaches and open spaces. Local authority town centre litter bin emptying schedules stepped up a gear and litter-pickers were returned from other locations or duties. However, the return to shopping in town centres and retail parks was slow and litter remained at lower than usual levels.

After over three and a half months of closure the hospitality sector was allowed to reopen on 4 July, much to the relief of the pubs, restaurants and hotels along with other face-to-face services such as hairdressing. This action relocated many revellers from outside public spaces back to their favourite watering hole or restaurant and so reduced the pressure and litter on local and national parks and beaches.

On the 14 July the UK government announced that wearing a face covering would become compulsory in shops and supermarkets in England from 24 July. Those who failed to do so faced a fine of up to £100. This obligation to wear masks brought with it a new problem — a proliferation of disposable masks being littered around shopping streets and transport hubs, such as train stations and buses, where it was also compulsory to wear masks. (See PPE section 4.)

The end of August brought with it a sense that some semblance of normality was returning to our lives. Children would soon be returning to school and students going to university. There was a socially distanced 'friendly' football match between Chelsea and Brighton with a crowd of 2,500, a month of 'eat out to help out' and a government-launched drive to encourage people back to work. Had we seen the demise of the virus? Alas, no.

Outbreaks of coronavirus were cropping up with alarming frequency and this led to the government's pronouncement in mid-September that no more than six people would be permitted to gather, indoors or outdoors, which became known as 'the rule of six'. October saw concerning increases in the incidence of coronavirus in all ages which led to a second, less severe, lockdown in November. The change in the weather towards the end of September coupled with many people returning to work and education resulted in fewer outdoor gatherings and consequentially litter began to return to something more like the levels seen prior to the pandemic. The aspect of littering that is now prevalent is the ever-conspicuous face masks which are increasingly littering the landscape.

3. Essex context

3.1 Essex local authorities

Local authorities are the key organisations that have a statutory duty to clear litter and fly tipping from publicly-owned land such as town centres and public open spaces. During the summer months, Essex local authorities were contacted to share their experiences of the impacts that lockdown had upon littering in their area and the impacts upon their operation of cleansing services in order to fully understand the emerging patterns that were being reported and observed nationally. Ten of the 14 Essex authorities provided information about their experiences along with some very interesting local insights into the changing nature of littering behaviour and the impact that this has had upon the street scene.

Local authority key workers worked throughout lockdown to provide the essential waste, recycling and street cleaning services that their residents needed. This was recognised and appreciated by the vast majority of the public, with 90% of authorities received an increased number of compliments related to their street scene operations.

In order to understand the pressures upon local authorities' street cleaning and litter-picking operations, we must consider the impact of the changes in resident behaviour on wider services. During lockdown, with more people at home, there was a significant increase in demand upon local authority waste and recycling services due to increased volumes of materials being presented for collection. In order to support the delivery of these essential services local authorities re-prioritised their workforce, and in many cases street cleaning staff were redeployed on a temporary basis onto frontline waste and recycling services.

Local authorities needed to act swiftly to adjust to the changing picture:

- 90% of councils reported that they saw a shift in the locations where litter bins were more heavily used
- 100% of rural councils reported an increase in the amount of material presented
- 60% reporting a change in the usage of their dog waste bins

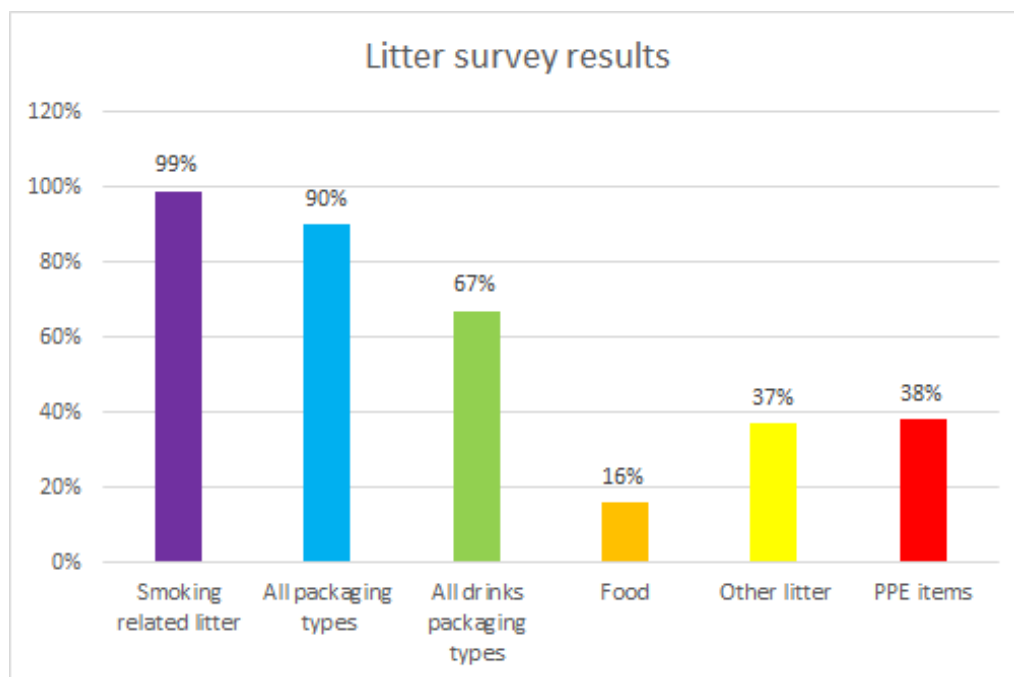
80% of councils made changes to their cleansing operations in light of the above. For example, cleaning staff were redeployed away from the town centres, which had been abandoned by the majority of people, and focused instead on the parks and open spaces, which were seeing a surge in visitor numbers, in order to meet the shifting demand.

The changing nature of the litter that authorities encountered also posed a challenge, with some authorities facing human waste being left in public places, where public toilets were closed due to lockdown restrictions, or in places such as some beaches and open countryside where there were none.

All authorities reported that they had seen PPE items being littered. The majority also reporting a significant increase in food and drinks packaging being littered, partly as a result of the 'dinner party in the park' phenomenon.

3.2 Litter survey

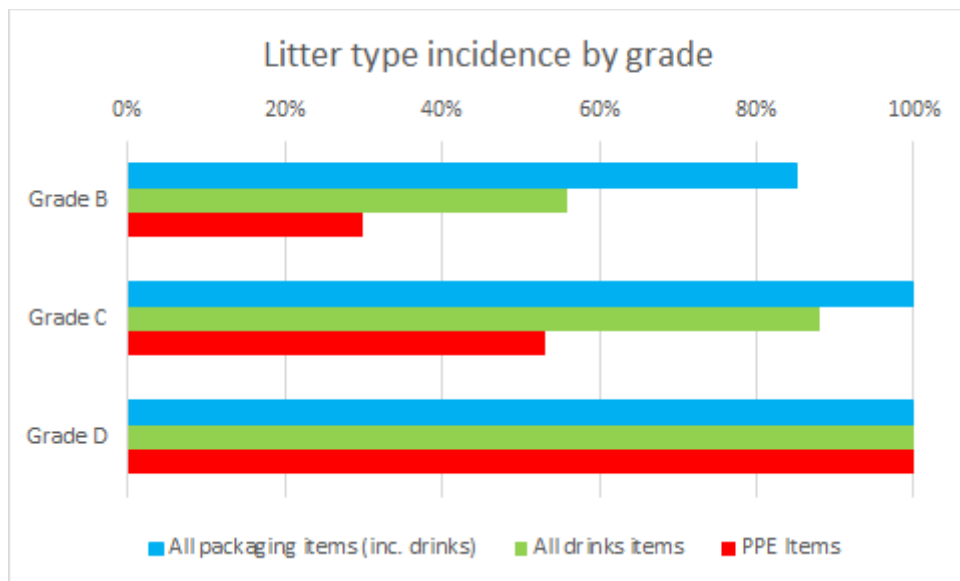
During September and early October, a litter survey was carried out across Essex, surveying 140 transects (a 50m stretch of road, footpath or park) across the 14 districts of Essex to determine the scale of the issue presented by PPE and packaging littering following the easing of lockdown. The surveyors noted the types of litter found on each transect as well as recording the Local Environmental Quality (LEQ) grade assigned to the transect.



This pattern broadly reflects the trends shown in previous surveys carried out by Keep Britain Tidy (KBT) in 2017-18, which indicates the results identified in this study are broadly reflective of the littered environment before lockdown. However, the notable exception is that in 2017-18 PPE litter was not found.

Smoking material was found to be the most prevalent litter type affecting all land use types, with only two of the 140 sites surveyed not having any smoking related litter. However, this is partly due to the nature of cigarette butts and other small items such as matches being very difficult to collect unless using a mechanical street sweeper. Even then the items tend to be found wedged in nooks and crannies around street furniture so much smoking material observed may have been in situ for some time despite the best efforts of the authority responsible for cleansing. While this is a problem of its own, this is not something that this study seeks to tackle and as such will not be included in the further detailed analysis of the data.

When considering the sites surveyed according to the LEQ grade assigned, 73% were found to meet the acceptable standard of grade B or above. It is also abundantly clear that the well-documented phrase ‘litter breeds litter’ is indeed true:



The increase in the prevalence of all waste types when considering the lower grades starkly illustrates the theory that where an area is littered and looks less cared for, people are more likely to litter in that area.

4. A new type of litter – personal protective equipment (PPE)

The coronavirus pandemic brought a previously unseen form of litter onto the streets and open spaces of Britain – disposable face masks and plastic gloves. In the early stages of the pandemic many people voluntarily started wearing masks and using gloves in order to protect themselves from the virus.



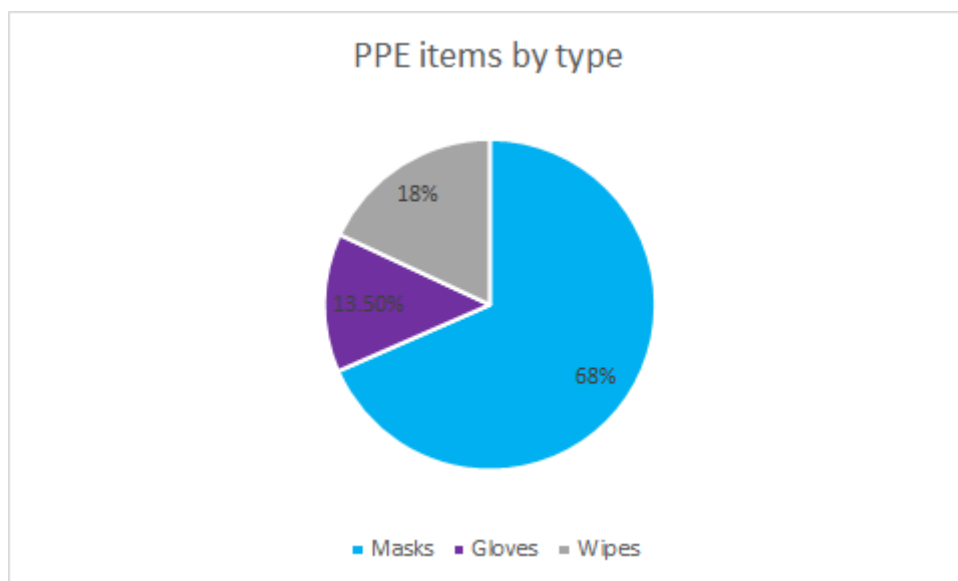
Image courtesy of Jenny Dadd, Esmée Fairbairn Foundation

Following research from scientists, which found that rather than protecting the wearer, the use of masks would help prevent asymptomatic carriers of the virus from spreading it to others, the government mandated the wearing of masks on all forms of public transport and at all NHS facilities from 15 June. This was then extended to all shops and supermarkets from 24 July, and then widened to cover many other indoor settings, including places of worship and entertainment venues in early August.

Pale blue disposable surgical face masks are now a common sight littering our environment, often found around transport hubs, shopping areas and town centres —almost like a beacon of the times that we find ourselves living in, due to their conspicuous colouring and size. Reusable masks are less frequently seen discarded, probably often the result of accidental rather than deliberate littering, but still a new and highly visible littered item.

A CPRE-commissioned poll by YouGov of more than 2,000 members of the general public, conducted in November 2020, found that 76% had noticed more PPE litter close to where they live since March.

The litter monitoring survey found that 38% of all the sites inspected contained at least one item of PPE litter within the 50m transect. Additionally, PPE items were noticed in the vicinity of the majority of sites surveyed. One site notably had eight items of PPE found within it and more than 30 further face masks littered immediately around the transect. Over the 52 sites affected by PPE litter 82 items of discarded PPE were recorded, the majority of which were face masks, with 56 individual masks being identified.



The Great British Beach Clean, organised by the Marine Conservation Society, which took place during September this year, revealed that almost 30% of beaches which were litter-picked by volunteers had face masks and gloves on them. This highlights the pervasiveness of these items of litter, spreading from the point of use in high footfall retail and transport areas through to our countryside, onto beaches and ultimately into the seas and oceans.

All local authorities reported that they had seen PPE litter in their districts, with many officers seeing these items littered, not only in retail and transport areas, but increasingly around schools and other educational facilities. Since the requirement for secondary school pupils to wear face masks was introduced in late September it has been reported that significant numbers have been found in the immediate vicinity of secondary schools located in otherwise residential areas. Many primary schools now also require parents to wear face masks while on the premises and significant

concentrations of discarded masks have reportedly been seen in the immediate vicinity of many primary schools across the county.

The significant presence of PPE litter is particularly concerning as these items are worn principally to protect others from the spread of viral particles. Once littered, these items not only pose an unpleasant visual intrusion to the street scene with associated environmental degradation, they also pose a risk to wildlife. There have been many reports of birds and other animals becoming entwined in the elastic straps of discarded masks, and if these items are entering our seas and oceans the implications will only be magnified.

During our canvas of the network of the CPRE network, all of the responses received detailed sightings of PPE litter. In the majority of cases, this was the issue that received the lengthiest and most impassioned responses:

'There is PPE on pavements, on roads, on beaches, in our towns. It's everywhere.'

'Large increase in numbers of single-use PPE. The amount of PPE outside of shops, high streets, petrol stations and road side verges is devastating.'

'[...] seeing less gloves now but more surgical masks, I feel upset and worry about the effect on wildlife.'

'We've seen quite a lot of PPE; it feels dirty and particularly intrusive.'

'There are a lot of masks in store car parks. I suspect that many are accidental and not deliberate drops. We feel that supermarkets should be doing more to keep on top of this sort of litter in their car parks.'

'We've seen masks in pub car parks, around schools and along high streets and we're saddened to see lost or discarded masks that are not recyclable due to plastic content.'

'I've seen lots of those disposable blue masks. Disgusted.'

There is a further concern with this type of item being littered, which is altogether more sinister. Scientists writing in *The Lancet* analysed the length of time that actively infective virus particles can remain on items. While active viral particles could no longer be found on the majority of surfaces three to four days after exposure, 'a detectable level of infectious virus could still be present on the outer layers of a surgical mask', which are the predominant type of masks observed being littered, up to seven days after exposure. This therefore poses a risk not only to those employed in the collection of dropped litter but also to the multitude of volunteers who give their time to improving their local environment through litter-picking.

The coronavirus pandemic has served to make everyone more aware of maintaining high standards of personal hygiene, particularly in relation to frequent hand-washing. However, for some this awareness of the paramount importance of cleanliness does not seem to have extended to the appropriate disposal of PPE items, with some members of the public showing scant regard for the hazard that this type of littering can present to others. Health and safety is a significant concern when undertaking any cleansing activities. The need for proper protective equipment when collecting items of this nature is critical in protecting those who seek to remove this blight from our environment. But first and foremost, errant PPE litterers must understand the risk that this behaviour poses to others in order to prevent these items being discarded in the first place.

5. Litter by location

An inevitable consequence of the pandemic and the government's edicts was that people's patterns of behaviour changed. Initially, the majority of people spent their time at home and in their immediate environs, leaving towns and cities largely vacant. Open spaces, countryside and beaches became the locations of choice and so the litter followed. The CPRE-commissioned YouGov poll confirmed this pattern which demonstrated that 33% of respondents had spent more time in the countryside and 30% spent more time in parks. In contrast 75% of respondents had spent less time in inner city high streets with 69% spending less time in their local high streets.

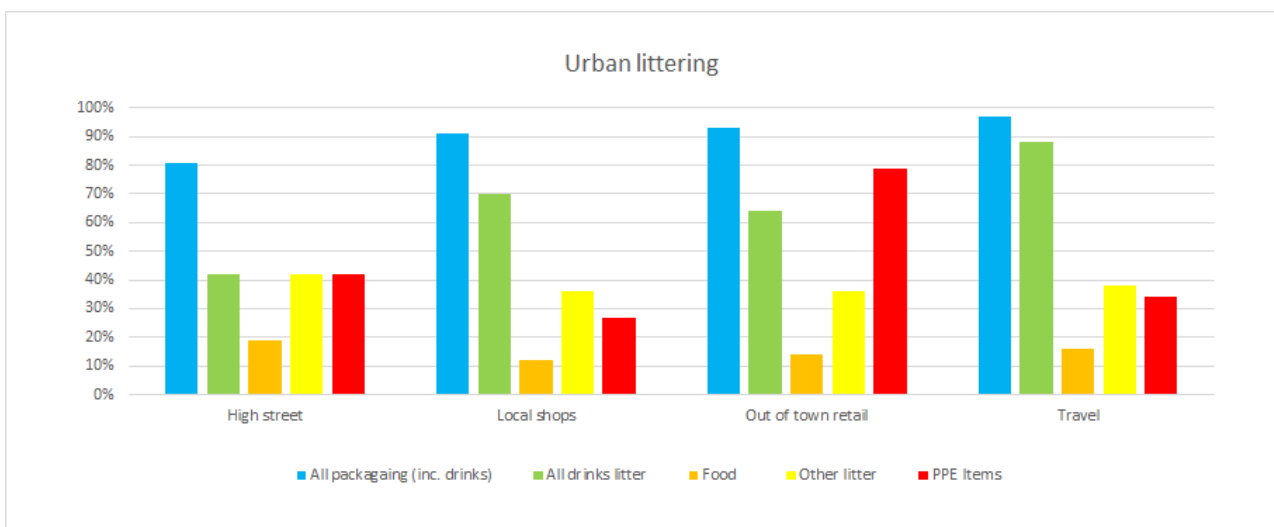
5.1. Urban areas

As town centres and commercial centres went into lockdown, they were largely people free for six weeks. All non-essential retailers, restaurants, bars and entertainment venues were required to close, resulting in exceptionally low levels of litter on the streets and in the litter bins in town centres across the country. Many of the larger city centres, which have very little residential property, became rubbish-free ghost towns. This hiatus in the perpetual cycle of littering that local authorities were accustomed to enabled councils to reprioritise their litter-picking and street cleaning teams, moving them away from the unused town centres and targeting the locations where littering was now more intense.

As lockdown lifted, many pubs and restaurants diversified into providing takeaway offerings to enable them to continue trading despite the restrictions. Unfortunately, this change in business model for food and drink outlets brought with it additional litter to the recently deserted, and refreshingly uncluttered, town centres. In order to protect people from the contagion of the coronavirus, many coffee shops stopped using reusable cups and many more 'food on the go' items were individually wrapped, which added to the growing volumes of litter. All these disposable takeaway items also became more prevalent in the rubbish that has been found littering our parks, beaches and countryside.

Litter survey

The data gathered in the litter survey largely focused on urban areas which have a high footfall and are the areas which, prior to lockdown, were more commonly affected by significant littering.



81% of high streets surveyed were affected by packaging litter, with beverage packaging litter specifically affecting 42% of these sites. PPE litter was also found on 40% of high street transects.

The prevalence of packaging and PPE litter in this environment is not surprising given the use of the space. However, it is very disappointing given the general availability of litter bins in these areas, many of which also offer a recycling option. Typically, local authorities in Essex cleanse main high street areas many times daily, with litter bins also being checked several times throughout the day and emptied as required. This points to a significant issue, with a minority of people discarding items when they have finished with them despite the option to do the right thing and use one of the many litter bins provided.

When considering more local shopping areas, such as parades of shops in residential areas, 91% of sites surveyed were affected by packaging litter, with beverage packaging litter specifically affecting 70% of sites. PPE litter was also present on 27% of sites. There are several potential reasons why this pattern of littering would be observed in this particular environment. In many local shopping areas, street cleansing is not as frequent as main town centres, with litter from parades of shops possibly being litter picked once daily or even less. This lower frequency of cleansing will allow for more accumulation of litter between litter picks. These areas are also often providing more of the 'food on the go' outlets than main high street areas, potentially resulting in people discarding packaging immediately after leaving the outlet.

The most significant finding in out-of-town retail parks was that 79% of sites were affected by the presence of littered PPE items, by far the highest incidence of PPE items found in any land use type. Litter-picking frequency on retail parks is variable as these sites are generally under private ownership, so we are unable to determine whether the frequency of litter-picking could impact upon the extent to which it accumulates. The high incidence of PPE litter though may be due to the fact that people do not often transit through these areas as they would a high street, and all businesses on these sites will require visitors to wear a mask. As a result, a significantly higher proportion of visitors to these areas will be using a face covering during their visit and then will wish to dispose of it when they have finished shopping. There may also be more accidental dropping of face masks in areas like this as people reach into bags or pockets for car keys as they return to their vehicles. Alternatively, items may fall from or be blown from vehicles as people get in and out — something that was witnessed by several local authority officers in their own car parks.

Travel hubs such as train and bus stations are often the responsibility of private companies, such as train operators, who are also responsible for litter-picking and cleansing in the immediate area. Cleansing in these areas is variable so we can't draw conclusions about whether litter-picking frequency could impact upon the accumulation of litter. The prevalence of packaging in these areas was significant, with 97% of sites being affected by packaging items. Notably, 88% of sites were affected by litter arising from drinks, with alcoholic beverage items found on 47% of sites and non-alcoholic beverage items found on 84% of sites. Discarded PPE was also common on these sites, with 34% of sites being affected. Surveyors reported that they also saw PPE items in the vicinity of all travel sites surveyed.

Essex local authority experiences

Local authority officers reported that, after an unprecedented absence of litter in town centres during the early part of the lockdown, once takeaway and drive-thru restaurants reopened there was a sudden resurgence in takeaway coffee cups and burger boxes along town centre roads and public areas. While shops, restaurants, cafés and pubs have reopened, people haven't rushed back to the town centres and they are still seeing lower than average levels of littering, which is one positive to come from the impact of the pandemic.

In response to this Keep Britain Tidy also produced a selection of campaign images to help with littering since lockdown, which were made freely available to all KBT network members:



Source: Keep Britain Tidy

Unfortunately, a less positive trend reported by local authorities was a surge in so called 'careful fly tipping'. The majority of local authority officers reported that they had seen significant dumping outside charity shops. Many people took the opportunity that lockdown presented to have a clear-out at home but since non-essential retailers were still closed, people who wanted to donate their items to charity found themselves with no outlet. In attempting to do the right thing, people placed items outside charity shops. However, while the stores were closed these items were ultimately going to be left on the street so local authorities had no option but to remove these items and dispose of them. This 'careful fly tipping' was also seen at recycling banks where banks were overflowing with material so people placed their recyclables beside the banks. In these cases, while people believed they were doing the right thing, leaving their items in this way constituted fly tipping and presented a real issue for local authorities.

CPRE network feedback

The CPRE network also reported that a decrease in town centre littering had been noticed during lockdown but that as the lockdown was lifted an increase was observed, particularly where retail parks had drive-thru takeaway restaurants on site. Supermarkets were also highlighted as an area of concern, with frequent littering in the surrounding areas, particularly car parks. While these areas are often privately managed, litter from these areas migrates into surrounding areas, so decisive action is needed to ensure that there is no detrimental impact on the local area.

5.2 Local parks

As we all began to venture out to enjoy the unseasonably good spring weather, local parks became the focal point for many. The importance of these as green lungs and a space for exercise, physical and mental wellbeing, was particularly evident where there were large numbers of people who didn't have gardens. As lockdown lifted, they also became the new places to meet up with friends. Households weren't permitted to mix at home and the space of a local park allowed for social distancing in the fresh air, which reduced the likelihood of coronavirus contagion. Restaurants, pubs and cafés remained closed and so 'dinner parties in the park' became a common sight. There was a marked increase in discarded drink and food containers as well as disposable barbecue trays as people partied in the park.

The unprecedented litter abandoned in parks became the attention of media focus with many newspaper and television articles covering this new widescale behaviour. In London the Royal Parks litter-pickers, who cover eight green spaces in London, picked up more than 250 tonnes of rubbish during June. It took staff 11,078 hours — the equivalent of 15 months of work — just to clear the litter left on the grass.

Basildon Council reported overwhelming levels of litter in its parks which its cleaning crews struggled to keep on top of. People were leaving their waste next to full bins which quickly spread across the parks but the council, like so many others, asked people to take their litter home with them.

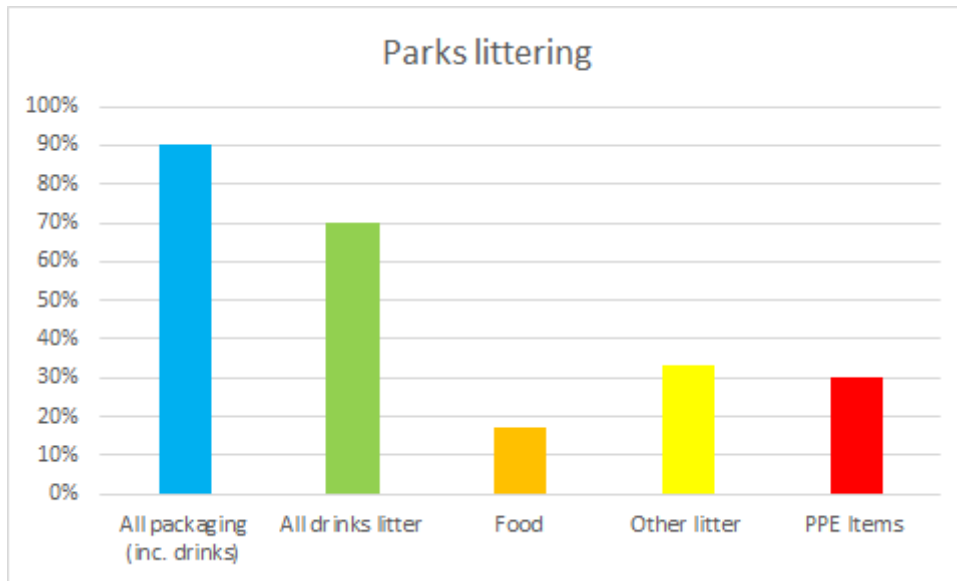
In frustration at the levels of litter and other anti-social behaviour in parks many councils have adopted KBT's Love Parks campaign, which was developed in response to the issues being faced by local authorities:



Source: Keep Britain Tidy

Litter Survey

During the litter survey, 30 park and open space sites were inspected:



A theme frequently reported by local authority officers was that people were using the open spaces in different ways, such as the dinner party in the park. This trend for al fresco dining was also driven by the lack of availability of eat-in hospitality until July. The proliferation of restaurants and cafés offering takeaway services led to a huge rise in the amount of packaging being used in this sector. Much of this waste made its way to open spaces, which goes some way to explaining why 90% of open spaces surveyed were affected by packaging litter of some kind with 70% of site affected by the presence of food packaging in particular.

Another trend, which was previously not seen to this level, was the consumption of alcohol in these settings. 43% of sites were affected by alcoholic drinks packaging, the second most significant percentage in any category. The reason for these items being discarded in open spaces could be due to the pressure placed upon the available bins by the huge surge in visitor numbers, but research published by KBT in their Little Book of Litter in 2012 highlighted that intoxication may be a factor. It states that 70% of people surveyed thought that people would be more likely to litter when drunk, that people are also less likely to feel guilty about littering when drunk and that littering is somehow more excusable when the perpetrator is drunk. This may go some way to explaining the prevalence of items related to the consumption of alcohol in these areas.

The fact that 30% of sites were affected by discarded PPE was surprising, as in the majority of cases PPE would not need to be worn in these areas. However, this may be explained by people discarding it along with other items that they had used for a picnic, by it being blown here from nearby retail areas, or falling from pockets and bags while people were enjoying the outdoors.

Essex local authority experiences

Local authorities in Essex reported a surge in litter bin use in parks and open spaces, many stating that these spaces have been used to an extent never seen before, surpassing even the best bank holiday weekend. One officer noted that they had received lots of feedback from the public about the green spaces in the district and how many people were not aware of the range of parks on offer until the lockdown. Litter bins in parks are typically emptied daily and areas litter-picked once a day. Some local authorities reported that they had drafted in additional staff to help with litter-picking and bin-emptying in their parks, with one authority increasing the frequency of litter bin-

emptying by 25%. Yet despite these efforts the demand for waste disposal on site outstripped capacity on a daily basis.

Several Essex authorities ran campaigns during lockdown to try to make people think before just abandoning their litter in parks:



Source: Braintree District Council

WHY ARE YOU THROWING LITTER HERE?

- I'm lazy
- I don't care about where I live
- I think other people should clean up after me

Don't Be A TOSSER

We're CLEANING UP BASILDON

Basildon Council
BASILDON • BILLERICAY • WICKFORD

Source: Basildon Council

DON'T BE A TOSSER

Why are you tossing litter around here?

- I'm lazy
- I don't care about this community
- I think other people should pay to clean up after me

USE A BIN OR GET A FINE!

www.brentwood.gov.uk

BRENTWOOD BOROUGH COUNCIL

Source: Brentwood Borough Council

CPRE network feedback

The CPRE network also reported that they had seen an increase in litter in their local parks. Cheltenham's parks saw an incredible amount of litter left to the extent that the borough authority put up posters using the strapline "don't be a tosser". The litter was mainly food and drink containers but also a lot of disposable BBQ.' Staffordshire also saw an increase in litter. It was felt that some of this might be the result of reduced litter-picking leading to overflowing bins.

5.3 Open countryside

More than half of England is countryside, with vast swathes protected as National Parks, Areas of Outstanding Natural Beauty and Sites of Special Scientific Interest. The majority are managed by private landowners or organisations such as the National Trust, Forestry Commission and the Ministry of Defence.

Litter in the countryside is much less intensively managed than local urban parks and many areas have fewer, if any, paid litter-pickers and often deliberately don't have litter bins except at 'honey pot' spots such as visitor centres, cafes and car parks. Most importantly, if visitors drop litter in the countryside it is no one's 'job' to pick it up. A volunteer or a member of the public may take responsibility but often it is picked up by animals and birds, causing risk of death or injury. The Countryside Code requests visitors to 'leave no trace of your visit, take all litter home'.

This year saw record numbers of visitors to Britain's countryside as a result of the weather and the coronavirus restrictions. But sadly, the litter, rubbish and abandoned camps followed close behind. The Lake District National Park Authority recorded 300 bags of rubbish collected in a single weekend in June as lockdown began to ease, and the North York Moors National Park Authority cleared out a single waterway with a haul of 20 bags of litter. In both cases this was a level of littering they hadn't experienced before.

Those who manage the National Parks and other areas of the countryside are keen to encourage more newcomers to their areas and are pleased that the pandemic has brought a new group of people out to enjoy them. In a Guardian article on 14 August Jack Feinnes, the director of the Holkham estate, North Norfolk said, 'It's a totally different demographic [...] we're seeing a lot of young people. The positive is we have a chance to engage with a whole different section of society'. There seems to be a consensus of opinion that littering and other undesirable behaviour occur in part because some of the new 'different demographic' have less awareness and understanding or consideration of nature and have not been taught how to engage with the countryside. For most youngsters learning about the environment, wildlife and the countryside is a minimal part of the school curriculum and is not something that many parents are familiar with. Ben McCarthy, of the National Trust (head of nature and conservation ecology), maintains that 'once people have positive experiences in nature, they start to have pro-environmental attitudes'. Better engagement and better experiences for the widest range of the public will help nature to recover.

5.3.1 Fly camping

The inability to holiday abroad combined with a desire to escape from the narrow confines of lockdown led many people to flock to campsites, resulting in these filling up quickly. Campsites also had to practise social distancing within their fields which meant much reduced capacity. Some campers who turned up without bookings found the campsite full, and rather than go home they chose to 'wild camp' in unsuitable places, sometimes leaving a trail of destruction.

The true spirit of 'wild camping' is to escape the hustle and bustle and to enjoy the peace and tranquillity that the countryside offers and to be at one with nature, which many people embrace. This inherently implies that when wild camping you will leave no trace of your visit. Wild

camping is not permitted in National Parks, except for Dartmoor National Park, and unless it is in a designated wild camping area, express permission must be sought from the landowner.

However, what was seen in the summer of 2020 was not wild camping. Some campers simply abandoned their entire camp, which due to the scale of rubbish became more akin to fly tipping than just littering. As a result, another new pandemic term has entered our vocabulary: 'fly camping'.

Festivals are now a big part of the UK culture with over 400 happening each year but many if not all of these were cancelled in 2020. As lockdown lifted, some frustrated festival-goers, feeling they had been restrained for long enough, chose to recreate their festival experience in the countryside, forests and at beaches. After their festival party had finished, they walked away from the debris of their tents, chairs, barbecues, food and drink containers and general rubbish, in much the same way they would have at a festival. Festival organisers, familiar with this behaviour, employ an army of volunteers to clear up the abandoned camping equipment, tents and chairs left as if they were single-use items and this seems to have become the norm for some. This behaviour in the countryside was relatively unknown before the pandemic.

Fly camping affected many landowners and managers, including the National Trust whose land is mainly open access. It saw a massive increase in fly camping and simulated festival activity on its land. National Parks UK even uploaded the following to their website:

'Q. As a taxpayer I can camp or party all night long in National Parks, right?

National Parks Authorities don't actually own much of the land in National Parks. Most of it is privately owned and a great deal of it is particularly sensitive: either historically important or as a home for nature. You need to follow the guidance given by each National Park about camping, it can be quite restrictive but that's with good reason. National Parks are definitely not festival sites.'

This highlights the significance of the issue faced by countryside land managers. Not only is the debris left behind unsightly and time-consuming and costly to remove, it is also a hazard to wildlife.

CPRE network feedback

CPRE Dorset reports that 'Since restrictions have eased, fast food outlets reopen and travel/"staycations" have increased, so have litter incidents particularly at parks and beaches.'

CPRE Oxford found that there was more litter in places where people parked their cars to walk themselves or dog walk in the countryside. This litter was mainly fast food, drinks cans and dog poo bags.

On a positive note, CPRE Staffordshire reported very little smoking-related litter in its countryside locations, possibly due to the big drive by the fire service to prevent accidental fires in the early dry spring and summer.

5.4 Beaches

The spring and summer of 2020 found many people furloughed and at home, children not at school, the longest hot spell of weather since records began (six days above 34c) and no foreign holidays. These combined factors meant that people flocked to Britain's beaches for fun and relaxation. In an era where a trip to the supermarket was the highlight of the week, a day at the British seaside was the equivalent of a sun-drenched holiday abroad.

Beaches saw unprecedented use from the late May bank holiday onwards, not just at weekends, as was more traditional, but also throughout the week since many people were not working. The resultant litter was also unprecedented. The widely reported 'invasion' of Bournemouth beach saw 500,000 people on one of the hottest days of the year. Litter bin facilities couldn't cope and people

didn't take their litter home with them, resulting in an amazing 8 tonnes of rubbish being collected from the beach and 33 tonnes from the Dorset coast.



Bags of litter cleared after one sunny day at an Essex Beach. Image courtesy of Tendring District Council

Oceanographic magazine reported 'Unprecedented amounts of litter on beaches since lockdown eased. There have been numerous reports of high levels of discarded PPE, such as single-use masks and plastic gloves littered across UK beaches and found in the ocean. Additionally, high levels of illegal 'wild-camping' have resulted in issues with human waste and toilet paper/wipes on the coast, as well as incidents of fire damage from camp fires and barbecues.'

BBC Norfolk reported beach litter in Great Yarmouth reaching levels not seen before, even after events and school holidays. Days at the beach produced colossal amounts of rubbish with litter-pickers finding 'broken glass, a bedsheet, face masks, disposable gloves, a table tennis bat, the string and handle from a kite, a broken camping chair and candles from a birthday cake'.

Essex local authority experiences

In coastal areas and other tourist hotspots litter bins are often emptied many times a day and there are also very frequent litter patrols to keep the area clean. The coastal authorities in Essex all employ additional staff during the peak season to increase the frequency of litter bin-emptying and litter-picking even further, with additional litter bins being provided in areas of peak use. Many of these authorities brought in their additional bins and seasonal staff earlier than usual due to the demand following the easing of lockdown. Despite these efforts by the local authorities to keep up, the demand for waste disposal on site outstripped their capacity on a daily basis.

One coastal authority officer suggested the unprecedented levels of beach litter was a direct consequence of restaurants and cafés being closed for eating in. Many people visiting the coastal areas of Essex are often day trippers who arrive by train and would normally go to a bar, café or restaurant for lunch rather than bringing a picnic to minimise the number of things they have to carry with them. Unfortunately, with cafés and restaurants having to become exclusively takeaway outlets, this generated a surge in packaging which made its way onto the beaches. In the absence of dine-in options many visitors either got takeaway food and drinks or even had food delivered to them on the beach, or they purchased picnics from supermarkets at their destination. Often they

would buy larger packs of snacks and drinks to share with friends on the beach and then deposit filled ‘bags for life’ beside or in litter bins, or just leave them where they had been sitting.

Alcohol waste and the presence of nitrous oxide canisters among litter and in litter bins was another recurrent theme in coastal local authority officers’ accounts. Significant volumes of cans and bottles were left on beaches as people partied late into the night while pubs were closed and social mixing indoors was restricted.

One authority reported that they had secured additional funding from government to increase the frequency of litter-picking and litter bin-emptying in their open spaces on the coast because areas which had previously had litter bins emptied once over a weekend now needed many visits a day to keep on top of demand during the peak of the good weather.

Across the country volunteer litter-picking groups increased their collections to help keep their local areas clean. Many local people were so galvanised by the images of litter-strewn beaches on television that they went out litter-picking on their own. It could be argued that the existence of the government’s furlough scheme helped to facilitate this activity when many people would previously not have had the spare time to do this.

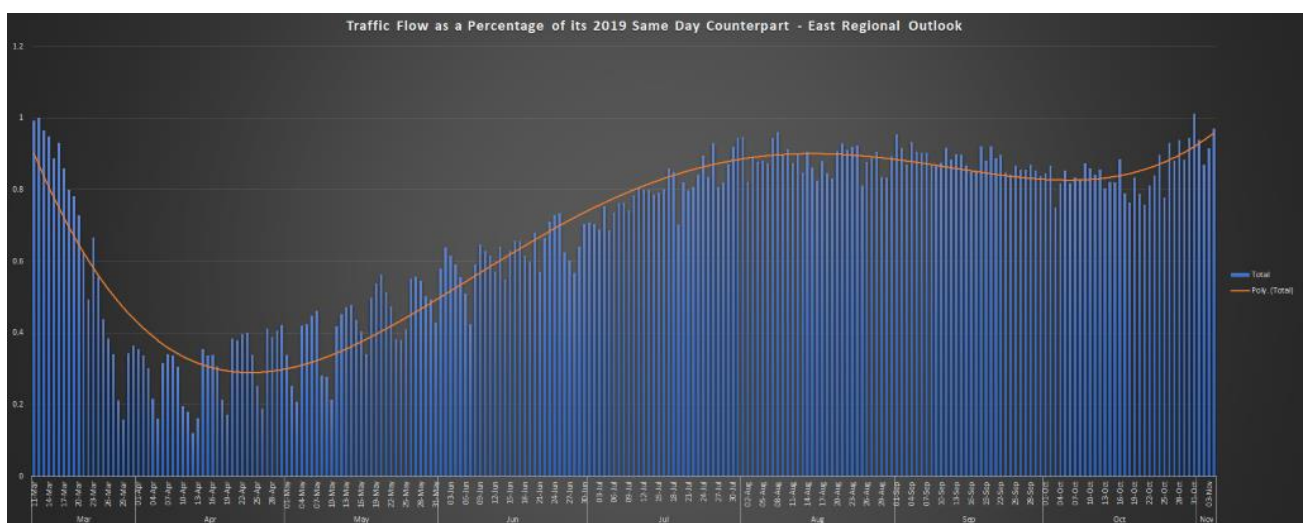
CPRE network feedback

CPRE Devon and CPRE Dorset both reported a rise in littering on beaches in their area with one respondent describing the increase in litter they had seen as ‘devastating’. The increasing presence of PPE materials and significant amounts of plastic in this litter was a very concerning trend, threatening to spill into our oceans and seas.

5.5 Roads

As the lockdown began and we were advised against all but essential travel, road use tailed off to very low levels at the end of March and for much of April after which it slowly increased as lockdown restrictions were eased during the summer. Nationally, traffic hit its lowest level on Sunday 12 April with only 14% of traffic on the roads compared to 2019 levels. In the first two weeks of April, the levels of traffic averaged 24% of those of the previous year.

In the Eastern region the pattern is reflective of the national picture, with the lowest recorded traffic flow on 12 April at 12% of the level shown the previous year. In Essex this low was just 14% of usual traffic flow on the A12, and 16% of the usual traffic flow on the A120. This demonstrates the significant impact that lockdown had on people’s lives across the country, as they followed the directive to ‘stay at home’.



Source: Highways England

Essex local authority experiences

During lockdown the reduced traffic, combined with closed takeaway facilities, meant that reduced roadside littering was observed by officers of many Essex local authorities. However, as takeaway businesses re-opened there were reports in the media of flurries of fast-food waste littering road sides.

Several local authority officers stated that lockdown presented an opportunity to capitalise upon the reduced traffic flows to carry out thorough cleansing on the road network, specifically the high-speed trunk road network which is a very challenging area to litter-pick safely. Unfortunately, staffing demands for other frontline services, and the need to focus litter-picking in areas that were seeing higher than average use, meant that this was not possible in most cases.

CPRE network feedback

Local CPRE groups reported a mixed picture of littering on roadsides. CPRE Devon felt that the roadside lay-bys suffered from increased littering and fly tipping of both domestic and builders' rubbish during the coronavirus pandemic, while CPRE Kent felt there was less litter during the lockdown, citing specifically the A20 which runs in to the Kent Downs Area of Outstanding Natural Beauty.

Members of CPRE Northumberland reported a reduction in rural roadside littering, initially through lockdown, but that this began to increase as restrictions lifted. The littering that was observed consisted of water bottles, coffee cups, fast food packaging and energy drinks cans. They also mentioned windblown rubbish from bins.

6. Fly tipping

Reports of fly tipping increasing by 300% during lockdown made news headlines and extensive media coverage. The YouGov poll commissioned by CPRE found that 40% had noticed more fly tipping since March. ClearWaste, an app to report fly tips and deal with the illegal dumping of rubbish, was bombarded during this period with reports and photographs of fly tipping up by 75%. The City of London Corporation reported a 52% increase in the number of fly tips in Epping Forest between January and April this year compared to the same period last year. These were mainly furniture, household items and garden waste. The Woodland Trust, which kept its 1,000 sites open during the pandemic to give people the opportunity to exercise and enjoy wildlife, also saw a surge in fly tipping as well as littering, costing the charity £134,000 to clear up at a time when charities are struggling financially.

Not only did the quantity of fly tipping change, but also the nature of the waste being dumped.

In recent years there has been a growing issue with so-called industrial fly tipping, where large volumes of material from illegal waste operations are dumped. The Environment Agency leads on investigations into this type of fly tipping along with the police and landowners, which has links to serious organised crime. This 'industrial' fly tipping stopped during the early months of lockdown. It is believed that this activity stopped because, with restrictions on travel and a reduction in road use, the perpetrators would have been much more conspicuous and therefore more likely to arouse suspicion from the police and other authorities.



Images courtesy of Richard Cowen CPRE Durham and Caroline Dibden CPRE Hampshire

Unfortunately, smaller domestic fly tipping incidents grew in number. Several of these could be accounted for as ‘careful fly tipping’ where people have placed items beside full bins or recycling banks, or where people left items for reuse outside charity shops which were unable to open due to the pandemic. But a significant number were more malicious in nature.

Most people were mandated to stay at home, many unable to work, and this sudden increase in free time led to neglected gardens being tended and DIY jobs undertaken. On the weekend of 18-19 April DIY stores won permission to reopen and they were rewarded with queues of customers waiting up to two hours to get into stores, such was the demand! As a result, DIY and garden waste that couldn’t be put in the main ‘black sack or bin’ refuse was being created in abundance.

The majority of council-managed Recycling Centres for Household Waste (RCHWs), more commonly known as ‘the local tip’, were closed from the end of March to mid-May. Additionally, many local authorities paused collection of garden waste and bulky household items such as fridges and sofas during the lockdown so that staff could be redeployed to the statutory frontline waste and recycling collections in order to minimise disruption to residents. These factors, combined with charity shops also being closed since they were non-essential retail premises, left householders with very few options for disposal of their reusable items and waste from these home and garden improvements.

The excellent weather experienced during the spring generated a perfect storm of lots of green garden waste and nowhere to put it! Hedge trimmings and grass cuttings were being dumped in woods, lay-bys and countryside. While this is perceived to be less offensive than litter or other fly-tipped items because of its biodegradability, it still constitutes fly tipping.

For the more conscientious skip hire was the solution, for others the advert on social media for a ‘clearance service’ was the convenient, and often cheaper option. Sadly, many local authority enforcement officers report that adverts on social media for ‘man with a van’ services can result in fly-tipped items, especially when many legal waste disposal sites were not available in the peak of lockdown. While many of these operators run legitimate operations and have the appropriate licences, the less scrupulous don’t provide waste transfer notes to the people they take

waste from, leaving the hirer at risk of prosecution for failing to carry out their duty of care with regards to disposal of their waste, and also indicating that the waste may not be going to an authorised facility.

Essex local authority experiences

Not only was this increase in domestic fly tipping covered by the media, it also was a big problem for local authorities. One council in Essex revealed that residents were phoning in to report fly tipping had been dumped at the end of their drive. However, upon investigation it became evident that the resident had put it there themselves! Another Essex authority reported that two illegal waste facilities had begun operating during the pandemic, a matter which was referred to the Environment Agency for action.

CPRE network feedback

More than 50% of the local CPREs that responded said they had seen increased small-scale fly tipping. While most reported this to be domestic or DIY-type fly tipping, there were also references to builders' waste. It was felt the closure of the Recycling Centres for Household Waste was a contributory factor in people disposing of their waste illegally. Additionally, CPRE Dorset reported an increase of 'over the fence' dumping of garden-related materials.

CPRE Hertfordshire's representative said 'I've seen a lot more along my cycle routes, typically waste like old bathrooms and kitchens, and more recently a lot of waste engine oil in containers that spilt everywhere. As soon as it's cleared up another lot seems to appear.'

CPRE Staffordshire reported that fly tipping appeared to be more domestic in size with less of the commercial 'man and van'-type tipping. They would more commonly see smaller tips, such as a car boot load in a field gateway rather than a tipper wagon load up a quiet lane. People used the first part of lockdown to clear the shed/garden/spare room only to find the local authority tip was closed. They reported that once the tip reopened fly tipping has, if anything, gone down, possibly because there are more people around to create natural surveillance and discourage fly tipping.

7. Behavioural analysis of littering during lockdown

This study has amply demonstrated that during the coronavirus pandemic 2020 unprecedented levels of littering and fly tipping occurred in new and different locations. For nearly all of us our behaviour changed in many ways during this time and, especially as we emerged from lockdown, littering was no exception. These changes are likely to be a consequence of how we experienced the pandemic, the lockdown and how we felt as we came out of it. Understanding the thoughts and processes behind our behaviour will equip us better for putting in place measures to reduce the likelihood of such widespread littering and environmental damage recurring in the future. As evidenced in this study, many people have been careful with the rubbish they have created and tried to do the right thing by placing bags full of the remains from their day out or picnic lunch beside or on top of a bin. It was simply unfortunate that due to the sheer, unprecedented volume bins just could not cope.

There are many theories about behavioural change among the population. Through the summer, once the initial panic had died down and the more unexpected side-effects of lockdown began to be seen, the media considered the reasons behind the changes, particularly in littering behaviour. The main theories put forward can be broadly grouped into five areas:

7.1 Hierarchy of needs

The BBC reported in an article for Worklife in June 2020 that when people are placed under stress or are distressed, they revert to a mode of preservation which helps to ensure their survival,

demonstrated by Maslowe's hierarchy of needs. During the coronavirus pandemic the main concern for many people was, understandably, to avoid catching the virus which may lead to death. Caring for the environment was not essential for survival and so was fairly low down on many people's list of priorities.

7.2 Increased use of disposable items

During a pandemic people become more risk averse and, understandably, more protective of themselves and their loved ones. This is often the product of fear. To this end more disposable items are used as people don't want to catch anything from handling something that others have touched. The coronavirus pandemic resulted in takeaway coffee shops reversing their policy of encouraging people to use reusable coffee cups and the majority of outlets returned to only using single-use disposable cups. Many supermarkets and food outlets individually wrapped bakery items and fruit in plastic. Additionally, when eating in open spaces, people used disposable plates, cups, bottles and food containers. Inevitably, the more single use/disposable packaging or eating materials available, the more litter that will be left either deliberately or negligently. Chris Coode from Thames 21 was quoted in the BBC's Worklife article stating that 'the majority of rubbish we are finding along the Thames in London is single-use plastic'.

7.3 Lockdown frustration

One of the primary explanations as to why people littered when they were released from lockdown and were allowed to go out to open places and meet with friends was that they had a sense of frustration, followed by rebellion.

In the Metro newspaper in July 2020 Professor Margareta James outlined the theory that when people are at home for such long periods of time, they experience a disconnect with public places and so don't take responsibility for clearing up after their own mess. There is a sense of frustration and a desire for rebellion after being 'locked up' for so long. Rebelling against what is considered right for the common good is seen as an assertion of free will. Some felt that they had selflessly complied with the lockdown rules set out by government with little in the way of compensation. People had been compliant for a long time, the duration of which had not been foreseen or previously experienced, and as a result some felt disengaged from government and from their own local communities. Community wellbeing is closely linked to respect for local and shared environment, and this inevitably was diminished.

Most local authority officers agreed that frustration was the primary driver behind the increase in littering behaviour. The feeling was that people had got fed up with 'following the rules' and that this was acted out through careless littering. This can also be referred to as 'generosity fatigue', a term from business psychology described in a study published in the Harvard Business Review. This relates to people who undertake generous actions for the greater good but eventually burn out, becoming exhausted with 'giving', leading them to become resentful and more selfish in their actions if there are no limits set to their generosity. In the case of the coronavirus lockdown, boundaries kept moving as restrictions changed and the lockdown went on longer than anyone imagined, so it is unsurprising that people became tired of following the rules, and as a result frustration bubbled over into acts of defiance and disengagement.

Dr Konstantinos Arfanis, also quoted in the Metro newspaper, says that a major driver behind the increase in littering behaviour is the way lockdown has drastically changed our day-to-day activities. Under normal circumstances people tend to respect social norms and conventions such as throwing rubbish into bins. However, the global pandemic has made people 'angry and somewhat scared. Social conventions become irrelevant'.

7.4 Unthinking littering

People who are used to socialising in cafés, bars and restaurants where staff are paid to clear up after them, aren't necessarily used to socialising in parks and open spaces or familiar with the way to use them. In these circumstances littering is not necessarily deliberate or malicious, it's just that people aren't thinking through the ramifications of their actions when they leave their pizza boxes, plastic bottles and rubbish from their al fresco party. The same could be said of those abandoning their tents after their mini-recreated festivals in the countryside, beaches and forests. It should be remembered that we only see what's left behind; we don't see the rubbish that people have taken away.

7.5 Littering begets littering

It is a well-known concept that if a place looks littered or uncared for, then it will attract more litter. This is because littering is the normal behaviour here and people will often copy the behaviour of others. Also, a person throwing down one additional piece of litter knows that their actions will not make the place look any worse than it already does.

Keep Britain Tidy neatly summed this up in their Little Book of Litter (2012):

'Indeed, the very presence of litter is enough to persuade or dissuade someone from creating even more litter. For instance, a person is more likely to feel guilty about dropping litter in a clean and well-maintained area than they are in a dirty and littered area in which they may feel that the addition of one more piece of litter will make little difference to the overall appearance of the area. Litter can impact on people's behaviours and understanding people's behaviours is key to tackling the litter problem.'

Their research showed that 49% of those surveyed believed that people are more likely to drop litter when there is already lots of litter lying around.

As concern for the climate emergency grows, it is hoped that littering behaviour will become unfashionable. But this can't be achieved through good will alone — a concerted push from government will be needed to drive this change in behaviour to deliver a litter-free future.

8. Conclusion

The evidence is clear that the coronavirus pandemic and the consequential legislation which curtailed our activities has had an impact on many areas of our lives, not least of which is littering, fly tipping and how we dispose of our waste. As towns and commercial centres saw a dramatic reduction in people visiting them, similarly littering reduced dramatically. However, as places for recreation and socialising changed from indoors to outdoors, in an attempt to reduce the spread of the virus, so the litter followed. In many cases leaving litter is not malicious or wilful but more negligent or even accidental, suggesting a lack of understanding about how to use these spaces. It should also be stressed that many people who visited parks, beaches and the countryside during and after lockdown were respectful of their environment and took litter home or put it in bins where available. However, the actions of some have left a lasting impact.

Although the unprecedented levels of litter were dealt with admirably by local authorities and armies of volunteers across the countryside, parks and beaches, clearing up is dealing with the symptoms of the problem not the cause. Local authorities and landowners provide waste receptacles in many areas. They also maintain high levels of cleaning activity focused on the areas of high usage which all comes at significant cost — yet still the problem persists. Where this issue occurs in remote

countryside locations, the challenge posed to landowners and managers is not only one of cost but also logistics because of the location and the expanse of area to be covered.

The high levels of food and drinks packaging litter found during the pandemic highlights the need for significant action, not only to ensure an effective means of capturing this material and preventing it from being littered but also to reduce packaging at source.

The new type of litter that is now seen on the streets, PPE, is particularly concerning given the insidiousness of its nature and its ability to further spread coronavirus once it has been used. Following the introduction of the smoking ban in public places in July 2007, a significant upsurge in discarded smoking materials was noted outside premises where smoking was previously permitted. In response to this, many places installed cigarette bins directly outside the premises where people would congregate to smoke. This could provide a solution for those wishing to discard their PPE litter as soon as they have left a building. Hospitals are already providing bins at their exits for visitors and patients to dispose of their PPE. Perhaps this is needed for all retail and hospitality premises to reduce the prevalence of discarded PPE?

Understanding the reasoning behind people's behaviour will enable a more rounded and complete approach to preventing a repeat of the littering problem in the future should these circumstances arise again. Fear and frustration are powerful drivers which ultimately resulted in significant changes in behaviour during the pandemic. Fear drove an increase in the number of single-use items being consumed and also an increase in takeaway packaging, while frustration drove many people to become disengaged with the social norms.

During lockdown many people, and a much greater diversity of people, have had a new and positive experience of the countryside, and more people than ever have visited it. Open spaces such as beaches and parks that capture this interest should be nurtured and the positive experiences gained through lockdown should be used to influence others. There is a need for greater understanding of the countryside and a deeper knowledge of the Countryside Code for all, particularly those people who have previously been strangers to the countryside.

Our countryside is one of England's greatest assets and needs to be protected to ensure that it can be experienced and enjoyed by all.

9. Recommendations

We have a prolific throwaway culture in the UK, in which packaging and other single-use items are discarded without a care as to where they will end up. With producers of such items paying little attention to how the items they sell, and profit from, are disposed of and the damage they cause to the environment, it is little wonder that disregard travels down the supply chain to consumer behaviour. Litter is a symptom of the unsustainable approach to how we use and waste resources and the impact it's having on the countryside has never been clearer.

This study has shown that when consumption and use of single-use items rises, be that single-use face masks, glass bottles or takeaway cups, littering of those items also rises. Only solutions that tackle the root causes of litter will prevent us from continuing to be the 'Dirty Man of Europe'. That's why CPRE, the countryside charity, is calling for a renewed commitment from the government to curb our throw-away addictions and ensure a wholesale shift to valuing and effectively disposing of materials. A CPRE-commissioned poll of more than 2,000 members of the general public showed that 79% think the government should be taking more action to tackle litter.

We're calling on the government to:

- 1. Deliver systemic solutions to littering:**
 - 1.1. Commit to an 'all-in' Deposit Return Scheme (DRS) that includes glass, plastic and metal drinks containers of all sizes by the end of 2023. Applying a deposit to drinks containers prevents them being littered.**
 - 1.2. Introduce a full Extended Producer Responsibility scheme (EPR) by the end of 2023 that is transparent, accurate and detailed and which provides full end of life costs, to specific types of materials. Fees to producers should be sufficiently modulated in order to incentivise eco-design and to drive a continued reduction in the production and sale of single-use plastics. Fees should also cover the costs of street cleansing and any targeted anti-littering campaigns.**
 - 1.3. Use a combination of taxes and charges, combined with full extended producer responsibility, to incentivise a reduction in single-use items and packaging right across the supply chain. Charges on single-use items, such as cutlery, must cover all single-use items and not just plastic to guarantee against a rise in wasting other valuable materials.**
- 2. Support the promotion of the Countryside Code, with its clear anti-littering guidance, through online advertising and engagement with schools. Support the promotion of the Countryside Code, with its clear anti-littering guidance, through online advertising and engagement with schools.**
- 3. Renewed government commitment to the aims of the Litter Strategy for different local groups, National Parks, local authorities, Highways England and businesses to reduce litter through co-operation, collaboration and joint working.**

10. References

- Barkham, P. 'The worst of Human Nature': UK stacationers 'trail of destruction. The Guardian. 14 August 2020. <https://www.theguardian.com/environment/2020/aug/14/uk-staycations-countryside-coast-visitors-trail-of-destruction> [Accessed 28 August 2020]
- Basildon Council. In the news: Tonnes of rubbish dropped in borough's parks in two days. 04 June 2020. <https://www.basildon.gov.uk/article/8096/In-the-news-Tonnes-of-rubbish-dropped-in-borough-s-parks-in-two-days> [Accessed 10 September 2020]
- BBC News. Bournemouth Beach: 'Major Incident' as thousands flock to coast. 25 June 2020. <https://www.bbc.co.uk/news/uk-england-dorset-53176717> [Accessed 10 Sept 2020]
- Bond, A. 'Huge increase' in fly tipping and littering in woodlands during lockdown. The Woodland Trust. 7 July 2020. <https://www.woodlandtrust.org.uk/press-centre/2020/07/lockdown-litter-fly-tipping/> [Accessed 28 August 2020]
- Campaign for National Parks. Why are our National Parks full of rubbish? 2020. <https://www.cnp.org.uk/blog/why-are-our-national-parks-full-rubbish> [Accessed 26 August 2020]
- Chin, AWH, Chu, JTS, Perera MRA, Hui, KPY, Yen, H, Chan, MCW et al. Stability of SARS-CoV-2 in different environmental conditions. The Lancet. 2 April 2020 [https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30003-3/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30003-3/fulltext) [Accessed 22 Oct 2020]
- City of London Corporation. City Corporation warns against fly tipping at Epping Forest during COVID-19 lockdown. 12 May 2020. <https://news.cityoflondon.gov.uk/city-corporation-warns-against-fly-tipping-at-epping-forest-during-covid-19-lockdown/> [Accessed 28 August 2020]
- Farhoud, N. Coronavirus lockdown sees fly tipping soar 75% with tips closed and fewer bin runs. The Mirror. 15 May 2020. <https://www.mirror.co.uk/news/uk-news/coronavirus-lockdown-sees-fly-tipping-22035697> [Accessed 28 August 2020]
- Grant, A & Rebele, R. Beat Generosity Burnout. Harvard Business Review. 23 January 2017. <https://hbr.org/2017/01/beat-generosity-burnout> [Accessed 6 October 2020]
- Keep Britain Tidy. Litter in England; The Local Environmental Quality Survey of England 2017/18. p5. https://www.keepbritaintidy.org/sites/default/files/resource/National%20Litter%20Survey%20201718_0.pdf [Accessed 30 September 2020]
- Keep Britain Tidy. Little book of Litter. 2012. p36. https://www.keepbritaintidy.org/sites/default/files/resources/KBT_Little_Book_of_Litter_2012.pdf [Accessed 20 October 2020]

- Keep Britain Tidy. Little book of Litter. 2012. p45.
https://www.keepbritaintidy.org/sites/default/files/resources/KBT_Little_Book_of_Litter_2012.pdf [Accessed 20 October 2020]
- Lowe, Y. Fly-tipping has soared by 300 per cent during the lockdown, university analysis shows. The Telegraph. 30 April 2020. <https://www.telegraph.co.uk/news/2020/04/30/fly-tipping-has-soared-300-per-cent-lockdown-university-analysis/> [Accessed 28 August 2020]
- Marine Conservation Society. Great British Beach Clean 2020 results: PPE pollution on the rise on UK's beaches www.mcsuk.org/news/gbbc_2020_results [Accessed: 6 November 2020]
- McLeod, S. Maslowe's hierarchy of needs. Simply Psychology. 20 March 2020. <https://www.simplypsychology.org/maslow.html> [Accessed 10 September 2020]
- National Parks UK. Visit national Parks. 2020. <https://www.nationalparks.uk/visit-us/> [Accessed 12 November 2020]
- Natural England. The Countryside Code. 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/900032/countryside-code-poster.pdf [Accessed 3 November 2020]
- Oceanographic Magazine. Unprecedented amounts of litter on UK beaches reported since lockdown easing. 2020. <https://www.oceanographicmagazine.com/news/lockdown-litter-uk/> [Accessed 19 November 2020]
- Ro, C. 'Why are parks full of litter as lockdown eases?'. BBC Worklife. 11 June 2020. <https://www.bbc.com/worklife/article/20200610-why-are-parks-full-of-litter-as-lockdown-eases>
- The Royal Parks. Lockdown litter up by a third as the royal parks collects 20 London buses of rubbish in June alone. 16 July 2020. <https://www.royalparks.org.uk/media-centre/press-releases/lockdown-litter-up-by-a-third-as-the-royal-parks-collects-20-london-buses-of-rubbish-in-june-alone> [Accessed 26 August 2020]
- Scotter, K & Devlin, L. Coronavirus: 'The sheer amount of beach rubbish is colossal'. BBC News Norfolk. 26 June 2020. <https://www.bbc.co.uk/news/uk-england-norfolk-53177188> [Accessed 28 August 2020]
- Thompson, L. 'Psychologists explain why people are littering more now lockdown is lifting'. The Metro. 1 July 2020. <https://metro.co.uk/2020/07/01/psychologists-explain-why-people-are-littering-now-lockdown-lifting-12918790/> [Accessed 6 October 2020]
- Wikipedia. Timeline of the COVID-19 pandemic in the United Kingdom (January – June 2020) [https://en.wikipedia.org/wiki/Timeline_of_the_COVID-19_pandemic_in_the_United_Kingdom_\(January%E2%80%93June_2020\)](https://en.wikipedia.org/wiki/Timeline_of_the_COVID-19_pandemic_in_the_United_Kingdom_(January%E2%80%93June_2020)) [Accessed 30 September 2020]

- Wikipedia. Timeline of the COVID-19 pandemic in the United Kingdom (July - December 2020) [https://en.wikipedia.org/wiki/Timeline_of_the_COVID-19_pandemic_in_the_United_Kingdom_\(July%E2%80%93December_2020\)](https://en.wikipedia.org/wiki/Timeline_of_the_COVID-19_pandemic_in_the_United_Kingdom_(July%E2%80%93December_2020)) [Accessed 30 September 2020]
- Woolaston, S. 'It was so gross, I nearly cried': Meet the UK's litter-picking army – fighting our rising tide of filth. The Guardian. 21 July 2020. <https://www.theguardian.com/environment/2020/jul/21/it-was-so-gross-i-nearly-cried-meet-the-uks-litter-picking-army-fighting-our-rising-tide-of-filth> [Accessed 28 August 2020]
- Worldometers. United Kingdom. <https://www.worldometers.info/coronavirus/country/uk/> [Accessed 30 September 2020]

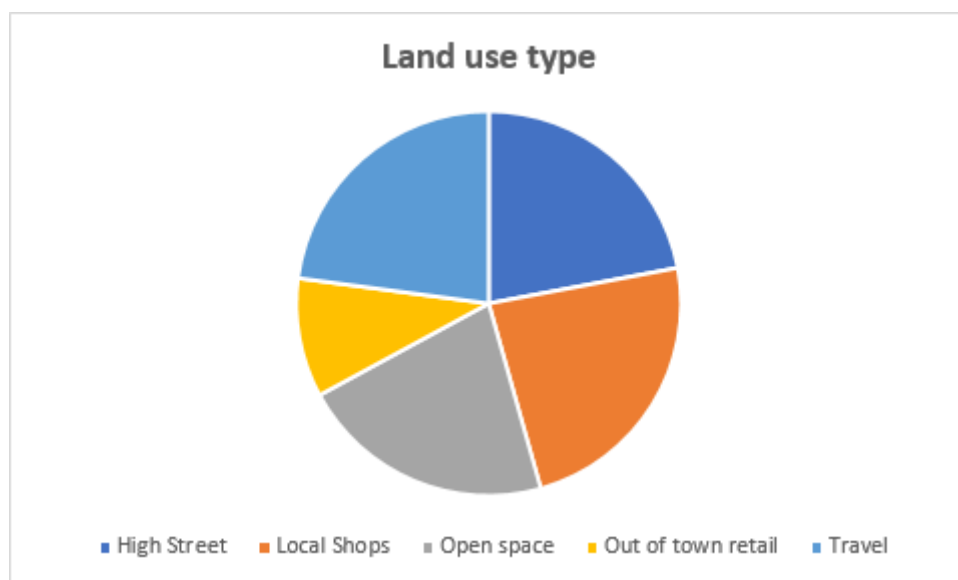
Appendix 1

Litter survey methodology

In order to establish the prevalence of PPE litter in Essex, transect surveys were undertaken using the Local Environmental Quality (LEQ) methodology developed by Keep Britain Tidy (KBT) as a base.

It was determined that a county-wide survey would be appropriate and that 10 transects would be assessed for each district, borough or city council area. Transects were identified in high footfall areas, which were divided into five land-use categories:

- High streets (main shopping area featuring national brands, restaurants etc);
- Local shops (smaller parades of shops featuring smaller national outlets and independent retailers);
- Out of town shopping areas (major retailers located out of town centres e.g. retail parks);
- Open spaces (countryside tourist destinations, parks, beaches etc); and
- Travel (public transport locations such as rail and bus stations).



Transects of 50m were identified for monitoring and then each transect was surveyed on foot in order to count the number of PPE items found (grouped by type), identify other types of litter present within the same transect and assign a grade to the transect as a whole.

The types of litter identified were categorised as follows:

- Drinks packaging (further subdivided into alcoholic and non-alcoholic drinks related items);
- Food packaging items (including snack packaging, confectionery wrappers, fast food items etc);
- Food items (discarded items or inedible items such as apple cores, banana skins etc)
- Other littered items (including receipts, bus tickets, clothing, vehicle parts, other miscellaneous items);
- Other packaging (non-food packaging items);
- PPE items (face masks, gloves and wipes); and
- Smoking related litter (including cigarette butts, cigarette packaging, matches, lighters etc).

The grades used for local environmental standards are set out in Defra's Code of Practice on Litter and Refuse as follows:

- Grade A: No litter or refuse;
- Grade B: Predominantly free from litter and refuse apart from some small items;
- Grade C: Widespread distribution of litter and/or refuse with minor accumulations; and
- Grade D: Heavily affected by litter and/or refuse with significant accumulations

Appendix 2

Litter survey findings

Transect type	Number of transects	Litter type									PPE items				PPE on site
		Smoking related	Food packaging	Food	Alcoholic drinks related	Non-alcoholic drinks related	Total drinks	General packaging	Total packaging	Other	Masks	Gloves	Wipes	Total PPE	
High Streets	31	31	19	6	4	10	13	14	25	13	14	2	1	17	13
Percentage		100%	61%	19%	13%	32%	42%	45%	81%	42%				55%	42%
Local retail	32	32	22	4	6	20	22	15	29	12	7	2	2	11	8
Percentage		100%	69%	13%	19%	63%	69%	47%	91%	38%					25%
Open space	30	28	21	5	13	18	21	11	27	10	4	2	6	12	9
Percentage		93%	70%	17%	43%	60%	70%	37%	90%	33%					30%
Out of town retail	15	15	13	2	3	10	10	6	14	5	17	2	6	25	12
Percentage		100%	87%	13%	20%	67%	67%	40%	93%	33%					80%
Travel	32	32	22	5	15	27	28	13	31	12	14	3	0	17	11
Percentage		100%	69%	16%	47%	84%	88%	41%	97%	38%	44%	9%	0%	53%	34%
Number of sites affected		138	97	22	41	85	94	59	126	52	56	11	15	82	53
Percentage of sites affected		99%	69%	16%	29%	61%	67%	42%	90%	37%					38%

