



TIDY Northern Ireland
Our Take On...
Chewing Gum Litter

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This discussion paper sets out TIDY Northern Ireland's position regarding chewing gum litter. The environmental problems of chewing gum litter are highlighted, the associated costs are examined and potential solutions to the problem are explored together with TIDY Northern Ireland's recommendations on what needs to be done in Northern Ireland to rectify the issue.

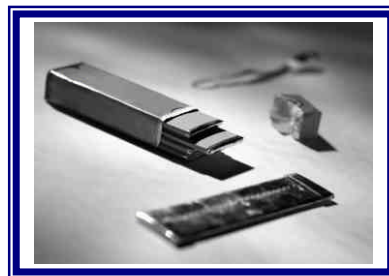
Executive Summary

Chewing gum litter is a major issue in Northern Ireland with 92% of our streets being covered in it. To deal with this issue effectively adequate resources need to be used that will fully eradicate the problem by altering negative public behaviour. This paper draws the conclusion that actions to be taken should centre on the following themes:

- * **Producer Responsibility;**
 - * *Lobby chewing gum manufacturers and academic institutions to research and develop biodegradable gum products*
 - * *Gum manufacturers should acknowledge their responsibility to remove the mess from the pavements*
- * **Public Behaviour Modification Campaigns;**
 - * *Sufficient funding from Wrigleys (and other gum manufacturers) to develop campaigns in Northern Ireland.*
 - * *Increase awareness of the safety aspect of 'Swallow don't Spit'.*
 - * *Utilise all available mechanisms to encourage the correct disposal of gum until all gum users have acquired permanent learned behaviour modification.*
- * **Education;**
 - * *Integrate chewing gum litter as a topic within schools.*
- * **Enforcement.**
 - * *Review the current level of on the spot fines for dropping chewing gum to reflect the cost of removing it from pavements.*

Introduction

Chewing gum is not a modern phenomenon. The ancient Greeks chewed mastiche – a chewing gum made from the resin of mastic trees; the ancient Mayans chewed chicle, which is a sap from the sapodilla tree; North American Indians chewed the sap from spruce trees and passed the habit along to the settlers. The first commercial gum wasn't available until 1848 when John B Curtis sold his 'State of Maine Pure Spruce Gum'. Later, as supplies of spruce gum diminished, manufacturers turned from chicle to latex.



In 1927, Wrigley opened the first chewing gum factory in Great Britain. Chewing gum manufacturers have also enjoyed heightened success during war times. The Wm. Wrigley Jr. Company recorded an increase in chewing gum demand during World War I and II and during the 1990-91 conflict in the Persian Gulf. In fact, during World War II, when top-grade ingredients were scarce, production was limited to the armed forces, and civilians were sold a lesser quality gum under the brand name Orbit.

What is Chewing Gum Litter?

It is estimated that there are 28 million regular gum chewers in the UK, nearly a billion packs of gum are sold here every year. TIDY Northern Ireland's Borough Cleanliness Survey showed in 2005, 92% of streets in Northern Ireland have chewing gum welded to them. While each of these pieces of gum costs about 10p to remove from the pavements, each stick or tab only costs about 3p to buy.

When chewing gum loses its elasticity or taste, an individual becomes tired of chewing, or situational factors arise, it will be disposed of. The urge to discard gum is often immediate and whilst in some cases a bin will be used, the fact that 92% of pavements are covered in the stuff illustrates that people will get rid of it where they are at that moment. Once spat out the gum becomes flattened and stuck firmly to the ground.

Once the gum has been flattened and stuck to the pavement it is not legally viewed as litter (although a person can be fined for dropping it!) due to the expense and length of time needed to remove it. Councils are under no legal obligations to remove it and often pavements only become clean when they are replaced under an Environmental Improvement Scheme.



Removing Chewing Gum Litter

In Belfast, it can take 2 years to clean one thoroughfare, patch by patch. The Operations Manager for Belfast City Council notes, "It is a losing battle. Every piece is taken off individually. It's very laborious".

Not only is flattened chewing gum the most abundant litter on pavements, it is also the most persistent. Highly resistant to aggressive chemicals with strong adhesion, chewing gum does not degrade and retains these properties over a long period of time, under all weather conditions.

Impacted gum cannot be dislodged by routine street cleaning, but requires specialist procedures and equipment such as power washing. Manual scraping, steam cleaning and cryogenics can also be used. All of these procedures are very expensive, causes damage to pavements and grouting, interfere with normal pedestrian flows as well as adding to noise pollution.



Removing Gum with Steam

The True Cost of Chewing Gum

The cost of producing chewing gum has always been low. High demand for chewing gum, allowing for high volume production, and advances in automation have helped to reduce costs further. The price of ingredients, such as corn syrup and gum base, has also declined since the 1970s, thus reducing costs and increasing profit margins.



Modern methods and new materials have changed the character of chewing gum. Natural ingredients have become scarce due to changing climatic conditions, demand, and development in regions where the ingredients were harvested. Chicle and other products from trees are now used in conjunction with synthetic materials.

Most chewing gums are made with five basic ingredients: chewing gum base, sugar, corn syrup, softeners (such as glycerin and other vegetable oils), and flavors (mostly extracted from mint plants). In sugar-free gums, sugar and corn syrup are usually replaced with aspartame, mannitol, and/or sorbitol.

Just under half the UK population chew gum and the market, currently valued at £322 million, is currently growing. The cost to the rate payer (council tax payer in UK) in the UK for removing chewing gum from public land comes to £100-£150 million a year. While some councils have chosen to purchase specialist equipment and use in-house teams to carry out cleaning, it must be recognised that most councils- especially in Northern Ireland – do not remove chewing gum residue. Thus the total expenditure on gum removal does not fully reflect the social cost of chewing gum litter.

Options to Reduce Chewing Gum Litter in Northern Ireland

No one initiative is going to automatically eradicate chewing gum from our pavements. TIDY Northern Ireland believes that a well planned, sufficiently funded, holistic approach across Northern Ireland will have the greatest chance of reducing the amount of chewing gum dropped every day. To achieve the maximum reduction of chewing gum deposits from the streets TIDY Northern Ireland recommends a number of approaches are simultaneously implemented. Recommended actions fall under the following sub-headings:

- * Producer Responsibility;
- * Public Behaviour Modification Campaigns;
- * Education; and
- * Enforcement.

*** Producer Responsibility**

Chewing gum is not like any other form of litter in that it can not be easily removed from the pavement once deposited. Manufacturers must take responsibility for the problems that their product causes. Manufacturers must make every effort to alter the properties of their gum so that once deposited it does not stick to either pavements or footwear.

Recommendation: Lobby chewing gum manufacturers and academic institutions to research and develop biodegradable gum products.

The economic instrument (taxation) approach is based on the 'polluter pays principle'. In this case a small portion of the external cost of littering is factored into the price to the public (polluter pays principle). It is thought that a tax would pressure gum makers into stepping up efforts to innovate and create new types of gum that would be biodegradable and easier to clean up. This approach to chewing gum litter problem recognises that the industry should share the

responsibility for the pollution caused by their products. The negative side of taxation could include the public seeing the tax as their 'go ahead' to litter – after all they have paid for it to be removed from pavements in the tax they paid.

Recommendation: A taxation on chewing gum may not reduce the amount of gum on the pavements, but TIDY Northern Ireland feel gum manufacturers should acknowledge their responsibility to remove the mess from the pavements.

* **Public Behaviour Modification Campaigns**

Campaigns to permanently change peoples behaviour are only successful if they are sustained over a long time period. At present, the anti-litter message on a standard pack of chewing gum only covers about 0.6% of the surface area. Even if this percentage is increased, there is no evidence to suggest that the message would have any impact on the gum-dropping public. It is likely that most people don't notice the message. It is unknown how successful anti-litter messages are on food packaging items.

At present there are no anti-gum litter campaigns that have demonstrated an overwhelming level of success in changing public behaviour. In England, the Chewing Gum Action Group has used money from Wrigley's to fund 3 pilot campaigns with varying degrees of success.



The only council to consistently demonstrate a reduction in the amount of new chewing gum appearing on pavements was Preston City Council. The reason Preston's campaign was successful can be attributed to the vast resources put into it by the council. They used every possible mechanism to get the message out to a relatively small area and population. This is how anti-gum campaigns need to be run, but the question has to be asked who should fit the bill. The money available to councils in England to mount campaigns is not available in Northern Ireland. Our councils do not have the resources to fund such an expensive market flooded campaign. This money needs to be raised from alternative sources.

Recommendation: Northern Ireland should expect monies to be forthcoming from Wrigleys (and other gum manufacturers) to develop similar campaigns in Northern Ireland. Sufficient resources need to be made available to have any long-term impact on chewing gum dropper behaviour.

* **The Message: "Swallow don't Spit"**

The message TIDY Northern Ireland believes needs to be passed onto the public is the lack of harm swallowing chewing gum causes. According to gastroenterology expert Charles Baum (MD) it does not take seven years to digest gum if you accidentally swallow it. Any gum that does end up in the stomach passes through, undigested, without causing any harm.

Recommendation: TIDY Northern Ireland increase awareness of the safety aspect of 'Swallow don't Spit'. TIDY Northern Ireland to be given appropriate funding to be spent changing public behaviour and attitudes.

* **Chewing Gum Wrappers /Pouches**

In order to engage the public's interest (particularly children) TIDY Northern Ireland feels the distribution of gum wrappers or pouches in all town centres

across Northern Ireland needs to be investigated. TIDY Northern Ireland has been involved in an anti-chewing gum litter using gum wrappers in Derry City Centre. The campaign demonstrated in the two-week period a 90% reduction in gum litter on the streets of Derry was observed. It is unlikely that after the campaign ended the reduction in gum litter remained at this low level. A month after the campaign the amount of gum residue had already risen by 20%. Without a sustained long-term initiative the anti-gum litter message quickly goes out of peoples minds and they revert to their natural behaviour.

Recommendation: Utilise all available mechanisms to encourage the correct disposal of gum until all gum users have acquired permanent learned behaviour modification.

* **Education**

Many schools ban chewing gum from anywhere on their premises. This is their prerogative and they have the power to do so. It is important that children are encouraged to appreciate the reason for the ban, but also why it is important to dispose of it correctly. The impact of incorrect chewing gum deposition should be incorporated into the national curriculum within in the citizenship topic. It is possible that using Eco-Schools would help this message be driven from the 'bottom up' rather than 'top down'.

Recommendation: Encourage Department of Education to incorporate chewing gum into National Curriculum within the citizenship topic.

* **Enforcement**

When every other method to reduce the incorrect disposal of chewing gum, enforcement and monetary fines is the only remaining viable option. The problem with trying to catch someone and fine him or her for dropping chewing gum is the difficulty in spotting it. The most common colour of chewing gum (white) helps it to blend into the background and allow a person to discretely drop it as they walk along. While it is not unheard of for an individual to have been fined for dropping gum, indicators are that it is the most infrequently issued FPN. Perhaps it may be more viable to use the threat of enforcement for dropping gum, rather than the likelihood of the actual event. If this was to happen, the on the spot fine would have to be considerably greater than it is for other types of litter. £50 is the current level of the fine for littering. Perhaps for people to modify their behaviour the fine for dropping chewing gum should be increased to £100+. While we don't expect many additional people to be fined, the threat of the fine may be enough to influence behavioural changes.

Recommendation: Review the current level of on the spot fines for dropping chewing gum.

Summary of TIDY Northern Ireland Recommendations

Chewing gum litter is a major issue in Northern Ireland and must be dealt with using adequate resources to eradicate the problem completely. Below are the full list of recommendations TIDY Northern Ireland feel need to be implemented across Northern Ireland:

Recommendation 1: *Lobby chewing gum manufactures and academic institutions to research and develop biodegradable gum products.*

Recommendation 2: *A taxation on chewing gum may not reduce the amount of gum on the pavements, but TIDY Northern Ireland feel gum manufactures should acknowledge their responsibility to remove the mess from the pavements.*

Recommendation 3: *Northern Ireland should expect monies to be forthcoming from Wrigleys (and other gum manufactures) to develop similar campaigns in Northern Ireland. Sufficient resources need to be made available to have any long-term impact on chewing gum dropper behaviour.*

Recommendation 4: *TIDY Northern Ireland to increase awareness of the safety aspect of 'Swallow don't Spit'. TIDY Northern Ireland to be given appropriate funding to be spent changing public behaviour and attitudes.*

Recommendation 5: *Utilise all available mechanisms to encourage the correct disposal of gum until all gum users have acquired permanent learned behaviour modification.*

Recommendation 6: *Encourage Department of Education to incorporate chewing gum into National Curriculum within the citizenship topic.*

Recommendation 7: *Review the current level of on the spot fines for dropping chewing gum.*