Fly-tipping: Causes, Incentives and Solutions

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EXECUTIVE SUMMARY

Fly-tipping is currently receiving a good deal of policy attention from the UK government. While the Environment Agency is responsible for dealing with the serious end of the problem, it is local authorities which have to tackle the large volume of fly-tipping. Much has been done to increase the powers available to local authorities in taking action against fly-tippers. However, there is now growing interest in working out how to prevent fly-tipping from happening in the first place.

The aims of this project were to develop a better understanding of the incentives for, and ‘causes’ of fly-tipping as it affects local authorities, and to provide advice and guidance on how to develop more effective strategies aimed at reducing and preventing the problem.

The project involved collecting and analysing information from a number of different sources:

- a thorough review of the available literature on fly-tipping;
- interrogation of the Flycapture database;
- a national survey of all waste collection and disposal authorities in England;
- case study work in 10 areas;
- a national survey of 2,000 householders;
- an analysis of data on convicted fly-tippers; and
- one-to-one interviews with 10 offenders and 10 trades people.

The study produced two documents: A research report, describing the results of the research and drawing out the implications for policy and practice; and a Good Practice Guide for local authorities, with practice recommendations supported with evidence. This is the research report.

Literature review

The research literature on fly tipping and responses to it is sparse. Such evidence as there is suggests, however, that fly-tipping comprises a serious problem:

- Crime and Disorder Reduction Partnership audits find that it is a major problem in many areas. For example it was found to be citizens’ top concern in Aston in 2004;
- a 2001-2002 survey by EnCams found that almost three quarters of local authorities thought fly tipping a significant or major problem;
- fly-tipping has been found to cause a wide range of problems to the natural, social and economic environment, such as disease transmission, soil contamination, the attraction of other crimes to affected neighbourhoods, increased fear of crime, substantial clear-up costs and discouragement of inward investment.

In relation to patterns of, explanations for and preventive responses to fly-tipping, directly related and ancillary literature suggests that:
• Fly-tipping will occur where perceived benefits exceed perceived costs, where weaknesses in collection and disposal services provoke those with waste to get rid of, and where those producing and disposing of waste are ignorant of their responsibilities for or methods of disposing of it lawfully;
• incentives for fly-tipping may inadvertently arise from landfill tax, the principle of producer payment, and reductions in the economic return from sale of spent goods, for example when the price of scrap metal has fallen;
• there is a range of rather different fly-tipping problems, which involve different forms of waste (for example household waste, construction waste, green materials), different places (for example alleyways, poorly lit access roads, unused industrial structures) and different sorts of perpetrator (for example householders, organised criminals, travellers);
• potential methods of preventing fly-tipping fall into several categories: increasing difficulty, increasing risk, reducing reward, reducing provocation and removing excuses for offenders.

Adopting a problem-solving approach will require that each different type of fly-tipping problem be subjected to careful analysis in order to work through which menu of plausible preventive responses will be worth trying. Moreover evidence of effectiveness would need to be collected to learn what works best under which circumstances. There is little evidence that this type of work is currently taking place.

Flycapture
Flycapture was launched by the Environment Agency in April 2004. All local authorities and the Environment Agency are required to submit monthly returns to it on the number, size, waste-types and location-types of fly-tips. This provides a national picture of the fly-tipping problems faced by local authorities. Several patterns emerged from the data:
• Monthly fly-tips recorded from July 2004 to June 2005 show a slight downward trend with a pronounced winter dip;
• there is an average of 250 recorded tips per month per local authority, but with huge variations. Five per cent of local authorities account for 45% of all fly-tips;
• there are higher rates of fly-tipping in more densely populated areas, and most especially in those suffering multiple deprivation, notably where there is overcrowding, poverty and unemployment. Opportunities to store waste and transport it for legal disposal at civic amenity sites may be limited for residents here;
• recorded fly-tipping occurs most commonly on that land where there is a local authority interest: highways, council land, alleyways and footpaths;
• most fly-tips involve relatively small quantities, no more than a boot or small van-full;
• household waste is the most commonly tipped type of waste. Fly-tipped hazardous waste is relatively rarely recorded.
Waste authority survey
All waste collection and disposal authorities in England were surveyed yielding 118 responses (30%).

The strong view of waste authorities is that there are two key drivers of fly-tipping:
- the costs of legitimate disposal; and
- the availability of civic amenity and other waste disposal sites.

There was little evidence of a strategic response to fly-tipping. Seventy-six per cent said they had no written strategy for reducing it, and 68% indicated that there had been no data analysis to inform strategy or tactics. Whilst occasional work with other bodies was quite common regular or formal partnership was much rarer.

The dominant response to fly-tipping was to clear the tip quickly in accordance with the BVPIs. Enforcement and education were the most often used preventive strategies though they were perceived to be less effective than less often used measures such as restriction of access to tip sites, provision of community skips and provision of free collection services for bulky items. CCTV was commonly used though was also the measure whose effectiveness local authorities felt least able to estimate. That said, throughout this piece of work there were very few signs of systematic or rigorous efforts to establish the outcome effectiveness of any of the measures put in place.

Case studies
The ten case study areas were those making returns to the survey of waste authorities who suggested that they had good data and had implemented successful interventions. Enthusiastic, co-operative and committed officials were found in each area visited. Yet the data were generally found on closer inspection to be poor. Little systematic analysis had been undertaken, even where data were available. Different problems generally were not, and could not be discriminated, even in most of these energetic and innovative areas. Systematic local evaluation of the effectiveness of the measures put in place was very rare. Nevertheless, a range of promising interventions was identified, as highlighted in the sister publication to this research report – the Good Practice Guide.

The household survey
The household survey achieved a response rate of 65%, with 1,196 successful interviews. It asked respondents both whether they had fly-tipped and whether that had been tempted to do so. Only one per cent said they had fly-tipped and a further 3% had been tempted. This seems to show a low level of public involvement in fly-tipping and quite a strong resistance to temptation. The most frequently mentioned reasons for fly-tipping (or being tempted into it) included the fact that the local tip was closed (24%), lack of storage space for rubbish (24%), lack of transport to the local tip (18%) and not knowing where to dispose of rubbish (18%). The respondents as a whole expressed high levels of satisfaction with their local tips. The largest problem was with queuing where 15% rated their local facilities as poor or very poor.
Convicted fly-tippers
The number of prosecutions for fly-tipping offences has increased rapidly since 1991. Roughly three in five of those prosecuted had been convicted of only one offence. Two fifths had been convicted of two or more. Six per cent of those convicted accounted for 22% of the offences. There seems to be a small number of relatively incorrigible prolific offenders and a larger number of occasional more easily deterred individuals. The more prolific fly-tipping offenders tended to be specialists, which the more occasional offenders appeared to have been involved in a wider range of offences of which fly-tipping was but one. This suggests different categories of offender in relation to whom different preventive responses will be appropriate.

Offender and trades people interviews
For traders, avoiding the costs of legitimate waste disposal facilities emerged as the strongest motive for fly-tipping. It was not, however, simply the fact that they were charged that is the issue but how pricing practices affect their competitiveness locally. They listed a range of what they saw as practices that tempted them into fly-tipping either because they saw them as inherently unfair or because they felt that these disadvantaged them in relation to their competitors who may be charged less.

The availability of tip sites was an issue for traders insofar as this could impact also on their business. This was not so much to do with the distance needed to travel to the site, but more to do with how the tip site operated. Inconvenient opening hours was an oft mentioned frustration. This was particularly the case in winter months when daylight hours meant the sites often closed early.

Another issue which emerged strongly in relation to tip sites was information about where they were. Traders often complained about the lack of information. The experience of the researchers also was that such information was not easily obtained, even from the local authority or civic amenity site workers.

Finally, the duty of care system seems to have fallen into disrepute. Some businesses see no incentive for buying a waste carrier licence. Some feel that the system disadvantaged small businesses as the cost per vehicle was much higher for them than their larger competitors. Some are unaware of the recent duty of care legislation, and those that are cannot see how it would make much difference to fly-tipping. Overall, the picture painted is of a system which actually at times made it quite hard to behave honestly and legally. There seem to be few incentives to comply with the duty of care regulations, and those that did felt disadvantaged competitively.

In terms of householders, black bin bags or household rubbish consistently emerge as the main fly-tip problem. Costs of legitimate disposal emerge as less of driver for fly-tipping than being able to use a civic amenity site. Householders fly-tipped because the site was closed or they didn’t have transport to get to it.
Conclusions
Fly-tipping is widespread. There is, however, not one problem but a variety of separate ones, distinguishable in terms of places, people, materials, and opportunities for legal as well as illegal disposal. Different problems call for different solutions. Careful and detailed analysis is needed to tease them out. This is not currently undertaken in local authorities. Indeed, notwithstanding the development of Flycapture it is not often possible given the forms of data collection that are undertaken.

Local authority policies and practices can inadvertently create temptations and opportunities for fly-tipping. Opening hours of, information systems relating to, sites for, rules of, accessibility to, and patterns of charges for civic amenity sites can all be configured in ways more or less conducive to fly-tipping by householders, businesses, waste carriers and travellers. Likewise, waste collection and clear-up practices may also be important. Here there may be scope, for example, to differentiate the needs of densely populated, relatively poor inner-city residential areas and the suburbs in terms of collection arrangements. At a national level, waste carriage licensing arrangements, duty of care responsibilities, and penalties for fly-tipping also emerged as significant parts of the opportunity structures for, risks of and rewards for fly-tipping or legal disposal of waste material, although these were the main focus of this piece of work.

There is scope for a more strategic, joined up, problem-solving approach to fly-tipping with greater use of analysis, more co-operation between authorities, the police and the Environment Agency, and stronger evaluation of initiatives to build a firmer knowledge-base for dealing with the issues. This will be more promising than current approaches, which tend to stress enforcement when the opportunity arises and clearance after the event.
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1 Introduction and approach to the study

Background
Fly-tipping is currently receiving a good deal of policy attention from the UK government. While the Environment Agency is responsible for dealing with the serious end of the problem, it is local authorities who have to tackle the large volume of fly-tipping. Much has been done to increase the powers of local authorities to take action against fly-tippers. There is now, however, more interest in working out how to prevent fly-tipping from happening in the first place. Little is known about the problem, though, to enable effective preventative strategies to be developed locally and nationally.

Aims and approach of the project
The aim of the project is to develop a better understanding of the scale and nature of the problem as it affects local authorities, and develop advice and guidance on how to develop more effective strategies aimed at reducing and preventing the problem. In order to do this, the project takes a problem oriented approach to the research. Problem-oriented approaches to crime and anti-social behaviour have generally found it useful to identify sub-sets of problems, to understand what drives or ‘causes’ them and consequently what might work as a preventative response to each.

Methodology
The approach to this study involved a number of different data collection exercises:

1. **Literature review** – a thorough review of the available literature on fly-tipping, internationally, and including ‘grey’ literature (PhD theses etc)

2. **Flycapture analysis** – interrogation of the Flycapture database to provide a general description of the extent and distribution of the problem, what is dumped and the kinds of location used for fly-tipping

3. **National Survey of all Waste Collection and Disposal Authorities in England** – to provide an assessment of current practices and policies, and the capacity to undertake problem-solving work locally

4. **Case study work in 10 areas** – to examine data in more depth and provide more detailed descriptions of problems, identify and illustrate good practice, and evaluate any interventions

5. **National household survey** – a module was developed for inclusion in the National Statistics Omnibus survey of a random sample of 2,000 householders. The purpose was to provide an assessment of the scale and nature of fly-tipping by householders, their motives for fly-tipping and the effectiveness of current waste collection and disposal services.
6. **Analysis of data on convicted fly-tippers** – to provide a picture of current enforcement activity, trends and outcomes in prosecutions and profile fly-tippers in terms of their other possible criminal activity

7. **One-to-one interviews with offenders and trades people** – to explore the motivations and drivers for fly-tipping, and identify issues for attention that could remove the ‘causes’ of fly-tipping

**Products**
The study has produced two documents:

- A full research report for Defra, describing the results of the research and drawing out the implications for policy and practice
- A Good Practice Guide for local authorities, with practice recommendations supported with evidence and presented as simply and succinctly as possible.

This is the research report.
2 What the literature tells us

There is a very sparse research literature on fly-tipping. A search of academic databases, in England, Europe and the USA, unearthed few pieces of published work and just one piece of ‘grey literature’ (Old, 2003). This review has been expanded, therefore, to include literature on related behaviours of littering and abandoned vehicles on the basis that these might lend some insight into the problem of fly-tipping. It also includes various surveys and other small unpublished pieces of analysis conducted locally.

The current context – roles and responsibilities

Fly-tipping, defined by Defra (www.Defra.gov.uk) as ‘the illegal disposal of waste’, is illegal under section 33 of the Environmental Protection Act (1990, c.43 part II). In addition to the actual tipping of waste, the Act also makes it an offence to handle waste carelessly (so-called duty of care offences) or without a waste management licence. Data discussed later in this report shows how convictions for all these offences have grown continually since 1990. Much of what follows, however, refers to the first of these – the tipping of waste illegally.

The powers available to enforcement agencies (the Environment Agency and local authorities) and the penalties available to the courts have been substantially increased by the Clean Neighbourhoods and Environment Act (2005). Specifically, it:

- raises the maximum penalty fine available in the Magistrates Court for fly-tipping from £20k to £50k;
- makes a guilty offender pay for all court and investigation costs that enforcement agencies had to pay in bringing the action to court;
- allows courts to award clean up costs to enforcement agencies and landowners/occupiers;
- provides for forfeiture of vehicles used in fly-tipping;
- gives waste collection authorities and the Environment Agency power to stop and search vehicles (a police officer must still be present to stop a vehicle) which are used for fly-tipping, carrying waste when not registered as a waste carrier, or committing a waste duty of care offence;
- allows fixed penalty notices for certain regulatory offences.

Importantly, all acts of fly-tipping are now arrestable offences providing local authorities and the Environment Agency with increased police support with their enforcement strategies.

In addition to providing greater powers to local authorities and the courts, the government is also encouraging greater attention to the problem locally through the establishment in 2005 of a Best Value Performance Indicator (BVPI) on fly-tipping (BVPI 199d). Progress against this BVPI is measured by local authority returns to the national Flycapture database, with progress indicated through a reduction in the number of fly-tipping incidents reported over consecutive years and an increasing number of enforcement actions taken against fly-tippers (ODPM, 2005). This particular BVPI sits within the
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wider context of Public Service Agreement (PSA) target 8 – ‘to lead the
delivery of cleaner, safer, greener public spaces and improvement of the
quality of the built environment in deprived areas and across the country, with
measurable improvement by 2008’ (ODPM, 2005).

Responsibility for dealing with fly-tipping and fly-tippers rests primarily with the
Environment Agency and local authorities. In order to clarify who deals with
what, a working protocol has been agreed (Working Better Together, Fly-
tipping Protocol, 6, 2005). The agreement, in essence, is that the Environment
Agency will deal with the more serious fly-tipping problems irrespective of
where they occur. These are defined as those involving large scale dumping
(more than a lorry load – approx. 20m$^3$), or tipped by an organised gang or
group of offenders or involving certain hazardous wastes. Local authorities are
responsible for smaller fly-tips on public land, roads, and by-ways.

In cases where the waste is tipped on private land, however, it is the
responsibility of the landowner to remove the waste. Indeed if they have
deposited, knowingly caused or permitted the deposit then a notice can now
be served on either the occupier or the landowner by the enforcement
authority requiring them to remove the waste. Appeals can be made to a
Magistrates Court, within 21 days (Section 59, Environmental Protection Act
1990). Private land owners include organisations such as the National Trust,
Network Rail, British Waterways and Highways Authorities who own
substantial amounts of land; through to farmers and urban residents with
much smaller plots of land. All have to pay the cost of dealing with fly-tipping.

How their responsibility for keeping communities clean of waste are carried
out by local authorities can be complicated by the way in which the roles of
waste collection and waste disposal are organised. This can lead to some
perverse incentives. In two-tiered authorities, the roles of waste collection and
waste disposal are separated with the County Council taking responsibility for
waste disposal, including managing the Civic Amenity sites, while the
Local/District Authority deals with the waste collection. Under this
arrangement, it is the local/district authorities that bear most of the costs of fly-
tipping. They bear all the costs of the clean up, with waste disposal authorities
bearing the cost of disposal. Since it costs waste disposal authorities the
same amount to dispose of household waste whether it is collected, brought
to a civic amenity site or fly-tipped, the only actual additional cost of fly-tipping
on waste disposal authorities is the loss of revenue in cases where the waste
usually carries a charge for its disposal, such as trade or hazardous waste.

Waste Disposal Authorities are concerned with meeting targets for re-cycling
and minimising use of landfill sites. They may, therefore, introduce policies
and practices, such as alternating refuse/recycling collection, closed lid and
no side-waste policies, which make it harder for people to dispose of waste
properly. The effect of this could be to tempt more people into fly-tipping,
thereby increasing the burden on their waste collection colleagues but not on
themselves. In unitary authorities, however, where the same organisation is
responsible for both waste collection and disposal services the potential for
such perverse incentives is less. In this situation, the authority responsible for
providing both waste collection and disposal policies feels the effect of fly-tipping, and may therefore be incentivised to look at the problem more holistically and strategically.

Fly-tipping data and its use
One of the problems facing agencies in trying to control fly-tipping, is a lack of knowledge about the problem (Park, 2000). Collection of data locally is patchy and until recently there were no data available nationally on the scale of the problem. This data problem was highlighted in a review conducted by the National Audit Office (2002). As a response, the government launched Flycapture in April 2004 (www.Defra.gov.uk/environment/localenv/flytipping/Flycapture.htm).

Flycapture
The purpose of Flycapture is to provide a picture nationally of the fly-tipping problem dealt with by local authorities and the Environment Agency (it does not aim to provide a complete national picture, since it does not deal with the majority of incidents that occur on private land). All local authorities and the Environment Agency are required to submit monthly returns to the Flycapture database including:

- The number of incidents, broken down by land type, waste type and size;
- the total costs;
- the number of enforcement actions completed by type;
- the number of prosecution outcomes by type; and
- the number of fines by amount.

The data collected through Flycapture is presented and discussed later in this report.

Fly-tipping and local crime and disorder reduction strategies
The 1998 Crime and Disorder Act requires police forces and local authorities to work together to reduce crime and disorder in their local areas. They would do this by undertaking, once every three years, an analysis (audit) of local crime and disorder problems, and on the basis of their findings develop and implement a strategy for reducing those identified as priority problems. This has led to the creation of so-called Crime and Disorder Reduction Partnerships (CDRPs) in each local authority area, responsible for this work.

A review of their most recent audit and strategy documents reveals that fly-tipping is often mentioned as an issue. For example, 63% of the 48 CDRPs in the East of England attend to fly-tipping specifically in their audits. Whether this is an increase over the previous round of audits is not known, but it seems likely for a number of reasons:

- the Government has specifically encouraged CDRPs to attend much more to anti-social behaviour problems in their most recent round of audits and strategies.
- Section 1 of the Clean Neighbourhoods and Environment Act 2005 requires anti-social behaviour and local environmental quality to be
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considered as part of any strategy. Fly-tipping is mentioned in government guidance to CDRPs as an issue to examine in this context.

• the introduction of the national Flycapture database now enables CDRPs to include some, albeit rather basic, analysis of fly-tipping in their local areas with relative ease. What gets measured gets attention.

There is, however, little analysis of the local problem beyond what is available from Flycapture and little or no benchmarking for comparative analysis with other areas. This means that it is largely public opinion, expressed through the consultation exercise that has to be undertaken as part of the audit process, that identifies fly-tipping as a priority problem locally.

In only a few CDRPs, however, does the problem of fly-tipping progress from being an issue in the audit to having a strategic plan for its reduction. In the East of England, for example, while 63% of the 48 CDRPs mentioned fly-tipping in their audits, and 19% said it was a priority, only 4% include it in their strategic plan for reducing local crime and disorder. Where it is, the action proposed is largely confined to clean-up, either through conducting clean-up days or introducing targets for clean-up of reported incidents, and to introducing CCTV into fly-tipped hot spots.

The problem of fly-tipping
Evidence from the CDRP audits suggests that fly-tipping is a problem in many areas. This is reflected within local authority resident satisfaction surveys that also show that fly-tipping is seen as a prominent problem. For example, a West Midlands Police citizen survey of Aston in 2004 showed that overall the citizens’ highest concern was fly-tipping in their area (West Midlands Police, 2004). Also, a survey of residents living in ‘New Deal for Communities (NDC)’ areas, found fly-tipping to be a concern. Seventy percent of respondents indicated that fly-tipping was ‘a problem’ or ‘a serious problem’ in their area (Cole, Hickman & Green, 2003).

At national level, a series of surveys of local authorities conducted by Tidy Britain (now Encams) over a number of years gives some insight into scale and trends in fly-tipping. Figure 2.1 below shows how local authorities in England, Wales and Northern Ireland assessed the problem over four sweeps of the survey. It shows a fairly stable trend between 1994/1995 and 1997/1998 with around 50% of authorities considering fly-tipping either a significant or major problem. In 2001/2002, however, a distinct change in trend is observed, with 73% of authorities now assessing the problem as either significant or major. There could be a number of reasons for this, including increased attention and sensitivity to the problem. Sixty percent of local authorities thought that the introduction of the landfill tax had made the problem worse. Since this was introduced in 1996 one might have expected to see an increase in fly-tipping almost immediately.
Figure 2.1: Local Authority opinions of the fly-tipping problem in their area, results from the EnCams surveys.

<table>
<thead>
<tr>
<th>Year</th>
<th>1994/95</th>
<th>1996/97</th>
<th>1997/98</th>
<th>2001/02</th>
</tr>
</thead>
<tbody>
<tr>
<td>major problem</td>
<td>6%</td>
<td>42%</td>
<td>48%</td>
<td>54%</td>
</tr>
<tr>
<td>significant problem</td>
<td>7%</td>
<td>47%</td>
<td>45%</td>
<td>28%</td>
</tr>
<tr>
<td>minor problem</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
<td>19%</td>
</tr>
<tr>
<td>no problem</td>
<td>90%</td>
<td>2%</td>
<td>2%</td>
<td>28%</td>
</tr>
</tbody>
</table>

SOURCE: EnCams, 2003

The damage caused by fly-tipping
Fly-tipping is a problem in its own right, but it can also lead to many other problems. Three areas of ‘collateral damage’ have been raised in the literature.

Natural environment damage
Fly-tipped waste causes pollution, habitat destruction and death of wildlife. It is beyond the scope of this review to explain the full impact of fly-tipping on the environment. The following, however, provide examples:

- Dumped black bin bags slowly rip apart and begin leaking contaminated fluid, which then seeps down into the soil. This potentially not only affects the soil and the plants that grow in it, but also any aquifers below;
- animals get into the rubbish bags and ingest items, which may cause serious damage or death to native wildlife and household pets alike;
- black bags containing food waste will draw rodents and other small mammals to the area, many of whom carry disease (EPA, 1998);
- dump sites are also at risk of catching fire by spontaneous combustion, or become targets for arson (EPA, 1998);
- contaminated muck away (construction and excavation waste) used as topsoil on large grassland areas (‘Dumping on Britain’, BBC One) will not only contaminate the soil, but also aversely affect the local wildlife, and those people who use the grassland for recreation;
- waste fly-tipped near streams and rivers, or in their catchments risks being swept into the waterways and contaminating the water, and the wildlife who use the waterways (Williams & Simmons, 1999).
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Social environment damage
Fly-tipping is unsightly and affects the quality of life of residents who see it every day. In particular, two theories of crime suggest how fly-tipping can lead to other social problems which impact on the quality of residential life.

1. **Broken Windows**: The so-called ‘broken windows’ theory suggests that a small visible piece of damage to property, be it public or private, which is not quickly rectified, attracts more damage and other more serious crime (Wilson and Kelling, 1982). This happens because not rectifying the original damage indicates to offenders that no-one cares about the area – so it is free to ‘trash’, so to speak. The oft used example is that of a broken window. If someone throws a stone through a window of a property and it is not fixed, this sends a message that that property is not cared about. It is then more likely that the same property will get more stones through its windows, and graffiti on its walls. This will then spread through the community until the whole area slips into decline. In the case of fly-tipping, one black bag of waste that is not removed quickly will signal to others that such tipping in that location is tolerated, and thus more potential offenders will seize the opportunity to commit similar crime at or near that location. The preventative implication of this theory is that any fly-tipped waste should be removed quickly, this being the first step in any project with the aim of reducing fly-tipping (Huffman, Grossnickle, Cope & Huffman, 1995).

2. **Signal Crime Theory**: This is different from Broken Windows. It focuses on fear of crime rather than the behaviour of offenders. Signal Crime theory stipulates that the visible presence of actual or impending crime (from serious crime to anti-social behaviour) can signal to residents that there is a crime or anti-social behaviour problem in their area (Innes, 2004a). In this way, such crime affects not only the specific victims, but also the community at large who may become fearful of what is happening in their community (Innes, 2004a). Thus the occurrence of a very visible event such as fly-tipping in a community may increase residents’ fear of crime. Such fear will be most pronounced when there is high ‘dissonance’ between the type of crime which has occurred and the community it has occurred in. For example, an inner city community with massive ongoing development projects may not notice fly-tipping as much as a pristine rural community. It is the latter where fly-tipping is likely to become a ‘signal crime’, and generate fear of crime. Multiple signal crimes which are in close proximity to each other will also increasingly sensitise the community to such events (Innes, 2004b). The practical response to signal crime theory has been the introduction of the National Reassurance Policing Programme. Those areas where fear of crime is high, and signal crimes are the cause of that fear, receive a style of policing which is targeted at the source of that fear (http://www.reassurancepolicing.co.uk).

Economic environment damage
Economically, fly-tipping can be very expensive for a community in a number of different ways. For example:

- Flycapture reports suggest that local authorities in England spent around £44 million on clearing and disposing of fly-tips between April 2004 and
March 2005. This means tax payers’ money is diverted away from other local public services to cover these costs, or local taxes are raised. However if you add in the costs to private landowners these costs could double as if fly-tip occurs on private land, landowners have to pay directly for the clear up. The Environment Agency estimates that the total cost of fly-tipping to taxpayers and private landowners is in the region of £100m-150m.

- the sight of a significant amount of fly-tipping in an area may discourage financial investment in the area (EnCams, 2003);
- residential property values in a fly-tipped area are likely to decrease (EPA, 1998);
- fly-tipping undermines the financial viability of commercially-based waste disposal businesses, weakening the whole waste disposal infrastructure (EnCams, 2003).

**The ‘causes’ of fly-tipping**

There are a number of potential ‘reasons’ for, or drivers of fly-tipping that have been discussed in the literature. The following summarises the main ones.

**Economic drivers**

Smith, Jacobson and Webb’s (2004) analysis of abandoned vehicles shows how changes in the economic environment of waste disposal can lead to changes in tipping behaviour. Although the reliability of the data is problematic, they do show increasing numbers of abandoned vehicles concurrent with increased costs of legitimate scrapping. The increased costs of legitimate disposal arise for two reasons:

1. The drop in the market price for scrap metal; and
2. increased controls over how noxious substances from vehicle scrapping are dealt with.

Where end of life vehicles once had a value, and scrap dealers would pay for them, owners now have to pay for the disposal of their vehicles. This, coupled with the ability to avoid being identified as the vehicle keeper, has led more and more owners to dump their unwanted vehicles by the roadside. It is often a combination of such rewards and risks that leads to problems emerging, something which is discussed further below.

Changes in the economic context of waste disposal appear powerful drivers for illegal dumping of waste. The following discusses two specific economic changes likely to affect fly-tipping in similar ways to that documented for abandoned vehicles.

**Landfill Tax**

October 1996 saw the introduction of the landfill tax (Turner, Salmons, Powell & Craighill, 1998; The ENDS Report 278, 1998), brought in to reduce the amount of waste going to landfill and encourage more recycling (Martin & Scott, 2003; Turner, Salmons, Powell & Craighill, 1998). The amount of tax payable is based on weight, with increased tax levies for each extra ton of waste. For those landfill or waste transfer sites that do not have weighbridges, the landfill workers estimate the waste weight.
It is commonly believed that the introduction of the landfill tax is a prime driver for fly-tipping. However, there is little evidence in the literature to substantiate this theory. Nevertheless, the Environment Agency claim a rapid increase in fly-tipping incidents was observed over the time the landfill tax was introduced (EA, personal communication). In addition, an Encams survey (1998) suggested that most local authorities believe the landfill tax tempted more people into fly-tipping. An analysis by Oxfordshire County Council provides some rare data showing quite clearly the impact of increased disposal costs on the fly-tipping of tyres.

The EC Landfill Directive banned the land filling of whole tyres from 2003, thereby increasing the disposal costs for tyres. Figure 2.2 below compares the costs to Oxfordshire County Council of dealing with selected types of fly-tipped waste. It shows that the costs of disposing of fly-tipped tyres doubled after the Directive took effect.
Figure 2.2: Costs of disposal of selected fly-tipped waste in Oxfordshire

Source: internal report by Oxfordshire County Council

Producers pay
The climate now being created primarily through EU legislation is that producers pay the costs of disposal of their products. This will profoundly impact the economics of waste disposal, and could theoretically have a powerful affect on illegal waste dumping. In relation to vehicles, the End of Life Vehicle Directive has already come into force (2000/53/EC) although it will not take effect in the UK until 2007 when producers will have to pay 'all or a significant part' of the cost of vehicle dismantling and recycling. Smith, Jacobson and Webb (2004) suggest that, once this happens, the problem of abandoned vehicles in the UK should diminish as the economic incentive for dumping vehicles disappears. They do point out, however, that in the interim, a culture of dumping vehicles could easily develop which might be hard to turn around. In addition, some end of life vehicles may have been abandoned.
because they have simply stopped working, making it hard and costly to get them to disposal sites.

The Waste Electronic and Electrical Equipment (WEEE) directive (2002/96/EC) similarly requires producers to recover, recycle, and treat old items from their customers. It was expected to be brought into British law by 13 August 2005 for implementation by 1st January, 2006. However this process has been delayed and a new timetable for implementation was not yet released at the time of writing. WEEE items include:

- Household appliances;
- IT and telecommunications equipment;
- audiovisual and lighting equipment;
- electrical and electronic tools;
- toys, leisure and sports equipment;
- medical devices; and
- automatic dispensers.

(EA: Online, accessed July, 2005)

The impact of this initiative on fly-tipping may not be as straightforward as for vehicles. Unlike vehicles, for example, householders can currently take small electrical and electronic goods to civic amenity sites for free. Indeed, much of the fly-tipped household waste could be taken to civic amenity sites for free. This implies that factors other than economics are driving the problem. These could include ignorance of what to do with the waste, or simply convenience, coupled with perception of low risk of capture.

**Opportunity structures**

The above discussion shows that while economic factors are clearly an important driver for fly-tipping, there are other factors that combine to create a situation where fly-tipping is more or less likely. This more complex notion of the ‘causes’ of fly-tipping is known as the opportunity structure. The opportunity structure describes the context which gives rise to the problem, and the different factors that combine to facilitate the problem. Webb and Marshall (2004) provide a good example of an opportunity structure in relation to the fly-tipping of construction and demolition waste in London.

Example of a fly-tipping opportunity structure:

**Fly tipping of construction & demolition waste: the offenders perspective**

- formal controls over waste movement are weak
- you get paid on the basis of how much waste you move and how quickly, not where it ends up
- using landfill sites is expensive
- there are many ‘suitable’ places to tip
- it is easy to hide the identity of trucks and their owners
- the design of trucks makes tipping fast
- the risk of getting caught is small
One can see that it is a complex interplay of the offenders' judgement of the ease, rewards, and risks that lead them to engage in this kind of fly-tipping, and that these judgements are affected by many different aspects of the environment in which they work – the effectiveness of the regulation system, the economic incentives and levers, the design of trucks, the availability of suitable locations, the ease of making excuses for your behaviour, and so on. There are a number of important implications of this way of thinking about such problems:

1. These factors work in combination to affect offenders' judgements. This implies that dealing with any one of these could alter the opportunity structure sufficiently to have an impact on the problem.

2. Defining the opportunity structure enables a range of potential interventions to be identified, and helps to expand the scope for action.

3. The opportunity structure will be different for different kinds of problem behaviour. The analysis has to be very crime specific. The example above applies to a very well defined problem of large scale tipping of construction and demolition waste. It would not apply to householders dumping black bags of rubbish over the railway fence. This problem would have a very different opportunity structure and require, therefore, very different interventions.

Future research that is policy oriented should aim to develop an understanding of the opportunity structures underlying the different kinds of fly-tipping problem.

**Profiling different fly-tipping problems**
All the available evidence is that household waste appears to make up most incidents of fly-tipped waste (EnCams, 1998; Defra, the Environment Agency and the LGA, 2005). Studies also show that the locations in which fly-tipping takes place are very varied. In the US, the Environmental Protection Agency (EPA, 1998) suggests the following as common fly-tipping sites:

- Undeveloped lots/abandoned structures/unused industrial facilities;
- poorly lit access roads;
- property along railways and highways;
- alleys;
- charity drop box locations;
- construction sites;
- forests/woods/farms; and
- borders of cities and counties because of lack of police presence in these areas

EnCams (1998) identifies a rather different, and more rural, list of commonly fly-tipped places which include:

- Lay-bys;
- field openings;
- roadside verges;
- outside tips; and
Fly-tipping: Causes, Incentives and Solutions

- hedge bottoms in country lanes, cul-de-sacs and car parks.

‘Other highways’ and ‘industry/warehousing/retail sheds’ emerge from the more recent Local Environmental Quality Survey of England (EnCams, 2003).

An unpublished survey of farms in England and Wales (Marcus Hodges Environment Limited & BDB Associates, 2002) suggested that gateways were the most commonly fly-tipped hot spot, followed by ditches and fields.

A more robust study of fifty sites along the River Taff and its catchment area found many kinds of location suffered from fly-tipping (Williams and Simmons, 1999). Seventy-five percent of industrial sites, 62% of commercial areas, 48% of residential sites and 45% of open spaces were fly-tipped.

These surveys identify a wide variety of locations where fly-tipping takes place. Searching for common characteristics of what makes a fly-tipping location suitable, the EPA claims that tippers look for convenient places to tip where the chance of being caught is considered small. They suggest that locations on jurisdiction boundaries may be vulnerable in this respect. Another common ‘requirement’ seems to be that sites allow easy vehicular access. Williams and Simmons (1999) found that 60% of the sites which had good vehicular access had been fly-tipped, compared with just 28% of sites without vehicular access. This suggests that inability to transport waste to a legal disposal site it not a driver for such fly-tipping. It also points to ways in which popular fly-tipping locations might be protected.

Who fly-tips?
The kinds of analysis cited above do not lend any insight into the various different kinds of fly-tipping problem. Analysis of who fly-tips, however, quickly reveals different sub-sets of fly-tipping problems, each with its own set of drivers and, therefore, ‘opportunity structures’.

According to the London wide Initiative for Fly-tipping (LIFT, cited in EnCams, 1998), there are four groups of people who fly-tip.

1. Organised criminal fly-tippers, for whom financial reward is the driver
2. Commercial fly-tippers wanting to avoid waste disposal charges
3. Domestic fly-tippers for whom legal disposal methods are inconvenient
4. Travellers who leave a lot of waste on their sites


Organised criminals
The inclusion of organised crime as a separate group begs the question of how these are defined, and how they are different from the three other groups listed. In relation to the export of stolen cars, for example, Brown and Clarke (2004) concluded that there is less involvement of conventional organised groups in this than claimed. The conventional concept of organised crime as ‘mafia’ type groups is also not always correct. Brown and Clarke claimed that organised crime groups are becoming smaller, and more fluid networks of people taking advantage of opportunities as they arise.
Examples of organised fly-tipping include:

- A series of incidents involving one set of offenders who organised the dumping of 1,705 lorry loads of waste (34,000 tonnes) over a 12 month period (cited by Webb and Marshall, 2004).
- A case whereby 18 articulated trailers of tyres where tipped in lay-bys in North West England over a three week period dumping approximately 30,000 tyres (EA, personal communication).
- A case where two offenders have illegally deposited waste in four different Environment Agency regions by deceiving and coercing landowners into accepting waste on their land. The deposits are typically more than 50 lorry loads of demolition and construction waste (EA, personal communication).

Organised fly-tippers have been known to carry weapons (including firearms), intimidate witnesses and use various counter detection methods, including oil smeared on number plates, false paper work and false building site signs (EA, personal communication).

**Commercial fly-tippers**
Potentially, the temptation for independent waste truck drivers to avoid the landfill tax could be large, particularly in a competitive environment where margins and wages may be small. They stand to gain economically, by charging their customers for the removal of waste including the landfill tax, then dumping the waste wherever is convenient (illegally). There are ways to avoid this situation. Webb and Marshall found, for example, that larger waste haulage companies pay the landfill tax direct rather than rely on their drivers to pay, thus removing the incentive and opportunity for this kind of fraud.

There is also evidence of quite a lot of ignorance particularly amongst small and medium sized enterprises (SMEs) of their legal responsibilities and duties of care in relation to waste, which could lead to fly-tipping.

The NetRegs survey “How green are small businesses” (NetRegs, 2002) found that only 18% of SMEs could name any environmental legislation that applied to their business. Prior to prompting, 86% did not believe their business’s actions caused any harm to the environment. Just over half the participants (54%) had heard of the ‘Duty of Care’ regulations, but only 17% could name three of its requirements. 32% of larger businesses (50-250 employees) could name the Environmental Protection Act, 1990 compared with just 5% of the smaller businesses (0-9 employees).

**Domestic fly-tippers**
Household waste emerges time and again as the most common type of waste dumped. Some of this might come from waste contractors but some will undoubtedly be dumped by householders directly. The reasons can be varied, including:

- Missing the kerbside rubbish collection service or having a poor service, leading waste being dumped rather than kept until the next collection;
- not having any personal transport, and so being unable to take waste to the civic amenity site;
discovering the civic amenity site is closed, and dumping waste at the front gate either out of frustration, or because it is believed that the waste will be taken into the site the following day.

Economic drivers are only relevant for residents when it comes to disposing of large items, as charges are often levied by waste collection authorities although they do vary in their policies. This charge may apply to the collection and disposal of white goods such as refrigerators and freezers as these items contain hazardous gases that need careful handling. Some local authorities may also charge their residents for other bulky waste, such as furniture, to be collected. This can create the temptation for some people who are able, to fly-tip these items and avoid the charges. The speed with which local authorities can collect bulky waste may also be an important factor, and may interact with cost – some may be happy to pay for collection if the goods are taken quickly. No good behavioural evidence is available currently on the impact on fly-tipping of varying services in this way.

Lack of awareness of legal responsibilities and duties of care will also be an issue for householders, particularly if they pay someone else to collect their waste. From November 2005 in England and January 2006 in Wales, householders are required to do all they can to ensure that their waste is disposed of properly by those they pay to take it away. This amounts, in practice, to ensuring that the waste is collected by properly licensed waste contractors. The extent to which this new policy is understood by householders, is practicable and works in controlling fly-tipping are all questions that future research might address. There may also be value in conducting research to determine what householders understand by the term ‘fly-tipping’.

Travellers
Travellers are mentioned in a number of reports as being associated with fly-tipping:

- A report by LIFT (1984; cited in EnCams, 1998) identified Travellers as one of four groups who fly-tip;
- Seven percent of farmers asked who they think were responsible for fly-tipping on their farms mentioned Travellers (Marcus Hodges Environment Ltd & BDB Associates, 2002);
- Webb and Marshall (2004) report that about 5% of incidents of fly-tipping recorded on the Environment Agency database of construction and demolition waste incidents, were associated with Traveller sites; and
- a survey of local authorities owners and managers of traveller sites found that fly-tipping and waste disposal was the single most often mentioned site management problem with rubbish and/or fly-tipping being identified as a problem on, or adjacent to, two-thirds of Traveller sites (Niner, 2003).

One possibility for this association is that Travellers often do not have access to the same kerbside collection provisions as permanent residents. This means Travellers must find alternative waste disposal arrangements, let the
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waste accumulate on-site or fly-tip it near-by. Niner (2003) reports that while accumulations of waste near Traveller sites are most commonly attributed to the activities of the site's residents, non-resident dumping is identified on six out of the ten sites with a waste problem. This is recognised by Travellers, who feel they frequently get the blame for other people's tipping.

The waste may also be a product of traditional Traveller trades, such as garden work, tarmac and other building works and scrap dealing. As such, the motivation for fly-tipping this waste is akin to that of trade waste, i.e. to avoid costs of legitimate disposal.

What has been, and could be done about fly-tipping?
There are many ideas around about what might be done to reduce fly-tipping (see for example the EPA guidebook, 1998), and much has been tried. The Tidy Britain Group Survey in 1998 (EnCams, 1998) showed that the most common approach to tackling fly-tipping reported by local authorities then was 'enforcement of current legislation' (43%) followed by 'restriction to fly-tipping sites' (36%). However, only 39% of local authorities believed that their methods had proved successful. Few initiatives, however, have been soundly evaluated. The knowledge base of 'what works' is, therefore, very poor.

This section outlines these varied types of intervention using the framework developed from situational crime prevention. Situational Crime Prevention (SCP) has been used widely in conventional crime prevention work, and many evaluations have shown its value. Essentially, SCP involves searching for measures that do one or more of the following in relation to the specific problem of concern:

- Increase the effort needed for an offender to commit the crime;
- increase the risks to the offender for committing the crime;
- reduce the rewards that offenders would gain from committing crime;
- reduce the provocations which can induce crime; or
- remove excuses that offenders can make to rationalise the crime (Clark & Eck, 2003).

Increasing effort
- Target hardening of locations
  Target hardening of locations or hot spots for fly-tipping is a popular approach and has been tried by many local authorities. These measures try to make it harder for fly-tippers to use these locations, usually by physically preventing vehicular access. They don’t always work, though. One local authority installed concrete barriers in front of lay-bys to prevent waste being dumped by the roadside. After these were installed, however, waste was simply dumped in front of and on top of the barriers (personal communication, Spelthorne District Council, 11 May 2005). This is not an uncommon story.

Alley-gating is a popular measure currently. In East Manchester, residents had a problem with people dumping rubbish in the alleyways at the sides and backs of their houses, making these hard to use (Cole, Hickman & Green, 2003). The residents approached the local authority about this, and
the solution was to gate-off the alleyways. The process takes time as planning permission is needed (see Johnson & Loxley, 2001), but once gating is completed no-one can access the alleyway except residents who have keys. Alley-gates have been found to be effective in reducing burglary so there is every reason to believe it would be effective in reducing fly-tipping – unless offenders are householders who have access to the alleys.

Increasing risks
A study by Environmental Resources Management Ltd (ERM) in 2003 showed that the risk of being caught and prosecuted for fly-tipping was very small. 70% of 73 authorities who answered the questionnaire had not prosecuted a fly-tipping case between 1998-2003. Of the 19 who had, only eight were satisfied with the outcome (Dupont & Zakkour, 2003). Dupont and Zakkour suggest that because of vast variation in detection and prosecution between local authorities, there is a risk that fly-tippers will move their activities out of the ‘tougher’ areas and into those areas where their capture is less likely (Dupont & Zakkour, 2003). The ERM study also examined the perceived obstacles to prosecution. The most common response was the lack of sufficient evidence for a charge (Dupont & Zakkour, 2003). Other obstacles included not having a full time enforcement officer for fly-tipping, and a lack of perceived support from the legal section of the local authority.

Detection and prosecution of even the more serious cases attracting the attention of the Environment Agency can be problematic. Webb and Marshall (2004) found that just 2.5% of cases of construction and demolition waste reported to the Environment Agency in NE and SE Thames regions in 2002, resulted in a successful prosecution and conviction. This is due mostly to the difficulty in tracing this kind of waste to its source. However, when a fly-tipper is caught, the fines (and it is often fines) are often considered derisory and well worth the small risk to offenders. The Environment Agency claim that the average fine for the last four years for the more serious fly-tipping offences the Agency takes to court has maintained around the £1500 level (Environment Agency, personal communication).

- CCTV
CCTV is a common tool used to increase enforcement capacity by those local authorities able to invest in the technology. EnCams has produced a good practice guide on ‘using surveillance equipment to tackle fly-tipping’ (M.E.L Research, 2003). This guide covers everything from the legal considerations when using CCTV, to choosing the right equipment and taking enforcement action. There are also case studies presented showing where CCTV has helped to prevent or reduce fly-tipping.

More robust evaluations of CCTV, however, find that its impact on crime is mixed and often disappointing (Gill & Spriggs, 2005). Welsh and Farrington (2002) in a rare systematic review conclude that CCTV is place and crime specific in terms of its effectiveness in reducing crime. They found, for example, that its effect on public transport was unclear but that it was much more effective in reducing crime against vehicles in car parks. It
can also provoke responses from offenders to reduce its value. For example, when CCTV was introduced into building societies to prevent robberies, there was some evidence that robbers responded by wearing disguises, thus undermining the usefulness of CCTV (Austin, 1988). In relation to fly-tipping, lorries can disguise their identity using false registration plates, obscuring the plates with mud and oil, or not being registered or registered to a false name and address.

The key to using CCTV effectively is to think through how it is supposed to work in relation to the particular problem of concern. Tilley (1993) describes at least nine different ways in which CCTV could work. Which one is triggered will depend on the context. He concludes that it is most effective in those situations where offenders are convinced that the risk of identification and capture is increased. Where increased risk is not plausible, for example in relation to pick-pocketing on Oxford Circus (Webb & Laycock, 1991) there is no effect.

A further issue with CCTV is its sustainability. There is some evidence that, if CCTV does make an impact, its effectiveness may fade over time (Phillips, 1999). Webb and Laycock (1991) suggest that this is a consequence of offenders testing the system and learning the extent to which risk of capture really has increased. This may mean that mobile cameras are a more economic option, followed up with more permanent interventions to consolidate the short term impact. It also implies that strategic use of publicity will be important, to make the most of any successful detections, and help sustain in the minds of offenders heightened risk. The following example shows another way in which offenders might be informed of increased risk:

One rubbish tip in the Borough of Maidstone has eleven CCTV cameras in operation in the area; these cameras are linked up to a security company who provide sirens and high powered halogen lights and speakers. When the security company believe someone is about to fly-tip they turn on the alarms in order to deter the potential offender; if that does not work the public address system is used with a message of “Put your waste back into the vehicle and take it away, you are being filmed by CCTV cameras” (Maidstone Borough Council, 2002, p8).

- **Registration of vehicles**
  Given that vehicles are so important in fly-tipping, much detection effort is vehicle-led. This, however, is undermined by the ease with which offenders can disguise the identity of their vehicles, not just through crude efforts to obscure the number plate but also by registering false information in the various vehicle, waste carrying and operating licensing systems. For example, currently vehicles which carry waste do not have to be individually registered as waste carriers. Waste carrier registration is given to the companies who own the vehicles (Control of Pollution (Amendment) Act 1989). Unless companies can keep a reliable check of who is driving which vehicle at any particular time, it will be hard to use the licensing system to detect fly-tippers. Registering individual vehicles could
remove this anonymity, although there would still be scope for registering false identities. The increased effort required to evade detection may, however, be sufficient to deter some offenders.

- **Tax evasion charges**
  An alternative to trying to prosecute for fly-tipping is the seldom considered option of charging offenders with ‘tax evasion’ in order to deter them from fly-tipping. By failing to deposit waste in legal waste disposal sites offenders are also failing to pay landfill tax, thus they could be charged with tax evasion (Turner, Salmons, Powell & Craighill, 1998). This remedy still requires offenders to be caught, and enough evidence still needs to be in place for the charges to stick. However, simply advertising the fact that offenders risk these charges may be enough to deter some, more so if highly publicised examples are made of a few. Baroness Young of Old Scone, the Chief Executive of the Environment Agency, has said that they (the Environment Agency) have been examining the idea of using tax evasion charges against fly-tipping offenders (Public Accounts Committee, 22 January 2003).

- **Encouraging reporting**
  Maidstone Council (2002) suggested that a reward scheme should be in place in their borough to encourage people to report fly-tipping. If a resident gave information which led to a fly-tipper being successfully prosecuted, the resident would receive a monetary reward up to the value of £500 (Maidstone Borough Council, 2002). It is not known if this proposal was implemented and, if so, whether it was effective. There will be many challenges to implementing such a scheme and making it work. While reward giving has been shown to work well in changing environmental behaviour, it is often more cost effective to change the environment in which the unwanted behaviour occurs (Huffmann et. al., 1995).

- **Undercover operations**
  Undercover operations are another potential option in tackling fly-tipping (Skumatz, Van Dusen & Carton, 2001). Undercover operations can lead to arrests, and strategic use of publicity can make the most of any success to build in a deterrent mechanism as well as an incapacitation one. They are, however, very expensive, requiring a lot of police involvement and equipment, and such a tactic is probably best reserved for the most serious cases justifying such costs.

**Reducing rewards**
Within the field of pollution control, there is a considerable body of literature on economic incentives and levers for encouraging ‘green’ behaviour. These essentially focus on how to design taxation and subsidy systems that ensure the costs of illegal behaviour outweigh the costs of behaving honestly, and are summarised in Webb and Marshall (2004).

In relation to fly-tipping, two ideas have been suggested as a way of reducing rewards and encouraging ‘green’ behaviour. One is about billing people who
fly-tip for the costs of the clean up, and the other is about rewarding those who don’t.

- **Direct billing of fly-tippers for the costs of clean up and disposal**
  This is akin to the enforcement approach except that it is not a criminal justice remedy, but a purely economic one where the offenders are charged directly for the full costs of cleaning up their tip and disposing of the rubbish. It has a number of advantages over conventional enforcement remedies. First, it is civil action and therefore the burden of proof is lower. Secondly, it places the true cost of the fly-tip on the offenders, and thirdly it can be a much faster process than one that has to proceed through the criminal justice system. All these characteristics suggest that it could a more powerful way of deterring fly-tipping. In addition, of course, it would also save the local authority time and money preparing and prosecuting a court case. It is now possible for local authorities in England to apply this approach using new powers provided through the Clean Neighbourhoods and Environment Act 2005 (s22). Fixed Penalty Notices can be used to fine directly individuals who can be identified as having fly-tipped waste.

Linderhof, Kooreman, Allers and Wiersma (2001) examined the weight-based pricing experiment introduced in the Dutch Municipality of Oostzaan. In order to control any side-effects on fly-tipping, Oostzaan put in place services for residents to report any incidents of littering or fly-tipping. Efforts were then made to trace the origin of any fly-tipped waste, with those households then charged for the waste collection and fined as well (Linderhof et. al., 2001). This seems to have been effective, to the extent that the authors report that 4-5% of waste from Oostzaan was taken over the border into neighbouring Municipalities to relatives, employers or friends to dispose of who did not have the weight-based pricing system!

- **Deposit-refund systems**
  Ferrara (2003) suggests the introduction of a deposit-refund system to incentivise good waste disposal practice. Consumers would be charged a deposit for consumption at the point of sale, but this deposit would be refunded at the point of waste disposal. This should give householders a big incentive to dispose of waste legally, and also help to cover the cost of any clearing up of fly-tipping. Fullerton and Kinnaman (1995) also contend that a deposit refund system is the best for optimal disposal. There are, however, substantial implementation challenges and administrative costs and would require a detailed cost-benefit analysis before investing in such a system.

**Reducing provocations**

- **Opening hours at Civic Amenity sites**
  Fly-tipping can often be seen outside the gates of civic amenity sites, suggesting that this particular problem may arise because, finding the site closed, people leave the waste outside the site gates in frustration and some annoyance. Trialling later opening hours for local Civic Amenity sites may help prevent such a problem (Maidstone Council, 2002). Later opening hours over the summer period when there are more daylight
hours and more people doing house and garden maintenance for longer periods of time could be a positive move. Some local authorities already do this, and while its effectiveness in controlling fly-tipping is not known, it makes perfect sense from a customer service point of view.

Removing excuses
- **Free skip weekends**
  Some councils such as the London Borough of Barnet offer free 'skip weekends', when skips are located around the borough enabling residents to dispose of their bulky items for free (Defra, 2002). The EnCams survey (2003) showed that 70% of local authorities who implemented such community skip initiatives thought they were effective.

  There are costs to such schemes, for example policing the skips to ensure that they are only used for domestic waste. Also, the skip weekends may not resolve fly-tipping that occurs at other times when skips are not available. Perhaps it might be better to think of them as being the starting point for a multi-faceted fly-tipping strategy, providing the programme with a clean start on which to build.

- **Advertising**
  Another way to remove the ability of people to excuse their behaviour is through advertising, making it clear what the rules are and what is unacceptable behaviour. The impact of advertising on behaviour is a complex topic, and like CCTV the effects in crime prevention can be disappointing. Hansmann and Scholz (2003), however, describe an experiment using advertising to control littering behaviour which seems to have been effective. The aim was to reduce the amount of litter dropped by movie-goers on a cinema floor during a film, by showing a series of messages on the screen before the film began. The results showed a 28% reduction in the weight of litter dropped on the floor per person compared to baseline levels, although the researchers questioned whether this impact was sustainable over time.

  Care has to be taken in generalising from studies such as this. The case above targets a very specific behaviour, a behaviour which is seldom enforced, and in very specific circumstances. Other research produces more disappointing results. Riley and Mayhew (1980), for example, found that television advertising of the risks of vandalism did not reduce vandalism in Manchester compared to the control area of Bradford. Generally, the lessons from research are that publicity can be a powerful tactic in reducing crime if it is associated with a very specific problem and increases offenders perceptions of risk (Bowers and Johnson, 2003; Johnson and Bowers, 2003). The authors of the littering study described above are also right to worry about sustaining effects produced by advertising. Research shows that offenders do learn about risk, and that any initial impact may fade if no real increase in risk can be demonstrated (Webb & Laycock, 1991)
3 What Flycapture tells us

In an effort to get a clearer national picture of the fly-tipping problem the Environment Agency launched the Flycapture database in April 2004. All local authorities as well as the Environment Agency are required to submit monthly returns on the number, size, waste and location type of the fly-tips recorded each month. It is intended that in the future, local authorities will also be required to report the actions taken against fly-tippers.

Problems with data
This study revealed a number of problems of reliability and validity of the data:

1. Although guidance is provided to local authorities on how to classify fly-tips, it is clear that local authorities have different ideas of what constitutes a fly-tip and what does not. Side-waste is a particular issue, recorded in some local authorities as fly-tipping, but not in others. This can generate huge differences in the data. Liverpool, for instance, had to be excluded from this analysis as its Flycapture returns showed that black-bag fly-tipping incidents in alley-ways increased suddenly by a factor of more than a hundred as a result of their inclusion of side-waste in the figures.

2. While most local authorities comply with the requirement to submit Flycapture returns in terms of reporting the number of incidents that have taken place each month, not all have been so willing to break down these returns into the separate Flycapture categories: size, waste and location type. For some local authorities that do not have the appropriate systems in place, collating this information requires considerably more effort. Consequently, some authorities only complete part of the return or dump all incidents into one field; entering ‘0’s for the others. In addition, there was some evidence to suggest that a few local authorities simply guess how their fly-tipping incidents are distributed across categories.

3. Some local authority performance targets are based on Flycapture data. This creates an incentive to inflate the number of incidents at the base-line so that performance targets are more easily met, and to include incidents that other local authorities might reject as fly-tipping.

4. Since local authorities are only required to submit data on fly-tipping incidents they deal with, not all fly-tips are reported to Flycapture. Those occurring on private land, for example, which are not the council’s responsibility, are frequently not entered on the system.

5. Flycapture guidance stipulates that a fly-tip can only be classified into one category. This makes it hard to know how to record a mixed waste fly-tip comprising of a fridge, a sofa and several bags of building rubble, for example. This example could be classed as either ‘white goods’, ‘other household waste’, or ‘construction and demolition waste’.
6. Flycapture returns contain aggregated data only. It is not a record of individual fly-tipping incidents. This limits the way the data can be analysed. For example, while it might be possible to ascertain that the majority of tips were comprised of household waste or construction waste, which were dumped mostly on roads or fields, it is impossible to determine whether either waste type was disproportionately associated with either one of the land types.

These problems either place limitations on how the data can be analysed or introduce a certain amount of unreliability into the information. It is important that this is kept in mind when interpreting the analyses below.

It must also be kept in mind that the following analyses are based on returns submitted by local authorities between July 2004 and June 2005. Since the database was launched only a few months prior to this (April 2004), this represents Flycapture’s early stages. In some cases it took local authorities several months to put systems in place to collect the data and get up to speed with the submission process. It was therefore decided to exclude local authorities who failed to provide at least six returns in this twelve month period. Further, Liverpool and Sheffield City Councils were excluded for the reason given in point 1 above.

The scale of the fly-tipping
Based on Flycapture figures, it is estimated there were about 1.1 million incidents of fly-tipping in the 12 months June 2004-July 2005, with local authorities experiencing an average of around 250 fly-tips per month. Figure 3.1 shows the trend over this period, revealing what we know from more detailed work in local authorities is the seasonal dip in the winter months. Also, the trend over this period is down, with June 2005 dipping below 250 tips for the first time in this period.

Figure 3.1: Average number of fly-tips per month
Local authorities vary enormously in the numbers of fly-tips they report to Flycapture. Figure 3.2 shows the distribution of fly-tipping across English local authorities.

**Figure 3.2: Number of fly-tips reported by local authority area per month**

Figure 3.2 shows pockets of quite high concentration of fly-tipping, and these seem generally to be areas of high population density. Fly-tipping seems particularly focused around urban areas in London, the North West of England and the North East.

Calculating a rate per head of population controls for the possibility that these areas have more fly-tipping simply because more people live there. If population density were the main driver for the distribution shown in Figure 3.2, the rate per head of population should be similar across all local authorities. Figure 3.3 shows both the number and rate for each local authority.
Figure 3.3: Number of fly-tips and rate per month per 1,000 population by local authority

There are a number of interesting points from Figure 3.3:

1. The rate is not flat, which means that factors other than simply population density drive the problem. Statistical analysis does show that part of the variance in rate is correlated with density of population (this is discussed in more depth below), but Figure 3.3 suggests that the problem increases exponentially, i.e. it increases much more than would be expected by population density alone. Two possibilities could explain this:
   a. further statistical analysis shows that the variance is also strongly correlated with Indices of Multiple Deprivation. Issues such as overcrowding and poverty emerge as relevant and plausible drivers of the problem
   b. the exponential rate of increase would be consistent with the ‘broken windows’ theory described above, i.e. that fly-tipping in areas of multiple deprivation encourages more people to fly-tip

2. Some local authorities suffer massively more than others. Liverpool and Sheffield have been excluded from this analysis, as they report unusually high numbers – between three and six times as much as the next highest local authority. This looks like a recording issue. A number of local authorities, however, suffer very high numbers and rates of fly-tipping. 5% of local authorities account for 45% of all fly-tips. The top six report an
average of 3,573 fly-tips per month, with a monthly rate of 18 per 1000 population. These figures are more than ten times the average for England nationally. Concentrations like this deserve closer attention as reductions here have the potential to alter the national picture.

3. Two local authorities stand out as having high numbers but low rates – Leeds and Birmingham, which represent the two blips in Figure 3.3. This pattern goes against the trend and is also deserving of attention as it may provide good practice lessons.

4. One local authority has low number but high rates – the Corporation of London – because the size of the residential population is so low.

The nature of fly-tipping
Figure 3.4 shows the locations which suffer from fly-tipping. The low level of risk for private, commercial, rail, water and farm land is probably an underestimate for the reason given on page 24 – 25% of farmers claimed to have experience fly-tipping on their farms over a five year period, 33% of which claimed never to have reported a fly-tip to the authorities (Marcus Hodges Environment Ltd & BDB Associates, 2002). What Figure 3.4, and Flycapture generally, shows is how the problem impinges on local authority responsibilities. This explains why highways, council land and other access routes emerge so strongly, because these are the main areas of land for which the local authority are responsible for keeping clear. Highways probably suffer so much more than other areas such as alleyways and footpaths because so much fly-tipping is vehicle-based.

Figure 3.4: Location of fly-tipping

Figure 3.5 shows the kind of waste which is fly-tipped. Thankfully, hazardous waste is relatively rare although the impact on the environment is clearly disproportionate to the number of fly-tips. Household waste fly-tipping is much
more prevalent than commercial waste tipping, with many more incidents of household black refuse bags being tipped than, say, green waste. Figure 3.5 does not, however, reflect the size of tip. In terms of volume, for example, one tip of green waste is likely be much more extensive than one black refuse bag, and be more expensive to clean up.

**Figure 3.5: Type of waste tipped**

Figure 3.6 shows the volume of fly-tipping as measured by Flycapture. In line with the picture presented in Figure 3.5, most fly-tips amount to no more than a car boot or small van load, or a single item. Larger loads are relatively rare, although again the impact of these will be far in excess of their number. One lorry can tip 20 tonnes of waste, while one car probably tips a couple of black bags and a carpet!
It is difficult to delve any deeper into the problem using Flycapture data, for example cross tabulations are not possible because of its aggregation. However, some rather crude analysis does begin to show the need and potential for such deeper analysis. Figure 3.7 shows the distribution of two types of problem around London – single item/car-boot load fly-tips and tipper load or more fly-tips. It shows rather different patterns, with larger tips occurring more on the outskirts of urban conurbations than smaller tips. This suggests the need and potential for rather different solutions to these problems.
Comparing Flycapture data with other local area statistics potentially provides insight into fly-tipping problems. However, the limitations of Flycapture described at the beginning of this section mean such analyses must be treated with caution. Furthermore, since local authority areas vary greatly by way of population density, housing, income, land use, amount of construction work, rurality and proximity to cities etc., it is likely the factors that contribute to fly-tipping may differ between areas too. For example, in terms of access to civic amenity sites, distance might be an important factor in rural areas, whereas in urban areas, traffic conditions may be more significant. More importantly, many factors thought to be associated with fly-tipping co-vary to a considerable extent. For example, areas that are densely populated are the same areas where you find poor quality overcrowded housing, low income families, etc. This complicates the analysis and renders conclusions hard to make with any degree of confidence.

The remainder of this section considers some factors that could be hypothesised as being associated with fly-tipping. It must be emphasised that these analyses are speculative with the associations described are not to be considered conclusive; but as warranting more in-depth investigation at most.

Table 3.1 shows the correlation between average local authority fly-tipping rates and several local area statistics.

<table>
<thead>
<tr>
<th>Index of multiple deprivation (IMD)</th>
<th>Population density</th>
<th>Average distance to nearest CA site</th>
<th>Percentage of households without a car</th>
<th>IMD measure of overcrowding</th>
<th>IMD combined measure of income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of fly-tipping</td>
<td>0.52**</td>
<td>0.41**</td>
<td>-0.25**</td>
<td>0.58**</td>
<td>0.46**</td>
</tr>
</tbody>
</table>

** p<0.01

Table 3.1 shows that, at a general level, average local authority fly-tipping rates correlate strongly with many factors. However, as discussed many of these factors correlate with each other. This covariance is perhaps best illustrated by the negative correlation found between fly-tipping and distance to civic amenity site. At first glance this association seems counter-intuitive since many would expect fly-tipping to increase as the distance from legitimately means of disposal increases, not decreases. However, this begins to make sense when considering that the largest distances to civic amenity sites occur in the most rural areas of England, areas which have lower population density, less overcrowded housing, etc. These areas are not as prone to fly-tipping as built-up urban areas. To gain a better understanding of the extent to which these factors are associated with fly-tipping it is useful to

---

1 The average distance to civic amenity site was calculated by measuring the distance from each census output area centroid to its nearest CA site, weighing each distance measured by the population of that output area.
control for the rurality of the area. Table 3.2 shows the association between Index of Multiple Deprivation and local authority fly-tipping rates, broken down into six rural classes (as defined by Defra, www.http://statistics.defra.gov.uk/esg/rural_resd/rural_definition.asp)

Table 3.2: Correlations between fly-tipping and IMD by rural class

<table>
<thead>
<tr>
<th></th>
<th>Major urban</th>
<th>Large urban</th>
<th>Other urban</th>
<th>Significant rural</th>
<th>Rural 50</th>
<th>Rural 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation</td>
<td>0.414**</td>
<td>0.660**</td>
<td>0.286*</td>
<td>0.375**</td>
<td>0.434**</td>
<td>0.266*</td>
</tr>
</tbody>
</table>

**p<0.01; *p<0.05

Table 3.2 shows that deprivation is associated with fly-tipping across all rural classes. The indices of multiple deprivation however are made up of a variety of measures such as housing, income, education, health, crime and the living environment. This begs the question of which factors that contribute to deprivation are associated with fly-tipping, and which are not. It could be hypothesised that at least two of these factors may be associated: housing and income. Residents living in overcrowded housing conditions may not have sufficient space to store excess waste or unwanted furniture, indeed, those living in high-density housing with shared refuse facilities may not have sufficient waste provisions for regular amounts of waste. Income may also be a factor since some councils charge for bulky waste collection services and traders on low incomes may be more motivated to avoid paying waste disposal costs. Table 3.3 shows the correlations between fly-tipping and measures of overcrowding, population density and income.

Table 3.3: Correlations between fly-tipping, population density, overcrowding and income by rural class

<table>
<thead>
<tr>
<th></th>
<th>Major urban</th>
<th>Large urban</th>
<th>Other urban</th>
<th>Significant rural</th>
<th>Rural 50</th>
<th>Rural 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population density</td>
<td>0.562**</td>
<td>0.201</td>
<td>-0.101</td>
<td>0.122</td>
<td>0.220</td>
<td>0.210</td>
</tr>
<tr>
<td>Overcrowding</td>
<td>0.660**</td>
<td>0.501**</td>
<td>0.223</td>
<td>0.227</td>
<td>0.045</td>
<td>0.172</td>
</tr>
<tr>
<td>Income</td>
<td>0.494**</td>
<td>0.158</td>
<td>0.140</td>
<td>0.317*</td>
<td>0.519**</td>
<td>0.205</td>
</tr>
</tbody>
</table>

**p<0.01; *p<0.05

Table 3.1 suggests that population density is strongly associated with fly-tipping. However, Table 3.3 shows that when controlling for rurality, population density is only associated with fly-tipping in major urban areas. An even closer look at particular waste types fly-tipped in these areas suggests that population density is particularly associated with commercial waste and household black bags. It can be argued that the more dense an area is, the less space there may be for storing waste, both for residents and for businesses. If waste storage is the dominant factor, a relationship would be expected for fly-tipping household waste in overcrowded areas.

2 Please refer to the appendices for details of these correlations
As can be seen in Table 3.3, overcrowding is strongly associated with fly-tipping in urban areas. This relationship is particularly prominent for fly-tipping of household and commercial waste particularly black bags and bulky waste (including white goods). Construction and demolition waste is also associated with overcrowding but to a lesser extent.

A closer look at the relationship between fly-tipping and income reveals that, in urban areas, income is associated with construction and demolition waste, bulky waste, commercial waste and vehicle parts. No significant association was found with fly-tipping of black bin bags and income. In rural areas, however, there is a weak association with household black bags, but more so for bulky waste.

As well as factors associated with deprivation, incentives to fly-tip may include those relating to accessing legitimate waste disposal services.

Table 3.4 gives the correlations between fly-tipping and the average distance to civic amenity site and the percentage of households in a local authority without a car by rural class.

**Table 3.4:** Correlations between fly-tipping, distance to civic amenity sites and percentage of households without a car by rural class

<table>
<thead>
<tr>
<th></th>
<th>Major urban</th>
<th>Large urban</th>
<th>Other urban</th>
<th>Significant rural</th>
<th>Rural 50</th>
<th>Rural 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to CA site</td>
<td>-0.148</td>
<td>0.422**</td>
<td>0.089</td>
<td>0.011</td>
<td>-0.156</td>
<td>-0.149</td>
</tr>
<tr>
<td>Households without a car</td>
<td>0.620**</td>
<td>0.677**</td>
<td>0.298</td>
<td>0.390*</td>
<td>0.256</td>
<td>0.102</td>
</tr>
</tbody>
</table>

**p<0.01; *p<0.05**

It must be noted that the measure of average distance residents in each local authority need to travel to reach their nearest civic amenity site assumes residents can access their nearest tip. In reality, in cases where residents’ nearest tip lies outside of their local authority boundary, they may not be allowed access. That being said, Table 3.4 shows that no relationship was found between distance to civic amenity sites and fly-tipping in five of the six rural classifications. Interestingly, a reasonably strong association was found in ‘large urban’ areas. If distance to civic amenity sites was to be a factor in urban areas generally you would expect this pattern to occur in ‘major urban’ areas too. On closer inspection of the data, this pattern was found to be particularly associated with commercial waste and chemical drums; waste which would not normally be accepted by civic amenity sites. Therefore, this association can be confidently dismissed as an anomaly. No association was found with household waste and distance to civic amenity site.

In built up areas, the distance to a civic amenity site is rarely, if ever, going to be of any significance. What is likely to be more pertinent, however, is the time it takes to get there, which is dependent more on traffic conditions than distance, and in particular whether the householder has access to a vehicle.
Sadly, it is not possible to calculate the average time needed for each resident to visit their nearest civic amenity site, Table 3.4 does however show the relationship between fly-tipping and the percentage of households in a local authority with no car. As can be seen, in urban areas there is a strong association between vehicle ownership and fly-tipping, less so in rural areas.

On closer analysis, a strong relationship is found between vehicle ownership and the fly-tipping of household waste, bulky waste (Flycapture’s ‘other household waste’ category) and white goods. A weaker correlation is found between vehicle ownership and commercial waste and construction and demolition waste.

In summary, although caution must be exercised when interpreting these analyses, it appears fly-tipping is more associated with areas of multiple deprivation than simply the density of the population. The exact nature of this relationship, although difficult to determine, appears likely to be related in some way to overcrowded housing and lack of vehicle ownership.
4 Practice and capacity in waste authorities

Two strands of work were conducted to assess current practice in waste collection and disposal authorities, and their state of readiness to develop more preventive interventions – the national survey of waste authorities, and detailed case study work in selected areas. This section describes the findings from both.

4.1 The Waste Authority survey
In July 2005, a survey was distributed to all waste collection authorities (WCAs), waste disposal authorities (WDAs) and unitary authorities in England. Its aims were to:

- gauge each authority’s specific fly-tipping problems;
- understand the context in which each authority operates;
- identify examples of good practice; and
- inform the selection of suitable case studies for more detailed analysis and inclusion in a good practice guide.

Key findings from the survey are presented below. Full details of the survey, the questions asked and the responses received, are given in the appendix.

Response rate
In total 118 authorities returned the questionnaire representing a 29.9% response rate. Considering the survey’s complexity and its non-obligatory nature, the response rate was always expected to be low. This rate is comparable to the 38% response rate reported by Encams in its 2003 survey. Table 4.1 and Figure 4.1 depict the rate and geographical spread of the responses to the survey.

Table 4.1: Waste authority survey response rates

<table>
<thead>
<tr>
<th></th>
<th>No. authorities responding</th>
<th>Total in England</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCAs</td>
<td>83</td>
<td>274</td>
<td>30.3%</td>
</tr>
<tr>
<td>Unitary authorities</td>
<td>21</td>
<td>80</td>
<td>26.3%</td>
</tr>
<tr>
<td>Total Collection Authorities</td>
<td>104</td>
<td>354</td>
<td>29.4%</td>
</tr>
<tr>
<td>WDAs</td>
<td>14</td>
<td>40</td>
<td>35.0%</td>
</tr>
<tr>
<td>Total waste authorities</td>
<td>118</td>
<td>394</td>
<td>29.9%</td>
</tr>
</tbody>
</table>
Figure 4.1: Distribution of waste collection/unitary authorities responding to the waste authority survey

Perception of the problem

*How concentrated is it?*
Figure 4.2 compares local authority perceptions of fly-tipping problems in this survey compared to previous Encams surveys (1998, 2003).
Fly-tipping: Causes, Incentives and Solutions

**Figure 4.2:** Waste authority perception of fly-tipping problems in their area

Four percent of local authorities considered fly-tipping to be a major problem, a figure in line with most of the previous sweeps of the Encams survey (with the exception of the survey in 2001/02). This is also the picture presented by Flycapture data which shows the problem, in terms of number of fly-tips, massively concentrated with around 5% of local authorities suffering 45% of all fly-tips nationally.

The perception by 69% of local authorities that fly-tipping is a significant problem for them is rather different from that presented by the Flycapture data, which suggests a figure more around 30%. But that is based purely on the number of fly-tips, which can be a misleading indicator of size of problem.

**What are the main problems?**

The type of waste fly-tipped and the locations used for tipping waste all mirror the picture presented in Flycapture, i.e. mainly household rubbish, with householders and small trade/builders being the main culprits, and highways being the main location (see appendix). The survey did allow, however, more discrete problems to be described by respondents in a way that Flycapture cannot. Figure 4.3 describes the prevalence of particular problems waste authorities say they have.
Figure 4.3: Top 10 particular problems of fly-tipping – proportion of authorities saying they have this problem

Interestingly, Figure 4.3 reveals even more the problem of household black refuse bags being dumped in residential streets. This problem is much greater than any other. It is also easy to see how this can get mixed up with the side waste issue. A black bag left out three days before collection is due looks like a bag that has been dumped, even though the motivation is different.

Green waste emerges in a number of different ways – either tipped by garden services or by householders. The greater prevalence of householders tipping green waste is perhaps surprising as they have available to them free disposal services which traders do not. Building waste also emerges in two forms – waste dumped around housing, and waste transported for dumping in rural areas. White goods do not figure much as a problem.

This sort of analysis begins to illustrate the need to identify discrete problems for closer examination, as these will each suggest rather different responses.

What are the causes?
In relation to possible ‘drivers’ for these problems, two clear winners emerged from this survey – attempts to avoid the costs of disposal, and availability of civic amenity sites. A range of other ‘causes’ of fly-tipping were mentioned but these two dominated as Figure 4.4 shows.
Figure 4.4: Authority perceptions of the ‘causes’ if fly-tipping

Responses
There was little evidence of a strategic response being taken to the problem. 76% said they had no written strategy for reducing fly-tipping and 68% said that there had been no data-driven analysis conducted to help develop strategies or tactics. 44% said that fly-tipping had been included in the local Crime and Disorder Reduction strategy, but 43% didn’t know if it had or not.

In relation to specific kinds of intervention, the picture that emerges from the survey is of a field where preventive work is undeveloped. Clearing up the tip is still the dominant response, as Figure 4.5 shows.
Figure 4.5: Distribution of local authority spend in response to fly-tipping

- Clearance, 81%
- Enforcement, 12%
- Prevention, 7%

Another indicator of the immature state of preventive work in this field is the little collaborative work that is undertaken with other agencies. As Figure 4.6 shows, as much as a quarter of local authorities never work with other agencies, with little over 27% of local authorities working regularly with their neighbouring authorities.

Figure 4.6: Extent of partnership working

Q: To what extent does your WCA/unitary authority work with the following public agencies to improve the fly-tipping situation?

When preventive tactics are used, however, the experience is that these are usually effective. Indeed, they are often seen as more effective than enforcement work and education work, even though the latter are more common responses.
Figure 4.7 shows that 72% of authorities had adopted enforcement tactics, but less than 50% thought these effective. Difficulties in obtaining convictions were considered the main problem here. Only 43% had tried restricting access to hot spots, but over 80% of these projects were judged successful. Perhaps these more situational crime prevention tactics will become more common as experience of their efficacy grows and the word spreads.

**Figure 4.7:** Proportion of Local Authorities attempting different responses, and proportion judging these as very or quite effective

![Graph showing proportions of local authorities using different responses and judging their effectiveness](image)

Generally speaking, and again in line with the undeveloped preventive approach, there was little good data being collected on the problem with which to evaluate the effectiveness of interventions. Many local authorities said they either didn’t know whether their responses had been effective, that it was too early to tell or simply didn’t answer the question. Figure 4.8 shows that this varied by response. CCTV was the most common response implemented with little knowledge of its effectiveness, perhaps following the current ‘fashion’ for CCTV. Local authorities restricting access to hot spots, however, tended to be able to judge whether it had worked or not, perhaps because it is more obvious whether a hot spot has stopped attracting fly-tipping.
4.2 The case studies

One of the aims of the survey was to identify those local authorities where some in depth work and analysis might be conducted, to show how to describe problems better and what works in responding. Ten areas were selected on the basis that they said they had good data and had implemented successful interventions.

The details of the resulting case studies appear in the good practice guide and won’t be repeated here. The following, however, describes the more general findings from this work. Bear in mind that these areas were apparently better set up for problem solving preventive work than others.

Perhaps the first thing to note is the general enthusiasm of those at the sharp end who helped us with the study. They were all willing participants in the study and had variously made efforts to improve processes, such as clearance of tips, collection of evidence, preparation of cases for court, and work in partnership with others.

The overwhelming finding has to be, however, the poverty of the data collected locally. We had hoped to be able to undertake some detailed analysis of local data to produce some examples of the kinds of problem classifications good crime prevention work involves. Fly-tipping involves a range of different people dumping different waste for different reasons. Good problem solving work requires the detailed analysis of these individual problems in order to generate effective solutions. In the end, we were unable to do this with the data available. Particular problems were

- Records not being kept about individual incidents
Inconsistencies in field entries
Changes in categories used
Vague, if any, geo-referencing

There was little evidence of analysis of data locally, and in any case these problems severely limit the scope of what would be possible. One example illustrates the point:

This experienced researcher spent several days trying to make use of this authority’s data. Even though there were (unusually) records of each incident kept in Excel going back to 1999, he had to conclude that nothing useful could be done - the spatial referencing was too imprecise, data were missing and apparently could not be provided, the spelling/definitions of sub-areas were inconsistent, and the goods tipped had to be manually recoded.

Another problem relates to the lack of any coding, or even recognition often, of different kinds of problem. For example, analysis of records in another case study revealed three rather different kinds of problem, all of which were lumped together as fly-tipping:

- what you might call conventional fly-tipping, with strangers being seen dumping waste from vehicles,
- neighbour problems where there seemed to be a persistent problem with a particular set of nuisance neighbours (who likely appear in other local authority department and police records) and
- littering, for example throwing a cigarette packet or fast food wrapping out of a car window

The problem arises in part because of the emphasis on clean up and enforcement, so that the data systems are set up to track cases through a legal process (even here, though, records here were weak, for example in relation to fine-payment) or to monitor a waste collection contract. More recently they have been ‘tweaked’ to provide returns to Flycapture.

The data are not set up to inform the development of strategic approaches to the reduction of the problem. Such an approach makes much more demand on data systems that capture the right kind of information, in a consistent way, and the skills of local analysts. Moreover, there didn’t seem to be much understanding or appreciation of the need to keep such data, again because of the overwhelming emphasis of reactive enforcement work rather than proactive strategic thinking

In relation to interventions, aside from cleaning up the tips, there were broadly three kinds of effort:

- Enforcement, special crackdowns as well as the routine work of enforcement officers
- Some situational measures, notably CCTV, fencing, the erection of barriers, and the facilitation of natural surveillance by cutting down foliage
• Public education about citizen responsibilities and local authority facilities for disposing of water.

In almost all cases the evidence of impact was at best anecdotal. There was little if any systematic evaluation.

Bearing in mind that the sites chosen for case study work appeared the better ones from the survey, the conclusion must be that local authorities are currently poorly set up to undertake problem analysis and strategically driven reduction work.
5 The offender’s perspective

Developing a perspective on the problem from the offender’s point of view was a major objective of this study. This section examines what we know about offenders and what we have learned from talking to them. There are three parts to this:

- The first examines what we know from official court records of prosecutions and offenders’ criminal careers
- The second describes the results of a national randomised household survey of the extent of fly-tipping
- The third examines the issues to emerge from one-to-one interviews with convicted offenders and businesses involved in the transportation and disposal of waste

5.1 Prosecutions and criminal careers

This section examines what we know about convicted offenders. Two datasets were created from nationally held databases:

a) details of prosecutions in magistrate’s courts for contraventions against four sections of the Environmental Protection Act 1990, for the period 1991-2004. These data were extracted from the Court Proceedings Database held by the Office for Criminal Justice Reform. The offences were:

<table>
<thead>
<tr>
<th>Relevant legislation</th>
<th>Environmental Protection Act 1990 section 33 (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Depositing, causing the deposition or permitting the deposition, treating, keeping or disposing of controlled (but not hazardous) in or on land without a licence</td>
</tr>
<tr>
<td>Referred to below as</td>
<td>TIPPING CONTROLLED WASTE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relevant legislation</th>
<th>Environmental Protection Act 1990 section 33 (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Depositing, causing the deposition or permitting the deposition of hazardous waste in or on land without a licence</td>
</tr>
<tr>
<td>Referred to below as</td>
<td>TIPPING HAZARDOUS WASTE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relevant legislation</th>
<th>Environmental Protection Act 1990 section 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Importing, producing, carrying, keeping, treats or disposes of controlled waste without taking reasonable measures; failing to comply with the secretary of states requirements</td>
</tr>
<tr>
<td>Referred to below as</td>
<td>DUTY OF CARE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relevant legislation</th>
<th>Environmental Protection Act 1990 section 33 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Contravening conditions of a waste management licence</td>
</tr>
<tr>
<td>Referred to below as</td>
<td>WASTE MANAGEMENT LICENCE</td>
</tr>
</tbody>
</table>
b) details of offenders, including their criminal histories, for those convicted for the above offences in 2004. This data was extracted from the Police National Computer

**Prosecutions**

Figure 5.1 shows the number of prosecutions of each type over the 14 year period, essentially since the Environmental Protection Act was introduced.

**Figure 5.1:** Number of prosecutions in magistrates courts (England & Wales)

![Figure 5.1](image)

Clearly, the number of prosecutions has grown enormously over this period, as would be expected with new legislation. The risk of prosecution, however, remains small. On the basis that Flycapture suggests around one million fly-tips per year, the risk of being sanctioned for fly-tipping is less than 1%, even taking into account the possibility that these court figures underestimate rates of sanctioning. The upward trend, however, is promising and can be expected to continue, even pick up pace as local authorities exercise their new powers and expand their enforcement work.

There are two rather unusual trends that are worth commenting on here. The first is the sharp increase in duty of care prosecutions in 2004. This probably reflects the powers now available to local authorities to check waste transfer notes and suggests that they are indeed beginning to make use of these.

The second is the increase in prosecutions for waste management licence contraventions, which picks up pace from 2000. The reasons for this are unknown.

The proportion of cases prosecuted which end in a conviction remain steady throughout this period at around 80%, and as Figure 5.2 shows fines are the most common sentence for all offences. There is no change in the pattern of sentencing over this period. The average fine per offender was £2,000, but there was enormous variation. For example, fines for tipping hazardous waste...
ranged from £300 to £20,899. Immediate custody was rare and seems reserved for the most serious of cases where hazardous waste is involved.

**Figure 5.2:** Sentencing outcomes 1993-2004

The figures reported in Figure 5.1 and Figure 5.2 show a slightly different pattern to that reported by the Environment Agency. The conviction rate of prosecutions brought by the EA is higher at 96% but with a lower average fine of £1500 (Better Regulation Executive, 2005).

Figure 5.3 shows prosecutions by region, and reveals the extent to which duty of care cases are concentrated in London. Again, the reason for this unusual pattern is not known.
**Figure 5.3:** Number of prosecutions by region, 1993-2004

![Graph showing number of prosecutions by region](image)

Source: Court Proceedings Database at the Office for Criminal Justice Reform.

**Offenders’ criminal careers**

Information about individuals convicted of one or more of the fly-tipping offences during 2004 was obtained from the Home Office Police National Computer data. This included importantly their criminal histories, to develop an offender profile.

In matching court records of prosecutions with those on the PNC, discrepancies between the two databases emerged. According to the Court Proceedings Database at the Office for Criminal Justice Reform, the total number of convictions for these four offences in 2004 was 705. However, PNC only appeared to have a record of 342 of these offences. These differences varied according to the type of offence, as shown in Table 5.1.
Table 5.1: Number of fly-tipping convictions in England and Wales in 2004, according to the Court Proceedings Database at the Office for Criminal Justice Reform (CPD at OCJR) and the Home Office Police National Computer (HOPNC).

<table>
<thead>
<tr>
<th></th>
<th>CPD at OCJR</th>
<th>HOPNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tipping Controlled Waste</td>
<td>185</td>
<td>218</td>
</tr>
<tr>
<td>Tipping Hazardous Waste</td>
<td>40</td>
<td>44</td>
</tr>
<tr>
<td>Duty of Care</td>
<td>217</td>
<td>34</td>
</tr>
<tr>
<td>Waste Management Licence</td>
<td>263</td>
<td>46</td>
</tr>
<tr>
<td>All Offences</td>
<td>705</td>
<td>342</td>
</tr>
</tbody>
</table>

Source: Court Proceedings Database at the Office for Criminal Justice Reform and Home Office Police National Computer.

While there are discrepancies in most offence types, these are more pronounced for the duty of care and waste management licence cases where only 20% appear on PNC. One possible reason for this is that local authorities and the Environment Agency are not routinely informing PNC of convictions in the cases that they prosecute. This means that knowledge about offenders, and particularly their previous offences, is compromised. This is an issue worth exploring further.

PNC revealed that 170 offenders were responsible for the 342 fly-tipping offences. Moreover they had also between them been previously convicted of 1,008 other offences.

The age profile of this group was older than for the general criminal population. Their mean age for a first appearance in court for a fly-tipping offence was 37.4 years\(^3\), see Figure 5.4 (SD=14.4; min=15.8; max=73.7). This compares with studies showing that the peak age for offending generally is the late teens and early 20s. Indeed, the age at which these offenders appear in court for any offence is 30.2yrs. They appear, on the whole, to be a group of offenders who either begin a criminal career later, or are cleverer, having managed to avoid capture for some time.

\(^3\) Please note this data was available for just 138 offenders (81.2% of the total sample).
Analysis of their offending patterns reveals that 61% of these offenders had been convicted of just one offence (Table 5.2), but that there were some prolific offenders. The 39% of offenders accounted for 70% of all offences and 6% of offenders account for 22% of offences. Within the specific offence types:

- 7% of tipping controlled waste offenders accounted for 24% of these offences
- 6% of tipping hazardous waste offenders accounted for 23% of these offences
- 5% of duty of care offenders accounted for 12% of these offences
- 5% of waste management licence offenders accounted for 28% of these offences

**Table 5.2: Percentage of offenders and offences by offence type**

<table>
<thead>
<tr>
<th>Number of Fly-tipping Offences</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>13</th>
<th>15</th>
<th>N base</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIPPING CONTROLLED WASTE % Offenders</td>
<td>70</td>
<td>16</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>% Offences</td>
<td>44</td>
<td>20</td>
<td>12</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>7</td>
<td></td>
<td></td>
<td>218</td>
<td></td>
</tr>
<tr>
<td>TIPPING HAZARDOUS WASTE % Offenders</td>
<td>77</td>
<td>16</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>% Offences</td>
<td>55</td>
<td>23</td>
<td></td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>DUTY OF CARE % Offenders</td>
<td>57</td>
<td>29</td>
<td>10</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>% Offences</td>
<td>35</td>
<td>35</td>
<td>18</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>
The implication is that a small number of offenders don’t appear to have been deterred by their first experiences of the criminal justice system and continue to commit a large number of fly-tipping offences.

In addition to fly-tipping, 45% of this sample of 170 fly-tippers had criminal careers, which included other offences. At Table 5.3 shows, 77 fly-tippers also had convictions for 1,008 other offences.

**Table 5.3:** Number of non-fly-tipping offences committed by fly-tipping offenders.

<table>
<thead>
<tr>
<th>Offence</th>
<th>Number of Offences</th>
<th>Number of Offenders (offenders may appear in more than one offence category)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary motoring offences</td>
<td>255</td>
<td>28</td>
</tr>
<tr>
<td>Theft and handling stolen goods</td>
<td>185</td>
<td>50</td>
</tr>
<tr>
<td>Summary offences (exc. Motoring)</td>
<td>164</td>
<td>50</td>
</tr>
<tr>
<td>Other indictable offences (exc. Motoring)</td>
<td>99</td>
<td>58</td>
</tr>
<tr>
<td>Unknown / Non England &amp; Wales</td>
<td>72</td>
<td>23</td>
</tr>
<tr>
<td>Burglary</td>
<td>62</td>
<td>22</td>
</tr>
<tr>
<td>Violence against the person</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>Drug offences</td>
<td>37</td>
<td>14</td>
</tr>
<tr>
<td>Criminal damage</td>
<td>32</td>
<td>19</td>
</tr>
<tr>
<td>Fraud and forgery</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td>Indictable motoring offences</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Sexual offences</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Robbery</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,008</strong></td>
<td><strong>77</strong></td>
</tr>
</tbody>
</table>

Further analysis was carried out to test whether fly-tippers have particular criminal careers and profiles. In relation to prolificacy, there seemed little relationship between a prolific general crime career and degree of involvement in fly-tipping. A Pearson’s correlation was conducted between the proportion of fly-tipping offences in an offender’s criminal history and the total number of offences committed. Results showed a significant negative
correlation ($r= -.57$, $p<.001$), meaning that the more prolific offenders committed a smaller amount of the fly-tipping crime. This suggests that while general offenders might get involved in some fly-tipping, the more prolific fly-tippers are specialists.

Fly-tippers did, however, seem to have a particular type of criminal history. Table 5.4 compares the proportion of the fly-tipping sample convicted of different offences at different ages with the general population (using estimates given by Prime, White, Liriano and Patel, 2001). The highlighted cells indicate where the proportion in the fly-tipping group is higher than would be expected from the population estimate.

Table 5.4: Percentage of male fly-tipping offenders committing other crimes, as compared to male population estimates from Prime et al (2001), by age group

<table>
<thead>
<tr>
<th></th>
<th>&lt;21yrs</th>
<th>21-24yrs</th>
<th>25-29yrs</th>
<th>30-34yrs</th>
<th>35-39yrs</th>
<th>40-45yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence Against the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person</td>
<td>0.0</td>
<td>5.2</td>
<td>3.3</td>
<td>7.3</td>
<td>5.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Sexual Offences</td>
<td>0.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.5</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Burglary</td>
<td>0.0</td>
<td>3.1</td>
<td>0.0</td>
<td>5.9</td>
<td>4.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Robbery</td>
<td>0.0</td>
<td>0.9</td>
<td>0.0</td>
<td>1.0</td>
<td>0.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Theft and Handling</td>
<td>3.3</td>
<td>2.7</td>
<td>4.3</td>
<td>4.8</td>
<td>6.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Fraud and Forgery</td>
<td>1.1</td>
<td>1.1</td>
<td>0.0</td>
<td>2.3</td>
<td>2.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Criminal Damage</td>
<td>1.1</td>
<td>3.5</td>
<td>1.1</td>
<td>5.7</td>
<td>2.2</td>
<td>8.8</td>
</tr>
<tr>
<td>Drug Offences</td>
<td>1.1</td>
<td>2.5</td>
<td>1.1</td>
<td>3.7</td>
<td>4.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Other Summary Offences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motoring Offences</td>
<td>5.4</td>
<td>1.3</td>
<td>5.4</td>
<td>1.5</td>
<td>6.5</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>4.3</td>
<td>4.3</td>
<td>3.5</td>
<td>4.3</td>
<td>2.5</td>
<td>4.3</td>
</tr>
<tr>
<td></td>
<td>1.1</td>
<td>4.2</td>
<td>4.3</td>
<td>3.5</td>
<td>4.3</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>1.1</td>
<td>4.2</td>
<td>4.3</td>
<td>3.5</td>
<td>4.3</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: Home Office Police National Computer.
N.B.: N base number of fly-tipping (FT) offenders was 92 (age/gender data missing for the remaining 78); POP percentages are estimations obtained from Prime et al (2001).

Caution is needed in interpreting Table 5.4 as the numbers in each cell from the fly-tipping sample will be small. It appears to show, however, that the fly-tipping offenders are more likely to have convictions for less serious offences, and particularly for motoring and other summary offences, and also for theft and handling offences. Drug offences also seem to be a little more prevalent amongst this group.

Given the discrepancies in the court and PNC data, and the often small numbers being analysed here, we must be careful not to interpret too much from this data. There does, however, seem good support for the idea of two rather different kinds of offender:

1. The fly-tipper who is trying his luck, gets caught and doesn’t do it (or get caught) again. These seem to take the same approach to other
offences, taking the opportunity in relation to less serious offending but not getting involved in anything more serious

2. The persistent serial fly-tipper who specialises in this, and is not deterred by anything the criminal justice system has thrown at him yet

There are implications here for strategy, in that the two groups are likely to require different responses.

5.2 The household survey
In order to assess the prevalence of fly-tipping amongst the general household population, a module was included in the December 2005 sweep of the ONS Omnibus survey. This survey is run by National Statistics every twelve months, and allows government departments to collect data on various aspects of social policy. A random sample of 2,000 residential addresses is selected, and one person at each address over the age of 16 yrs is selected for face-to-face interview. Addresses are visited three times on different days at different times before the household is coded as a ‘non-contact’.

The fly-tipping module explored both actual fly-tipping behaviour, and temptation to fly-tip. It also examined views about the adequacy of local waste collection and disposal services and facilities. The full questionnaire is available in Appendix A.

A response rate of 65% was achieved for the fly-tipping module which amounted to 1,169 successful interviews from a base of 1,801 eligible households.

For the household survey, fly-tipping was defined as ‘discarding rubbish in places other than council rubbish tips, or via council waste collection services’. Respondents were asked to only include items of a ‘household black rubbish bag’ size or larger and not to include general litter.

Results
Only 1% (11) of respondents said they had fly-tipped in the last 12 months, although a further 3% said they had been tempted to do so but had not. The following analyses are based on the 39 people who said they had, or had been tempted to, fly-tip in the last 12 months.

Table 5.1 shows that the black refuse bag is the most common item to be, or likely to be dumped closely by a range of other waste types. Interestingly, there is some evidence of a gender effect, with electrical goods most likely to be dumped by males but garden waste by females. Perhaps this reflects some gender-based division of labour within the household.
Table 5.1: Waste type dumped or tempted to dump, by gender

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black refuse bag</td>
<td>27</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>White goods</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Furniture</td>
<td>23</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Garden waste</td>
<td>13</td>
<td>31</td>
<td>21</td>
</tr>
<tr>
<td>Building waste</td>
<td>22</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Electrical goods (TV, computer, stereo etc)</td>
<td>20</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Vehicle parts</td>
<td>3</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Tyres</td>
<td>3</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>16</td>
<td>11</td>
</tr>
</tbody>
</table>

No particularly strong pattern emerged in the types of locations favoured for fly-tipping, the most common location being the roadside but only in 24% of occasions. The factors that made a location suitable for fly-tipping were mainly convenience (in 42% of cases) and because there was already rubbish there (in 37% of cases). Interestingly, 30% of women said they tried not to be spotted. This didn’t seem to be an issue for men.

The reasons given for fly-tipping, or being tempted to fly-tip are shown in Table 5.2. Costs emerge from this as less important than ease of access to waste disposal facilities, including knowing where to go, particularly when waste storage capacity at home is tight.

Table 5.2: Reasons for fly-tipping or being tempted to fly-tip, by gender.

<table>
<thead>
<tr>
<th>Reason given</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local rubbish tip closed</td>
<td>23</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Nowhere to store rubbish in own property</td>
<td>15</td>
<td>36</td>
<td>24</td>
</tr>
<tr>
<td>Lack of transport to a local rubbish tip</td>
<td>22</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Didn’t known where to dispose of rubbish</td>
<td>10</td>
<td>29</td>
<td>18</td>
</tr>
<tr>
<td>Council charge to pick up large items</td>
<td>6</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Cost of taking waste to a rubbish tip</td>
<td>3</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Local rubbish tip too far</td>
<td>6</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Missed kerb-side collection</td>
<td>-</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>34</td>
<td>22</td>
<td>29</td>
</tr>
</tbody>
</table>

Generally speaking, however, the views about waste disposal facilities were very positive. Seventy-two percent of those interviewed had used their local civic amenity site in the last 12 months and Table 5.3 shows their views on a range of different aspects. Queuing seems to be the worst problem. Other than that, there seems little more that local waste disposal authorities could do to improve matters. Overall, 79% of those interviewed said that the experience of taking rubbish to the local tip was either very easy or easy. Only 9% rated it
as difficult or very difficult. Although the number of fly-tippers is small, their views of the local tip do not differ greatly from this overall picture. Perhaps this explains why such a small proportion of people with waste to dispose of do so by fly-tipping.

Table 5.3: Householder rating of local tip

<table>
<thead>
<tr>
<th></th>
<th>Very good (%)</th>
<th>Good (%)</th>
<th>Neither (%)</th>
<th>Quite poor (%)</th>
<th>Very poor (%)</th>
<th>Don’t know (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
<td>43</td>
<td>44</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Opening times</td>
<td>35</td>
<td>45</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Queuing</td>
<td>22</td>
<td>44</td>
<td>17</td>
<td>12</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Vehicular access</td>
<td>51</td>
<td>35</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Staff help</td>
<td>34</td>
<td>34</td>
<td>17</td>
<td>5</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Capacity</td>
<td>39</td>
<td>43</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

It is interesting that three times as many people were tempted to fly-tip as went through with it. The reason so many people do not give in to the temptation seems to be because they are a mainly decent, law-abiding group for whom it is likely that any risk of being caught is a sufficient deterrent. When waste disposal facilities appear to be on the whole very good, it seems simply not worth the risk.

Table 5.4: Reasons for not fly-tipping, by gender

<table>
<thead>
<tr>
<th>Reason</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would not knowingly break the law</td>
<td>51</td>
<td>29</td>
<td>43</td>
</tr>
<tr>
<td>Fear of being caught</td>
<td>39</td>
<td>53</td>
<td>44</td>
</tr>
<tr>
<td>Did not want to harm the environment</td>
<td>37</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Legal disposal method became available</td>
<td>29</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>The opportunity did nor arise</td>
<td>4</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Discouraged by police operations</td>
<td>4</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Discouraged by council action against fly-tippers</td>
<td>4</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>-</td>
<td>5</td>
</tr>
</tbody>
</table>

5.3 Interviews with offenders and waste producers/carriers

This section describes the issues that emerged from interviews with ten convicted fly-tippers and ten waste producing and handling businesses. The perspective described here comes from the business rather than residential community.

The ten offender interviews were the result of a long and intensive process trying to persuade offenders to participate in the study. Contact details for 88
offenders convicted in the last twelve months were provided by twelve local authorities. All these offenders were sent letters inviting their participation. After a poor response, some local authority enforcement officers made personal approaches to offenders to persuade them to take part and reassure them about confidentiality. In the end, ten offenders agreed and were interviewed by telephone. The aim was to explore in more depth the incident for which they were convicted, to understand the circumstances and the reasons why they fly-tipped. In the end, we suspect that those who agreed were the less serious offenders. More serious and serial offenders did not emerge from our sample.

A total of 594 businesses from the following categories were sampled from the London area of the Yellow Pages: tyres, gardening, electricians, plumbers, builders, and waste disposal. Ten agreed to be interviewed – five gardening or landscaping businesses, two waste transfer stations, one removals business, one skip hire company, and one builder. The aim of these interviews was to explore the issues which interviewees felt would tempt people to fly-tip. These interviewees were, in effect, ‘proxy’ offenders who may not have fly-tipped themselves but would be able to express a view from the fly-tippers perspective.

The following describes the key issues to emerge from these 20 interviews. They fall into essentially two groups – issues to do with the use of legitimate tip sites, and issues to do with regulation and policing of fly-tipping

Use of legitimate tips

Costs
Avoiding the costs of using legitimate waste disposal facilities emerged as a strong motive for fly-tipping. Eleven interviewees mentioned this unprompted and a further seven explicitly said they were unhappy with the price they had to pay when using commercial waste disposal sites. None disputed the reality of having to pay for the service, but the tight margins that many of them worked with and the competitive market meant they were extremely sensitive to cost issues.

“If you’re a bit hard up on your luck and then you see an opportunity to save some money, and it’s a question of making money on a job or not…then you would be tempted.”

“it seems like fly-tipping has got worse since the rates have increased.”

“If [the prices] continue to go up and up we have no choice but to put the prices up with our clients…we may start losing clients to one man vans.”

They were particularly sensitive to price increases and what they saw as unfair charging practices. A number of practices that were seen as unfair, and potential drivers for fly-tipping, emerged
1. Interviewees from small businesses were very sensitive to differences in cost between local authorities. This was seen as unfair in two ways. First, it meant that businesses in one area had higher disposal costs than others and second, it implied that one local authority was charging more than they should.

“They’ve got to make [tip charges] more even across the board.”

The problem arises because disposal sites are run by different companies who set their own prices. Councils can, however, control this by writing price limits into the tender documents.

2. Secondly, they were very exercised about how vans were treated which they thought was often unfair. Vans are usually treated at waste disposal sites as carrying commercial waste, even though they may contain household rubbish. This means vans pay more regardless.

“Just because I have a van and the bloke next door has a car, he can take his waste in [to the civic amenity site] but I can’t.”

“You could get an estate car and go in 30 times a day couldn’t you?”

3. Setting a minimum charge at many commercial waste disposal sites was an issue particularly for smaller businesses when the minimum charge was set at a weight of one ton.

“As a small business owner I can’t afford to do it, I can’t.”

“The minimum charge is unfair.”

“We contractors can’t afford to pay one ton tipping…It crucifies small business men.”

Minimum charges such as this affected gardening businesses particularly. While they may have a large volume of waste (filling their work vehicles) it is usually quite light so they feel they are being overcharged.

On the other side of the argument one waste transfer station explained why they have a minimum charge. Each person who comes into the waste transfer station takes up an employee’s time as they have to check that the waste is not hazardous and supervise them. There is also the paper work to consider on the accounts.

4. Some interviewees felt that charging the same rates for recyclable as non-recyclable waste was unfair. Recyclable waste has some value, and it was felt that councils are making money from it.

“You paying to dump it, and they’re gonna turn around, recycle it, and make money out of that.”
“You’ve got to give something back, you can’t charge on both ends.”

Others were disappointed that there were no, or very few, local or national government schemes for waste recycling for business i.e. depots where traders can deposit recyclable waste.

“There is no recycling facilities for commercial vehicles.”

“For commercial businesses the recycling is abysmal, ridiculous, they don’t do it.”

Considering the requirement to meet EU recycling targets, it would be sensible for the government to encourage more business recycling, especially in businesses where a large proportion of the waste is recyclable e.g. gardening, landscaping, and building.

5. Interviewees also mentioned that some of the tips they went to would not invoice them for the tipping charges, requiring them to pay cash which they didn’t like for security reasons. Some tips operated accounts for customers who tipped large amounts of waste, but not for small businesses which they thought unfair.

6. Lastly, one interviewee mentioned, from the householders perspective, the unfairness of restricting the number of times householders could go to the tip in one year. If householders go over this number they are charged.

“They limit the amount of time you can go household waste tipping…6 times within a year…I don’t put a limit on how much I pay in council tax do I.”

Various options were suggested to make charging systems fairer, all of which give some insight into reasons why people get tempted into fly-tipping:

- Staggering the price list based on vehicle size, e.g. a car pays £10, a car and trailer pay £15, a van pays £20, a bigger van pays £30 etc.

- Fix prices by volume rather than weight – as it can be difficult to know how much your rubbish weighs and therefore how much you have to pay at the tip.

- Ensure the price for tipping waste legitimately is less than the fines for fly-tipping.

**Availability and ease of use**
Cost emerges as an issue not only in relation to direct charges but also to the time it takes to use tips - travelling to the tip, getting weighed in, unloading waste, getting weighed out, and getting to the next job.

“It takes time, plus you have to pay for it”
This can impact on the earnings of a small business, especially a ‘one man’ business, and fly-tipping becomes an option which some choose to take. Two interviewees believed that increasing the availability of tips locally will make it much more likely that people are going to use them.

“The more localised the facility the more likely it is to be used.”

“I think there should be more rubbish bins and dumps around.”

When asked what would prevent fly-tipping one interviewee answered “better collection services [domestic], and more dumps.”.

Queues outside tips can also present a cost to small businesses. One interviewee fly-tipped because the queue was too long at the local tip and he needed to clear his vehicle for the next job of the day. He decided to fly-tip.

The opening times of local tips was also mentioned as an issue and potential obstacle to their use. For example, often tips will close at 3.30pm in the winter because of daylight hours. Many interviewees, however, would work beyond this time and need their vans free to complete the days work as well as to start a new job the next morning.

“I think opening hours are an issue.”

“The dumps could be open longer.”

Another interviewee stated that his local tip operated restricted opening hours for commercial vehicles, so that it was not available until 3pm. This could mean being unable to tip waste and empty the vehicle, and therefore continue with the days work.

**Knowing where the tips are**

Interviewees highlighted the lack of information about local commercial tipping facilities and this was indeed supported by the researchers own experiences in talking to local authorities, many of whom also did not know where all the available commercial tip sites were.

“It’s not commonly known where people [businesses] can go to dispose of recyclable waste”

Similarly, when individuals take waste to the tip and find out they can’t dump it there for whatever reason, the tip workers sometimes cannot tell them an alternative place to take it.

“There’s nowhere to dump fridges and computers…if you go down to the local dump they won’t take it off you…and they won’t tell you where you can take it”
Often these businesses work in areas they are unfamiliar with, which puts them at even more of a disadvantage. One interviewee told how, in such circumstances, he spent the best part of two days trying to find a registered waste disposal site. He tried the local council who were of no help then he phoned the EA. The EA were only able to give him the address of one site, when the interviewee turned up at the site he found it was closed down.

Interviewees would like a simple way to find out local information – especially when their jobs require them to travel to places they are not familiar with. Some suggested that there should be an internet service set up for this. While the EA does have online public registers, it does not include a register of all waste disposal sites and what waste can be taken there.

**Corruption at tips**

We were told some stories of what amounted to some very dubious and possibly even corrupt practices at tips. These highlight the areas of sensitivity for businesses, and where they are most vulnerable.

Some tips workers take advantage of the need for workers to clear their vans at the end of the day. One practice seemed to be to prevent vans entering after 3.15pm, claiming that they wouldn’t be able to clear their waste and be off site by closing time at 3.30pm, unless a bribe was paid. The going rate seemed to be £10.

Another practice was to take bribes for allowing waste to be dumped for free or a reduced cost. At tips where there are no weighbridges and weight is estimated by tip workers, there is more scope to get away with such corrupt practices.

While not corruption, one interviewee told of a tip that would turn people away if they weren’t wearing a yellow high visibility jacket. Even if they were wearing an orange high visibility jacket, they would be made to buy a yellow one from the tip workers before being allowed on site.

**The regulation and policing of fly-tipping**

**Waste carriers’ licences**

It was clear from our interviews that the waste carrier license had fallen into disrepute. One interviewee described it as a “complete scam”. Not all of the businesses we interviewed who needed a waste carrier’s licence had one, and six out of ten businesses interviewed couldn’t see the value of having one “I’m paying the dump to dump stuff, why do I have to pay you [Environment Agency]?…its basically a certificate, and that’s all we do get”.

It was felt that if a value could be demonstrated, more people would get one. Two particular ways which might encourage more take up would be if it:

- gave them access to places they otherwise couldn’t use. Generally, businesses are not checked for their licence when taking waste to an appropriate waste disposal site
gave them access to information that was relevant to their business. Four businesses felt that for the cost of the licence they should at least receive regular updates from the EA on waste disposal regulations and other related information. At the moment it was felt that “There is precious little information… As a licensed waste carrier there should be some form of information that comes out to you”.

Perhaps because of this lack of any practical value, many people didn’t even know they needed a licence. “Not a great deal of people i.e. builders, know the law until they are stopped.”. This particular interviewee felt it was unfair that he paid for the licence while his competitors didn’t even know they needed one. “If it’s law for one it should be law for everybody.”

Interviewees couldn’t see how the licence as currently operated could control fly-tipping. “If you force every contractor to have a licence – doesn’t mean they’re not going to tip”. One interviewee pointed out that in theory you could be stopped by police and the council could check your waste carriers licence, but then after the check you could just dump the waste a couple of miles down the road.

In addition to giving the licence some practical value, a number of other ideas were suggested for improvement:

- there should only be licences for hazardous waste, WEEE, and other specifically regulated waste
- displaying the licence in the front windscreen of vehicles – similar to a tax disc, which would be easier for authorities to check; and doing proper checks on people before they get given licences.
- licences should be charged per vehicle rather than per business. Currently, this disadvantages the smaller ‘one man and a van’ business who has to pay as much as the larger business operating many vehicles
- more checks on those people applying for a licence to make sure they are fit and proper to handle waste. “As far as I’m concerned it’s just a paper exercise…there doesn’t seem for me to be any checks done into who is actually applying.”

**Duty of care**

There was scepticism amongst some of these businesses about the impact of the new duty of care regulations for householders. Particularly it was felt that their ‘clients’ would not know about these and continue to employ the cheapest contractors who undercut others by fly-tipping. Indeed some businesses did not know about these new regulations themselves and had to be told by the interviewer.

To enable householders to operate their new duties, it was thought key to inform them more about the costs of waste disposal. This would then enable
them to be alert to any unrealistically low quote for a clearance job, and to employ more honest contractors. Otherwise such contractors face being undercut and going out of business

“Let the public know more, if they know it’s £100 or whatever to supply a skip and someone’s going to clear it for £50 and load it up then something’s not right”

“I think public awareness needs to be improved, because obviously it is the public that employ these rogue tradesmen.”

Penalties for fly-tipping
There were mixed views on the most effective deterrents for fly-tipping. Some thought that fines should be harsher. The combination of low fines and small risk of capture meant that currently it was cheaper to fly-tip than to pay the tip fees all the time.

“They’ve [council] gotta make it so that people think if I get fined for tipping this – for fly-tipping – it will cost me more than it would if I go to the tip and tip it.”

Others had different ideas on how to deter fly-tippers:

“What they really want to do is start confiscating peoples vehicles and start crushing them or selling them.”

“A fine is a very good deterrent, but not as good as public humiliation.”. This was based on experience when this offender’s face and name were published in two of his local papers, and on a local radio station. “The way to stop this [fly-tipping] is to get the people who are doing it and on the front of the daily paper and stick all their bloody faces on it...”.

Community service was seen as ineffective. One offender who had been given a community sentence felt that this was no deterrent as all you are really required to do is turn up (although he actually worked). “Community service isn’t worth the paper it’s written on...It’s an absolute joke.”

Sometimes it’s hard to do the right thing
There were a number of examples where interviewees appeared to have been trying to do the right thing, but were nevertheless prosecuted and fined by the local authority.

In one instance an individual was charged with fly-tipping because the council believed he had left bulky waste outside his property. In fact the individual had employed a legitimate waste disposal company to remove it but they had failed to do so as agreed. This individual was prosecuted but acquitted by the judge who told the council that the case should have never gone to court. However, he still got a conditional discharge, which meant his name was put on record for 12 months. The individual also had to pay court costs of £800 as the judge said he had to get costs from someone. He also had to take time off
work to attend four court appearances during his prosecution. The individual said his prosecution was just prior to a blitz on fly-tipping by the council – he believes this is part of the reason why his case went to prosecution in the first place. He believes the case could have been easily handled out of court which would have been less time consuming and less expensive.

In another case an individual and his friend were both prosecuted for putting rubbish bags outside someone else’s house (on the evening before collection day). They put one bag in the rubbish bin – which already had some rubbish in it - and two beside the bin. The individuals couldn’t put it outside their own residence because of the council’s ‘no side waste’ policy. They didn’t think they were doing anything wrong as they believed the waste was going to be picked up on the following day (collection day). The council then prosecuted the individuals and they received a fine of £175 each. The interviewee says they felt criminalised by the process. He felt that a £50 fine and an apology to the person whose house they put the rubbish outside would have been more appropriate.

In this final example, an individual who was working on his own house took some brickwork to the tip in a trailer to dump as domestic waste. As the tip workers knew him as a trader, however, they said he had to pay. When the individual said it was waste from his own house, the tip workers said they needed someone from the council to verify this. The council were unable to send anyone to make the check for at least one week, which left the individual with a trailer full of bricks. As the trailer was rented, he couldn’t afford to keep it for longer than a week. After making every effort to get the council and even the police to help, he decided to dump the bricks on the steps of Town Hall in protest. He neatly stacked the bricks and contacted the local paper. He was charged and prosecuted for fly-tipping. The individual believed he had done everything possible to get rid of the waste legally.

**Thinking strategically**

Policing and enforcement was generally thought not to be the way forward in controlling fly-tipping. Rather, a more strategic approach should be taken that deals with some cross-cutting issues. For example, while increasing prices at tip sites might reduce usage and therefore reflect well on the council’s use of landfill, it won’t actually help control fly-tipping. As one offender put it “The government wants us to reduce the amount of waste we are disposing of, but all we are doing is we are responding to customer requirement. You don’t get fewer leaves fall from the trees just because waste is more expensive.” The same interviewee went on “Waste is a product of growth at the end of the day and if the government want the economy to grow they have to understand that waste is going to grow with it.”

Another interviewee commented that the current regime did nothing to create any incentives for disposing of waste legitimately. “There is no incentive to dispose of your waste in a more responsible way.” Another commented on his friend’s fly-tipping “It was a case of laziness and ease really”, i.e. the default was to fly-tipping rather than proper disposal. The advice was summed up by one offender thus:
“Basically what they’ve gotta do is sit down and say alright we need to make it more convenient, more accessible financially for small business people to start dumping their rubbish [at a legitimate site] rather than [fly-] tipping it…”
6 Conclusions

The principal aim of this study was to understand better the incentives for, and ‘causes’ of fly-tipping, to enable more effective preventive policies and practices to be developed. While it is possible to theorise about ‘drivers’ of fly-tipping, this study sought to get an insight into the problem from the offender’s perspective, as it is their perceptions and experiences that have to be changed if any reduction strategy is to be effective.

The strong view of waste authorities is that there are two key drivers of fly-tipping:

- The costs of legitimate disposal; and
- the availability of civic amenity and other waste disposal sites.

These drivers also emerged strongly from interviews with fly-tippers themselves, although there were some differences between two main groups – traders and householders.

**Traders**

Avoiding the costs of legitimate waste disposal facilities emerged as a very strong motive for fly-tipping amongst traders. The analysis by Oxfordshire waste disposal authority clearly shows what happens when it becomes more costly to dispose of waste, in this case tyres, legitimately.

It is not, however, simply the fact that they are charged that is the issue for these small businesses but how pricing practices affect their competitiveness locally. They listed a range of what they saw as unfair practices. These tempted them into fly-tipping either because they saw them as inherently unfair (for example minimum charges) or because they felt that these disadvantaged them in relation to their competitors who may be charged less.

The availability of tip sites was an issue for traders insofar as this could impact also on their business. A number of issues were raised in this respect. Although one was distance to travel, another more prevalent one appeared to be the way that the tip site opening times fitted into their working day. Traders frequently wanted to clear their vans and lorries of waste at the end of the day, in readiness for an early start the next. The opening times of tip sites for commercial waste often did not accommodate this schedule, particularly in winter months when daylight hours meant that they closed early. There were tales of corrupt tip site workers also taking advantage of this need, and holding vans who turned up close to closing time almost to ransom.

Another issue which emerged strongly in relation to tip sites was information about where they were. Traders often complained about the lack of information, and how hard it was to find out where to go to tip waste. This was a particular problem for those traders working in unfamiliar locations. The experience of the researchers also was that such information was not easily obtained, even from the local authority or civic amenity site workers.
Finally, the duty of care system seemed to have fallen into disrepute. These businesses saw no incentive, for example, for buying a waste carrier licence. Some felt that the system disadvantaged small businesses as the cost per vehicle was much higher for them than their larger competitors. Some were unaware of the recent duty of care legislation, and those that were couldn’t see how it would make much difference to fly-tipping.

Overall, the picture painted here was of a system which actually at times made it quite hard to behave honestly and legally. There seemed few incentives to comply with the duty of care regulations, and those that did felt disadvantaged competitively. This issue of a system that defaults to dishonesty, i.e. where the costs of honesty outweigh the costs of dishonesty, emerged throughout the study.

**Householders**

Black bin bags or household rubbish consistently emerge as the main fly-tip problem, at least in terms of volume. It was, therefore, somewhat surprising that just 1% of householders in the survey admitted to having fly-tipped in the last twelve months. This can be partially explained by the fact that some local authorities include side waste, or waste put out at the wrong time, as fly-tipping whereas a householder might not.

Nevertheless, Flycapture data suggests that there are about one million incidents of fly-tipping each year in England. The household survey found that 1% of households had fly-tipped in the last twelve months. On the basis that this amounts to around 250,000 fly-tips nationally by householders each year, this suggests that householders are responsible for around a quarter of all fly-tips nationally.

Interestingly, the same survey reveals that around 3% of households had been tempted to fly-tip but had not. Given the generally very positive views about the availability and ease of using civic amenity sites, this suggests that the current waste collection and disposal arrangements and enforcement regime are preventing around at least 750,000 fly-tips per year, i.e. the problem could be much worse. The question is what more to do.

As might be expected for this group, costs of legitimate disposal emerge as less of driver for fly-tipping than being able to use a civic amenity site. People fly-tipped because the site was closed or they didn't have transport to get to it. Loading up a car only to find that the site is closed when you get to it seems a not unusual experience, leading to the waste being dumped at a convenient location. Equally, many people living in areas of multiple deprivation do not have access to a vehicle to get to a civic amenity site.

Areas of multiple deprivation suffer particularly from fly-tipping. As well as less availability of transport to get to civic amenity sites, the higher density housing may mean that there is less storage available to householders for their waste so they have a greater need to dispose of it more regularly. This can lead to more black bags appearing on the street before the timed collection, and more side waste.
Even in these circumstances, however, there are examples of people trying to do the right thing. For example, waste is often dumped outside the gates of civic amenity sites, and householders will dump their side waste next to their neighbours waste, in the expectation that the waste will be easily collected. Some even think that this is what you are supposed to do in these circumstances.

Although these problems are defined in Flycapture terms as fly-tipping, local authorities need to make the distinction between low-level fly-tipping and waste crime. Indeed, in some cases these problems may be better conceived of as the consequence of inadequate waste collection arrangements that do not quite meet the needs of residents.

**Serial and opportunistic offenders**

In general crime control work it is well recognised that there are two kinds of offender:

- opportunistic offenders, who take advantage of an opportunity to make some money or show off or whatever. These offenders are generally less motivated to break the law and therefore easily deterred. There are a lot of them.

- persistent and prolific offenders, who account for a great deal of crime. There are not many of them, but they are highly motivated and therefore less easily deterred.

The data examined here on convicted offenders suggests that the same two types of fly-tipper exist. 39% of offenders had only been convicted once while 6% of offenders accounted for 22% of all offences. The one-off offenders seem to be generally more petty and opportunistic offenders, having convictions for other offences. The prolific fly-tippers appear to be specialists.

This is important information. It means that two kinds of response are required for each group of offender. Measures that make it harder or less rewarding to fly-tip are more likely to deter the opportunistic group. The more committed group are the ones where enforcement resources need to be focused.

**Strategic thinking**

One of the big challenges in organising a strategic response to fly-tipping locally is the poor capacity by local authorities for problem oriented work and strategic thinking aimed at prevention. Enforcement dominates thinking, even when it is not seen as terribly effective and penetrates the fly-tipping community very little.

The incentives and drivers identified above show that a more strategic response from local authorities will require:

- collection and disposal services to work together as well as other organisations such as planning authorities
• neighbouring authorities to work together to ensure their strategies align
• better data collection and analysis, aimed at better understanding problems and local patterns
• more evaluation and the development of a knowledge base of what works or what might work (the accompanying good practice guide provides guidance here)
• ability to recognise and pass upwards higher level problems for action, for example recycling or landfill targets set by national government might be having perverse local effects which result in more fly-tipping

This study shows they are weak on all these.

There is also action here for the Environment Agency and Defra, for example to deal with the weaknesses in the duty of care system and to ensure a national waste strategy which thinks through impact on fly-tipping, and which recognises the contribution of other organisations such as the ODPM and its responsibilities for planning guidance. In a period of major house building programmes, whenever higher housing densities are encouraged, there is more need than ever to think through the planning requirements that would minimise fly-tipping risk.
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Fly-tipping: Causes, Incentives and Solutions


