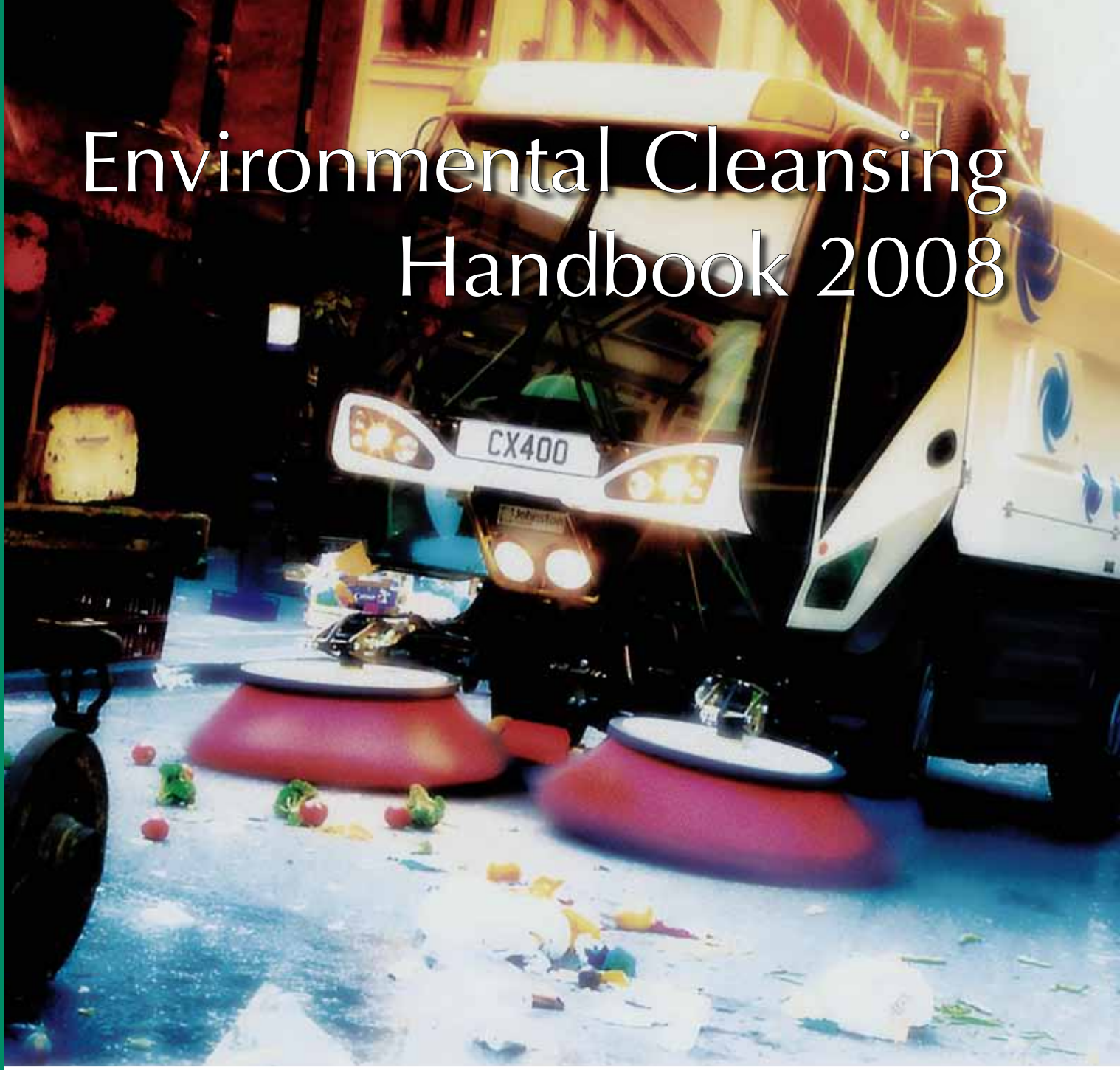
# Environmental Cleansing Handbook 2008

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## Presidential Foreword

Environmental cleansing is one of the most visible services that a local authority provides to its residents. High performance in this area has a direct effect on the local amenity and quality of life and is recognised and valued by almost everyone in a community.

I commend the CIWM and its Scientific and Technical Committee, therefore, on the publication of the third edition of the Environmental Cleansing Handbook, which has been produced in a busy period of legislative change and Government recognition. The Clean Neighbourhoods and Environment Act 2005 introduced important legislation for those working in environmental cleansing, for example by extending the definition of litter to include gum and smoking related litter. It also improved the outlook for public conveniences, which have often been seen as the 'Cinderella' service, and these are once again under the spotlight with the recent publication of the Department for Communities and Local Government's Toilet Strategy.

Local authorities and their partners have also been working hard to improve service provision and reduce costs, with service integration and technological innovation for monitoring winter services being key areas of improvement. Practical experience is always invaluable and this latest edition of the Handbook contains many case study examples highlighting good practice and innovative approaches to common cleansing issues.

It is important to note too that this technical publication does not just cover one sector or one area of the country. Environmental cleansing has an impact on many aspects of community life and it is important to learn from a diverse range of stakeholders facing different challenges. It is encouraging, therefore, to see all corners of the country contributing to this important subject.

I also commend the CIWM for moving forward in terms of information accessibility. This is the first CIWM technical publication to be made available in electronic version, potentially allowing it to reach a much wider audience, as well as facilitating easy and regular updating in the future.

Now in its 13th year, the CIWM's Environmental Cleansing Handbook has been used by a large number of practitioners in this varied and extensive service delivery area over the years. This third edition will continue to provide those charged with planning and delivering these frontline services with the latest information, guidance and good practice – helping them to keep our local environment 'cleaner, safer and greener'.

Hugh Hoather
CIWM President
July 2008

## Chairman's Foreword

A good and well respected industry colleague and friend of mine, Alan Clarke, was the instigator in producing publications in this important area of Environmental Services and I would like to dedicate this publication to his memory.

I am pleased to have been involved as Chairman for this version of the Environmental Cleansing Handbook, following on in Alan's footsteps. There have been many changes in legislation, good practice and local authority service delivery over the past eight years.

Street cleansing now covers a broader range of issues than it did in 2000, including how to design out problems relating to environmental cleansing. Partnerships with highway sectors along with guidance issued means that street design and layout considers how cleansing might be assisted and not hindered.

There is more integration of services and combining working teams so that the public see an overall complete service delivery for their community. The Government's policies for cleaner, safer and greener have lead to the public taking more notice of how the street scene impacts on their feeling of safety and civic pride.

I would like to thank those that contributed to this publication and spent many an hour assisting Tina Benfield in producing a fine and respectable document that can be used by students studying the subject of environmental cleansing as well as anyone that has an interest in our streets and communities. More importantly a document for those dedicated practitioners that strive to deliver a little thought about but very important service for local people.

David Richardson
Chairman of Working Group
July 2008

## Working Group Members

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## Introduction

This edition of the publication examines the very wide area that is "Environmental Cleansing". Since the second edition was published some eight years ago there have been very many changes in this particular sector of the waste management industry.

Significant events include major changes to the law, most notably the introduction of the Clean Neighbourhoods and Environment Act 2005, the publication of an updated edition of the Code of Practice on litter and refuse, the more widespread use of fixed penalty notices, clarifications on the definitions of smoking and chewing gum litter, the smoking ban and many more. These, together with changes in management approaches to street cleansing and the emergence of "street scene" allied with the Government's changing approach to measuring and managing performance mean that this publication is both timely and necessary.

# History of Cleaning

This publication examines the activities that are covered by the umbrella term of "Environmental Cleansing" and which to many are better known as "Street Cleansing". Both these terms cover a wide range of services and operations that are routinely carried out by and on behalf of local authorities within the United Kingdom and beyond.

Local authorities and in more recent times many private sector waste management companies have developed methodologies and practices to ensure that a high standard of Local Environmental Quality (LEQ) is achieved in their areas.

The remit of environmental cleansing is wide and with the concept of "Street Scene" seeing increased expansion within local authorities is likely to widen still further.

The basic elements of environmental cleansing would include the following:

- street sweeping
- litter picking
- provision of and emptying of litter bins
- street washing
- removal of stains from paviours, etc
- graffiti removal
- fly-posting removal
- road gully cleansing
- weed control on highways
- beach and foreshore cleansing
- treatment of highways to prevent and remove frost, snow and ice
- emergency cleansing
- specialist cleansing.

The problems facing modern local authority departments charged with the responsibility of providing the above services are not new.

Historically, cleansing departments have since their inception had to respond to the demands placed on their towns by those who live and work and resort there. Perhaps more so than at any other period in history, the Industrial Revolution in the UK presented the greatest challenges to local authorities and their predecessor organisations.

By the time the Industrial Revolution reached its height, huge increases in population were presenting significant problems in all areas. Industrial towns and cities, particularly in the north of England and the Midlands began to suffer serious health problems associated with diseases directly attributable to the poor standards of sanitary provision which existed in these areas. Edwin Chadwick reported on these effects and published his findings in his work - *Report on the Sanitary Condition of the Labouring Population*, published in 1842. Following the publication of Chadwick's report, towns and cities in the UK began to adopt measures recommended in the report to improve sanitation in industrial areas, and in populated town and cities. Improvement Boards (precursors to modern local authorities) were established to implement the necessary improvements. The late nineteenth and early twentieth century saw the introduction of significant legislation, which gave local authorities both duties and powers to improve local environmental quality in areas such as waste removal, street cleansing, litter collection and bin provision. The specific and particular problem of litter and discarded material was not, however, formally recognised as a particular and distinct problem.

It was not until the late 1950s, that the specific problem of litter and its effect on the urban environment was recognised following extensive lobbying by the national association of Women's Institutes. From this the Keep Britain Tidy Group (later the Tidy Britain Group and now Encams) was formed. The first Litter Act appeared in 1959.

The latter half of the twentieth century saw significant deterioration in the urban environment compared with the first fifty years. It seemed that littering was endemic in the UK population. Succeeding legislation seems to have made little or no impact on the problem.

Post-industrial regeneration in many areas of the UK has taken place over the past twenty years or so. Former manufacturing areas have benefited mostly from this investment, with the opportunity being taken to clear derelict land and implement other improvements in local environmental quality. More thoughtful design of schemes has led in the most successful cases to reductions in litter by designing out some of the problems.

Powers and responsibilities conferred on local authorities over the past sixty years or so have provided the tools to bring about the improvements in environmental quality, which both they and the public desire. These various laws with their variety of remedies and devices can be viewed as landmark legislation in the context of this subject.

Bringing things completely up to date, the Clean Neighbourhoods and Environment Act 2005 provides local authorities in England with panoply of devices to help them mange the task of maintaining environmental quality.

# Management and Policy Issues

## Health & Safety and Risk Management

A growing body of legislation is encouraging a culture which is intolerant of accidents and injuries at work and managers are increasingly held accountable for those occurring amongst their workforce. Health and safety management skills should be integrated into management training programmes with equal weighting alongside other traditional skills. In order to avoid falling foul of the law, managers must take a proactive and visible approach to compliance.

The legal obligation to attend to health and safety matters at work has been with us universally since the 1974 Health and Safety Act. This is still the main piece of legislation which applies today. The Health and Safety at Work Act 1974 lays down the general outline of what is expected and from whom, with regards to health and safety. However, a series of more specific regulations provides the detail.

Waste management has over the past few years been targeted by the Health and Safety Executive to clean up its act and ensure that health and safety is a key part of management and policy. A forum, Waste Industry Safety and Health (WISH) has been formed by those operating in the industry and works with the Health and Safety Executive in producing guidance and discussing issues.

Please note amendment and new regulations are issued from time to time to amend and supplement the core regulations concerning health and safety at work. Copies of the regulations and amendments thereto are available to download from the office of public sector information (www.opsi.gov.uk) and approved codes of practice and guidance on complying with the regulations are available from the Health and Safety Executive (www.hse.gov.uk).

The following is a list of key legislation that is only indicative and should not be taken as definitive legal advice.

### Management of Health and Safety at Work Regulations 1999

The regulations set general duties on employers and established a formal structure for the management of health and safety at work. These regulations include duties to carry out risk assessments, health surveillance and emergency procedures as well as training.

### Manual Handling Operations Regulations 1992

Manual handling operations which may cause injury should be identified by risk assessments under the Management of Health and Safety at Work Regulations 1999. Where this is the case the manual handling operations regulations require employers to avoid hazardous manual handling wherever reasonably practicable, to assess any which cannot be avoided and the reduce the risk of injury as far as is reasonably practicable.

### Provision and Use of Work Equipment Regulations (PUWER) 1998

These regulations placed duties on employers to ensure the suitability of equipment and the provision of training and information. Manufacturers of equipment were also obliged to provide equipment which is 'safe' during use and maintenance. Inspection and mobile work equipment is also covered and there are obligations upon those that are responsible for hiring out equipment.

### Lifting Operations and Lifting Equipment Regulations 1998

These regulations specifically deal with equipment used for lifting. The bin-lift on a refuse collection vehicle is covered by these regulations. The employer must ensure that lifting equipment and attachments for lifting are of adequate strength and stability and safety. The obligation to examine and inspect equipment is also embodied in these regulations and records must be kept.

### Personal Protective Equipment 2002

The 1992 regulations set out principles for selecting, providing, maintaining and using personal protective equipment. They do not replace some specific legislation such as the Control of Substances Hazardous to Health (COSHH) regulations, but do replace some 20 other older pieces of law. To avoid confusion, the 2002 PPE regulations are targeted at manufacturers and suppliers who are given specific duties surrounding fitness, quality and CE marking etc.

### Health and Safety (First Aid) Regulations 1991

The regulations required employers to make an assessment of first aid needs and provide adequate and appropriate equipment and facilities for first aid, such as first aid kits. The employer must also ensure that an adequate number of suitable persons is provided to administer first aid and is trained to do so. Where peripatetic employees work in urban areas involving relatively low risk work, the employer may not need to provide anything other than the permanent facilities at base. However, where areas are isolated or facilities are not available, suitable first aid kits should be carried.

### The Workplace (Health, Safety and Welfare) Regulations 1992

These regulations cover a wide range of issues relevant to providing and maintaining a safe and healthy environment for workers. Included in this are suitable lighting, clean

conditions, welfare and hygiene provisions and safe traffic routes for vehicles and pedestrians.

### Control of Substances Hazardous to Health (COSHH) Regulations 2002

The aim of the regulations is to control exposure to hazardous substances arising out of, or in connection with, work. The regulations do not apply to asbestos or lead, which have their own regulations. Employers must, under the regulations, assess the risk presented by substances and either prevent or adequately control exposure to them.

### Reporting of Industrial Disease and Dangerous Occurrences Regulations (RIDDOR) 1995

The regulations lay a duty on employers to report specific types of injury, dangerous occurrences and occupational diseases to the regulatory authorities. For example, a broken arm sustained at work would be reportable under the regulations, while a broken finger would not. Reportable diseases are those, such as asbestosis, which are linked to work and are contained in a defined list. Dangerous occurrences include, e.g. the collapse, overturning or failure of load-bearing parts of lifts or lifting equipment. Any accident, which results in over three day's absence will be reportable.

### Health and safety (Display Screen Equipment) Regulations 1992

Unlike most other modern health and safety regulations, these cater for the hazards presented by computer and other display screen equipment. Employers have a duty to assess workstations and reduce risks, ensure display screens, keyboards, chairs, etc. meet certain minimum standards and lay duties on manufacturers. They also allow users appropriate free eye tests and special glasses if required.

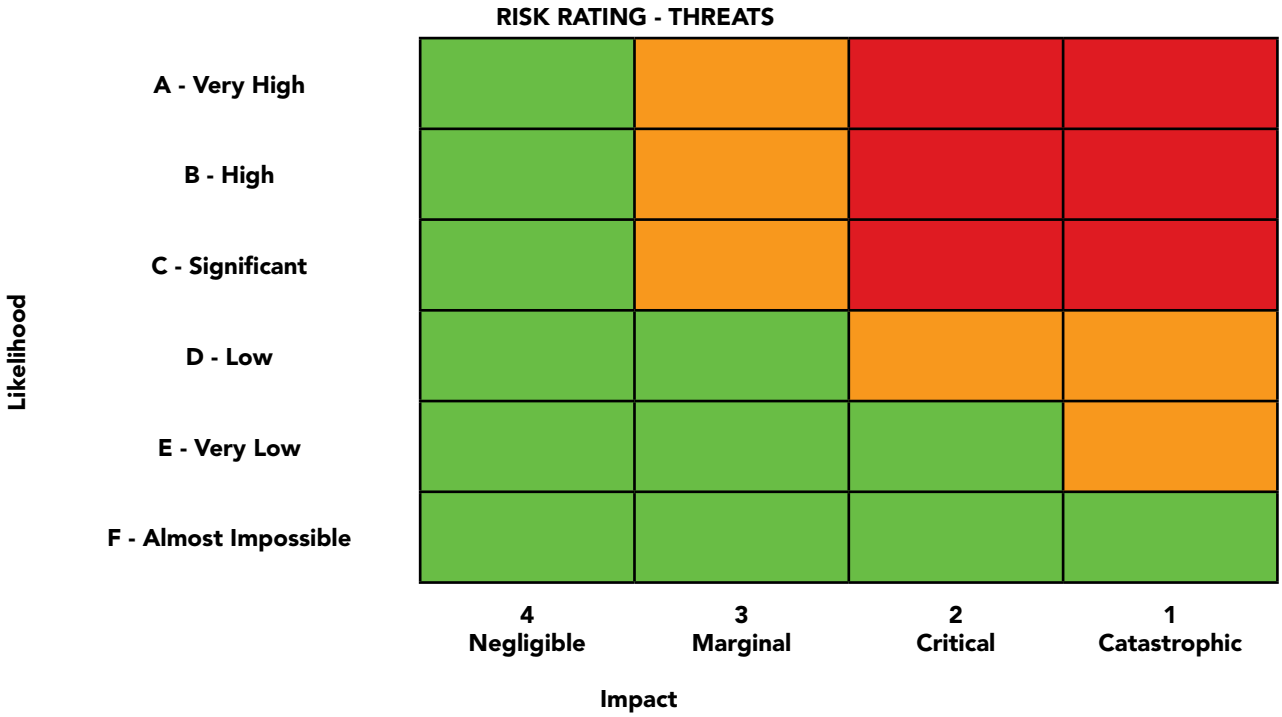
## Risk Assessment

Managing health and safety means identifying and evaluating risk. The primary way of doing this is by carrying out a formal risk assessment. Both the consequence of a risk and its likelihood of occurring should be assessed.

However in brief, risk management is the way in which risk is identified, analysed, controlled and reviewed. The stages of this cycle are outlined below:

- risk identification this is about identifying risks and saying what will happen and how will it happen
- risk profiling or risk analysis and prioritisation looks at the likelihood and impact should a risk be realised and takes into account the effectiveness of any controls in place
- agree tolerance i.e. the overall level of risk that can be tolerated in given situation as agreed by those attending the workshop or meeting. This level has been set (historically) at C2.

When deciding which risks to control, managers should prioritise the more significant risks first. However, all risks need to be risked assessed. When risks have been



identified as needing action, managers should first of all seek to avoid the risk by changing the way in which the task is done. If this is not possible, other control methods need to be used such as method statements, training etc.

## Chapter 8

*The Traffic Signs Manual* was revised and published in June 2006 and Chapter 8 covers traffic safety measures and signs for road works and temporary situations and is divided into two parts.

Part 1 – Design provides guidance for those responsible for the design of temporary traffic management arrangements which should be implemented to facilitate maintenance activities or in response to temporary situations.

Part 2 – Operations provides guidance for those responsible for planning, managing, and participating in operations to implement, maintain and remove temporary traffic management arrangements.

Chapter 8 is a Code of Practice that applies in England, Northern Ireland, Scotland and Wales. It should also be noted that many of the basic principles contained in it are also covered in the Safety at Street Works and Road Works – A Code of Practice. All authorities, bodies and organisations responsible for all types of roads to which the public have access are strongly recommended to make compliance with the requirements of Chapter 8 a condition of contract in the case of works carried out on their behalf.

Where works are in progress on a highway, the person, persons or organisation responsible for the works is under an obligation to those using the highway, (both vehicle users and pedestrians) to take reasonable practicable steps to protect them from personal injury and their property from damage. Therefore sufficient warning signs, barriers and other measures needed to highlight any danger should be placed at or near the site of the works to the extent necessary to discharge that obligation.

Working on live roads carries a potentially high risk; road users may not expect to encounter standing or slow-moving works vehicles, or people at work, in the carriageway. In addition, the personnel involved may have little protection from oncoming traffic so it may be necessary to provide safety barriers/cones and temporary signs to provide a safer working environment for employees. Work should be managed properly to ensure that the risks are as low as is reasonably practicable.

Mobile traffic management is used for mobile road works which involve short duration lane closures where the traffic signs used are essentially vehicle mounted, although some static signs may also be required.

The works must be carried out in good visibility only. They include continuous mobile operations, as well as those which involve movement and periodic stops and short-duration static works and may be carried out on carriageways both with and without hard shoulders. Works falling within this include grass cutting, weed spraying and gully emptying.

Mobile works should be carried out only during periods of low risk and during low traffic flows when congestion is unlikely to occur.

Guidance provided in Chapter 8 should always be considered in conjunction with a site specific risk assessment before use.

### Generic Risk Assessment

The following is a generic highways risk assessment and instruction sheet to indicate the issues that should be considered when carrying out a risk assessment for environmental maintenance on highways.

ROAD NAME/NUMBER – **ALL** PARISH – **ALL**
DIRECTION OF TRAVEL – **AS STATED ON EACH SHEET**

| TASK | Litter Picking | ✓ | Tractor Flail | ✓ | Strimming | ✓ | Ride On | ✓ |
|---|---|---|---|---|---|---|---|---|

Stretch assessed – use specific identifiable description: (e.g. from corner of Park Lane to first farmer's gate on left hand side). **(As stated on each sheet the instructions only cover the stated stretch of road and cannot be considered as the same everywhere you work)** (Approx distance miles)

| Photo – | Map – |
|---|---|
| Each instruction sheet contains a picture of the stretch that needs working taken from the end that the end that the assessment was conducted from. When working in the opposite direction lefts and rights will need reversing. Please bear this in mind. | Each instruction sheet has an ordnance survey picture lifted from GGP which gives a map view of the area to be worked. |

SAFE METHOD OF OPERATION BASED ON RISK ASSESSMENT

| | |
|---|---|
|  | This arrow is the legally required sign advising motorists to pass the vehicle on the right. It must be 900mm tall to suit all road types. |
|  | This sign is the legally required sign advising motorists that there are people at work in the highway. It must be shown at each end of the stretch on the left hand verge. It must also have wording attached underneath telling motorists what is going on. It must be 750mm tall. |
|  | This sign is the legally required sign advising motorists that the road is narrowing due to obstructions in the highway (You). It must be shown each end of the stretch on the left hand verge. It must also be shown at each road junction joining the stretch you are working on. Make sure it is correct for the direction of travel. This one tells the approaching motorist that you are working on their right hand verge. |
|  | This one tells the approaching motorist that you are working on the left hand verge – in their carriageway. Both road narrows signs must be 750mm tall. |

**Mandatory:**

Each safe method of operation has mandatory requirements and points to consider in this box. This information is in addition to the information given in the risk assessment on the second page. The following additional mandatory requirements apply to each road being worked on:

- think about what you are doing and where you are working – stay safe above all else
- rural roads have the highest national accident rate
- avoid creating unnecessary obstructions to the motorist
- avoid creating more hazard to the motorist than is necessary – don't help them to have an accident
- act with care and courtesy to road users – do not create a 'road rage' incident which will endanger you and create complaints, etc
- tractor to pull over to allow queued traffic through if necessary
- tractor to be vigilant working in solid white line areas – motorists may take risks
- the work has been planned considering good visibility. Think and think again if it is foggy or misty and before, during or after thunder storms or flash rain storms in the summer (dark overcast conditions)
- when setting out road signs or changing them round take extreme care in the road. Make sure you are safe crossing the roads
- be aware of other colleague's work. Avoid being hit by effected debris from their machinery, but work close enough to be a visible team in the highway. Avoid stragglers or lone workers
- always take care to look for overhead services and wires – there are many around, both electricity and telephone
- when working on over bridges – particularly motorways – avoid ejecting particles from strimmer/flail onto the carriageway beneath
- use your sense – if in doubt don't. Work as a team protecting each other and looking out for each other
- the verges will change conditions during the year so watch your footing. Grips will come and go dependent on county highways maintenance schedules
- the stretches will change over time. Report any important differences to your supervisor so the assessments and instructions can be reviewed and amended as necessary.

Within the risk assessments on the following three pages each of the road assessments have formed the basis for the safe methods of operation which should be followed. The issues looked at in the risk assessment are shown in the chart on that second page. If things change the supervisor should be informed.

The assessments were based on an assessment of the nearside verge from a driver's perspective.

The following risk assessment is for environmental maintenance on a designated highway and illustrates by example the generic risk assessment above.

ROAD NAME/NUMBER – Desford Road – 4a PARISH – Enderby

DIRECTION OF TRAVEL – From Narborough Wood Park towards Enderby

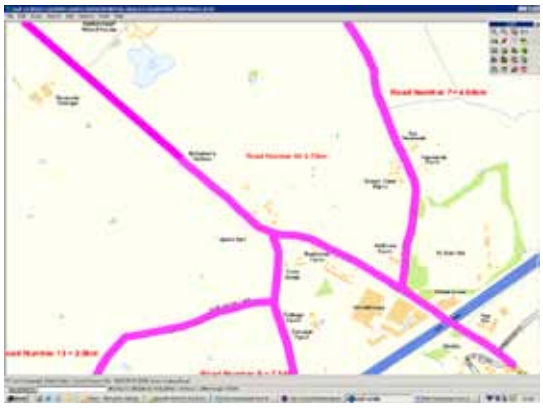
| TASK | Litter Picking | ✓ | Tractor Flail | ✓ | Strimming | ✓ |
|---|---|---|---|---|---|---|

From Narborough Wood Park to Enderby traffic lights at Next Plc

(Approx distance 0.9 miles)

Photo –

Map –



SAFE METHOD OF OPERATION BASED ON RISK ASSESSMENT OVERLEAF

| | |
|---|---|
|  | Always displayed on rear of tractor – minimum 900mm size sign. |
|  | Displayed at Enderby side of Narb Wood Park at Desford end, by traffic lights at entry to Desford Road at Enderby and at end of Forest Road so traffic turning out of Forest Road are aware of works. Wording required – as per task e.g. Grass cutting/Litter Picking etc. Always name the biggest obstacle/ hazard to road users. |
|  | Displayed within 50m of Men at Work sign at Enderby end and on Desford Road towards Narb Wood Park just after Forest Road junction. |
|  | Displayed within 50m of Men at Work sign at Narb Wood Park and on Desford Road towards Enderby just after Forest Road junction |

**Mandatory:**

Care – some narrow verge areas – take extreme care. Especially at bottom of hill around the hand railings. Visibility not too bad in dip pictured above. Watch out for grips.

Care this is a busy road, with traffic governed by traffic lights top and bottom – traffic will come in bursts each way.

Signage to be used as above. Once finished working in one direction reverse the 'road narrows' signs around to indicate a change in direction of working activities.

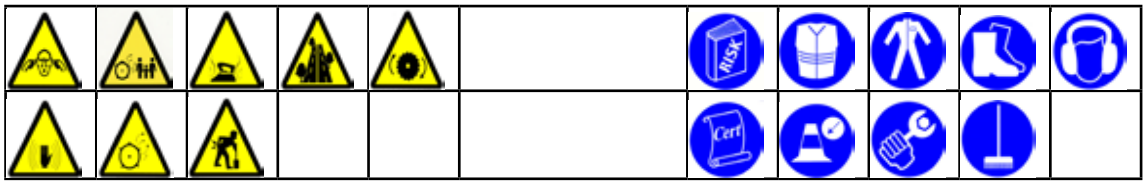
See also job/equipment specific risk assessments and safe methods of operation.

**Always assess the nearside verge from a driver's perspective.**

| | | | | | |
|---|---|---|---|---|---|
| Legal speed limit | National | | Any overhead services? | Y | Telephones |
| Likely speed of traffic | 60 – 70 mph | | Any street furniture on verge to be avoided? | Y | Lamp Posts<br>Road Signs<br>Telegraph Poles |
| Width of whole roadway | 5-6 metres | | Likelihood of animals? | N | |
| Visible distance<br>(Assume clear weather) | 50-100 metres | | Any trees etc. to avoid? | Y | |
| Is there a pavement?<br>How wide? | Y | 0.5 – 2m | Any islands in middle of road? | Y | Raised concrete at Enderby |
| Width of verge for pedestrian worker | 0.5 - 2m | | Any hazards marked on road surface? | Y | SLOW |
| Will pedestrian worker be in road at any point? | Y | At bottom of hill only | What road signs to motorists are displayed? | Speed Limit | Farm/Tractor |
| Can pedestrian worker stay more than 1m from carriageway? | N | | Any junctions in this stretch? (CARE will also need signing) | Y | Thurlaston Lane/ Forest Road |
| Grips known to be present? | Y | | Type of white lining/ carriageway markings<br>Meaning | Long white broken<br>Hazard | |
| Raised ironworks or other trip hazards on stretch | N | | Parked cars expected? | N | |
| Is verge level or sloping? | Level | | Nominal traffic volumes? | 10 Cars per minute at 11.30 hrs | |
| Is there a ditch to be attended to? | Y | RHS | | | |
| Any side roads or access ways to cross? | Y | Access to Farm and houses | | | |
| Other hazards on stretch<br>Care – some narrow verge areas – take extreme care. | | | | | |

| | | |
|---|---|---|
| Task : 429 | Date : 10/05 | Title : Tractor Mounted Side Arm Flail Operations |

| SIGNIFICANT HAZARDS | RISK ASSESSMENT | | | |
|---|---|---|---|---|
| | Insignificant | Low | Medium | High |
| Noise | | | X | |
| Entanglement and Ejection (Flailing Blades) | | | X | |
| Burns | | X | | |
| Road traffic accident | | | X | |
| Whole body vibration (low frequency noise) | | X | | |
| Driving fatigue | | | X | |



**Hazards** **Controls**

**References:**

- The Provision and Use of Work Equipment Regulations.
- The Manual Handling Regulations.
- Noise at Work Regulations.
- New Roads and Streetworks Act.

**Control measures:**
***Planning***

All operations must be carried out as prescribed in the manufacturer's manual and must be subject to local risk assessment, in writing if necessary, before operations commence.

All known site hazards e.g. terrain (the presence of slopes or uneven ground, wire fencing and obstructions) and assessed hazards e.g. the likelihood of harmful material or adverse traffic conditions must be made known to the operatives concerned before the task commences. Machinery must be maintained to a high level at all times and be inspected for faults before commencing work. All faults must be reported.

***Operational***

Operatives must wear the appropriate personal protective equipment (PPE) (including high visibility clothing where required). Additionally operatives must also be alert and mindful of their requirement to protect both themselves and others (including members of the public) from the hazards of the operation especially children and those who may be deaf or blind.

Never allow any part of the body to come into contact with the flail head. (Be aware that latent energy in a hydraulic drive system can cause rotation of the head especially when blockages are released).

Never attempt maintenance you are not competent to perform. When working on the highway drivers must hold an appropriate licence and always conform to the Highway Code and ensure safety signs and beacons are in good order.

**Always ensure that the power take-off unit (PTO) and cover are in good order. Always ensure that the PTO drive spline is covered when not connected to any ancillary machinery.**

Failure to comply with this will result in disciplinary action being taken.

***Supervisor***

Supervisors must ensure that they are aware of traffic conditions and arrange appropriate warning for road users where slow moving tractor operations will be carried out on the highway and ensure that this operation is only carried out by competent persons, and that the machinery is in good order and has suitable and effective guards where fitted.

***Training***

All operators must be fully trained before carrying out any work with this machine. Training must be recorded on personal and quality assurance (QA) training records. **All training must be signed off in the individuals Q.A. training record and his /her Safety Training Passport and Codes of Practice Manual.**

**Site specific assessments must be completed for any identified additional significant risks.**

# Night Time Working

## Working in Hours of Darkness Risk Assessment

### Introduction

Traffic flows and other factors dictate that some traffic management activities are conducted during the hours of darkness. Such operations require additional pre-planning, resources and procedures to those needed for daytime activities.

Although the accident risk for the traffic management workforce associated with high flow traffic is generally lower during the night, the risk of other work related accidents during the hours of darkness is increased due to factors such as fatigue, difficulty in judging distances, and limited vision. In the case of night-time only working, additional hazards are introduced due to the necessity to remove the traffic management before the morning peak traffic flow when night-time operations may be running late.

The following issues should be considered in planning traffic management activities to be carried out during the hours of darkness.

### Personnel Issues

It is essential that personnel involved in this activity are carefully selected for their fitness for night-time work. This selection should include an assessment of vision and hearing.

Additional training for work during hours of darkness is of paramount importance, and this should be delivered by a nominated competent person.

Personnel required to work during the hours of darkness must have adequate rest periods both prior to and following each night shift. Information regarding hours of work for night workers is given in *Traffic Signs Manual - Chapter 8*.

### Pre-Planning

The following checks should be conducted during daylight hours as necessary. Stopping points for vehicles should be pre-determined and positively identified. This is particularly important where there is no hard shoulder, or when stopping at locations that might be obstructed by safety fencing or other structures/objects.

The proposed location for temporary signs, the start and end of tapers, and longitudinal coning should be positively identified.

Relevant verges/central reserves should be inspected for hazards, and to ensure that there is adequate width to place the temporary signs safely. Consideration should be given to pre-placing signs in the central reservation or verge so that they then only need to be stood up at night. Carriageway crossing points must be checked to ensure that there are adequate sight lines to see oncoming traffic.

The position of any overhead lines likely to impinge on the planned traffic management activity must be positively identified and the method statement adjusted to minimise any risk.

### Lighting

Where signs are required to be lit for a long period of time, the supply should be connected to the mains electricity supply, e.g. street lighting, wherever practicable. If lighting is to be powered by battery, gas or oil powered generators, planning should ensure that the battery charge/ fuel supply is sufficient to last through the hours of darkness.

Where gas lamps are used for lighting signs, the cylinders must be secured in a safe position, protected from impact with errant vehicles, and provision made for their safe transport across the carriageway.

Consideration must be given to provision of adequate lighting of areas in which traffic management activity is taking place. If, because of the temporary nature of the activity, it is not practicable to connect these lights to the mains supply then, if possible, they should operate off the electrical system of accompanying vehicles.

All lighting must be sited so as not to dazzle users of the highway or the workforce and consideration should be given to locating reflective road signs to minimise reflected light.

Erection and movement of lighting towers or other elevated lighting equipment should be conducted with due regard to the danger presented by any overhead lines which may be present. When a lighting tower has to be moved the mast must be lowered.

At contra-flow cross-over's consideration should be given to the continuity of the level of street lighting for road users. Isolated pools of light or darkness should be avoided throughout the approach and cross-over areas of traffic management.

On unlit roads where the horizontal or vertical alignments or the road surface through the cross-over is below standard, the application of temporary street lighting to the cross-over and approach areas should be considered.

### Work Practices

A means of judging the distance between the crossing point and oncoming traffic should be considered to facilitate crossing of the carriageway on foot to place equipment on the central reservation.

Hand lamps should be available for use as appropriate.

Prior to commencement of work, all sign lighting equipment must be checked for correct operation, and batteries in warning lamps must be checked and replaced as necessary. All temporary traffic management equipment must be maintained in a clean condition.

A readily available stock of appropriate equipment must be maintained for immediate replacement of damaged or lost signs, delineators or lighting items. The relevant storage area must be equipped with adequate illumination.

### Noise

Noise is less acceptable at night than in the daytime and every effort must be made to keep this to a minimum. This can be achieved by:

- use of electrical connections to mains supplies rather than generators
- ensuring that all mechanical equipment is 'noise suppressed' to the lowest possible levels
- asking personnel to communicate as quietly as possible.

Consideration should be given during the planning stage, with regard to the local environmental officer's requirements, to avoid methods of working which are particularly noisy, such as the use of thermal lances.

### Communications

To compensate for the reduced visual inter-communication between elements of the workforce, special consideration should be given to the system of communication for temporary traffic management activities during darkness.

**Please ensure that you are aware of the work activities you or you team are going to carry out. Also make yourself familiar with the relevant Safe Methods of Operations**

## Night Time Economy

The night time economy is having an impact on many major cities throughout the country. A number of local authorities have addressed this in a number of ways and although problems including fast food litter and the greasy deposits and staining resulting from it, along with fly-posting, street urination and graffiti can be the result of night time activity, they also have an impact on the day time environment.

### Westminster Case Study

Due to the vibrant 24/7 economy operating in the West End and the increase in music and dance venues there, Westminster City Council was experiencing an increase in night time local environmental problems, such as litter, street urination and other forms of anti-social behaviour.

By using a toolkit of solutions and initiatives, the night time local environmental quality problems are being addressed. This toolkit includes amongst others:

- A comprehensive night time waste collection and street cleansing service operating between 10pm and 6am – a 'clean streets' policy. Backed up by GPS vehicle tracking and management dashboard ICT systems.
- A 24-hour customer services hotline that records and codes all calls from the public on noise and waste complaints. This is fed through to officers on the ground in real time via handheld devices.
- 24-hour Community Protection teams, focusing on anti-social behaviour issues.
- A 24-hour Noise team.
- 24-hour Street Environment Managers – a team of 10, whose role is to liaise with customers, resolve problems, educate and enforce – e.g. Duty of Care Section 34 and Fixed Penalty Notices.
- Street drinking legislation – in some areas no-street-drinking zones have been introduced.
- Utilisation of the city's central CCTV service to monitor issues and advise staff of problems immediately.

**Source: Encams Knowledge Bank**

As well as having procedures and policies in place to combat the outcome of late-night anti-social behaviour, specific risk assessments need to be performed for the task being carried out by the night-time operators.

## Personal Protective Equipment

Personal protective equipment should be issued to staff to enable them to carry out their tasks safely. The exact requirements for PPE will need to be determined by the risk assessment. For staff working on the highway reflective vests and jackets are likely to be a minimum requirement. Safety shoes/boots with steel toecaps and gloves are also likely to be a minimum requirement.

## Legislation

Environmental cleansing is governed by an extensive amount of legislation which covers all aspects, including dog fouling, litter and illegal deposit of waste. The historical legislation and history of cleansing sets into context the operation of environmental cleansing and it is only recently that specific legislation has been developed; this was with the Clean Neighbourhoods Environment Act 2005.

All aspects of the UK have historical legislation and devolved administrations as well as some major cities have developed regulations to suit local issues.

## Clean Neighbourhoods and Environment Act

This Act was a major piece of legislation change for local environmental quality and some of the key sections under the Clean Neighbourhoods and Environment Act 2005 (CNEA) are outlined.

Section 18 extended littering to any open place which is open to the air that the public have access to; this is not just for land it includes water. Fixed penalty notices issued for littering were set at £75 if the local authority did not specify their own fee (which this section allowed). It is also made it an offence to not give full name and address or false details when asked, (in relation to a littering offence).

Section 20 repealed litter control areas under Section 90 of the Environment Protection Act 1990. Section 20 gave powers to litter authorities to issue litter clearing notices in relation to any land in its area which is open to the air. A principal litter authority must be satisfied that the land is defaced by litter or refuse so as to be detrimental to the amenity of the locality, before serving a litter clearing notice in relation to any land.

Section 21 extended the street litter control notices to include vehicle or stall or other moveable structure.

An offence under Section18, 19 or 20 is liable to summary conviction not exceeding level 4, on the standard scale. The liability can be discharged on payment of a fixed penalty notice of £100, (if the authority has not set its own fee).

Section 23 inserted a new Schedule 3A on free distribution of printed matter on designated land. A person commits an offence if they distribute any free printed matter without the consent of a principal litter authority on any land which is designated by the authority. An offence is liable on summary conviction to a fine not exceeding level 4 on the standard scale. The authority must advertise the designation of land and place a notice on the land.

Section 27 extended the definition of litter to include the discarded ends of cigarettes, cigars and like material as well as chewing gum and the discarded remains of other products designed for chewing.

Section 31 extended the Anti Social Behaviour Act 2003 offence of defacement by graffiti to include defacement by fly posters or flyers. If a notice is served by the local planning authority relating to the removal of placards and posters and the removal of the offending materials are not carried out in the time specified the authority may recover costs of carrying out their duty to remove the materials.

Fly-tipping was tackled comprehensively under CNEA. Amendments to Control of Pollution (Amendment) Act 1989 means the defence of operating under an employer's instructions is repealed, when using unregistered transport for transporting waste. If any waste is illegally deposited the defence of acting under an employer's instructions is also repealed. If an authority deems that a vehicle being used to transport material is likely to be subsequently used to illegally deposit that material, the authority can search and or seize the vehicle. If a person is convicted of depositing waste illegally, authorities have the power to forfeiture vehicles used by the offender.

On failing to show relevant paperwork when requested the authority can issue fixed penalty notices (local authorities may retain the receipts to contribute to enforcement roles).

Section 99 amended the legislation relating to abandoned trolleys in that they can now be seized and removed. If the owner is determined the fee can be demanded by the authority and can be recovered as a due debt.

A commencement order in February 2007 highlights the commencement dates of the rest of the CNEA 2005. See http://www.opsi.gov.uk/si/si2007/uksi_20070390_en_1 for the detailed table.

## Environmental Protection Act 1990

**Section 33**
**(Prohibition or unauthorised or harmful depositing, treatment or disposal etc of waste)**

Section 33 is the primary piece of legislation which creates the offence for depositing or permitting controlled waste to be deposited on any land unless a waste management licence authorising the deposit is in place. Recent changes to Section 33 now prevent the defence that an employee was acting on behalf of his employer and hence avoid prosecution. Other changes enable local authorities to seize vehicles involved in fly-tipping offences in cases where it is likely that the person will continue to re-offend. In exceptional circumstances suspects may be detained by the Police where it is evident that failure to arrest would be prejudicial to the outcome to the investigation. The maximum fine for a successful prosecution has been increased from £20,000 to £50,000 and raises the maximum term of imprisonment on conviction for the illegal disposal of non-hazardous waste to five years.

A local authority is also given the power to remove waste illegally deposited in contravention of section 33 without giving notice (or to take other steps) where it is necessary to remove or prevent pollution of land, water and air or harm to human health, and to recover the reasonable costs of doing so (Section 59(7)) and (8)).

**Section 34**
**(Duty of Care)**

Section 34 places a duty of care on any person who is in control of waste to take reasonable steps to keep it safe and to make sure it is passed on to an authorised registered carrier to dispose of. Local authorities have the power to request commercial waste producers or carriers to produce copies of waste transfer notes and their authorisation to carry waste. I n November 2005 changes were made to the legislation which extended the use of duty of care to include private households as well as commercial premises. Responsibility is now firmly placed on the householder to make sure their waste is passed on to a registered waste carrier as they are ultimately responsible for ensuring it is disposed of correctly.

**Section 59**
**(Powers to require removal of waste unlawfully deposited)**

Subsection 59(1)(a) provides that, where controlled waste has been illegally deposited on land in contravention of section 33, a local authority may require the occupier of the land, upon at least 21 days notice, to remove the waste.

Section 59 provides the local authority with the power to require the removal of waste from land from which it is not responsible for maintaining. Until recently these powers could only be used against the land occupier, however, changes to the legislation now make the land owner responsible for removing the waste in situations where the occupier cannot be found.

Where a person fails to comply with such a notice they shall, upon summary conviction, be liable to a fine and the local authority has the power to undertake the steps set out in the notice and recover the reasonable costs of doing so (Section 59(5) and (6)).

**Sections 79 - 81**
**(Statutory nuisances)**

It is the duty of every local authority to inspect its area to detect statutory nuisances and to take reasonable steps to investigate a complaint of a statutory nuisance made by a person living in its area. A statutory nuisance will include: any premises in such state as to be prejudicial to health or a nuisance, and any accumulation or deposit which is prejudicial to health or a nuisance (Section 79(1)).

A local authority may serve a notice requiring the abatement of the nuisance or prohibiting or restricting its occurrence or reoccurrence on the person responsible for the nuisance, or where they cannot be found, on the owner or occupier of the premises (Section 80(1) and (2)). Failure to comply with an abatement notice is an offence with a person being liable, upon summary conviction to a fine (Section 80(4)-(6)).

Where an abatement notice has not been complied with a local authority may abate the nuisance and do whatever may be necessary in execution of the notice, and may recover their reasonable expenses of doing so from the person responsible for causing the nuisance (Section 81(3) and (4)).

**Sections 86 and 89**
**(Duty to keep land and highways clear of litter etc.)**

Duty upon a local authority to keep the highways for which it is responsible, insofar as is reasonably practicable, clear of litter and refuse and to ensure it is kept clean. It is the duty of a statutory undertaker in respect of its relevant land to ensure that the land is, so far as is reasonably practicably, kept clear of litter and refuse. (Section 89(1) and (2)).

The "relevant land" of a statutory undertaker is defined as land which is under the direct control of a designated statutory undertaker, in relation to which the public have no right or permission to have access with or without payment and is operational land. Operational land is defined as land which is within 100 metres of a railway station platform to which the public is entitled or permitted to have access with or without payment and which: forms an embankment, cutting, siding, level or junction, but is not part of a depot, goods, yard, or enclosed area where plant and machinery is kept; or is within the rails or on the tracksides, but is not within a tunnel; or is on a viaduct or bridge.

**Section 92**
**(Summary proceedings by litter authorities)**

Provides a local authority with the power to issue litter abatement notices in respect of the relevant land of a designated statutory undertaker, where the land is defaced by litter or refuse. A person failing to comply with a notice commits an offence and will be liable, upon summary conviction, to a fine. Where a person fails to comply with a notice, a local authority may enter onto the land and clear the litter or refuse and recover the reasonable costs of doing so.

**Section 92A**
**(Litter clearing notices)**

Provides a local authority with the power to issue a litter clearing notice upon the occupier of land (or where the land is not occupied the owner) where the local authority is satisfied the land is defaced by litter or refuse so as to be detrimental to the amenity of the area, requiring the person within not less than 28 days to clear land of litter or refuse and to take reasonable steps to prevent further littering etc. A litter clearing notice may not be served in relation to land which is: highway maintainable at the public expense, local under the control of a local authority, Crown land, relevant land of a statutory undertaker, relevant land of a designated educational institution, or land which is covered (but has at least one side open to the air) and to which the public do not have access with or without payment (Section 92A).

**Section 92c**
**(Failure to comply with litter clearing notice)**

Where a person fails to comply with a notice they will be guilty of an offence and liable on summary conviction to a fine, and a local authority may enter the land itself and clear it, recovering the costs of doing so (Section 92C).

**Sections 93 and 94**
**(Street litter control notices, Street litter: supplementary provisions)**

Provides a local authority with the power to issue street litter control notices with a view to preventing accumulations of litter or refuse in and around any street or open land adjacent to any street. A notice may not require the clearing of litter or refuse from any carriageway, except at a time when the carriageway is closed to all vehicular traffic.

**Section 94B and Schedule 3A**

Provides a local authority with the power to designate areas for the distribution of free literature – thus controlling the distribution of free literature.

**Section 99 and Schedule 4**
**(Abandoned Shopping and Luggage Trolleys)**

Under section 99 local authorities may resolve that the provisions set out in Schedule 4 to the Act will apply in its area. Local authorities have the power under Schedule 4 to seize and remove shopping or luggage trolleys found abandoned by the local authority on any land in the open air. The Schedule also provides for the retention, return and disposal of abandoned trolleys.

## The Refuse Disposal (Amenity) Act 1978

**Sections 2 and 2A**
**(Penalty for unauthorised dumping. Fixed penalty notices for offence of abandoning vehicles)**

It is an offence under this Act to abandon a vehicle or any part of a vehicle in the open air or on a highway (Section 2). A local authority may serve a fixed penalty notice where an offence has been committed under section 2 (Section 2A).

**Section 3**
**(Removal of abandoned vehicles)**

Duty upon a local authority to remove any motor vehicles abandoned on any land in the open air or on a highway. Where a local authority is of the opinion that the abandoned vehicle is in such a condition that it should be destroyed, the local authority must affix a notice to the vehicle for a minimum of 24 hours before removing the vehicle.

**Section 4**
**(Disposal of removed vehicles)**

A local authority may dispose of any vehicle which they take into their custody by exercising their powers under section 3.

**Section 5**
**(Recovery of expenses connected with removed vehicles)**

A local authority may recover from the person responsible for abandoning the vehicle the costs of removing and disposing of it under sections 3 and 4.

**Section 6**
**(Removal and disposal etc of other refuse)**

Under section 6 a local authority has the power to remove anything (other than a motor vehicle) which they consider to be abandoned on any land or on a highway, and to recover the cost of removing and disposing of it from the person responsible for abandoning it. Before exercising this power the local authority must give notice to an occupier of such land that they intend to remove it within a prescribed period.

**Section 8**
**(Powers of entry etc)**

A local authority under section 8, may, at any reasonable time and with at least 24 hours notice (reference Section 325 of the Town and Country Planning Act 1990), enter upon any land to both ascertain whether they should exercise their powers under sections 3 and 6 of this Act and also to exercise those powers.

### Control of Asbestos Regulations 2006

This regulation applies in particular to work on, or which disturbs materials containing asbestos. The clearing of asbestos-contaminated land is not specifically covered but these regulations place duties on employers of people who are liable to be exposed to asbestos containing materials in the course of their work. In this case it applies equally to building maintenance workers as well as those who may be engaged in clearing fly-tipping.

### Control of Noise at Work Regulations 2005

Hearing damage caused by exposure to noise at work is permanent and incurable. The noise regulations are designed to protect against risks to both health and safety from exposure to noise – the health risk of hearing damage in those exposed, and safety risks such as the noise affecting the ability to hear instructions or warnings. The regulations require employers to assess the risk to its employees and others and implement control measures and health surveillance in set circumstances to protect those exposed.

### Control of Vibration at Work Regulations 2005

These regulations require employers to carry out suitable and sufficient assessments of the levels of vibration workers are exposed to. The regulations cover both Hand-Arm Vibration (HAV) and Whole-Body Vibration (WBV) and impose duties on employers to introduce control programmes and health surveillance for employees found to be at risk. The regulations state exposure limits and action values at which point employers must act.

### The Health and Safety (Consultation with Employees) Regulations 1996

The law requires you to consult employees in good time on matters that affect their health and safety. This consultation should occur when introducing any measure that may substantially affect their health and safety, planning or organising safety training, introducing new machinery or work practices. Employees are allowed to elect safety representatives from among their group to be consulted with. The Safety Representatives and Safety Committees Regulations 1977 (SR&SCR1977) also relate as they give prescribed cases in which recognised trade unions may appoint safety representatives from among the employees. SR&SCR1977 also provides for the establishment of safety committees.

### Pressure Systems Safety Regulations 2000

These regulations place duties on the manufacturer, supplier and user of pressure systems. These will be applicable if an employer utilises static or mobile pressure systems in the course of cleansing work. Typical examples being (high pressure) water jetting and (vehicle) washdown facilities. They provide for competent operation, maintenance and inspection routines to be in place to control the risk of serious injury from the hazard of stored energy as a result of the failure of a pressure system or one of its component parts.

### Work at Height Regulations 2005

A place is 'at height' if a person could be injured falling from it, even if it is at or below ground level. The regulations set out a simple hierarchy for managing and selecting equipment for work at height. The duty holder must avoid work at height where they can, use work equipment to prevent falls where work at height cannot be avoided, and where prevention of falls is not possible, mitigate the consequences of a fall. There are also requirements to prevent falls through fragile surfaces and to prevent falling objects from work areas. These regulations can conceivably be expected to apply to some cleansing activities.

### Code of Practice on Litter and Refuse

This code was issued in November 2006 by the Secretary of State under section 89(7) of the Environmental Protection Act 1990 and sets out practical guidance on the discharge of the duties under section 89(1) and (2) of that Act on certain landowners and occupiers to keep specified land clear of litter and refuse, and on local authorities and the Secretary of State to keep clean public highways for which they are responsible.

An updated version takes account of changes to litter legislation introduced by the Clean Neighbourhoods and Environment Act 2005. In addition to providing statutory guidance for those with a duty to clear litter and refuse from their land, it is intended that the revised code will assist other land managers in achieving and sustaining high local environmental quality.

### Fast Food Voluntary Code of Practice 'Food on the Go'

Food and drink packaging makes up a large proportion of the litter people drop, and the Government is

working with food outlets, manufacturers and retailers to address this. Reducing litter caused by food on the go - A Voluntary Code of Practice launched in October 2004, is one example. Fast food operators, shops and supermarkets are encouraged to sign up to this Code of Practice, which then commits them to work in partnership with the council to improve their local environment, for instance by providing additional bins, staffing regular litter sweeps around their outlets, conducting research into waste minimisation and promoting the anti-litter message to their customers.

The Voluntary Code of Practice for 'Food on the Go' recognises that industry has a role to play in tackling litter issues. However, it also looks to enable all relevant parties - food outlets, local authorities, major landowners and the public - to work together in a mutually supportive partnership, to find local solutions to local problems. The aim of the Voluntary Code of Practice is to reduce food litter and waste that becomes litter in the local environment by outlining best practice and recommendations for action to be taken by all fast food retailers. This should allow all parties to work together in a mutually supportive partnership, to find local solutions to local problems.

For further details follow the link http://www.defra.gov.uk/environment/localenv/litter/food.htm

## Welsh Legislation

Wales implemented Clean Neighbourhoods and Environment Act 2005 on a different timetable to England. In November 2007 a commencement order highlighted the commencement timetable for sections of CNEA in Wales. See the explanatory note at http://www.opsi.gov.uk/legislation/wales/wsi2007/wsi_20073371_en_1

Wales implemented a smoking ban for premises and vehicles on 2 April 2007 via the Smoke-free Premises etc. (Wales) Regulations 2007.

## Scottish Legislation

### Summary of Scottish Legislation relating to litter

**Section 90**
**(Litter Control Area)**

Environmental Protection Act 1990 allows local authorities to designate prescribed types of land as a Litter Control Area if litter or refuse is considered detrimental to the amenity of the area. This then places a duty on the owner or occupier of the land to ensure that it is kept clear of litter and refuse, so far as is practicable. Failure to discharge the duty may result in being taken to court by an aggrieved citizen or the council.

**Section 33**
**(Prohibiting the unlicensed deposit of waste)**

Environmental Protection Act 1990 Section 33(1) makes it an offence to deposit waste, or knowingly permit or knowingly cause such deposit, in or on any land without a waste management licence.

Section 33(5) specifically **includes** waste deposited from a motor vehicle, making the person controlling the vehicle responsible for the deposit.

Higher penalties are available if the fly-tipped waste is special (i.e. hazardous) waste.

Cases may be pursued by both SEPA and local authorities.

**Section 33A**
**(Fixed Penalty)**

Environmental Protection Act 1990 An authorised officer of a local authority, a police constable or an officer of SEPA (as the waste regulation authority), on having reason to believe that a fly-tipping offence has been committed has the power to give the offender a notice inviting the offender to pay a fixed penalty.

If the fixed penalty is not paid, the alleged offender will be reported to the procurator fiscal for consideration of prosecution.

**Section 59**
**(Removal of unlawfully deposited waste)**

Environmental Protection Act 1990 Provides powers for waste regulation authorities (SEPA) and waste collection authorities to require the removal of waste unlawfully and knowingly deposited. Costs can be reclaimed.

**Section 79/80 Part III**
**(Statutory Nuisance)**

Environmental Protection Act 1990 A local authority can serve an abatement notice if an accumulation or deposit is considered to be prejudicial to health or a nuisance. Reasonable costs can be recovered. Inert material, however, would not be categorised as a statutory nuisance.

**Section 95**
**Civic Government (Scotland)Act 1982**

In relation to the problem about build up of rubbish in back courts on private land. A local authority may by notice in writing require the owner of an open space to maintain the open space and any boundary walls or fences so as to prevent danger or nuisance to the public. The owner can recover costs from occupiers.

**Section**
**The Roads (Scotland) Act 1984**

It is an offence to place anything on a public road (which includes footways) without the Roads Authority's consent. This includes such things as temporary signs, sandwich boards and the display of goods outside shop frontages.

Unnecessary obstacles on footways, footpaths and other pedestrianised areas are a hazard to pedestrians particularly those who are visually impaired or who have mobility difficulties and can also hinder effective street cleansing.

**Section 179**
**(Land Adversely Affecting Other Land)**

Town and Country Planning (Scotland ) Act 1997
If it appears to a planning authority that the amenity of any part of their district, or adjoining district, is adversely affected by the condition of any land in their district they may serve on the owner, lessee and occupier of the land a notice under this section requiring such steps for abating the adverse affect as may be specified in the notice to be taken within such a period as may be specified.

**Section 6**
**Refuse Disposal (Amenity) Act 1978**

Gives local authorities the powers to remove from land open to the air or on a highway anything that has been abandoned without lawful authority. If the land is occupied, the council must give notice of their intention to remove. Costs can be recovered from the person leaving the refuse or a person knowingly permitting it.

Scotland introduced a smoking ban in closed or partially closed premises on 26 March 2006 through the Smoking, Health and Social Care (Scotland) Act 2005 and this was implemented via The Prohibition of Smoking in Certain Premises (Scotland) Regulations 2006.

## Northern Ireland Legislation

Northern Ireland implemented their smoking ban on 30 April 2007 via the Smoking (2006 Order) (Commencement) Order (Northern Ireland) 2007.

Litter is controlled by the Litter (Northern Ireland) Order 1994 with various amendments for fixed penalties. This legislation parallels Environment Protection Act 1990.

## Duty of Care

To combat some of the issues of fly-tipping an amendment in 2005 was made to the Environmental Protection Act 1990 to include a duty of care for householders. This implemented a duty on householders to check that companies that they were using for removal of waste from their premises were registered carriers. A website was set up by the Environment Agency to allow residents to check that companies they planned to use were registered waste carriers.

Defra issued their first major review consultation on Duty of Care during 2007 to look at the issues raised by the waste industry over the lack of following the code of practice set up under Section 34 of the EPA 1990. The second consultation closed on 8 September 2008. Details of the consultations and following updates can be found at http://www.defra.gov.uk/environment/waste/legislation/duty.htm

## Waste Storage

Some of the issues arising for environmental cleansing departments could well stem from inadequate storage for waste and or recyclables. If waste or recyclables are not managed correctly anti-social behaviour could lead to material being fly-tipped or littered around the area adding to the work of the local authority. Storage is important for householders and commercial & industrial premises alike.

There is legislation relating to waste storage and extensive guidance available for architects, designers, planners and waste managers.

**Building Regulations H6**

The approved document Part H Solid Waste Storage is the relevant section for waste management. There is a requirement in building regulations to provide adequate storage for solid waste. Adequate means of access should be provided for people in the building to the place of storage and from the place of storage to the collection point.

**BS 5906:2005 Waste Management in Buildings**

This British Standard code of practice (updated from the 1980 version) includes aspects of waste management in buildings to ensure that adequate storage of waste and recyclables are included. Inadequate storage can lead to waste becoming litter or fly-tipped. The Code indicates that planning authorities and waste departments should liaise on ensuring that developments or renovations have waste storage included from the design stage.

**Code for Sustainable Homes**

On 13 December 2006, the Code for Sustainable Homes was launched. This is a new national standard for sustainable design and construction of new homes. Waste storage and its provision is one aspect that is rated by the new Code. By integrating elements of this voluntary Code into new homes

Southwark Council Case Study

## Enforcement team works with police to tackle litter and tipping

In 2002, a survey of residents in Southwark showed that a clean environment came top of the wish-list. Residents felt services needed to be improved – and the council agreed.

Less than a year later, a dedicated enforcement team had been set up to tackle enviro-crime and is now seen as a best practice service across national and local government.

Fly-tipping has been reduced by 58 percent – with the knock-on benefit of reduced clean-up bills. There has been an increase in the number of vehicles that carry waste transfer notes and are registered with the Environment Agency, and an improvement in street cleanliness. Residents are also more aware that things like littering and tipping constitute a crime and their satisfaction with the council has increased dramatically.

The project's success comes from its unique approaches to enforcement. It is, for example, the only team in the UK to have a full-time seconded police officer working directly on behalf of the council and providing a day-to-day uniformed presence.

Staff are paid for from the council's budget, but funding was granted by the Home Office for some of the surveillance equipment used. Much of the work is self-financing through the fines given out – 1,753 fixed penalty notices (FPNs) were issued in 2006/2007 with a 90 percent payment rate.

The team carries out enforcement using a combination of methods, including vehicle stops to check for illegal waste carriers, seizure of illegal street trading operations and crackdowns on litter and dog fouling. These operations usually involve partnership work with many different organisations including the police, DVLA, VOSA, the Environment Agency, Customs and Excise and other council departments.

The council department has an enviable list of equipment at its disposal, including two motorcycles with covert cameras, a CCTV mobile surveillance van, an unmarked police car with Automatic Number Plate Recognition (ANPR) and other items of overt and covert surveillance equipment.

Service level agreements were drawn up to define partners' responsibilities and a system was put in place to check results and feedback so that enforcement could be targeted effectively.

The team also ensures that it keeps up-to-date with legislation so that new powers can be used as soon as possible. Southwark council obtained Member decisions and support, for example, on setting fines for the Clean Neighbourhoods and Environment Act 2005.

Any obstacles were avoided by careful forward-planning and by making sure that members were kept informed of progress and plans. Members are regularly updated via video clips and promotional materials.

For some of the measures, such as vehicle stopping operations, the team piloted the process first. This meant they could hone the procedure and ensure that evidence was gathered properly and powers were used appropriately. In the first six months of the vehicle stop operations, 1303 vehicles have been stopped in Southwark, 233 requests to produce paperwork have been given, 77 FPNs have been issued and our Police partners have made 49 arrests.

In terms of evaluation, the service level agreement between the council and the police is reviewed quarterly and results are collated for an annual review. The vehicle stop operations are reviewed quarterly. Litter operation statistics are logged after each operation and locations for the operations are decided depending on success.

For more information, please contact Simon Baxter on simon.baxter@southwark.gov.uk

and obtaining assessments against the Code, developers will be able to obtain a 'star rating' for any new home which will demonstrate its environmental performance. Full Technical Guidance on how to comply with the Code has been published. http://www.planningportal.gov.uk/uploads/code_for_sustainable_homes_techguide.pdf

**Site Waste Management Plans**

Provisions have been made for regulations relating to site waste management plans, including construction and demolition works. This provision is another route for tackling fly-tipping waste, of which a percentage is construction and demolition waste. Those working on construction sites must indicate via a site waste management plan how the material that arises from demolition and/or construction is to be handled.

## Enforcement

No matter how successful the various cleansing regimes are, which are put in place by local authorities, there will remain areas that are still despoiled as a result of human activity. In particular many members of the public

indulge in behaviour that is anti-social and results in a deterioration of local environmental quality. Examples of such behaviour includes, litter dropping, fly-tipping, fly-posting and allowing dog fouling.

In some of the above examples, where the actions are deliberate and wilful it is often appropriate to take enforcement action against offenders; this action may include prosecution in certain cases.

A wide range of legislation is available to local authorities to tackle such problems as described above and in recent times these have been added to by the Clean Neighbourhoods and Environment Act 2005.

## Covert Surveillance

### Types Of Covert Surveillance

There are two types of covert surveillance - directed surveillance and intrusive surveillance.

The police, intelligence services and other public authorities can lawfully use covert surveillance if they have an authorisation or warrant signed by an authorised official. Material obtained through covert surveillance can be used as evidence in court.

Covert surveillance activity which does not involve an interference with property and so falls outside the scope of the Police Act 1997 will be authorised and conducted in accordance with Regulation of Investigatory Powers Act 2000 (RIPA).

Part II of the Regulation of Investigatory Powers Act 2000 regulates other forms of covert surveillance referred in the Act as "intrusive surveillance" and "directed surveillance".

RIPA draws a distinction between 'directed' surveillance and 'intrusive' surveillance.

### Directed Surveillance

Directed surveillance is a type of covert surveillance where police, intelligence agencies and other public authorities follow an individual in public and record their movements. Directed surveillance can be lawfully undertaken to obtain private information about a person if public authorities reasonably suspect that a person has committed, or intends to commit, a crime.

An authorisation for directed surveillance may be granted:

- when needed for a particular case
- in the interests of national security
- to prevent and detect crime or prevent disorder
- in the interests of the economic well-being of the UK
- in the interests of public safety
- to protect public health
- to assess or collect any tax, duty, levy or other charge payable to a government department.

Directed surveillance is permitted without an authorisation in circumstances where authorities need to act immediately and there isn't time to make an application.

### Intrusive Surveillance

Intrusive surveillance involves the presence of an individual on private residential premises or in a private vehicle. It also includes any surveillance carried out by means of a device.

Due to its invasiveness, this type of surveillance is only used to catch offenders suspected of serious crimes. Only the most senior authorising officer in relevant public authorities can approve intrusive surveillance.

The Regulation of Investigatory Powers Act (RIPA) legislates for using methods of surveillance and information gathering to help the prevention of crime.

RIPA makes provision for:

- the carrying out of surveillance
- the use of covert human intelligence sources.

### Use of RIPA Forms

Decisions about using regulated investigatory powers must be recorded as they are made.

This is the case for:

- applicants seeking authority to undertake regulated conduct
- authorising officers and designated persons who consider and decide whether to grant authority or give notice for that conduct.

Forms to record applications and decisions in writing are available to public authorities which use RIPA. http://security.homeoffice.gov.uk/ripa/publication-search/ripa-forms/

The Home Office has issued a Covert Surveillance Code of Practice and this code of practice provides guidance on the use of covert surveillance by public authorities under Part II of RIPA 2000. http://security.homeoffice.gov.uk/ripa/publication-search/ripa-cop/covert-cop?view=Binary

Local authorities need to be aware of the complexity of carrying out covert surveillance including the justification for carrying out the procedure as the authorisation has to come from the local authority legal department as well as fulfill the surveillance commissioners.

There has to be a justification as to why the surveillance is to be carried out covertly. Care has to be taken that Human Rights are not infringed.

If the authorisation is not completed correctly any evidence gathered is not admissible in court. An annual audit has to be submitted to the Home Office.

## Local Environmental Quality

Local environmental quality (LEQ) is the quality of the local environment which is effected by issues such as litter, abandoned vehicles, fly-tipping and graffiti. Such anti-social behaviour affects the resources and waste management industry in a variety of ways.

In recent years LEQ has become more of a public issue and recent legislation, Anti-Social Behaviour Act 2003 and Clean Neighbourhoods and Environment Act 2005 (see page 15) gave more powers to local authorities to tackle issues including litter, dropped gum, dog fouling, graffiti and abandoned and nuisance vehicles.

CIWM produced a publication in September 2005 titled *Local Environmental Quality – a guide to good practice*. The publication provides examples of good practice and innovation in the management and control of anti-social activity and includes sources of further information.

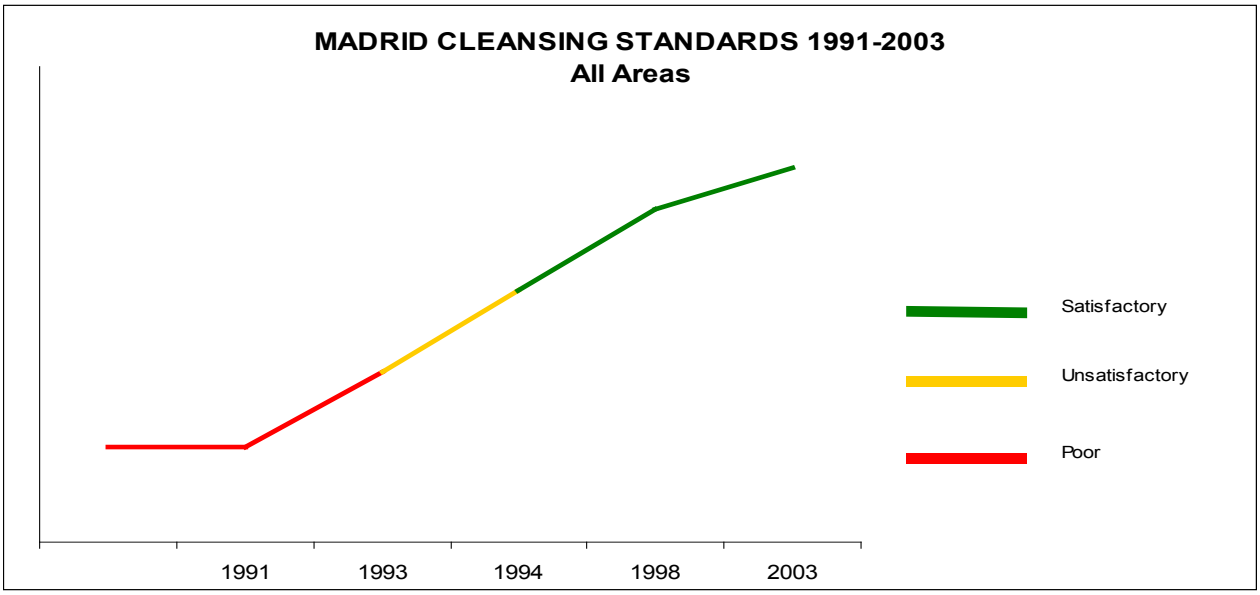
## LEQs In Madrid

Between the years 1991-1993, ENCAMS undertook cleanliness surveys in leading European capitals. This work revealed that Madrid was, by a substantial margin, the most littered capital city in Europe. In 1993, ENCAMS was engaged to assist the City Council and its contractors to improve standards.

An initial Local Environmental Quality Survey (LEQS) diagnostic report showed that although there were significant shortcomings in the street cleansing service, the poor standards of cleansing were also caused by other, wider local environmental management problems, including:

- separately managed contracts for domestic and commercial waste collection systems that created a lot of litter through poor containment and handling
- public space management that was undertaken by a variety of agencies to widely differing standards
- poorly designed and maintained footways and carriageways that were difficult to cleanse
- chaotic parking and traffic management, reflecting both social attitudes and an absence of effective and systematic enforcement
- lack of consideration of maintenance when new building and urban design solutions were agreed by planning and development control functions
- a wide variety of cultural factors including: the discarding of tapas tissue papers and receipts on the floor as a sign of satisfaction by customers; the consumption of pine nuts and the discarding of their shells in public spaces; chronic levels of dog fouling reflecting anti-social attitudes by some dog owners; the placing of planters and other impedimenta on footways by businesses.

Using the information provided by the LEQS in a carefully planned way, the City Council and its contractors, advised by ENCAMS, have brought about huge improvements in local environmental quality in the city centre, as the following graph shows.




The Chartered Institution of Wastes Management

**Three stages of improvement**

**Stage 1 – Improvements in Cleansing Service 1993 - 1994**

From the start of the new contract, high-calibre, professional managers were recruited, drawn from varied backgrounds, including industrial, civil and agricultural engineering. This underlined the fact that Grupo Dragados, the city's multi-national utilities contractor, regarded providing urban services as having the same status as any of its other operational divisions, including building, oil rig, hydro-electric dam, motorway and railway construction.

As a matter of priority, the new managers installed systematic monitoring and management systems that reported on the service outputs identified by the LEQS report, as well as on the production processes that underpin them.

This routine flow of data identified a wide-variety of actions that could be taken within the contract to improve cleansing standards, including:

- measures to reduce staff absenteeism, increase training and motivation, including providing and maintaining smart uniforms for staff and liveries on equipment. Shift patterns were also amended to provide cover at times of the day when standards declined, which proved attractive to many young mothers who could fit the work around school hours and other family commitments. This in turn had the effect of helping to transform public perceptions of cleansing staff
- the need to withdraw sub-standard types of litter bin and other equipment
- to ensure that the right cleansing techniques were used in the right place at the right time.

The contract managers' willingness to innovate showed in other ways, including experimenting with non-standard cleansing equipment drawn from industrial cleaning and horticultural applications, and in devising new, intensively co-ordinated combinations of manual and mechanical techniques.

**Stage 2 – Engaging With Others 1994 – 1998**

The aim of the second stage of the process was to reduce the impediments to service delivery that were caused by the often thoughtless actions of other agencies and some sections of the public. Again, many of these changes involved relatively little cost, including:

- engaging with managers of waste collection services in order to reduce spillage, poor containment, and wastes being placed out for prolonged periods
- raising the awareness of planning and urban design agencies to ensure that new developments are more maintainable from a street cleansing perspective, and that construction sites are better managed to reduce dust, litter and staining
- engaging highway agencies in revising parking policies to ensure more areas are free from obstructions to cleansing
- ensuring the police agencies enforced against traffic parking offences
- agreeing maintenance standards with bodies responsible for managing other types of public land – especially parks
- the planned and positive engagement of anti-social dog owners and communities in areas where dog fouling was identified to be worst.

**Stage 3 – Renewing the City's Infrastructure and Using LEQ as an Economic Attractor – 1998 onwards**

Overcoming the many problems relating to the city's highways cannot be resolved quickly: it requires planning and substantial political and financial commitment. However, by 1998 consensus had been achieved, since when many substantial local environmental improvements have taken place, including:

- the programmed renewal of the city centre's infrastructure and landscaped areas, ensuring that the urban design solutions are durable and maintainable
- the significant reduction of obstruction through the implementation of through-going parking and traffic management strategies
- continued investment in innovative service management solutions based on systematic monitoring, data analysis and management information systems, which ensure appropriate responses are made to the ever-changing challenges of an international capital city.

The result: Madrid is probably one of the cleanest and most attractive capital cities in Europe today. Furthermore, ENCAMS' 2003 report was seen as providing independent support for Madrid's Olympic Bid, in which high LEQ was regarded as a positive feature.

## LEQs in Barcelona

For the City of Barcelona, the motivations for engaging with ENCAMS were somewhat different. After the emotional 'high' of hosting the 1992 Olympics, Barcelona's politicians had recognised that local environmental and community decline had occurred. They also realised that to be sustainable the city's booming international tourist trade needed consistently high LEQ standards (especially to attract the lucrative upper-end of the market), and yet this industry was the source of new and damaging local environmental management stresses in many of the city's high-profile areas.

Additionally, Barcelona's resident population was changing rapidly, and becoming very ethnically diverse, presenting new challenges in the way local services are specified, communicated and delivered. These demographic changes simply add to the already severe service demands (especially in waste management), which were present in a city with the highest population density in Europe.

Finally, the City Council, aware of the improvements that Madrid had achieved over the past decade, was also stimulated by regional pride and competition.

The brief for ENCAMS' work in Barcelona, therefore, has differed significantly from that in Madrid, and has focused substantially on the social and economic drivers of LEQ in the city, as well on physical determinants.

A new chief executive of environment - a highly experienced manager from a very different business area - realised substantial changes would result from this work, including the need to:

- increase greatly the technical and managerial competencies of both the city council's own staff and those of its contractors
- establish systematic monitoring systems in order to acquire data to help specify, and then to assess the success of, large investments in the city's waste collection and processing systems
- supply information to politicians and a wide range of stakeholders in the city in a way that they understood, in order to obtain their 'buy-in' when making difficult choices that would bring about radical changes in the way services are delivered.

This work has proceeded apace, with early success being achieved in terms of increased recycling and effectiveness of the new waste systems. However, much remains to be achieved, including in relation to protecting local environmental quality in the city from the run-away success of its short-stay tourism industry.

## IBAL Anti Litter League

Irish Business Against Litter (IBAL) commenced the IBAL Anti-Litter League in 2002 to mobilise local authorities into action on the subject of litter. By ranking the performance of each authority against each other, IBAL felt they could pressurise authorities into action. Initially comprising of 27 areas, the League has grown to include over 50 towns and city areas, and is now co-funded by the Department of the Environment. All towns of over 5,000 inhabitants are now covered by the Anti Litter League.

An Taisce, established in 1948, is the most influential environmental body in Ireland and carries out the Anti-Litter League survey to cleanliness standards equivalent to those used in England.

# Performance Standards

## Local Environmental Quality Survey of England (LEQSE)

The Local Environmental Quality Survey of England (LEQSE) is prepared annually by ENCAMS on behalf of the Department for Environment, Food and Rural Affairs (Defra). Five surveys have been completed to date.

The purpose of the survey is to support Defra and other departments in raising the standard of local environmental quality across England by providing data on a range of key indicators, including the sources and causes of poor quality environments and analyses of this data both by land-use class and region.

However, the LEQSE Report does not only inform, it also enables Government to set and monitor cleanliness targets through the Best Value Performance Indicator suite of BV 199 and so raise standards across the country.

With five years of accumulated data to work with, it is possible to describe the level of local environmental quality in England with ever increasing confidence.

The survey is a vibrant and dynamic tool which is kept constantly under review, with the next development underway – an extension of the survey from a representative sample of local authorities to a survey of 100 percent of English local authorities by March 2008.

As well as providing data for the Years 6 and 7 England wide reports, the survey has been extended to provide each local authority with its own customised baseline report highlighting local priorities in improving local environmental quality against the National Benchmark.

This information will also be made available in a simplified format to the public via the web to assist in informing communities on levels of local environmental quality in their area to assist in public education and capacity building of communities.

## Capital Standards

Capital Standards was established in 2002 as a programme to improve local environmental quality in London and is a partnership between 28 London local authorities, London Councils, ENCAMS (Environmental Campaigns), Environment Agency, Government Office for London, Greater London Authority (GLA), Metropolitan Police Authority (MPA) and Transport for London (TfL).

The Mission Statement is:

*To play a strategic role in the improvement of the Capital's local environmental quality, by identifying and acting upon*

*gaps and opportunities through the engagement of all stakeholders.*

The programme includes:

- the undertaking of local environmental quality surveys in 28 London local authorities
- sharing of best practice through seminars and meetings
- training of local authority officers through an enforcement academy
- working Groups on issues including education, enforcement, graffiti and transport
- London-wide campaigns on local environmental quality issues
- London Schools Environment Award.

It is managed through a Steering Group consisting of four London borough representatives (drawn from the member authorities), the Greater London Authority, London Councils and ENCAMS.

Surveys within the Capital Standards partnership authorities are carried out independently by ENCAMS.

For further information http://www.capitalstandards.com/

## Performance Indicators Update

### BVPI 199

The Government, through its *Cross-Cutting Review on Improving Public Space* in 2001, identified local environmental quality as one of the chief concerns of local communities. As a result BVPI 199 was introduced to provide a robust, reliable indicator covering environmental cleanliness and to report on the cleanliness of the street and local environment in local authorities.

Then in April 2005 The Office of the Deputy Prime Minister (ODPM) announced BVPI 199 was to be extended to cover graffiti, fly posting and fly-tipping, as well as litter and detritus. As a result BVPI 199 now contains four elements:

- BV 199a. – Covering litter and detritus
- BV 199b. – Graffiti
- BV 199c. – Fly posting
- BV 199d. – Fly-tipping.

Details on auditing BVPI 199 can be found on this website: http://www.leq-bvpi.com

BVPIs are now replaced by National Indicators.

### NI 195

The Local Government White Paper *Strong and Prosperous Communities* published in October 2006, committed to introducing a set of streamlined indicators that would reflect national priority outcomes for local authorities working alone or in partnership.

A single set of 198 national indicators was announced as part of the Comprehensive Spending Review 2007. The national indicators:

- will be the only measures on which central Government will performance manage outcomes delivered by local government working alone or in partnership
- replace all other existing sets of indicators including Best Value Performance Indicators and Performance Assessment Framework indicators
- will be reported by all areas from April 2008.

In each area, targets against the set of national indicators will be negotiated through new Local Area Agreements (LAAs). Each agreement will include up to 35 targets from among the national indicators, complemented by statutory targets on educational attainment and early years.

The headline definitions for the 198 indicators were announced on 11 October 2007 by Hazel Blears. The Government consulted (November 2007) on the detailed definitions of the set to ensure that the methodology for measuring individual national indicators at a local level is sound. The consultation sought views on the methodology, frequency of reporting and data source of each individual indicator.

There are national indicators (NI) relevant for street and environmental cleansing and these are NI 195 improved street and environmental cleanliness (levels of graffiti, litter, detritus and fly-posting) www.ni195.com is a specific page set up to report for NI 195. NI 196 is the indicator for improved street and environmental cleanliness – fly-tipping.

## Public Relations

### Handling the Media

Environmental cleansing are high profile services which are of interest to the local press – and occasionally regional or national television, radio and press. It is good practice to keep the local press aware of initiatives and to enlist their help in reaching local residents and businesses with your message. Most local authorities will have a central public relations team and a protocol as to how contacts should be managed. Familiarity with the media protocol is essential to ensure the correct message is portrayed at the right time.

Where the press is investigating a service failure it is good practice to respond with a detailed explanation as quickly as possible. In most instances they will be seeking a balance to the story they have already been told (by a local resident or business).

## Keeping Members Informed

Contacts with Members will fall into a number of categories:

- Routine contacts about problems which they have identified or been told about. As with the press, a detailed response as quickly as possible will help to explain the reasons behind the problem and allow the Member to make an appropriate response to a complainant.
- New initiatives. Where there are plans for changes that will affect the public, keep Members informed of what the changes are, where they will affect, and why they are being introduced. This will help them deal with any queries or complaints that might arise. They will not appreciate dealing with a complaint about a new initiative, which they know nothing about.

## Informing the Public

Public expectation of environmental cleansing services is usually that they should be getting better. Use a variety of medium to keep people informed, such as leaflets, the council's website, local press, council newspaper or magazine. Make sure that all written material is in plain simple English. Try to avoid using jargon. It is quite useful to use people from other departments to "test-drive" the text to make sure it makes sense. Wherever possible, consider using photos or drawings to clarify the meaning.

If information is being delivered directly to the home make sure there is a precise specification for its delivery. If the material is to be posted through the letterbox, make this clear. Some form of audit could be carried out to ensure that the delivery is happening in the manner specified.

## Employee Relations

The employee workforce is the front-line in delivering environmental cleansing services and presenting the councils image to the public. Therefore they have a direct impact on what the council is trying to achieve. Consideration should be given to the following:

- uniform. Is the corporate image highly visible, clean and smart?
- customer training. Have the workforce been trained/ instructed in the appropriate way to speak to people? Does the workforce have sufficient information to answer questions?
- workforce involvement. Is the workforce actively involved in the development of policy and practices or are these dictated from above?

### Harrow Customer Relations

London Borough of Harrow street maintenance crews have cards (credit-card style) which they can hand to people when they can't provide an immediate answer. This has details of how to contact Harrow Council.


## Black, Minority and Ethnic Community

Black, minority and ethnic communities may need special consideration particularly if English is not their first language.

It may be council policy to offer translations of leaflets in a number of different languages.

Identify people within the workforce who can speak minority languages. In these circumstances they may be able to explain leaflets directly over the phone.

Consider contacting community and faith leaders to see whether they can assist with distributing the message/ information.

# Communications

## ENCAMS

ENCAMS stands for 'Environmental Campaigns' and is the charity behind the Keep Britain Tidy campaign. ENCAMS is a leading expert in local environmental quality, and assists in delivering improvements to local environmental quality by enabling land managers and the public to take action on issues such as litter, graffiti, fly-posting, abandoned vehicles and dog fouling. With over 50 years campaigning experience and managing award schemes such as Blue Flag for beaches, ENCAMS remains one of the most recognised environmental campaigners in the country.

ENCAMS is funded by Government through the Department for Environment, Food and Rural Affairs, private sector backing or via consultancy work with land managers.

ENCAMS currently undertakes a range of services for over 160 local authorities; business improvement districts (BIDs), registered social landlords (RSLs) and other major landowners and managers, providing strategic advice to address a variety of environmental issues.

## Tidy Northern Ireland

TIDY Northern Ireland is the charity behind the Keep Northern Ireland Tidy and Help TIDY Northern Ireland campaigns. TIDY Northern Ireland is the leading expert in local environmental quality, and assists in delivering improvements to local environmental quality by enabling businesses, communities and the public to take action on issues such as litter, graffiti, fly-posting, dog fouling and other anti social behaviour actions. TIDY Northern Ireland has over 15 years experience in managing award schemes such as Blue Flag for beaches and the Eco-Schools programme for primary and post primary schools in Northern Ireland along with the TIDY Business programme for large and small companies. TIDY Northern Ireland is the recognised campaigning organisation on all matters relating to litter in Northern Ireland.

TIDY Northern Ireland is funded by Government through the Environment & Heritage Service, private sector, local councils and Education and Library Boards.

TIDY Northern Ireland is presently working with the majority of the 26 councils in Northern Ireland along with all five Education Boards, various town centre managements and over 20 NGOs in the environment sector.

TIDY Northern Ireland is an active member of the Northern Ireland Environment Link and the Environmental Education Forum.

## Keep Scotland Beautiful

Keep Scotland Beautiful (KSB), one of Scotland's leading environmental charities, has been working to achieve litter free and sustainable environments for over 40 years. Our current principal areas of activity as listed below:

- People and Places – KSB runs a partnership programme with Scottish local authorities to monitor levels of cleanliness, share best practice, provide training and reduce levels of litter and waste, vandalism, graffiti, dog fouling and fly-tipping
- KSB co-ordinates National Campaigns on litter, fly-tipping and abandoned vehicles
- The Waste Aware Scotland programme to encourage reducing, reusing and recycling is administered by KSB
- hosted by KSB the Sustainable Scotland Network (SSN) co-ordinates and supports the work of local authority Local Agenda 21 co-ordinators to improve awareness and action regarding the sustainable development agenda
- under the auspices of FEE (The Foundation for Environmental Education) KSB runs the Eco Schools programme. Available to all Scottish schools the programme is funded by the Scottish Government Education & Lifelong Learning and Environment & Rural Affairs Directorates
- Blue Flag and Seaside Award – KSB administers two award programmes for Scottish beaches recognising excellent beach management practices, good water quality, facilities and information provision.

Keep Scotland Beautiful (KSB) is the trading name for the charity company Environmental Campaigns (Scotland) based in Stirling. Keep Scotland Beautiful currently receives grant support from the Scottish Government for some of its core administration costs and programmes.

## Keep Wales Tidy

Keep Wales Tidy is an independent National Voluntary Organisation with charitable status working towards a Clean, Safe and Tidy Wales. Keep Wales Tidy co-ordinates a number of programmes and projects such as: the Local Environment Audit and Management System (LEAMS); Eco-Schools; Clean Rivers; Clean Coasts; Coastal Awards including Blue Flag, Seaside Award and the Green Coast Award; the fly-tipping project Pride in our Communities, and the Tidy Wales Awards.

Keep Wales Tidy is a partner in Waste Awareness Wales and Environment Wales and provides an information service to various agencies and the public on litter and other related issues. There are staff working across Wales but our three principle offices are in Cardiff, Caernarfon and Pembroke Dock.

## Cleaner, Safer and Greener Network

The introduction of the Clean Neighbourhoods and Environment Act 2005 was the most significant change in environmental legislation that land managers are required to implement since the Environmental Protection Act 1990.

The Cleaner Safer Greener Network (CSGN) programme run by ENCAMS helps local authorities, registered social landlords and other service providers involved with the management of a large area of land, to meet the requirements of the act.

The CSGN enables members to make efficient use of the enhanced powers, but importantly, equips them to address the social, economic and physical factors that have a direct impact on environmental quality and anti-social behaviour in their area.

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Subscription to CSGN entitles members to many exclusive benefits including access to a wealth of good practice information; valuable guidance on developing effective local environmental quality strategies and implementing performance management systems to improve service efficiency.

Members enjoy access to ongoing support from ENCAMS, monthly news updates, access to discounted training opportunities, and invitations to a range of thematic seminars and events. Also available are learning experiences from field trips and many opportunities for networking and sharing good practice with other land managers working towards similar goals. Members also get the exclusive opportunity to become partners in ENCAMS' renowned national campaigns, benefiting from around £15 000 free local media advertising and guidance from our expert Campaigns Team.

The network is designed to be flexible and reflect individual needs and priorities, in addition to providing an insight into fundamental principles, such as the Gershon Efficiency Review.

For more information about becoming a member of the CSGN please contact csg-enquiries@encams.org

## Street Furniture

### Litter Bins

The provision of litter containers of suitable design in the right locations forms a key part of any litter management strategy that a local authority should have in place.

Careful consideration of choosing, positioning and emptying considerations are pre-requisites of an effective service.

When considering the provision of litter containers there are important factors that must be taken into account, including the following:

- capacity of container (available volume for waste)
- construction of container (robustness, integrity)
- appearance of container (aesthetics)
- 'footprint' of container (how much space does it occupy)
- context of container (does it look right and seem appropriate in the particular location)
- ease of emptying
- impact on other on-street activities (potential for obstruction, creation of pinch-points etc).

The design of the container will have major impacts on the usage and emptying regime that will need to be considered. Is the container designed for small litter – cigarette ends and other smoking related litter, or fast food packaging – which can be bulky.

Is the container to be sited in a heavy pedestrian area where there is likely to be high footfall. Is the demographic profile of the users likely to be small children or older children, adults, etc?

Consideration needs to be taken of the climatic conditions as adverse weather conditions could impact on the container. The likelihood of abuse is key as there could be illicitly placed commercial waste, or the use of the container as an 'anchor' or 'bollard' as well as vandalism.

Design considerations are by necessity a compromise. The main requirements of a good litter bin are:

- durability
- utility
- aesthetics
- cost.

Care should be taken when positioning litter bins. They should not obstruct the highway or impede other highway users. Fixtures and fittings should be safely tucked away such that no dangerous projections are present. The container location itself should not form a litter trap.

It is essential that the above criteria be properly considered before implementing a litterbin installation programme.

The large-scale provision of litter containers in an area itself does not necessarily mean that the litter problem will be well controlled within an area. Consideration should be given to determining if litter containers are the answer, could their provision actually create more litter and fly-tipping. Would a more detailed cleansing regime produce the same cleanliness level?

## On-Street Recycling

Street litter is defined in the Environmental Protection Act 1990 (EPA 1990) and Clean Neighbourhoods and Environment Act 2005 and classified as household waste in the EPA 1990. Litter can be a significant proportion of household waste arisings – particularly in city centre locations. On-street recycling refers to either the provision of separate bins, similar in size to litterbins, for recyclable waste and/or the harvesting of recyclable materials during street cleansing and litterbin emptying operations.

Where the proportion of street litter is high, on-street recycling can make a significant contribution to an authority's recycling rate. Elsewhere, the principal purposes of providing separate bins may be to reinforce the message that recycling is part of normal behaviour, rather than the actual tonnages being collected.

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One of the issues relating to the provision of separate bins is the degree of contamination in the bin. Councils will need an effective publicity and education programme, coupled with enforcement and a process to remove contamination from the collected waste. By comparison, harvesting of recyclable waste has the advantage of building in quality control into the collection system. However, as it is largely invisible to the public, it has the disadvantage of not promoting recycling as normal behaviour.

The Government published (August 2007) a consultation paper *Recycling on the Go* which proposes the development of codes of practice and guidelines for the provision of this type of service.

In June 2008 the Government issued a voluntary code of practice setting out key principles for those wishing to offer recycling in public places. www.defra.gov.uk/environment/waste/recycleonthego/pdf/recycleonthego-code.pdf

## Public Conveniences

### Background History and Development

Local authorities have provided public toilets for their citizens since the late 1800s, the first examples being found in the City of London. Earliest provision of toilets in the UK was for males only and often took the form of urinals that were cheap to construct and maintain and served their purpose very well.

The Edwardian era saw improved provision of toilet premises with WCs becoming a common feature and provision for women starting to increase in most areas. By the outbreak of the First World War, public toilets, or 'public sanitary conveniences' as they were known, were commonplace throughout the country.

The Public Health Act 1936 consolidated a large part of the mass of public health legislation, including that relating to public conveniences, but these powers were still permissive.

### Relevant Legislation

Public Health Act 1936

Section 87 of the Act, as amended by the Local Government Act 1972, enables any local authority, including a county, parish or community council, to provide public conveniences. The consent of the highway authority is required for conveniences in or under a highway or proposed highway.

A highway authority may itself provide public sanitary conveniences in any situation where another local authority could not provide them without its consent.

A local authority which provides such conveniences may make byelaws as to the conduct of persons using or entering them; let them for such term at such rent and subject to such conditions as they think fit, and charge such fees for the use of conveniences, other than urinals, as they think fit. Conveniences, for this purpose, include closets, urinals and lavatories.

The high capital cost of providing new conveniences and replacing outdated ones combined with the cutbacks in capital allocations, has tended to limit development in this area in recent years. High running costs, particularly of staffed conveniences, have also brought the service under close scrutiny. In the face of such pressures some authorities have sought arrangements for the provision of public conveniences by commercial undertakings, in return for a contribution from the authority. Public conveniences may also be provided by a developer at no initial cost to the authority as part of a deal for a major redevelopment scheme. Savings can also be made by integrating public conveniences into other local authority buildings.

### Provision

Legal authority to provide public toilets derives from the Public Health Act 1936 and in particular Section 87 (this replaced an earlier provision in the Public Health Act 1875). The provision of public conveniences by a local authority is a discretionary rather than a mandatory service. It is partly because of this that many local authorities have felt justified in implementing closure programmes in recent years. With competing demands for finance, public toilet provision is very often not seen as a high priority.

Local authorities should be sensitive to the needs of users and canvas widely to establish public expectations in respect of provision of public conveniences. In recent times, local authorities have suffered criticism for large-scale closure programmes that some members of the public believe to be unacceptable.

### Denbighshire Win Building Cleaning Team of the Year and Overall Service Team of the Year Award 2006

Denbighshire have transformed the service provided through their public conveniences by allocating a £130,000 ongoing capital budget. The service was moved into the Environmental Services department and handed over to the council's existing building cleaning service.

The operational staff are treated as full team members and received proper training to the British Institute of Cleaning Science (BICS) standard and were provided with the right equipment for the job.

The previous level of complaints of 85 letters a year reduced by 90 percent, and a first recently was the appearance of complementary letters. National recognition for the work and investment came through APSE's award for 2006.

## Toilet Strategy

CIWM along with a number of other organisations have been involved in working with the Government department for Communities and Local Government. This department have been working on a 'Toilet Strategy' to improve the public's access to public conveniences.

The guide reviews the evidence and sets out ways in which local authorities and their partners can secure improvements in public conviences. It does not seek to promote public conviences above all other local services but, by arguing the case for public conviences, removing barriers to provision, and sharing good approaches and practice, the guide aims to encourage local authorities and the business community to review the importance of provision. A copy of the publication can be found here http://www.communities.gov.uk/documents/localgovernment/pdf/713772

## Training, Skills and Competence

### Introduction

All employers want a well trained workforce, which requires an investment in their skills and skills development. Apart from the competitive advantages that can be achieved by developing a more skilled and capable workforce, there are a number of operational and motivational benefits which are listed below. The list of perceived benefits is by no means exhaustive, but provides an overview of the wide ranging benefits which an organisation can expect to achieve by investing in the development of its staff:

- employees become more conscious of the aims, goals and specific targets of the organisation and their jobs
- the newcomer becomes operational more quickly as learning times are reduced
- more effective working methods and techniques provide a better way of working
- a greater application of skill to a task can improve output and quality
- accidents, waste and scrap can be reduced by better job knowledge
- attitudes towards customers or clients and other liaison departments can be made more constructive
- job and task flexibility can be maximised.

## Graphic Showing the Type of People Involved in Environmental Cleansing

Admin

Call centre staff

Street cleaners – front line and supervisors

Monitoring and Enforcement personnel


Street wardens

Graffiti teams

## Why Invest in a Trained and Competent Workforce?

Why should we ensure that all those employed in the industry are trained, skilled and competent? Increasingly, the tasks and activities undertaken by waste management organisations are becoming more diverse; today's workforce has acquired multi-skills and the plant and equipment used has become more sophisticated through technological advancement. This in turn means raising the standards of skill and knowledge of the employees who operate them. In doing so this creates teamwork, reduces the level of supervision required and increases employee motivation and morale.

Organisations have used different approaches in addressing the skills and competence needs of their workforce ranging from internal/external training courses to a 'competence based' approach using National Vocational Qualifications. Traditionally this has been driven by legal compliance although this is changing as organisations recognise the benefit of a trained and competent workforce in terms of reducing risks, liabilities and improving health and safety practices.

There are basically three areas where individuals may need to develop their skills and competence:

- **During Induction:** For new entrants to the organisation, or for those transferring into a new job, induction training provides basic information about the job, their role, responsibilities and legal requirements. This training enables the individual to 'settle' into the new job as quickly and effectively as possible
- **Job Specific:** This follows on from induction and helps the individual to learn the basic requirements of the job and brings essential job-related knowledge and skills up to the required level of competence. This provides the specific job related training to operate plant and equipment to required standards
- **Continuous development:** Building on basic training, this helps the individual to add to and increase their job-related knowledge and skills. Continuous training ensures that the individual is kept up-to-date and in line with changes/developments in their specific area of work. Development focuses on the overall development of the individual, and supports those who want to progress or who hope for promotion.

This not only applies to permanent employees but increasingly to agency/temporary staff who provide Environmental Cleansing Services.

## What is Available?

This section lists those organisations that provide training, deliver competence or have an interest in improving the (basic) skills of the workforce (not in any particular order). Contact details are provided so that up-to-date information can be obtained from each organisation.

### Skills Development

Sector Skills Councils (SSC) are responsible for the development of National Occupational Standards which reflect the occupational roles of individuals. Within the

environmental cleansing service there are a variety of roles where the skills needs have to be addressed, particularly with the development of integrated and multi-skilled workforces.

## Asset Skills

Asset Skills is the SSC for the property, facilities management, housing and cleaning industries and has developed a highways and land qualification from which the street cleansing standards and qualifications are derived (See vocational qualifications).

## Training Courses and Programmes

There are a number of providers of training courses for those employed in environmental cleansing.

**Chartered Institution of Wastes Management (CIWM)**

CIWM have developed a *Street Scene – Clean Neighbourhoods* supervisor course, other courses relevant to environmental cleansing are shown in the table.

**Environmental Campaigns (ENCAMS)**

ENCAMS has been providing structured and bespoke training courses for over 2 years which tackle the issues relating to Local Environmental Quality (LEQ). ENCAMS has also developed a range of short duration training courses covering LEQ and environmental cleansing.

As part of the Government's efficiency agenda, Defra and ENCAMS has formulated research and guidance into how local authorities can achieve greater results within existing budgets in the area of street cleansing and related services. The Local Environmental Management (LEM) skills framework steering group is overseeing the development of a local environmental management (street cleansing and related services) skills framework, through identifying existing up-skilling opportunities and developing solutions to address training gaps within the industry. The purpose of the LEM skills framework is to develop a national education and training resource in support of local environmental management in England.

## Skills for Life Qualifications

**Waste Management Industry Training and Advisory Board (WAMITAB)**

WAMITAB provides a range of Skills for Life qualifications for those employed in delivering environmental services ranging; Skills for Life are defined as, "the ability to read, write and speak English and to use Mathematics at a level necessary to make progress at work and in society in general". Over seven million adults in England have difficulties with literacy and numeracy and over 65 percent of those employed in the waste management and recycling industries have varying degrees of difficulty with literacy and numeracy which are often a barrier to skills/competence development in the workplace.

WAMITAB has mapped the level 1 and 2 NVQs in Street Cleansing with the national standards for literacy and numeracy, which has highlighted how important good literacy and numeracy skills are to employees in those work areas. Additionally, the acquisition of literacy and numeracy skills at this level would help the employee achieve the NVQ and to this end WAMITAB has developed an 'embedded workbook', which improves literacy and numeracy as well as providing 100 percent of the underpinning knowledge for the NVQ. WAMITAB offers a full range of services for employees with these difficulties ranging from initial assessment/diagnostic through to teaching/support, national test and certification.

## Training Courses available from CIWM

| Title | Aims | Who should attend |
|---|---|---|
| Street Scene – Clean Neighbourhoods | To provide an understanding of law, guidance and best practice relevant to their role. It is designed to give an overview of Street Scene to enable the issues to be managed and not detailed instruction on specific issues | Local Authority Street Scene supervisors and managers, Town Centre Managers, private sector and anyone responsible for facility management |
| Flycapture Enforcement Course Stage One A | To provide delegates with the knowledge and understanding of the government's fly-tipping strategy and relevant legislation | Those with no previous experience but will also serve as a valuable update/refresher for those with experience |
| Flycapture Enforcement Course Stage One B | To provide delegates with the knowledge and understanding of the range and types of enforcement powers available to local authority officers when dealing with fly-tipping incidents, how to carry out practical investigations safely and prepare a case file and present it in court | Those with some experience of carrying out enforcement for a local authority |
| Flycapture Enforcement Course Stage Two | To enable the candidates to develop, implement, monitor, and evaluate enforcement policies and procedures to facilitate good enforcement practices. To develop the skills to adopt a strategic approach to raise the profile of fly-tipping enforcement and prevention | Those with a responsibility for managing the enforcement process |

## Training Programmes and Courses available from ENCAMS

| Title | Aims | Who should attend |
|---|---|---|
| BV 199 - Understanding Structure, Content and Government Requirements | To provide local authority managers with a detailed understanding of key aspects of this innovative indicator | Senior Managers, Managers and Supervisors who are in charge of implementing BV199 |
| How to Grade for BV 199 | To enable delegates to successfully implement and survey for BV199 in their authorities | Local authority managers and officers responsible for implementing the monitoring systems required for BV199 |
| Introduction to Clean Neighbourhoods & Environment Act | To provide an overview of the Act and highlight the consequences of the changes it has and will bring about | Local Authority Managers and Officers, Waste Management Officers, and Elected members responsible for implementing the Act |
| An Introduction to Fixed Penalty Notices | To provide an understanding of fixed penalty notices, the systems and safeguards to protect the authority and officers | Local Authority Managers and Officers, Waste Management Officers, and Elected members |
| Local Environmental Quality Enforcement Course | To help LEQ Enforcement Officers understand and utilise the powers available to tackle enviro crimes effectively | Local authority enforcement officers with responsibilities for enforcing LEQ legislation |
| An Introduction to FPNs for Litter, Graffiti, Flyposting and Dog Control Orders | To provide a basic understanding of how to apply the relevant sections of the Clean Neighbourhoods and Environment Act 2005 relating to litter, dogs, fly posting and graffiti by means of a Fixed Penalty Notice lawfully, safely and appropriately | Officers authorised by parish councils and district council officers with LEQ enforcement roles (specifically the issuing of FPN's for litter, dog control, graffiti and fly posting) |
| Avoiding and Managing Conflict | To raise the awareness in dealing with confrontational situations and equip people to carry out their jobs effectively in a safe and confident manner | All front line staff dealing with the general public and is particularly useful for those working within an enforcement environment |
| Tackling food on the go related litter | To provide local authorities with the knowledge and tools to tackle the problems associated with food and drinks related litter | Suitable for Trade Waste Managers/Officers, Town Centre Managers, Street Cleansing Managers/Officers but is also suitable for Members of Business Improvement Districts, Coastal Managers and Large landowners (universities, airports and large shopping centres) |
| Developing an Anti Fly-posting Strategy | To help those responsible for managing the problems associated with flyposting, through demonstrating essential considerations for an anti-flyposting strategy | This course is aimed at officers and managers with responsibility for preventing offences and dealing with those responsible |
| Developing Anti-Graffiti Measures & Strategies | To understand the impacts which graffiti has on Local Environmental Quality | Local authority managers, waste management officers, town centre managers, registered social landowners, neigbourhood wardens |
| How to Use Marketing & PR Effectively | To enable delegates to devise and deliver their own campaigns in-house, and understand the wider context of marketing and communications | Communication, marketing, recycling, environmental officers, or managers responsible for organising campaigns |
| Effective Street Cleansing | To provide front-line employees (street sweepers) with the knowledge and understanding needed to perform their operational tasks | Local authority street sweepers, street sweepers employed by contractors, manual staff employed by facilities managements organisation on street sweeping duties |
| Graffiti Removal by Hand | To successfully and safely remove graffiti by hand | Those involved with removing graffiti on a smaller scale – caretakers, wardens, community groups or local authority officers, where a professional graffiti removal team is not required |
| Graffiti Removal by Pressure Washer | To successfully and safely remove graffiti using a pressure washer | Those involved with removing graffiti professionally including local authority operatives, managers and large landowners |
| Managing Customer Focused LEQ Services | To increase customer satisfaction whilst improving the overall efficiency of street cleansing and related services | Suitable for local authority directors, managers and senior officers responsible for making decisions over the delivery of street cleansing and related services |

| | | |
|---|---|---|
| Flycapture Enforcement 1a | To provide delegates with the knowledge and understanding of the government's fly-tipping strategy and relevant legislation | Newly appointed enforcement officers of legal teams (or for those existing officers wishing to update their existing skills) |
| Flycapture Enforcement 1b | How to carry out practical investigations safely and prepare a case file and present it in court | Enforcement officers, supervisors and managers and those with some experience of carrying out enforcement for a local authority |
| Flycapture Enforcement Course (Stage 2) | To enable the candidates to develop, implement, monitor, and evaluate enforcement policies and procedures to facilitate good enforcement practices | Those with a responsibility for managing the enforcement process such as Enforcement Managers and Senior Officers |

## Vocational Qualifications and Competence

### Waste Management Industry Training and Advisory Board (WAMITAB)

WAMITAB currently offers two National Vocational Qualifications (NVQs) for those employed in street cleansing and will be able to offer a third when Asset Skills have developed a street cleansing supervisory qualification (at NVQ level 3). The structure of the street cleansing NVQs are shown in the table.

### City & Guilds

City & Guilds offer a range of NVQs relating to front-line and back room staff including the street cleaning NVQs at Levels 1 and 2 and administration and customer care NVQs.

## Street Cleansing NVQs available from WAMITAB/City & Guilds

| NVQ at level 1<br>'Cleaning and Support Services - Level 1'.[a] | WAMITAB Cleaning Highways and Land NVQ – Level 2<br>'Cleaning and Support Services – (Highways and Land) – Level 2' [a] |
|---|---|
| The candidate must complete six units in total. | The candidate must complete seven units in total: both mandatory units + at least one from Option Block 1 + at least three from Option Block 2. The Seventh unit could come from either Option Block 1 or Option Block 2. |
| ***Mandatory Units (all candidates for the N/SVQ must complete all of these)*** | ***Mandatory Units (All candidates for the N/SVQ must complete both of these)*** |
| Unit 1 Maintain service delivery<br>Unit 2 Ensure your own actions reduce risks to health and safety<br>Unit 3 Work as a member of a team | Unit 2 Ensure your own actions reduce risks to health and safety<br>Unit 4 Promote and maintain service delivery |
| ***Option Units (All candidates for the N/SVQ must complete at least three of these)*** | ***Option Block 1 (All candidates for the N/SVQ must complete no more than two of these)*** |
| Unit 12 Clean toilets and washrooms manually<br>Unit 20 Clear highways and land manually<br>Unit 21 Clear spillages from highways and land manually<br>Unit 22 Remove graffiti and fly-posters manually<br>Unit 23 Manually clear snow and treat highways and land for ice | Unit 5 Support the work of a team<br>Unit 6 Develop and maintain positive working relationships with customers<br>Unit 7 Control the use of resources<br>Unit 8 Communicate effectively in the workplace |
| | ***Option Block 2 (All candidates must complete no more than four of these)*** |
| | Unit 24 Clean streets using a driver controlled vehicle<br>Unit 25 Clean streets using a pedestrian controlled machine<br>Unit 26 Remove graffiti and fly-postings using pressure washing equipment<br>Unit 27 Clear drains and surface water gullies<br>Unit 54 Wash the outside of vehicles |

a) Title of NVQ certificate

WAMITAB is the awarding body for qualifications in the waste & resource management industry in England, Wales and Northern Ireland and joint awarding body, with SQA, for qualifications in Scotland.
WAMITAB is an approved training provider for *Train to Gain* in England. WAMITAB works with the Waste & Resource Management Industry to provide the following services:

- Operator /Continuing Competence Scheme/Certificates
- Certificates of Technical Competence
- Certificates of Competence
- National Vocational Qualifications
- Vocationally Related Qualifications
- Scottish Vocational Qualifications
- High Quality approved Training and Development provision
- *Skills for Life* Literacy & Numeracy & ESOL Qualifications

Employees within the industry are now able to gain, through WAMITAB, nationally recognised vocational competence qualifications for:
**recycling, refuse collection, street and other cleansing activities, Civic Amenity sites, Material**
**Recycling Facilities, Transfer Stations, landfill sites, incinerators and Weighbridges**

WAMITAB also approves providers of quality training programmes related to Vocational Qualifications. If you are a training provider and are interested in gaining WAMITAB approval for your training programmes please contact us.

For further details of the WAMITAB programmes contact:

WAMITAB, Peterbridge House
3 The Lakes, Northampton NN4 7HE
Tel: 01604 231950
Fax: 01604 232457

E: info.admin@wamitab.org.uk
www.wamitab.org.uk

**Useful Contacts** (in alphabetical order)

Asset Skills
T: 01604 233336
F: 01604 233573
E: northampton@assetskills.org

Chartered Institution of Wastes Management (CIWM)
T: 01604 620426
F : 01604 621 339
E: ciwm@ciwm.co.uk
www.ciwm.org.uk

City & Guilds
T: 020 7294 8245
F: 020 7294 2414
E: james.mccartney@cityandguilds.com
www.cityandguilds.com

Environmental Campaigns (ENCAMS)
T: 01942 261665
F: 01942 824778
www.encams.org

Waste Management Industry Training and Advisory Board (WAMITAB)
T: 01604 231950
F: 01604 232457
E: info.admin@wamitab.org.uk
www.wamitab.org.uk

## Induction Training

### Vehicles

In 2004/2005 there were 235 fatal injuries and 159 000 other injuries reported to the HSE. In order to help to reduce such statistics, responsible companies and organisations feel that training is a high priority. It is after all far cheaper to invest in training that could prevent accidents rather than risk the consequences of an accident. Thus training is carried out for a number of reasons – including Health & Safety, assessment of competence and further development of personnel skills.

As most municipal vehicles require full driving licences or HGV licences a distinction must be made between driver training and operator training. The DVLA issues driving licenses to individuals for certain categories of vehicles but as yet there are no licenses for certain categories of sweepers (e.g. pedestrian walk-behind sweepers). It is therefore the manufacturers at the request of the company / organisation, which are brought in to show the driver the safe operation of a machine.

Municipal training and re-training is a necessity, which may all too often be overlooked. In the UK all manufacturers are concerned with providing operator training for vehicles and with the retraining of existing staff. It is very common for a local authority to employ an in-house trainer and have them spend time with a manufacturer, which, in turn, allows them to train and assess local authority employees themselves.

Manufacturers also take training very seriously and many employ dedicated trainers to provide training for their own staff as well as to companies, organisations and local authorities who purchase the manufacturers equipment.

As you look to fit staff training into your future plan, the following points are well worth bearing in mind, training:

- boosts morale. Staff members feel better and more motivated about working for an organisation / company if you show your belief that they can improve
- emphasises priorities
- is cheap — certainly cheaper than recruiting and hiring or dealing with an accident due to lack of training
- is a stimulant, while eliminating training can enforce mediocrity.

### Minority and Ethnic Community Workers

In recent years more and more EU and former Eastern bloc country workers have travelled to Britain in search of employment. Many Polish, Lithuanian, Russian and Ukrainian nationals have entered the workforce. Street cleansing services, in particular, now employ a high proportion of these.

Whilst this is particularly prevalent in the London area, other parts of the country are also experiencing a similar situation. As a result, changes and alterations have had to be made to induction and training procedures. One company have developed a Polish induction pack to help with such a scenario.

Companies and local authorities are employing foreign national supervisors to help with this process and to ensure important communication is effectively carried out. There are also examples of English language teachers being employed from within the workforce to help teach employees basic English.

It is vital to ensure that employees, whatever nationality, hold valid driving licenses (where appropriate), are legally resident in this country and can understand basic communication. It is important that they understand who to call in the event of an emergency (999 may be an obvious number to ring if you are British) and can understand simple instructions.

An employee who cannot understand any English will not be able to understand induction, training and health and safety procedures. Employers need to be absolutely sure their staff have been adequately trained and can be proved to be so before they are safe to go out to work.

## Efficiency

What is efficiency? Efficiency is not about cuts, but about raising productivity and enhancing value for money. Efficiency gains accrue when projects achieve one or more of the following:

- reduced inputs (money, people, assets, etc) for the same outputs
- reduced prices (procurement, labour costs, etc) for the same outputs
- greater outputs or improved quality (extra service, productivity, etc) for the same inputs
- more outputs or improved quality in return for an increase in resources that is proportionately less than the increase in output or quality.

The efficiency agenda represents an opportunity – a chance to identify resources capable of reinvestment in the frontline, or to hold down council tax. In the environmental services area, this means that improved efficiency should allow authorities to redirect the resources that are released to support the delivery of improved services and infrastructure, thus helping to meet their ambitions to set-up and boost recycling and cleaner ways of managing waste.

## Gershon/Best Value/CPA

In August 2003, the Prime Minister and the Chancellor of the Exchequer commissioned Sir Peter Gershon to undertake an independent review into releasing major resources and redirecting them to frontline services with the aim of increasing overall efficiency.

Efficiency saving is all about getting value for money – either reduced budgets while maintaining service levels, or a static budget with an increase in level of service. The former are 'cashable' in that they release cash that can be redirected to the frontline, while the latter are 'non-cashable'. Defra expected the majority of efficiency savings on street cleansing to be 'non-cashable, obtained by improved standards of performance as measured by BV199.

The guidance document Achieving Improvements in Street Cleansing & Related Services, was produced by Defra in2005. http://www.defra.gov.uk/environment/localenv/litter/pdf/street-clean.pdf

## Best Value

The 1999 Local Government Act introduced a duty for all councils, and other local government bodies to put in place arrangements to secure continuous improvement known as Best Value. It also gave the Audit Commission general powers to inspect councils.

There became a clear distinction between inspection and auditing and due to the complexity of services there was a need to combine the inspection and auditing role of the Audit Commission and this was completed with Comprehensive Performance Assessment.

## Comprehensive Performance Assessment

The essence of a Comprehensive Performance Assessment (CPA) framework is that it draws on a range of information such as performance indicators, assessments of corporate capacity, audit and inspection reports, and stakeholder opinions to reach a single judgement about the performance of a local body.

The Commission has developed tailored frameworks for CPA for single tier and county councils, district councils and fire and rescue authorities. The frameworks pull together a range of information in an objective and comparable way to reach an overall judgement on a council's performance.

## Comprehensive Performance Assessment to Comprehensive Area Assessment

In 2009 Comprehensive Area Assessment (CAA) will supersede the Comprehensive Performance Assessment (CPA) of local government. CAA will continue to provide assurance about how well-run local public services are and how effectively they use taxpayers' money. But it also aims to be more relevant to local people by focusing on issues that are important to their community.

## Partnership Working

The view that efficiency gains can be achieved by greater degrees of collaboration between council's – including effective joint working between waste collection and waste disposal authorities – is becoming increasingly widespread. There are a number of examples that show that co-operation between local authorities can work well, often through collaborative procurement or joint service delivery arrangements for some waste management services.

### South Tyne and Wear Waste Management Partnership

The South Tyne and Wear Waste Management Partnership (STWWMP) was established to enable the three partner authorities to jointly procure solutions for the disposal of residual municipal waste.

The Partnership comprises three metropolitan councils, Gateshead, South Tyneside and Sunderland. In support of this, the Councils also ratified a Stakeholders Agreement (effectively a Memorandum of Understanding), which established clear guidelines for joint working and decision-making in December 2006.

There is a consensus within the three authorities that there are real opportunities in partnering and procurement bringing benefits in terms of shared costs and added attractiveness to external contractors. Currently there is one major waste company and one medium sized local waste company, and the authorities would like to attract other contractors to improve competitiveness and value for money. Historically partners have all worked closely together on waste issues, the current waste disposal management contracts lapse at the same time, giving an opportunity to procure future services together. A strong case for partnership working by the three authorities was also the outcome of a study by Defra funded consultants (Urban Mines Ltd.) in 2006.

The partners acknowledge that previous waste strategies relied on the use of low-cost disposal options, predominantly landfill. However, strict targets to divert Biodegradable Municipal Waste (BMW) from landfill and increasing recycling targets mean that the Partnership appreciates the need to implement a new long-term waste management contract to respond to its long-term needs.

The Partnership is well underway in the development of a full Joint Municipal Waste Management Strategy, using Direct Consultancy Support (DCS) from Defra WIP/LASU, was produced in October 2007. This will be informed by a further piece of work, also supported by DCS, to conduct a waste analysis of residual waste, household recycling centre waste, and kerbside waste across the Partnership. Assistance from the 4Ps has supplemented capacity across the partnership and training on procurement delivered to a wide range of officers.

The partners have demonstrated a very strong capacity for making change work, and have a proven track record in making significant and sustainable improvements over the past few years. The environment is a key theme in each of the Councils' priorities for the future and is a core element of all Corporate Policies/Strategies. Each partner authority has a Cabinet member with responsibility for this lead/portfolio area.

Waste Information Network http://146.101.137.80/docsummary.aspx?id=331

## Procurement

Procurement practices are themselves a key area for delivering efficiencies, and it is possible that some authorities could make better use of purchasing power by aggregating requirements for services and facilities. Collaboration also provides an opportunity to share know-how and, where appropriate, to pool and even reduce the resources that go into procurement.

It has now been several years since the concept of Street Scene was first accepted and in fact several authorities have taken it one step further and considered Public Realm as a whole (see partnership working).

The Audit Commission publication *ACKNOWLEDGE* on Street Scene (Audit Commission 2002) procurement and competition identified the following key areas:

- procurement strategies
- skills and expertise
- market consultation and analysis
- options appraisal
- partnerships
- outsourcing.

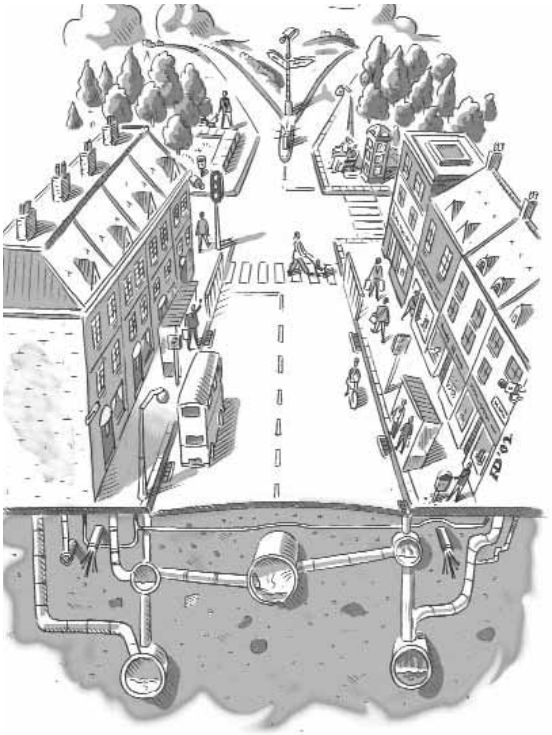

**Figure 2 Features of the Street – Source Audit Commission[3]**

## Partnership Working – Planning, Street Services, Highways and Land Managers

For East Riding of Yorkshire Council Street Cleansing Services is part of Streetscene Services that encompasses Highways, Street Lighting, Grounds Services, Street Cleansing, Waste Collection & Disposal, Traffic and Parking Services.

The council is responsible for keeping adopted highways clean and litter-free, within the requirements of the Environmental Protection Act along with other public spaces, such as parks, play areas and beaches.

The primary legislation that the Highways Unit works within are the Highways Act 1980 and the New Roads and Street Works Act 1991 and using these involves working in partnership with colleagues in other departments and external bodies.

Inter departmental partnerships cover work such as potentially adoptable estate roads. Initially we work closely with the planners to ensure that the layout and materials specification complies with the relevant guidance documentation such as the highway design guide. Once the developer has satisfied all requirements a set of approved drawings is issued by Development Control, and the responsibility for inspecting the work, as it progresses, passes to Streetscene Services (highways). The developer is required to inform us when certain key stages of construction are being carried out so that inspections may be made but ad-hoc ones are also carried out as officers pass sites. Details of the work are kept on standard templates and filed in case they are required in the future.

Once the development is complete a joint inspection is carried out between ourselves and Development Control and a list of defects is drawn up. This is passed to the developer and upon satisfactory completion the estate is placed upon one year's maintenance agreement. At the end of this period, a further inspection takes place and subject to no defects having occurred, arrangements are made to adopt. Details such as the number of gullies, inspection chambers, length of road/footways and number of properties is disseminated to those responsible for gully emptying, refuse collection, sweeping and maintenance of public open spaces.

The Highways Unit has extensive contact with adjacent local authorities and agents for the Highways Agency. It is important that there is a seamless transition between various local authority highways and also those that the Highways Agency are responsible for, so the travelling public can be confident of a consistently maintained infrastructure. Partnership working may be instigated by any of the parties and would cover joint signing schemes, diversion routes for road closures and utilising each others road or lane closures to carry out maintenance tasks including sweeping, gully emptying and litter picking. Work between the local authorities is generally of a more ad-hoc basis whilst some work is planned, a majority is reactive such as the need to divert traffic due to vehicle collisions, damage to bridges etc.

Formal meetings take place between ourselves and the Highways Agency agents, WSP Carrillion, at which planned programmes of work are discussed along with any changes to contacts.

It is also necessary for the units to work closely with the police and fire brigade generally to deal with mud on the road, the aftermath of vehicle collisions and chemical spillages. If the Council receives a report of mud on the road then this is initially dealt with by the police. Only if they deem the road to be in a dangerous condition, and are prepared to close the road, will the Environmental Unit be mobilised to undertake a clean up. The police should provide details of the person responsible for causing the problem so that the Council can recover its costs through the rechargeable process. If the situation is not considered dangerous then warning signs may be placed on site. Stocks of temporary signs are kept at depots and members of the public are able to purchase these from us.

On occasions we will be called out to clear up following a road incident. A majority of the time the work entails hand sweeping and picking up of large debris but if there is a large oil or fuel spillage extensive sanding followed by mechanical sweeping may be necessary. In such cases any adjacent gullies must be checked for contamination and emptied.

In the event of a chemical spillage the police, or more usually the fire brigade, attend the scene initially. It is important that the Councils procedure for dealing with these incidents is adhered to. In its simplest form a representative of the Council attends site and arranges for a private company, Colt UK, to deal with the incident. The officer will take the responsibility for arranging any road closures and diversions whilst liaising with the police.

Full details of how to deal with this type of emergency can be found in East Riding's Front Line Emergency Manual.

We also work closely with land managers such as the Environment Agency (EA) and Local Internal Drainage Boards to ensure that damage due to flooding is mitigated.

The EA operates a system of warnings that are automatically sent to Emergency Planning and other sections of the Council. At various stages of the warning system representatives from the Highways and Environmental Units attend the location and monitor the situation and arrange for operatives, with plant, to attend. The units work closely together particularly if there are a number of sites being affected. At the end of any event clearing up is necessary and generally means the sweeping of roads and footways along with ensuring that gullies are emptied and drains are running to maximum capacity. Full details of the procedure are in the Councils *Coastal and Non Coastal Flooding Manual*.

The less extreme work, particularly with the EA, is to comment on their flood defence proposals and agreements to provide pumps at key locations once defences have been provided such as at Stamford Bridge. Local Internal Drainage Boards work with ourselves, including colleagues in Infrastructure and Facilities, to ensure that both public and private drainage systems are kept in good order and can cope with expected volumes of water.

East Riding uses partnership working for combating restricted street cleansing due to parked vehicles, see page 50.

For outsourcing the Audit Commission stated: "Street scene services show serious failures in addressing competition. A structured and rigorous approach to competition is essential to best value and service improvement." The report continued: "The majority of street scene inspections have raised serious concerns over the failure to properly review competitiveness and challenge methods of service delivery. Street scene services have discrete elements (operational, professional and administrative), and authorities should be rigorously evaluating alternative service provision and procurement options, including different ways of packaging the broad range of services. At present there is inadequate consideration of in-house versus outsourced service provision."

They suggested that authorities should consider their procurement strategies; develop their skills and expertise; consult with potential suppliers and analyse the results.

The option of partnering with other authorities, or outsourcing they stated must be considered as well as integrated contracts covering the wider spectrum of street scene activity. The need for outcome based contracts. The Audit Commission in *Building for the Future: The Management of Procurement under the Private Finance Initiative* (Audit Commission 2001) listed the skills required for effective procurement.

Sir Peter Gershon in *Releasing Resources to the Frontline* (Gershon 2004) (which was published in July 2004 said: "Efficiency in the public sector involves making best use of the resources available for the provision of public services."

Several reports have examined the use of procurement in the public sector, not least the Byatt review of 2002 (Byatt 2001).

However the Gershon report seems to have been the key for local authorities since 2005. Gershon found that:

- strategic management of major suppliers is not well established
- there is a lack of strategic visibility and influence over totality of the spend
- procurement is undertaken without professional support so value for money is not achieved
- procurement of professional services such as consultancy, legal and financial services is not managed sufficiently. Fee income in these areas from the public sector doubled in 2003.

Gershon therefore recommends that to support efficiencies within local authorities there will need to be a move to, among others aggregate demand and procurement through the use of regional centres of procurement excellence.

The spending review that the Government published alongside the Gershon report proposed efficiency savings in local government of 2.5 percent per annum. Part of this is seen to be in procurement from the street scene sector although no actual figures were given (APSE 2004).

It seems that most councils are aiming at 2.5 percent savings year on year across the board. But each council has had to look at this in its own way and to the benefit of its own local residents.

## Possible Packages

As the above brief summary of street scene has shown there are significant challenges to all professionals in the environmental field. The wide spectrum of what has traditionally been the work of different Institutions and professions needs new thinking and new packages. But if councils decide to contract out their services or are already in a contracted out position, there will be challenges around ensuring the full partnership approach is achieved. Flexibility will be a key, changes will come and the challenges within one field let alone those of several Institutions will demand great innovation and co-operation.

The options for packaging are vast from the use of individual contractors or internal providers with a seamless interface with clients and customers, to the full blown total all embracing management and maintenance contract that covers all areas of street scene. The fact that the Government have changed the rules on PFIs and the options of prudential borrowing makes exploration of new solutions key to service improvement.

In conclusion, a note of caution from the Audit Commission "Outsourcing in part or whole is unlikely to solve the problems of a struggling service. Contractors will be understandably reluctant to deal with authorities showing weak management, unclear aims and unrealistic expectations about rapid improvements. Poor performing services must focus on building client capacity before considering outsourcing the service(s)" (Paragraph 124, Audit Commission, 2002).

### Questions for Consideration when Contemplating Procurement:

- There are rarely more than three bidders for large waste contracts and having only one or two is common. Is it better to encourage specialists and diversity in the design and packaging of contracts?
- It is in the interests of the council to promote its local economy. The size of each package, the split between functions and the provision of local depot facilities will all affect the ability of local players and new players wishing to come into the area to submit competitive bids.

## Integration of Services at Gateshead Council

Historically, the Council's record in terms of refuse collection was outstanding with an average of only three missed bins per 100 000. The service was rated as one of the best in the country with a high level of public satisfaction evidenced. The background story to the grounds maintenance service however, was less satisfactory, with a high level of customer complaints on the quality of grass cutting consistently being received by the Council.

**Grounds Maintenance**

To put this merger into greater context, the grounds maintenance service, which had 140 employees, was responsible for:

- 200 Hectares of grassed areas on housing estates
- 129 Hectares of highway verge
- 29 major parks within the borough
- 157 Hectares of land in schools, which include sports pitch maintenance and marking
- 74 Hectares of land around public buildings, which include the Gateshead Civic Centre
- 58 Hectares in Cemeteries
- 2 Crematoria
- Over 100,000 trees throughout the Borough.

**Cleansing Services**

Cleansing services, which had 200 employees, was responsible for covering waste/recycling collection, trade waste, street cleansing, winter maintenance and public conveniences.

To put this into greater context, the service managed:

- 8 900 household waste collections from domestic properties each week
- 1 800 commercial and industrial premises have their waste removed each week
- 85 000 requests completed each year for the removal of bulky household waste and garden waste
- 16 000 skip loads are removed from waste receptions sites each year
- 550 miles of adopted public highways, footpaths, pedestrian precincts
- 65 000 road gullies are cleansed each year
- 5 000 instances of illegal dumping are removed each year
- 8 000 tonnes of waste are collected and disposed of each year
- 6 500 gallons of waste oil recovered
- 348 miles of priority winter gritting routes.

**Operational Issues**

In addition to simply dealing with the basic volumes and areas of responsibility between the previously distinct units, the Council had to deal with a range of complex operational issues including:

- cleansing services working a 37 hour standard week, including supervisors
- grounds maintenance working 41.25 hours per week summer and 30 hours per week winter, whilst supervisors worked 35.50 hours
- grounds maintenance operating a measured day rate bonus providing a 51 percent bonus
- cleansing services operating a fixed bonus scheme providing 37.8 percent bonus
- little historic co-operation between services
- public confusion as to who does what
- different service frequencies with no co-ordination
- workforces operating from different depots
- CCT having impacted upon the level of service achieved by grounds maintenance
- grounds maintenance management giving a low priority to grass cutting
- resistance to change from employees
- ground maintenance staff only having been provided with protective clothing where deemed essential.

A decision was taken to abolish the variable working week and formally establish both a Street Services Division and a Ground Care Division under a single management structure to deal with all of the above on a co-ordinated basis.

The Street Services Division was to undertake all former cleansing services tasks, but in addition also undertake all routine grass cutting on highway verge, open space and housing estates.

Ground Care Division was then formed with the remaining more qualified former grounds maintenance staff, who then concentrated their efforts on maintaining parks, cemeteries, schools and horticultural features throughout the Borough.

So, what has been achieved?

- grass cutting in streets/open spaces and street cleansing under unified supervision
- grass cutting not disrupted by planting of summer bedding, events etc
- new machinery procured which reduces rear discharge
- average grass cutting frequency reduced from 11 to 7 working days
- number of cuts achieved = 27, previous grounds maintenance specification said 15-20 cuts per annum
- mechanised edging programme
- litter removed in advance of grass cutting and paths swept after
- complaints down by 60 percent in the first 12 month period
- complaints down by 80 percent in the second year
- footpath weed control contract extended to include tree bases, walls and street furniture
- strimming in specification is three times per year – significantly increased to 5-6 per year
- more frequent cutting of central reservations – from 3-4 to 6 per year
- more attention to verges on rural routes
- hanging baskets increased from 400 to 800 then to 1600
- new flower beds being created
- rose beds being improved
- hire of bulb planter – 70 000 in one day
- small shredders to reduce tip travelling time
- hanging basket watering via gully emptying vehicle on late shift
- improved reliability of services to industrial estates
- better corporate image of workforce by use of work-wear
- being seen as leaders in the field of integrated environmental maintenance
- excellent authority CPA result
- rating for environment four out of four
- Northumbria Police Problem Solving Project of the Year.

Ultimately, Gateshead Council has delivered on a range of objectives by combining and maximising their available resources both in terms of the workforce, and the fixed assets available. By no means is the process complete, and the Council now has a clear vision for the full future integration of all street services activities within New Neighbourhood Areas. New multi-skilled teams are to be configured to work within five neighbourhood areas across the Borough, who will closely work with all services and respond to local needs.

- Traditionally local authorities have been extremely effective in borrowing at competitive rates but have had significant capital borrowing restrictions. Prudential borrowing and investing to save has changed this. As the level of debt in large companies increases so does the cost of borrowing. Should capital borrowing rest with the private sector or should local authorities borrow where they can?
- Risk-averse local authorities have often piled risk onto the contractor. This inevitably increases the cost of the contract. There is no point passing on risk if ultimately it comes back to the council.
- Green procurement issues and sustainability are becoming important in all areas, none more so than in this area where the public are very conscious of the pressure on them to recycle and consider the waste hierarchy. It is important that any procurement exercise considers the full implications of the potential outcomes. It may even be prudent to include some specific environmental evaluation to encourage better working practices.
- Training is often now considered to be a function of the contractor. However, with TUPE it is clear that the workforce may well work for the local authority far longer than for one contractor and therefore training and skills requirements could be made part of the contract to ensure a fully skilled workforce, not just for the current contract but for the future.

## Integration of Services

This section will examine how the provision of front-line services can be integrated into one seamless service and what benefits derive from this approach and how it works in practice and will give examples of local authorities where this has been achieved and what the benefits are likely to be.

Traditionally local authorities have had separate services for all activities within the street.

Compulsory Competitive Tendering confirmed within the specification the boundaries for these roles, but the public never could understand why the sweeper removed the litter from the highway and not the adjacent shrub or grassed area. Similarly why did the grass cutters suddenly appear and spew cuttings over the footpath that the sweeper had recently swept.

Within the Best Value regime more local authorities are now looking at the whole street scene approach with a view to making a marked improvement in local

environmental quality. More co-ordination and integration of services within the street has improved both quality and levels of satisfaction.

## Environmental Considerations

### Emissions

Emissions from vehicles and equipment fall into four broad categories – exhaust air, noise, engine emissions and the whole life environmental footprint of the product concerned.

It is important to ensure that the impact of vehicle emissions on local amenity is kept to a minimum, especially due to the close proximity of street cleaning vehicles and the general public.

Where possible consider the use of Ultra Low Sulphur fuel for large diesel vehicles, and Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG) or Biodiesel for smaller vehicles. Where possible consider changing the fleet to more environmentally friendly fuels or purchase vehicles with this capability.

Exhaust air: sweepers predominantly use air flow to convey detritus from the surface to a hopper body. The clever bit is to separate the debris from the air stream in the body and not exhaust it to atmosphere in a manner reminiscent of a volcano. At present the most reliable and efficient method of achieving this is by water injection into the air/debris stream combined with air flow manipulation as it passes through the machine. There are two main accreditations to look out for - the North American "Rule 1186" (http://www.aqmd.gov/rules/doc/r1186/r1186_equip.pdf) and the shortly to be announced European "EUnited" certification.

### Noise

Excessive noise can be classed as Environmental Pollution, which can result in a nuisance to the local community. It is important to consider local amenity when planning the street cleaning programme, such as not carrying out activities in built up areas in the early morning or late evening.

All road vehicles should have EU type approval and will have maximum decibel output, it is important to ensure that a planned maintenance regime is implemented and maintained to ensure vehicles operate to their maximum efficiency.

Under the new Control of Noise at Work Regulations 2005, there is a duty on employers to:

- assess the risks to employees from noise at work
- take action to reduce the noise exposure that produces those risks
- provide employees with hearing protection if the noise level cannot be reduced by using other methods
- make sure the legal limits on noise exposure are not exceeded
- provide employees with information, instruction and training
- carry out health surveillance where there is a risk to health.

The regulations require you to take specific action at certain action values. Where these values are exceeded you should be looking for alternative processes, equipment and / or working methods which could make the work quieter or mean employees are exposed for shorted periods of time.

Introducing a positive purchasing and hire policy can be the most cost-effective long-term measure you take to reduce noise at work. Choosing quieter equipment and machinery, whether it is bought or hired, from the start can save you the cost of introducing noise-reduction measures once it is installed or in use.

Manufacturers of machinery for outdoor use are required under EC directive 2000/14/EC to display the maximum guaranteed sound power level on their equipment. The sound power level (LWA) is the noise energy being emitted from a theoretical source which will decay as the distance from the source increases. It should not be confused with the actual noise level experienced by an operator. Note: This requirement is directed at the manufacturer and is separate from that which employers have to their employees.


*Example of required noise label for each machine*

Engine Emissions: The rules regarding exhaust emissions from diesel engines used in municipal equipment are complex, but predominantly controlled by two European directives.

- Directive 97/68/EC as last amended by 2004/26/EC - relevant to non-road mobile machinery (NRMM) such as sweeper auxiliary engines and referred to as "Stage II and now IIIA".

- Directive 88/77/EEC as last amended by 2005/55/EC relevant to road mobile machinery propelled by the engine in question such as truck chassis and compact sweepers and referred to as "Euro 1,2,3,and now 4".

Note: It is not accurate to say that a NRMM engine is more or less environmentally friendly than one which is road mobile as the applications and therefore the test criteria are very different.

Whole Life Environmental Footprint: Every vehicle and piece of equipment has an effect on the environment, from production to disposal. The factors effecting this footprint are therefore numerous, however some of the most significant areas to consider are the selection of a manufacturer with environmental processes in place, the recyclability of the equipment when it has reached the end of it's useful life and, probably most importantly, the useful life of the machine itself.

## Water Management (as Part of Environmental Stewardship)

Water is an important tool in street cleaning, however it must be considered in an environmental aspect as water might not always be readily available and in the summer month's drought orders might be imposed leading to restrictions over usage. Therefore it is always prudent to minimise water usage where possible.

In environmental cleaning water is used for the following activities:

Street Washing, Channel Flushing, High Pressure jetting, graffiti removal, cleansing of signs / bollards, cleansing of street furniture, re-sealing of gully pots, dust suppression.

### Abstraction and Conservancy

The use of water as a medium to assist in the performance of cleansing operations of all kinds is a well-established practice. Recent years have seen an increase in the frequency of water usage for the performance of some environmental tasks, notably in some street washing operations and for the removal of graffiti.

It is not so long ago that the availability of and access to water for cleansing operations was taken for granted. Recent water shortages as a result of climatic changes in the UK have brought the matter into much sharper focus, with some areas experiencing drought in recent years.

It follows, therefore that stewardship of such a valuable resource is essential and only the minimum amount of potable water should be drawn, consistent with the absolute needs of the service provided. Careful selection of machinery and equipment for example can lead to much lower consumption of water used for cleansing.

An example might be in specifying pressure washing equipment that is high pressure, low-volume rather than the other way around.

At the end of any process, all cleansing operations which use water whether potable or not, will create an effluent which must be properly managed and disposed of. It is not sufficient to allow effluents thus generated to "run away".

## Tackling Drug Related Litter

The publication of guidance *Tackling Drug Related Litter Guidance and Good Practice* drafted jointly by Defra and the CIWM in October 2005 was a landmark as it was the first time there had been recognition of the problem since it had first been identified by waste managers in the 1990s. Has there been any activity since the Guidance? This summary highlights the introduction of Drugs Related Litter (DRL) into the Revised Code of Practice on Litter & Refuse (COPLAR) 2006 and provides three case studies highlighting positive action being taken on DRL.

Those who have been calling for DRL to receive some attention by the legislators were pleased to see its inclusion in the revised Code of Practice on Litter and Refuse published April 2006. COPLAR 2006 now recommends that "dangerous items" require a quick response and says that Land Managers should "consider shaping their monitoring to enable them to respond quickly to potentially dangerous items such as glass or drug needles, or to sensitive areas such as playgrounds." (P.15 COPLAR 2006)

http://www.defra.gov.uk/environment/localenv/litter/code/pdf/cop-litter.pdf)

Many authorities have so far introduced their own voluntary 'rapid response' service over and above their statutory response to the Grades of Cleanliness set out in the Code of Practice. The new COPLAR endorses this approach and suggests a three hour response target for drugs litter. "There will be circumstances, which, in the interests of responsibility and/or health and safety, require managers to respond far quicker than the maximum response time. For example, should drugs needles be found on a school playground, or any items of litter be found on an airport runway, it is expected that these objects be removed as a matter of priority, well before the maximum response time. It is recommended that for drug-related litter, duty bodies respond within three hours of a report." (Pg. 26 COPLAR 2006 http://www.defra.gov.uk/environment/localenv/litter/code/pdf/cop-litter.pdf)

Three examples of positive action are highlighted:

- Policy – Keep Wales Tidy Draft Policy on Drugs Related Litter

- Partnership – Blackpool Community Safety Partnership – Needlefinder programme
- Practical Action – Leeds City Council's Needle team was recently recognised by the Home Office

## Fly-Tipping

Fly-tipping causes nuisance to a number of people and organisations, including private land owners and local authorities.

CIWM's *Local Environmental Quality* publication addresses the issues of fly-tipping including the reasons why people decide to fly-tip.

There is also the National Fly-tipping Prevention Group (NFTPG) which was set up by those affected (land owners, local authorities) and regulating fly-tipping (Environment Agency and local authority). Guidance has been issued for landowners and this can be found on the website http://www.environment-agency.gov.uk/nftpg/

During 2006 the Jill Dando Institute carried out research to look at the causes, incentives and solutions to fly-tipping. A full research report http://www.jdi.ucl.ac.uk/downloads/publications/research_reports/fly_tipping/JDI_FlyTipping_ResearchReport.pdf was published along with appendices http://www.jdi.ucl.ac.uk/downloads/publications/research_reports/fly_tipping/JDI_FlyTipping_ResearchReport_Appendices.pdf and there was a good practice guide http://www.jdi.ucl.ac.uk/downloads/publications/research_reports/fly_tipping/JDI_FlyTipping_GoodPracticeGuide.pdf produced along with a summary good practice guide http://www.jdi.ucl.ac.uk/downloads/publications/research_reports/fly_tipping/JDI_FlyTipping_GoodPracticeGuide_Summary.pdf.

## Management and Treatment

In most cases the waste being collected will be considered to be household waste and will contain a biodegradable fraction. As such it will count towards landfill allowances under Landfill Allowance Trading Scheme (England), Landfill Allowance Scheme (Wales, Scotland and Northern Ireland), if it ends up in a landfill. The following wastes require more specialised collection and disposal:

- clinical/drug-related
- asbestos
- liquids
- tyres.

### Policy – Keep Wales Tidy Makes The Point.

Keep Wales Tidy (KWT) has recently completed a draft policy paper which is out for consultation. The paper highlights the good work already underway in this area and the fact that the majority of communities are "unlikely to encounter drug related litter in the form of discarded needles and syringes" and that the issue is a problem confined to "hotspots" where needles can be found in "significant quantities".

The paper is pragmatic and far-reaching, considering not only 'end-of-pipe' collection practices, which are usually the focus of attention in this debate, but also raising some of the strategic issues around increasing needle exchange services and calls for research into the impact of drug consumption rooms on drug litter to be investigated. The report calls for:

- wider education of drug users on the correct and safe disposal of used needles and syringes and better public education on the hazards of DRL
- the wider nationwide provision of needle exchange centres, preferably on a twenty-four hour basis, which KWT believes will have a positive impact on the levels of drug related litter
- wider provision of secure sharps boxes in 'hotspot' areas
- further specialised training for all operatives whose work brings them into contact with DRL
- further partnership working and sharing of good practice between organisations
- research study into the use of drug consumption rooms
- using current Community Safety Partnerships to develop and manage an All Wales Database on Drug Related Litter
- closer working between KWT and the Regional Community Safety Partnerships on Drugs Related Litter.

Photo: courtesy Keep Wales Tidy

For further information on Keep Wales Tidy's Draft Policy on Drugs Related Litter, contact Tegryn Jones , Chief Executive Keep Wales Tidy. Tel: 02920 256767 E-mail: tegryn.jones@keepwalestidy.org

### Blackpool Community Safety Partnership - Drug Paraphernalia Monitoring and Problem Solving

In Blackpool, it is the Community Safety Team and Drugs Team that has driven the development of services to tackle DRL. Their approach consists of a number of elements.

The first issue was locating community needle bins in public places. The first bins were placed in the worst affected places - it was "common knowledge" where these first bins would go. Next, the Partnership established a system to monitor and identify where next to site them.

The Community Safety Partnership then established a reporting system across the departments within Blackpool Council and its partners such as the Police and traffic wardens that come into contact with discarded paraphernalia and devised a Needle & Syringe Find Report form. These forms are completed and sent to a central point to be entered on to the Needle Finder database.

This database is then translated into maps such as the one illustrated here which help the Partnership to identify on-going patterns and trends in drugs related litter.

The Partnership set up a Needle find Hotline for the public so if they found discarded works, they could ring and have them removed, and nominated residents were also trained how to remove needles and syringes safely for out-of-hours situations. Promotional materials were also produced outlining for example, what to do in the event of a needlestick injury.

Blackpool Community Safety Partnership set up a Needle Reporting system which it then uses to map incidents of DRL. This map is overlaid on to an aerial photo.

Photo: courtesy Blackpool Community Safety Partnership.

Another key feature of the project is that the Partnership worked closely with a community needle bin manufacturer to review the common problems associated with community needle bins in public places and have worked together to produce a product incorporating many improved features.

For further information on the work of the Blackpool Community Safety and Drugs Team contact Dominic Blackburn Email: dominic.blackburn@blackpool.gov.uk Tel 01253 651165

## Landfill Ban on Liquids

There are now three types of landfill sites as classified under the Landfill Directive, hazardous, non-hazardous or inert landfill sites.

Hazardous Landfills accept hazardous waste. Hazardous waste is defined by the Hazardous Waste Regulations and the List of Wastes Regulations. The wastes will have to be assessed against two sets of limit values:

- the limit values associated with the List of Waste Regulations. These determine whether the waste is hazardous, unless it is covered by an absolute entry
- the limit values set by the waste acceptance criteria for hazardous landfills.

Non Hazardous Landfills accept non hazardous waste which is not on the Hazardous Waste List, and includes municipal waste and inert wastes. In addition some non hazardous landfills can be used for the disposal of stable, non reactive hazardous wastes with leaching behaviour equivalent to that of non hazardous wastes, provided they are not deposited in the same cells as biodegradable municipal waste.

Inert Landfills accept only inert wastes, which is defined in the Landfill Directives as:

## Practical Action – Leeds City Council's Needle Team Receives Prestigious Home Office Award

For a number of years, it might have been true that the valuable work of drug related litter collection teams across the country in keeping the places we live and work free of discarded injecting paraphernalia was not fully appreciated or embraced by the drug services community. However, a recent award received by Leeds City Council suggests that this might be changing.

Leeds City Council's Needle Collection Service recently picked up the Home Office Drugs Team of the Year 2007 Award for Yorkshire & the Humber. The award recognised the team's good work collecting "an amazing 400,000 discarded needles in the last five years" and also the teams own initiative to develop and deliver drug-related litter awareness talks to colleges, enforcement officers, estate caretakers, schools and construction and demolition companies.

Acting on their own initiative, the team members regularly go beyond the call of duty by dealing with the unexpected. Intelligence is also shared with relevant organisations, resulting in a reduction in the number of discarded needles, tracking down drug dealers and improving public safety and confidence. The team has developed a good referral network with colleagues and regularly receive reports from the City Council's own refuse crews, from its parks and countryside staff as well as the police, housing caretakers and even CCTV operators. Frieda Haley, Operations Manager for the team commented that "the quality of referrals is critical and we have trained the referral agencies to ask the right questions of those reporting discarded needles - otherwise we can waste a lot of time literally looking for a needle in a haystack".


**One of the Award-winning team removing DRL from inner city Leeds.**

**Photo: courtesy Leeds City Council**

The team's workload is shared between pro-active patrolling of well-known hotspot areas across the city and responding daily to reported incidents. Altogether, the team collects around 100,000 needles a year, but they have noticed a drop in the number of needles they are collecting, something they think may be the outcome of the development of community drug workers who are building a rapport with injecting drugs users and educating users not only about safer injecting but also responsible disposal of their needles.

For further information on the work of the Needle Collection Service at Leeds City Council Email: frieda.haley@leeds.gov.uk Tel 0113 2146570

*"waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater".*

### Tackling Fly-tipping in East Riding of Yorkshire Council

Fly-tipping is the common term that refers to the illegal disposal of unwanted waste items. These offences often occur in the countryside, on highway verges by the side of quiet roads or in other secluded areas where offenders are unlikely to be seen. The East Riding of Yorkshire covers an area of approximately 1000 square miles that includes a vast rural region. It is Council policy that incidents of fly tipped waste are investigated and removed quickly in order to discourage any further dumping.

East Riding of Yorkshire Council has 14 Customer Services Centres located across the authority that are all able to deal with reports of fly tipping made in person, by phone or by email. In addition to this there are a further 22 kiosks where incidents can be reported. In order that the Council could further improve its access to information it introduced an initiative it appropriately named 'Spot and Sort'. The purpose of this being to enable Council employees to report on line any incidents of fly tipping which they may come across whilst they are travelling on the vast network of East Riding roads. The scheme has been well received by employees with an average of 8 incidents of fly tipping being reported each month. Apart from fly tipping the 'Spot and Sort' initiative has been further developed to include other environmental crimes such as littering, dog fouling, fly posting and graffiti.

On receiving a fly tipping complaint a Council Enforcement Officer will contact the complainant to let them know the action they intend to take to investigate the incident and to confirm that arrangements are in place to remove the waste. Sections 33, 34 and 59 of the Environmental Protection Act 1990 provide local authorities with the power to take enforcement action. During the initial site visit the fly tipped waste is photographed and any evidence obtained identifying a possible source of where it has come from is removed. Arrangements are then made to remove the dumped items, in most cases within 48 working hours of the complaint being received. The Enforcement Officer will then write to any names or addresses he has obtained requesting the person attend a formal interview under caution.

To help reduce incidents of fly tipping East Riding of Yorkshire Council has taken up the challenge of tackling unregistered waste carriers. In many cases unregistered carriers are found to be responsible for fly tipping the waste they collect as they do not have the necessary documentation to dispose of it correctly and often prefer not to pay the site disposal fee. East Riding of Yorkshire Council has teamed up with the local offices of Vehicle Operators Service Agency (VOSA), the Environment Agency and the Police to carry out a programme of vehicle stop and searches. Each agency has its own agenda for stopping vehicles, for instance VOSA to check that vehicles are road worthy and the Police to ensure vehicles are taxed and insured. The Council's role is to check vehicles carrying waste are legally registered to do so. Drivers who do not have a copy of their own, or their employers Waste Carriers Registration and a Waste Transfer Note for the load in transit are given seven days to produce the necessary documentation. Where the documents are not produced within the set timescale a £300 fixed penalty notice is issued for each offence of not producing.

Since the change in the waste duty of care legislation East Riding of Yorkshire Council has increased the number of cases it has taken before the Courts by over 70 percent. As a result this has in turn been effective in reducing the overall number of incidents of fly tipping, a number which had previously been increasing. It is clear therefore that the Council's approach of encouraging residents and staff to report incidents of fly tipping, of reacting quickly to investigate and remove dumped items, of using the Householders Waste Duty of Care legislation and joint working with our partner agencies have all had a major impact in the East Riding and are contributing to a reversal of the nationwide trend of increasing levels of fly tipping.

This means that only a very limited range of wastes can be deposited in such landfills. Possible examples include waste glass, concrete, bricks, tiles and ceramics.

Street sweepings can include various types of materials including sand, salt, leaves, broken glass, litter, debris, small dead animals from road traffic accidents, packaging materials. For the majority of times the content of street sweepings is likely be inert or organic, determined by the nature of the wastes.

In the event of the street being swept after a spillage or road traffic accident there is the possibility that the load could be classed as hazardous wastes, due to the presence of oils and chemicals.

## Water Mixed with Road Sweepings

Most street cleaning wastes are currently disposed of at landfill sites, where specific areas are created to aid the disposal of such wastes away from the tipping face, due to the sludge nature of the wastes. It is important to remember that liquids are now banned from landfill sites since 30 October 2007 under the Landfill Directive, although sludge is allowed. The definition of a sludge is 'liquid content must be 10 percent of the total volume, or a minimum of 250litres, which ever is the least'. The definition of "liquid waste" and the distinction between a liquid and a sludge is important as sludge is not prohibited from landfill, and the spreading of sludges is exempt from the Landfill Directive's requirements under certain circumstances.

See link below for Guidance for Waste Destined for Disposal in Landfill document:

http://www.environment-agency.gov.uk/commondata/acrobat/wacv2_1006008.pdf

Sludges can go to landfill but liquids can't. Section 3.1 of above document contains a definition of liquid waste. Relevant interpretation for road-gulley silts is ' a waste that flows only slowly, rather than instantaneously into a hollow will be a sludge or fine-grained solid and not prohibited'. Operators may need to decant excess liquid off before taking the remaining sludge to landfill.

Further Environment Agency guidance on liquid wastes related to gulley and street cleansing operations is available http://www.environment-agency.gov.uk/commondata/acrobat/landfillban_2_1953606.pdf

See also section 8 of Defra guidance below:

http://www.defra.gov.uk/environment/waste/topics/landfill-dir/pdf/reg-interpret.pdf

Link below is to the Landfill Directive Implementation timetable:

http://www.environment-agency.gov.uk/commondata/acrobat/timetable2_932847.pdf

## Composting/Recycling – Leaf Fall, Street Sweepings

In order to minimise the amount of waste sent to landfill, and to achieve Landfill Diversion targets local authorities are now looking into ways to maximise recycling and composting potential from their activities. One method might be to compost the street sweepings, where the majority of the load is made up of organic wastes i.e. leaves, grass cuttings etc. The City of Westminster Council undertook the following feasibility study into the suitability of these materials for composting. See right.

### Composting of Street Sweepings – City of Westminster Trial

SWAP, in partnership with Aqua Enviro, was contracted by the City of Westminster Council to undertake a feasibility study to explore the possibility of undertaking municipal collections of autumn leaves, derived from street sweepings, for composting. The research sought to establish whether it would be viable to use leaves collected in primarily urban areas for composting or whether there would be prohibitively high levels of physical and chemical contamination.

The samples were analysed for conductivity, pH, the carbon:nitrogen ratio and inorganic ion content. The suitability of the samples for composting was then assessed in accordance with the British Standards Institution for composting (BSI PAS 100) specification for composted materials.

The results revealed that a high proportion – between 63 and 95 percent – of street sweeping rubbish generated during autumn months was comprised of leaves, with only a small amount being street litter, which could be removed at source. The samples conformed to the BSI PAS 100 and the findings have prompted the City of Westminster to bid for further funding to implement a city-wide leaf composting scheme.

http://www.swap-web.co.uk/content.asp?ItemID=27&mid=28&incid=22

http://www.aqua-enviro.net/pdf/Leaf%20Composting%20Final%20Report.pdf

## Highway Obstruction

### Introduction

Obstructions to the highway (including the footway and verges) are commonplace all over the UK and beyond. For a variety of reasons there will be those who temporarily or in some cases permanently cause obstructions to the highway.

The reasons for obstructions may be manifold but in general they occur as a result of persons wishing to take advantage of the public highway for their own personal benefit.

The effect of obstructing the highway can be both inconvenient and dangerous to third parties.

People particularly affected by this practice include; partially sighted persons, parents with pushchairs, persons who are confined to wheel chairs or have difficulty with mobility etc., anyone who is forced to walk into or around another part of the highway because someone is depriving them of access.

Those providing services such as street cleansing operations or delivery of goods may be considerably inconvenienced by the practice.

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### Combating Vehicle Parking Which Can Lead to Restricted Street Cleansing

Street cleansing operations were recently re-evaluated to bring together five different scheduling systems so that the whole of East Riding had its streets cleaned using a consistent schedule and frequency. All this information is held in a Geo-database allowing quick viewing, effective interrogation and easy editing functionality. A new 4-day on 4-day off rota was introduced which means that the streets are cleaned seven days per week through the year, including Bank Holidays, and eliminating the previous high level of overtime and vehicular downtime.

One major problem faced by the Street Cleansing department when trying to keep streets tidy is the number of cars parking on the road. This causes a major problem for the street cleansing vehicle where access cannot be gained to a large proportion of the street. In many areas street parking is at a premium with the majority of the residents having no access to off-street parking. Residents are very reluctant to move from their 'spot' and although information passed to our customers states the dates of street cleansing operations, the number of residents clearing the street is minimal.

Initially if access to parts of the street was unavailable at that time, it would be missed and no cleansing operations would take place until the next time the street was on the schedule. If the same parts of the street had cars parked on it during the next cleansing rota, it would be missed again. Where possible, kerbed edges would be swept by hand, although this is a labour intensive operation increasing the level of downtime for the street cleansing vehicle. The more cars that are kept off the streets on the day of operations, the more efficient the operational works.

The areas affected by this problem traditionally tend to be in the centre of the larger towns where housing rarely has an off-street driveway. These areas are usually on a maintenance frequency being mechanically swept once every week. It is our aim to cleanse every gully on an annual basis. Combining efforts can be timed to cleanse the gullies and ensure the area is mechanically swept on the same day. If access to a street or an area of street is repeatedly unavailable, a 'letter dropping' exercise is undertaken. Residents are informed of the time and place of the planned gully emptying and street cleansing. People are asked to ensure the area is clear of parked cars. This action has been successful in the past but there is still an average of 38 percent non-participation.

Consultation was carried out with residents and identified a number of problems residents encountered relating to these operations.

- cost of relocation
- relocation inconvenience factor
- availability of nearby parking
- parking spaces taken up by commuters.

Taking the information gathered from the consultation process Street Cleansing have approached these problems by partnership working with our Car Parking Team. Development of the letter dropping exercise addressed one of the major problems identified by the consultation process. The cost of relocation would be tackled by offering those residents involved with a free car park pass for the specific day of works. This would allow the resident to display the pass in the nearest car park.

We found that as a result of the letters informing the residents of the planned works and the options available to them, the participation levels increased allowing significant improvements to the maintenance levels. Non-participation in the streets targeted has been reduced to 12 percent.

There are of course lawful exceptions to when the highway may be blocked.

These include the following:

- to facilitate waste collection operations (needs the authorisation of the highway authority and the waste collection authority)
- to place a skip on the highway
- to erect scaffolding on the highway
- to place hoardings on the highway.

Apart from the above exceptions any other obstructions to the highway are likely to be unlawful and will almost certainly be a source of nuisance.

Obstructions are likely to be encountered in a number of scenarios including the following:

- vehicles parked on verges in residential areas
- vehicles offered for sale from the highway (including verges)
- abandoned vehicles
- waste stored on the highway awaiting collection outside of agreed times and practices both within and outside of containers
- skips sited on the highway without a valid permit
- waste fly-tipped on the highway
- objects or material stored over street gullies preventing the free drainage of water from the highway and also their emptying.

Changes in the structure of how society operates, for example the "24 hour" economy means that obstructions to footways caused by temporary waste storage in the late evening are likely to be more of a problem than in the recent past. This is an example of a problem that must be addressed.

## Legal Issues and Enforcement

As alluded to earlier, obstruction of the highway is unlawful and as such can result in enforcement actions being taken against various parties.

In the first instance advice from local authority officers to those responsible for causing temporary obstructions can often resolve the problem. In some cases, however, it will be necessary for the authority to take more formal enforcement action. Various powers are available in England and Wales under the Highways Act 1980. Useful devices under various sections of Part 2 of the Environmental Protection Act 1990 are also available for use.

Most recently a series of fixed penalty notices (FPNs) is available which can be issued in respect of various issues related to the obstruction of the highway, particularly by waste. In Scotland and Northern Ireland different legislation exists and reference should be made to the relevant law for those areas.

## Designing Out

The main objective for including designing out within this publication is to ensure that forethought and early preparations are made to have environmental cleansing considered from the start of a project. This means that cleansing is included in any project. If there is a rebuild of street paving, forethought would mean that paving is not chosen which cannot be easily maintained for weeds, street washing and smoking litter, for example.

## Weeds

Weeds seeds will germinate wherever they are given the opportunity to do so, sometimes in unlikely and hostile environments. CIWM produced a publication on *Control of Weed Growth on Public Footways and Highways* and there is a section within it covering design aspects of the street to ensure weed growth is easier to control.

## Cleansing

If street cleansing cannot be carried out on a regular basis further local environmental quality issues are likely to arise – weed growth due to detritus accumulation and gully blocking if the detritus or litter accumulates around drains.

### Gum Targets To Prevent Gum On The Street

Discarded chewing gum is considered by the public as one of the worst forms of litter. The UK market for chewing gum is estimated at over 3.5 billion pieces per year, sales are forecast to grow by 18 percent by 2010

It is estimated that the clean-up costs in the United Kingdom are in excess of £150 million. Gum sales are increasing in the UK, as more people stop smoking the problem of littered chewing gum is likely to increase.

To help remove this problem "Gum Targets" are being trailed in Goole Town Centre.

A Gum Target serves two main purposes. First and foremost it acts as a convenient disposal point on which the public can deposit their used chewing gum. Used gum is contained and then removed and disposed of before it becomes a problem at street level.

Secondly a Gum Target acts as a visual reminder that chewing gum is litter and that the consumer should take personal responsibility and dispose of their used gum appropriately.

The front of the Gum Target is covered with a removable, printed Gum Sheet on which the public are encouraged to stick their used chewing gum. The Gum Sheets carry an integrated campaign of messages and designs that are aimed at capturing the attention of the gum chewing public, encouraging them to modify their behaviour and dispose of their gum through the use of Gum Target.

Gum Targets have been installed at 15 locations on the pedestrian area of Boothferrry Road. Demonstrations of the Gum Targets were given to local schools and covered in the local press.

The Gum Targets are regularly serviced to ensure that space is available to deposit gum. Initial usage has been positive and the amount of gum deposited in the area has reduced.

## Management of Gum on the Street

One of the main issues that the public highlight in local authority surveys is the cleansing of gum from the streets. If street design (including paviours, walls and other street furniture) is not determined with gum cleansing in mind local authorities can spend a lot of time and resources cleaning gum material off the streets.

Defra has been supporting gum awareness campaigns with funding for advertising campaigns and many local authorities have looked at how they can encourage their local community to dispose of gum appropriately.

## Working With The Community to Prevent Graffiti and Litter

As part of the Council's Vision which aims to improve the QUALITY of the life of the community; earn the RESPECT of the people served and build PRIDE in belonging to the East Riding of Yorkshire the Streetscene section of the council has worked closely with a wide and various sections of the public. The Environment and Neighbourhood Services has been at the heart of many of the major projects including "Operation Community Challenge" this is part of the councils Safe Communities Partnership. The purpose of the Partnership is: *To work in partnership to reduce crime, disorder and misuse of drugs in the East Riding of Yorkshire*. The Challenge is being led by the Neighbourhood Action Teams (NATs).

The NAT has recruited a large number of volunteers and is working closely with the local policing team to identify potential areas for cleaning. The council are asking Neighbourhood Watch to get involved in cleaning up their own residential areas whilst the NAT and East Riding of Yorkshire Cleansing Services are focusing on the centre of villages. A class from both the local primary and secondary school will be involved in litter picking in the local parks.

The council provides everything from gloves, goggles, and graffiti removal spray to sweeping brushes and litter pickers. The street cleansing department supplies extra vehicles and even weighs the litter that the volunteers have collected. The Cottingham project saw the volunteers collect 160Kg of litter and fly-tipped material.

The continued support of the council's partners and volunteers is seen as an essential way forward both for East Riding Council and the local communities. The continuing targeting of graffiti and litter picking will hopefully have a positive affect on everyone and will stop those who presently write the graffiti and drop their litter. The residents of all the parishes and towns, along with the council and its partners, hope to gain a real sense of pride and respect for each other within all the communities of East Riding.

The Council's Environment and Neighbourhood services unit, along with all its partners, will continue to improve the well being of all its citizens through continuing projects which will see the cleaning of streets, removal of graffiti and generally giving neighbourhoods a "spring clean". With new towns and parishes to help clean and tidy, this programme will hopefully run and run and encourage others to participate.

## Graffiti

Graffiti has long been used to express opinions but whatever the artistic merits (as some see graffiti) the application to a property of a third party without their consent is criminal damage. CIWM's publication *Local Environmental Quality – a guide to good practice* has a number of case studies covering graffiti.

## Harrow Case Study – Pavement to withstand cleansing operations

In the London Borough of Harrow these problems have been addressed by replacing small element paving with more traditional paving stones, laid on a lean concrete bed. The thickness of the paving was also increased from 50mm to 63mm.

The change in specification necessitated good quality control at the construction phase but had the following added benefits:

- reduced responsive highways maintenance – to repair vehicle damage
- the resulting surface was smoother and easier to clean
- the new paving provided a smoother ride for pushchairs, wheelchairs and shopping baskets.

Quick removal of graffiti discourages more of the same or additional environmental crime.

Designing out graffiti will involve the use of permanent anti-graffiti coatings to surfaces likely to attract graffiti, this will enable easier removal.

## Fly-Posting

Fly-posting or more correctly the "unauthorised display of advertisements", contrary to the relevant law (1990 Town and Country Planning Act) is a common source of complaint in the UK.

Prevention of fly-posting is particularly difficult due to the huge number of possible locations and surfaces available to those tempted to unlawfully post.

CIWM produced *Local Environmental Quality – a guide to good practice* in September 2005 which details prevention, removal and information on enforcement relating to fly-posting.

Successful prosecutions secured by Camden have been a driver in seeing the amount of fly-posting reduced.

## Pavement Loading

Cleansing maintenance of pedestrian areas and footways can lead to conflict with highways engineers for one or more of the following reasons:

- damage to large element paving from the loading imposed by ride-on mechanical sweepers
- removal of sand from joints, in small element paving (400mm sq. and below), by suction from mechanical sweepers
- removal of sand from joints, in small element paving, when cleaning chewing gum off using high-pressure jetting.

# Gum

## Chewing Gum Action Group

The Chewing Gum Action Group (CGAG), established in October 2003, brings together gum manufacturers, the Local Government Association, the Chartered Institution of Wastes Management, ENCAMS and Defra to seek sustainable solutions to irresponsible gum disposal.

The remit of the Action group includes:

- increasing public awareness of the issue
- promoting responsible disposal behaviour through campaigns
- guidance and support for local authorities tackling gum litter
- proving information on disposal and cleansing products
- research into gum litter and the attitudes and awareness of gum droppers.

There are a number of research reports and survey findings on Defra's website http://www.defra.gov.uk/environment/localenv/litter/gum/actiongroup/index.htm

During 2005 a public awareness campaign took place in three selected towns and cities across England (Preston, Manchester and Maidstone) to challenge the irresponsible dropping of chewing gum. These pilots led to the media campaign for 2006 that a number of local authorities applied to participate in (fifteen were selected).

In 2007, campaigns have been run using an updated set of visuals and the slogans "guilty / not charged" and "sin / bin" to focus minds on appropriate versus inappropriate disposal behaviour. Sixteen local authorities took part in this year's round of campaigns that aimed to educate people about the responsible disposal of chewing gum and the financial penalties that offenders face. The results showed that local authorities that have taken part in public awareness campaigns have cut chewing gum litter in their areas by an average of 58 percent.

The Action Group is preparing for another round of campaigns for 2008.

## Smokers Litter

Smoking-related litter is known to be one of the most prevalent types of litter as measured by the annual Local Environmental Quality Survey of England (LEQSE). The results from the last three years show that smoker's materials were present on 79 percent of survey sites. Over the last five years, the amount of cigarette litter has increased by nearly 20 percent.

## Cigarette Litter Action Group

The Cigarette Litter Action Group (CLAG) was recently developed and met for the first time in July 2006. It consists of 13 organisations (including ENCAMS and the Tobacco Manufacturers Association) and is chaired by Defra. The CLAG was developed after stakeholder consultation and comprehensive research about the extent and impact of cigarette litter in England. The CLAG runs according to a Terms of Reference, and over 100 organisations are listed on the CLAG stakeholder database.

The objective of the CLAG is to develop a co-ordinated approach across all stakeholder groups to reduce cigarette litter in England. From July 2006 to early 2007 the CLAG was developing its core activities and management structure, much of which is subject to a request for funding from the tobacco industry.

It is proposed that the CLAG develops consistent resources, branding and information that would be used across several behavioural change campaigns driven by the CLAG. These campaigns would aim to change the littering behaviour of smokers and would consist of educative techniques (such as advertising or face to face education), a call to action and the provision of ashtrays as part of the solution. The campaigns would be implemented at cigarette litter hotspots (e.g. pubs/ hotels, office entrances, and transport hubs) and would engage local authorities as well as other partners (such as retailers). Ultimately, we aim to equip smokers with the motivation and tools to appropriately dispose of cigarette litter, so that appropriate disposal becomes a 'social norm' in any context.

It is also proposed that a grants programme be developed to inject resources into those areas that require help with kick-starting appropriate cigarette litter disposal. This funding would enable local authorities to implement behavioural change campaigns in their own locality.

One of the main drivers of the CLAG is to enable concerted, preventative action prior to the introduction of indoor smoking bans in England in July 2007, which could result in an increase in cigarette litter as smokers move outside.

Since early July 2007 Defra have determined that determining the route of funding for this group is currently proving difficult to secure and have decided to mothball the group. Funding was being sought from industry to sustain this group, similar to the Chewing Gum Action Group.

## Smoking Ban

Under Environmental Protection Act 1990 (EPA 1990) section 93 street litter control notices may be issued by principal litter authorities where there is a significant problem with litter on the street. The notice can place requirements on the occupiers (or owners) of premises effected by litter to clear the litter or refuse from the specified area and may in particular require the provision or empyting of receptacles for litter or refuse.

The Clean Neighbourhoods and Environment Act 2005 clarified that smoking-related materials are litter, to encourage greater enforcement against this offence. This legislation also gave greater powers for local authorities using fixed penalty notices for litter offences.

On 13 February 2007 Defra launched a consultation extending these provisions to allow notices to be issued for all types of eating and drinking establishments and office buildings. This was aimed particularly at helping to deal with the potential of smoking litter being dropped by customers and employees, when England enforced a smoking ban on open or partially open land on 1 July 2007.

The Street Litter Control Notices (England) (Amendment) Order 2007 came into force on 1 July 2007 and prescribes the descriptions of commercial or retail premises in respect of which a street litter control notice may be issued.

## Impact on the Streets of the Smoking Ban

A recent ENCAMS report stated there had been as much as a seven times increase in the amount of other smoking material – cigarette packets, films and matches – littering the streets since going smoke free earlier this year.

Wales and Northern Ireland have also seen an increase in cigarette related litter. Tidy Northern Ireland reported a 17 percent increase in smoking related litter after the ban was introduced in Northern Ireland and Keep Wales Tidy recorded a seven percent rise since their ban.

Scotland on the other hand saw an immediate increase but then it fell due to more people using the correct disposal containers provided.

## Spillages

Local authorities have a number of issues to address with spillages, this may include small spillages (paint on the footway) or large spillages (oil from a road accident). Local authorities need to have a procedure in place to allow resources to be addressed, whether the spillage is due to an accident or out of hours emergency.

Any forward planning that allows for spillages to be easily cleaned from the footway or highway potentially save time and resources on all sides (local authority, highways and emergency services).

There have been a number of issues with spillages on the footway or highway during bin washing procedures. Legally these spillages fall under Section 33 and 34 of the Environmental Protection Act, local authorities can ensure that anyone operating a bin washing scheme in their area belong to an associated body before they are given a licence to operate. Enforcement officers would need to ensure that they have the resources to prosecute operators that contravene the legislation.

## Open Spaces and Parks

In the Code of Practice for Litter and Refuse (Defra, 2006) there is a statutory duty for litter authorities to maintain public open spaces and these include parks and municipal cemeteries.

## Case Study Explaining How the East Riding of Yorkshire Council's Out of Hours Service is Delivered.

The East Riding of Yorkshire is located on the country's eastern coast and shares boundaries with North Yorkshire, Doncaster, North Lincolnshire and the urban settlements of York and Kingston upon Hull. To the east lies the North Sea and to the South the Humber estuary. Covering 241 000 hectares and having a population of 325 000 it is the largest unitary authority in England.

There are a number of ways in which an incident can come to the attention of the Council but usually these are through an out of hours phone call from a member of the public who is requesting a service or reporting a problem.

During the out of hours period calls are directed through a dedicated call centre run by 'Lifeline' which is available to collate and direct information to the most appropriate responding unit.

Front line operatives are available on rota to deal with normal situations, should bad weather be reported such as high winds or heavy rain additional resources are activated on a precautionary basis to deal with the anticipated situation.

The East Riding is a coastal Authority and often flood and weather warnings are received requesting staff be deployed on a precautionary basis to coastal or low lying areas for monitoring purposes and to ensure flood gates remain closed.

Many situations need to be assessed and there is an escalation process to ensure an incident receives the most appropriate response. Any situation can be escalated should it necessitate resources beyond those that are normally available this may eventually lead to the Councils Emergency Control Centre being set up and the full emergency process being activated.

Staff have available to them a First Line Response Manual, which details many of the situations likely to be encountered when attending an out of hours call. This details contact telephone numbers, shift rotas and procedures. In addition the manual gives guidance on such issues as lone working and how to feedback to, and deal with, responding officers.

The possibility of a coastal oil spillage is an ever present threat due to the volume of traffic using the river Humber, refineries and docks, therefore regular exercises are undertaken with the other Authorities that may be affected.

Recently the East Riding of Yorkshire Council has purchased some equipment that will be deployed should an oil spillage occur. This is held at the Council's Hedon depot due to the suitability of its location, it is near the mouth of the river Humber where it joins the North Sea. This equipment comprises cones, temporary fencing, containers, signs, various hand tools, torches, buoys and personal safety equipment. This includes a 'Fast tank' which is an easily erected holding tank into which oily, contaminated waste can be stored prior to its disposal.

An exercise was recently undertaken to test our ability to respond to an incident this process included deployment of equipment and staff, toolbox talks to ensure safe working practices, establishment of working areas and exclusion zones. It also tested our ability to control staff and equipment on site and ensure staff well being through the provision of food and wash down facilities. The physical aspects of this exercise involved the excavation and lining of storage trenches and the erection of a 'Fast tank' both of which would both be used during an incident to store contaminated material. The final phase of the exercise involved the dismantling of the equipment and restoration of the beach to its previous state.

This exercise helped develop staff experience with a number of lessons being learnt such as the need to level off an area of beach before erection of the 'Fast tank' and showed that there is a need for portable radios due to the lack of telephone signal on the coast.

This exercise will aid in the delivery of an effective response during and following an incident and allows staff to become familiar with specialist equipment and safe working methods in a real life situation.

There has recently been much discussion about the declining quality of our city parks and lack of focus upon rural green spaces. While this is undoubtedly a cause for concern in many places there are also many examples of thriving, popular sites run by dedicated, enthusiastic people working closely with their local communities. Many places that were run-down and neglected just a few years ago are now shining examples of outstanding green space management, and this shows the way forward. The Green Flag Award Scheme is the impetus to an ever-increasing improvement in the quality of our parks and green spaces.

Green Flag Award – is the national standard for parks and green spaces. A record 554 Green Flag Awards have this year (2007/08) been given to sites across the country - an increase of 30 percent compared to last year. 55 percent of local authority areas now have one or more parks flying the flag, a symbol of a well managed, quality green space

## Dogs and the Law

There are a number of pieces of legislation controlling dogs and dog fouling and it is important that local authorities are aware of how they can use such legislation and any limitations there might be.

### Dog Control Orders

The Clean Neighbourhoods and Environment Act 2005 has replaced the dog byelaw system and the Dogs (Fouling of Land) Act 1996 with powers to make Dog Control Orders. Primary and secondary authorities (local authorities and principally parish councils) can make Dog Control Orders in relation to five dog control matters, including:

- dog fouling
- dog ban areas
- areas where dogs must be on leads
- areas where putting and keeping a dog on lead when instructed
- multiple dog walking restrictions.

When Dog Control Orders are made a period of local consultation and notification in local press is needed. The maximum fine upon conviction for a Dog Control Order offence is £1000, and Fixed Penalty Notices (£50) may also be issued.

Though section 65 of the Clean Neighbourhoods and Environment Act 2005 repealed the Dogs (Fouling of Land) Act 1996, local authorities who designated land under the 1996 Act prior to 6 April 2006 can continue enforcing the offence.

Similarly, no byelaws can be made by local authorities or parish councils for those matters capable of being prescribed in a dog control order (which are mentioned in the previous paragraph). But byelaws made before 6 April 2006 will continue to have effect until they are either revoked or replaced with a dog control order.

## Special Events

### Event Waste Management

Special events are temporary in nature and often generate a high volume of waste materials. Developing good practice management of wastes at events is central to maintaining a consistent message on recycling and litter prevention. Good practice includes adopting sound purchasing and packaging polices, effective waste and recycling services and clean up practices.

The Sydney 2000 experience has shown that this diversion figure can reach up to 75 percent by recycling cardboard, paper, food and drink containers and composting organic material such as food scraps, paper plates and biodegradable cutlery.

Managing waste at events results in benefits for councils, event organisers, the public and the environment by reinforcing sustainable behaviour. Benefits include:

- **Councils** that have policies on waste reduction and resource recovery at public events are more likely to meet their community's environmental expectations. Effective event waste management can impact on the behaviour of stallholders and attendees in a positive way by reinforcing at-home recycling practices.

- **Event organisers** save money by reducing the amount of waste sent to landfill and generate goodwill among the public. Providing recycling and reducing litter enhances the reputation of the event, making it more attractive to tourists and other visitors.

- **The public** benefits by being able to attend a clean and tidy event.

- **The environment** benefits from a more sustainable use of resources, the avoidance of waste and litter, a decrease in material going to landfill, and the use of materials that are less environmentally damaging.

### Planning for Effective Waste Management at Events

Effective event waste management starts during the planning stages of each event. There are a number of key steps that can be taken to ensure waste is properly managed at each event these steps include:

- planning
- gaining commitment
- promotion
- stallholders/contractors
- minimising packaging
- bin stations
- planning.

Often waste is dealt with as an 'add on' to the event planning; it should instead be integral to the overall plan for the event. It is important from the outset to establish waste minimisation and recycling goals so these can be communicated to every one involved in the event.

An event waste plan should be developed highlighting targets and aims and how these will be achieved throughout every stage of the event.

When setting goals it is best to set achievable goals. It is not advisable to make the first event too challenging, if the goals are too difficult they may not be met and people will be put off doing any waste initiatives in the next year.

At the next event set the goals a little higher. The aim is to gain commitment from event planners, demonstrate that recycling at events can work and to establish a culture of sound waste management at each event.

To ensure waste management is integral to event management, nominate one person to be responsible for implementing the event waste plan and to be a champion for effective waste management at all events.

Check if there are any council policies or guidelines for events and waste management at the chosen location before writing the waste plan.

## Gaining Commitment

The success of waste and recycling initiatives at events will be possible through gaining commitment from all key stakeholders. Key stakeholders will include:

- councils – including, event organisers, communications teams, councillors, waste management teams, street cleaning teams
- event site owners – benefits for them include reduced costs for waste management and positive environmental image
- sponsors – may be attracted to events that send out environmental messages
- stallholders and vendors – there commitment can be gained by placing a clause in their agreement, permit or contract that commits them to use certain packaging and to follow all waste and recycling procedures
- waste service contractors – the use of clauses in their contracts will help gain their commitment to waste management aims
- other service contractors – includes businesses supplying fencing, portable toilets, power supply, sound systems or marquees, they need to understand the goals of the waste plan.

The public- will respond positively to plans to help recycling and minimise waste. Mention recycling on all promotional materials; provide clear signing and positive messages throughout the event.

## Promotion

As well as promoting the event, the waste activities that will be available at the event should also be promoted, i.e. recycling bins or composting bins. Branding the event as being 'waste wise' or a 'zero waste' event will help to give the event an environmental image. Possible avenues to promote the event include:

- in all literature, media releases, programmes, tickets, posters, etc
- post event editorials
- endorsement from a well-known local identity to promote the environmental initiatives
- have environmental promotional signs and banners displayed throughout the site
- use word of mouth from all those involved in planning the event.

It is advisable to develop a communications plan as part of the waste management plan to promote all recycling activities. It is important that all messages are clear, simple and consistent.

## Stallholders/Contractors

To achieve your recycling targets it is important that suppliers, stallholders and contactors understand the waste management goals and the requirements to minimise packaging and waste. This should be communicated early to them so they can source the appropriate materials. Stallholders are major contributors to waste generated at events, most of which is catering and packaging waste.

Asking stallholders to change their packaging may come with resistance. Undertake research into locally available alternatives and provide a list of suppliers to each stallholder applying to attend the event. Doing this may help bring them on board easier. Cost will be a determining factor in the packaging materials stall-holders use, by presenting the benefits of alternative packaging this will also help gain their support.

Another way to prevent undesirable packaging materials at your event could be to stipulate a list of materials that are acceptable and not acceptable at your event. This list can be incorporated into their permits, contracts/ agreements. If stallholders fail to meet these conditions they can be informed that they may not be asked to attend future events. This is one way of establishing a culture of supplying environmentally acceptable materials at all events. But these measures should come after other recycling initiatives and approaches have been tried.

To help manage waste quantities find out what type and quantities of materials each stallholder and contractor are likely to sell and use, this information will be vital to the waste management plan.

Stallholders will also need to be told what to do with their waste at the end of the day. This needs to be incorporated into the waste management plan and communicated to all stallholders. If special bins are to be provided for stallholders they will need to be supplied with a bin placement plan to help identify which bins they can use.

Stallholders should be informed that a member of the waste management planning team will be monitoring stallholders throughout the event and at the end of the day.

## Minimising Packaging

Encouraging all stallholders to minimise packaging will result in cost as well as environmental savings. The person responsible for implementing the waste management initiatives at the event should:

- check with the waste contractor which recyclables are accepted before setting the list of recyclables materials for stallholders
- encourage stallholders to minimise waste through including within their agreements that they need to take steps to minimise waste
- provide a list of specific types of packaging that will be allowed at the event
- provide a list of local suppliers of recycled content or compostable or recyclable packaging
- appoint someone to liaise with vendors for the event.

## Bin Stations

The location of bin stations will have a big impact on the effectiveness of the waste strategies employed for the event. The correct number of bins, their placement and clear signage will be essential for success. Clear signage and communication will help to keep contamination down in recycling bins. Before the event the site should be inspected and a bin placement plan devised.

A bin station usually consists of either two bins (one recycling and one waste) or three bins (two recycling and one waste). Each bin needs to be labelled with standard signage and each station should be consistent in appearance.

Bin stations need to be placed in strategic locations where the event attendees can use them. Place bins station:

- where people gather such as high-traffic areas, stalls, entertainment areas, entrances and exists
- away from where people are likely to queue, so they are not an obstruction
- for convenience of the user rather than just the collector
- where they can be effectively emptied and serviced.

Back of house bins are for stallholders and contractors (and usually consist of skips or wheelie bins) these should be placed in areas that are not accessible to event attendees. A site plan should show each bin station and all back of house bins, the plan should be provided to the waste contractor and stallholders.

To avoid confusion it is advisable to cover up street litter bins.

Source: http://www.environment.nsw.gov.au/education/wwe_before.htm Waste Wise Event website of the Department of Environment and Climate Change NSW.

# Operations

## Weather Emergencies

The weather, in certain circumstances, can be a significantly important and valuable aid for the street cleansing services, with rain washing pavements and roads, positioning debris in channels and wall lines, and wind blowing litter into well known wind traps for inconvenient removal. Without the assistance of the elements, which in the UK are guaranteed to occur regularly, the work of the street cleansing service would be more complex.

However, in severe conditions, weather can create havoc with the basic requirement of environmental cleansing where the function is to maintain the highway in a fit state for the passage of pedestrian and vehicular traffic.

Fortunately, the most extremes of weather, other than road icing, are infrequently experienced and the problems suffered are generally limited to highways obstructed by fallen trees or large wind-blown debris or flooding due to blocked road gullies or the overloading of the surface water drainage systems.

The handling of these emergencies has been made a little easier by the establishment of the National Severe Weather Warning System, established after the hurricane suffered in the south of England in 1988 which effectively closed down the road system in the area for a number of days. These advance warnings do generally give the emergency services and local authorities time to prepare the necessary manpower and equipment to deal with anticipated problems.

However, climate change seems to be increasing the likelihood of extremes. Recent floods have led to many authorities having to take another look at their weather emergency plans.

The area of extreme weather which requires the establishment of a specific emergency service in order to affect adequate control is that involving ice and snow on highways and footpaths during the winter periods. This was until recently commonly known as the winter maintenance service, now the winter service (see below) and is established throughout the UK. It ranges from the intensive operations needed for the motorways and trunk road networks, through to those provided, generally along with the cleansing services, in metropolitan and district councils, enabling limited arrangements for treating minor roads and footpaths at these times.

## Winter Service

Winter service has been called various names in the past including winter maintenance, but the particular management requirements during this period are not "maintenance" in the traditional sense but specialist operational services. The term "winter service", has been used in Northern Ireland and provides a more apt description and has been adopted by the Code of Practice for Highway Maintenance Management (called *Well-Maintained Highways* published by TSO - ISBN 0 11552 643 9). This is now the main code of practice for winter service and therefore this handbook has adopted the same terminology.

Winter service is not an emergency service in the traditional sense in that low temperatures, ice and snow are regular and frequent occurrences, even given the affects of climatic change. In these circumstances the winter service can and should be subject to the same regime of planning and review as other aspects of the council services.

Policies and operational plans developed for the winter service will, however, have relevance in emergency planning for dealing with other extreme weather conditions including flooding, high winds and high temperature, the incidences of which may be affected by climatic change. They will also have some relevance to the wide range of non–weather related emergencies that could affect the highway network.

Although a much specialised area, the winter service is a significant aspect both financially and in terms of its perceived importance to users. According to the Institution of Civil Engineers Design and Practice Guide 2000 a recent survey concluded *"that for every £1 spent on winter maintenance, £2 is saved on accident reduction, £5 is saved on a reduction in traffic delays and £1 is saved by not creating the need to engage emergency services."*

The heart of a winter service is an overall operational plan. The Code of Practice for Highways Maintenance Managers has several recommendations concerning both winter service and weather emergencies; these include the need for a winter service operational plan, which it says *"should be reviewed annually in consultation with users and key stakeholders, to take account of changing local circumstances."* Appendix H of that document gives a list of items considered to be the minimum desirable for an authority's winter service operational plan. Readers are recommended to refer to this excellent document when establishing or reviewing their winter services.

It is not possible, within this publication, to address all of the aspects of a winter service, but simply to highlight some of the main areas and recent developments that need to be considered if high standards, together with efficiency and cost effectiveness, are to be achieved.

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## Legal Implications

Why is there a need to undertake the treatment of roads and footpath? The answer until recent years was to avoid the obstruction and danger to motor and pedestrian traffic from frozen surfaces.

The following relates to England and Wales:

Highway authorities in England and Wales have had a statutory duty under Section 150 of the Highways Act to remove snow. There had been no requirement until 2003 to treat ice or carry out precautionary salting of the highway network, but this was undertaken to provide as safe a journey as possible to the travelling public, having regard to financial constraints.

The Railways and Transport Safety Act 2003 in part 6 Clause 111 had an addition to the Highways Act 1980 that stated *"After section 41(1) of the Highways Act 1980 (c. 66) (duty of highway authority to maintain highway) insert- "(1A) In particular, a highway authority are under a duty to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice."*

The background to this clause as it went through Parliament stated that *"This clause extends to England and Wales … a duty on a highway authority to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow and ice…The duty provided by this clause is similar to one already existing in Scotland, contained in section 34 of the Roads (Scotland) Act 1984."*

The background to this was stated as follows: *"On 15th June 2000, in the case of Goodes v East Sussex County Council, the House of Lords decided that the duty of a highway authority, under section 41 of the Highways Act 1980, to maintain a highway did not include a duty to keep the highway safe by preventing ice from forming. They considered that if such a duty were desirable, that would be a matter for Parliament."*

Each authority should therefore produce their own plan based on current best practice guidance including the principals of the revised *Code of Practice for Highways Maintenance Management* section on winter services published in 2005 and the Institute of Civil Engineers design and practice guide on highway winter maintenance.

The code of practice states in relation to the duty introduced by the Railways and Transport Safety Act 2003:

*"This is not an absolute duty, given the qualification of 'reasonable practicability', but it does effectively overturn previous legal precedence, albeit not with retrospective effect. Section 150 of the Act still imposes a duty upon authorities to remove any obstruction of the highway resulting from 'accumulation of snow or from the falling down of banks on the side of the highway, or from any other cause'.*

*Given the scale of financial and other resources involved in delivering the winter service and the obvious difficulties in maintaining high levels of plant utilisation for specialist equipment, it is not practically possible either to:*

- *provide the service on all parts of the network*
- *ensure running surfaces are kept free of ice or snow at all times, even on the treated parts of the network.*

*In these circumstances, in order to comply with the changes in legislation, it will be necessary to undertake risk assessments to establish which routes should be included in a programme of treatment during inclement weather. In particular, the treatment of footways must be fully addressed taking account of risk to all highway users and consideration of the available resources. "*

Therefore although the objectives are to:

- minimise delays, accidents and damage resulting from ice and snow
- undertake winter service effectively and efficiently
- try to prevent ice from forming on priority routes by precautionary gritting
- melt ice and snow already formed by post-gritting
- remove snow causing an obstruction.

It will not be possible to cover all routes at all times, and the plan should be based on prioritisation based on a risk analysis.

As with all activities in the waste management industry, the training of operatives to undertake the task in an efficient and safe manner is essential. The operation of the 'gritting machine' is generally simple, but the mechanical systems do pose safety hazards to the operator. The conditions that exist when the service is being provided are the worst that can be expected for drivers and a high level of skill and experience is needed to avoid accidents. Drivers undertaking gritting operations on trunk roads and motorways must hold a Certificate of Technical Competence (CoTC) and it is wise for all other operators of the service to require this as a minimum standard for their drivers.

## Contractor/ Client Relationships and Best Value

Following the introduction of compulsory competitive tendering (CCT), which eventually included this service, a need for a contractor/client arrangement was established. The nature of the service, its variability, operational times,

etc., does not easily lend itself to being established on the normal local authority contract basis. However, providing that fixed charges can be established for the main infra-structure of the service - i.e. vehicles, salt storage, night shift operatives, weather forecasts, supervisory and management costs and unit rates for salt usage, fuel and additional labour costs - the service can be reasonably costed and appropriate financial controls exercised by the client.

It is crucial that within the client/contractor relationship the responsibility for initiating action is clearly defined, along with that for controlling the operation, particularly when multiple applications are required during prolonged snowfall. It is not unreasonable to delegate responsibility for the whole management of the service to the contractor. Such an arrangement does not mean that the client needs to lose financial control, providing that the contract has been prepared carefully, and properly identifies the criteria and the performance standards that are required.

With the introduction of Best Value, some have returned the service to a single control basis without the formal contractor/client arrangements. The benefits of the costing arrangements that were established for CCT generally remain as these have proved very useful in planning and justifying the costs incurred by the service during various severe weather periods. The principle of satisfying the public's demands on the service, which is a key factor to Best Value, make it more difficult to handle the balance between need and acceptable cost for this service, making it very difficult to establish. The establishment of 'benchmarks' for service level provided may be the only way to avoid unreasonable pressure for a service level that is unaffordable.

Part of the system must be an adequate communication system to keep the public and media advised of the action that has been taken and the progress of the emergency. With local radio and television, the ability to advise motorists of the existence of problems on roads can be immediate and very useful. It is sometimes difficult in the course of an emergency to prepare for the need to communicate with the media and this can result in the information issued being poor. A pro-forma with general operational activities, such as number of men, vehicles in use, salt laid, etc., can avoid this problem, as can notes on general advice to motorists that are repeated on every occasion a contact is made. The widespread publication of the routes that are scheduled for treatment is essential to assist the public in a decision to set out onto snow and icy roads and to defend subsequent claims of lack of treatment at a later date.

## Treatment Works

The routing of the salting vehicles is crucial to a smooth and satisfactory operation. The routes must be able to comply with the required response time established in the plan and then form a compromise between the needs to:

- attend the highest priority roads first
- cover the whole of the roads that need treatment as quickly as possible
- avoid confronting the driver with complex manoeuvres and constant reference to route charts
- maximise the carrying capacity of the salting vehicle.

It is also necessary for the routes to be able to operate satisfactorily at times of snow, when the possible use of ploughs may require that both sides of the highway have to be treated and generally the simple reversing of the route is adequate to meet this requirement. However, the increasing numbers of one way streets and dual carriageways, even in urban areas, can make this requirement difficult.

The control of salt usage also requires the route to identify where the width of spread has to be changed and this requirement only adds to the heavy workload of the driver. It does appear that the use of electronic support to assist the driver in these circumstances can be an advantage. A facility to guide the driver around the route and automatically change the rates and width of spread by the use of global positioning satellite (GPS) to determine the position of the vehicle is already available, and with route based forecasting (see below) there may be opportunity for automated partial route gritting in the future.

Such a facility would change the service into a science rather than the art that it is at present.

## Weather Forecasting

Developments in the forecasting of weather and its effect on the winter service over the past couple of decades can only be described as dramatic. The use of weather forecasts to plan and control the operation previously was not possible and the forecasts were used generally as a warning of impending wintry weather. The timing of its onset was not specific enough to the precise locality of the area, and the operational managers had to use their own judgement in making decisions as to what action to take and at what time to attend to the emergency, which often resulted in the over-treatment and use of precautionary salting in order to avoid problems being experienced.

Modern weather forecasting and the use of thermal mapping, local weather stations and computers by the National and Regional Meteorological Office and their open road service now provide very accurate detailed daily forecasts, with updates for individual local areas with precise times for the onset and cessation of freezing

### Network Weather Forecasting in Neath Port Talbot County Borough Council

Neath Port Talbot County Borough Council (NPTCBC) has had a long involvement with route forecasting, having commissioned a feasibility study from Oceanroutes in 1996, as part of research and development work then being undertaken by the authority.

The results of this work, was the subject of a joint presentation by Ian Davy/Brian Williams at Cold Comfort 2000.

Several factors lead to the decision to seek improvement in the forecast service, which in turn led to the adoption of route forecasting in place of the traditional forecast, these being:

- internal audit of winter service plan
- legal obligations under The Railway Transport and Safety Act 2003
- recommendations from the internal Winter Service Review Group.

The first improvement in forecasting was the provision of temperature and surface condition data at 20-minute intervals for 13 bridge decks. Unfortunately this was not considered to be very user friendly due to information overload. In 2004 the weather forecast contract was due for renewal and the opportunity was taken to include the provision of an enhanced service namely route forecasting.

The contract was awarded to Entice Technologies Ltd for two years with the option of a third year extension. All the precautionary gritting routes were surveyed by Entice with all available road construction and traffic data being supplied by the Council. The intention being to evaluate the value of route based forecasting against the traditional service, to determine if improvements were as anticipated.

Some limited validation work was undertaken by the Environment Directorate's Network Management section. This involved comparison of site specific forecast graphs, actual data and nearest route forecast point (maximum distance 25m). Whilst some initial forecasts gave reason for concern, following discussions with the provider, continuous improvement followed, as did confidence in the system. Close examination of certain routes indicated cold spots which had hither too been considered warm and were not thought to be a problem under normal conditions. The question, which had to be addressed, was, was this a flaw in the forecast system, or potential danger spots. At the time the Council was offered the facility of a new IR sensor under development by Campbell Scientific, which was installed at one of the forecast cold spots. Subsequently, observed data from the sensor supported to a high degree, the accuracy of the route forecast at the location in question.

At the end of the two-year contract on the recommendation of the Winter Service Review Group, the option to extend the contract for a third year was taken. Shortly afterwards Entice Technologies Ltd was acquired by WSI.

Over the last three years operational staff have gained first hand experience in the use of route forecasting. Confidence in the system is such that route forecasting is now regarded as the core requirement of weather forecasting service in NPTCBC for the foreseeable future. Further developments are taking place in the form of footway route forecasts. Four are currently being evaluated.

temperatures, precipitation etc., along with slightly less accurate long range 5-day forecasts.

The facility to talk to the duty forecaster, at any time day or night, to clarify any situation can be of considerable assistance and comfort. The accuracy of the forecasts provided always increases with the shorter the time before the weather is expected, but the accuracy does have a tendency to drop in line with the severity of weather being forecast.

Further developments have provided the facility, through the Meteorological Office and a private company, using weather stations located at strategic points in the area, for the operations manager to be issued with a portable or office computer which can be linked by a normal telephone to a central control centre providing information detailing specific forecasts for the road situations in his own areas, thereby giving details of the possibility of road temperatures falling below freezing point and those roads where ice will form and at what time this will occur. This information is displayed on charts, maps and tables, in a manner that enables it to be easily understood. The system has begun to develop into the main decision making tool for the winter maintenance manager.

However, the latest development originally by Birmingham University and now commercially by WSI (a sister company of the Weather Channel) takes this one step further. Sky-view factor mapping has some major benefits over thermal mapping. Traditional thermal mapping fails to take into account the dominant role that sky-view factor has on the variation of road temperature. By understanding the sky-view factor, forecasts can be made for any time of day (not just minimum temperatures) and under any weather conditions. This new method does away with the need for each night to be forced to fit a damped, intermediate or extreme thermal map! Measurement of the sky-view

factor enhances the predictive capability of any ice prediction system. This combined with other known geographical and other factors leads to a computer prediction for each route.

This new technology offers local councils a change in the way in which road weather forecasts are delivered. It switches from regional to route based forecasting, moving away from forecast zones to an individual forecast tailored for each route. Once proven this will move to an 'expert system', removing the subjectivity of human decision making. It has obvious benefits in terms of ensuring correct routes are treated first and could also aid the environment as it has a significant potential for reducing salt usage.

The availability of route forecasting is timely, and will be of an immense benefit to the winter service practitioner. It will enable the practitioner to make more informed treatment decisions, meeting the requirements of a Highway Authority's legal obligations, whilst minimising unnecessary actions.

## Vehicles and Equipment

The operation of spreading salt on the surface of highways and other locations has been taking place for some considerable time now.

Historically, however, the material first used for treatment of roads was boiler ash from the very many thousands of Lancashire boilers that were in use in the country. The application of boiler ash had a dual role as a de-icing agent and also assisted traction of vehicles in packed ice and snow. This material was extremely cheap and very freely available. Its disadvantages included difficulty spreading, varying quality, mess left after the snow had gone and damage to the tyres of road vehicles.

This material was replaced by the spreading of fine graded aggregate material with a sharp geometric shape- in other words grit. Grit had no properties as a de-icing material but instead assisted vehicles to improve their purchase on the road surface and thus improved traction.

The application of such material to roads became known as "Gritting"- hence the current use of that term even though the material used is now salt.

The equipment required for the winter service comprises of salt spreaders (commonly known as gritters), snow ploughs, snow blowers, a suitable vehicle to carry this equipment, and loading shovels to load salt onto vehicles.

Developments in the 'gritter' have been extensive mainly in order to spread rock salt very accurately and evenly onto the highway whilst operating from one side of the road. The basic principle of a moving belt running along the floor of the vehicle carrying salt through an adjustable gate at the rear onto a spinning disc still applies. However, the modern gritter is now speed related, with means it is possible to adjust, from the cab during the process, the quantity of salt being laid and the width and area of spread on an asymmetric pattern to suit all circumstances and types of roads that have to be treated. These developments have significantly improved the range of a standard gritting vehicle by the accurate application of rock salt.

Snow ploughs have not changed from their original concept other than the method of attachment to the vehicle which can now be undertaken by means of a quick release system, which enables the rapid deployment of the ploughs when required. Snow blowers are rarely required in the UK but are generally the only efficient means of removing the thick snow drifts experienced on rural roads.

The carrying chassis for gritters and snow ploughs can be new, second-hand or other service vehicles that have come to the end of their operational life. The case for using new vehicles for this service is very strong despite the initial financial implications. The reliability of gritters is paramount and nothing is more useless than a gritter in the workshops during a period of bad weather. The use of second-hand vehicles often requires a larger fleet to be operated to cover breakdowns, considerably higher maintenance costs and often disgruntled drivers who have to use the vehicles. Their operational life as gritters is often short and results in the frequent transfer of the spreader and snow plough attachments to the next vehicle.

A new vehicle, on the other hand, is reliable, loved by its drivers, has less maintenance costs and can be operated with the same body for a period of five - six years. It has been found more beneficial to refurbish the body after

this period for a second term and to fit to a new chassis, as the modern salt spreading body does not deteriorate by corrosion as it did previously, and considerable savings can be made by the refurbishment process.

De-mountable bodies are a good compromise between the two options; however, care should be taken to ensure the winter emergency task is not affected by the use of existing lightweight vehicles just because they exist in the fleet. Where they really come into benefit is to provide low cost additional units for use in severe conditions without committing a chassis to full-time operation within the service.

It is, therefore, essential to undertake a full life costing, taking into account the number of drivers that may be required, of the winter emergency equipment before establishing a policy. Avoid the all too common year to year decision making crisis on this aspect of the service, as this is certain to result in higher costs.

The continued maintenance of gritting vehicles during the summer periods is just as important as during their operational periods; considerable expense can be involved during this period, sometimes with little overall value. The mothballing of vehicles as expertly devised by the armed forces, where oils are drained, engine cylinders exposed and packed with oil impregnated material, and wheels and tyres removed, is not justified for the relatively short period concerned. However, the thorough cleaning of all traces of salt from the vehicle, the greasing of all moving parts, and the occasional running of the engine during the summer do pay dividends when the vehicle is checked out and returned to service in the autumn and reduces the amount of repairs that need to be carried out.

Winter service vehicles are extremely powerful and have to distribute the salt across the full width of the carriageway. Drivers should therefore be asked to keep a safe distance when following a salting vehicle, and to exercise great care when overtaking.

## Salt

The most commonly used treatment material for ice, frost and snow in the UK is rock salt. This material (sodium chloride) is mined and generally comes from one of two sources in the UK either from the Cheshire salt fields or from Boulby in the north-eastern most corner of North Yorkshire.

Rock salt (BS 3247:1991:Salt) for spreading on highways for winter service) is the prime material for winter maintenance purposes and whilst it does have certain environmental disadvantages, the ability of salt to lower the freezing point of water and melt ice and snow is essential to modern living in the civilised world. Other materials are available; however, their cost and manufacturing needs are generally prohibitive. Rock salt is a natural material and available in almost unlimited quantities.

The environmental disadvantages of rock salt can be minimised by careful handling and use and it is the duty of all engaged in this service to observe the precautions. Rock salt should only be stored on properly engineered surfaces, preferably solid based with the necessary drainage facilities to handle the saline run off that will be produced. If possible, salt should be stored in enclosed barns where additional benefits of easier handing, loading and better spreading qualities can be guaranteed. The Environment Agency leaflet *Pollution Prevention Guidelines - Highways Depots (PPG10)* covers the essential issues if planning a new storage facility or reviewing current ones.

Considerable research has been carried out into the financial benefits of storing salt in barns against outside heaps. Loss of salt through leaching from rainfall can be significant; however, if it is received in the early summer and the external heap is well compacted and shaped, the natural process of capping does produce a crust which results in most of the rainwater passing down the sides of the heap and minimises the loss through leaching. The leaching process is generally most pronounced during the winter period when the heap is breached and rain enters, this problem also results in the salt being wet. Ironically, the spreading of wet salt is sometimes preferred to dry salt particularly for pre-salting where dry salt has a tendency to blow off the road by wind and traffic movements. This has now been developed in some processes where salt is pre-wetted on application to assist in its adhesion to the highway surface. The worth of this process has not yet been fully evaluated but does have the problems of further complicating the operations and the likelihood of equipment failure at time of need.

The spreading of salt should be undertaken in accordance with the levels required for the circumstances present, the laying of extra salt will not improve the situation further and can only increase costs and result in unnecessary environmental damage to adjacent vegetation. The holding of adequate stocks of salt for normal winter purposes is essential. Stocking during the winter of limited quantities is possible. However, it must be remembered that if you have used up your stocks, the same will have applied to many other officers, therefore there will be a heavy demand and the salt that is available will be at a premium price. The ability to hold adequate if not slightly excessive stocks which do not deteriorate in your own area does give peace of mind and is worth the small capital costs that such provision incurs.

Recent developments by the salt supplying companies have provided an alternative to the holding of large stocks of salt continuously during the winter period. Arrangements which monitor the usage of salt via a

### Lincolnshire County Council Winter Service Trial

A trial for winter (2006) was prepared to determine the impact of using molasses by-product alongside brine for spreading on roads around Grantham and Lincoln. The principle behind the trial was to see if the molasses will help the salt stick to the road as Lincolnshire has had issues in the past with salt blowing away from the road surface or being pushed away by traffic. Six routes were trialled and a control of 20g of salt was used alongside a reduction to 17.5g of salt. Lincolnshire like other local authorities is concerned about the amount of salt they are using on the roads and the impact this is having on the verges and watercourses in the area. The trial monitored the impact of reducing the salt level as well as how well the material adhered to the road.

Although there is not thought to be much difference in effect of skid resistance with the use of salt or ABP products, there is concern about the overuse of all products as it is thought to cause a slight reduction in skid resistance on wet or dry roads when not required. Further investigation is being carried out nationally and the best practice guidance seems to be to consider before gritting whether there may already be sufficient salt on the road from previous gritting operations.

local weigh-bridge directly connected to the salt supply company enable the replenishment of stocks as it is used. This assists the supply company in its production of salt and enables the authority to operate with a minimal level of stockpile. It also avoids the holding of a very high value stock which, in the average authority, would amount to £100 000 and the charges that result from such stock holding. It has to be pointed out, however, that such arrangements must not take away the essential requirement for on-site stocks to handle a severe period of weather with a reasonable spare margin.

There is concern nationally about the environmental impact of over salting and other products are being considered including the use of adding Agricultural By-Products (ABP) in such products as SafeCoat. However, the trials of such products have led to concern that there may be other environmental issues resulting from the use of these by-products, therefore the choice of material is still a matter of discussion. The particular concerns relate to depot storage of these materials where they run into water courses.

## Snow

The treatment of ice through frost is a simple process that requires a single application of salt at the required rate to affect total control. Snow and to a lesser degree, freezing rain, have different aspects which require the full-time attention of the operations manager to ensure the best control and maximise the use of the workforce and equipment. Snow can be experienced progressively when treatment slowly becomes ineffective and under these circumstances, the operations manager can organise his facilities to take action before the road surface is obstructed or poses difficulties for traffic. Snow can also be experienced in large quantities over short periods, with or without strong winds which effectively curtail any meaningful operations until the conditions improve, when the necessary ploughing and re-treatment can be undertaken.

Snow can be blown by strong winds onto roads and continuously build up deposits on those roads. Fortunately this is generally only experienced on certain roads. The problem can be dealt with by the constant presence of a snow plough to remove the build up, or by closing the road to traffic if it is a minor road. The removal of the snow drifts can then be tackled by snow blowers or by large loading shovels when the winds have eased.

If problems are experienced regularly, snow fences can be erected permanently or just for the winter period. These fences prevent the drifts from building up on the roads and provide a highly cost-effective control to this problem.

One major problem resulting from heavy snowfall is the rescue and clearance of vehicles trapped by snow, a problem which can develop rapidly and, by its very nature, totally impede the snow clearance process. The prompt closing of roads that are affected by heavy snow can avoid the complete paralysis of the road system. However, the British public does not respond well to advice at these times and experience shows that they will continue to attempt journeys despite pleas from the police to stay at home, effectively causing themselves and the emergency services major difficulties.

## Footpath Treatments

The formation of ice is of equal danger to pedestrian traffic as it is to road traffic and the spreading of rock salt on footpaths has to be provided with the same degree of priority. Hand spreading of salt is generally the best option, particularly in shopping areas etc. where the salt can be applied only where required and the well tried method of flicking a small quantity of salt off the blade of a shovel with a stick can easily result in the right quantity being applied in the desired areas.

When long stretches of footpaths or large precincts have to be treated, the use of a footpath gritter is essential and suitable attachments to mini-tractors, normally used for summer grounds maintenance duties, can provide a cost-effective solution to this problem.

### Transport for London Winter Service

Winter service on footpaths is a key aspect for major towns and cities and Transport of London have been trialling modified quad bikes for gritting footways around London.

The bikes have been trialled for three years and they tow small trailers and evenly distribute the salt along pre-determined routes. Each bike carries 500kg of salt and at 1.2m wide can travel along most urban footpaths effectively. On average one salt load can cover around 1.5km of footway. The bikes are supported by hand spreading.

With the control of the quantity of salt being spread on roads now under very precise control, the most likely areas for over treatment and therefore environmental damage to the vegetation are on footpaths and the method of applying salt by throwing 'shovel-fulls' is wasteful, imprecise, and totally unacceptable.

The planning of footpath treatment has to be carried out with the same care and precision as with road salting routes and good records of when treatment is undertaken need to be kept. Clearly, only the major areas can be treated by the limited workforce that is generally available as it is now rare to suspend other services to enable these treatments to be carried out except in the most severe conditions.

## Finance

Financing a winter service can be a nightmare but it does not have to be. A large proportion of the cost is committed to the infra-structure of the service and therefore is expended every year regardless of the severity of the winter. Other costs are only incurred if operations are needed and increase generally in line with the severity of the winter experienced.

Using these criteria, a reasonable estimate of the costs of winters of various severity levels can be determined. However, the provision of a running contingency fund to meet the most severe winters is essential. This prevents the need to seek emergency approval at the time of high crisis when all attention should be given to the operational requirements.

A further aspect of the winter service that is being increasingly experienced are the claims for compensation for injuries and damage from pedestrians and motorists. Some of these claims result from allegations of failures to treat roads or footpaths and others from impact damage to cars by the spreading of salt from the gritting vehicles.

This development can, if the claims are successful, place a considerable burden on the winter service. The only protection from these claims are well established and documented policies within the plan and the meticulous maintenance of records of the reasons and times of the treatment of roads and footpaths along with any other factors affecting the situation at the time.

It has now become essential in many areas to fit all gritting vehicles with black box monitoring equipment as a matter of routine. This equipment effects the full monitoring of the treatment operation, providing times when the vehicle is being used, its location, through the GPS system, and the rate and width of spreading of the salt. It is only with this information that claims often received some considerable time later can be contested. The level of awards that has recently been experienced is such that they can exceed the annual cost of the service by a factor of ten.

In addition to the maintenance of records, the service must be able to demonstrate that it is being given consistently and in line with other providers, a process of priorities is not acceptable by simply placing cash limits on a hazard that can kill, or severely injure. Examination of the arrangements of neighbouring organisations and their operations is essential if a robust defence is to be delivered. As with all activities, a clear risk management approach to the possibility of claims needs to be carried out.

## When to Salt

People often wake up to a severe frost, scrape ice off their car and are then surprised to find that the roads have not been salted. This is because action is taken on the ROAD temperature being at or below freezing rather than the AIR temperature. Roads retain heat and do not cool down nearly as quickly as objects such as cars, and so frost on a car can be a misleading guide to whether salting is needed on the roads.

Salting is likely when road temperatures are at or below 1°C, and moisture is present or likely to be present to form ice. For the vast majority of the country most days throughout the winter period, frost does not usually affect road surfaces until late evening or early morning so whenever possible salting is carried out overnight and outside periods where road traffic is heavy.

## The Winter Season

The winter season will need to be decided for each authority as it is dependant on local circumstances but generally there will be a standard period from late October until late March or early April, with a contingency period outside of that season. However, in Northern England, Scotland and certain other parts of the country this may need to be extended.

## Safety

Winter service is important in terms of both economy and road safety. It is carried out in order to ensure the safe movement of all highway users, including buses, cyclists, motorcyclists and pedestrians. It is economically significant because of delays that bad weather can cause.

## Adopting a Council Policy

Due to the need for clarity in any decision making process it is important that each council has a clearly stated policy adopted by Members, as well as an annual review and winter service plan.

In general the policy should be something like as follows:

> The council's policy is to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice. The council consider the best way of achieving this is by prioritisation of certain roads and footways. The detailed operational procedures are covered by the winter service plan which is revised and published each year.

A fuller statement might then contain other specifics for example the box to the right is based on one London authority's wording.

Anyone who has managed a winter service will have suffered the stress, anxiety, frustration, and tiredness that dealing with an ever changing, often impossible situation, produces. Many, if asked, would willingly give up the responsibility for the service. However, after successfully concluding a well organised and successful operation, against all the elements, the sense of achievement cannot be equalled by any other aspect of the waste management industry.

## Emergency Planning

There is a great variety of natural and other peacetime disasters which may befall a local authority at any time. The public expectation is that the local authority in its area will manage these in an efficient and effective manner.

Examples of incidences can include the following:

- weather emergencies due to snow, gales, flooding and drought
- disease or contamination affecting the food chain-for example Foot and Mouth outbreak
- landslips and similar physical phenomena
- spillages of materials and consequential problems
- major incidences involving transport.

Each local authority will have in place a major peacetime disaster plan outlining procedures and systems to be followed to manage the particular incident. In particular the role of all partner organisations will be clearly stated. Much of the contents and procedure in the major plan will form a template for use on some smaller incidents which may also arise.

> The council policy is to prioritise the work to try to ensure that resources are directed at the most important areas first. Therefore priority routes are agreed for both carriageway and footway gritting.
>
> Salt bins are also provided to enable the operatives to get at salt quickly and prevent bags of salt having to be provided by a vehicle. There are around 500 salt bins being used.
>
> The council policy is to pre-salt, wherever possible, the main routes before ice forms or snow falls, and when severe frost is forecast the footways will also be treated as soon as the workforce are available, in a pre-determined priority order.
>
> In this area a large number of the main routes are under the control of Transport for London as the Highway Authority; it is their duty to treat carriageways and footways on their routes. Therefore the policy is for the cleansing operatives normally working on these routes to be sent to other areas to work on the priority routes that the council is responsible for.
>
> As a policy, cycle-ways will not be treated separately from the road or footway prioritisation, due to it being operationally very difficult to send a gritter down such routes. It could also mislead people into thinking that when part of a cycle route had been treated as part of the carriageway gritting that the whole cycle-way has been treated. The question on whether it is sensible to encourage the riding of a bicycle in such weather also is of concern. This policy will be reviewed if new methods of treating such routes become available.
>
> As a policy the council will prioritise the highways, using all the staff normally working on the highways and will use the non-highways related staff to carry out other council work (in housing estates, parks and educational establishments.) The exception to this will be where the only available plant is required off highway for work that is seen to be a higher priority than the remaining highways work.

## Emergency Planning Following the Extensive Flooding that Hit the East Riding of Yorkshire Council and Surrounding Areas During 2007

The East Riding of Yorkshire is located on the country's eastern coast and shares boundaries with North Yorkshire, Doncaster, North Lincolnshire and the urban settlements of York and Kingston upon Hull. To the east lies the North Sea and to the South the Humber estuary. Covering 241 000 hectares and having a population of 325 000 it is the largest unitary authority in England.

Within the East Riding the over arching role for the emergency planning process is undertaken through a jointly funded organisation, the Humber Emergency Planning Service. This service is funded by the East Riding of Yorkshire Council, Hull City Council, North and North East Lincolnshire Councils.

There are a number of ways in which a situation can come to the attention of the Council; this can be simply through a police report of an incident such as an accident or a collapsing building to a report of a major issue affecting a large population area such as the recent fire at Bartoline. All these incidents affect residents and Council services to some degree however they may require different levels of response.

The requirements need to be assessed and there is an escalation process to enable any situation to receive the most appropriate response. When a situation begins to escalate necessitating resources beyond those that would normally be available then it is reported through line management ultimately resulting in an Emergency Control Centre being set up and the full emergency process being activated.

This planning process covers normal daytime operations but also the out of hours periods, within the East Riding out of hours calls are directed through a dedicated call centre run by 'Lifeline' which is available to collate and direct information to the most appropriate responding unit. Out of hours staff are available on rota to deal with normal situations, should bad weather be reported such as high winds or heavy rain additional resources are activated on a precautionary basis to deal with the situation. It is when these resources are found to be inadequate that the situation needs to be escalated and the option of opening the Emergency Control Centre considered.

During the flooding of 2007 the Emergency Control Centre was opened, this was due to the situation escalating beyond the ability of normal response staff to deal with the volume of requests for service. The possibility of heavy rain had been forecast, however, it was not anticipated that the rainfall was likely to be as intense or as prolonged as it turned out to be.

It is the duty of the Emergency Control Centre to direct the media response and provide a strategic overview for operational delivery of the response, the centre is manned by a manager (usually Head of Service) with additional staff representing the various service areas involved in delivering the response. The service area representatives provide a link for the Emergency Control Centre Manager, delivering information to and from their respective operational areas and co-ordinating instructions. Through this process a targeted response to the worst affected areas can be delivered and up to date information managed.

During the delivery of the response an unofficial Operational Control Centre was set up at the Hedon depot which was particularly badly affected by the flooding during the heaviest rainfall. This control centre was manned by senior managers with operational staff being supplemented by employees from other depots, additional equipment and sandbags were delivered to the worst affected areas as they became available.

This proved to be a success as it provided a dedicated front line link to one of the most exposed areas of the East Riding with regular feedback to the Emergency Control Centre. This information was used by the Emergency Control Centre to assess the overall picture and to disseminate information to local residents, the media and Government office who all required information due to the extreme nature of the emergency.

During the lessons learnt and feedback process following the incident it was felt that communication and delivery could be improved by making the opening of an Operational Control Centre a formal process. An Operational Control Centre plan was therefore developed which would also determine how the centre would work once activated.

During the review a fundamental finding was that an Operational Control Centre is best placed to deliver appropriate locally based services if situated as close as possible to the incident, in an area as large as the East Riding it would therefore need to be set up in any of the five main Council depots, these are located at Beverley, Market Weighton, Hedon, Carnaby or Willerby.

It was also found that an Operational Control Centre may be required whether or not the central Emergency Control Centre had been activated this could be in situations having a localised nature necessitating specific rather than multi agency or multi departmental response.

An Operational Control Centre plan has been produced detailing issues such as:

- the triggers and actions following a decision to open a centre
- guidance regarding staffing and staff welfare
- information on how best to equip and run the centre
- details of how it would operate and protocols with the Emergency Control Centre
- the functions of the control centre and responsibilities of its manager
- the risk management process
- closure of the centre
- exercising and feedback.

The plan also provides record forms for use during an incident these include staff rotas, and attendance and incident forms.

Following the flooding experience in 2007 a sandbagging deployment policy has been produced which includes a list of frequently asked questions, this is included in the plan to aid staff decision making processes.

Equipment is stored at strategic locations around the East Riding, this is for use during an incident to aid the co-ordination of operations and includes paper, flip charts, plans, phones and cameras along with other essential items, it is stored in locked cabinets ready for use as an incident progresses.

The Operational Control Centre plan is seen as a live document which will be updated and improved as lessons are learnt following incidents and activities, the lessons learnt and feedback process are fundamental to its development which is an evolving process.

The Operational Control Centre plan has yet to be used in earnest but it is felt that it will be a valuable tool for use when dealing with emergency situations.

A copy of the East Riding of Yorkshire Councils Operational Control Centre Plan can be obtained by application to Lester Burton at lester.burton@eastriding.gov.uk.

# Vehicles and Equipment

## Mechanised Sweeping

### General Principles

There are two distinct types of sweepers: mechanical and suction.

This describes the means by which the material is transported into the hopper or load space. (Usually after collection by brushes).

Mechanical (prevalent in the United States) utilises a conveyor system to move the material.

Suction methods rely on air flow, much like the domestic "vacuum" cleaner. This is the system utilised almost entirely in the United Kingdom.

#### Airflow

The term "suction", in relation to a sweeper often gets confused with vacuum.

The reality is that, because of the large amount of air a sweeper has to constantly move, it relies on **airflow** rather than vacuum to carry the swept material. (The same as the domestic "vacuum" cleaner which isn't actually a vacuum cleaner!)

Sweepers are therefore designed to maximise airflow. It follows that the operator must ensure that the system is cleaned and maintained in accordance with the manufacturer's recommendations (a daily task).

#### Water

Water is vital for most sweepers above the size of the "sub compact" machine. (i.e. sub compacts tend to use paper/textile filter screens). Water has several purposes.

#### Filtration

The water is injected into the high speed stream of debris/detritus being ingested through the nozzle. This adds weight to the ingested material. Coupled with this, once the material enters the much larger void of the body (or hopper) and its speed drops dramatically, it tends to fall to the floor. Lighter materials are caught by fairly coarse screens (sometimes complemented with a hanging row of chains to provide an additional screen).

The screens themselves need cleaning during the day, either manually (brush/water jet) or via devices which shake the screens to dislodge the material. These devices can be pneumatic or operated by cable.

To illustrate the importance of water in this system, a regulation in America ("PM 10") requires a sweeper to "filter" material so that only particles of less than 10 microns are exhausted by the machine. To achieve this, the machine is fitted with extra ("misting") jets which produce a damp "fog-like" area in front of the nozzle, further increasing the effectiveness of the "wetting" of the material assisting it to gain sufficient weight so that more of it falls to the hopper floor.

#### Lubrication

The water lubricates the intake tubes, ducts and wear plates.

Note that, on occasions, a driver may be asked to "sweep dry" usually on road surfacing operations. An inexperienced driver will shut down all of his water. This leads to the often seen sight in road works of a sweeper throwing out dust clouds visible from some distance.

In these circumstances, the sweeper is effectively "shot blasting" itself with the material it is collecting and the wear rate of the intake tubes and wear plates can be dramatic (measured in a few days in some cases)

The correct procedure is to inject water into the nozzle box only. This water does not touch the road surface as it is being taken straight up into the body. Again, the machines can be fitted with extra (or larger) water jets in the nozzle if this is to be a regular occurrence.

An exception to this "water rule" is where the contractor is applying anti-skid materials which must be laid dry. The surplus (very expensive) residue is collected by the sweeper and stored in the hopper for future use – in this case water is never used by the sweeper but the material's density makes it unnecessary for filtration purposes. The wearing parts of the sweeper are beefed up to withstand the additional abrasion but have to be considered as "consumables".

#### Dust Suppression

In dry conditions, brushes create clouds of dust. To suppress this, sweepers are fitted with jets to spray water on the road surface, usually working on the same circuit as the brush control so that as each brush is actuated, the water is sprayed in front of that particular brush. Similarly, it switches off when the brush is deactivated – conserving water.

In dry conditions it may also be found necessary to apply water to the road surface to augment the water injected into the nozzle if it is noticed that dust is being exhausted by the machine.

Indeed, in very bad conditions, even the high pressure sprays may be necessary.

## Sweeper Configuration

### Front Mounted Brushes and Suction

The smaller machines (1 tonne – 4.25 tonne) generally have brushes fitted to the front of the machine "feeding" a central suction nozzle (or nozzle box). This can be mounted on skids, wheels or have a suspension system.

The brushes are usually independently controlled for position and pressure, at least one of these machines having the ability to sweep in reverse enabling the operative to clean out internal corners without leaving his cab.

The system is also utilised on some 7.5 tonne – 12 tonne machines to achieve payloads (and often road speeds) close to that of the conventional truck mounted sweeper whilst retaining the ability to access tight areas such as hammerheads, cul-de-sacs and areas close to parked vehicles.

It can be likened to a "dust pan and brush" (i.e. if the brushes can reach the material, it will be fed into the nozzle box).

### Side Brush and Suction

Most of the larger machines (and some of the smaller ones) utilise a side mounted brush with suction (figure 1).

Usually a cylindrical brush is fitted underneath the machine (known as a wide sweep brush); its purpose is to move material across to the suction nozzle as the machine drives forward.

This brush can be angled to either side in the case of a dual sweep machine and it is possible, on some dual sweep machines to have both the offside and the nearside nozzle box in operation creating a more effective swept width (figure 2).

Figure 1. Side-mounted channel brush with suction nozzle

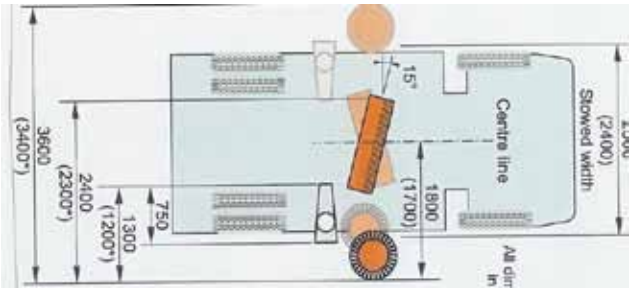


Figure 2. General Layout

Vehicles can, however, be fitted with front brushes (sometimes using a weed ripper, figure 3) which can help clear out channels and move material out of the path of the front wheels, but the machine must still drive past the material to enable the brushes to collect it and feed it to the nozzle.

Figure 3. Front-Mounted WeedRip Brush

## Options

### Wanderhoses

Most sweepers can be fitted with a wanderhose.


Figure 4a. Heavy Duty Wanderhose

Figure 4b. Lighter Duty Wanderhose

As shown above, this can be a heavy duty item, (150 or 200 mm diameter) mounted on a turntable or on "crane arm" on the rear for all types of cleaning (including, in some cases bricks etc),

Extensions allow it to reach down a gulley up to six metres from the top of the machine. Sometimes a larger 2000 mm design is fitted for larger objects. Wanderhoses can be fitted with power assistance if required.

Also shown above, a lighter item can be fitted which is far more flexible for collecting leaves, etc but hasn't got the durability of the heavier item. Sometimes this can be completely detachable enabling it to be stored out of harms way until needed (leafing season etc.).

### High Pressure Water Systems

Water can be supplied by the various high pressure water systems that can be fitted to sweepers for road washing or street furniture cleaning (figure 5).

These range from "hand lance only" systems for washing the vehicle, street furniture, etc to full systems utilising spray bars for road cleaning. Pressures range from 64 Bar for a compact sweeper up to 250 Bar for specialist sweepers for surface cleaning at airports, etc.

In most cases, it is possible to mix detergent with the water for a more effective clean. This ranges from a simple "venture" system to the lance utilising a five litre container of chemical which is drawn into the water system as it passes into the spray jet. Or it may be a far more elaborate system whereby the detergent is laid down, mixed to the ratio selected by the driver, and then further mixed with an additional water spray system – most prevalent on the specialised airport and industrial sweepers.

It is generally inadvisable to put detergent into the water tank without advice from the manufacturers as the detergent may damage the pump system, invalidating the warranty.

Figure 5a. Hand Lance

Figure 5b. High Pressure Spray bar on front bumper

Note if a hand lance is used to clean the vehicle, care must be taken to prevent damage to the vehicle livery. For this purpose, most lances are fitted with twin selectable jets which produce a jet profile (extreme pressure) and a fan jet (dissipated pressure – ideal for vehicle washing).

High pressure systems can be used for street washing but water capacity is limited unless the machine is modified to utilise the load space to augment the water tank or, indeed, fitted with supplementary tanks which may include a detergent tank for degreasing etc.

### Water Recirculation

In most of the larger machines, all the water is stored in a tank (or a combination of tanks) and is described as "total loss" as the water is only used once.

Most compact sweepers, due to their limited size, have two systems, the "total loss" water system which supplies water to the dust suppression sprays and optional high pressure water system (hand lances etc.). This water may only be needed to be used intermittently.

The second system incorporates a recirculation system with, in most cases a separate tank whereby the water in the detritus entering the body drains through filtration screens (bit like a "chip basket!") back into the tank where it can be used again. Such a system is also available in some large mechanical sweepers.

Other sweepers store the recirculating water in the main hopper, injecting it into the nozzle via pump or gravity, the recirculation principle is the same.

The water in the recirculation tank is kept away from the fine dust suppression jets as it would block them, jets in a recirculation system are usually very large (25mm or more in some cases).

Most recirculation systems have the facility to allow the operator to dump excess water in order to provide a relatively dry load for tipping and ensures the maximum payload. This avoids the Landfill Directive Article 5 3a which prohibits liquids being landfilled from 30 October 2007.

At the time of writing (2007), however, there is some doubt about the legality of dumping water into the public drainage system – see Water Mixed With Road Sweepings section (page XX).

Conventional water systems without recirculation systems usually have some form of filtration screen in the hopper door which allows the operator to drain the water off.

The system can be as simple as two flexible pipes on the rear door (set at different heights to allow for draining off according to whether the detritus is floating or lying on the hopper floor). An improved system involves extra screens and large bore valves to drain.

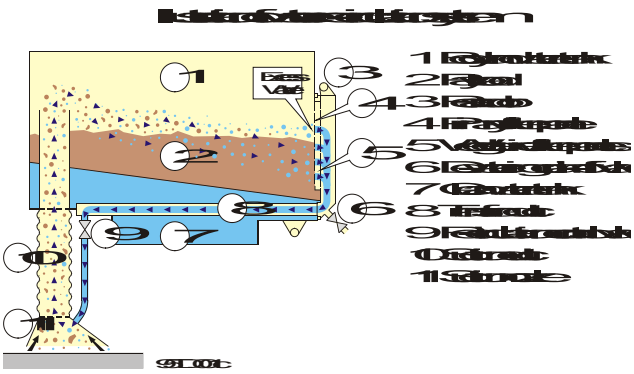

Figure 6: Water Recirculation System, Truck Mounted Sweeper

This system is similar to the compact sweeper and utilises the hopper to augment the water supply in the main water tank with an extra 750 litres of water. This extra water is used solely to feed the nozzle box. It is fed by gravity through a large bore jet to ensure that it doesn't block.

When the water in the hopper is used up, it is augmented by the main water tank to restart the cycle.

Its main advantages are it:

- conserves water
- allows the sweeper to stay on station for longer
- is an effective system for removing excess water from the load.

**But** it **must** be kept clean to work.

## Machine Types by Size

### Compact and Sub Compact Sweepers

More and more councils require smaller machines to undertake more demanding tasks. As inner city areas and towns see increased numbers of pedestrians in shopping centres and precincts, this invariably leads to an increase in litter dropped. Similarly there are additional requirements for places for people to sit and eat, to secure bikes, as well as for parking for transport, which all further complicates the collection and removal of litter and detritus from the streets.

The traditional sweeper has evolved into several hybrid machines, designed to cope with all sweeping requirements in modern cleansing. The smallest of these is the walk-behind pedestrian operated machine, which is still seen in fairly large numbers throughout the UK and Europe.

Until recently the most popular size of machine chosen by local authorities for town centre and precinct cleansing was the walk-behind sweeper. With the visual presence of machine and operator, the public perception of getting something for the council rates was always a bonus for the local authority or contractor. It was reassuring for the public to see and hear a sweeper patrolling the shopping areas.

Vast numbers of pedestrian operated equipment has been sold over the past 20-25 years. But over the past few years a quiet revolution has been brewing. In most town centres a new breed of sweeper is gaining in popularity.

Nowadays sweeper operators would much prefer to be riding in machines in the dry and where possible in the warm in winter and in the cool in the summer. This has prompted a new sweeper race and at almost every exhibition over the last four years one manufacturer or another has launched a new sweeper.

This new type of sweeper has been affectionately dubbed the "sub compact", which is rather a broad term for all ride-on sweepers with a single occupant cabin. The demands of Health and Safety mean these sweepers have to be quiet, small, easy to operate and wash down, have an efficient dust filtration system, be low cost, low maintenance and reliable.

As you can appreciate this was a tall order that has been tackled head on by several of the well-known manufacturers in the UK. The sub-compact precinct sweeper has now become a much more usable piece of equipment incorporating many of the concepts seen in larger compact machines. The most recent addition seen on some of the sub compacts is the use of recirculating water. This allows the machine to be operating in dusty environments, whilst still keeping dust particles within the dirt container suspended in water. The water is reused time and time again – an obvious environmental benefit as well as being an ideal way to suppress dust. In addition to this the machine can also use surface water to recirculate thereby reducing the amount of clean mains water that the machine uses.

Manoeuvrability is a key factor when choosing a small sub-compact sweeper. Options include rear wheel steering, front wheel steering, and most recently articulated steering. Street planners have not always got street cleansing in mind when making their plans. It goes without saying that the life of a contracts manager could be made a lot simpler if the odd lamppost were to be moved or signs raised, etc. Nonetheless obstacles are something that the new sub-compact sweeper has to contend with, so ideally the machine has to be narrow. Most sweepers of this type are approx. 1,000-1,100 mm in width, which enables the machine to squeeze through most obstacles and fit on 90 percent of footpaths.

Kerb climbing is of major importance to a driver and the ability to negotiate a 6" kerb is a must. The machine will also need the power to pull itself up the kerb and the majority of machines on the market today come as standard with four wheel drive and tyres that give the machine good traction. They also have a low footprint thus allowing them to work on footpaths and pedestrian areas.

The largest of machines in this class is the "compact" sweeper. This is a multi-tasking machine, which some local authorities use in more rural areas and some use around the town centre. This type of sweeper has been with us for about 20 years although recently many have undergone quite extensive face lifts. The environmental impact of a machine this size plays a huge part in the

construction and use of a compact sweeper. Just recently the new Euro IV laws came into effect forcing all sweeper manufacturers to re-design or re-engineer emission and exhaust systems on all compact sweepers.

What defines a compact sweeper? The basic characteristics, which define a compact sweeper, are the 2-seat cabin, up to two cubic meter hopper and a road speed of 50km per hour. Most of the machines of this size will have a pressure washer, wander hose, and carry in excess of 300 litres of clean water and utilise water recirculation.

Many similarities exist between the compact and the sub-compact – it is merely the engines that are larger in order to power all hydraulic components.

With larger machines like this manoeuvrability is of the utmost importance. As with the sub-compact there are options of standard front wheel steering, four wheel steering and also articulated steering. Due to the fact that machines travel further and faster, the suspension falls within the category of automotive style suspension. If you take a compact machine over bumps in the road up to 50 km per hour, neither driver nor passenger is likely to feel the difference between their sweeper and a passenger vehicle.

With most of the compact machines retailing at in excess of £50,000 and the sub-compacts selling for figures over £35,000 the whole life costs are now becoming increasingly important in the decision-making process. Once a demonstration has taken place, before orders can be placed, suppliers have to run the gauntlet of the tender. More and more tenderers require full life costings of the vehicles as well as the options of extended "bumper to bumper" warranties and also fixed prices for the duration of the contract, etc.

Experience shows that year on year budgets for street cleansing appear to be chipped away, moved about and reduced. However, the local authorities all still want the same levels of cleanliness as have been achieved in the past.

In the next few decades it is conceivable that the market will demand only one size of small sweeper, which will be about 1.1 cubic meters. Such machines will be able to cover both urban and town centre work. They will probably operate on a double shift basis – with the unit operating on a night shift as well, which – in turn – will mean that the unit will have to be fairly quiet. In Italy, for example, they are already experimenting with electrically powered sweepers - but they still have operatives carrying out spot litter picking duties. Whatever progress is made in terms of machines in future – the operator will still have an important role to play.

At the "heavier end" (the compact rather than sub compact) of this class of machine are in the weight range of 3.5 tonne GVM to 4.25 tonne GVM so the question of driver licensing can become an issue if the machines are over 3.5 tonne (drivers who passed their car test on or after January 1977 will need to take another test).

It is possible, in most cases to "down plate" a vehicle down to 3.5 tonne but, of course, this does reduce the payload. (Indeed, in some towns in Europe, the speed is required to be considerably less).

Often, the chassis design allows for a tow bar facility for a trailer which can increase usage in parks and garden operations.

Many of these machines have the ability to sweep and wash at the same time and to be fitted with equipment for graffiti removal (high pressure lance) all too varying degrees of effectiveness depending on the machine's design.

They can usually be fitted with equipment found on larger sweepers, such as weed spraying equipment and weed ripping brushes.

### Front Brush/Suction Compact/Sub Compact Machines.

These have the ability to sweep into corners without the need for the operator to leave the cab. This is particularly useful for sweeping under and around street furniture and the machine may incorporate a feature which allows the sweep gear to remain on the ground when reverse is selected. This allows the machine to pull the material out of the corner and subsequently sweep it up as it goes forward again.

They are very narrow machines allowing access into confined areas and to sweep conventional width footways etc. See Figure 7.

### Side Brush/Wide Sweep Compact

Automotive style chassis with fully sprung suspension. The sweeper is mounted on "six wheels" (dual rear) configuration allowing an extremely low footprint weight on pavement and susceptible surfaces.

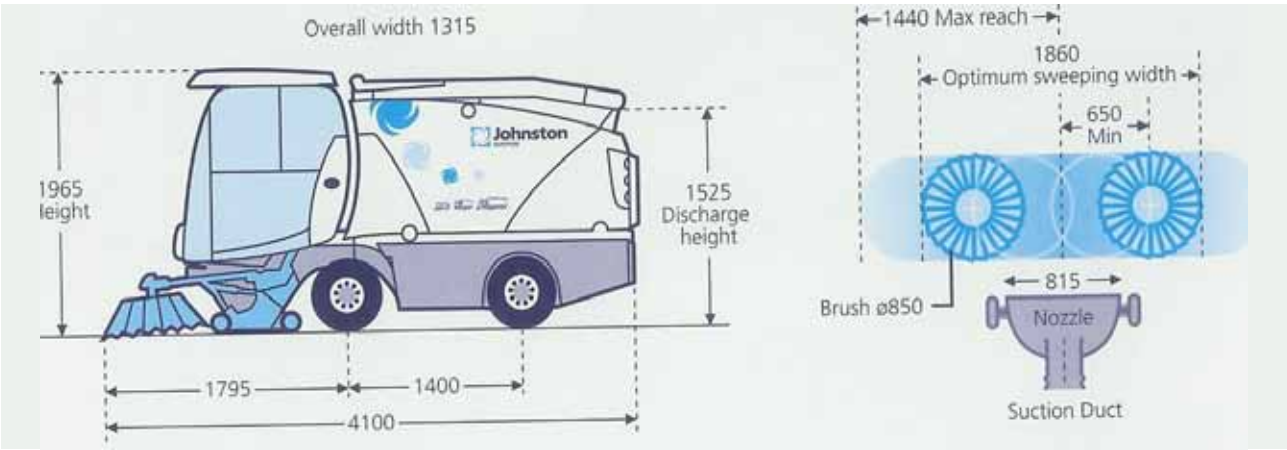


Figure 7: Sub-compact – General Dimensions

Two front polypropylene brushes are complimented by a full width under slung wide sweep polypropylene brush with a kerbside mounted steel tined channel brush (as found on larger truck mounted sweepers).

The machine is able to undertake light sweeping in precincts or heavy road kerbside sweeping due to the dual brush system and travel speed of 60 kilometres per hour. Weed ripping brushes can be fitted as can the addition of weed killing spray attachments.

An additional 1000 litres quick release water bag turns Scarab's Minor into a street washing unit. For winter services snow plough and gritter attachments can be supplied.

In essence, a small road sweeper.

## Mid-sized Compact Sweepers

Loosely classed as "Compact or Mid-size" sweepers are machines with front brushes/ suction but generally at 7.5 tonne GVW (or GVM) in UK to take advantage of the driver licensing threshold (notwithstanding those who passed their tests on or after January 1977). See Figure 8.

Though larger overall, some do tend to be as narrow as some of the smaller sweepers which loosely fall into the "compact" category.

Some machines are purpose built to this weight whereas others are "down plated" from (say) 10 tonnes or so. Others are left at that weight where there is no 7.5 tonne threshold, as in most of Europe.

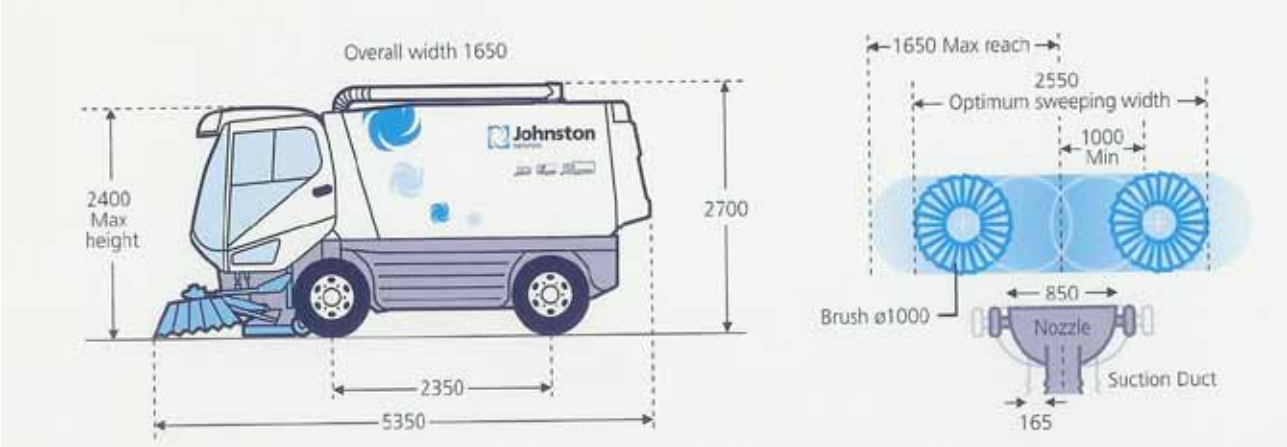


Figure 8: Mid-sized compact – General Dimensions

They have the advantage of better agility than a truck mounted sweeper, front mounted brushes and are usually narrower than the truck mounted machine. As such, they are ideal for sweeping housing estates, cul-de-sacs and various other restricted locations.

Payload (weight) is generally better than a truck mounted sweeper at the same weight often at the expense of actual volume.

Top speed of some of these machines is in the region of 80 km/hr making for rapid transit between sites.

## Truck Mounted Sweepers

The truck mounted sweeper rated at 7.5 gross vehicle weight, has the advantage of being operated with a non-HGV licence (assuming the operator passed his/her test before January 1997).

It has a limited payload but is still seen as a useful machine because of the driver licensing concession.

The most common weight of chassis for a "normal" road sweeper is in the 15 tonne range with 12 tonne being utilised where size of machine is critical.


Figure 9: "LGV" Truck Mounted Sweeper (15 Tonnes)

Almost universally utilising side mounted brush and suction.

Other machines in this class are mounted on chassis up to 36 tonnes (sweepers in excess of 18 tonne and, particularly specialist truck mounted sweepers are covered in the section on specialist sweepers).

The sweeping equipment can be powered by an additional (auxiliary) engine or from the main engine via direct drive or hydrostatically.

In the case of an auxiliary engine machine, operation of body tipping (including door operation) can be from the chassis gearbox power take off ("PTO") or from the auxiliary engine or via electrical pump (or both).

In the early 1980s the 'single engine' (hydrostatically powered) heavy duty truck road sweeper was re-introduced to the market (previously tried in the early '70s). This meant that the chassis engine drove the sweeping equipment. Claimed advantages included larger payloads, larger body capacity and increased water carrying capacity.

As mentioned in the "brushes" section of the handbook, the brushes (side mount, front mount or under slung "wide sweep") can be filled with various materials and provided with the ability to increase or decrease the brush pressure.

Increasing brush pressure improves effectiveness (particularly when weed ripping) whilst decreasing it saves brush wear (only really of use when litter collection is the requirement rather than surface cleaning).

Control of the machine (in the UK) is generally via a vehicle with left hand drive but built for the UK sweeper market (i.e. headlamp aim etc. as UK).

Most chassis are available ready prepared to have sweeper equipment built onto them (sometimes known as "sweeper packing"). This operation relocates the air tanks, batteries etc. to enable the sweeper to be fitted without interference.

This is particularly important with the introduction of more stringent emissions controls (currently "Euro 4) whereby such items as exhaust systems can not be modified by other than the manufacturer.

Furthermore, the chassis gearing has to be such to enable the machine to travel at speeds in the region of one – two m/hr without clutch slipping by the driver whilst still having an effective top speed for travelling. This can be improved using nine speed gearboxes or even utilising an automatic gearbox or hydrostatic transmission.

## Specialist Sweepers

A range of specialist sweepers are available for people who have a special requirement for a non standard sweeper. Bespoke built sweepers can be manufactured to a customer's specification, to do a particular job that cannot easily be undertaken by a standard machine. Applications include:

### Porous Asphalt Cleaning

With hopper capacities of 12m$^3$ or more and a water capacity of up to 24 000 litres, these machines are built on chassis with a 36 tonne GVW. This water can be re-circulated, thereby giving the machine the opportunity to stay on station for longer periods (up to eight hours) without the need to tip and refill.

### Road Construction

Specialist sweepers can be fitted with rear suction boxes, mounted in between the rear wheels, using a 205kw auxiliary engine. This option jets high pressure water at up to 200 litres per minute at 600 bar as well as sucking up the detritus. This will leave road surfaces ready to accept tarmac- usually after one pass.

### High Speed Runway Sweeping

Machines similar to the above have been supplied, suitably modified, to the M.O.D. for high speed runway sweeping. In trials the machines have been found to exceed the M.O.D. specification for speed, being capable of sweeping at 80 kph. Not a speed to be recommended but demonstrating the machine's capabilities.

### Multi Tasking

Both valuable time and money can be saved by using one machine to do several tasks including: street cleaning, weed removal, street washing, kerb edge cutting and gully cleaning. All can be done by one machine. A number of front mounted options can also be used for pavement washing, underpass, barrier and tunnel cleaning. Hot water is also an option for oily spill pick-up and road re-texturising.

## Dual Sweep Machines

Where the machine is fitted with sweep gear on each side (a "dual sweep" machine) there is a choice of single (normal) controls or dual (two steering wheels) controls.

### Dual Controls

Fifteen years or so ago, most dual sweep machines would also be dual steer (i.e. two steering wheels, brake, clutch, throttle pedals etc.). Nowadays, that option is still available but not as popular.

The decision as to whether or not to have dual controls is largely dependent on the operation and the perceived safety issues.

Advantage of dual controls:

- driver is closer to the work site (i.e. same side of cab as sweep gear in operation). Can be perceived as safer than single control.

Disadvantages include:

- cost
- limited to suitable chassis
- in most cases, require the driver to leave his cab, walking into traffic flow to change position in cab
- driver has to re-adjust his mirrors and control panel

- dual controls can be interfered with by a passenger unless interlock system fitted.

### Single Controls

However, if one driving position is to be employed on a dual sweep machine, the options are to utilise the mirrors more effectively or, more commonly, to fit a camera over the offside channel brush.

The advantage of doing this is:

- it is a relatively easy operation, to fit an additional camera on the back door to act as a more effective rear view mirror
- the driver does not have to reposition his driving mirrors due to sitting in a different position
- the driver can switch instantly from nearside sweep to offside sweep without leaving the cab (particularly useful where it would be hazardous to exit the cab)
- can carry a passenger without him/her interfering with the controls (although power steering assistance is biased to the driver and it is possible to fit a cover plate over the redundant pedals).

## Motive Power for Sweeper Functions

Hydrostatic drive (permanent or selectable for sweeping) utilised extensively in the compact range. A series of hydraulic pumps drive the transmission, suction gear, water pumps etc.

Also used in some truck mounted sweepers by fitting a hydrostatic gearbox in the transmission system.

Advantages:

- single motive power for drive and sweeping functions
- ability to emulate automatic transmission
- one engine to maintain.

Disadvantages:

- interferes with driveline
- cannot use rebated fuel (although the use of rebated fuel in auxiliary engine machine is under review)
- more complicated to diagnose faults
- usually requires the vehicle to stop to engage sweep system
- engine power is divided between driving vehicle and the sweeper gear, can be a compromise when climbing hills.

Auxiliary - engine driving fan/impellor via fluid flywheel (and/or belts)/gearbox or via a hydraulic pump and motor (often providing the power for body tip and rear door opening for discharge).

Advantages

- simpler drive system for sweeper function
- truck transmission not affected
- can use rebated fuel (but see note above)
- sweeper can be manufactured without the need for the chassis to be present – simple option for export (can be simply mounted to local chassis)
- sweep system can be set up so that sweeping can commence or finish without vehicle stopping (less time obstructing traffic)
- load on vehicle engine when climbing hills does not affect sweeper performance.

Both systems have their devotees and it is largely down to personal preference although this does not mean that all the elements of costs shouldn't be considered when buying a machine, particularly the "whole life costs" i.e. the cost of the machine to purchase + running/maintenance costs + downtime costs – value of machine on disposal.

## Fuel Economy.

Latest Government thinking includes concern about carbon footprinting and emissions. There are suggestions that fitting an auxiliary engine to power an induction fan might not be necessary.

Note, however:

- it is easy to assume that one engine means less fuel consumption which, in turn, means less pollution
- the argument is not that simple. A sweeper has to perform a series of functions which all require energy
- whether that is from one or two engines is not an automatic base for making an informed decision
- a twin engine sweeper has a main engine running slightly above idle with the auxiliary engine doing all the work
- a single engine machine usually uses hydrostatic transmission which requires an oil cooler to dissipate the heat generated by this system (heat is wasted power/fuel)
- both types of machine need to burn fuel to produce the energy to operate the sweeper, whether that is from one or two engines is almost irrelevant
- various tests have yet to define which is the most efficient as this does not take into account the unique work patterns of each operator. The choice therefore is multi-faceted based on vehicle trials and past experiences to achieve a balance of efficiency, whole life costs and reliability.

## The Suction Fan (or Impeller)

Most, if not all, of the machines described above utilise a suction system which protects the fan via the filter system (only filtered air reaches the fan).

The fan will still wear depending on the environment it is working in (e.g. areas of high sand content, taking up road planings etc. will have a worse effect than areas where litter picking is the only function).

**It is vital, therefore, that the fan is examined and cleaned regularly (at least once a week) to ensure that it is not wearing so much that it loses its integrity and, therefore, may disintegrate with potentially disastrous/ lethal consequences.**

Many manufacturers build safety systems into the fans such as fitting much thicker blades every fourth blade or so with the addition of tie rods reinforcing the structure. The effect of this design is that the fan will retain its integrity well beyond the point when suction performance has deteriorated to unacceptable levels.

Manufacturers should ensure that optimum fan performance occurs at a speed well below the engine's maximum. Factors affecting the suction include engine torque, airways design and fan efficiency.

It is important that suction performance is judged by the ability to pick up materials rather than by the noise the machine is making. (i.e. a larger fan can run at a lower (quieter) speed than a small fan).

## Maintenance

**Please note again the previous paragraph about fan maintenance.**

The only way to maintain performance is regular cleaning and adjustment to ensure that the airflow is maintained and the recirculation system (when fitted) is effective.

Cleaning is obviously the responsibility of the operator, together with some adjustments and lubrication.

The sophistication of these machines required to achieve the customer's demands, when such machines work in the worst conditions imaginable, requires dedicated, trained operators, also working in poor conditions and dedicated maintenance personnel.

The smaller machine, in particular works in such cramped areas that it is inevitable that it will suffer damage. This needs to be identified as such so that remedial action regarding work methods (where relevant) can be taken.

It is all too easy to blame the machine for operational shortcomings.

Consider, therefore, factory training of the technicians, all operatives to be properly trained or perhaps contracting the whole lot to a hire company or service provider.

## Brushes

Brushes generally are of the slightly "conical" shape which spin on a vertical axis (seen on the front of sweepers and the sides) or the "roller" type brush fitted across the vehicle, underneath it, designed to sweep the width of the vehicle.

The filling of these brushes ranges from polypropylene through various stages of wire through to the "weed ripping" brush "conical brush type" fitted with 1" diameter tines manufactured from wire rope.

Choice is dependant upon the surface finish required/ durability of the brush/effectiveness of the brush.

Generally, the more durable the brush (steel tines), the better the scarification and brush durability.

This durability is essential where the sweeper has the ability to increase pressure on the brushes for heavy duty cleaning and weed ripping where this is the method of choice.

At the other extreme is the softest of the polypropylene brushes which produces an excellent finish, particularly cleaning up the finer particles that the coarser steel brush can't. It is not as durable as the steel, however.

A good compromise (on compact sweepers and the wide sweep brush of truck mounted sweepers) is the brush which is 50 percent polypropylene and 50 percent steel for effective cleaning and brush durability.

Polypropylene is also available in varying degrees of stiffness.

Similarly steel tines range from flexible crinkly wire to stiff, chisel like tines mounted in line with the rotation to cut into the detritus like a knife or turned to chisel the detritus. (Whilst not being particularly kind to the surface).

All steel brushes on an unsealed concrete surface will quickly reveal the aggregate ultimately leading to the surface breaking up.

Weed rip brushes, in particular, if used in a channel where the road surface hasn't been properly laid or is in poor condition will rip up the road surface as well.

In reality the softness to hardness of the brush by virtue of the mixture of fill is infinitely variable.

**A word of caution**.

During normal use, all brushes will shed some of the tines as they wear. In most cases these dislodged tines will be ingested by the sweeper along with the material being

swept. This cannot be guaranteed, however, which is why airports and most race circuits insist that all brushes on a sweeper are polypropylene.

A wire brush used on a race track will immediately leave marks on the surface.

Should a loose polypropylene tine be drawn into an engine duct (aircraft or race car), the consequences are much less than if the tine was steel. Indeed, airfield staff will check all sweepers which are going "airside" for that reason.

## Training

Initial training or 'driver instruction' is carried out by all sweeper manufacturers, on delivery of the equipment. This not only endorses the health and safety aspects of operating the vehicle but ensures daily checks and preventable maintenance procedures are fully highlighted. Proficiency certificates are issued where applicable.

## Recycling of Used Parts

Generally speaking, the sweeper manufacturers have yet to address this issue. Refurbishment is possible, but sweeper design is advancing so quickly, that a refurbished old design machine will be left lacking in performance.

### Brushes

Currently, old brushes are not generally suitable for recycling although there are some initiatives in development.

The first isn't strictly an initiative but one manufacturer of brushes for compact machines has offered a service which involves taking back the old (MDF) brush stocks and using them as fuel to heat the premises where the brushes are manufactured. This has not had a high take-up as yet.

Another manufacturer is experimenting with sleeving the brush tines so that the top can be re-used with new tines, but this is in its infancy.

## Street Washing

Low Pressure Street Washer

Many local authorities now require that pedestrians zones be washed and there are several machines on the market which offer street washer equipment options.

Street washing methods fall into four main categories:

- the most popular is the high pressure water system, which cleans paths and surfaces via front mounted jets. The residue water is typically washed into the drains
- low pressure water and detergent which is dribbled onto front mounted scrubbing brushes, with the residue sucked up as the machines passes

- high pressure washer machine with suction nozzle mounted behind

- high pressure jets which rotate under a hood at the front of the machine, with a suction hood to collect the residue This system does not require detergent and has the added advantage of having no brushes to replace. Where road surfaces and kerbsides require washing a truck mounted low pressure / high flow "flushing" machine may be more suitable.

## Highway and Weed Control

Controlling weeds on footways and highways is an important part of any environmental cleansing programme. The presence of unwanted growth in and around areas such as footways, highways, paved and pedestrianised areas is a problem.

Weed control is an area of concern to many different groups of people. The cleansing officer does not like them as they present an untidy vista, the highway engineer does not like them as they are destructive and damage the fabric of the highway and the elected Member does not like them as they are a source of complaint from members of the public. Also the public do not like them as they are perceived as a sign of neglect on the part of the local authority.

It is important to integrate all performance methods of control including mechanical, chemical and manual to achieve a high standard of weed control and CIWM produced a publication in 2000 called *Control of Weed Growth on Public Footways and Highways*.

## Cleansing as Part of Highways PFI

With StreetScene becoming more common and integrated organisational arrangements to ensure the highway is treated as a whole from boundary to boundary there is a change happening in terms of contractual arrangements. Highways PFIs are currently still at the path-finder stage and only two have been let and a number of further ones are in process at present (2007).

As part of the first highways PFI at Portsmouth the whole of street cleansing was included. In the second one it was considered and then removed.

In deciding whether cleansing should be included there are a number of issues. These are mainly to do with whether the authority feels it adds to the service provision or removes the flexibility many require in such a key service area.

### Weed Control at East Riding

The control of weeds on the highway is carried out using an in-house 4-man team. The team use quad bikes to apply the weed killer. The bikes are easy to use and very manoeuvrable allowing access around parked cars and obstacles. In the past the weed killer had to be applied by hand-held applicators adding considerable time to the job.

The use of an in-house team has allowed us to tailor the spraying regimes to meet the demands of the seasons. Last year there was a period of drought followed by prolonged rain; this resulted in weeds shooting up despite being treated earlier in the season. Using the in-house teams meant that we could deploy the quad bikes into the high profile areas to control the weeds. This proved the flexibility of the system not being programmed to two treatments at set times of the year but being able to adapt to demand.

It is probable that cleansing in its totality would not be required to make a highways PFI viable, and could distract from best service provision. However the damage from weeds and other plants and vegetation to highways fabric probably means that these should be included.

The potential damage that mechanical sweepers can cause to footpaths should also be considered before deciding on whether to include cleansing in the PFI.

The issue of winter service likewise will need to be considered due to the possibility of damage of the highways fabric from salt and frost action.

## Beach Cleaning

The importance of a clean beach cannot be overstated. Amenity beaches in particular will attract a greater or fewer number of visitors to a resort in proportion to the standard of cleansing presented. In holiday resorts served by amenity beaches this has a direct effect upon the economy of the locality.

There are five main reasons why amenity beaches should be cleansed to the highest possible standard:

- for the Health and Safety of all beach users
- statutory duty for litter authorities
- attracting awards or status recognising high standards
- benefit of local economy in improved visitor numbers
- Civic Pride.

As the volume of beach-goers increases each year, unfortunately so does the volume of debris left behind on the beaches. Rubbish infecting beaches is usually left in one of two ways.

The most obvious polluters are the beach-goers themselves who do not always leave the beach with all their rubbish. Food residues, bottles, wrappers and general packaging has become the bane of all who wish to enjoy clean beaches. Most food items are subject to redundant and unnecessary packing which often remains on the beaches after the owners have left.

Water-borne refuse resulting from ocean dumping, river and stream washouts and storm drain run-offs is of even greater concern. In recent years the most alarming debris are medical wastes including hypodermic syringes. Most water-borne is deposited by the tides at the water's edge, which is a particularly challenging area to clean.

Decaying animal matter and seaweed can quickly become a health hazard if not properly and timely removed. Algae growths in the world's oceans, particularly when accelerated by fertilizer run-offs from farmland, have spawned record harvest in recent years. Beaches throughout Europe have been closed in the past several years due to high water coliform counts from decaying seaweed algae.

## Beach Cleaning Methods

Although the causes of the pollution problems at most beaches are easily definable, they are often difficult to prevent.

Clean beaches can be maintained in two ways: manually or mechanically. Manual beach cleaning usually entails individuals searching the beach and physically picking up each piece of rubbish. This method is time-consuming and therefore can be quite expensive.

Mechanical beach cleaning has become the accepted method to maintain most of the UK's popular public and private beaches. Mechanical beach cleaning captures both visible and buried debris and large areas can be effectively covered by one person.

The dilemmas which exist when designing a mechanical beach cleaner are threefold:

- units must be able to survive the harsh working environment of abrasive sand and corrosive saltwater
- units must be able to capture large debris such as rocks and stones yet also remove small debris such as can tops, bottle caps and cigarette ends
- units must be capable of working under a variety of conditions such as wet sand (at the tide line), dry sand, find sand and clay/dirt.

There are two accepted methods of mechanical cleaning. The first is the sifting method in which a mechanical cleaner, usually towed behind an agricultural tractor, lifts the sand and sifts (or sieves) the material attempting to separate the debris from the sand.

The main drawback with sifting cleaners is that it is difficult to capture small debris, particularly in wet sand conditions (at the tide line) without also removing quantities of sand. Wet sand often clogs the sifting mechanism or fills the hopper with sand. Sifting machines by design must move relatively slowly along the beach in order to process the sand.

The more common and effective method utilizes a tractor-towed raking machine which digs tines or teeth into the sand, lifting only the debris (not the sand) onto a conveyor belt. The debris is elevated by the belt where it is transferred to a hopper at the rear of the unit. When the hopper is full it is raised and the debris is deposited into a waiting lorry or dumped into a skip.

All equipment utilized on the beach is subject to significant wear. Maintenance of the beach cleaners is an important consideration and should be thoroughly researched to determine the full useful life of the equipment. The raking design does not face the same hazards as that of the sifting machines which are constantly inundated by sand and dust. The raking design also requires fewer moving parts which translates to less wear and damage.

This method allows the unit to easily handle the wet sand areas and permits the unit to quickly clean even in several inches of water. The primary advantages of the raking method are fast, efficient cleaning without removing any of the valuable sand. The raking method is the most popular method in the UK.

## Positive Results Achieved

An active and aggressive programme of education, deterrence (fines for dumping) and beach maintenance can easily preserve the valuable beach resource of years to come.

Studies also show that individuals are much less likely to pollute the beach when it is properly maintained than when they arrive at an already fouled beach.

# Gully Cleansing

## Introduction

The cleansing of street gullies (emptying) on the highway and at other locations is an essential function. The purpose of street gullies is to drain rainwater and surface water from the highway and to deliver it to the sewer. The reason this is necessary is to maintain safe and free passage for users of the highway.

Clearly, the water that enters into the street gully will carry with it a variety of materials of both organic and inorganic origin. The purpose of the gully pot is to prevent this material entering the sewer by allowing it to fall out of suspension and collecting in the bottom of the pot.

As the gully pots begin to fill it is essential that materiel which has fallen out of suspension is removed at intervals frequently enough to prevent the gully from becoming blocked and thereby failing to drain water from the highway. Deciding upon the correct frequency of emptying street gullies is an important decision.

Factors that will affect the decision include:

- gradient of highway
- location of gully
- type of road use
- relative distance of other gullies
- local climate including mean levels of precipitation.

## Method of Cleansing

Historically street gullies were emptied manually using a variety of specialised tongs and scoops. Some cleansing departments even had tools manufactured to their own designs for this purpose.

Mechanisation of gully emptying is now almost universal but there are still circumstances in which it is impossible to use large machinery to access gully pots and in these cases hand emptying is still employed. The way in which gullies are now emptied is by the use of a vacuum tanker.

## Operation of Vacuum Tanker

Vehicles used for the emptying of street gullies are known variously as gully tankers, gully emptiers, gully wagons, gully pumps and gully suckers depending upon which part of the country is being referred to.

In simple terms these vehicles are vacuum tankers with a capacity to draw out the contents of street gullies and also with capacity to hold clean water for the resealing of empty gullies.

An exhauster draws air from the tank that creates a vacuum within the dirty water side of the tank. Upon arriving at a street gully, a boom with a suction pipe is inserted into the gully and a valve on the pipe is opened resulting in atmospheric pressure forcing the contents of the gully pot into the dirty water tank.

Excess water is periodically blown off back into the street gully after the material in suspension has settled in the tank.

It is important that the driest load possible is presented for disposal at landfill sites, as “liquid” waste is no longer permitted at landfill sites.

## Gully Cleansing Maintenance Procedures To Prevent Flood Damage

The floods of June 2007 highlighted problems with the current maintenance procedures for highway gullies. The Council was concerned that not all gullies were recorded and that a large number had not been maintained. A major programme of maintenance was put into action to visit every town and village worst affected by the flooding.

The gully-cleansing programme has now been prioritised and will be managed from individual depots and maintained on a cyclic basis. Along with this the Council is looking at drastically altering how the gully cleansing system operates by involving some elements of mobile working. Data logging systems are currently being investigated and trialled by the Council. If these trials are successful it will be possible to create an accurate record, which lists each gully maintained by the East Riding of Yorkshire Council. This list would be very useful for a number of reasons:

- monitor driver performance and working hours
- produce high-level management reports
- improve data communication between the depot and workforce, reducing paperwork and costs
- produce route mandates for each team
- better plan and monitor routes in real time to identify route deviation and non-compliance
- the ability to stop potentially litigious claims as proof could be provided that works have been carried out
- accurate records of gully conditions
- accurate records of the geographical positions of gullies
- where drains are cleaned on a timed basis, it may be impossible to assess whether issued work has been carried out properly.

Two major problem areas that arose during the summer flooding were the A63 and A1079. These are major roads in the East Riding of Yorkshire and they suffered badly from flooding. To combat this and avoid it happening again a deep clean has been launched on both roads. The gullies on these roads are being electronically logged with details of their geographic location and condition. These findings will be imported to a GIS mapping system and be viewed in a map format.

The main future target for the East Riding of Yorkshire Council is to improve our current gully maintenance program so that the chances of future flooding are significantly reduced. The main way that we believe it is possible for this to happen is by utilising mobile technologies such as data logging systems that will be fitted to all gully tankers to enable real-time recording of maintenance works and gully locations.

When a complete record of gully locations is indexed it will be possible to transfer the information to Confirm and GIS mapping systems. Confirm offers the most sophisticated and comprehensive suite of specialist asset and infrastructure management capabilities available. The Confirm Asset Management System also provides a range of added value capabilities that allow you to mobilise your workforce and undertake analysis, visualisation and planning of operational and investment strategies.

The East Riding of Yorkshire Council is planning to add an extra two gully cleaning tankers to its fleet. This will not only help in operational terms i.e. the amount of work that can be undertaken because the more vehicles the public see gully cleansing, the greater their perception of our commitment to reducing the risk of flooding. This is a prominent factor because flood victims feel very strongly about making sure that similar flooding situations are not experienced again.

The transition to a fully electronic gully cleansing programme will optimise performance and ensure that the most efficient service is always on offer to residents of the East Riding of Yorkshire Council.

Alongside the improvements that are being made to the current East Riding gully cleaning programme the Council has also been preparing emergency measures. It has to be acknowledged that no matter how effective and efficient a gully maintenance programme is; if freak weather conditions such as those witnessed in June 2007 take place then some flooding may be unavoidable. With this in mind the East Riding of Yorkshire Council has set up emergency control centre packs at each of its depots. These packs will facilitate emergency control centres in each of the remote council depots and can be set up in a matter of minutes.

The installation of video conferencing in the emergency control centre packs is being investigated which would allow for the remote depots to patch into main meetings taking place at a central location. This would allow for the direct exchange of information and would eliminate the chances of vital pieces of information being lost at a time of emergency. This would ensure that works and procedures could be undertaken immediately and our residents would see that active steps are been taken to resolve distressing situations in the shortest possible timeframe.

The works carried out after the severe summer flooding definitely had a positive impact when a similar flooding situation presented itself in January 2008. Scenes like those experienced in June 2007 were thankfully avoided and we were able to improve the quality of life for a lot of our resident's who had been flooded in the previous year and feared that they may be flooded again.

## Abandoned and Nuisance Vehicles

One of the most significant issues of blight affecting the UK in recent years has been that of abandoned motor vehicles. Whilst the problem has been around for many years, earlier successful legal measures generally meant that the problem was kept under control in most cases.

Factors outside of the UK can have significant effect on the numbers of abandoned vehicles which arise. The huge growth of the economy in China and India (2007) has led to a massive increase in demand for scrap metals and other materials with consequent increases in price in the market place. In the past two years this has led to a reduction in the numbers of vehicles abandoned as owners take advantage of attractive prices offered by dismantlers. Local authorities need to monitor this situation to help them manage and plan demand for service.

A significant increase in the number of "abandoned "vehicles being reported to local authorities are in fact nuisance vehicles, which, whilst they may not be truly abandoned in the eyes of the authority concerned, are nevertheless, the source of annoyance to members of the public. The law surrounding the issue of abandoned and nuisance vehicles has seen some changes in the recent past and is currently under review again. This is further affected by the recent introduction of the End of Life Vehicle Directive (ELV Directive 2000/53/EC). Apart from the nuisance problems caused by vehicles which are abandoned many other problems are associated with abandoned and nuisance vehicles.

The Clean Neighbourhoods and Environment Act 2005 gave local authorities additional powers in relation to abandoned and nuisance vehicles. Powers to remove vehicles fit only for destruction mean that such vehicles can now be removed summarily without the need for a notice of intent, addressed to the keeper in most cases.

Nuisance vehicles, which were previously outwith the controls available in the Refuse Disposal Amenity Act 1978 can also be removed in certain circumstances and a scheme of fixed penalty notices (FPNs) allows the local authority to deal with vehicle related problems in a more expeditious way.

The End of Life Vehicles Directive (ELV Directive) from the European Union requires that all Member States operate a scheme within their country for managing vehicles that have reached the end of their economic life which is in accordance with established high standards of environmental practice and which minimises the likelihood of pollution. This is achieved by the operation only of authorised treatment facilities (ATFs) (as opposed to the traditional Motor Vehicle Dismantlers (MVD)) that are required to de-pollute vehicles before the commencement of the dismantling operation.

ELV Directive reference http://ec.europa.eu/environment/waste/elv_index.htm this page gives a link to the Directive itself and highlights progress on any amendments.

## Rapid Response

The idea of a rapid response style service for cleansing has been around for a number of years with the remit of providing a quick response crew to deal with non-routine issues and calls about:

- dirty streets
- graffiti
- small fly-tips
- road traffic accidents.
  - o broken glass
  - o oil spillage
  - o other fluids
- dead animals
- drugs litter
- asbestos
- fallen trees.

Crews will need to be equipped and trained to deal with the above, varied scenarios in ways that are safe and which comply with relevant legislation and regulations.

Most local authority contracts tend to be written around the requirements and response times set out within the EPA1990 and associated code of practice. These contracts are, typically, frequency based in some way, dependant on the EPA cleansing zone occupied by each street and influenced by local footfall/usage requirements.

There are, however, times when cleansing related issues need to be dealt with quickly, in-between scheduled visits. This is where rapid response is traditionally used. This allows for quick, often within one hour, action and without the need to call on existing resources and affect scheduled work. The service is an attractive "quick win" for service officers, the public and of course, local politicians.

Many cleansing contracts have a rapid response service requirement within the specification. The success of the service can often lead to over-use and demands, as operational staff and client officers see rapid response as a way of dealing quickly with all their cleansing related problems, so close management of how the service is used is important.

Managers will need to be aware of ensuring usage guidelines are clear to all parties and be aware of the danger of sending such teams zig-zagging across the District, when, either the service required does not necessitate immediate action, or other cleansing units may be better suited and located to deal with any issue that may arise.

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## Sources of Further Information

Association of Public Service Excellence (APSE)
www.apse.org.uk

Association of Town Centre Managers (ACTM)
www.atcm.org

British Cleaning Council (BCC)
www.britishcleaningcouncil.org

British Toilet Association (BTA)
www.britloos.co.uk

Chartered Institution of Water and Environmental Management (CIWEM)
www.ciwem.co.uk

Chartered Institution of Wastes Management (CIWM)
www.ciwm.co.uk

Department for Communities and Local Government (DCLG)
www.communities.gov.uk

Defra
www.defra.gov.uk

ENCAMS
www.encams.org

Highways Agency
www.highways.gov.uk

Health and Safety Executive (HSE)
www.hse.gov.uk

Improvement and Development Agency (IDeA)
www.idea.gov.uk

Keep Wales Tidy
www.keepwalestidy.org

Keep Scotland Beautiful
www.keepscotlandbeautiful.org

Local Government Association (LGA)
www.lga.gov.uk

Tidy Northern Ireland
www.tidynorthernirleand.org

## Glossary

CNEA – Clean Neighbourhoods and Environment Act

COPA – Control of Pollution Act

CSGN – Cleaner Safer Greener Network

Defra – Department for Food and Rural Affairs

ENCAMS – Environmental Campaigns

EPA – Environment Protection Act

LAS – Landfill Allowance Scheme

LATS – Landfill Allowance Trading Scheme

LEQ – Local Environmental Quality

NGO – Non Government Organisation