

SAFE TRAFFIC MANAGEMENT ON WASTE AND RECYCLING SITES

This guidance has been developed by the Waste Industry Health and Safety (WISH) Forum to help control safety and health risks in the waste management industry associated with traffic management on waste and recycling sites, including interactions between pedestrians and vehicles, vehicles and vehicles, and vehicles and fixed structures. The Health and Safety Executive (HSE) was consulted in the production of this publication. It endorses the sensible, proportionate, reasonable and balanced advice on managing risk during waste-related activities as set out in this guidance.

The focus of this document is about preventing transport-related accidents to those who work at or visit/use waste and recycling sites. It is mainly targeted at employers, managers, safety professionals, and supervisors, although others may find it useful. It provides advice on how to assess the main hazards associated with transport-related activities on sites, gives practicable examples of how to eliminate or reduce risk, and aims to help you plan and organise your site, concentrating on:

- Safe site
- Safe people
- Safe vehicles (including mobile plant)

Tips, discussions, case studies, and notes – in WISH documents tips, discussions, case studies, and notes are sometimes provided in green tint boxes. Tips, discussions, and case studies are informal advice, experience, and ideas aimed at helping operators manage risk. They are not part of formal guidance. Notes expand on specific issues, give clarification, highlight issues, and provide explanations. Notes are part of formal guidance.

Contents

1. Introduction

2. Organisation and planning

- 2.1. Organising for traffic safety
- 2.2. Risk assessment and traffic management plans
- 2.3. Visiting drivers and other site users
 - 2.3.1. Pre-entry site issues
 - 2.3.2. Regular site visitors
 - 2.3.3. Irregular site visitors
- 2.4. Worker consultation and engagement

3. Safe site

- 3.1 Site layout
 - 3.1.1 Vehicle movement design
 - 3.1.2 Vehicle entry and exit
 - 3.1.3 Vehicle parking
 - 3.1.4 Vehicle routes and inside buildings
 - 3.1.5 Reversing and use of reversing assistants and similar
 - 3.1.6 Signage
 - 3.1.7 Lighting
 - 3.1.8 Technology and vision aids
- 3.2 Pedestrian segregation design
 - 3.2.1 Pedestrian access areas
 - 3.2.2 Segregated walkway design
 - 3.2.3 Crossing points
- 3.3 'Designated areas'
 - 3.3.1 Weighbridges and weighbridge areas
 - 3.3.2 Sheeting and un-sheeting areas
 - 3.3.3 Waste tipping/discharge areas - general
 - 3.3.4 Waste tipping/discharge areas - split-level and pit type
 - 3.3.5 Waste tipping/discharge areas – smaller vehicles, fly-tipped, bulky wastes etc
 - 3.3.6 Loading-out - general
 - 3.3.7 Loading-out baled wastes and similar
 - 3.3.8 Refuelling/recharging areas
- 3.4 Communication
- 3.5 Maintenance, repair etc activities

Waste Industry Safety and Health Forum

4. Safe people

- 4.1 Information, instruction, and training
 - 4.1.1 Multiple sites and common site rules
- 4.2 PPE (personal protective equipment)
- 4.3 Roles and responsibilities

5. Safe vehicles, including mobile plant

- 5.1. Selection and fitness for purpose
- 5.2. Technology and vision aids for vehicles, including mobile plant
- 5.3. Maintenance, daily checks, and defect reporting

6. Monitoring and review

- 6.1. Proactive and reactive checks
- 6.2. Periodic review
- 6.3. Enforcement of site rules and procedures
- 6.4. Incident management

7. Change management

- 7.1. Managing abnormal situations
- 7.2. Restricted access
- 7.3. National emergencies and similar
- 7.4. Managing contractors on site

Further reading and information

Disclaimer and WISH



1. Introduction

The overall number of transport-related incidents on waste and recycling sites is comparatively small. However, when they do occur the consequences are often serious, and they are one of the most common causes of fatalities on waste and recycling sites. Safe on-site traffic management is a major consideration for the waste and recycling sector.

This guidance applies to the majority of waste and recycling sites. The principles can be used as a source of advice regarding transport risks across a wide range of facilities. However, there are special considerations for sites such as civic amenity/HWRC (household waste recycling centre) sites, material recovery facilities (MRFs) and landfill operations. Additional guidance and advice on these special considerations can be found in other WISH documents:

WISH WASTE 13 Designing and operating material recycling facilities (MRFs) safely, available as a free download at: [WASTE 13](#)

WISH WASTE 26 Managing health and safety at HWRC CA sites, available as a free download at: [WASTE 26](#)

WISH INFO 29 Landfill specific aspects of on-site traffic management, available as a free download, along with other WISH information sheets, at: [WISH INFO sheets](#)

This document is concerned with on-site traffic issues. It does not cover traffic risks when collecting wastes. For guidance and advice on these aspects see other WISH documents such as WISH WASTE 04 Waste and recycling vehicles in street collection (at: [WASTE 04](#)), and WISH INFO 11 Safety in driver only commercial waste and recycling collections (at: [INFO 11](#)).

This guidance is aimed at waste and recycling facility managers, their supervisory staff and safety professionals in waste and recycling companies/organisations. It can also be used as the basis for supporting the development or improvement of pedestrian and vehicle interface arrangements. Primarily, it aims to help eliminate or reduce the risk of injury that may arise from the interaction between pedestrians and vehicles or mobile plant, and from the general use of vehicles and mobile plant on site.

For organisations which have formal ISO accreditations following the 'Plan-Do-Check-Act' approach may be the most effective way of approaching safe traffic management (organisations which do not have these formal accreditations can also follow this approach - see the HSE's guidance on safety management HSG65, available at: [HSE HSG65](#)). The graphic below shows the 'Plan-Do-Check-Act' approach in outline as applied to on-site traffic management.

Waste Industry Safety and Health Forum



The main concentration in the guidance is on the risk of pedestrian/vehicle collisions, as the most common cause of serious and fatal accidents. However, your risk assessments and traffic management should also include the risks of vehicle/vehicle collisions (including between road vehicles and mobile plant), and vehicle/fixed structure collisions. While these types of accident typically have a lower likelihood of serious or fatal outcomes, they can still pose a significant risk, as the two case studies on the next page illustrate.

This guidance does not aim to be comprehensive, but it does contain information and examples that will help you comply with the law and may help you in considering what you should do.

Case study – vehicle-on-vehicle collision. A waste and recycling company operated a ‘split-level’ transfer station: waste lorries tipped at the upper level over a drop (protected by bump stops) to the lower level where a 20-tonne loading shovel loaded bulk waste lorries for onward transport. Access to the upper level was via a ramp. The ramp had been designed to highway standards and there was adequate, if tight, passing room for two lorries. However, two or three times a day the loading shovel needed to access the upper level to assist in the removal of spilt wastes, to clear detritus from the upper level’s bump stops etc. One day the loading shovel was accessing the upper level via the ramp when a cage waste vehicle was coming down the ramp, likely a little too quickly. The loading shovel operator’s forward vision was hampered by the shovel’s over-size bucket, and he failed to see the cage vehicle, collided with it, and the shovel’s bucket ‘decapitated’ the cage vehicle’s cab. Fortunately the two operatives in the cage vehicle had ‘ducked’ in time and avoided serious injury. Collisions between vehicles, and in particular larger vehicles/mobile plant and smaller vehicles can be serious and should be part of your risk assessment and safe traffic management.

Case study – vehicle-on-fixed structure collision. A waste and recycling company installed a recycling plant in a pre-existing building which had not been designed for waste and recycling use (previously used as a warehouse for agricultural materials). The building was of steel construction with concrete panelling on its lower half and steel cladding on its upper half. Two sets of vehicle doors were provided: a series of lower doors in the concrete panelling with concrete lintels at the door tops, and taller doors which extended into the steel cladding with steel lintels. One day a hook-lift waste lorry attempted to leave the building via one of the lower doors (investigations following the accident indicated that this had become common practice as it avoided a tight manoeuvre associated with leaving via a taller door). The hook-lift lorry driver had failed to completely lower their container, which impacted with the concrete lintel of the lower door. The concrete lintel became dislodged and fell onto the lorry cab, crushing it and killing the driver. While this accident may be unusual, collisions between, for example, vehicles and picking cabin legs or other critical structures are more common, can have serious outcomes, and should be part of your risk assessment and safe traffic management.

2. Organisation and planning

2.1 Organising for traffic safety

The legal underpinning for workplace traffic safety is included in the Workplace (Health, Safety and Welfare) Regulations. These require that every workplace is organised in such a way that pedestrians and vehicles can circulate safely. Operators of waste and recycling sites should use the guidance to these regulations in conjunction with the information available in HSE's guidance 'Workplace transport safety' as a starting point for their traffic management, and supplement this with this guidance specific to waste and recycling sites. The HSE's guidance (HSG136) is available at: [HSE HSG 136](#).

2.2 Risk assessment and traffic management plans

Traffic-related issues should be risk assessed for their potential risk and to ensure adequate systems, physical controls, procedures etc to control the risks are in place. The output of this risk assessment/s should be a formal and recorded, written traffic management plan. The level of detail in such traffic management plans should be proportionate to the complexity and size of the site. This risk assessment should at least cover the following:

- Identify the hazards which might arise from interactions between:
 - Vehicle/pedestrian interfaces
 - Vehicle/vehicle interfaces (including mobile plant)
 - Vehicle/structure interfaces (including waste storage and loading activities)
- Decide who/what might be harmed and how
- Evaluate the risks and decide on precautions
- Record your findings and implement them
- Review your assessment and update as necessary

Some key areas to consider include:

- Pre-site entry issues
- Safe site - how do people, vehicles, plant and equipment interact with each other?
- Safe people - who needs training, instruction and information; what does this look like; what are people's individual and collective responsibilities; what monitoring and supervision is required and what is it for?
- Safe vehicles - selecting the right vehicle or plant for the task and making sure it is maintained
- What are the residual risks that result from the constraints of the site (for example, size of site footprint), the vehicles and foreseeable human error. How will these be controlled?

Waste Industry Safety and Health Forum

Suitable control measures include:

- Physical measures, such as road design and provision of traffic barriers etc
- Site specific procedures and instructions, including a formal, written traffic management plan and defined site rules which include traffic risks
- Training, information, instruction and induction - a robust traffic plan will be of no use unless all operatives, and others on site, are aware of it and those responsible for managing traffic are competent to do so

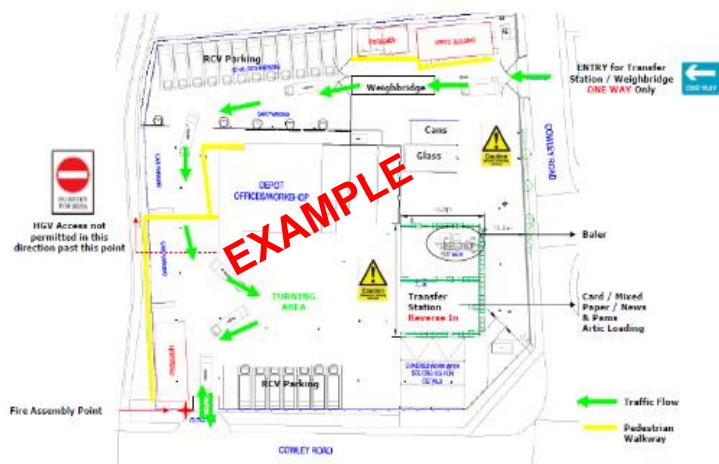
Traffic risk assessments should also consider other relevant legal standards, such as the Provision and Use of Work Equipment Regulations (PUWER) for the operation and maintenance of mobile plant, and the Workplace Health, Safety and Welfare Regulations for the organisation of traffic routes.

An effective traffic management plan should include features such as:

- Pedestrian routes and crossing points
- Site traffic routes and directions, including speed limits
- Areas where pedestrians are not permitted to enter, and pedestrian safe zones
- Areas where specific tasks are carried out (for example, sheeting/un-sheeting, loading etc.)
- Car, van and other non-waste vehicle routes and parking areas
- Emergency assembly points, escape routes and similar, and how to get to them safely

For further information on risk assessment, visit [HSE risk pages](#), or for a simpler approach visit the HSE's managing risk pages at: [HSE simpler H&S risk](#). There also is a list of other helpful workplace transport-related guidance at [HSE workplace transport pages](#).

Traffic management plans should include maps/diagrams or similar showing traffic routes, no-pedestrian areas, storage areas, pedestrian walkways etc. These can assist in employee and visitor inductions and are often more effective during induction than a 'mass of words'



2.3 Visiting drivers and other site users

2.3.1 Pre-site entry issues

Controls to ensure good traffic management should be in place before any contractors or visitors (including waste lorry and other delivery vehicles) arrive at a site.

Make sure that those working on, or visiting your site have received an induction, including site traffic rules and traffic plan before they start work or commence discharging wastes etc.

The first point of contact on arrival at site should be made clear in the information you provide to visitors or contractors, including, where to park, where to go when on site and who to report to. Inductions for drivers can take place at the weighbridge or in a separate room/building. Inductions for contractors usually take place in a separate room/building.

Tip. Often the same waste collection drivers will visit and discharge wastes at the same site day-after-day. If this is the case with your site, why not visit the drivers at their depot and induct them on your site rules, traffic management etc there as a group rather than inducting drivers one at a time as-and-when they arrive at your site. If you take this approach, you may save a lot of time, although watch-out for new drivers and it would be good practice to repeat inductions periodically.

2.3.2 Regular site users

Site operators should ensure adequate communication with regular site users and visitors before they start work on site. Providing site rules in advance, for others to issue on your behalf, should not be wholly relied upon, as content may not be provided to everyone who requires it. It is therefore necessary to ensure either that an induction process is in place for everyone upon arrival or check that adequate induction has taken place previously.

Site operators should also establish and maintain clear feedback systems with regular site users and customers where issues, such as drivers breaching traffic rules, can be raised and addressed.

2.3.3 Irregular visitors and site users

Pre-site entry planning for irregular users and visitors (for example school groups or customers auditing sites) can be more difficult. However, the principles as above should also be applied. Remember that this type of visitor may be at higher risk because of their relative lack of site-related experience. Your risk assessment considering, and information provided for, this type of visitor should reflect this. An increased level of supervision is likely to be needed.

Inevitably, new drivers and non-routine customers in vehicles (such as hire companies delivering equipment) will arrive at sites. In these cases pre-planning is limited, but all of them should still receive an adequate site induction to keep them safe that covers traffic management issues and site rules before being allowed to move about on site.

2.4 Worker consultation and engagement

Workers should be consulted and engaged regarding health and safety arrangements, including traffic management, for the work they undertake as this will support ownership of allocated responsibilities. Worker consultation and employee engagement can contribute positively to achieving the desired outcomes by:

- Identifying problems
- Understanding what individuals really do
- Indicating whether activities can be carried out safely
- Understanding what challenges they face and generating sound practical ideas and solutions
- Understanding how people want to be communicated with

Further information on worker involvement is available at [HSE involvement pages](#). Readers may also be interested in WISH's information sheets on employee engagement and health and safety leadership. These are available as free downloads at: [WISH INFO 09](#) (for employee engagement) and at: [WISH INFO 01](#) (for health and safety leadership).



Two example simplified maps/diagrams taken from site traffic management plans and used during site inductions, and an employee engagement session at a larger site

3. Safe site

The design and operation of a safe site needs to consider how people, vehicles, mobile plant, site layout, structures and equipment etc all interact with each other. This section provides a greater level of insight into designing vehicle routes, providing segregated pedestrian routes and considering designated areas required by waste site operations etc. These physical controls should be supported by site procedures that include communication arrangements and maintenance and repair activities.

3.1 Site layout

A well-designed site improves safety and contributes to ease of use and productivity.

You should produce a written traffic management plan, which shows the vehicle and pedestrian routes to be followed, designated areas (such as for sheeting and un-sheeting), where specific tasks are carried out, parking areas, emergency assembly points etc.

Your plan should be reviewed (along with your traffic management risk assessment), as required by changes in circumstances (for example, changes in work activities, traffic type, traffic volume and circulation etc), and periodically at intervals determined by factors such as residual risk.

Monitoring, maintenance and enforcement regimes should be in place to ensure that the 'hardware' and systems/procedures you originally provided still do their job and are used as intended.

3.1.1 Vehicle movement design

The design of vehicle routes needs to take a number of factors into account, as detailed in the following sections, although there are some overarching considerations. Vehicle routes should:

- Not interfere with the safety of areas designated for specific tasks/uses
- Not interfere with the safety of pedestrian routes
- Not impact pedestrian visibility - this may include blind spots or corners in close proximity to pedestrian crossings etc
- Where drivers, mobile plant operators etc need to access and egress their cabs, vehicle routes should, as practicable, be aligned to pedestrian walkways etc – for example, a walkway leading directly and all of the way to a mobile plant parking area
- Provide safe routes for vehicles to move around the site without impinging on the safety of pedestrians, for example, pedestrians moving to and from welfare facilities, where collection crew members are dropped off before a vehicle is tipped/discharged etc

3.1.2 Vehicle entry/exit

Issues relating to entry and exit from the public highway should be assessed. Visiting vehicles crossing lanes of traffic or making sharp turns should be avoided where practicable, especially when entry is from a road with fast-moving traffic. Examples of how to overcome such problems include the installation of dedicated slip roads from the highway, and, for drivers re-joining the public road, stipulating that exit should be 'left turn only' to prevent vehicles crossing opposing traffic lanes.

Segregation of lorries, mobile plant and light vehicles should occur as soon as reasonably practicable, such as employee etc car parking being close to the site entrance. In addition, so far as is reasonably practicable, heavy and light traffic should use separate vehicle routes and dedicated parking areas.

Pedestrian routes from visitor, employee etc car parking to the reception/offices should be clear and obvious to visitors. Their design and layout should separate pedestrians from vehicle movements and avoid the need for crossing vehicle routes so far as is reasonably practicable.

Effective control measures should be provided at points where drivers may need to queue. This could involve the use of vehicle holding points, traffic lights or other clear signage to ensure that entry is prohibited until it can be achieved safely. Additionally, when on-hold, drivers should be instructed to remain in their vehicles to ensure they do not stray into vehicle routes or operating areas.

3.1.3 Vehicle parking

It is good practice to have separate parking arrangements for cars (both employees and visitors) and commercial vehicles and mobile plant. This has the potential to allow for pedestrians to be able to access reception or other facilities without the need for mandatory PPE (personal protective equipment) that may be required in operational areas. An example of this would be to have visitor car parking located immediately adjacent to the site offices so that 'hi-vis', safety footwear, hard hat etc are not required to be worn when walking from their car to the office.

It is common practice to reverse park, as it is usually deemed safer to reverse in and drive out such as in emergency situations. This will be subject to the layout of the premises, the site-specific traffic management risk assessment and any existing organisation policy requirements. Where this is the case, this will need to be included in site rules, site inductions and clear signage provided.

Commercial vehicle and mobile plant parking needs to consider issues such as vehicle sizes; their manoeuvrability; and whether the space between them allows for effective pre and post use vehicle checks. It is usually better, where practicable, to have separate lorry and mobile plant parking areas.

Depending on the overall length or rear overhang of any vehicle and the proximity to buildings, perimeter fencing or other physical structures etc, there may be a need to install bump stops or wheel stops in order to prevent damage to property or other vehicles (see photograph on the following page).

Where trailers are uncoupled and parked, parking brakes should always be used. Drivers need to check their application before coupling in order to prevent vehicle/trailer roll-aways.

3.1.4 Vehicle routes and inside buildings

The design and construction of site roads/vehicle routes should include factors such as:

- Roadways should be constructed to an appropriate standard and width, and this should reflect the type of traffic that will use the road, anticipated adverse weather conditions etc
- Ensure the marking of routes is clear and unambiguous. To prevent confusion, road signs and markings should generally be to highway standard as this is what drivers expect to see
- Use one-way systems wherever it is reasonably practicable to do so
- Where practicable routes should segregate heavy and light vehicles, and working plant, such as separate entrances for cars/vans and lorries
- Avoid sharp bends and steep inclines so far as is practicable
- Avoid blind corners so far as is practicable. Where these are unavoidable, provide mirrors or similar to improve vision and/or consider traffic control through the 'danger area' such as traffic lights, automatic barriers etc
- Ensure good visibility for drivers along the road line

There are specific requirements for landfill sites where on-site roads are frequently made and unmade as the landfill's tipping face moves – see WISH INFO 29 Landfill specific aspects of on-site traffic management, available as a free download at: [WISH INFO sheets](#).

All vehicle movements inside buildings can be categorised as high-risk areas with the potential for vehicle to vehicle, vehicle to structure, and/or vehicle to pedestrian collisions. Robust systems that control vehicle entry, manoeuvring and exit are required to prevent such incidents.

- Provide separate doorways for pedestrians and vehicles to ensure segregation – it is not acceptable for pedestrians to use vehicle access doors
- Provide fixed barriers immediately inside/outside pedestrian doorways to prevent and deter pedestrians from walking directly into vehicle operating areas and/or traffic routes

Waste Industry Safety and Health Forum

- Consider the use of audible warnings, such as requiring vehicles entering a building to sound their horn and slow down when entering and leaving buildings (some sites install systems such as 'alarm strips' which activate an alarm when approaching vehicles drive over them)
- Consider traffic light or barrier etc entry systems controlled by a mobile plant operator working within the building or use of a traffic controller (note - traffic controllers can be at significant risk and controls should be designed so that they can work from a place of safety, such as within an area protected by impact-resistant bollards or barriers etc)
- Not allowing pedestrians entry while plant or vehicles may be in motion unless there are safe systems that ensure effective segregation from the work activity in place
- Decide by risk assessment safe distances between tipping vehicles, the maximum safe number of vehicles allowed inside a building at any-one-time etc and enforce these limits
- If pedestrians are required to access work areas such as picking cabins etc within a building the use of physical barriers, fencing etc, is more effective than 'painted' pedestrian walkways. If there is no practicable alternative to painted walkways within buildings, these should be maintained so they remain clearly visible, and their use strictly enforced at all times
- Put safe systems of work in place to ensure pedestrian and vehicle segregation during short and long-term shutdowns for maintenance and repair activities

Case study – traffic in buildings. One common layout at recycling plants/MRFs is for the recycling machinery, picking cabin/s etc to be aligned along one wall of the building with roller doors for vehicle access in the opposite wall, and a tipping floor between the two. At a MRF so arranged, workers were required to walk down the side of the tipping floor to access the picking cabin. Site management were aware of the risk and had provided a painted walkway along one side of the building. However, this route was longer than walking diagonally across the tipping floor. One day a worker was taking this diagonal 'short-cut', was struck by a lorry, and suffered fatal injuries. There was no practicable reason in this case that physical barriers could not have been provided to 'corral' workers via the walkway and protect them from traffic. Or a pedestrian access door could have been provided in the rear of the building next to the picking cabin removing the need to cross the tipping floor.



Examples traffic barriers/fencing inside MRF buildings, example pedestrian barrier just outside an access door, and an example lorry 'bump stop' to prevent the vehicle's rear overhang impacting a building

3.1.5 Reversing and use of reversing assistants and similar

Reversing is a high-risk activity. Sites should be designed to eliminate or minimise the need to reverse wherever practicable. However, it is accepted that on waste and recycling sites there are areas where reversing usually cannot practicably be completely eliminated, such as on tipping floors, pit and split-level waste reception areas etc. Where reversing cannot practicably be eliminated the following mitigation measures should, at the least, be considered:

- Only allow reversing in designated reversing areas where it cannot practicably be eliminated, and make these areas clear in your traffic management plan
- Unnecessary vehicles, mobile plant etc should be removed from the immediate vicinity
- Good all-round vision is essential. For plant operators near-360° visibility can usually be achieved by the use of appropriately fitted mirrors and/or, more commonly, a combination of mirrors and closed-circuit TV cameras (CCTV – reversing cameras). Mirrors and CCTV cameras should be inspected regularly as part of daily mobile plant checks to ensure they are clean, properly maintained and remain in good working order
- Put safe systems of work in place to ensure pedestrian and vehicle segregation during short and long-term shutdowns for maintenance and repair activities

Audible reversing warnings should be used. However, care should be exercised, and they should not be relied upon in isolation (in areas where reversing is routine people tend to become ‘immune’ to reversing alarms). Reversing alarms may be a useful additional safeguard but they may not be heard by everyone, in particular in noisy environments, they can become just part of the background noise or cause confusion if too many vehicles are reversing. The environmental impact of reversing alarms may also need to be considered to comply with planning and similar restrictions. Alternatives to the standard ‘bleepers’, such as ‘warbling’ or ‘white noise’ reversing alarms, can often be used to mitigate these impacts – just turning-off reversing alarms is not acceptable.

The use of a reversing assistant or similar to assist with reversing manoeuvres is a high-risk activity and this option should only be used when it is not possible to implement other reasonably practicable measures, such as improving site layout. Reversing assistants and similar should not generally be used in areas where reversing is a routine and frequent activity, such as on tipping floors, at split-level or pit waste reception areas etc unless the risk of not using a reversing assistant or similar significantly outweighs the risks associated with the use of a reversing assistant or similar.

The use of reversing assistants is not common on waste and recycling sites. However, their use in waste collection is, such as with RCVs (refuse collection vehicles – bin-lorries). More information on this is included in WISH INFO 12 Reversing in waste recycling collections, available at: [WISH INFO 12](#). The principles in INFO 12 should also be applied on sites.

Discussion. Different organisations and sites often use different terms for workers involved in assisting reversing activities, often incorrectly. For example, terms such as ‘banks-person’, ‘traffic marshal/controller’, ‘reversing assistant’ etc are sometimes used. These are different roles:

Reversing assistant – a person who assists a lorry driver to reverse and keeps the reversing area clear of other pedestrians. The reversing assistant is not in control of or responsible for the manoeuvre (the driver retains control and responsibility). All the reversing assistant is doing is helping the driver as an ‘extra-pair-of-eyes’. Reversing assistants require training and instruction, such as where to stand and where not to stand, but this is generally fairly basic.

Traffic marshal/controller – typically a person who controls access to an area. For example, a person who stops lorries from entering a tipping hall when the safe number of lorries allowed in the hall has been reached. In basic terms a human traffic light/traffic barrier (installing traffic lights/barriers is often more effective and lower risk). Traffic marshals/controllers require training, such as to remain in their physically protected area when directing vehicles, but this is generally fairly basic.

Banks-person – a person who controls and has responsibility for a (typically) complex task which requires co-ordination to be conducted safely. One typical example being a banks-person who controls and co-ordinates the unloading of a lorry using a crane at a construction site. A waste and recycling example might be the control and co-ordination of the use of a 360-degree excavator to clear a stuck load in the rear of a tipping lorry. The banks-person is in control, has responsibility for the task, and has specific training and competency in the task to allow it to proceed safely.

Other definitions can be found specific to other industry sectors. What is essential is that whatever the person’s role that they are clear about it and the limits. If this is not the case, then there is a risk of ‘mission-creep’ such as a reversing assistant taking-on the role of a banks-person without having the required training and competency to do so.

Where in the uncommon cases that a reversing assistant has been deemed by risk assessment to be essential for the safe running of a site and there is no other practicable alternative effective control:

- They should **NEVER** stand directly behind the vehicle or in a ‘crush zone’ between a reversing vehicle and fixed structure, wall, bale stack or similar immovable object
- They should be adequately trained
- They should wear appropriate, high visibility clothing
- They should be in the driver’s sight at all times during vehicle movements
- They should be at a safe distance when vehicles are moving or tipping

Waste Industry Safety and Health Forum

- Signalling conventions, hand/arm signals, or radio control procedures should be understood by drivers before a reversing manoeuvre commences
- Drivers should be instructed that if, at any time, they cannot see the reversing assistant they should **STOP** immediately
- Any near-misses or similar incidents involving reversing assistants should be reported promptly and effective remedial actions taken. Near-misses and similar relating to reversing assistants should be analysed and fed-back into your risk assessment to ensure that the risks in using reversing assistants remain justified in balance against not using reversing assistants

3.1.6 Signage

Simple and clear signage which informs site users of key information should be displayed in prominent and clearly visible locations, starting at the site entrance and then throughout the site and its operational areas. Signs should:

- As practicable, use pictograms rather than words (often clearer, quicker to understand, and English may not be a driver's first language)
- Generally, conform to recognised standards such as road traffic signs (use road type signs wherever practicable to avoid confusion)
- Include signs for speed limits; directions and routes; one-way systems, overtaking prohibitions, traffic priorities, traffic and pedestrian crossings etc
- Adhere to the Health and Safety (Safety Signs and Signals) Regulations (where appropriate)
- Identify PPE requirements and areas pedestrians are banned from, such as areas where reversing cannot be eliminated, and the additional precautions need to be taken
- Be maintained, kept clean, and replaced if damaged or excessively worn or faded

Signage should not be used as a primary control as people tend to become 'sign-blind' over time and a 'forest' of signs may be confusing – keep signage simple, obvious, visible, and clear.



Signals used by reversing assistants and similar should be clear and inducted-out to drivers, signage should be to the relevant standards and clear

3.1.7 Lighting

The provision of lighting should be considered during the design of both vehicle routes, trafficked areas and pedestrian access areas and walkways. Lighting should be appropriate to the activity in the area. For example, higher levels of lighting are likely to be required in reversing areas than at general site access roads.

The hours of operation (including in the winter months) and the volumes of people and vehicles should be considered, along with interaction points (for example at pedestrian crossings) where additional lighting may be required. These points will need to be considered for both internal and external vehicle movements/pedestrian interactions.

Lighting should be maintained, kept clean, blown bulbs and non-operational/faulty lights replaced promptly etc. Guidance on Lighting at work can be found at [HSE HSG38 guidance](#).

3.1.8 Technology and site visibility aids

Technology and visibility aids are increasingly commonplace, and, in addition to aiding the driver in the safe operation and use of vehicles and mobile plant, can also help to protect pedestrians and monitor behaviours during daily activities. Examples of technology available for consideration include:

- Convex and other types of mirrors to aid visibility at blind spots
- Interactive signage such as those which automatically light-up when a speed limit is exceeded, vehicle height warnings, no access areas etc
- Traffic lights
- Automatic barriers (these can be combined with interlocked pedestrian gates so that pedestrians can only cross a road when the vehicle barrier is down)
- Lighting systems used for pedestrian crossings that are lit 'green' when it is safe to cross
- 'Halo' lighting systems that project separation lines around vehicles
- Transceiver and similar systems, such as:
 - RFID (radio frequency tags) technology that alarms in both the vehicle cab and on the wearers 'vibrating tag' when they approach each other
 - Transceiver systems (unlike RFID these rely on batteries in the tags to work)
 - AI-based systems that use cameras to look for pedestrians, vehicles or structures in close proximity to the vehicle, and warn the driver
- Site-based CCTV (sometimes enhanced by AI) to aid monitoring

Waste Industry Safety and Health Forum

Introducing technology and visibility aids should be carefully considered as part of any risk assessment process, to make sure there is a clear connection between identified risks and the appropriate controls; that the technology has a positive impact in improving safety; and that the use and reliance upon the technology does not introduce new, unintended and unforeseen risks which are not properly managed and controlled. Technology should not take away from the responsibilities of the driver to operate any vehicle or mobile plant safely, or from pedestrians who may interact on site from understanding the risks.

Case study – over-reliance on technology. A hazardous waste site installed a transceiver system on its mobile plant operating in the site's main hall. All operational employees were given 'clip-on' transceiver tags to wear and visiting drivers were lent tags at the weighbridge. The system on the mobile plant detected when a tag being worn by a person was too close to them and alarmed to inform the plant driver of the person's close proximity. One day a customer auditor was visiting the site and the site office forgot to give him a tag to wear – he was very nearly run-over by one of the site's loading shovels. Mobile plant operators had become overly reliant on the transceiver system to warn them that someone was too close and were paying less attention than they should have been. Technology can be a useful support to other controls and precautions but should not be relied on.

Case study – limiting vehicle numbers by automatic barrier. A recycling site had identified via risk assessment that the maximum safe number of lorries allowed in its tipping hall at any one time was no more than three. However, at busy times, and despite visiting drivers being instructed to wait until there were less than three in the hall before entering, the site had problems enforcing the rule (the visiting drivers were on 'task-and-finish' and so had an incentive to speed-up their tipping). The site installed pressure strips at the entry and exit vehicle doors to the hall linked to an automatic barrier which would not lift until fewer than three lorries were in the hall. Even then the site went through several barriers (damaged by impatient drivers) before installing a more robust barrier...



Example of a 'forest of signs' which are unlikely to be fully read by drivers etc, examples of pedestrian control measures at vehicle access/exit doors

3.2 Pedestrian segregation/separation design

3.2.1 Pedestrian access areas

The design of pedestrian access areas needs to take a number of factors into account, as detailed in the following sections, including, but not limited to, the following considerations:

- Which areas require pedestrian access? This may include storage areas, smoking areas, collection crew waiting areas, access to picking cabins and welfare facilities, or the transition from one building to another. These may result in pedestrians walking into/over roadways/vehicle routes or into mobile plant and other operating areas
- Who needs access? Are they general staff, workers, visitors, or members of the public, as the control measures required may vary
- How many people need access? This may impact the width of walkways, access doors etc, and the level of control measures that may be required. For example, a pelican/traffic light crossing versus a zebra crossing
- What is the frequency of access required? During shift changes, or only in the event of emergency evacuations (consideration may need to be given to stopping vehicle movements)
- The time of day? People movements during the hours of darkness or poor weather may identify a requirement for additional lighting, or additional high visibility PPE
- What happens in an emergency situation? In the event of an evacuation, people need safe and easy exit from buildings and to assembly areas
- At some waste and recycling facilities, the process of removing waste or recyclables through sorting by hand via 'picking from the floor' activities ('totting') takes place. This is a high-risk activity and specific guidance can be found in WISH Waste18 - Hand Sorting of Recyclables ('totting') with Vehicle Assistance at: [WISH WASTE 18](#)

3.2.2 Segregated/separated walkway design

All vehicles (including mobile plant) and pedestrians should be segregated/separated from each other, so far as is reasonably practicable following the general guidance hierarchy below:

- Provide walkways which are separated from roads/vehicle routes or trafficked areas
- Provide physical barriers to segregate pedestrians from vehicles, in the preference order of:
 - Solid and permanently installed concrete or similar construction
 - Double Armco or similar 'vehicle proof' designs
 - Single Armco or similar

Waste Industry Safety and Health Forum

- Permanent railings/fencing
- Removable/moveable barriers and similar
- Raised kerbs
- Or a combination of the above. For example, a raised kerb with a pedestrian railing/fence mounted on it
- Where physical barriers cannot practicably be installed, the use of painted walkways, avoiding any potential vehicle blind spots, may be considered (along with the use of hi-vis PPE). As noted above and in the case study on page 14 of this document these can be unreliable as an effective control as without strict monitoring they can easily be bypassed
- Control measures need to be implemented that provide sufficient protection for pedestrians considering the volume and type of vehicles operating at the premises and the activity being undertaken. For example, a raised kerb may be adequate at the side of a straight access road but may not be acceptable where vehicles reverse
- If pedestrians and vehicles must share the same route, such as an access road, it should be wide enough to allow vehicles to pass pedestrians safely. At the least, suitable warning signs and road markings should be displayed and where practicable physical protection provided
- Provide barriers at buildings' pedestrian exits to prevent pedestrians walking unexpectedly onto roads/vehicle routes
- Provide adequate lighting to increase visibility of pedestrians during the hours of darkness. Consider increasing/improving lighting where this would assist in improving visibility and reducing risk dependent on factors such as the type of activity taking place in the area
- Vehicle speed retarders (speed bumps/humps) may be required to protect the areas where vehicles and pedestrians interact, such as when approaching pedestrian crossing points or at the entry to higher-risk traffic areas
- Where there are high volumes of pedestrians, consider installing subways, bridges and traffic lights, or a combination of these
- Ensure pedestrians are a safe distance from, and as practicable excluded from, areas where vehicle loading/unloading, tipping, sheeting and reversing take place



Examples of physical barriers and a separated walkway

3.2.3 Crossing points

Crossing points (pedestrian crossing points) have an increased risk of contact between vehicles and pedestrians, so appropriate control measures should be implemented including.

- Road crossing points for pedestrians, both externally and internally to buildings, should have good visibility on either side for both pedestrians and drivers and signposted. Dependent on risk level, the following should be considered for crossings:
 - Automatic barriers and/or traffic lights
 - Interlocked opening pedestrian gates
 - Inward opening pedestrian gates
 - Crossings marked with conventional black and white stripes or with hi-visibility lines, supported as required by road markings
- Avoid locating crossings on blind corners
- Where large vehicles operate, consider:
 - Installing stop lines and signs ahead of the crossing point to overcome the driver's limited visibility immediately in front of the vehicle cab
 - Installing speed bumps ahead of the crossing to slow the speed of approaching vehicles
- As with other road markings, pedestrian crossings ('zebra crossings' etc) markings need to be maintained and periodically repainted – waste and recycling sites are known to be harsh environments for road markings

Case study – location of crossing point. At a recycling site pedestrians needed to cross an access road to use the site's welfare facilities. Management installed a road-marked and signposted 'zebra crossing' at a point on the road where visibility was good for both vehicles using the road and pedestrians. However, this meant that pedestrians had to walk out-of-their-way to use the crossing and had taken to crossing the road by the shortest route. The site installed fencing along the side of the road to the crossing point to 'corral' pedestrians to the correct point.



Examples of crossing points and signs, road markings, speed humps etc at these

3.3 'Designated areas'

While vehicles and pedestrians can generally be effectively segregated as they move around a site, there are some activities where greater levels of pedestrian interactions may occur. So far as is reasonably practicable, these should be carried-out in 'designated areas' where additional control measures can be implemented. The sub-sections below cover some typical designated areas:

- Weighbridges and weighbridge areas
- Sheeting and un-sheeting areas
- Waste tipping/discharge areas - general
- Waste tipping/discharge areas - split-level and pit type
- Waste tipping/discharge areas - smaller vehicles, fly-tipped, bulky wastes etc
- Loading-out – general
- Loading-out – baled wastes
- Refuelling/recharging areas

3.3.1 Weighbridges and weighbridge areas

The location of the weighbridge/s should be such that access is as simple and straightforward as is reasonably practicable. On entering the site, signage should clearly indicate where the weighbridge/s is and provide instructions on what a visiting driver should do.

It is good practice to have the weighbridge/s and its associated area at the site entry/exit point. Sites may have separate in and out weighbridges, or where they are shared, traffic light systems, rising barriers etc should be used to help prevent head-on and other collisions.

The design of weighbridge areas should eliminate or minimise the driver's time out of the cab. Where practicable, a driver should be able to talk to weighbridge staff and exchange documentation without leaving the cab, for example by designing and installing weighbridge windows at cab height.

Safe access and egress should be provided if drivers are required to leave their vehicle cabs and enter the weighbridge building. If the driver leaves their cab, the vehicle's parking brake should be applied, and the vehicle engine should not be left running. The ignition keys should be removed and retained by the driver – this is basic vehicle security.

Suitable barriers, or equally effective means, should be provided to prevent other traffic encroaching over any pedestrian route between lorry and weighbridge door/window. Traffic should be controlled at this point to ensure correct queuing.

Systems should be in place to restrict/prevent vehicle access to the weighbridge when calibration, maintenance and/or repair work is being undertaken on the weighbridge/s.

3.3.2 Sheeting and un-sheeting areas

In the past many workers were seriously injured or killed falling off waste vehicles while sheeting and un-sheeting. The advent of automatic sheeting systems (auto-sheeting) for higher vehicles/containers has reduced this risk significantly, along with increased awareness and requirements for skips and similar to be sheeted and un-sheeting from the ground without climbing onto the vehicle/container. During the interim period while auto-sheeting was being introduced, many waste and recycling sites installed platforms, gantries, harness systems etc. These have largely now been made redundant and have either been removed or fallen into disuse. However, such systems do still exist and have been included in the order of preference given below for reducing fall risks:

- Leave the load un-sheeted (if road traffic and environmental law allows it)
- Automated sheeting systems (auto-sheeters): these systems allow the driver to sheet and un-sheet the load from ground level and remove the need for access at a height. They protect workers both on site and out on collection, where other safety facilities may not be provided
- Require waste containers such as skips to be un-sheeted from ground level
- Sheeting platforms: these platforms should be fully enclosed by fall-rails to reduce the risk of a worker falling between the platform and the side of the vehicle or stepping off the end of the platform. Fall-rails and platforms should not be used to climb onto loads
- Gantries and harness systems: these do not prevent a fall but are designed to reduce the risk of serious injury from the effects of a fall. If harnesses and lanyards/inertia reels are to be used, drivers must be trained in pre-use checks and how to use the harness and system

Sheeting and un-sheeting should only take place in a designated area that ensures segregation from other site activity and generally, as practicable, drivers undertaking sheeting/un-sheeting should not be expected to work within 5 metres of any traffic flows, or the area physically protected.

Case study – location of sheeting/un-sheeting area. At a recycling site management had designated a 'layby' at the side of the site's main access road as the sheeting and un-sheeting area. A skip lorry driver was attempting to remove the sheet from his load, but the sheet became stuck on a protruding item of waste and would not come-free. The driver pulled vigorously at the sheet, and it came-away suddenly. The driver fell backwards and rolled under the wheels of a lorry which was accessing the site resulting in serious leg injuries requiring amputation. If sheeting/un-sheeting areas are not physically protected from any passing or other traffic movements, they should be a safe distance away from such movements.

3.3.3 Waste tipping/discharge areas - general

The vast majority of waste and recycling sites have an area/waste reception facility where wastes are tipped/discharged from lorries and other waste vehicles. The nature of the tipping/discharge process varies such as ejection vehicles (RCVs, TRVs etc), push-out or walking floor lorries, tipping lorries such as skip motors, hook-lifts etc, hand-balling (manual unloading) of cage vehicles, bulky wastes, smaller trade vehicles etc. The type of tipping/discharge area also varies such as open tipping floors, split-level systems, pit reception systems etc. However, all have similar general risks and unless a 'drive-through' system has been put in place (rare at waste sites) they involve the waste vehicle reversing, and often drivers need to leave their cabs to operate external controls, open container doors etc. Waste tipping/discharge/unloading areas are higher-risk and require strict controls.

Note. Landfill sites pose specific tipping/discharge etc issues, such as because tipping etc may take place on potentially unstable, uneven etc ground. For specific landfill issues see WISH INFO 29 '*Landfill specific aspects of on-site traffic management*', available as a free download, along with other WISH information sheets, at: [WISH INFO sheets](#).

Badly loaded, overloaded etc vehicles can present hazards, such as tipping/discharge problems at a waste and recycling site. Operators should have procedures in place to monitor for overfilled, badly loaded etc vehicles to allow remedial action to be taken with customers etc to avoid repetitions.

Waste tipping/discharge areas need to be on flat, firm, level ground, which is maintained and without significant inclines or camber. Any significant damage, potholes etc should be repaired promptly.

Where drivers may need to leave their cabs to perform essential tasks (such as opening container doors, operating external tipping/discharge controls etc), adequate controls should be in place to protect them. Measures may include:

- Physical segregation between tipping, discharging etc lorries, such as adequately high and long concrete 'islands' between tipping bays at a pit-type reception system
- Where physical segregation is not practicable or complete, adequate separation distance between discharging, tipping etc vehicles and other vehicles or plant in the area should be maintained. The industry standard is that no moving plant or vehicle should be within 5 metres of any pedestrian, such as a driver out of their cab operating controls
- Limits may need to be placed on the number of vehicles allowed into a tipping, discharge etc area to preserve this 5-metre separation – such limits should be enforced
- Drive-through tipping, discharge etc areas can be considered to reduce vehicle reversing and turning movements, although these are usually not practicable at waste and recycling sites

Waste Industry Safety and Health Forum

- A requirement that any mobile plant in the immediate vicinity ceases moving and/or operating when a vehicle is discharging should be in place
- Only the driver should be allowed out of any multi-person vehicle cab to perform essential duties. At some sites collection crew members are dropped-off in a safe area prior to the lorry entering the tipping/discharge area, and collected after the activity has been completed
- Stipulating drivers remain as close to their vehicle as possible when performing essential duties – no wandering-around
- Side-hinged container doors, such as on hook-lift containers, should be safely secured in the open position prior to tipping to prevent doors ‘swinging’ and hitting a person

Sites should have safe methods in place for dealing with foreseeable problems, such as bridged loads. Drivers should not be allowed to devise their own methods, such as ‘jogging’ (see below).

Vehicles should not travel with vehicle bodies, hoppers, tailgates etc in an elevated position. These should be lowered as soon as practicably possible after tipping/discharge. If out-riggers/stabilisers are deployed, such as for a heavy load on a skip motor, consideration should be given to the risk of roll-away (parking brake on, flat stabiliser leg end plates etc).

As part of their site induction, drivers should be instructed to abort tipping/discharge if problems occur and seek the advice of site staff.

‘Jogging’ of vehicles/containers to free blocked material and ‘shunting’ (driving the vehicle and braking hard) in an attempt to shock or jog a load free, to remove blocked material from containers etc is a high-risk activity and should be banned except in exceptional circumstances, and then only under strict control based on a specific risk assessment of the specific problem. Jogging is not safe, has resulted in fatalities, can lead to overturns, uncontrolled release of loads, wear on components, or in extreme cases a vehicle ‘flipping’ over. Loads that are jammed should be dug-out rather than try to release them by jogging, or in some cases the waste container may need to be disposed of as a whole including the stuck load, for example wet cement which has been allowed to set in a skip.



Two examples of waste lorry fall-overs resulting from badly loaded wastes, one on a waste and recycling site and one on the road, and an example ‘flipped’ skip lorry resulting from attempted jogging of a stuck load

3.3.4 Waste tipping/discharge areas - split-level and pit type

Some waste and recycling sites involve discharge into a 'pit' or are 'split level' where collection lorries tip/discharge their loads from an upper level down to a lower level where bulking and similar activities occur. In both cases collections lorries reverse to an 'edge' below which may be a significant drop. While not common, serious accidents have occurred when collections lorries have reversed over the 'bump stop' at the edge of a split level/pit.

EN1501-1 (standard for compaction waste collection vehicles such as RCVs) mandates a rear ground clearance of at least 200 mm, although many waste vehicles have clearances in excess of this.

- Bump stops at pit/split level edges should be at least 200 mm high
- Notwithstanding the above, if the collections vehicles using the site have a rear clearance in excess of 200 mm, then bump stops should be higher – the aim being to maximise the effectiveness of the bump stop
- Bump stops should have a square/oblong cross section and should not be 'ramped'
- Gaps in bump stops to allow easier clearance of debris, spilt wastes etc should be of a size and location so as not to reduce the effectiveness of the bump stop
- Waste and other debris should be cleared from bump stops to avoid build-up potentially resulting in a 'waste ramp' which would reduce the effectiveness of the bump stop

Low chassis, generally small tonnage (<7.5t) vehicles, such as flatbed, cage, box body, road sweepers etc, often have a lower clearance height. Bump stops are usually designed for larger vehicles and may cause significant vehicle damage if struck. It is recommended that there is a specific area or bay designated for low chassis small tonnage vehicles, away from the main tipping bays, to allow the material to be discharged before it is then pushed using mobile plant, into the pit, over the split level etc and only once all pedestrians and vehicles have been cleared from the area.

Drops at the discharge point for split level/pit reception systems should also be fitted with barriers, such as security-type raising pole barriers, roller shutter doors or similar.

- Barriers, roller doors etc should only be raised/opened when a vehicle is ready to discharge its load – at other times they should be kept down/closed
- Barriers, roller doors etc can be manually operated by an operative located in a safe position or in an item of mobile plant and in clear visual range of the discharge point, or by automatic systems such as sensors let into the floor or fitted to the side stanchions of a roller door etc
- Floor markings at a safe distance in front of split level/bunker edges, such as a clearly visible line which pedestrians must not cross when a barrier, roller door or similar is raised/open, can be used but should not be relied on as the only control

3.3.5 Waste tipping/discharge areas - smaller vehicles, fly-tipped, bulky wastes etc

In addition to their usual waste collection vehicle customers, many sites also accept wastes in smaller vehicles, such as cage vehicles, box vans, flatbeds, road-sweepers etc. Some of these vehicles are of the tipping type, while others require waste items to be unloaded manually (hand-balling). For example bulky wastes, fly-tipped wastes etc. Hand-balling often involves more than one person and takes time resulting in a greater risk-exposure than the transient and short risk-exposure of a single driver out of their cab to operate external controls. Considering this, the industry-standard of a 5-metre stand-off as noted above is likely to be insufficient to reduce risk adequately. Where this is the case:

- A separate unloading/discharge area/s or bay may need to be identified if practicable, away from other vehicle movements – it is not acceptable for hand-balling to take place next to reversing and/or tipping/discharging 20 tonne etc waste vehicles
- At tipping/discharge floors/halls a physically protected area can sometimes be created, provided that space allows. If this approach is not practicable, then adequate stand-off needs to be provided – this may involve closing a tipping area, or part of it, until hand-balling has been completed
- At pit and split-level waste reception areas a bay can often be dedicated to hand-balling and appropriate fall and pedestrian fencing installed to protect against falls and vehicle impacts (beware those persons hand-balling wastes climbing on such fencing)

Notwithstanding the above, it is recommended that ideally there is a specific area/bay designated away from the main tipping bays/area, for small tonnage (<7.5t) vehicles (hand-balled and tipping vehicles). This approach allows materials/wastes or items to be discharged/tipped, or manually unloaded, before they are then moved using mobile plant or similar.

For road-sweepers there are often requirements in site environmental permits as to how these will be discharged and where. Typically, this is into a separate bay/facility.

3.3.6 Loading-out - general

Materials are taken away from waste and recycling sites in various ways. For example, residual waste transported off-site by bulk lorries for disposal or waste-to-energy use, loose recyclates such as metals, aggregates, glass for processing etc. In many cases heavy mobile plant such as a loading shovel or grab crane is used to load outward-bound lorries and/or containers (for baled wastes see below). There are also specialised systems such as conveyor/hopper loading of lorries or the use of compactor units to pack wastes into ISO-type containers. In general these specialised systems are outside of the scope of this guidance and require separate and specific risk assessment.

Unless there is adequate space, and in general, loading areas should be separate from waste tipping/discharge areas. Where practicable drive-through systems which do not require outward-bound lorries to reverse are preferable. For example, a drive-through bay next to a tipping/discharge area where residual wastes are loaded into a bulk waste lorry over a wall or similar, or a loading area which lorries can drive forwards into rather than needing to reverse.

Where drivers are not required to be part of the loading process, they should:

- Remain in the safety of their cab at all times, except where loads are moved over the cab - sometimes FOPs (falling object protection) and cab protection can be insufficient when loading heavy items/materials, or when using grabs/buckets in close proximity to the cab (if over-the-cab loading cannot practicably be avoided a specific and detailed risk assessment should be carried-out on falling object risk)
- Or drivers should leave their cab before loading commences and go to a safe area (for example, a driver rest room), via a safe pedestrian route
- During either process it is common practice for the vehicle keys to be secured in order to prevent any unauthorised vehicle movements
- Whatever method is used, pedestrians should be excluded from loading areas during loading

Badly loaded or overloaded bulk and similar lorries present obvious hazards, such as waste falling onto the public highway, poor braking, instability etc. Site operators should have procedures in place to ensure that bulk and similar lorries are not overfilled, badly loaded etc and that any overloaded lorry is not allowed to leave site until the issue is rectified – this is a legal duty.

3.3.7 Loading-out – baled wastes

Baled wastes are typically loaded onto curtain-sided lorries and similar or into ISO and other shipping-type containers etc using mobile plant such as clamp-trucks or forklifts. At some sites bales are loaded onto lorries direct at the bale storage area, at other sites bales are moved from storage to a designated loading area to be loaded. Whichever system is used:

- Ground conditions at bale loading areas need to be flat, firm and level, without significant incline or camber – it is not acceptable to load or temporarily store bales awaiting onward transport on slopes, road cambers etc
- Bales should not be stacked, even temporarily, on pedestrian walkways, main traffic routes or public highways etc, or anywhere there is a risk of them falling onto pedestrians
- Pedestrians should be excluded from bale loading areas during loading – there have been several serious and fatal accidents where bales have been ‘nudged’/dropped by a forklift or similar and fallen onto, or bale stacks collapsed onto, pedestrians during bale loading

Waste Industry Safety and Health Forum

- Where ramps are used to load shipping containers or direct onto lorries, they should be robust, included in routine checking/inspection systems, and fitted with side guard-rails to prevent any clamp truck or similar going over the side of a ramp
- If a pedestrian needs to enter the loading area, such as to take photographs during the loading of a shipping container or for quality control, loading should cease until they have left the area

Further information on the safe storage of bales can be found in WISH WASTE 13 'Designing and operating material recycling facilities (MRFs) safely', available at: [WISH WASTE 13](#).

While not aimed at waste and recycling operations, general guidance on loading and unloading can be found on the HSE's website at: [HSE loading unloading facts](#).

3.3.8 Refuelling/recharging areas

Many sites have fuelling facilities, at the most basic a 'derv' tank, or more sophisticated arrangements such as underground tanks with 'petrol pumps' above ground. In addition, e-truck/e-plant charging points are becoming more common. Fuelling/charging facilities should be away from traffic flows, vehicles/plant fuelling/charging should not cause a traffic obstruction, and facilities should be protected against vehicle strike. Dependent on the type of facility, considerations include:

- Where does the driver/operator fuelling stand, and are they protected from moving vehicles/plant, including other vehicles etc waiting to fuel/charge. For example, longer fuel hoses may be required to allow the driver/operator to stand in a safe place
- As practicable, access to fuel pumps, Ad-blue tanks, charging points etc from both sides
- Queuing arrangements may be required, in particular for e-vehicles/plant which may need to be at the charging point for a significant time period
- Alternative fuel sources may require different refuelling arrangements away from typical fossil fuel areas, such as compressed natural gas (CNG)



FLT (forklift truck) fall-over during loading of loose wastes, bales awaiting loading, loading a curtain-sided lorry, large FLT fall-forward during loading of a waste container onto rail

3.4 Communication

It is common practice to use two-way 'fixed-band' radios for contact between parties. Their use is recommended rather than CB etc radios, as there is better signal control and quality. Sites should stipulate who should have access to radios and training will be required in their use.

Communications between drivers and pedestrians using two-way radios and/or hand signals should be clear and unambiguous. Where hand signals are used all involved should be instructed in their use and what they mean.

3.5 Maintenance and repair activities

Plans for regular/ongoing maintenance of site infrastructure need to be in place, which may include the need for daily/weekly road sweeping, checking that barriers remain safe and operational, that signs are clean and visible, and that lighting (including traffic lights) is functioning as expected. When undertaking planned or unplanned repair works, it is essential that the same level of control, particularly in segregating vehicles, pedestrians and work activities, be maintained.

Where normal site operating procedures cannot be continued, it is important that there are appropriate risk assessments and alternative site rules in place to cover both short term and longer-term works. These controls need to take into consideration being able to allow maintenance personnel and vehicles to access areas of the site they would not normally enter. Any changes required to site rules, pedestrian or traffic flows etc should be communicated to regular site uses and others involved.

4. Safe people

4.1 Information, instruction, and training

All employees, contractors, and visitors should receive information to make them fully aware of the risks on the premises and the actions that they need to take to make sure that sites are used and operated in a safe manner. It is particularly important to consider the different training needs of:

- New recruits and trainees
- Young people who may be particularly vulnerable to accidents
- People changing jobs, or taking on new responsibilities
- Workers for whom English is not their first language
- Operational and non-operational people - ask yourself if someone who works permanently in an office understands how much space an articulated vehicle needs compared to a car; how a rear wheel steer HGV moves, and if they understand what a driver of a large vehicle or item of mobile plant can see, and not see?

Make sure that those working on, or visiting the site have received an induction, including sharing the details of any site rules. What is included will vary depending on the audience. Clear and simple site rules and a visual traffic management plan should be considered the minimum required.

Initial training and induction should explain what a user needs to know and do when they are on site. Depending on the role, induction content typically includes:

- Arrival information, such as where to park and where to go when on site, and where not to go
- PPE (personal protective equipment) requirements
- Any restricted areas
- How to report and escalate any problems or concerns

Some groups will need a greater level of training than others. For example, a traffic controller or a mobile plant operator usually requires more specific tailored training to support their duties than, for example, a picking cabin operative. All training provision should be recorded and the records retained.

Site rules can be shared with known/planned visitors or contractors before they arrive and should include key and relevant instructions. Information can be delivered in a number of ways. including digital delivery (e-mail/video), issued documents, information boards etc. A record of who has received formal information should be retained and be available for checking.

It is important to assess the effectiveness of training provided to ensure it is fit for purpose. Studies have shown that the effectiveness of training to modify and control behaviour decays over time. Thought needs to be given to the timing and frequency of follow up/refresher training and induction to maintain safe working practices, and such training should also be given to reflect changes in the traffic plan or where there is evidence of non-compliance. This may include re-induction, or the use of toolbox talks and similar on revisions to site rules and traffic management plans.

For additional general advice on training, see the HSE's leaflet 'Health and safety training: A brief guide', available at: [HSE INDG345 advice leaflet](#). For specific waste and recycling training guidance see WISH WASTE 21 'Health and safety training', available at: [WISH WASTE 21](#).

4.1.1 Multiple sites and common site rules

Many larger companies/organisations have common booklets containing site rules that apply to all of the sites they operate. Such booklets are useful in ensuring good consistent standards are in place. However, individual sites should still ensure that common site rules booklets have been adapted to account for site-specific circumstances. For example, the traffic management plan for one site will be different to the same for another site as their layout etc will be different.

4.2 PPE (personal protective equipment)

PPE is the least acceptable control measure and should be considered a last resort. At waste and recycling sites, high-visibility clothing is nonetheless essential, as at all times it has a positive role to play in enhancing safety for site operatives, drivers and visitors. Wearing PPE to the designated standard should be strictly enforced in areas on site where it is identified as a required control measure, including with third parties such as customer drivers.

High-visibility (hi-vis) clothing is only effective so long as it remains high-visibility and is worn correctly. A dirty/oily hi-vis waistcoat loosely 'draped' around a person rather than being fastened is far less visible than a clean, bright hi-vis waistcoat worn correctly. Hi-vis clothing should be kept clean, and when it becomes dirty and less effective either replaced or cleaned (cleaning can reduce the intensity of colour of hi-vis clothing and replacement may be better).

You should also consider risk exposure relative to the use and degree of hi-vis clothing. For example, a minimum requirement for visiting lorry drivers to at least wear a hi-vis waistcoat may be appropriate, whereas you may decide based on your risk assessment that a traffic controller should also wear hi-vis trousers and hi-vis hard hat cover.

Discussion. Traditionally hi-vis has been bright yellow (or orange in some specialised applications), and in the past was only really used in the workplace. Today yellow hi-vis is commonly in use outside of the workplace, such as being worn by cyclists, motorcyclists, horse riders, children on a school trip etc, often for good reasons. There is evidence that people have become over-familiar with yellow hi-vis and that it tends to 'fade into the background' rather than being as obvious as it previously was (the counter argument is that a person wearing bright yellow clothing is always likely to be more visible than someone wearing dark grey). Some site operators are now turning to alternatively coloured hi-vis to overcome this issue, such as bright pink or bright green hi-vis. This is the same theory as having site speed limit signs saying '11 mph' rather than 10 mph – unusual and makes people think. You may wish to consider such tactics, although experience is that often the unusual quickly becomes the usual and also fades into the 'background'. Whatever approach is taken, hi-vis of any colour should still comply with the relevant EN and similar standards.

4.3 Roles and responsibilities

Clear responsibilities should be defined for all those who have a role to play in making sure that sites are used and operated safely. Responsibilities must be specific to the role but have a connection to a shared purpose. Responsibilities help to set the standards expected and drive consistency in how people work, both individually and collectively.

Statements written in simple language, short in length, and which can be easily understood are typically the most effective. Examples include:

- Use marked walkways when moving around site
- Wear hi-vis jacket/waistcoat
- Confirm vehicle driver is in safe area before starting loading
- Do not speed
- STOP if a pedestrian enters the area when you are manoeuvring a vehicle / mobile plant

Separate responsibilities into what is core (for everyone) and what are additional or bespoke to a role. An example of a bespoke responsibility for a traffic controller could be 'control all vehicle movements in the tipping hall'. Whatever methods are used, all involved should be clear of what their roles and responsibilities are.

5. Safe vehicles (including mobile plant)

5.1 Selection and fitness for purpose

The correct specifications for vehicles and mobile plant used on site is important to adequate levels of safety. Vehicle capabilities have to be consistent with site conditions and the tasks performed. A risk assessment is required, to ensure that the vehicles and/or mobile plant is fit for purpose and safe for use under the working conditions in which it will be operated. This is particularly important on landfill sites – see WISH INFO 29 ‘Landfill specific aspects of on-site traffic management’ for more detail, available as a free download, along with other WISH information sheets, at: [WISH info sheets](#).

The selection of mobile plant in particular, should consider the tasks to be undertaken and the local environment, especially when the size of the work area may be restricted. For example, smaller mobile plant may be needed where space is limited, or the use of articulated mobile plant which have a smaller turning circle etc. Considerations for mobile plant specification may include (note – the list below includes both traffic safety and non-traffic issues):

- Spark inhibitors in potentially flammable/explosive atmospheres
- Exhaust guards
- ‘Trash’ guards over mobile plant windows to protect from ejecta and falling wastes
- Flashing orange or similar beacons, for larger items of plant multiple beacons
- Falling object protective structures (FOPS)
- Roll-over protection systems (ROPS)
- Front/side under-run protection
- High efficiency particulate air (HEPA) filter for use in dusty environments
- Automatic fire suppression systems (increasingly an insurance requirement)

The stability and ground clearance of vehicles and mobile plant should be adequate for site conditions and tasks. For example, a standard counterbalance forklift truck would be unsuitable for use on rough and uneven ground. Size, lifting capacity etc are also factors to consider relative to the tasks that you will expect mobile plant to carry-out.

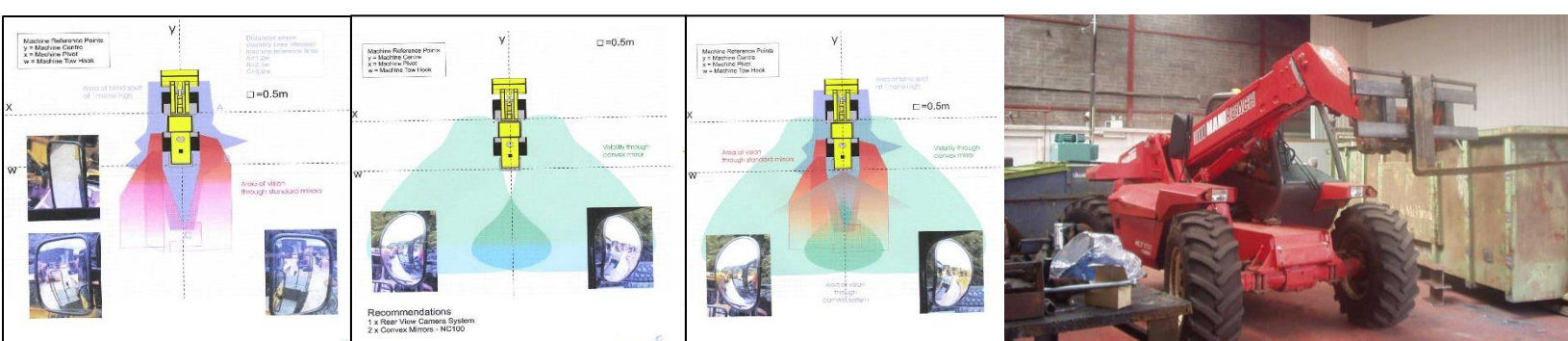
Relating to traffic safety, vision from heavy mobile plant is a key area. Most items of mobile plant come with ‘standard’ mirrors to assist operator vision. Some site operators are now requiring their suppliers to conduct a formal vision assessment to determine whether additional/enhanced mirrors, rear-view cameras etc may improve plant operator vision. In some cases, the difference can be significant (see example vision splay diagrams on next page). Whatever vision aids are fitted, mirrors, cameras etc, they should be included in daily checks and if a defect is significant the item of plant taken out of service or used in lower-risk activities until the defect can be rectified.

Vision from heavy mobile plant can be reduced or restricted by the attachments that are used, the location of lifting arms etc. Examples of this may include the use of a large capacity bucket on a loading shovel or a body mounted cab air filtration unit. In these situations further assessments relating to vision are valuable and may determine additional controls, such as enhanced mirrors, additional CCTV/rear-view camera positions etc. The use of over-sized buckets on items of plant such as loading shovels can be a particular concern. Consideration should be given to buckets with the top section constructed of bars rather than being solid to assist forward vision in use. Further information is available in RR1156 - Visibility risk zone method to evaluate operator visibility for earth-moving machinery published by the HSE, and available at: [HSE RR1156](#).

5.2 Technology and vision/visibility aids (vehicles and mobile plant)

Technology and visibility/vision aids are increasingly commonplace, and, in addition to aiding the driver/plant operator in the safe operation and use of vehicles and mobile plant, can also help to monitor driver behaviours during daily activities. Examples of technology available which can be considered include:

- Vehicle cameras (rear-view, 360-degree etc)
- Audible reversing alarms (standard 'bleepers', white noise etc)
- Nearside turning alarms
- Beacons and enhanced lights
- Collision warning systems (radar, LIDAR, sonic etc)
- 'Halo' lighting systems that project separation lines around vehicles/mobile plant
- Transceiver d similar systems, such as RFID (radio frequency tags) technology that alarms in both the vehicle cab and on the wearer's vibrating tag when they approach each other, or more 'traditional' transceiver systems which require batteries in the tags
- AI-based systems that use cameras to look for pedestrians, vehicles or structures in close proximity to the vehicle, and warn the driver



Three vision splays for the same loading shovel, first shows vision from standard mirrors, second with enhanced mirrors, and third standard plus enhanced mirrors and rear-view camera. Lift arms can sometimes also block vision

Technological aids can be of use and can enhance traffic safety levels. However, they should not be relied on as a primary control and do not replace basic measures such as keeping vehicles/mobile plant and pedestrians separated/segregated. Introducing technology and visibility aids must be carefully considered as part of any risk assessment process, to make sure there is a clear connection between identified risks and the appropriate controls, and that the technology has a positive impact in improving safety. Technology should not take away from the responsibilities of the driver to operate any vehicle or mobile plant safely, or from pedestrians who may interact on site from understanding the risks. Consideration should also be given to how technology aids interact with each other, so that the driver knows what each alarm or warning relates to, so they can respond accordingly.

5.3 Maintenance, daily checks, and defect reporting

Pre-use/daily checks should be carried out on all vehicles and mobile plant, with defects and safety hazards reported to the responsible person. Vehicles and mobile plant with safety critical defects, including critical vision aid defects, should not be used and should be quarantined and prevented from use until repaired by a competent person. A system for formal thorough inspections under PUWER/LOLER (Provision and Use of Work Equipment Regulations and Lifting Operations and Lifting Equipment Regulations) by a competent person, internal or external, should also be in place.

Before starting work, the plant operator/driver should carry-out and record a daily/pre-use check on the vehicle or item of mobile plant to make sure that it is safe to use and functioning correctly. As a minimum, the checks should be in line with the manufacturer's instruction and typically include:

- Mirrors, rear-view camera/s, reversing alarms etc all working and undamaged
- Brakes, lights, steering, beacons, horn, in cab equipment etc all working correctly
- Oil, fluid levels etc OK, and there are no leaks
- Wheels, tyres, tracks etc secure and in good condition

Checks should be recorded and any faults reported to the responsible person.

Mobile plant which is identified to have a fault with any vision aid (for example, damaged/missing mirrors; non-functioning rear-view camera/s etc) should either be taken out of service until a repair can be made or used in lower-risk activities, for example not used in areas where there are pedestrians.

Former road-going (highway) vehicles that are used exclusively for site activity (such as 'shunters' used to move containers) would typically be classified as mobile plant and should still be checked, inspected etc as for mobile plant. Some organisations maintain such vehicles to road-going standards even though they are not used on the highway.

Waste Industry Safety and Health Forum

Some organisations conduct post-shift/after-use checks in addition to pre-use checks. These can allow any defects to be actioned ahead of the vehicle/mobile plant being required the next shift/day.

All vehicles and mobile plant should be inspected, tested, maintained and operated to comply with any manufacturer recommendations, applicable statutory requirements and relevant guidance.

Site operators should be wary of leased/rented-in mobile plant, for example a temporarily leased item of plant to replace an owned item which is undergoing maintenance, repair etc. Such leased/rented mobile plant may not be to the same standard as owned plant. For example, may not have enhanced mirrors, rear-view cameras etc. Some site operators consult with their regular leasers/renters to ensure that when they need a leased/rented item of mobile plant it comes to the same standard as their owned plant.

Road vehicles, such as waste collection/transport lorries, should also be subject to routine checks to ensure they are safe to use. A typical checklist for such checks is given in WISH's reference document on the topic, available at: [WISH REF 01](#), and such checks are mentioned in other WISH documents.

Site operators may be directly in control of checks on their own road vehicles/lorries, but not of checks on third party vehicles depositing wastes at their site. On occasion, site operatives, staff etc may notice obvious defects, damage etc to third party vehicles. If such observed defects, damage etc are significant, operatives should be empowered to report such to site management so that the third party can be informed. It should be noted that site operators have a legal duty not to allow an illegal vehicle onto the public highway, and that this would include third party vehicles with obvious safety critical defects/damage. As noted above in the section on loading-out, this legal duty would include over-loaded/badly loaded/unstable bulk and similar waste lorries.

6. Monitoring and review

6.1 Proactive and reactive checks

Traffic management arrangements should form part of routine proactive site/workplace monitoring in order to review the effectiveness of issues such as:

- Site traffic management arrangements
- Training, information, and instruction provided to people on risks and controls
- Driver training etc provided for the safe use and operation of vehicles and mobile plant
- Any breaches of rules and systems which should be targeted for remedial action

Regular site/workplace checks and inspections (walk-arounds etc) should be undertaken on different days and at different times to fully understand the effectiveness of controls in place. The completion of these checks needs to be assigned to the right people, with the right mixture of skills and knowledge to observe and monitor both the activities and people on site. Checks and inspections should include engagement with employees, drivers etc rather than only being passive observation.

Checks/inspection should not be purely desk-based – they involve actually going out onto site. The results of all monitoring activities should be recorded and any required remedial actions carried out.

In addition to ‘in-person’ checks, consideration should be given to using CCTV to support monitoring. Individual’s behaviours can change when they see a manager or supervisor, where CCTV can provide a ‘real world’ insight to behaviours and working practices. If you do use CCTV there are rules and guidance to follow, and you should consult with your employees in advance.

Reactive review of traffic management assessments (and associated traffic management plan) should take place if any significant changes have been implemented (see section below on change management) or a traffic related accident, incident, or near-miss occurs.

6.2 Periodic review

If no significant changes have occurred, traffic risk assessments should still be reviewed periodically, at intervals to be determined by risk assessment. During such periodic review the results of checks/inspections need to be considered, including issues such as:

- Site, vehicle, mobile plant, and equipment condition
- Are movements and interactions of people/vehicles aligned with your traffic plan
- Whether people are working in-line with their training/qualifications

- Contractor activities - are they impacting on the safety of people/vehicles on site such as the blocking of a walkway
- Discuss issues and challenges with site users - ask 'how can this be done better'

6.3 Enforcement of site rules and procedures

Events involving pedestrians and vehicles are one of the most common causes of fatalities at waste and recycling sites and site employees should be clear that it is one of their duties to ensure compliance with traffic management rules. There should be a clear management commitment to take responsibility for what takes place on their site. In addition, all workers should be made aware of their personal responsibilities and the consequences for breaches of site rules. The role and presence of a visible supervisor in making sure that everyone is performing their tasks safely and in compliance with expected rules and procedures cannot be ignored.

Breaches of traffic and site rules are to be treated as high priority, given the potential outcome of any vehicle or mobile plant/pedestrian collision. Sites should have in place appropriate mechanisms to report and deal with any breaches – that is a method of reporting breaches and actions that will be taken, both with internal and external site users. Examples of actions that could be taken include a 'three strikes and you're out' rule for visiting lorry drivers.

6.4 Incident management

A mechanism for reporting, escalating and managing non-conformances against site rules and procedures, as well as for investigating accidents, incidents and near misses is an important piece of management control, and should include not only how corrective actions will be implemented, but also how site rules, traffic management plans, risk assessments and controls will be updated to account for the findings of incident investigations.

7. Change management

Change is a common factor for many waste and recycling sites. For example, changes in the location/s of storage areas, extensions and developments to buildings, recycling plant etc, changes in or new waste types accepted by a site, increases/decreases in waste inputs etc. These changes can impact on traffic management on site. Before any change is made you should review your traffic risk assessment and plan to assess if there will be any impacts, and to avoid any unintended consequences. If there will be impacts then you should revise your assessment and plan, and as required your traffic safety controls (both physical and procedural) before any change is made. This is particularly important for site developments.

Case study – change management. A company planned and constructed a new MRF (materials recovery facility) on an old industrial site. The development included a large new recycling hall comprising an indoor waste tipping/discharge area, installation in the hall of various recycling machinery, a picking cabin, and an indoor storage area. Part of the original plan was to refurbish an old existing derelict building on the site to serve as offices and welfare facilities. Management knew that workers in the picking cabin would need to access these welfare facilities and planned for this by means of a protected pedestrian walkway which exited the hall to the rear of the picking cabin leading direct to the planned welfare facilities, without the need to walk-across any trafficked area of the hall. However, the company encountered timing and budget issues, and the refurbishment of the derelict building was put on hold. As an alternative temporary cabins were placed on site to provide office and welfare facilities. These temporary cabins were placed on the opposite side of the hall to the derelict existing building. But the company failed to review their traffic plan and as a result failed to provide an alternative safe walkway. Workers in the picking cabin were left to find their own route and started crossing a trafficked area of the hall to access the temporary cabins. One day a worker was walking back to the picking cabin from the temporary welfare facilities across a trafficked area and was run-over by a loading shovel. He sustained fatal injuries. Change is almost inevitable on many waste and recycling sites. Change can impact on traffic safety and needs assessing and addressing in advance.

7.1 Managing abnormal situations

Some changes are planned, and any impacts can be considered in advance. However, some changes are not planned. For example, an unplanned breakdown of critical recycling or other machinery/plant, a fire at a nearby other waste site resulting in diverted wastes coming to your site, industrial action resulting in disrupted or changed waste collection arrangements etc. When such abnormal situations occur there may be a tendency to concentrate solely on dealing with the immediate problems posed. However, abnormal situations can impact on traffic flows and safety, and you should take the time to review your traffic risk assessment during abnormal situations to ensure controls remain effective.

Sometimes when abnormal situations occur and changes to normal site arrangements are made, a separate risk assessment may be required to ensure that all additional hazards and control measures have been addressed. In other cases a temporary revision to an existing traffic assessment and plan may be more appropriate, dependent on the nature and extent of the situation/change. In either case, the changes need to be communicated to relevant persons.

7.2 Restricted access

Some situations/temporary changes may result in restricted access to a portion/s of your site, or portions not being available. For example, a major fire at your site, a significant spillage, contaminated/quarantine issues, a construction project, structural concerns etc. The same considerations as those required for maintenance projects and other types of change, even if only temporary, should be implemented. In some cases the restriction of access may mean that the only safe option is to reduce waste inputs to a level which can be handled safely.

7.3 National and similar emergencies

On rare occasions, waste and recycling sites (usually but not always landfills or other disposal sites) are used for national emergencies, and this may require a change to the normal site arrangements such as specific tipping areas, temporary loss of a manoeuvring area, temporary access roads, vehicle sterilisation/specific cleaning requirements etc, all of which could have an impact on traffic movements and safety. Examples may include:

- Foot and mouth disease and similar (disposal of animal carcasses)
- Assisting the police, such as the disposal of drugs, contraband etc
- Pandemics and other events which may change waste arisings, methods of operation etc

Care should be taken in such circumstances to ensure that the effect of the change to normal operating methods is properly risk assessed, including any impact on traffic routing etc, and controls introduced to ensure safe operations, so far as is reasonably practicable. This would include traffic safety and plans.

7.4 Managing contractors on site

Selecting competent contractors to operate on your site is important. Before contracts are agreed, you should ensure that they are suitably resourced in terms of plant and personnel and they have the right level of technical and safety competence. For further information see the HSE's publication 'Using contractors: a brief guide', available at: [HSE INDG 368](#).

Waste Industry Safety and Health Forum

On award of the contract, site rules should be provided to contractors in advance, including traffic safety rules, so that any company providing personnel or services can make their staff aware of site procedures and rules. You should ensure that contractors' employees have received and understand the site and traffic rules before starting work.

Directions to the site, where to park when they arrive etc should also be provided to minimise risks to drivers who may not know its location. Directions and maps should be clear and unambiguous to ensure drivers understand them.

All contractors should be subject to an appropriate induction before they start work.

Contractors are required to understand the impact of their activities on the site and its users and should be consulted at regular intervals to make sure that any changes required to control measures are implemented on site.

Further reading and information

HSE publications

All of the below are available by searching the HSE's website (<https://www.hse.gov.uk/index.htm>)

- Workplace transport safety: an employers' guide HSG136
- Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22
- Workplace Health, Safety & Welfare Regulations 1992. Approved Code of Practice and guidance L24
- Using contractors: A brief guide INDG368
- Safety signs and signals. The Health and Safety (Safety Signs and Signals) Regulations 1996. Guidance on Regulations L64
- Health and safety training: A brief guide Leaflet INDG345
- Personal Protective Equipment at Work. Personal Protective Equipment at Work Regulations. Guidance on Regulations L25
- Lighting at work HSG38
- RR1156 - Visibility risk zone method to evaluate operator visibility for earth-moving machinery

WISH guidance

All of the below are available on the WISH website (<https://www.wishforum.org.uk/>)

- Managing health and safety at HWRC/civic amenity sites WISH Waste 26
- Waste and recycling vehicles in street collection WISH Waste 04
- Health and safety training: Guidelines for the waste and recycling sector WISH Waste 21
- Designing and operating material recycling facilities (MRFs) safely WISH Waste 13
- Hand Sorting of Recyclables ('totting') with Vehicle Assistance WISH Waste 18
- Reversing in waste recycling collection WISH INFO 12
- Traffic safety – landfill specific aspects WISH INFO 29

Other documents/guidance

- Road Traffic Act 1991 (c.40) The Stationery Office 1991 ISBN 978 0 11551093
- ESA (Environmental Services Association) Vehicle and pedestrian interface good practice guidance

Disclaimer and WISH

Nothing in this guidance constitutes legal or other professional advice and no warranty is given nor liability accepted (to the fullest extent permitted under law) for any loss or damage suffered or incurred as a consequence of reliance on this guide. The guidance is not a substitute for duty holder judgment and/or professional safety advisor's judgment. Notwithstanding the good practice in this guidance, duty holders are responsible for ascertaining the sufficiency and adequacy of their internal and independent procedures for verifying and evaluating their organisation's compliance with health and safety law. WISH accepts no liability (to the fullest extent permitted under law) for any act or omission of any persons using the guidance

The Waste Industry Safety and Health (WISH) Forum exists to communicate and consult with key stakeholders, including local and national government bodies, equipment manufacturers, trade associations, professional associations and trade unions. The aim of WISH is to identify, devise and promote activities that can improve industry health and safety performance. For more detail see the WISH website at: <https://www.wishforum.org.uk/>.

Further information

This guidance is issued by the Waste Industry Health and Safety (WISH) Forum to help control safety and health risks. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance, you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.