



# KERBSIDE LOADING GUIDANCE

Second Edition  
January 2017

**MAYOR OF LONDON**



**TRANSPORT  
FOR LONDON**  
EVERY JOURNEY MATTERS

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## 01 Introduction

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This guide aims to ensure appropriate kerbside loading facilities are included on London's highways and in street design schemes. This information will be useful for those managing and making changes to the road network including land-use planners involved in development control, developers, highway and street scheme design teams, enforcement and highway management teams.

Deliveries are vital for a thriving and vibrant local economy. Without deliveries, there would be no goods to buy in shops; no home deliveries; no food or drinks in bars and restaurants; offices would have no stationery and waste would pile up. Without local shops and facilities, residents have to travel further for the things they need, increasing the demand for travel on already congested networks.

Likewise, servicing activities are essential for maintaining buildings, premises and their equipment. Servicing keeps lifts, air conditioning, heating and office equipment working and maintains utilities such as electrics, plumbing, telecommunications and computer services. For example, goods cannot be sold if an electronic point of sale

(cash register) system breaks down. Therefore, appropriately located parking spaces are needed for servicing vehicles as they cannot use loading spaces legally.

This guide shows how land-use, size of development and the amount of economic activity undertaken, drives the demand for deliveries. These factors dictate the range and volume of commodities needed, which in turn drives the size of vehicles used, the frequency of deliveries, how goods are moved to and from a premises, and how far from the building a delivery vehicle driver would be prepared to stop.

The location of a loading facility in relation to the land-use it is serving, the loading space size and its availability are critical to the successful performance of any street. However, vehicles stopping to load or unload where or when not intended can detrimentally affect road reliability and the safety of other street users such as buses, cyclists and pedestrians. The justification used for a street scheme might not consider these negative impacts, and so would include an over-inflated assessment of the scheme's value for money and monetised benefits.

By contrast, facilitating kerbside loading at the right place and time, through a combination of appropriate physical infrastructure and Traffic Regulation/Management Orders, smooths the

traffic flow and benefits the local economy. However, over-reliance on loading regulations can lead to large numbers of Penalty Charge Notices (PCNs). Ultimately, these add to the cost of the commodities being delivered without creating significant change to the time or location of deliveries, and do not necessarily reduce the detrimental impact of deliveries on other road users.

Separate guidance is provided for those planning and making deliveries and servicing including:

- Those undertaking purchasing and facilities activity who need to consolidate and retime their requirements for deliveries and servicing and ensure they are undertaken safely with clean vehicles
- Drivers of delivery and servicing vehicles who need to use the right facilities at the correct (legal) time and how they must also show consideration for other road users
- Delivery companies who need to schedule delivery trips according to the availability of legal loading facilities and have procedures in place to manage the safety of their operations and their drivers' behaviour

## 02 About this guide

This document will be of use to traffic engineers, developers, highway and enforcement authorities and those interested in or connected with on-street loading activities. Its basic purpose is to:

- ♦ Outline the land-use characteristics that drive delivery and servicing activity
- ♦ Set out how goods are transferred to and from vehicles
- ♦ Provide guidance on balancing the needs of different street users
- ♦ Give guidance on how to understand the loading environment using a delivery and servicing audit methodology (under development)
- ♦ Provide some design and behaviour change solutions for:
  - ♦ Improving the loading environment
  - ♦ Altered and new building loading facilities

Each street, traffic scheme or development will have its own characteristics and issues which need to be understood through local observation before potential solutions can be identified. The specific objective of this document is to help understand the wide range of characteristics and issues, and to formulate practical, affordable strategies for their resolution.

Transport for London (TfL) has already produced guidance that deals with general parking, loading and enforcement<sup>1</sup>. This provides a valuable insight into the parking and loading regulations, the signs and lines used, and the issue of PCNs and should be used alongside this kerbside loading guidance.

This kerbside loading guidance document deals specifically with loading and considers how to balance the needs of a wide range of associated stakeholders. It also recognises our desire to encourage businesses and delivery and servicing operators to change their operating practices to consolidate and retime deliveries and servicing trips. In addition, it provides guidance on aesthetics and on limiting the visual intrusion that results when loading facilities are incorporated into the streetscape.

Finally, this guide aims to assist highway authorities fulfil responsibilities under Part 2 of the Traffic Management Act 2004, namely their Network Management Duty. Improving provision of legal loading facilities, addressing commercial vehicle PCN hotspots, and engaging in dialogue with freight operators through Freight Quality Partnerships (FQPs) can all help to reduce the negative impacts of loading on traffic flow and congestion. These actions are referenced in the Department for Transport (DfT) Operational Guidance to Local Authorities<sup>2</sup>.



## 03 Surface Transport principal outcomes

We can all work towards the clear commitments TfL Surface Transport principal outcomes provide. Because we manage such complex and interconnected services, with a finite amount of road space and limited funding, there is bound to be tension between these outcomes. Failure of schemes to give adequate recognition to the principal outcome of sustainable freight could have a detrimental and unplanned impact on other principal outcomes such as:



### Quality bus network

Maintaining and enhancing a reliable, safe, accessible bus network and supporting coach operations across all of London.



### Better Places to walk

Creating and supporting safe, attractive, accessible streets and places that people can use, enjoy and choose to walk more.



### Reliable roads

Ensuring a reliable and resilient road network for all of London by managing congestion and improving connectivity.



### Reduced casualties

Continuing the downward trend in casualties on London's roads and public transport networks.



### Improving the environment

Continuing to deliver environmental improvements, by reducing pollutants from ground-based transport and enhancing the natural environment.



### Reduced crime

Continuing the downward trend in crime, antisocial behaviour and fear of crime on London's transport networks



### More and safer cycling

Enabling more people to cycle, more safely, more often.

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## 04 Healthy Streets

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The Mayor's Healthy Streets vision is for London to be a safer and more pleasant to live and move around in. It seeks to reduce traffic, pollution and noise; create more attractive, accessible and people-friendly streets where everybody can enjoy spending time and being physically active; and ultimately improve people's health. TfL's initiatives will be instrumental in improving air quality, reducing health inequality, making the roads safer, and contributing to a better quality of life in London. In addition, it will ensure that London continues to be an attractive environment for business and employees, helping to encourage investment and grow London's economy.

The Healthy Streets Approach is about planning future developments so shops, schools and workplaces are close to people's homes so they do not need to drive to get to them. It is about transforming neighbourhoods to reduce the dominance of motor vehicles, so people feel safe and confident walking and cycling for short trips. It is about making strategic changes across large areas of London, like 20mph zones to help people feel safe and the Ultra-Low

Emission Zone to make the air clean. And it is about improving public transport services, so people can choose not to use cars – helping people to stay active on the way to the stop or station, making the streets less car-dominated for everyone, and generating vital revenue through public transport fares to be reinvested in streets and places.

Our vision for the future of London is of a city where people choose to visit their local shops; because high streets are designed for people and the streets on the way are pleasant places to be in. It is a city where people choose to take the bus instead of driving across town, because buses are prioritised over cars and other traffic. It is a city where essential delivery and service vehicles can get around efficiently, keeping everyone's lives running smoothly. And, above all, London can become a city where people choose to walk, cycle and use public transport more, bringing huge health and wellbeing benefits to everyone

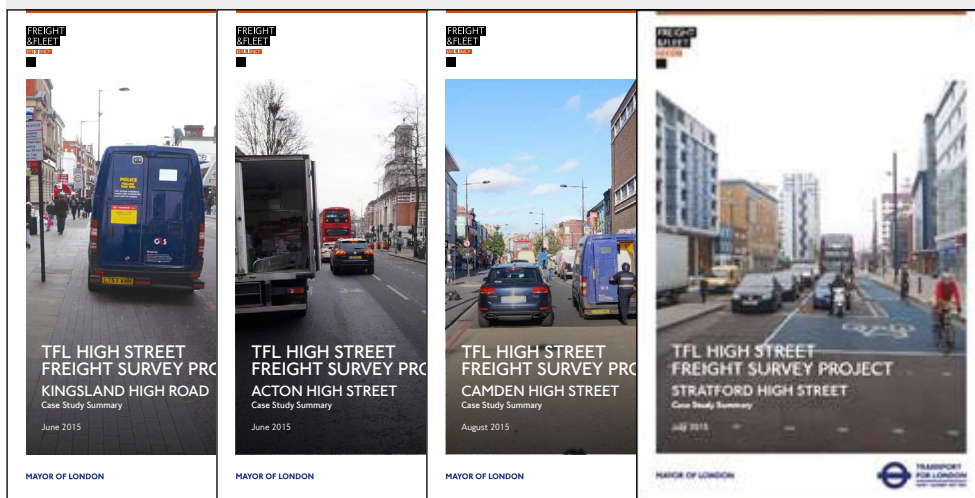
The Mayor and TfL are determined not just to keep London running, but to make it a better city, in which everyone can live well. Adopting the Healthy Streets Approach is vital to ensuring that London's future is even brighter than its present.

## 05 Land-use, deliveries and servicing

Deliveries and servicing are undertaken via a contract between the customer and the supplier. Often the customer does not recognise their role in ensuring deliveries happen at the right time, place and frequency. The supplier will do what the customer asks. Therefore, helping the customer to understand their role is essential if our streets are to perform efficiently.

Each type of land-use will have different customers with different business needs. To help understand the range of delivery and servicing activity we undertook detailed surveys at four high streets: Kingsland, Acton, Camden and Stratford. These surveys help us to understand why deliveries and servicing happens as it does and how it can affect street performance. The reports are available on TfL's website Freight publications page at <https://tfl.gov.uk/corporate/publications-and-reports/freight?intcmp=8606> under freight reports and guidance. We are currently undertaking further land-use and delivery trip-rate research and will update this guidance when the data becomes available.

TfL High street freight survey project reports



Summary report and delivery and servicing toolkit



### Business

New developments should incorporate off-street delivery and servicing locations where possible. However, many business locations in London do not have off-street loading facilities. Businesses supplied with goods over the pavement depend on the provision of kerbside loading facilities that are located in the right place and operate at the right time.

The timing of deliveries to a business is affected by business opening hours, staff availability, and scheduling by delivery companies.

Smaller businesses may have little say over the exact timing of deliveries, although larger organisations such as supermarkets generally have greater control over their supply chain with central planning of deliveries and control over staffing of the premises.

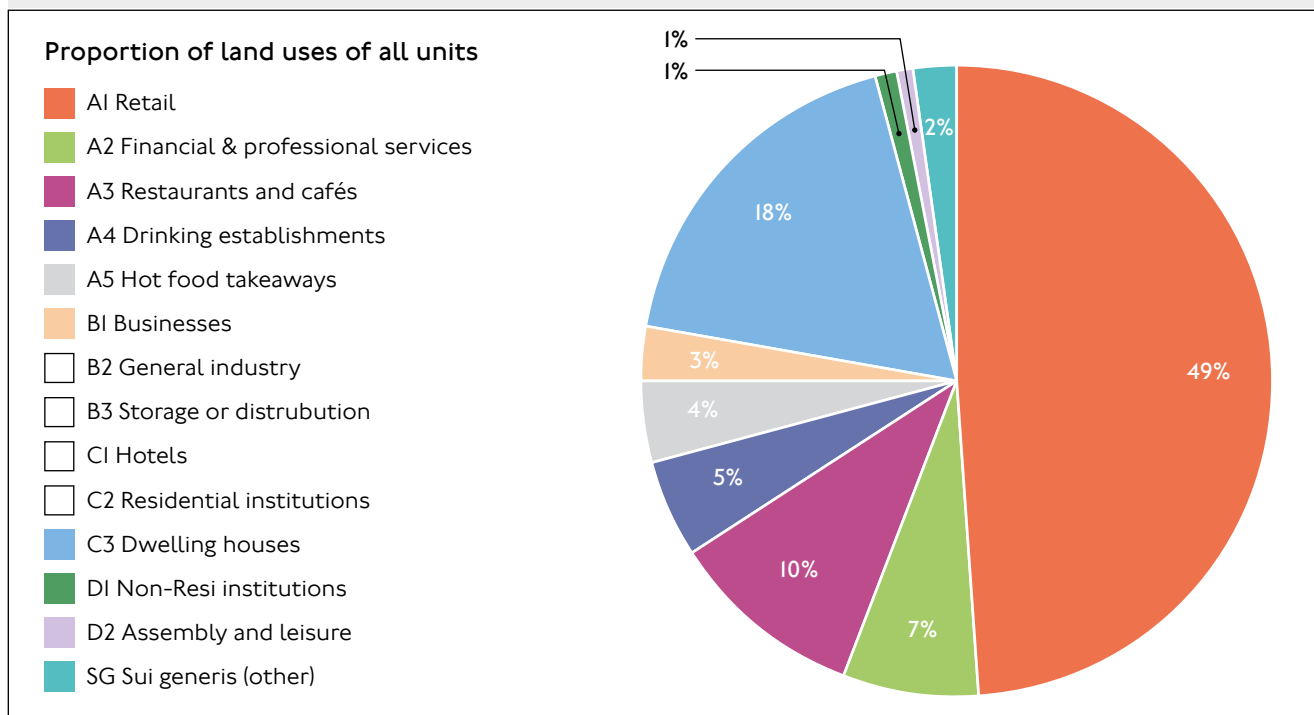
In the case of commodities such as perishable fresh goods subject to food hygiene control regulations, or other time-sensitive products such as newspapers and medicines, deliveries have to be made within certain time windows.

On a typical high street two thirds<sup>3</sup> of the businesses are classed as ‘independents’. Independent retail units have a higher number of smaller deliveries than a similar sized retail unit that is part of a chain.



The three most common ground floor frontage land-uses on high streets are A1 retail, A2 financial and professional services and A3 restaurants and cafés. The most commonly occupied A1 retail units are hairdressers and newsagents. It is important to consider the upper-floors as well where C2 residential institutions are most common.

Figure 2: Example land use details for a typical high street





Land-use characteristics from 'Summary report and delivery and servicing toolkit' (<https://tfl.gov.uk/cdn/static/cms/documents/summary-report-and-delivery-and-servicing-toolkit.pdf>)

Land Use	Average Number of Delivery and Servicing trips per week on a typical High Street	Average Number of Delivery and Servicing visits per day on a typical High Street	% Illegal Delivery and Servicing trips	% Trips taking place from 07:00 to 19:00	% Trips taking place from 19:00 to 07:00	Most common vehicle used	Average duration of stay	Number of waste trips generated per day	Location Type		
									High Street	Side Street	Private Access
AI	590	84	55%	71%	29%	LGV	14:08	75	78%	21%	0%
Sub AI											
Book Shop	3	0	70%	90%	10%	LGV	08:49	0	90%	10%	0%
Charity Shop	8	1	70%	85%	15%	LGV	14:53	1	94%	6%	0%
Clothes	91	13	59%	70%	30%	LGV	12:25	16	91%	9%	0%
Cosmetics	20	3	62%	83%	17%	LGV	15:11	2	88%	12%	0%
Dentists	7	1	30%	89%	11%	LGV	06:11	1	37%	63%	0%
Dry Cleaners	3	0	100%	80%	20%	LGV/OGVI	13:35	0	80%	0%	0%
Estate Agents	2	0	44%	89%	11%	LGV	02:02	0	44%	56%	0%
Gift Shop	13	2	31%	88%	12%	LGV	11:15	1	88%	12%	0%
Hairdressers	42	6	68%	57%	43%	OGVI	13:22	11	74%	25%	0%
Health	5	1	21%	84%	16%	OGVI	10:08	1	74%	26%	0%
Home	60	9	61%	81%	19%	LGV	17:54	8	51%	48%	1%
Internet Café	8	1	100%	84%	16%	OGVI	05:48	4	100%	0%	0%
Jewellers	1	0	100%	100%	0%	OGVI	04:55	0	100%	0%	0%
Motoring	2	0	57%	71%	29%	Car	04:08	0	57%	43%	0%
Newsagents	63	9	33%	56%	44%	LGV	13:06	3	76%	24%	0%
Off License	6	1	77%	64%	36%	LGV	04:50	1	77%	23%	0%
Opticians	6	1	50%	73%	27%	OGVI	06:30	1	100%	0%	0%
Pharmacy	45	6	56%	84%	16%	LGV	14:52	2	89%	11%	0%
Phone Shop	17	2	71%	68%	32%	LGV	09:02	2	95%	5%	0%
Photography	12	2	45%	68%	32%	OGVI	12:16	4	96%	4%	0%
Post Office	12	2	65%	85%	15%	OGVI	07:10	2	87%	13%	0%
Printing	0	0	100%	100%	0%	LGV	04:26	0	100%	0%	0%
Retail-Food	52	7	54%	71%	29%	LGV	26:24	3	67%	30%	3%
Sport	8	1	42%	55%	45%	OGVI	18:33	2	70%	30%	0%
Stationary	6	1	74%	87%	13%	LGV	11:26	1	100%	0%	0%
Supermarket	77	11	40%	62%	38%	LGV	14:21	2	72%	27%	0%
Technology	18	3	69%	74%	26%	OGVI	10:07	4	80%	20%	0%
Travel	6	1	100%	92%	8%	OGVI	00:52	3	100%	0%	0%
Vacant	3	0	67%	75%	25%	LGV	03:50	1	83%	17%	0%
A2	107	15	63%	65%	35%	OGVI	08:55	23	73%	26%	0%
A3	187	27	61%	65%	35%	LGV	18:58	17	73%	26%	0%
A4	97	14	47%	77%	23%	LGV	12:48	7	63%	29%	0%
A5	480	69	51%	51%	49%	M/C	17:57	13	59%	41%	0%
B1	29	4	60%	76%	24%	LGV	12:36	4	56%	11%	6%
B2	17	2	100%	55%	45%	OGVI	00:46	8	100%	0%	0%
C1	5	1	48%	71%	29%	OGVI	12:29	0	19%	14%	0%
C2	26	4	72%	78%	22%	OGVI	14:27	5	80%	17%	0%
C3	54	8	48%	76%	24%	LGV	14:15	6	87%	7%	0%
D1	27	4	61%	78%	22%	LGV	30:28	3	41%	28%	2%
D2	11	2	36%	100%	0%	LGV	15:19	0	29%	52%	5%
SG	8	1	52%	84%	16%	LGV	11:43	0	55%	29%	0%
N/A	5	1	67%	90%	10%	LGV	31:23	1	71%	29%	0%

A5 Hot-food takeaways generated the highest number of trips, though these were mainly made delivering food to residences by moped.

Building frontages make a major contribution to the feel and character of a street, especially in town centres and retail environments. These frontages often become part of the trading area and can reduce street width forming café style outside seating, additional stall space, or locations for 'sandwich board' advertising. The provision of tables and chairs on the street requires a licence; the other potential obstructions also require active management to protect pedestrians. Some streets pavements are also made up of both public-owned footway and paved frontage that forms part of a premises' land.

For many businesses, the frontage is also a key entry point for goods. Where this is the case and the availability of on-street parking is limited, alternative arrangements such as loading on nearby side roads, off-street facilities or multi-use parking bays used for loading during off-peak periods may provide desirable solutions.

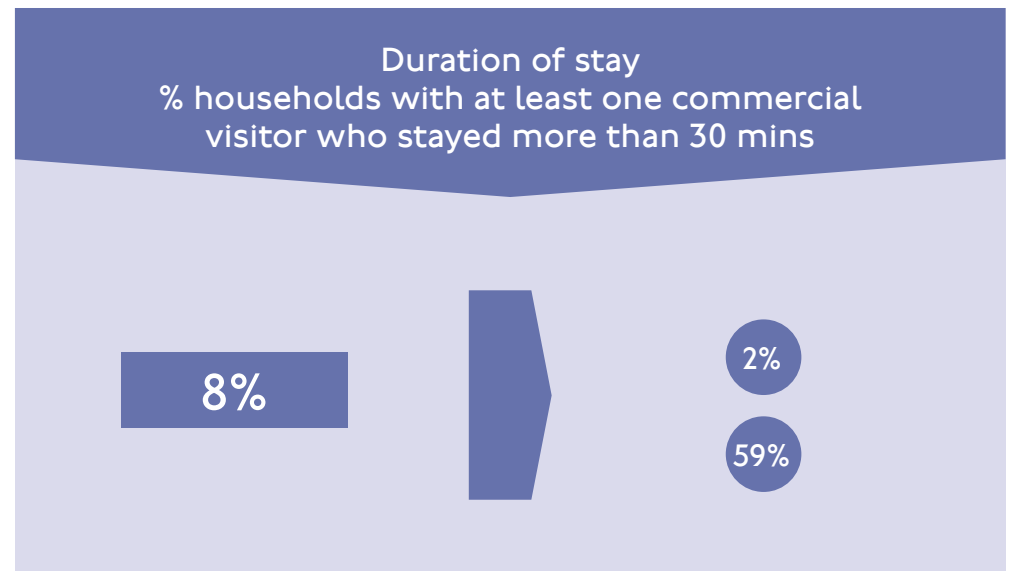
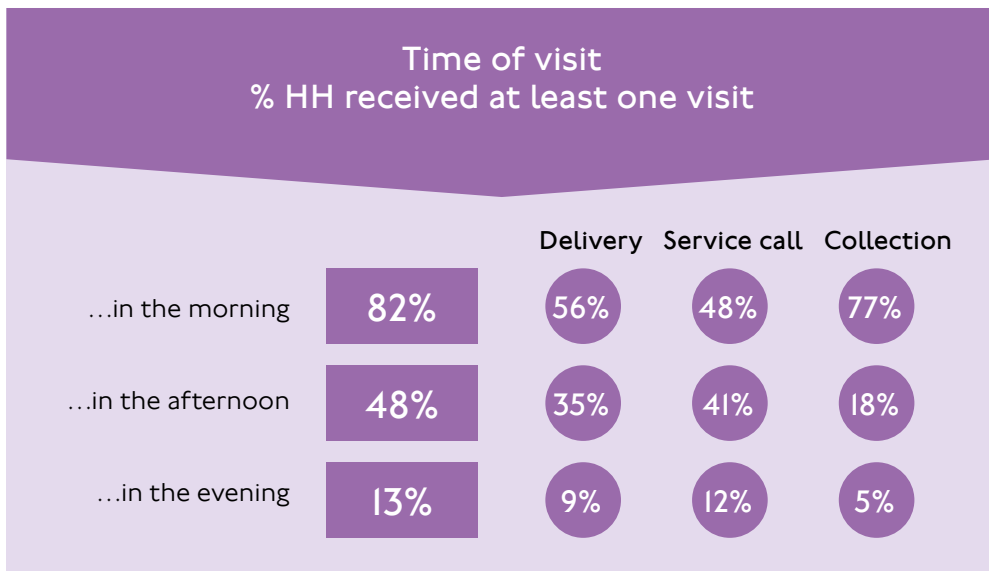
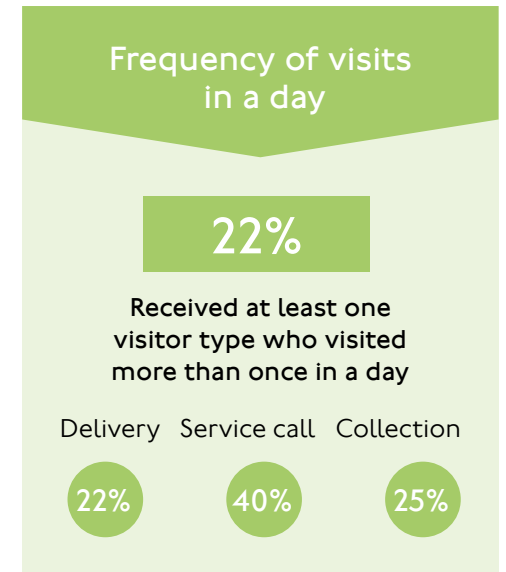
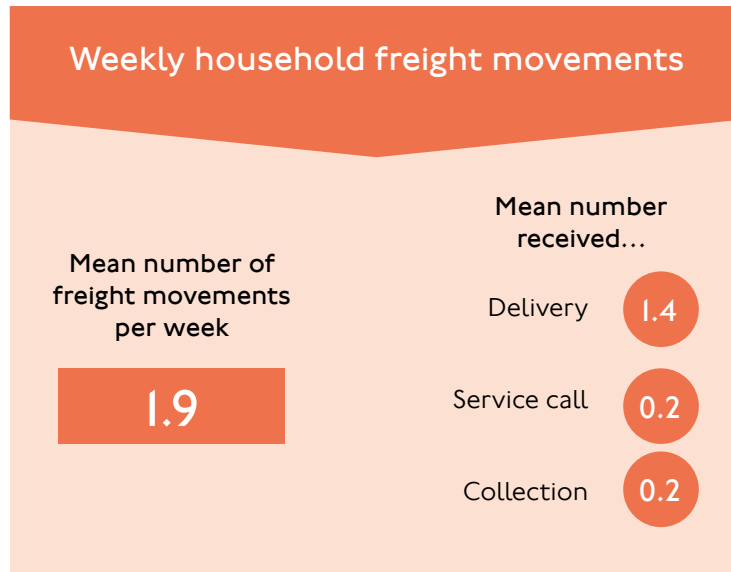
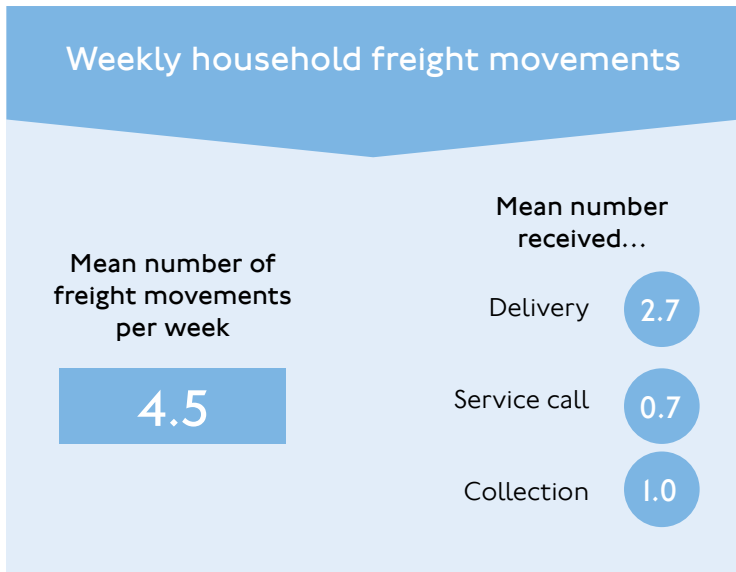
### Residents and home shopping

Personal deliveries are increasingly being made directly to homes and work offices. This can create conflicts with residential parking and increased congestion in and around central London for office deliveries. In many residential areas, loading space competes with the demand for parking. An important issue to consider is that home deliveries might be required in the evening when residents are present and pressure on parking space is most severe. Moreover, the increase in home shopping, largely fuelled by the rising popularity of online retailers, is exacerbating potential delivery problems in residential areas and congestion in central London where personal deliveries are made into workplaces.

We have undertaken research<sup>4</sup> to help understand these trends and found:

- The majority of London households received between one and two different types of freight movements in any one day (64 per cent)
- The higher the household income, the more likely they were to receive five or more types of freight movements in a week (48 per cent vs. 37 per cent vs. 31 per cent)
- Households with children received more freight movements to their home in a day compared to those with no children
- Half of all households with children received five or more freight movements last week compared to slightly more than a third of households with no children (53 per cent vs. 36 per cent)
- Older households, particularly the 'Modest Traditions' economic group were less likely than other groups to receive five or more freight movements in a week
- Outer London households were more likely to receive five or more freight movements in a week compared to inner London households (42 per cent vs. 36 per cent)
- Houses were more likely to receive at least one freight visitor type who visited on more than one occasion compared to flats (23 per cent vs. 19 per cent)

Summary of household freight movements from research Ref I731a Residential freight report V2.0

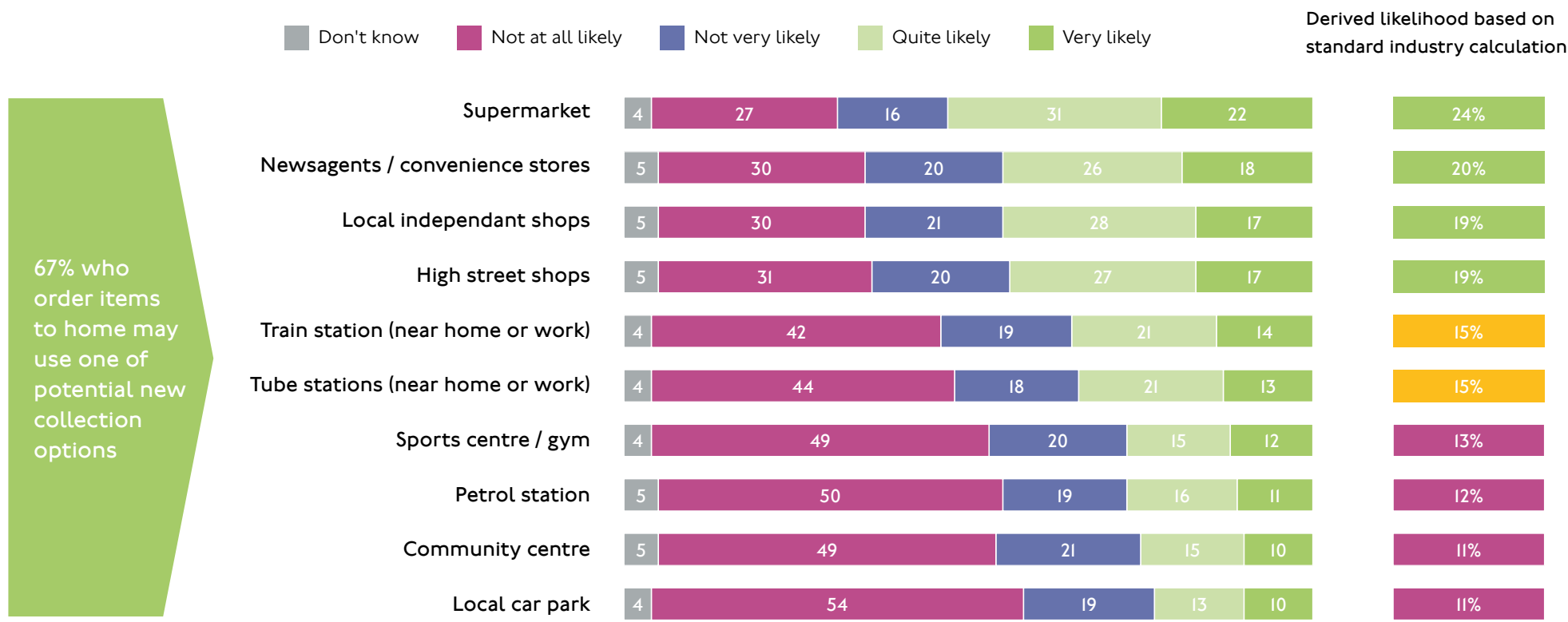


Home deliveries are normally made during the day when customers are not at home resulting in failed delivery attempts. A counter measure to this would be to actively promote the installation of pick up, drop off sites

(PUDO) (CollectPlus, InPost, Doodle) to reduce van trips, especially adding this as a new requirement to be included in Delivery and Servicing Plans (DSPs) for new developments within the planning consent.

Another fast moving development is the Sameday timed delivery of all sizes of delivery sometimes linked to a build and install service (not a delivery) this creates even more trips adding to the congestion and poor air quality in London.

Alternative home delivery locations from research Ref. I669 TfL Home delivery presentation



67% who order items to home may use one of potential new collection options

Disabled people just as likely as non disabled people to be interested in one of collection points

## 06 Loading location and goods transfer movements

A PCN may be issued when a legal loading facility is not used or the time taken for delivery/collection activity exceeds the permitted loading duration (20 or 40 minutes depending on the highway authority). As the volume, value or weight of goods to be delivered increases, the distance from the premises that the driver will be prepared to stop is reduced. If the location of the loading facility requires the goods to be moved across a road, the safety of the person making the delivery should be considered. If a controlled crossing is to be used, the additional time taken to use the crossing should be considered. Crossing a road can reduce the willingness of drivers to use the loading facility, particularly with large, heavy or valuable goods.

The vehicles using loading facilities can range from motorcycles and cars to vans and lorries (some of which may be articulated). In many locations, the 'default' design vehicle can be assumed to be a 12-metre long, 18 tonne rigid, however this is dependent upon the surrounding land-use and business. The size of a vehicle has implications for how much space it needs for movement and parking. Loading facilities should be of sufficient size for the vehicles most likely

to use them. Where a loading facility has high demand, either from a single business or where it is used by several premises, the loading facility will need to be large enough to accommodate a number of vehicles arriving at the same time, unless a shared delivery management system is in use by the premises.

Loading activities can cause congestion by blocking the flow of traffic or increase safety risks. Several issues need to be considered in this respect:

- The physical location where a vehicle stops to load/unload
- The time the activity takes place
- The frequency of vehicles stopping in the loading facility
- The size of the facility and size of vehicle
- The flow of traffic past the loading facility

Goods will need to be transferred and this will involve the manual handling or the use of lifting equipment. The means of handling goods between a delivery vehicle and a delivery premises will also affect the distance from a premises that a driver will be prepared to stop. The design and layout of the built environment should accommodate such equipment. Pedestrian amenity can be impacted where large volumes of goods have to be moved along the pavement.

The primary means of manual handling and its specific requirements are described below.

### Cash

Due to the risk of robbery, cash and valuables in transit (CVIT) is a specialist field of logistics. Cash transfers are not just restricted to banks, building societies, automated teller machines (ATMs) or cash points, Post Offices or foreign currency exchanges. Most retail businesses use paper and coin cash and generally require regular collections to limit the amount of cash held at any one time.

Cash transfers attract armed robberies and under Section 17 of the Crime and Disorder Act 1998, local authorities have a duty to help design-out crime. The Metropolitan Police Service and the British Security Industry Association (BSIA) are also concerned with such risks to employees and bystanders. Armed robberies can affect pedestrian fear of crime. For crime reduction good practice the Metropolitan Police Service recommends a number of general issues be taken into account when planning street layouts:

- The delivery vehicle should be able to park at 90 degrees to the destination premises
- The distance between the vehicle and the destination premises should be minimised
- Routing that allows cover for ambush (for example, doorways, alleys) should be avoided

- ♦ Railings along kerbs which prevent unloading from the side hatch or require custodians to walk further should also be avoided
- ♦ Allow for a line of sight between the vehicle and the destination premises, including on-board video cameras
- ♦ Allow kerb space for any following police vehicle



### Dollies

Stacking plastic trays or baskets are frequently moved using wheeled frames. These are often stacked high with lightweight goods such as bread, so dropped kerbs and shallow

gradients are needed to avoid spillages. Smooth pavement surfacing is needed to minimise the noise and reduce the risk of residents being affected when off-peak deliveries are made.

A solid-base plastic dolly



### Kegs and casks

The brewing industry uses kegs and casks to hold alcohol and transfer it to licensed premises. Empty kegs also need to be taken back to the delivery vehicle. Kegs and casks are often dropped from the vehicle and rolled along the footway to a trapdoor. It is important to consider:

- ♦ The surface that the containers are dropped on to (most breweries use mats), so that they do not crack surfacing or damage it when rolling
- ♦ The vehicle will often be stopped and aligned with any strengthened pavement surrounding the cellar hatch
- ♦ The distance of the vehicle from the trapdoor should be minimised to reduce risk of injury for delivery staff and pedestrians

- ♦ The safety of pedestrians, other road users and delivery staff, with respect to open trapdoors and rolling kegs/casks

A delivery vehicle placed close to the trapdoor will mean the operators only have to travel a short distance with the kegs/casks, limiting health and safety concerns. It will also allow the operator to oversee the open trapdoor.

The brewing industry tends to operate side-loading vehicles. For access purposes, these require a length of kerb free from continuous railings or other obstructions such as bike parking or hire bike stands.

The industry has produced a publication covering its specialist manual handling requirements<sup>5</sup>. The publication complements the Health and Safety Executive (HSE) guidance<sup>6</sup>.

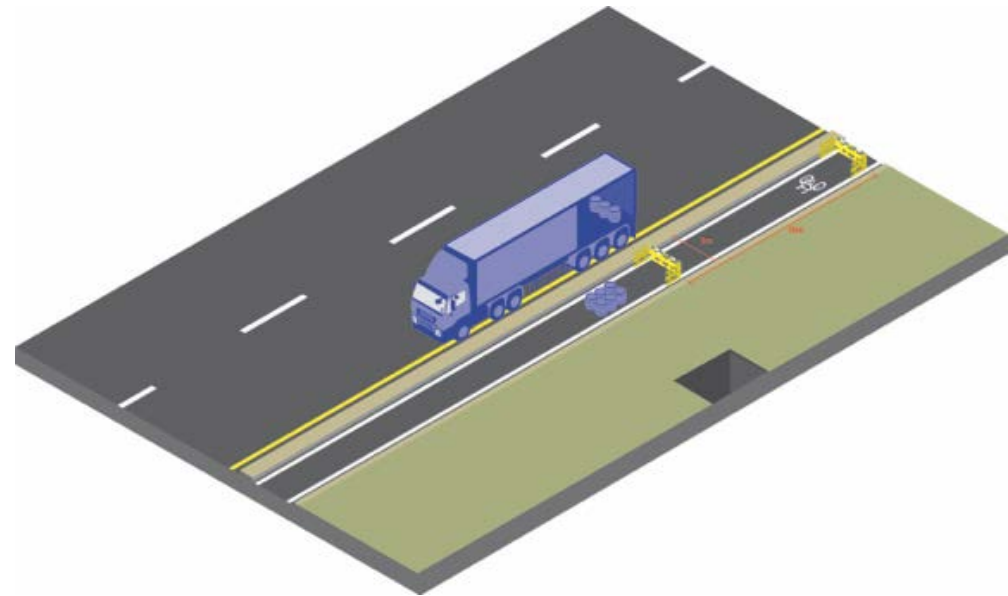
Kegs and casks can be heavy. Table I gives approximate weights for filled vessels.

Table I: Weight of brewery vessels

Goods	Volume	Approx. weight
Lager keg	11 gallon	64kg
	22 gallon	128kg
Beer cask	9 gallon firkin	52kg
	18 gallon kilderkin	104kg

Making beer deliveries across cycle lanes should be avoided where possible to minimise risk to cyclists and those making the deliveries. Where this is not possible, we have developed a safe delivery protocol using portable barriers and signs. On a bidirectional track we use signage to create a safe loading space for barrels to be unloaded and for single-way tracks, the signage is used to temporarily close the cycle track altogether. For routes with high cycle flows, the licensed premises and delivery company should be approached to avoid deliveries when high numbers of cyclists are expected.

Safe delivery protocol for brewery logistics crossing cycle lanes



Kegs lowered into pub cellar



Signage for safe delivery protocol across cycle lanes



Kegs being unloaded from vehicle



## Liquids

Many office blocks, hospitals and schools will have standby generators or boilers powered by fuel oil. Liquids (for example, fuel oil) are occasionally transferred across the kerb using a hose. The hose should be clearly visible to other street users. Crucially, the hose length will act as a restriction on where the delivery vehicle can stop.

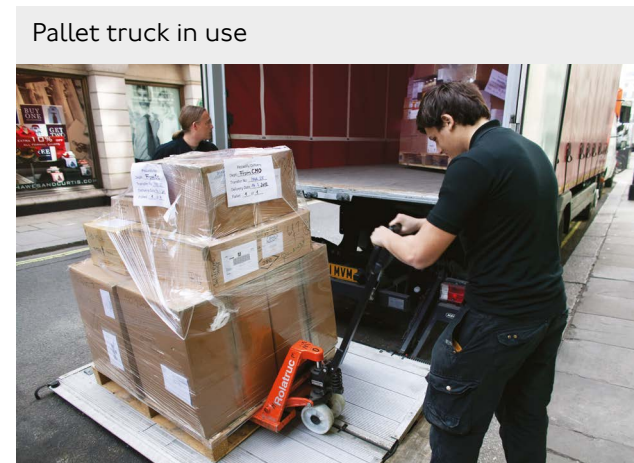
## Manual loading

Some products are only suitable for loose handling such as sacks of flour, rice and courier parcels which do not require lifting equipment. However, short and easy access is required for such loads because of the weight and the need to maintain temperature control (for food). A courier delayed by a long transfer, for example, may be tempted to drive quicker to make up for lost time, placing other road users at risk.

## Pallet truck

Many goods are consolidated on to pallets, with a pallet truck used for their transfer. These trucks have small, hard wheels and a low body. Pallets are often heavy (around

one tonne) and cumbersome to move, so will typically be lowered from large vehicles via a tail lift. For these reasons, kerb upstands (even small ones), rough surfaces, restrictive bollards and gradients should be avoided. As pallets are generally 800mm by 1,200mm in size, it is recommended that bollards and other restrictions should not be placed less than 1,400mm apart wherever pallets are likely to be used. Pallets can have goods overhanging the sides and goods could be poorly secured. It may also be that they have to be decanted at the door and the pallet taken back with the driver. Smooth surfaces and gentle gradients are needed to avoid noise and load spillage. The pallet and truck make the movement unit markedly larger.



## Refuse bins

Most residential premises have wheelie bins. These can be moved two at a time if the pavement width permits. They do not need dropped kerbs but will be noisy to move potentially affecting residential amenity if dropped kerbs are not provided or rough pavement surfaces used.

Wheelie bin





Some high-density accommodation and community/educational facilities may use large circular wheeled bins or paladins. These are heavy and difficult and noisy to move requiring shallow gradients and the refuse collection vehicle to reverse to within 10 metres. Commercial premises use a range of wheeled bins such as Eurobins. These are more easily moved than paladins and require dropped kerbs.

Paladin



Eurobin



### Roll cages

Roll cages (ie roll containers and roll pallets) are typically used by supermarkets and laundries to carry goods in bulk. Roll cages vary in height (up to 1.8 metres) and width (up to one metre), and can weigh up to 500kg. Their contents do not overhang these dimensions.

Roll cages require surfaces that can cope with their weight. Smooth surfaces, minimal gradients and an absence of kerb upstands are also needed. Roll cage deliveries will often involve a large number of individual cages and the footway may be used as a temporary storage area making it necessary to consider the space required. A typical supermarket delivery to a high street store may involve 40 cages per vehicle. This is on and off because of return cages and often recyclable material goes back too on some of the returnable cages.

Roll cage



### Sack truck

Sack trucks are suitable for carrying small box-shaped goods. The wheels can withstand small kerb upstands and rough surfaces, although these should be minimised. Typically, sack trucks are quite narrow, although the goods they carry can overhang them. Some have a curved rear to accommodate drums or barrels.

Sack truck



### Stillages

Some industries such as motor spares for dealerships and certain manufacturers use bespoke stillages. These often weigh more than pallets, can be larger in footprint and are of steel construction, needing pallet trucks or mechanised handling such as forklifts.

### Additional considerations

#### Needs of utilities and services

Many services occupy our streets, such as post boxes, telephone boxes and refuse bins. Utilities, such as water, gas and electricity, are also present under the surface and accessed by either inspection covers or above ground boxes. Frequent access to these areas is required for maintenance and in emergency situations.

Utilities and services may compete for space with other street uses, including loading facilities. In particular, the location of inspection covers and boxes and the strength of surfacing above underground services can present design issues for loading facilities. However, utilities may be relocated in consultation with the relevant statutory undertaker. Those that are above ground should address positioning to help declutter the pavement or facilitate new loading spaces.

### Loading bans

Generally, there should be no need to restrict loading activity unless there are significant reasons to do so (for example, high levels of pedestrian activity or security). Where such bans are being considered, the impact on loading activity and the potential consequences of such restrictions should be assessed carefully. This would need full consultation working with the land-users and freight bodies/delivery companies to ensure the business can still exist, as bans will not stop freight activity. For example, how will CVIT vehicles be able to access retail or commercial areas?

Loading bans currently in place should be regularly reviewed to ensure they remain fit for purpose as land-use changes as does the character of an area. Something that was relevant 10 years ago may not be now.

No loading sign



## 07 Balancing the needs of street users

Streets account for 80 per cent of London’s public realm. Raising the ambition for streets with a collaborative, design-led approach is key to achieving new standards of excellence and recognising the fundamental role our streets and places play in improving the public realm and providing an enhanced quality of life.

Streets are places for people. Successful streetscapes are inclusive and provide for the competing requirements of their users, including pedestrians, cyclists, motorcyclists, bus passengers, private vehicle owners and freight vehicle operators.

In 2012, the Mayor of London set up the Roads Task Force to consider how to tackle the challenges facing the Capital’s roads. It recommended that London’s 34 traffic authorities use a new ‘street family’ as a practical way to understand the mixed use of our roads.

Instead of describing the quality of a road, the street type illustrates its desired rather than current function. The balance between loading requirements and the different road users will vary depending on the street type. For example, the high movement function of

a ‘core road’ makes kerbside loading facilities less suitable, except when low vehicle flows occur. Likewise, access for delivery vehicles may be banned at certain times from a ‘city place’ to enable the ‘place’ function of the space to be maximised. This approach helps decision makers understand the amount of change needed when planning street schemes.



The following sections provide a summary of the main considerations of the different road users:

### Delivery companies



In the highly competitive logistics industry, the pressure to reduce costs and increase efficiency is relentless. This often results in a drive to minimise the time taken to complete each individual delivery and maximise the number of deliveries each vehicle completes in a day. Combined with a range of other factors, such operational pressures may lead drivers to load in contravention of local loading regulations. Sometimes, however, this is because there is no provision for delivery and servicing.

Of course, logistics and transport companies using lorries operate in a regulated environment. As well as complying with regulations on drivers’ hours, both drivers and

their employers must observe strict standards of vehicle operation and maintenance. They must also comply with health and safety legislation and reduce risks to themselves and other road users. In parallel, they have to fulfil their customers' demands and operate in a competitive commercial environment.

Increasingly vans are being used in response to smaller order sizes and home delivery. Vans operate in a less regulated environment than lorries, not requiring a special driving licence or ongoing driver professional development. Vans are the only form of motorised transport expected to increase significantly in the coming years but are mainly diesel-fuelled, creating health risks.

### Cyclists

The Mayor's vision is for cycling in London to become an integral part of the transport network. Cycling should be a normal part of everyday life, something people hardly think about and feel comfortable doing in ordinary clothes<sup>7</sup>.

In order to keep London moving and meet future demand, our road network and the way we manage it needs to be modernised. As part of our Road Modernisation Plan, innovative designs are being implemented to transform cycling and to improve the environment for all road users.



Good design for cycling must be sensitive to physical conditions that may matter less for other users but are important to cyclists such as surface quality, surface material, ability to maintain constant speed, gradients, deflections and undulations.

Cyclists need smooth, clear routes which allow them to see and be seen. Because of the reduction in road space, problems can occur when overtaking a cyclist who is passing a stopped vehicle. Cyclists are also vulnerable to

vehicle parts (for example, mirrors, tail lifts and doors) and goods which jut out into their path. Furthermore, cycle lanes and cycleways (cycle lanes on the footway) will directly interact with loading activities if vehicles stop on them, temporarily store goods on them or transfer goods across them.

The London Cycling Design Standards<sup>8</sup> gives advice on retaining and managing kerbside activity: appropriate line markings and enforcement, timing of deliveries and the potential for inset bays or 'floating' them (between the cycle lane/track and the general traffic lane)<sup>9</sup>. Sections 4.2.6 and 4.3.10 give guidance on the integration of cycle facilities with parking and loading and provides indicative layouts.

### Pedestrians

Pedestrians are key users of street environments. To encourage walking, streetscapes are often designed with pedestrians' desire lines, visual amenity and relaxation in mind. To encourage active travel and to improve London's street environment in general, loading facilities should be located to minimise disruption to pedestrian movements. Where possible, loading facilities should be harmonised with such features.

Pedestrians are particularly vulnerable to injury from vehicles, as well as to environmental

factors (for example, noise and air pollution) and any activity on the footway that restricts their passage. This is especially relevant to wheelchair and pram users. Loading facilities should therefore be designed to limit such issues.

Pedestrians and cyclists, in particular, are vulnerable to vehicles used in transporting goods. Indeed, delivery operatives themselves are vulnerable to the physical effects of manual handling. Both groups should be protected to prevent serious impacts on their wellbeing and to reduce pressure on public health services.

Urban streets are subject to noise and air pollution mainly from road traffic. Loading facilities should be designed to minimise disruption to the road network as this creates congestion and leads to an increase in idling and associated emissions. These emissions can be twice as much when compared with driving efficiently.

Vehicles can also damage the physical structure of streets (particularly footways and street furniture). This can be potentially hazardous and leads to extra costs associated with highway repair. Loading facilities should, therefore, be designed with this in mind.

### Buses

Other vehicles, such as buses, are a central feature of the streetscape. Loading vehicles that have stopped on the carriageway can block their passage, causing traffic congestion.

To operate effectively, buses require consistent journey times but can easily be delayed by traffic congestion. They also need adequate space to pick up passengers.

Passengers, meanwhile, need good access and queuing space at bus stops. Further guidance on this issue is available from TfL<sup>10</sup>.

Due to a lack of suitable places to stop, goods vehicles may impede other forms of transport (for example buses), which will subsequently contribute to increased noise, congestion and emissions.

Reliable journey times are essential to bus services in London and we should be consulted if a loading facility is likely to impact on a bus route.

### Other pavement uses

In London other uses of the street/pavement space include:

- Bike parks (including cycle hire schemes)
- Motorcycle parking
- Disabled parking
- Multi-use parking bays
- Electric vehicle charge points (EVCPs)
- Post boxes
- Signs
- Parking meters

Considerable effort is now put into decluttering the street to minimise the above, but there is a case for more effort in 'thoughtful siting' to facilitate maintenance and delivery access without obstructing street users.

## 08 Ways of understanding the loading environment

### Delivery and servicing audit methodology (under development)

This chapter sets out a methodology for analysing kerbside activity. The methodology will help those responsible for and involved in maintaining streets and developing schemes. It uses findings and experiences gained by surveying four London high streets to record delivery and servicing activity and develops our understanding of why this occurs as it does".

This methodology provides a consistent approach to analysing kerbside behaviours on any given street. By collecting and analysing the datasets identified in this methodology we can establish a comprehensive understanding of the kerbside, particularly the delivery and servicing behaviour and the underlying causes of it.

The methodology has four phases as described in the subsequent sections:

- **Phase 1** – Analysis of existing background information
- **Phase 2** – Land-use and street audit
- **Phase 3** – Video surveys and questionnaires
- **Phase 4** – Analysis of results

### Phase 1 – Analysis of existing background information

Analysing existing background information takes advantage of information that should be available (or can be obtained) from TfL and London boroughs. Phase 1 is exclusively desk-based and allows the user to develop a basic understanding of the existing kerbside constraints within their study area. The key datasets of the existing background information are:

- Traffic Regulation Orders (TROs)
- Penalty Charge Notices (PCNs)
- Planning considerations such as delivery curfews, Delivery and Service Plans (DSPs) and Construction Logistics Plans (CLPs)

Supplementary information such as pedestrian footfall and crossing counts, traffic flows and collision data may also be available.

#### Traffic Regulation Orders

The waiting and loading restrictions contained within the TROs set the context for kerbside restrictions in the study area, and enable the user to understand kerbside behaviours. The information should be requested from the highways authority to assess the provision and capacity for kerbside activity and how the kerbside has been allocated to different uses.

The TRO information should be cross-referenced against the street audit (see Phase 2) to check for discrepancies or inaccuracies between the two sets of information. This is because the carriageway markings and signs on-site may not always fully reflect the actual TROs.

#### Penalty Charge Notices

To help contextualise the parking and loading restrictions, PCN data should be obtained from the highways authority. This information helps to illustrate the extent to which contravention of local waiting and loading restrictions is an issue within the study area. The information should be requested in a spreadsheet so that the user can analyse the data by location, time, date, and PCN contravention code.

#### Planning considerations

Details of any delivery curfews, DSPs and CLPs should be collected from the local London borough. This information is available on many of the London boroughs' websites. It is recommended that the user speaks to staff in the planning team who will be familiar with recent developments that have had curfews, DSPs or CLPs. This should also include any framework DSPs and CLPs and relevant documents relating to Opportunity Areas.

These plans provide additional context and understanding of how delivery, servicing and construction vehicles 'should' access their customers' premises, and any restrictions which are in place to control this access. The information can be compared against the PCN information and against the video survey analysis (Phases 3 and 4). This highlights areas of non-compliance by measuring behaviour of a property/business against a formal agreement.

Analysis of DSPs and CLPs will be useful for more recent developments. The relevance of DSP and CLP analysis will ultimately depend on the number of plans that have been issued within the study area.

### Supplementary data

Any supplementary information that is deemed useful, such as pedestrian footfall, traffic flows and collision data, should be obtained to give a measure of how delivery and servicing vehicles relate to, or impact upon, other modes in the street. The method for collecting these types of data is widely available, although the video survey (Phase 2) can provide this data if required.

## Phase 2 – Land-use and street audit

The purpose of this phase is to develop a thorough understanding of variables that affect kerbside delivery and servicing activity. The user will spend a majority of this phase on site to record key information about their study area (in accordance with the user's health and safety procedures). Land-use and floorspace data can be obtained from Office for National Statistics, commercial products such as Experian or Goad or through TfL or local planning departments. The results from the audit can also be used to inform the planning of the video surveys and questionnaires described in Phase 3 of the methodology. The two key components of Phase 2 are:

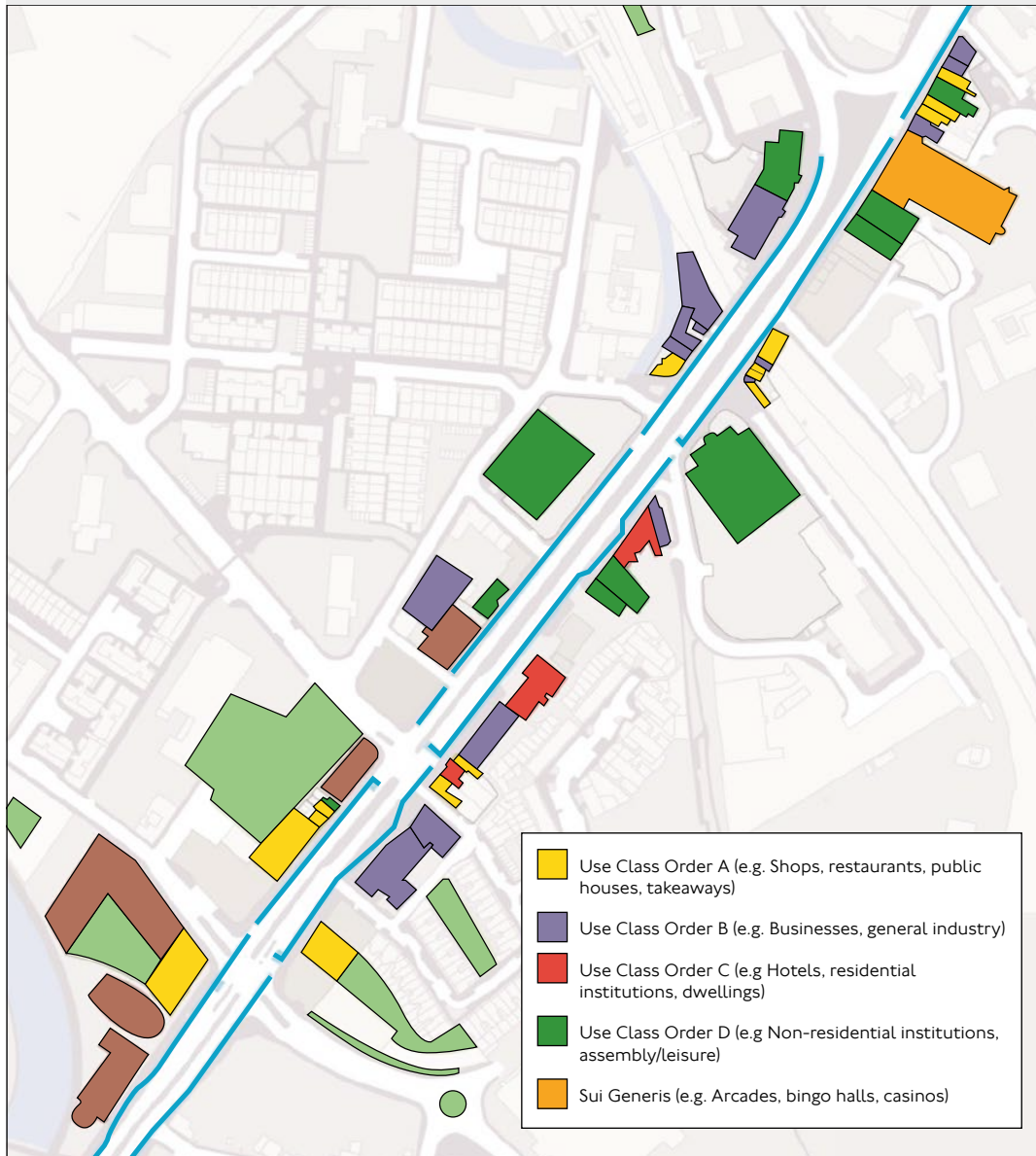
- Land-use and street audit
- Floorspace data

### Land-use

Baseline information gathered from the land-use audit would typically consist of the following:

- Number of premises fronting on to the street
- Names, addresses and land-use classes of these premises in addition to a granular breakdown of land-uses throughout the street (this is particularly relevant to AI units as many different types of business can be classed as AI)
- Other relevant information for each business, for example, whether it is independent or part of a chain, and the normal operating and opening hours of each business

Stratford High Street – ground floor land-use classes



### Street audit

Baseline information gathered from the street audit would typically consist of the following:

- Number of vehicle lanes and permitted movements on all sections of the street being studied together with associated side streets and intervening junctions
- Extents and nature of waiting and loading restrictions (including private accesses)
- Facilities for all users of the streets including buses (bus lanes, stops and stands), pedestrians (footways and crossings) and cyclists (segregated and unsegregated cycle lanes and tracks, dedicated cycle signals and crossings)
- Primary vehicular accesses for these premises (public highway, main street or side/rear street or private access) should also be recorded where shown on plans

As well as helping to understand the street in question, this data helps develop building and kerbside zones. These zones are used in the video survey (Phase 3) and analysis (Phase 4).



Collating the information from the audits into spreadsheets will enable the user to undertake high-level analysis of their study area, including:

- Number of units
- Composition of land-use classes
- Comparison of floorspace figures
- Arrangement of vehicular access
- Composition of waiting and loading restrictions
- Consistency between on-site kerbside conditions with TROs

If TfL data or borough planning teams are to provide floorspace figures, it is recommended that an appropriate member of staff from the data or planning team accompanies the user during a site visit to ensure consistency of the identification of individual premises.

### Phase 3 – Questionnaire interviews and video survey

Phase 3 of the methodology is focused on fieldwork and is the most time consuming stage. Completing the questionnaire interviews and video survey provides the user with a comprehensive insight into the everyday kerbside behaviours within their study area, and helps identify the key influences upon kerbside activity. It is important to note that questionnaires should be scalable and the level of detail/insight garnered should be relative to the scale of the initiative being considered.

#### Questionnaire interviews

Questionnaire interviews should be conducted with those who generate or determine the delivery or servicing activity, as well as those 'using' the study area. They should be conducted after the analysis of the video survey to help determine when and where the peaks in delivery and servicing activity occur. This will allow better 'targeting' of questionnaire interviews.

It is important that the interviewers understand the purpose of the questions being asked and are able to elaborate and assist participants who may not be familiar with delivery and servicing activity and kerbside behaviours. It is critical that interviewers are proactive when conducting the questionnaires and prompt participants to elaborate on their responses: this is particularly important where participants are less familiar with the concept of kerbside delivery and servicing activity.

Interviewers will introduce themselves and the purposes of the study to participants first and refer to the kerbside in the immediate vicinity to get participants to think about that space and how it is used for kerbside activity. Interviewers need perseverance to focus respondents on the delivery and servicing activity in the study area, as this type of activity may not be immediately obvious to participants.

### Video survey

Video surveys can generate a significant volume of data, and provide the user with an invaluable insight into kerbside behaviours within their study area. However, they require the largest budget within the methodology and sufficient funds may not always be available to conduct a video survey.

A video survey should ideally cover an entire study area, preferably for a full seven-day period covering an entire week (168 hours in total) and at a time of year with representative traffic flows, pedestrian footfall (and delivery and servicing) conditions. When defining the extents of the video survey, the user should consider all potential vehicular accesses in the study area, particularly private and rear accesses, to ensure that all kerbside activity is recorded.

If budgets dictate a shorter period, then both weekdays and weekend (at least a Saturday) should be chosen and one that covers the peak delivery and servicing activity. In all cases, surveys should not be undertaken in school holidays. Other factors to consider in determining the time of the video survey include the nature of the land-uses and whether any nearby events or construction projects need to be avoided to maintain the accuracy

and robustness of the video survey results. The timing of the video survey should be discussed and ideally agreed with the highways authority.

The video survey should record the following information for all vehicles stopping at the kerbside in a study area:

- Time of arrival
- Time of departure
- Length of stay
- Vehicle type
- Trip purpose
- Kerbside zone used
- Building zone used
- Where possible some commentary on what delivery and servicing vehicles were doing, for example, waste collection or delivering materials

The results from the audit can be translated into base plans and therefore a template for the video survey company to identify appropriate camera locations. The survey results should be related to the agreed kerbside and building zones.

### Phase 4 – Analysis of results

Having completed the questionnaire interview and/or video survey the user will have a wealth of data and information to analyse. It is critical that the user interrogates their data as they feel appropriate, and that they take time to identify the key insights from it. This section provides an overview of the analysis completed during the surveys of four high streets as a guide.

The background research, audits, interviews and surveys should also be used to identify problems and conflicts with the current road layout. The development of the proposed layout will need to include elements to reduce these conflicts. These conflicts can be presented on a conflicts map and details included in an accompanying table, examples of which are provided in the high street summary and case study documents<sup>12</sup> and also shown below. This allows the user to refine their understanding of the issues relating to delivery and servicing activity and how the street design and business/operator behaviour should be changed. The user should aim for this work to be as detailed as possible in order to inform how to improve the loading environment, the next step in the process.



## 09 Improving the loading environment

Improvements to the loading environment can be considered within the following hierarchy:

1. Cater for deliveries within present facilities
2. Consider a dispensation
3. Alter existing facilities
4. Build new facilities

### Cater for deliveries within present facilities

Changing physical street infrastructure can be expensive and time-consuming. Before doing so, a number of actions can be undertaken to manage loading demand within existing facilities. To increase use of loading facilities, these techniques may also be needed where facilities are altered or new facilities built.

### Site assessment/delivery point assessment

Encouraging operators to make use of available facilities is the most cost effective option. A site assessment case study<sup>13</sup> illustrates how

a freight operator has assessed a delivery location and produced a plan for drivers and load planning staff.

### Implement Delivery and Servicing Plans

Managed by the premises where deliveries are made, this process looks at how deliveries and collections are conducted and where/when vehicles can legally stop. It involves the person responsible within the premises (for example, the facilities manager) coordinating and scheduling vehicle activity, as well as ensuring that delivery companies park legally<sup>14</sup>. This is easier and more effective than regulation and for new build can be part of leases and contracts as derived from the planning permission for the development (for example, Westfield Olympics).

### Reconsider timings associated with loading restrictions

Frontages, land-use and delivery activity all change over time. Timings that were appropriate and applicable some years ago may not be so today. Therefore, it may be appropriate to reassess the timings of loading restrictions.

### Consolidated deliveries

Reducing the number of deliveries to a premises by bulking up orders is the most common form of consolidation. Consolidating deliveries to multiple premises in one geographic location can also reduce vehicle activity. Rather than a number of vehicles turning up to deliver small consignments, a delivery company makes a single drop of a consolidated load from multiple suppliers. Using a preferred supplier shared by multiple businesses also consolidates deliveries. These approaches are best suited to a wider area, such as Business Improvement Districts (BIDs) or a town centre and may require coordination and cooperation if the benefits are to be realised.

A number of issues including congestion, safety, efficiency, security and air quality can be addressed by managing delivery and servicing trips. We have highlighted a range of consolidation solutions that can be employed and the TfL 'rethinking deliveries' summary report<sup>15</sup> provides further information.

### Retiming deliveries

Retiming deliveries has the potential to shift vehicle activity away from periods of peak demand and congestion. As well as making a positive contribution to network performance, this approach reduces competition for peak time kerbside loading facilities.

Not every business will benefit from retiming deliveries. For example, small businesses may not be able to provide staffing cover for night-time deliveries, or the goods in question may not be suited to such a regime. To facilitate this for smaller premises and ones with limited staff, an 'airlock' unmanned delivery with key entry may be possible with careful design.

Potential social impacts must also be considered. Specifically, this means noise and light pollution. Delivery restrictions may currently be in place as a result of noise abatement notices or planning conditions. Many notices and conditions will restrict activity between 22:00 and 07:00.

Before permitting night-time deliveries, it is therefore appropriate to consult all main stakeholders, including local residents, businesses and delivery firms, and to have due regard for the various laws in force, as well as for current guidance. Other TfL and borough departments, such as environmental health, traffic and planning, should also be consulted.

TfL recognises the potential benefits of retiming deliveries and we encourage their use in situations where negative impacts can be sufficiently mitigated. The TfL/Re-timing Deliveries Consortium document 'Getting the timing right'<sup>16</sup> provides further information.

## Enforcement

Access to current loading facilities may be constrained by non-loading vehicles parking inappropriately and therefore preventing legal use. This results in legal freight activity being displaced to illegal areas.

## Sharing

Some facilities may be shared with other street users (for example, taxis and coaches) which have similar space requirements. Care should be taken, however, with regard to conflicting hours of operation.

## Consider a dispensation

In locations where loading is generally to be discouraged or is low, deliveries may be permitted through a dispensation, avoiding the need to provide dedicated facilities. This may reduce casual stopping by other vehicles and allow deliveries that should have preferential access (for example, where health and safety or security is an issue). Such an approach will require liaison with the local highway authority responsible for issuing dispensations.

If your site assessment reveals that there are no appropriate parking/loading solutions and you cannot adapt your approach, a dispensation

from loading restrictions might be granted. A dispensation will only be granted if it can be demonstrated that no alternative solution exists. Currently, most authorities only allow dispensations for one-off, rather than regular deliveries. Further information is available in Section 6 of 'Parking and loading legally'.

## Altered and new loading facilities

If a decision is taken to consider altering existing loading facilities or build new ones, it will be necessary to determine what form these facilities should take. Obviously, there will be a need to accommodate the correct sized vehicles, with attention given to suitable construction for weight, including axle loading and power steering impact on surfaces. However, the needs of other stakeholders and the built environment will also need to be considered.

The route taken by goods between the vehicle and the premises is a key issue; the aim should be to limit the physical strain on delivery staff and to mitigate any risks to passing members of the public. Furthermore, infrastructure should at no point be too narrow for the goods or for the required manual handling equipment, and should be of the correct grade and surface requirements for the delivery media. New facilities should be put in place using the normal TMO/TRO procedures.

The following hierarchy could be used during the decision making process. Different solutions may be more suited to particular street types (see Chapter 6):

1. Accommodate deliveries off the carriageway
2. Accommodate deliveries on side roads
3. Accommodate deliveries on the carriageway
  - i) On-footway loading
  - ii) Inset bay
  - iii) Half-on, half-off facilities

Each of these options is considered in more detail below:

### Accommodate deliveries off the carriageway

Off-street loading provision should be considered for new developments. It is difficult to integrate new off-street provision into existing buildings.

However, buildings may originally have had loading bays built into them but their use could have changed over time with them now being used as storage areas, so that delivery activity is displaced on to the kerbside. Landlords or tenants should be challenged if this is the case.

### Accommodate deliveries on side roads

Side roads connecting with any main street can provide useful kerb length for loading. However, the following points need to be taken into account:

- Vehicle access and egress may prove difficult (slight modification may be needed to the surrounding infrastructure), so this might not be a suitable option for larger vehicles, and evaluation of weights and turning circles will be needed. Reversing should also be avoided as a banksman would be needed and only drays are usually double manned to allow this
- Drivers may not be aware of side road facilities, although maps and education may solve this problem
- Drivers may be reluctant to leave a main road, especially where they would enter a one-way system
- The distance from the loading facility to the delivery point may be too far
- Side roads may be residential and residents' concerns should be considered

### Accommodate deliveries on the carriageway

Loading facilities on the carriageway can be denoted either by a marked loading bay or by lines with appropriate signage. For many boroughs, this is seen as an attractive option as it generally provides the greatest flexibility and has limited cost implications. However, it may need to be reconsidered in locations where vehicle movements by other road users would be seriously impeded or there are significant health and safety issues.

Ideally, a loading facility should not restrict times of loading activity. But in particular street types, for example, where vehicle flows are high at certain times of the day and loading activity would impede traffic, a time restriction may be necessary.

Where demand for loading facilities is high and parking demand is low or can be relocated, parking bays could be converted into loading bays. Taxi ranks can also be shared in places where both uses can be managed; for example, loading could be permitted in the morning and taxi use could be permitted in the afternoon and evening.

Loading facilities should only be placed in bus lanes during their normal times of operation in exceptional circumstances, for example, in places where it is not possible to incorporate inset bays.

## On-footway loading

On-footway loading involves a vehicle mounting the kerb and coming to rest on the footway. This option may be beneficial where vehicle flows are high and footfall and demand for loading facilities are low. Although it allows vehicles to mount the kerb, on-footway loading also permits pedestrians a full unhindered footway width when vehicles are not present.

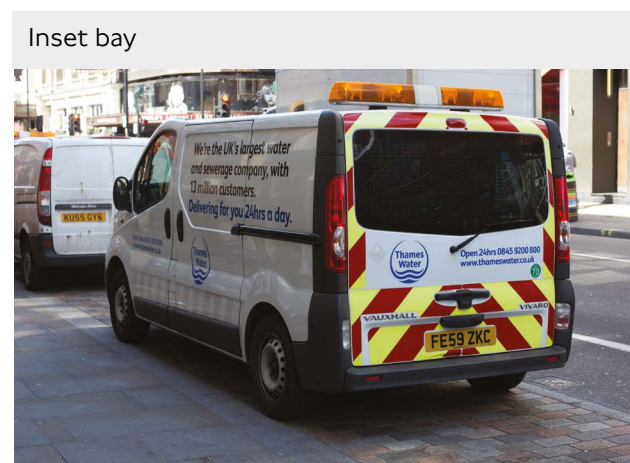
Due regard should be given to the strength of the infrastructure, particularly pavements and utility hatches. Alternatives to kerbstones may also be needed.

Fundamental to any decision is the need to ensure sufficient space remains for pedestrians to pass safely. It may be necessary to limit use of the facility to particular time periods, for example, outside peak pedestrian periods. Attention should also be given to the placement of street furniture.

## Inset bay

Inset bays form an area outside the normal carriageway line that has a surface contiguous with the carriageway. This is typically located in what might otherwise be the footway or in void space at the nearside of the carriageway.

Inset bays enable vehicles to load at a distance from the flow of passing vehicles and reduce the need for restrictive hours of operation – particularly useful in areas with tidal or heavy vehicle flows. The remaining footway width should not be less than two metres<sup>17</sup>. More space may be needed where footfall demands it.



## Half-on, half-off facilities

Some loading facilities are designed to allow vehicles to park with the nearside wheels on the raised footway and the offside wheels on the carriageway. Such facilities should use the same placement principles as inset bays regarding vehicle flows, pavement strength and remaining footway width.

As with on-footway loading, half-on, half-off facilities are suitable in some circumstances but are not appropriate where pedestrians would be impeded or damage to infrastructure might result. They are not ideal and should be seen as the last resort as the flow of traffic would still be impeded.

## Dissemination

Different parking areas may be subject to different timings, in terms of the restrictions that apply. Moreover, new or altered loading facilities may not be obvious to delivery drivers and schedulers. Local retailers may not be in a position to pass on the relevant information to their suppliers. For these reasons, the wide dissemination of information about loading facilities should be regarded as good practice.

Above all, good communication can help ensure the efficient use of such facilities.

## 10 Design considerations

Designing new or altered loading facilities requires an appreciation of a range of issues, including:

- Planning
- Suitable locations
- Timings
- Facility size
- Length of kerbside required including flares
- Camber
- Surfacing, smooth no cobbles or bumps
- Safety
- The public realm
- Furniture, bollards and signs discouraged except on walls – decluttered

### Planning

The implications of the methods and frequency of serving any given premises should be considered during the planning application. A plan to introduce kerbside loading might not be seen as desirable where the applicant can reasonably use off-street facilities.

Enforcement bodies, delivery operators and planning applicants all need to work within the parameters presented by the built environment and by the conditions stipulated by planners. Planners and highway engineers have the active role in kerbside loading facility implementation. They should act holistically to satisfy the requirements of the various departments within their organisation and should also consider the needs of all stakeholders.

Increasingly, local authorities demonstrating best practice are introducing the concept of ‘freight champions’ within their organisation. Freight champions are individuals who communicate internally between departments and liaise with external parties to ensure that solutions (i) are mutually beneficial and (ii) limit the impact of freight movements on the broader community.

Funding for additional loading facilities related to planning applications may be available via Section 106 agreements.

Drafting a Delivery and Servicing Plan as part of a Transport Assessment can provide the framework to better manage all types of freight vehicle movement associated with individual buildings. This should identify where vehicles will stop to undertake deliveries to the building.

### Suitable locations

As a general rule, loading facilities should be positioned to minimise the transfer distance from the vehicle to the delivery point. As noted in Chapter 5, as the volume, value or weight of goods to be delivered increases, the distance from the premises that the driver will be prepared to stop is reduced. Loading restrictions will not automatically increase the use of a poorly positioned loading facility. If the facility is not used, vehicles may stop in locations affecting the safety and performance of the road, affecting the benefits realised by the road scheme. In particular cases (for example, the brewery trade), it is desirable to align the vehicle with the building. For safety reasons, it is inadvisable to encourage deliveries across busy lanes of traffic. The location should also be in keeping with the public realm, as discussed below.



Loading facilities are often located between pedestrian and vehicular movement areas. This requires a compromise between the conflicting needs of pedestrians (see the Disability Discrimination Act 2005) and vehicular traffic (see the Traffic Management Act 2004).

Although the minimum needs of both must be met, in locations of important traffic flow (for example, red routes) loading facilities should be placed so as to minimise disruption to passing vehicles, ensuring traffic flows smoothly.

In more pedestrian-oriented areas, loading facilities should be located so as to minimise disruption and safety risk to pedestrians. In areas where both vehicle and pedestrian needs are important, a local compromise must be sought.

Practical experience suggests that, for most delivery drivers, the need to maximise the number of drops they make means their likely stopping point will be the most convenient/first spotted parking space. In many cases, this will exclude loading facilities on side roads, for example. There is a need to signpost parking available or communicate information to operators to pass on to drivers.

Paris has adopted 50 metres as the guideline maximum distance from a loading facility to a delivery premises. A similar distance may prove suitable for London's roads, with shorter distances for heavier and riskier goods such as valuables and brewery kegs/casks.

Loading facilities on side roads should be considered where an adequate turning radius allows vehicles to manoeuvre without overrunning the footway and where deflections into other lanes of traffic can be minimised<sup>18</sup>. Vehicles attempting sharper turns will need some length to straighten the vehicle along the kerb line. Vehicles should be discouraged from reversing back on to the main carriageway from side roads or reversing from the main carriageway down the side road for safety reasons unless they have a suitably trained driver's mate or banksman with high visibility jacket etc.

Wherever possible, loading facilities should avoid impeding bus stops and access to them. Consideration should also be given to (i) how other vehicles may pass a loading vehicle and (ii) the sightlines around it.

Facilities near pedestrian crossings should be considered carefully if there is a risk that lines

of sight would be impeded or that conflict with pedestrians would result.

Any obstruction near a major junction should be avoided as this can impede the junction's effectiveness and safety. Loading facilities in the carriageway should ideally be placed at least 15 metres from such a junction but consideration needs to be given to cash and brewery deliveries, as pubs and banks are often located on street corners. Alternatively, it may be possible to set in a parking place as part of the junction design.

It is also important to consider the noise generated by some loading operations, such as engine and refrigeration units and manual handling aids (for example, cages and kegs). Or as part of the change look at quiet equipment and methods. Alternative fridges and rubber tyred equipment for example.

Statutory undertakers' equipment is often placed on or under the surface of the pavement (ie the carriageway and footway) and can be difficult to relocate.

There may be weight and access restrictions around some of these facilities. In such cases, the statutory undertaker should be consulted.

## Timings

Consideration needs to be given to the timings that new loading facilities are expected to operate. This needs to take into account:

- Business operating hours
- Timings associated with traffic flow, for example, peak traffic flows
- Timings associated with high levels of pedestrian activity
- Planning conditions imposed by the planning authority on building operations such as delivery restrictions
- Any other environmental constraints such as noise abatement notices
- Clever conditions would specify quiet delivery requirements that with adherence would allow different operational hours

## Facility size

A number of vehicle dimensions are relevant to the design of loading facilities:

- Vehicle length
- Vehicle width
- Alighting space
- Kerb alignment space
- Tail lift space
- Side door unloading space
- Turning in and out space (flare)



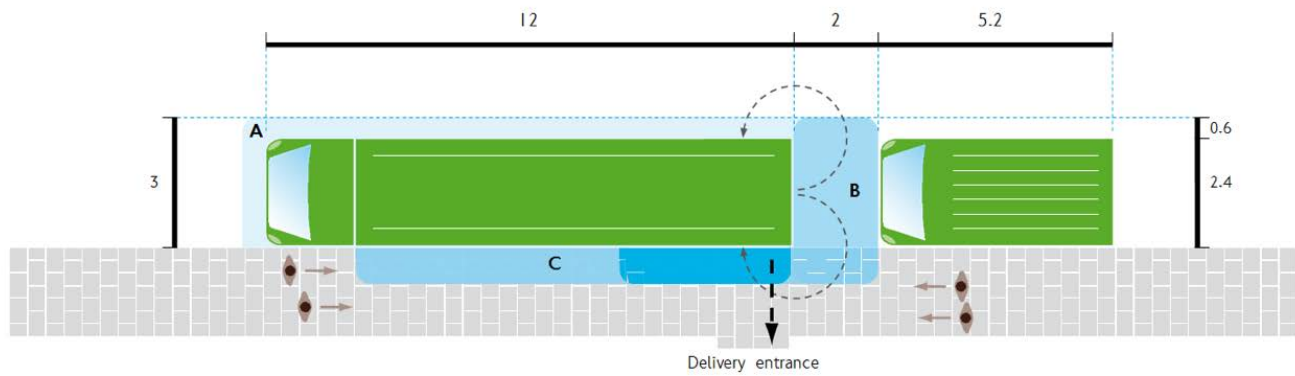
Adequate space should be provided for the driver to align with the kerb (around 50cm) and to alight safely from the vehicle and walk to the footway. This may involve considering the relative speed and density of passing traffic. It is also important to consider cyclists, who may be at risk from opening doors and tail lifts.

Vehicles' tail lifts and rear doors need around two metres to operate. This should be factored into kerb space calculations. Many tail lifts will allow goods to be transferred directly on to the footway avoiding the need to mount the kerb, however, this involves using side plates and is slower than pure ground movements.

Side doors and curtain-sided vehicles will require space to unload from the side. This space may in turn require greater footway width than is needed for rear-loading vehicles. Bollards, pedestrian railings and other street furniture can hinder the movement of goods from side-loading vehicles.



Space requirements around a loading vehicle in a loading facility



**Key**  
 A: Area where driver walks to alight vehicle  
 B: Area of rear loading activity  
 C: Area of side loading activity  
 All measurements are in metres

## Kerb length required

Providing adequate kerb length for deliveries depends on obtaining appropriate information regarding demand. It also requires an understanding of the kerb length needed for each and every vehicle that has to stop at the location at any given time. This should relate to where vehicles need to stop to reduce the distance to the delivery premises.

Loading facilities are not simply restricted to box-shaped, line-marked bays. They can also include yellow lines and yellow blips designating a length of kerb.

The need for adequate space at times when a loading facility area is suspended should not be forgotten (for example, for utilities works or events such as football matches). In such instances, the provision of appropriate nearby facilities should be considered.

As well as their actual length and the space needed to handle goods on and off a vehicle, goods vehicles require manoeuvring space to access and egress a loading facility. Even the carriageway as having minimal turning space, care must be taken to ensure there is enough space for the vehicle to manoeuvre safely – preferably without the need to reverse in areas where pedestrian conflict or other problems could arise from blind spots.

Railings and other kerbside street furniture (utility cabins, bins, signs) can deter and hinder loading activity and should therefore not be placed alongside lengths of kerb where loading is to be encouraged.

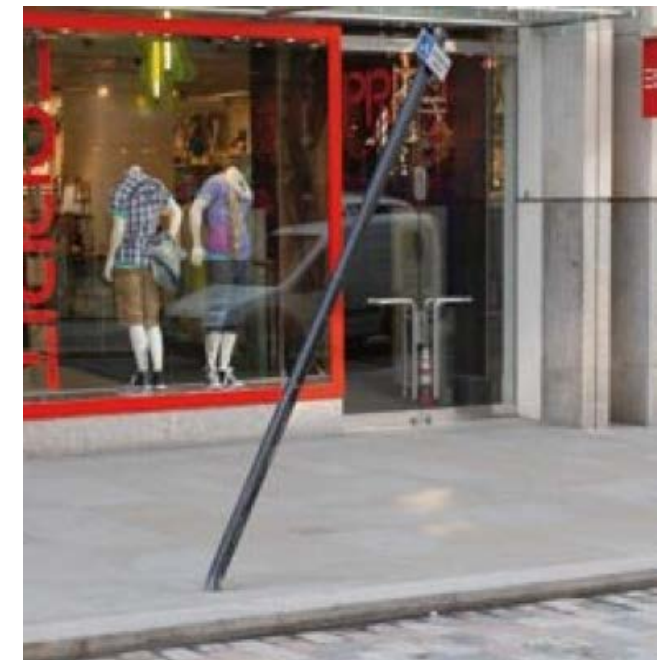
End-to-end (parallel) parking and insets require similar manoeuvring spaces, and the corner between the kerb line and the start of a flare can be assumed to be similar to any other obstruction that needs to be avoided. The dimensions given in Table 2 below are for end-to-end parking, but can be assumed to be similar for flare length.

Particular care is needed to provide adequate manoeuvring space to avoid the following potential problems:

- Vehicle overhanging the kerb or doors swinging (with subsequent contact with pedestrians or street furniture)
- Multiple forward and reverse movements
- Driving the wheels over the kerb
- Entering the opposite lane

The guidance below relating to end-to-end parking provides indicative minimum flare lengths. These assume low-speed manoeuvres of around two mph. The specified dimensions do not include mirrors. A single movement, rather than multiple forward and reverse movements, is also assumed.

Unlike bus stops, where the vehicle using the facility is pre-determined, loading facilities will be used by a wide range of vehicles with different sizes and handling characteristics. The following guidance, which is also summarised in table 2, has been developed as a rule of thumb on kerbside space requirements.



### Driving forward into a facility

When driving a typical vehicle into a space and aligning it with the kerb, it is suggested that the minimum space needed (in addition to the vehicle length) should be the vehicle length plus the vehicle width, as shown in Figure 4. Additional vehicles loading behind this vehicle may use its swept area.

### Driving forward out of a facility

When driving forward out of a loading facility past an obstruction, it is suggested that the minimum kerbside space requirement (in addition to the vehicle length) should be one and a half times the vehicle width.

### Reversing into a facility

When reversing into a loading facility past an obstruction, it is suggested that the minimum space required (in addition to the vehicle length) should be one and a half times the vehicle width, as shown in Figure 5. However, designing on-street facilities that require vehicles to reverse should be discouraged due to road user safety.

In addition, kerb space is required for unloading the vehicle from the rear. Typically, this might be assumed to be two metres, although some

specialist operations may require more space. In most circumstances, the manoeuvring space will provide the appropriate unloading space.

For any loading facility, the entry flare should have a maximum acuteness of around one in three. Exit flares should have a maximum acuteness of one in one.

Table 2: Kerb length for manoeuvring required, depending on entry method

Manoeuvre	Kerb length (in addition to vehicle length)
Forwards in	Vehicle length plus width
Forwards out	Vehicle width times 1.5
Reverse in	Vehicle width times 1.5

Figure 4: Driving forward into a facility

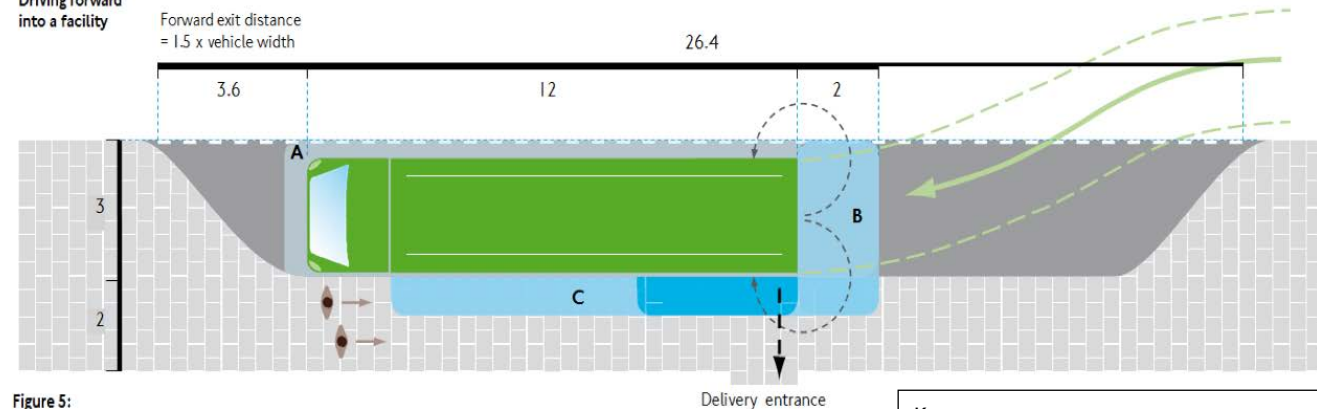
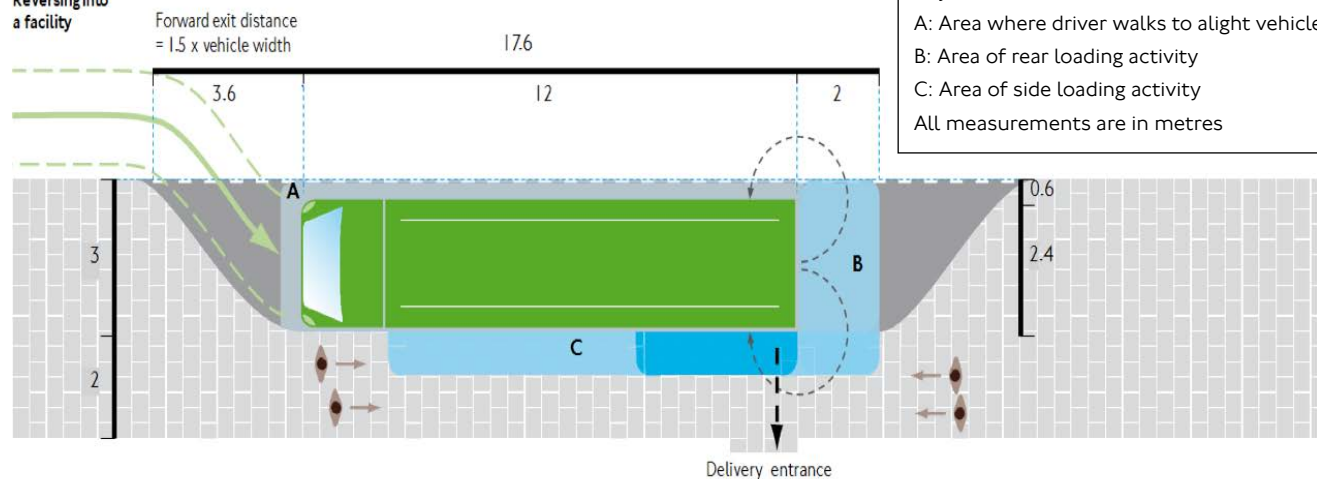
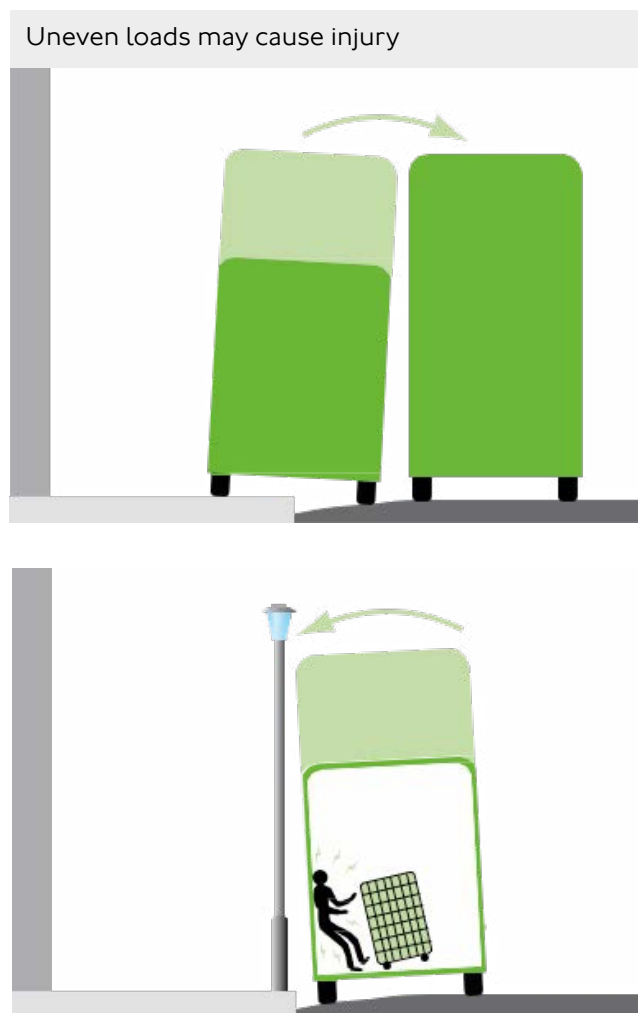


Figure 5: Reversing into a facility



## Camber

Any height difference between the offside and nearside of the vehicle can cause goods inside to become unbalanced during loading. A similar effect is found with excessive camber on roads.



## Surfacing

TfL has issued guidance on the surfacing of roads and footways<sup>19</sup>. Information on substructure is also available from the Highways Agency<sup>20</sup>. Footways may not have the same structural strength as adjacent carriageways, so they may need to be strengthened before permitting vehicles to use them. Boroughs may have separate arrangements in place regarding surfaces and road strength.

## Safety

Road safety is a key issue in any streetscape. It should always be taken into account when designing and implementing new and improved loading facilities.

Delivery vehicles can be large, with significant blind spots and particularly limited rearwards visibility when manoeuvring. In addition, their drivers often alight into the flow of traffic and undertake handling operations which may conflict with traffic and pedestrian flows.

Limited analysis of STATS19 reportable injury data for Greater London in 2014 has shown that vulnerable road users are at risk from delivery vehicles. However, steps can be taken to reduce the factors contributing to this risk.

Delivery vehicles may be required to reverse into bays. Although usually completed at relatively low speeds, the greatest dangers of injury during this manoeuvre are (i) to passing pedestrians and (ii) when the driver alights into traffic. Non-injury collisions also occur, with vehicles striking roadside furniture and other vehicles.

The footway should be wide enough so that the overhang from any vehicle does not contact pedestrians or street furniture. Street furniture like barriers may be used to keep vehicles and pedestrians apart, however, it can also impede the transfer of goods and be subject to high maintenance bills due to frequent repair, so minimal use is preferable.

Drivers will be required to alight from their vehicles. This is a source of danger for the driver (from passing vehicles) and for passing cyclists, who can easily be injured by opened doors. For driver and cyclist safety, careful consideration should be given to the space needed to alight from the delivery vehicle.

Merging into the flow of traffic from a roadside loading facility is a difficult manoeuvre which can result in collisions as vehicles (including bicycles) may emerge from behind the delivery vehicle, in addition to the presence of other parked vehicles and moving pedestrians. In particular, thought should be given to rearwards visibility, which can be complicated by bends, traffic flows, and vehicle speeds.

Space in front of the loading bay should allow for a safe forwards movement out of the bay.

### Lighting

Although goods vehicles typically operate throughout the working day, many deliveries are made out-of-hours. Lighting should be sufficient to enable delivery drivers, especially those reversing, to see potential conflicts adequately. The lighting provided can also be used to aid the offloading of goods and to improve the driver's personal security.

Lighting should also be positioned with a view to reducing glare. Particular attention should be paid to the additional height of many goods vehicles. The ideal location for lighting is at the rear of the loading bay, covering the facility and surrounding footways, and is best mounted on or adjacent to buildings to declutter the pavement and carriageway. Care should be taken to ensure it is not obscured by trees. There should also be enough highway lighting for drivers to alight from their vehicles in safety.

### Security

Better lighting and on-street cameras are good for driver safety and security, but their use could also assist more out-of-hours deliveries by monitoring driver and goods to ensure they are safe. This could cut dwell time, depot contact procedures and help reduce crime.

### Road safety audit

Anyone involved in providing a kerbside loading facility should be aware of any requirement to conduct a road safety audit. They are strongly advised to consult the relevant procedural documents on this topic for TfL<sup>21</sup>.

### Inclusive mobility

The DfT guidance 'Inclusive Mobility' was produced to help transport practitioners implement the requirements of the Disability Discrimination Act 2005. The guidance highlights the need for a barrier-free pedestrian environment for everyone, including people with disabilities. Generally, loading facilities should take into account a person's spatial, aural and visual needs, and the need for frequent rest points.

Spatial needs relate to the space needed for people to pass, including those using wheelchairs and crutches. Key issues will include effective footway width, gradients, steps, posts and similar furniture, and items stored temporarily on the footway.

Aural needs relate to the need to hear impediments and potential hazards. If background noise is too loud, moving objects such as reversing vehicles may not be detected and could represent a danger.

Visual needs relate to the need to see or interpret the pedestrian area. In this context, it might be necessary to use colour and/or texture to delineate clearly the edge of an inset loading bay or carriageway. Pedestrians also require clear desire lines; loading facilities which present a risk to pedestrians should be kept away from these desire lines where possible. Again, items stored and moved temporarily on the footway can be an issue.

Rest points (for example, seating) are often required for mobility-impaired people. Loading facility designs should not reduce the amount of seating provided for this purpose. The DfT guidance document, which includes full descriptions and technical information, should be consulted for further details.

Streetscape in Woolwich



## The public realm

Loading facilities are an integral part of the street scene. They are therefore an important element in the design of the public realm. This section discusses the general concepts involved in fitting kerbside loading facilities harmoniously into the public realm and summarises structural design factors that may need to be considered.

Different parts of London have distinct visual characteristics. Their streetscapes are interesting and varied. This variety is the result of the way London has grown and developed over the years. It has also been influenced by the particular history and geography of each individual location.

These visual characteristics should be kept in mind when designs are prepared for new loading facilities or changes made to existing ones. Surface materials that are particular to the neighbourhood in question should be retained wherever possible. Throughout the whole of London, respect for an area's distinctive visual characteristics and urban qualities can be achieved by reducing street clutter to the minimum. This also cuts the cost of cleaning and maintenance and helps keep an area tidy giving it the feel of being looked after.

Clutter can result from too many signs. It can also arise from ill-considered and over-elaborate designs that, as years go by, become difficult to maintain.

## Visual clarity

It is preferable to keep a clear visual separation between the carriageway, kerb and footway. This can be achieved by using differing tonal contrasts and surface textures.

Visual clarity helps people with disabilities find their way about. Achieving such clarity is particularly important on footways near loading facilities where heavy goods are handled across a pedestrian path because footways are places where those with disabilities should expect to feel safe.

## Inset facilities

Loading facilities are generally situated either wholly on the carriageway, or using some form of inset facility (ie inset, on-footway, or half-on, half-off). Inset facilities will alter an otherwise clean kerb line and so create challenges in terms of visual clarity, footway width, and the straightness of pedestrian routes.

However, there are also opportunities to fit footway furniture, such as trees, benches, post boxes and telephones, around them. Where an inset loading bay is desirable, it will be necessary to decide which option is most appropriate visually. Often, carriageway tarmac may be acceptable as the road construction simply extends into the inset loading bay. Where special designs are considered such as granite setts, care is needed with their bedding and jointing as the turning force of power-steered goods vehicles can loosen setts, creating safety and maintenance issues.

On-footway loading facilities can be delineated with bollards if they are high enough to be seen from the vehicle and should be located so that delivery activity and pedestrian amenity is not impeded, with special consideration given to those with visual impairments. Changes in the surface finish, colour or paint markings can also be used. The kerb can benefit from a chamfer and should be no more than 75mm high. It should also be noted that high kerbs can be useful in preventing undesirable wheel entry to the footway.



To prevent damage, the footway is likely to need considerable strengthening to carriageway standard including culverts and covers for services. This should extend beyond the actual area of the bay. Ideally, the surface should remain visually the same as the rest of the footway.

On-footway facilities allow the full width of the footway to be used by pedestrians when loading is not taking place. They also retain the visual distinction between footway and carriageway.

Inset facilities can be placed in the void space created by crossing build-outs, trees, telephone boxes and other footway furniture so that a straight footway remains adjacent to the buildings.

### Trees

If trees are already in place along a footway where a loading bay is to be installed, they can be incorporated into the design. Care should be taken that their hanging height does not impede (i) the tops of vehicles or (ii) lighting. The same care should be taken with building signs, overhangs, hanging baskets on lamp posts etc.

Roots per tree type can cause problems by damaging pedestrian surfaces and making

delivery difficult. Specific departments within local authorities maintain trees. They should be consulted when it is proposed to incorporate trees into loading facility designs and when remedial work is needed. Trees can also be used to deter inappropriate footway parking.

### Bollards, street furniture and other vertical obstacles

Strategic placement of bollards creates the opportunity to sign loading facilities or physically prevent access by inappropriate vehicles. However, bollards can impede reasonable movement by vehicles, so where possible avoid them. They can also interfere with the transfer of goods to the surface and their movement using manual handling aids. In particular, pallets will be impeded by bollards placed too close together. The same principles apply to other common street furniture and statutory undertakers' equipment. Examples include:

- ♦ Signposts
- ♦ Post boxes
- ♦ Phone boxes
- ♦ Utilities boxes
- ♦ Benches
- ♦ Refuse bins

- ♦ Santander Cycles (cycle hire scheme) and motorcycle parking

Although street furniture is regularly used to enhance the street scene, its exact placement should be considered carefully.

To prevent damage, street furniture should be placed out of the reach of vehicles (including overhang) and should be clearly visible to drivers, particularly when reversing. Further guidance is available from TfL<sup>22</sup>.

### Materials and strength

To reduce unsightly and unsafe damage and safeguard visual amenity, any surface that has to carry a heavy goods vehicle needs to be constructed to full carriageway strength standards. This is especially relevant to inset bays where an existing footway may not be strong enough.

Areas of footway next to loading facilities at public houses are likely to be damaged by falling beer kegs. It is generally accepted practice for brewers' draymen to use a bounce mat to reduce the impact of kegs dropped on to pavements. However, these are not always used and the footway can be damaged. Even with a bounce mat damage can occur if the footway is not reinforced. Even small, robust concrete elements of 400mm x 400mm may not be strong enough.

Slabs may also become uneven over time. This will hinder the movement of manual handling aids. Smooth footway materials are preferred by loading operators and also reduce noise from manual handling equipment such as roll cages. One option worth considering is to provide small areas of new 100mm x 100mm setts, laid carefully and pointed to provide a smooth surface. Such a surface has the visual appeal of traditional granite setts and can withstand the impact of heavy kegs, yet is smooth enough to be comfortable for people with disabilities or in wheelchairs.

In some areas, a carefully designed arrangement of granite kerb stones, laid with a smooth, flat surface uppermost, can be acceptable.

### Signage

Traffic signs and road markings are governed by the Traffic Signs Regulations and General Directions 2016 (TSRGD 2016). TSRGD 2016 allows a considerable range of options to meet various circumstances. However, all signs should be either prescribed in TSRGD 2016 or specially authorised by the DfT.

### Reducing clutter

Excessive signs and markings represent clutter and can therefore add to confusion. Traffic signs and markings that incorporate clutter-free designs are quickly comprehensible. Signs can be fixed to street furniture and buildings. This option should be considered before introducing a new post into the built environment. Signs fixed to private property will need the owner's permission.

For more information on sign size, clarity and clutter issues, see the 'Traffic Signs Manual', Chapter 3<sup>23</sup>.

In shopping streets that are partial pedestrian areas, signs at entrances to loading areas and to zones can often be incorporated neatly into gateways or other structures. Where TSRGD 2016 does not specifically require it, multiple signs should not be installed.

### Drainage

As with all road facilities, kerbside loading facilities should be well drained. This will prevent build-up of debris and pooling of water.

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