7. Planning for freight activity at the kerbside

This section provides guidance for councils and other local authorities on managing kerbside freight activity. Kerbside management is a complex task involving road design, safety and regulatory considerations. However, the Toolkit focuses on capacity considerations for kerbside areas, and the allocation of space for freight and servicing activities. The logistics management practices outlined in the Toolkit need to be incorporated into broader approaches to kerbside management.

7.1 Introduction

Kerbside spaces in busy urban centres need to meet the demands of many different users, including pedestrians, cyclists, public transport, private vehicles, and freight and servicing movements. All of these different users have their own requirements. Commercial freight vehicle operators are mainly focused on maximising their revenue by completing as many deliveries as they can, as efficiently as possible. Their drivers will take the path of least resistance to complete their deliveries quickly and safely. Often, this means parking at the kerbside.

While freight and servicing drivers may use similar vehicles, their behaviours can be very different:

- delivery drivers will arrive at a location, aim to complete one or more pick-ups and deliveries, and then move to another area to repeat the same task. They tend to park for short periods and generally comply with loading zone time restrictions.
- service providers and tradespeople may need to stay in a location for a longer period – often a number of hours, and at times over more than one day. These drivers tend to park for longer periods and demonstrate lower levels of compliance with loading zone time restrictions. Loading zones in the Sydney CBD are designed to support both freight and servicing activity, but they are not designed to provide long-term parking.

Kerbside management policies, enforcement approaches and land use planning all influence drivers' behaviours.

7.2 Planning to manage kerbside space

A number of factors are putting pressure on traditional approaches to kerbside management.

Cities around the world are increasingly becoming less motor vehicle-centric and more people-centric. Planners are creating spaces focused on public amenity and active transport solutions with walking making up the majority of trips within urban centres. In many cities, planners may repurpose kerbside space – which was previously used for parking – to support these changing priorities. These transformations can have a major impact on the freight and servicing task across a wide area and in a short period of time.

Construction activity creates an additional demand on kerbside capacity, particularly in Sydney's urban centres. Work zones supporting new developments can take up large amounts of kerbside space for the duration of the construction project.

Many major cities are facing the challenge of increasing road and kerbside congestion. However, a reduced supply of kerbside space can stimulate innovation and encourage vehicles to use off-street facilities. With no reason to change, it is unlikely people will. **Figure 21** highlights some of the ways that capacity constraints make it difficult for logistics operators to deliver to customers in busy urban areas and indicates how this may work as a force for change. The subsequent sections aim to equip local authorities with the tools to manage these constraints in a way that mitigates their impact and supports improved place outcomes.

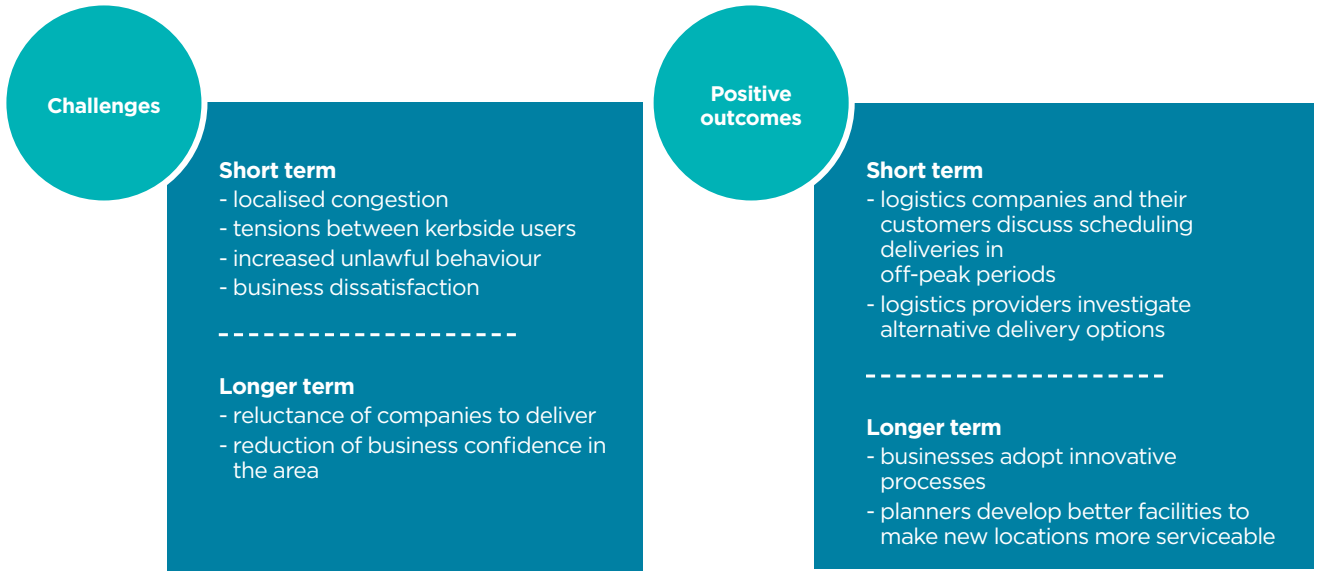


Figure 21 Implications of demand for kerbside loading exceeding supply

7.3 Maximising kerbside use

There are a range of potential responses to increasing pressure on kerbside capacity and the impact on the freight and servicing task. This section looks at some of the current challenges and discusses opportunities for unlocking additional kerbside space.

7.3.1 Kerbside challenges

Table 15 Summary of kerbside management challenges

Challenge	Description	
Suitability of the space	Various factors determine the suitability of a space for loading, including:	
	• width of bay • length of bay • camber • manoeuvrability • obstruction from surrounding trees and kerbside furniture	• distance to intersections • likely impact on nearby activities • possibility of noise disturbance • traffic flow timings • street lighting • urban planning objectives
Risks to vulnerable road users	A vehicle manoeuvring into and out of a space can be a risk to pedestrians and cyclists, and to other vehicles when it merges back into traffic. Larger delivery vehicles often have significant blind spots and limited rear visibility when manoeuvring. Equally, drivers alighting and unloading from freight and servicing vehicles can be at risk from surrounding traffic.	
Types of business to service	Some products require special handling. Beer kegs, for instance, are difficult to move over longer distances. For socio-historical reasons, pubs and hotels typically sit on street corners, which are now often busy traffic intersections.	
Minimising distance to delivery points	Where freight and servicing personnel cannot access loading zones, goods need to be moved longer distances. This increases the time and effort involved in making deliveries, congests footpaths and makes the overall process more complex and less efficient. Planners allocating loading zones must consider how deliveries will reach their final destination before implementing any changes.	
Understanding non compliance and the effect of penalty notices	Understanding driver behaviour in a given area can improve the planning process. Kerbside restrictions, for instance, will not automatically increase the use of alternative spaces – they may instead result in more illegal parking. Planners can learn more about an area's freight and servicing problems – and drivers' responses – by consulting rangers, drivers and local business managers, by analysing data, and by observing parking and traffic movements. They may also use infringement data to help them plan for more efficient, safer outcomes.	
Construction impacts	Construction projects often require a work zone at the adjacent kerbside or in the nearby area. This typically impacts pedestrian thoroughfares. Although these changes can be temporary, a work zone around a large construction project could be in place for a number of years.	

Delivery personnel using trolleys and other equipment are facing increasing challenges navigating congested footpaths

7.3.2 Management approaches for local authorities to maximise kerbside capacity

Although new developments should be self-sufficient, there will always be a need to provide some kerbside capacity to support businesses in older and heritage listed buildings that do not have off-street facilities. **Table 16** and the following subsections identify different ways to maximise kerbside capacity.

Table 16 Opportunities to maximise kerbside capacity

Opportunity	Description
Kerbside hierarchies	By prioritising different types of kerbside use, authorities can utilise the space in the most effective and efficient way.
Time-of-day demand and kerbside designations	Authorities can reserve kerbsides for traffic flows during peak periods (for example, bus lanes), and provide parking for other uses during off-peak periods.
Time-of-day access in pedestrianised areas	Freight and servicing vehicles can be given access to pedestrian areas during periods of low foot traffic, such as early morning or overnight.
Short-term parking	Short-term parking zones can flexibly accommodate both general parking and loading zone activity. Turnover in these zones can be higher than in 30-minute loading zones.
Evening and overnight loading zones	Extending loading zone operating hours into the evening or keeping them open overnight can help meet customers' needs and encourage off-peak freight and servicing activity.
Parking management systems	Effective management of kerbside loading and parking areas can improve compliance and efficiency.
Role of side roads	Prioritising freight and servicing activity on side roads can help support business activity on main thoroughfares.
Provision of different types of space	Planners and other authorities can influence freight and servicing as well as customer behaviour by altering the type of space provided and the permitted length of stay.

7.3.2.1 Kerbside hierarchies

Where overall parking demand exceeds supply, local authorities may develop a kerbside hierarchy to guide how to allocate parking spaces. The City of Sydney has taken this approach. **Figure 22**, which shows the City's kerbside hierarchy for parking (public transport uses, such as bus lanes, have the highest priority during hours of operation), is an example of the priorities of a mature CBD with a large commercial and employment focus.

As described in **Section 4.2**, major CBDs need to support multiple supply chains: commerce, retail, leisure and residential, as well as goods travelling to construction sites. The timing of these tasks often overlaps, with many movements concentrated into peak daytime hours.

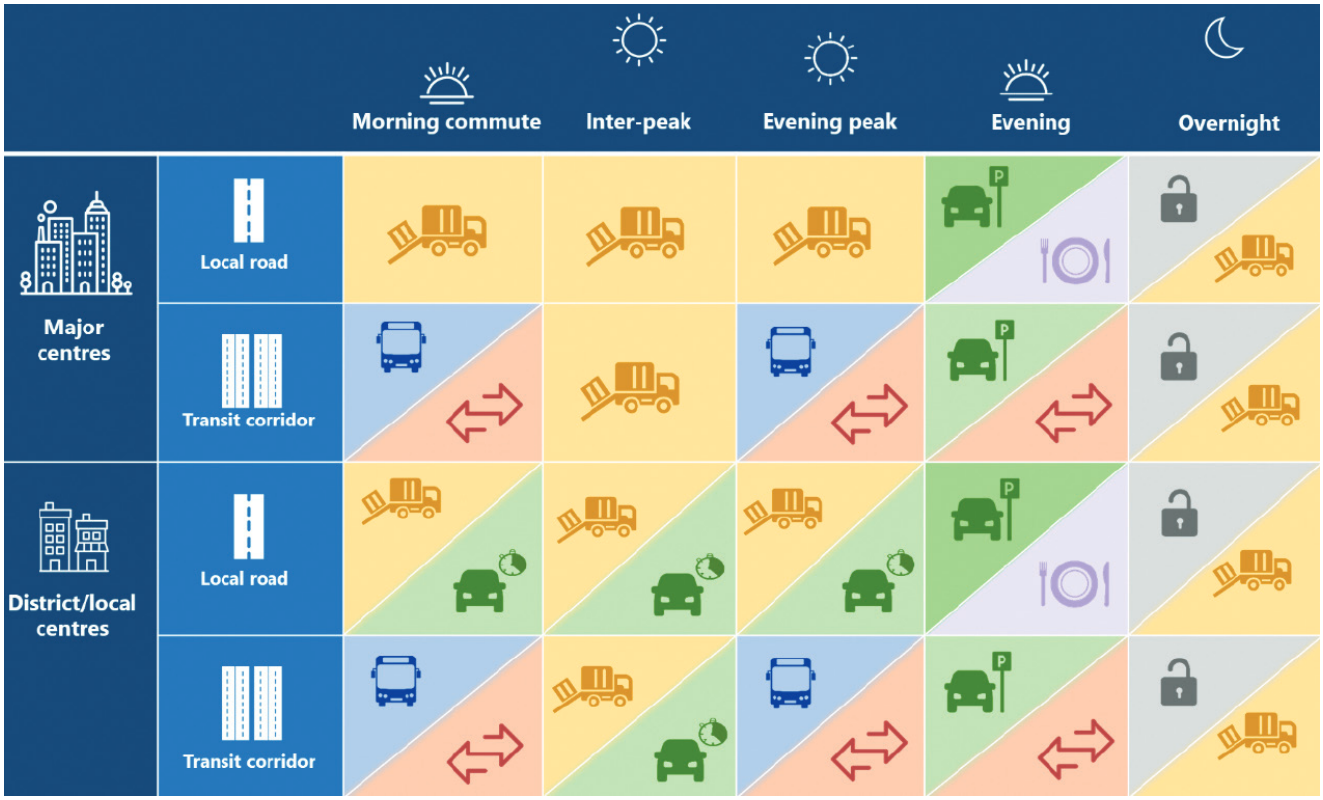
Priority	Kerbside use	Service Objective
Highest	**Taxis**	To provide taxi ranks within 150m of any location in central Sydney. To provide pick up and drop off locations at or near key accommodation, tourism, commercial and residential facilities. To maximise safe pick up or set down opportunities, while minimising congestion impacts.
	Delivery and service vehicles	To provide loading zones within 100m of any location without on-site paring or loading.
	Mobility parking	To provide dedicated mobility parking spaces within 100m of a concentration of specialist medical or human services facilities. To provide dedicated mobility parking or ticket parking that can be used by mobility permit holders within 150m of any location in central Sydney.
	Authorised vehicle zones – essential services	Spaces to be provided as required to facilitate postal collection, policing and parking of dedicated emergency services or incident response vehicles.
	Authorised vehicle zones – coach parking	To provide short term coach parking for group pick up and drop off near to major destinations or accommodation. To encourage turnover of on-street coach parking and use of off-street facilities for long-stay coach layover.
	Authorised vehicle zones – passenger vehicles	To provide parking for government agencies or consular parking only where alternative off-street is not available within reasonable distance, or where on-street parking is required for exceptional circumstance.
	General kerbside parking	To provide time limited ticket parking and parking wherever or whenever space is not required for higher priority uses. To provide ticket parking with resident permit-holder exemptions in locations appropriate for long-stay kerbside parking.
Lowest		To provide dedicated long-stay motorcycle parking for use by commuters.

Figure 22 The City of Sydney's kerbside hierarchy (CoS 2015, p.4)

7.3.2.2 Time-of-day demand and kerbside designations

Table 17 provides an example of how kerbside space can be used for different purposes throughout the day, noting that the best use of the space may change multiple times each day. Ideal kerbside use may also depend on the type of road. Local shopping strips, for example, will have different requirements and priorities to major corridors.

Table 17 Examples of how the kerbside space in urban centres can be used for different purposes throughout the day



Changes in use throughout the day can lead to complex signage, but this approach can improve the efficiency of the kerbside and improve traffic flows. Changing uses also mean no single user can occupy the space for an entire day; this type of user can park in off-street carparks instead.

Example of kerbside that is used for different purposes according to different needs across the day

7.3.2.3 Time-of-day access in pedestrianised areas and bus lanes

Time-of-day restrictions can influence local delivery activity. Local authorities implement these restrictions in some pedestrian-centred areas or areas given over to public transport by permitting overnight or early-morning access for freight vehicles and restricting deliveries during peak pedestrian and commuter periods. **Figure 23** shows an example of this approach in Pitt Street Mall in Sydney. The Mall sees a high level of delivery activity early in the morning before transforming into a vibrant pedestrian boulevard for the rest of the day.

Other examples of this approach include Swanston Street and Bourke Street Malls in Melbourne, where vehicles are permitted access outside the peak pedestrian periods to minimise conflict between vehicle and pedestrian movements.

3am–8am

Vehicle access is permitted for deliveries, tradespeople and services.

8am

All vehicles exit and the bollards are raised.

12:30pm

Pedestrians at weekday lunchtime.

Figure 23 Changing uses in Pitt Street Mall across the day

7.3.2.4 Short-term parking

Under NSW road rules, loading zones are provided for use by drivers of commercial vehicles for up to 30 minutes, depending on the type of vehicle. Truck zones are reserved for larger vehicles with longer dwell times, and generate different vehicle and driver behaviours to loading zones.

Short-term parking zones – which may be used by drivers of both private and commercial vehicles – are an effective way to maximise kerbside capacity. **Table 18** shows an assessment of short-term parking activity and driver behaviour on Church Street in Parramatta undertaken by TfNSW in 2017. In this example, freight and servicing vehicles accounted for 19 per cent of all activity. Although Church Street had some loading zones at the time of the assessment, 51 per cent of freight and servicing activity was in 15-minute parking areas.

The assessment also demonstrated a lower average dwell time for commercial vehicles in short-term parking than in loading zones. Observations of different types of vehicles in different parking zones indicated that 15-minute parking areas were better suited to delivery vehicles than trade and service vehicles. Delivery vehicles made up 59 per cent of the commercial vehicles in 15 minute parking spots, but only 47 per cent in one-hour parking and loading zones.

As the Parramatta CBD grows and pressures on its kerbside capacity increase, its kerbside zoning is likely to become more segregated, as in the Sydney CBD. In the long term however, an increased demand for kerbside drop-off and pick-up from driverless vehicles could mean that the ideal model of kerbside zoning in the Sydney CBD may be similar to the current arrangement of short term parking spaces in Parramatta and other similar centres.

Timed parking provided for delivery vehicles at Chatswood Interchange

Table 18 Parking events in a mixed zone in Church Street, Parramatta, in 2017

Parking type	Number of spaces	Number of passenger vehicle events (Mon–Fri, 6am–6pm)	Passenger vehicle average dwell time	Number of commercial vehicle events (Mon–Fri, 6am–6pm)	Commercial vehicle average dwell time
15-minute parking zone	12	816	0:20:21	206	0:18:37
One-hour parking zone	6	764	0:36:49	107	0:25:55
Loading zone	3	153	0:27:17	93	0:28:01
Total	21	1,733	0:28:21	406	0:22:36

7.3.2.5 Evening and overnight loading zones

In recent years, the Sydney CBD has seen an increase in freight and servicing activity between 6pm and 6am. Some businesses find it more efficient to deliver overnight, as journey times to and from the CBD are shorter given the lighter traffic, and parking is easier to find. Some deliveries such as milk, bread and newspapers are invariably made overnight to prepare the city for early-morning activity. In addition, eCommerce could lead to further growth of evening deliveries as people arrive home after work.

Loading zones are currently uncommon in the evening. Most kerbside capacity at this time is dedicated to general kerbside parking. TfNSW has worked with a number of businesses to extended loading zone hours to facilitate efficient evening deliveries.

An example of a loading zone with extended hours in the Sydney CBD

7.3.2.6 Parking management systems

As technology improves, parking management systems are becoming increasingly sophisticated. In recent years, some councils have installed sensors in the ground to monitor the time vehicles park, while others keep track of parking time using machines that require drivers to key in and register. Increasingly, smartphone apps are being used both for booking spaces and for tracking parking use.

Many councils in Australia and overseas are also investigating 'virtual parking' management systems. These systems allow the dynamic control of the kerbside by only permitting drivers who have registered and reserved kerbside space to stop and park.

7.3.2.7 Side roads

Although it is often not practical to provide loading zones or other parking on main roads, businesses on these corridors still require goods and services. Side roads typically play a major role in supporting freight and servicing movements along main corridors.

7.3.2.8 Environmental conditions

Noise is the main cause of environmental complaints. It can be an important consideration when organising timing of kerbside use in a location. In areas where noise is an issue, such as residential areas, kerbside access could be limited to vehicles that meet certain environmental criteria – for example, quiet electric vehicles. It is worth noting that in acoustic tests TfNSW conducted with waste operators in 2016, combustion engines and hydraulic devices on trucks were not the loudest source of noise. The noise from operators moving waste bins, closing bin lids and emptying items (particularly glass) into waste trucks consistently exceeded the noise emitted from the truck itself.

Even when drivers and operators are using a diesel truck, improved practices such as switching off radios and not slamming vehicle doors can reduce the noise they create to an acceptable level.

7.4 Managing kerbside provision in different types of centres

Different types of urban centres have distinct business demands and freight and servicing characteristics. **Table 19** describes variations in how freight and servicing vehicles use kerbsides in different types of urban centres, and outlines the developments likely to impact the logistics tasks in urban centres in the future.

Table 19 Profile of kerbside management challenges by size of urban centre

Centre size	Parking, loading and delivery characteristics
Local centre	• businesses value kerbside parking to support their customers • a group of local shops may occasionally be supported by a loading zone • local supermarkets and shopping centres typically have a rear door or dock for deliveries and servicing • parking is flexible (shoppers and commercial vehicles both use short-term parking) • residential developments may have limited access to docks and rely on the kerbside for deliveries and waste collection • newer mixed-use developments (commercial and residential) have off-street facilities to support delivery and servicing access • provision of off-street surface-level parking adjacent to developments is more cost-effective than developing integrated docks.
District centres and CBDs	• businesses commonly have access to a rear laneway for deliveries and servicing • businesses value kerbside parking to support delivery and servicing activity, but local workers tend to use it more • loading docks provide off-street servicing access • incorporating loading docks into buildings is more cost-effective than using surface-level land adjacent to buildings • parking is flexible; shoppers and commercial vehicles both use short-term parking • capacity for bicycle couriers and hubs is increasing • delivery drivers often park and walk for multi-drop deliveries to several businesses within the area.
Major CBDs	• an increasing variety of goods and services sees supply chains supporting commerce, retail, residential, tourism and leisure businesses • supplying CBDs is a 24-hour task • parking spaces to support businesses' customers are less essential – customers arrive via public transport or park off-street • kerbsides are managed formally through kerbside hierarchies • few or no on-street parking spaces for private vehicles • activating laneways previously used for servicing constrains some access • loading docks support off-street delivery and servicing activity • major opportunities are emerging for centralised hubs with walkers and bike couriers becoming more prevalent • out-of-hours and overnight servicing and deliveries are promoted to encourage more efficient use of kerbside capacity • time-of-day priorities apply to kerbside use, to ease congestion and take advantage of different opportunities in the daytime and night-time economies • CBD transport network provides limited opportunities to increase the number of loading zones • traffic growth and urban remodelling will lead to a decline in kerbside parking spaces.
All sizes of urban centres in the future	• 'micro-mobility' lanes will provide opportunities for more space-efficient delivery vehicles, such as terrestrial drones • areas will be remodelled with an increasing focus on pedestrian amenity and placemaking priorities • less kerbside space will be available • access to pedestrian areas will be provided outside of peak periods for freight and servicing • space-efficient logistics methods will be necessary for servicing urban areas • driverless vehicle pick-ups and drop-offs are likely to place further demands on diminishing kerbside space, while the use of off-street carparks for private vehicles will fall • advanced supply chain methods will be developed for consolidated servicing in larger precincts • urban logistics facilities will be developed or incorporated into mixed-use developments • an increase in business-to-customer deliveries will support the growth of lockers and drop-off centres for storing and collecting goods.