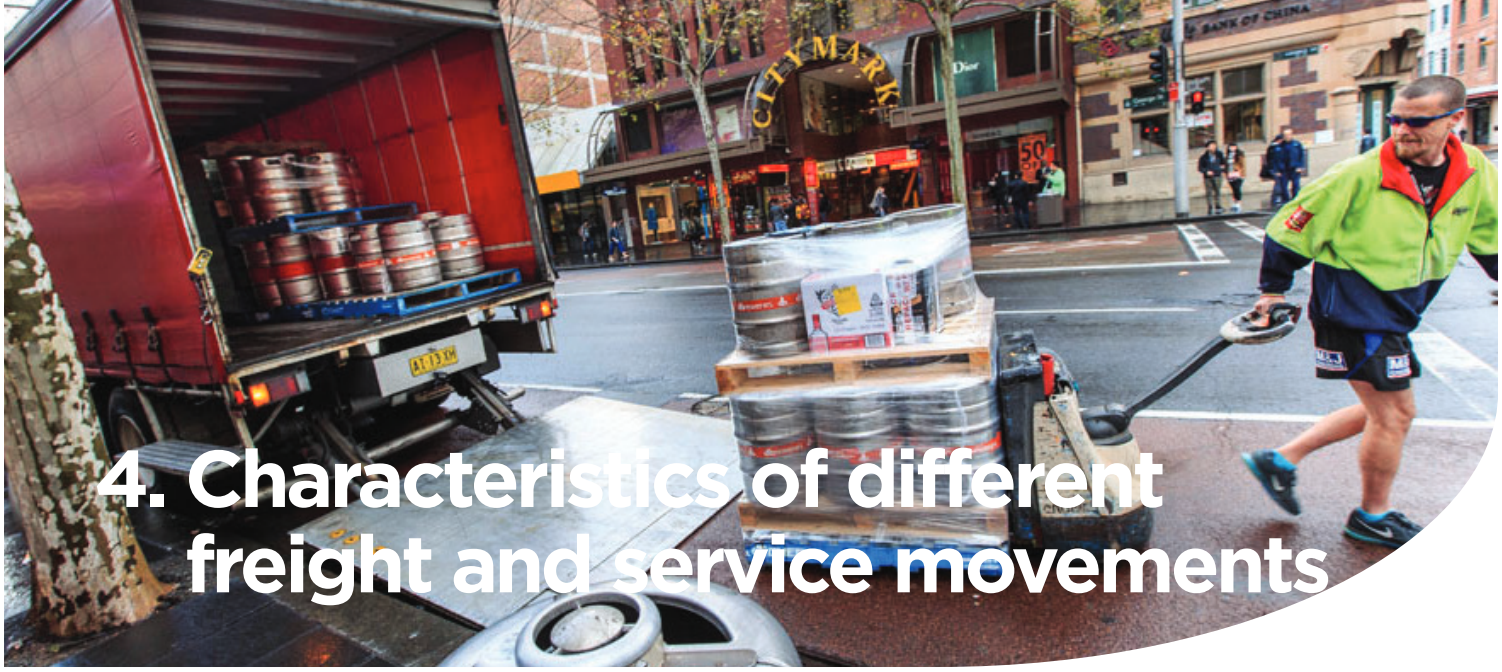


4. Characteristics of different freight and service movements

This section provides an insight into the key characteristics of the most common types of freight and service vehicle movements that occur each day. It is essential to understand the characteristics of key movement types to plan better for the freight and servicing task and minimise the need for kerbside loading.

4.1 Freight activity timing

Mid-morning is the busiest time for freight activity in the Sydney CBD. It is when businesses open and expect deliveries from couriers and parcel companies, when retail stores receive stock for the day's trade and when restaurants and cafés receive the bulk of their supplies for the busy lunch and dinner periods.

While some goods can be delivered overnight, there are a variety of reasons why other goods cannot be delivered outside business hours including:

- goods are shipped overnight from regional areas or interstate and do not arrive in Sydney until the early morning, including items such as fresh produce and seafood
- the Sydney Airport curfew means many international items arrive after 6am
- most businesses are only open during normal trading hours and are not prepared to accept the costs of overnight labour to receive and unpack deliveries
- many retail businesses still operate using a 'just-in-time' inventory model and only carry minimal stock onsite. These businesses rely on quick and reliable supply chains with frequent deliveries to meet customer demand
- cold supply chain items need to be received and stored immediately.

4.2 Freight profiles

Each type of freight movement has different operating characteristics. These characteristics should be considered when planning loading facilities in buildings and precincts. Some movements are time-critical, with narrow delivery windows. Others require the use of larger vehicles or involve longer dwell times such as removalist trucks.

It is important that, as far as possible, loading facilities are designed to accommodate the characteristics of the different freight and service vehicle movements a building or precinct will generate. This will help optimise operational efficiencies and, by doing so, minimise potential road network and kerbside impacts. **Table 1** provides a summary of each vehicle movement type.

Table 1 Summary of the key types of freight and service vehicle movements

Movement	Preferred vehicle	Dwell time	Time-of-day criticality
Parcel/courier	Van to small rigid vehicle (SRV)	Short	High
Office supplies	SRV	Short to medium	Medium
Food* – provedore and supplies	Van to medium rigid vehicle (MRV)	Medium	Medium to high
Food* – beverages	MRV to heavy rigid vehicle (HRV)	Long	Low
Fashion and retail	MRV to heavy combination vehicle (HCV)	Long	Low
Cash-in-transit	SRV	Medium	High
Waste collection	HRV	Short	Low
Removalist	MRV	Long	Low
Trade and service	Van to SRV	Long	Low

*** More detail on types of food and beverage movements is provided in Section 4.2.3**

4.2.1 Parcels and couriers

Courier movements are numerous and service nearly all building types in urban centres.

Couriers typically handle business-to-business (B2B) freight so movements in urban centres are generally concentrated around commercial buildings. However, the growing eCommerce sector is changing this profile. Now, many traditional courier or parcel delivery companies are key providers in the business-to-consumer (B2C) market, and increasingly service residential buildings as well.

Couriers traditionally operate on a pickup-and-delivery (PUD) model, with drivers concentrating on deliveries in the morning and pickups in the afternoon. This approach, however, is also evolving. As online retailers increasingly focus on achieving quicker delivery times to differentiate themselves from competitors, they are generating more urgent freight movements throughout the day.

In general, couriers handle small, lightweight parcels and complete a large number of deliveries and pickups each day. As a result, they tend to use smaller vehicles, in particular vans, and dwell at drop-off points for short periods. Couriers often prefer kerbside parking to avoid spending additional time accessing existing off-street facilities. It also enables them to service multiple delivery points from one parking location. As vans may be loaded with 80–100 deliveries for customers in one day, couriers can save time by delivering goods from the minimum number of parking stops.

Couriers also tend to operate to tight delivery windows. While there may be some flexibility to shift delivery or pickup times for some clients, couriers are generally limited by the trading hours of their customers and the urgency of the consignments they are handling.

To plan for couriers and encourage them to use off-street facilities, planners must make them easily accessible and convenient to ensure couriers can speedily access and exit the facilities and also reach their customers quickly from these facilities.

4.2.2 Office supplies

Office supply movements are very similar to courier movements. They are common in urban centres and typically concentrated around commercial buildings. The goods are often heavier and bulkier than most courier consignments. As a result, office supply movements often involve large vans or small trucks, and deliveries require longer dwell times than those of couriers.

Offices supply movements are generally constrained to delivering during business hours, although the time of day at which deliveries are completed is typically flexible.

4.2.3 Food, including packaging supplies

Delivering seafood at Macquarie Centre using a van

Food and beverage deliveries are common in urban centres, with the bulk generated by demand from retail businesses such as cafés, restaurants, bars and supermarkets. Offices providing basic kitchen supplies for staff such as tea, coffee and milk, as well as catering for events, also attract some vehicle movements. In addition, the growth of online grocery shopping is increasing the number of food and beverage movements to residential buildings.

These movements vary considerably depending on the goods being transported and the customers being serviced. Most daily food and beverage movements are completed by small trucks, but some larger, heavier consignments, such as beer kegs, require bigger vehicles. **Table 2** summarises the typical characteristics of food and beverage movements.

4.2.4 Fashion and large retail

Vehicle movements to and from fashion and large retail businesses are generally concentrated around locations such as key shopping centres and department stores. The key difference between this type of movement and regular courier movements is the scale and concentration of demand.

Delivering supplies to a fast food restaurant in the Sydney CBD using an articulated truck

Typically, fashion and large retail consignments are large but relatively lightweight. The type of vehicle in which they are delivered is often determined by the accessibility of the delivery point, with suppliers preferring to use the largest, most efficient vehicle that each delivery point can accommodate (including semi-trailers). Delivery times are largely determined by retailers, with most deliveries occurring within contractually agreed windows. While some in-store factors dictate when deliveries need to be made, the timing of retail deliveries is generally more flexible than for courier or perishable movements.

Planning for fashion and large retail movements needs to be pragmatic. They are essentially bulk freight movements, so every effort should be made to maximise the accessibility of loading facilities in the developments and precincts in which they occur. Planners should consider the long dwell time of delivery vehicles and provide adequate space for unloading goods. Dock restrictions on vehicle size and loading space worsen congestion by increasing the total movements necessary to complete the delivery.

Table 2 Typical characteristics of food and beverage delivery vehicle movements

Type of movement	Freight	Indicative vehicle	Timing	Vehicle turnaround	Size of goods
Provedores	Fresh produce including bread, milk, smallgoods	SRV	Time-sensitive – generally before business hours	Short – often less than 15 minutes	Smaller consignments – often reasonably light
Supplies and consumables	Coffee, cups, packaging	SRV	Varied	Short – often less than 15 minutes	Smaller consignments – often reasonably light
Boutique alcohol suppliers	Beer, wine, spirits	Van – SRV	Varied	Medium – generally between 15 and 30 minutes depending on order size	Smaller cartons, some kegs – generally heavy consignments
Beverage suppliers	Soft drinks, water	MRV – HRV	Varied	Long – often 30 minutes or more	Pallets and cartons – heavy
Major alcohol suppliers	Beer, wine, spirits	MRV – HRV	Generally weekly morning deliveries	Long – often 30 minutes or more	Kegs, pallets and cartons – heavy
Meat suppliers	Beef, lamb, pork, poultry	MRV – HRV	Varied	Long – often 30 minutes or more	Cartons and carcasses – heavy
Supermarkets	Bulk goods including groceries, fresh produce, dairy, meats	HRV – HCV	Customer-driven delivery windows	Long – often 30 minutes or more	Pallets and cages – heavy
Home grocery delivery	Mixed groceries	SRV	Time-sensitive determined by customer – often outside business hours	Varies depends on reception arrangements and order size	Cartons/bags or equivalent

4.2.5 Cash-in-transit

Cash-in-transit refers to the movement of currency and other high-value items to and from banks, financial institutions and other major points of exchange. Generally, armoured vehicles the size of small trucks are used to complete this task, though larger trucks are often used for coin collection. Due to the value of the cargo, neither the timing nor the parking locations of cash-in-transit movements can be fixed. In addition, drivers of cash-in-transit vehicles are subject to a range of risk-related exemptions under the road rules that allow them to stop as close as possible to their delivery and collection points.

Although off-street facilities are generally not preferred by drivers of cash-in-transit vehicles, planning for cash-in-transit is still an important consideration where a building or precinct is likely to attract these movements. Building and precinct planners and developers should consider providing practical on- and off-street parking for these movements to minimise their associated risks.

4.2.6 Waste collection

Waste collection is a ubiquitous task demanded by every building and precinct. Waste operators prefer large trucks as these are generally the most efficient vehicles for the task. This type of vehicle not only maximises operational efficiencies, but also minimises the total number of vehicle movements. However, vehicle selection is often determined by external constraints such as street accessibility and the size of off-street facilities, particularly height restrictions.

Collecting secure waste in Parramatta using a rigid truck

The timing of waste collection is largely determined by land use. In commercial and retail areas, collection is often required multiple times each week and is generally feasible at any hour. In residential areas, collection is generally weekly and timed to minimise disruption to occupants.

Dwell time for waste collection vehicles tends to be reasonably short but is greatly influenced by accessibility considerations and bin arrangements at collection points.

Waste collection should be planned as an off-street activity in larger buildings and precincts. By moving the task off-street, planners and developers can reduce footpath clutter on collection days, minimise impacts on place outcomes and amenity and reduce vehicles' reliance on kerbside loading. This principle applies to commercial, retail and medium to high density residential waste collection. Loading facilities should be designed to accommodate the largest vehicles possible and to give drivers direct access to bin rooms.

Public street bins may need to be emptied multiple times per day, typically after lunch and once again at the end of the day. Some councils have trialled "smart bins" that send a message electronically when they are full as a means of minimising waste collection movements.

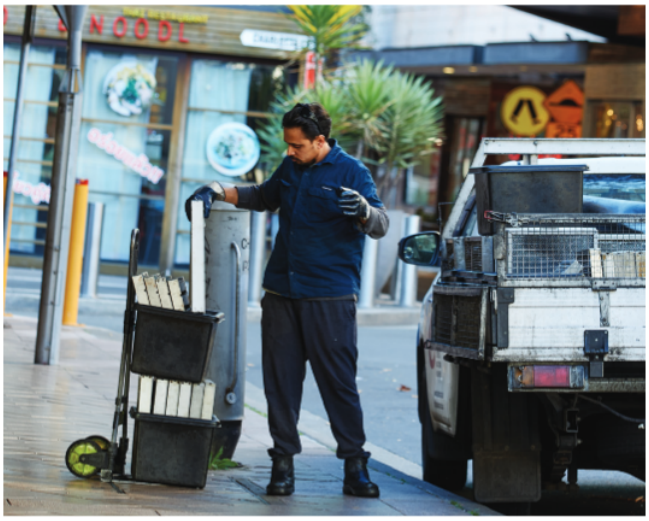
4.2.7 Removalists

Removalist movements are generated by occupants of residential, retail and commercial buildings. They require long dwell times and almost always involve small to medium-sized trucks (most commonly MRV size). Commercial and retail relocations are often completed outside business hours to minimise the impact on business operations, but residential relocations tend to occur during business hours.

While removalist movements are less common than other movements such as courier deliveries, good planning is still essential to accommodate them, particularly in residential sites. Failure to plan for removalist movements can result in inconvenience, reduced rental appeal, loss of amenity, network impacts and, in some circumstances, safety risks. As with waste collections movements, in larger buildings and precincts removalists should be accommodated off-street to mitigate these potential impacts.

4.2.8 Trade and service vehicles

Every building and precinct will create a demand for trades and services such as plumbing, electrical work, lock smithing, indoor plant maintenance, cleaning and general maintenance. In urban centres, most buildings will generate a daily demand for these activities. The demand generated by older buildings, which typically have no or limited loading dock space, will create more kerbside congestion. On nearly all occasions, tradespeople will require a vehicle to carry tools and equipment to site, and longer dwell times. Typically, tradespeople operate smaller vehicles like utes or vans.



Collecting restaurant air filters for cleaning in Chatswood, Sydney using a ute

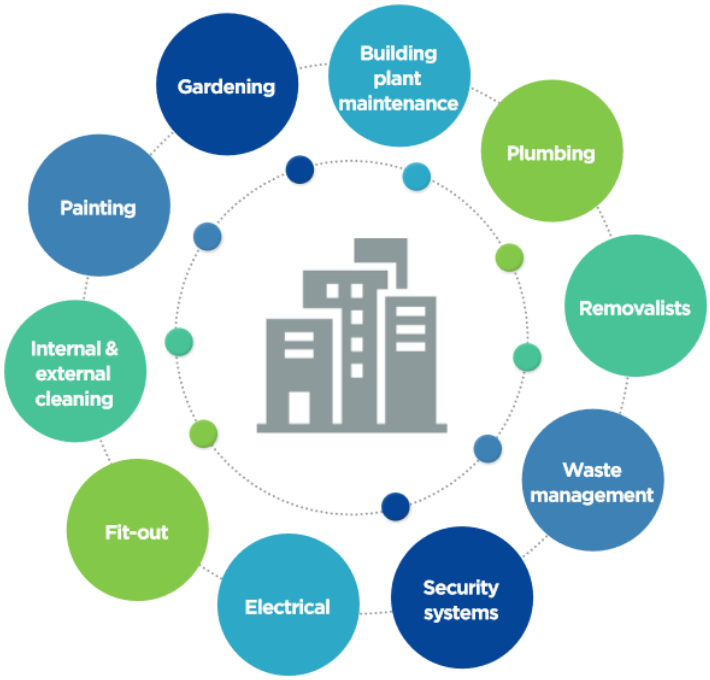


Figure 6 Examples of the types of servicing activity generated by large buildings

While the same type of vehicle may be used for both delivery and servicing tasks, it is generally best to consider trade and service vehicle movements independently of freight movements, and plan for them as such. There are two reasons for this:

- dwell time – trade and servicing vehicles' dwell times are typically longer than most freight vehicles and subject to greater variability depending on the nature of the work being performed. As a result, these vehicle movements can have a disproportionate effect on loading bay capacity and the ability of other freight and servicing vehicles to plan and schedule their movements.
- vehicle size – as trade and servicing vehicles are typically smaller than freight vehicles, they can more easily access general parking areas with lower clearances and restricted manoeuvrability. While there are benefits in ensuring trade and service personnel can access loading facilities such as goods lifts, their vehicles can be more efficiently accommodated in lower-cost parking areas than larger freight vehicles.