

Practice note no. 11

Issued: July 2012

Parking analysis plans

Purpose

This practice note provides guidance on the preparation of parking analysis plans. When required, these plans demonstrate how adequate on-street parking spaces can be provided in

compliance with relevant provisions of development schemes and related ULDA guidelines.

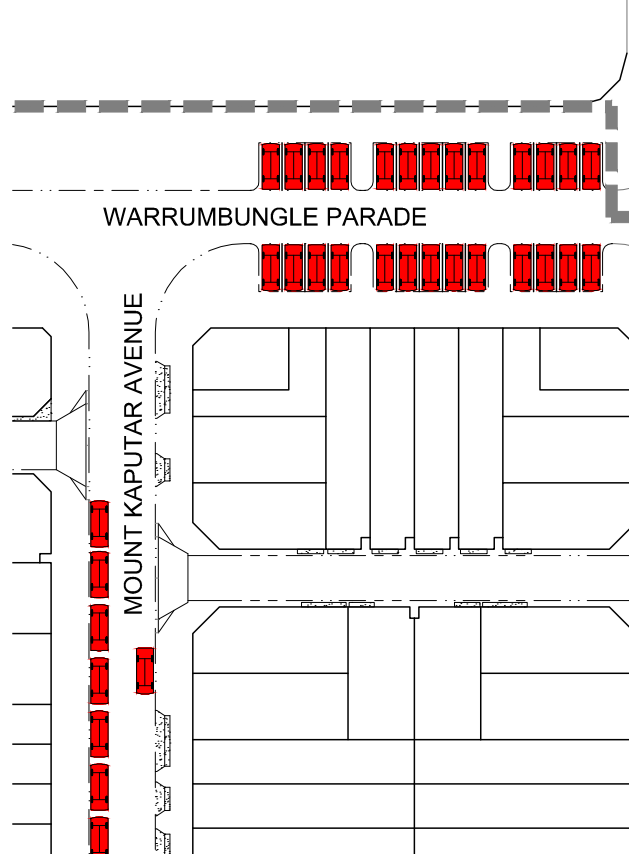
On-street parking provision

The adequate provision of on-street parking requires specific consideration when residential and mixed use development densities exceed 20 dwellings per hectare and/or street carriageways are less than 7.5 metres wide.

The ULDA Guideline No 7 Low Rise Buildings includes on-site and on-street parking requirements. These parking rates have been based on case studies of existing and proposed developments both within and outside of Urban Development Areas in Queensland.

Parking analysis plans are required when the proposed neighbourhood access street will provide access to:

- » Lots less than 12.5 metres wide, or
- » A multiple residential development including up to 6 dwelling units.



On-street parking availability

The availability of on-street parking is effected by the width of the street pavement/carriageway, the width of allotments, facilitating access and exit from driveways, frequency of driveways, and whether lots have vehicular access from a street or a lane. In all cases, the street design should enable to enter and leave the lot in one movement.

Street carriageways

ULDA Guideline No 6 Street and Movement Network indicates two typical neighbourhood access street carriageway widths: 5.5 metres and 7.5 metres.

When lots are narrow or narrow opposite narrow, the challenge in providing on-street parking in a street with a carriageway width of 5.5 metres is parked cars blocking access in and out of driveways.

A 7.5 metres wide carriageway provides for greater opportunities for on-street parking.

Swept path analysis indicates that very few on-street parking spaces are available on a 5.5 metres wide carriageway, particularly when servicing lots less than 12.0 metres wide.

The diagram illustrates how a car parked clear of the driveway on one side of a 5.5 metres street carriageway interferes with access to driveways on the other.

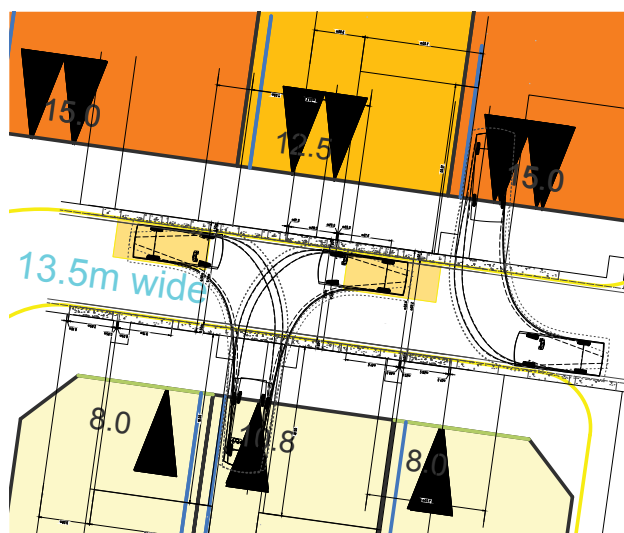
A 5.5 metres carriageway is generally only suitable in streets where lot widths are at least 10.0 metres wide, and around 50 per cent of lots are at least 12.5 metres wide.

A 5.5 metres wide carriageway may be suitable for on-street carparking where lots front both a street and a rear lane. In this case, where most of the lots are less than 10.0 metres wide, one side of the street carriageway may require line marking to prevent parking on both sides.

The image below shows a 5.5 metres street carriageway with parking on one side only. Lots are serviced from a rear lane or a small number of driveways off the street.

Where the 5.5 metres carriageway provides for two-way traffic, a gap the length of at least two parallel carparking spaces (12 metres) should be made available along the parking side to enable mid-block passing opportunities, at least every 50 metres. A driveway off the street can also provide passing opportunities in this situation.

Swept path analysis - 5.5 metres wide street carriageway



Legend

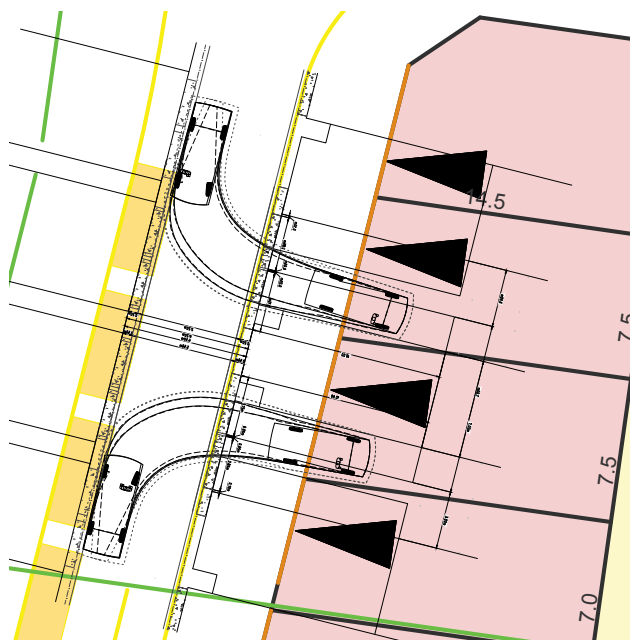
-  possible on site carparking space
-  kerb
-  possible on street carparking space
-  swept path of standard vehicle

In low traffic volume streets where lots are not also serviced by a rear lane, a 7.5 metres street carriageway will usually provide for sufficient on-street parking and adequate turning movements at development densities up to 30dw/ha.



5.5 metres street carriageway - parking on one side + two-way traffic where lots accessed from a rear lane or a limited number of driveways

Swept path analysis - 7.5 metres wide street carriageway



Legend

-  possible on site carparking space
-  kerb
-  possible on street carparking space
-  property boundary
-  swept path of standard vehicle

The diagram above illustrates how cars parked on one side of a 7.5 metres wide street carriageway, can enable vehicular access to driveways on the other. This is the case where the lots are 7.5 metres wide.

Rear lanes

Yellow line marking may be required to prevent parking in rear lanes, as lanes are typically designed to enable vehicular access to on-site carparking only.



Yellow line marking may be required in rear lanes to prevent parked cars blocking access to garages.

What should a parking analysis plan contain?

A parking analysis plan should show all dedicated and possible on-street car parking spaces, determined in accordance with and located in relation to:

- » on-street parking rate requirements as set out in the relevant UDA development scheme or guideline
- » public transport access and servicing
- » road function, pavement width and other features which might restrict parking such as driveways, pedestrian pathways, crossing points or water sensitive urban design (WSUD) features
- » the distribution of on-street parking relative to surrounding land uses and density.

The parking analysis plan should also include a supporting table outlining the following information:

- » number of lots
- » estimated maximum number of dwellings and number of bedrooms per dwelling
- » the number of on-street parking bays proposed, both informal and designated
- » compliance with on-site parking rates.

On-street parking spaces included in the plan should be colour coded to indicate if a parking space is an informal on-street parking opportunity or a designated parking bay, (i.e. spaces that are located in indent bays or will be line marked).

Where lots front both a street and a lane, a 7.5 metres street carriageway may be required where there is an aggregation of lots with a frontage less than 7.5 metres and densities approach 50dw/ha. No swept path analysis will be required in this case.

On-street parking requirements and assumptions

The following requirements and assumptions should be considered when planning for on-street parking or preparing an on-street parking analysis plan.

Rate of provision

Refer to UDA development schemes or ULDA guidelines as appropriate to location or use. Refer in particular to *ULDA Low Rise Buildings Guideline No 6*.

Safety considerations

On-street parking should not be assumed or designed within the following locations:

- » within sight line clearances of intersections
- » on the inside of shape curves
- » within a T-junction opposite a high volume or high-speed road, on a steep down grade
- » near traffic island/ pedestrian refugees.

The detailed design should comply with relevant Australian Standards and road design manuals.

Driveways

On-street parking should not be provided or assumed where individual property access would be compromised. Swept path analysis may be required in some locations to confirm appropriate manoeuvring is available.

Analysis and design is to provide for vehicle access to on-site parking in a single swept path movement in forward gear.

Distribution

On-street parking should be distributed considering the following:

- » each dwelling should have an on-street car parking space preferably within 50 metres measured between the nearest point of the lot boundary and the parking space
- » spaces are distributed and grouped considering the planned residential density and other adjacent uses such as centres or parkland.

Parking space dimensions and assumptions

The following parking space dimensions and assumptions should be considered when undertaking a parking analysis and preparing material to support a development application. These standards are for analysis only with detailed design to consider the relevant technical standards.

Length of space

The length of on-street parking spaces is dependant on the street context and arrangement but generally the following will apply.

- » An informal on-street parking space should be assumed to be a minimum of 5.4 metres in length: this applies between driveways or to unmarked on-street parking
- » A parallel on-street parking space opposite a yellow line marked side should be a minimum length of 6.0 metres
- » Parallel indented bays should be a minimum length of 6.0 metres with the end bays 6.3 metres.

Width of space

An exclusive perpendicular parking lane or spaces which are line marked or indented parallel bays should normally be a minimum width of 2.7 metres.

Local neighbourhood streets

Local neighbourhood streets which are not line marked with a minimum width pavement of 7.5 metres or less can be assumed to provide for informal parking provided driveway locations and other constraints are considered along with the following parameters regarding groupings of parking.

- » No more than 8 parallel bays are acceptable in one run where passing opportunities are not available. Consideration should be given to indented parallel bays, nose in parking, the arrangement or width of driveways or the staggering of parking to provide for vehicle passing with supporting signage or line marking.
- » Multiple indented parallel or nose-in bays should be broken up with street trees and planting. For parallel bays 3-4 bays in one length/group may be appropriate but for nose-in bays groups of 6-8 would be considered.

Technical standards

The design of on-street parking should comply with the following documents and other engineering standards as appropriate. Refer also to *ULDA Guideline No 13 - Engineering Standards* for relevant road design standards.

- » Relevant Ausroads Standards including *Guide to Road Design Part 6B: Roadside Environment* and *Guide to Traffic Engineering Practice - Part 11- Parking*
- » *AS/NZS 2890.5:1993 - Parking facilities, Part 5: On-street parking*
- » *DTMR Road Planning and Design Manual*
- » *Queensland Manual of Uniform Traffic Control Devices*

Example of a parking analysis plan and supporting information



Number of lots	180
Estimated maximum number of dwellings	170
Number of bedrooms per dwelling	1-4
Number of on-street parking bays proposed, both informal and designated	135
Compliance with on-site parking rates	1 or 2 on site car parks per dwelling