Supplement

Traffic and Road Use Management
Volume 1 – Guide to Traffic Management

Part 11: Parking management techniques (2020)

November 2020

Queensland Government

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1 Introduction

This section provides further information for agencies assessing the use of kerbside road space. Austroads' *Guide to Traffic Management Part 11: Parking management techniques* provides a list of factors to be considered but there is no quantification of magnitude of the risks, information on the scope, or other pertinent issues that need to be assessed when considering these factors.

This section provides additional information on the factors to be considered by asset managers and other operational staff to identify and assess operational issues and make an informed decision when assessing the use of kerbside road space.

1.1 Related documents

This section should be read in conjunction with the documents listed in Table 1.1.

Table 1.1 – Related documents

Publisher	Title
Austroads	*Guide to Road Design Part 3: Geometric design*
	Guide to Road Design Part 4A: Unsignalised and signalised intersections
	Guide to Traffic Management Part 5: Link management
	Guide to Traffic Management Part 11: Parking management techniques
Standards Australia	Australian Standard AS 2890.5 *Parking facilities Part 5: On-street parking*
Transport and Main Roads	Queensland *Manual of Uniform Traffic Control Devices Part 9: Bicycle facilities*
	Queensland *Manual of Uniform Traffic Control Devices Part 11: Parking controls*
	Road Planning and Design Manual, Edition 2, Volume 3, Part 3
	Road Planning and Design Manual, Edition 2, Volume 3, Part 4A
	Technical Cycle Note B5: Finding space for on-road bicycle lanes

2 Factors to be considered for assessing the use of kerbside road space: assessment process

A number of categorised factors and risk ratings have been developed to assist authorities to consider systematically all the issues and effects associated with the decision-making process for the use of kerbside road space.

The factors to be considered and associated outcomes are presented in Table 2.

Table 2 – Factors to be considered for assessing the modification to on-road kerbside parking provision

Factors to be considered for assessing the modification to on-road kerbside parking provision				**Comments**
Traffic	**Crash Risk**			
	Low	**Med**	**High**	
Traffic volumes (based on two-lane two direction flow).	<3,000 AADT	3000–10,000 AADT	>10,000 AADT	Increases crash likelihood
Traffic speeds (higher of posted and 85th percentile speed).	<50 km/hr	50–60 km/hr	>60 km/hr	Increases likelihood and consequences
Proportion of heavy vehicles (not including buses).	<5%	5–10%	>10%	Increases likelihood and consequences
Proportion of buses	<2 buses/h	2–10 buses/h	>10 buses/h	Increases likelihood and consequences, noting interaction with buses servicing bus stops
Kerbside parking turnover (during peak hour for bicycle and motor vehicle traffic) (observed turnover, not signed)	30 min	15 min	5 min	Increases crash likelihood
History	**Low**	**Med**	**High**	
Parking-related crash history – severity	Property damage only	One or more seriously injured	One or more fatal	Indicator of crash severity and need to change
Parking-related crash history-frequency per year	No crash record at site	1–5 crashes recorded	>5 crashes recorded	Indicator of crash frequency and need to change
Observed parking manoeuvre (reverse parking and so on) hazard for through traffic	Outside peak hour only	During peak hour only	All day	Indicator of an increase to crash likelihood

Factors to be considered for assessing the modification to on-road kerbside parking provision				Comments
Road attributes	**Low**	**Med**	**High**	
Road is on the Principal Cycle Network.	n/a	n/a	Yes	Indicates the likely presence of people riding bikes and Transport and Main Roads intention to provide for people riding bikes in the next road upgrade
Lane width narrows (squeeze point) or termination of bicycle lane	> 3.9m wide	3.5–3.9m wide	<3.5m wide	If combined with traffic med–high risks, increased likelihood of a crash
Steep uphill grades	<3%	3–6%	>6%	If combined with traffic med–high risks, increased likelihood of a crash
Sightline restrictions	Meets CSD requirements	Meets ASD requirements	Does not meet ASD requirements	Indicates likelihood of crash.
CSD = Crossing Sight Distance ASD= Approach Sight Distance Ref: Austroads *Guide to Road Design Part 4A*				
Road user	**Low**	**Med**	**High**	
Proportion of child / novice people riding bikes	10%	20%	30%	Increases both crash likelihood and consequences
Presence of vulnerable road users	People with a disability	Elderly or children	Both	Increases both crash likelihood and consequences
Number of mid-block pedestrian crossings/h	<10	10–20	>20	Increases both crash likelihood and consequences

Factors to be considered for assessing the modification to on-road kerbside parking provision				Comments
Operational issues	**Efficiency Risk**			
	Low	**Med**	**High**	
Observed kerbside parking impact on public transport operations (is there sufficient space for bus stops?)	None	Some (in one direction only)	Major (in both directions)	Would public transport operations be improved by removing kerbside parking?
Observed kerbside parking obstruction to through traffic (for example, kerbside parking and no dedicated right turn lane)	Outside peak hour only	During peak hour only	All day	Would the throughput of the road increase by removing kerbside parking?
Functionality of the route	Terminating traffic with vehicle access to kerbside land uses (local street)	Something in between (urban road or connector road)	Fast moving through traffic (major arterials or highway / motorway)	Is the use of kerbside road space in line with the intended function of the road?
Current motor vehicle level of service for the road (is service provision adequate?)	A or B	C or D	E or F	Is the benefit of supplying parking greater than the disbenefit to moving traffic?
Current bicycle level of service for the road (is service provision adequate)?	A or B	C or D	E or F	Takes account of cycle infrastructure provided and the effect of the use of kerbside road space

Factors to be considered for assessing the modification to on-road kerbside parking provision				Comments
Parking needs	**Effect on adjacent land uses / revenue**			
	Low	**Med**	**High**	
Is there off-street (or side street) parking provided / available? (also consider onsite car parking for residential properties)	Yes, direct	Yes, indirect or shared	None within 100m	What is the proximity of off-street alternatives? Are they reasonable? Would there be a significant effect on business? This is a key factor as to why kerbside parking may not be removed.
Does the adjoining land use 'front' the kerb and is it dependent upon 'passing trade', 'impulse purchases' or 'pick-ups / drop-offs' (for example, ATM, takeaway, newsagent, and so on)?	Deliveries only	<50% of business	Majority of business	
Is there a need to provide kerbside parking as a 'traffic calming' technique?	Other options are available	Yes	Yes, critical	When comparing identical residential streets, those with kerbside parking usually have lower speeds and traffic volumes.
Will there be a significant loss in metered parking revenue?	None	Marginal	Significant	What will be the financial effect on the authority?

Factors to be considered for assessing the modification to on-road kerbside parking provision				Comments
Can the site be accessed conveniently by public transport? (measure of public transport service frequency)	A service at least every 30 mins and full taxi service	A service at least every hour and some taxi service	A service less than every hour or does not exist and no taxi service	Indicator that there are other means of accessing the site, as well as by car, meaning it is an accessible and convenient place by all modes of transport resulting in potentially less demand for car parking supply
Can the site be accessed conveniently by riding bikes? (measure of current state of adjoining cycle network)	Connected cycle network exists	Partially connected cycle network exists	No cycle network exists	

2.1 Assessment process

The intent of the process is to assist road authorities in their decision making regarding the use of kerbside road space. The need for changes to the existing use of kerbside road space could be identified through a number of means such as awareness of crash history, community feedback or officer awareness of risks / issues, inappropriate kerbside use related to the adjacent land use, effects on efficient traffic operation, or the need to create a safer environment for people riding bikes.

The process undertaken to assess the current situation should include:

1. visit site to observe and record issues
2. collect relevant data such as crash statistics, traffic volumes, and on-street carparking performance data (for example, parking turnover data)
3. apply the factors and risk ratings (refer Table 2) using engineering judgement and applying weighting as necessary to take into account specific characteristics of the road segment under study
4. document and report the findings of the process and make recommendations, and
5. undertake stakeholder and community consultation, if any changes are to take place.

The checklist, shown in Table 2, is suitable for application to segments of road with similar characteristics; for example, this could be limited to a single block or retail strip. The road segment could be longer if characteristics such as adjoining land use, speed, road cross-section, road speed, traffic composition and kerbside parking provision remain consistent.

2.2 Areas of impact when assessing the use of kerbside road space

There are three, main (high-level) 'areas of impact' that need to be considered and balanced when assessing the current use of kerbside road space. These areas are:

1.	Impact on safety	Influence crash risks
2.	Impact on congestion	Influence road capacity for vehicle throughput (road efficiency)
3.	Impact on adjacent land uses	Influence on shops and residents

These are the trade-offs to be balanced when making decisions about the use of kerbside road space. Generally, giving too much emphasis to one will have detrimental effects on the others.

2.2.1 Crash risk factors

2.2.1.1 Traffic

The consideration of this factor is to review and assess the characteristics of the traffic on the relevant street segment, such as traffic speeds, traffic volumes, proportion of buses / heavy vehicles and parking turnover. The potential crash risk increases as traffic volumes, traffic speeds and proportions of buses / heavy vehicles increase. Higher car parking turnover also increases the potential crash risk.

2.2.1.2 Parking history

These risks are based on assessing the parking-related crash history and the potential for parking manoeuvres to create hazards to through moving traffic. If these risks exist, it could increase crash risk and, therefore, provide one indication of the need to change the area's operation.

2.2.1.3 Road attributes

The road attributes examine the specific geometric characteristics of the road such as lane widths, steep grades and sightline issues. Depending on the results, these characteristics have the potential to increase crash risk and, therefore, reduce safety within a particular street segment. It also takes into consideration the role of the street on the Principal Cycle Network.

2.2.1.4 Road user

This criterion looks at the existing and potential road users on the street segment, particularly identifying the presence of vulnerable road users, people walking, children or inexperienced people riding bikes which can increase the likelihood and consequences of a crash.

2.2.2 Road efficiency risk factors

2.2.2.1 Operational issues

The operational issues assess the effect the current use of kerbside road space may have on public transport operations, movement of through traffic, capacity of through traffic, the road function and level of service. Depending on how these items score, they can affect the efficiency of the road segment, and reassessment of the current use of kerbside road space may improve the operation of the street.

2.2.3 Effect on shops and residents

2.2.3.1 Parking needs

This criterion considers the effect of parking as a kerbside road space use on the adjacent and surrounding land uses. It considers the availability of alternative parking in proximate locations, type of adjacent land use and its dependence on the parking, whether the kerbside parking is used as a traffic calming technique and the effect on revenue associated with parking meters. Consideration of access to the site by other transport modes such as public transport and riding bikes is also incorporated, as this may indicate that the site is an accessible place with safe and convenient travel options, and potentially has less demand for parking supply.

2.2.4 Relationship of factors to outcomes

Consideration of these factors will provide a 'risk based' assessment on the potential:

- crash
- efficiency, and
- impact risk

of a particular segment of road.

The outcome will be a low, medium or high-risk rating. Engineering judgement is needed in the application of the factors and risk ratings with weightings applied as necessary, taking into account specific characteristics of the road segment under study. The factors in Table 2 provide the context to assist in making a decision about managing kerbside road space and the results are to inform the decision-making process only (that is, it is not mandatory).

Low risk – this factor is not likely to influence the 'area of impact'. Modifications are not likely to be required, based on this factor.

Medium risk – this factor is likely to influence on the 'area of impact'. Modification is likely to be required and could be related to amending the road layout and amending kerbside road space use (such as limited parking restriction). The site should be monitored.

High risk – this factor is highly likely to influence the 'area of impact', especially when combined with other 'high risk' factors in the same category. Modification is urgently required and could be related to amending the road layout and amending kerbside use (such as limited parking restriction or complete removal / relocation). The site should be treated, monitored and evaluated (to determine effectiveness of the treatment).

3 Field checklist for asset managers (observation sheet)

Table 3 illustrates a field checklist for asset managers.

Table 3 – Field checklist for asset managers (observation sheet)

Factors to be considered for assessing the modification to on-road kerbside parking provision		
Traffic		
Traffic volumes (based on two-lane two direction flow)		Increases crash likelihood
Traffic speeds (higher of posted and 85th percentile speed)		Increases likelihood and consequences
Proportion of heavy vehicles (not including buses)		Increases likelihood and consequences
Proportion of buses		Increases likelihood and consequences, noting interaction with buses servicing bus stops
Kerbside parking turnover (during peak hour for cycling activity)		Increases crash likelihood (observed, not signed)
History		
Parking related crash history – severity		Indicator of a genuine need to change
Parking related crash history – frequency per year		Indicator of a genuine need to change
Observed parking manoeuvre (reverse parking and so on) – hazard for through traffic?		Indicator of a genuine need to change
Road attributes		
Road is on the Principal Cycle Network (PCN)		Road segments that are on the PCN are likely to be high risk where there is on-road parking provision
Lane width narrows (squeeze point), or termination of bicycle lane		If combined with traffic, med–high risks
Steep uphill grades		If combined with traffic, med–high risks
Sightline restrictions		
CSD = Crossing Sight Distance ASD= Approach Sight Distance Ref: Austroads *Guide to Road Design Part 4A*		
Road user		
Proportion of child / novice people riding bikes		Increases both likelihood and consequences
Presence of vulnerable road users		Increases both likelihood and consequences
Number of mid-block pedestrian crossings (per hour).		Increases both likelihood and consequences
Operational issues		
Observed kerbside parking effect on public transport operations (is there sufficient space for bus stops?)		Would public transport operations be improved by removing kerbside parking?

Factors to be considered for assessing the modification to on-road kerbside parking provision		
Observed kerbside parking obstruction to through traffic (for example, kerbside parking and no dedicated right turn lane)		Would the throughput of the road increase by removing kerbside parking?
Functionality of the route		Is kerbside parking in line with the intended function of the road?
Current motor vehicle level of service for the road (is service provision adequate)?		Is the benefit of supplying parking greater than the disbenefit to moving traffic?
Current bicycle level of service for the road (is service provision adequate)?		Takes account of cycle infrastructure provided.
Parking needs		
Is there off-street (or side street) parking provided / available? (also consider onsite car parking for residential properties)		What is the proximity of off-street alternatives? Are they reasonable? Would there be a significant effect on business? This is a key factor as to why kerbside parking may not be removed.
Is the adjoining land use 'front' the kerb and is it dependent upon 'passing trade', 'impulse purchases' or 'pick-ups / drop-offs' (for example, ATM, takeaway, newsagent, and so on)?		
Is there a need to provide kerbside parking as a 'traffic calming' technique?		When comparing identical residential streets, those with kerbside parking usually have lower speeds and traffic volumes
Will there be a significant loss in metered parking revenue?		What will be the financial effect on the authority?
Can the site be accessed conveniently by public transport?		Indicator that there are other means of accessing the site, as well as by car, meaning it is an accessible and convenient place by all modes of transport, resulting in potentially less demand for car parking supply
Can the site be accessed conveniently by riding bikes?		

9.4 Provision of parallel kerbside parking

9.4-1 Verge parking and indented parking

1 Purpose and scope

Verge and indented parking is typically provided between the kerb line and property boundary, and can be a cost-effective retrofit measure to relocate parking from the road pavement to the verge to make space for other use of the road space (such as on-road bicycle lanes).

The pavement markings and signage requirements for on-road parking are addressed in the Queensland *Manual of Uniform Traffic Control Devices* (MUTCD) *Part 11 Parking*. The typical dimensions, width limitations and layout of parking bays are given in Australian Standard AS 2890.5. As well as a parking issue, this is also an issue of the design of the 'Roadside Environment': design considerations and specifications are included in the *Road Planning and Design Manual Part 6B*.

1.1 Introduction

Kerbside parking serves the adjacent land uses, allowing for motor vehicle storage. Kerbside parking, if not managed correctly, can also negatively affect road operations and road safety. Kerbside parking presents an obstacle on the road that occupies and blocks road space that could be used for vehicle throughput. High turnover parking manoeuvres (especially reverse parallel parking) obstructs the flow of traffic and creates several safety risks, and parked vehicles can also obscure visibility of traffic at driveways and intersections and people walking on a mid-block crossing. The dilemma is many businesses and residents have a genuine need to use the streets as a vehicle storage area, so it can be difficult to remove or reduce kerbside parking in many locations without reinstating it elsewhere.

The removal of kerbside parking is usually controversial, but not unprecedented. It has occurred on many older arterial roads with adjacent commercial or residential land uses to increase vehicle throughput or improve safety such as improving sightlines on crests. The provision of indented or verge parking to replace the on-road kerbside parking has been used as a solution in some of these instances.

2 Verge parking

Moving the kerbside parking to the verge is a cost-effective measure, provided the parking bays meet required standards and parking includes appropriate regulatory signage. Verge parking involves provision of a 'hardstand' treatment on the verge, such as paving or concrete, to allow vehicles to park safely in the verge without disrupting movement of people walking and other functions of the verge. A 2013 cost estimate of typical costs for a single bay would be in the order of $10,000 (assuming no kerb change, no service relocation and simple single bay behind existing kerb).

Some key design requirements have been developed, based on existing standards, and are presented in the *Road Planning and Design Manual Part 6B*. The key issue in design is to ensure consideration is given to:

- appropriate widths for people walking
- effect on sightlines
- landscaping, and
- other services within the verge.

Figures 2(a) and 2(b) shows the existing kerb is easily mounted by vehicles accessing the parking and space is still available to provide for people walking, landscaping and property access.

Figure 2(a) – Example of verge car parking using stamped asphalt and concrete pavements

(Photo supplied by R. Black, Brick n Pave)

Figure 2(b) – Example of required regulatory signage to allow verge parking. Arana Hills, Moreton Bay Regional Council

3 Indented parking

Indented parking is a similar form of verge parking but is slightly more expensive and requires careful consideration of both utility / services and drainage issues. It involves providing car parking in the verge at the same level as the road pavement and, therefore, requires changes to the kerb line to achieve. It is more suitable to locations with heavier parking demand and medium to high volumes of

people riding bikes, due to its higher costs and effects on existing infrastructure. A 2013 cost estimate of typical costs for a single bay would be approximately $18,000 (assuming kerb alteration but no significant service changes).

Some key design requirements have been developed based on existing standards and are presented in the *Road Planning and Design Manual Part 6B*.

Figure 3 shows placement of the indented parking around property driveways, electricity poles and street furniture whilst still enabling through and unobstructed movement for people walking in the verge.

Figure 3 – Example of indented care parking into the verge, Sandgate Road, Nundah

Source: Transport and Main Roads Digital Video Road (DVR)

4 Case studies

Provision of parking within the verge has occurred in a number of locations. The following case studies illustrate some practical examples of implementation.

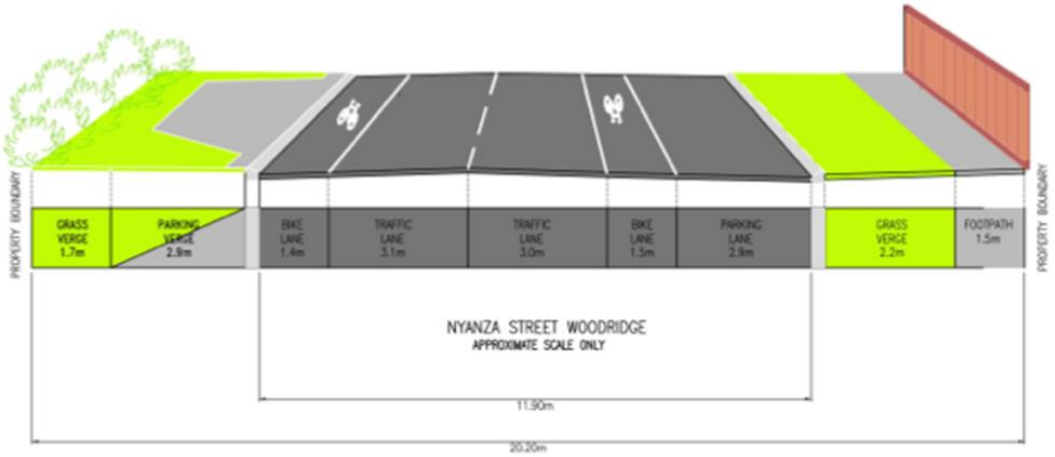
Nyanza Street, Woodridge

Nyanza Street, Woodridge in the Logan City Council area is a residential street which has been retrofitted with indented parking bays on one side to allow dedicated bicycle lanes. Nyanza Street is a collector street with a posted speed limit of 60km/hr. It has unregulated parallel parking, used for local residential purposes, with kerbside parking northbound and retrofitted indented parking in the verge southbound. The bicycle lanes form part of a dedicated cycle route between Compton Road and Kingston Road providing a north / south cycle route in the Logan City Council area, providing access to many adjacent rail stations, local and district shops, as well as the Logan Central Activity Centre, which includes the Council Administration building. Surveyed volumes at the site were 2585 vehicle per day, 15 people riding bikes per day and 29 parking movements per day, representing low parking demand (approximately 15% in peaks) and primary long stay in nature (8-hour dwell times). Although the traffic volumes do not require specific provision for people riding bikes as a result of traffic volumes, the location formed an important cycle network link and, therefore, Council considered it important to provide dedicated bicycle facilities. The result was the provision of a high level of service for people riding bikes and motor vehicles and provision of adequate car parking to meet the adjacent land use demands.

The road reserve width was typical of many Logan City Council streets with an approximate 12m carriageway within a 20.0m road reserve, making it impossible to provide for bicycle lanes unless space was reallocated. The solution still allows for car parking by adjacent residents as well as

provision of a dedicated bicycle lane in both directions for people riding bikes. The verge width where the parking was provided was 4.6m, as shown in Figure 4(a).

Figure 4(a) – Nyanza Street, Woodridge: Typical cross-section



In Figure 4(a), indented verge parking is provided on one side to achieve on-road bicycle lanes. Parking in the other direction remains kerbside. Room for people walking, landscaping and services is still available within the verge, meeting minimum requirements.

Figure 4(b) – Nyanza Street, Woodridge: Aerial and street views

Photos from Transport and Main Roads aerial photography and traffic cameras

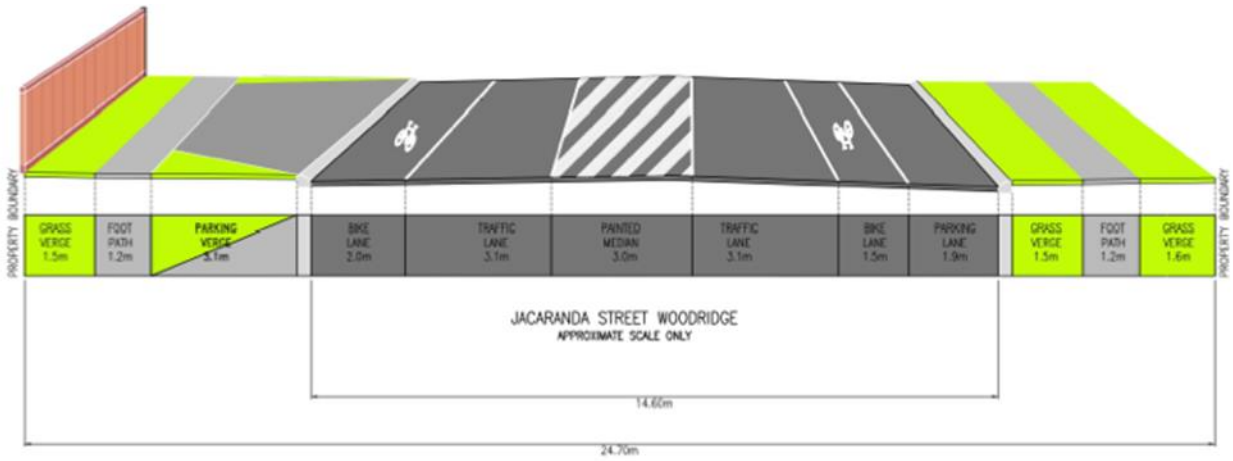
In Figure 4(b), verge parking is provided between driveways and street furniture such as power poles. A footpath is still able to be provided to enable unobstructed movement for people walking.

Jacaranda Avenue, Logan Central

Further south along the Nyanza Street bicycle route between Compton Road and Kingston Road is Jacaranda Avenue where this treatment type has been continued. Jacaranda Avenue, Logan Central in Logan City Council is also a collector residential street with a posted speed limit of 60 km/hr. The unregulated parallel parking has been provided as parallel kerbside parking in the southbound direction and indented parking in the verge in the northbound direction. Surveyed volumes for this street are 3773 vehicles per day, 12 people riding bikes per day and 84 car parking movements per day, representing low parking demand (10% in peaks) and shorter stay parking with average dwell time of 23 minutes.

The road reserve on Jacaranda Avenue was slightly wider compared to Nyanza Street with a 14.6 m carriageway width within a 24.7 m road reserve width. Despite the low number of people riding bikes, the car parking facilities at this location appear to be functioning well by providing adequate space for all road activities. The verge width where the parking has been indented is 5.8 m. The cross-section for Jacaranda Street is illustrated in Figure 4(c).

Figure 4(c) – Jacaranda Avenue, Logan Central: Typical cross-section



In Figure 4(c), indented verge parking is provided on one side to achieve on-road bicycle lanes. Parking in the other direction remains kerbside. Room for people walking, landscaping and services is still available within the verge.

Figure 4(d) – Jacaranda Avenue, Logan Central: Aerial view

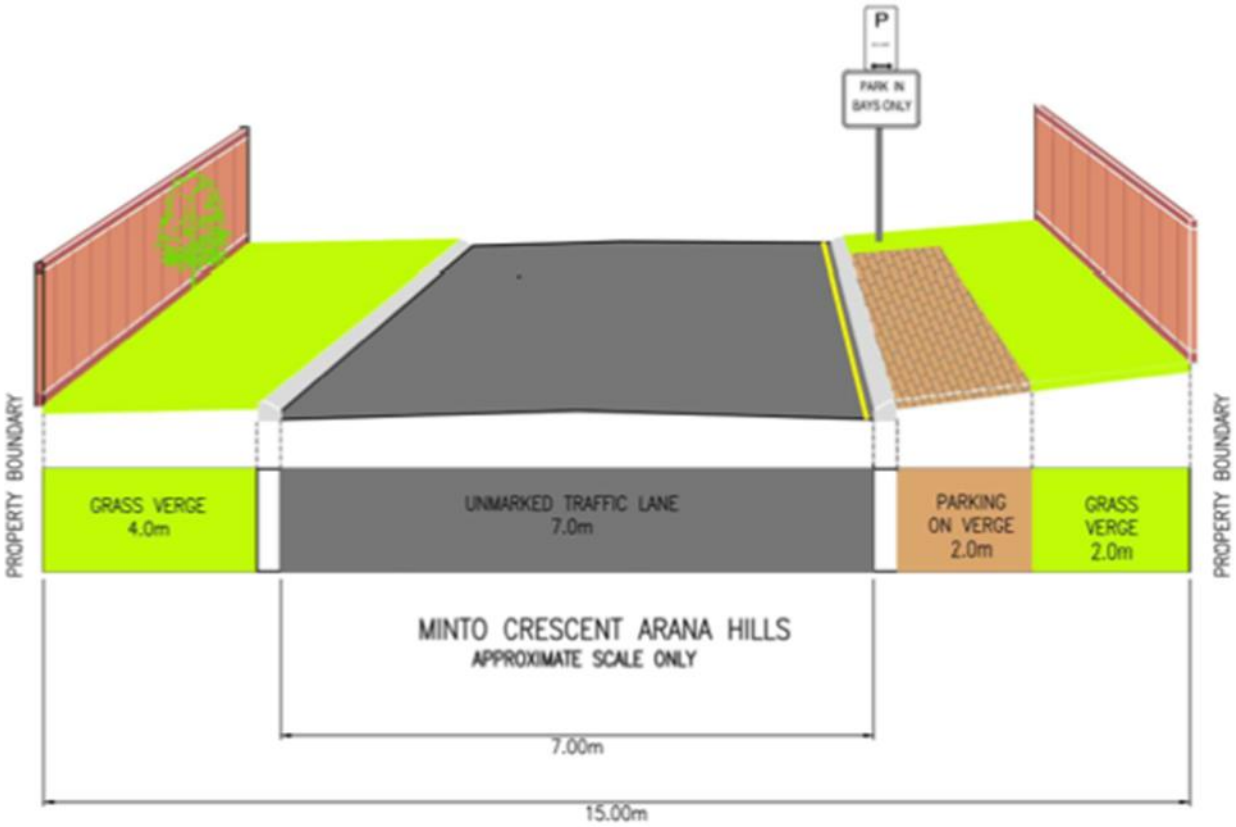
In Figure 4(d), verge parking is provided between driveways and street furniture such as light poles and landscaping. A footpath is still able to be provided to enable unobstructed movement for people walking.

Minto Crescent, Arana Hills

The last example of retrofitted verge parking is at Minto Crescent, Arana Hills in Moreton Bay Regional Council. The location consists of a residential local access street with no footpath and a posted speed limit of 50 km/hr. The street is steep with limited sight distances. Unregulated parallel parking is provided kerbside in the westbound direction and on verge parking bays in the eastbound direction. Surveyed volumes are 118 vehicle per day, three people riding bikes per day and 32 parking movements per day, representing low demand (approximately 20% occupancy) with short stay parking (average dwell time of 60 minutes). There have been reported and observed incidents of parking manoeuvring conflicts between people parking motor vehicles and people riding bikes at this location. Dedicated bicycle facilities are not required to be provided at this location; however, due to the steep grades and limited sight distances in both directions, reducing interactions between people riding bikes and parked cars was a desirable solution. It also reduced the risk for crashes by motorists and people riding bikes into parked cars by removing these obstacles from the on-road carriageway.

The road reserve width of Minto Crescent is 15 m with a 7.0 m carriageway width. The verge width where parking on the verge was provided is 4.0 m. The cross-section for Minto Crescent is shown in Figure4(e).

Figure 4(e) – Minto Crescent, Arana Hills – Typical cross-section



In Figure 4(e), indented verge parking is provided on one side to remove obstacles to movement in the through lanes and improve sight lines. Parking in the other direction remains kerbside. Room for people walking, landscaping and services is still available within the verge width; although the width is narrow, it is appropriate for a local access street.

Figure 4(f) – Minto Crescent, Arana Hills: Street view

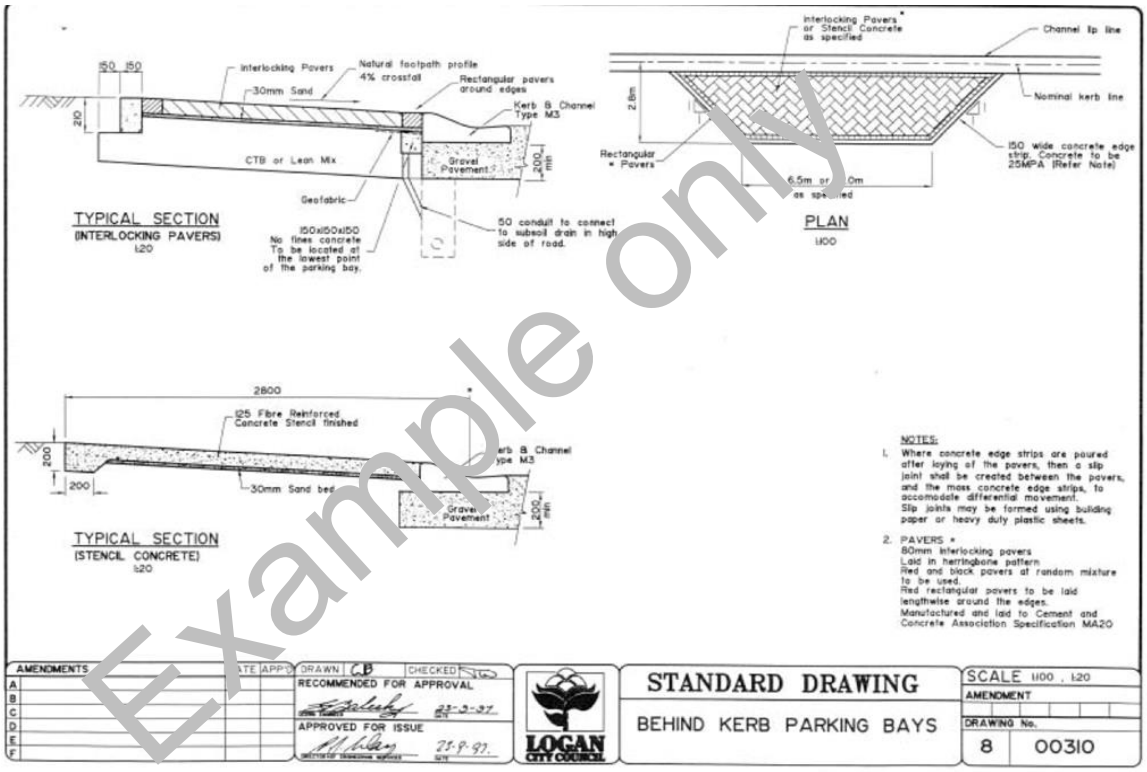
In Figure 4(f), verge parking is provided between driveways and street furniture. The grassed part of the verge provides for unobstructed movement for people walking.

A summary of the key details of these case study projects can be found in Table 4.

Table 4 – Case study summary: Key project details

	Nyanza Street, Woodridge	**Jacaranda Ave, Logan Central**	**Minto Cres, Arana Hills Ave,**
Project details	Removed on-street kerbside parking on one side and replaced with indented parking in the verge to provide on-road bicycle lanes in both directions		Indented verge parking provided on one side of the road
Local authority	Logan City Council		Moreton Bay Regional Council
Adjacent land use	Residential		
Road classification	Collector		Local Access
Posted speed	60 km/h		50 km/h
Road geometry	Flat and straight with good sight distance		Steep with limited sight distances
Road reserve width	20.2 m / 11.9 m kerb-to-kerb	24.7 m / 14.60 m	15.0 m / 7.0 m
Crash history	No crash history available		1 parking-related crash recorded
Cycle Network linkages	Part of a regional north / south link between Compton Rd and Kingston Rd		No
Total traffic (vpd)	2485	3773	118
Total people riding bikes (per day)	15	12	3
Total parking movements	29	84	32
Parking demand (occupancy)	Low: approx. 25% in AM peak; 15–25% in PM peak	Low: approx. 10% in AM and PM peak	Approx. 20% occupancy
Avg parking dwell time	8 hrs 36 mins	23 mins	60 mins

Figure 4(g) – Standard drawing example, Logan City Council



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