

# Traffic control devices manual

## Part 13

# Parking control

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# Preface

## Introduction

The *Traffic control devices manual* will provide guidance on industry good practice, including, where necessary, practice mandated by law. The planned structure of the *Traffic control devices manual* comprises 22 parts and is shown in table A.

Each part will be developed under the guidance of a working group of practitioners experienced in, and having specific knowledge about, the subject. The practitioners will also be representative of the intended users of the documents. Interested practitioners and affected organisations will be given the opportunity to comment on drafts and have their input incorporated appropriately in the final document.

The *Traffic control devices manual* will be published electronically only and will be available on the Land Transport NZ website.

## Relationships with other documents

The *Traffic control devices manual* will support and reference:

- New Zealand legislation and, in particular, the Land Transport Act 1998 and rules made pursuant to that act, including the Land Transport (Road User) Rule, the Land Transport Rule: Traffic Control Devices and the Land Transport Rule: Setting of Speed Limits
- general polices contained in Austroads Guides (in particular, the Guides to Traffic Management, Traffic Design and Road Safety) [under preparation in 2007/08] by providing detailed guidance to meet specific requirements of New Zealand law and practices
- New Zealand and, as appropriate, Australian standards
- codes of practice, guidelines and published standards of various authorities.

Each part will attempt to provide a broad coverage of the subject but avoid duplicating major elements of referenced documents, preferring to direct readers to the source.

The *Traffic control devices manual* will, on completion, replace the joint Transit New Zealand and Land Transport NZ publication *Manual of traffic signs and markings* (MOTSAM).

## Part 13 Parking control

*Parking control* was developed with guidance from a working group representing local government (3 members), New Zealand Parking Association (3), Ministry of Transport (1), Automobile Association of New Zealand (1) and Land Transport NZ (1). They were assisted by the contracted authors (Tim Selby and Cherie Ulrich of Opus International Consultants).

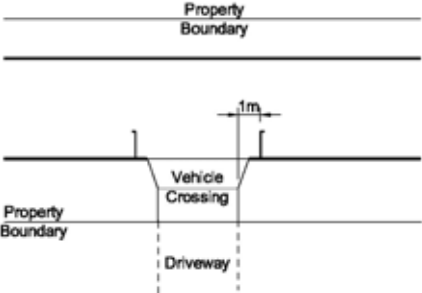
**Table A** Planned structure of *Traffic control devices manual*

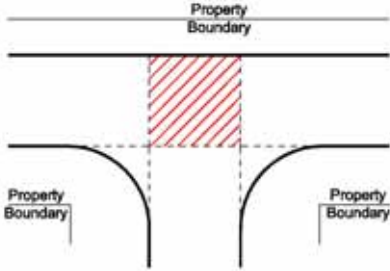
Part	Title	Outline of content – may vary as the manual develops
	Sign specifications	Detailed descriptions of traffic signs, including dimensions, colour and layout
	Signal specifications	Detailed descriptions of permitted traffic signal displays and dimensions and colours of signal aspects
	Marking specifications	Detailed descriptions of road markings, including dimensions, colours and layout
1	General requirements for signs	Purposes of traffic signs and their legal foundation Materials and construction General design principles – size, lettering, legends Installation – location, mounting heights, etc
2	Route and street name signs	Route signing, including state highways, regional roads, bypasses, detours, scenic routes, etc Street name signs, including design and location
3	Motorist services and tourist signs	Motorist services signing policy, application and design Tourist signs General information signs, eg public amenities, features
4	Advertising signs	Design and location principles Policies for billboards and other forms of roadside advertising
5	General requirements for markings	Purposes of markings and their legal foundation Materials and some general application issues General design principles – size, lettering, legends
6	Traffic signals	Application of New Zealand legal requirements Specific applications, eg ramp signals, roundabout signals
7	Traffic control devices for general use	Treatments at intersections, including options for traffic control, advance warning, etc Treatments between intersections, including delineation, curves, passing facilities, steep grades, etc
8	Temporary traffic management	Included for completeness – will link to the <i>Code of practice for temporary traffic management</i> and local body supplement

Part	Title	Outline of content – may vary as the manual develops
9	Railway level crossings	Risk assessment (ALCAM)  Design considerations, eg facility types, traffic movements, stacking length, sight distances  Types of control – passive or active
10	Motorways and expressways	Specific sign and marking requirements for motorways and expressways
11	Local area traffic management	Design principles  LATM devices in New Zealand legal and environmental context  Applications of LATM – reference examples
12	Speed	Signs and markings for speed limits  Temporary and variable speed limits  Advisory speeds
13	Parking control	Legal framework – implications and responsibilities  Design considerations and elements  Linear and zone parking treatments  Parking furniture, eg meters, vending machines
14	Special vehicle lanes	Signs, markings and surface treatments  Specific applications – bus, transit, truck, cycle and other classes of lanes
15	Cycles	The extent to which issues relating to these specific classes of road user will be covered within other relevant sections of the manual is still to be determined. It is possible none of these parts will be developed.
16	Pedestrians	
17	Heavy motor vehicles	
	Glossary of terms	Definitions of terms used throughout the <i>TCD manual</i>
	References	All documents referenced throughout the <i>TCD manual</i>

## Definitions

Term	Definition
Arterial road	A road predominantly carrying through traffic from one region to another, and intra-regionally forming principal avenues of travel for traffic movement.
Bus	A passenger service vehicle (as defined in section 2(1) of the Transport Services Licensing Act 1989) that has more than nine seating positions (including the driver's seating position).
Bus lane	A lane reserved by a marking or sign installed at the start of the lane and at each point at which the lane resumes after an intersection, for the use of: <ul style="list-style-type: none"> <li>(a) buses</li> <li>(b) cycles and motorcycles, unless either or both are specifically excluded by the signs.</li> </ul>
Car park	A place where cars may be parked – also commonly referred to as parking lot.
Casual users	Casual users are usually short-term visitors to an area who would not be familiar with the parking systems in place. These types of users may warrant larger parking spaces being made available.
CCS	CCS Disability Action Incorporated, the major issuer of disabled parking permits in New Zealand.
Clearway	A length of roadway over which a no-stopping parking restriction applies for the purpose of increasing the number of through traffic lanes or providing increased space to allow for the free movement of traffic during the period for which the clearway restriction applies.
Coach	A passenger service vehicle that has more than nine seating positions inclusive of the driver's seating position, and that is engaged in the conveyance of persons on organised tours.
Collector road	A non-arterial road that collects and distributes traffic in an area, as well as serving abutting property.
Cycle	(a) A vehicle having at least two wheels designed primarily to be propelled by the muscular energy of the rider; and  (b) includes a power-assisted cycle.
Cycle lane	A longitudinal strip within a roadway reserved by a marking or sign designed for the passage of cycles.
Cycle path	(a) Part of the road that is physically separated from the roadway that is intended for the use of cyclists, but which may be used also by pedestrians; and  (b) includes a cycle track formed under section 332 of the Local Government Act 1974.

Term	Definition	
Design vehicle	For each nominated class of vehicle, the dimensional configuration that represents the characteristics that will encompass the greater number (nominally 99 percent) of the vehicles in the national fleet in that class.	
Disabled (person with a disability)	Any person who suffers from physical or mental disablement to such a degree that they are seriously limited in the extent to which they can engage in the activities, pursuits and processes of everyday life ( <i>The building code</i> and NZS4121: 2001).	
Driver	A person driving a vehicle; including the rider of an all-terrain vehicle, a motor cycle, a moped, a cycle, a mobility device or a wheeled recreational device.	
Driveway	<p>A defined area used by vehicles travelling between a public roadway and property adjacent to or near the road.</p> <p>Drivers are not permitted to park over a driveway or within 1 m distance from the prolongation of the driveway.</p>	
 <p>The diagram illustrates a driveway layout. A horizontal line at the top is labeled 'Property Boundary'. Below it, a road surface is shown with a 'Vehicle Crossing' area. A dashed line indicates the 'Driveway' extending from the road. A vertical dimension line shows a '1m' distance from the prolongation of the driveway to the road edge. Another horizontal line below the road is labeled 'Property Boundary'.</p>	Duration	The length of time in minutes or hours that a vehicle is permitted to be parked in a parking area.
	Edge line	A broken or continuous white line marking (or kerb) used to indicate the far left or far right side of the roadway.
Flush median	A median marked in accordance with 7.4(2) of the TCD Rule.	
Footpath	<p>A path or way principally designed for, and used by, pedestrians; and includes a footbridge.</p> <p>Users of mobility devices and wheeled recreational devices are permitted (unless specifically prohibited by the road controlling authority) to use a footpath.</p>	
Goods vehicle	<p>A motor vehicle that is:</p> <p>(a) designed exclusively or principally for the carriage of goods; or</p> <p>(b) used for the collection or delivery of goods in the course of trade.</p>	

Term	Definition
Intersection	<p>(a) In relation to two or more intersecting or meeting roadways, means that area contained within the prolongation or connection of the lateral boundary lines of each roadway (as shown in the figure to the right); but</p> <p>(b) if two roadways are separated only by a traffic island or by a median less than 10 m wide, the roadways must be regarded as one roadway.</p>
	
Lane	<p>(a) A longitudinal strip of roadway that is intended for the passage of vehicles or a specific class of vehicle that is separated from other parts of the roadway by a longitudinal line or lines of paint or raised studs; and</p> <p>(b) includes:</p> <ul style="list-style-type: none"> <li>(i) a cycle lane</li> <li>(ii) a lane for the use of vehicular traffic that is at least 2.5 m wide</li> <li>(iii) a lane of a two-way road divided by a centre-line.</li> </ul>
Level crossing	<p>(a) A place where:</p> <ul style="list-style-type: none"> <li>(i) a railway line crosses a road or street on the same level; or</li> <li>(ii) the public is permitted to cross a railway line on the same level; and</li> </ul> <p>(b) includes a bridge used for both rail vehicles and road traffic on the same level; but</p> <p>(c) does not include a railway line on a road that is intended solely for the use of light-rail vehicles.</p>
Loading zone	An area of marked roadway designated solely for the purpose of loading or unloading goods or passengers.
Local road	A road or street primarily used for access to abutting properties.
Marking	A line, symbol, pattern, message, numeral, pavement marker or other device set in the roadway or applied or attached to the road surface.
Median	A strip of land that may be part of a road that separates vehicles travelling in opposite directions.

Term	Definition
Mobility device	<p>(a) A vehicle that:</p> <ul style="list-style-type: none"> <li>(i) is designed and constructed (not merely adapted) for use by persons who require mobility assistance due to a physical or neurological impairment; and</li> <li>(ii) is powered solely by a motor that has a maximum power output not exceeding 1500 W; or</li> </ul> <p>(b) a vehicle that the Director of Land Transport has decided under section 168A(1) of the Land Transport Act 1998 to be a mobility device.</p>
Must	Indicates a statement that is mandatory.
No parking	A requirement similar to 'no stopping', except that stops for short periods are permitted for the purpose of taking up or setting down passengers or goods.
No stopping	A requirement that a vehicle may not be stopped or allowed to remain stationary, except when necessary to avoid conflict with other traffic or to comply with the directions of a member of the police force or a traffic control sign or signal.
Panel	One complete unit of parking control information relating to one section of the roadway containing one symbol indicating the type of control, and any other necessary panel components.
Panel component	<p>Individual pieces of information or symbols that may be combined on a panel as follows:</p> <ul style="list-style-type: none"> <li>(a) the type of control (indicated by a symbol or symbol and words)</li> <li>(b) times of operation, if to be specified</li> <li>(c) user limitation, if any</li> <li>(d) a one-way or two-way arrow.</li> </ul>
Parking	<p>(a) In relation to any portion of a road where parking is, for the time being, governed by the location of parking meters or vending machines placed under a bylaw of a local authority, the stopping or standing of a vehicle on that portion of the road for any period exceeding five minutes; and</p> <p>(b) in relation to any other portion of a road, the stopping or standing of a vehicle (other than a vehicle picking up or setting down passengers in a loading zone or reserved parking area, and entitled to do so) on that portion of the road.</p>
Parking bay	A recess or a section of marked roadway set back from the general flow of traffic that can accommodate one parked vehicle. Also commonly referred to as parking space.
Parking enforcement officer	A 'parking warden' appointed under section 7 of the Transport Act 1962



Term	Definition
Parking meter	A device for registering and collecting payment for a length of time during which a vehicle may be parked.
Parking space	The area of roadway required to park one vehicle. Used interchangeably with the term 'parking bay' where the space is set back from the flow of traffic.
Pedestrian	<p>(a) A person on foot on a road; and</p> <p>(b) includes a person in or on any contrivance equipped with wheels or revolving runners that is not a vehicle and permitted to use a footpath.</p> <p>In New Zealand law, a pedestrian does not include a person on a mobility device or a wheeled recreational device. However, both of these classes of user may use a footpath. Readers are advised that, in some overseas jurisdictions, particularly Australia, rules and guidelines use the term pedestrian to include mobility devices and wheeled recreational devices.</p>
Pedestrian crossing	A pedestrian crossing established and marked on a roadway in accordance with clause 8.2 of the TCD Rule.
Power-assisted cycle	A cycle to which is attached one or more auxiliary propulsion motors that have a combined maximum power output not exceeding 300 W.
Private car park	A car park (eg at a residential development or place of employment) that is not intended to be used by the public without prior invitation or that is available only under certain conditions.
Public holiday	A day specified as a public holiday in section 44(1) of the Holidays Act 2003.
Public parking	Parking spaces available to general road users, which may be controlled by either a road controlling authority or a private company but which, subject to the road user meeting the conditions imposed by the controlling organisation, the public are invited to use
Regular users	Those users who are familiar with the parking systems. These types of user may be comfortable with using smaller car parking spaces.
Reserved parking	An area of roadway reserved for parking by a specified class or classes of vehicle or class or classes of road user, or for a specified purpose.
Road	<p>Includes:</p> <p>(a) a street; and</p> <p>(b) a motorway; and</p> <p>(c) a beach; and</p> <p>(d) a place to which the public have access, whether as of right or not; and</p> <p>(e) all bridges, culverts, ferries and fords forming part of a road or street or motorway, or a place referred to in (d); and</p> <p>(f) all sites at which vehicles may be weighed for the purposes of the act or any other enactment.</p>

<b>Term</b>	<b>Definition</b>
Road controlling authority (RCA)	In relation to a road: (a) means the authority, body or person having control of the road; and (b) includes a person acting under and within the terms of a delegation or authorisation given by the controlling authority.
Road margin	Includes any uncultivated margin of a road adjacent to but not forming part of either the roadway or the footpath (if any).
Road user	A driver, rider, passenger or pedestrian.
Road User Rule	Land Transport (Road User) Rule 2004, including any subsequent amendments.
Roadway	That portion of the road used or reasonably usable for the time being for vehicular traffic in general.
School crossing point	A school crossing point established in accordance with clause 8.4 of the TCD Rule. These are commonly called 'kea crossings'.
Service bay	A designated space clear of the apron to accommodate a commercial vehicle parked at a loading dock.
Shared path	A path intended to be used by both pedestrians, cyclists, mobility devices and wheeled recreational devices.
Should	Indicates a recommendation.
Shoulder	Any part of a road not designed to be used by motor vehicles when travelling along the road and, on a sealed road. Includes: (a) any unsealed part of the road; and (b) any sealed part of the road outside an edge line on the road.
Shuttle bus	A small bus catering for between 9 and 11 passengers. Usually tows a trailer for passenger luggage.
Special vehicle lane	A lane defined by signs or markings and restricted to a specified class or classes of vehicle; and includes a bus lane, a transit lane, a cycle lane and a light-rail vehicle lane.
Standing	Stopping: (a) for the purpose of picking up or setting down passengers, or, in the case of a taxi stand, for the purposes of waiting for hire; and (b) while a vehicle remains attended by the driver at all times.
Territorial authority (TA)	A district council, city council or county council ( as defined by the Local Government Act 2002).

Term	Definition
Traffic control device (TCD)	<p>A device used on a road for the purpose of traffic control; and includes a:</p> <ul style="list-style-type: none"> <li>(a) sign, signal or notice; or</li> <li>(b) traffic calming device; or</li> <li>(c) marking or road surface treatment.</li> </ul>
TCD Rule	Land Transport Rule: Traffic Control Devices 2004, including any subsequent amendments.
TCD Specifications	Land Transport NZ <i>Traffic control devices specifications</i> – a collective term to cover the <i>Sign specifications</i> , <i>Signal specifications</i> and <i>Marking specifications</i> parts of the TCD Manual.
Traffic island	A defined area within a roadway, which may be flush with the roadway or raised, and from which vehicular traffic is intended to be excluded.
Traffic sign	A board, plate, screen or other device, whether or not illuminated, displaying words, figures, symbols or other material intended to instruct, advise, inform or guide traffic on a road; and includes a 'children crossing' flag, a hand-held Stop sign, a parking control sign and variable message signs; but does not include a traffic signal.
Truck	A vehicle with a gross mass of more than 4.5 tonnes.
Vehicle	<p>A contrivance equipped with wheels, tracks or revolving runners on which it moves or is moved; and includes a hovercraft, a skateboard, in-line skates and roller skates; but does not include:</p> <ul style="list-style-type: none"> <li>(a) a perambulator or pushchair</li> <li>(b) a shopping or sporting trundler not propelled by mechanical power</li> <li>(c) a wheelbarrow or hand-trolley</li> <li>(d) a child's toy, including a tricycle and a bicycle, provided, in either case, no road wheel (including any tyre) has a diameter exceeding 355 mm</li> <li>(e) a pedestrian-controlled lawnmower</li> <li>(f) a pedestrian-controlled agricultural machine not propelled by mechanical power</li> <li>(g) an article of furniture</li> <li>(h) an invalid wheelchair not propelled by mechanical power</li> <li>(i) any other contrivance specified by any other rule not to be a vehicle for the purposes of this definition.</li> </ul>
Vending machine	A self-service device that, upon insertion of a coin, paper currency, token, card or other technology, dispenses a paper ticket to 'display' within the vehicle (Pay and Display machines) or displays the duration of time paid for each specific space within the area covered by the machine.

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Term	Definition
Visible	Able to be seen from a safe stopping distance.
Wheeled recreational device	A vehicle that is a wheeled conveyance (other than a cycle that has a wheel diameter exceeding 355 mm) and that is propelled by human power or gravity.  Includes a conveyance to which are attached one or more auxiliary propulsion motors that have a combined maximum power output not exceeding 200 W.
Zone parking	A defined area of roadway where parking is permitted or prohibited for a specified class or classes of vehicles or class or classes of road user (with or without a time restriction). Persons using vehicles within the zone (or area) can reasonably be expected to be aware of the application of the parking restriction to the area without the need for the erection of signs at each intersection within the area, for reasons including:  (a) the nature of the zone; or  (b) the nature of the parking restriction; or  (c) traffic patterns into and within the zone; or  (d) the nature and number of entry points to the zone.  The extent of the zone is defined by signs at the boundaries advising road users of the control requirements.

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# 1 Introduction

## 1.1 Purpose

This document entitled *Part 13 Parking control* is part of a suite of guidelines within the *Traffic control devices manual* (TCD Manual) prepared by Land Transport NZ. The document is intended to provide guidance on the use of traffic control devices to transport and parking practitioners, management and enforcement staff. Its aim is to provide the industry with best practice guidance on the use of traffic control devices related to stopping, standing and parking. In particular, it builds upon the specifications for approved signs, markings and other traffic control devices approved or mandated for use in New Zealand as set down in the *Traffic control devices specifications* (TCD Specifications).

## 1.2 Stopping, standing and parking

Within the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule) and the Land Transport (Road User) Rule 2004 (Road User Rule), 'parking' is defined as meaning:

- in relation to any portion of a road where parking is for the time being governed by the location of parking meters or vending machines placed under a bylaw of a local authority, the stopping or standing of a vehicle on that portion of the road for any period exceeding five minutes; and
- in relation to any other portion of a road, the stopping or standing of a vehicle (other than a vehicle picking up or setting down passengers in a loading zone or reserved parking area, and entitled to do so) on that portion of the road.

The TCD Rule also goes on to define 'standing' as stopping:

- for the purpose of picking up or setting down passengers, or, in the case of a taxi stand, for the purposes of waiting for hire; and
- while a vehicle remains attended by the driver at all times.

## 1.3 Scope

The document seeks to incorporate links to a number of appropriate policies, standards and guidelines and forms a logical link to New Zealand practices for the Austroads Guide to Traffic Management series.

This document sets out the legal framework under which parking, stopping and standing is permitted, as well as setting out the responsibilities of those providing parking spaces. It also provides guidance on design considerations and specific standards and design elements that need to be taken into account with respect to public and private car parking provision, both on- and off-street. Furthermore, the document makes comment on the above with respect to different types of parking provision (linear and zone parking), the types of control (time and charge) and the associated traffic control devices and parking furniture needed to provide appropriate and adequate guidance to road users on the prevailing parking restrictions.

For completeness, it contains guidance for various classes of vehicles and users, including buses, taxis and disabled facilities.

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## 2 Responsibilities

Parking provision, for either public or private use, is the responsibility of road controlling authorities (RCAs). Within the TCD Rule, in relation to a road, an RCA:

- (a) means the authority, body or person having control of the road; and
- (b) includes a person acting under and within the terms of a delegation or authorisation given by the controlling authority.

These can be either:

- territorial authorities (TAs)
- regional councils
- Transit New Zealand
- other Crown entities that manage and maintain roads (eg Department of Conservation)
- private landowners providing car parks for public use, including supermarkets, hospitals, airports and universities
- private landowners.

An RCA may provide off-street public parking spaces; for instance, in multi-storey car parks for general use subject to a charge or conditions, or private parking spaces for use by specific invitation only.

### 2.1 Public parking

Public parking is parking controlled by either the local road controlling authority or a private company, that which, subject to the road user meeting the conditions imposed by either organisation, the general public are invited or have a right to use.

#### 2.1.1 Road controlling authorities (RCAs)

RCAs manage on-street parking spaces and may also own and operate off-street public parking facilities. Parking restrictions, prohibitions and fees are typically set by the RCA through bylaws. The bylaws are enforced by RCA-appointed parking enforcement officers who may issue parking notices or impose other forms of penalty, such as the towing away of illegally parked vehicles.

Some off-street parking provided by an RCA may simply be subject to conditions of use (see section 2.1.2).

RCAs in advising road users on parking limitations must comply with the TCD Rule, Transport Act 1962 and Local Government Act 1974 and 2002, as described in section 3.

#### 2.1.2 Private operators

Private operators (who may be considered RCAs with respect to the TCD Rule) may establish and provide parking spaces on land under their direct control for use by general members of the public. Typically, car parking provision is subject to conditions of use, eg parking charges levied on users of the parking space. Private operators (such as universities and supermarkets) cannot make bylaws but are able to enforce their terms of use using their rights as the landowner/occupier. However, it is



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important the private operator provides clear notice of the terms under which the public may use or, as the case may be, not use the space, and use of signs and markings in the form contained in the TCD Rule would substantially meet this need.

Enforcement of the parking conditions is typically through private agencies that may clamp or tow noncomplying vehicles. There should be a delegated authority between the landowner/occupier and towing firm to allow them to act in towing the vehicle. An agreement should be in place between the tow firm and the Police to provide information in an event of the car being reported stolen. In New Zealand, only the Ministry of Justice may clamp vehicles on a public road where there are unpaid court-imposed fines applying.

## 2.2 Private parking

Private parking is controlled by private organisations, whereby parking spaces are available to certain users by invitation only. Private parking may be on-street (eg on non-council managed 'un-adopted' roads) where the street is a private access to a number of dwellings; or it may be off-street, eg private non-residential parking associated with office blocks or retail outlets. Access to and from private non-residential parking spaces may be controlled by various means, such as barriers at the entrance or exit, or can be restricted to users of the private property (eg parkers are required to shop at a specified retail outlet that owns the parking area).

As with private operators providing public parking, enforcement of the parking conditions is typically through private agencies that may clamp or tow noncompliant vehicles. Similar requirements and agreements between the landowner/occupier and towing firm, as indicated previously, should be in place, and any situations should be appropriately signed.

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## 3 Legal framework and implications

### 3.1 General principles and powers

The following documents outline the legal requirements of RCAs and other parties in New Zealand in relation to parking facilities, their enforcement and road user responsibility.

#### 3.1.1 Transport Act 1962

The Transport Act 1962 was the principal act for general road transport matters. Most of the provisions have been updated and incorporated into the Land Transport Act 1998; however, the Transport Act still contains some elements relating to parking, primarily bylaws and appointment of parking wardens.

#### 3.1.2 Local Government Act 1974 and 2002

The Local Government Act (LGA) provides the general framework and powers under which New Zealand TAs operate, and is designed to provide a democratic and effective local government that recognises the diversity of New Zealand communities. The legislation promotes local accountability and defines a clear purpose for local government.

In relation to parking, the LGA sets out the TA responsibility and power to set any parking restrictions and providing parking places

#### 3.1.3 Land Transport Rule: Traffic Control Devices 2004 (TCD Rule)

The TCD Rule describes the requirements for the design, construction, installation, operation and maintenance of traffic control devices. It sets out and details the responsibilities of RCAs in the provision of traffic control devices.

RCAs must follow the requirements as described in the TCD Rule. In particular, sub-clause 13.1 (1) states 'a road controlling authority must comply with this rule when providing, installing, modifying or maintaining a traffic control device'.

#### 3.1.4 Land Transport Rule: Road User Rule 2004 (Road User Rule)

The Road User Rule stipulates how traffic must legally operate on the road and applies to all road users. In particular, with respect to stopping and parking, the Road User Rule stipulates parking prohibitions in certain specific locations, such as near intersections, pedestrian crossings and bus stops. The signing and marking requirements associated with these locations are highlighted in section 3.3.

#### 3.1.5 Building Act 2004

The erection of houses and other buildings is controlled by the Building Act 2004 and applies to the construction of new buildings as well as the alteration and demolition of existing buildings. In particular, it provides legal requirements for the number, design and access of disabled car parking spaces.

## 3.2 Regulation of parking

Parking control is determined by either the RCA or the private landowner. The application of parking control and its enforcement on roads vested in a TA are made under bylaw processes and are made by exercising powers in the Local Government Act 1974 and section 72(1)(k) of the Transport Act 1962.

Transit New Zealand has the power of a local authority under the Transit New Zealand Act 1989 (Transit Act) to legalise parking. However, under section 62 of the Transit Act, Transit has the power to delegate that power to local authorities to manage and enforce parking on the state highway network. In such circumstances, Transit typically determines and legalises the parking restrictions and, where parking is permitted, the TA manages the enforcement of time limits and fee collection.

The RCA must install parking marking and appropriate signs described by the TCD Rule.

The existence of underlying legislation prohibiting parking in certain locations (for instance, within 6 m of an intersection or obstructing vehicle entrances and exits) as prescribed in the TCD and Road User Rules removes the need for such restrictions to be specifically identified within a local authority bylaw and they may not need to be specifically marked or signed. However, where appropriate, they can be reinforced and identified to road users through the provision of appropriate traffic control devices. In such circumstances, however, care is needed to ensure any offence notice issued during enforcement stipulates the correct description of the offence committed. Alternatively, it is recommended the restriction is implemented through the bylaw process to negate any confusion.

The control of parking at any other location deemed appropriate by the RCA/private property owner can be undertaken through the use of signs and markings.

The application of any restrictions on parking on public roads outside of the general limitations of the rules must be by way of RCA bylaw. Information relating to such parking restrictions should be accessible to the public and, if required, be able to be presented to a court to support any prosecution.

Private owners who invite the public to park on their property (eg supermarkets or hospitals) are considered RCAs and therefore have responsibility to manage the signing and marking of parking under the TCD Rule. In order to ensure consistency and understanding of information within these facilities, use of signs and markings in the form contained in the TCD Rule would substantially assist.

## 3.3 Implications of parking legislation

When stopping, standing or parking a vehicle, it must be done with due care and with reasonable consideration for other road users, regardless of whether the vehicle is attended or unattended. Furthermore, under the Road User Rule, where practicable, vehicles should be parked on the road margin (but not on a lawn, garden or other cultivation adjacent to, or forming part of, a road) rather than the roadway itself.

In certain circumstances, legislation requires that appropriate signs or markings be installed to denote parking restrictions or prohibitions and that these be applied in a uniform and consistent manner.

### 3.3.1 Parking signs and markings – general requirements

Parking signs or markings must be used when the RCA has made a bylaw or by some other means to prohibit the stopping of vehicles at all times.

Where parking prohibitions exist through other enactments (eg at fire hydrants, across driveways – see photo, close to corners, and on or near pedestrian crossings), the TCD Rule allows RCAs to install regulatory signs or markings to draw attention to the restriction (see also section 3.3 for more detail). The bylaw process however is recommended for the installation of such regulatory signs and markings.



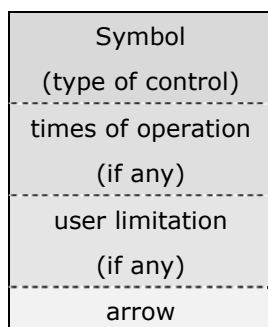
*No stopping line marked over a driveway*

Parking signs must be installed:

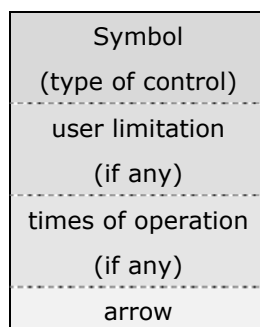
- when the RCA has prohibited or restricted the stopping of vehicles for specified periods of time; or
- when the RCA has prohibited the stopping of vehicles (either at all times of the day or for specified periods of time) to ensure the free flow of traffic movement, eg clearways.

It is not uncommon for a number of parking signs and supplementary plates to be combined onto a single post or other existing structure (eg lamp posts or buildings) – giving road users a range of information. Accordingly, when combining signs, it is important that the general overarching control 'message' is relayed back to the road user at the top of the series of sign combination, thereby creating a hierarchy of importance as outlined in figures 3.1–3.3:

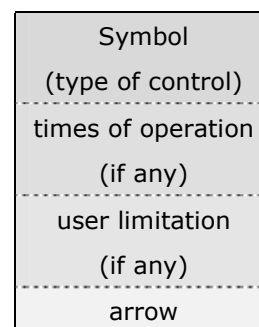
**Figure 3.1** Parking panels



**Figure 3.2** Zone panels



**Figure 3.3** Other panels



The TCD Rule restricts the number of parking signs on the same posts to two, unless one of the signs is a 'clearway' or special vehicle lane sign, in which case three are permitted. However, supplementary information relating to the 'type of control' are not considered as separate signs and can therefore be included on the same post. The individual signs may be mounted on one plate, with the restriction of each sign separated by a continuous line.

Where a number of parking signs apply to the same spaces, it is recommended the most restrictive sign be at the top and the least restrictive at the bottom. For example, a clearway sign would appear above a reserved parking sign, which in turn would appear above a general time limit (at other times) sign.

### 3.3.2 Unsigned or unmarked parking restrictions

As indicated in section 3.2, there are a number of locations and situations where the stopping, standing or parking of a vehicle is contrary to the Road User Rule. However, such locations, as identified below, need not be specifically signed or marked unless the RCA considers it appropriate to do so or has determined parking may occur and has signed or marked this exception.

#### Bends, crests and dips

There are instances where parking on high-speed, high-volume roads or at unexpected locations will create a disruption to through traffic. Within the Road User Rule, drivers or people in charge of vehicles must not:

*Stop, stand, or park the vehicle on any part of a roadway so close to any corner, bend, rise, dip, traffic island or intersection as to obstruct or be likely to obstruct other traffic or any view of the roadway to the driver of a vehicle approaching that corner, bend, rise, dip, traffic island, or intersection unless the stopping, standing or parking is authorised by signs or markings maintained by the RCA (subclause 6.3 (1)).*

While there is no specific requirement for an RCA to mark such locations, the TCD Rule provides for an RCA to install No Stopping signage or markings where demand for parking has created these types of hazards.

#### Intersections

Parking within 6 m of an intersection can reduce visibility for other road users and is not permitted under subclause 6.3(2) of the Road User Rule. Again, while there is no legal requirement to provide road markings at such locations, RCAs may provide them where appropriate to help reinforce the need for vehicles to be kept clear of such locations (see photo on right).



*No Stopping restrictions close to intersection*

#### Driveways

Drivers must not stop, stand or park their vehicles so that they obstruct driveways. Obstruction is defined as a vehicle being parked within 1 m of the side of the driveway (Road User Rule, clause 6.9). The TCD Rule does not require RCAs to mark or sign such locations and, in general, it is recommended they are not marked. However, an RCA may consider installing markings where there is high parking demand or sight visibility is an issue.

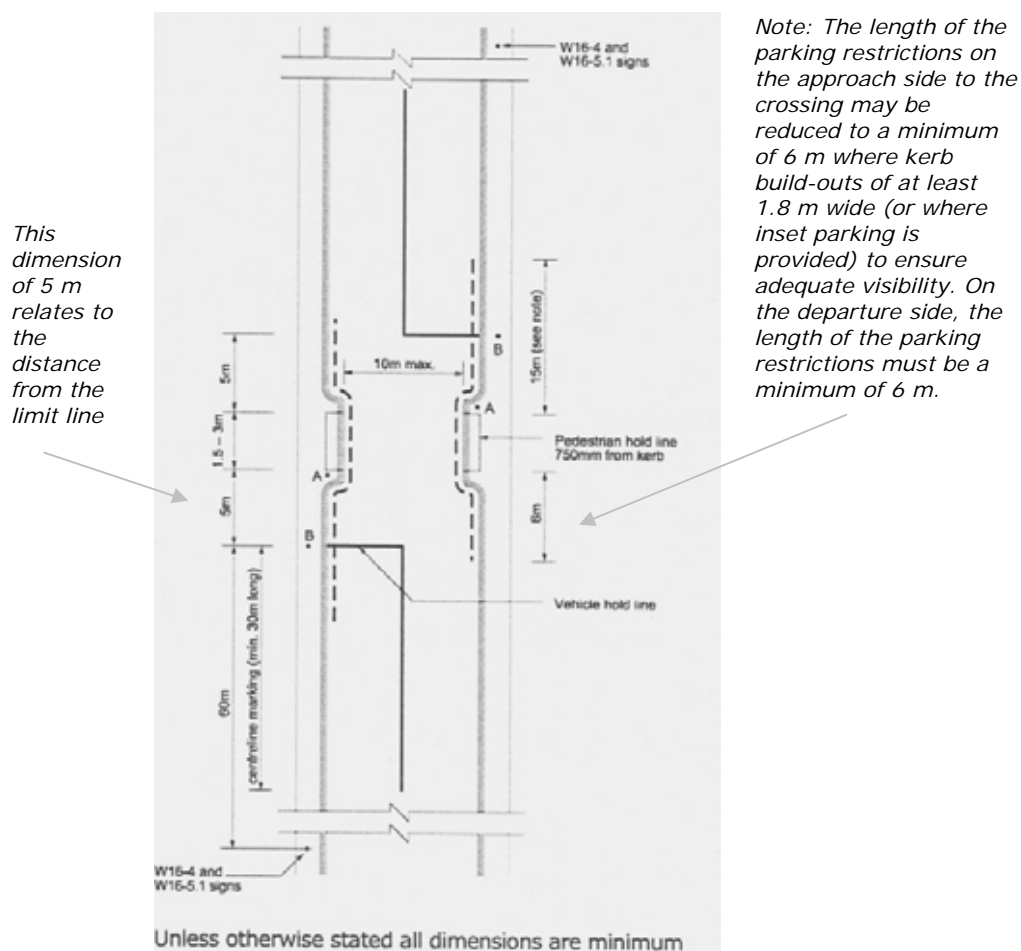
#### Pedestrian crossing facilities

A number of different types of pedestrian facilities are described in the TCD Rule:

- **Marked pedestrian crossing ('zebra crossing')**: A pedestrian crossing or 'zebra crossing' must be marked in accordance with the TCD Rule, Schedule 2 (M1-1). The rule does not require that parking restrictions be applied to the approaches to the pedestrian crossing; however, the Road User Rule states drivers must not park (or stop) on, or within 6 m of the driver's approach to, the marked pedestrian crossing.

- Other pedestrian facilities (eg refuges/traffic islands): under clause 6.7 of the Road User Rule, a driver or person in charge of a vehicle must not stop, stand or park the vehicle on a traffic island or flush median.
- School crossing points ('kea crossings'): A school crossing point must be marked in accordance with the TCD Rule, Schedule 2 (M1-3), which sets out a number of parking restrictions around the crossing location (see figure 3.4).

**Figure 3.4** Parking restrictions around kea crossings



### Bus stops

Road users may not park, stand or stop on or within 6 m of a bus stop sign (Road User Rule, clause 6.8). Bus stops must be marked out where the space reserved for the bus extends for more than 6 m on either side of a single bus stop sign. Where bus stops are marked out, they should be marked in accordance with the TCD Rule Schedule 2 (M3-2). The standard layouts and traffic controls associated with bus stops are included in section 6.

### Special vehicle lanes

Where part of a road is defined as a 'special vehicle lane' (such as a bus lane or cycle lane) for 24 hours, seven days a week, and is suitably marked or signed in accordance with the TCD Rule, no additional signing or marking to restrict or prohibit parking is legally required. In such cases, the driver or person in charge of a vehicle must not stop, stand or park the vehicle in a special vehicle lane unless the vehicle belongs to the permitted class of vehicle for which the lane is reserved and the stopping or standing of the vehicle is permitted by signs or markings (eg a bus stop within a bus lane).

For time-restricted special vehicle lanes, appropriate signs and markings are required to denote the parking restrictions in force outside of the hours of the operation of the special vehicle lane.

### **Fire hydrants**

A driver or person in charge of a vehicle must not stop, stand or park the vehicle within 0.5 m of a fire hydrant (or, if the fire hydrant is below the surface of the road, within 0.5 m of the centre of the cover of the hydrant). However, a person is able to park within this location if someone who is capable of moving the vehicle remains with the vehicle, which can therefore be moved if necessary.



*Fire hydrant (parking restrictions)*

If a fire hydrant is outside the roadway, vehicles must not be stopped, stood or parked between the nearer edge of the roadway and any marking on the roadway indicating the presence of the fire hydrant if the hydrant is located within 6 m of the centre of marking indicating the presence of the hydrant.

Although not specifically required to be marked, an RCA may mark the fire hydrant to help ensure access is maintained (see photo above right).

### **At or near level crossings**

Although not required to be marked and signed, vehicles must not park on a level crossing or near a level crossing so as to obscure the view that other road users may have of the crossing or a rail vehicle approaching the crossing.

Recommended practice in urban areas is to mark at least 20 m of No Stopping restriction, which can be extended to ensure signs and traffic control devices are visible from a safe stopping distance. In rural areas, No Stopping lines may also be marked on the approach to level crossings when the RCA considers parked vehicles may restrict visibility of traffic control devices from a safe stopping distance.

## **3.3.3 Road user obligations toward parking signs and markings**

Legislation also requires a driver or a person in charge of the vehicle to obey certain requirements if appropriately signed or marked in accordance with the TCD Rule, as follows:

### **Parking at an angle**

Where an RCA has indicated parking at an angle to the direction of the roadway by way of parallel lines to indicate the allowed direction (see section 6.2), a driver must not stand or park a vehicle (other than a cycle) other than in accordance with the direction indicated. Goods vehicles that exceed 6 m in length fitted with a flat deck or tray must not be stopped or parked at an angle to the direction of the road during hours of darkness, except if indicated as permissible by signs or markings.

### **Parking on footpaths/cycle paths/shared paths**

Vehicles must not be stopped or parked on a footpath, cycle path or shared path with the exception of cycles and mobility devices. Cycles may be parked if indicated as permissible by signs or markings, or

if cycle parking facilities are installed but a general exception for cycles and mobility devices exists provided when parked they do not unreasonably obstruct any other user of the footpath.

### Reserved parking

Reserved parking is an area of roadway that has been reserved for parking by a specified class or classes of vehicles, activity or by class of road user. This relates to particular types of vehicles such as buses, taxis, goods vehicles and vehicles used by the disabled.

Such areas need to be reserved by the RCA through bylaw and must be signed by one or more appropriate parking signs adjoining the area (at any place or places that give a driver reasonable notice of the presence of the area) (see photo on right). The extent of the reserved area must (unless impracticable) also be marked by lines.



*Showing reserved parking and loading zone*

### Loading zones

A loading zone is an area that has been designated by an RCA solely for the purpose of loading or unloading goods or passengers. Vehicles must not be left unattended for more than five minutes (or any longer period specified on a sign). The RCA must install appropriate signs and markings in accordance with the TCD Rule (see section 6).

## 3.4 Enforcement

With any type of parking regulation, enforcement must be undertaken to effectively manage the parking system. Without ongoing enforcement, road users will become complacent and the measures put in place to manage congestion and parking issues will not be effective.

### 3.4.1 Legislation and bylaws

Councils have the right to set bylaws under the Transport Act 1962 or Local Government Act 1974 and 2002. A council may appoint parking enforcement officers under section 7 of the Transport Act 1962 and their powers to enforce are given by section 72(1) (k). General parking noncompliance and other restrictions (such as clearways) can also be enforced by the New Zealand Police.

When road users do not comply with the bylaw requirements, parking enforcement officers issue parking offence notices (imposing standard parking fines) and may have the vehicle towed away. In some cases, offences or non-payment of the fine can result in court hearings.

Enforcement of bylaws should lead to better overall compliance of the parking and traffic system. There is a need for appropriate levels of enforcement to ensure fair and effective turnover of limited parking spaces and safe and efficient movement of traffic.

Transit New Zealand typically delegates the enforcement of parking restrictions on the state highway to the TA. Private landowners can transfer control of their parking spaces to the TA but, because of current legal processes, they generally prefer to manage their property using rights as landowner or occupier.



### 3.4.2 Types of enforcement

There are three main methods for the enforcement of parking controls:

- Parking infringement notices – the most common form of penalty involves authorised parking enforcement officers issuing tickets to those vehicles that have not complied with the parking controls.
- Wheel clamping – involves attaching a clamp to a vehicle's wheel to hinder mobility and where the vehicle owner will have to pay to have the clamp removed. This can be used by both public (off-road only) and private landowners to aid enforcement of regulations. In New Zealand, only the Ministry of Justice may clamp vehicles on a public road where there are unpaid court-imposed fines applying.
- Tow-away – involves removing a vehicle from an illegally parked area and can be used by both public and private landowners.



*Off-street private property –  
Tow Away sign*

These types of measures are further outlined in the Austroads *Guide to traffic management, Part 11: Parking*.

Private landowners should advise motorists of the type of enforcement undertaken in addition to the conditions of use where public parking is provided.

### 3.4.3 Emergency vehicles

Emergency vehicles are used to attend emergencies and are operated by enforcement officers, the ambulance service, the fire service, civil defence emergency workers or defence force emergency vehicle drivers. Emergency service vehicles have a defence for not complying with parking restrictions, where:

- it is reasonable that the restriction should not apply to the emergency vehicle
- the driver is taking reasonable care in doing so.

Under clause 1.8(1) of the Road User Rule, if it can be demonstrated that there is a 'life and death' situation, an emergency vehicle is permitted to park anywhere provided their emergency beacon is displayed.

### 3.4.4 'Public work' vehicles

A driver has a defence for not complying with a parking restriction if:

- they can demonstrate the vehicle was engaged in a public work on the road
- the vehicle was being used with due consideration for other road users
- the parking was reasonably necessary for the purposes of the work
- the driver took all reasonable care.

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## 4 Design considerations

### 4.1 Parking policies and strategies

The New Zealand Transport Strategy (NZTS) outlines the government's aim to have an affordable, integrated, safe, responsive and sustainable transport system for New Zealand by the year 2010. The five objectives of the NZTS are:

- Assisting economic development.
- Assisting safety and personal security.
- Improving access and mobility.
- Protecting and promoting public health.
- Ensuring environmental sustainability.

The introduction and implementation of suitable parking policies and strategies by local authorities can have an impact on the above five objectives, given that parking management significantly influences travel behaviour. Parking can be considered a key component in both transport and land use planning, as managing the availability and cost of available parking can help reduce the number of car trips to a particular location.

Parking policies should not be considered in isolation, but should support and take into account wider transport, economic development, urban design, environmental, and social and recreational strategies that may exist at a local and regional level. It is particularly important to consider parking standards within a regional context, given competing regional centres. For instance, the provision of free or unlimited parking at one retail centre may attract motorists away from another, closer shopping centre that has parking restrictions. Such an uncoordinated approach may therefore generate more and longer trips by car overall. Accordingly, parking provision should be viewed as an integral part of the transport issues associated with land use development.

The development of robust local and regional policies related to parking allows specific locations and areas to have targeted strategies in place depending upon the parking management regime required, eg residents' parking or zone parking within a central business district (CBD).

In developing and implementing parking policies and strategies, a number of issues (as shown below) should be considered.

#### 4.1.1 Functions and hierarchy of the road

Each road within a district should have a road hierarchy classification – this is normally outlined in the district plan of each TA. The hierarchies are there to ensure that all roads are consistent with their classification to achieve a safe and efficient transport network. It is important that parking requirements, restrictions and prohibitions relate to the intended function of the road (see table 4.1).

The function of each particular road type needs to be examined when determining the level of parking and, in cases where there are high volumes and speeds, the ability of the road to carry traffic efficiently and safely is reliant upon external factors such as parking and access control. For example, where there are arterial sections of road where peak volume are high, there may be a need to introduce clearway parking during specific times of the day to provide extra lanes to through traffic.

**Table 4.1** Movement and parking functions by road class

Road type	Movement function	Parking function
Motorway	Principal routes for the movement of goods and people between regions	No parking allowed
Arterial	Primary network that connects regions and cities/towns, as well as being the main roads through cities/towns, often forming long continuous routes and carrying the bulk of urban travel	Limited. Any parking provided should provide sufficient room for vehicles to manoeuvre out of spaces without disrupting through traffic. Opportunity exists to provide time-restrictive operations during peak times (eg clearways)
Collector	Provides a connection between the arterial and local roads	Provided, but may have differing types of restrictions applied
Local	Provides access to adjacent property	Provided. Restrictions may be applied where demand is high

In conjunction with the roading function, parking policies and strategies need to be linked to the overall land-use type in which the road is located.

#### 4.1.2 Adjacent land use and development

Land use is a major factor when developing parking policies and strategies (as well as when determining supply and demand for specific parking facilities). Land use can be split up into general types of activities (eg as set out in a TA's district plans), which can help guide the type of parking controls to be implemented, for instance:

- In retail and commercial areas, parking controls such as the provision of short-term parking for clients and customers will support such activities. The most sought-after spaces should be made available to the greatest number of people through the use of time limits.
- In residential areas, particularly near commercial areas, parking controls such as resident parking permit schemes will support residents' parking needs. Naturally, such controls need to balance the needs of non-residents visiting the area by way of time-limited parking.

For each type of road within different land use zones, permitted stopping and parking activity types (eg bus stops, taxi stands, loading zones, disabled parking, short-/long-stay parking, residents' parking) can be identified and potentially prioritised.

Local authorities have a responsibility in determining the number of off-street parking spaces to be provided, through controls set down in their district plan. These controls typically provide for maximum or minimum numbers of parking spaces for specific types of development and relate to the policies and strategies adopted by that local authority. Larger developments that typically require an integrated transportation assessment to support the resource consent application should identify the amount and type of parking to be provided with respect to the district plan.

### 4.1.3 Traffic characteristics

The type of vehicles or classes of users and their relative priority in terms of time and space allocation will need to be identified when developing a parking strategy and designing layouts for an area. Vehicle sizes and dimensions are included in section 4.5.

The types of vehicles include cars, taxis, heavy vehicles, cycles, motorcycles and buses, while classes of users include disabled, commercial and local residents. The demand for parking is largely influenced by the adjacent land use, such as retail areas in the middle of a CBD, schools, residential suburbs or industrial zones.

## 4.2 Urban design considerations

When developing and designing both on- and off-road parking facilities, certain environmental aspects should be considered to ensure they blend into the surrounding facilities and provide a certain level of 'attractiveness' to road users. The following should be considered when developing parking areas:

- separating surface parking places into smaller areas
- using different colours and textured materials appropriately
- using landscaping to provide visual impact to parking areas.

In addition to the above, the designer needs to consider how well the design of the car park area, building, etc fits into the overall environment. This would include aspects of types of access, pedestrian use (including users of mobility devices), safety, landscape and site context. Further information is provided within the *New Zealand urban design protocol*, the *National guidelines for crime prevention through environmental design in New Zealand* and *Austrroads Guide to traffic management: Part 11: Parking*.

## 4.3 Characteristics of users

When developing parking areas, the type and characteristics of potential users need to be considered in order that their requirements are taken into account during the design. Potential users include:

- **Casual users:** These are usually short-term visitors to an area who would not be familiar with the parking systems in place. These types of users may warrant larger parking spaces being made available.
- **Regular users:** Those who are familiar with the parking system. These types of users may be comfortable with using smaller car parking spaces.
- **Disabled users:** These are defined within the Building Act 2004 and NZS 4121: 2001 *Design for access and mobility – buildings and associated facilities*. Types of mobility-impaired users and their requirements should be identified within any parking strategy in order to provide sufficient facilities. Parking for people with disabilities is required under law as set down in the Building Act 2004. The requirements generally refer to a percentage of spaces being made available to those with disabilities.

NZS 4121:2001 states 'it is required under Section 118 (previously section 47A ) of the Building Act to provide car parks for disabled road users', and car parks provided for this purpose must be on an accessible route and as close as practicable to the site. The standard also refers to the minimum requirements for design standards, accessibility issues and the minimum number of parks required dependent on the land use.

Reference to layouts and requirements is also detailed in NZS 4121: 2001

Those road users with disabilities able to use this type of parking need to apply to CCS Mobility Action and other approved providers for a disability parking permit, which is required to be displayed for enforcement purposes. Note: The majority of TAs will accept international mobility permits when enforcing the use of disability parking spaces.

- **Other:** Off-road parking facilities (such as supermarkets, hospitals, universities) may provide space for users other than those listed above who require specific design requirements. For instance, 'parent and child' parking bays, reserved for parents travelling with children (often up to approximately eight years of age), may be provided and would probably need to be designed to accommodate push chairs and prams being taken out of, or put back into, a car.

## 4.4 Parking management

In addition to the quantity of parking provided, parking can be managed through a number of interventions such as time restrictions, pricing mechanisms and restricted usage. Fees and time limits are often used to ration and create turnover of spaces where there is a short supply of parking provision relative to demand.

### 4.4.1 Time limits

As part of the sign requirements for regulation of parking facilities, there are common time restrictions applying to linear or zone parking. The permissible periods of parking are normally in multiples of '5 minutes' and are applied in appropriate situations, generally determined by use.

Time limits help create a turnover of parking spaces, thus maximising opportunities for a greater number of motorists to park their vehicle in locations of high demand.

Short-stay parking facilities are needed for shoppers or visitors to an area who generally require a limited amount of parking time. Where demand exceeds supply for these types of users, alternative arrangements such as off-street facilities or fee-paying systems should be introduced to minimise conflict and congestion on the surrounding road network.

Long-stay parking facilities are appropriate for those drivers who generally park all day, such as commuters. Their demands must be taken into consideration when developing a strategy to ensure commuter parking does not occupy valuable parking areas required by those requiring short-term parking arrangements, such as shoppers and visitors.

Table 4.2 suggests a range of parking durations and appropriate uses. Further information is provided in the Austroads *Guide to traffic management, Part 11: Parking*.

Where provisions are made for disability parking, consideration should be given to whether the signed time restrictions for adjacent parking facilities are appropriate for the reserved disability spaces. Given mobility problems, the disabled may take longer to travel between the parking area and their destination. The TA may wish to review the time limits imposed on the disabled or review enforcement requirements. For instance, commonly used techniques include applying a 30–60-minute parking extension as a concession to the disabled. Note that a 5-minute ('P5') parking restriction should not be used in disabled parking areas.

**Table 4.2** Examples of parking durations and use

Duration	Use	Examples
2 mins	Used at locations where people are likely to be picked up and dropped off and vehicle is likely to be attended	Drop-off or pick-up zones for passenger or goods
5–10 mins	Used at locations where people are likely to be picked up and dropped off	Hotels, movie theatres, airports, schools
15 mins	Used at locations where people exit the car for short-duration visits	Single land use facilities, eg dairy, banks
30 mins	Locations with a high turnover of shoppers due to demand	Number of small shops or multi-use shops
1 hour	Where there is a high turnover of shoppers and major demand for parking	Major shopping centres, professional services (eg lawyers, medical centres, accountants)
2 hours	Major demand for parking  Resident parking schemes may apply for long-term users	Professional services  Shopping centres
4 hours	Used for those areas where all day parking is not desirable	Areas where shopping/professional services apply

#### 4.4.2 Fee-paying systems

As the demand for parking outweighs the supply, there may be a need to incorporate some fee-paying systems to help better manage the parking available within the network. Fees can be effective in ensuring that motorists stay no longer than they need to, which, as with time limits, creates turn-over of the parking space and provides an opportunity for another motorist to use the space.

There are several different types of fee-paying systems for parking, which can be paid for in different ways depending upon the technology available (for instance, being able to insert a coin in a parking meter or pay by cellphone at a Pay and Display machine):

- parking meters
- coupon parking and parking permits (permits issued for specific time periods)
- ticket vending machines – Pay and Display.

The issues associated with using these types of systems are further outlined in section 9. Some of the benefits from introducing fee-paying systems are:

- higher turnover in parking spaces
- better enforcement due to time systems in place
- discouragement of all day parking
- increase of revenue.

### 4.4.3 Restricted usage

By restricting parking spaces to certain users, such as residents within a defined area, parking can be managed to best address the needs of those who may be affected by 'stray' parked vehicles. The restriction of parking to certain groups of people is typically tied in with time restrictions – so that restrictions are in place when area-wide demand would exceed supply, eg during the working day when commuters and shoppers may try to park in residential areas close to the CBD.



*Coupon parking sign with time and day restrictions*

When developing residential parking schemes, a balance in parking provision must be sought with any local businesses in the area. An overall parking strategy needs to be developed to incorporate all these issues. See the photo above right for a typical sign used in a coupon parking area.

## 4.5 Parking provision

### 4.5.1 Parking zones and resident parking

Zone parking generally covers an area with a uniform set of specific parking restrictions. Fee-paying systems can be applied to this entire area. There may be situations where specific parking zones over a small area may be established within an overall larger CBD zone – ie where a self-contained area has parking restrictions that vary from the overarching zone parking controls. Where this occurs, the most appropriate signage must be displayed to correctly identify to the road user the system in place.

The extent of a parking zone is shown by the use of signs at all entry and exit points to the zone. Examples of layouts of signs for an area can be found in section 7. Further information on placement of signs associated with zone parking is contained in *AS 1742.11: Manual of uniform traffic control devices – part 11 parking controls*.

### 4.5.2 Loading zones

Loading zones are generally created for those vehicles that require parking for a short term to pick up or drop off goods or passengers. The type of zone required (whether for goods, passengers or both) and the time limits will be determined by the RCA. Sites should be located at one end of parking bays free from any obstructions for ease of use when unloading or picking up. Further information is provided within the Austroads *Guide to traffic management, Part 11: Parking*. The signing and marking of loading zones is contained in section 6.

### 4.5.3 Rural parking

The majority of the information within this document relates to urban parking facilities, where there is typically more pressure on parking. However, rural parking issues do exist.

Types of rural parking include, but are not restricted to, rest areas, motorist service centres and truck stops. It is recommended that parking facilities in rural areas be located off-road where practicable. Advance directional signage should be provided so drivers have sufficient time to make a decision while travelling.

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The types of signage, including motorist service signs, are located within *Manual of signs and markings, part 1*. Further information on rural parking can be found in *Austrroads Guide to traffic management, Part 11: Parking*.

## 4.6 Design vehicles – base vehicle design

Traffic Note 48 (Land Transport NZ) 'Light vehicle sizes and dimensions: street survey result and parking space requirements' suggests AS/NZS 2890.1: 2004 *Parking facilities Part 1: Off street car parking* reflects New Zealand vehicle fleet data, and use of that standard is encouraged.

The base vehicle design is used to determine appropriate widths and lengths for vehicle spaces. Measurements are also taken from the Land Transport Rule: Vehicle Mass and Dimensions (2002) and should be taken into consideration along with the design elements outline in section 5, and any requirements identified within TA district schemes, bylaws or other documentation.



## 5 Design elements

This section describes the specific standards and guidelines in relation to the elements of design of parking spaces.

### 5.1 Off-road parking

Off-road parking is where the parking facility does not directly interact with the through traffic flow along a road other than at the access point between the road and the car park.

This type of facility is required when demand for parking far outweighs the supply of on-road facilities and alternative parking areas are required. More information on off-road parking, including undercover and multi-storey parking facilities, can be found in AS/NZS 2890.1:2004 and AS 2890.2: 2002 *Parking facilities: Part 2: Off-street commercial vehicle facilities*. AS/NZS 2890.1 defines the classification of off-road parking by user type – such as all day parking, residential, long term, short term, high or low turnover and people with disabilities.

When providing off-road parking facilities for a substantial number of vehicles, a traffic impact assessment should be undertaken to assess:

- the impact of the generated parking traffic on traffic flows on the surrounding road network, including, as a minimum, the performance of the car park access
- the interaction of manoeuvring vehicles and pedestrians and the provision of suitable walking facilities within and to/from the car park
- any conflicting issues with adjacent side road and access ways, including site visibility
- the adequacy of queuing space within the car park to ensure vehicles do not block the approach roads.

### 5.2 On-road parking

On-road parking can be generally described as that which is located alongside the edge of the road, and where manoeuvring into and out of a parking space may interact with traffic flow. Further information can be obtained from AS 2890.5: 1993 *Parking facilities: Part 5: On-street parking* and section 7 within Austroads *Guide to traffic management, Part 11: Parking*.

On-road parking is typically provided either parallel to or at an angle to the direction of traffic. Issues associated with each type of on-street parking are shown in table 5.1. It should be noted that 'front-in' angle parking (where a motorist drives their vehicle into the angled space and reverses out) or 'rear-in' angle parking (where the motorist passes the space and then reverses into the park and drives forward out of the space) may occur. The relative merits of each are discussed in detail in the Austroads *Guide to traffic management, Part 11: Parking*.

**Table 5.1** Positives and negatives of types of on-road parking

Type of parking	Positives	Negatives
Parallel	If controlled, has the least disruption on flow of traffic	Cannot accommodate as many spaces as angle parking.
	Has less crashes associated with manoeuvring out of parking spaces than angle parking	Some cyclists may ride into an opening car door.
Angle (kerb)	Provides more spaces than parallel parking	Needs a wide roadway width to accommodate spaces
		Depending on angle, it may be difficult for drivers parked to enter into traffic stream.
		Not suitable next to a cycle lane unless there is extra clearance for parking manoeuvres
Angle (centre of road – with a median separating traffic lanes)	Creates traffic calming effect	Should not be used on arterial roads, especially in conjunction with parking along the kerb
		Pedestrians have to cross the road to reach the vehicle

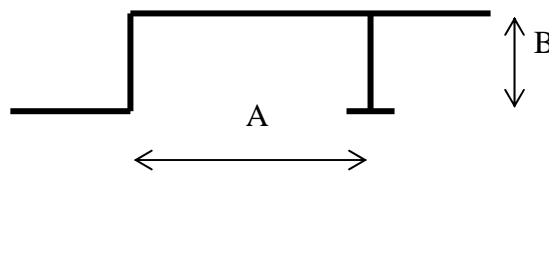
### 5.3 Space requirements for design vehicles and users

There are a number of standard space requirements for specific vehicle types. The following information on design layouts for parallel and angle parking dimensions is taken from AS/NZS 2890.1:2004 or AS 2890.5 unless noted otherwise. Design requirements are the basic minimum standard for New Zealand conditions and their use should be considered with respect to the 'Design considerations' in Section 4. For instance, when providing reserved spaces for use by the disabled or 'parent and child' vehicle parking spaces, parking bays will need to be larger than the minimum dimensions for 'standard vehicles'. Furthermore, when designing and providing parking bays, vehicle tracking (or turning) movements should be taken into account.

### 5.3.1 Parallel parking

Parallel parking adjacent to the kerbside in the direction of the traffic flow is a common form of on-street parking. The recommended minimum space requirements for different types of vehicle are shown in table 5.2.

**Table 5.2** Preferred parking space lengths for parallel parking



Vehicle type*	Space length (A) (m)	Space width (B) (m)
Standard vehicle (car/van)	5.4 <sup>1</sup> /6.0	2.5
Taxis	5.4 <sup>2</sup>	2.5
Disabled (on-street)	6.0 <sup>3</sup>	2.5
Disabled (off-street)	6.0 <sup>3</sup>	3.5 <sup>3</sup>
Bus	12.0 <sup>4</sup>	2.5
Coach (using articulated vehicle)	19.0 <sup>5</sup>	3.5
Truck (small rigid vehicle)	6.4 <sup>5</sup>	3.5
Truck (medium rigid vehicle)	8.8 <sup>5</sup>	3.5
Car towing trailer	12.5	2.5
Truck (large rigid vehicle)	13.5 <sup>5</sup>	3.5
Truck (articulated vehicle)	18–20 <sup>5</sup>	3.5
Bicycle	2.0	1.2
Motorcycle	2.5	1.2

\* The Land Transport Rule: Vehicle Dimensions and Mass 2002 limits standard vehicles with their loads to a maximum height of 4.25 m. Normal clearance provided for most parking facilities is 4.5 m. For other dimensions and clearances, also refer to section 5.3 in AS/NZS 2890.1: 2004.

<sup>1</sup> AS 2890.5: 1993 (on-road) has three different lengths depending on the location of the parking space. 5.4 m is the nominal space length and is used in standard layouts for on-road parking at end of bay and 6.0 m is used for middle parking bay. See AS 2890.5: 1993 for further information. Spaces adjacent to walls or other obstructions can have their width increased by 300 mm on the side of the obstruction.

<sup>2</sup> For taxi bays, use  $5.4n + 1.0$  where  $n$  = number of taxis along taxi stands (AS 2890.5: 1993).

<sup>3</sup> Design requirements are taken from NZS 4121:2001. Any variations on standard parking dimensions such as rear-mounted hoists should be investigated further. Use standard vehicle length requirements to accommodate any variations in vehicle. The minimum length requirement in NZS 4121:2001 is at least 5 m; however, good practice is 6 m. Furthermore, under subparagraph 12.4(8)(a)(ii) of the TCD Rule, a reserved parking area such as that provided for disabled users cannot have the parallel marking more than 3 m from the kerb or roadway edge.

However, this is only for the width of the parking bay, and the turning circle is not provided for within the 3 m width; an additional 1.5 m should be provided for this.

<sup>4</sup> For bus bay length, use  $(n * l)$  where  $n$  = number of buses using the bay simultaneously and  $l$  = length of vehicle. As a guide, use 12 m for single unit rigid buses and 18–20 m for articulated buses. Consider taper lengths of 15 m on approach and 15–30 m on departure. It is recommended the dimensions of the local vehicle fleet are confirmed prior to design.

<sup>5</sup> Descriptions of vehicle type are taken from AS2890.2:2002 (and included in the definition). Dimensions are taken from table 4.1 for service bays.

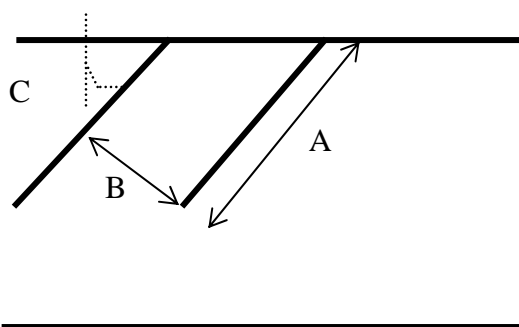
### 5.3.2 Angle parking

Angle parking is used where there is sufficient roadway width. It permits the accommodation of a larger number of parking spaces in comparison with parallel parking. The angle of the park can vary from 30° to 90° depending on the type of environment and width of roadway.



Angle parking bays with central Pay and Display machine

**Table 5.3** Preferred parking space lengths for angle parking



Vehicle type	Space length (A) (m)				Space width (B) (m)			
Angle of park (C)	30°	45°	60°	90°	30°	45°	60°	90°
Standard vehicle (car/van) <sup>1</sup>	5.4	5.4	5.4	5.4	2.5	2.5	2.5	2.5
Disabled	5.4	5.4	5.4	5.4	3.0	3.0	3.0	3.0
Bus	Not applicable							
Truck (small rigid vehicle) <sup>2</sup> (SRV)	Not applicable							
Truck (medium rigid vehicle) <sup>2</sup> (MRV)	(see AS 2890.5:1993 where it states that 'if kerbside parking is required then parallel parking is the only practicable configuration')							
Truck (large rigid vehicle) <sup>2</sup> (LRV)								
Truck Articulated Vehicle <sup>2</sup> (TRV)								

<sup>1</sup> Using dimensions from the Medium Use Category in AS 2890.5:1993.

<sup>2</sup> Descriptions of vehicle type are taken from AS 2890.2:2002. Dimensions are taken from table 4.1 for service bays.

## 5.4 Vehicle classes

### 5.4.1 Taxi stand

As noted in section 5.3, taxi stand dimensions are similar to those required for standard vehicles. The signing and marking requirements for taxi stands are contained in section 6.

AS 2890.5 provides guidance on locating taxi stands, as well as the overall number of taxis to be catered for within a taxi stand.

### 5.4.2 Bus stops and bus or coach parking

Bus parking requirements should be based on either rigid or articulated vehicle designs, depending on the bus fleet in operation. Buses are generally treated the same as heavy vehicles with regard to base vehicle design. Dimensions for buses and coaches are described in section 5.3.

Coach parking should be provided where there has been a need identified, particularly in tourist locations and areas servicing entertainment facilities. The need for separate coach parking can also occur where the drivers otherwise attempt to park in a bus stop used by scheduled bus services. Coaches are larger than normal buses, with parking bay sizes similar to those required by articulated heavy vehicles (see section 5.3). Where there is limited space, sites can be designated drop-off or pick-up zones, with the coach directed to another area for long-term parking.

When locating bus stops, it is essential that consideration be given to providing sufficient footpath space to ensure that pedestrians (including mobility devices) waiting at the bus stop do not hinder the through passage of users of the footpath. Advice on the location and provision of school bus stops is provided in Land Transport NZ Traffic Note 44 'Safe siting of school bus stops'.

### 5.4.3 Heavy vehicle parking

Parking for heavy vehicles is generally created due to demand, rather than as part of a standard parking facility.

There are many different types of heavy vehicles and these must be assessed prior to developing any scheme that involves parking provision. Dimensions of these types of vehicles are prescribed in the Land Transport Rule: Vehicle Mass and Dimension 2002, while suggested parking bay dimensions are described in section 5.3. Further information on dimensions and design principles is contained in AS 2890.2: 2002.

### 5.4.4 Motorcycle parking

Motorcycle parking is typically provided where there has been a need identified, rather than as a standard requirement. It should be noted that difficulties can occur in attempting to implement and enforce fee-paying systems for motorcycle parking, including providing parking meters. In addition, motorcycles cannot always display parking tickets in a secure manner. Motorcycle parking can often be accommodated in spaces that are too constrained for other classes of motor vehicles.

The marking and signing requirements for motorcycle parking are included in section 6.

### 5.4.5 Cycle parking

Cycle parking facilities typically consist of stands, enclosures or lockers. Stands can be considered as short-term parking devices located in almost any position and can be suitable in locations with a high level of passive security, eg outside shops. Enclosures are communal compounds, used for instance at workplaces, providing protection from the weather and having a higher degree of security. Bike lockers provide a high level of security for individual cycles and are located for instance at passenger transport interchanges.

When providing cycle parking facilities on the footpath, care should be made with respect to ensuring that the facilities (with cycle attached) do not block the movements of others using the footpath. Stands should be placed a minimum distance of 1 m apart to ensure that two cycles can be attached to the stand (one on either side) and that access to the cycle is still maintained. Similarly, adequate space should be left at each end of the stand in order to allow safe and easy access (for instance, without having to stand in the road) and to ensure that the protruding wheels of parked cycles don't encroach into the road.

### 5.4.6 Emergency service vehicles

If specifically designing for these larger types of vehicles (eg fire engines and ambulances), the parking bay dimensions will be similar to those of a large rigid vehicle, contained in section 5.5.

### 5.4.7 Others

There are other special types of vehicles that should be taken into consideration when developing parking requirements for a facility or area. These can include:

- **Vehicles with trailers:** Austroads *Guide to traffic management, Part 11: Parking* recommends these should be treated in the same manner as truck parking in relation to stall width and depth, tracking paths, etc. Dimensions can be found in AS 2890.2, while parking bay dimensions can be found in section 5.3.
- **Motor-homes:** There are some situations where parking needs to be provided for the overnight parking of vehicles, in particular, motor-homes. Parking associated with these kinds of vehicles for overnight use is typically catered for within off-street car parks that are normally close to empty at night. Special facilities may need to be provided for overnight parking requirements.

## 5.5 Car park design

### 5.5.1 Geometry

The layout and geometric characteristics of parking facilities are important factors for both usability and safety of the facility. Further information on specific geometric uses can be referenced from AS/NZS 2890.1, AS 2890.2 and AS 2890.5. In summary, factors that should be considered when designing parking areas include:

- horizontal and vertical alignment
- provision of parking spaces where sight visibility is not adequate
- tracking paths for vehicles entering into and leaving from angled parking spaces
- surface condition and slope of parking spaces

- the location of the parking facility access: these should be located in areas where there is adequate sight distance along the main road from the car park access. This is particularly important in rural areas, given the high speeds of approaching vehicles and time required by heavy vehicles to accelerate and exit from the parking facility
- location of street furniture in relation to parking spaces
- location of disabled parking and ramps in relation to buildings and access to destinations
- pedestrian and mobility device access within the parking area (see below).

### 5.5.2 Pedestrians and mobility devices

Consideration must be given to providing a friendly environment for pedestrians and mobility devices free from (or with a limited number of) obstructions. Personal security issues such as lighting, clear paths and the provision of security systems should be considered as part of a design. See section 4.2 on urban design considerations.

### 5.5.3 Surface condition of the parking space

The surface of a parking space or area should be relatively flat, formed and free from any obstructions that may cause harm to road users.

For people with disabilities, 'the surface condition shall consist of an unobstructed area having a firm plane surface, all at one level, with a fall not exceeding 1:40 in either direction of parking or at 90 degrees to it, or 1:33 if the surface has a bitumen seal' (AS 2890.5: 1993). If possible, however, a gradient of 1:50 is preferred.

Coloured road surfaces can also be provided to reinforce the use of reserved parking spaces by disabled users. It is recommended blue be used to help better identify parking spaces reserved for disabled road users. This is a common feature overseas. In addition, the disabled parking symbol specified in Part 3 Schedule 2 of the TCD Rule (M3-5) should be marked.



*Coloured disabled parking space, Australia*

### 5.5.4 Lighting and security

When designing either on- or off-road parking facilities, security of those using the facilities must be taken into consideration to ensure poor design does not hinder or limit the use of the facility (eg drivers being unwilling to use a car park due to personal or vehicle security concerns). The following should be considered when developing parking areas:

- adequate and consistent lighting
- design of open spaces where those entering or leaving vehicles are not walking through narrow areas where lighting is insufficient
- limited vegetation that can provide cover
- provision of security surveillance systems.

## 6 Linear parking

Linear parking occurs along individual lengths of road either adjacent to the edge of the road or in the centre of the road. It can be either parallel to the kerb or at an angle – most commonly 30°, 45°, 60° or 90° (at right angles to the kerb). The signs and markings used to control linear parking are shown below.

### 6.1 Signs

#### 6.1.1 Sign specifications

Specifications for traffic signs associated with linear parking are described in the TCD Rule.

*Sign specifications*, currently under development, provides images that may be applied directly by sign manufacturing software.

Signs published can be viewed at [www.landtransport.govt.nz/roads/tcd/index.html](http://www.landtransport.govt.nz/roads/tcd/index.html).

#### 6.1.2 General

Signs (including supplementary signs) incorporating arrows to indicate the direction and extent of a parking restriction 'must be installed parallel to, or at an angle of not more than 45 degrees from, the side of the roadway to which they relate' (subclause 12.5(3) TCD Rule).

There is a limit to the number of signs that can be installed on the same pole or in the same location on the same building, wall or fence. The limit, described in the TCD Rule, is:

- not more than two parking signs (or three parking signs, provided one of them is a clearway or special vehicle lane sign); or
- one parking sign and one pedestrian sign.

A supplementary plate for this purpose is considered to be part of the sign it supplements.

A sign incorporating the letter 'P' denotes a parking restriction applying between 8 am and 6 pm on all days except public holidays, unless otherwise specified.

Signs relating to the restriction or prohibition of parking on a length of road must be installed:




- at the start and end of the length of the restriction (section of affected roadway)
- at or near both sides of an intervening intersection along its length (except for clearways, where signs need only be installed beyond each intervening intersection)
- at distances of not more than 100 m between any two signs.

Care should be given to the placing of sign posts to ensure they do not impact on the opening of car doors – for instance, placing signs in the middle of disabled parking space may prevent the vehicle's door being opened or affect access to any mobility device required.



## No Stopping

**Table 6.1** No Stopping – signs and usage



Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples	
No stopping (at all times)	P1-1 P1-3 P1-4	To indicate a length of road along which stopping is prohibited at all times. The prohibition applies over the full width of the road reserve.		
				

These must be installed:

- at right angles to the roadway (or in a way that clearly indicates the area of the road to which the restriction applies and facing in the direction of approaching traffic)
- at a distance of no more than 100 m between any two signs on roads with a speed limit up to and including 70 km/h, and no more than 500 m on rural roads (ie the speed limit exceeds 70 km/h).

The signs may be used with No Stopping markings (see section 6.2).


**Table 6.2** No Stopping – specified period: signs and usage

Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples	
No stopping (specified period)	P1-1 P1-3 P1-4	To indicate a length of road on which stopping is prohibited at certain times of the day and/or days of the week		

- More than one time period can be noted on the sign.

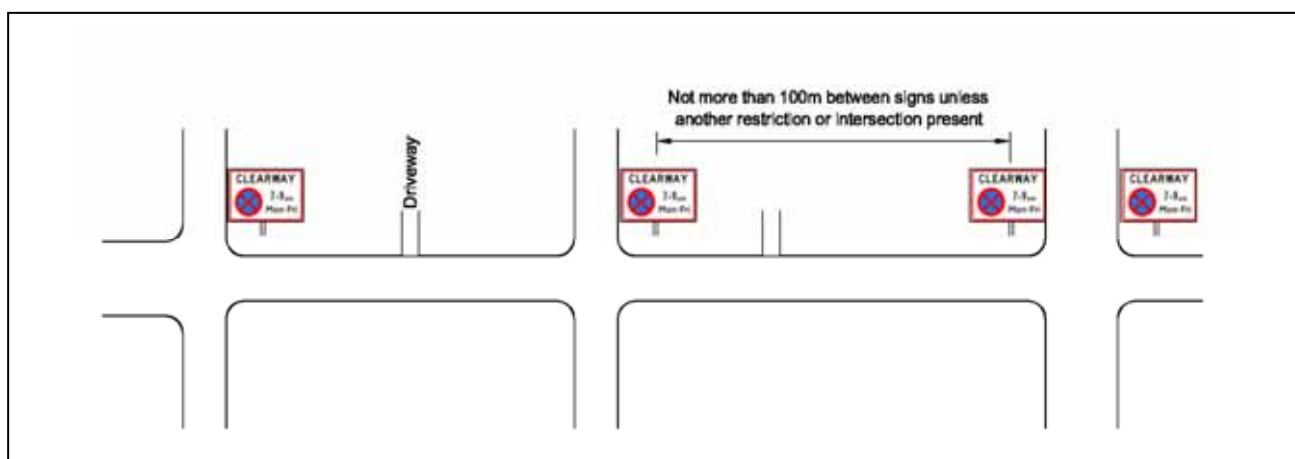
## Clearways

**Table 6.3** Clearway – signs and usage

Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples
Clearway (No stopping – specified time period)	P1-2	To indicate the length of road that stopping is prohibited in order to provide an additional traffic lane during the specified time periods.	


- Clearway restrictions are used to assist with the free flow of traffic by ensuring the capacity of a traffic lane is not compromised by parked vehicles or may create an additional lane.
- The signs should be installed at the beginning of each restriction and at intervals not exceeding 100 m.

**Figure 6.1** Clearway signs along a length of road



## No Parking









**Table 6.4** No Parking – signs and usage

Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples
No Parking (specific site requirements)	P-3	To indicate where no vehicle, other than those indicated, may park, stop or stand provided the driver remains in attendance	

- Must always be used in conjunction with a vehicle type, eg bus stops and taxi stands.

## Parking – restricted use



**Table 6.5** Restricted use parking – signs and usage

Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples	
Parking time restricted	P2-1 to P2-4	To indicate a parking time limit (ie the length of time permitted to be parked in the same location)		
Parking reserved for described vehicle classes	P4-2 to P4-5	To indicate permitted types of vehicle parking (and extent of parking time limit).		
Parking reserved for different user types	P4-6	To indicate that parking permitted for disabled road users only – displaying a valid permit		
Parking reserved certain activities	P4-1	To indicate designated area for loading zones and reserved parking		

- Without the sign indicating a specific period (eg certain days of the week or non-standard hours) for which the parking time limit applies (in minutes), the restriction relates to standard hours and days of operation (8 am to 6 pm, Monday to Sunday other than public holidays).
- Vehicle classes include buses, cycles, motorcycles, shuttle buses and other 'authorised' vehicles.
- Time restrictions are generally in multiples of five minutes.
- Signs associated with loading zones and reserved parking areas must specify the class of vehicle or road users, and/or designated activity to which the loading zone or reserved parking area is restricted.
- A loading zone includes the dropping off of passengers or goods unless specifically restricted, by wording of the sign to one or the other.
- Supplementary plates indicating time restrictions are permitted on 'vehicle class' and 'road user' parking restriction signs.

## Special vehicle lanes

**Table 6.6** Special vehicle lanes – signs and usage

Type of restriction	Sign no. ( <i>Sign specifications</i> )	Use	Sign examples
Special vehicle lanes	R4-7 to 4-9	To indicate a reserved traffic lane for use by the class of vehicle indicated.	 

- No additional parking signs or markings prohibiting parking are required if the traffic lane is marked and, if necessary, signed as being reserved for the use of permitted identified vehicles.
- Special vehicle lanes include bus, transit and cycle lanes.
- Special vehicle lanes may be crossed over by a driver in order to park in a place clear of the special vehicle lane.

## 6.2 Markings

Markings are an important part of parking control and can be the required mechanism for defining a restriction or help reinforce a restriction imposed by a sign. In addition, marking can provide guidance on how parking spaces are to be used.

### 6.2.1 General

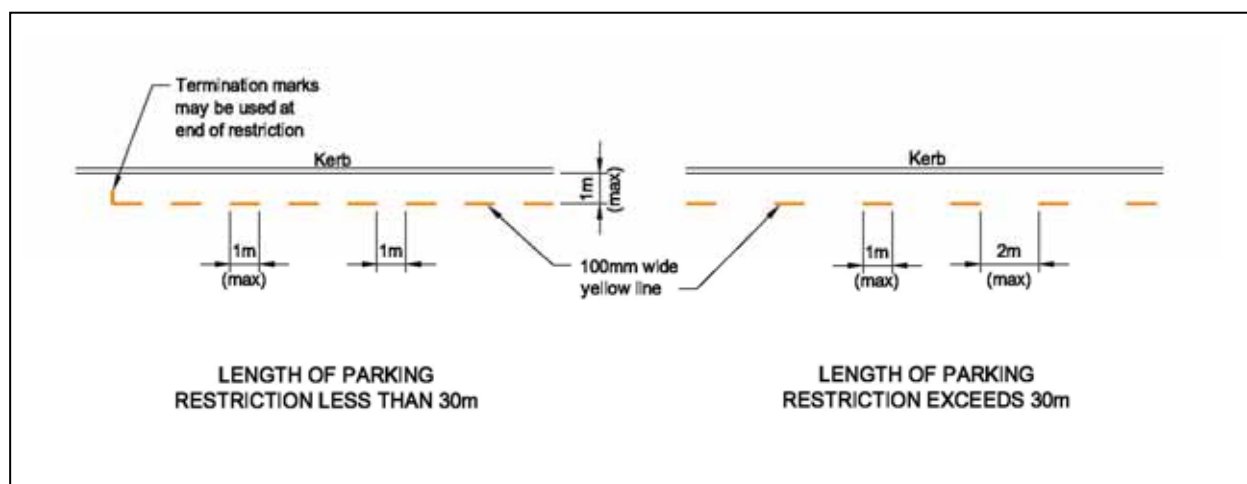
The legal requirements for the installation of markings and their dimensions are included within the TCD Rule.

The types of materials (and their tolerances) used for roadway markings should be used in accordance with Transit's *TNZ M/20: 2003 Specification for long-life roadmarking materials* and *TNZ M/7: 2006 Specification for roadmarking paint*. Other materials may be used where sufficient evidence of the performance of the markings has been provided.

#### No Stopping

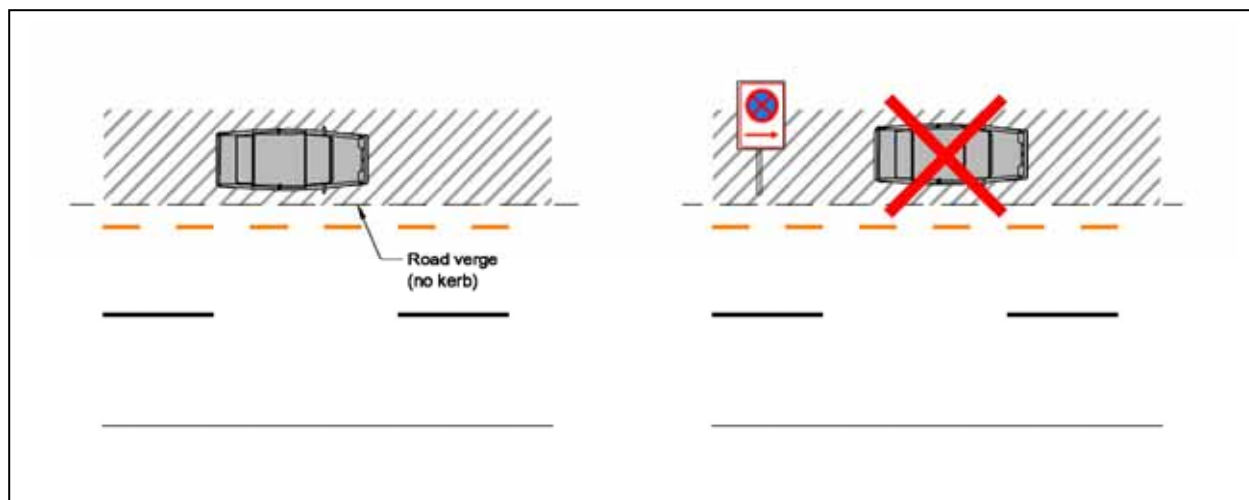
If marked, No Stopping restrictions must be marked by a broken yellow line, not less than 0.1 m wide. The broken line must have strips not longer than 1 m and gaps not longer than 2 m (see figure 6.2). The markings must be located no further than 1 m away from the adjacent kerb. Where shorter lengths of No Stopping markings are used (eg less than 30 m), then shorter gap lengths of 1 m may be used. Where longer lengths of No Stopping markings are used (eg greater than 30 m), then the maximum of 2 m gap length may be used.

**Figure 6.2** No Stopping markings



No Stopping lines do not prevent vehicles from being parked to the left of the markings where there is no kerb, eg on a verge. However, a No Stopping sign relates to the full width of the road reserve and prohibits vehicles from being parked on a verge to the left of the roadway (see figure 6.3).

**Figure 6.3** Stopping beyond the roadway



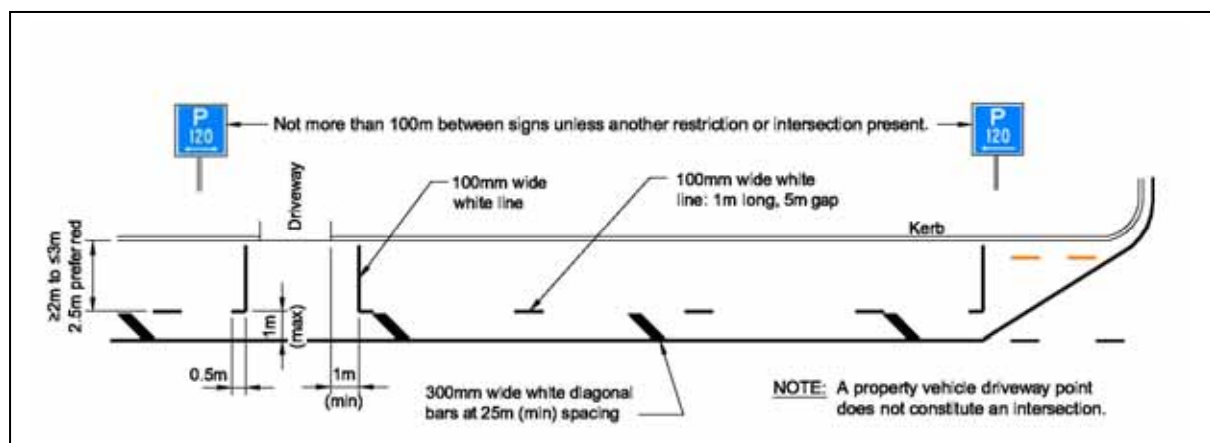
**Parallel parking**

Parallel parking is the most common form of on-road parking. The marking of permitted parking should be based upon the demand for parking envisaged, as indicated below.

Demand for parking	Types of parallel marking
Low	May be marked by a white edge line a distance 2–2.5 m from the kerb
Moderate	May be marked with the inverted 'L' or hockey stick markings and dashed white lines (see figures 6.4 and 6.5)
High	Individual parking spaces should be marked with either inverted 'L' or 'T'; if additional delineation is required, edge lines should be considered – refer to figure 6.6

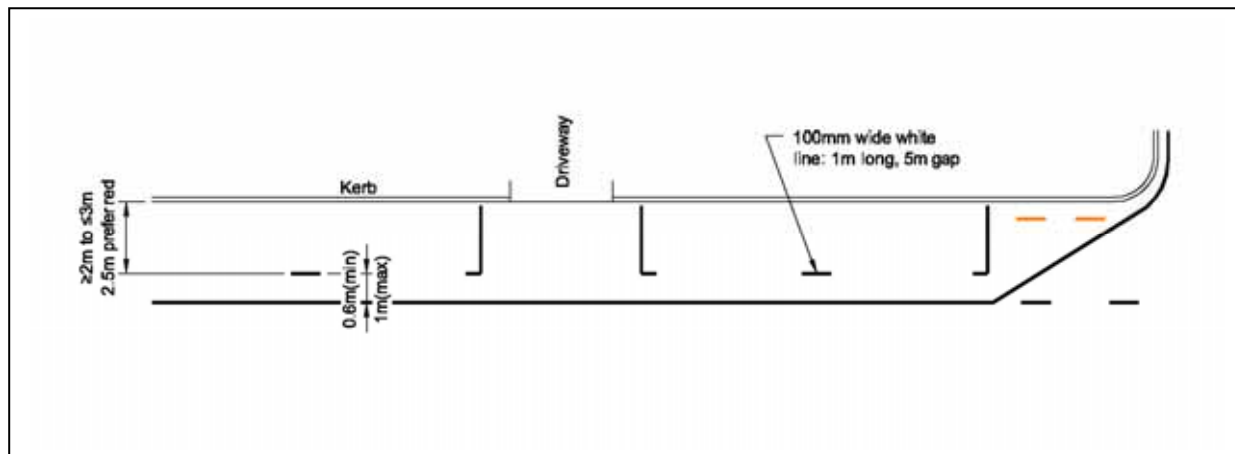
Examples of parallel parking layouts are included below.

**Figure 6.4** Moderate demand for parking (shoulder > 3 m)

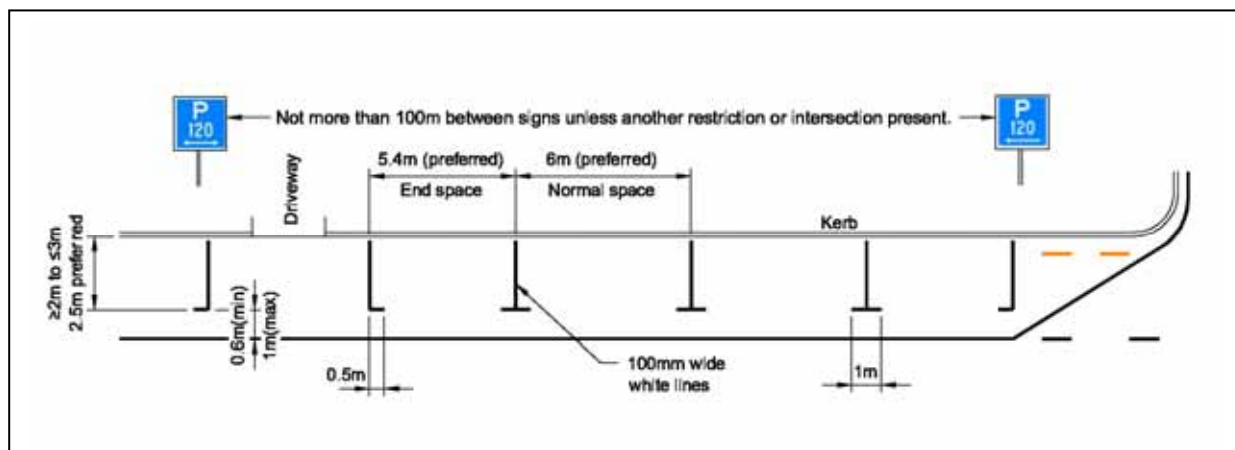


Drivers are not permitted to obstruct a driveway. Specifically they may not stop, stand or park at or within 1 m of a driveway (Road User Rule). This requirement can be reinforced by either providing No Stopping lines across the driveway or preferably by showing the extent of parking, as shown in figure 6.5. Where No Stopping markings have been installed, the RCA should include reference to them in their bylaw and they must if the No Stopping restriction extends beyond 1 m from the driveway.

**Figure 6.5** Moderate demand for parking (shoulder 2.3–3.5 m)



**Figure 6.6** High demand for parking



### Angle parking

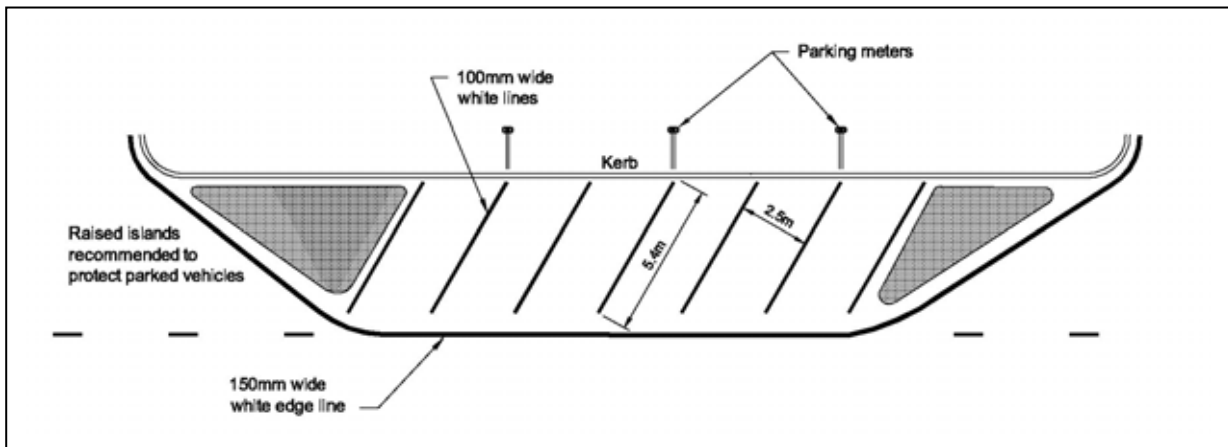
Parking can be provided with a range of angles, most commonly 30°, 45°, 60° and 90° to the kerb or edgeline.

Unless the surface makes it impracticable to do so, angle parking spaces must be indicated by parallel lines applied to the road surface and must be marked in white paint (TCD Clause 12.7)

Angle parking should be avoided on arterial high-speed routes where disruption to through-flow traffic should be kept to a minimum. (See section 5 for comments.) Additional measures such as kerb build-outs may be used to protect parked vehicles and allow drivers leaving intervening driveways or intersections to gain visibility past angle-parked vehicles protected from through vehicles.



**Figure 6.7** Angle parking with parking meters adjacent to each parking bay



### Reserved parking areas

Reserved vehicle parking areas are those that restrict their use to a certain class of vehicle or user, such as taxis, buses, motorcycles, cycles and disabled parking. Specific requirements for space dimensions can be found in section 5.

Road marking must be used only in conjunction with regulatory signs outlined in this section.

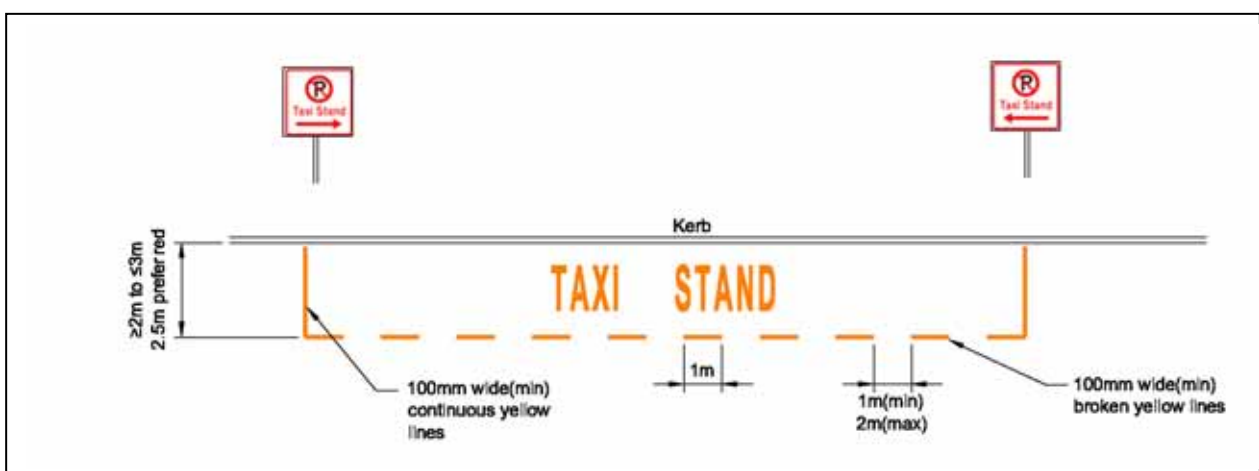
Appropriate letters or symbols taken from the TCD Rule may be marked to identify parking spaces for a specified vehicle class or road user within reserved parking areas.

#### *Taxi stands*

Where the road surface is suitable, taxi stands should be marked on the section of road an RCA has authorised to be reserved for a taxi stand.

Taxi stand markings must be used in conjunction with signs P3-3.1 to 3-3.4 and must be marked in yellow paint. Additional 'TAXI STAND' words may be used if required, depending on the length of the reserved area.

**Figure 6.8** Marked taxi stand



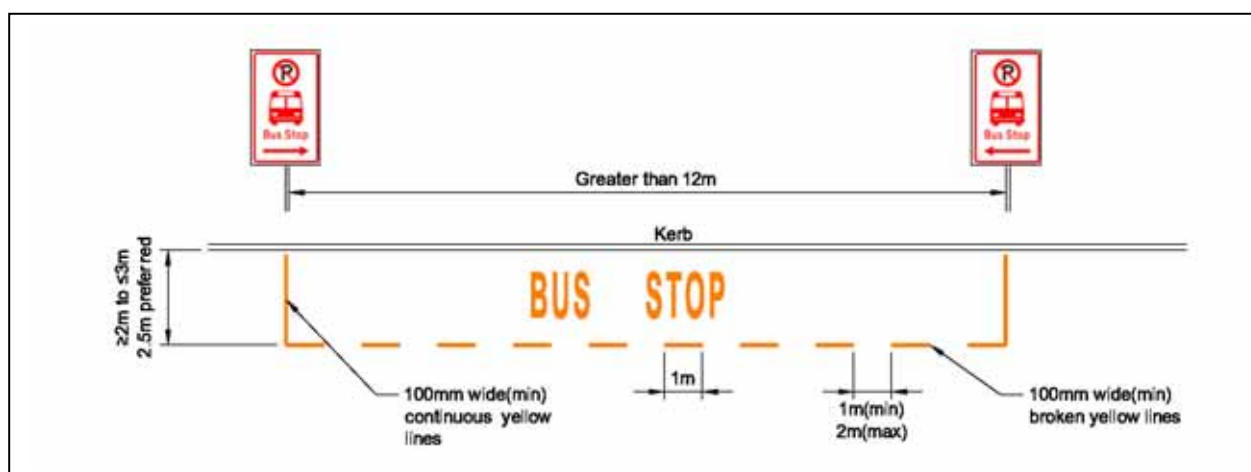
### Bus and coach stops

Where the road surface is suitable, bus stops should be marked on the section of road an RCA has authorised to be reserved for a bus stop. They can be either kerbside or indented bays. Bus stop bays must be marked if they extend more than 6 m on either side of a single Bus Stop sign. Bus bay lengths are generally 12 m for dingle unit and 19 m for articulated buses or coaches. Sufficient space should be allocated to the bus stop to allow a bus to pull into the kerb and out again from the space. A typical 12 m bus will require a 8 m lead-in to the stop and 5 m to pull out if parking or other restrictions are in place at either end of the bus stop.

Bus stop markings must be marked in yellow and be used in conjunction with those signs denoted in section 6.1. Additional 'BUS STOP' words may be used if required, depending on the length of the reserved area

As illustrated in figure 6.9, when a marked bus stop is greater than 12 m, two signs must be provided at either end. If the site is equal to or less than 12 m, a single sign in the middle is sufficient.

**Figure 6.9** Marked bus stop



Bus boarders (where kerbs are extended so that the bus stops within the traffic lane rather than pulling into a bay) are used where buses face difficulties and delays trying to merge back into the traffic flow. Markings and signage are similar to those used at conventional bus stops.

### Loading zone

Where the road surface is suitable, loading zones should be marked on the section of road that an RCA has authorised to be reserved for such purposes.

When parallel to the kerb or roadway edge, loading zones when marked, as with other reserved parking areas, must be indicated by the provision of:

- continuous yellow lines at right angles to the kerb/road edge at each end
- broken or continuous yellow lines parallel to, and between 2 m and 3 m from, the roadway edge.

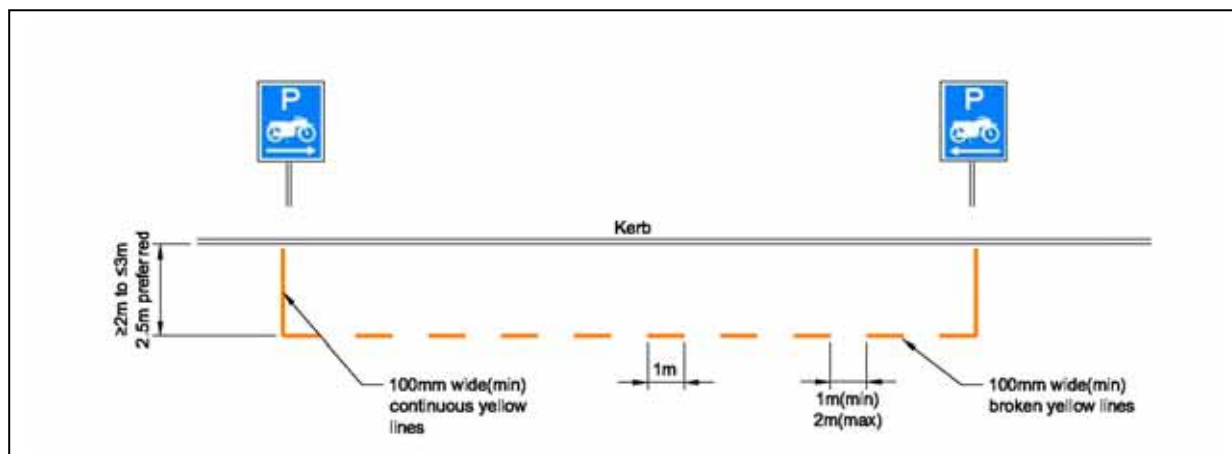
When marked at an angle to the kerb or roadway edge, a loading zone must be indicated by continuous yellow lines on either side of the loading zone at the appropriate angle to the kerb or road edge.

Loading zone markings must be used in conjunction with signs noted in section 6.1.

### Motorcycle

Where the road surface is suitable, motorcycle parking areas should be marked on the section of road an RCA has authorised to be reserve for motorcycles. Motorcycle parking areas must be used in conjunction with signs P4-2.1 to P4-2.4 (see section 6.1) and must be marked in yellow paint.

**Figure 6.10** Motorcycle parking

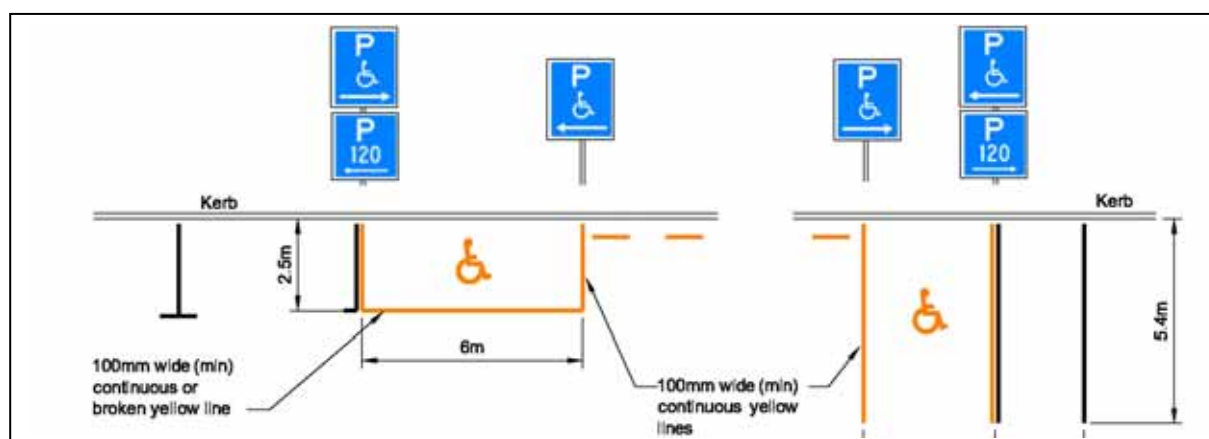


### Parking for disabled

Where the road surface is suitable, parking areas for the disabled should be marked on the section of road an RCA has authorised to be reserved for vehicles displaying disabled parking permits.

Parking areas for disabled must be used in conjunction with signs noted in section 6.1 and must be marked in yellow paint (see figure 6.11).

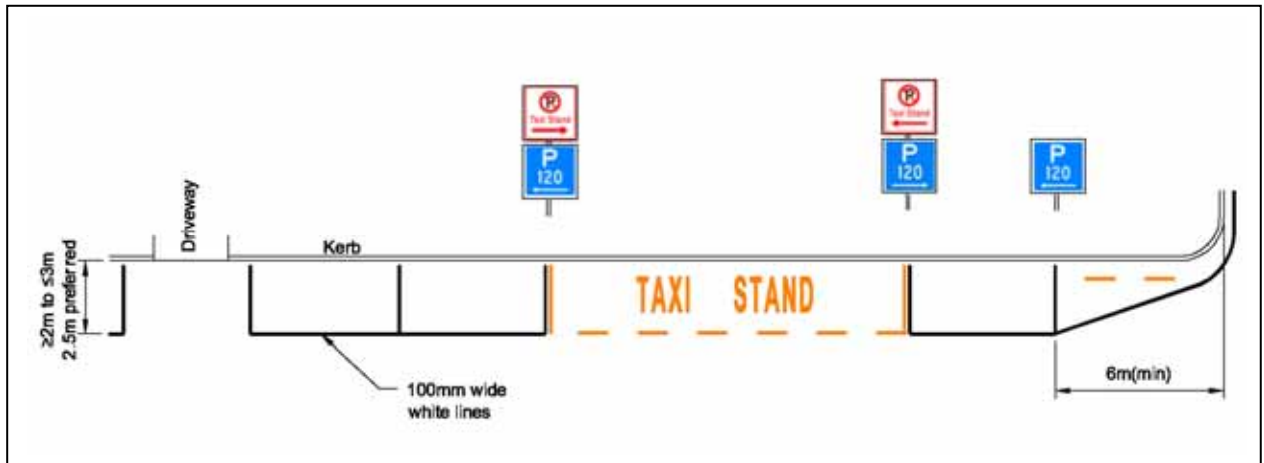
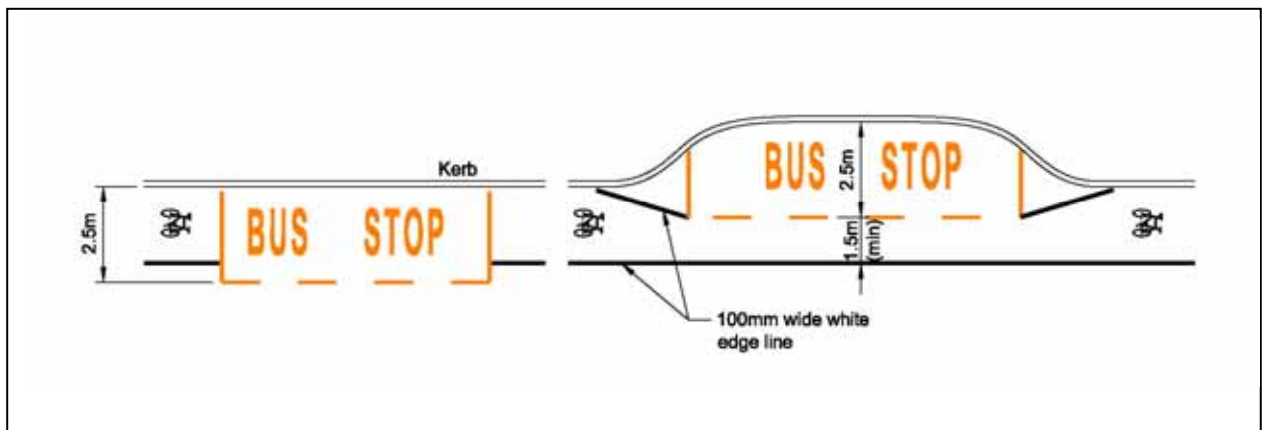
**Figure 6.11** Parking for disabled



References to disabled parking requirements (such as the appropriate legislation, provision of facilities, reference to layouts and design, etc) can be found in section 4.3.

Further examples of road markings are shown in figures 6.12 and 6.13.

Figure 6.12 Taxi stand with adjacent parallel parking

Figure 6.13 Marked bus stop within marked cycle lane<sup>1</sup>

<sup>1</sup> Note that specific details relating to cycle lanes should be referenced from the New Zealand Supplement to the Austroads *Guide to traffic engineering, Part 14: Bicycles*.

## 7 Zone parking

Zone parking is a term used to denote parking restrictions that are common or uniform throughout an entire area.

The area is usually defined by signs at the entry and exit to the zone, with repeater signs provided facing oncoming traffic at intervals of not more than 100 m apart (depending upon the size of the area) to help provide guidance to road users.

There may also be some situations where zones can be created within zones to denote a particular area that differs slightly from the overarching control. Other parking controls such as time-limited parking, bus stops, loading zones and taxi stands can operate within the parking zone. Where this happens, the zone parking is signed as ending and beginning again either side of the restriction. These signs are positioned parallel to the kerb.

### 7.1 Signs

#### 7.1.1 Sign specifications

Specifications for traffic signs associated with zone parking are described in the TCD Rule.

*Sign specifications*, currently under development, provides images that may be applied directly by sign manufacturing software.

Signs currently published can be viewed at [www.landtransport.govt.nz/roads/tcd/index.html](http://www.landtransport.govt.nz/roads/tcd/index.html).

#### 7.1.2 Orientation of signs

Signs must be installed as close as practicable to the roadway on the left-hand side of the road facing the direction of oncoming traffic so that drivers are able to see the sign as they approach the zone.

#### 7.1.3 Longitudinal positioning of signs

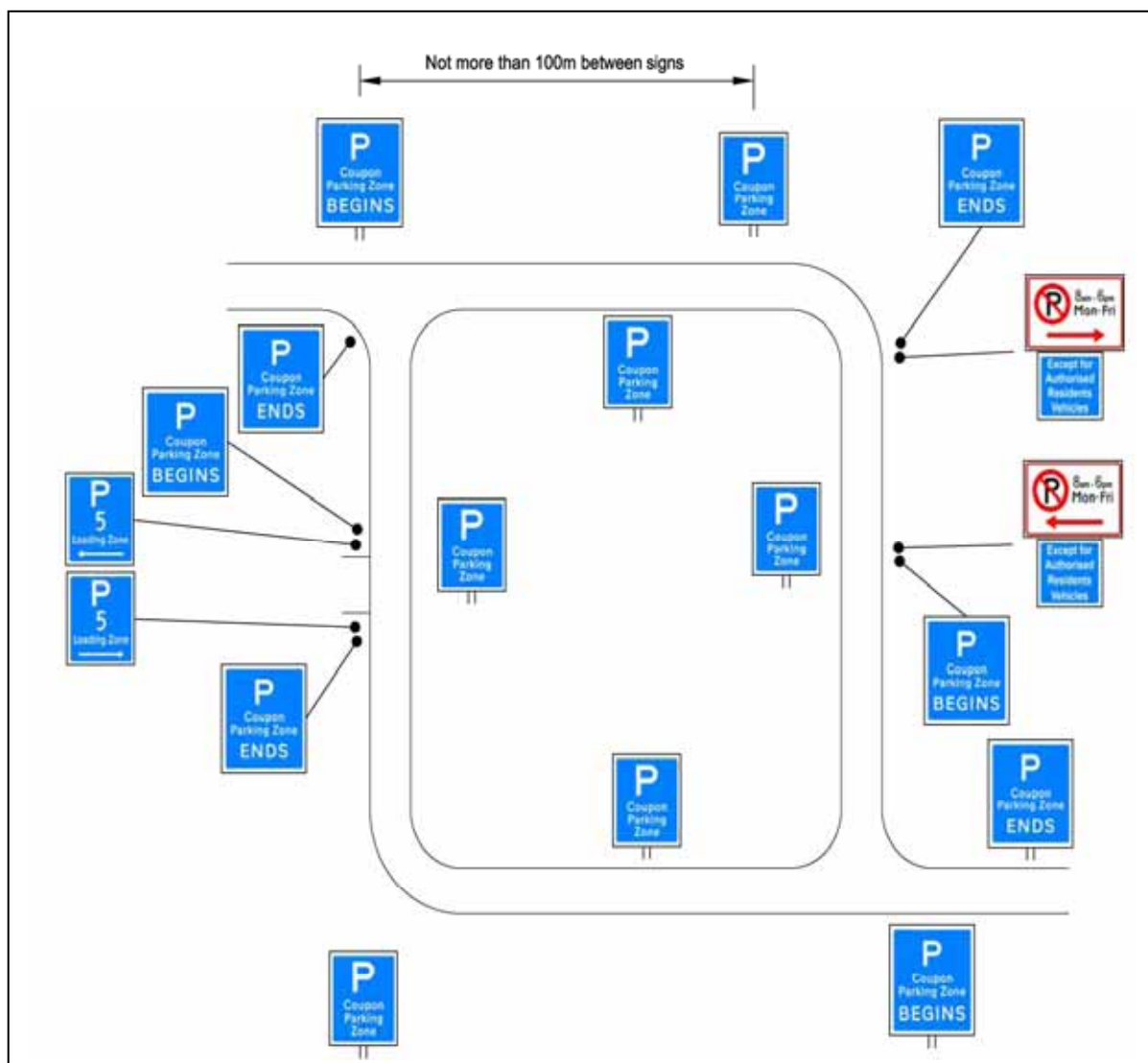
Signs relating to zone parking must be installed:

- at each of the various entry and exit points to the area or zone
- at intervals of not more than 100 m within the zone





When the zone parking system is to be ended and continued after the interruption of another parking restriction, a 'zone ends' and a 'zone begins' sign must be used either side of the restriction, facing oncoming traffic.

Figure 7.1 shows a suggested sign layout for a coupon zone that includes a residents' parking area and a time-restricted (five minutes) loading zone.

Figure 7.1 Sign layout for zone parking



**Table 7.1** Zone parking – signs and use

Type of restriction	Sign no. (TCD Specifications)	Use	Sign examples
Zone parking	P4-7.1 P4-7.3	To indicate the extent of the parking zone. Sign to define the type of parking zone	 
Zone parking repeater	P4-7.2	To act as a reminder of the existence of the parking zone	
Zone parking for specified users	P4-8.1	To be used as a supplementary plate to indicate the vehicle class exempted from an identified parking restriction	

#### 7.1.4 Service and tourist signs

Parking associated with service and tourist areas will be included within the TCD Manual *Part 3 Motorist services and tourist signs*. Part 3 is intended to cover:

- trailer parking areas
- public parking areas
- scenic sites
- service centres.

Accordingly, guidance for such facilities is not included within this document.

## 8 Parking direction signs

Parking direction signs provide information to road users as to the location of parking areas. Parking directional signs can be of two types:

- standard static signs indicating types of parking and parking locations (see figure 8.1) – can be used to direct traffic to both on- and off-road parking facilities as well as other parking types, such as Park and Ride facilities

**Figure 8.1** Standard static parking direction sign (stating parking location and availability of toilet facilities)



- real time systems (see figure 8.2) – a mix of static and changing traffic information is provided to motorists through the use of variable message signs. The information can be automatically updated to advise the number of currently available spaces in specific car parks.

**Figure 8.2** Real time system



The types of information that may be included on direction signs are:

- location (name) of car park
- distance
- number of spaces available
- any vehicle and time restrictions
- facilities available at or near the car park (eg toilets or Park and Ride).

The type of system in place can assist in successfully directing traffic to the most appropriate facility and therefore aid in reducing congestion around urban areas.



## 9 Parking furniture

### 9.1 Fee-based systems

There are many different types of fee-paying systems and machines to control parking, including parking meters and vending machines (such as Pay and Display). These types of fee-paying systems are typically provided at on-street parking spaces, whilst off-street fee-paying systems include paying on entry/exit and paying on foot with access/exit controls provided.

#### 9.1.1 On-street parking

##### Parking meters

Parking meters allow individual parking bays to be paid for with the available remaining time limit for each space shown on the parking meter. They can be provided on an individual parking bay basis by locating the parking meter adjacent to the car parking space, or for a collection or group of parking spaces through the use of a centralised parking meter.

Signs to indicate parking restrictions do not need to be installed if parking is controlled by parking meters that are located at, or adjacent to, each parking space. In such cases, meters must have the information pertaining to parking limits and fees attached to the meter. Accordingly, parking spaces controlled by a centralised parking meter not adjacent to a parking bay need to be signed as being a parking meter controlled area – with signage at the start and end of the parking restriction as well as repeater signs as appropriate.

Types of parking meter include:

- **Mechanical** – Mechanical meters are the traditional-style meter that shows the time available. They are no longer widely installed since the introduction of electronic type systems. The main features are:
  - each parking space can have its own meter, either single or double headed
  - enforcement is effective but labour intensive
  - easy to use and convenient to drivers and parking officials.



*Single-headed parking meter*

- **Electronic** – These are conventional parking meters with electronic systems. They can be used in the same way as mechanical meters; however, information regarding parking rates and usage can be recorded, and tokens used instead of coins. The main features are:
  - rates can be easily altered
  - tokens can be accepted
  - data is stored within the system.

## Vending machines

### Defined spaces

These devices service a number of different car parking spaces. The driver must select the appropriate space when paying. The devices:

- can cater for 1–20 spaces
- contain information with which to undertake audits
- have reduced maintenance and labour costs
- can be used with card readers and other communication facilities.



Source: [www.lps.co.nz](http://www.lps.co.nz)

### Pay and Display

Pay and Display machines are a common form of payment system used in large areas. The system operates with the driver paying the machine and then displaying the vended ticket in view of enforcement officers within the vehicle. They can service a large number of vehicle spaces, most likely up to 20 spaces or more per machine.

The machines can:

- provide auditing of cash received
- pre-programme rate and time changes
- have cash security
- be used with card readers and other communication facilities, such as cellphone payment systems.



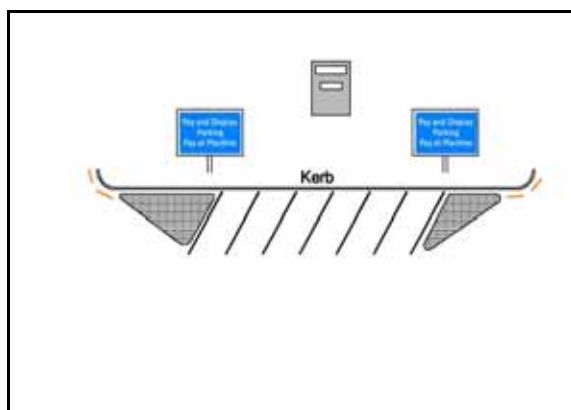
Pay and Display vending machine

Signs to indicate parking restrictions using a centralised Pay and Display vending machine need to be signed as being a Pay and Display controlled area – with signage at the start and end of the parking restriction, as well as repeater signs as appropriate (see table 9.1 and figure 9.1).

**Table 9.1** Angle parking with centralised parking meter or vending machine

Type of restriction	Sign No. (TCD Specifications)	Use	Sign example
Zone parking by payment	P4-9.1	To indicate the type of fee payment system in place over the length of the road	

**Figure 9.1** Angle parking with centralised parking meter or vending machine



### 9.1.2 Off-road parking controls

Commonly used methods of control for off-street car parks include vending machines (Pay and Display) or drivers obtaining a ticket on entry to the car park and then paying either:

- at the exit when leaving the car park; or
- at a central fee-paying machine on foot prior to leaving the car park (and being provided with a token to permit egress from the car park).

Such systems require access and exit control mechanisms to be in place.

## 9.2 Access and exit controls

### 9.2.1 Barrier arms

Barrier arms are generally needed where some form of control is required over fee-paying systems in off-road parks.



*Barrier arm – office building*

### 9.2.2 Bollards

Use of individual car parking bays can be controlled through the use of bollards that can be raised or dropped by the authorised user to allow access.

## 9.3 Locations of types of parking systems

Care should be taken in the design and placement to ensure that access by all road users (including the disabled – see section 4.3) is possible and the location is secure. It is important people parking their vehicle do not have to go out of their way to pay for parking.

Accordingly, it is recommended that centralised parking meters and Pay and Display vending machines that serve a number of parking spaces be located no more than equivalent to six parallel parking bays apart. That is, each central parking meter or Pay or Display machine is to serve a preferred maximum equivalent to three parallel parking bays either side.

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## 10 Temporary traffic management

Wherever temporary parking restrictions are required, specific signs should be installed to reflect the changes, with the existing signs covered up or removed.

Any changes to the normal operating procedures of the road will need to have a temporary traffic management plan (TMP) approved by the RCA. In most cases, when developing a TMP, reference should be made to Transit New Zealand's *Code of practice for temporary traffic management* (CoPTTM) or RCA Forum *CoPTTM Local roads supplement*.

### 10.1 Temporary parking restrictions

Temporary parking restrictions should be installed in accordance with the approved TMP. The TMP must consider and relocate any loss of special parking areas (ie taxis, buses, disabled parking) elsewhere.

### 10.2 Reserved parking for work-related activities

Private organisations undertaking site-specific works requiring the removal of dedicated parking, especially within busy urban environments, should apply to the local authority seeking to reserve parking spaces elsewhere.

### 10.3 Parking for recurring events

Where there are particular sites that have recurring events (such as sports arenas, parks and concert facilities), there should be some arrangement made with the local authority for a permanent strategy to outline the parking issues at the site as well as ways in which parking can be controlled and enforced. This can be part of a total event management strategy and should include consultation with the local authority, Police and residents/business community to minimise the impact during the event.

Any permanent signing must be supplemented by means by which the public are aware of the day and time restrictions that may apply.

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# 11 References

The following documents have been used and referenced in the development of this document:

AS 2890.2: 2002 *Parking facilities: Part 2: Off-street commercial vehicle facilities*, Standards Australia

AS 2890.5: 1993 *Parking facilities: Part 5: On-street parking*, Standards Australia

AS/NZS 2890.1:2004 *Parking facilities: Part 1: Off-street parking*, Standards Australia/Standards New Zealand

AS1742.11: 1999 *Manual of uniform traffic control devices: Part 11: Parking controls*, Standards Australia

*Building Act 2004*, New Zealand Government

*Code of practice for temporary traffic management (CoPTTM)*, Transit New Zealand, edition 3, November 2004

*CoPTTM Local roads supplement*, Road Controlling Authority Forum, September 2005

*Guide to traffic management Part 11: Parking*, Austroads, 2007 (draft)

*Holidays Act 2003*, New Zealand Government

*Land Transport (Road User) Rule 2004*, Minister for Transport Safety

*Land Transport Act 1998*, New Zealand Government

*Land Transport Rule: Traffic Control Device Rule 2004*, Minister for Transport Safety

*Land Transport Rule: Vehicle Mass and Dimensions Rule 2002*, Minister for Transport Safety

*Local Government Act 1974*, New Zealand Government

*Local Government Act 2002*, New Zealand Government

*Manual of traffic sign and markings: Part I Signs*, Transit New Zealand / Land Transport New Zealand

*Manual of traffic signs and markings: Part II Markings*, Transit New Zealand / Land Transport New Zealand

National guidelines for crime prevention through environmental design in New Zealand, Ministry of Justice, November 2005

New Zealand supplement to Austroads Guide to traffic engineering practice, Part 14: Bicycles, Transit New Zealand

*New Zealand transport strategy*, New Zealand Government, December 2002

*New Zealand urban design protocol*, Ministry for the Environment, March 2005

NZS 4121: 2001 *Design for access and mobility – Buildings and associated facilities*, Standards New Zealand

*The building code, Schedule 1, Building Regulations 1992*, New Zealand Government

*TNZ M/20: 2003 Specification for long-life roadmarking materials*, Transit New Zealand

*TNZ M/7: 2006 Specification for roadmarking paint*, Transit New Zealand

*Traffic Note 44 Safe siting of school bus stops*, Land Transport New Zealand, December 2004

*Traffic Note 48 Light vehicle sizes and dimensions: Street survey results and parking space requirements*, Land Transport New Zealand, December 2004

*Traffic Note 51 Parking signs and markings*, Land Transport New Zealand, December 2004

*Transit New Zealand Act 1989*, New Zealand Government

*Transport Act 1962*, New Zealand Government

*Transport Services Licensing Act 1989*, New Zealand Government