

Auckland Transport Code of Practice

Chapter 10

**Traffic Signs  
and Road  
Markings**



## 10 Traffic Signs and Road Markings

### 10.1 Introduction

The objective of traffic signs and road markings on roads is to guide and aid the safe and efficient movement of road users to their destinations. To achieve this, signs and markings must be clear, concise and easy for road users to understand. As such, signs and markings should be kept to a minimum to handle the driving task at that particular point on the road.

For public roads, Territorial Authorities are responsible for the provision, installation and maintenance of traffic signs and road markings.

This chapter provides clarity and consistency in the use of traffic signs and road markings throughout the Auckland region. *Section 10.1* is an introduction. *Sections 10.2* and *10.3* cover the general standards for Traffic Signs and Pavement Markings respectively. This chapter is not intended to cover all aspects in detail, but rather to provide general guidance.

The Land Transport Rule: Traffic Control Devices 2004 (TCD Rule) legislates signage and markings nationally. The Traffic Control Devices Manual (TCDM), and the Manual of Signs and Markings (MOTSAM), provides interpretive clarity and general specifications related to the TCD Rule. Where reference is made to these national standards the terminology TCD Rule and TCDM/MOTSAM are used. Reference to TCDM/MOTSAM includes reference to NZTA Traffic Notes.

The TCDM is being developed by NZTA on an ongoing basis and various sections of the TCDM have still to be published. Some sections of MOTSAM are still operative, but will in time be replaced by relevant new sections of the TCDM.

Notwithstanding the application of the TCDM, a Territorial Authority may introduce specific bylaws or rules relating to traffic signs and pavement markings. In the case of Auckland Council, these would be promulgated by Auckland Transport or be documented in the Auckland Unitary Plan (AUP). When adopted, the AUP will supersede the District Plans (DPs) of the previous TA's that were amalgamated to form Auckland Council.

Until the Auckland Unitary Plan has legally replaced the above mentioned previous TAs' District Plans, the appropriate sections of the DPs in this context relevant to signage will continue to be legally applicable. Similarly, until the bylaws of the above mentioned previous TAs have been replaced by new bylaws, the relevant previous TAs' bylaws will still be legally applicable.

The use of TCDs should be limited to those that are legally required by the TCD Rule and those that AT identifies as essential for the guidance, safe and efficient movement of road users.



Regulatory TCDs (both signs and markings) must be established through a legal process to be enforceable without the risk of challenge. TCDs covered by the bylaws must be resolved by the Traffic Control Committee (TCC). Guidance on this process is covered in AT's Quick Guide to Preparation of Resolution Reports and Drawings (Resolutions Booklet Version 1 - August 2011). Other TCDs not covered by the bylaws may be established by delegated AT staff. In both cases the TCD proposal must be set out in a detailed report.

Various standards, specifications and guidelines are applicable to signs and markings. The specific documents referenced in this chapter are as follows:

- Land Transport Rule: Traffic Control Devices 2004 (TCD Rule);
- Traffic Control Devices Manual (TCDM);
- Manual of Traffic Signs and Markings (MOTSAM);
- NZTA Traffic Notes
- TNZ / NZTA Performance Specifications;
- AS/NZS and RSMA Standards;
- Auckland Transport's Signage Guidelines
- Austroads Guide to Traffic Management Part 10: Traffic Control and Communication Devices (2009).

The maintenance of traffic signs and pavement markings must comply with *ATCOP Chapter 25 – Maintenance*.

Numerous abbreviations/acronyms are used throughout this chapter as follows:

ADS	Advance Direction Sign
AMP	Asset Management Plan
AT	Auckland Transport
ATCOP	Auckland Transport Code of Practice
CAR	Corridor Access Request
CDS	Confirmation Destination Sign
COPTTM	Code of Practice for Temporary Traffic Management
DP	District Plan
EJTS	Estimated Journey Time Sign



EMS	Electronic Message Sign
IDS	Intersection Direction Sign
ITS	Intelligent Transport System
MOTSAM	Manual of Traffic Signs and Markings
NZGB	New Zealand Geographic Board
NZRF	New Zealand Roadmarkers Federation
NZTA	New Zealand Transport Agency (formerly Transit New Zealand, TNZ)
OVRM	Over dimensional Vehicle Route Map
PNS	Place Name Sign
RAMM	Road Asset Maintenance Management (system)
RARP	Regional Arterial Road Plan
RCA	Road Controlling Authority
RIAWS	Rural Intersection Activated Warning Sign
RIS	Route Indicator Sign
RSMA	Road Safety Manufacturers Association
SED	Standard Engineering Detail
SH	State Highway
SID	Speed Indication Device
SNS	Street Name Sign
SS	Service Sign
STMS	Site Traffic Management Supervisor
TA	Territorial Authority
TCC	Traffic Control Committee



TTM	Temporary Traffic Management
TCDM	Traffic Control Devices Manual
TCDR	Traffic Control Devices Rule
TS	Tourist Sign
VMS	Variable Message Sign

## 10.2 Traffic Signs

### 10.2.1 National and Best Practice Standards

Auckland Transport's traffic signs must comply with the sign specifications of the TCDM Part 1 – General Requirements for Traffic Signs.

All traffic signs on AT's network must comply with the best practice documents, standards and guidelines referenced in *Section 10.1* and the following reference documents unless otherwise stated:

- New Zealand Transport Agency Traffic Control Device Manual (TCDM). The TCDM (which includes MOTSAM) provides interpretive clarity and general specifications related to the TCD Rule.
- TNZ P/24 Performance Based Specification for Traffic Signs
- NZTA P/32 Electronic Warning Signs on State Highways
- NZTA P/35 Specification for National VMS Operating Procedures
- NZTA P/37 Specification for mobile variable message signs
- Australia and New Zealand Standard AS/NZS 1906.1 and 1906.2
- RSMA Compliance Standard for Traffic Signs
- NZ Building Code, Clause B1 – Structure
- NZS 3404: Steel Structures
- AS 1554, SAA Structural Steel Welding
- AS 1650, SAA Hot Dip Galvanising Code
- Z 450 Galvanising Standard
- NZS 4203: Loading Standard
- ACC Standard Engineering Details
- Auckland Transport Drawings Series SM Drawings

It is essential that [Auckland Transport's Signage Guidelines](#) (PDF 93KB) are read at the embedded hyperlink before reading the rest of this section.



## 10.2.2 Traffic Sign Types

Traffic signs are classified by function into three main groups as follows:

- **Regulatory** (including general, parking and road user restrictions);
- **Warning** (including temporary and permanent);
- **Advisory** (including guide and route signs such as street name and community facilities, tourist signs, service signs and general information signs).

Traffic signs are usually retro-reflective, but electronic (active light source) signs may be approved by Auckland Transport where warranted.

Regulatory, Warning and Advisory signs may be permanent or temporary.

Table 22, which follows, provides an overview of references for each sign type.

**Table 22: General Signage Reference by Type - General Signs**

Classification	Sign Type	TCD Manual Reference	MOTSAM Reference	AT Guidance & Other Standards
<b>Regulatory Signs</b>	General	Part 1 - General Design Requirements	Part 1: Section 02 Regulatory Signs - General	ATCOP Section 8.2
	Parking	Part 1 - General Design Requirements	Part 1: Section 03 Regulatory Signs - Parking	Quick Guide to preparation of Resolution Reports and Drawings (AT)
	Vehicle Restriction	Part 1 - General Design Requirements	Part 1: Section 04 Regulatory Signs - Heavy Vehicle	
<b>Warning Signs</b>	Permanent Warning Signs	Part 1 - General Design Requirements	Part 1: Section 06 Permanent Warning Sign	NZTA Traffic Note 57 - Active Warning Signs (not at schools) - Guidelines
	Temporary Warning Signs	Part 8 - Code of Practice for Temporary Traffic Management	Part 1: Section 05 Temporary Warning Sign	NZTA Traffic Note 57 - Active Warning Signs (not at schools) - Guidelines
<b>Advisory Signs</b>	Guide Signs (including Street Name Signs)	Part 1 - General Design Requirements Part 2 - Direction, Service and General Guide Signs	Part 1: Section 07 Regulatory Signs - Guide Signs Part 3: Section 08 Overbridge Name Signs	ATCOP Section 8.2  RTS 14



Classification	Sign Type	TCD Manual Reference	MOTSAM Reference	AT Guidance & Other Standards
	Motorist Service Signs	Part 1 - General Design Requirements Part 2 - Direction, Service and General Guide Signs	Part 1: Section 08 Regulatory Signs - Motorist Service Signs Part 3: Section 09 Motorist Service Signs	
	Tourist Signs	Part 1 - General Design Requirements Part 2 - Direction, Service and General Guide Signs	Part 1: Section 09 Regulatory Signs - Tourist Signs Part 3: Section 10 Tourist Signs	
	General Information Signs	Part 1 - General Design Requirements Part 2 - Direction, Service and General Guide Signs	Part 1: Section 10 Regulatory Signs - General Information Signs	
<b>Electronic Signs</b>	Variable Message Signs	Part 1 - General Design Requirements	Part 3: Section 1 Introduction	<p>NZTA P/32 Specification for Electronic Warning Signs on State Highways</p> <p>NZTA VMS Operating Policy (pending) National VMS Operating Procedures (pending) NZTA ITS Specification: Variable Message Sign COPTTM</p> <p>NZTA – Traffic Note 37 – 40km/h variable speed limits in school zones (Revision 2)</p> <p>NZTA Traffic Note 56 – Active School warning signs - guidelines</p> <p>NZTA P/35 Specification for VMS National Operating Procedures</p> <p>NZTA P/37 Specifications for mobile variable message signs</p>
	Lane Control Signs	Part 1 - General Design Requirements		NZTA P/32 Specification for Electronic Warning Signs on State Highways



Classification	Sign Type	TCD Manual Reference	MOTSAM Reference	AT Guidance & Other Standards
<b>Electronic Signs , continued</b>				NZTA ITS Specification: Lane Control System
	Variable Speed Limit Signs	Part 1 - General Design Requirements		NZTA P/32 Specification for Electronic Warning Signs on State Highways  NZTA ITS Specification: Lane Control System
	Over Height Vehicle Warning Signs	Part 1 - General Design Requirements		NZTA P/32 Specification for Electronic Warning Signs on State Highways  NZTA ITS Specification: Variable Message Signs  Over dimensional Vehicle Route Maps (OVRM)
	Changeable Message Signs	Part 1 - General Design Requirements		NZTA P/32 Specification for Electronic Warning Signs on State Highways  NZTA ITS Specification: Variable Message Signs  NZTA P/35 Specification for VMS National Operating Procedures  NZTA P/37 Specifications for mobile variable message signs
	Parking Direction Signs	Part 1 - General Design Requirements Part 13 - Parking Control	Part 1: Section 03 Regulatory Signs - Parking	NZTA P/32 Specification for Electronic Warning Signs on State Highways

### 10.2.3 Regulatory Signs

Regulatory signs instruct road users by requiring or prohibiting specified actions in using a road. They must comply with the requirements of the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule).

There are two types of regulatory signs:





- **Prohibitory** – those indicating an action a road user must not take, e.g. no right turn.
- **Mandatory** – those indicating an action a road user must take, e.g. stop

Regulatory signs must be installed to instruct road users of a requirement, restriction or prohibition on traffic at the following locations:

- At each point where the requirement, restriction or prohibition applies; or
- Where the requirement, restriction or prohibition applies to a length of road:
  - at the start; and
  - at the end; and
  - at intervals along its length, as specified in the Rule or other enactments (i.e. clearway) ; and
  - on the side road approach e.g. at change of speed limit
- Where the requirement, restriction or prohibition applies to a zone restriction at:
  - each entry point to the zone; and
  - intervals within the zone, as specified in the Rule; and
  - each exit point from the zone.

In addition, where a speed limit changes and at intervals within the speed limit area, AT will – in accordance with the Speed Limit Rule - provide a regulatory speed limit sign.

## 10.2.4 Warning Signs

Warning signs inform road users of permanent or temporary hazards on a roadway or give advance notice of features on or near a road. They must comply with the requirements of the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule).

There are two types of warning signs:

- **Permanent** warning signs, and
- **Temporary** warning signs.

Appropriate temporary warning signs may also be mounted on vehicles.

### Permanent Warning Signs

Permanent warning signs must be installed at any place where special care or reduced speed is appropriate, and in particular, consideration needs to be given in terms of appropriateness near the entrance to a school, kindergarten, preschool centre, hospital or other areas with vulnerable road users.

It should be noted that the TCD Rule states that a motor vehicle that is being used as a school bus must display a School Bus warning sign at the front and rear of the vehicle when the vehicle is operating and being used as a school bus.



## Temporary Warning Signs

Temporary warning signs are required where a temporary risk is likely to arise at any place on a road that may cause:

- Damage to the public or to road workers; or
- Damage to the road.

Temporary Traffic Management (TTM) must comply with the Code of Practice for Temporary Traffic Management (COPTTM), by a qualified STMS of a sufficient level for the level of road. AT approval must be obtained through a Corridor Access Request (CAR). A temporary hazard, such as a disabled vehicle on the road, an accident, a slip, a washout or a broken transmission line, may require appropriate temporary warning signs to be erected by:

- Emergency services personnel; or
- A worker involved in removing the temporary hazard, or in making the hazard area safe.

In addition to the hazard, temporary warning signs installed should not create additional hazards to pedestrians, cyclists or other road users. Alternative safe routes need to be provided where required.

### 10.2.5 Advisory Signs

Advisory signs provide road users with information or guidance on the intended use of the road. As with regulatory and warning signs, advisory signs must comply with the requirements of the Land Transport Rule: Traffic Control Devices 2004 (TCD Rule). The TCD Manual (which includes MOTSAM) provides interpretive clarity and general specifications related to the TCD Rule. However, unlike regulatory and warning signs, there are generally more subjective/interpretive requirements within the specified standards for Advisory Signs. This section articulates Auckland Transport's position and requirements when applying TCDM/MOTSAM or other relevant standards applicable to Advisory Signs.

There are special requirements related to applying for, installing and removing such signs. The application process is summarised below.

The guidelines provided in this chapter do not in any way negate other relevant Resource Consent requirements or bylaws related to signs.

Currently the District Plans (DP) of the legacy councils that were amalgamated to form Auckland Council may have additional requirements that need to be taken into account when assessing signage applications. For example, Section 16 of the legacy Rodney District Council DP requires a Resource Consent for the erection of any sign that is not located on the specific



site/development to which the sign applies. This is a transition situation which will be superseded when the Auckland Unitary Plan is adopted.

The onus is on the applicant to provide information showing the need for the sign.

Normally only one sign will be permitted for any particular amenity/facility with two signs being the maximum where specifically warranted.

To ensure that the requirements of the TCDM for the maximum number of signs on any one pole or at any one particular intersection are not exceeded, Auckland Transport reserves its right to approve the signs on the basis of sign hierarchy and not merely on a 'first come first received' basis. This means that Auckland Transport may need to decline further signage applications or remove existing signs at such an intersection.

The manufacturing and installing of any approved Advisory Sign is at the applicant's cost, with installation facilitated through AT's Contractors. The Advisory Sign will become the property of AT, will be included in AT's asset database and will be maintained by AT at the applicant's cost.

With respect to replacements or upgrades of Guide Signs, AT requires that an assessment against the [Auckland Regional Destination Signage Strategy](#) (PDF 14.3MB) must be undertaken to confirm the required format, location and destinations.

On some occasions General Interest Signs may need to be removed for various reasons including, but not limited to:

- A higher priority sign being approved for a location that already holds the maximum number of signs
- Road works
- The sign no longer being appropriate due to changing circumstances or policy

If a General Interest Sign is removed the redundant facility sign will be relocated or held in storage until such time as it can be relocated or scrapped, as appropriate.

It is important that applicants are aware that Auckland Transport through its delegated representatives can remove a sign at any time in the future and that applicants will not be reimbursed for their original cost or any subsequent related costs.

The use of advisory signs is one method that is used to guide people throughout the region. Advisory signs are split into five types. A detailed definition of each sign type is given in the individual sub-sections which follow. The sign types and relevant specifications are defined as outlined in Table 23.

A specific hierarchy has been adopted to prioritise the advisory sign types covered in these guidelines. The hierarchy ensures that low priority signs such as General Interest Signs are not



installed at the expense of essential signs such as Street Name Signs. The hierarchy also ensures a consistent arrangement of signs on any post or pole with the highest priority signs - Street Name Signs - at the top and the lowest priority signs - General Interest Signs - at the bottom. The sign priority is shown in Table 23.

Table 23: Advisory Sign Types

Sign Type	Definition	Reference for Sign Specifications	Priority
<b>Street Name Signs (SNS)</b>	Signs that inform road users of the name of the street	ATCOP Table 21 and TCDM Part 2 Section 7	1 (High)
<b>Guide Signs (Route)</b>	Signs that inform and guide road users through the road network	TCDM Part 2 Section 4	2
<b>Tourist Signs (TS)</b>	Signs that identify the location of recognised tourist facilities	TCDM Part 2 Section 6	3
<b>Service Signs (SS)</b>	Signs that identify services which are commonly required by travellers and are located adjacent to, or within reasonably close proximity to the road	TCDM Part 2 Section 5	4
<b>General Interest Signs (GIS)</b>	Signs that identify the location of recognised amenities and facilities of general interest.	ATCOP Table 22 and TCDM Part 2 Section 8	5 (Lowest)

AT's Advisory sign colour convention is described below:

In order to differentiate between Street Name Signs and (Route) Guide Signs (direction/destination), Street Name Signs must show a white legend on a green background whereas (Route) Guide Signs must show a white legend on a blue background. General Interest Signs must be the colour inverse of Street Name Signs i.e. green legend on white

background. It should be noted that the colour of Guide Signs on State Highways is white-on-green.

AT's Advisory sign colour and positioning hierarchy convention is depicted below.



**AT's Advisory Sign Colour and Positioning Hierarchy Convention aligned]**

**[blocks above**

Other than AT's colour and positioning hierarchy conventions shown above, the criteria and standards set out in the TCDM must be adopted for use on AT's road network.

Specifications for Street Name Signs and General Interest Signs are detailed later in this section.

There are some general principles applicable to sign poles:

- The maximum number of signs facing in a single direction on any pole is four. Where a pole supports signs facing in more than one direction, the maximum number of signs to be supported by that pole is six (TCDM Part 2 Page 8-3).
- Existing utility poles such as street light poles should be used where appropriate.
- No more than one pole displaying fingerboard signs may be provided at any given intersection.
- Common-sense must be applied when locating sign poles e.g. not in the middle of footpaths or in line with pedestrian crossing points. A localised clear footpath width of at least 1.5m must be provided and signs should preferably be positioned 500mm beyond footpaths on berms.

10.2.5.1 *Street Name Signs*

A Street Name Sign example is shown below:



Feature	Specification Summary
Background Colour	Green
Text and Chevron	White
Length	Varies – refer to ATCOP Table 24
Depth	225mm for Local and Collector Roads 250mm for Arterial Roads & National Routes
Installation Height	2.8m–3.0m to underside of sign (2.5 minimum)
Priority	1
Reference	ATCOP Table 24 & TCDM Part 2 Section 7

All Street Name Signs must comply with TCDM Part 2 section 7, ATCOP Table 24 (following) and ATCOP Standard Plan Nos. SM001 to SM004.

Specifications for Street Name Signs are as shown in Table 24.

**Table 24: Specifications for Street Name Signs**

Feature	Specification
<b>Blade Dimensions</b>	SNS blade depths should be nominally: <ul style="list-style-type: none"> <li>• 250mm for all intersections on or with National Routes and Arterials, and</li> </ul>





Feature	Specification		
	<ul style="list-style-type: none"><li>• 225mm for all other Local and Collector Road intersections.</li></ul> <p>In urban areas blades should typically be between 600mm and 1500mm long.</p> <p>In rural areas blades should typically be between 900mm and 1800mm long.</p> <p>All blades must be extruded aluminium of 3mm web thickness with strengthened flange top and bottom (I-section) and square ends.</p> <p>The blade finish must be completely weather resistant and corrosion proof for the life of the sign.</p>		
<b>Height</b>	Street Name Signs should generally be mounted between 2.8m – 3.0 m high - to make allowance for further sign blades to be added below the Street Name Signs in the future. The clearance to the underside of Street Name Signs may vary between 2.5m minimum and 3.5m maximum. Where more than one Street Name Sign is mounted on the same pole – the major road sign must be positioned above the minor road sign. At traffic signals the Street Name Sign should be located immediately above the primary, secondary or tertiary (if present) signal head.		
<b>Reflectorisation</b>	Class 1 High Intensity (HI) retro-reflective materials must be used. The lettering and background must have the same reflectorisation with the same Class of materials.		
<b>Lettering - size</b>	Lettering must be Modified Series E upper and lower case, 80% length and 120% spacing, as words in upper and lower case lettering are easier to read than block capitals.	Letters must be central on the blade and letter height shall be:	<ul style="list-style-type: none"><li>• 150mm (120mm minimum) on 250mm blades, and</li><li>• 125mm (100mm minimum) on 225mm blades.</li></ul> <p>To aid conspicuity, lettering must be no closer to the outside edge of the blade than 50% of the letter height and a 50mm border of background colour above and below the lettering must be provided.</p>
<b>Reduced Lettering and Spacing</b>	The width of the letters may be reduced up to 20% if the sign would exceed 1200mm in length if full letter widths were used. There should be a 40% reduction in space width between letters, i.e. spacing is to be 60% of full		



Feature	Specification																																																																				
	<p>spacing.</p> <p>The letter's' spacing should be used between words and at the ends of the wording of the sign. The 's' spacing may be reduced to 50% 's' if the letter width has been reduced by 20% and the final length still exceeds 1200mm.</p>																																																																				
<p><b>Lettering – abbreviations</b></p> <p><b>Recognised abbreviations</b></p>	<p>The recognised abbreviations listed below must be of the same lettering style and font height as the street name itself.</p> <p>The following abbreviations are acceptable:</p> <table border="0"> <tr> <td>Arcade</td> <td>Arc</td> <td>Heights</td> <td>Hts</td> </tr> <tr> <td>Avenue</td> <td>Ave</td> <td>Highway</td> <td>Hwy</td> </tr> <tr> <td>Boulevard</td> <td>Bvd</td> <td>Junction</td> <td>Jnc</td> </tr> <tr> <td>Brae</td> <td>Br</td> <td>Lane</td> <td>Ln</td> </tr> <tr> <td>Chase</td> <td>Ch</td> <td>Motorway</td> <td>Mwy</td> </tr> <tr> <td>Circuit</td> <td>Cct</td> <td>Parade</td> <td>Pde</td> </tr> <tr> <td>Circle</td> <td>Circle</td> <td>Place</td> <td>Pl</td> </tr> <tr> <td>Circus</td> <td>Circus</td> <td>Plaza</td> <td>Plz</td> </tr> <tr> <td>Close</td> <td>Cl</td> <td>Promenade</td> <td>Prm</td> </tr> <tr> <td>Corner</td> <td>Cnr</td> <td>Quay</td> <td>Quay</td> </tr> <tr> <td>Court</td> <td>Ct</td> <td>Rise</td> <td>Rise</td> </tr> <tr> <td>Crescent</td> <td>Cr</td> <td>Road</td> <td>Rd</td> </tr> <tr> <td>Drive</td> <td>Dr</td> <td>Square</td> <td>Sq</td> </tr> <tr> <td>Esplanade</td> <td>Esp</td> <td>Street</td> <td>St</td> </tr> <tr> <td>Expressway</td> <td>Exp</td> <td>Terrace</td> <td>Tce</td> </tr> <tr> <td>Freeway</td> <td>Fwy</td> <td>Track</td> <td>Track</td> </tr> <tr> <td>Gardens</td> <td>Gdn</td> <td>Views</td> <td>Views</td> </tr> </table>	Arcade	Arc	Heights	Hts	Avenue	Ave	Highway	Hwy	Boulevard	Bvd	Junction	Jnc	Brae	Br	Lane	Ln	Chase	Ch	Motorway	Mwy	Circuit	Cct	Parade	Pde	Circle	Circle	Place	Pl	Circus	Circus	Plaza	Plz	Close	Cl	Promenade	Prm	Corner	Cnr	Quay	Quay	Court	Ct	Rise	Rise	Crescent	Cr	Road	Rd	Drive	Dr	Square	Sq	Esplanade	Esp	Street	St	Expressway	Exp	Terrace	Tce	Freeway	Fwy	Track	Track	Gardens	Gdn	Views	Views
Arcade	Arc	Heights	Hts																																																																		
Avenue	Ave	Highway	Hwy																																																																		
Boulevard	Bvd	Junction	Jnc																																																																		
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Feature	Specification								
	<table border="0"> <tr> <td>Glade</td> <td>Glade</td> <td>Walk</td> <td>Wk</td> </tr> <tr> <td>Grove</td> <td>Gr</td> <td>Way</td> <td>Way</td> </tr> </table>	Glade	Glade	Walk	Wk	Grove	Gr	Way	Way
Glade	Glade	Walk	Wk						
Grove	Gr	Way	Way						
<p><b>No Exit Supplement</b></p>   <p><b>Walkway</b></p> <p><b>Cycleway</b></p>	<p>No Exit situations should be indicated by supplementary signs mounted below the Street Name Sign on the same pole and having the same letter type, reflectivity and colour combination as the main sign. The letter height to be used must be 80mm for local and collector roads and 100mm for arterial roads. All “No Exit” streets should have the supplementary “No Exit” sign attached. In some situations a larger stand-alone A40-1 “No Exit” sign (as per TCD Rule Schedule 1) may be installed at the direction of the relevant AT Engineer. An additional supplementary “Walkway” and/or “Cycleway” sign should be installed below the Street Name Sign when there is a connecting access way for pedestrians and/or cyclists at the end of a cul-de-sac / dead-end street.</p>								
<p><b>Street Number Supplement</b></p>	<p>Street numbers are not to be used except in special circumstances at the direction of the relevant AT Engineer. Where deemed necessary they should be displayed on a supplementary sign mounted below the bottom corners of the main sign. On Arterial Roads, the text must be 100mm high. Where used for Local and Collector Roads, the text must be 80mm high. In all cases, they must have the same letter type and colour combination as the main sign.</p>								
<p><b>Logos or Emblems</b></p>	<p>There must not be any logos/emblems on any street name, destination or information signs. However, space is to be left for a potential future logo.</p>								
<p><b>Mounting</b></p>	<p>Mounting for SNS must ensure that the blades are held rigidly in position. Signs must be mounted and maintained with the blades horizontal and with the blade faces in a vertical plane, even when the supporting pole is tapered.</p> <p>Signs with long road names or place names that cannot be reduced enough to fit to the 1200mm blade or unable to be split into two lines should be placed on single-sided signs up to 1500mm centrally mounted on a single post. Where a sign is to be centrally mounted and it is to be double-sided, then two single-sided blades must be installed so that no part of the sign is obscured.</p> <p>Signs which are longer than 1500mm must be mounted on two posts.</p>								



Feature	Specification
<b>Stacked signs</b>  <b>Stacked signs</b> <b>(continued)</b>	<p>Where stacked signs are used the following standards apply:</p> <ul style="list-style-type: none"><li>• The first letter of each sign must be aligned vertically with the other signs in the stack.</li><li>• Stacked signs if pointing in the same direction must be joined by products like high strength double-sided tape and spacer or similar equivalent product as approved by the relevant AT Engineer This additional support is to reduce 'droop' and as additional vandalism protection.</li><li>• If one sign in a stack is to be replaced to the new standard all signs in that stack should be upgraded at the same time, subject to the relevant AT Engineer's approval.</li><li>• If it is necessary to upgrade other signs in a stack, all signs in the stack should be made to the same length e.g. shorter signs increased to the limit of 1200mm.</li><li>• Approval for the layout of stacked signs must be obtained from the AT Engineer before production.</li></ul>
<b>Support posts</b>	<p>Support poles for all new and replacement signs must be white powder-coated 76mm OD anti-rotational fluted aluminium or electro-galvanized steel. The pole with a showerproof cap on top must be anchored in a 500mm ground socket approved by the relevant AT Engineer. The ground socket must be concreted in the ground and the pole must be secured to the ground socket by an Allen screw or equivalent retaining device. Using a standard 3.6 m pole this will allow for a maximum of two 250mm sign blades to provide the minimum 2.5m clearance. If it is known that more sign blades are required the pole length should be increased accordingly.</p> <p>Where the old standard 100mm x 100mm white-painted H4-tanalised timber posts are still in good condition, replacement and new blades may be attached to them.</p> <p>Where an existing timber post is damaged or in a poor state of repair it must be replaced with a white powder-coated 76mm OD anti-rotational fluted aluminium or electro-galvanized steel pole. Refer to standard drawing SM003.</p>
<b>Fittings</b>	<p>The fittings to attach the sign blades to the pole must be RSMA approved products authorised by the relevant AT Engineer. Refer to Plan No. SM005</p>



## Locating Street Name Signs

Good Street Name signage is essential to guide road users through the network. To ensure this, Street Name Signs (SNS) must be provided at every intersection identifying all intersecting roads.

The most important issues to be considered when locating Street Name Signs are conspicuity and consistency, with conspicuity taking precedence over consistency where all guidelines cannot be met. It is not prudent to expect motorists to search all corners of an intersection in order to receive guidance. The sooner motorists locate a sign, the more time they will have to read it and react appropriately. Signs must therefore be located where they are visible over a distance appropriate to the operating speed of the approach road concerned.

Signs must be oriented according to the TCDM specifications so that they are clearly visible to road users in the street or road to which they apply. All sign materials must also meet the visibility guidelines outlined in the TCDM.

The design, location and erection of Street Name Signs should generally conform to the recommendations as described in the TCDM.

Typically, Street Name Signs must be installed at the following points:

- Start and end points (unless it ends as a cul-de-sac where only the start point will apply).
- Regular intervals on main routes (particularly at intersections with side roads that form a through route)
- At any point where the street name changes on a through route.

The number of signs required at intersections is shown in Table 25 and Table 26, which follow.

**Table 25: SNS Requirements at T-Intersections**

Road Type	National Route/Arterial	Local
National Route/Arterial	2 signs for each intersecting road	
Collector	2 signs identifying collector road 1 sign identifying National Route/Arterial	1 sign for each intersecting road



**Table 26: SNS Requirements at Cross Intersections**

Road Type	National Route/Arterial	Local
National Route/Arterial	2 signs for each intersecting road	
Collector	2 signs for each intersecting road	At least 1 sign for each intersecting road

The positioning of the street name signs must be generally in accordance with TCDM Part 2 section 7.3 Location and in particular Table 7.7 Recommended street name sign layouts. Refer to Standard Plan No's. SM001 and SM002 for these street name sign diagrams. The number of signs to be provided is also dependent on the total kerb-to-kerb width. Where central medians exist, additional signs must be located on the median provided that the safe offset/clearance requirements can be met.

Refer to Standard Plan No's. SM003 and SM004 for horizontal and vertical clearance requirements.

**10.2.5.2 Guide Signs**

All Guide Signs must comply with TCDM Part 1, Part 2 section 4 and ATCOP Standard Plan No's. SM006 to SM009.

Route Guide Signs are provided to inform road users about directions and distances to destinations. Good Guide Signs will give accurate, clear and concise information at a time when the road user is able to read, understand and react appropriately and safely. Clear and efficient guide signing is an essential part of road and traffic engineering as road users depend on these signs for information. The white-on-blue sign colour convention for Guide Signs on AT's Road Network is crucial for ease of recognition. (Note that on NZTA's State Highways Road Network their Guide Sign colour convention is white-on-green.)

The five main types of Guide Signs are outlined in Table 27.

**Table 27: Guide Sign Types**

Sign Type	Abbreviation	Location
Advance Direction Sign	ADS	Before an intersection
Intersection Direction Signs (below Street Name Sign at intersection)	IDS	At an intersection

Confirmation Direction Sign	CDS	Beyond an intersection
Place Name Sign	PNS	At a destination
Route Indicator Sign	RIS	At the beginning/continuation/end of a marked route

### Advance Direction Sign

The first type of Guide Sign is an Advance Direction Sign. An example is shown below.



#### Feature

Background Colour

Text, symbols & border

Length

Depth

Installation Height

#### Specification Summary

Blue

White

Varies – refer to TCD Rule Schedule 1

Varies – refer to TCD Rule Schedule 1

2.5m to underside of sign



Priority	2
Reference	TCDM Part 2 Section 4

Advance Directional Signs must comply with the TCDM Part 1 and Part 2 Section 4.

Advance Directional Signs (ADS) are located on approaches to significant intersections and they indicate the destinations on each road leading away from the intersection including the next major destination, where appropriate.

Advance Directional Signs should generally only be used in the following circumstances:

- To aid traffic management and safety;
  - To indicate recognised destinations. In order to achieve consistency on AT's route network, only destinations recognised by AT as Acknowledged Place Names for traffic signage will be used on Advance Directional Signs. Refer to [Auckland Transport's Approach to Acknowledged Direction, Service and General Guide Signs – Appendix A1](#) (PDF 861KB) via the embedded hyperlink. Priority should be given to those acknowledged destinations that are defined as Principal Localities;
- Only on sealed roads;
- At key intersections on Strategic Routes and Arterials.

Either map or stack-type Advance Directional Signs may be used. Map signs show a simplified diagram of the layout of the intersection being signed with the destinations, whereas stack signs show the destinations and directions using a column or stack layout.

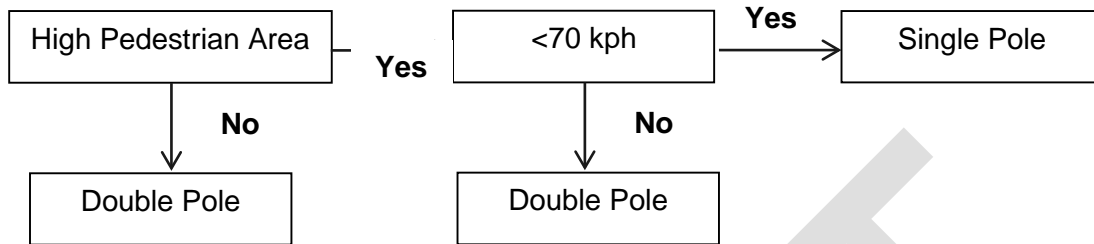
Map signs are more appropriate for complicated intersections such as roundabouts, where there are successive junctions and where a stack sign cannot adequately show an unusual road layout.

Where direction inserts to a State Highway are required they must be in NZTA's standard white-on-green and should include the white-on-red SH Shield in brackets, if the State Highway is more than one intersection away. See foregoing photo example of Advance Direction Sign.

On AT's route network Advance Directional Signs must show a white legend on a blue background and in all other respects Advance Directional Signs must meet the requirements and specifications outlined in the TCDM.

All destinations shown on Advance Directional Signs should be repeated on the relevant Intersection Design Signs. Where Intersection Direction Signs are provided, the destinations on these must match those shown on corresponding Advance Directional Signs.

When choosing pole configuration for Advance Directional Signs, the flowchart in Figure 28 should be used:



**Figure 35: Advance Directional Sign Flowchart**

In some applications, street names need to be shown on ADS. The approaching street name must be incorporated on ADS at the top. Street Name Signs on ADS must be shown as white letters on a green background with Street Name Signs having the same dimensions as specified in ATCOP Table 22. The top panel of the ADS should have a white background, but the remainder of the background of the ADS must be blue with a white border as shown in the foregoing Advance Direction Sign photo example.

### Intersection Direction Sign

The second type of Guide Sign is an Intersection Direction Sign. An example is shown below:





<b>Feature</b>	<b>Specification Summary</b>
Background Colour	Blue
Text, chevron & border	White
Length	Varies – refer to TCD Rule Schedule 1
Depth	Varies – refer to TCD Rule Schedule 1
Installation Height	3.0m to underside of sign
Priority	2
Reference	TCDM Part 2 Section 4

Intersection Direction Signs must comply with the TCDM Part 1 and Part 2 Section 4

In addition to providing directional information, these signs indicate to motorists the presence of an intersection.

- As these signs are much larger than Street Name Signs and General Interest “fingerboard” signs, the number of Intersection Direction Signs (IDS) will be restricted firstly to those that are essential to comply with the TCDM, and secondly to those that are necessary to avoid confusion when directing road users to acknowledged destinations. Refer to [Auckland Transport’s Approach to Acknowledged Direction, Service and General Guide Signs – Appendix A1](#) (PDF 861KB) for the list of Acknowledged Place Names / Destinations.

Intersection Direction Signs on sealed roads replace the historical ‘black on yellow’ AA fingerboard signs. Intersection Direction Signs must show white legend on a blue background. Destinations shown on IDS must match those shown on the related ADS.

Guide Signage on unsealed roads will usually be limited to Intersection Direction Signs. On unsealed roads Intersection Direction Signs will show white legend on a blue background, but will be of a size and layout to meet the requirements outlined for Street Name Signs in ATCOP Table 22 and the TCDM.

### **Confirmation Destination Sign**

The third type of Guide Sign is a Confirmation Direction Sign. An example is shown below:





Feature	Specification Summary
Background Colour	Blue
Lettering & border	White
Length	Varies – refer to TCD Rule Schedule 1
Depth	Varies – refer to TCD Rule Schedule 1
Installation Height	3.0m to underside of sign
Priority	2
Reference	TCDM Part 2 Section 4

Confirmation Direction Signs must comply with the TCDM Part 1 and Part 2 Section 4

Confirmation Direction Signs (CDS) are located after an intersection and reassure road users that they are travelling toward their intended destination. These signs also show the distances to the named destinations.

Confirmation Direction Signs should only be used on sealed roads and will generally only be required near key intersections where full Guide signage is necessary. Confirmation Direction Signs must show a white legend on a blue background.

### Place Name Sign

The fourth type of Guide Sign is a Place Name Sign. An example is shown below:





Feature	Specification Summary
Background Colour	Blue
Lettering & border	White
Length	Varies – refer to TCD Rule Schedule 1
Depth	375mm minimum
Installation Height	TCD Rule Schedule 1 (A17-1) Option A 3.0m to underside of sign
Priority	2
Reference	TCDM Part 2 Section 4

Place Name Signs must comply with the TCDM Part 1 and Part 2 Section 4. Place Name Signs must show a white legend on a blue background.

Place Name Signs (PNS) indicate to road users that they have actually arrived at the intended destination that they have been following on Guide Signs along the route. Place Name Signs encourage commercial businesses to align the marketing and advertising of their activities to a locality and street name, instead of requiring individual signage.

- In order to achieve consistency on AT's route network, only destinations recognised by AT as Acknowledged Place Names for traffic signage purposes will have a Place Name Sign. Refer to [Auckland Transport's Approach to Acknowledged Direction, Service and General Guide Signs – Appendix A1](#) (PDF 861KB) for the list of Acknowledged Place Names.

### Route Indicator Sign

The fifth type of Guide Sign is a Route Indicator Sign. An example is shown below:



<b>Feature</b>	<b>Specification Summary</b>
Background Colour	White
Text & border	Black
Width	310mm
Depth	360mm
Installation Height	3.0m to underside of sign
Priority	2
Reference	TCDM Part 2 Section 4

Route Indicator Signs must comply with TCDM Part 1 and Part 2 Section 4.

Route Indicator Signs (RIS) are used to guide road users along the most convenient and effective routes. They are ancillary guide signs and may be individual signs or be shown on Advance Direction Signs. When included on other signs such as an Advance Direction Sign, the minimum urban Route Indicator Sign size indicated above may be reduced to 200mm x 240mm according to the TCD Rule Schedule 1 (A16-2).

The use of specified routes also enables AT to direct traffic along roads that are designed for such traffic volumes, thereby easing pressure on other less suitable roads and residential streets. Route Indicator Sign should be used along all routes approved and sign posted with Advance Direction Signs or Intersection Direction Signs.

#### 10.2.5.3 *Tourist Signs*

Tourist Signs are important signs for non-regular road users. An example is shown below:





<b>Feature</b>	<b>Specification Summary</b>
Background Colour	Brown
Text, symbols & border	White
Length	Varies – refer to TCD Rule Schedule 1
Depth	Varies – refer to TCD Rule Schedule 1
Installation Height	3.0m to underside of sign
Priority	3
Reference	TCDM Part 2 Section 6

Tourist Signs must comply with TCDM Part 1 and Part 2 Section 6.

Tourist Signs (TS) may be used to acknowledge major tourist attractions. Any tourist attraction gaining NZTA tourist signage approval on the State Highway Network will generally also be approved for signage on AT's road network where such signing is applicable.

The number of these signs on AT's road network is strictly limited and controlled. To qualify for Tourist Signs an attraction must fully meet the requirements set out in the TCDM and specifically the Eligibility Criteria in TCDM Part 2 Section 6.5.

Trade names and commercial advertising will generally not be permitted. Exceptions may be permitted where it can be demonstrated that the name has become well known through common usage across the Auckland Region.

Tourist Signs must be supplied in A and B sizes for approach speeds below and above 75km/h respectively. Refer to TCDM Part 2 Section 6.4.2.

Specific tourist facilities may be identified through advance direction, position and information signs. While generic signs (e.g. Thermal Pools) are encouraged, specific signs (e.g. Waiwera Thermal Resort) may be permitted where the attraction meets the requirements set out in the TCDM. Refer to [Auckland Transport's Approach to Acknowledged Direction, Service and General Guide Signs – Appendix A2](#) (PDF 861KB) for the list of Acknowledged Tourist Attractions.

Tourist routes/ways (collective names for drives, routes and trails) may also have specified AT signs. AT supports the provision of route indicator and directional signs to identify and promote

tourist ways. These signs can be accommodated within the road reserve where they complement the aims of the guidelines for road signs and are approved by AT.

### 10.2.5.4 Service Signs

Service Signs (SS), formerly called Motorist Service Signs, provide internationally recognised symbols to indicate services commonly required by road users, located adjacent to the road or at a reasonable distance along a side road. A Service Sign example is shown below:



Feature	Specification Summary
Background Colour	Blue
Text, symbols & border	White
Length	Varies – Refer to TCD Rule Schedule 1
Depth	Varies – Refer to TCD Rule Schedule 1
Installation Height	3.0m to underside of sign
Priority	4
Reference	TCDM Part 2 Section 5

Service Signs must comply with TCDM Part 1 and Part 2 Section 5.

These signs should only be used to indicate specific services that are not obvious to road users/travellers in the immediate vicinity of the service. TCDM Part 2 Section 5.3.3 describes a reasonable distance along a side road as being up to 2 km in urban areas and up to 5 km in rural areas, the exception being any camping / accommodation-type service in a rural area which may be up to 50km along a side road.

While Service Signs are most appropriate on Strategic Routes and Primary Arterials there may be occasions where these signs are useful on other roads with high seasonal traffic volumes.

Service Signs will generally be incorporated with Advance Direction Signs and Tourist Signs or combinations of these, but can also be installed in 'stand-alone' locations if necessary.

### Advance Service Sign and Position Service Sign

There will be road environments and travel demands for which Advance Service Signs and Position Service Signs should be provided.

An Advance Service sign example is shown below:



Advance Service Signs are rectangular shaped signs that inform travellers of services on the road ahead or on a side road. Advance Service Signs must show the distance to the service or the turn-off to a service on a side road. No more than 4 services symbols should be shown on one sign. Advance Service Signs should generally be positioned up to 500m ahead of the service or side road down which the service is located.

An example of a Position Service Sign is shown below:



Position Service Signs should be used to indicate the actual location of the service or the side road turn-off to the service. Position Service Signs should be located at or directly opposite the point of entry to the service facility or side road turn-off on which the service is located. Position Service Signs should only be provided at the side road turn-off when the service located on the side road warrants service signing.

#### 10.2.5.5 General Interest Sign

General Interest Signs (previously commonly called “Fingerboard” Signs) identify the location of recognised amenities and facilities of a general interest.

An example of a General Interest Sign is shown below:





Feature	Specification Summary
Background colour	White
Text & chevron	Green
Length	Varies – refer to ATCOP Table 22
Depth	225mm for Local and Collector Roads 250mm for Arterials
Installation Height	2.5m minimum to underside of sign
Priority	5
Reference	TCDM Part 2 Section 8

General Interest Signs must comply with TCDM Part 2 Section 8 and ATCOP Table 22.

A General Interest Sign must be the colour inverse of the Street Name Sign blade, but in all other aspects it must comply with the standard requirements for Street Name Signs (see ATCOP Table 22). Their positioning must follow the principles for Street Name Signs provided in Table 22 except that General Interest Signs must always be the lowest signs in a stack.

General Interest Signs are assigned the lowest priority (5) in the advisory signs hierarchy – refer Table 21. They are only permitted where the maximum of 4 signs facing in the same direction or 6 signs per pole/post has not already been exceeded. No more than one pole displaying fingerboard signs may be provided at any given intersection. AT's policy is to install General Interest Signs only where these signs are absolutely necessary. This recognises the need to minimise sign clutter and that these signs are the lowest priority. All other sign types should be considered before approving the use of General Interest Signs.

Historically, many General Interest Signs ("Fingerboard" Signs), were erected to help road users to find a facility/amenity or location in the absence of suitable reliable Street Name Signs. With AT's approach of prioritising the provision of good street name signage, many amenities and facilities of general interest will be able to supply street addresses thereby reducing the need for General Interest Signs.

General Interest Signs are permitted under the following circumstances:



- The amenity or facility is acknowledged by AT. Refer to [Auckland Transport's Approach to Acknowledged Direction, Service and General Guide Signs – Appendix A4](#) (PDF 861KB) for the current list of Acknowledged General Interest Amenities/Facilities; and
- The amenity or facility is not on a Strategic Route, Arterial or Major Road (>10,000vpd); and
- Owing to the layout of the road network a significant number of non-local road users cannot reasonably be expected to find the facility easily. Refer to TCDM Part 2 Section 8 Page 8-3 Location and orientation; and
- A Street Name Sign is not an adequate suitable alternative; and
- A Service Sign is not a suitable alternative (note that in some cases Service Signs and not General Interest Signs should be used.); and
- The General Interest amenity/facility is not an acknowledged tourist facility

Trade names and commercial advertising will generally not be permitted. Exceptions may be permitted where it can be demonstrated that the name has become well known through common usage across the Auckland Region.

## 10.2.6 Electronic Message Signs

All Electronic Message and Variable Message signs must comply with NZTA P/32, P/35 and P/37 and Notes. Electronic Message Signs can be static or mobile (usually trailer-mounted). The most common types of electronic signs used in Auckland are as follows:

- General Variable Message Sign
- Estimated Journey Time Sign
- School Zone Speed Limit Sign
- Speed Indication Device Sign
- Curve Warning Sign
- Cycle Warning Sign
- Rural Intersection Activated Warning Sign

### General Variable Message Sign

General Variable Message Signs (VMS) are provided to regulate, to advise or to warn of downstream traffic activity/hazards. The messages on these signs can vary from mandatory speed limits to lane closure warnings. A VMS example is shown below.





All VMS must meet the requirements and specifications set out in the NZTA – ITS specification variable message sign supply and installation and notes documents.

VMS signs can be mobile as well as static. An example of a mobile VMS (trailer-mounted) is shown below.



The mobile types of VMS are commonly trailer mounted. They are commonly used as part of temporary traffic management measures at road works sites and at events. Guidance on the requirements for trailer mounted VMS signs are given in:

- TCDM Part 8 COPTTM
- NZTA P35: Specification for VMS National Operating Procedures
- NZTA P37: Specifications for Mobile Variable Message Signs

The above reference documents detail what information can be displayed, where they can be placed, who needs to approve these signs and their deployment. . They give guidance on how

to deal with signs being put on the road reserve which advertise events or private developments and signs that are placed on private property, but are clearly visible from the road.

### **Estimated Journey Time Sign**

Estimated Journey Time Signs (EJTS) help motorists to make informed decisions about their journey time and their preferred route. They help improve traffic flows and provide more predictable travel times. These electronic signs are located on arterial roads and arterial road approaches to motorway interchanges.

An Estimated Journey Time Sign example is shown below.



All Electronic Journey Time Signs must meet the requirements and specifications set out in the NZTA – ITS specification variable message sign supply and installation and notes documents.

### **Active Warning Signs**

Active Warning Signs (AWS) are warning signs that have a variable electronic display component which becomes active when the activity or hazard described by the sign is likely to be occurring on or close to the road. AWS guidelines for those signs not at schools are covered in NZTA Traffic Note 57. Guidelines for AWS signs/zones at schools are covered in NZTA Traffic Notes 37 and 56. AWS examples include Speed Indicator Device Signs, School Zone active warning signs (refer to NZTA Traffic Notes 37 and 56), curve warning signs, cycle warning signs. Some of the frequently used AWS signs are summarised below.

### **School Zone Variable Speed Limit Sign**

Many school zones have variable speed limits with a 40kph speed limit displayed shortly before school opens and shortly after school closes. These signs (and zones) require approval by AT's TCC in order to be enforceable by NZ Police. An example of a 40kph school zone speed limit sign (electronic) is shown below:



For 40kph school speed zones, variable message signs RG 6-1 and RG 6-2 may be used to:

- provide a safer road environment outside schools
- raise awareness and reinforce driver expectations of the likely presence of children
- encourage safe and active travel to school.

One drawback of any permanently displayed sign is the manner in which some drivers, who regularly pass it, tend to ignore the sign or fail to see it. Variable image signs, which are displayed only when relevant, provide a way of addressing this drawback. Other associated traffic calming measures can additionally enhance compliance with the restricted speed limit.

Electronic School Speed Zone signs must only to be used where warranted – refer to NZTA Traffic Note 37.

### **Speed Indication Device Sign**

Speed Indication Device (SID) Signs are used to alert a motorist to their driving speed - in advance of an impending hazard. SIDs use radar sensors to detect motor vehicles approaching a hazardous location and indicate the driver's approach speed. Often motorists are unaware that they are exceeding the speed limit and the activation of the SID draws their attention to this, allowing the driver to react accordingly. This helps to provide a safer environment for workers, drivers, road users of other modes of transport and pedestrians. An example of a Speed Indication Device Sign is shown below:





## **Curve Warning Sign**

Sometimes drivers encounter downgrade conditions with 'obscured' horizontal curves demanding reduced approach speeds. In these instances advance electronic curve warning signs (with advisory speed) may be beneficial.

The curve warning sign may be triggered by the speed of an approaching vehicle. If such sign is fitted with orange warning lights it should only be activated when the speed of an approaching vehicle exceeds a pre-set (safe) speed. If the advisory speed is also indicated on chevron sight boards installed on the outside of the curve, then the advisory speed figure on the sign can change to the words 'Slow Down' if the vehicle's speed is greater than the pre-set value.

## **Cycle Warning Sign**

Where there are likely to be significant numbers of cyclists on or crossing a roadway at a particular location, an electronic Cycle Warning Sign with a 'cyclist' symbol and the words 'Slow Down' may be used in advance. These signs can be activated by installing detectors. Alternatively, the signs can be manually activated locally by a person approved by AT and be operated for the duration of the hazardous period.

## **Rural Intersection Warning Sign**

Rural Intersection Activated Warning Signs (RIAWS) are used to reduce trauma at high risk intersections in rural areas, by reducing impact speeds.

There are two possible signs (currently on trial by NZTA) as shown in the images below.

The first one, which is a combination of a PW-9 warning sign with an active LED sign that displays a flashing 'Slow Down', will alert passing motorists to the fact that a vehicle is approaching from the side road, enabling them to take evasive action, if necessary.

The second one, which is a combination of an LED active sign unit as used in school signs with the PW-9 sign, reduces the speed limit to 70km/h near rural intersections. The reduced speed limits will only operate at times when traffic is approaching from the side road or turning right into the side road. Examples of Rural Intersection Activated Warning Signs currently being trialled are shown below:



Installation of these signs requires approval from AT's TCC and/or NZTA (if part of a trial) in order for the signs to be enforceable by NZ Police.

## 10.3 Pavement Markings

The term pavement markings refers to all markings on 'ground surfaces' of transport function assets such as road carriageways (roads), footpaths (walkways), vehicle parking areas, paved areas, cycleways, combined walkway/cycleway facilities and footpath crossings. Edge Marker Posts (EMP) are classified as markings in MOTSAM and that convention is followed here.

### 10.3.1 National and Best Practice Standards

Pavement markings must comply with best practice documents and guidelines referenced in Section 8.1 and the standards outlined in this section unless otherwise stated in this *ATCOP Chapter 10*.

All pavement markings must comply with the following:

- NZTA E/4 Certification of Thermoplastic Roadmarking Applicators and Pre-heating Tanks.
- NZTA M/07 (TNZ M/7) – Specification for Roadmarking Paints
- TNZ M/12 – Specification for Raised Pavement Markers
- NZTA M14 (TNZ M/14) - Edge Marker Posts
- TNZ M/20 – Specification of Long-Life Roadmarking Materials
- TNZ M/24 – Specification for Audio Tactile Profiled road marking
- TNZ P/12 - Pavement Marking
- TNZ P/14 - Installation of Raised Pavement Markers
- NZTA P16 (TNZ P/16) - Installation of Edge Marker Posts
- TNZ P/22 – Specification for Reflectorised Pavement Marking
- NZTA/NZRF T/08 (TNZ T/8) - Road marking Paint Applicator Testing



- TNZ T/12 – Long-Life Pavement Marking Material Applicator Testing
- NZRF QAP001 – Quality Assurance Programme “Certification Policies”
- NZRF QAP002 – Quality Assurance Programme “Specification and Guidelines”
- NZTA P 25 & P 25PN – Pilot Specification for Calcined Bauxite
- NZTA P 30 – Specification for High Performance Road marking
- NZTA P 33 – Performance Based Specification for Coloured Surfaces (pending)
- NZTA T 16 – Determination of Retro reflectivity
- NZTA Traffic Control Devices Manual (TCDM)
- NZTA Manual of Traffic Signs and Markings (MOTSAM)
- NZTA Guide to Urban Road Markings
- NZTA/NZRF T4: 2008 Specification for Road Marking Paint Applicator Testing
- TNZ/LTSA RTS5 Guidelines for rural road marking and delineation
- Austroads Guide to Traffic Management Part 10, Section 6

Unless otherwise specified herein, all pavement markings must comply with TCDM/MOTSAM.

All references to reports, documents, standards, guidelines, acts and regulations are references to the latest versions complete with all amendments.

Notwithstanding above comments, some AT applications of TCDM/MOTSAM require guidance as described below.

### 10.3.2 No Stopping At All Times Markings

No Stopping At All Times (NSAAT) lines are a method of restricting parking and should be used only when other measures are insufficient to control parking. The requirement for a NSAAT restriction should be discussed with Auckland Transport’s Operations Division at an early stage. Once an agreement has been reached in principle around the need for the restriction and the extent of NSAAT pavement markings, the respective processes for the preparation and approval of a Traffic Resolution must be followed.

There are four main purposes for the installation of NSAAT lines, as follows:

- To improve safety: where parking compromises safety such as restricting visibility or the ability for vehicles to make turning movements without coming into conflict with parked vehicles.
- For operational reasons: parking may restrict the flow of traffic which may compromise the operation of an intersection or along a carriageway
- To enable emergency access: parking may impede the ability for emergency vehicles to gain access to a particular location for instance a narrow street or across the frontage of a fire station.

- Temporary restrictions: NSAAT lines may be required for a period of time to enable temporary works to occur. These should only be used where the works are required for a protracted temporary period of time such as a number of months rather than a short duration (such as a few days).

The application of NSAAT pavement markings must not proceed until a Traffic Resolution has been approved by Auckland Transport’s Traffic Control Committee. The Traffic Resolution process is summarised in section 8.1. The installation of NSAAT pavement markings without an approved Traffic Resolution means that the parking restriction cannot be enforced and therefore the markings become ineffective.

### 10.3.3 Edge Marker Posts

Edge Marker Posts (EMPs) must be considered for improved delineation when the standard road delineation methods are insufficient. EMPs are generally only used on rural roads. These are recommended for (but not limited to) use in the following situations:

- Frequent horizontal and/or vertical curves along the route
- Sub-standard curves
- Through areas commonly subject to fog, mist or steam
- Through areas with high night traffic
- Through areas with high tourist traffic

For guidance in the application and design detailing for edge marker posts refer to MOTSAM Part 5 and RTS 5 “Guidelines for Rural Road Marking and Delineation”.

### 10.3.4 “Check before you step” Footpath Marking

These must be primarily used on pram crossings at school zebra crossings, school patrol crossings and kea crossings. Markings must be in yellow with dimensions (mm) as follows:



Figure 36: Raised Pavement Marker Application



### 10.3.5 Raised Pavement Marker Application

In addition to MOTSAM's guidance on Raised Pavement Markers (RPMs), they should also be considered for use in the following situations:

- Local (Two-way single carriageway roads)
  - Rural - AADT of 3,000+ (except along residential areas) along the road centreline
  - Urban - AADT of 6,000+ (except along residential areas) along the road centreline
- Collector Road - Major intersections and centreline
- Secondary Arterial - Major intersections and centre line
- Primary Arterial - Major intersections and centreline

If the road requires surfacing works within the coming 12 months, the use of RPMs should be postponed until completion of the resurfacing work.

### 10.3.6 Fire Hydrants and Valves

As per Water Care Services Limited's Standard Construction Drawing No. WS 8. Watercare's standard construction drawings are available under [Engineering standards on the Watercare website](#).

### 10.3.7 Audio Tactile Profiled (ATP) Line Marking

This form of pavement marking treatment should be considered:

- For roads with AADT of at least 6,000
- For road sections with high crash incidents.

Refer to section 4.08 of MOTSAM: Part 2: Markings

### 10.3.8 Parking Area Markings

Various types of parking area markings are described in sections 2.11 and 2.12 of MOTSAM: Part 2: Markings. These cover general parking, bus stops, loading zones, taxi stands, motorcycle parking, bicycle stands and disability parking spaces.

Additionally, various types of parking users are to be considered:

- Regular users – for people who regularly use the facility and will have a high level of familiarity with the parking area
- Casual users – for the short-term visitors and have minimal familiarity with the parking area
- Disabled users – these are defined within the Building Act 2004 and NZS 4121:2001 Design for access and mobility – buildings and associated facilities. Requirements for the quantity and location of disabled parking spaces are detailed in NZS 4121:2001.





- Other users – these are parking users that require specific design requirements such as hospitals, supermarkets and universities. This will require approval from AT's Operations Division prior to implementation.

Refer to *ATCOP Chapter 11 Parking, Section 11.2.1* and Table 31 for simplified parking design layout dimensions.

## 10.3.9 Special Vehicle Lane Markings (and Coloured Surfacing)

Special vehicle lanes e.g. transit lanes, bus lanes, cycle lanes are usually identified by specific markings (e.g. cycle symbol on cycleways) and continuous or discontinuous coloured surfacings (e.g. green coloured surfacing on bus lanes). The markings must comply with TCDM/MOTSAM and *ATCOP Section 5.1* for Bus/Transit lanes and *ATCOP Chapter 13* for Cycle lanes. Any departures from these standards or additional marking requirements must be submitted to the relevant AT Engineer for approval, before installation.

Special Vehicle lane surfacing must consist of a pigmented polyurethane, epoxy or similar resin, and have synthetic coloured aggregate broadcast or entrained in to act as the wearing course. The product must have skid resistance at least equal to the adjacent road surface, and have a life expectancy (able to be demonstrated by trials or from existing jobs) with regard to presence, colour retention and skid resistance of at least 5 years.

The surface should have a British Pendulum reading when new of between 0.4 to 0.45 BPN. The riding surface must be smooth and have a NAASRA reading of no more than 60 NAASRA counts/km with good drainage.

Green colour must be used on bus lanes and cycle lanes to match the existing green colour, which must be approved by the relevant AT Engineer prior to application.

The relevant AT Engineer may request other colours such as red, for other special vehicle lane marking.

## 10.3.10 Road Marking Materials

Two general types of materials used for road markings are Paint and Thermoplastic. Although both are widely accepted, thermoplastic has the advantages of greatly extended life (5-6 years), greater texture depth, better night-time visibility and higher skid resistance when compared to paint. Pavement marking materials' selection criteria that must be considered are:

- Classification of road
- Volume of traffic
- Strategic priority of the road
- Health and Safety (both in application and during use)



- Other specific road or environment factors

**Paint**

The pavement marking paint required, where thermoplastic material has not been specified, must comply with the requirements of NZTA M7 and associated specifications.

The paint requirements, unless otherwise specified herein, must be based on NZTA M7 paint classification - ability to withstand trafficking:

**Table 28: Recommended Paint Classification**

Maintenance Priority	Road Description	Class A	Class B	Class C
MP1	Generally Primary Arterials			●
MP2	Generally Secondary Arterials			●
MP3	Generally Collector Roads. May be Secondary Arterials		●	●
MP4	Generally Local and Collector Roads		●	●
MP5	Generally local sealed roads		●	●
MP6	Generally local sealed roads with low traffic volume. Mostly urban/rural residential roads	●	●	
MP7	Unsealed roads			
MP8	Access ways and Car parks	●		

**Table 29: Recommended Paint Dry Film Thickness**

AADT	180 microns	220 microns	300 microns
>8,000			●
1,500 to 8,000		●	●
<1,500	●	●	●

**Thermoplastic Markings**



Unless otherwise specified, all thermoplastic road markings must comply with the requirements of TNZ M/20 and associated Notes.

**Raised Pavement Markers**

Raised pavement markers must comply with TNZ M/12 and as approved by the relevant AT Engineer. Only approved raised pavement marker adhesive must be used.

**Edge Marker Posts**

PVC-UV stabilised 4mm thick posts complying with TNZ M/14 must be used.

**10.3.11 Installation/Workmanship**

**General pavement marking**

General pavement marking installation and workmanship must comply with TNZ P/12 and P/14 (Raised Pavement Markers) together with the modified requirements as follows:

- The last sentence of Clause 11.1 of TNZ P12 does not apply and is deleted.
- Non-conforming markings must be remedied to comply with the specifications, particularly Clause 15 of TNZ P/12.
- All misplaced RPMs must be removed and replaced correctly

**Edge Marker Posts**

Edge Marker Posts (EMP) must comply with TNZ P/16 on both sides of the road in accordance with the specification. EMPs must directly align on both sides of the road where site conditions allow.

**10.3.12 Re-statement of Existing Road Markings**

The following table provides a guideline on how surveys should be carried out depending on the road hierarchy and extent of works.

Table 30: Road Marking Surveys

Road Hierarchy	Extent of Works	Survey Method
<b>Primary and Strategic Arterials</b>	<b>Midblock sections, Intersections (3 or more approaches), multiple sites, around horizontal/vertical curves etc.</b>	<b>Topographic Survey and Photos</b>
<b>Secondary Arterials</b>	<b>Midblock sections</b>	<b>Measuring Wheel and</b>



Road Hierarchy	Extent of Works	Survey Method
		<b>Photos</b>
	<b>Intersections (3 or more approaches), multiple sites, around horizontal/vertical curves etc.</b>	<b>Topographic Survey and Photos</b>
<b>Collector and Local Roads</b>	<b>Midblock sections, Intersections (3 or more approaches), multiple sites, around horizontal/vertical curves etc.</b>	<b>Measuring Wheel and Photos</b>

All pavement markings must be reinstated as per the existing layout unless specified otherwise by AT. This can be verified by doing a second/as-built survey of the reinstated line marking as per the same method used for surveying of the existing line marking (refer to Table 29). Before and after surveys must be submitted to AT. This information will be used to assess the workmanship of the re-instatement works.

Any changes to pavement markings (in particular parking restrictions) need to be formally resolved, in agreement with AT, through the Traffic Control Committee Resolution process.

### 10.3.13 Removal of Pavement Markings

Removal of redundant markings (i.e. markings that are no longer required) including long life and thermoplastic type markings must be by the use of a method approved by the relevant AT Engineer prior to work commencement. The method specified must not damage the road surfacing.

Redundant pavement markings must be removed from the wearing surface of pavements to leave a clean pavement with a surface texture and colour comparable to the adjacent pavement surface.

All numerals, letters, symbols and arrows must be removed in such a way that confusing messages (e.g. from visual effects such as ‘ghosting’ and/or ‘silhouettes’) are not given to motorists, particularly under wet or poor light conditions.

“Blackout” will only be permitted for temporary markings removal, and the redundant marking in this instance must be completely removed within 48 hours. Prior to the use of the “Blackout” method approval of the relevant AT Engineer must be obtained.