

Road Delineation Policy

Policy References

- Effective date: 1 October 2010
Reviewed 17 August 2017
- Review due: 30 September 2020
- Approved by Council: Policy approved by the Engineering Services Committee on 30 September 2010 and reviewed on 17 August 2017

Introduction

Delineation is a term used to describe elements that provide guidance to motorists using roads. Such elements include road markings, signage and raised pavement markings.

Delineation is a treatment that enhances the selection of the appropriate vehicle path and speed or position to allow a movement to be carried out safely and efficiently. It could include road marking, reflectorised raised pavement markers (RRPMs or cat's eyes), traffic signs, chevron signs and edge marker posts.

The road environment very much sets the pace for drivers. Good sight lines provide drivers with confidence, likewise with delineation. If the road is of a suitable width with good wide shoulders and is well delineated, it will allow drivers to achieve the appropriate safe legal speed for that road section. Where roads have a lower delineation, this is more likely to leave drivers less confident and hence travel at a lower speed than if the same road was delineated to a higher standard, irrespective of how suitable the road geometry including width and vertical/horizontal alignment may be. On local rural roads, the road width and alignment has generally had very little improvement from the way it was prior to first being sealed 40 or more years ago.

While cars are being made safer, roads generally are only being maintained rather than being re-built. The driver on the day of travel remains a significant variable making decisions based on the situation ahead and hence setting their level of risk. Other than changing the road alignment, road delineation is one of the only options available to clearly convey to drivers the situation ahead allowing them to take the appropriate course of action.

Background

A driver's prior expectations about the standard of road markings and delineation are a major factor in his or her ability to negotiate the road environment safely. While it is important to ensure that a road is designed to a consistent standard, there are locations on the

Tasman District roading network that due to historical, physical or financial constraints where this has not occurred. When this happens transport engineers must rely on road markings, signs and other delineation devices to advise drivers of changes in the road environment.

If these road markings, signs or delineation devices are not provided, or not used consistently, driver expectations are not met and the chance of a motorist entering a hazard at too great a speed increases. The inconsistent use of markings or devices may also result in the driver misinterpreting the visual message intended.

The following are the delineation hierarchy categories including their lengths on Tasman District Council roads.

Note these categories are for delineation purposes only and do not change the roading hierarchy development for the Tasman Regional Management Plan or the Nelson Tasman Land Development Manual 2019.

Delineation hierarchy	Road length	Centreline	Edge lines	RRPMs	Edge marker posts	Road name blades
Rural arterial and tourist roads	211	Full length	Full length (100 mm)	Full length	Full length	160 mm lettering
Rural primary collector roads	129	Full length	Full length (75 mm)	Isolated	Isolated	120 mm lettering
Rural secondary collector roads	144	Full length	Isolated (75 mm)	Isolated	Isolated	120 mm lettering
Rural local roads	266	Isolated	Isolated (75 mm)	Nil	Isolated	120 mm lettering
Urban arterial, primary and secondary collector	89	Full length	NA	Isolated	NA	120 mm lettering
Urban local roads	111	Isolated	NA	Nil	NA	120 mm lettering

Outcomes

Urban Roads

Urban roads are marked with centre lines for the arterial and collector roads with local access roads having these in isolated locations such as sharp curves only. Intersection controls are installed on side roads for arterial and collector roads. For local roads, intersection controls will depend on the intersection configuration and safety issues. For example, cross-road intersections have control on at least two of the legs. Lane lines and park limit lines are used in certain locations where specific traffic management is required, for example outside a school or shopping precinct.

Rural, Arterial and Tourist Routes

Roads such as those identified as Rural Arterial or Tourist Routes are delineated to a high standard. These roads generally carry the higher traffic volumes or in the case of tourist roads, are more likely to have the greater number of drivers with less confidence driving New Zealand roads. Tourists driving into the district will typically come via the state highway network which has a high level of delineation. The Council's Tourist Route standard has a similar level of delineation to provide consistency for this user group.

Standard delineation features for arterial and tourist category roads include:

- Centre line
- Edge lines – 100 mm wide
- RRPMs
- Edge marker posts
- Full markings for single lane bridges
- Flag lights
- Hazard markers (where required)
- Intersection controls – on all side roads
- Curve warning signs (where warranted)
- Road name blades with larger 160 mm lettering
- Advance intersection signage
- Chevrons
- Guardrails (where warranted)

Rural Collector Roads

The difference in delineation of collector roads compared to that of arterial and tourist routes is they only have edge marker posts (EMPs) at curves and raised pavement reflective markers (RRPMs) commonly known as cat's eyes along the centreline where night time safety issues are identified.

Standard delineation features for collector roads include:

- Centre line
- Edge lines – 75 mm wide
- RRPMs – at locations with safety issues
- Edge marker posts - isolated
- Full markings for single lane bridges
- Hazard markers (where required)
- Intersection controls – on all side roads
- Curve warning signs (where warranted)
- Road name blades with 120 mm lettering
- Advance intersection signage
- Chevrons
- Sight rails most likely instead of guardrails (where warranted)

Rural Local Roads

Local roads either sealed or gravel are delineated to a lesser standard than arterial, tourist routes and collector roads. Local roads have road markings and other delineation devices

including signage to warn of a safety issue such as a sharp curve that is significantly different to the remainder of the route.

Standard delineation features for local roads includes:

- Centre line – isolated due to road alignment
- Edge lines – isolated due to safety issues
- Edge marker posts – isolated sections due to safety issues including road alignment
- Full markings for single lane bridges where practicable
- Hazard markers (where required)
- Intersection controls – on main road where required or safety issue
- Curve warning signs (where warranted)
- Road name blades with 120 mm lettering
- Chevrons
- Sight rails most likely instead of guardrails (where warranted)

For new roads the developer's designer shall assess the delineation hierarchy based on this policy and the function of the road. They will recommend a hierarchy for the approval of the Engineering Manager.

Attached – Quick Reference Guide

Treatment Type	ROAD DELINEATION CATEGORY					Notes
	ARTERIAL & TOURIST	COLLECTOR	LOCAL ROAD			
			Rural - Seal	Rural - Gravel	Urban	
Centre lines	√	√	Safety exception*		Safety exception*	Absolute minimum width 5.0m for urban & 5.4m where edge line is required
Edge lines	√ 100mm	√ 75mm	Safety exception*			
RRPM's	√	Safety exception*				
Edge marker posts	√	Isolated*	Safety exception*	Safety exception*		Install absolute minimum of 3 for isolated treatments
Full markings at single lane bridges	√	√	√	As practical		As per MOTSAM
Flag lighting	√					
Hazard Markers	On all hidden hazards 1m from edge of carriageway, including hidden culverts.					RM-7 type reflective discs
Intersection control	√	√	√	√	√	As per MOTSAM
Curve Warning signs	√	√	√	Safety exception		In line with MOTSAM for all out of character curves
Road name blades	150mm	120mm	120mm	120mm	100mm	Modified E, or C for longer names to fit on 1200mm blade. No Exit and Rapid No. 60mm, matching font. See Tasman District Council Street Name Blade Specification for detail
Advanced intersection signage	√					As per MOTSAM permanent Warning Signs (eg. PW8-12). Arterial / Arterial & Arterial / Collector intersections
Chevrons	√	√	√	√		Plus in-line with MOTSAM for all out of character curves where advisory signs alone are not sufficient
Sight rails	Guardrails	√	√	√		

* Safety exception and Isolated treatments at Engineers direction.

Arterial & Tourist Route: Full edge marker post spacing (as per MOTSAM Table 5.4)

Note: Isolated RRPM's include 20m "lead in" to feature (curve, narrow bridge or intersection).

Curve Radius (m)	Spacing (m) pairs opposite
20-30	10.0
30-40	12.5
40-60	15.0
60-80	17.5
80-100	19.0
100-150	21.0
150-200	25.0
200-300	28.0
300-400	31.0
400-600	35.0
600-800	40.0
800-1200	45.0
over 1200	50.0

Isolated edge marker post spacing (as per MOTSAM table 5.2):

Horizontal alignment (radius m)	Post type		Spacing (m)	EMP Location
	Left	Right		
Straights	A	B	100	Pairs opposite
All curves over 600m	A	B	100	Pairs opposite
LH Curves <600m	None	C	50	Right only
RH curves <600m	A	None	50	Left only
LH curves <140m	None	C	25	Right only
RH curves <140m	A	None	25	Left only
Vertical crest curve	A	B	At least three visible	

Note: Delineate entire feature (sub standard or frequent curves, narrow bridge or intersection) including at least one as "lead in". Install absolute minimum of 3 (correctly spaced) at isolated feature.

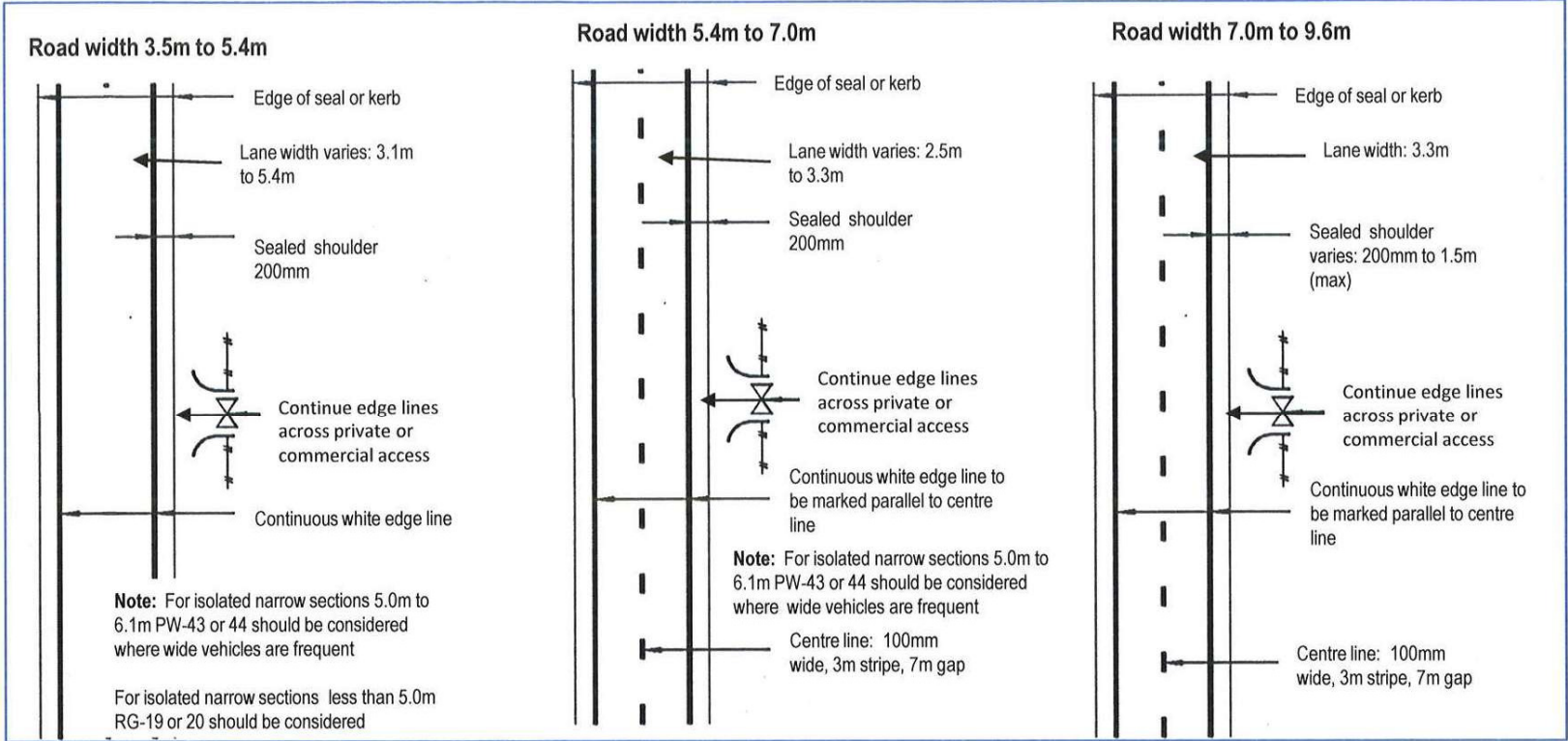


FIGURE 1: EDGE & CENTRE LINE LAYOUTS

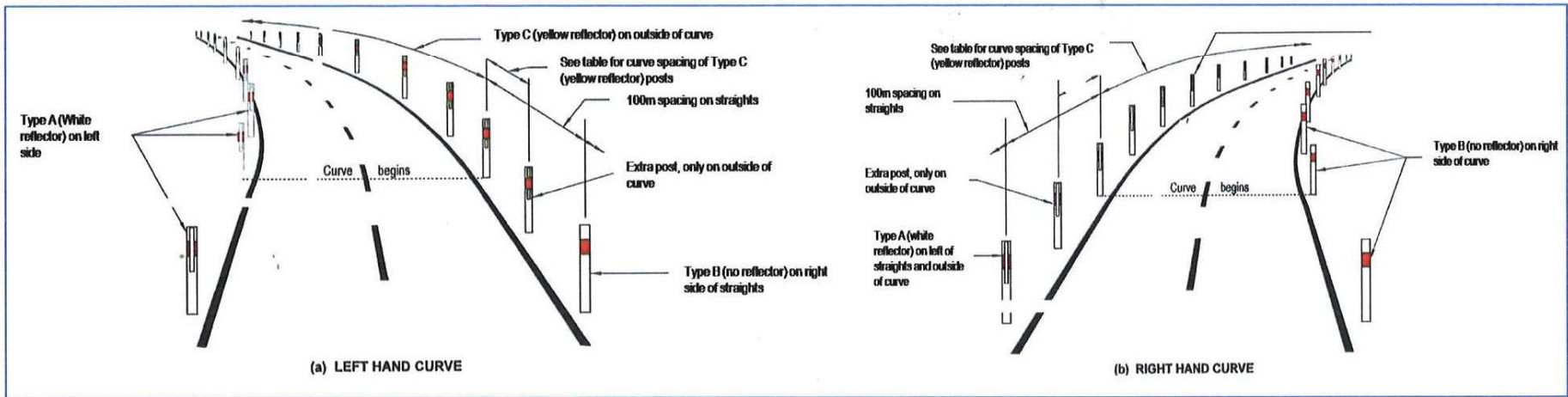


FIGURE 2: EDGE MARKER POST LAYOUTS