4. Associated safety aspect of driveway design/location

The visibility requirements detailed in these guidelines are aimed at reducing collisions due to conflicts between vehicles manoeuvring at driveways and vehicles on the frontage road.

Other safety aspects of driveway design and location aimed at reducing such conflicts are discussed below with reference to recommended standards in other Ministry of Transport and Transit New Zealand documents.

4.1 Frontage road seal widening

On rural roads without kerbs, additional seal widening near driveways allows more room for manoeuvring and through vehicles to avoid conflicts. The additional seal widening reduces the disruption to the through flow of traffic on the frontage road. Generally, this is only warranted on arterial roads with a speed limit of 70 km/h or more.

On these roads seal widening is not considered necessary, although it may be desirable, for low volume driveways unless they are frequently used by heavy vehicles, e.g. milk tankers, which need additional room and time to make manoeuvres compared with light vehicles.

Figures 3 and 4 show the recommended seal widening for low volume driveways frequently used by heavy vehicles and for high volume driveways fronting arterial roads without kerbs and with speed limits of 70 km/h or more. These figures are based on diagrams 3 and 4 from Transit New Zealand, *Planning for a safe and efficient highway network under the Resource Management Act* [2].

Figure 3: Seal widening on rural arterial roads for low volume driveways frequently used by heavy vehicles

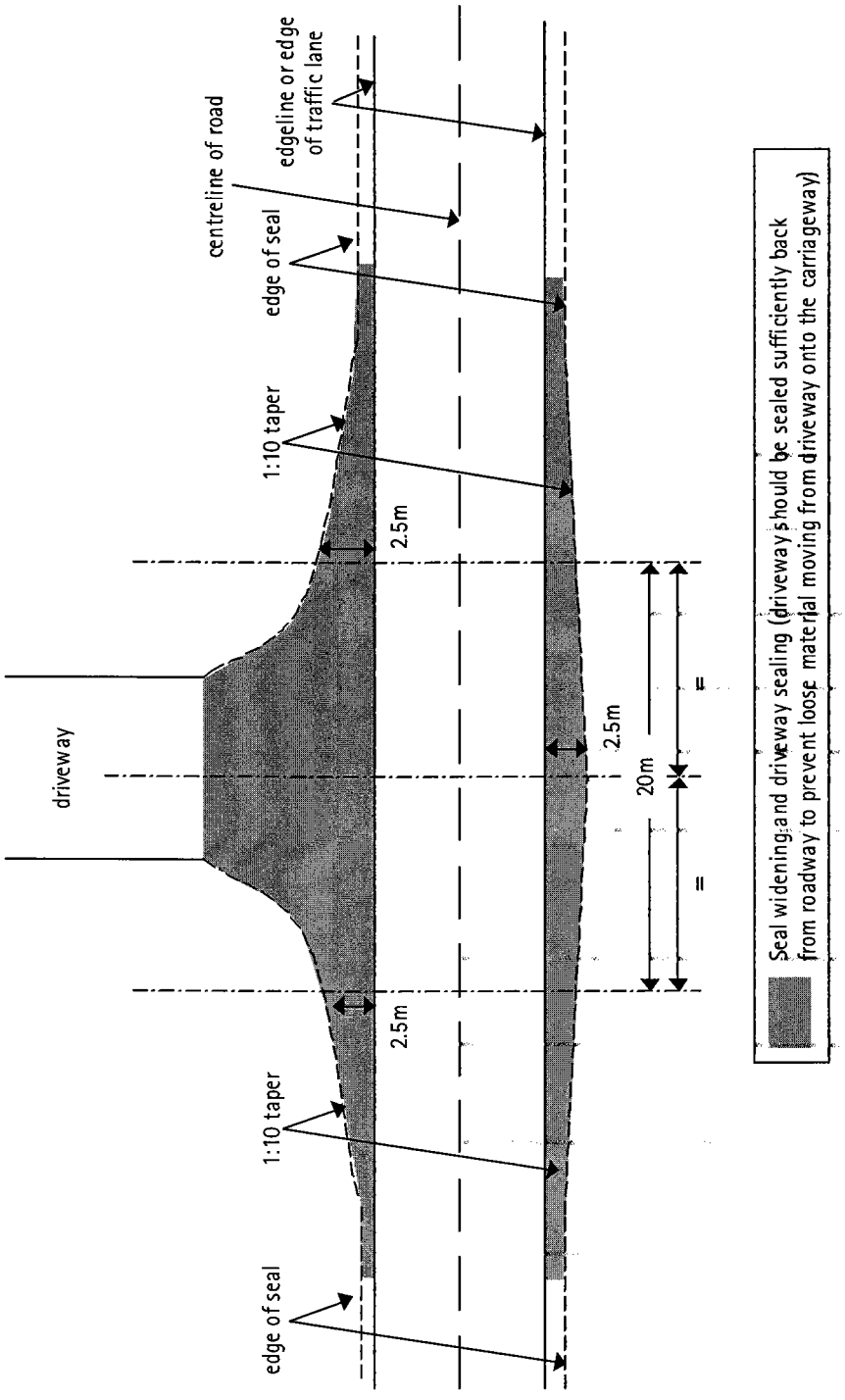
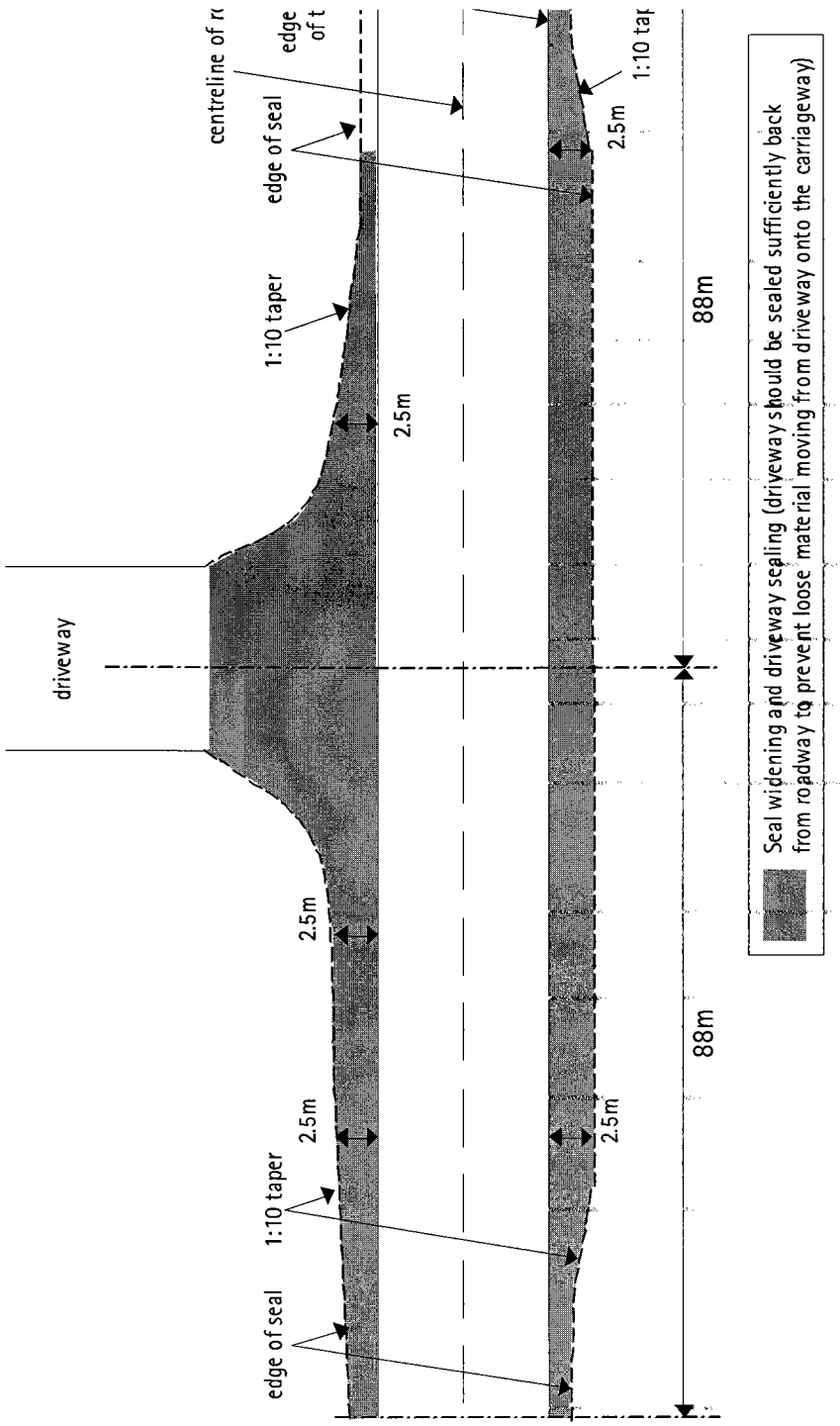


Figure 4: Seal widening on rural arterial roads for high volume driveways



4.2 Distance from intersections and between driveways

Driveways should be located sufficiently far from intersections so manoeuvres at the driveways do not conflict with, or get confused as, manoeuvres at the intersection.

The following distances from intersections are recommended by the given references:

		Distance
Ministry of Transport [3]	Service stations	
	• Near intersections with traffic volumes > 1,000 vehicles per hour	30m
	• Near intersections with traffic volumes < 1,000 vehicles per hour	9m
Ministry of Transport [4]	Rural selling place	
	• Arterial road	60m
	• Local/collector road	30m
Transit New Zealand [2]	Rural	
	• On state highway	100m
	• On side road intersecting a state highway	30m
	Urban	
	• One of intersecting roads a state highway	15m

Similarly, driveways should be spaced along the frontage road so it is clear at which driveway manoeuvres are taking place. This is particularly important for high volume driveways fronting arterial roads.

Transit New Zealand, *Planning for a safe and efficient highway network under the Resource Management Act* [2] recommends a minimum distance between driveways of 200 metres on rural state highways with a speed limit of 100 km/h. On urban state highways it recommends a minimum distance between driveways of 7.5 metres for residential land uses and 15 metres for other land uses.

4.3 Driveway width

Excessively wide driveways can create more unpredictable manoeuvres at driveways and increase the potential for conflicts with traffic on the frontage road.

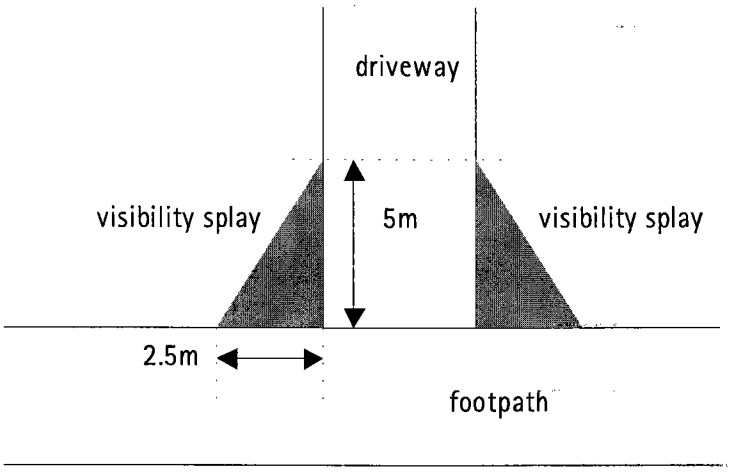
Both Ministry of Transport, *Standard for service stations* [3] and *Guidelines for establishing rural selling places* [4] and Transit New Zealand, *Planning for a safe and efficient highway network under the Resource Management Act* [2] recommend maximum driveway widths of 9.0 metres for two way operation. The latter also recommends a maximum 6.0 metres width for one way operation for activities with a high propensity to attract vehicles and a maximum of 3.5 metres for activities with a low propensity to attract vehicles. Ministry of Transport, *Standard for service stations* [3] recommends a maximum width of 6.0 metres for one way operation at service stations.

4.4 Pedestrian safety

For all driveways crossing a footpath there should be a line of clear sight between pedestrians on the footpath and vehicles using the driveway so that collisions are avoided. The area occupied by the driveway should also be well defined so that pedestrians can anticipate vehicle paths across the footpath.

This document has not developed any guidelines for this. However, Building Industry Authority DI Access Routes [5] recommends a 5.0 x 2.0 metre visibility splay for vehicle routes crossing a pedestrian route. This is indicated in the diagram below and should be considered for high volume driveways crossing footpaths in areas with high pedestrian activity.

Figure 5:



Ministry of Transport, *Standard for service stations* [3] states that "if the flow of pedestrians along the footpath is more than 1,000 per hour for several hours of the day, the site is not suitable for a service station."

5. References

[1] NAASRA (1988) *Guide to traffic engineering practice part 5 - intersections at grade.*

[2] Transit New Zealand (June 1992) *Planning for a safe and efficient highway network under the Resource Management Act.*

[3] Ministry of Transport (1983) *Standard for service stations.*

[4] Ministry of Transport (August 1992) *Guidelines for establishing rural selling places.*

[5] Building Industry Authority (Draft March 1992) Approved Document, *DI Access Routes.*

6. Acknowledgements

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- Auckland City Council
- Southland District Council
- Transit New Zealand
- All Ministry of Transport Road and Traffic Standards Sections.

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