

Guidelines for street name
signs

RTS 2

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Foreword

These guidelines were prepared because many existing street name signs are not effectively serving their purpose of providing clear information. In particular, many are badly located, cannot be read under night-time conditions, and have lettering which is too small or indistinct.

There is also clear evidence that sub-standard street name signing is a cause of road accidents.

These guidelines are aimed at achieving a general improvement in street name signing, to a level which is acceptable by international standards.

November 1990

Definitions

Arterials

For the purposes of these Guidelines, arterials include those streets or roads carrying traffic volumes of 10,000 vehicles per day or more, all streets or roads with a raised or painted central median and all streets with a total (kerb to kerb) vehicle carriageway width of 20 metres or more.

Background

That part of a street name sign on which the message is placed. (It establishes the most predominant colour of the sign and is the most significant contributor to the visual target value of the sign).

Border

That part of the background between the message and the edges of the sign.

Brightness

(Same as Luminance). A measure of the amount of light coming off a surface in a given direction.

Conspicuity

A measure of a sign's visual impact or how well it stands out from its surroundings. Also called visual target value.

Contrast

The difference in appearance i.e. brightness or colour or both, of two parts of a visual field seen simultaneously or successively.

Contrast Ratio

An objective measure of contrast. Specifically for street name signs this measure is expressed by the formula:

$$\frac{L_L - L_B}{L_B}$$

Where L_L is the luminance of the legend and L_B is the luminance of the background. The contrast ratio is the most important factor in determining legibility for given letter sizes.

Labels

The classifiers associated with the names on street name signs. Includes "street", "road", "crescent" etc.

Legends

That part of the message on the street name sign consisting of the name and the label.

Legibility distance

The distance from which a sign can be read in daytime conditions with 20/20 static visual acuity.

Luminance

(Same as Brightness). A measure of the amount of light coming off a surface in a given direction.

Message

That part of the street name sign that provides information to road users. Includes the name, label and any logo, numbers etc on the sign but excludes the background.

Minor streets

For the purpose of these Guidelines, minor streets are all those streets or roads that are not arterials i.e. those streets carrying traffic volumes of less than 10,000 vehicles per day, those streets with no median dividing opposing traffic streams and those with a total (kerb to kerb) vehicle carriageway width of less than 20 metres.

Operating speed

Equal to the 85th percentile speed of traffic on a section of road under free-flowing conditions. For practical purposes the operating speed can generally be taken as 60 km/h on minor streets in urban areas, 70 km/h on arterial streets in urban areas and 110 km/h in rural areas.

Reading distance

The distance travelled by a motorist in the time it takes to “read” a sign.

Reflectorisation – class 1

The photometric performance achieved by use of retroreflective sheeting made from encapsulated lens material commonly referred to as High Intensity Grade. Performance and durability requirements are specified in reference (4).

Reflectorisation – class 2

The photometric performance achieved by use of retroreflective sheeting made from enclosed lens material commonly referred to as Engineering Grade. Performance and durability requirements are specified in reference (4).

Surroundings

The ambient setting or environment against which a sign is seen.

1. Introduction

The effectiveness of traffic signs, including street name signs, is dependent on their legibility and conspicuity. In turn these are dependent for effectiveness on design and their location in relation to the roadway. Uniformity in design and location of signs is thus an important factor in enhancing their performance. This document is intended to encourage uniformity by providing guidelines on design and location for signs in both urban and rural situations.

(Definitions of some of the terms used in these guidelines are given in the front of the document).

2. Summary of guidelines for street name signs

2.1 Colour

Recommended colour combinations for street name signs are white letters on blue or green backgrounds in urban areas and white letters on blue backgrounds in rural areas.

2.2 Reflectorisation

Sign lettering and backgrounds should be reflectorised with Class 1 materials in urban areas and Class 1 or Class 2 materials in rural areas. Alternatively, signs could be internally illuminated.

2.3 Lettering

Lettering should generally be Series D a minimum of 125 mm in height on minor urban streets and a minimum of 150 mm in height on arterials and in rural areas. Modified Series E or Transport Medium with 150 mm capitals may also be used on arterials.

2.4 Size and shape

Signs should be between 500 mm and 1200 mm in length and have a border of background colour at least 50 mm wide but desirably with a width equivalent to 50% of the letter height. Desirable blade depths are therefore 250 mm for 125 mm lettering and 300 mm for 150 mm lettering.

2.5 "No Exit" supplements

"No Exit" situations should be indicated by supplementary signs mounted below the street name sign and having the same letter type, letter size and colour combination as the main sign.

2.6 Locality identification

Locality identifiers (monograms, logos etc) may be added to street name signs provided they do not detract from the legibility of the sign.

2.7 Property numbers

Property numbers may be included on street name signs provided they do not detract from the main message of the sign.

2.8 Location

Signs must be located where they are visible over a distance appropriate to the operating speed and where possible within the area of the intersecting road reserve boundaries of the streets to which they apply.

2.9 Height

Street name signs should be mounted with their underside between 2.5 m and 3.5 m above ground level.

2.10 Lateral offset

Signs should generally be mounted within 1500 mm of the kerbface or shoulder edge but at least 450 mm behind the kerbface on kerbed streets, 500 mm behind the kerbface on islands or medians, or 600 mm from the shoulder edge on unkerbed streets.

2.11 Number of signs

The number of signs at an intersection should be increased for more complex backgrounds, more important streets and wide streets.

2.12 Advance street name signs

Additional street name signs should be mounted on the central median or overhead in advance of intersections between two or more arterials.

3. Design of street name signs

3.1 General

Street name signs should be sufficiently conspicuous, legible, and meaningful that all road users can read and act upon them without causing any undue disruption to the traffic stream, under both daytime and night-time conditions.

Signs should be double sided unless mounted on walls or verandah fascias in which case they should be duplicated on the opposite side of the street.

The recommendations in this guideline are sufficiently flexible to facilitate the economic provision of street name signs and allow variations for local identity purposes.

3.2 Sign colour

The conspicuity (visual target value) of a street name sign is mainly dependent, in daylight conditions, on the contrast between the sign background and its surroundings and, in night-time conditions, on the brightness (luminance) of the sign background.

Legibility of a sign is dependent on the relative contrast between the letters and the sign background. A light letter colour on a dark background provides the best contrast. The dark letters of the reverse combination tend to be “washed out” by the diffusion of light from a light background.

Combinations of black and white provide the best colour contrast for legibility, but in an urban environment this provides a poor contrast with the surroundings which does not aid conspicuity (particularly at night).

Yellow, orange and red backgrounds are used extensively for other traffic signs and should therefore not be used for street name signs.

The recommended colour combinations for street names signs are, therefore, white letters on a blue or green background in urban areas, and white letters on a blue background in rural areas (where the surrounding environment is more likely to be green). More details on colours and colour combinations are given in Appendix 1.

The colours used for street name signs should desirably be consistent throughout a territorial authority or urban area.

3.3 Reflectorisation/illumination

To obtain sufficient brightness to be effective at night, especially at maximum mounting heights, street name signs must be either retroreflective, internally illuminated or floodlit. The latter two are generally impractical or excessively expensive.

Normal street lighting is not sufficient to illuminate street name signs for motorists but is often useful to enable the signs to be read by pedestrians.

Class 2 reflectorisation of letters and sign backgrounds would generally provide sufficient brightness in rural areas. Class 1 reflectorised materials should be used for both lettering and sign backgrounds in urban areas where there is a higher level of ambient lighting in the surroundings. Class 1 materials are also necessary to achieve adequate brightness with dipped headlights.

To achieve contrast ratios which maximise legibility, the same class of reflectorised material should be used for both lettering and background on a given sign. That is Class 1, Class 2 and/or non-reflective materials should not be mixed on the same sign.

Because Class 1 and Class 2 materials degrade at different rates, the contrast ratio on signs manufactured from mixed classes of materials will change over time. Such signs therefore have a shorter lifetime in terms of acceptable performance than those made from matching materials.

It should also be noted that Class 1 materials have been shown to have a longer lifespan in the field than Class 2 materials. Signs manufactured from Class 1 materials are therefore the most economical in the long term.

The papers by Horner, Kemp and Pandich (1) and Jenkins and Gennaoui (2) contain further useful information on the field performance of retroreflective traffic signs.

Internally illuminated street name signs must have acceptable contrast ratios. The light output of these signs should be high enough to be conspicuous but not so high as to cause glare problems. One or two fluorescent tubes per sign would produce an acceptable light output under most circumstances.

Further details on acceptable combinations of colours and reflectorisation and on contrast ratios are given in Appendix 1.

3.4 Lettering

Lettering for the street name signs on minor streets in urban areas should be all capitals. Desirably these should not be less than 125 mm in height with an absolute minimum of 100 mm in height.

Signs on arterial streets should have either capital letters not less than 150 mm high, or upper and lower case lettering with capitals not less than 150 mm high. Alternatively, upper and lower case lettering may be used to distinguish advance street name signs or low mounted signs on medians or traffic islands.

Lettering on street/road name signs in rural areas should all be capitals not less than 150 mm high.

Lettering with upper and lower case characters has greater legibility than lettering in capitals only.

Details of legibility requirements are given in Appendix 2.

Series D lettering complying with the National Roads Board Manual of Traffic Signs and Markings (3) should be used for legends entirely in capitals, except where this would result in a sign more than 1200 mm long (see Section 3.5). In these cases Series C lettering should be used, or spacings between letters decreased (although legibility will be reduced).

Modified Series E or Transport Medium lettering complying with the National Roads Board Manual of Traffic Signs and Markings (3) should be used for legends in upper and lower case.

Standard abbreviations for the labels "Street", "Road", etc are given in Table 1 on page 12. These abbreviations should have lettering of the same size and type as the street name. Except for signs with upper and lower case lettering, the second and subsequent letters of any abbreviation or label may be half the height of other letters on the sign. (See Figure 1 for examples of acceptable sign layouts).

Labels not given an abbreviation in Table 1 e.g. “Lane”, “Quay” should not be abbreviated unless the resulting sign would exceed 1200 mm in length.

Figure 1: Examples of Acceptable Sign Layouts

Useful format for the head of a T-intersection

COLOMBO ST

< 86 ALPHA AVE 88 >

 WAINONI RD

CLIFTON TCE
27 - 49

GLAMIS PL >

NO EXIT

Andrews Cr

Table 1: Standard abbreviations for labels

Avenue	AVE	Freeway	FWY
Boulevard	BVD	Highway	HWY
Close	CL	Parade	PDE
Corner	CNR	Place, Plaza	PL
Crescent	CR	Road	RD
Drive	DR	Square	SQ
Esplanade	ESP	Street	ST
Expressway	EXP	Terrace	TCE

3.5 Sign size and shape

Street name signs should be rectangular with the long axis horizontal and should be end-mounted where possible.

The length of the sign should be a minimum of 500 mm and a maximum of 1200 mm unless mounted centrally or mounted on two posts.

A border of background colour around the legend is an important aid to conspicuity. Desirably the width of the border both above and below the legend should be 50% of the height of the lettering of the legend. A 50 mm border of background colour above and below the legend should be considered the absolute minimum.

Minimum blade depths are therefore 225 mm with 125 mm lettering, and 250 mm with 150 mm lettering with desirable blade depths of 250 mm and 300 mm respectively.

3.6 "No Exit" supplements

A "No Exit" situation should be indicated by a supplementary sign mounted directly below and on the same post as the street name sign to which it applies. The supplementary sign should have a verbal message with the same colours, lettering size and lettering type as the street name sign.

3.7 Locality identification

Monograms, logos or wording can be added to street name signs to identify the territorial authority or locality within an authority. Such identification must not detract from the legibility of the street name signs or significantly affect their uniformity within an area.

Acceptable forms of identification are shown in the examples in Figure 1 on page 11.

3.8 Property numbers

The inclusion of property numbers on street name signs or on supplementary signs can be useful for passenger services, emergency services and pedestrians in particular.

Such numbers should be between 75 mm and 100 mm in height. They should be formatted and located so as not to detract from the main messages of the sign.

3.9 Directional indication

Retroflective chevrons or arrows at either end of the legend can be used as an additional indicator for road users. They are recommended on low mounted signs on medians or traffic islands, and in situations where the orientation of the street name sign does not clearly convey the direction of the street to which it refers.

4. Location of street name signs

4.1 General

Where possible street name signs should be located within the area formed by the intersecting road reserve boundaries. Signs should be oriented in the direction of the street or road to which they apply. From all other approaches they should be clearly visible to drivers and pedestrians over at least the distances given in Table 2, under both day and night conditions.

In situations where trees, street curvature, large kerb radii or other factors make it difficult to comply with all the recommendations in these Guidelines, these visibility requirements should take precedence over the desire for consistency in sign location.

Locating signs on traffic islands (especially at free left turn lanes) or on medians can be ideal provided the required clearance from the traffic stream can be met (see Section 4.3).

Table 2: Required visibility for street name signs

Operating speed (km/h)	Visibility distance (metres)
50	70
60	90
70	110
90	150
100	170
115	220

(These distances are based on the legibility distances calculated in Appendix 2 but assume that motorists travelling at the higher speeds will start slowing when they first see the sign but before they have read it).

Separate, frangible posts should be used for mounting street name signs, although existing utility poles or lighting columns can be used where these enable the above visibility criteria to be met. In central business districts or commercial areas it may be convenient to mount the signs on verandah fascias or the sides of buildings.

The number and location of signs required at a particular intersection will depend on factors such as street classification, traffic volume and complexity of the surroundings.

Where signs for two or more streets are mounted on the same post the signs for the major streets should be mounted above those for the minor streets.

4.2 Height

Street name signs over footpaths should be mounted with the underside of the sign between 2.5 metres and 3.5 metres above the footpath and desirably at 3.0 metres high. Lower signs can be subjected to vandalism and higher signs will not be adequately illuminated by dipped headlights.

Note that these requirements generally prevent signs from being mounted above the signal heads on the same poles as traffic signals. In central business districts signs should be mounted above, on, or below verandahs depending on where they are most clearly visible. This may require the use of heights outside the above range.

Low-mounted signs on medians, central islands at roundabouts or verges should not obscure the headlights or indicators of opposing or turning traffic.

4.3 Lateral offset

Street name signs should be as close as possible to the traffic stream without being vulnerable to damaging passing vehicles, or being damaged by vehicles.

Measured from the end of the sign nearest the traffic stream, signs should be at least 450 mm behind the kerbface on kerbed streets, 500 mm behind the kerbface on islands or medians with mountable kerbs, or 600 mm from the shoulder edge on unkerbed roads or streets.

It is generally recommended that signs be no more than 1500 mm behind the kerbface or shoulder edge (provided the mounting post does not obstruct the footpath). There are obvious exceptions to this requirement such as double-sided signs on wide medians and signs applying to through routes and located at the head of 'T' intersections.

Signs should be located within the area formed by the intersecting road reserve boundaries if possible.

4.4 Regularity of signs on arterials

Repeater street name signs should be displayed at regular intervals on arterial routes, particularly at every intersection with a side-road that forms a through route.

Signs should also be erected at any point where the street name changes on a through route.

4.5 Advance street name signs at major intersections

Advance street name signs are desirable for intersecting arterial routes particularly where there is a central median. Specifications for these signs should be similar to those for the signs at the intersection since the same design principles apply.

Advance street name signs should be erected in advance of the intersection by at least the distances shown in the following table:

Table 3: Location of advance street name signs in relation to intersections

Operating Speed (km/h)	Distance in advance of intersections (metres)
60	85
70	100
80	120
90	140
110	180

These distances may need to be varied where there would be minor side streets between the sign and the intersection of the named arterial street.

On arterials where there are one or two lanes in each direction and a raised central median, low-mounted signs on the central median may be used as an advance warning. Where there are three or more lanes in each direction or there is no raised central median, overhead sign installations may be necessary.

In some situations, street name signs may be mounted above or below advance direction or I-34 Intersection Advance Warning Signs. This is not permitted in the case of I-27 Stack signs on State Highways.

4.6 Number of signs per intersection

The examples of recommended sign locations in Section 4.7 show the desirable minimum number of signs at various types of intersections.

The number of signs erected should be increased where the surrounding environment is more complex in terms of advertising signs, traffic signal heads, roadside activity, etc.

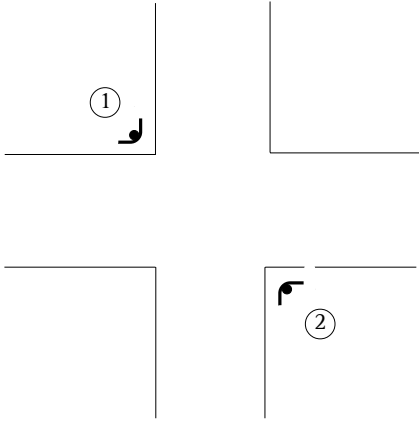
For example, a cross-roads in a central business district should have two signs for each approach i.e. eight signs altogether, double-sided where possible. An intersection of two minor rural roads may require only one double-sided sign for each road.

4.7 Recommended sign locations

4.7.1 General

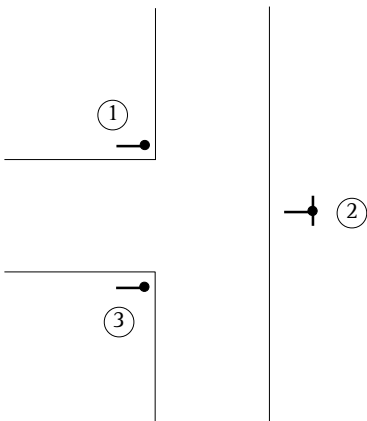
Consistency in the location of street name signs e.g. to the right or left of approaching drivers, near or far side of the intersecting street is an important factor in aiding their conspicuity. To be entirely consistent would require an unreasonable number of signs. The following schematic examples of recommended sign layouts provide a reasonable compromise. Signs shown in these examples are intended to be double-sided except for advance signs on medians or unless otherwise stated.

4.7.2 Intersections of minor streets with minor streets



A sign showing the name of each street at position (1) is sufficient, unless the names of one or more streets change, in which case an additional sign or signs should be provided at position (2).

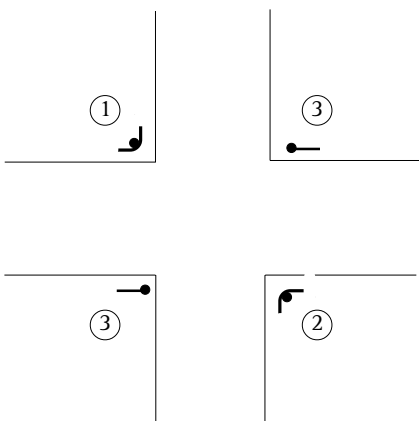
4.7.3 'T' Intersections of (a) minor streets with minor streets or (b) minor streets with undivided arterials



The name of the side street should be provided at position (1) and the name of the through street at position (2).

An additional side street sign should be provided at position (2) if the through street is an arterial and may also be provided at position (3).

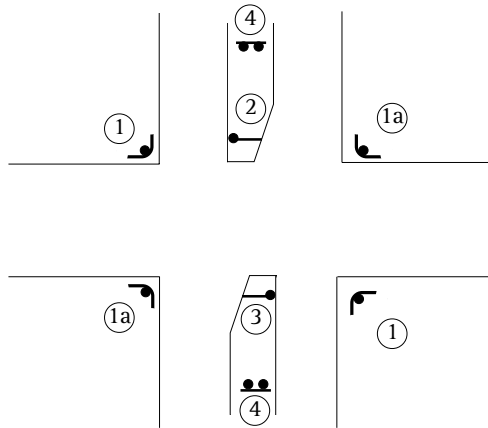
4.7.4 Cross intersections of minor streets with undivided arterials and cross intersections of undivided arterials



Minor street and arterial names should be provided at positions (1) and (2).

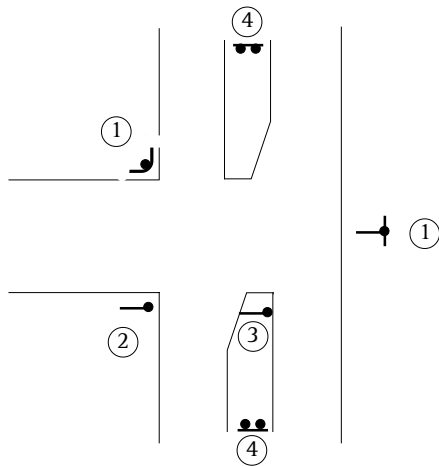
If the name of the cross-street changes at the intersection, additional (minor) street name signs should be provided at positions (3).

4.7.5 Cross intersections of divided arterials with other streets



Street name signs for the divided arterial should be provided at positions (1) or (1a). Where the minor street name is the same on both sides of the intersection, street name signs should be provided at positions (1) or (1a). If the street name changes, additional signs may be provided at positions (2) and (3). Advance street name signs should be provided at position (4) for major side-roads.

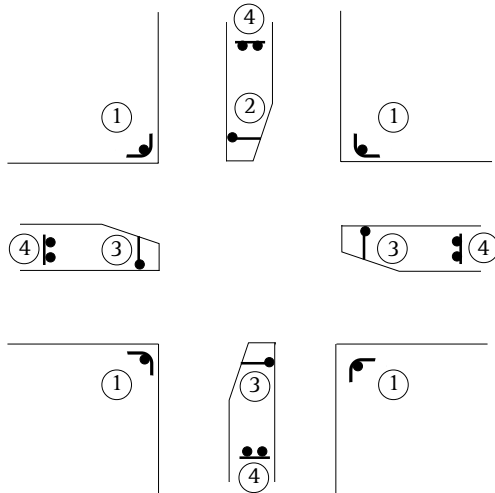
4.7.6 'T' intersections of divided arterials with other streets



The arterial name and the minor street name should always be provided at positions (1).

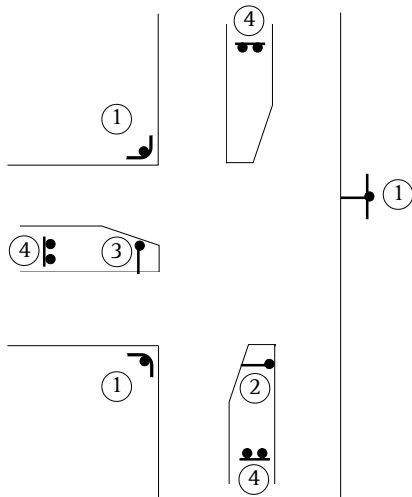
Additional minor street signs may be provided at position (2) or (3). Advance street name signs should be provided at positions (4) for major side-roads.

4.7.7 Cross intersections of two divided arterials



Signs for both arterials should be provided at positions (1). If either street name changes, additional signs may be provided at positions (2) and/or (3) as appropriate. Advance street name signs should be provided at positions (4).

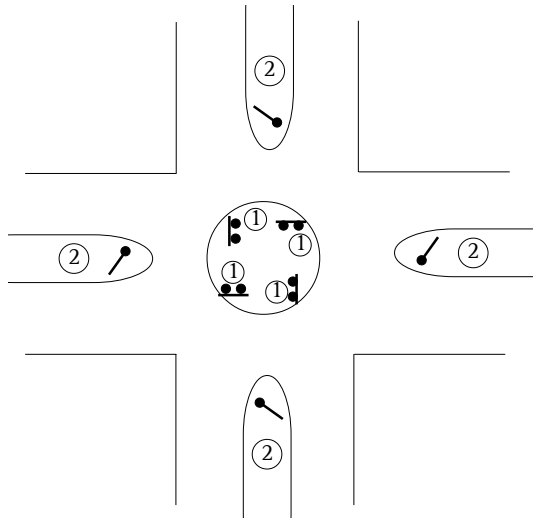
4.7.8 'T' intersections of two divided arterials



Signs for both arterials should be provided at positions (1). An additional side-road sign may be provided at position (2). If the name of the through route changes an additional sign may be provided at position (3).

Advance street name signs should be provided at position (4).

4.7.9 Roundabouts



Signs for all streets should be provided in accordance with the recommendations in Examples 4.7.2 to 4.7.8 above.

In addition, low-mounted street name signs with chevrons can be provided at positions (1) on the central island of urban roundabouts. For larger roundabouts with sufficient width on the splitter islands 1-33 direction signs should be provided in positions (2).

References

1. R.S. Horner, J.E. Kemp and T. Pandich – “Life Expectancy of Retroreflective Sheeting for Road Signs in Various Conditions of Natural and Artificial Weathering”, Proceedings 15th ARRB Conference (Part 5), 1990.
2. S.E. Jenkins and F.R. Gennaoui – “National Survey of the Photometric Performance of Retroreflective Traffic Signs”, Proceedings 15th ARRB Conference (Part 5), 1990.
3. National Roads Board – “Manual of Traffic Signs and Markings”, 1975.
4. The New Zealand Traffic Control and Road Safety Equipment Manufacturer’s Association – “Code of Practice for the Manufacture, Distribution and Erection of International Traffic Signs”, 1988. (This document is a draft for a proposed New Zealand Standard).
5. P. Olsen, M. Sevak and J. Egan – “Variables Influencing the Night Time Legibility of Highway Signs”, University of Michigan Transportation Research Institute, July 1983.
6. D.L. Woods and N.J. Rowan – “Street Name Signs for Arterial Street”, Highway Research Record 325, Highway Research Board, 1970.
7. National Association of Australian State Road Authorities – “Guide to Traffic Engineering Practice Part 8 (Traffic Control Devices)”, 1988.

Acknowledgements

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Appendix 1

Colour and reflectorisation combinations

Contrast ratio between the legend and the background is the most important factor in determining the legibility of a sign for given lettering size and type.

Important considerations in the relationship between legibility and contrast ratio are:

1. Night-time legibility is a more important determinant of overall legibility than daytime legibility. All else being equal, a sign which is legible at night will be legible in daytime but the reverse is not necessarily true.
2. Peak legibility is achieved at contrast ratios of between 30:1 and 50:1 although there is generally little improvement above ratios between 7:1 and 10:1.
3. For Class 1 retroreflective material contrast ratios of 5:1 will achieve close to peak legibility particularly for older drivers.
4. Higher contrast ratios especially those above 50:1 cause a reduction in legibility for older drivers.
5. Contrast ratios may change over time as signs deteriorate when in field situations. This effect needs to be minimised by using the same class of retroreflective material for both legend and background.

Further information on the deterioration of retroreflective materials may be found in the papers by Horner, Kemp and Pandich (1) and Jenkins and Gennaoui (2).

Given that increasing sign background luminance i.e. the standard of reflectorisation, achieves greater conspicuity of the sign, the most effective signs will be those made of Class 1 with colours providing a contrast ratio of between about 5:1 and 30:1.

More information is given in Olson, Sevak and Egan (5) and Woods and Rowan (6).

Table 1: Typical luminance values (cd/m²)

	Unreflectorised	Reflectorisation*	
		Class 2	Class 1
Blue	0.20	4	20
Green	0.14	9	45
Yellow	0.68	50	170
Orange	0.20	-	-
Red	0.21	14.5	45
White (Silver)	1.00	70	250
Black	0.00	-	-
Brown	-	1	12

* Measured at 4° entrance angle and 0.2° observation angle.

These values in Table 1 result in the typical contrast ratios shown in Table 2 for various combinations of legend and background colours.

Table 2: Typical contrast ratios for various colour combinations

Letter colour	Background colour	Contrast ratio
Class 2 White	Class 2 Blue	16.5)
Class 2 White	Class 2 Green	6.8)
Class 1 Silver	Class 1 Blue	11.5) Acceptable combinations
Class 1 Silver	Class 1 Green	4.5)
Class 1 Silver	Class 2 Green	27
Class 1 Silver	Class 2 Blue	61.5
Class 2 White	Class 1 Blue	2.5
Class 2 White	Class 1 Green	0.6
Black	Class 2 White	-1)
Black	Class 1 White	-1) Should not be used
Class 2 White	Black	Infinity)
Class 1 White	Black	Infinity)

Appendix 2

Legibility

The following principles and assumptions have been used in determining legibility requirements for street name signs.

1. The time in seconds taken to read a sign with between two and five words in $T=0.25 N$ where N is the number of words (see NAASRA (7)). Street name signs are assumed to have two words.
2. For a given approach speed, Reading Distance is defined as the distance travelled in the time it takes to read the sign.
3. Legibility Distance is the distance from which a sign can be read. Legibility distance of Series D lettering is 0.6 metres per mm of capital letter height. (NAASRA (7) and Woods and Rowan (6)). This value is for daytime conditions and assumes 20/20 static visual acuity. For night-time conditions legibility distance is reduced to 0.48 metres per mm of capital letter height.
4. Daytime legibility distances of Series C and Modified Series E lettering are 0.5 metres per mm of capital letter height and 0.75 metres per mm of capital letter height respectively.
5. Street name signs are assumed to be located on the far side of the intersection as motorists approach.
6. Drivers make turns into a side road at a speed of 20 km/h.
7. Normal deceleration rates are between 1.8 m/sec^2 and 2.5 m/sec^2 (see NRB(3) for deceleration distances).
8. It is assumed that drivers will have located a street name sign before they read it and react to it. Perception – reaction times are therefore not considered in the following table. Therefore Required Legibility Distance equals Reading Distance plus Deceleration Distance.

Table 1: Calculation of required letter heights for different approach speeds

Approach speed (km/h)	Reading distance (m)	Deceleration distance (m)	Required legibility distance (m)	Required letter height (mm) Series D	Required letter height (mm) Modified Series E
50	7	60	67	112	-
60	8	80	88	147	117
70	10	100	110	183	147
90	12	135	147	245	196
100	14	155	169	282	225
115	16	200	216	360	288

Note 1: The calculated required letter heights for lower approach speeds have been rounded to obtain the letter heights recommended in the text.

Note 2: For rural approach speeds it will generally be impractical to install street name signs with letter heights as calculated except on motorways and other important routes. It must therefore be assumed that motorists will begin to decelerate after seeing the street name sign and before they are able to read it.

Road and Traffic Guideline publications

The following Road and Traffic Guidelines are available:

- RTS 1 Guidelines for the implementation of traffic control at crossroads (1990)
- RTS 2 Guidelines for street name signs (1990)
- RTS 3 Guidelines for establishing rural selling places (1992)
- RTS 4 Guidelines for flush medians (1991)
- RTS 5 Guidelines for rural road marking and delineation (1992)
- RTS 6 Guidelines for visibility at driveways (1993)
- RTS 7 Advertising signs and road safety: design and location guidelines (1993)
- RTS 8 Guidelines for safe kerblines protection (1993)
- RTS 9 Guidelines for the signing and layout of slip lanes (1994)
- RTS 11 Urban roadside barriers and alternative treatments (1995)
- RTS 13 Guidelines for service stations (1995)
- RTS 14 Guidelines for installing pedestrian facilities for people with visual impairment (1997)
- RTS 17 Guidelines for setting speed limits (1995)

The Guidelines may be purchased from:

Land Transport Safety Authority, Head Office (PO Box 2840, Wellington) or Regional Offices in:
Auckland, (Private Bag 106 602), Wellington (PO Box 27 249) and Christchurch (PO Box 13 364).