

# Specification for Design, Construction and Maintenance of Cycling and Shared Path Facilities

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This specification details the requirements for the design, construction and maintenance of cycling and shared path facilities on the state highway network or local road corridors that are maintained and managed by the NZ Transport Agency (Transport Agency).

This specification does not currently apply to footpaths (Sept, 2018) but work is underway to better understand the design, construction and maintenance requirements for footpaths given the recent shift in funding policy.

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# 1 Glossary

See Notes for the Specification for the Design, Construction and Maintenance of State Highway Cycling and Shared Path Facilities for definitions used within the specification.

## 2 The State Highway Cycling Network

The New Zealand State Highway Cycling Network has been defined, agreed and mapped based on frequently used and promoted routes. It includes sections of state highway that are part of the New Zealand Cycle Trail (both Great Rides and Heartland Rides), popular sports routes as identified by usage heat maps and local knowledge, and strategic urban cycling networks as defined by local authorities. In 2018, the State Highway Cycling Network comprises around 2000km of the entire state highway network and is made up of sealed shoulders, cycle lanes, separated cycleways and shared paths. The network may change over time and maps will be adapted as required and stored on the Transport Agency's Maphub.

## 3 Planning and Design

The Transport Agency shall collaborate with the appropriate Local Authority to develop a regional cycling plan to ensure a connected and consistent cycling network. The cycling network needs to be considered as part of a wider integrated transport system approach.

This specification signals an intention to deliver a suitable level of service for people cycling on the parts of the state highway network that form the State Highway Cycling Network and contribute to the broader New Zealand cycleway network. It is designed to specify the requirements for developing new and maintaining existing cycling facilities to ensure the needs and safety of people cycling are considered and provided for in a similar way to those of other road users.

### 3.1. Pavement Markings

All pavement markings must be designed in accordance with the Traffic Control Devices (TCD) Manual and comply with the Traffic Control Devices Rule.

### 3.2. Traffic Signs and signals

All traffic signs and signals must be designed in accordance with the TCD Manual.

## 4 Forward Works Programme Development

The development of any cycling and shared path renewal programme must follow the principles detailed below:

- Discuss objectives and expectations including funding levels and changes to asset integrity trends and service levels.
- Analyse deterioration, historical performance, other known sources of information such as but not limited to CRMS and RAMM maintenance costs data.
- Undertake a visual condition inspection, using the appended Cycling and Shared Path Visual Condition Inspection Guide.
- Optimise treatment length segmentation.
- Integrate with the rest of the Forward Works Programme for approval

- Consider the needs of different users especially vulnerable users that might require a nonstandard design to be safe and effective, eg. for cycling facilities near schools
- Prioritise opportunities that have the greatest customer impact and best value for money.

The contractor must identify opportunities for improvements to the existing sealed shoulder sections of the State Highway Cycling Networks as part of planning of road resurfacing or pavement rehabilitation renewals. See Specification notes for details on funding processes for these associated improvements.

The cross-section standard in the table below shall be applied to pavement rehabilitation works.

*Table 1 TARGET SHOULDER SEAL WIDTH FOR STATE HIGHWAY CYCLING NETWORK*

TARGET SHOULDER SEAL WIDTH FOR STATE HIGHWAY CYCLING NETWORK			
	50 km/h	70 km/h	100 km/hr
<i>Minimum adjacent traffic lane width</i>	<i>3.0 m</i>	<i>3.3 m</i>	<i>3.5 m</i>
1-1000 AADT	0.0 m	0.0 m	0.0 m
1000-2000 AADT	0.75 m	0.75 m	0.75 m
2000-5000 AADT	1.0 m	1.0 m	1.0 m
5000-8000 AADT	1.2 m	1.5 m	1.5 m
8000-18,000 AADT	1.5 m	1.7 m	2.0 m
18,000+ AADT	2.0 m	2.0 m	2.2 m

For high volume roads (AADT 8000+), refer to national and local cycle network plans, as alternatives such as off-road cycle paths or parallel local roads may have been identified. In such cases, for some sections, the cycling network target width for highway shoulders may not be required. For lower volume roads (less than 2000 AADT) that have high proportion of heavy vehicles, the Contractor must consider providing additional seal width especially where the roads are used by vulnerable road users (e.g. Elderly, children etc.)

Adequate shoulder width is particularly important where ATP limits useable cycling space around the edge line.

Where sufficient shoulder widths are not possible, reduced speed limits should be considered.

## 5 RAMM Data

All as built and maintenance data relating to cycle lanes, separated cycleways and shared paths must be created and entered as per the State Highway Database Operations Manual (SHDOM)

The minimum information that is required is:

- The asset owner
- The agreed maintenance owner and agreed maintenance tasks
- The forward works programme requirements/responsibilities including condition assessment
- The surfacing Information
- The pavement layer information if different from the remainder of the carriageway
- Associated cycle furniture, safety components, signage, markings etc; and
- GPS/ location data
- Maintenance activities and costs

Coloured surfacing is not captured as a surfacing asset, but is recorded as a delineation asset in the 'marking' table in RAMM. The marking type that applies to coloured surfacing is 'M83 – Coloured surfacing'. The attributes (such as location, colour, material etc.) of the coloured surfacing is to be captured in the same manner as for other road marking.

## 6 Pavement Design and Construction Requirements

Asphalt, concrete and granular pavements are all acceptable pavement material construction solutions.

All pavement materials and construction shall comply with the current NZ Transport Agency Specifications.

### 6.1. Sealed Shoulder (cycling) and Cycle Lanes

The design traffic loading and design life shall be that used for the adjacent vehicle carriageway.

### 6.2. Separated Cycle Paths and Shared Paths

The pavement design shall consider all potential heavy vehicle loading and be designed for a minimum of 1000 Equivalent Standard Axles and a nominal design life of 25 years when subject to environmental deterioration.

## 7 Surfacing Design and Construction Requirements

Asphalt, concrete and chip seal surface types are all acceptable finished surfaces for cycling and shared path facilities.

All asphalt surfacing used in cycling facilities shall meet the requirement of the NZ Transport Agency specification M10 particularly the minimum thickness requirements and compaction requirements.

All chip seal surfacing used in cycling facilities shall follow the procedures set out in the Chipsealing in New Zealand Handbook. Grade 4, grade 5 or grade 6 chips are acceptable chip sizes when chipsealing cycling facilities in accordance with NZTA Specification M6.

For shared paths, the design and construction of the surface shall provide a minimum of 8 years maintenance free service.

## 8 Resurfacing

The sealing or resurfacing of the sealed shoulder or cycle lanes should occur at the same time as sealing the adjacent traffic lanes in order to minimise traffic disruption, except when there are significant factors warranting another approach.

All surfacing treatment shall be for the full width of the cycling facility (including sealed shoulders) so that there is no surface lip present.

When the best treatment option is to resurface the vehicle lanes only, the seal edge should be within the edge line so there is no surface lip on the shoulder.

When the best treatment option for vehicle lanes uses stone larger than grade 4, consideration should be given to not resurfacing the shoulder and only sealing within the edge lines when the shoulder is in good condition, or using a smaller chip on the shoulders in order to not adversely affect the ride quality for cyclists using the shoulder.

## 9 Pavement Markings

All cycling-related pavement markings (eg. bicycle symbols) shall meet the requirements of the NZ Transport Agency's specification P22 Specification for Reflectorised Pavement Marking and/or P30 Specification for High Performance Road Marking.

All coloured surfacing used in cycling and shared path facilities shall meet the requirement for the NZ Transport Agency's P33 Specification for the supply and installation of coloured pavement surfacing.

## 10 Utility Operators

New underground utility services shall not be placed within a cycling facility unless there is no practicable alternative. If utilities must be placed or repaired within a cycling or shared path facility then all surfacing reinstatement shall be for the full width of the facility.

## 11 Temporary Traffic Management

All traffic management plans for works within the State Highway Cycling Network shall explicitly provide for cyclists, even when there is no marked cycle lane present.

Alternative road space for cyclists must be provided if the existing cycling space is unavailable due to the works.

The contractor must ensure that signs are placed in a manner that the safety of road users, including pedestrians and cyclists, is not unduly affected.

All temporary traffic management signs, signals and road markings shall conform to the Traffic Control Devices Rule, the Traffic Control Devices Manual and the principles described in the Code of Practice for Temporary Traffic Management.

## 12 Maintenance and Operational Requirements

Operational and maintenance plans and activities shall be:

- adjusted to respond to the different needs and capabilities of cyclists in different circumstances, eg the abilities of younger cyclists near schools
- developed for the many types of cycle facilities present on the State Highway Cycling Network, and
- scheduled and executed to deliver the standards detailed below

Guidance on how to determine appropriate sweeping routines is included in the notes to this specification.

### 12.1. Auditing of Operational Performance Measures

Operational performance measures relating to sealed shoulders, cycle lanes, shared paths and separated cycleways shall be included in the compliance inspections whenever the adjacent road carriageway has been selected as part of the compliance audit programme and is identified as part of the State Highway Cycling Network. The appended Cycling and Shared Path Visual Condition Assessment guide provides details for undertaking a visual inspection.

## 12.2. Pavement Repairs

Reinstatement by the contractor shall not increase the roughness of the cycling or shared path facility.

## 12.3. Surface Debris/Detritus

All glass or detritus that could lead to a cyclist falling off their bike and incurring injury or needing to take evasive action (eg, stones over the size of 50mm, large tree branches), shall be removed within 24 hours of being detected or reported.

No cycling facility should have more than 0.5 kg of detritus that sits proud of the surface within any 5m<sup>2</sup> area.

This is defined as any collection of fragments or material on or within a cycling facility that includes small slips, fretting's from cuttings, deposits of windblown sand, or grit, deposits of loose aggregates, fallen leaves, and the build-up of minor droppings or spillages created from passing traffic or weather/climatic conditions.

## 12.4. Utility Service Covers

The difference between an existing utility service lid cover and the surrounding surface shall not exceed 15mm.

## 12.5. Surface Bumps

There shall be no surface bump within a cycling facility with a +/- 20mm lip which causes a noise, vibration or ride nuisance.

## 12.6. Potholes

A pothole is defined as having a diameter of 100 mm.

There shall be no pothole >100mm, and any that occur shall be repaired within 48 hours of being detected or reported.

## 12.7. Edge Break

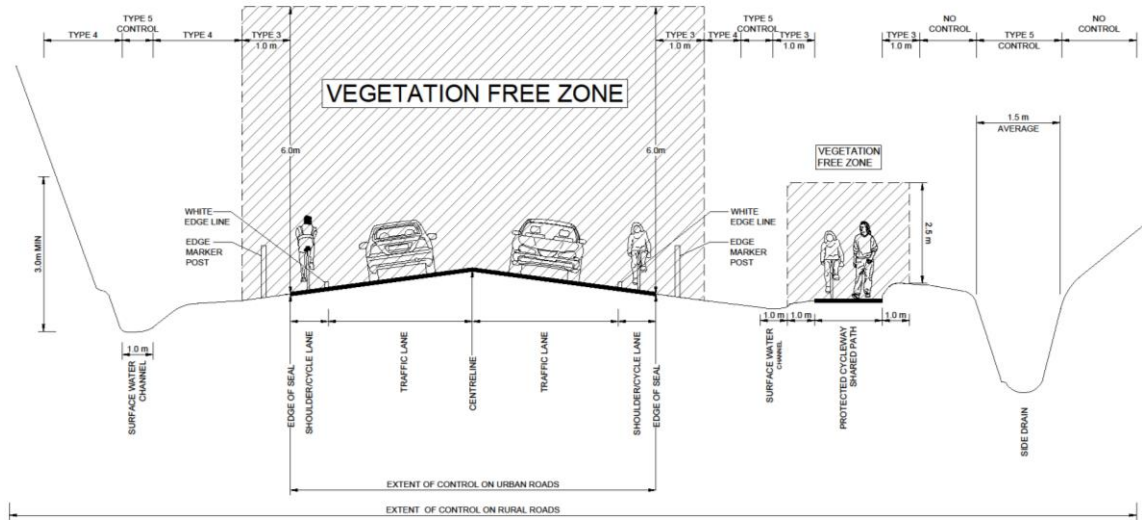
There shall be no edge break that encroaches in a separated cycleway, shared path or cycle lane that reduces the effective width. Where the cycling facility is a sealed shoulder, no edge break should reduce the width to less than the minimum shoulder widths, as required by Table 1.

## 12.8. Vegetation

Vegetation shall be maintained to provide the clearway as per the envelope shown in Figure 1 at all times.

Note that for separated cycle lanes and shared paths, the height of the vegetation free envelope is reduced to 2.5 metres.

Figure 1- Cycling and Shared Path Facility Vegetation Envelope



## 13 Review

The Agency intends to review this document before 2023 having considered its usefulness and value for money considering feedback from customers and users.