

Guideline

Coloured surface treatments for bicycle lanes

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1 Introduction

This guideline provides guidance on the use of green-coloured surface treatments when applied to on-road bicycle lanes.

- Coloured surface treatments for other applications are addressed in [Technical Specification MRTS110 Coloured Surface Treatments](#).
- High-friction surface treatments are addressed in [Technical Specification MRTS111 High Friction Surface Treatments](#).
- Township entry treatments are addressed in [Technical Note TN170 Township Entry Treatments](#).

Green-coloured surface treatment is an advisory treatment only and does not define a bicycle lane by itself. Green-coloured surface treatment must only be used on bicycle lanes or bicycle paths.

To accommodate different materials and varying conditions, an approximate colour match to one of the following three greens in [Australian Standard AS 2700 Colour standards for general purposes](#) is permitted – G13 Emerald, G16 Traffic green or G23 Shamrock. Approximate colour match is determined in accordance with AS/NZS 1580.601.1 *Paints and related materials – Methods of test: Method 601.1: Colour – Visual comparison*.

A consistent green colour should be provided along a route or within a given locality.

2 Use green-coloured surface treatments selectively

Green-coloured surface treatments can assist in increasing awareness of drivers and people riding bikes of the areas designated for bicycle use.

To maintain visual impact effectiveness and minimise costs associated with coloured surface treatments, they should be used selectively and only in busy or higher volume locations where the road layout has unusual features or where driving decisions are more complex, refer *Section 4 Locations where a green-coloured surface treatment may be used* for further details. Coloured surface treatments should not be used on long lengths of bicycle facility where the cross-section is constant and there are few conflict, compliance or crash issues involving people riding bikes.

3 Effectiveness of green-coloured surface treatments

The AGTM10(2020) statement

Austrroads (2011) noted that the provision of coloured cycle lanes of good width leading from the transition to the advanced limit lines of signalised intersections improves bicyclist perceptions of safety to a greater extent than the improvement in actual crash risk. As such facilities improve bicyclists' perceptions, their use encourages more to ride.

should be replaced with:

Austrroads report [AP-R380/11 Effectiveness and selection of treatments for cyclists at signalised intersections](#) found

Better driver behaviour was observed in previous studies at coloured cycle lanes. This study shows that the provision of coloured cycle facilities results in substantially safer outcomes.

Transport and Main Roads research performed a before-after evaluation of a number of green-coloured surface treatment sites in Cairns, Queensland and found

A significant increase in the lateral distance between motor vehicles and cyclist and bicycle lanes was observed at a majority of the sites after the installation of the treatment. At a roundabout where motorist encroachment was measured, there was a significant reduction in both the total percentage of motor vehicles encroaching as well as the mean encroachment distance.

Other treatments such as turn restrictions or physical lane dividers may be more effective safety interventions than coloured surface treatments. Considering the needs of people riding bikes at all stages of design can help to achieve road and intersection treatments that:

- provide clear guidance to all road users
- reduce the potential for conflict between motor vehicles and bicycles, and
- avoid the need for extensive use of green coloured surfacing.

4 Locations where a green-coloured surface treatment may be used

Green-coloured surface treatments may be considered as a supplementary treatment to highlight potential for conflict where other users are expected to cross a bicycle facility.

Typical situations where a green surface treatment may be used to highlight potential for conflict include:

- on sections of bicycle lanes with a poor safety record
- on the approach and departure of a busy or complex intersection, or one with uncommon layout or alignment features (refer Figure 4(a) for example)
- where large numbers of vehicles change lanes or turn across a bicycle lane, including, for example, across commercial property accesses into high-turnover car parks
- where a bicycle lane crosses a free-flowing merge or diverge lane (refer Figure 4(b) for example)
- for a bicycle lane adjacent to a bus lane, busy loading zone or high-turnover kerbside parking lane
- for a contraflow bicycle facility
- at other locations, where other road users may not expect to encounter people riding bikes – for example, where people riding bikes using an off-road path, service road or local street enter an on-road bicycle lane, and/or
- to discourage driver encroachment into a bicycle lane near an intersection or within a bicycle storage box or hook turn space.

Figure 4(a) – Coloured treatment where the intersection layout and traffic movements are complex and large numbers of vehicles cross the bicycle lane

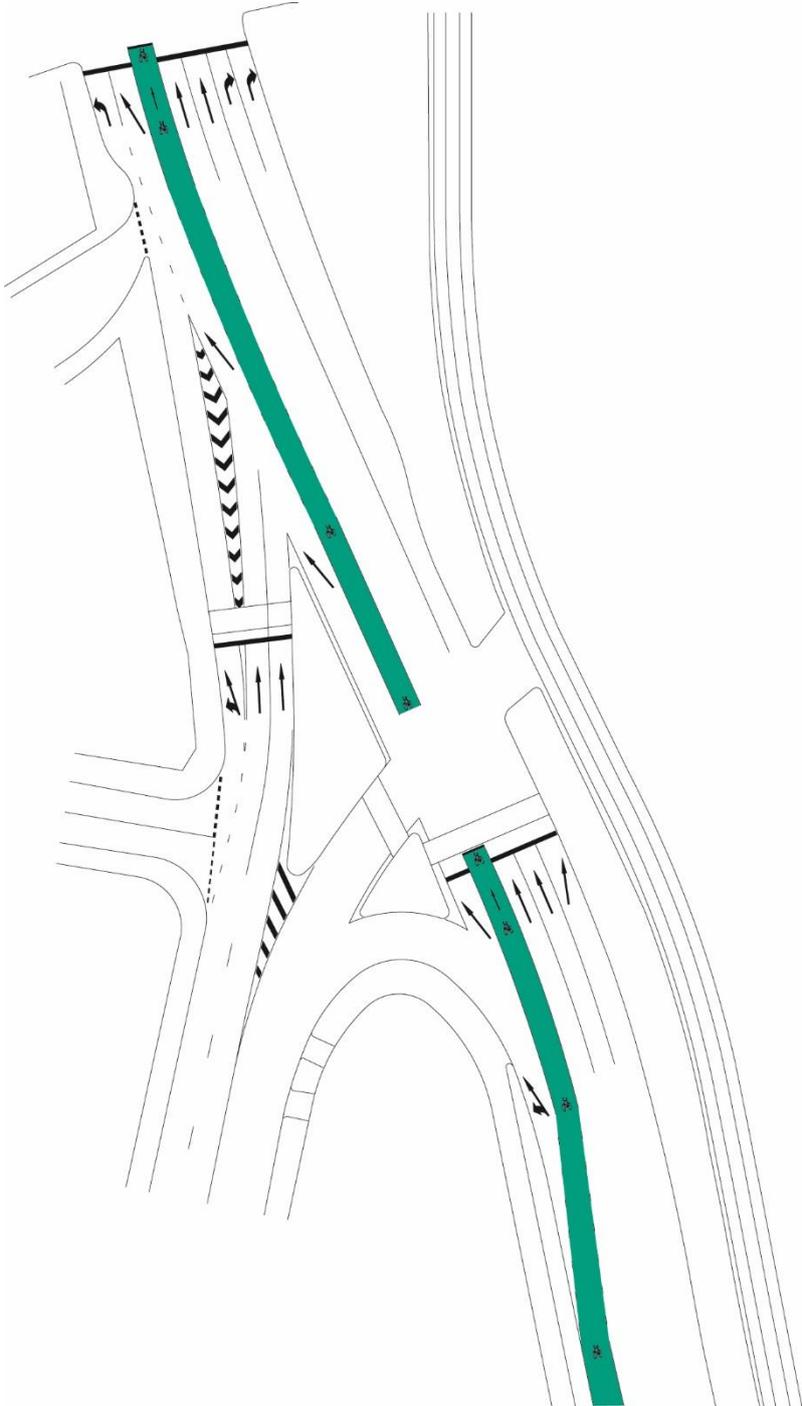
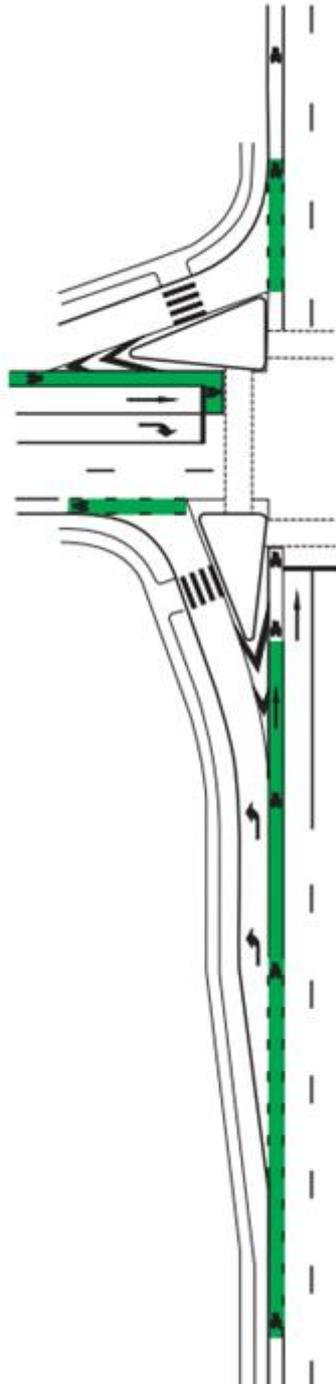


Figure 4(b) – Coloured treatment a bicycle lane passes through an intersection which has a high volume turning movement



Note: The green treatment does not need to extend beyond the conflict zone, unless there is a particular safety issue)

5 Warrants for use of coloured surface treatment

Transport and Main Roads has adopted a warrant system for use in Queensland. The warrant system incorporates an Excel spreadsheet (available on the Transport and Main Roads website), in which the treatment being assessed is selected along with relevant criteria particular to that site. 'Weightings' and 'ratings' are allocated to the various criterion options selected for the site and a score for the location is calculated by multiplying the weight by the rating for each separate criterion. All relevant

criteria points are totalled to give a final score for the site. A score of 400–420 is an objective indicator that coloured pavement treatment may be justified at the site.

This warrant should be used to assist in exercising judgment and not as a substitute for it. It is intended to assist assessors in ensuring that the major relevant factors have been considered in the selection process. The warrant system is intended as a guide only and is no substitute for judgment based on local knowledge and past experience; for example, coloured surface treatments may be justified at sites that do not meet the warrant but have a poor crash history.

6 Factors to consider when choosing coloured surface treatment materials

A coloured surface treatment must be designed to function like any other road surfacing, providing a sound, durable surface layer, which maintains the required texture and skid resistance for its design life. High-friction surface treatments are address in Technical Specificaiton MRTS111 *High Friction Surface Treatments*.

The design and specification of a coloured surface treatment for bicycle lanes should:

- ensure the suitability of the existing surface to support and bond with the colour treatment
- provide a surface texture and skid resistance suitable for bicycle use, including in wet conditions, and
- limit differential skid resistance between the bicycle lane and adjacent traffic lanes.

The coloured binder and any coloured surface coating on the aggregate will wear and expose more of the base aggregate colour over time. Use of a product incorporating a clear synthetic aggregate with coloured surfaces can enhance colour retention.

7 Maintenance considerations

As the coloured surface treatment is a supplemental treatment some amount of wear loss may be acceptable if the treatment still largely performs the function of highlighting the conflict zone. Determination of acceptable wear should be a site-specific engineering judgement. Ideally, the treatment should be as durable as surrounding pavement delineation, so they are aligned on the same maintenance schedule.

