

3. REVIEW OF CYCLE LANE MARKINGS STANDARDS

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The purpose of this report is to inform the Council of the findings of research into cycle lane marking standards.

BASIS OF THE RESEARCH

The basis of the work into cycle lane marking standards was the premise that the existing cycle lane marking, which comprises a one metre white stripe, followed by a 5m space, is a very weak marking style. As a line style, it has the least amount of paint on the road of any line style in use.

The research programme looked at both the types of marking techniques available, and after determining which ones could be used for cycle lanes, then looked at their layout and design in various roading situations.

This report outlines the research recommendations and intended actions.



Cycle lanes marked to existing standard

MARKING TECHNIQUES

The research investigated a range of marking and delineation techniques, including the use of coloured lines, coloured surfaces, audible lines, RRPMs (or cats eyes), white lines. Lines and surface colouring techniques were considered for the visual impact on vehicle drivers and cyclists. Raised marking techniques (audible lines and RRPMs) were considered based on visual and audible indications to cyclists and drivers, and safety effects on cyclists.

The research results were:

- Almost any white line style putting more paint on the road will be more effective than the existing cycle lane marking.
- Cycle symbols should be used frequently in cycle lanes and spaces.
- Coloured surfacing should be used when greater awareness of the likely presence of cyclists is required.
- Large areas of paint, such as wide diagonal stripes, should not be used due to the slippery surface created.
- Coloured lines should not be used - they fade more quickly than white and would be less effective over time.
- Audible lines may be used in some circumstances when technology has developed a line that conforms to Transit NZ safety specifications.
- RRPMs should not be used to delineate cycle lanes. To provide an audible effect, they need to be spaced very frequently. In doing so they create a surface hazard for cyclists - particularly those with narrow tyres.

MARKING CONFIGURATIONS

The study looked at approximately 20 different typical cycle/vehicle interactions on the roads. In each situation the study sought to identify what warning or alert the vehicle driver would need to be aware (or more aware) that they are next to, or crossing into a cycle lane or space, and what level of risk they were presenting to cyclists if they did move into the lane or space.

Marking configurations were then developed to pass on the appropriate strength of warning, dependent upon the level of risk.

The recommended marking configurations are as follows:

- Normal on-road cycle lanes should always be marked with a solid white line between the cycles and traffic, except where traffic is expected to cross - e.g. side streets and slip lanes - in which case normal continuity markings should be used.
- Cycle lanes should always have some kind of marking on their left hand side: either solid edge lines, parking ticks, or normal kerbs with no-stopping restrictions.
- Cycle lanes on multi-lane arterials should be marked with coloured surfacing for their full length.
- All cycle lanes approaching signalised intersections, and advanced waiting areas at intersections, should have coloured surfacing.
- Cycle lanes on the discharge side of intersections should be marked with coloured surfacing for a short distance.
- Where roads are "squeezed" to minimum widths, or where roads are extremely curvaceous, cycle lanes should be marked with coloured surfaces.
- Where traffic may be expected to cross the cycle lane in high volumes, such as slip lanes, the cycle lane surface is coloured.
- Where the cycle lane is next to high turnover parking, the cycle lane is separated from the parking by a "safety strip", and is coloured.
- Where cycle lane is next to low turnover parking (such as all day parkers), it will be marked at normal width without coloured surfacing.
- Where vehicles cross cycle lanes at high volume, and at crossing locations that have a collision history, then cycle symbols should be marked facing the crossing traffic.

STATUS OF THE RECOMMENDED CHANGES

The recommend marking patterns are subject to some debate, both within the Council's City Streets Unit, amongst other road design and safety forums. The change proposals will be taken to the Road Controlling Authorities forum, the Traffic Management Workshop and the Cycle Conference, with the intention of creating a national marking standard, using the research paper as a base from which to move forward.

Meanwhile, the City Streets Unit is moving forward with:

- Colouring the surface at new intersection layouts, and "squeeze points" and new cycle lanes on multi-lane arterials (viz Fendalton Road project).
- Investigating "safety strips" outside high turnover parking areas.

The City Streets Unit has chosen not to accept the marking of cycle lanes with solid white lines at this stage, as solid lines have a distinct meaning in traffic regulations. The unit is investigating the impact of marking cycle lanes with a 2m stripe and 4m gap (double the existing quantity of paint). Depending on the results of these investigations and the outcomes of the future technical forums, marking standards are likely to progressively change.

Attached is a picture gallery indicating what some of the changes to the marking configurations would look like.

Recommendation: That the Council adopt the recommendations of the cycle lane marking standards as detailed above in principle for implementation subject to budget considerations.