



Testing of different cycle lane markings through a priority junction

Background

As part of a programme of off-street trials of innovative cycling infrastructure, Transport for London (TfL) commissioned TRL to test alternative markings for use where cycle lanes are continued through a junction.

TfL's London Cycling Design Standards recommends that advisory cycle lanes should be continuous across the mouths of junctions to guide cyclists and warn motorists. Although standard UK markings can be used for this purpose, other marking types are used elsewhere and could potentially offer benefits over existing ones. This study examined a variety of different road markings including several international options alongside some novel designs based on adaptations of markings present in UK regulations.

Objectives of the study

The objective of this trial was to measure road user comprehension of, conspicuity of, and road user compliance with, a range of alternative markings for continuing a cycle lane past a side road.

Test methodology

A choice-reaction time methodology was chosen, using a tachistoscopic presentation technique. This presents participants with a brief (2 second) view of an image showing a marking applied to a photograph of a real junction. Participants were then asked to judge whether it would be appropriate to pull out in front of an approaching cyclist. This technique limits the time a participant has to make their decision, reducing the influence of biases (such as social desirability bias; where people respond in the way they think they are expected to respond, i.e. giving way to cyclists).

They also completed a survey to test their comprehension of the markings and attitudes. Two hundred members of the cycling and driving public participated in the trial at three locations across London.



Option 5



Option 6



Findings

The data analysed suggests that there are few differences between the marking options, especially in terms of conspicuity and comprehension: participants understood the purpose of the markings.

However, more differences were found when examining the safety and compliance aspects of the options. In particular, a subset of markings was found to be slightly preferential to the rest: namely options 1 and 3 (shown below) which made participants less likely to pull out in front of a cyclist.

Furthermore, participants were also asked to indicate the position at which a vehicle should stop. This would show, for example, whether drivers might mistake the cycle lane markings for the give way line. Options 1, 3, 5 and 6 encouraged participants to stop furthest back from the junction when giving way to a cyclist.

Taken together, the results suggest that options 1 and 3 were the best performing markings in this study, as participants were least likely to pull out in front of a cyclist, and stopped furthest back from the cycle lane, when they were presented.

As can be seen from the images below, marking options 1 and 3 are superficially similar; the only difference is the markings are much thicker (25cm vs. 15cm) in option 3.

Further Information

TfL - Better Junctions for Cyclists

www.tfl.gov.uk/betterjunctions

TRL - Safer Cycling Innovations

www.trl.co.uk/cyclinginnovationtrials/



A participant using the Tachistoscope



Option 1



Option 3