

Road Safety Factsheet

June 2017

Cycling – Light Segregation

Light segregation was discussed at RoSPA National Road Safety Committee on 11th January 2017 and this factsheet has been compiled to reflect the views of the Committee.

Highway Authorities are seeking to increase cycling levels in accordance with the Government's Walking and Cycling Strategy and as such are looking at different engineering measures that will allow more cyclist-vehicle segregation. One example of this is the use of protected cycle lanes (also known as light segregation). These use a pre-cast dividing feature to deter vehicles from entering a mandatory cycle lane (see picture below).

The dividing feature may be a low level moulded hump (mini orca or armadillos) or a thin pole comparable to cylindrical cones used to separate opposing lanes in road works. Splitter islands at the beginning and interim locations along a route section can also provide further protection to cycle lanes.

An example is the Great Clewes Street/Blackfriars Road Corridor, Salford which includes 4.2km of protected cycle lanes and is the largest application of light segregation up to date in the UK. This scheme was preceded by two smaller trial sites in Salford (Manchester).



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Pros

Light segregation schemes are becoming increasingly popular because they offer value for money and adoptability.¹ The estimated cost of constructing a kerb-separated cycle track in central London is approximately £700,000 per km, compared to around £60,000 per km for light segregation. As Armadillos are bolted into the road surface they can be easily repositioned inexpensively and with minimum disruption.

Light segregation has been used successfully abroad; examples include New York, Washington, Christchurch and Seville

Cons

There have been questions from a number of consultees in the two Manchester trial sites about the legal status of light segregation measures. The DfT view is that they are classified as street furniture and are neither road signs nor road markings and, therefore, are not covered by the Traffic Signs Regulations and General Directions 2016. As such, they do not require DfT authorisation and it is the decision of the individual highway authority to determine their acceptability at specific locations. This has led to different designs being trialled across the country, with varying levels of success.

For example, Local Transport Today (May 2016) highlighted two schemes in Camden and the City of London which were quickly removed due to safety concerns. The Motorcycle Action Group (MAG) has also raised safety concerns with RoSPA, in particular that:

- They create a pedestrian trip hazard – on the Camden, Aldergate scheme, 55 pedestrian falls were recorded in a 24 hour period as a result of pedestrians tripping over the MiniOrcas. (which are smaller than Armadillos)
- Powered Two Wheelers are forced towards segregation by a 'side swipe' manoeuvre
- Cyclists collide with the armadillos or posts due to wobble or misjudging the width required whilst overtaking slower cyclists

Lessons learnt

Although there is no national recommended standard for these Light Segregation Schemes, individual authorities such as TfL and Transport for Greater Manchester have conducted trials, which have led to improvements on the earlier schemes.

For example, the Manchester Great Clewes Street/Blackfriars Road Corridor, included:

¹ Light Segregation for Cycle Lanes Note, Transport for London July 2015

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- Splitter islands – these are positioned at the beginning of each light segregation section and at regular intervals (~25m spacing) in order to provide a visible line of sight for general traffic. The splitter islands also effectively define a 0.4m 'buffer zone' offering protection to cyclists from passing vehicles.
- Orientation of Armadillos – the in-line arrangement were found to be more effective rather than those used at an angle
- Spacing of Armadillos – Three metre spacing was found to be effective, with a minimum of three Armadillos and a maximum of seven between splitter islands.
- Road markings - Use of a single mandatory cycle lane marking on the offside (traffic) side of the light segregation.
- Only used to provide protection for a mandatory cycle lane which all other traffic including motorcycles are prohibited from using.,

Experience from both the two Manchester trial sites and the construction of the full scheme on the Great Clewes Street/Blackfriars Road Corridor will inform the next revision of the Greater Manchester Cycle Design Guidance. It is also TfL's intention that the various trial outcomes will form the basis of design guidance, which will be added to the London Cycling Design Standard (LCDS 2014).

Recommendations

Light segregation schemes should be based upon 'current best practice' developed from the pilot schemes implemented in cities such as London and Manchester. This is important to achieve maximum safety benefits for all vulnerable road users and past mistakes are not replicated.

As light segregation schemes are not covered by the Traffic Signs Regulations and General Directions 2016, RoSPA believes that a national design standard should be developed as a way of ensuring that all schemes are delivered to a set safety standard. Without this there is a danger that schemes will be implemented which at best have no safety benefits and at worst create danger to vulnerable road users.

Post-implementation monitoring should take place in all cases to allow for adjustments to mitigate unforeseen issues during the design stage.

