23 June 2010

Mr Michael Rowland
Director
Road Safety Authority
Moy Valley Business Park
Primrose Hill,
Dublin Road
Ballina
Co Mayo

Dear Michael

I refer to your letter of 9 November and subsequent discussions with Dave Fadden of this office in relation to this Department's draft Regulations in relation to enabling cyclists to overtake on the left of traffic; providing cyclists with access to contra flow bus lanes and bus only streets; and to remove the requirement on cyclists to use cycle lanes where they are provided on road ways. In your letter, you suggested that a risk assessment be carried out on the proposals and I am now following the matter up on foot of consideration by the Department of the risk assessment and a redrafting of the proposed Regulations.

I enclose a copy of the risk assessment and a set of revised draft Regulations that take the findings of the risk assessment into account. In this respect, you will note that the proposal to grant access to contra flow bus lanes and bus only streets has been removed on foot of the outcome of the risk assessment.

We have consulted with the Road Safety Division of the Department who in turn consulted the Transport Investment Division. Both Divisions have indicated that, on balance, the approach proposed in the draft Regulations is acceptable. Following the making of the Regulations, however, Road Safety Division have indicated that they will wish to discuss aspects related to implementation.

You will recall that the removal of the mandatory use requirement is a commitment under action 15.4 of the National Cycle Policy Framework and I would like now to progress the matter. Insofar as the question of overtaking on the left is concerned, this is referred to in action 15.1 (ii) of the National Cycle Policy Framework and it is regarded as opportune to resolve this issue at the same time as dealing with the mandatory use requirement.

I would appreciate the expert views of the Road Safety Authority as soon as possible please.

Yours sincerely

Sgd R.Devlin

Ronnie Devlin
Assistant Principal
National Sustainable Travel Office

Tel: 00 353 1 604 1110
ronniedevlin@transport.ie
*smarter**travel*** »»

Working To Save Lives

RSA

15th July 2010

Mr. Ronnie Devlin
Assistant Principal
National Sustainable Travel Office
Department of Transport
Kildare Street
Dublin 2.

Ref : 1006/23

Dear Ronnie,

Thank you for forwarding me the risk assessment report in relation to the proposed changes in regulations for cyclists which was part of the National Cycling Policy Framework. I note that access to contra flow bus lanes and bus only streets has been removed on foot of the outcome of the risk assessment.

The RSA has reviewed the risk assessment document from a road safety perspective but feel it would be worthwhile to have it formally reviewed by the Garda National Traffic Bureau from a roads policing and enforcement perspective. I would place significant weight on the views of the Gardai and urge you to consult with the Gardai formally.

The risk assessment suggests that by mandating the cyclists to use cycle lanes you are effectively removing their entitlement to use the main carriageway and that this may send out the message that the bicycle does not belong on the roadway. It must be made explicitly clear to all road users that bicycles are entitled to use the road and that they are covered by road traffic legislation. There are other cases where certain road users are restricted from using parts of the road infrastructure such as learner drivers, vehicles under 50km/h not allowed to use motorways, HGV's not allowed to use the outside lanes of a motorway and cars not allowed to use bus lanes.

Legislation is in place to regulate different modes of transport taking into account safety issues including, the vehicle a person drives, their experience or their vulnerability on the road. Research shows that the safest cycle paths exclude the motorist from interacting with the cyclist. However, as many cycle lanes in Ireland don't physically restrict access by motorists hence the engineering of cycle lanes should be reviewed as a matter of urgency as provided for in 2.5 and 2.9 of the National Cycle Policy Framework. Obviously in urban settings total segregation is not feasible hence engineering solutions which promote cycling and protect cyclists are essential. Particular engineering and legislative interventions are necessary to facilitate cyclists at junctions and traffic controls. Merely changing the law on the use of existing

lanes will not optimise protection for cyclists and has the potential to place cyclists at even greater risk than at present.

The RSA has serious reservations about removing the requirement to use cycle lanes where these are provided and would recommend addressing the cycle lane engineering and maintenance issues referred to above to increase the acceptability and safety of the cycle lane network. If the Department of Transport decides to amend the legislation in relation to the mandatory use of cycle lanes it should also include a media and education campaign for all road users and pedestrians to highlight these changes.

You may also want to consider the implications for traffic flow if large groups of cyclist are using the roadway and are exempted from using cycle lanes where provided.

If you wish to discuss further please do not hesitate to contact me.

Yours sincerely,

Michael Rowland
Director

Údarás Um Shábháilteacht Ar Bhóithre
Road Safety Authority

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O'REILLY Helen

From: Patricia McAloon <pmcaloon@rsa.ie>
Sent: 19 September 2016 17:14
To: HAYES Nicola
Subject: Cycle tracks query
Attachments: Cycle lanes reply Nicola Hayes.pdf

Dear Nicola,

Please find attached letter of reply from Michael Rowland on cycle tracks query.

Kind regards
Patricia

Patricia McAloon |**Secretariat** |**Road Safety Authority** |Moy Valley Bus. Pk., Primrose Hill, Ballina, Co. Mayo |Post Code: F26 V6E4|Dir 096-25011 | Fax 096-25024| www.rsa.ie

From: Michael Rowland
Sent: 02 September 2016 20:26
To: HAYES Nicola
Cc: O'REILLY Helen; TIMONEY Oisin; Velma Burns; Patricia McAloon
Subject: Re: Cycle tracks query

Nicola,

We have carried out some research on what's happening internationally. We want to supplement that with some further surveys of Irish road users which we will commence very soon. Velma will forward an overview of what we have found so far but we want to supplement that with information from our own survey.

Regards
Michael

Sent from my iPad

On 2 Sep 2016, at 17:19, HAYES Nicola <NicolaHAYES@dttas.ie> wrote:
Michael

Grateful if you could advise the Department as to whether the RSA has given consideration to the mandatory use of cycle tracks by cyclists. The position of the RSA in relation to this matter would be appreciated.

Kind regards
Nicola

From: HAYES Nicola
Sent: 21 July 2016 16:35
To: Michael Rowland
Cc: O'REILLY Helen
Subject: RE: Cycle tracks query

Hi Michael

Just made a small change – reflected in text .

By the way, further to our conversation earlier this week, I found the letter RSA sent in 2010 with its views on the revocation of the mandatory use of cycle lanes (expressing strong reservation on the revocation....). Will send it on. Given the ambiguity that is currently in the SI, we need to be satisfied from a road safety point of view that any amendment to the Regs to reflect Departmental policy at the time they were drafted does not undermine cyclist safety. In this regard Department will formally request views of RSA on any such amendment. We are also engaging with AGS.

Regards
Nicola

From: Michael Rowland [mailto:MRowland@rsa.ie]
Sent: 21 July 2016 15:36
To: HAYES Nicola
Subject: Cycle tracks query
Importance: High

Hi Nicola,

Further to our conversation the other day regarding cycling tracks see below query in respect of same and our proposed response in bold. Let me know if you have any comments before I issue.

Regards
Michael

In your last email you said: "The Rules of the road did not at any point say that only those narrow set if cycle tracks Must be used."

A version of the Rules of the Road downloaded in 2016 states:

REMEMBER
Cyclists must use any cycle track provided.

A version of the Rules of the Road downloaded in 2015 states:

REMEMBER
Cyclists must use any cycle track provided as part of a pedestrian street
or area, or as part of a contra flow cycle track.

Screenshots also attached. I've checked this with copies I have a copies another individual had downloaded.

I've two questions on the above:

(1) How does the RSA explain the difference between the Rules of the Road downloaded in 2015 and one downloaded in 2016

(2) Did legal advice or other advice prompt this change? Where did this advice come from?

The Rules Of The Road is not the Law – it is simply an interpretation of the law from a road safety point of view. Readers with queries about the law are urged to check the legislation or to ask a Garda. The 2013 ROTR reflected the advice contained in the explanatory notice for SI332 /2012. The RSA was subsequently advised by DTTAS that the explanatory did not reflect the relevant section in SI 332 of 2012
in fact the law had not changed and its most recent edition the RSA sought to clarify the law as it currently stands.

Michael Rowland | Director Road Safety Research & Driver Education | Road Safety Authority | Moyvalley Business Park, Primrose Hill, Dublin Road, Ballina, Co. Mayo | ə 096-25200 | www.rsa.ie

see documents tab for email received

From: Michael Rowland
Sent: 22 July 2016 08:10
To: Gemma Dermody
Cc: Michael Dolan
Subject: FW: Mandatory use of cycle lanes

Gemma,

Can you assign to Michael D on CMS please for my review.

Thanks,
Michael

Michael Rowland | Director Road Safety Research & Driver Education | Road Safety Authority | Moyvalley Business Park, Primrose Hill, Dublin Road, Ballina, Co. Mayo | ə 096-25200 | www.rsa.ie

From: HAYES Nicola [mailto:NicolaHAYES@dttas.ie]
Sent: 21 July 2016 17:50
To: Michael Rowland
Cc: O'REILLY Helen
Subject: Mandatory use of cycle lanes

Michael

Further to earlier conversations on this issue and the ambiguity that currently exists between SI 332 of 2012 and the Explanatory Note to the Regulations.

Please find attached obs the RSA provided in 2010 regarding the revocation of mandatory use of cycle lanes under SI 182/1997. I am also attaching the risk assessment completed at the time and the letter from the Department to the RSA.

It has come to light that the Department's intention in 2012 when drafting the amending Regulations (SI 332/ 2012) was to remove the mandatory use requirement and only provide that they be used where a contraflow cycle track is provided and any cycle track in a pedestrianized area. This is reflected the commitment in the National Cycling Framework Policy 2009 – 2020. This intention is not however what is reflected in the SI 332 /2012 as it is currently drafted.

The Department would again like to seek the views of the RSA on the mandatory use of cycle lanes from a road safety perspective.

Regards
Nicola

Working To Save Lives

Road Safety Authority

Working To Save Lives

RSA

19 September 2016

Ms Nicola Hayes
Assistant Principal Officer
Department of Transport, Tourism and Sport
Kildare Street
Dublin 2.

Dear Nicola,

Further to your request for input on whether or not the use of cycle lanes should be mandatory, the Road Safety Authority(RSA) Research Department has reviewed the available data on collision trends in Ireland that may be relevant for the discussion, as well as international evidence regarding the safety of cycle lanes for cyclists. We have also made some suggestions for further research in this area to provide more context to guide policy in this matter.

In order to address the issue, we believe that a number of questions are relevant:

1. To what extent are cycle lanes, where available, used by cyclists on Irish roads?
2. Does cycle lane usage by cyclists improve the safety of cyclists?
3. Is the available cycle lane infrastructure fit for purpose?

Context
There has been an increase in cycling participation in recent years - up 9.6% from 2006 to 2011 as per the CSO; also surveys conducted by Dublin City Council and the NTA have corroborated continued increases (steady year on year growth in the number of cyclists crossing the canal cordon since 2010, and overall a 125% increase in the numbers when you compare 2006 with 2015).

This increase in cycling uptake has led to a corresponding increase in cyclist injuries which first emerged in 2012 (up from 395 to 630) and the most recent provisional data for 2014 suggests that 844 cyclists were injured in 2014. This serves to highlight the need to address cyclist safety from a number of perspectives: public education, including driver and cyclist attitudes and behaviour, and potentially an audit of the cycling infrastructure falling under the remit of local and city councils.

To what extent are cycle lanes, where available, used by cyclists on Irish roads?
In Ireland we do not have any reliable exposure data to measure the prevalence of cycling in terms of distance travelled to aid in the interpretation of cyclist risk, or any data to identify to what extent cycle lanes are used by cyclists where available on the

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road network. This lack of information is mirrored in many other countries and makes it difficult to ascertain the uptake of cycle lanes and their safety effects.

Does cycle lane usage in Ireland improve cyclist safety?
It is important to note that the Irish road collision database does not identify if an injured cyclist was using a cycling lane at the time of the collision. However, a review of cyclist injuries in 2012 indicated that 8 in 10 cyclist injuries occur in urban rather than rural areas, also that almost half of cyclists injured were injured at junctions, with T-junctions representing the most dangerous type. The prevalence of collisions at junctions suggests that these collisions are unlikely to have been avoided had a cycle lane been used or in place.

A recent study conducted by DIT Grangegorman where the RSA injury data was overlaid on maps of the road network which included cycle lane markings, showed that 57.6% of all cyclist collisions from 2006-2012 occurred on roads with on-street cycle lanes, while roads with no cycle lanes were responsible for 38.4%. We do not know, however, whether or not the cyclist was using the lane at the time, or whether or not the collision occurred on the lane. The study suggests that the higher incidence of collision occurrence on roads with cycle lanes may be due to greater uptake of cycle in these areas.

Suggested further research
Overall, there is a lack of information available in Ireland to answer the question as to what extent cycle lane usage affects cyclist safety in Ireland, however there is scope to consider the commissioning of new research to gain insight into the topic. This could incorporate a number of elements which are currently being considered by the Research Department:

- A review of the pre-crash data of cyclists fatal collisions from 2008-2012
- A review of collision data from the 2014 and 2015 RISC database on fatal and serious injury collisions (this database, as it is more detailed, may provide more relevant information that the previous collision dataset could not)
- An observational study of cyclist use of cycle lanes which could incorporate visual assessment of any hazards that may impede usage and safety
- A survey of cyclist attitudes and behaviour in relation to cycle lane usage, incorporating elements such as frequency of usage, barriers/facilitators to usage and perceptions of safety. This could be complemented by a survey of motorists to assess views of cycle lanes and usage from their perspective.

In the coming weeks, the Research Department will put plans in place to commission an observation study and an attitudinal study in line with the above.

Are cycle lanes in Ireland fit for purpose?
Anecdotal information suggests that non-use of cycle lanes can be attributed in part to the poor condition of cycle lanes (debris and rubbish, poor quality road surface, faded lines) and parked vehicles obstructing the lanes. These represent significant safety hazards for cyclists and provide a potential justification for non-use. Where cycle lanes are present there is a requirement that they are maintained to a proper standard and that the laws applicable are enforced on a consistent basis. Cycle lanes should not be mandatory if the infrastructure in place is not fit for purpose. Further analysis will be required to establish to what extent the existing cycle lane infrastructure is safe. The RSA recommends that the Department liaise with Local Authorities/TII as relevant to conduct engineering assessments of the safety of a sample of cycle lanes nationally, potentially following guidelines developed by TII for Road Safety Audits.

What does the international evidence say about the safety effects of cycle lanes?
The Research Department reviewed the available international evidence on the topic of cycle lane safety. A detailed summary of some of the international evidence can be found in the appendix. Some of the most pertinent points include:

- In many countries and states, cycle lane and cycle path use is mandatory if they are present (e.g. The Netherlands, Denmark, France, Germany, Quebec and a number of US States)
- Cycle lanes do not always ensure safer conditions for cyclists, e.g. cycle lanes can result in significant RTI reduction on on-road sections, but may cause safety issues at junctions (Danish Study)
- Having lower speed limit zones (20 – 30km/h) when cyclists and motorists are road sharing may have safer and more significant results than cycle lane usage
- Cycle lanes tend to have adverse effects when they come into contact with roundabouts in particular
- In some circumstances, motorists exhibit less safe behaviour when overtaking when cycle lanes are present
- The deployment of cycling infrastructure should be accompanied by adequate levels of maintenance and enforcement of access rules
- Where appropriate, traffic speeds should be limited to less than 30 km/h where bicycles and traffic mix but care should be taken that speed control devices do not create hazards for cyclists
- The more separate linear cycling infrastructure that exists in a given country, the fewer recorded injury accidents involving at least one cyclist

Overall, having considered the available Irish and International evidence, the RSA does not believe that cycle lanes should be mandatory without giving consideration to the following:

- Further research should be conducted in Ireland to understand cycle lane usage by cyclists, their safety benefits, and cyclists/motorists attitudes towards usage

- Other cyclist safety measures should be considered to improve cyclist safety, particularly the reduction in speed limits in urban areas with or without cycle lanes where there is a high throughput of cyclist traffic

- The Department of Transport Tourism and Sport should, in collaboration with Local Authorities and TII as appropriate, undertake an engineering assessment to review current cycle lanes with regard to effectiveness, safety (keeping a minimum of 1.5 metre distance) and maintenance, as well as intersection with junctions and roundabouts

I trust that this information has given an insight into the complexities surrounding the question of mandatory use of cycle lanes and believe that addressing the three issues mentioned above will best inform the final decision on mandatory use.

I would be happy to discuss further as required.

Yours sincerely

Michael Rowland
Director

APPENDIX

Cycle lanes Overview

There is conflicting evidence on the effectiveness of cycle lanes internationally. Mandatory cycle lanes prevent vehicles from driving or parking in the lane, advisory cycle lanes are marked by a broken white line and vehicles can drive and park on the lane. Some sections of advisory cycle lanes may have restrictions during rush hour which prevent vehicles from parking on the lane. The purpose of cycle lanes is to allocate and demarcate space for cyclists within a carriageway in order to:

- Increase drivers' awareness of cyclists
- Encourage drivers to leave space for cyclists
- Give people greater confidence to cycle on the road network
- Improve 'perceived' and 'actual' safety
- Assist cyclists to pass queuing traffic
- Encourage lane discipline by cyclists and motor vehicle drivers
- Help to confirm a route for cyclists(Transport Scotland, 2010)

Cycle lanes result in significant RTI reduction on on-road sections, but may cause safety issues at junctions. Three different studies in Denmark showed a 10 per cent rise in the number of cycling RTIs when cycle lanes were installed in urban areas. The total increase in the number of RTIs covers a major drop on road sections and a major increase at junctions. (T. Andersen *et al*, 2012).

Cycle lanes appear to have little impact on road safety targets, but there is clear evidence of safety benefits in continuing lanes across junctions (TfL, 2005). Reid and Adams also highlighted there was inadequate UK evidence which suggested that marked cycle lanes provide a safety benefit. They also found that behavioural indicators such as how much space motorists provided cyclists when overtaking can show deterioration in some circumstances. (S. Reid and S. Adams, 2010)

A major drawback of advisory cycle lanes between **junctions** is that at times of the day when parking and loading is permitted, cyclists using the lane have to pull out round parked vehicles. This can cause resentment with cyclists who feel that "the vehicle is parked on my cycle lane". Other northern European countries do not use advisory kerbside cycle lanes, primarily for this reason. In situations where kerbside parking or unloading is legally permitted at some times of the day, the use of time-limited mandatory cycle lanes is preferred to advisory cycle lanes (TfL, 2005).

From the perspective of Other Road Users (ORUs), the principle benefit of cycle lanes is that they get cyclists out of their way. When cycle lanes are provided, there is an expectation that cyclists should not be on the road. There is concern among some ORUs about cycle facilities which make life harder for ORUs, for example by 'taking away' some of their space, or allowing cyclists already passed to get back in front again.

[Full Report Available at: http://www.roadsafetyobservatory.com/Review/10143].

Cycle Lanes on Roundabouts

Cycle lanes are not often used on roundabouts but where they are provided they must be well designed to ensure they do not introduce additional hazards. Cycle lanes which help cyclists to maintain visibility and help to show other road users where a cyclist is intending to leave the roundabout can be useful.

- The idea of marking cycle lanes on roundabouts may appear, at first glance, to be a relatively simple one, but it is not. Cycle lanes on roundabouts must be very carefully considered. There is little evidence to suggest that they offer any safety benefits to cyclists, and they may introduce additional hazards. Some cycle lanes on roundabouts have been removed because they led to an increase in RTIs. (Ove Arup & Partners Ltd, 2008)

Cyclists will feel and be safer on roundabouts where:

- Approach arm traffic speeds are low
- Circulatory carriageway speeds are low
- Cyclists are positioned prominently and are highly visible both on the approach arms and the circulatory carriageway

Where this cannot be achieved, cyclists should be provided with an attractive off-carriageway alternative. Off-carriageway cycle facilities offer a safer route through a roundabout, however these may introduce significant additional journey times to the point that they may be unattractive to use. Off-carriageway facilities should be direct, safe and attractive to use (Transport Scotland, 2010).
[Full Report Available at: http://www.roadsafetyobservatory.com/Review/10143]

International Studies

When interpreting the outcomes of international studies into cycle facilities, it is important to consider the legislative and regulatory environment. In many countries and states, cycle lane and cycle path use is mandatory if they are present. In New Zealand, the Road User Rule (Ministry of Transport 2004) does not forbid cyclists from using general traffic

lanes where an adjacent dedicated facility is present, except on motorways. This is not typical worldwide; for example, cycle facility use is mandatory in:

- The Netherlands
- Denmark
- Germany (if a bike lane sign is displayed)
- France (if required by local authorities)
- the Canadian Province of Quebec
- The States of Alabama, California, Hawaii, Maryland, New York, Oregon (if required by local authorities) and Pennsylvania (if indicated by a sign)

Full report available at:
https://www.nzta.govt.nz/assets/resources/research/reports/389/docs/389.pdf

As different users benefit from different types of facilities and some facilities are less suitable for different groups (LTNZ 2004), mandatory use can influence the literature. A number of organisations and individuals internationally are opposed to specific provision for cyclists and argue for cyclists to be treated as 'vehicles.' This opposition possibly stems from mandatory use, whereas New Zealand has no such requirements.

Internationally, priority rules also differ. For example, Sweden has special rules for cyclists crossing the road, where the cyclist must take the speed and distance of the oncoming vehicles into consideration before crossing. In the Netherlands, cyclists must always give way to motorists at intersections without right of way regulations, except in special residential areas (*woonerven*) (OECD 1998). In New Zealand, cyclists are treated as vehicles if they are using the roadway; in other circumstances, they are treated more like pedestrians (for example on shared-use paths and mid-block signalised crossings). In other words, a cyclist on a shared-use path adjacent to a roadway must give way to traffic on intersecting crossroads and accesses, just as a pedestrian would.

Effectiveness of On-road Bicycle Lanes at Roundabouts in Australia &New Zealand
Research was undertaken for Austroads on bicycle lanes at roundabouts. An extensive literature review informed empirical data gathering. The literature review revealed strong evidence that bicycle lanes on the approach and within roundabouts are associated with negative safety outcomes. Limited and inconclusive research was found on high-speed, multi-lane roundabouts. The dominant cyclist injury crash type involved a motorist entering a roundabout failing to give way to a circulating cyclist. Cyclists could maximise their safety by tracking closer towards the inscribed island.

Cyclist lateral tracking was observed at urban roundabouts, which showed that they commonly travelled close to the centre of the traffic lane. Where bicycle lanes were

present in the circulating carriageway, they were rarely used by riders. When lane markings were changed at roundabouts to encourage lane sharing, this significantly shifted cyclist positions. It was concluded that the presence of bicycle lanes within the roundabout may serve to discourage lane sharing. High-speed, multi-lane roundabouts were not studied due to the unacceptable risk the researchers would have been exposed to.

Motorist approach speeds across a range of single lane and multi-lane roundabouts were measured and found to be surprisingly similar. Within 20 m of the holding line, horizontal and vertical deflection, or limited visibility to the right could be used to reduce vehicle speeds to an equitable speed of desirably 25 km/h (maximum 30 km/h); this would provide greater time for motorists to scan for conflicting movements (including cyclists) and to reduce the severity of any crash that may occur. This additional time would be likely to reduce the most frequent conflict between motorists and cyclists.

A key conclusion from the research is that new or modified roundabouts would ideally either have equitable speeds, or provide for cyclists so that they don't have to enter the circulating carriageway. The tangential roundabout design philosophy of English-speaking countries maximises capacity, whilst the radial design philosophy of continental European countries maximises safety of all users. Other useful geometric elements are vertical deflection, horizontal deflection, and tighter approach radii.

Strong evidence was found that lane markings that encourage cyclists to "claim the lane" (for example sharrows) can be effective and are recommended where speeds are equitable. Cycle lanes on the approach should terminate some distance behind the holding line where speeds are low. Where equitable speeds are achieved, approach lanes should not exceed 3.0 m in width so that drivers do not attempt to enter the roundabout alongside cyclists.

Where equitable speeds are unachievable, consideration should be given to physical separation on the approach and departure. The report authors cannot provide conclusive guidance on circulatory cycle lanes due to a lack of data and more research is required. All the evidence is pointing towards speed being the major road safety issue at roundabouts. If the underlying fundamental problem is addressed, then the question that this research is supposed to answer (will bicycle lanes at roundabouts improve safety?) will become secondary. Our research shows conclusively that cyclists maximise their safety when they occupy a lane, and this is most easily achieved when speeds are equitable.

[Full report available at: http://www.cyklokonference.cz/cms_soubory/rubriky/195.pdf]

The Effects of the Pages Road Cycle Lane on Cyclist Safety in New Zealand
[Full report available athttp://viastrada.nz/sites/viastrada.nz/files/pages-cycle-lanes.pdf]

Based on data provided by the Christchurch City Council's Metro Count survey, it was determined that the installation of the Pages Road cycle lane resulted in a 1.4 km/h mean speed decrease for all eastbound traffic. As speed is proportional to crash risk and consequence severity this decrease in motor vehicle speed corresponded to an increase in the inferred safety of cyclists. Results from the video recorded motor vehicle positioning surveys indicated that motor vehicles moved slightly closer to the kerb after the cycle lane installation when no cyclists were present, even though the traffic lane had moved further outwards. The mean distance between cyclists and motor vehicles decreased after the installation, as fewer cyclists used the footpath or parking space. It was assumed that, the greater the distance between the cyclist and the passing motor vehicle, the greater the safety of the cyclist. Hence, the cycle lane installation decreased inferred cyclist safety in terms of motor vehicle-cyclist separation but the use of this measure may not be appropriate in this case.

Motorists perceived that the cycle lane increased safety of cyclists but cyclists did not. A more rigorous study would be required to draw any firm conclusions on the cycle lane's effect on perceived safety. Monitoring the speeds of motor vehicles over a longer period of time after the cycle lane installation would provide insight into the changing perceptions motorists have of the cycle lane as they grow more accustomed to it. This would identify any novelty effect produced.

From the crash history of sites with and without cycle lanes recently installed, it appeared that the control sites experienced a greater reduction in crash rate than the cycle lane sites. To validate or dispute this, a more in-depth analysis of the crash history of other sites with a better understanding of the characteristics of control sites would be beneficial. More consideration should be taken in eliminating the effects of other treatments and campaigns that affect cyclist crash rates. This study was very specific to an individual site and hence cannot be used to draw any complete conclusions about the safety of cycle lanes in general. However it is hoped that the results from this case study can be combined with those of other studies to gain a more comprehensive understanding of the effects of cycle lanes on the safety of road users and to improve the methodology of subsequent studies.

Full report available
https://www.researchgate.net/publication/29486993_The_Effects_of_the_Pages_Road_Cycle_Lane_on_Cyclist_Safety_and_Traffic_Flow_Operations

UK TRL Report

The Department for Transport (UK) commissioned TRL to conduct a literature review to consider the role of infrastructure in relation to the safety of cyclists and their interaction with other road users. It was undertaken as part of the wider research programme, Road User Safety and Cycling, being led by TRL. Overall, it proved problematic to draw firm conclusions from the literature. Taken as a whole, the most significant infrastructure-related risk factors for cyclists in single vehicle incidents on highways appear to be slippery roads (due to weather) and poor or defective road surfaces. For multi-vehicle collisions, the main infrastructure risk factors appear to be posted speed limits and encounters with other road users at junctions.

Of all interventions to increase cycle safety, the greatest benefits come **from reducing motor vehicle speeds.** Interventions that achieve this are also likely to result in casualty reductions for all classes of road user. This may be achieved by a variety of methods, including physical traffic calming; urban design that changes the appearance and pedestrian use of a street; and, possibly, the wider use of 20 mph speed limits. A number of infrastructure interventions that are not widely used in the UK have been implemented on the continent to increase safety at junctions. Particular examples include cycle lane markings continued across junctions, cycle pre-signals and Trixi mirrors (mounted below signal heads to allow drivers of heavy vehicles to see cyclists at their nearside). The literature suggests that, appropriately applied, the former two approaches can have a beneficial effect on cycle casualties.

Full Report available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3731/infrastructure-and-cyclist-safety.pdf

The UK Policy - The Use of Cycle Lanes (Rule 63)

These are marked by a white line (which may be broken) along the carriageway (see Rule 140). When using a cycle lane, keep within the lane when practicable. When leaving a cycle lane check before pulling out that it is safe to do so and signal your intention clearly to other road users. Use of cycle lanes is not compulsory and will depend on your experience and skills, but they can make your journey safer.

Rule 140

Cycle lanes are shown by road markings and signs. You must not drive or park in a cycle lane marked by a solid white line during its times of operation. Do not drive or park in a cycle lane marked by a broken white line unless it is unavoidable. You must not park in any cycle lane whilst waiting restrictions apply
Available at: https://www.gov.uk/guidance/the-highway-code/rules-for-cyclists-59-to-82

UK Study claims cycle lanes can make roads more dangerous for cyclists
Cycle lanes can make roads more dangerous for cyclists, according to a study by Leeds and Bolton universities. The research suggests that cycle lanes currently provided on many roads may make travel less comfortable and attractive for cycle users. The study also comes to the conclusion that 'cycle lanes do not appear to provide greater space for cyclists in all conditions'. The researchers attached a camera to the back of a bicycle and rode along roads that had stretches with and without cycle lanes. They found that when there was no cycle lane, drivers tended to give riders a wider berth. When there was a cycle lane, motorists drove closer to the bikes.

Most of Britain's cycle lanes do not comply with the width of 1.5m (5ft) recommended by the Department for Transport. The study suggests that reducing the speed of traffic would do more to improve cycle safety than narrow cycle lanes. The research reveals that when there is a cycle lane, motorists drive within the confines of their own marked lane with less recognition of the need to provide a comfortable passing distance to those using the cycle lane. Measurements were taken on roads with and without cycle lanes using a bicycle with instruments that measured the distance of passing vehicles. A spokesperson for the Environmental Transport Association (ETA) said: 'All too often, cycle lanes end up little more than a cheap and nasty way of promoting cycling – they take circuitous routes, are poorly maintained and often parked in by cars so it is little wonder that most experienced cyclists tend to avoid them.

Available at: http://www.rudi.net/node/21603