

# Working To Save Lives



7 July, 2017

Mr. Declan Hayes,  
Principal Officer,  
Road Safety Division,  
Department of Transport, Tourism and Sport,  
Leeson Lane,  
Dublin 2.

Re: **Mandatory Use of Cycle Lanes**

Dear Declan

Please find attached summary of the research conducted on behalf of the RSA in relation to cycle lanes, their usage and safety effects.

The research methodology utilised included a literature review, an observational survey of cyclist's use of cycle lanes as well as a survey of cyclist's attitudes and behaviour and stakeholder interviews.

You will note from the summary that there was high usage of cycle lanes by cyclists and that cyclists felt much safer using cycle lanes. It was recognised that whilst there has been a huge growth of cycling evident in Ireland, infrastructure and safety developments have not be prioritised to reflect this growth.

In conclusion, based on the survey conducted on behalf of the RSA as well as the view of international literature it cannot be definitively stated that cycle lane treatment provide safety benefits for cyclists and specific risks have been identified at roundabouts and junctions. On that basis the RSA recommends that the use of cycle lane infrastructure by cyclists should be advisory rather than mandatory.

Yours sincerely

Moyagh Murdock  
CEO

cc: **Liam Keane - RSA**

# Cycle Lanes: Usage & Safety Effects

Prepared by: The RSA Research Department, June 2017

Prepared for: Nicola Hayes, Department of Transport, Tourism & Sport

## Introduction

In 2016, the Road Safety Authority (RSA) commissioned a series of research studies to gather data on the incidence of cycle lane usage by cyclists in locations where these are available, and to gain greater understanding of the potential safety effects associated with cycle lane infrastructure. The research was designed to inform the work of the Department of Transport Tourism and Sport (DTTAS), following a formal request from DTTAS for advice as to whether cycle lane usage by cyclists should be made mandatory or not. The methodology and key findings of the research conducted have been set out in this report.

## Research Methodology

The RSA commissioned four research studies to address the research question:

*'Should cycle lanes be mandatory for cyclists or not?'*

The following studies were completed:

1. **Literature review:** Literature review on the safety benefits associated with cycle lane infrastructure. This was conducted by Dr. Kiran Sarma of NUI Galway.
2. **Observational survey of cyclist use of cycle lanes:** In this study, over 86,000 observations were conducted across 18 sites in Ireland: 10 in Dublin, 4 in Cork, 2 in Limerick and 2 in Galway. Observations were recorded from video footage of cyclists on the approach to a junction and also within the junction in some locations. Observations were conducted in February 2017 by Tracsis plc on behalf of the RSA.
3. **Survey of cyclist attitudes and behaviour:** 244 in-home interviews conducted with cyclists as part of the Behaviour & Attitudes (B&A) nationally representative Barometer Study. Interviews were conducted in March 2017. The structure of the sample is as below:

male	female	<35	35+	Dublin	Ex Dublin	urban	rural
175	69	95	149	60	184	158	86
72%	28%	39%	61%	25%	75%	65%	35%

4. **Stakeholder interviews:** Five in-depth interviews were conducted with national and international respondents highly engaged in the area of cycling and cycle safety. The interviews were conducted by B&A and were unstructured in nature and covered the following broad areas: Overview of cycling in Ireland, cycle lanes – availability, usage, safety and mandatory use.

## Summary of Key Findings

The key points of each of the studies have been set out below. A full copy of each report is available from the RSA upon request:

### 1. Literature Review

- While no international studies have been conducted on the road safety value of *mandatory* cycle lanes specifically, this review looked at the safety value of cycle lane infrastructure in general (mainly focusing on pre-post collision evaluations of new cycle infrastructure, covering all types of cycle lane infrastructure e.g. lanes, paths/trails segregated from traffic). In total, 24 studies were examined.
- Theoretically, cycle lanes and paths should have a road safety benefit for cyclists, particularly at higher traffic speeds and volume (Brady, Loskorn, Mills, Duthie, & Machemehl, 2011). However, studies that examined painted cycle lanes reported inconsistent findings, with some treatments linked to increased risk, decreased risk or non-significant effects.
- Taking the studies as a whole, it does appear that a key concern for cycle lane treatments is that partial implementation of treatments between, but not at, intersections can increase risk (Chen et al., 2012; Coates, 1999), with these effects holding even having controlled for changes in volume of cyclists post introduction of the new treatments (often termed 'cyclist exposure'). In short, the evidence would suggest that, in the absence of a high-quality network (i.e. between and at intersections), cycle lanes can inflate collision risk and thus should not be mandatory for cyclists.
- There is an argument in some of the literature that cycle lanes should *only* be installed where appropriate treatments are in place at intersections (the safest type of infrastructure here is fully segregated) and indeed there are proposals in the literature that *segregated* cycle infrastructure at high volume, high speed roundabouts should be mandatory
- The overall recommendation is that based on the available evidence, there is insufficient evidence to support a mandatory imposition of cycle lane usage in Ireland.

## 2. Observational Survey of Cyclists:

- From the video observation study conducted, a high proportion of cyclists were observed using the cycle lanes where these were present:
  - Across the Dublin sites 80% of cyclists observed were using the available cycle lanes consistently, 14% used the lane inconsistently (i.e. on approach but not in the junction or vice versa) and 6% did not use the lane at all
  - In terms of the regional comparison, consistent use stood at 81% in Galway, 79% in Limerick and 79% in Cork.
  - Where feasible to surmise reasons for non-use or inconsistent use of the cycle lanes, the main reasons identified in Dublin were:
    - Vehicles encroaching on cycle lane (11%)
    - Congestion/capacity of cycle lane (7%)
    - Vehicles parked in cycle lane (7%)
  - Furthermore, it was noted that in a number of locations that there was no suitable cycle lane infrastructure to facilitate right turning movements for cyclists at junctions.

## Survey of Cyclist Attitudes & Behaviour:

Of the 244 cyclists interviewed, a significant proportion stated that they used the lanes where they were available, and they stated that they felt safer when using these, specifically:

- 54% of cyclists stated that they had a cycle lane or track available to them for the routes they use most often. Availability varied significantly by area – available for 66% of urban cyclists, but only 35% of rural cyclists.
- 60% of cyclists stated they 'always' used cycle lanes/tracks in locations where they are available
- Over 3 in 4 cyclists agreed that cycle lanes/tracks are well designed and well maintained. Key reservations relate to obstructions from cars.
- 78% of cyclists stated that they feel much safer when using cycle lanes/tracks
- 84% agreed that usage of cycle lanes/tracks should be mandatory
- 67% agreed that when cyclists use cycle lanes/ tracks they are treated with greater consideration and respect by motorists
- Overall, the top ranking factor that would make cyclists feel safer is 'more cycle lanes/tracks' (73%); this is followed by 'more considerate or safer drivers' (57%).

### 3. Stakeholder Interviews

- It was widely acknowledged a growth in cycling is evident in Ireland, particularly in the main urban areas. However, infrastructural and safety developments have not been prioritised to reflect this growth. In particular, there is a distinct lack of cycle lanes/tracks outside of the main urban centres. It was acknowledged that cycle tracks (segregated from traffic) are of higher quality and safety relative to cycle lanes.
- The main concern expressed by these cyclist advocates was that the current infrastructure is not fit-for-purpose (in terms of design and maintenance) and therefore cycle lane usage should not be mandatory as cyclists need to customise their use of these lanes for their own safety. In this regard, encouraging motorists to reduce their speed in urban areas was also cited as being critical to ensuring cyclist safety.

### Conclusion

Overall, the research studies conducted on cycle lane usage has shown that, in locations where cycle lanes are available, cyclists tend to use these rather than not. While overall, cyclists tend to feel safer when using these, it is also apparent that there are occasions when they need to avoid using them for practical reasons such as the presence of obstructions in the lane, thus posing a problem for a potential mandatory imposition of usage.

There appears to be differences in the availability of appropriate cycle lane infrastructure in urban versus rural locations, and there is also an acknowledgement that the infrastructure is not as sophisticated as that in some other EU countries.

Furthermore, a review of the international literature has not been able to definitively state that cycle lane treatments yield safety benefits for cyclists, and specific risks have been identified at roundabouts and junctions.

On this basis, it is advised that the usage of cycle lane infrastructure by cyclists should be *advisory* rather than *mandatory*.