

**Use of Advanced Stop Lines by Motorcycles  
Final Report**

**by Alan Tilly and Paul Huggins**

**PR T/096/03**

**UNPUBLISHED PROJECT REPORT**

**TRL Limited**



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**Prepared for:Project Record:      Use of Advanced Stop Lines by Motorcycles  
(UG483)**  
**Contract Number: PPAD 9/100/54**  
**Client:Department for Transport**

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# CONTENTS

## Executive summary i

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Objective of the research	1
1.2	Outline Methodology	1
1.3	Advanced Stop Lines	2
1.4	The sites	2
1.5	Design of the shared use ASLs	3
1.6	Background to the research	3
1.7	Policy Background - motorcycles	4
1.8	Policy background – cycles	4
1.9	Review of literature	5
<b>2</b>	<b>Methodology, data collection, analysis and results</b>	<b>7</b>
2.1	Consulting Local Councils	7
2.1.1	Data collection	7
2.1.2	Analysis and Results	7
2.2	Traffic Surveys	11
2.2.1	Data collection	11
2.2.2	Analysis and Results	11
2.3	Video Survey	12
2.3.1	Data collection	12
2.3.2	Analysis and Results	14
2.4	Attitudinal Survey – motorcyclists and cyclists	23
2.4.1	Data collection	23
2.4.2	Analysis and results of the ‘before’ surveys	23
	Analysis and results of the ‘after’ surveys	23
2.5	Attitudinal survey – pedestrians	23
2.5.1	Data collection	23
2.5.2	Analysis and results	23
<b>3</b>	<b>Discussion</b>	<b>23</b>
<b>4</b>	<b>Recommendations</b>	<b>23</b>
<b>5</b>	<b>Acknowledgements</b>	<b>23</b>
<b>6</b>	<b>References</b>	<b>23</b>

**Appendices bound separately**

- Appendix A - Plan of Proposed Works**
- Appendix B - Letter to UK Councils**
- Appendix C - Traffic Surveys**
- Appendix D - Video Monitoring Form**
- Appendix E - Definitions of Motorcycle Type**
- Appendix F - Video Survey Results, Site One: Romford Road Westbound AM Peak**
  
- Appendix G - Video Survey Results, Site Two: Romford Road Eastbound AM Peak**
- Appendix H - Video Survey Results, Site Three: Barking Road Westbound AM Peak**
- Appendix I - Video Survey Results Site Four: Barking Road Eastbound PM Peak**
- Appendix J- Final Meeting Notes: Shared Use of Advanced Stop Lines 18<sup>th</sup> March 2004**

## Executive summary

The Department for Transport has commissioned TRL Limited to monitor and report upon trials in the London Borough of Newham that allow the shared use of Advanced Stop Lines (ASLs) by cyclists and motorcyclists. The trials are taking place at two signalised junctions. New shared use ASLs and motorcycle filter lanes have been installed on all four arms of both junctions. Before works had begun on site, a series of 'before' surveys were undertaken. These included traffic surveys, attitudinal surveys and video surveys, local authorities were consulted and a Sounding Board convened. Once works had been completed on site, a programme of 'after' surveys was undertaken.

In April 2003, 116 local Councils were written to, of which 84 replied. The feedback received queried whether allowing motorcycles to use advanced stop lines would have a detrimental impact upon the safety and convenience of cyclists. Amongst the comments raised were that shared use ASLs may lead to motorcyclists inadvertently using other cycle facilities such as cycle lanes, motorcyclists may intimidate cyclists, it could encourage motorcyclists to filter forwards and it could compromise the safety of pedestrians. The current illegal use of advanced stop lines by motorcycles and other vehicles was mentioned, as was the issue of enforcement. Five Councils commented that they support the use of advanced stop lines by motorcycles.

The 'before' attitudinal surveys found that 70 per cent of motorcyclists and 88 per cent of cyclists use advanced stop lines at least some of the time. Motorcyclists view having a 'head start' as being their main benefit, cyclists consider it as being segregated from other traffic. The majority of motorcyclists supported the idea that they should be allowed to use advanced stop lines. Thirty one per cent of cyclists objected to their shared use though just over half were in favour, the remainder 'didn't mind'. Most of the pedestrians interviewed, 61 per cent, had no strong opinion regarding the shared use of advanced stop lines, only 16 per cent expressed an objection. Those pedestrians that did object considered that the motorcycle would be too close to people crossing the road.

The 'after' attitudinal found that 83 per cent of motorcyclists considered that the junctions were 'better' following the installation of the shared use ASL and new motorcycle feeder lane. Two cyclists considered the junction to be worse. Primarily motorcyclists considered the junction to be 'better' because the new motorcycle feeder lane offered riders a clear path to the ASL reservoir.

The video surveys showed that in both the 'before' and 'after' situation, filtering between the kerb and queuing traffic was the most common way that cyclists reached the stop line. Even in the 'before' situation motorcyclists would adopt an 'active riding style' to reach the front of queuing traffic. The most common way that they would achieve this was filtering forwards by overtaking on the outside of queuing traffic. The number of motorcyclists filtering forwards increased post installation of the new motorcycle filter lane.

The Sounding Board raised concern that the shared use of ASLs would lead to overcrowding and possibly conflict between cyclists and motorcyclists. However, this situation did not arise. Given that cyclists would filter forwards on the left and motorcyclists on the right, the two groups of rider would tend to stop and wait on opposite sides of the ASL reservoir. This situation could have led to conflict between left turning motorcyclists and right turning cyclists. However, this situation at these junctions did not arise because the predominant movement for all road users was straight ahead.

There were no collisions recorded in either the 'before' or 'after' video survey. Near misses were rare with none occurring once the shared use advanced stop line and new motorcycle filter lane had been installed. However, many cyclists rode in both a dangerous and illegal manner. They would put themselves in a vulnerable situation but manage to avoid collisions or near misses through their riding skills.

The main concern is for the safety of motorcycle riders given the junction geometry and the new motorcycle filter lane. A motorcyclist is unable to ride straight into the advanced stop line reservoir because there are pedestrian refuges in the centre of the carriageway. When a motorcycle reaches the advanced stop line the rider must turn left into the reservoir. This can place the rider in a vulnerable situation if the signals change and traffic starts moving just as the rider arrives. This manoeuvre is made more difficult through the build up of grit and debris which would cause the front wheel to slide, leading to loss of control.

The study concludes that there are likely to be situations elsewhere where shared use advanced stop lines and new motorcycle filter lanes work satisfactorily. This would be in a situation where, as in Newham, turning movements do not lead to conflict between cyclists and pedestrians. The number and proportion of motorcyclists and cyclists would also need to be similar. It would also need to be somewhere where a new or existing junction layout could accommodate a new motorcycle filter lane without requiring a motorcyclist to make manoeuvres that could potentially place the rider in a vulnerable situation.

The study recommends that a post completion safety audit is now undertaken to determine whether the new facilities ought to be made permanent. Further research is also required, particularly at a site where there are more turning movements, more cyclists and motorcyclists, and a situation where cyclists outnumber motorcyclists and vice versa.

# 1 Introduction

In Autumn 2003, the London Borough of Newham started allowing motorcycles, mopeds and scooters, hereafter referred to generically as motorcycles, to use advanced stop lines (ASLs) on the Romford Road and Barking Road on a trial basis. A motorcycle filter lane has been installed specifically to provide motorcyclists with access to the ASL reservoir. In order to assess the impact of this measure upon the safety and convenience of all road users, a programme of 'before' and 'after' monitoring was undertaken. This included video surveys and attitudinal surveys of motorcyclists, cyclist and pedestrians. This Final Report presents the findings of these surveys and considers the conclusions that can be drawn from them. It makes recommendations regarding the shared use of ASLs and the next stages in these trials.

## 1.1 Objective of the research

The objectives of this study, as set out in the project brief, are to monitor and evaluate:

1. Interactions between motorcyclists and cyclists, motorcyclists and pedestrians, and motorcyclists and other road users when, in, entering and leaving the ASL area. This should include details of entry, and movement and positioning within the ASL.
2. The relationship between positions taken and manoeuvres performed at the junctions.
3. Actual incidents and conflicts, including those not normally reported through STATS 19.
4. An assessment of the potential for incidents, for example, of 'near-misses'.
5. Road user's perceptions of safety, comfort and effectiveness of motorcyclists using ASLs.
6. Traffic composition (motorcycle, cycle, pedestrian and other) 'before' and 'after' the trial. This should include surveys of cycle activity on both the carriageway and the cycle track. Flows and turning movements should be recorded.

## 1.2 Outline Methodology

The methodology chosen to achieve the objectives of this project involved a literature review, a programme of data collection and a series of 'before' and 'after' surveys. The purpose of the literature review is to identify relevant research already undertaken that could contribute to the project. It has been used to inform the task of data collection and analysis providing a wider perspective of the relevant issues.

The data collection exercise involved writing to local Councils in the UK to ask whether they allow motorcycles to use ASLs, and to solicit their own views upon this subject. The 'before' surveys included traffic surveys, video surveys, and attitudinal surveys of pedestrians, motorcyclists and cyclists. The 'before' surveys took place in April and May 2003. The 'after' surveys took place in October 2003, once the works had been completed on site. Taking into account the seasonal variation in motorcycle and cycle use, these were considered to be representative and comparable times of the year.

## Sounding Board

From the outset TRL recognised that this research is likely to be the subject of scrutiny by stakeholder organisations. Though it was not specified in the research brief, a Sounding Board was convened to provide a means of involving these stakeholders. The purpose of the Sounding Board was to achieve consensus amongst those with differing views on the subject regarding the research methodology and interpretation of the results. The Sounding Board provides the Department for Transport with a

reliable and credible foundation upon which technical and policy decisions could be based. The Sounding Board included delegates from the following organisations:-

- Department for Transport.
- TRL.
- English Region Cycling Development Team.
- Cyclists Touring Club.
- Transport for London.
- Motorcycling Industry Association.
- London Borough of Newham.
- British Motorcyclists Federation.
- Motorcycle Action Group.

The pedestrian organisation Living Streets were invited to attend the second meeting of the Sounding Board but were unable to send a representative.

### 1.3 Advanced Stop Lines

Advanced stop lines for cyclists were first introduced in the United Kingdom in Oxford in 1986. Their purpose is to improve the safety and convenience of cyclists by giving them a 'head start' at signalised junctions. Because cyclists have slower acceleration than cars, cyclists often find it difficult to turn right at traffic signals if other vehicles are turning left or going straight ahead. An experienced and confident cyclist will position himself or herself at the front of the queue of the traffic to avoid being 'cut up'. However, this may involve having to cross the stop line, which is an offence, it can also make it difficult for the cyclist to see the signal heads. Advanced stop lines address this issue by providing a waiting area, or reservoir, for cyclists in between two stop lines. The forward most, advanced stop line, is for cyclists, the one behind for motorists. The reservoir extends across the full width of the carriageway and is typically 5 metres deep. A cycle lane, or feeder lane, is sometimes provided, usually on the left, allowing cyclists to reach the waiting area unimpeded. By giving the cyclist priority in a vulnerable situation, the cyclist is able to turn, or go ahead safely, when the signals change. They also make the cyclist clearly visible to other road users allowing them to position themselves away from direct vehicle exhaust fumes. Advanced stop lines also give a clear message to other road users that the needs of cyclists are being treated seriously.

The provision of ASLs in Newham is encouraged by the London Cycle Network Design Manual, which states that '*provision of advanced stop lines should be considered at the majority of junctions within the London Cycle Network*'.

### 1.4 The sites

The four sites chosen for the trials were the junctions:

- Site One, Romford Road/Water Lane/Vicarage Road - Westbound
- Site Two, Romford Road/Water Lane/Vicarage Road – Eastbound
- Site Three, Barking Road, Hermit Road/Beckton Road – Westbound
- Site Four, Barking Road/Hermit Road/Beckton Road – Eastbound

All sites are situated in the London Borough of Newham and are signalised cross road junctions situated in built up urban areas. At each site the predominant movement is in an east/west and west/east direction in and out of central London in the AM and PM peak hours respectively.

There were originally ASLs on each arm of the Romford Road at its junction with Water Lane and Vicarage Road, these have now both been removed. However, the green reservoir road marking on the western side of Romford Road, site two, is still clearly visible. To some road users it may appear that the ASL is still in operation. In the 'before' situation, there was a working ASL properly marked out, on the western arm of the Barking Road junction, site four.

### 1.5 Design of the shared use ASLs

Drawings of the shared use ASLs are included in Appendix A. At both junctions all four arms of the junction have had shared use ASLs installed. The dimension of each shared use ASL varies according to the existing junction geometry. However, in all cases the ASL reservoir is 5 metres deep. Motorcycles can gain access to this reservoir via a motorcycle filter lane provided on the off-side of the carriageway. This filter lane is 1.2 metres wide and 10 metres in length. The lane and the reservoir itself are marked out in blue coloured anti-skid surfacing.

The reservoirs display the new cycle logo and the text '*AND SOLO M/C*'. New '*M/C*' road markings are provided at the entry to each motorcycle lead in lane. Advanced warning signs have been provided 40 metres prior to the new shared use ASL facility, they display the text '*EXPERIMENTAL MOTORCYCLE ADVANCED STOP LINE AHEAD*'.

#### Photograph 1. Advanced warning sign situated on the Romford Road



### 1.6 Background to the research

Motorcycles make up just 1 per cent of all road traffic but are involved in 14 per cent of all road accidents, a high proportion of which occur at road junctions. To help improve the safety and convenience of motorcycle riders, motorcycle interest groups have for a number of years lobbied for motorcycles to be allowed to use ASLs. They argue that this would improve motorcycle safety without detriment to any others road users. Cycling groups are however concerned that the safety of

cyclists would be compromised if motorcycles were allowed to share the use of ASLs. It is argued that ASLs would then start being used for a purpose other than that for which they were originally intended. The purpose of this research is to assess the wider implications of allowing motorcycles access to ASLs, allowing informed decisions to be made regarding their shared use.

## 1.7 Policy Background - motorcycles

The consultation paper 'Developing an Integrated Transport Policy', published in August 1997, made it clear that the Department of Environment, Transport and the Regions wishes to explore whether there is scope for motorcycles to contribute to the Government's wider transport objectives. Following this, the 1998 Transport White Paper 'A New Deal for Transport: Better for Everyone' mentioned that *'Mopeds and motorcycles can provide an alternative means of transport for many trips. Where public transport is limited and walking unrealistic, for example in rural areas, motorcycling can provide an affordable alternative to the car, bring benefits to the individual and widen their employment opportunities'*.

Whilst recognising the advantages of motorcycling in some circumstances, it noted that their wider benefits are dependant upon journey purpose, type of motorcycle used and the mode of transport that the rider has switched from. The White Paper acknowledged that mopeds and small motorcycles may produce benefits if they substitute for car use, but not if people switch from already sustainable modes of transport such as walking, cycling or public transport.

The White Paper acknowledged that motorcycling raises some important and complex issues, not least of all being road safety. In response to this, the Advisory Group on Motorcycling was set up by Lord Whitty on 6<sup>th</sup> May 1999. The brief for the Group included reviewing the role of all motorcycles in an integrated transport policy including the scope for traffic management measures that are beneficial to motorcyclists and contribute to that policy. The use of ASLs by motorcycles falls within this review.

The Government's 10-Year Plan for Transport, published in July 2000, reaffirmed the Government's view that motorcycles do have a part to play in an integrated transport policy. It recognised the advantages of motorcycles over cars in terms of flexibility and affordability mentioning that they make *'more efficient use of road space in congested town centres and provide a cheaper alternative for people on low incomes living in rural areas'*.

In March 2000 the Department of Transport, Environment and the Regions published 'Tomorrow's Roads Safer for Everyone'. This document set out the Government's road safety and strategy targets for 2010 replacing those set in 1987. The document reiterates the Government's view that *'mopeds and motorcycles can present environmental advantages on some journeys'*. Nevertheless it is pointed out that motorcyclists represent a large proportion of road casualties in relation to their number. The document describes the safety record of motorcyclists *'over the last few years as being poor, even compared to cyclists'*.

## 1.8 Policy background – cycles

The National Cycling Strategy (NCS) was launched in July 1996. It aims to establish a culture favourable to the increased use of bicycles for all age groups, to develop sound policies and good practice and to seek out effective and innovative means of fostering accessibility by cycle. It included targets to double the number of cycle trips between 1996 and 2002, and to double them again by 2012. In addition to setting a central target for the number of cycle trips, the Strategy encourages local authorities and other groups to establish localised targets for increased cycle use.

The publication of the 1998 Transport White Paper 'A New Deal for Transport: Better for Everyone', set out a vision of a more integrated and sustainable transport system in the UK. It introduced policies intended to make transport more sustainable, in which it is envisaged cycling will play a key role. The White Paper endorsed and adopted the National Cycling Strategy targets.

The 10-Year Plan for Transport (Department of Environment Transport and the Regions, 2000) 'Transport 2010' states that cycling accounted for less than 2% of all trips in 1998. In light of this the plan included a target to treble the number of cycling trips from their 2000 level by 2010. *'Growth is expected to be triggered both by improved local provision for cycling, and from the impetus created by the National Cycle Network currently being set up'*.

## 1.9 Review of literature

The Department for Transport, Local Government and the Regions commissioned the Halcrow Group Limited to research the effects of a modal shift from cars and public transport to motorcycles. The likely impact this would have upon congestion, the environment and other modes of traffic was studied. The findings of this research are set out in the document 'Motorcycling and Congestion', Halcrow Group Limited 2001. This research involved observing the behaviour of motorcyclists at five sites in Central London, it was found that motorcycle riders take advantage of motorcycle's size and manoeuvrability and adopt active riding styles to make progress. Between 20 and 90 per cent of all motorcycles were observed to filter whether on the nearside, offside or in between cars where traffic is either stationary or moving. Just 5 to 10 per cent of motorcyclists did not attempt to make progress. Between 20 and 50 per cent of all riders arrived at the signals at the head of the queue of traffic. The studies found that there was little difference in the observed behaviour of motorcycle and scooter riders.

This active riding behaviour raises road safety issues for both riders and pedestrians. When a motorcycle is filtering at the same speed as other traffic in the centre lane, the riders are increasing their forward sight distance by being able to look ahead between the lines of vehicles. This increases the available thinking and braking time in which to stop. However, a rider adopting this behaviour is vulnerable to involvement in a collision with another vehicle that unexpectedly changes lanes. In a situation where a motorcycle rider is filtering through stationary traffic, there is a risk of a collision with pedestrians. The pedestrian may judge it is safe to cross the road because the traffic is not moving, failing to take account that there may be a motorcycle or cycle filtering in between the queuing vehicles. At the same time, the rider may not see the pedestrian hidden behind vehicles. They are too intent focusing upon the narrow gap ahead. When traffic is moving this risk is reduced, as it is less convenient for a pedestrian to cross the road.

To summarise, Motorcycles and Congestion 2001 found that motorcycle riders in many cases do filter forwards when traffic is either stationary or slow moving. The Transport and Road Research Laboratory Report, 'Observations of Motorcycle Riders at Junctions' 1986, sought to identify types of manoeuvres that present special problems for motorcyclists. Five junctions were chosen for observation including crossroads, with traffic signals, similar to those being studied in Newham. Rider behaviour was studied to find out how many were 'good' riders and how many had picked up 'bad habits'.

The study found that 58 per cent of riders failed to look over their shoulder for following traffic. They may have looked too late, or have demonstrated too little head movement, for the rider to see properly what was behind. Forty three per cent of riders either failed to give a signal indication when turning, made the signal too late for following traffic, gave a poor signal so that following traffic would not have been able to see it properly, or gave the wrong signal. Thirty one per cent of riders were observed approaching and travelling through the junction at a speed judged to be unsafe for the

conditions. Twenty per cent of riders rode too closely behind the vehicle ahead or passed too closely when overtaking moving or stationary vehicles. Sixteen per cent of riders were judged to move from one lane of traffic to another, 'cutting in' on other vehicles without signalling to gain advantage when traffic was slow. Ten per cent of riders were at fault for cutting the corner when turning right, this may have involved entering the new road on the wrong side of the carriageway.

The Halcrow (2001) and Transport Research Laboratory Report (1986), suggested that in the 'after' situation it would be likely that allowing motorcycles to use ASL would encourage motorcycles to ride actively to the head of the queue of traffic even though the greater majority adopt this practise already. However, it is also a practice that they do not always conduct safely, as a number of faults with rider behaviour have been observed.

## **2 Methodology, data collection, analysis and results**

This section presents the methodology of data collection, its analysis, and the results. Section 2.1 presents the outcome of consultation with local Councils. Section 2.2 presents the traffic surveys and analyses traffic composition at both junctions. Section 2.3 discusses the results of the ‘before’ and ‘after’ video surveys and Section 2.4 presents the results of the attitudinal surveys.

### **2.1 Consulting Local Councils**

#### **2.1.1 Data collection**

At the inception of the study, Newham Borough Council was understood to be the only Local Authority in the UK that was planning to allow motorcycles to legitimately use ASLs. To confirm this, TRL wrote to 116 local authorities asking about their policy regarding use of ASLs by motorcycles. This letter also asked for the authorities’ view upon the use of ASLs by motorcycles. A copy of this letter and details of all authorities written to is included in Appendix B.

#### **2.1.2 Analysis and Results**

In all 84 replies were received either by letter, or e-mail. Of the local authorities that answered the question regarding their policy towards the use of ASLs by motorcycles, all responded that they do not allow shared use, 14 mentioned that they do not have any ASLs in their administrative area. Five local authorities however considered motorcycles should be allowed to use ASLs.

The table below summarises the comments received. The number of times the same opinion was expressed was recorded, allowing the comments received to be ranked.

**Table 1: Summary of comments received by local authorities**

Comment	Count	Council
<i>Allowing motorcycles to use ASL's would reduce their effectiveness as road safety facility for cyclists</i>	7	Manchester City Council Devon CC, Corporation of London, Slough BC, Braintree DC, LB Redbridge, Cambridgeshire CC
<i>Allowing motorcycles to use ASL's could lead to motorcycles using other cycle facilities such as cycle lanes</i>	5	Tunbridge Wells BC, Surrey CC, Cheshire CC, St. Edmundsbury BC, Swindon BC
<i>The presence of a motorcycles is likely to be intimidating for cyclists</i>	5	Daventry DC, Barnsley MBC, LB Merton, City of Westminster, North Lincs Council
<i>It would encourage motorcycles to pass on the outside of traffic</i>	3	Oxfordshire CC, Torbay Council, Lincolnshire CC
<i>Motorcycles pulling away quickly could compromise the safety of crossing pedestrians</i>	3	Borough of Poole, LB Redbridge, North Lincs Council
<i>Use of ASLs is difficult to enforce</i>	3	East Sussex CC, Kent CC, City of Westminster
<i>Safety implications and confusion using cycle lanes</i>	2	Gosport BC, Wolverhampton MBC
<i>Could lead to over crowding in the ASL</i>	2	City of Westminster, Cambridge CC
<i>The difference in speed between cyclists and motorcycles is likely to cause problems</i>	2	Barnsley MBC, OxfordshireCC
<i>Cyclist's wishing to turn right may be blocked by motorcycles</i>	2	Borough of Poole, LB Tower Hamlets
<i>Motorcycles would block the ASL for cyclists</i>	2	Borough of Poole, Hertfordshire CC
<i>Motorcycles have sufficient power and speed to pull away in traffic</i>	2	Swindon BC, Shropshire CC
<i>Approach lanes are not wide enough for motorcycles</i>	1	Borough of Poole
<i>ASL's are fume free waiting areas</i>	1	Borough of Poole
<i>Cyclist's views could be compromised</i>	1	Borough of Poole
<i>Would reduce cyclist/motorcyclist conflict as motorcycles would be clear before reaching the middle of the junction</i>	1	Eastleigh BC
<i>If motorcycles are allowed to use ASL's then they should be allowed to use approach lanes</i>	1	LB Hillingdon
<i>Perhaps it should be accepted that motorcycles will use ASL's and legislate accordingly</i>	1	East Sussex CC
<i>There is a general problem that cyclists and other road users do not know how to use the ASL's</i>	1	Kent CC
<i>Concerns regarding the slow speeds of cyclists leaving advanced positions</i>	1	Rosendale BC
<i>Slower mopeds at the front of the queue could frustrate traffic behind</i>	1	Hertfordshire CC
<i>The County is unaware of any illegal use of ASLs by motorcyclists</i>	1	Hertfordshire CC
<i>Cyclists tend to act as 'pedestrians' when the lights are against them</i>	1	Hertfordshire CC
<i>Motorcycle action group does not support cyclists using ASLs</i>	1	City of Sunderland Council
<i>Would not object to motorcycles using ASLs as long as it's in the interests of road safety</i>	1	Herefordshire CC

<i>Shared use is acceptable as long as volumes of either user does not reach a level where the risk of accident increases</i>	1	Worcestershire CC
<i>ASLs don't benefit cyclists much due to abuse by motorists and lack of feeder lanes in some cases. However, they do benefit crossing pedestrians by providing extra space between themselves and motorised traffic</i>	1	LB Ealing
<i>Enforcement is judged to be abortive and counter productive even if there were police resources to carry it out.</i>	1	Shropshire CC
<i>Restricted road width will not usually allow adequate space for combined use with motorcycles. Where this is possible, the road layout could potentially confuse the motorcyclist</i>	1	St. Edmundsbury BC
<i>Most experienced cyclists move to the front of the lights regardless of whether an ASL is provided or not</i>	1	Somerset CC
<i>It would be beneficial to allow motorcycles to use ASL's as they are also vulnerable road users</i>	1	Somerset CC
<i>Problem of motorcycles in ASLs could be increased due to the introduction of congestion charging</i>	1	City of Westminster
<i>Allowing motorcycles to use ASLs could not be achieved without a radical review of design standards</i>	1	Slough BC
<i>ASLs are supposed to prevent conflict and assist cyclists turning right</i>	1	Braintree DC
<i>High acceleration machines at the front of the queue could lead to an increased chance of a collision with traffic jumping the lights</i>	1	Lincolnshire CC
<i>Cyclists would not have the head start to make their manoeuvre ahead of motorcycles</i>	1	Lincolnshire CC
<i>ASL's are used by motorcycles as they cannot be enforced by the police</i>	1	City of York Council
<i>Technical guidance to support use by motorcycles would be useful</i>	1	Rutland CC
<i>Would not allow motorcycle use unless there is evidence showing it increases motorbike safety without compromising that of cyclists</i>	1	Gateshead Council
<i>Any use and abuse is covered by the Highway code and drivers are therefore liable for prosecution for failing to show due care and attention</i>	1	Greenwich Council

The majority of respondents considered that allowing motorcycles to use ASLs would have a negative effect upon the functioning of the ASL as a road safety facility for cyclists. Another common concern was that allowing motorcycles to use ASLs could lead to them using other cycle facilities, not least cycle lanes. It is considered that a motorcycle rider, aware that he/she is now legitimately allowed to use an ASL, may mistakenly assume he/she is also allowed to use cycle lanes, compromising the safety and convenience of cyclists.

A number of respondents considered that the presence of a motorcycle in an ASL also occupied by a cyclist would be intimidating to the cyclist. The size, noise and exhaust emissions of the motorcycle may compromise a cyclist's confidence, detracting from the convenience, safety and attractiveness of cycling. Advanced stop lines separate cyclists from the harmful and unpleasant exhaust emissions generated by other vehicles.

Several authorities commented that a motorcycle rider, aware that he is allowed to use an ASL, would be more likely to filter forwards on the outside of traffic in order to take advantage of this facility. These respondents consider that motorcyclists filtering forwards on the outside of traffic are placing themselves in a vulnerable position. It is therefore a manoeuvre that should not be encouraged. It is considered that by allowing motorcycles to use ASLs, some riders will start filtering forwards on the outside whereas before they waited in turn in the line of queuing traffic.

Motorcycles generally have faster acceleration than a car or any other type of motorised vehicle. In most situations, they have faster acceleration than a cycle. This was raised as a concern as it may compromise the safety of pedestrians crossing in front of the ASL. A motorcyclist may accelerate quickly on the green signal, or in some cases the red/amber signal, hitting a pedestrian still crossing the road. Other authorities mentioned that ASLs benefit pedestrians by providing a space between themselves and motorised traffic. A pedestrian crossing in front of an ASL occupied by a motorcycle is then closer to the nearest motorised vehicle.

The ability of motorcycles to accelerate quickly also raised further concerns. A motorcycle waiting in an ASL at the front of a queue of traffic would leave the ASL unhindered and be able to accelerate away quickly. This may expose the rider to the risk of a collision with another vehicle still completing a manoeuvre from the previous phase or one crossing the junction in the other direction on a red signal. Again related to power and speed, it was mentioned that motorcycles do not need the 'head start' over other traffic as motorcycles have sufficient power to pull away at the same rate of acceleration as other vehicles.

It is understood that provision and use of ASLs is not yet defined in Highway Law. From casual observation, cars and other vehicles already encroach into ASLs. This was something that the 'before' video surveys confirmed. A number of respondents mentioned that enforcement of the correct use of ASLs is a difficult issue, some mentioned that many motorcycle riders already use ASLs. One respondent queried the worth of ASLs given that they are commonly used by all vehicles. There remain enforcement difficulties whether these are due to lack of resources or legal clarity regarding their use. One respondent mentioned that there is a general problem of road users being unaware of ASL's purpose and use.

Concern was raised regarding the capacity of ASLs and their ability to accommodate more users in the space available. In some cases, if motorcycles are allowed access, the ASL may become overcrowded with users inevitably blocking and conflicting with one another.

At some ASLs, feeder lanes are provided to allow a cyclist to enter without crossing a stop line. It was mentioned that the geometry of these feeder lanes makes them unsuitable for motorcycle use. It was also mentioned that any further adaptations to the layout of ASLs could be potentially confusing for other road users.

#### **Key Points: Consulting local authorities**

- 116 local authorities were consulted of whom 84 replied
- Allowing shared use of ASLs was generally opposed
- The most commonly cited reasons for resisting shared use were that:-
  - It reduces an ASL's effectiveness as a road safety measure for cyclists;
  - It could lead to motorcyclists using other cycle facilities; and
  - The presence of a motorcycle would be intimidating for cyclists.
- Enforcement, overtaking on the outside and pedestrian safety were also raised by more than one Local Authority

## 2.2 Traffic Surveys

### 2.2.1 Data collection

Full twelve hours classified vehicle counts were undertaken on Wednesday 14<sup>th</sup> May 2003 at Barking Road/Becton Road/Hermit Road. The survey period was 07:00 to 19:00 hours, weather conditions were wet/dry in the morning and dry in the afternoon. Similarly counts were undertaken at the junction of Romford Road/Water Lane/Vicarage Road on Tuesday 20<sup>th</sup> May 2003, weather conditions were dry in both the morning and afternoon. The results of the traffic surveys can be found in Appendix C.

### 2.2.2 Analysis and Results

#### *Romford Road/Water Lane/Vicarage Lane*

At this junction the right turn movement from Romford Road westbound into Water Lane is banned, all other movements are permitted. Over the full survey period, 24,699 vehicles including cycles passed through this junction. At all times, the junction was busiest in the pm peak 16:00 to 17:00 hours, when 2,341 vehicles including cycles were counted. Flows during the AM peak 08:00 to 09:00 hours were lower, 2,165 vehicles including cycles.

Over the full 12 hour period, a similar number of motorcycles and cycles used the junction, motorcycles made up 1.6% of all traffic, cycles 1.5%. Motorcycle use of the junction peaked between 16:00 and 17:00 hours, 63 were counted. Cycle use of the junction was greatest between 07:00 and 08:00 hours, 63 were also counted. The number of cycles using the junction remained high between 08:00 and 09:00 hours when 62 were counted.

In total 8 cycles were counted making a right turn manoeuvre during the 12 hour survey period. Five of these cyclists were turning from the Romford Road eastbound into Vicarage Lane. Thirty two motorcycles were observed making a right hand turn. Similar to cycles, the most common turning manoeuvre was from Romford Road eastbound into Vicarage Lane, over the full 12 hour period 19 motorcycles made this turn.

#### *Barking Road/Becton Road/Hermit Road*

Over the full 12 hour survey period, 15,917 vehicles including cycles were counted using the Barking Road/Becton Road/Hermit Road junction. The morning peak is between 09:00 and 10:00 hours though traffic begins to build from 08:00 onwards. In the AM peak, the primary movement is along the Barking Road in an east to west direction consisting of 620 vehicles including cycles. In the pm peak, this remains the predominant movement, 515 vehicles including cycles. However, traffic in the opposite direction builds to an almost equal number, 471 vehicles including cycles.

At all times of the day the primary turning movement is from Hermit Road turning right westbound into Barking Road. In the AM peak 09:00 to 10:00 hours 90 vehicles including cycles made this movement. In the pm peak, 18:00 to 19:00 hours this rose to 109 vehicles including cycles. The other significant turning movements are between Barking Road and Hermit Road in both directions.

Over the full 12 hour survey period, cycles accounted for 0.9% of all traffic. However this rose to 1.9% between 08:00 and 09:00 hours, and 2% between 17:00 hours and 18:00 hours. In the AM peak, the primary movement for cycles was along Barking Road westbound. In the pm peak this movement reversed.

During the full 12 hour survey period just 5 cycles were recorded making right hand turns. Three of these took place between 08:00 and 09:00 hours from Hermit Road into Barking Road westbound.

Over the full 12 hour survey period, motorcycles accounted for 1.9% of all vehicles including cycles. MOTORCYCLE use peaked between 07:00 and 08:00 hours when 52 motorcycles passed through the junction accounting for 4.5% of all traffic. In the pm peak, motorcycles accounted for 2.3% of all traffic. Similar to cycles, over the full 12 hour survey period there were relatively few motorcycles counted making right turn movements, 25 in total. Just under half of these, 11, were motorcycles turning from Hermit Road into Barking Road westbound.

## 2.3 Video Survey

### 2.3.1 Data collection

In order to monitor any changes in road user behaviour arising from the installation of motorcycle filter lanes, 'before' and 'after' video surveys were undertaken. These took place at the following times and locations.

#### *Site One, Romford Road/Water Lane/Vicarage Road, Westbound, AM Peak*

Week one, 'before', 2<sup>nd</sup> April 2003 06:30 to 09:30 hours  
Week two, 'before', 9<sup>th</sup> April 2003, 06:30 to 09:30 hours  
Week three, 'after', 8<sup>th</sup> October 2003, 06:30 to 09:30 hours  
Week four, 'after', 15<sup>th</sup> October 2003, 06:30 to 09:30 hours

#### *Site Two, Romford Road/Water Lane/Vicarage Road, Eastbound, PM Peak*

Week one, 'before', 2<sup>nd</sup> April 2003, 16:00 to 19:00 hours  
Week two, before, 9<sup>th</sup> April 2003, 16:00 to 19:00 hours  
Week three, 'after', 8<sup>th</sup> April 2003, 06:30 to 19:00 hours  
Week four, 'after' 15<sup>th</sup> April 2003, 06:30 to 19:00 hours

#### *Site Three, Barking Road/Hermit Road/Beckton Road, Westbound, AM Peak*

Week one, 'before', 1<sup>st</sup> April 2003, 06:30 to 09:30 hours  
Week two, 'before', 8<sup>th</sup> April 2003, 06:30 to 09:30 hours  
Week three, 'after', 7<sup>th</sup> October 2003, 06:30 to 09:30 hours  
Week four, 'after', 14<sup>th</sup> October 2003, 06:30 to 09:30 hours

#### *Site Four, Barking Road/Hermit Road/Beckton Road, Eastbound, PM Peak*

Week one, 'before' 2<sup>nd</sup> July 2003 16:00 to 19:00 hours  
Week two, 'before', 9<sup>th</sup> July 2003 16:00 to 19:00 hours  
Week three, 'after', 7<sup>th</sup> October 2003, 16:00 to 19:00 hours  
Week four, 'after', 14<sup>th</sup> October 2003, 16:00 to 19:00 hours

All surveys were undertaken in either the AM or pm peak as this is the time when motorcycle and cycle flows are at their highest. As this is the time of most activity, it is also likely to be the time of greatest interaction between cyclists, motorcyclists and other road users. Any conflict is most likely to occur at this time.

In all three cameras were erected at each junction. Camera one filmed vehicles approaching the junction. This allowed a comparison to be made between the 'before' and 'after' situation as to how motorcyclists and cyclists arrived at the junction. For example, in the 'before' situation were motorcyclists filtering between lines of traffic, in the 'after' were they using the new motorcycle filter lane? Camera two filmed the ASL/stop line itself, it was also positioned to film the signal heads.

Camera two provided information regarding use of the ASL, positions adopted, encroachment, near misses and other issues such as overcrowding. The third camera filmed vehicles leaving the ASL/stop line recording the movements that motorcyclists and cyclists made.

**Photograph 2: Camera position one, approaching the advanced stop line**



**Photograph 3: Camera position two, leaving the advanced stop line**



The complete tapes were then analysed and the findings entered on the video monitoring form included in Appendix D. Appendix E provides details of the definitions of motorcycle type used during the video analysis. The term business user refers to people who ride a motorcycle as part of their job. It includes for example despatch riders, police riders and pizza delivery riders. The Sounding Board was consulted upon the content of the monitoring form providing guidance upon the key issues that would need to be monitored.

Initially attempts were made to distinguish between male and female motorcyclists. This task was difficult because the rider is wearing a helmet and bulky protective gear. It was soon judged that recording the gender of motorcycle riders would be inaccurate so this was abandoned.

Unfortunately there is no 'after' video data available for site three, week two. High winds shifted the angle of the cameras rendering the tapes unusable.

In order to help present the results 'combined averages' for the 'before' and 'after' situation have been calculated. This is simply the average for a particular entry recorded in weeks one and two 'before' and three and four 'after' converted to an average for both weeks giving a combined average 'before' and 'after'.

In all weeks 'before' and 'after', the majority of motorcyclists and cyclists arrived at the ASL/stop line by holding their position in the flow of traffic. Analysis of the results focuses upon motorcyclists that adopt an 'active riding style' to make progress forwards. This includes:-

- Riding between the kerb and traffic to the right;
- Filtering between lines of traffic;
- Weaving in and out of vehicles;
- Filtering on the outside of queuing traffic 'before'; and
- Using the new motorcycle filter lane 'after'.

### **2.3.2 Analysis and Results**

The full results of the video surveys are presented in Appendices F, G, H and I.

#### *Site One, Romford Road/Water Lane/Vicarage Road, Westbound, AM Peak*

Site one was the most heavily trafficked site by both motorcycles and cycles in both the 'before' and 'after' surveys. In week one 'before', 120 motorcycles were counted falling to 98 in week two. The number of motorcyclists observed remained high in the 'after' surveys, 102 in week three and 101 in week four. A good sample of cyclists was also recorded. The number was high varying from 81 in week two 'before' and 99 in week four 'after'. In both the 'before' and 'after' surveys, the most common type of motorcycle recorded was scooters or mopeds. The second most common type of motorcycle were traditional/tourer followed by sports/sport tourer motorcycles.

In week two 'before', 20 motorcyclists were recorded filtering forwards between the kerb and queuing traffic. In week one 'before', 16 motorcyclists filtered forwards to the stop line on the outside of queuing traffic. This was repeated in week two when 15 motorcyclists adopted this practise. This gives a combined average of 15 per cent. The number of motorcyclists observed both weaving and filtering forwards between lines of queuing cars in the 'before' situation was relatively small. Just 1 motorcyclist was observed weaving in both weeks one and two, 6 riders filtered between lines of traffic in week one, and 1 in week two.

In the 'after' surveys, 32 motorcyclists in week three and 27 in week four, representing nearly a third of all riders, combined average 29 per cent used the motorcycle filter lane. This is approximately double the number counted filtering on the outside of traffic compared to the 'before' surveys.

After installation of the new motorcycle filter lane, around one in ten of all motorcyclists reached the junction by filtering between the kerb and queuing traffic. Ten motorcyclists did this in week four 'after', half the number who did so in week two 'before', 20. Though the numbers are small, in the 'after' survey there was an increase in weaving and filtering between queuing traffic. In week three 2 motorcyclists, in week four, 5 motorcyclists were observed weaving, a combined average of 4 per cent. In week three 4 motorcyclists and week four 6 motorcyclists were recorded filtering between lines of queuing traffic a combined average of 5 per cent

In weeks one and two 'before', a combined average of 86 per cent of motorcyclists left the stop line on a green signal. The majority of the remainder pulled away on a red/amber signal. Only one motorcyclist in week one 'before' was observed making a manoeuvre on a red signal. In the 'after' surveys, the vast majority of motorcyclists left the junction on a green signal, a combined average of 96 per cent. Again in the 'after' situation, one rider was observed pulling away on a red signal. In both the 'before' and 'after' surveys, over 90 per cent of motorcycles surveyed continue straight ahead along the Romford Road bound towards London. The remainder made a left turn with only one rider being observed turning right.

In the 'before' situation, a combined average of 77 per cent of cyclists arrived at the junction cycling between the kerb and traffic to their right. One cyclist in the 'before' survey was recorded cycling along the pavement. Only one cyclist was ever recorded filtering on the outside of queuing traffic, this took place in week two 'before'. Weaving in and out of vehicles did take place during the 'before' surveys though only 1 cyclist did this in week one and 2 in week two.

In both the 'before' and 'after' surveys, over a quarter of all cyclists pulled away from the stop line on a red signal. The remainder made their manoeuvre on a green signal. Upon leaving the junction, nine out of ten cyclists proceeded straight ahead. The remainder turned left though two cyclists were observed turning right in week four 'after'. Three cyclists in the 'after' survey were recorded cycling along the pavement. Weaving in and out of traffic rose in the 'after' situation, seven cyclists were recorded adopting this practise.

The video surveys of site one provided some valuable 'before' information, as there were no ASLs at the time of the survey. Of all motorcyclists that used the junction, 36 per cent stopped at the front of queuing traffic. One motorcycle rider in both weeks one and two, 'before', was observed waiting at a red signal on the right hand side of the lane having actually crossed the stop line. In week one, of all motorcyclists that stopped, 51 waited behind the stop line in front of queuing traffic behind, 25 riders were observed in this position in week two. Over both weeks, riders in this position at the front of the queue of traffic tended to wait in centre or right hand side of the carriageway.

Of all motorcyclists stopping in the 'before' situation, a combined average of 52 per cent reached the front of the traffic queue. In both weeks one and two 'before', one motorcyclist was recorded crossing the stop line. In week one 13, and week two 9 motorcyclists waited in a position near to the kerb.

In the 'before' surveys, 3 cyclists in week one and 4 in week two crossed the stop line whilst waiting at the signals. In both weeks one and two 'before', all cyclists with the exception of one each week waited in a position next to the kerb.

Following the installation of the ASL and motorcycle filter lane, the number of motorcyclists stopping that managed to reach the front of the traffic queue increased substantially from 52% 'before' to 81% 'after'. Of these, 3 in week three and 8 in week four crossed the forward most stop line. From observations on sites and the video evidence, it appears that motorcyclists using the new motorcycle filter lane in the 'after' situation may be approaching the ASL reservoir at a slightly higher speed than they were able to in the 'before' situation. This may be because motorcyclists now have a clear uninterrupted approach to the junction. In addition, the rider is now riding within a clearly defined motorcycle filter lane, and may feel more confident approaching at a higher speed.

Further problems arise because the rider's view of the stop line is not always clearly visible because it is not ahead, it is to the left of the pedestrian refuge. When vehicles are queuing, it may not be visible

at all. As the rider reaches the ASL reservoir he/she must turn to the left and stop. The limited depth of the reservoir may not always give the rider sufficient space to 'straighten up' and stop. As a consequence the rider may inadvertently cross the stop line. This issue arose at all four junctions in the trial.

**Photograph 4: Motorcyclist crossing the stop line**



The majority of motorcyclists that stopped waited on the right hand side of the ASL near the centre line. Fewer motorcyclists were observed in the 'after' survey waiting in a position next to the kerb. Five motorcycle riders were recorded in a position next to the kerb in week three 'after' and 13 in week four.

Similar to motorcyclists, the number of cyclists that manage to reach the front of queuing traffic rose once the ASL facility had been installed. Taking the combined average for weeks three and four, ninety per cent of all cyclists reached the front of the traffic queue. However, the number of cyclists crossing the stop line in the 'after' situation also rose. Nine cyclists in week three and 7 in week four were observed crossing the stop line. The majority of cyclists waited in a position against the kerb, only 1 cyclist in week one and 4 in week four waited on the right hand side of the ASL near the centre line.

**Table 2: Site one, Romford Road, Westbound**

	<i>Before</i>				<i>After</i>			
	Week One		Week Two		Week Three		Week Four	
	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist
<b>Number</b>	<b>120</b>	<b>82</b>	<b>98</b>	<b>81</b>	<b>102</b>	<b>92</b>	<b>101</b>	<b>99</b>
<b>Weaving in and out of traffic</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>5</b>
<b>Filtering on the outside of traffic</b>	<b>16</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Using the new motorcycle filter lane</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>32</b>	<b>1</b>	<b>27</b>	<b>4</b>
<b>Filtering between the kerb and traffic</b>	<b>0</b>	<b>47</b>	<b>20</b>	<b>76</b>	<b>7</b>	<b>46</b>	<b>10</b>	<b>48</b>
<b>Filtering between lines of traffic</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>6</b>	<b>3</b>
<b>Number reaching the front of the queue</b>	<b>52</b>	<b>19</b>	<b>26</b>	<b>28</b>	<b>52</b>	<b>24</b>	<b>48</b>	<b>29</b>
<b>Number crossing the stop line</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>9</b>	<b>8</b>	<b>7</b>
<b>Number waiting in the ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>49</b>	<b>15</b>	<b>40</b>	<b>21</b>
<b>Number waiting on the right hand side of the carriageway</b>	<b>20</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Number waiting on the right hand side of the carriageway/ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>23</b>	<b>4</b>	<b>27</b>	<b>1</b>
<b>Number waiting next to the kerb</b>	<b>12</b>	<b>24</b>	<b>11</b>	<b>30</b>	<b>10</b>	<b>23</b>	<b>12</b>	<b>25</b>

**Key Points Romford Road, Westbound**

- Site One had the highest flows of motorcycles and cycles.
- The number of motorcycles using the new filter lane was double the number filtering on the outside 'before'.
- Weaving by motorcyclists and cyclists was uncommon.
- The number of motorcyclists and cyclists managing to reach the front of queuing traffic rose in the 'after' situation.
- In the 'after' situation the majority of motorcyclists waited in the right hand corner of the ASL reservoir.
- The number of motorcyclists recorded riding between the kerb and queuing traffic fell in the 'after' situation

*Site Two, Romford Road/Water Lane/Vicarage Road, Eastbound, PM Peak*

Prior to undertaking this study, there had been an ASL at this junction though this has been removed. However, the green road surface of the ASL reservoir was still visible in the 'before' situation giving the impression that there was in fact an ASL in operation. Even after the shared use ASL and motorcycle filter lane has been installed, road markings approaching the ASL were still potentially confusing. There were green cycle lanes, a worn red bus lay-by in addition to the blue ASL reservoir.

**Photograph 5: Confusing coloured road markings**

In the 'before' surveys, the number of motorcyclists observed remained fairly constant over both weeks, 71 were recorded in week one, 66 in week two. Scooters and mopeds were the most common type of motorcycle recorded accounting for a combined average of 57 per cent of all motorcycles in the 'before', 44 per cent in the 'after'. The number of cyclists 'before' was 80 in week one rising to 89 in week two. In the 'after' surveys, the number of motorcycles counted fell to 57 in week four, the number of cyclists recorded fell to 67.

In the 'before' situation 8 motorcyclists in week one and 8 in week two were observed filtering forwards on the outside of traffic, a combined average of 12 per cent. In week one, the number of motorcyclists surveyed riding between the kerb and queuing traffic was 10, this fell to just 2 in week two. No motorcyclists were recorded weaving in and out of traffic in week one though 3 were surveyed doing this in week two.

Over both weeks 'before', a combined average of 89 per cent of motorcyclists left the stop line on a green signal. However in week one, 2 riders crossed the stop line on a red signal. The majority of

motorcyclists crossed the junction and proceeded straight ahead. Only 1 motorcyclist was ever observed turning left though 3 in week one and 8 in week two did make a right hand turn.

In the 'after' survey, there was a relative increase in the number of motorcyclists now using the new motorcycle filter lane compared to the number who filtered on the outside 'before'. A quarter of all riders crossing the junction, used this new facility, 14 in all.

In the 'before' survey, a combined total of 63 per cent of cyclists arrived at the junction riding between the kerb and traffic to their right. Nine cyclists in week one and 10 in week two were recorded riding along the pavement up to the junction. Just 2 riders in weeks one and two were observed filtering forwards on the outside of queuing traffic. One rider in week one, and 3 in week two, were recorded weaving in and out of traffic to reach the junction.

In the 'before' surveys a number of cyclists were observed crossing the junction on a red signal. Twelve did this in week one and as many as 23 in week two. This represents a combined average of 21 per cent or one in five of all cyclists. Nevertheless the remainder primarily left on a green signal. The predominant movement was then straight ahead, only 3 riders in week one and 5 in week two turned right, 3 in week one and 1 in week two turned left.

In the 'after' survey a combined average of 42 per cent of cyclists, 28 riders, filtered forwards between the kerb and traffic to their right. Five cyclists actually rode within the motorcycle filter lane to reach the traffic signals. Seven cyclists in the 'after' survey left the junction on a red signal, the remainder left on a green signal.

In week one 'before', 6 motorcycles waited at the signals having crossed the centre line. Nine motorcyclists did the same in week two. Over both weeks, the majority of motorcyclists managed to get to the front of the queue of traffic. On average over the two weeks 82% of all motorcyclists achieved this, a combined average of 40% of motorcyclists would wait in a position against the kerb.

Similar to motorcyclists, in the 'before' situation, the majority of cyclists managed to reach the front of the traffic queue, a combined average of 92 per cent. Eleven cyclists in week one and 7 in week two crossed the stop line. The greater majority of these were in a position next to the kerb, a combined average of 87 per cent.

Following installation of the ASL and motorcycle filter lane, the average number of motorcyclists reaching the front of the queue increased from 82% 'before' to 89% 'after'. Of those waiting at the front 'after', a combined average of over half, 51%, were stationary on the right hand side of the ASL reservoir near the centre line. On average 1 in 5 riders, a combined average of 18%, would wait in a position near the kerb.

In the 'after' survey, the average number of cyclists reaching the front of the traffic queue fell from 92% to 75%. Of those that did reach the front, an average of 68% of all those stopping waited in a position next to the kerb.

**Table 3: Site two, Romford Road, Eastbound**

	<i>Before</i>				<i>After</i>			
	Week One		Week Two		Week Three		Week Four	
	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist
<b>Number</b>	<b>71</b>	<b>80</b>	<b>66</b>	<b>89</b>	-	-	<b>57</b>	<b>67</b>
<b>Weaving in and out of traffic</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>3</b>	-	-	<b>2</b>	<b>1</b>
<b>Filtering on the outside of traffic</b>	<b>8</b>	<b>2</b>	<b>8</b>	<b>2</b>	-	-	<b>0</b>	<b>0</b>
<b>Using the new motorcycle filter lane</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	-	-	<b>14</b>	<b>5</b>
<b>Filtering between the kerb and traffic</b>	<b>10</b>	<b>61</b>	<b>2</b>	<b>43</b>	-	-	<b>0</b>	<b>28</b>
<b>Filtering between lines of traffic</b>	<b>3</b>	<b>1</b>	<b>9</b>	<b>1</b>	-	-	<b>0</b>	<b>0</b>
<b>Number reaching the front of the queue</b>	<b>14</b>	<b>20</b>	<b>22</b>	<b>17</b>	-	-	<b>19</b>	<b>16</b>
<b>Number crossing the stop line</b>	<b>6</b>	<b>11</b>	<b>9</b>	<b>7</b>	-	-	<b>1</b>	<b>8</b>
<b>Number waiting in the ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	-	-	<b>18</b>	<b>8</b>
<b>Number waiting on the right hand side of the carriageway</b>	<b>5</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Number waiting on the right hand side of the carriageway/ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	-	-	<b>11</b>	<b>1</b>
<b>Number waiting next to the kerb</b>	<b>7</b>	<b>19</b>	<b>11</b>	<b>17</b>	-	-	<b>4</b>	<b>15</b>

**Key Points: Romford Road, Eastbound**

- The number of cyclists recorded in the 'after' surveys had fallen.
- Few cyclists weaved in and out of traffic in the 'before' surveys, none were recorded weaving in the 'after' surveys.
- The number of motorcycles using the new motorcycle filter lane in the 'after' situation was greater than the number filtering on the outside 'before'.
- In both the 'before' and 'after' surveys, filtering between the kerb and queuing traffic was the most common way that cyclists reached the front of queuing traffic.
- The primary movement for cyclists and motorcyclists was straight ahead.
- In the 'after' situation motorcyclists tended to wait on the right hand side of the reservoir whilst cyclists would wait on the left hand side next to the kerb.

*Site Three, Barking Road/Hermit Road/Beckton Road, Westbound, AM Peak*

At Site three, in the 'before' surveys the number of motorcyclists and cyclists counted were very similar. In week one 68 motorcycles and 68 cycles were counted. In week two, the numbers were similar again, 71 motorcyclists and 70 cyclists. In the 'after' surveys, the number of motorcycles recorded rose marginally, 73 in week three and 76 in week four. However the number of cyclist fell slightly to 55 in week three and 60 in week four.

In all four weeks surveyed, mopeds and scooters were the most common type of motorcycle recorded accounting for nearly 50 per cent of all motorcycles. Traditional/tourer motorcycles were the second most common type of motorcycle representing a third of all those surveyed. The third most common type of motorcycle were sports/sports tourer motorcycles. Over the full survey period 2 tandem cycles were observed, the remainder were traditional cycles.

The most common 'active' riding style used by motorcyclists to approach to the junction in the 'before' situation was filtering on the outside of queuing traffic. Eleven motorcyclists in week one, and 23 motorcyclists in week two adopted this technique, a combined average of 25 per cent. A similar number of riders approached the junction riding between the kerb and queuing traffic. Nine motorcyclists rode this way in week one, rising to 23 in week two, giving a combined average of 13 per cent. In week one, 7 motorcyclists were recorded filtering between lines of queuing traffic, 11 in week two, a combined average of 13 per cent. Four motorcycles were observed weaving between traffic in week one, 2 in week two.

In the 'after' surveys a combined average of a third, 33 per cent, of motorcyclists used the new motorcycle filter lane. As many as 30 motorcyclists used this facility in week four. Comparing this figure to those who filtered on the outside of queuing traffic in the 'before' surveys, this represents a combined mean average increase of 45%.

In the 'after' surveys, there was a decrease in the number of motorcycle riders who would filter between the kerb and queuing traffic, this fell to just 3 motorcyclists in week three and 6 in week four. In the 'after' survey the number of motorcyclists that weaved in and out of traffic to reach the junction fell though the total numbers were small. One rider was observed weaving in week three, 3 in week four.

Again in the 'after' surveys, the majority of riders, a mean average of 98 per cent, proceeded straight ahead. Just 1 rider in week three, and 3 in week four, made left turns. No motorcyclists were observed turning right.

In both the 'before' surveys the majority of motorcyclists pulled away from the signals on a green light, a combined average of 78 per cent. In week one, 2 riders pulled away actually crossing the stop line on a red signal. In both weeks one and two 'before', a combined average of 93 per cent motorcyclists proceeded straight ahead. The remainder made a right or left turn in equal numbers.

In the 'before' situation, cyclists primarily arrived at the junction riding between the kerb and traffic to their right. In week one, 60 cyclists were recorded doing this, 56 in week two giving a combined average of 84 per cent. In the 'after' surveys the number of riders riding between the kerb and traffic to their right fell slightly, 40 in week three, 43 in week four, a combined average of 72 per cent. It should however be borne in mind that the total number of cyclists observed in the 'after' surveys had also fallen. In the 'before' survey week one, 2 cyclists, and in week two 3 cyclists, were observed filtering between lines of queuing traffic. Only a small number of cyclists were observed weaving in

between traffic to reach the junction, just 2 in both the 'before' and 'after' surveys. In the 'after' survey 1 rider was however observed using the new motorcycle filter lane.

Similar to motorcyclists, the majority of cyclists, a combined average of 98 per cent proceeded straight ahead in both the 'before' and 'after' surveys. In the 'before' surveys a total of 5 cyclists turned left, 2 in the 'after' survey. One cyclist turned right in the 'after' survey.

Whilst the majority of cyclists would leave the junction on a green signal, 18 in week one 'before' and 25 week two left on a red signal. In the 'after' survey the number 'jumping the lights' fell to 13 in both weeks, again the total number of cyclists recorded had also fallen.

Analysis of the 'before' results found that, 30 per cent of motorcycle riders stopping reached the front of the queue of traffic and actually crossed the stop line. Two thirds of these waited on the outside of the lane adjacent to the centre line. In the 'after' survey the number crossing the forward most stop line fell to a combined average of 12 per cent. A combined total of 91 per cent of motorcyclists were therefore waiting in a position ahead of other traffic. Whilst waiting within the reservoir, 31 per cent of riders came to a halt towards the front of the reservoir.

Given that the majority of cyclists approached the junction cycling between the kerb and traffic to their right, the number of motorcycles waiting in this line is of interest as their presence could impede the passage of cyclists. In the 'before' situation a combine average of 26 per cent of motorcyclists that stopped waited against the kerb whether ahead of, or behind the stop line.

Compared to the 'before' surveys, in the 'after' surveys a smaller proportion of motorcyclists crossed the forward most stop line, a combine average of 12 per cent. The number that waited within the ASL reservoir 'after', compared to being at the front of queuing traffic 'before' increased from 49 per cent, to 76 per cent 'after'.

Similar to the 'before' surveys, the majority of cyclists in the 'after' survey reached the ASL reservoir cycling between the kerb and queuing traffic. In the 'after' situation the number of motorcycles now waiting adjacent to the kerb had fallen to a combined average of 19 per cent. In the 'after' situation motorcyclists tended to wait nearer the centre line. Nearly a half, a combined average of 49 per cent was either ahead of, within or immediately behind the ASL next to the centre line, away from approaching cyclists.

In the 'before' survey, a combined average of 87 per cent of cyclists waited near the kerb with traffic to their right, this fell to 83 per cent in the 'after' situation.

**Table 4: Site three, Barking Road, Westbound**

	<i>Before</i>				<i>After</i>			
	Week One		Week Two		Week Three		Week Four	
	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist
<b>Number</b>	<b>69</b>	<b>69</b>	<b>71</b>	<b>69</b>	<b>73</b>	<b>55</b>	<b>76</b>	<b>60</b>
<b>Weaving in and out of traffic</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>
<b>Filtering on the outside of traffic</b>	<b>11</b>	<b>1</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Using the new motorcycle filter lane</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>18</b>	<b>0</b>	<b>30</b>	<b>1</b>
<b>Filtering between the kerb and traffic</b>	<b>9</b>	<b>60</b>	<b>23</b>	<b>56</b>	<b>3</b>	<b>40</b>	<b>6</b>	<b>43</b>
<b>Filtering between lines of traffic</b>	<b>7</b>	<b>2</b>	<b>11</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>
<b>Number reaching the front of the queue</b>	<b>41</b>	<b>16</b>	<b>31</b>	<b>26</b>	<b>36</b>	<b>15</b>	<b>48</b>	<b>15</b>
<b>Number crossing the stop line</b>	<b>13</b>	<b>8</b>	<b>11</b>	<b>14</b>	<b>1</b>	<b>4</b>	<b>10</b>	<b>2</b>
<b>Number waiting in the ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>33</b>	<b>10</b>	<b>36</b>	<b>12</b>
<b>Number waiting on the right hand side of the carriageway</b>	<b>18</b>	<b>1</b>	<b>17</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Number waiting on the right hand side of the carriageway/ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>17</b>	<b>0</b>	<b>26</b>	<b>1</b>
<b>Number waiting next to the kerb</b>	<b>10</b>	<b>13</b>	<b>11</b>	<b>27</b>	<b>12</b>	<b>15</b>	<b>4</b>	<b>13</b>

**Key Points: Barking Road, Westbound**

- In both the 'before' and 'after' surveys more motorcyclists were recorded weaving than cyclists.
- The number of motorcycles using the new motorcycle filter lane in the 'after' situation, 33%, was greater than the number filtering on the outside 'before', 25%.
- In both the 'before' and 'after' surveys, filtering between the kerb and queuing traffic was the most common way that cyclists reached the front of queuing traffic.
- The number of motorcyclists recorded filtering between the kerb and queuing traffic fell in the 'after' surveys.
- The number of motorcycles recorded using the ASL rose in the 'after' surveys.
- In the 'after' survey, motorcyclists tended to wait in the right hand side of the reservoir, cyclists on the left against the kerb.

*Site Four, Barking Road/Hermit Road/Beckton Road, Eastbound, PM Peak*

In the 'before' surveys, the total number of motorcycles counted over the two weeks was similar with 45 in week one and 40 in week two. As with the other three sites scooters and mopeds were the most frequent type of motorcycle recorded, accounting for almost half of all motorcycles in both the 'before' and 'after' surveys. Tourer/traditional motorcycles were the second most common type and sports/sports tourers ranked third. In the 'before' surveys, 63 cyclists were counted in week one, 77 in week two.

The number of motorcycles observed in the 'after' surveys increased significantly in week four. Forty eight, a figure similar to the 'before' surveys were counted in week three, rising to 63 in week four. Again the majority of motorcycles recorded were scooters and mopeds. In weeks three and four of the 'after' surveys, the number of cyclists observed fell slightly to 57 in week three and 58 in week four. Time of year is the probable explanation for this fall as the 'before' surveys were undertaken in July, when cycling is most popular.

In the 'before' survey week one, 16 motorcycles were recorded filtering to the front of the queue on the outside of traffic, 28 in week two giving a combined average of 53 per cent. In week one 'before', 6 riders filtered forwards between the kerb and traffic to their right, 5 riders did so in week two giving a combined average of 13 per cent. Filtering between lines of queuing traffic was however less common, 2 riders did this in week one 'before', 2 in week two. Similarly, weaving in and out of traffic was uncommon, just one rider rode this way each week 'before'.

In the 'after' survey, 18 motorcycle riders in week three and 36 in week four used the new motorcycle filter lane, a combined average of 48 per cent. It should be borne in mind that the number of motorcycles using the junction in week four had increased so the number using the motorcycle filter lane could be expected to increase accordingly.

In the 'before' surveys, a combined average of 91 per cent of motorcyclists pulled away on a green signal. In the 'before' surveys 3 riders were recorded crossing the stop line on red signal. In both weeks 'before' the majority of motorcyclists proceeded straight ahead, a combined average of 91 per cent. The remainder made either a right or left turn in equal numbers.

Again in the 'after' surveys the majority of riders left the junction and carried straight on. Just one motorcyclist was observed turning right in the 'after' survey.

In the 'before' surveys, cyclists primarily arrived at the junction riding between the kerb and the queuing traffic, around two thirds, a combined average of 68 per cent of cyclists adopted this approach. In week one 'before' 2 cyclists were observed weaving in and out of vehicles, in week two 4 cyclists chose this riding style. Two cyclists in week one 'before' and 9 in week two overtook queuing vehicles on the outside. Filtering between lines of traffic was uncommon, in the 'before' survey just 3 cyclists were recorded doing this. One rider in week one cycled along the pavement and then entered the ASL.

Over half of the cyclists left the junction on a green signal, a combined average 'before' of 59 per cent. However, over a third both weeks were observed to leave the stop line on a red signal. The primary movement for cyclists was straight ahead. Just 3 riders turned left in week one, rising to 10 in week two.

Of all motorcycle riders stopping in the 'before' survey, around three quarters reached the head of queuing traffic, a combined average of 72 per cent. Forty per cent of motorcycle riders stopping crossed the stop line. Motorcycle riders tended to wait at the signals in the right hand lane away from the kerb near the centre line. A combined average of just 4% of all motorcycle riders stopping positioned themselves near the kerb.

Once the ASL and motorcycle feeder lane had been installed, all motorcycle riders recorded stopping managed to reach the front of the queue. Around a quarter of these crossed the forward most stop line, a combined average of 65 per cent waited within the ASL itself. The remainder were behind the ASL stop line though in front of the queue of other vehicles.

In the 'before' surveys, a combined average of 87 per cent of cyclists that stopped manage to reach the front of queuing traffic. Well over three quarters waited against the kerb, a combined average of 83 per cent. Six per cent of those that stopped were however recorded waiting in the outside hand lane near the centre line.

In the 'after' survey, all cyclists manage to reach the front of queuing traffic. Of all cyclists that stopped, 4 riders in week three and 6 in week four were observed to cross the forward most stop line, a combined average of 35% of all riders that stopped. Of all cyclists stopping, a combined average of 88 per cent of cyclists waited in a position against the kerb with queuing traffic to their right. Only one cyclist that stopped waited in the right hand corner of the ASL reservoir.

**Table 5: Site four, Barking Road, Eastbound**

	<i>Before</i>				<i>After</i>			
	Week One		Week Two		Week Three		Week Four	
	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist	M/C	Cyclist
<b>Number</b>	<b>45</b>	<b>63</b>	<b>40</b>	<b>77</b>	<b>48</b>	<b>57</b>	<b>63</b>	<b>58</b>
<b>Weaving in and out of traffic</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>
<b>Filtering on the outside of traffic</b>	<b>16</b>	<b>2</b>	<b>28</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Using the new motorcycle filter lane</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>18</b>	<b>5</b>	<b>36</b>	<b>3</b>
<b>Filtering between the kerb and traffic</b>	<b>6</b>	<b>46</b>	<b>5</b>	<b>48</b>	<b>3</b>	<b>22</b>	<b>1</b>	<b>45</b>
<b>Filtering between lines of traffic</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>1</b>
<b>Number reaching the front of the queue</b>	<b>24</b>	<b>21</b>	<b>22</b>	<b>17</b>	<b>31</b>	<b>14</b>	<b>39</b>	<b>15</b>
<b>Number crossing the stop line</b>	<b>18</b>	<b>8</b>	<b>14</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>14</b>	<b>6</b>
<b>Number waiting in the ASL</b>	<b>14</b>	<b>13</b>	<b>7</b>	<b>11</b>	<b>24</b>	<b>8</b>	<b>20</b>	<b>8</b>
<b>Number waiting on the right hand side of the carriageway</b>	<b>17</b>	<b>1</b>	<b>19</b>	<b>1</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>
<b>Number waiting on the right hand side of the carriageway/ASL</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>16</b>	<b>1</b>	<b>25</b>	<b>0</b>
<b>Number waiting next to the kerb</b>	<b>5</b>	<b>21</b>	<b>1</b>	<b>15</b>	<b>6</b>	<b>11</b>	<b>2</b>	<b>14</b>

**Key Points: Barking Road, Eastbound**

- More cyclists than motorcyclists were observed weaving in and out of traffic.
- The number of motorcyclists observed filtering between the kerb and queuing traffic fell in the 'after' surveys.
- In the 'after' situation there was an increase in the number of motorcycles reaching the front of queuing traffic.
- The number of motorcycles waiting in the ASL reservoir increased once the new motorcycle filter lane had been installed.
- In the 'after' survey, motorcyclists tended to wait in the right hand side of the reservoir, cyclists on the left against the kerb.
- The number of motorcycles using the new motorcycle filter lane in the 'after' situation was greater than the number filtering on the outside 'before'.
- In week one a motorcycle encroached in to the ASL on fourteen occasions.

*Collisions and near misses*

There were no collisions recorded in either the 'before' or 'after' situations. There was however a number of near misses. A near miss is defined as an event that would have resulted in a collision had one or both road users not taken evasive action.

There were many cases of cyclists in particular riding illegally or in a manner that put them at risk. However, these are not classified as near misses because the rider, no matter the potential danger they are in, is in control of the situation. Similarly there were also countless events involving pedestrians that technically ought to be recorded as near misses. This would involve a pedestrian crossing the road then having to run the last few steps to avoid being hit by a vehicle.

In all three hours 'before' and three hours 'after' video filming took place. In this time four near misses were recorded. All four of these occurred on the Romford Road westbound 'before'. Two of these were the result of cyclists deliberately taking risks, putting themselves in vulnerable situations. The other two may not have occurred had the rider been willing to wait in the queue of traffic. Of all the sites surveyed, site one is the most confined in terms of road space. This may have been a contributing factor.

Site one, Romford Road, 'Before'. This near miss involved a motorcyclist filtering forwards between the kerb and traffic to his right. The rider stopped against the kerb with a lorry to his right. The rider was in a confined space. As the signals changed the rider accelerated quickly, overtaking the lorry on the inside. The motorcyclist then had to swerve sharply to cut in front of the lorry to avoid hitting the kerb and pavement on the opposite side of the junction.

Site one, Romford Road, 'Before'. A cyclist was recorded weaving in and out of traffic and then crossing the stop line on a red signal. As the cyclist was entering the junction box a car driver crossing in the opposite direction needed to swerve to his right to avoid colliding with the cyclist.

Site one, Romford Road, 'Before'. A cyclist filtering forwards between the kerb and queuing traffic crossed the stop line on a red signal and stopped some 5 metres in front of the stop line and waited for a gap in crossing traffic. This crossing traffic had to swerve to the right to avoid colliding with the cyclist.

Site one, Romford Road, 'Before'. A motorcyclist arrived at the junction riding along the centre lane holding his position in traffic. A car driver in the right hand lane tried to change lanes to the centre lane forcing the motorcyclist to serve to his left.

*Video survey – summary of findings*

All four sites that were video surveyed are broadly similar in terms of traffic flows, turning movements and junction configuration. In order to understand the overall impact of the installation of the shared use advanced stop lines and new motorcycle filter lane, an average figure for all four sites weeks one and two ‘before’ and three and four ‘after’ has been produced. These are presented in the table below.

**Table 6: Summary of video survey**

	<i>Before</i>		<i>After</i>	
	M/C	Cyclist	M/C	Cyclist
<b>Number</b>	<b>292</b>	<b>305</b>	<b>260</b>	<b>244</b>
<b>Weaving in and out of traffic</b>	<b>3%</b>	<b>3%</b>	<b>2%</b>	<b>4%</b>
<b>Filtering on the outside of traffic</b>	<b>22%</b>	<b>3%</b>	<b>N/A</b>	<b>N/A</b>
<b>Using the new motorcycle filter lane</b>	<b>N/A</b>	<b>N/A</b>	<b>33%</b>	<b>4%</b>
<b>Filtering between the kerb and traffic</b>	<b>13%</b>	<b>72%</b>	<b>6%</b>	<b>56%</b>
<b>Filtering between lines of traffic</b>	<b>7%</b>	<b>2%</b>	<b>5%</b>	<b>2%</b>
<b>Number reaching the front of the queue</b>	<b>40%</b>	<b>27%</b>	<b>53%</b>	<b>26%</b>
<b>Number crossing the stop line</b>	<b>13%</b>	<b>10%</b>	<b>8%</b>	<b>9%</b>
<b>Number waiting in the ASL</b>	<b>4%</b>	<b>4%</b>	<b>43%</b>	<b>17%</b>
<b>Number waiting on the right hand side of the carriageway</b>	<b>20%</b>	<b>1%</b>	<b>N/A</b>	<b>N/A</b>
<b>Number waiting on the right hand side of the carriageway/ASL</b>	<b>N/A</b>	<b>N/A</b>	<b>28%</b>	<b>2%</b>
<b>Number waiting next to the kerb</b>	<b>12%</b>	<b>14%</b>	<b>24%</b>	<b>19%</b>

Across all four sites the number of motorcyclists using the new motorcycle filter lane ‘after’ was greater than the number that filtered on the outside ‘before’. The number doing so increased from 22 per cent to 33 per cent. The number of motorcyclists filtering between the kerb and queuing traffic fell in the ‘after’ situation from 13 per cent to 6 per cent. There was no change in the percentage of

cyclists that stopped that managed to reach the front of the traffic queue. The percentage of motorcyclist that achieved this rose from 40 per cent to 53 per cent.

Both the percentage of cyclists and motorcyclists crossing the stop line fell in the 'after' situation. The reason for this is likely to be because the cyclists and motorcyclists now had a proper waiting facility whereas before they needed to cross the stop line to create space around them. The number of motorcyclists waiting on the right hand side of the carriageway, away from the cyclist's position, increased in the 'after' situation from 20 per cent to 28 per cent.

There were no collisions or near misses in the 'after' situation. Four near misses occurred in the 'before' situation all at site one, the most confined of all sites surveyed. Two of these involved cyclists putting themselves in vulnerable situations, possibly to get away from and in front of other traffic. The other two involved motorcyclists, one of which was a motorcyclist filtering on the inside in a restricted space.

## 2.4 Attitudinal Survey – motorcyclists and cyclists

### 2.4.1 Data collection

‘Before’ and ‘after’ attitudinal surveys were undertaken to reveal the opinions of cyclists, motorcyclists and pedestrians towards allowing motorcycles to use ASLs. Cyclists and motorcyclists were surveyed with the assistance of the Police who ‘flagged’ them down. For time and accuracy, the interviews were then conducted using a tape recorder. The comments made were then entered into a database for analysis.

The ‘before’ cyclists and motorcyclist attitudinal surveys took place at the following times and locations:-

- Barking Road/Hermit Road/Beckton Road - *Westbound*  
15th April 2003, 06:30 to 09:30 hours
- Barking Road/Hermit Road/Beckton Road - *Westbound*  
16th April 2003, 06:30 to 09:30 hours

A further survey of motorcyclists only took place on:-

- Romford Road/Water Lane/Vicarage Road - *Eastbound*  
11<sup>th</sup> June 2003, 17:00 to 18:30 hours
- Romford Road/Water Lane/Vicarage Road  
19<sup>th</sup> June 2003, 14:30 to 16:30 hours

The ‘after’ attitudinal surveys of cyclists and motorcyclists took place one month after the shared use advanced stop lines and new motorcycle filter lanes had been installed. This was to allow time for all road users to become familiar with the new road layout. One issue that did arise was the difficulty stopping motorcyclists that had used the motorcycle filter lane. In some cases it would have been dangerous to ask them to stop as it would have necessitated them changing lanes ‘cutting in’ against moving traffic to reach the interview site. The ‘after’ surveys took place at the following times and locations:-

- Romford Road/Water Lane/Vicarage Road - *Westbound*  
21<sup>st</sup> October 2003, 06:30 to 09:30 hours
- Barking Road/Hermit Road/Beckton Road - *Westbound*  
23<sup>rd</sup> October 2003, 06:30 to 09:30 hours

### 2.4.2 Analysis and results of the 'before' surveys

**Table 7: 'Before' surveys, number interviewed**

Motorcycle Riders		Cyclists		Total
Male	Female	Male	Female	
30 (42%)	0 (0%)	34 (48%)	7 (10%)	71

In the 'before' surveys 30 motorcyclists and 41 cyclists were interviewed. Ten per cent of the sample was female all of whom were cyclists.

**Table 8: 'Before' survey, do you use advanced stop lines?**

	Yes	No	Sometimes	Total
Motorcyclists	15 (50%)	9 (30%)	6 (20%)	30
Cyclists	30 (73%)	5 (12%)	6 (15%)	41

In the 'before' situation, the majority of those interviewed, whether a motorcyclist or cyclist, mentioned that they used ASLs. However the proportion of cyclists using them was higher than motorcyclists, 73 per cent compared to 50 per cent. Adding those that regularly use ASLs, to those that use them only sometimes, shows that 88 per cent of cyclists, will use ASLs at some time compared to 70 per cent of motorcyclists. From the attitudinal survey it is therefore evident that the vast majority of cyclists use the ASL facility as do a substantial proportion of motorcycle riders even though they are not entitled to do so.

**Table 9: 'Before' survey, motorcyclists, why do you use advanced stop lines and what are the benefits?**

Advantages	Percent
Offers a head start over other traffic	30%
Away from and in front of traffic	29%
More visible away from and in front of traffic	7%
More room to slow down and stop	7%
Motorcycles can filter through traffic	7%
Other reasons	13%
Not sure	7%

All those that use ASLs 'before' were then asked why they use them and what do they perceive as being the benefits. Nearly one third, 30 per cent, of motorcyclists mentioned that they use ASLs because it gives them a head start over other traffic. A similar number, 29 per cent, replied that they consider it to be an advantage being separated from other traffic. A motorcyclist waiting in between queuing vehicles may find they are in a confined space requiring more skill and care when pulling away. One rider mentioned that they feel more visible and safer waiting in the ASL whilst another said that they use the ASL as it provides extra braking distance.

**Table 10: 'Before' survey, cyclists, why do you use advanced stop lines and what are the benefits?**

Benefits	Percent
Away from and in front of traffic	38%
Offers a head start over other traffic	28%
Reduced risk of collision	13%
More usable away from and in front of traffic	6%
No reason	6%
The filter lane allows you to get to the front	3%
More space to manoeuvre	3%
More visible, away from and in front of traffic, reduce risk of being cut up	3%

The majority of cyclists 'before' responded that they use ASLs because they enjoy the benefit of being away from and in front of traffic. This indicates that they consider the ASL improves the safety and convenience of making a journey by cycle. By being away from traffic they are away from the exhaust fumes and noise of queuing traffic and able to make a straight ahead movement without being 'cut up' by left turning traffic. Having a head start over other traffic was the second most commonly cited benefit of ASLs by cyclists.

It is noteworthy that motorcycle and cycle riders give different answers to this question. Motorcyclists see being able to pull away more easily as a benefit whilst cyclists view being separated from traffic as being the primary benefit. This suggests that in the opinion of the rider, ASLs provide motorcycle riders with journey time benefits as opposed to safety and convenience benefits for cyclists.

**Table 11: 'Before' survey, motorcyclists, why do you use advanced stop lines sometimes and not others?**

Reason	Percent
Depends on traffic conditions	50%
Will enter the ASL only if necessary to keep ahead of traffic	33%
Can't help encroaching into them	17%

The main reason given for not using ASLs by those motorcyclists that use ASLs sometimes and not others was that it depends on traffic conditions. Others mentioned that they only use them if it is necessary to do so to keep ahead of traffic.

**Table 12: ‘Before’ survey, what are your views on allowing Motorcycles to use ASLs? Do you support, object or don’t mind?**

	Support	Object	Don’t mind
All riders	43 (62%)	9( 13%)	17 (25%)
Motorcyclists	23 (77%)	2 (7%)	5 (17%)
Cyclists	20 (51%)	7 (18%)	12 (31%)

Of all those interviewed ‘before’, 62 per cent supported the idea of allowing motorcycles to use ASLs, just 13 per cent objected whilst 25% had no strong opinion either for or against. However, the proportion of motorcyclists in favour of allowing access to ASLs was proportionately higher than that of cyclists. Over three quarters, 77%, of motorcyclists, supported the trials as opposed to just half, 51 per cent of cyclists. Similarly 18 per cent of cyclists objected to the proposal compared to just 7 per cent of motorcyclists.

**Table 13: ‘Before’ survey, motorcyclists, how would allowing motorcycles to use advanced stop lines help?**

Advantages	Percent
Away from and in front of traffic	48%
Improve road safety for motorcyclists	14%
Would help traffic flow more easily/time savings	12%
Motorcycles would not impede the flow of other vehicles	5%
Motorcycles would become more visible to other road users	5%
Would not conflict with cyclists	5%
Motorcycles use them anyway	5%
Offers a head start over other traffic	5%

When those motorcycle riders who support allowing motorcycles access to ASLs were questioned on how it would help nearly half, 48%, cited being in front of and away from traffic. This was also one of the primary reasons given by cyclists. The second most common reason given by motorcyclists was that it would improve road safety when travelling by motorcycle.

**Table 14: ‘Before’ survey, cyclists, how would allowing motorcycles to use advanced stop lines help?**

Advantages	Percent
Away from and in front of traffic	14%
There is sufficient space	14%
They move away quicker without disadvantaging cyclists	14%
Would not conflict with cyclists	10%
Would benefit motorcycles but take space from cyclists	5%
Would remove uncertainty regarding their use	5%
Motorcyclists give cyclists space	5%
No reason	5%
Intends to buy a motorcycle	5%
Motorcyclists are vulnerable road users too	5%
Willing to share space	5%

*Analysis and results of the ‘after’ surveys***Table 15: ‘After’ survey, number interviewed**

Survey location	Motorcycle Riders		Cyclists		Total
	Male	Female	Male	Female	
Site One Romford Road Westbound 21 <sup>st</sup> October 2003	17	1	19	4	41
Site Two Barking Road Westbound 23 <sup>rd</sup> October 2003	19	1	16	1	37
Total	36 (46%)	2 (3%)	35 (45%)	5 (6%)	78 (100%)

In the ‘after’ surveys, 38 motorcyclists and 40 cyclists were interviewed making a total of 78. Nine per cent of the sample was female, 3% of who were motorcyclists and 6% cyclists. In all 6 learner motorcycle riders were interviewed, 2 despatch riders and one rider carrying a pillion passenger.

**Table 16: ‘After’ survey, Romford Road, do you think the junction is now better or worse now that it has been changed?**

Rider type	Male motorcyclist	Female motorcyclist	Total motorcyclists	Male cyclists	Female cyclist	Total cyclists
Better	14	1	15 (83%)	9	1	10 (43%)
Worse	0	0	0 (0%)	1	1	2 (9%)
Not noticed a change	0	0	0 (0%)	4	2	6 (26%)
New user, not applicable	1	0	1 (6%)	3	0	3 (13%)
No answer given	2	0	2 (11%)	2	0	2 (9%)
<b>TOTAL</b>	<b>17</b>	<b>1</b>	<b>18 (100%)</b>	<b>19</b>	<b>4</b>	<b>23 (100%)</b>

At Romford Road in the ‘after attitudinal survey 15 (83%) motorcycle riders considered that the junction is better since it had been changed. No motorcyclists mentioned that it was now worse. By comparison, 10 (43%) cyclists thought that the junction was now better, 2 riders thought it was worse and 6 riders had not noticed any change. However, excluding new users and those that did not answer the question, 56% of cyclists thought that the junction is now better, 11% thought it is worse.

**Table 17: ‘After’ survey, Barking Road, do you think the junction is now better or worse now that it has been changed?**

Rider type	Male motorcyclist	Female motorcyclist	Total motorcyclists	Male cyclists	Female cyclist	Total cyclists
Better	13	0	13 (65%)	9	0	9 (53%)
Worse	0	0	0 (0%)	0	0	0 (0%)
Not noticed a change	1	0	0 (0%)	5	1	7 (41%)
New user, not applicable	4	1	5 (25%)	1	0	1 (6%)
No answer given	1	0	1 (5%)	1	0	1 (6%)
<b>TOTAL</b>	<b>19</b>	<b>1</b>	<b>20 (100%)</b>	<b>16</b>	<b>1</b>	<b>17 (100%)</b>

At Barking Road in the ‘after’ attitudinal survey 13 (65%) of motorcycle riders considered that the junction was now better. This percentage is less than at Romford Road, the reason for this being the larger proportion of riders in the new user category or riders that did not give an answer. Nine (53%) cyclists commented that the junction was now better, none said it was worse.

**Table 18: ‘After’ survey, Romford Road and Barking Road combined, do you think the junction is now better or worse now that it has been changed?**

Rider type	Male motorcyclist	Female motorcyclist	Male cyclists	Female cyclist	Total
Better	27	1	18	1	47 (60%)
Worse	0	0	1	1	2 (3%)
Not noticed a change	1	0	10	3	14 (18%)
New user, not applicable	5	1	4	0	10 (13%)
No answer given	3	0	3	0	6 (8%)
	36	2	36	5	78 (100%)

Combining the results of the surveys at both sites shows that 47 of the motorcyclist’s and cyclist’s interviews thought that the junction was better now it had been changed. Just 2 people thought it was worse, both of whom were cyclists. It is also notable that 13 cyclists mentioned that they had not noticed a change compared to just 1 motorcyclist. This perhaps is as would be expected given that the motorcyclists have been provided with a new facility, the new motorcycle filter lane.

**Table 19: ‘After’ survey, reasons given by cyclists as to why the junction is ‘better’ since it has been changed**

<b>Reason</b>	<b>Better</b>
No explanation given	7
Provides space in front of and away from other traffic	7
Allows the user to pull away unimpeded	3
The motorcycle filter lane directs motorcycles to the stop line with less interaction with other traffic	3
The blue marking provide a clear message to other road users	1
Can chose between using the inside cycle lane or outside motorcycle feeder lane	1
Uncertainty regarding advanced stop lines has been removed	1
Improves rider conspicuity	1

The most common reasons given by cyclists as to why they thought the junction was ‘better’ now it had been changed was that it provided the cyclists with space away from other traffic and that it allowed them to pull away unimpeded. Three respondents mentioned that the new motorcycle filter lane led to motorcyclists having less interaction with other traffic. They could have been suggesting that they appreciate the motorcycle filter lane as it encourages motorcyclists to filter on the outside of queuing traffic away from cyclists filtering on the inside.

**Table 20: ‘After’ surveys, reasons given by motorcyclists as to why the junction is ‘better’ since it has been changed**

Reason	Number
The motorcycle filter lane directs motorcycles to the stop line with less interaction with other traffic	15
Provides space in front of and away from other traffic	7
Allows the user to pull away unimpeded	3
No explanation given	5
Uncertainly regarding use of advanced stop lines has been removed	1
Can chose between using the inside cycle lane or outside motorcycle feeder lane	1
Vehicles still encroach into the advanced stop line reservoir	1
Less conflict with turning vehicles	1
Easier to enter the advanced stop line reservoir	1
Confusing road layout	1
The blue markings provide a clear message to other road users	1
Improves riders conspicuity	1
It allows motorcycle traffic to flow more easily	1

The primary reason why motorcyclists thought that the junction was better since the shared use ASL and motorcycle filter lane had been installed was that it provided the rider with a clear route to the front of queuing traffic. The most commonly cited reason given by cyclists for considering the junction to be better was that the ASL allows the rider to be away from and in front of other traffic. This ranked second as a reason why motorcyclists thought the junction was now better. Both cyclists and motorcyclists considered that the ASL was an improvement because it allowed riders to pull away unimpeded.

Reading from the transcripts of the attitudinal surveys revealed some general views. Both cyclists and motorcyclists expressed a feeling of greater safety resulting from being able to get in front of traffic and be seen. Three cyclists and 3 motorcyclists added that other vehicles often encroach into the ASL. One cyclist and 2 motorcyclists expressed concern regarding the build up of grit and debris in the motorcycle filter lane. This is a hazard for riders as the grit and debris accumulates at the position where the motorcycle or cycle is turning. There is a risk of the front wheel slipping on the grit leading to loss of control. Four motorcyclists added that they would welcome being allowed access to the bus lanes whilst 2 cyclists mentioned that they should not.

**Photograph 6: Build up of grit and debris in the motorcycle filter lane****Key points: Attitudinal survey of cyclists and motorcyclists**

- Nearly two thirds (62%) of all riders in the 'before' survey supported motorcyclists being allowed to use ASLs, seven cyclists objected.
- In the 'before' survey, half of all motorcyclists mentioned that they do use ASLs. It is not known whether these riders are aware that they are technically not allowed to do so.
- In the 'before' surveys, both motorcyclists and cyclists mentioned that ASLs offer a head start over other traffic and it allows the rider to be away from and in front of traffic.
- Eighty three percent of motorcyclists 'after' considered that the junctions were better following the installation of the shared use ASL and motorcycle feeder lane.
- Two cyclists consider the junction to be worse following the installation of the shared use ASL and motorcycle feeder lane.

## 2.5 Attitudinal survey – pedestrians

### 2.5.1 Data collection

The ‘before’ and ‘after’ pedestrian attitudinal surveys took place at the following times and locations:-

‘Before’ Romford Road/Water Lane/Vicarage Road, 11<sup>th</sup> June 2003, 16:15 to 16:45 hours

‘Before’, Barking Road/Hermit Road/Beckton Road, 19<sup>th</sup> June 2003, 12:00 to 14:00 hours

‘After’, Barking Road/Hermit Road/Beckton Road, 17<sup>th</sup> November 2003, 10:00 to 12:00 hours

### 2.5.2 Analysis and results

**Table 21: ‘Before’ pedestrian survey, gender of respondents**

Gender	Number	Percent
Male	32	43%
Female	42	57%
TOTAL	74	100%

In all 74 pedestrians were surveyed the majority of which were female. Far more women were observed walking in the vicinity of the trial sites than men. Many of these women appeared to be making shopping trips.

**Table 22: ‘Before’ pedestrian survey, opinion of respondents**

Opinion	Number	Percent
Support	16	22%
Object	12	16%
Don’t mind	45	61%

When questioned whether they support allowing motorcycles to use ASLs the majority replied that they did not mind. More pedestrians supported the proposal, 22 per cent, as opposed to objected, 16 per cent.

**Table 23: 'Before' pedestrian survey, reasons for objections**

<b>Comment</b>	<b>Number</b>	<b>Percent</b>
Motorcycles would be too close to pedestrians	4	33%
Greater risk of collision with cyclists	4	33%
Motorcycles may be more likely to jump the lights	1	8%
Revving engines would be intimidating	1	8%
Greater risk of collision with pedestrians	1	8%
Motorcyclists are not safety conscious	1	8%

Where given, the most common reason for objecting to allowing motorcycles access to ASLs was that the motorcycles would be too close to pedestrians crossing the road in front of the queuing traffic. They appreciate the 5 metre gap the ASL provides between them and vehicular traffic and feel this would be lost if motorcycles were allowed to use them. Other pedestrians considered that there would be a greater risk of collision with cyclists.

**Table 24: 'Before' pedestrian survey, reasons for not minding**

<b>Comment</b>	<b>Number</b>	<b>Percent</b>
It would not make a lot of difference	10	33%
Vehicles already use them	6	20%
If it helps motorcyclists	3	10%
Motorcycles already use them	3	10%
So long as they don't jump the lights	1	3%
If it helps ease traffic congestion	1	3%
It would make motorcycling safer	1	3%
It wouldn't be any more dangerous	1	3%
It's a good idea	1	3%
It might be more noisy	1	3%
As a bicycle rider I don't mind sharing the space	1	3%
Bicycles can already use them	1	3%

A third of all pedestrians surveyed had no objection to motorcycles using ASLs with some mentioning that it would not make a lot of difference. This indicates that vehicles already encroach into ASLs, something that was confirmed by the video surveys. When a cyclist is using the ASL, vehicles are less likely to encroach in to it, when the ASL is vacant it is usually then used by all other vehicles.

**Table 25: ‘Before’ pedestrian survey, reasons for support**

Comment	Number	Percent
If it would help make motorcycling safer	6	46%
Because it would help me as a motorcyclist	3	23%
It would provide motorcyclists with somewhere to wait	3	23%
If it helps ease traffic congestion	1	8%

Of those that supported allowing motorcycles access to ASLs and provided a reason, the majority considered that it would make motorcycling safer. Three of these pedestrians made this comment mentioning that they also ride a motorcycle.

**Table 26: ‘After’ pedestrian survey, gender of respondents**

Gender	Number	Percent
Male	10	83%
Female	2	17%
TOTAL	12	100%

It was raining heavily on the day of the ‘after’ pedestrian survey, consequently people were unwilling to stop to be interviewed, hence the low number surveyed.

**Table 27: ‘After’ pedestrian survey, opinion of respondents**

Opinion	Number	Percent
Support	7	58%
Object	2	17%
Don’t mind	3	25%
TOTAL	12	100%

The majority of pedestrians in the 'after' situation supported motorcycles being allowed to use advanced stop lines. Amongst the reason given for the view were that it helps with the flow of traffic and improved road safety by providing the rider with more space. Others commented that the new motorcycle filter lane is beneficial as it stops motorcyclists weaving. One respondent did not agree with ASLs at all, though he commented that if they are provided, motorcycles may as well be allowed to use them.

Of those that objected, both raised concern that motorcycles could skid in the wet possibly colliding with a pedestrian.

**Key points: Pedestrian surveys**

- In the 'before' surveys the majority of pedestrians mentioned that they 'did not mind' whether or not motorcycles were given access to advanced stop lines.
- In the 'before' surveys 12 of the 74 interviewed objected to shared use ASLs. The reasons for these objections were that motorcyclists would be too close to pedestrians and that there may be conflict with cyclists.
- In the 'after' survey, the majority of those interviewed supported shared use ASLs, commenting it provides the rider with more space and improves the flow of traffic

### 3 Discussion

Road traffic growth is having a damaging impact on the environment, economy and public health. To address this, the Government and local Councils are encouraging and enabling people to make a modal shift away from the private car to more sustainable modes of transport such as by cycle.

Cyclists are amongst one of the most vulnerable modes of transport. The objective of ASLs is to improve rider safety by providing space at the front of queuing traffic. In this position they have a head start over other traffic reducing the likelihood of them being 'cut up' by turning vehicles. They are also in a more clearly visible position.

In addition, ASLs serve as a priority measure for cyclists, encouraging and enabling more people to cycle. They improve the attractiveness of cycling, for example, by separating the riders from the exhaust fumes of queuing traffic. They also give a clear message to car drivers that the needs of cyclists are being taken seriously, perhaps prompting prospective new riders to make a modal shift in favour of cycling.

Similar to cycles, motorcycles are also vulnerable modes of transport. Like cycles, they also provide their user with mobility providing access to jobs, education and healthcare. There is an ongoing debate as to the role of motorcycling in a wider, integrated and sustainable transport strategy. This is something being addressed by the Governments Advisory Group on Motorcycling. Motorcycles may have congestion benefits over the private car though actively promoting their use may raise road safety and environmental issues. Nevertheless, motorcycles are legitimate road users and the needs of the rider should be catered for, not least any measure that could reduce the number of motorcycle casualties. It needs to be determined whether allowing motorcycles shared use of advanced stop lines help achieve this without detriment to any other road user.

Local authorities were consulted and asked for their view upon allowing motorcycles to use ASLs. The majority of those that replied raised concerns regarding the impact this would have upon the safety and convenience of cyclists. However, these concerns appear to be subjective and not based on research.

The attitudinal surveys of cyclists and motorcyclist found overwhelming support amongst cyclists for the new motorcycle filter lane and shared use ASLs. There were objections from just two cyclists. It is noteworthy that motorcyclists cited the priority benefit of 'a head start over other traffic' above the safety benefit of 'away from and in front of traffic'. The reverse was the case for cyclists, motorcyclists value the priority benefits of ASLs, cyclists the safety benefits.

The research undertaken by Halcrow (2001) established that the majority of motorcycle riders take advantage of a motorcycle's size and manoeuvrability and take advantage of opportunities to actively make progress to the front of queuing traffic. This active riding behaviour was something verified by this study's video surveys. Even 'before' the shared use ASLs and motorcycle filter lanes had been installed, many motorcyclists would reach the front of queuing traffic primarily by overtaking/filtering forwards on the outside. Earlier research by TRL found that when riders are making this type of manoeuvre they often make errors in their riding style further putting themselves in a vulnerable situation.

The 'before' video surveys also confirmed that motorcycles use advanced stop lines even though they are not formally allowed to do so. This was an issue mentioned in the feedback from by local authorities, motorcyclists violate ASLs but budgetary constraints prevent their proper use from being enforced.

Prior to the study, it had been speculated whether shared use of ASLs would lead to overcrowding or conflict between cyclists and motorcyclists. This was not found to be the case. In the 'after' situation cyclists tended to filter forwards and then wait on the left hand side of the lane whereas motorcyclists using the new filter lane would ride then wait on the right hand side. The two user

groups were therefore separated. However, this could have led to conflict between right turning cyclists and left turning motorcyclists as they would have had to cross in front of each other. This did not arise at either of these junctions because the predominant movement was straight ahead. Very few riders were observed making either left or right hand turns.

The main issue did not concern conflict between cyclists and motorcyclists but arises from the junction configuration needed to provide a motorcycle filter lane. Motorcyclists approaching the junction using the motorcycle filter lane must 'swoop' to their left into the ASL reservoir. They can not proceed in a straight line and enter the reservoir. This is not possible because there is a pedestrian refuge in the centre of the carriageway, one that is directly in line with the new motorcycle filter lane. If the rider does not move to the left, the rider would either collide with the pedestrian refuge or stop before it becoming 'stranded'.

When a motorcyclist is using the new motorcycle filter lane and traffic is stationary, this manoeuvre is possible. However, motorcyclists using the new filter lane at the time that the signals change must join a line of moving vehicles before reaching the pedestrian refuge. A further problem is the build up of grit and debris at the point where the motorcyclist must turn. This presents a hazard as the front wheel may slide leading to loss of control of the motorcycle.

The shared use of ASLs in Newham do not appear to raise any road safety issues for cyclists nor detract from the convenience and attractiveness of using this mode. This is because at these sites there are few turning movements and hence minimal opportunity of conflict. However, there are issues for the safety of motorcyclists themselves arising from the geometry and configuration of the new junction.

In situations similar to Newham where there are few turning movements and relatively small numbers of cyclist and motorcyclist turning movements, shared use ASLs with new motorcycle filter lanes are acceptable providing the geometry of the junction allows this facility to be correctly designed and installed. In this situation the safety and convenience of motorcycling would be improved without impacting upon cyclists. The existing active riding style of filtering forwards on the outside of queuing traffic could then be properly catered for.

## 4 Recommendations

It is understood that a safety audit was undertaken prior to the installation of the shared use ASLs and motorcycle filter lane. This would have been based upon the drawings available, 'before' site visits and officer experience. Now, with the benefit of works being completed on site, it is recommended that a post completion safety audit is carried out at each arm of each junction to investigate further the issues raised in this report.

The main area of interest should be the ability of motorcyclists, using the new motorcycle filter lane, to rejoin the traffic flow, particularly when traffic is moving. Depending upon the outcome of this safety audit a decision could be made whether to make the shared use ASL and new motorcycle filter lane permanent on some or all arms of each junction. Should the post completion safety audit find motorcyclists using the new motorcycle filter lane trying to rejoin traffic is an area of concern, consideration should be given as to whether this facility could be modified to improve road safety. Options may include increasing the depth of the ASL or lengthening the new motorcycle filter lane taper in the ASL reservoir. Both of these modifications would increase the available opportunities for a motorcyclist to rejoin the traffic flow. There may however be implications for junction capacity.

For as long as the new motorcycle filter lane remains in situ, it should be swept regularly to stop the build up of grit and debris which can present a hazard to motorcycles as they turn.

An attitudinal survey of car drivers was not included in the original brief for this contract. This is something it is recommended that the Department consider as a motorcyclist rejoining traffic whether moving or stationary, 'cutting in', may give rise to new issues from a car drivers perspective.

The road markings particularly at site two are potentially confusing to road users. It is recommended that all obsolete markings are removed thereby making the new motorcycle filter lane and shared use ASL more prominent.

Further trials should be undertaken at sites where, turning movements are greater, the number of cyclists and motorcyclists are greater, and a new motorcycle filter lane can be installed directly into the ASL reservoir.

Though it was not raised in the attitudinal surveys, the Sounding Board considered the shared use ASL motorcycle filter lane sign could be improved. It is recommended that this is something the Council consider revisiting.

**NOTE:** The draft final report was submitted to the client, Department for Transport, in December 2003. A meeting was subsequently convened and attended by representatives from the London Borough of Newham, Department for Transport and TRL. This meeting discussed the TRL report and its implications for the future of the trials. The meeting agreed that the current geometry of the advanced stop lines and motorcycle feeder lanes is unsatisfactory given the islands in the centre of the carriageway on which the signals are mounted. It was agreed that the London Borough of Newham would investigate the feasibility of relocating these islands and/or removing the motorcycle filter lane. A copy of the minutes of this meeting are given in Appendix J.

## **5 Acknowledgements**

The TRL project team acknowledges the assistance and support of Keith Freeman, London Borough of Newham. The contribution to this project by all Sounding Board members namely Suku Phull, Alex Sulley, Tony Russell, Gary Macgowan, Craig Clarey-Clinch, Trevor Magner and Trevor Baird is also appreciated as is Adrian Clarey's assistance with the video analysis.

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