



# Advanced Stop Lines

Advanced Stop Lines are a low-cost but highly-effective way of helping cyclists at junctions, and are becoming increasingly common in Cambridge. We would like to see them at every junction in Cambridge.

This document contains some detailed observations on the design of advanced stop lines and makes a number of suggestions for improving some of the those have already been provided.

Cambridge Cycling Campaign  
P.O. Box 204, Cambridge CB4 3FN

[camcycle@pobox.co.uk](mailto:camcycle@pobox.co.uk)  
[www.ccdc.cam.ac.uk/camcycle](http://www.ccdc.cam.ac.uk/camcycle)

Document No. N9815  
July 1998



# Advanced Stop Lines

Advanced Stop Lines (ASLs) are a low-cost but highly-effective way of helping cyclists at junctions. They reallocate road space from motor traffic to cycles at precisely those locations where cycles have the greatest difficulty and where collisions are most likely to occur.



*Simple but effective:  
an advanced stop line  
on Coldham's Lane*

We would like to see ASLs at every junction in Cambridge. We believe that they are more effective in helping cyclists than a lot of more expensive measures. They are exactly the sort of cycle facility we would like to see the County Council spend its money on.

This document describes why advanced stop lines are so valuable to cyclists, and discusses a number of design issues which should be taken into consideration when they are planned. It also makes proposals for improving a number of existing ASLs in Cambridge.

## ***What is an Advanced Stop Line?***

Advanced stop lines are becoming increasingly common at signalled junctions in Cambridge. They are provided to allow cyclists to bypass the stationary lines of queuing traffic in order to position themselves more visibly at the head of the queue.

The provision of an advanced stop line creates a **reservoir area** in which cycles can wait in front of other traffic. A **cycle approach lane** is normally, but not always, provided to allow cycles to reach the reservoir when vehicles are queuing.

## ***How ASLs help Cyclists***

Advanced stop lines help cyclists in a number of ways:

- They encourage cyclists to position themselves in a position that is highly visible to following traffic. Cyclists waiting by the kerb are much less visible.
- They allow cyclists to move off first and thereby avoid being 'cut up' by turning traffic
- They allow cyclists to avoid having to breathe direct vehicle fumes, especially the smoke from badly-maintained diesels.
- They allow cyclists to carry out more safely and conveniently a manoeuvre that they would perform any-

*Cover:  
Marking out the  
advanced stop line  
on Castle Street*

way. At junctions where ASLs are not provided cyclists can frequently be seen waiting out in front of the waiting traffic, well past the stop line. Cyclists do this for all the reasons mentioned above, not merely to jump the queue.

- They allow cycles to bypass traffic queues safely and conveniently, which helps to encourage cycling as a mode of transport in line with local and national policy.

For these reasons **we would like to see advanced stop lines introduced at every signalled junction in Cambridge.**

## Improving the Design of ASLs

The design of ASLs is well described in the government's Traffic Advisory Leaflets on this subject (references 2 and 3, see Appendix 3), and the County Council has been designing ASLs locally for several years. It is nearly ten years since the first ASL appeared in Cambridge, and since then they have become fairly common. We do believe, however, that some of the ASLs in Cambridge have been more successful than others and with this experience in mind we would like to make a number of observations on their detailed design.



*Red surfacing would make this advanced stop line even better: Newmarket Road*

### ***Red Surfacing is essential***

Applying a red surface to the reservoir and approach lane has a noticeable effect on the proportion of motorists who respect the advanced stop line.

We believe that red surfacing is essential and that it should be standard practice at all new ASLs in Cambridge. In addition, all the existing ASLs that do not already have a red surface should be given one.

Only a minority of ASLs in Cambridge do not have a red surfacing, and these are listed in Appendix 2.

The red surfacing should always be reapplied after a junction is resurfaced or patched. This is not always the case.

### ***Approach Lanes are essential***

In recent months, advanced stop lines have been provided at a number of junctions in Cambridge without any approach lanes, for example at the Robin Hood (Cherry Hinton Road/Fulbourn Road/High Street/Queen Edith's Way) junction.



*ASL without approach lane.  
This cyclist can only use it  
because there is no traffic:  
Fulbourn Road*

We think this is a very poor arrangement. To provide an advanced stop line and reservoir without providing an approach lane is, we believe, pointless, because cycles are unable to reach the reservoir and use it.

At its worst, the provision of an ASL without an approach lane encourages cyclists to pass vehicles on the left when there is insufficient room to do so safely. This can be dangerous, particularly when the vehicle being overtaken is very long, and we would not like to encourage it.

We have also observed that motorists, seeing that the reservoir is rarely used, tend to respect it less. This is especially noticeable at the Robin Hood junction.

If the road is wide enough for a cycle approach lane then one should be provided. An approach lane does not have to be as wide as a normal cycle lane because its purpose is to prevent queuing blocking the path of cycles, not to protect cycles from moving traffic. A width of 1m is too narrow for a normal cycle lane but can be adequate for an approach lane. Nevertheless, where sufficient road space is available, full-width cycle lanes should be provided, 1.5m minimum and ideally 2.0m.

If there really is no room for even a narrow approach lane then we would question whether the provision of an ASL is appropriate. Providing an ASL in such cases does though have a certain merit in being a 'political' statement that the road is for cycles as well as motor vehicles.

Appendix 2 contains a list of all the ASLs in Cambridge that do not have approach lanes. We believe all these should be given approach lanes.



*ASL with approach lane:  
Devonshire Road.*

### ***Approach Lanes must be wide and long enough***

Where possible, the approach lane should be 1.5m wide and ideally 2.0m wide. However, a substandard lane width of 1m is much better than providing no approach lane at all.

The approach lane should be at least two car lengths long. Very short approach lanes are of little value.

### ***The Main Traffic Lane should not be too wide***

An side-effect of providing cycle approach lanes is some-



*This cycle approach lane is too narrow compared with the width of the adjacent traffic lane:  
Northampton Street*

times to reduce the number of lanes of normal traffic from two to one. Examples of this include the St Barnabas Road and Gwydir Street approaches to Mill Road. This is often desirable, because in addition to providing more road width for cyclists the single lane of traffic simplifies the traffic flow through the junction and reduces conflict with cyclists.

In some cases, however, the width of the remaining carriageway is sufficiently wide to tempt a second line of vehicles to form even if there is no such lane marked. When this hap-

pens the left-most lane of motor traffic often encroaches into the cycle approach lane. A common example of this occurs at the Northampton Street approach to the signals at Bridge Street, where a second lane of motor traffic sometimes forms. It is also sometimes observed at the Gonville Place approach to the signals at Parkside, where a third lane of motor traffic sometimes forms.

This problem can be reduced by making the motor traffic lane sufficiently narrow, and the cycle lane sufficiently wide, to discourage an additional lane of motor traffic from forming.

### ***Problems for Right-Turners***



*Cyclists turning right would benefit from a second cycle approach lane:  
Gonville Place*

If there is a separate traffic lane for right-turning motor traffic, and the signals change to green whilst a right-turning cyclist is still using the cycle approach lane, then that cyclist becomes stuck in the wrong position on the road for turning right.

A popular Dutch solution to this problem is to provide a second approach lane to the left of the right-turn lane.

One location where such an arrangement would be valuable would be on the Gonville Place approach to Mill Road. Here there is already a full-width ASL with an approach lane on the left. A great deal of cycle traffic, however, turns right here into Mill Road. An additional cycle approach lane, to the left of the right-turn lane, would help cycles performing this manoeuvre. There would appear to be ample road space to do this.

### ***The Reservoir should be full-width***

In a number of locations in Cambridge the reservoir area does not extend the full width of the main traffic lane. For



*A full-width reservoir would allow right-turning cyclists to wait in the correct position:  
Castle Street*

example, at Chesterton Lane approaching Magdalene Street the reservoir is no wider than the cycle approach lane. On the Castle Street approach to the same junction the reservoir only extends about two-thirds of the way across the lane.

This causes problems for right-turning cycles because they cannot legally position themselves in front of the traffic in the correct road position for their intended manoeuvre. Worse, it may encourage cyclists intending to turn right to wait on the left-hand side of the road,

which is potentially dangerous. We therefore believe that reservoir areas should always span the full width of the left-most traffic lane and should normally span any other lanes as well.

Where full-width reservoirs have been provided they work perfectly well. Cyclists are quite capable of choosing the correct position to wait. Observation of Gonville Place, where the reservoir spans two traffic lanes, shows that left-turning cyclists wait in front of the left lane and right-turning cyclists wait in front of the right lane.

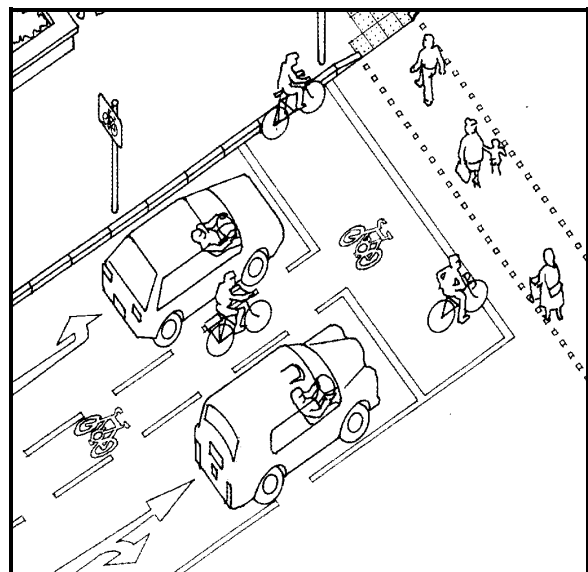
**Left-turn-only Lanes**

If the left traffic lane is for left turns only then the cycle approach lane should be on its right (as at East Road/Mill Road) not to its left (as at Milton Road/King's Hedges Road).



*Above: This approach lane places straight-ahead cyclists in the wrong position on the road:  
Milton Road*

*Below: An approach lane on the right of the left-turn lane is better*





Ideally, two cycle approach lanes should be provided, one to the left of the left-turn-only lane and the other to the left of the straight-ahead lane. If only one approach lane is provided then we would prefer to see just the latter.

The Cambridge Cycling Campaign's position paper "Left Turn Lanes" (reference 4) discusses this in more detail.

*Two cycle approach lanes to cater for different cycle movements:*

*Groningen, Netherlands*

### **Possible Future Developments**

We would also like to see further experiments with the design of advanced stop lines.

### **Eye-Level Signals**

At junctions where there is no opposing signal, such as Newmarket Road westbound at the entrance to B&Q, cyclists have to use the signal by the stop line. Since cyclists tend to wait closer to the stop line than a car driver does (because the driver sits a metre or two behind the front of their vehicle) they have greater difficulty seeing the signal. We would therefore like to see an experiment with an additional green cycle signal at eye level.



*Eye-level signals would be easier*

### **A "Head Start" for Cycles**

Such a signal could be used to provide cyclists with a 'head start' by changing to green a few seconds before the main signals. This would help reduce conflict between left-turning motorists and straight-ahead cyclists.

By giving an advance indication that the traffic was about to start moving, this would also help cyclists (especially right-turners) avoid getting caught in an inappropriate position (such as in the approach lane) when the traffic starts to move.



*Eye-level signals could be used to give cyclists a 'head start'*

### **An "All Green" Phase for Cycles**

If such additional cycle signals were provided on all approaches to a junction they could be used to provide an 'all green' phase for cycles. At such an 'all green' phase, cycles from all directions would proceed at the same time, without the danger of conflicting with motor vehicles. This is common practice in the Netherlands. It has the particular benefit of helping cyclists turn right, which remains a difficult manoeuvre even with an ASL.

## Appendix 1: Advanced Stop Lines needed

We would like to see advanced stop lines at all signalled junctions in Cambridge. We believe, however, that the following junctions should be provided with ASLs as a matter of priority:

- Mill Road approaching Gonville Place/East Road
- Hills Road/Lensfield Road/Regent Street/Gonville Place (all four approaches, but especially northbound and southbound)
- Parkside approaching East Road/Gonville Place
- Newmarket Road/Coldham's Lane

This is a very busy junction with a lot of conflict between cycles and motor vehicles. ASLs are needed on all approaches, especially to help cycles on Newmarket Road eastbound turning right into Coldham's Lane and to help cycles travelling westbound go straight-ahead. ASLs would also be of value at the River Lane junction nearby.



*Above:  
Advanced stop line  
desperately needed:  
Newmarket Road/  
Coldham's Lane*

*Below:  
Approach lane already provided -  
just add the reservoir:  
Chesterton Lane*



- Chesterton Lane approaching Bridge Street/Castle Street

There is a forward stop line here but it is only about 1m wide and does not extends in front of the main traffic lane. This does not provide enough space for



the large number of cycles that use this junction. It also does not allow straight-ahead cycles to position themselves in front of the main traffic lane, clear of left-turning cycles. The reservoir for cycles should therefore be widened to extend the full width of the traffic lane.

- Newmarket Road approaching Ditton Lane
- Huntingdon Road approaching Victoria Road

In both these locations an ASL is needed at the end of the straight-ahead lane. An approach lane has already been provided.

- Elizabeth Way Roundabout (all approaches)

Since this roundabout is now completely controlled by traffic signals we would like to see advanced stop lines on all the approaches to the roundabout and on the roundabout itself.

An example of an ASL on the approach to a signalled roundabout can be seen in Bristol at the St James Barton Roundabout on the Inner Circuit Road. This is described in detail in reference 2.

## Appendix 2: Review of existing Advanced Stop Lines

### *Approach lanes needed*

The following ASLs have no cycle approach lanes. We believe this makes the ASL of much less value, and that approach lanes should be provided.

- Cherry Hinton Road/Cherry Hinton High Street/Fulbourn Road/Queen Edith's Way (all directions)
- Grantchester Street approaching Barton Road
- Mill Road (both directions) approaching Gwydir Street/St Barnabas Roads

This is the only junction of the three where we have any sympathy for the claim that the road is not wide enough. Even here, however, narrow approach lanes should be provided. Even if the approach lane was encroached by buses and lorries it would still be of value by encouraging queuing cars to wait further away from the kerb that they do at present. If there is really no space for approach lanes then the ASLs should be removed.



*Above:  
A huge reservoir, but no  
approach lane:  
Queen Edith's Way*

*Below:  
Approach lane needed:  
Mill Road*



### *Red surfacing needed*

The following ASLs have approach lanes but the absence of a red surfacing causes them to be respected less by motorists. We would therefore like to see both the approach lanes and reservoir areas at these junctions surfaced in red.

- Cherry Hinton Road approaching Hills Road
- Hills Road northbound approaching Cherry Hinton Road
- Newmarket Road approaching Stanley Road/B&Q entrance (both directions)
- Devonshire Road approaching Tenison Road



*Red surface needed:  
Hills Road*

This ASL did once have a red surface, but the red colour is now almost completely gone. In addition, part of the reservoir area has been patched with a black surface. Complete renewal is required.

- Tenison Road approaching Devonshire Road

As in Devonshire Road, the red colour here is almost completely gone and needs renewing.

- Mill Road (both directions) approaching Gwydir Street/St Barnabas Roads

The recent resurfacing of Mill Road has left both reservoir areas without a red surface. This needs reinstating.

### ***Other changes needed***

The following ASLs have approach lanes and red surfacing. Further changes, however, could be made to make them more effective.

- Milton Road northbound approaching King's Hedges Road/Green End Road

The cycle approach lane is to the left of the left-turn-only lane and therefore places straight-ahead cycles in the wrong position in the road. The approach lane should be moved to the right of the left-turn only lane and extended back to connect with the existing cycle lane on Milton Road. If there is insufficient road width for two cycle approach lanes (one for left-turning cycles and one for straight-ahead cycles) then the priority should be to provide one for straight-ahead cycles.

- Northampton Street approaching Castle Street/Magdalen Street

The cycle approach lane is narrow whilst the main traffic lane is very wide. This encourages a second lane of motor traffic to form, blocking the cycle lane. The cycle lane should be widened and the motor traf-

fic lane reduced to a normal width to discourage this.

- Newmarket Road approaching Stanley Road/B&Q entrance (eastbound)

The approach lane is short and starts with zero width, getting wider towards the junction. This is completely unnecessary: there is plenty of room here for a standard approach lane of constant width which extends back to the advisory cycle lane further back.

- Devonshire Road approaching Tenison Road



*Most cycles turn right,  
most cars turn left.  
Should the approach  
lane be moved?  
Devonshire Road*

Most cycle traffic here turns right, whilst most motor traffic turns left. For this reason it would be better for the cycle approach lane to be on the right-hand side of the main traffic lane rather than on the left. Since cyclists coming off the cycle bridge need to be able to get into this lane we would like to see a continuous lane off the cycle bridge into this right-turn cycle lane, with motorists having to give way. This is a narrow residential street with a speed hump just before the bridge exit so it is not unreasonable to expect motorists to slow down and give way.

- Castle Street approaching Chesterton Lane/  
Northampton Street

There is still a lot of conflict here between left-turning traffic and straight-ahead cycles. A separate advance signal as described above, that allowed cyclists to clear the junction before other traffic started moving, would avoid this.

It would also be better if the reservoir was full-width.

### ***Advanced Stop Lines that work well***

The following advanced stop lines have cycle approach lanes, red surfacing, and generally work well:

- Coldham's Lane approaching Cherry Hinton High Street
- East Road approaching Mill Road/Parkside
- Magdalene Street approaching Northampton Street/  
Chesterton Lane.

This is a good example of how even a narrow approach lane can be of considerable value. It would however be better if the reservoir was full-width.

- Gwydir Street and St Barnabas Road approaching Mill Road



*Above:  
Money well spent:  
Gwydir Street*

*Below:  
Money well spent:  
East Road*



### Appendix 3: References

- 1 *Cycle-friendly Infrastructure: Guidelines for Planning and Design*, Section 16.1. CTC and others, 1996. Available from the CTC.
- 2 *Advanced Stop Lines for Cyclists*, DETR Traffic Advisory Leaflet 08/93. Available on the internet at [www.sac.co.uk/cw/taljob/cycle/08\\_93/index.htm](http://www.sac.co.uk/cw/taljob/cycle/08_93/index.htm)
- 3 *Further Development of Advanced Stop Lines*, DETR Traffic Advisory Leaflet 05/96. Available at [www.sac.co.uk/cw/taljob/cycle/05\\_96/index.htm](http://www.sac.co.uk/cw/taljob/cycle/05_96/index.htm)
- 4 *Left-Turn-Only Lanes*, a position paper from the Cambridge Cycling Campaign, June 1998. Available from the campaign (please quote document reference N9814).