



Cambridge
CYCLING
Campaign

Left Turn Lanes

Left-turn-only lanes are very common in Cambridge but cause real difficulties for cyclists.

This document describes those problems and suggests how they can be minimised by suitable detailed design.

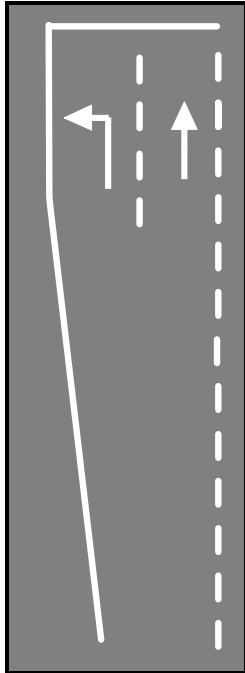
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Left-turn only lanes



A typical left-turn-only lane. Where are cyclists supposed to go?



A cyclist rides in the middle of the road to avoid a left-turn-only lane:

*Trumpington Road/
Brooklands Avenue*

*Cover:
Hills Road/
Station Road*

A left-turn-only lane is a traffic lane on the approach to a junction that is reserved for traffic intending to turn left at the junction. Traffic wishing to go straight ahead must use the lane to its right.

A problem for Cyclists

There are two main problems with left-turn only lanes:

- They force cyclists to ride in a more vulnerable position on the road.
- They cause conflict between cyclists going straight ahead and motorists turning left.

Cyclists wishing to go straight ahead are forced to ride in an exposed and vulnerable position in the middle of the carriageway, with traffic passing on both sides. Frequently traffic will change lanes both in front of and behind the cyclist, adding to the feeling of vulnerability. Whether the cyclist is actually in danger or not, it is unpleasant and feels unsafe. The longer the left-turn lane, the worse it is for cyclists.

Many cyclists find it very difficult to maintain a correct position in the straight-ahead lane. Their exposed position in the middle of the road makes them so self-conscious about the traffic behind them that they feel forced to ride along the white line that marks the division between the left-turn and straight-ahead lane. Unfortunately this places them very close to left-turning traffic that is overtaking them on the left, whilst encouraging straight-ahead traffic to overtake them on the right even if the traffic lanes are not really wide enough.

In many cases the road layout at the start of the left-turn lane exacerbates the situation. This is where the kerbside lane turns into the left-turn lane and cyclists have to move over to the right to join the straight-ahead lane. This is a difficult manoeuvre to perform, especially in busy or fast-moving traffic.

Cyclists are frequently faced with a dilemma over when to move over to the straight-ahead lane. Do they move across as early as possible, which is an easier manoeuvre to perform but which increases the length of time they have to spend in an exposed position? Or do they move over as late as possible, reducing the length of time spent in an exposed position but forcing them to pull out into the

path of following vehicles at a point where they do not expect it.

What can be done?

There are several possible solutions.

Improve the road layout

Modest changes to the road layout can greatly improve conditions for cyclists.



Still the best left-turn-only lane in Cambridge: East Road/Mill Road

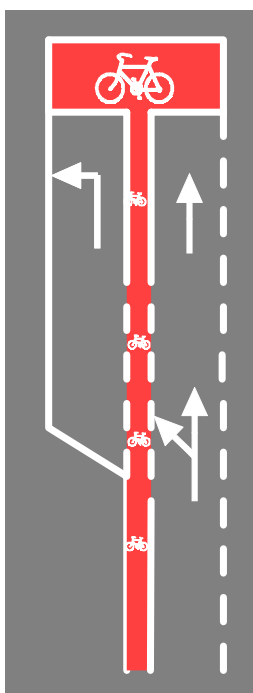
The key to improving conditions for cyclists is to provide straight-ahead cyclists with a cycle lane that starts beside the kerb before the start of the left-turn lane and leads right up to the junction. The cycle lane should be continuous, so that cyclists do not have to move over to the right and cross a traffic lane to get into the correct position. Instead it should be the left-turning traffic that has to change lane and cross the cycle lane in order to turn left.

The aim here is not only to make cyclists feel safer: it is also to improve visibility. It is much easier for motorists moving over to the left to see cyclists ahead of them than it is for cyclists moving over to the right to see motorists behind them.

We would advocate the arrangement at East Road/Mill Road as an excellent example of these principles and as an exemplary demonstration of how to alleviate the impact of a left-turn-only lane.

The key features are:

- Reduce the length of the left-turn only lane so that cyclists have to ride in an exposed position for as short a time as possible. The left-turn only lane should be long enough, however, for motor vehicles to move across without having to cut across close to cyclists.
- Modify the road layout at the start of the left-turn-only lane so that the single traffic lane becomes the straight-ahead lane, and the left-turn lane appears as a separate lane on the left.
- Provide a continuous cycle lane for straight-ahead cyclists from the single-lane section of the road right up to the stop line at the junction, and surface it in red.



The ideal layout

Left-turning traffic will need to cross this lane to get into the left-turn lane, so at least part of it will need to be advisory.

- Provide an advanced stop line at the end of the straight-ahead traffic lane.

In addition to offering the normal benefits of an advanced stop line (such as better visibility to following traffic), it allows cyclists to avoid having to wait in the cycle lane whilst left-turning traffic passes close by them on their left, which is a problem at the Newmarket Road/Ditton Lane junction.

In several locations in Cambridge an advisory cycle lane has been provided to assist cycles going straight ahead. Examples are Newmarket Road/Ditton Lane and Huntingdon Road/Victoria Road. Unfortunately these cycle lanes start in the middle of the road rather than at the kerbside, so cyclists still have to cross a lane of traffic to get to them, and they do not lead to advanced stop boxes at the junctions themselves.

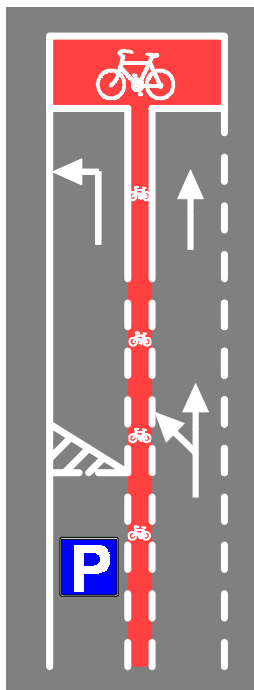
Other locations where we would like to see an improved layout include Milton Road/King's Hedges Road and Cherry Hinton Road/Cherry Hinton High Street. There are many more locations listed in the appendix.

Allow cyclists to go straight on from the left

Another way of addressing the problems of left-turn-only lanes is to reorganise the signal phasing at the junction to allow cyclists to go straight ahead from the left-hand side of the road. This has been implemented at two junctions in Cambridge: Hills Road/Brooklands Avenue and Hills Road/Cherry Hinton Road. At these junctions a segregated cycle lane has been provided on the left hand-side of the road with its own phase of the signals.

This has the advantage of avoiding the need for cyclists to ride in the centre of the road, and many cyclists feel much more comfortable with this arrangement. Nevertheless it has a number of disadvantages:

- It is expensive, though less so if implemented when the signals are first installed.
- Cyclists going straight ahead usually get less 'green time' than straight-ahead cars, leading to increased delays for cyclists. Because of this, some cyclists ignore the special cycle lane and ride with the motor traffic lanes, exposing them to the problems listed above.



An alternative arrangement for when parking is permitted close to the junction

At the Hills Road/Cherry Hinton junction, for example, the amount of green time devoted to cyclists is so small that at peak periods it is insufficient to allow all the queuing cyclists to clear the junction.

- Cyclists intending to turn left are forced to wait whilst motor traffic turns left, also leading to increased delays. Again, this causes some cyclists to ignore the cycle lane and ride with the motor traffic instead.

This latter problem has been successfully avoided at the Hills Road/Cherry Hinton Road junction by the provision of a separate left-turn lane for cyclists that allows them to avoid the signals entirely. This works well.



*Separate signals allow cycles to go straight ahead from the left:
Hills Road/
Cherry Hinton Road*

- Cycles get a green signal at the same time as straight-ahead motor vehicles. These two streams of traffic converge at the far side of the junction at what is usually a point with restricted width. A cycle lane should always be provided at the far side of the junction, and the widths of both this cycle lane and the main traffic lane should be great enough to allow these two traffic streams to stay apart. The junction should also be aligned so that cyclists

do not have to move over to the right as they cross it (this is a problem at Hills Road/Cherry Hinton Road)

Our general view on this type of segregated facility is that it can be valuable at junctions where traffic flow and vehicle speeds are both high. However, because it nearly always causes increased delays for cyclists we would prefer to solve such problems by altering the road layout to allow cyclists to ride with the rest of the traffic.

Remove the lane completely

The best solution may be not to have a left-turn-only lane at all.

There are several junctions where a left-turn-only lane has been provided but where it makes very little difference to the capacity of the junction because the proportion of traffic

that turns left is small. In such cases we believe that the removal of the left-turn-only lane is easily justified.

Here are two examples of left-turn lanes that appear to serve no real purpose and which should be removed:

- Madingley Road eastbound approach to Park and Ride site



*This left-turn-only lane is little-used and should be removed:
Newmarket Road/
Park and Ride site*

- Newmarket Road eastbound approach to Park and Ride site

There are other junctions where removal of the left-turn-only lane will cause a reduction in the junction capacity. In such cases we believe that removal of the lane should nevertheless be considered because of the difficulty and danger it causes for cyclists.

Note that removing the left-turn-only lane does not necessarily mean reducing the number of lanes on the road. It simply means allowing straight-ahead traffic to use the left-most lane and adjusting the junction layout, and any signals, accordingly.

Appendix: Left-turn-only lanes in Cambridge

Left-turn lanes with no provision for cyclists

This section lists most of the left-turn-only lanes in Cambridge that have no provision for on-road cyclists going straight ahead.

All these junctions should be modified to cater for the needs of cyclists, as described in the main part of this document.

- Madingley Road eastbound, junction with Park and Ride site. There is a shared-use footway here but this is of a poor standard.
- Milton Road northbound, junction with Gilbert Road
- Milton Road northbound, junction with Arbury Road
- Milton Road northbound, junction with King's Hedges Road. A cycle lane has been provided for left-turning cyclists but this is of no help to straight-ahead cyclists because it places them in the wrong position on the



*Milton Road/
Gilbert Road*



*Milton Road/
King's Hedges Road*



*Jesus Lane/
Victoria Avenue*



*Newmarket Road/
Coldham's Lane*

road.

- Gonville Place westbound, junction with Hills Road
- Jesus Lane eastbound, approach to Victoria Avenue roundabout
- Elizabeth Way southbound, approach to East Road roundabout
- Newmarket Road westbound, junction with Coldham's Lane
- Newmarket Road eastbound, junction with Park and Ride site. There is a shared-use footway here but it is of a poor standard.
- Newmarket Road westbound, approach to Airport Way roundabout
- Hills Road southbound, junction with Station Road
- Station Road, approaching junction with Hills Road
- Cherry Hinton Road eastbound, approach to Perne



*Trumpington Road/
Brooklands Avenue*



*Cherry Hinton Road/
High Street*



*Hills Road/
Station Road*



*Station Road/
Hills Road*

Road roundabout

- Perne Road southbound, approach to Cherry Hinton Road roundabout
- Mowbray Road northbound, approach to Cherry Hinton Road roundabout
- Cherry Hinton Road, junction with Cherry Hinton High Street
- Babraham Road northbound, approach to Addenbrooke's roundabout
- Trumpington Street southbound, approach to Lensfield Road mini-roundabout
- Trumpington Road northbound, approach to Fen Causeway mini-roundabout
- Trumpington Road southbound, junction with Brooklands Avenue
- Trumpington Road southbound, junction with Long Road

Left-turn-only lanes with partial provision

The following left-turn-only lanes have some provision for cyclists but further changes are needed to make them fully satisfactory:

- Milton Road southbound, junction with Green End Road



*Shelford Road/
Trumpington High
Street:
The cycle lane
should be made
continuous and red*

This has an advisory cycle lane to the right of the left-turn-only lane, but it would benefit extending back across the pelican crossing to link up with the cycle lane further back. It would also benefit from an advanced stop line.

- Shelford Road northbound, junction with Trumpington Road.

Here the left-turn-only lane appears off to the left, and there is a cycle lane on the approach to the junction and a separate disconnected cycle lane in the straight ahead lane.

We would like the two sections of cycle lane to be linked up and surfaced in red and an advanced stop line installed at the junction.

At the following three junctions a short disconnected length of advisory cycle lane has been provided in the middle of the road. This is of some help to cyclists but they still have to pull out into the traffic and cross a traffic lane to reach it.

We would like to see the traffic lanes realigned, as described on pages 3 and 4, to provide a continuous cycle lane from the left side of the road right up to the junction.

- Milton Road southbound, junction with Cowley Road
- Newmarket Road eastbound, junction with Ditton Lane
- Huntingdon Road southbound, junction with Victoria Road.

The photographs below show a suggested modification to the layout at this junction.



*Huntingdon Road/
Victoria Road:
Cyclists currently
have to move out
into the traffic.*



*Huntingdon Road/
Victoria Road:
An artist's impression
of a continuous cycle
lane up to the junction.*

Left-turn-only lanes with good provision

The following is the only junction approach in Cambridge with a left-turn-only lane which offers straight-ahead cyclists a continuous, straight, cycle lane leading to an advanced stop line. This junction works well and in general no further changes are required.

- East Road westbound, junction with Mill Road

The following junctions provide separate signals for straight-ahead cyclists. These generally work well, the main problem here being insufficient green time for cycles.

- Hills Road northbound, junction with Brooklands Avenue
- Hills Road southbound, junction with Cherry Hinton Road.

Signposting could be improved here: there is no advance warning of the cycle lane to inform straight-ahead cyclists that they can keep to the left.