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Milton Road Consultation Response  
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# Cambridge Cycling Campaign – Milton Road Consultation Response

## Executive Summary

Cambridge Cycling Campaign does not support either of the two options, 'Do Maximum' or 'Do Something'. Our ideal way forward would be for there to be serious restrictions on traffic volumes—perhaps by way of a congestion charge or other demand management measures. With such provision, there would be no need for bus lanes at all and it would be easy to make really good provision for pedestrians and cyclists. For the present, however, we have sought to work with and improve on the idea of bus priority. We do consider some elements of the proposals to be interesting but would like to explicitly put forward an alternative proposal. We have called our alternative proposal the 'Do Sustainable' option. It provides bus priority, fully segregated cycleways, protected bicycle junctions, and excellent pedestrian facilities whilst retaining an avenue of trees and fits this mostly residential street and route into Cambridge.

## Do Sustainable Principles

The 'Do Sustainable' proposal combines five basic concepts into a coherent strategy that would increase the capacity of Milton Road to move people as well as increasing safety, while retaining the green aspects of the Milton Road neighbourhood such as trees and verges.

The five basic concepts are:

- fully segregated uni-directional cycleways in each direction
- central tidal bus lane down the centre of the roadway
- fully protected bicycle junctions
- closing conflicting movements at signalised junctions where possible
- closing side roads to remove all rat-runs.

## Segregated Cycleways

The 'Do Maximum' and 'Do Something' proposals suggested a cycleway that was just 2 metres wide. This is below the current width of cycleways being provided within Cambridge along main roads. Huntingdon Road and Hills Road are providing at least 2.3m wide cycleways where possible and it is deeply troubling that a major cycle route such as Milton Road would reduce this to less than 2 metres (after kerbs and other obstructions). This implies that 'Do Maximum' and 'Do Something' proposals would only allow a single line of bicycle traffic, significantly reducing the capacity of the road and encouraging faster cyclists to move into the bus lane (potentially delaying buses and with increased accident risk). We therefore suggest that allocating an additional 0.5m of space for slightly wider cycleways would itself be a bus-priority measure.

The 'Do Sustainable' proposal will provide uni-directional cycleways that are 2.5m wide, allowing cyclists to overtake and have sufficient space that their movements will not impact on pedestrian or other traffic nearby.

## Central Tidal Bus Lane

In proposing the concept of a central tidal bus lane, two important facts were considered:

- the majority of the buses travelling along the corridor are express buses that do not stop, and
- the majority of the traffic congestion is inbound in the morning peak, and outbound in the evening peak.

Even though the report documents 51 buses an hour that will use Milton Road, a significant minority of these buses will only traverse Milton Road between Gilbert Road and Mitcham's Corner or from King's Hedges Road to the north. The remaining buses comprise approximately 35 express buses that don't stop, one express bus that does stop at a single bus stop, and 3 local buses (route 9) that stop at every bus stop. When the bus lanes are on the near-side of the road and the local buses stop at bus stops and pick up and drop off passengers, each passenger that the bus deals with will delay the bus and potentially any express buses immediately following it.

Neither of the 'Do Maximum' or 'Do Something' proposals includes elements to speed up the processing of bus passengers. We have therefore assumed that the manual payment of fares will persist and an average of 10 seconds per passenger will be required to take payment and issue a ticket, although we fail to understand why this should still be the case

in the 21<sup>st</sup> Century. If there is an average of three paying passengers at each bus stop, this will require approximately 30 seconds per bus stop. There are currently 7 bus stops between the Science Park and Mitcham's Corner and therefore 3.5 minutes will be required by the local bus to pick up passengers. With a near-side bus lane, any bus behind the local service will also be delayed by a similar length of time. Given that the 36 express buses an hour will be travelling along this corridor every 1 minute and 40 seconds on average, by the time the local bus has reached the end of the corridor, on average two or three express buses will be delayed behind it.

The 'Do Sustainable' proposal solves the above problem by building a tidal bus lane. The tidal bus lane is placed along the centre of the roadway, between the general vehicle lanes. Bus stops will still be provided at the edge of the roadway so the local bus will just move out of the central lane to stop in the general vehicle lane. All express buses in the tidal direction would quickly overtake the stopped local bus and not be delayed. This would therefore provide significant bus priority and faster journeys for the express buses along Milton Road than either of the other two proposals.

### Protected Bicycle Junctions

The 'Do Maximum' and 'Do Something' proposals include "words" that suggest that the junction will include bicycle infrastructure. Examples of such "words" include advanced stop lines, early cycle starts at some junctions, and cycle lane bypasses. Unfortunately, such infrastructure would both delay car and bus traffic and also make the junction more dangerous for people cycling. We consider that the junctions must be designed with three movement types in mind: people walking, people riding bicycles, and people in motorised vehicles. Each of these movement types should be given separate space and time to move through the junction.

The 'Do Sustainable' proposal therefore includes protected junctions at Gilbert Road, Elizabeth Way, Arbury Road, and Kings Hedges Road.

We understand the phrase 'protected junction' to mean that bicycles are kept separate from the main flow of traffic, segregated from the main traffic junction using barriers, which may be planters with trees or shrubs within them, and provided with separate traffic signals to allow their safe movement around the junction. There are no advanced stop boxes, no two-stage right turns, and no moving of bicycles at the same time as conflicting motorised traffic.

### Closing Conflicting Movements at Junctions

The 'Do Maximum' and 'Do Something' proposals include suggestions for restricting some movements, ostensibly to increase the speed of bus traffic. However, whilst we support this as a principle, we do not consider the proposed restrictions to be either sufficient or in the right places. For example, removing the ability to turn right from Milton Road inbound into Gilbert Road would have two significant consequences: forcing traffic that wants to undertake that manoeuvre to use Ascham Road and Gurney Way to access Gilbert Road, roads already blighted with rat-running traffic; and pushing more traffic onto Victoria Avenue and/or Chesterton Road, neither of which have capacity or sufficient width to provide high-quality segregated bicycle facilities along their whole length.

The 'Do Sustainable' proposal would restrict movements from Milton Road outbound into Elizabeth Way, to increase the capacity of that junction. This proposal would not have any restrictions for movements into and out of Gilbert Road, or Kings Hedges Road.

## Closing Side Roads to Rat-Runs

As highlighted above, a number of streets are already used as rat-runs in a way that is detrimental for the local residents. Examples include Ascham Road / Gurney Way, Hurst Park Avenue / Orchard Avenue / Leys Avenue / Leys Road, Ramsden Square, Kendal Way, and Lovell Road. Neither the 'Do Maximum' nor the 'Do Something' option recognises these detrimental effects.

The 'Do Sustainable' proposal will therefore remove all rat-running to and from Milton Road and other roads such as Kings Hedges Road / Arbury Road / Gilbert Road.

## Development of the Do Sustainable Proposal

The Draft Options Report identifies that the majority of Milton Road is approximately 20 metres wide or a small amount of land could be purchased to achieve such a width. We support the acquisition of land to create a minimum of a 20-metre-wide right of way that can be allocated where necessary.

### Pedestrian Traffic

From the 20-metre wide right of way, a minimum of four metres, two metres on each edge, should be allocated for pedestrian traffic. This leaves 16 metres for other modes of transport.

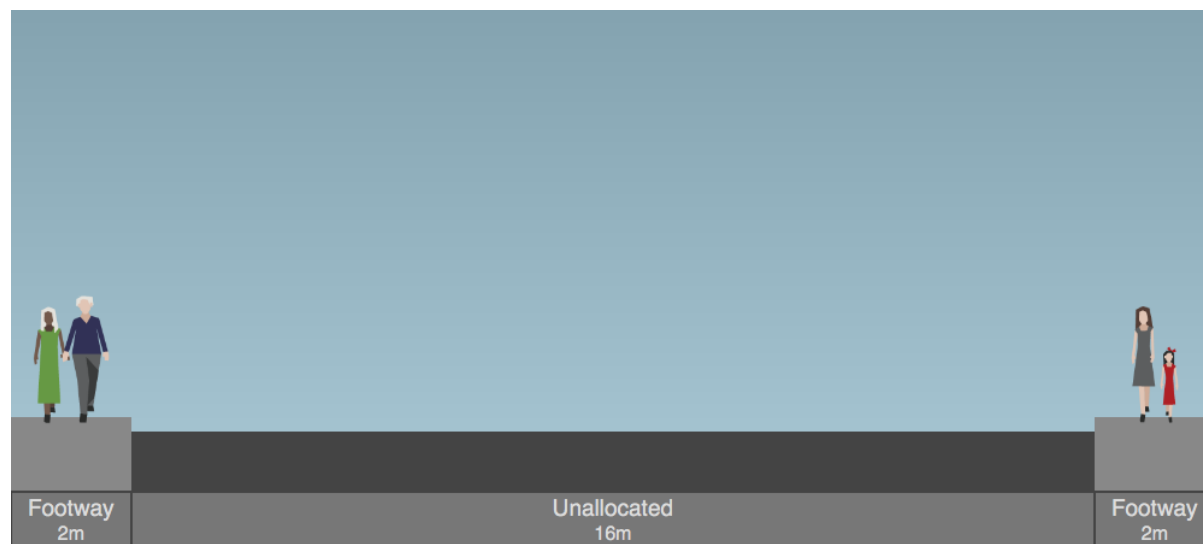


Figure 1: Space allocated for pedestrians

## Bicycle Traffic

As stated above, we consider that segregated cycle lanes that are 2.5 metres wide would provide sufficient space to encourage people to stop driving and start to ride bicycles. This leaves 11 metres of space for segregation of bicycles from relatively high-speed motorised vehicles as well as space for those vehicles.

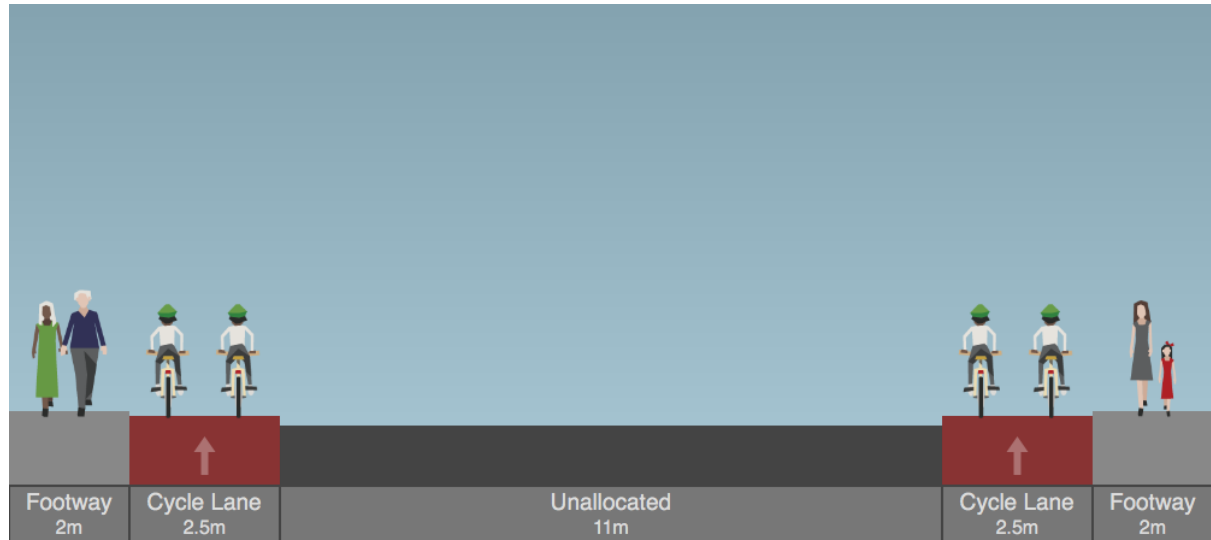


Figure 2: Space allocated for bicycles

## Without a Bus Lane

The 'Do Sustainable' proposal does not need a tidal bus lane in all locations and therefore two general purpose traffic lanes of 3.2 metres can be placed in the middle of the road, leaving 4.6 metres of space for segregation.

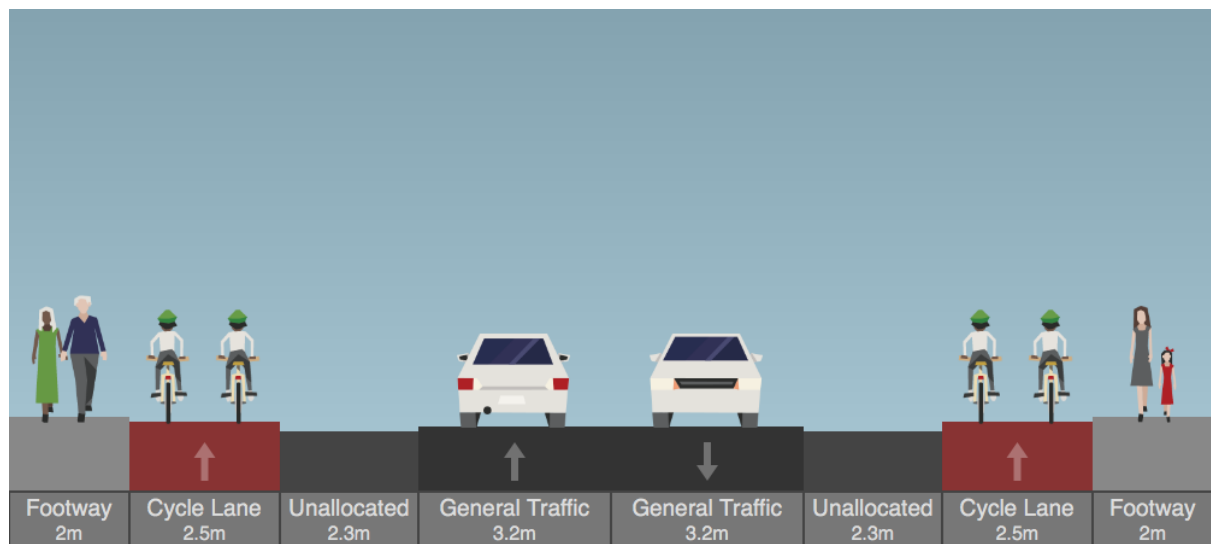


Figure 3: Space allocated for general traffic lanes

## Without a Bus Lane and Segregated Cycleways

The 'Do Sustainable' proposal allocates the unallocated space to green space such as hedges, trees, or grass.

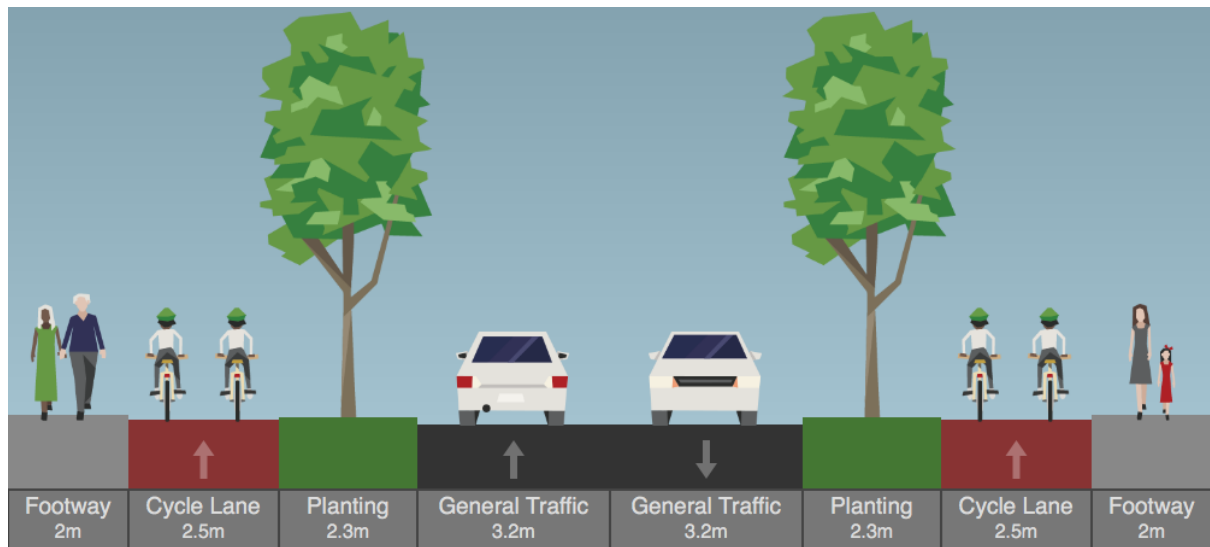


Figure 4: Without a bus lane and segregated cycleways

## Bus Lane

The 'Do Sustainable' proposal also allows for a single tidal bus lane of 3 metres down the centre of the right of way. This leaves approximately 4 metres on either side of the bus lane to provide a general vehicle lane and segregation.

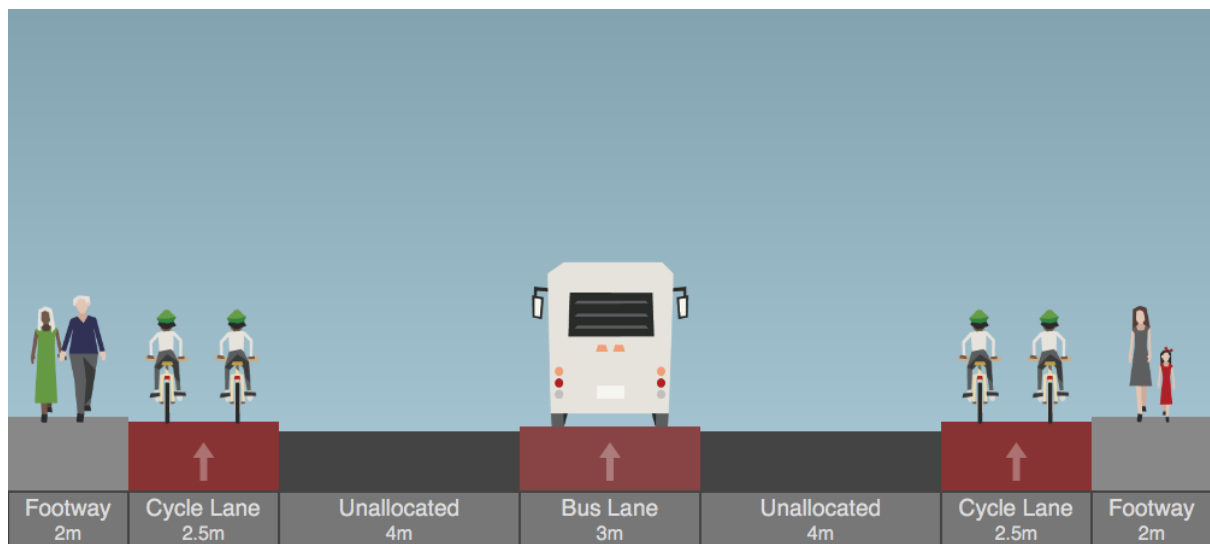


Figure 5: Space allocated for tidal bus lane

## General Vehicle Lanes with a Tidal Bus Lane

The standard width of general vehicles lanes along similar corridors in Cambridge is 3 metres, and therefore 3 metres is provided here.

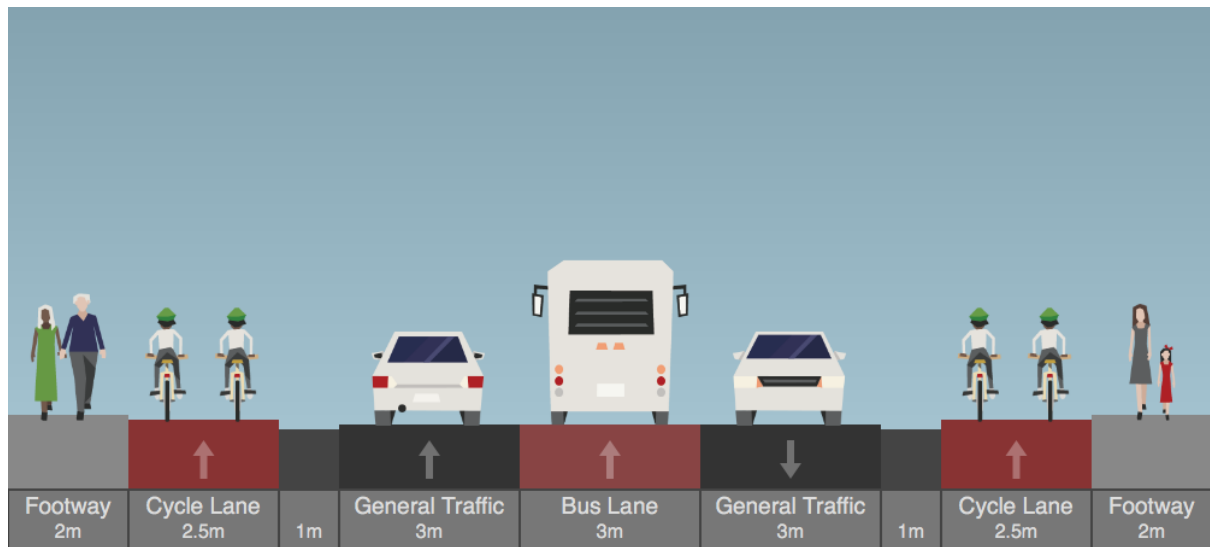


Figure 6: Space allocated for general vehicle lanes

## Tidal Bus Lanes and Segregated Cycleways

The 1 metre of segregation between the bicycle lanes and the car lanes could be allocated to trees, hedges, shrubs, or flowers. We consider it possible to plant urban trees within such a one-metre space, provided that such trees are placed a reasonable distance apart and are planted in a similar way to the riverside trees. A significant proportion of general traffic along Milton Road are heavy goods vehicles and segregation between such vehicles and bicycle traffic is essential.

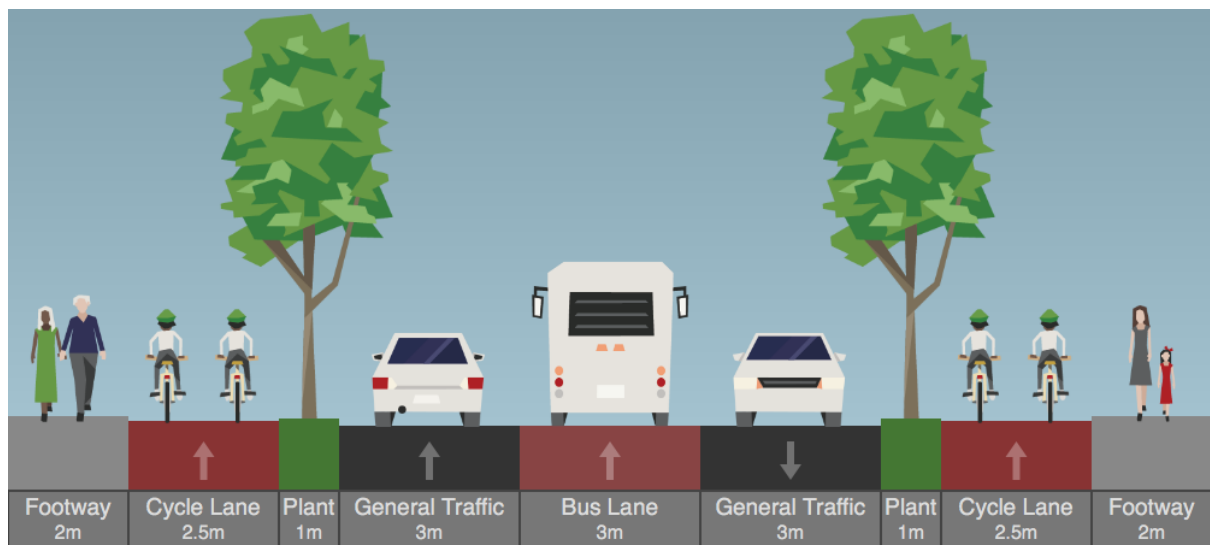


Figure 7: Avenue of trees along Milton Road

## Tidal Bus Lane

As noted above, a tidal bus lane would operate down the centre of the road. The advantage of placing the bus lane in the middle of the road is that the regulation of when traffic is allowed to use the road can be based on time. An alternative would be to use overhead signs every few hundred metres (as used on the A38(M) in Birmingham or the A15 in Lincoln) which we would consider ugly and inappropriate for this residential area. Simple signs as used on the approach to Silver Street highlighting the traffic direction in effect should be sufficient.

For example, between 02:00 and 13:00 the bus lane would operate inbound. Between 13:00 and 14:00 the bus lane would not operate as this is a relatively quiet time on the roads. Between 14:00 and 01:00 the bus lane would operate outbound. Again, between 01:00 and 02:00 the bus lane would not operate.

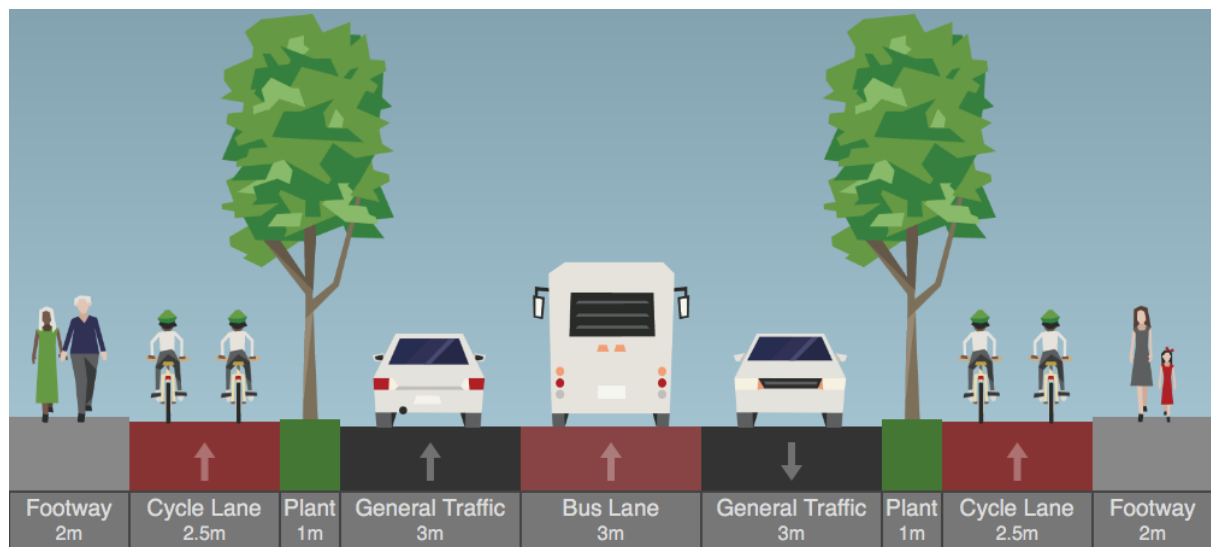


Figure 8: Tidal Bus Lane AM Peak

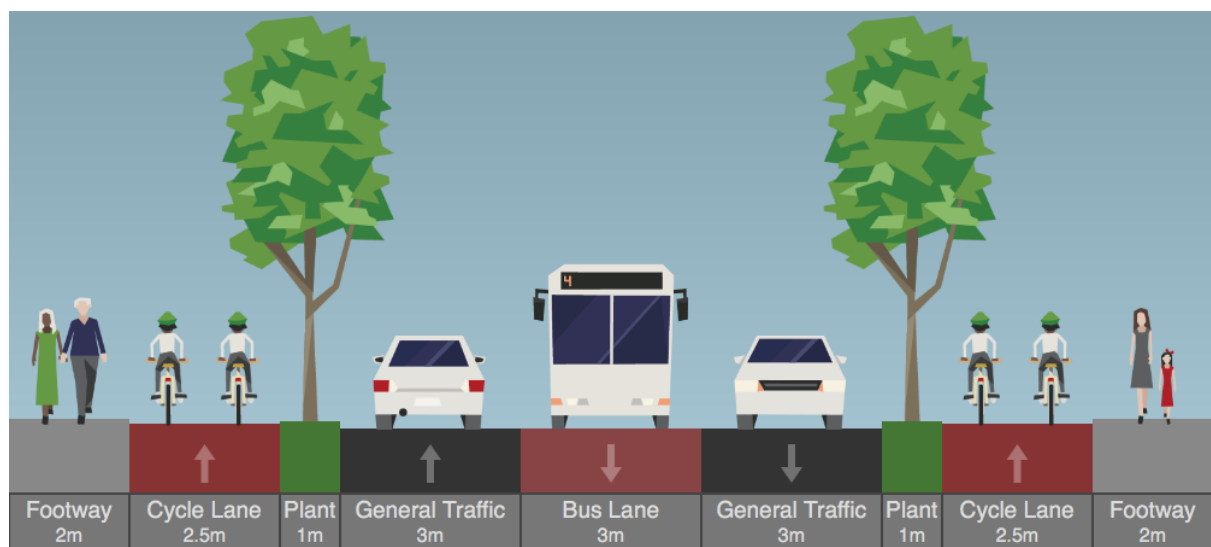


Figure 9: Tidal Bus Lane PM Peak



## Do Sustainable Details

### Cowley Road / Science Park Junction

It has been stated that nothing will be done with this junction until the A10 / A14 improvements have been planned. However, given the anticipated general rise in bicycle traffic in the area and the significant further increase that will be caused by the Cambridge North railway station and the new bridge over the river, we consider that doing nothing in this area is not acceptable. We also recognise that money may be limited at this time to make significant changes. We propose a small change to the road layout that would significantly increase the ability of pedestrians and cyclists to move around unhindered by the significant delays and potentially dangerous toucan crossings that currently exist.

We recommend removing the turning movements from Cowley Road at the Science Park junction. This would mean there would be no direct route from the Science Park to Cowley Road; however access would still be possible by turning left onto Milton Road and then right into Cowley Road at the existing traffic lights. It would also mean that traffic leaving Cowley Road and turning left would have to travel to that same junction to turn left. This would allow Cowley Road to stay at one lane all the way from the old Park & Ride site past Taylor Vinters. The toucan crossing at the corner could then operate independently of the main Science Park junction, allowing this toucan crossing to run more frequently. Given the limited time that Cowley Road traffic is provided a green light onto Milton Road, this toucan could just operate as a 20-seconds green phase for Cowley Road motor traffic, and the same 20-seconds green phase for pedestrian and bicycle traffic. This would minimize the delays to bicycle traffic without reducing the capacity of the road system.

The other side effect of this change is that the right-turning filter lane from Milton Road into Cowley Road at the Science Park junction can be removed and the space allocated to Cambridge-bound traffic. Specifically, the left-turn filter lane into the Business Park would be extended so that the toucan crossing over the entrance of the Business Park can allow significantly more time for moving bicycle and pedestrian traffic. Cambridge-bound traffic would not be delayed by the queuing traffic from Milton Road into the Business Park. This would also allow the existing “cattle cage” between the inbound and outbound Milton Road traffic at this junction to be widened to cope with the additional expected bicycle and pedestrian traffic.

We would also suggest moving the bus stop to the end of the existing bus lane, at the pedestrian and cycle entrance to the Science Park, and rebuilding this as a bus stop island. We consider that there is sufficient space here to provide this.

### Lovell Road

We propose closing Lovell Road at the Milton Road end to motor vehicle traffic, and moving the toucan crossing to a position in line with Lovell Road, similar to the toucan crossing of Newmarket Road at Abbey Street. Moving the toucan crossing would provide a more direct route from Kings Hedges Road via Lovell Road to the bicycle underpass under the Busway.

### Kings Hedges Road Junction

We propose that the design of the junction of Kings Hedges Road with Milton Road be significantly changed: the tidal bus lane should be built down the middle of the road, and a fully protected bicycle junction should be created.

We believe that these changes are necessary because the proposed Advanced Stop Lines, Cycle Early Release lights, and two-stage right-turns are not components of cycling infrastructure that will attract new cyclists or foster the growth of cycling in the area; a fully protected bicycle junction would be able to achieve that goal.

We are also greatly concerned about the over-engineering of the roadways. We disagree with the provision of two approach lanes on Green End Road, and the three approach lanes on Milton Road up to this junction in the inbound direction. The volume of traffic does not warrant this amount of space for motor vehicles, and it would lead to a safety hazard for people walking or cycling.

### Woodhead Drive

Woodhead Drive provides access to a large number of residential properties where the only access by private motor vehicle is from Milton Road. Given the potentially large number of vehicles that could be turning at this point, it is not safe to have such traffic turning across a high speed tidal bus lane. Therefore at Woodhead Drive the bus lane would temporarily terminate and a “turning lane” be provided for residents to access Woodhead Drive from Milton Road.

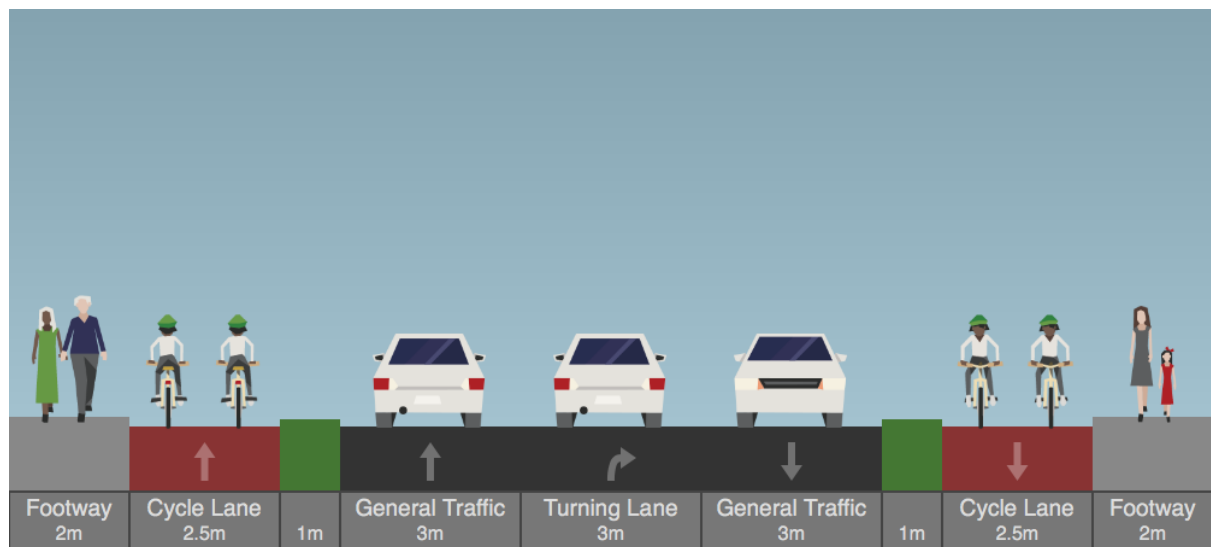


Figure 10: Car turning lane in the middle of the road

### Bus-Stop Islands

When a bus stop is provided a bus-stop island should also be provided. Such islands cause a slight horizontal offset in the roadway, which may have the small added benefit of reducing vehicular speeds around the bus stop. The bus stops would also be offset along the road so that a toucan crossing can be provided in between the bus stops to allow passengers to cross the busy road as easily as possible.

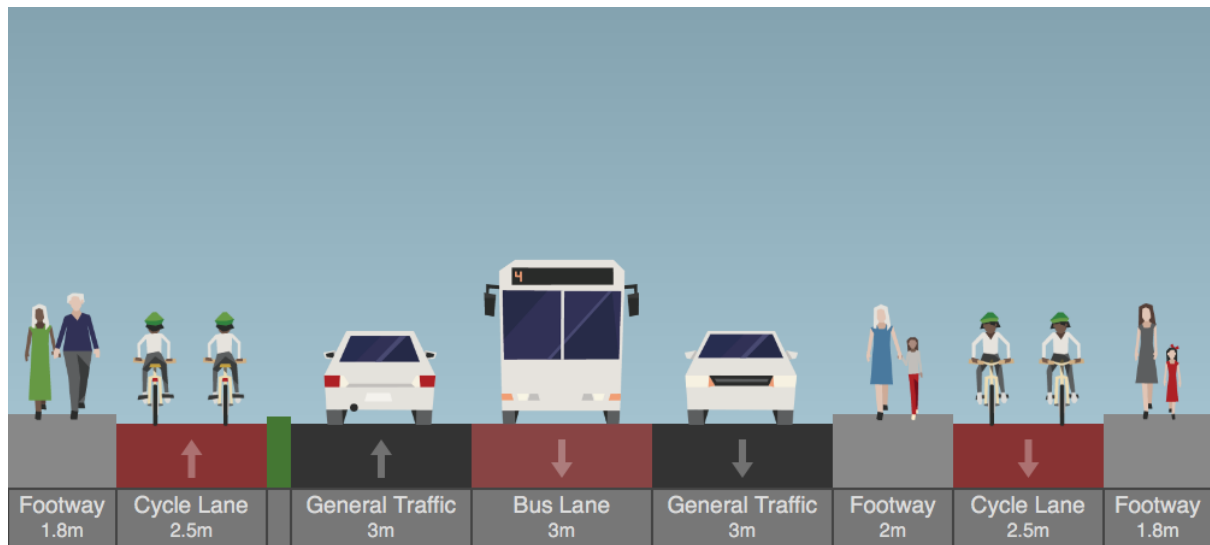


Figure 11: Bus Stop Island (Outbound)

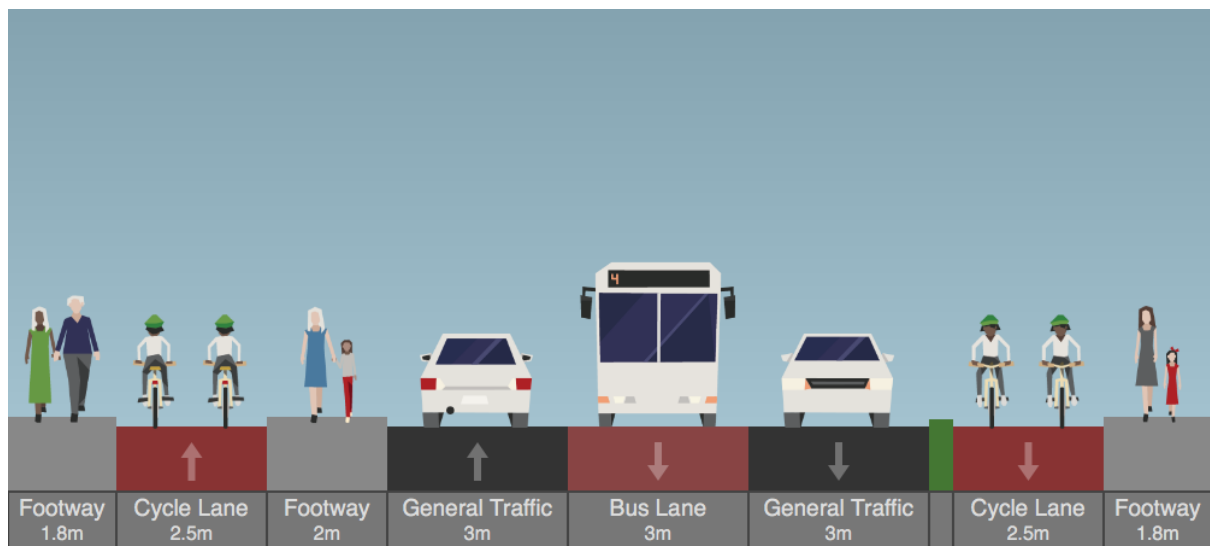


Figure 12: Bus Stop Island (Inbound)

## Kendal Way / Ramsden Square

It is proposed to close access to and from Milton Road to Kendal Way and Ramsden Square to all motor vehicles. This would remove all rat-running through these two residential streets. Access to Ramsden Square would continue from Kings Hedges Road. Access to Kendal Way would continue from Green End Road.

At the existing junctions for both of these roads, a bus stop would be provided. Given that the junction no longer exists for motor traffic, there is additional space to provide the bus stop island and therefore less horizontal deflection is required.

The existing pedestrian crossing would be converted into a toucan crossing and placed between the two bus stops. This would provide residents of Ramsden Square and Kendal Way with a safe route to the bus stops on either side of the road.

The toucan crossing would also provide an early bus start to allow local buses to bypass queuing traffic up to the toucan crossing and then pull in to the side of the road to pick up or drop off passengers at the bus stop. To enable bus priority, local buses would always

trigger red lights for the car traffic, and then once they have passed the pedestrian phase would be provided.

Fraser Road / Middleton Road Bus Stops

A similar design to the Kendal Way / Ramsden Square bus stops would be provided.

Downham’s Lane

It is proposed that Downham’s Lane be closed to all motor vehicles at Milton Road. Access to Downham’s Lane and the rest of the Woodhead Drive estate would be provided using the Woodhead Drive junction. A toucan crossing should be provided, as described above for Lovell Road, to provide for pedestrian and cycle traffic from Downham’s Lane.

Union Lane

We support the closure of Union Lane as in both the ‘Do Maximum’ and ‘Do Something’ proposals.

Arbury Road Junction

We are concerned that, with consideration of the ‘cross city cycling’ proposals for Arbury Road, Arbury Road and its junction with Milton Road will remain a major barrier to cycling. The proposals for north of the Arbury Court play area are subject to a separate response, but we are concerned that there are no proposals for the section south of the play area to the Milton Road junction.

We propose to close Arbury Road at the Arbury Court play area. This would have two significant benefits. Firstly, the parts of Arbury Road which have the least space to the south of the play area would have the majority of traffic removed, allowing for the safe movement of people walking and cycling along this route. There would be no rat-running traffic through the Hurst Park estate’ as the estate’s roads are only accessed from Milton Road. The shops on the corner of Arbury Road would still have direct access from Milton Road and would still be able to attract passing traffic.

The volume of traffic entering and leaving Arbury Road would be significantly cut, reducing the time required to service this traffic and therefore providing additional time for the through Milton Road traffic, including buses. It is proposed that right turns from Milton Road to Arbury Road be allowed by providing a turning bay in the middle of the road for right-turning traffic. The outbound Milton Road approach would have a single lane of traffic, providing space for this turning bay.

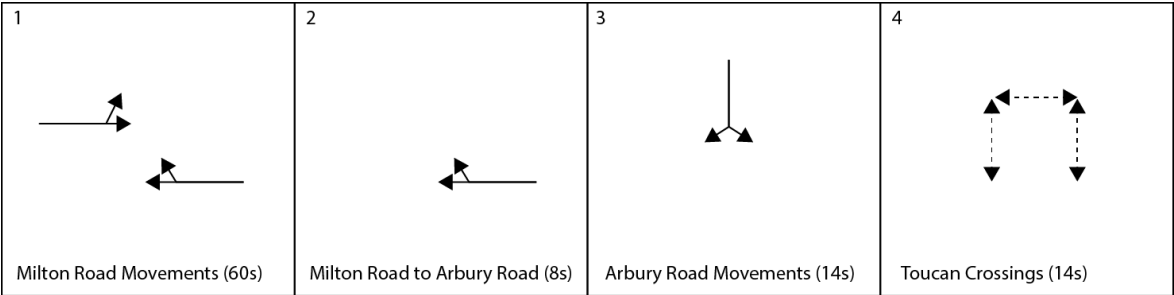


Figure 13: Signal Phases for Arbury Road Junction

As shown in Figure 13, on the assumption that the phases all have a six-second gap between them, Milton Road inbound is provided with over 60% of the time for the movement of traffic, significantly higher than today.

It should be noted that when Arbury Road was closed ten years ago for major road works, the quality of life for the local residents was significantly improved.

### Elizabeth Way Junction

We support the closure of Highworth Avenue with Milton Road and recognise the significant benefits this could bring to the capacity of this critical junction to the movement of all modes of traffic, but in particular bicycle traffic.

We propose that right-turning motor traffic from Milton Road to Elizabeth Way be banned. Traffic that may need to make such a movement can easily travel via Mitcham's Corner and Chesterton Road to Elizabeth Way. Removing this movement allows the signal timing of Elizabeth Way junction to be very simple. Milton Road would be provided with approximately 60 seconds of green time, followed by approximately 28 seconds for Elizabeth Way movements. These would then be followed by a 14-second pedestrian and cycle crossing phases.

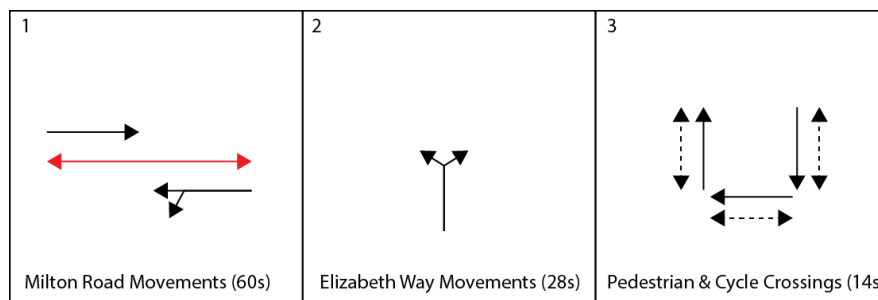


Figure 14: Signal Phases for Elizabeth Way Junction

The junction design for Elizabeth Way would be a fully segregated and protected bicycle junction with a tidal bus lane through the middle. The yellow area in Figure 15 is space for pedestrians, green is space for bicycles, and grey is space for motorised vehicles, with the red area for buses.

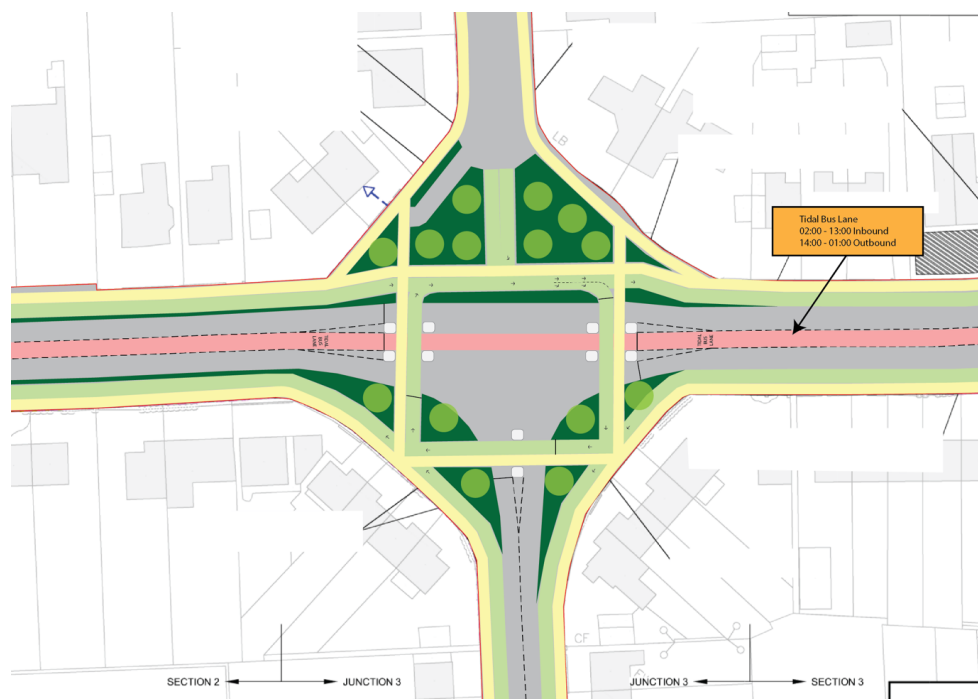


Figure 15: Elizabeth Way Junction design

Approaching this junction inward bound, travelling from right to left in this diagram, a cyclist would first ride along the side of the road and then deviate to the left. If they were turning left into Elizabeth Way then they would never have to stop and could just continue into the cycle lane to the south. If they were continuing down Milton Road or turning into Highworth Avenue then they would stop next to the pedestrian crossing. At the appropriate signal phase, the bicycles and pedestrian traffic would be given a green light. This phase is sufficiently long that somebody riding towards Highworth Avenue could cross Elizabeth Way and then turn right to cross Milton Road. Note that this movement has no conflicts with pedestrians. If cyclists were going down Milton Road then they would cross Elizabeth Way and then give way to anybody walking across the cycleway and then continue down the segregated cycleway.

Approaching this junction from Mitcham's Corner, travelling from left to right in the diagram, the rider would diverge slightly from the motor traffic and cross over the pedestrian space. If they were turning into Highworth Avenue, then they would just turn left. If they were continuing along Milton Road they would stay to the left as indicated by cycleway markings and then move back towards the motor vehicle carriageway staying in the cycle lane. If they were turning right into Elizabeth Way, they would stay to the right as indicated by the cycleway markings, wait for the traffic light signal and then cross Milton Road.

At no point do car drivers have to worry about where bicycles are. If they are turning left from Milton Road into Elizabeth Way, they do not have to check for bicycles passing them on the left as they turn, and they will never have to worry about hitting a bicycle as they turn.

It should be noted that the dark green areas on the diagram could be ornamental flower gardens with the light green circles providing a forest of trees. None of these trees is in the important sight lines for vehicular traffic, and yet can provide shelter for people on bicycles or walking from strong winds and rain as they are mostly placed near the waiting areas for crossing the road.

### **Ascham Road / Chesterton Hall Crescent Junction**

We propose the closing of Ascham Road to all motorised vehicles at Milton Road. This road is currently a rat-run and its closure would remove this traffic from these roads. All traffic for Ascham Road would use Gurney Way for access. In place of this priority junction, a fully signalised toucan crossing would be provided where Ascham Road and Chesterton Hall Crescent meet Milton Road. This toucan would be as wide as the right of way, with the bare ground in the raised bed next to the tree at the top of Chesterton Hall Crescent reduced in width to provide more space for pedestrians and bicycles to pass with as little conflict as possible.

It is also suggested that a tree be planted in a similar fashion at the end of Ascham Road. We have estimated the width of Ascham Road and Chesterton Hall Crescent to be approximately 15 metres, and therefore 2-metre pavements and 2.5-metre cycleways would easily fit around a 6-metre tree planting area.

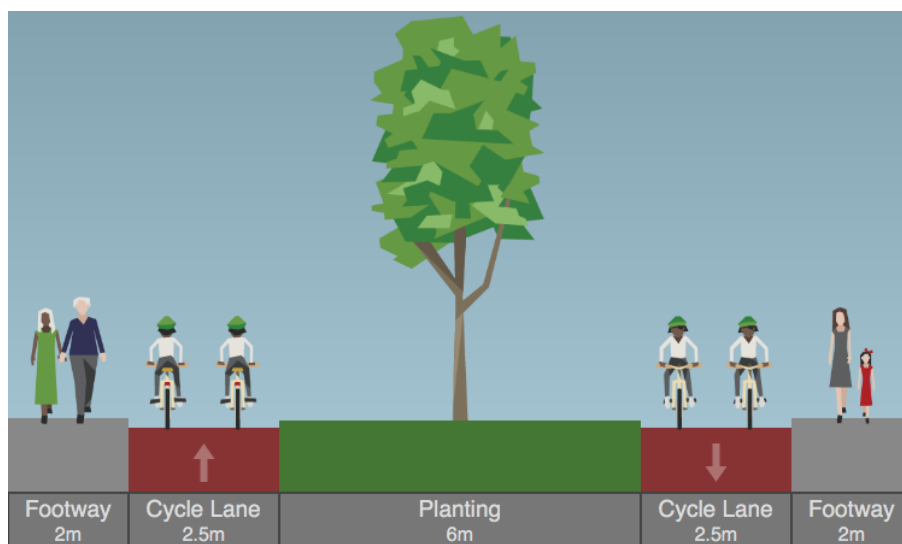


Figure 16: Space allocation at Ascham Road and Chesterton Hall Crescent

## Milton Road and On-Street Car Storage

In some locations there is currently extensive private car storage provided at very low cost to residents. We consider that subsidising the storage of private property at taxpayers' expense in a road such as Milton Road is not the best use of valuable road space. However, if car storage is to be provided for purely political reasons then we consider that it should not be provided in the same locations as a dedicated bus lane.

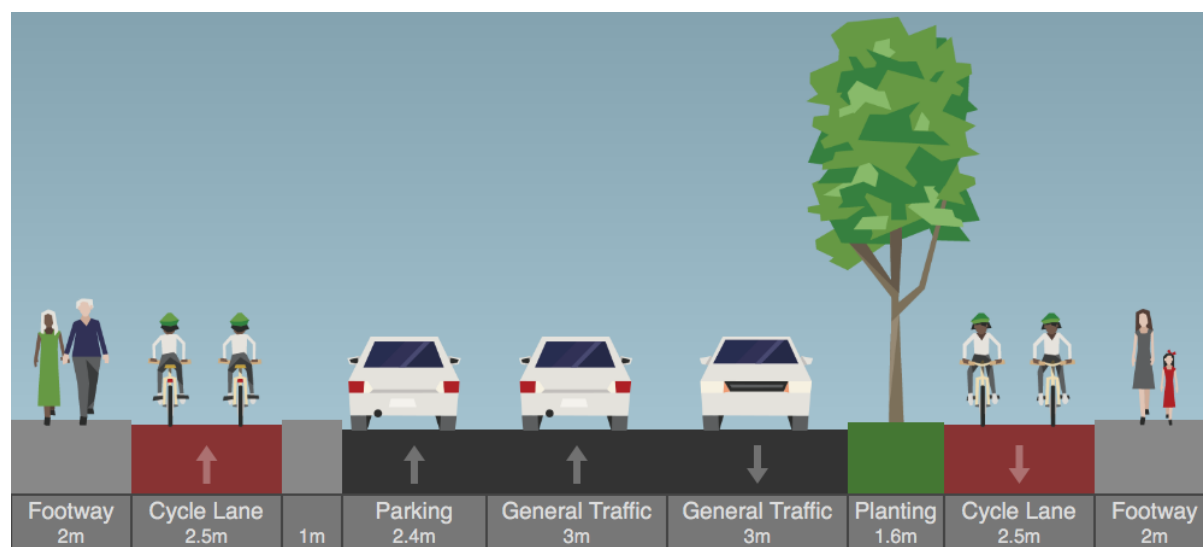


Figure 17: On-Street Car Storage

We consider that, as shown in Figure 17, a one-metre gap should be provided between the edge of the car storage area and the cycle lane to prevent 'dooring' incidents. This also provides space for people to walk around their vehicles before crossing the cycleway to access the pavement.

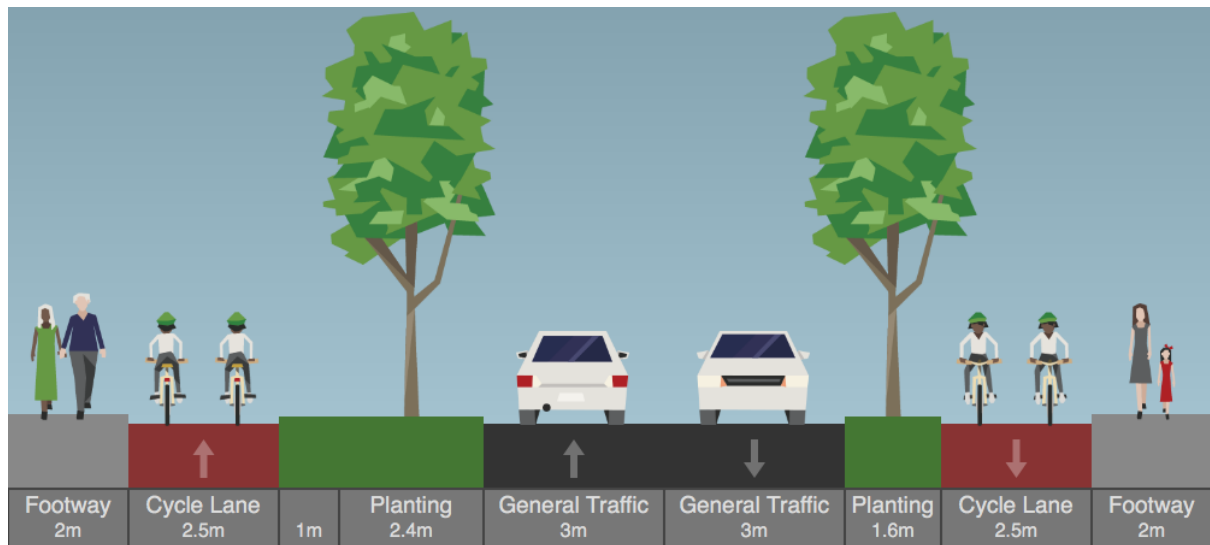


Figure 18: Interspersed Trees between Car Storage

We would intersperse the car storage bays with trees to provide an avenue of trees.

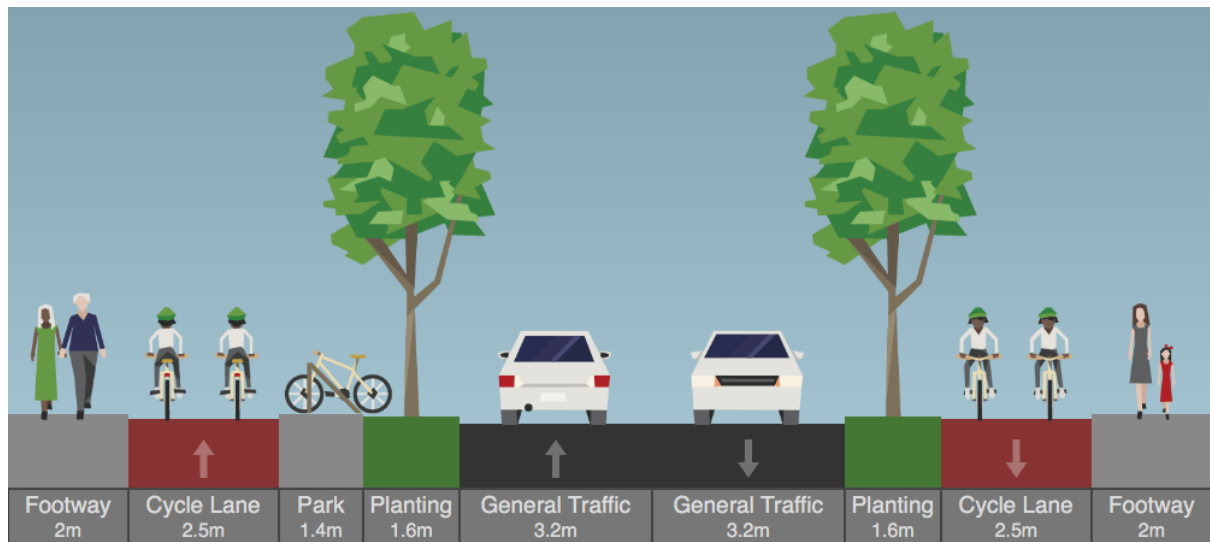


Figure 19: On-Street Bicycle Parking

We would provide bicycle parking at the same quantity as private motor vehicle storage. Such bicycle parking could be placed behind the street trees.

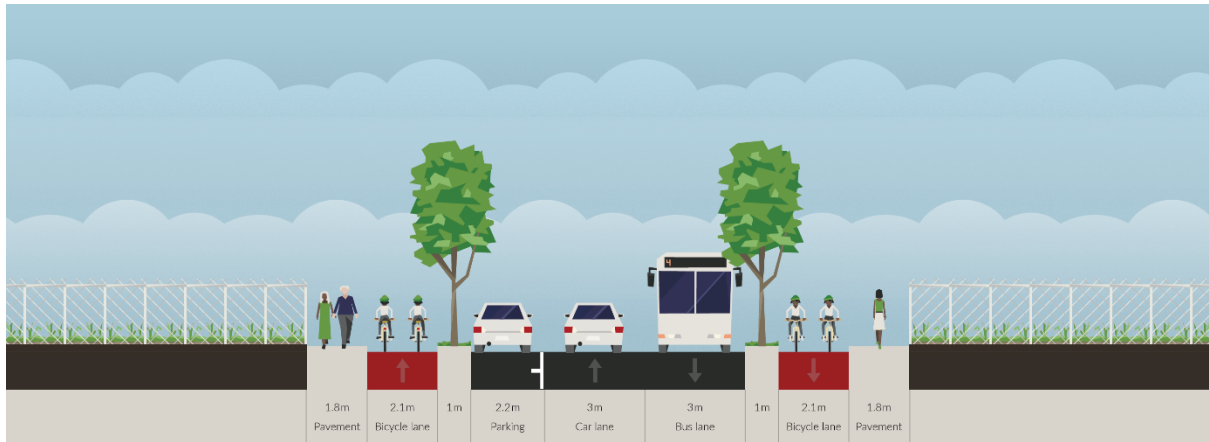
### Gilbert Road Junction

We disagree with the removal of right-turning movements from Milton Road into Gilbert Road, primarily because this is a major movement as documented on the Cambridge cycle map. This movement allows people travelling from the centre of Cambridge to use the Fort St. George bridge, via Pretoria Road, Ferry Path and Herbert Street for all points to the north and north west, for example the majority of Arbury. This is currently a quiet route which would be rendered impossible by both the 'Do Maximum' and 'Do Something' options.

It is noted that the volume of traffic south of the Elizabeth Way junction is significantly lower, as a large proportion of the traffic is crossing the river using the Elizabeth Way Bridge. We therefore don't believe that a bus lane is required up to this junction. We



support the use of a bus gate to allow the buses priority at the junction, but providing only two lanes through this junction would provide additional space for segregated bicycle infrastructure here.



## General Concerns

We are concerned that the hierarchy of road users, as defined by Cambridge County Council, has been ignored and instead an alternative hierarchy has been used. The approved hierarchy of road users places pedestrians above all others, followed by bicycles and then public transportation. This scheme appears to have placed buses before bicycles. These scheme also lacks consideration of the environmental aspects of the proposals, especially from the wider road way, for the removal of trees. The proposals being consulted upon appears to be just a highway scheme rather than a scheme to improve a main street through a neighbourhood that also happens to provide bus priority.

We are concerned that maintenance of general traffic at today's levels has not specified whether "general traffic" includes bicycle traffic or not. Given the significant increase in bicycle traffic in the last few years in Cambridge, we are concerned that these proposals have not adequately considered the existing flows of bicycle traffic or future bicycle flows along or across this corridor.

We are concerned that the objectives of these proposals do not include safety. We believe that this is a major omission.

The outline design process starts from a poor standard of provision for bicycle traffic. The maximum width of a cycle lane according to Figure 7-1 is 2.0 metres, even though the majority of the segregated cycle lanes installed in Cambridge in the last few years are significantly wider than this. We believe that on such a busy route, a minimum width of 2.5 metres is essential. We do not consider the recommendation of a 1.5-metre wide cycle lane to be sufficient for the existing flows of bicycle traffic, let alone the projected increased flows of bicycles in the future.

## Width of Road

It appears from the drawings that the majority of Milton Road is approximately 20 metres wide. Where it is not 20-metres wide there are proposals to acquire small amounts of land to enable a 20 metre width. However, the proposed use of such width is poor from a cycling point of view.

Whilst countries such as the Netherlands or Denmark would allocate a minimum of 2.5 metres for a one-way cycle track, both the 'Do Maximum' and 'Do Something' proposals have allocated only 2 metres of space. We consider that a minimum width of 2.5 metres in each direction is required along the complete length of Milton Road.

According to LTN 2/08, Figure 2.2 and Section 2.4.1, the minimum width of a cycleway that would allow two people on bicycles to pass each other is 2.5 metres, and therefore we consider that allocating only 2 metres for the cycleways means that the scheme would effectively halve the potential capacity of this main cycle route. Also, a 2.0-metre cycleway would not provide a safe environment for overtaking slower cyclists, potentially leading to significant bunching of riders, poor overtaking manoeuvres and using the bus lanes for overtaking, slowing bus traffic at the same time.

As it is not proposed to change the speed limit of this road, the distance required for traffic at 30mph immediately adjacent to the cycleway, according to LTN 2/08, is 1.5 metres of space. This would leave the "effective width" of the cycleway at just 0.5 metres. We do not consider an effective 0.5-metre-wide cycle lane to be acceptable on such a busy cycle route.

### Segregated Cycle Lanes

We do not support the 'Do Something' cycle lane designs. Placing the cycle lane between parked cars and moving cars is an unsafe design that will only cause more problems. We consider that even the provision of a 50 cm "door" strip is insufficient on such a busy road. If car parking has to be provided – and we consider that it does not – then it should be used to protect vulnerable road users from fast-moving heavy vehicles and not the other way around.

The proposed cross-section of the 'Do Something' proposals would also increase vehicular speeds, causing more danger to people crossing the road on a bicycle or by foot, as the apparent width of the road is significantly wider.

### Crossings

We consider that crossing a four-lane road, two bus lanes and two general purpose traffic lanes, will be particularly dangerous. This danger will be enhanced by some traffic lanes being stationary, and potentially blocking the sight lines of crossing bicycle traffic from buses moving at 30mph along the bus lane.

We note that the most recent fatality on Milton Road was apparently a result of a person on a bicycle attempting to cross the road where it is currently three lanes wide. Providing a wide road has been shown to increase vehicular speeds and therefore goes against the general principles of designing a safer road environment.

We would therefore request that all cycle lanes are protected from moving cars by trees, hedges, shrubs, or other solid objects, and not be within the main motor-carriageway.

We also propose that crossings be provided at regular intervals. These should either be toucan crossings, as described above, or by the means of a pedestrian / bicycle refuge in the centre of the road. In such locations only a single lane of traffic travelling in a single direction must be required to be crossed in a single crossing, as shown in Figure 20.

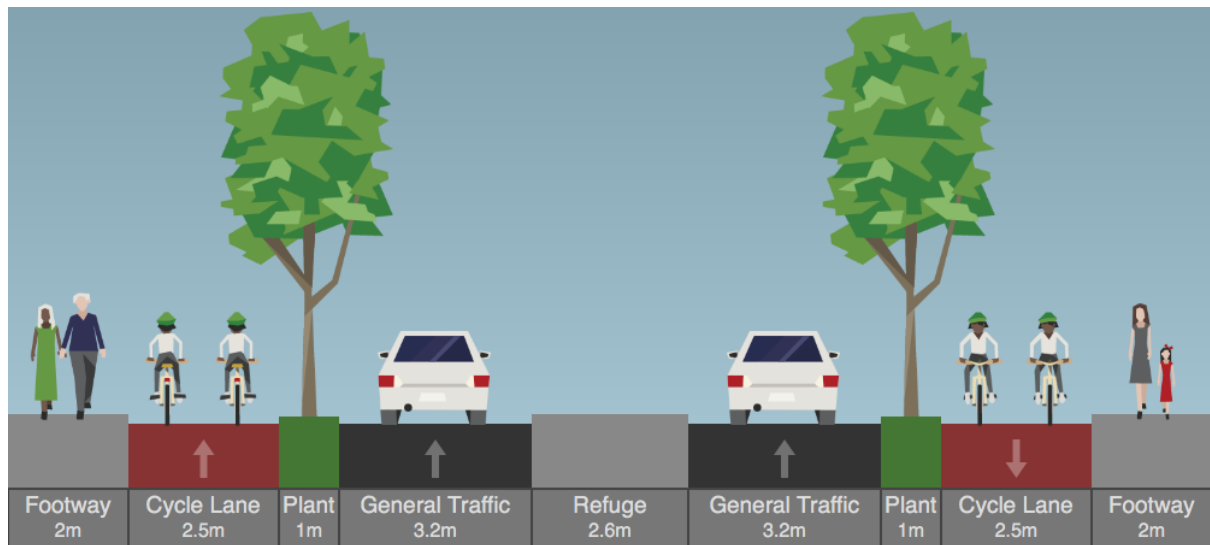


Figure 20: Pedestrian refuge in middle of road

## Surfacing

All cycle lanes should be surfaced in a machine-laid red-mac as used on Hills Road and Huntingdon Road.

## Car Parking on Milton Road

The 'Do Something' proposal allocates significant areas of road space for car parking where very little car parking is used today. We are completely opposed to additional car parking along this route. We have classified this route as predominately a radial distributor route, moving traffic from the strategic road network into the city centre. As such, allocation of valuable road-space for on-street car parking is perverse.

The increase from 158 to 280 parking spaces along Milton Road will only increase the incentive for people to drive and not take the bus or walk or use a bicycle. We cannot see how the increase in car parking along a bus route will increase the number of people transitioning from using their cars to using their buses. We also question why an increase in car parking is even required. There is no significant development expected. If such development did occur we would not expect that such developments would given land for car storage from the city but would expect that the development would provide the car storage it expects on its own land.

Given that more people in Cambridge walk or cycle to work than drive, priority should be given to them and not to motor vehicle traffic. We also note that the objectives of this project is not to provide additional car storage on public land.

## City-wide Residents' Parking

There are currently large numbers of commuter cars parking for free on local roads. Examples include Ascham Road, Gurney Way, Highworth Avenue, Hurst Park Avenue. Of course the same is true across the city as well, but we are confining comment here to the Milton Road neighbourhood. We propose that a city-wide residents' parking scheme is introduced that would remove the ability for people to drive almost into the city centre, park for free, and then walk the remaining distance to their destination. This would provide additional space for cyclists and improve the living environment for residents. It would also reduce the volume of traffic travelling down Milton Road to access these free car-parking

spaces and therefore allowing this traffic to be captured at the Park & Ride sites or onto public transport much earlier.

## Bus Stops

We are very concerned that the proposed bus stops do not have islands separating bus passengers from bicycle traffic. We have observed that in Copenhagen, Denmark every bus stop with the same design as that proposed in the consultation drawings is being replaced with island bus stops owing to the excessive number of collisions. Given the success of the bus stop islands on Huntingdon Road and Hills Road we request that similar designs be implemented in this scheme.

It is noted that in some places there is limited space for a bus stop island. Therefore, we propose that the bus stops be redistributed so that bus stop islands can be built at junctions where roads have been closed to motor vehicles, as much as possible.

For example, at Kendal Way and Ramsden Square, the bus stop island could be provided where the existing vehicular road junction is, requiring the bus stops to be moved slightly. This would allow the bicycle and pedestrian traffic to be moved behind the island with greater ease owing to the increased width available at these locations. The toucan crossing that is currently immediately adjacent to Kendal Way could then be moved to halfway between Kendal Way and Ramsden Square, approximately where the bus stops are at the moment. This would allow pedestrians accessing the bus stops to minimise the detour from their desire lines.

## Residential Use

Milton Road is predominately a residential road where the majority of those residents have off-road parking. Therefore provision needs to be made for safe access and egress from those properties. Where a tidal bus lane is in operation, traffic turning across the bus lane should be able to wait in the bus lane to allow access to their property. Where traffic is leaving a property and turning across the tidal bus lane into the road, they will have to wait for all three lanes to be clear before pulling out.

The cycle lane should not be adjusted in height at access points for properties but small ramps should be provided to allow vehicles to mount the cycleway and then the pavement before descending onto their private lane. This would also have the added benefit of slowing such traffic and reducing the severity of a collision between any traffic crossing the cycleway or footway with cyclists or pedestrians.

## Conclusion

We are disappointed with the lack of world-class bicycle infrastructure being proposed on such a critical route between the city centre, the residential neighbourhoods to the north-east of the city, and the major employment sites on the outskirts of the city. Milton Road should provide a direct, safe, and efficient way to move around on a bicycle, yet all we have been offered is a bit of paint, advanced stop lines, two stage right turns, and many other out-dated designs that would not be used in other world-class cycling cities.

In the interests of being as constructive as possible, we have offered an alternative proposal which we have called 'Do Sustainable' that has demonstrably followed the road user hierarchy approved by Cambridgeshire County Council. We started by allocating pedestrian space first, and then cycling space. We then allocated space for public transportation, recognising that most services are non-stopping express services. Finally,

we allocated space for general traffic and with the left over space created an avenue of trees.

Significantly we also made the street safer by closing side roads, reducing traffic crossing cycleways, and designing protected junctions for cyclists. Such designs, according to our microsimulations of the junctions, had significantly higher capacities than those offered, mainly because they didn't place bicycles in the way of motor-traffic.

We also proposed small changes to the road network to significantly reduce rat-running traffic. For example, closing Arbury Road removes the advantages of using Hurst Park Avenue to rat-running traffic whilst solving the problem of having Arbury Road as a major cycle route by removing the cars along the part of the roadway that has the least space to provide segregated bicycle infrastructure. The detour required for traffic is trivial compared with the potential increase in utility for bicycle traffic.

We have raised a number of concerns around the proposed car parking provision. There is a direct link between the number of car parking spaces available and resident propensity to drive, yet one of the proposals provided increasing the level of car parking. We propose restricting the number of car parking spaces, especially for non-residents, by introducing a controlled parking zone for the whole of the city of Cambridge, thereby reducing the demand for road space by people driving to a free car parking space and then walking or cycling from that point. This will encourage people to park their cars at the Park & Ride sites or take a bus or cycle from their home instead of drive.

We do not consider that a holistic approach has been taken by the consultants employed to prepare this consultation. The proposals would delay express-buses behind slowed local services, would increase the level of car parking and so increase the volume of traffic, and have designed traffic junctions that we consider inherently unsafe.

We welcome further discussions with the County Council to address our comments and to allow a more considered and better proposal to come forward that would allow more people, more safely, to use a bicycle to move along Milton Road.