



BICESTERBUG

B i c e s t e r B i k e U s e r s G r o u p

Submissions On Design of Banbury Road Roundabout, Bicester

03 April 2021

1. SUMMARY

Bicester Bike Users' Group ('Bicester BUG') supports the Option 3 'CYCLOPS' roundabout design proposal, though improvements could also be made to that design.

BBUG has real concerns about the other options, particularly given that the performance of the large roundabouts approved in Bicester to date has been abysmal.

2. COMMENTS ON OPTIONS

Option 1: Large Roundabout

Option 1 makes poor provision for non-motor vehicle users. The crossing points are a long distance from desire lines, making navigation slow and inconvenient. The crossings are poor, being either shared or uncontrolled. These are likely to discriminate against users with disabilities, leading to these users being unable to navigate them at all.

The design prioritises motor vehicle capacity at the expense of safety, health, active travel, and environmental considerations. We query the criteria that will be used to assess the performance of the junction and note that the software default of 0.85 ratio of capacity to flow at peak times has previously been relaxed by OCC at other junctions in Bicester so as to accommodate other considerations than motor vehicles. We would urge OCC to do so here.

Technically, one of the most concerning aspects of the design are the numerous areas of shared provision. Shared use facilities can create particular difficulties for visually impaired and other disabled people. Interactions between people moving at different speeds can be perceived to be unsafe and inaccessible, particularly by vulnerable pedestrians. This negatively affects comfort and directness and may amount to a breach of the public sector equality duty contained in the Equality Act 2010. The DFT strongly advises against shared use footways (DFT 2020, 1.6.1, 6.5.4 & 9.4.1). The DFT requires that at crossings and junctions, cyclists should not share the space with pedestrians, but should be provided with a separate, parallel, route (DFT 2020, 1.6.1). The local, Oxfordshire, county guidance also requires that off-carriageway facilities for pedestrians and cyclists should be fully segregated (OCC 2017, 2.1.3, 2.2.8, 3.4.6). The OCC Cycle Design Standards state that shared use facilities must not be provided along spine roads such as the present proposed road (OCC 2017 2.2.8).

Another concerning aspect is the lack of priority for cyclists over minor roads. The design of the shared path requires cycle users to stop and give way at the Fringford Road. This approach is no longer recommended because it conflicts with the overarching principles of directness, safety, and comfort (DFT 2020, 1.5.2). Because of the effort required to stop at every minor road (equivalent to cycling an additional 100m for each stop, see CROW, 2017, p.133), cycle users will be encouraged to cycle in the main highway, which is less safe (DFT 2020, 4.2.7 and Figure 1.1).

Current guidance deprecates layouts which make cyclists stop or slow down unnecessarily (DFT 2020, 4.2.7 and Tables 4-1 and 10-11). As the DFT points out: 'In urban areas, where protected space separate from the carriageway is provided for cycling, it is important to design priority junctions so that wherever possible cyclists can cross the minor arms of junctions in a safe manner without losing priority. This enables cyclists to maintain momentum safely, meeting the core design outcomes of safety, directness and comfort (DFT 2020, 10.5.7). The local Oxfordshire county guidelines echoes this point stating: 'Good design including adequate space and priority for cycle users is needed to ensure cycle users feel safe and cycle journeys are direct and convenient.' (OCC 2017, 2.2.5) and 'Priority for cycle users at side road junctions is critical.' (OCC 2017, 2.2.8).

The Bicester Local Walking and Cycling Infrastructure plan, now in force, also requires that priority is given to a cycle path where it crosses a road (OCC 2020, 20).

The pedestrian and cycle crossing points of the minor roads should be redesigned. As noted in the previous section, the two categories of users should remain segregated to reflect their different needs.

The cycle paths should continue with priority across the minor roads. To further support active travel, the pedestrian and cycle paths that cross minor roads should be placed on raised tables (DFT 2020, 10.4.6).

It is unlikely that such a junction would be sufficient to permit the attainment of a tripling of cycling and a 50% increase in walking as committed to in the 2020 Local Walking and Cycling Plan ('LCWIP') for Bicester. Rather such a junction would actively suppress active travel.

Overall, Option 1 fails to comply with numerous national and local standards and policy aspirations.

Other roundabouts recently constructed in Bicester (Vendee Drive, Bicester Village, and Rodney House) have performed extremely poorly. Traffic speeds are high, there are frequent losses of motor vehicle control with significant deaths and serious injury, damage to the infrastructure, and they are inconvenient and intimidating to use. The Graven Hill community has effectively been isolated by the Rodney House/Graven Hill roundabout because it is intimidating, slow, and unsafe to try to access by foot or cycle. One significant issue is that large roundabouts are significantly in excess of capacity for the majority of the day. This leads to high speeds, wide crossings, and an unpleasant environment for all users. As the US Department for Transport (2013) point out: 'Over-designing an intersection should be avoided due to negative impacts to all users associated with wider street crossings, the potential for speeding, land use impacts, and cost.'

Option 2: Signalised Junction

Option 2 is equally poor as Option 1 for many of the same reasons. Much of the provision is shared, contrary to local and national guidance, and the public sector equality duty. Few of the crossings are conducive to active travel or with desire lines. Again, there is no priority for cyclists across the minor Fringford Road.

Option 3: Unidirectional 'Cyclops' Style Roundabout

The Cyclops style junction is significantly better than the other options and is the only design likely to encourage the ambitious level of active travel that have been set as policy objectives in Bicester.

Much of the provision is segregated, which will support walking, cycling, and disabled users of both forms of transport.

One notable issue with the design is the unidirectional nature of the circulatory carriageway for cyclists. This inevitably leads to delay for both cyclists and motor vehicle users and thereby reduces capacity as cyclists will need to travel across more limbs of the junction than pedestrians. However, unidirectional movements are not an essential element of Cyclops style junctions. Bidirectional movements are possible on such junctions such as in the Netherlands, and one of the designers of the UK variant of Cyclops junctions Richard Butler, the Engineering Manager for Transport for Greater Manchester has confirmed that the Cyclops design supports bi-directional travel (personal correspondence, 2021). In the Netherlands, similar junctions support bi-directional cycle travel. One issue is managing the priorities at conflict points, but this could be achieved on a 4-arm intersection with 4 simple give way points (see Figure 1 below).

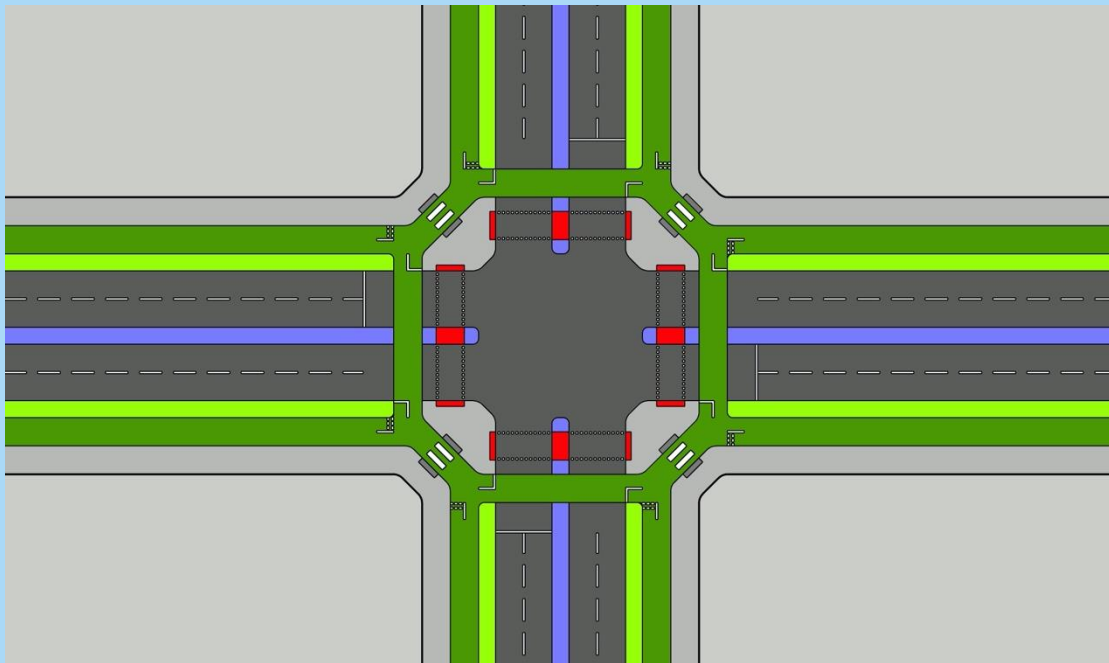


Figure 1: Bidirectional Cyclops Design showing give way markings at points of potential conflict.

A more minor matter that could be included as part of the design development would be safe transitions from the highway onto the cycle path.

3. GENERAL COMMENTS ON ALL OPTIONS

The Bridleway between Banbury Road and Fringford Road should be made fully accessible as part of the scheme as it is within the Site Boundary (Board 6). The bus stop on the east side of the B4100 north of the Toucan crossing needs to be linked to these active travel paths, it is currently on a grass verge inaccessible to most users.

4. REFERENCES

Butler, Richard (2021) personal correspondence to BBUG
Department for Transport (2018), NTS0308: Average Number of Trips by Trip Length and Main Mode: England, July 2018
Department for Transport (2020), Local Transport Note 1/20
CROW (2017), Design Manual for Bicycle Traffic
Oxfordshire County Council (2020), Local Walking and Cycling Plan for Bicester
Oxfordshire County Council (2017), Cycle Design Standards
US Department of Transportation Federal Highway Administration. (2013). Signalized Intersections Informational Guide (2nd Edition).