Core Bus Corridor 1: Clongriffin - Preliminary Submission

1.0 Introduction

Dublin Cycling Campaign is a registered charity that advocates for better cycling conditions in Dublin. Dublin Cycling Campaign is the leading member of Cyclist.ie, the Irish Cycling Advocacy Network (ICAN). Dublin Cycling Campaign wants to improve our roads and public spaces to enable and encourage active travel (walking and cycling).

We broadly welcome the proposed Clongriffin to City Centre as it has the potential to deliver a high-quality cycle route for its entire route. We understand that the NTA is currently at preliminary concept design stage. This is reassuring as many of the details of the proposed cycling facilities are sub standard and need to be improved in order to enable safe cycling for people of all ages and abilities.

We look forward to future engagement with the NTA to refine the details in later stages so that a high-quality design similar to the new, about to be constructed, Fairview/North Strand cycle route will be developed.

2.0 General Observations

2.1 There's a lot to love

Though we are critical of parts of the concept design there are already huge improvements proposed for pedestrians and cyclists within this concept design. These include:

- The space for a segregated cycle route from Belmayne to Marino
- Removal of Large roundabouts hostile to pedestrians and cyclists
- Removal of 11 left turning slip lanes along the length of this scheme
- The addition of four new pedestrian crossings both at junctions and mid-block

- That 23 of the 30 proposed bus stops have bus stop cycle bypasses (we think we can increase that number)

2.2 Scheme Objectives

The scheme objectives, included in Clongriffin CBC Route Selection Report (page 1), mention bus priority provision, and implementing the GDA Cycle Network Plan along this corridor to the specified quality of service. There is no mention of pedestrians in the scheme objectives.

We note that there are many pedestrian improvements already contained in the proposals. However, there are a number of pedestrian issues within these designs like staggered pedestrian crossings, which hinder efficient pedestrian movement. We recommend that pedestrians also be included in the scheme objectives in later rounds of this process. This is to ensure that pedestrians are not disadvantaged by the proposals. It should be noted that both the Dublin City Council Development Plan (section 8.4) and DMURS (section 2.2.2), include a transport mode hierarchy that places pedestrians first, cyclists second, public transport third, goods vehicles fourth and general traffic fifth. This also applies to all other Dublin Local Authorities.

2.3 Function of Malahide Road

Malahide road is a higher-order distributor road and a HGV route for the city. The speed limit on the Malahide Road from the city council border to the Artane Roundabout is currently 60km/h. From the Artane Roundabout to the city centre it is 50km/h. AADT counts on Malahide Road are also high.

Given the high traffic counts, high speed limits, and HGV traffic, special care needs to be given to how the cycling infrastructure is designed along the Malahide Road. HGVs in particular are a major cause of serious injuries and fatalities for cyclists. Special care needs to be taken at junctions in particular that cycle tracks will not place cyclists in the blind spots of HGVs at turning locations, or be squeezed between separate traffic lanes.

2.4 Cycling for All

Dublin Cycling Campaign advocates for better cycling facilities that will enable people of all ages and abilities to cycle. Currently, the people who cycle in Dublin are not representative of the general population. Cyclists tend to be adult, male and brave. This is a result of the relatively poor quality of cycling infrastructure, and no coherent cycle network in Dublin. Without a doubt the BusConnect's proposals, if implemented,

will make cycling safer in Dublin. However, they will not enable people of all ages and all abilities to cycle their full length because of the lack of segregation in many places.

Many of our observations refer to the lack of segregation provided by the current designs at many locations. Along this particular route there are segregated cycle tracks, but at many locations segregated cycle tracks become painted cycle lanes in order to allow for on-street parking or inline bus stops. At junctions cyclists are mixed back in with traffic. This loss of segregation will not enable people of all ages and all abilities to move to cycling. There are design solutions to these problems, like parking-protected cycle tracks, bus stop bypasses for cyclists, or using fully segregated junction designs like the Dutch style protected junction.

2.5 Primary Cycle Route Width

This CBC will deliver Primary Route 1C of the GDA Cycle Network Plan (CNP). The target quality of service for primary routes in CNP is A+/A. Below is an extract from section 2.3 of the Written Report of the CNP, which outlines the desired width of primary cycle routes as 2.5m.

Basis for Target Quality of Service

ROUTE TYPE	PRIMARY / NATIONAL	PRIMARY	SECONDARY
Cycle Volume Existing (3 hour peak period)	n/a	200 -1000	100-500
Target QoS - Width Factor	A+ Two abreast + overtaking Width = 2.5m	A+/A Two abreast + overtaking Width = 2.5m	A/B Single file + overtaking Width = 1.75m
Target QoS - Other Factors	A	B	B

We recognise that achieving a 2.5m wide cycle track on all portions of this route may be challenging, however it is possible to achieve this width along large segments of the route by widening into the median or using grass verges beside the proposed cycle track. In constrained areas a cycle track width of 2m is acceptable, but should be implemented with caution.

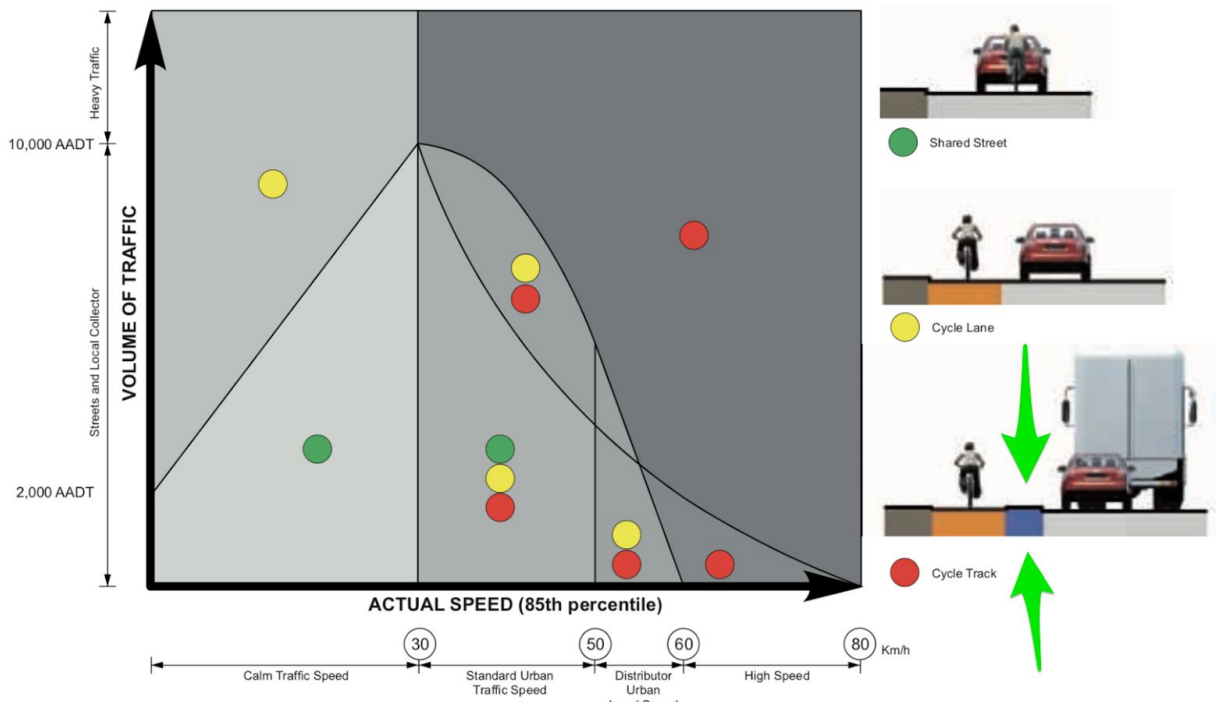
2.6 Buffer Space

The NTA's own National Cycle Manual (NCM), section 1.7.4, recommends that there should be a buffer space of either a hard paved area or grass verge between the cycle track and the roadway when the AADT and 85th percentile speeds are both high, such as along the Malahide Road.

This buffer space increases the comfort level for cyclists (one of the five needs of a cyclist). It also allows for overtaking using the full width of the cycle track, without partially overhanging the adjacent traffic lane. It is important to point out that the buffer space is not an area that should be cycled on and it should not be included in the width of the cycle track.

We encourage the design team to, where possible, match the design of "Cycle Track Behind Verge" on page 67 of the NCM, which has grass/planted buffer between the cycle track and the road.

Rationalising the number of right turn locations could allow for the central median to be narrowed so that a grass verge buffer space can be provided between the cycle track and the road.



There is no guidance within the NCM for the size of this buffer space (the area marked in blue in the cycle track image above). However, this design guidance from the UK maybe useful:

Speed Limit (km/h)	Desirable Minimum Horizontal Separation (m)	Absolute Minimum Horizontal Separation (m)
50	0.5	N/A
60	1.0	0.5
80	2.0 (including any hard strip)	1.5 (including any hard strip)
100	2.5 (including any hard strip)	2.0 (including any hard strip)
120	3.5 (including any hard strip)	3.0 (including any hard strip)

UK Interim Advice Note 195/16 for Cycle Traffic and the Strategic Road Network

2.7 Signalised Junction Design

Many of the proposed junctions on this Core Bus Corridor do not meet the criteria in the NTA's National Cycle Manual. There is widespread use of streaming lanes (an orphaned cycle lane between two traffic lanes) at junctions along this route. Including:

- Clarehall Avenue (40m left pocket turn)
- Clarehall Shopping Centre (50m left turn pocket)
- Coolock Lane Junction (75m and 40m left turn pockets)
- Tonlegee Junction (65m and 50m left turn pockets)
- Artane Roundabout (40m and 30m left turn pockets)
- Kilmore Road Junction (50m left turn pocket)

In section 4.4.4, on junction approaches the NCM states that:

- *Streaming cycle lanes can only be used in low traffic speed environments where there is minimal speed differential between cyclists and adjacent traffic*
- *Streaming is not suitable along HGV routes*
- *Streaming cycle lanes should only be used beside right or left hand pockets (i.e. distinct lanes dedicated to turning movements) and should not exceed 30.0m in length*

In essence the use of streaming cycle lanes at junctions on a road like the Malahide Road is against the manual. Malahide Road is a HGV route, with a large speed differential between cyclists and the heavy traffic. These concept junction designs are also not suitable for all ages and abilities.

A demonstration of how the proposed junction design does not enable cycling for people of all ages and all abilities

Greater segregation for cyclists is needed at major junctions along the route in order to enable and encourage more people to cycle. Segregated cycle tracks alongside roads provide segregation through space. At junctions segregation should be provided through specific allocated crossing time instead. Cyclists should be provided with their own set of traffic lights and their own phase sometimes combined with the pedestrian phase on parallel crossings. This means that cyclists are never moving at the same time as traffic that would cross their path.

2.7.1 Protected Junction Design

This form of junction design has been achieved along the soon to be constructed North Strand/Fairview cycle route project from Dublin City Council and the NTA. It uses a modified version of the protected junction design. The protected junction design also allows for right hand turns for cyclists.

The junction design also segregates pedestrians and cyclists by providing parallel crossings and designated spaces. This would eliminate shared spaces for pedestrians and cyclists. Shared spaces are disliked by pedestrians, cyclists and by people with disabilities. Parallel crossings also mean that cyclists don't have to use islands in the middle of the road that frequently are too small for bikes to easily manouvre around.

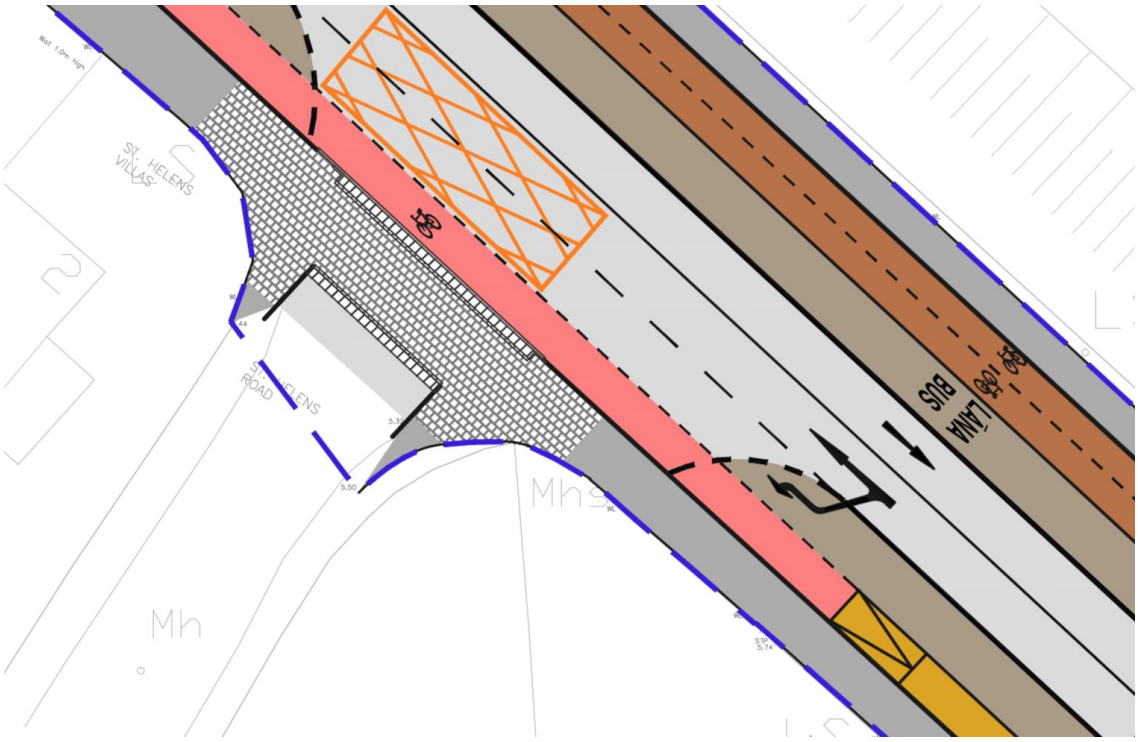
There is a good explanation of the principles of this design at www.protectedintersection.com.

2.8 Side Roads

At side roads it should be clear that cyclists and pedestrians have priority over traffic exiting or entering to or from the main road.

2.8.1 Continuous Footpaths/Entry Treatment

Infrastructure like entry treatment or continuous footpaths/cycle tracks encourage and promote priority for pedestrians and cyclists. They also encourage lower speeds. In general this would be exemplified by a raised table exit/entry from all side roads.



A raised continuous footpath over a side road as part of the proposed Merrion Gates to Blackrock Scheme - AECOM/ROD for NTA

2.8.2 Buffer Space Design

An alternate method for providing for safer minor road junctions is to bend the cycle track away from the road at the junction. This provides better visibility for cyclists by moving them out of the blind zones of turning vehicles. It can also provide space for turning vehicles to wait for cyclists to pass by. Priority for cyclists over minor roads

needs to be reinforced with this design. The cycle track should also be clear to motorists, the use of red surface treatment to mark the conflict area is a must.

With this design the area between the road and the cycle track places the cyclist well outside the blind zone of the truck and clearly visible to the driver without the use of

mirrors. The use of different surface treatment, in this case block paving, helps to highlight the conflict, indicates a change in driving conditions from main road to side road, and acts as a traffic calming measure.

This kind of design could be suitable on some of the outer sections of the Malahide Road where the cycle track will cross over entrances to industrial areas or garages. It's important at these locations to ensure the cycle track does not place cyclists in HGVs' blind zones.

2.9 Integration with GDA Cycle Network Plan

A single cycle route is only useful to people if their origin and destination are on or near the cycle route. A cycle network, where many cycle routes are connected together is far more useful to people. Similar to how a bus network is more useful than a single bus route.

This cycle route intersects with a number of other cycle routes included in the GDA Cycle Network Plan. This route should plan for the connection with these current or future cycle routes. Where possible, the ends of cycle lanes/tracks on these routes linking into the CBC cycle route should be constructed as part of the Core Bus Corridor. That will ensure that these junctions don't need to be re-designed when future cycle network projects are progressed.

Example Routes that intersect are:

- Clarehall Avenue, secondary route 1A
- Blunden Drive and Priorswood Road, feeder route
- Santry Greenway
- Tonlegee Road and Brookville Crescent, secondary NO5
- Gracefield Road and Ardlea Road, secondary 1F
- Collins Avenue, primary NO4
- Copeland Avenue and Griffith Avenue, secondary NO3

2.10 Bus Stop Bypasses

There are 7 of 30 locations where there are no bus stop bypasses for cyclists. There are many reasons we'd encourage the design team to include bus stop bypasses at all bus stop locations:

- Bus stop bypasses are recommended by the NTA's National Cycle Manual, given the frequency of buses along this route

- Bus stop bypasses remove conflict between buses and cyclists. There is nothing more terrifying, particularly for a beginner or tentative cyclist than a 30 ton bus pulling into a bus stop on top of you
- Buses will operate more efficiently at stops because bus drivers will not need to wait for a slow cyclist to pass the bus stop before pulling in
- Bus Stop Bypasses allow pedestrians to alight and descend from buses without having to worry about conflict with cyclists

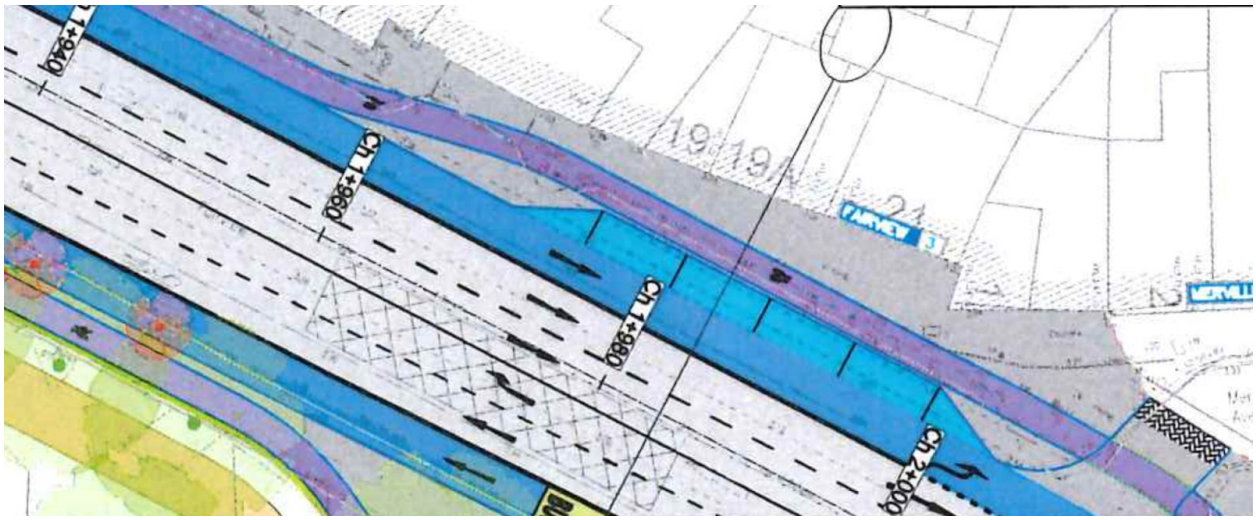
2.10.1 Bus Stop Locations

There is a strong case to be made for the rationalisation of bus stop locations. Are all of the stops shown in optimal locations? On map 19, there are two inline bus stops, that are only 150m from the nearest bus stop. Either these bus stops could be eliminated. On Map 7, there is an inline bus stop when the land behind is derelict land. We strongly urge the review of bus stop locations and frequency. This will ensure greater efficiency of the bus service but also allow for greater consideration of the preferred bus stop bypass design for safety of all commuters.

2.11 Parking Inside Cycle Lanes

There are a number of locations where car parking is located inside the proposed cycle track. This implies that the cycle track will convert into a painted cycle lane and cyclists will lose segregation from traffic.

Best practice would be to route the cycle track on the inside of the car parking and to provide a buffer space between the car parking and the cycle track for the 'door zone'. A parking protected cycle was the design used for the recent Fitzwilliam Street cycle route by Dublin City Council, and the North Strand/Fairview cycle route at Marino Mart.



Am example parking protected cycle track in the North Strand/Fairview cycle route AECOM/ROD for Dublin City Council/NTA. Cycle track in purple. Parking in light blue.

There are examples of parking inside of cycle lanes on map 11, map 14, map 18.

2.12 Opportunity for Multimodal Travel

Multi-modal travel between bike and bus could be encouraged as these designs progress. A first step would be to provide covered sheffield stands with CCTV coverage near bus stops along this route, giving a particular focus to where orbital cycle routes intersect with this Core Bus Corridor. As the CBC will host a super high-frequency bus route it makes it more likely that people will cycle to the spine, and avail of an efficient bus service.

Completing the missing cycle link to Clongriffin rail station is another key part of encouraging sustainable multimodal travel.

2.13 Development of Public Realm

Part of the benefits of the Bus Connects project, according to the supplied documentation, is to 'enhance and improve local areas', and to 'provide additional landscaping and outdoor amenities'. We urge the Bus Connects team to clearly indicate where these benefits will arise along all the newly designed routes, as these positive developments will be critical in 'selling' the project.

3.0 Route Observations

3.1 Fairview Diversion Multi-Criteria Analysis

In section 5.6, of the Route Options Report (page 82-94), there is a multi-criteria analysis (MCA), which came to the conclusion that the inbound and outbound cyclists should be diverted through quiet roads in Marino. In this analysis four options were considered, we'll discuss three of them here:

- Scheme 1: inbound bus lane, and inbound and outbound cycle tracks. No outbound bus lane
- Scheme 2: divert all cyclists through Marino. Inbound and outbound bus lane
- Scheme 3: divert the inbound cyclists through Marino, provide an outbound cycle track and an inbound bus lane

The MCA also highlights that the outbound bus lane provides little added bus priority. Without the bus lane, buses would share with general traffic for 180m. The queueing data included in the options report showed that the outbound bus lane isn't completely necessary, and many of the benefits could be realised using other bus priority measures.

Table 5.9 Route Options Assessment Summary (Main Criteria)

Assessment Criteria	Scheme 1	Scheme 2	Scheme 3	Scheme 4
Economy				
Integration				
Accessibility and Social Inclusion				
Safety				
Environment				

The result of the MCA was that Scheme 2 (divert cyclists, full bus lanes) was chosen as the best option. However, there are three issues with the multi-criteria analysis presented in this report and in Appendix A - MCA Tables. This MCA should be repeated without the following issues.

Issue 1: Scheme 3 provides better Cycling Integration than Scheme 2

In the final analysis Scheme 3 and Scheme 2 provide the same level of cycling integration score. This is clearly not true. Scheme 3 provides a cycle track along Malahide Road, which delivers a more direct cycle route with fewer delays inline with the GDA Cycle Network Plan. Scheme 2 introduces more delays points for cyclists, particularly inbound cyclists who must now use 3 toucan crossings to complete their journey. Scheme 3 should be marked as having better cycling integration score than Scheme 2.

Issue 2: Scheme 3 should have beaten Scheme 2 on Environment

The MCA determined that Scheme 2 performed better than Scheme 3 on environment. However, this was a mistake in the analysis. In the most constrained section of the Malahide Road, here are the cross-sections for Scheme 2 and Scheme 3.

Scheme 2

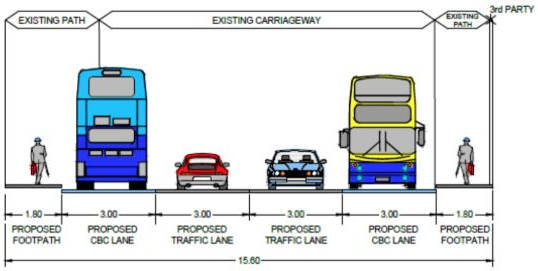


Figure 5.47 Cross Section A-A

Cross-section of 15.6m

Scheme 3

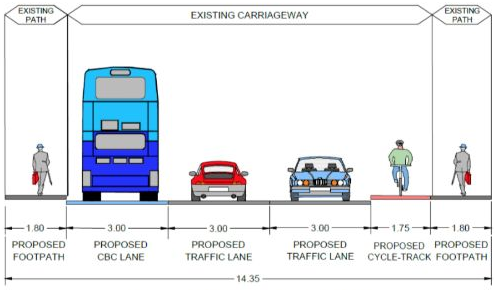


Figure 5.51 Cross Section B-B

Cross-section of 14.35m

It is odd that Scheme 3, even with a narrower cross-section had more disadvantages than Scheme 2 on the environment criteria. In the MCA Tables, a listed disadvantage for Scheme 3 but not Scheme 2 in the Archeology/Cultural Heritage criteria:

> *The boundaries of 2 protected structures on Malahide Rd (62 & 64) may be affected by road widening.*

However, Scheme 2, also impacts on the boundary of Malahide Road 62 & 64.

In the Flora and Fauna criteria, Scheme 3 had some advantages over Scheme 2 because of the need for less land take. Scheme 3 should have beaten Scheme 2 on the Environment criteria.

Taking Issue 1 and Issue 2 into account, the real winner of the multi-criteria analysis should have been Scheme 3, not Scheme 2.

Issue 3: Scheme 1 cross-section unnecessarily large

The cross-section used for Scheme 1 in the most constrained area is:

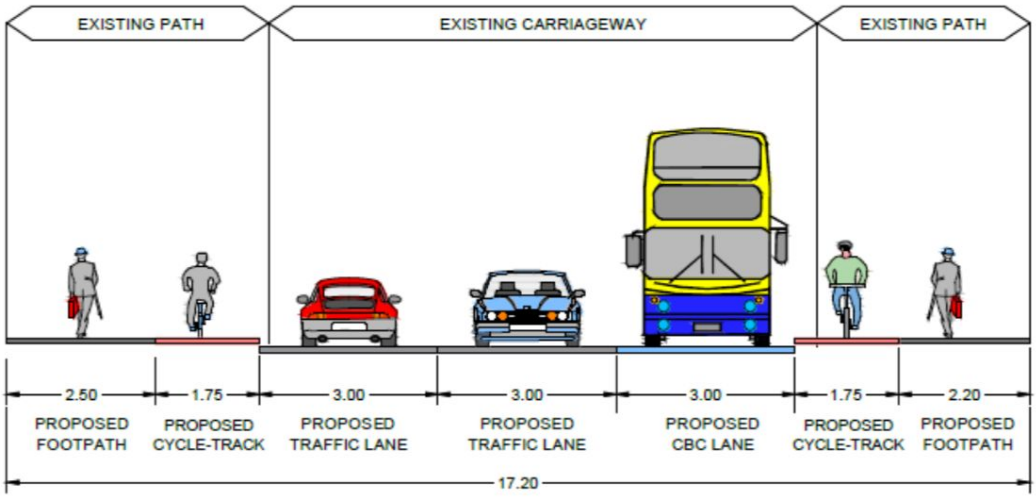


Figure 5.44 Cross Section B-B

This cross-section is 17.2m wide. However, it uses different dimensions for the proposed footpaths than the other schemes it is being compared to. It seems odd that a 2.2-2.5 footpath is provided beside a cycle track but only 1.8m is acceptable beside a bus lane. Both Scheme 2 and Scheme 3 use the minimum accepted value of 1.8m for the proposed footpaths. If Scheme 1, followed suit then its cross-section would be 16.1m instead of 17.2m. This makes Scheme 1 only 50cm wider than Scheme 2.

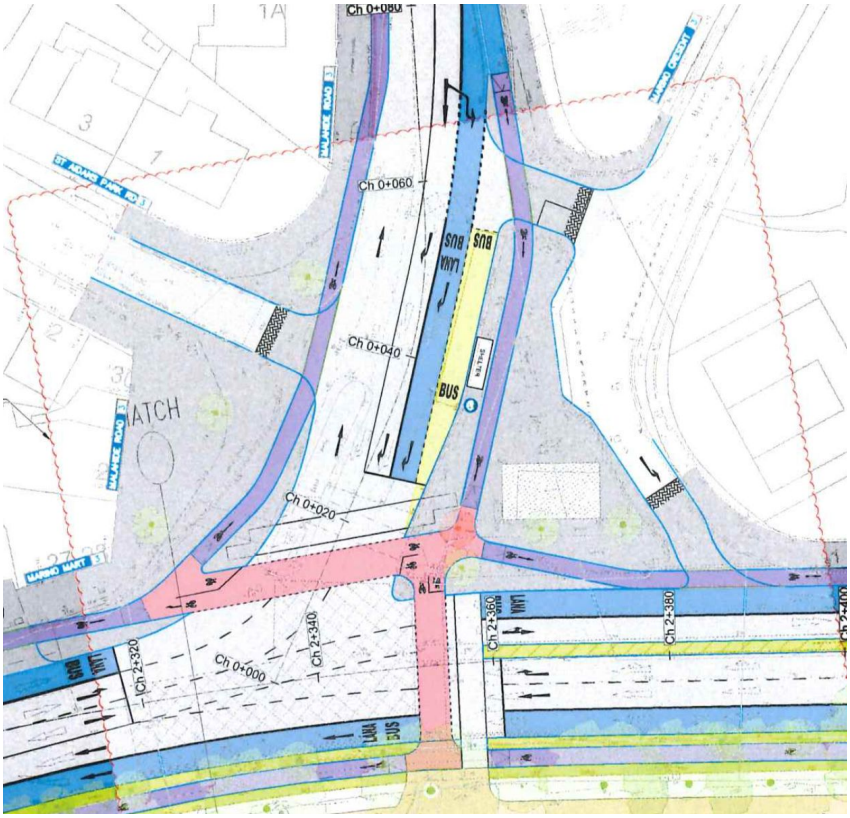
The multi-criteria analysis is not comparing like with like, which undermines the analysis. Using a cross-section of 16.1m, and taking into account Issue 1 above, it is likely that Scheme 1 and Scheme 2 would have been very similar on the environment option.

It is clear that arising from these three issues that the MCA should be repeated to determine if Scheme 2 should have been the preferred result or not. When repeating the analysis we also suggest adding another option, with a similar cross-section to Scheme 3, but divert the outbound cyclists instead of the inbound cyclists. Outbound cyclists can easily use the diversion through Marino (and do today). Inbound cyclists need to make two crossings to do the same diversion adding delays and reducing the

quality-of-service. Diverting outbound cyclists would provide a higher quality cycling integration.

3.2 Fairview Diversion Tie-in

If after re-completing the MCA, Scheme 2 is the preferred option again then we'd like to raise some points about the tie-in between this scheme and the Fairview/North Strand scheme. Below is the agreed Part 8 preliminary design of the Malahide Road junction of the North Strand/Fairview cycle route.



We encourage the design team to maintain this layout as far as possible even if Scheme 2, re-wins the MCA. In particular to keep the cycle bypass of the bus stop, for any cyclist who will cycle in the bus lane on Malahide Road. The cycle track should also be maintained between the junction and St Aidan's Park Road. This allows cyclists from the Clontarf/East Wall direction to cycle into Marino and avoid the Malahide Road.

3.3 Draughting Errors?

There are a number of side roads that gain greater access under these proposals (or are just draughting errors). For example, Newtown Road at the Malahide Industrial

Estate is being made two way, it is currently exit only? Access to Mount Dillon Court from Malahide Road is not currently possible (map 13). Danieli Road (map 14) is currently exit only, but is proposed 2 way? St David's Road junction is already a signalised junction.

3.4 Reducing Access to Malahide Road

We also suggest that closing off some side road accesses to Malahide Road be investigated. Potential options include Elm Road or Donnycarney Road, which have access from Collins Avenue. This will reduce conflicts for pedestrians and cyclists and improve bus priority by allowing for more continuous bus lanes without private cars turning across.

3.5 Parking Arrangements

We'd also like to see more clarity on some of the informal parking arrangements that exist along the route. For example, outside Grainger's pub on map 20, it is common for people to park on the hard surfaced area in front of the shops. Will this continue to be possible? If yes, how will drivers safely access this parking across the cycle track?

3.6 Missing Link to Clongriffin Station / Bus Terminus

The Clongriffin DART Station and Bus Terminus is a key public transport hub in the Clongriffin area. There are no works proposed on map 1 or map 2 to connect the cycle tracks on main street to this public transport hub.

Policy MTP3 of the Clongriffin Belmayne Local Area Plan (LAP) states that building walking and cycling infrastructure to connect to public transport hubs is a key part of the sustainable development of this area.

This section of the main road is not affected by Dublin City Council's Part 8 application for the Belmayne main street. A cycle route should be provided to this public transport hub and should be included as part of this proposal, either by redesigning 350m of the current road or via an alternate route.

3.7 Complete Primary Route 1C

There is only 560m of Primary Cycle Route 1C not covered by this Core Bus Corridor project. 315m of that is within Dublin City Council's area and the rest in Fingal. This is a prime opportunity for the NTA to include the full proposed cycle route 1C within this project.

3.8 Cycle K Garage (Map 9)

Special care should be given to the design of the Cycle Track at the K garage entrance on map 9. This entrance will see a high level of turning movements even from HGVs. There appears to be the space for a buffer space design (section 2.8.2 of this submission) at this location. It is important that cyclists are not placed in the blind spot of vehicles turning into the garage.

3.9 St Brendan Davis Drive

The inbound cycle track could merge onto St Brendan Davis Drive (map 12) earlier. This would help to create a bus stop bypass and remove many of the conflicts from vehicles turning off the Malahide Road. The intersection of St Brendan Davis Drive and Malahide Road would also be a good location for a raised table as that would encourage low speeds in this area.

3.10 Gracefield Road Junction

The proposed Gracefield Road junction will reduce cycling facilities. Currently it is possible for cyclists to travel in all directions. The new design will make it impossible for a cyclist coming from Gracefield Road to safely head either straight or right. This junction is a great candidate for a fully protected junction design (section 2.7.1) as there is the space. That would also mean that cyclists could safely travel in all directions on this road.

4.0 Conclusion

We trust that our observations will be taken into account as the design for this scheme progresses from a concept design to a preliminary design. We look forward to engaging with the NTA as the design progresses.

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