

Core Bus Corridor 6: Lucan - 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). We wants to make Dublin a safe and friendly place for everyone of all ages to cycle.

We are extremely disappointed in the proposals for the Lucan to City Centre CBC. The proposals fail to deliver any meaningful upgrade of existing poor cycling facilities or propose much new cycling infrastructure. The proposals fail to achieve the scheme objectives to provide cycling facilities that match the GDA Cycle Network Plan's quality-of-service level, or even basic standards of the NTA's National Cycle Manual. Serious work needs to be done to improve these proposals as they are unsafe and of poor quality.

We look forward to future engagement with the NTA to ensure that this route will meet the five needs of a cyclist and the standards of the National Cycle Manual.

2.0 Observations

2.1 Use Two-Way Cycle Tracks

This is one of the trickiest Core Bus Corridors to get right for cyclists. The N4 is a dual carriageway with a hard median with both high speed limits and high average annual daily traffic (AADT). Crossing the N4 is impossible except at a limited number of crossing points. In order to meet the five needs of cyclists (manual section 1.2) it would be best to provide a two-way cycle track on both sides of the N4 between Ballydowd Interchange and the Liffey Valley Interchange.

Two-way cycle tracks on both sides of the road will allow cyclists to make more direct and coherent journeys (two of the cyclist's five needs). For example, with the current proposals a cyclist leaving the city towards Lucan village will travel along Old Lucan Road, then be forced to pass under the Liffey Valley Interchange to the other side of the N4 and then cross back over again at the Ballydowd Interchange. All of these crossings, detours and delays can be avoided by providing a two-way cycle track on the northside of the N4.

For example, providing a two-way cycle track on the north side of the N4 would reduce an outbound cyclists journey from The Deadman's Inn to Woodies at Ballyowen Road from 2.5km to 1.9km and reduce the number of crossings from seven to two.

Another example, a cyclist leaving Ballyowen Lane heading towards the city, would be forced to take a 1.6km detour towards Lucan in order to use the cycle track legally. No sane person would make this detour, they will cycle the wrong way down the cycle track on southside of the N4 as far as Liffey Valley. This behaviour should be expected and accommodated in the design by providing a two-way cycle track on the southside of the N4.

2.2 Primary Cycle Route Width

This CBC will deliver Primary Route 6 and a section of Secondary Route 6A 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 CNP, which outlines the desired width of primary cycle routes as 2.5m for a one-way cycle track. We recommend a minimum of 4m for a two-way cycle track.

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

Basis for Target Quality of Service

There are many locations along the proposed route where the required width is well below standard. For example map 3 and map 4 the cycle track is less than 1.4m wide beside a high wall and with no buffer space. The two-way cycle track on map 8 and map 9 is hardly wide enough to be a one-way cycle track at 1.65m. These facilities need to be upgraded dramatically to meet the quality-of-service required in the scheme objectives.

2.3 Buffer Space

The NTA's National Cycle Manual (NCM), section 1.7.4, requires that there is 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 on the N4/Con Colbert Road/St John's Road West.

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.

Rationalising the number of right turn locations could allow for the central median to be narrowed so that a grass verge buffer space 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

The buffer space is of particular concerns along the first section of the route along the N4, which has high AADT (>100K) and a 80km/h speed limit. Another area of concern is Con Colbert Road and St John's Road West where there is also a high AADT and a 60km/h speed limit.

Without this buffer space the quality-of-service of this route will be a quality-of-service D, because of the high HGV influence.

2.4 Slip Lanes

There were no slip lane turns removed along the route and nine existing slip lane turns have been retained. Providing cycle lanes across slip lanes is not recommended by the NTA's National Cycle Manual (section 4.4.4). These slip lanes should be removed (DMURS 4.4.3) or converted into pocket turns without splays where complete slip lane removal isn't possible. Slip lanes encourage drivers to take corners at speed just when they should be slowing down. Examples on maps 1, 28, and 31.

2.5 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 a widespread use of streaming lanes (an "orphaned cycle lane" between two traffic lanes) at junctions along this route. Including:

- Ballydowd Interchange/Grange Castle Road (map 1)
- Kennelsfort Road (map 14)
- Con Colbert Road/Chapelizod Bypass (map 25)
- Con Colbert Road/South Circular (map 28)
- St John's Road West/Victoria Quay (map 31)

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

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

In essence the use of streaming cycle lanes at junctions on a road like the N4, Con Colbert Road, St John's Road West is against the manual. These are HGV routes, 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 are 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 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 fast/heavy traffic that would cross their path.

2.6 Integration with the wider GDA Cycle Network Plan

This route intersects with a number of other cycle routes included in the GDA Cycle Network Plan. A cycle network will always be more useful and connect more places than a single cycle route. Similar to how a bus network is more useful than a single bus route.

Where possible, the tail ends of cycle lanes of these routes 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 projects are progressed. In places there are existing cycle lanes that don't connect to this route.

Routes that intersect are:

- South Circular Road, Primary SO1
- Kylemore Road, Secondary Route SO4
- Liffey Valley Interchange, Secondary Route 7A
- Ballyowen Road, Secondary SO6

2.7 Bus Stop Bypasses

There are only 4 bus stops out of 19 on this route that have a bypass. There are many reasons we'd encourage the design team to include bus stop bypasses:

- Bus stop bypasses are recommended by the NTA's National Cycle Manual given the frequency of buses along this route
- Bus stop bypasses also 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 be able to pull into stops faster because bus drivers will not need wait for a slow cyclist to pass the bus stop before pulling in

2.8 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 desirable for people to cycle to the spine.

3.0 Route Observations

3.1 Old Lucan Road (West of M50)

This section (map 6-8) is an integrated cycling environment, where cyclists and motor traffic mix. This can be done in such a way as to provide a high-quality of service. However, the current proposals do not provide either a safe or high-quality integrated cycle environment following guidance from the NTA's National Cycle Manual.

This road is low-traffic but it is not low-speed. There is a 50km/h speed limit and the road is not designed for low-speed either. The carriageway is 8-12m wide in locations, far outside the 5.5m to 7m maximum in the National Cycle Manual (pg 55). The only piece of traffic calming is one speed ramp.

The NTA's National Cycle Manual states that the low speed environment must be self-evident, self-enforcing and self-explanatory in order to create a legible shared cycling environment. The current proposals are far outside the two link type designs for either narrow or wide shared streets (pg 54 & 55) of the National Cycle Manual. This section must be actively designed to be safe rather than just painting bike logos in the middle of the road.

Dublin Cycling Campaign undertook a speed survey of this road (attached as Appendix A). It found that the 85th percentile speed was 58km/h and that 38% of motorists were breaking the 50km/h speed limit. As we noted above this 50km/h speed limit needs to be reduced to 30km/h, and the road redesigned to make this a safe integrated cycle route.

There are two options here. Either narrow the carriageway to 5.5m - 6m, which would allow for wider footpaths and tree planting. The other option is to standardise the width to 8m and create the "Advisory Cycle Lane" design on page 58 of NCM. Our preferred option is to narrow the carriageway to 5.5m - 6m.

Because of the width of the carriageway, particularly near the entrance to King's Hospital School, there is a large amount of informal car parking. We suspect mostly as park and ride. The informal car parking on Old Lucan Road should be considered in the design. Either the car parking should be formalised by curb build-outs with tree pits in order to formalise the narrowing of the carriageway in this area. Otherwise when there are no/few cars parked the carriageway will appear 2-3m wider encouraging speeding.

A change in surface treatment and use of subtle design techniques like those from a Dutch bicycle-street could be appropriate for this road. Frequent use of speed ramps should also be used.



3.2 Lucan Road (East of M50)

The Lucan Road east of the M50 suffers from similar problems to the west side of the M50. The carriageway width is quite inconsistent changing from 6m up to 11m in places, though the speed limit is 30km/h. The carriageway width must be constrained and standardised in order to encourage a self-enforcing low-speed environment. The corner radii of many adjoining roads and entry treatment should be examined.

The carriageway should be narrowed by increasing the width of the footpath. A low speed environment should be encouraged through all appropriate measures in section 4.1.2 of DMURS.

There is a significant amount of both formal and informal car parking along Lucan Road. In some locations a rationalisation of car parking should take place, and space should reallocated to pedestrians and cyclists. In other locations the car parking should be formalised in order to keep the carriageway width low.

There is also a large car parking entrance to the Palmerstown House pub/restaurant with high traffic volume, Stewarts Hospital/Waterstown Park entrance (Map 13) and shopping entrance to Aldi (Map 12)

A 2018 planning application (SHD3ABP-302521-18) for 303 apartments on Kennelsfort Road included a Traffic and Transportation Assessment (TTA) by AECOM. It included morning and afternoon peak traffic counts for the area in Appendix B of the TTA.



AM peak traffic count - Source: AECOM, TTA for SHD3ABP-302521-18

2017 Baseline Conditions PM (16:00 - 17:00)



PM peak traffic count - Source: AECOM, TTA for SHD3ABP-302521-18

Road	AM Peak	PM Peak	Average	Estimated AADT
Lucan Road (W)	351	409	380	3,800
Lucan Road (E)	375	298	337	3,370
Kennelsfort Road Lower	480	508	494	4,940

The estimate AADT uses '*Note 4*' of section 1.7.4 of the National Cycle Manual that suggest estimating AADT 10x times peak hour two-way flow.

Most traffic along Lucan Road is not following the 30km/h speed limit. Dublin Cycling Campaign undertook a speed survey at two locations along this road (attached as appendix A). It found that 86% of motorists were breaking the 30km/h speed limit and the 85th percentile speed of 46km/h.

Given the medium AADT values and 46km/h 85th percentile speeds it is clear that something needs to be done in order to make this road safe for cyclists. Traffic reduction and traffic calming measures should be used in order to create a safe integrated walking and cycling environment in Palmerstown Village.

Here are some example bicycle street designs from the Netherlands that might be appropriate for adaptation.



This design uses a narrow carriageway, red road surfacing and a raised rumble strip in the middle made of blocks. The raised rumble strip acts like a mini speed bump when overtaking. This discourages overtaking at speed.



This design uses different surface treatments in order to encourage cyclists to cycle in the middle of the lane. This is optical narrowing.

Given that Palmerstown village is also a key local centre, a place in DMURS-terms, there is a great opportunity to improve the public realm in Palmerstown village in the process of retrofitting the streets for safer walking and cycling.

3.3 Kennelsfort Road

Kennelsfort Road (map 14) needs a complete redesign. There is a large amount of car parking inside of the cycle track, it should be the other way around. Cars should not cross the cycle track to park. The perpendicular (nose-first) car parking on Kennelsfort Road encourages cars to back out into the cycle lane with no visibility, which is utterly dangerous.

This could be changed to angled parking or changed to parallel car parking on both sides of the street, if the amount of on-street parking needs to be retained.

There is also little protection afforded to cyclists near the entrance to Mattress.ie industrial retail warehouses. It is worth noting that this site was the subject of a ultimately rejected planning application (SHD3ABP-302521-18) to build 303 apartments that involved removing this uncontrolled fifth arm to the junction and the creation of a narrow entrance further up Kennelsfort Road.

3.4 Con Colbert Road / South Circular Road Junction

This junction is messy and car dominated. The current design is unsafe for cyclists and breaches many National Cycle Manual recommendations such as streaming lanes, slip lanes. Cyclists need to be segregated through this junction. There is too much traffic moving at up to 60km/h at odd angles to mix cyclists and motor traffic. We're also disappointed that nothing has been done to improve the cyclist facilities on South Circular Road, which is Primary Route SO1.

3.5 Bus Stops on St John's Road West

We question the need for inline bus stops on map 29. Who do they serve? There are high walls and no nearby access to these stops. Residents in Heuston South Quarter (HSQ) will use the stops at Heuston, as the stops on map 29 would be hard to access. These stops are also a little far from Kilmainham and the high-density residential developments at Clancy Quay. These stops should be deleted.

3.6 Outbound Bus Stop outside Heuston Station

In particular we'd encourage the design team to find a solution for the outbound bus stop on map 30. This bus stop is not only used by Dublin Bus but also by national and regional buses stopping with long set-down times beside Heuston station. All of the land behind that bus stop is state-owned by OPW. Directly behind the bus stop is the car park of the Revenue Data Centre. Finding a bus stop bypass solution for this bus stop will not be easy but is a must. Traffic is too fast for cyclists to pull out around the bus and the buses set down for too long to just wait for the bus to move on.

3.7 Side Roads

There are a number of side roads where it isn't clear that cyclists have priority over them. Particularly Ballyowen Lane (map 3), the entrance to St Loman's hospital (map 4), and the entrance to the Hermitage Clinic (map 6).

3.8 Route Directions

The route for cyclists isn't exactly intuitive in all locations. Care should be given to design the route so that it is self-evident where cyclists should go next. This might include redesigning the hidden access point to the M50 overpass on map 8 or adding signage at the appropriate locations.

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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Appendix A: Speed Survey in Lucan and Palmerstown

Dublin Cycling Campaign undertook a speed survey at multiple locations along this route. The survey was undertaken on 24th January 2019 from 14:58 pm - 16:20 pm during freeflow traffic conditions.

Summary Results

		Sample	Speed	Average	85th	
#	Road & Location	Size	Limit	Speed	percentile	Speeding
	M50 - Palmerston Footbridge -		400			400/
1	Southbound	29	100	88	98	10%
2	M50 - Palmerston Footbridge -	17	100	25	20	0%
∠		17	100	25	29	0 /0
	Lucan Road - Gantry at diverge to M50 northbound -					
4	Eastbound	34	60	68	78	91%
	Lucan Road - Liffey Valley					
5	Footbridge - Eastbound	40	80	73	81	20%
	Lucan Road - Liffey Valley					
6	Footbridge - Westbound	40	80	74	81	25%
7	Old Lucan Road - Liffey Valley	21	50	47	50	38%
<u> </u>	rootbridge - both directions	21		4/		5070
	Old Lucan Road - Hollyville, at the speed cushions - Both					
8	directions	21	30	37	43	86%
٩	Old Lucan Road - D. Kennedy Steel - Both directions	30	30	30	16	87%
3		- 59	50		40	07/0

Speed Breakdown

#	Road	10	20	30	40	50	60	70	80	90	100	110	120
1	M50 - Palmerston Footbridge	0%	0%	0%	0%	0%	0%	0%	14%	62%	14%	7%	3%
2	M50 - Palmerston Footbridge	0%	6%	82%	12%	0%	0%	0%	0%	0%	0%	0%	0%
4	Lucan Road - Gantry at diverge to M50 northbound	0%	0%	0%	0%	3%	6%	53%	26%	12%	0%	0%	0%
5	Lucan Road - Liffey Valley Footbridge	0%	0%	0%	0%	0%	3%	38%	40%	20%	0%	0%	0%

6	Lucan Road - Liffey Valley Footbridge	0%	0%	0%	0%	0%	3%	20%	53%	23%	3%	0%	0%
7	Old Lucan Road - Liffey Valley Footbridge	0%	0%	5%	19%	38%	29%	10%	0%	0%	0%	0%	0%
8	Old Lucan Road - Hollyville, at the speed cushions	0%	0%	14%	48%	33%	5%	0%	0%	0%	0%	0%	0%
9	Old Lucan Road - D. Kennedy Steel	0%	0%	13%	31%	46%	10%	0%	0%	0%	0%	0%	0%

Location Map

