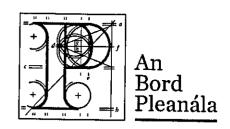
Our Case Number: ABP-314724-22



Metro South West Group C/O 39 Whitehall Road Terenure Dublin 12 D12 N265

Date: 05 December 2022

Re: Railway (Metrolink - Estuary to Charlemont via Dublin Airport) Order [2022]

Metrolink. Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to Charlemont,

Co. Dublin

Dear Sir / Madam.

An Bord Pleanála has received your recent submission (including your fee of €50) in relation to the abovementioned proposed Railway Order and will take it into consideration in its determination of the matter.

The Board will revert to you in due course with regard to the matter.

Please be advised that copies of all submissions/observations received in relation to the application will be made available for public inspection at the offices of the relevant County Council(s) and at the offices of An Bord Pleanála when they have been processed by the Board.

More detailed information in relation to strategic infrastructure development can be viewed on the Board's website: www.pleanala.ie.

If you have any queries in the meantime, please contact the undersigned. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

B SW

Niamh Thornton **Executive Officer**

Direct Line: 01-8737247

METRO SOUTH WEST GROUP c/o 39 Whitehall Road Terenure Dublin. D12 N265 Tel: 01-4555946

A	AN BORD PLEANÁLA		
LDG			
ABP			
	2 4 NOV 2022		
	50 Type: ask		
Time:	11.24 By: hand		

The Secretary, An Bord Pleánála, 64 Marlborough Street, Dublin 1.

22nd November 2022,

Dear Sir/Madam,

Re: Case reference: NA29N.314724 - MetroLink.

314724: Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to Charlemont, Co. Dublin

Statement:

This Submission wholly relates to that portion of the proposed Metro Link beyond the station located at St Stephen's Green East. For the avoidance of any doubt we are fully supportive of the project from Estuary to St Stephen's Green, which we consider is long overdue.

Observations of Metro South West Group:

We submit, however, that Bord Pleanala should defer the authorisation of the section of MetroLink beyond the St Stephen's Green station, other than to create a turning section similar in length to that which is currently proposed beneath Manders Terrace.

We further believe that the decisions made now will affect the provision of necessary rail infrastructure, for South West Dublin for generations to come and, we respectfully request you to consider, carefully, the content, findings and analyses contained in this submission to support our case.

Main Reasons as follows include:

- 1. Limitations of Charlemont terminus for radial extensions to south city and the consequences for south west Dublin.
- 2. Failure of the NTA to consider an alternative routing of the terminus, notably towards Rathmines, as outlined by Metro South West Group.
- 3. Potential Environmental/Climate Action benefits of an alternative extension route.
- 4. Inadequate plan for the supply of Public Transport to SW Dublin and the critical need, at this juncture, for correct decisions to be made in relation to the MetroLink trajectory into South Dublin in the future.
- 5. Many practicalities of linking *MetroLink* with the Luas Green Line at Charlemont have not been addressed

Page 1/3.

- 6. Breach of Aarhus Convention.
- 7. Continuing MetroLink beyond St. Stephens Green to Charlemont and Manders Terrace is unnecessary and premature.

1. Limitations of Charlemont terminus for radial extensions to south city and the consequences for south west Dublin

We believe that if the tunnel is bored as far as Manders Terrace, it seriously compromises the ability for a southern extension to include the highly populated city suburbs of Portobello, Lower Rathmines, and Harold's Cross.

We would submit that proper planning requires a proper evaluation of the options for extension and, that it is not consistent with proper planning to permit a station at Charlemont which would compromise the options.

2. Failure to consider an alternative routing, notably towards Rathmines as outlined by Metro South West Group.

We would submit that the Rathmines, or Portobello, area would be a far more suitable location for a terminus, including linkage with BusConnects corridors. TII has wholly failed to consider this. The south side terminus became relevant once it was decided not to convert the Green Line Luas to Metro.

3. Potential Environmental/Climate Action benefits of an alternative extension route.

We believe that a metro extension as far as Rathmines would, initially, yield immediate benefits environmentally for South West Dublin, and avoid adverse environmental impact on the Grand Canal.

4. Inadequate plan for the supply of Public Transport to SW Dublin and the critical need, at this juncture, for correct decisions to be made in relation to the MetroLink trajectory into South Dublin in the future.

A proper feasibility study for continuing *MetroLink* to South West Dublin needs to be carried out.

5. Many practicalities of linking MetroLink with the Luas Green Line at Charlemont have not been addressed

Many practicalities have not been addressed including passenger conflict on platforms and stairs; turning of trams.

6. Breach of Aarhus Convention.

We believe that the lack of consultation on important changes at Charlemont is a breach of the above.

7. Continuing MetroLink beyond St. Stephens Green to Charlemont and Manders Terrace is unnecessary and premature.

We believe that investigation now into the MSWG's suggestion of choosing an alternative terminus eg: Portobello / Cathal Brugha Barracks in Rathmines

- Could bring Transport User Benefits and Revenue from a station at Portobello.
- Cost approx. €650m (matching cost to Charlemont)
- Lay the foundation of the Metro to the south west.
- Aid climate action in the south west.

The following Appendix and Annexes outline our case extensively on 'Why An Bord Pleanála should initially approve MetroLink only as far as St. Stephens Green'.

Yours sincerely,

Pauline Foster

For, and on behalf of,

Metro South West Group.

Caulin Foster.



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- P. (i) NTA letter 12th Sept 2022. Huge Creegan to Jennifer Wall DCC Re Emergency Motion dated 13th June 2022. (2 pages)
 - (ii) NTA Letter $23^{\rm rd}$ May 2022. Huge Creegan to Jennifer Wall, DCC. -3 pages.

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Luas at Charlemont.

Bus Routes.

Heavy Rail at Glasnevin.

- Q. (i) Text of Emergency Motion for SEAC 13th June 2022. Cllr. Anne Feeney.
 - (i) DCC. Motion Cllr. Dermot Lacey. SEAC Meting 14th Mar 2022.
 - (iii) SDCC Motion Cllr. Alan Edge. Motion 2: 14th Feb 2022.
- R. (i) Joint Committee on Transport & Communications 28th June 2022 7pm Excerpts: Pages 1. 10. 16. 17. 18.
 - (ii) Joint Committee on Transport & Communications 4th May 2022 1.30pm Excerpts: Pages: 1. 9. 10. 11. 12.
- S. Parliamentary Question Dep. Aengus O'Snodaigh to Min. Ryan Thurs 3^{rd} Mar 2022. Q & A 2 pages.
- T. Exchange of letters Irish Times May 10th & 13th 2022.

Appendix

The Appendix contains the detailed information and analysis which underpins the submission from the Metro South West Group entitled

Why An Bord Pleanála should approve *MetroLink*only as far as St Stephens Green

Metro South West Group November 2022

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1 The Metro South West Group

- 1.1 The Metro South West Group (MSWG) comprises 40 Residents Associations in South West Dublin. We are concerned at the lack of public transport in South West Dublin. Having carried out extensive analysis, we have concluded that *MetroLink*, in a Phase 2, should continue to South West Dublin to serve the needs of this population.
- 1.2 We fully support the MetroLink project which is before An Bord Pleanála. Our only reservation relates to the proposed location of the southern terminus at Charlemont and the final position of the Tunnel Boring Machine (TBM) below Manders Terrace. This would seriously restrict future options for the continuation of MetroLink. In particular, it would diminish the Transport User Benefits of continuing to South West Dublin as a Phase 2 of MetroLink. In our view, An Bord Pleanála should approve the terminus in St Stephens Green with the TBM a short distance beyond this.

1.3 Here is the list of members of MSWG:

- 1. ART. Association of Residents of Terenure.
- 2. Butterfield and District RA
- 3. Fortfield and Templeville Residents Association.
- 4. Hermitage Residents Association.
- 5. Kimmage Road West Residents Association.
- 6. Knocklyon Network.
- 7. LOKRA.
- 8. Mount Argus and Church Park Residents Association.
- 9. Harold's Cross Vision 2025 Team.
- 10. OPTRA
- 11. Perrystown and Manor Estates Residents Association.
- 12. Rathfarnham Road Residents Association.
- 13. Rathgar Residents Association.
- 14. Rathgar Road Residents Group.
- 15. Recorders Residents Association.
- 16. St. Anne's Residents Association.
- 17. Shanid Road Residents.
- 18. Temple Manor and Wilkins Residents Association.

- 19. Templeogue Tidy Towns Group.
- 20. Templeogue Wood Residents Association.
- 21. Terenure Residents Association.
- 22. Terenure Road East Residents Association.
- 23. Terenure West Residents Association.
- 24. W.O.R.K. Residents Associations.
- 25. Woodstown Residents Association
- 26. Firhouse Bohernabreena Residents Group.
- 27. Beechdale Residents Association.
- 28. Lansdowne Park and District Residents Association.
- 29. Woodfield Residents Association
- 30. Dodderbrook Residents Association.
- 31. Boden Park Residents Association
- 32. Parkwood Residents Association. Old Bawn.
- 33. Scholarstown Wood Residents Association.
- 34. Oakdale Residents Association.
- 35. Knocklyon Woods RA.
- 36. Knockfield, Orlagh, Beverly Residents Association KOBRA
- 37. Moyville, Edmonstown Green and Edmonstown Court RA. MEERA.
- 38. Glendown Residents Association
- 39. HellfireMassy's Residents Asociation
- 40. College and Wainsfort Residents Association

2 Existing Public Transport in South West Dublin

- 2.1 It is the strong view of Metro South West Group (MSWG) that proper consideration be given to the transport needs of the South West city when deciding the correct location for the southern terminus of *MetroLink*. MSWG has itself looked extensively at public transport in the south west city. Chapter 3 of this Appendix is an assessment of what is likely to be required in 2042 based on the NTA's own projections. Chapter 4 illustrates that what is proposed by *BusConnects* is grossly inadequate for the needs of the area and shows clearly that metro is the only solution.
- 2.2 South West Dublin, the area between the Red and Green Luas lines, has a large population as shown below¹.

Metro South West

The need for sustainable public transport in SW Dublin



Narrow streets on bus corridors in SW Dublin: only metro can deliver capacity and speed

- 2.3 To the west, we have the Luas Red Line from Saggart and Tallaght able to bring 6,000 passengers into town in the morning peak hour. To the east, we have the Luas Green Line with a similar capacity. In the middle, we have a large area and population with only narrow roads linking to the city.
- 2.4 Current provision of public transport in the peak morning period is shown in Table 2.1.

between the Hazelhatch line and Luas Red

Between Luas Red and Luas Green

Between Luas Green and DART Bray

Where a DED is split, a split expressed in 1000's of population is estimated.

¹ The data in the above map are drawn from an analysis of the Census 2022 provisional populations of DEDs in Dublin respectively

The south west segment accounts for almost 25% of the city population.

Bus corridor	Current No. of Buses	Current Passenger Capacity
Kimmage-City Centre	9	
(at Mount Argus)	(3X54a; 6X9)	720
Tallaght-Terenure (at Terenure College)	19 (12X15; 4X49; 2X65; 1X65b)	1,520
Rathfarnham-City Centre (at junction with Rathdown Park)	12 (6X15b; 6X16)	960
Greenhills-City Centre (at Crumlin Hospital)	23 (6X27; 1X56a; 5X77a; 1X77x; 6X123; 4X151)	1,840
Totals	63	5,040

Table 2.1 Current provision of public transport 7-8am in-bound on points along the proposed bus corridors of *BusConnects*

2.5 In order to reduce congestion and greenhouse gas emissions, it would be important to substantially increase the usage of public transport. Chapter 3 examines the potential demand for public transport in South West Dublin, as estimated by the transport modellers in the NTA.

3 Potential Demand for Public Transport in South West Dublin in 2042

The Modellers' estimate

- 3.1 The NTA carried out an analysis of this in preparation for their *Draft Strategy for the Greater Dublin Area 2022-2042*. Their analysis is contained in the *Strategy Development and Modelling Report*, November 2021.
- 3.2 In the *Modelling Report*, an idealised public transport network was drawn up. In South West Dublin, two of the three main bus corridors Harold's Cross and Rathmines were modelled to have a high quality public transport as follows:
 - o 1-minute frequency
 - o Minimum speed of 20km per hour
 - Unlimited capacity.

These characteristics approximate to a system of 'metro on the street'.

Given these characteristics, the following levels of demand in the peak hour, in-bound, were estimated for 2042:

Table 3.1 Peak-hour am demand for public transport in 2042

	Harold's X	Rathmines	Total
Model demand, peak hour, in-bound,	6,600	9,300	15,900
that could be supplied (ACR, p.91)			

3.3 It is worth comparing these estimates of potential demand with actual supply in 2022.

Table 3.2 Peak-hour am supply of public transport in 2022^a

	Harold's X	Rathmines	Total
Actual supply of bus places, peak hour,	1,280	2,800	4,080
in-bound			

^a Bus timetables collated by MSWG. Under *BusCponnects*, Harold's X is earmarked for the 'F' Spine; Rathmines is earmarked for the 'A' Spine

It can be seen that the Modellers' estimates of potential demand are almost four time's current supply. The estimates of potential demand are vastly in excess of both current capacity and the capacity of *BusConnects*. Clearly, something more than buses is required.

3.4 Nonetheless, these Modellers' estimates of potential demand should have been increased. No account was taken of the opportunities of cycling to a "metro-like" service. MSWG carried out an analysis of a hypothetical continuation of *MetroLink* to south west Dublin. The analysis showed that even two hypothetical metro stations – at Spawell and Dodder Valley Park – would provide great opportunities for commuters

to cycle to these stations and complete their journeys by metro. Sixty-three locations were sampled throughout south west Dublin and from <u>all</u> of these, substantial time savings would arise compared to driving to the city or taking the bus. The average gross saving over driving into the city would be 18-19 minutes each morning. Allowing five minutes to transfer between modes, would leave a net saving of 13-14 minutes each morning. The MSWG analysis is replicated in Annex B.

- 3.5 No account was taken of the possible opportunities for people in south west Dublin to drive to a metro station and complete the journey by metro. The MSWG analysis showed that gross time savings would be similar to those achieved by cycling to metro stations at Spawell and Dodder Valley Park.
- 3.6 No account was taken of the possible opportunities for people living outside south west Dublin to avail of Park and Ride at two hypothetical metro stations at Spawell and Dodder Valley Park. For in-bound motorists on the N81, they would face a choice: continue driving into the city (40 minutes) or park at Spawell and take the metro (15 minutes). Similarly, for many motorists cruising around the M50, using the Park and Ride at Spawell would be very attractive.
- 3.7 For all of the above reasons, the estimates of potential demand by the modellers were far too low.
 - How the Modellers should have proceeded from the (corrected) estimate of potential demand for public transport
- 3.8 Starting from (upwardly corrected) estimates of potential demand, the next step for the modellers should have been to identify alternative ways of meeting as much as possible of this potential demand. It may be the case that not all of the potential demand can be met. However, the alternative ways of meeting as much as possible of this demand should have been evaluated to identify the most cost-effective option. This did not happen.

What the Modellers actually did

3.9 The Modellers did something else. They operated under the following stricture:

"Objectives are considered achieved in Phase 3 if the lower end of the plausible future demand estimates can be accommodated on the public transport schemes currently in planning, given these schemes must be delivered to meet climate goals to 2030." (page 89)

3.10 Thus, instead of seeking to serve as much as possible of potential demand for public transport in 2042 in a cost-effective manner, it was decided to reduce potential demand to meet the public transport proposals which had been pre-decided. Why bother with demand modelling, if you have already decided what public transport you are going to supply?

- 3.11 What had been pre-decided was *BusConnects*. The following few paragraphs follow the inappropriate journey of the Modellers as they sought to compress potential demand to meet the capability *BusConnects* in south west Dublin. If you wish to skip this apparently wasted journey, you can go straight to the outcome in paragraph 3.18.
- 3.12 The journey started with very high assumptions regarding the capacity of buses. It was assumed that ordinary buses on a *BusConnects* corridor could carry up to 3,500 passengers per direction per hour². *BusConnects Plus*, i.e. "bendy buses" were assumed to have a capacity of 5,400 passengers per hour. The Modellers made no distinction between different bus corridors, for example between multi-lane roads and simple roads with room for only one carriageway in each direction. All of the proposed *BusConnects* corridors in South West Dublin have long stretches of the latter type of road and the assumptions of the Modellers have little reality for these roads.
- 3.13 These assumptions provided targets for the Modellers' aim: reduce the "plausible future demand estimates" to below 3,500 or 5,400 passengers per corridor in the peak hour and BusConnects will suffice!
- 3.14 Armed with these corridor targets, the Modellers' <u>first</u> step was to reduce potential demand to reflect Covid-19 and the emergence of increased home working and blended working.

Table 3.3 Alternative future demand in 2042 due to trip reductions

	Harold's X	Rathmines	Total
Initial Model demand, peak hour, in-	6,600	9,300	15,900
bound, that could be supplied (ACR, p.91)	145		A500
Alternative future demand: Trip	5,600	7,600	13,200
Reduction (ACS, page 96)			

Both the Harold's Cross and Rathmines corridors were still problematic as potential demand exceeded the upper and lower targets (3,500 – 5,400) to fit within *BusConnects*.

3.15 The Modellers' <u>second</u> step was to factor in several demand reductions resulting from an increased uptake of cycling, the application of tolls and parking management. The results were as follows:

² Compare this to the actual capacity of 2,800 today on a very busy Rathmines Road (see Table 3.2). *BusConnects* is assumed to have 25% more capacity.

Table 3.4 Further demand reductions for 2042

	Harold's X	Rathmines	Total
Initial Model demand, peak hour, in-	6,600	9,300	15,900
bound, that could be supplied (p.91)			
Step 1: Alternative future demand:	5,600	7,600	13,200
Trip Reduction (ACS, page 96)			
Step 2: Further reductions (cycling, tolls,	3,800	5,100	8,900
traffic management: ACW, p96)	900		

Notice that Step 2 resulted in both Harold's Cross and Rathmines falling within the range 3,500-5,400, between the assumed capacities of ordinary and super buses.

3.16 Up to this, the modelling assumption was that a frequent, light rail, on-street type system would be used on these corridors. Step 3 involved moving away from this assumption and looking "at the impact of reflecting actual service characteristics similar to those envisaged by BusConnects", i.e. a much lower level of service. The results were as follows:

Table 3.5 Demand reductions in 2042 due to BusConnects

	Harold's X	Rathmines	Total
Initial Model demand, peak hour, in-	6,600	9,300	15,900
bound, that could be supplied (p.91)			
Step 1: Alternative future demand:	5,600	7,600	13,200
Trip Reduction (ACS, page 96)			
Step 2: Further reductions (more cycling,	3,800	5,100	8,900
tolls, traffic management: ACW, p96)			
Step 3: Impact of BusConnects, more	1,400	2,400	3,800
cycling: (Preferred Strategy ADF: p106)			

Step 3 produced the final demand forecasts for Harold's Cross and Rathmines which are shown in the above table.

3.17 Remember, the objective of the Modellers was as follows:

"Objectives are considered achieved in Phase 3 if the lower end of the plausible future demand estimates can be accommodated <u>on the public transport schemes currently in planning</u>, given these schemes must be delivered to meet climate goals to 2030." (page 89)

The Modellers took an initial figure for potential demand (15,900) which is far too low (see paragraphs 3.4 - 3.7 above). This was further reduced by 76 per cent to arrive at

- a 2042 estimate, which "can be accommodated on the public transport schemes currently in planning".
- 3.18 We now compare the results for estimated demand in 2042 from the modelling exercise with today's actual supply of buses on these corridors.

Table 3.6 Today's supply of public transport vs modelled demand for 2042

	Harold's X	Rathmines	Total
Today's actual supply of bus places, peak hour, in-bound	1,280	2,800	4,080
Modellers' final demand estimates for 2042	1,400	2,400	3,800
Step 3: Impact of <i>BusConnects</i> , more cycling: (Preferred Strategy ADF: p106)			

Clearly, the Modellers have been very successful in 'reducing' demand on the corridors. Taking Rathmines and Harold's together, estimated demand for public transport in 2042 was reduced to a level that is <u>below</u> today's actual supply of public transport (3,800 in 2042 vs 4,080 today).

What is the sense of that, given that we are trying to increase the patronage of public transport?

Conclusion of Chapter 3

3.19 The Modellers' estimates of the demand for public transport in 2042 make no sense. Unfortunately, the *Strategy Development and Modelling Report*, November 2021, was not just an academic exercise resulting in an article in a specialist journal. Rather, as the title suggests, it fed directly into the very poor provision for public transport, which the *Draft Strategy for The Greater Dublin Area 2022-2042* has proposed for south west Dublin for the next 20 years. This plan consists of *BusConnects*.

Chapter 4 examines the capacity issues of *BusConnects* in South West Dublin.

4 Inadequate Plan for the Supply of Public Transport in South West Dublin to 2042 and Beyond

4.1 In 2001, The Dublin Transportation Office published *A Platform for Change*. That Report modelled a 'bus only' solution. According to the Report:

"In summary, the analysis of the 'Comprehensive Bus' scenario established that buses alone could not address the problem because in many of the main transportation corridors the bus mode cannot provide the necessary capacity to cope with the forecast demand" (page 35).

Notwithstanding this conclusion from many years ago, in recent years the NTA has revived the concept of 'bus only' for south west Dublin.

BusConnects

4.2 The *Draft Transport Strategy for the Greater Dublin Area 2022-2042* provides a general endorsement of *BusConnects* as though it could be sufficient to meet the public transport needs of south west Dublin for the next 20 years.

According to the NTA,

"The aim of BusConnects Core Bus Corridors is to provide enhanced walking, cycling and bus infrastructure on key access corridors in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along these corridors."

However, for the next 20 years, the *Draft Strategy for the Greater Dublin Area 2022-2042* takes no account of the lack of adequate capacity of *BusConnects*, which has been clearly demonstrated over the past three years by MSWG (see Annex A) and others.

Capacity of the proposed bus corridors

- 4.3 According to the *Strategy Development and Modelling Report*, November 2021, the potential demand for public transport in 2042 will be almost four times the current supply in Harold's Cross and Rathmines. However, according to the Modellers, actual demand for public transport (buses) in 2042 will be lower than current supply. This is broadly consistent with the supply of public transport, which is provided under *BusConnects*.
- 4.4 Between the Red and Green Luas lines, the National Transport Authority has identified 4 bus corridors. Under *BusConnects*, the projected increase in the number of buses going into the city in the peak morning hour is very small.
- 4.5 Table 4.1 shows the details:

Table 4.1 Summary of Four Bus Corridors identified by the NTA:

Number of Buses and Passenger Capacity in-bound to the City
in the 7am to 8am Peak Hour from Specific Locations on the Corridors

Bus corridor	Current	Current	BusConnects	BusConnects
	No. of Buses	Passenger Capacity	No. of Buses	Passenger Capacity
Kimmage-City Centre (at Mount Argus)	9 (3X54a; 6X9)	720	18 (6XF1; 6XF2; 6XF3)	1,440
Tallaght- Terenure (at Terenure College)	19 (12X15; 4X49; 2X65; 1X65b)	1,520	10 (5XA1; 5XA3)	800
Rathfarnham- City Centre (at junction with Rathdown Park)	12 (6X15b; 6X16)	960	18 (5XA2; 5XA4; plus 2X74; 6X85))	1,440
Greenhills-City Centre (at Crumlin Hospital)	23 (6X27; 1X56a; 5X77a; 1X77x; 6X123; 4X151)	1,840	24 (4XD1; 4XD2; 4XD3; 2XD4; 2XD5 plus 2X72; 6X73)	1,920
Totals	63	5,040	70	5,600

- 4.6 The NTA has asserted, without evidence, that the proposed bus corridors can carry "multiples" of the number of buses set out in the *BusConnects* plan. This is entirely fanciful as the corridors would struggle even to accommodate the planned numbers of buses under *BusConnects*.
- 4.7 For example, Corridors 10 and 12 (from Tallaght and Rathfarnham) merge at Terenure Road East currently a very narrow 2 lane stretch of road see the photo. According to the NTA, this would be the busiest corridor in Dublin³.



³ Dublin Area Bus Network Redesign, Revised Proposal, page.96. October 2019, Jarrett Walker and Associates,

- 4.8 Under *Busconnects*, buses would turn right from Rathfarnham Road into Terenure Road East. That road would also receive buses and general traffic from Terenure Place, which is right opposite Terenure Road East. Terenure Place would receive buses from Templeogue Road, which would only contain buses and bikes. General traffic which now uses Templeogue Road would be diverted at Templeogue Bridge and Templeville Road to the KCR. There they could go to town via Crumlin (Stannaway and Clogher Roads) or they could turn right and access Terenure via Terenure Road West: no doubt, many motorists would choose this option. In addition to receiving 20 'A' buses in the peak hour, Terenure Road East would be expected to also receive 6 'S4' orbital buses and 4 '81' buses via Terenure Road West, giving a total of 30 buses per hour. This is a bus every 2 minutes, in addition to cars, vans, taxis, bikes etc.
- 4.9 According to the "My London" website,

"The Victoria Line operates 36 trains per hour at the busiest times, with 100 seconds between trains - making it the most frequent train service in the UK and second most frequent in the world."

Of course, unlike the buses on Terenure Road East, the trains on the Victoria Line do not have to contend with vans, cars, bikes etc. Even so, they manage to dispatch 'only' 36 vehicles in the peak hour.

Currently, Terenure Road East receives 19 in-bound buses in the peak hour and is highly congested in peak periods. To increase the number of buses in the peak hour by over 50 per cent, as proposed in *BusConnects*, — and thereby almost match the throughput of vehicles on the Victoria Line — would be a formidable challenge. The notion, as proposed by the NTA, that even more buses could be accommodated is difficult to comprehend.

Has a 'bus only' solution been examined previously?

4.10 The demonstration above that buses alone cannot provide sufficient capacity for South West Dublin is not a surprise. It simply bears out the prediction of 2001 that

"the bus mode cannot provide the necessary capacity to cope with the forecast demand" (page 35).

4.11 The 2001 Report went on to recommend the provision of a metro from Tallaght to the Airport via Kimmage, Harold's X, City Centre and Finglas. It also recommended an orbital metro from Tallaght to Blanchardstown and on to Finglas⁵.

⁴ A Platform for Change, Dublin Transport Office, 2001, page 35.

⁵ According to A *Platform for Change*: "METRO is a light rail system that is similar to LUAS except that it is completely segregated throughout its entire length (that is, it has no on-street sections)." Most of the lines for these proposed metros would have been over ground.

- 4.12 The MSWG analysis echoes A Platform for Change, and shows that buses alone would not be sufficient to serve the transport needs of South West Dublin.
- 4.13 Further material on the limited capacity of *BusConnects*, including the views of the NTA, is contained in Annex A.

The proposal to consider building two Luas lines in 20 years' time

- 4.14 Having produced no effective proposals for public transport over the next 20 years, the *Draft Strategy for the Greater Dublin Area 2022-2042* proposes two Luas lines for consideration post-2042 as follows:
 - City Harold's Cross Kimmage Kilnamanagh and onto Tallaght via Red Luas
 - Charlemont⁶ Terenure Rathfarnham Knocklyon Tallaght.

However, there is a major difficulty with this far-off proposal.

- 4.15 in 2008, the Railway Procurement Agency carried out a feasibility study for a Luas in South West Dublin. The proposed Luas line from Dundrum would have proceeded west via Churchtown and Nutgrove to Willbrook, turning north via Rathfarnham, Terenure and Harold's Cross to Christchurch. The study found that:
 - Many streets were too narrow to accommodate a Luas
 - There would not be enough passengers to justify it.
- 4.16 More recently, in 2016, in regard to "Corridor E N81 Settlements South Tallaght Rathfarnham to Dublin City Centre", the current Transport Strategy for the Greater Dublin Area 2016 to 2035 states:

"As such, a number of options, including Light Rail, have been examined. However, due to the land use constraints in the corridor and owing to the pressure on the existing road network, a Luas line was not deemed feasible." (page 56)

4.17 Accordingly, if

- the Railway Procurement Agency found that the streets in South West Dublin were too narrow for one Luas in 2008, and
- the NTA found that the streets were still too narrow in 2016,

These findings were reversed without any evidence. What are the chances that these streets will be wide enough to accommodate two Luases post-2042?

Conclusion of Chapter 4

4.18 The capacity limitations of BusConnects for South West Dublin became apparent in 2019. The recent musings about the possibility of reconsidering Luas for south west Dublin in 20 years' time have no evidential basis. During the last General Election,

⁶ It is worth noting that the application for a Railway Order contains no reference to Charlemont's role here.

held in 2020, politicians from all parties supported the carrying out of a feasibility study of continuing *MetroLink* to South West Dublin. The NTA responded with a *Metro to Knocklyon Feasibility Study*, 2021 (Jacobs/NTA). Chapter 5 examines this Study.

5 Critique of the Metro to Knocklyon Feasibility Study (2021, NTA/Jacobs)

The Metro to Knocklyon Feasibility Study

Prior to the General Election of 2020, all political parties which are now in Government sought a feasibility study into continuing *MetroLink* to South West Dublin. The *Metro to Knocklyon Feasibility Study*, which was carried out by Jacobs and the NTA, was published alongside the *Draft Strategy for the Greater Dublin Area 2022-2042*. Unfortunately, this study was not independent. The prior opposition of the NTA to even study the possible continuation of *MetroLink* to South West Dublin was evident at many public meetings and in correspondence with Government ministers. See Annex D, which contains the Task Order to Jacobs for the *Feasibility Study*, together with a link to the *Feasibility Study*. The *Feasibility Study* did not fully or properly examine the continuation of *MetroLink* to South West Dublin.

The alignments

- 5.2 The Metro to Knocklyon Feasibility Study examined the following two alignments:
 - A Charlemont Rathmines Terenure Rathfarnham Castle Ballyboden Knocklyon Ballycullen ("Through running").
 - B St Stephens Green Iveagh Rathmines Terenure Rathfarnham Castle Ballyboden Knocklyon Ballycullen ("Stand alone").

Note that Alignment A involves "Through running" of *MetroLink* from Charlemont to Upper Rathmines⁷: there would be no stump going from Charlemont to Manders Terrace. The highly populated areas of Portobello and Harold's Cross would not be served. However, some of Rathmines would be served

Alignment B envisages *MetroLink* going from St Stephens Green to Manders Terrace with a final stop in Charlemont – similar to the proposal which is before An Bord Pleanála. Thus Alignment B commences tunnelling at Ballycullen and tunnels northwards to arrive at the final station in St Stephens Green.

The main difference between the alignments is that Alignment A involves "Through running" of *MetroLink* from Charlemont to Rathmines and on to Ballycullen. There would be no 'stump' headed off to a cul de sac under Manders Terrace as in Alignment B.

5.3 It is no surprise that Alignment B would cost more than Alignment A. This is because, being standalone, Alignment B would require its own Tunnel Boring Machine (TBM) and launch site in South West Dublin; it would also require a separate station in St Stephens Green, and an underground cavern near St Stephens Green to store the

⁷ The Rathmines metro station would be in the grounds of St Louis convent.

mothballed TBM and to facilitate parking of trains and turnbacks; Alignment B would also duplicate the *MetroLink* from St Stephens Green to Manders Terrace by requiring additional tunnelling from Rathmines to St Stephens Green. However, if the St Stephens Green to Manders Terrace portion of *MetroLink* were removed, the capital cost of Alignment B would be reduced substantially by this offset.

- 5.4 If the interchange of *MetroLink* with the Luas line was in St. Stephen's Green, rather than Charlemont, the continuation of *Metrolink* to South-West Dublin could be achieved at a much lower cost. A better, less constrained, route-alignment could then be facilitated to serve South-West Dublin.
- 5.5 Following is a map showing Alignment A.

Rathmines (A2)

Rathmines (A2)

Rathmines (C2)

Rathmines (C2)

Rathmines (C3)

Rathmines (C4)

Rathmines (C4)

Rathmines (C5)

Figure 5.1 Alignment A

Conclusions of the Feasibility Study

5.6 The *Feasibility Study* confirmed that the continuation of *MetroLink* to South West Dublin is technically feasible. Here are some metrics from the *Feasibility Study*:

Metric	Alignment A	Alignment B
Capital cost (Q4 2019)	€4.1bn	€5.6bn
Benefit to cost ratio	0.8	0.5

The Feasibility Study concluded that:

"Subsequent analysis of the benefits and costs of the proposals show that both have a benefit cost ratio of below 1.0. Whilst the options are considered broadly feasible, this provides an initial indication that a Metro option is unlikely to be a cost-effective approach to enhancing public transport in this area of Dublin."

"More positively however is the relative success of the Charlemont alignment in enabling access to the southern suburbs of Rathmines, Terenure and Knocklyon from the north. Although still modest relative to station usage levels for the existing MetroLink proposals, demand levels may be sufficient to support higher quality public transport proposals of a more modest character."

5.7 However, the approach used in the *Feasibility Study* was not independent and was much too narrow. Our analysis shows the following:

The proposal that was made by MSWG was not examined

- The proposal that was made by MSWG envisaged *MetroLink* running from <u>St Stephens</u> <u>Green</u> to a proposed station in <u>Portobello</u> and the Tunnel Boring Machine would be parked under <u>Cathal Brugha Barracks</u>, pending its continuation (as a Phase 2) to South West Dublin (see Annex C).
- This option would have ensured that all of Rathmines, Harold's Cross and Portobello (with their large populations and numerous trip attractors) could have been served by Phase 2 of *MetroLink*. As St Stephens to Portobello / Cathal Brugha Barracks would comprise a tunnel of approximately the same length as the proposed tunnel from St Stephens Green to Charlemont / Manders Terrace, the capital costs should be similar. However, the Transport User Benefits would be much higher as new passengers would use the service; the TII proposal to bring *MetroLink* to Charlemont / Manders Terrace would merely duplicate a service which is already available on the Luas Green Line. Neither of the studied alignments dealt with this option

Tallaght Town Centre

5.10 No assessment was carried out of continuing *MetroLink* as far as Tallaght Town Centre (a major attractor). The option of continuing *MetroLink* to Tallaght was disallowed by the NTA⁸. It is well known that when designing metro systems, it is highly advantageous to have strong attractors at both ends of the line – to maximise patronage and to increase economic and social benefits. Tallaght is a major attractor in that it has a large and growing population; it also has a university, hospital,

⁸ Email of 19 November 2020 from the NTA to MSWG

municipal centre, football stadium, large business district, theatre, library, cinemas and shopping areas.

Figure 5.2 Some trip attractors in Tallaght Bothar Kat Agnelli Motor Park RSA Tallaght Power City **Driving Test Centre** Harvey Norman Co Flagship Tallaght istics 6 Kilnamanagh Tymon Primary Care Centre B&O Dublin - Tallaght R USE Cycle Superstore Premier Windowboard DDLETB Tallaght Training Centre Home Store + More Astro Park Tallaght Bancroft Park TU Dublin allaght University Hospital R113 8 The Dublin **Climbing Centre** The Animal Hospital Bank of Ireland Smyths Toys Superstores Tallaght Cross Leisureplex Tallaght IGFIELD Circle K Balr R113 The Square N#8 1 Breathnach's Tallaght Bargains Newsagent R113 Belgard Square S Sensory Garden Scoil Santair Furniture Designs Tallaght Stadium Community Google Maxi Zoo

Clearly, the consultants should have been allowed to assess the merits of continuing *MetroLink* to Tallaght. The merits of continuing *MetroLink* to Tallaght should have been evaluated by the consultant – after analysis – and not excluded *from the start* by the NTA. In default of considering Tallaght, the consultants had the metro finish up in a housing estate in Ballycullen!

5.11 In the case of someone who is living in Swords with a job in the Square, Tallaght, Table 5.1 shows the time taken today by car and public transport. These journey times are compared with metro.

Table 5.1 Journey times from Swords to the Square today vs with metro

Mode options		Time saving each morning with metro
Today		
Drive to the Square	50 mins	
Today		
Public Transport		
2 buses and Red Luas	1 hour 8 mins	
With metro:	45 mins	5 mins vs driving
		23 mins vs today's public transport

^a Derived from Google Maps with a departure time of 7am and MetroLink documentation

These time savings would be significant.

5.12 Social inclusion is another strong reason why Tallaght should have been included in the Feasibility Study. For someone living in Killinardan who wishes to go to work in O'Connell St. using public transport, Table 5.2 shows the time required today (by bike and public transport) vs if *MetroLink* was available in Tallaght: the time saving each morning would be significant.

Table 5.2 Killinardan to the GPO today (by bike, Luas and bus) vs with metro^a

Mode options		Total time	Time saving each morning
Today			
Cycle to Tallaght	11 mins		
Luas to O'Connell St	55 mins	. "	
1 mode change	5 mins	1 hr 11 mins	
With metro:			
Cycle to Tallaght	11 mins		
Metro to O'Connell St	20 mins		
1 mode change	5 mins	36 mins	35 mins

^a Derived from Google Maps with a departure time of 7am and MetroLink documentation

Location of stations

5.13 The radius around potential stations ("buffer zone") to determine their suitability and from which passengers are to be sourced was too small at 600m. This is just a 'rule of thumb', which may be appropriate in Manhattan! It assumes that all passengers would access the station on foot. However, MSWG carried out research on this matter across the outer suburbs between the Red and Green Luas lines. This research shows that, based on just two potential stations with Park and Ride and Cycle and Ride, substantial time savings could be achieved from a wide area by cycling or driving to a metro station and completing the journey by metro. This research was not even referred to much less incorporated in the *Feasibility Study*⁹. A copy of this study is in Annex B.

Park and Ride and Cycle and Ride

5.14 Consistent with the small catchment radius for passengers around stations and the associated assumption that the only way passengers would access the metro is on foot, there is no provision for Park and Ride nor Cycle and Ride and they are completely absent from the *Feasibility Study*. Nor is there any consideration of orbital feeder buses to the metro.

⁹ See Annex B

5.15 Copenhagen is often cited as a 'cycling city' as around half of commuting trips use bikes. A situation that could be replicated in Dublin. Here is a photo of a metro station in Copenhagen, which is surrounded by bicycles:



MSWG had suggested that stations with Park and Ride and Cycle and Ride should be considered for Spawell and Dodder Valley Park¹⁰. Surely, consideration should have been given to options such as this? If the northern end of *MetroLink* is to be provided with a Park and Ride facility for 3,000 cars from the M1, why was no Park and Ride projected for the south western continuation of *MetroLink*, to take traffic from the M50 and the N81? It is worth noting that the volume of traffic on these roads far exceeds the M1.

Capture of traffic on the N81

5.16 No consideration was given to the opportunities to 'capture' motorists on the N81 to leave their cars at a Park and Ride at a location such as Spawell and complete their journey city wide by public transport. MSWG research shows that substantial time savings would accrue. For example, consider a nurse living in Blessington and working in the Mater Hospital. Today, her only option is to drive to work. With a Park and Ride at a metro station in Spawell, she could park there and finish the journey by metro. Table 5.3 shows the time saving.

¹⁰ ibid.

Table 5.3 Blesssington to the Mater Hospital via Spawell: today vs with metro^a

Mode options		Total time	Time saving each morning
Today:			
Drive all the way	1 hr 15 mins	1 hr 15 mins	
With metro:			
Drive to Spawell	35 mins		
Metro to Mater	17 mins		1 8.1
Mode transfer	5 mins	57 mins	18 minutes

^a Driving times are taken from Google Maps with a departure time of 7am. Metro times are derived from MetroLink.

Capture of traffic on the M50

5.17 Over 100,000 vehicles pass by the Spawell exit on the M50 every day. Many of these motorists are based in Dublin and they are cruising around the motorway as a way of accessing different destinations in the city. Why was no consideration given to the opportunities to 'capture' some of these drivers so that they might leave their cars at a Park and Ride at a location such as Spawell and complete their journey city wide by public transport. MSWG research shows that substantial time savings would accrue. A motorist driving from Spawell to the city in the morning could expect a journey time of c. 40 minutes; the same journey by metro would take 15 minutes.

Transport modelling

5.18 It would appear that the NTA and Jacobs placed excessive reliance on the Eastern Transport Model (ERM). That model is derived from existing supply and demand. However, Dublin currently has no metro, so **relative** behaviours cannot be simply extrapolated from the existing limited transport options currently available.

For example, the use of existing Park and Ride facilities would give misleading indications of the journey time savings that could be achieved by driving to a metro station and completing the journey by metro. Thus, according to Google Maps, using the Park and Ride at Sandyford Luas stop might yield little or no time savings vs driving to the city; using the Park and Ride at the Red Cow Luas stop would most likely result in *increased* travel times vs driving into the city. By contrast, MSWG research shows that substantial time savings would accrue by using a Park and Ride at Spawell. The main reason for this disparity is that metro is much faster than Luas.

For the same reason, cycling to a metro station can yield much faster total journey times than cycling to a Luas or bus stop.

Direct use of POWSCAR data

5.19 The direct use of POWSCAR, as explained below, is essential for assessing the feasibility of metro. The ERM Transport Model is not sufficient on its own to estimate

the patronage of the continuation of *MetroLink* in South West Dublin. POWSCAR¹¹ is a rich source of data which needs to be directly analysed to assist in this estimation. For example, if someone is living in Blessington and commutes every day to the Mater Hospital, POWSCAR will show the mode of transport used and the time taken for this commute. Using POWSCAR data and timetables for *MetroLink*, total journey time can then be estimated for the 'metro' scenario where there is a Park and Ride at, say Spawell, with a metro connection to the city. The 'metro' journey time would then be: drive to Spawell and take the metro to the Mater Hospital. Table 5.1 above shows that there be a time saving of 18 minutes. Very importantly, POWSCAR would reveal how many commuters could achieve this and other time savings if metro were available.

Use of POWSCAR would enable options such as these to be explored and Transport User Benefits to be quantified.

Environmental benefits

5.20 In addition to the above shortcomings, another significant factor is relevant to this Feasibility Study and some other economic appraisals of transport projects carried out in Ireland, where environmental benefits are not directly incorporated in economic appraisals. This deficiency was articulated by Peter Walsh, Chief Executive of Transport Infrastructure Ireland, who is the applicant for the Railway Order:

Deputy Verona Murphy earlier referred to congestion as a significant contributor to carbon emissions. Where congestion can be addressed, the benefit of removing that congestion should be considered. The benefits available by creating an environment within an urban area that can accommodate active travel measures should also be looked at. That is not being appraised at the moment. The focus is very much on the time savings associated with a project and the valuation of time really swamps everything else over the lifetime of a project.

(Joint Committee on Transport and Communications, 3 November 2021)

- 5.21 In 2019, the Department of Public Expenditure and Reform issued guidelines regarding the valuation of carbon in the cost benefit analysis of public projects¹². Shadow prices of carbon were included in the Report to be used in these analyses: for example, a tonne of CO₂ was valued at €100 in 2030 and €265 in 2050.
- 5.22 What Peter Walsh has pointed out is that this approach has not yet been firmly embedded in the current practice with regard to transport projects. The *Metro to Knocklyon Feasibility Study*, reflects this out-dated practice. Thus, the reductions in

¹¹ A CSO dataset "Place of Work School or College" which is derived from the Census of Population. All workers resident in Ireland on Census night were coded to their place of work and all Irish resident students from the age of 5 and upwards were coded to their place of school/college. A detailed file containing the demographic and socio-economic characteristics of these residents along with information on the origin and destination of their journeys has been made available for analysis.

¹² Valuing Greenhouse Gas Emissions in the Public Spending Code, Climate Change Unit, Department of Public Expenditure and Reform, July 2019

carbon emissions (tonnes) are not quantified; they are not monetised; they are not included in the estimation of benefits and they are absent from the benefit to cost ratio.

Including the benefits of reduced carbon emissions would further increase the Benefit to Cost ratio. Chapter 8 of this Appendix contains a discussion of environmental benefits.

The combined effect of the above shortcomings

5.23 The combined effect of the shortcomings, which are listed above, would be to reduce substantially the estimated Transport User Benefits, which are reported in the *Feasibility Study*; the estimated Benefit to Cost ratio would also be reduced.

There is little doubt that if these shortcomings were addressed, the Benefit to Cost ratio would increase significantly from 0.8 and exceed 1 by a substantial amount.

Conclusions of Chapter 5

- 5.24 The *Feasibility Study,* which was produced by NTA/Jacobs, needs significant further work as indicated above. MSWG had offered in the past to assist with the Terms of Reference for this study; however, this offer was not accepted. MSWG is still prepared to provide assistance.
- 5.25 This further work should be carried out under the aegis of a Monitoring Committee, comprising the NTA and public and community representatives. The draft findings should be discussed with this Committee and the consultants should be solely responsible for the content of the final report.
- 5.26 In the meantime, An Bord Pleanála should allow the terminus of *MetroLink* to be located in St Stephens Green.
- 5.27 Chapter 6 shows that the alternative to proceed to a station at Charlemont and seal the TBM under Manders Terrace
 - Would increase the cost of MetroLink by c.€650m for no discernible benefit;
 - Would deplete the future benefits of continuing MetroLink to South West Dublin;
 - Would increase the cost of providing metro in south west Dublin.

Why continuing *MetroLink* to Charlemont and Entombing the TBM under Manders Terrace would Deplete the Benefits and Increase the Costs of the Future Continuation of *MetroLink* to South West Dublin

The current proposal

6.1 The current *MetroLink* proposal provides that it proceeds south from St Stephens Green to Charlemont and that the Tunnel Boring Machine is parked beyond Charlemont under Manders Terrace. This would only make any sense if the Luas Green line was going to be converted to metro as in the NTA's 2018 proposal¹³.

The obvious alternative

6.2 It is proposed to install a *MetroLink* station at St. Stephens Green. As St. Stephens Green lies directly below the centre of Dublin at O'Connell St., this would be a suitable location from which to continue *MetroLink* in any direction, after the appropriate analysis will have been carried out. Locating the terminus in St Stephens would not disadvantage any future options for continuing *MetroLink*. In particular, St Stephens Green would be a suitable location from which to direct *MetroLink* towards South West Dublin. From St. Stephens Green, the optimum route could be identified through the inner and outer suburbs of South West Dublin. Figure 6.1 shows the Red Luas line on the top left (to the west) and the Green Luas line on the right hand side (on the east).

¹³ MetroLink Scheme - Cost Benefit Analysis, 2018, Jacobs, Systra, NTA, TII

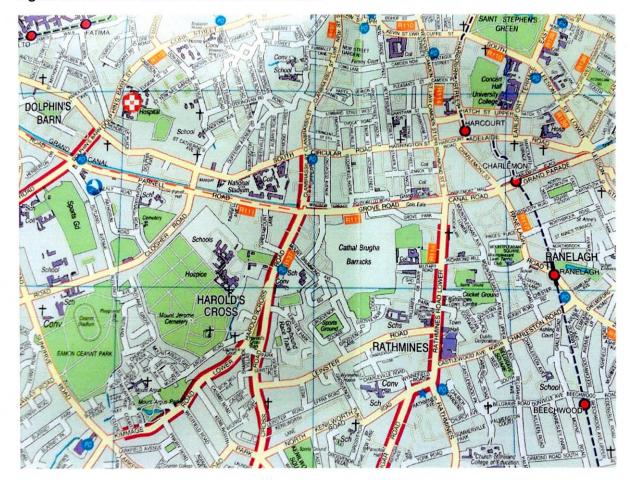


Figure 6.1 The inner suburbs of South West Dublin

- 6.3 However, if instead of proceeding from St Stephens Green to South West Dublin, MetroLink were to go from St. Stephens Green towards the Luas Green Line at Charlemont, the situation would change. While it would still be possible to continue MetroLink towards the outer suburbs of South West Dublin to Terenure and beyond the inner suburbs of South West Dublin would have been bypassed. For example, it would appear from Figure 6.1 that if MetroLink were to go to Charlemont (and the TBM would be parked some 650m south of Charlemont below Manders Terrace), the option of serving Portobello, Harold's Cross and much of Rathmines would be lost.
- 6.4 These are highly populated areas with many trip attractors. The trip attractors include: third level colleges, schools, library, cinemas, swimming pool, pubs, restaurants, shops. To send *MetroLink* to Charlemont and Manders Terrace would deplete the benefits that could accrue to residents of Portobello, Harold's Cross and Rathmines.

Of course, sending *MetroLink* to Charlemont and Manders Terrace would give rise to negligible benefits for those living near Charlemont; however, any such benefits would

merely replicate those which they enjoy already due to the Luas Green Line. No net benefits would accrue to society.

- 6.5 There is an obvious alternative to sending *MetroLink* from St. Stephens Green to Charlemont. For example, sending *MetroLink directly* from St. Stephens Green to Portobello/Rathmines and on to South West Dublin as a Phase 2 project? This option needs to be examined, having been neglected by the Jacobs/NTA *Feasibility Study*.
 - Subsidising the conversion of the Green Line to metro whilst loading costs, uncertainty and difficulties onto south west metro while
- 6.6 The Metro to Knocklyon Feasibility Study showed that "Through running" is more economical than sealing one metro line and setting up a second metro line ("Stand alone") to interchange with the first line. However, the current proposal involves sealing the TBM at Manders Terrace; this would add significant additional cost onto providing a metro service to south west Dublin.
 - In the Jacobs/NTA Feasibility Study, the capital cost of Alignment B ("Stand alone") was estimated to exceed Alignment A ("Through running") by €1.5bn.
- 6.7 However, according to the Environmental Impact Assessment Report, Appendix A7.9:

"A connection to the Green Line would be by cut and cover methods while connection to another bored tunnel would be by a direct connection underground....

On completion of tunnel boring the TBM would be diverted off the line of any feasible future extension of the tunnel....

Recognising the future possibility that MetroLink operation could extend southwards on the Green Line route or another route to be confirmed, the design allows for the TBM to deviate sufficiently from any feasible alignment extension, before being sealed in the rock formation".

Once more, no details are provided. There is no evidence that moving the TBM to one side would work in practice for an in-coming tunnel from south west Dublin. It is interesting to note that in the *Metro to Knocklyon Feasibility Study*, this scenario was not explored.

6.8 The proposal before An Bord Pleanála includes expenditure on works which are exclusively concerned with upgrading the Green Luas Line to metro. According to EIAR, Appendix A7.9,

"Importantly, the required tunnel boring works needed for the future connection to the existing Green Line would be completed as part of phase 1 of the works."

As there has been no Government decision to undertake the conversion of the Green Line to metro, this is premature and wasteful.

External reviews of the MetroLink proposal

6.9 Jaspers is a consultancy organisation which is linked to the European Investment Bank. According to its website, it

"helps cities and regions absorb European funds through top-quality projects."

Jaspers was asked by the Irish authorities to review the project. According to the review by Jaspers:

"The connection to Ranelagh could feasibly be deferred until there is clarity on the future of the Luas Green Line (subject to improved understanding of how this could physically be delivered in a scenario with metro operational)."

It is clear that TII did not make Jaspers aware of the research that had been carried out by MSWG. If they had been, Jasper's concerns would have been even greater. The lack of detail beyond St Stephens Green does not concern merely how the connection to a converted Green Line could occur, but other possible connections are also envisaged for which there is no detail whatsoever in the application for a Railway Order regarding how they could be implemented.

6.10 Indeed, there is great confusion regarding what is intended on the south side of Dublin. In response to a recent Parliamentary Question¹⁴, the Minister for Transport said:

"While the draft strategy states that the south Dublin area is best served by bus rapid transit (such as BusConnects) and light rail (such as Luas) for the foreseeable future, it notes that the MetroLink terminus at Charlemont can facilitate any potential future metro extensions to serve the south west, south or south east of the Dublin area should sufficient demand develop."

However, in the same PQ reply, he went on:

"The draft transport strategy proposes a Luas Green Line upgrade project after 2042 to deliver significant additional capacity as required."

However, the *Draft Transport Strategy 2022-2042* also envisages an <u>alternative</u> project, which would be much less costly, than converting the Luas Green Line to metro¹⁵:

"The challenges associated with the upgrading of the Luas Green Line to a metro standard of service have led to the emergence of an <u>alternative</u> proposal which seeks to meet travel demand from south of Sandyford along a new light rail corridor which serves UCD post-2042. As such, the upgrading of the Green Line to metro standard is not required as part of this strategy. Instead, for this

¹⁴ PQ Reference: 55612/22

¹⁵ Page 139

strategy period, the capacity and frequency on the current Green Line from Sandyford northwards to the city centre will be incrementally increased through the provision of additional tram fleet and services and associated turnback arrangements to meet forecast passenger demand."

Needless to say, this alternative proposal would obviate any future need to convert the Luas Green Line to metro.

6.11 Paradoxically, TII has used this ambiguity regarding possible metro extensions in three directions to seek to bat away Jasper's concerns¹⁶,

"TII have also noted in their response to these concerns that Charlemont enhances the possibility of other metro extensions to the south-east and southwest of Dublin."

6.12 The only reasonable conclusion to be drawn from the above is that it is premature to approve the *MetroLink* proposal beyond St Stephens Green.

Conclusion of Chapter 6

6.13 Absent

- Any justification for including the advance subsidy of the conversion of the Green Line in the MetroLink proposal, and
- A proper evaluation of the Rathmines / South West Dublin alternative,

there would need to be very weighty reasons for An Bord Pleanála to approve sending *MetroLink* to Charlemont / Manders Terrace, as this would diminish the substantial economic, social and environmental benefits of continuing *MetroLink* to South West Dublin, while increasing its capital cost. Therefore, An Bord Pleanála should adopt a conservative approach.

- 6.14 There is nothing to be lost by approving the *MetroLink* project as far as St Stephens Green. This decision would facilitate rather than pre-empt the achievement of significant benefits in the future.
- **6.15** Chapter 7 shows that Charlemont would be an inconvenient interchange for passengers.

¹⁶ Review Note: Preliminary Business Case, MPAG, June 2022

7 The Adequacy of St Stephens Green and the Drawbacks of Charlemont as an Interchange for Passengers

St Stephens Green

- 7.1 TII has estimated that the walking time from Luas to *MetroLink* at St Stephens Green East would be c. 7 minutes vs 3 minutes for Charlemont. While 7 minutes is less than ideal, the interchange would be simple: a horizontal walk and one escalator. Use of travellators could reduce this interchange time.
- 7.2 However, the original Metro North project, which was approved for a Railway Order by An Bord Pleanala, had the metro station on the western (College of Surgeons) side of St Stephens Green, where the interchange between the Green Line and metro would be swift. The option of locating the St Stephens Green *MetroLink* station on the western side of St Stephens Green was rejected by the NTA on the basis that the curve from Tara Street would be too great,

"The curves involved in coming through Tara Street Station, which was a critical connection for us, and then getting down to Charlemont would not allow us to go to the other side of St. Stephen's Green."

but without giving any measurement for this curvature¹⁷. In the current application for a Railway Order, TII has also rejected St Stephens Green West on the basis that

"The eastern side of St. Stephen's Green was identified as the optimum location for the MetroLink station as it would best serve passenger demand from the retail, commercial and cultural trip attractors in the vicinity. Further, the alignment from Tara Station (where MetroLink interchanges with DART and Irish Rail services) towards its terminus at Charlemont imposes turning constraints on the tunnel boring machine (TBM) that favour the eastern side of St. Stephen's Green as an appropriate location."

but, once again, without showing any measurement for the curvature that would be required.

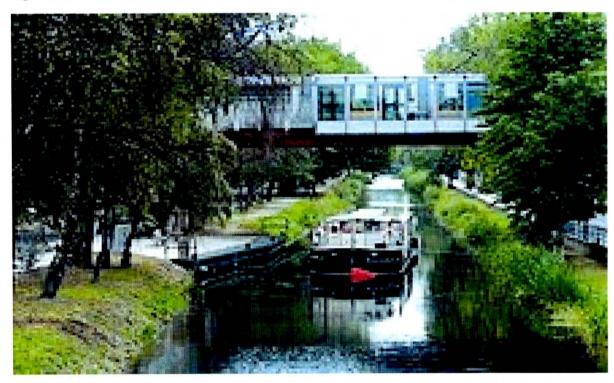
- 7.3 MSWG sought the advice of an experienced railway engineer on this matter. He said that the standard metric for measuring curvature is the "radius of curvature". If both of the proposed station locations were located on the circumference of the same circle, what would be the radius of that circle? The bigger the radius, the bigger the circle and the gentler the curve.
- 7.4 According to the expert, the "radius of curvature" from the proposed MetroLink station at Tara Street and a possible location on the west side of St Stephens Green would be approximately 500m, which would be completely unremarkable as many metro systems around the world have stretches of tunnel with a radius of curvature

¹⁷ Oireachtas Committee of Transport, 4 May 2022.

¹⁸ Paragraph 2.2.2, Appendix A7.5

- much smaller than this. The BART in San Francisco and the Central Line of the London Underground (between White City and Shepherds Bush) are just two examples.
- 7.5 There is great frustration at the long delays to date in progressing *MetroLink*. MSWG has no desire to appear as a cause, either real or imagined, for any further delay. Accordingly, MSWG is asking An Bord Pleanála to consider approving the terminus at St Stephens Green East with the TBM parked a short distance beyond this along the line as proposed by TII. Following essential further analysis, Government may decide to apply for a further Railway Order or a Variation of the Railway Order.
 - The unsuitability of Charlemont for interchanging with Luas
- 7.6 Charlemont would be unsuitable for an interchange between *MetroLink* and the Green Luas line. Figure 7.1 shows the vertical separation that would occur were the Luas /metro interchange to be located in Charlemont.





7.7 Figure 7.2 shows the 'above ground' aspect of the proposed interchange between Luas and *MetroLink*.



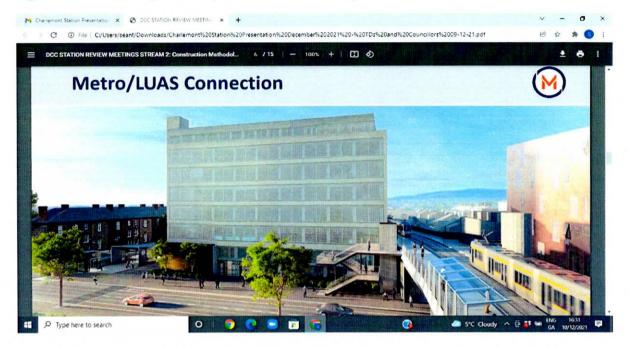
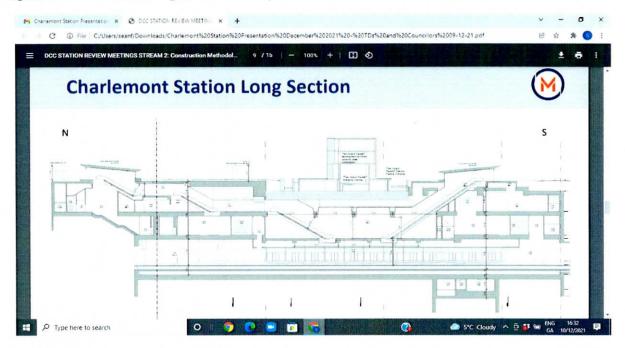


Figure 7.2 shows that the first manoeuvre for incoming Luas passengers (many with luggage and some with mobility issues) would be to cross the Luas line (looking both ways to avoid being mown down by an incoming or outgoing Luas). Would this be a safe manoeuvre for children?

- 7.8 The second manoeuvre would require passengers to descend 3 flights of stairs in the open. There would be considerable congestion on these stairs. Slow-moving and many passengers going in both directions would add to the congestion.
- 7.9 The third manoeuvre would be a walk in the open towards the entrance to the proposed metro station.
- 7.10 The fourth manoeuvre descending to the metro platform is shown in Figure 7.3.

Figure 7.3 Descending to the metro platform



7.11 The complexity and safety issues surrounding Charlemont make it unsuitable as an interchange. For example, the stairs and the Luas platforms could have many people hurrying in opposite directions.

Other disadvantages of Charlemont as a terminus / interchange

7.12 Table 7.1 shows the inter-modal connectivity of St Stephens Green vs Charlemont.

Table 7.1 Inter-modal connectivity with *MetroLink* (Luas, bus, taxi and bike)
St Stephens Green vs Charlemont

St Stephens Green	Charlemont		
- Greenline Luas: straightforward.	- Green Luas Line - located 10 Metres above the		
- Bus Services. 11, 31, X32, 32X, 37, 38A,	Ground. Connection by three flights of stairs		
39, 39A, 41X, 44. 46A, 61, 70, 84X, 100X,	and three escalators from Metro Station.		
125, 145, 155, 181, 193, 194, 194A 700,	- Buses. 44, 61. 450 Metres to access: 145, 155,		
824. D and E Spines.	11, 46A; E Spine.		
- Due to wide roads and paths: lots of	- Road along the Canal is a very busy Motor		
possibilities for Cycleways	route. Pathways are narrow, not conducive to		
- Viking Splash.	people with cases coming from the airport.		
- Hop-on-Hop-Off Buses.	Makes more sense for passengers to access or		
- Taxi Rank.	exit Metro at Stephens Green if travelling on		
- Secure Cycle parking in Drury St car park.	Green Line Luas.		
	- No Taxi Rank.		
	- No bike parking.		

7.13 Table 7.2 compares facilities in St Stephens Green vs Charlemont.

Table 7.2 Facilities in St Stephens Green vs Charlemont

St Stephens Green	Charlemont				
- Shopping: Stephen's Green S/C, Grafton	- There is no shopping area nearby.				
Street, Nassau Street, Wicklow Street, Georges	- No Theatres or Museums				
Street, More.	nearby.Hotels: Hilton, Clayton, Wilder				
- Theatres: Gaiety Theatre, National Concert	Townhouse, Mespil.				
Hall, Bewley's Café Theatre, Theatre of Little	- Limited number of Restaurants, Bars,				
Museum of Dublin.	Cafes in the area.				
- Museums: National Gallery, National					
Archaeology, Natural History, The Little					
Museum, Literature Museum, Royal Hibernian					
Academy, Mansion House, Royal Irish Academy,					
Trinity College.					
- Restaurants, Pubs, Cafes. Numerous.					
- Hotels: Buswells, The Green, Stauntons,					
Shelbourne, The Merrion, The Westbury,					
Grafton St. Studios, The Fitzwilliam, more.					

7.14 Table 7.3 compares St Stephens Green and Charlemont on their ability to facilitate options for the future development of public transport.

Table 7.3 Future transport options from St Stephens Green vs Charlemont

St Stephens Green	Charlemont			
-This location leaves all options open for the	- Limits the options for the continuation of			
future direction of Metro further to the South.	MetroLink, ruling out Harold's Cross and			
-If there are more Luas lines post-2042, then	most of Rathmines.			
Stephen's Green is a more suitable hub.	- NTA has suggested that in 2042			
-A destination in itself with its connectivity and	Charlemont could be a hub for three more			
passenger destination.	Luas Lines, coming from Tallaght /			
-It has more access for other services, including	Knocklyon, UCD / Sandyford and Lucan.			
buses, Luas and Metro	- Access to town or the Stephens Green			
	area would necessitate ascending to the			
	Green Luas or descending to the metro.			
	How could the confined Charlemont area			
	accommodate any or all of this?			

Possible interchange with buses in Rathmines

7.15 It is our submission that the *MetroLink* station at Charlemont would offer no immediate local bus connectivity. We are assuming for this purpose that *Bus Connects* would be fully implemented before *MetroLink* is opened. The only immediately adjacent buses are those on Ranelagh Road. It is important to note that many buses indirectly accessible at Ranelagh meet *MetroLink* station at St Stephen's Green.

We would submit that the interchanges to and from buses in Rathmines to a station at Charlemont *MetroLink* would involve long walks. Long walks from Adelaide Road (the 'O' orbital) would be also be involved. No thought has been given to infrastructure to facilitate this.

7.16 It should y be noted that the *BusConnects* corridor plan proposes banning other vehicles from Lower Rathmines Road via a bus gate at St Mary's College. This shows the sheer importance of Lower Rathmines Road for bus services.

There will be numerous bus services on Rathmines Road. It is quite likely that people would seek to transfer to or from *MetroLink* by getting on or off these services around Portobello Bridge and then walk across to the *MetroLink* terminus. The pedestrian infrastructure is poor. It is much easier to walk on the city side of the canal but this poses the challenge of crossing the canal to get to the proposed *MetroLink* terminus at Charlemont.

7.17 It should be noted for completeness that if the College Green Plaza pedestrianization goes ahead there is a contingency plan that the 4 'A' services would divert via St

Stephens Green. That would render Charlemont redundant as a connection point for all routes bar the 80.

However, as the Bórd rejected the College Green pedestrianization plan before, perhaps it is safer to assume for Railway Order purposes that the nearest the A services would get to the Charlemont *MetroLink* station is at Lower Rathmines Road. 'A' passengers would surely use the O'Connell St. metro station.

Annex F contains further information concerning buses on Rathmines Road.

Ranelagh Road

7.18 If *BusConnects* is implemented, the only adjacent buses to Charlemont would be the 86, 87 and 88 all of which would be relatively low frequency services. These services are similar to the current number 11 (to Sandyford) and 44 (to Enniskerry). As these buses would also go to St Stephen's Green, this would be the logical point to transfer from these buses to *MetroLink*.

Leeson Street

7.19 Leeson Street would have a frequent E service going to Dun Laoghaire (as 46A now) and Bray (as 145 now). However, these services would run along St Stephen's Green where people could transfer directly to *MetroLink*.

Orbital route

- 7.20 BusConnects provides for a high frequency (every 8 minutes) orbital service "O" on the South Circular Road axis and then via Adelaide Road. This concept of an inner city orbital service does not exist at the moment and could catch on. The 'O' service is likely to generate significant numbers of passengers to and from the metro.
- 7.21 The nearest bus stop is likely to be in the vicinity of Harcourt Terrace. This is particularly likely to happen because the east bound service would run on a one-way route closer to the city and a stop at Adelaide Road where the "each way" routes merge seems sensible. This we submit would result in pedestrian traffic using the Charlemont Luas station as a bridge: this would have a serious safety dimension. If you live near the 'O' route, the easiest route to the metro might be to hop on the orbital bus and then use Harcourt Terrace and the Luas platform as a bridge. We don't believe the plans submitted to you in any way address the issue of pedestrian traffic between the O service and MetroLink at Charlemont, despite the fact that the O service is to be the individual most frequent service under BusConnects.

Turning Luas trams at Charlemont

7.22 It has been suggested by NTA that a key basis favouring Charlemont over St Stephen's Green as the *MetroLink* terminus is the ability to run more Luas trams on the stretch Sandyford to

Charlemont as opposed to the portion of the line between Charlemont and St Stephen's Green.

This was asserted by the NTA on 28 June 2022 before the Dáil and Seanad Joint Committee on Transport. According to the NTA, the section Charlemont to St Stephen's Green could provide for 24 trams an hour whereas Sandyford to Charlemont could be served by 30 trams an hour.

By letter of 23 May 2022, the NTA asserted that the Charlemont/St Stephen's Green portion of the Luas line is less suited to a volume of trams because it is on-street and crosses significant road junctions including Harcourt St/Hatch St Upper and Harcourt Street/St Stephen's Green South. This is contested by Metro South West.

It is very surprising given that this is a very important reason favouring Charlemont that no information has been supplied to An Bórd Pleanála on what is a significant point.

- 7.23 We believe the following issues should have been fully analysed as part of the application for the Railway Order:
 - A. Where trams terminating at Charlemont would turn?
 - B. The implications for through passengers of trams starting and terminating at Charlemont
 - C. Whether there are constraints stopping the 30 trams an hour running on road to St Stephen's Green
 - D. The possible use of the siding at St Stephen's Green (between Dawson St and Kildare St) to turn Luas trams.

A Where trams terminating at Charlemont could turn

It is our view that in practice it is quite difficult to turn trams at or near Charlemont, not least because the first existing facility to switch tracks is at the St Stephen's Green stop. We don't know how difficult it is engineering wise to insert a crossing point and whether this would require the Luas service to be shut down for some time.

Here we analyse four possible points close to Charlemont where a switchover track could be put in

- (1) between Charlemont and Ranelagh
- (2) on the slope down from Charlemont station towards Adelaide Road
- (3) on the short straight stretch at Adelaide Road
- (4) on the relatively straight portion of Harcourt Street between Harcourt and St Stephen's Green Luas stops.
- (1) If a switchover point were to be placed between Charlemont and Ranelagh, it would follow that the 6 trams which finish at Charlemont would start from the inbound platform. This would block any tram coming from Sandyford until the switch point was reached this point also holds for any other switch point before the siding at St Stephen's Green. It would also but to a lesser extent hold up southbound trams while the tram switched to the southbound line; again a problem for all 4 switch points.

South-bound passengers entering a tram in Charlemont, which turned back at Charlemont, would likely walk across the line to access this southbound tram. It should be borne in mind that most of these passengers would be coming from an airport MetroLink and many of them would have luggage. They are likely to constitute an even flow as it would take some longer than others to walk the long distance from the metro. We believe that the combination of delaying the northbound tram and the safety issues of encouraging further people to cross the line makes this impractical.

- (2) A switch on the slope down to Adelaide Road (Peters Row) would seem to be very problematic considering the combination of the slope and the curve there. Again we think this is not practical.
- (3) A switch at Adelaide Road involves a very short stretch of street between two sharp bends. There may be enough space to do it, but the bends would cause visibility problems. Again we question the feasibility of this.
- (4) On the basis that we don't consider it feasible to switch at the Harcourt Luas stop, the fourth point we consider is somewhere on Harcourt St just north of the Harcourt Luas stop. This is of course beyond the supposedly significant junction at Harcourt Street/Hatch Street Upper, at which point, per NTA analysis further trams beyond the 24 capacity are problematic, and lies very close to St Stephens Green.

B Implications for through passengers

A key impact here is that Charlemont Luas would become about a 'fifth' of a terminus, as opposed to its current 100% "stop on the line" status; i.e. one fifth of incoming trams (6 out of 30) would have their terminus at Charlemont. If there are 30 trams an hour running north from Sandyford and only 24 are running past Charlemont, it is likely - particularly when times are busy - that many north-bound tram passengers travelling further than Charlemont would take the tram to there, leaving them far short from the city centre.

Those passengers could choose to:

- Stand on the platform and wait for the next one of the 24 city-bound trams. This
 would crowd the inbound platform, which bear in mind is is very narrow and lies
 directly over the canal.
- Alternatively, they could add to the volume of passengers effectively using the Luas stop as a bridge and descend the unsatisfactory red stairs on the northern side of the canal to complete their journey on foot. We think this could greatly increase the passenger traffic on that stairs. Further any incapacitated passenger has no lift provision of the city side of the canal,so any proposal to terminate trams at Charlemont involves serious inconvenience for persons with mobility issues.

The fact that outbound trams would commence at Charlemont would be likely to result in a lot of southbound traffic walking at peak times to the Charlemont Luas station from south city points and using the inadequate stairs to access an empty tram running about every 10 minutes. If someone managed to squeeze onto the south bound tram at Harcourt, they might alight at Charlemont and wait for a less crowded tram a few minutes later starting at Charlemont. This would intensify the use of that station on top of the *MetroLink* passenger traffic.

It would clearly be far better for continuing passengers that all trams went onwards to St Stephen's Green as this would get them close to the city centre.

C Whether there are constraints stopping the 30 trams an hour running on road to St Stephen's Green

We do not accept the assertion by NTA that 30 trams would be problematic. Indeed, in 2019, Transport Infrastructure Ireland reported on the Luas stretch from Sandyford to ST STEPHENS GREEN. The report depicted:

"the unique character of the Green Line between Sandyford and St. Stephen's Green i.e. (a) high level of segregation with very high journey time reliability" ¹⁹

The reasons include the following:

After Charlemont, Luas has exclusive use of Peters Row. On Adelaide Road it receives absolute priority on approach and does not have to contend with other passenger traffic. It has exclusive use of its track along Harcourt Street.

There are four material junctions between Charlemont and St Stephens Green: Peters Row/Adelaide Road, Adelaide Road/Harcourt Street, Harcourt Street/Upper Hatch Street and Harcourt Street/St Stephen's Green South.

In all cases, Luas receives absolute priority on approach.

Furthermore, it is likely that traffic restrictions being introduced largely in connection with BusConnects would significantly reduce the volume of traffic at each of these points and that there would be no difficulty in practice in having trams cross at these point every 2 minutes. Relevant specific traffic changes include:

- The closure of Lower Rathmines Road both ways which should reduce traffic on Adelaide Road heading west and Upper Hatch Street heading east
- The closure of Lower Leeson Street which would reduce traffic flowing into St Stephen's Green South
- We should note that while we have included Harcourt St/Adelaide Road in our list, there is no current vehicle traffic conflict there

D The possible use of the siding at St Stephen's Green (between Dawson St and Kildare St) to turn Luas trams

We think that this possibility should be investigated. Every 6 minutes approximately, a tram would terminate there, with two intervening trams running onwards to Dawson and beyond. Trams would just drive into the siding and switch track there, causing no obstruction.

Inconsistencies in the numbers of passengers projected to transfer at Charlemont

7.24 Annex G discusses the potential numbers of passengers projected from Luas to metro and vice versa. The issue of how many passengers would transfer would have important implications for the safety of the interchange and the comfort of passengers.

¹⁹ MetroLink - Luas Green Line: Peak Hour Capacity Requirements South of Charlemont, TII, March 2019

7.25 Further consideration of the deficiencies of Charlemont is contained in Annex H.

Conclusions

- 7.26 Continuing *MetroLink* beyond St Stephens Green to Charlemont and Manders Terrace is unnecessary. Furthermore, it would
 - Bring no benefits;
 - Cost some €650m; and
 - Restrict the options for the future continuation of MetroLink.

The failure to analyse all of the issues discussed above is a very serious flaw in the Railway Order application and on the face of it a ground in itself to reject the Charlemont terminus proposal.

- 7.27 Conversely, St Stephens Green to Cathal Brugha Barracks:
 - Could bring Transport User Benefits and Revenue from Portobello station
 - Cost the same €650m and
 - Lay the foundation of the metro to south west Dublin.

The opportunity now to analyse, and act on suggestions of Metro South West Group would avert these serious flaws and aid climate action.

8 Environmental Issues

Environmental Considerations for Metrolink

8.1 From data collected by Metro South West Group, there is no doubt that the long-term plan for Dublin's environmental health must include substantial investment in Metro systems. There is a lack of belief in the public that buses and *BusConnects* would be sufficient to meet the demands for public transport as proposed by NTA/TFI.

A Metro system, operated on electricity, generated by Renewable Energy Resources, is among the lowest carbon footprint. (See *Our World in Data*.) This is the obvious solution for the growing needs for Transport in South West Dublin. The benefits would increase year on year as the ridership increases year on year as was found with Luas.

8.2 The CSO *Transport Survey of 2019* found the following conclusions:

The transport sector emitted 12.0 million tons (Mt) CO2 in 2021 and accounted for 34.0% of Ireland's total energy emissions. Transport remained the most carbon intensive demand sector, with 95.5% of transport energy demand coming from fossil fuels. Rebounding from 2020 COVID-related travel restrictions, energy demand for transport increased by 8.3% in 2021, and was a significant driver of the overall increase in Ireland's energy-related emission this year. South West Dublin contributes substantially due to high car dependency.

- Provisional data from the first 6-months of 2022 indicates that demand for petrol is up by 27%, compared to the same period in 2021, and the demand for diesel is up by 15%, as consumption of both fossil fuels return to pre-COVID levels. Cars account for 65% of Dublin's transport emissions²⁰.
- 8.4 In addition to the socioeconomic benefits such as reduction in travel time, travel cost, accident rate, per capita vehicle ownership etc., the ability of metro system towards substantial reduction in per capita pollution emission is considered as one of the major benefits. However, if the benefits offered by the metro system such as reduced traffic congestion, GHG emissions, accident rates, savings in travel time and cost, safety and comfort are assessed and quantified collectively, the metro projects could become the most cost-effective projects than other public transport project alternatives.
- 8.5 Annex K sets out our concerns about the environmental impact on the Grand Canal.

²⁰ SEAI Report on Transport Energy consumption.

Conclusion of Chapter 8

8.5 MSWG sees a metro to South West Dublin originating at Stephen's Green as the answer to not only public transport needs in South West Dublin, but the only environmentally satisfactory answer to reducing greenhouse gases and encouraging a modal shift from private cars to public transport.

9 Lack of Adequate Consultation, including Aarhus Convention

The Aarhus Convention

9.1 It is our considered position that the provisions of the Aarhus Convention in relation to consultation on major projects applies to this project and that it has not been complied with by TII. We believe you should not grant permission in the absence of compliance.

We believe there are two major areas of concern

- (i) The change in this project to alter Charlemont from one of many intermediate stations on the line where local passengers would join and leave, to a proposal that Charlemont would be the terminus, took place at a very late stage in a very long running process. There was only one round of consultation on this from 26 March 2019 to 21 May 2019, a very short period of time. Further there were material changes after that with no consultation.
- (ii) During the consultation, between March 2019 and May 2019, it was first time learned that the project was now terminating close to the city centre rather than in Sandyford. We believe that this consultation should have considered other alternatives, such as terminating at St Stephen's Green. Further given the very obvious transport deficit in the south west city and the then announced proposals for numerous bus routes and a dedicated bus corridor on Rathmines Road, we believe that there should have been a proper consideration of having the terminus in Portobello/Rathmines.

Further changes

9.2 Long after the consultation, a presentation dated 9th December 2021 (Charlemont Station Area – Update Meeting) was made to local representatives which indicated a number of very substantial changes at Charlemont including a major entrance to the station at Dartmouth Road, a set of steps blocking an important view of a listed building, vehicle drop offs at Dartmouth Road and the closure of Dartmouth Road for between 2 and 5 years. None of these were evident at the time of consultation in 2019. This is clearly shown in Appendix O page 11 of "Preferred Route Design Development Report March 2019". There was no public consultation whatsoever on these major proposals. The lack of consultation ran the risk that a lot of people, particularly in the general Dartmouth Square area, would not be aware that a project had even more major implications for them. Further, it would seem for those who actually found out about the major changes, that any communication with them took place after the final round of the supposedly final consultations. This in itself seems to fall foul of the principle of the Aarhus Convention.

Contrast in consultatiosn re Albert College and Charlemont

9.3 It is to be noted that the 2019 process seemed to generate a lot of controversy about a tunnel intervention shaft at Albert College Park. NTA/TII ran a further consultation process about this which closed on 12 March 2020. This is evidenced in the documentation under

the "Consultations" section of the NTA website. The new issues introduced at Charlemont by the December 2021 documentation no less significant than those at Albert College Park. It seems bizarre that NTA/TII would not have had a full public consultation on the changes mooted in the 9 December 2021 document, when they presumably had the view that the Aarhus Convention obligations merited the Albert Park consultation.

What is entailed by compliance with the Aarhus Convention

9.4 We think it is abundantly clear that the Aarhus Convention applies to this project. The Preferred Route Public Consultation Document of March 2019 says at page 7 that

"At MetroLink we take seriously our obligations under the Aarhus Convention to facilitate public participation in decision making on major public infrastructure projects".

Article 6 of the Aarhus Convention in requires proper public consultation on decisions which have a significant effect on the environment. We would submit that the mere fact that a lot of this application is in the form of an EIAR is an acceptance that this is the case.

- 9.5 Article 6.3 requires reasonable time frames for the different phases, allowing sufficient time for informing the public and for the public to prepare and participate effectively during the environmental decision making. The point (with which we agree) has likely been made, in some submissions, that running a Railway Order application for a mere 8 weeks is not conducive to public participation. Equally the time scale of 8 weeks in other consultations is too short. The complexity of these proposals needs far more time than 8 weeks.
- 9.6 We don't believe the public have been allowed to "participate effectively" in the two issues outlined above. As you are no doubt well aware any public engagements seem to have been confined to written submissions between March and May 2019 in a period that included two holiday periods April 19 to 22 for Easter and the 6 May bank holiday. Further the scale of the changes made after the 2019 phase were quite significant and were not the subject of any public consultation.

Consideration of alternatives

- 9.7 Article 6.4 of the Aarhus Convention says that there is to be "early public participation when all options are open and effective public participation can take place". At the time of the March 2019 to May 2019 consultation, a decision had clearly already been taken by NTA and TII that the south city terminus would be at Charlemont, so "all options", such as St Stephen's Green, East or West, or Rathmines were not open. A proper consultation needed a detailed presentation on the relative merits of Charlemont, Rathmines and St Stephen's Green (and perhaps other places) as a south city terminus.
- 9.8 We have noted that Chapter 7 of the Appendix to the Environmental Impact Assessment Report "Consideration of Alternatives", despite containing 134 pages, does not give any thought to alternative south city termini and seems to confine itself to the minutiae of the detail of a pre-determined plan. There was no public involvement in any minor considerations in this document, which we believe is in breach of Article 6.4.
- 9.9 It is notable that the Rathmines area is deemed so important by NTA that they propose a bus frequency of more than one bus per minute (33 each direction in total) and the placing of a bus gate to restrict general traffic on Lower Rathmines Road. It is difficult to understand how

TII completely failed to consider Rathmines as an alternative terminus. It is notable that Study Area A in diagram 7.1 in that Chapter includes Rathmines, but no evaluation of Rathmines as a *MetroLink* terminus took place.

Conclusion

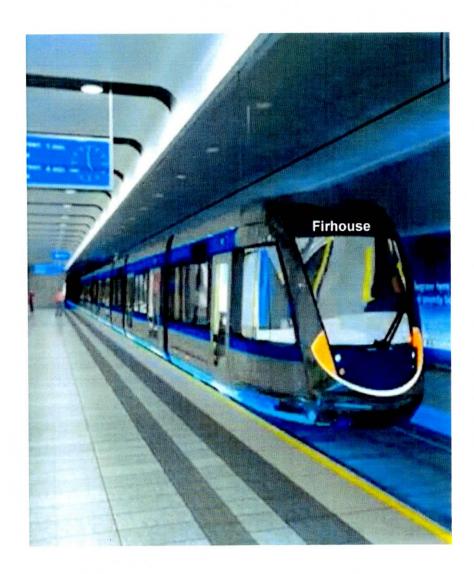
9.10 It would be our submission that the Aarhus Convention has not been complied with.

10 Options for Government if *MetroLink* goes no further than St Stephens Green

- 10.1 If An Bord Pleanála gives its approval for *MetroLink* to go no further than St Stephens Green, the Government will have many options. For example, Government may wish to apply for a further Railway Order, or a Variation of an existing Railway Order
 - To continue to South West Dublin (The *MetroLink* TBM to continue to South West Dublin "running through")
 - To continue to Rathmines as an interim measure (with its good bus connectivity).

Neither of these options would be possible if MetroLink goes to Charlemont / Manders Terrace as set out in the application for a Railway Order.

THE CASE FOR CONTINUING *METROLINK*TO SOUTH WEST DUBLIN



South West Dublin Metro Group

August 2020



THE CASE FOR CONTINUING METROLINK TO SOUTH WEST DUBLIN

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SECTION 1 INTRODUCTION AND EXECUTIVE SUMMARY

1.1 Introduction

During the last General Election, all three of the political parties, now in Government, supported the carrying out of a feasibility study, requested by Metro South West residents' group, into continuing *MetroLink* to South West Dublin. This document sets out our analysis which underpins the need for an early feasibility study, the core issue being, that buses alone will not be adequate to meet current and growing public transport needs for the population in this area.

As a LUAS system is not feasible, the only option for South West Dublin is Metro. In the absence of this, there will be a heavy reliance on cars, which is against every principle for a clean, environmentally safe and thriving city.

The current situation in relation to *MetroLink* offers a unique and timely opportunity, by continuing the already approved *MetroLink* project to South West Dublin. This would provide an efficient, safe, sustainable, reliable and affordable metro solution, which would move this area forward and support the vision of thriving city life and vibrant local communities.

Having reviewed all the data available, 29 Residents' Associations and Groups in South West Dublin, strongly support this *MetroLink* continuation initiative and have been canvassing the NTA for over a year, to carry out a feasibility study, to no avail.

Our analysis clearly demonstrates that the proposals within *BusConnects* cannot deliver the capacity to meet the current and future transport needs of the South West Dublin area.

As far back as 2001, The Dublin Transportation Office published *A Platform for Change*. That Report modelled a 'bus only' solution. According to the Report:

"In summary, the analysis of the 'Comprehensive Bus' scenario established that buses alone could not address the problem because in many of the main transportation corridors the bus mode cannot provide the necessary capacity to cope with the forecast demand" (page 35).

The Report went on to recommend a metro system for this area as the only viable solution.

This document is set out as follows.

Section 2: Shows our comprehensive analysis, including the inability of *BusConnects* to provide sufficient public transport capacity.

Section 3: Shows the need for an early feasibility study of continuing *MetroLink* to the general Firhouse area.

Section 4: Sets out and assesses the NTA response to our analysis and proposed feasibility study.



Section 5: Contains our conclusions.

1.2 Executive Summary

Section 2. Shows that South West Dublin lacks any medium or high capacity public transport and, that the catchment population of a hypothetical metro in South West Dublin would be similar to that of the Green Luas catchment, which the NTA used previously to justify a metro. Potential demand for public transport is analysed under several headings, including zoning, building activity and modal split. It is pointed out that the *Transport Strategy for the Greater Dublin Area 2016 to 2035* envisages that 23 per cent of all trips in the Greater Dublin Area would use public transport.

For South West Dublin to reach this target, the number of public transport trips would have to treble.

The capacity of the proposed bus corridors outlined by the NTA in their *Dublin Area Bus Network Redesign: Revised Proposal of October 2019* having been examined, it is found that across the three main bus corridors proposed for South West Dublin, namely;

- Kimmage to the city centre
- Tallaght to Terenure, which links with the Rathfarnham to City Centre corridor
- Greenhill to the city centre,

the number of peak-hour in-bound buses would increase by only three, from 63 to 66, with the number of passengers increasing from 5,040 to 5,280. Our analysis examines "pinch points" on each corridor to see if the corridors could accommodate more buses; it is observed that the corridors would struggle to achieve the proposed throughput of buses envisaged under *BusConnects*. Accordingly, these corridors could not accommodate significant increases in the number of buses in the peak hour.

It is concluded that buses alone could not provide sufficient public transport capacity for South West Dublin. This conclusion echoes a similar conclusion reached by the Dublin Transportation Office nineteen years ago in *A Platform for Change*, 2001.

Section 3 examines the possibility of continuing *MetroLink* to serve the population of South West Dublin. This would provide many benefits for the population of this area, including time savings, removing many cars from the roads, reducing pollution, freeing up road space for buses, pedestrians and cyclists.

The current NTA proposal – to park the Tunnel Boring Machine underneath Beechwood, south of Ranelagh – would involve the construction of 2 kilometres of unnecessary tunnel at a cost of almost €300m. If this section of tunnel was dropped, *MetroLink* could be continued to Firhouse for a cost of c. €1.3bn.

It is inevitable that a metro will be built to serve the population of South West Dublin – there is no alternative. However, the cost of building the metro subsequently as a stand-alone project would be some €500m higher than the cost of building it as a continuation of *MetroLink*.



Section 4 summarises the NTA response to our analysis and proposal. According to the NTA, the numbers of buses which are tabulated in *Dublin Area Bus Network Redesign: Revised Proposal – October 2019* are based on "proposed 2019/20 service frequency levels" and the bus corridors "can carry multiples of the number of passengers identified".

The idea that the *Report* was based merely on current "service frequency levels" is inappropriate. It takes into account neither the additional demand due to the required modal shift from cars to public transport (envisaged by the NTA's own *Transport Strategy for the Greater Dublin Area 2016 to 2035*) nor population growth.

The idea that the proposed bus corridors could carry "multiples" of the numbers of buses shown in the *Report* is not underpinned in the *Report*.

The NTA has dismissed our request that a feasibility study be carried out into continuing *MetroLink* to the general Firhouse area. However, this dismissal is based on a study which was carried our 12 years ago into a Luas on-street system and did not include the general Firhouse area.

Section 5 - Conclusions:

From the analysis, it is clear that:

- O Buses alone will not be sufficient to fulfil the public transport needs of South West Dublin. BusConnects would, at best, provide only a very small increase in public transport capacity (peak hour), in South West Dublin, leading to on-going overuse of cars as a preferred mode of transport, with all the attendent consequences as outlined in the document.
- → A feasibility study is immediately required for continuing MetroLink towards
 Firhouse, as a fundamental starting point to adequately service the long-neglected
 South West Dublin area. The feasability study process must include active
 engagement and consultation with local public representatives, community
 representatives and groups such as the South West Dublin Metro Group.
- This proposal needs to be considered urgently, before vital exchequer funds are wasted in creating a potentially redundant underground *MetroLink* parking and turnback space in Ranelagh.



SECTION 2 WHY SOUTH WEST DUBLIN NEEDS A METRO SERVICE

2.1 Introduction

For South West Dublin, buses on their own do not have sufficient capacity. Despite being a very important part of public transport, they have to be deployed in the most efficient manner possible:

- o To serve the needs of the residents of South West Dublin
- o To enable us to make a substantial shift from the car to public transport and
- o To reduce transport pollution.

2.2 The argument

The argument is very straightforward:

- Buses alone cannot provide sufficient public transport capacity in South West Dublin and, as a result, the South West will remain heavily reliant on cars, which will further damage the environment
- · On-street Luas is not feasible
- The only way to provide the required capacity is METRO.

In other words, there is no alternative to Metro to meet the public transport needs of the people living in South West Dublin.

2.3 Demand for public transport and level of service

2.3.1 Spatial aspect

Overleaf is a map of South West Dublin. To the west, we have the Luas Red line from Saggart and Tallaght able to bring 6,000 passengers into town in the morning peak hour. To the east, we have the Luas Green line with a similar capacity.

South West Dublin lies in the rough triangle between the Red and Green lines. It has neither Luas nor Metro and has to rely on low capacity buses as the only mode of public transport.





The contrast between South West Dublin and South East Dublin is striking. South East Dublin has both DART and Luas and, bisecting the area, there is the 'flagship' Quality Bus Corridor (QBC) along the Stillorgan Road. On the coast, DART is capable of bringing 15,000 passengers into town in the peak morning hour. The Luas Green Line can bring 6,000 passengers into town in the peak hour. The following table shows that the total in-bound public transport capacity in South East Dublin amounts to 24,600.

Table 2.3.1 Public Transport Capacity Peak Hour (7-8am) In-bound
Dublin South East vs Dublin South West

Mode	Dublin	South	East	Dublin	South	West
	Capacity			Capacity		
DART: feasible capacity	15,000			0		
Luas Green Line: feasible capacity	6,000			0		
Buses: actual provision	3,600a			5,680 ^b		
Total	24,600			5,680		

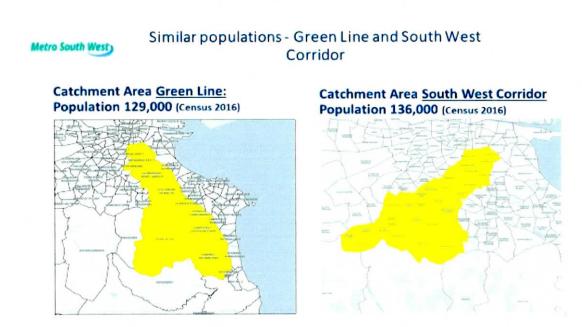
- At the entrance to Donnybrook Road: 1x116; 1x118; 7x145; 3x155; 4x39a; 7x46a; 1x46e; 3x7b; 1x7d; 3x84 = 31 buses.
 - On Merrion Road, at the junction with Ailesbury Road: 5x4; 2x7; 2x7a = 9 buses.
 - On Sandford Road at Gonzaga College: 3x11; 1x44;1x 61 = 5 buses.
 - The capacity of each bus is taken as 80 passengers.
- On Kimmage Rd Lower, at Mount Argus: 3X54a; 6X9 = 9 buses.
 - On Templeogue Road, at Terenure College: 12X15; 4X49; 2X65; 1X65b = 19 buses.
 - On Rathfarnham Road, at junction with Rathdown Park: 6X15b; 6X16 = 12 buses.
 - On Crumlin Road, at Children's Hospital: 6X27; 1X56a; 5X77a; 1X77c; 6X123; 4X151 = 23 buses.
 - On Terenure Road West, at the Presentation School: 4X15a = 4 buses.
 - On Clogher Road, at St Bernadette's Church: 4X150 = 4 buses.

In contrast, South West Dublin has only buses. From Table 2.3.1, it can be seen that <u>South</u> West Dublin has less than a quarter of the public transport capacity as South East Dublin.



2.3.2 Population

Whenever a metro is suggested to serve South West Dublin, the NTA say, repeatedly, that there isn't enough population in the area to justify it. But the numbers indicate that this is not the case.



Using the 2016 census, it can be seen that the population for the LUAS Green Line catchment area is roughly 129,000. This population is served by a Luas and this population has been used by the NTA to justify a metro. However, the population of a proposed metro line to Firhouse has a higher population.

2.3.3 Zoning

To promote future residential development potential in South West Dublin, South Dublin County Council (SDCC) has zoned 480 Hectares for Residential Development in Firhouse, Bohernabreena, Templeogue, Rathfarnham, Tallaght South and Central. This is an enormous area zoned for residential development. It is worth noting that zoned lands in both Cherrywood and Clonburris are lower than South West Dublin (Cherrywood has 350 zoned Hectares and Clonburris has 280 zoned Hectares). However, in contrast to South West Dublin, both Cherrywood and Clonburris have mass transit systems built into their plans. There is no such transport planning for the South West Corridor.

2.3.4 Building activity

Building in Dublin South West is happening rapidly. From 2016 to April 2019, permissions for almost 1,800 units (at densities of 25units/Ha) were granted. More recently, SDCC announced a further 500 units to be built in Killinarden.



2.3.5 Population growth

Dublin South West has an area with a population similar to the Luas Green line. Developers are actively building houses and SDCC is building also. 480 Hectares are zoned for residential development. At average densities of 25-40 units/Ha, this would generate population growth of 30,000 to 50,000 persons. Buses, including *Bus Connects*, haven't sufficient capacity for the current population, and buses on their own would be unable to cater for future development and population growth.

2.3.6 Modal split

In South West Dublin, 73% of passenger journeys are taken by car and only 9% are taken by public transport (bus)¹. The particularly low patronage in South West Dublin is probably associated with the lack of Luas, DART or metro. Such low patronage of public transport is neither sustainable nor acceptable. Transport planning has ignored South West Dublin, its population, its potential for growth and its importance as a commuter route on the N81.

2.3.7 Transport Strategy for the Greater Dublin Area 2016 to 2035

The *Transport Strategy* has a key target that, by 2035, 23% of all trips will be by public transport in the Greater Dublin Area, that is Dublin, Meath, Kildare and Wicklow – up from 16% at the start of the period. The *Strategy* document shows that only 9% of trips in South West Dublin (or Corridor E as it is called in the *Strategy*) used public transport. For South West Dublin, the usage rate of public transport would have to grow to two and a half times its current level to attain the GDA target by 2035: to go from 9% to 23%.

However, transport capacity must not only match this growth in projected usage, it must also cater for increases in population; the population increase is estimated in the *Strategy* at 9% for South West Dublin by 2035. Thus, public transport capacity in South West Dublin would have to increase to <u>almost three times</u> its opening level to reach the target for the Greater Dublin Area of having 23% of trips on public transport (23÷9x1.09) =2.8².

2.4 Bus provision

2.4.1 Current bus provision vs BusConnects

The following Table shows the bus corridors in South West Dublin today and, as envisaged under *Busconnects*.

² It is worth noting that the ambition of the *Transport Strategy for the Greater Dublin Area 2016-2035* is unduly modest. For example, according to the *Strategy*, if all its proposals were implemented, there would be more car trips in the Greater Dublin Area in 2035 than in 2016!



¹ Transport Strategy for the Greater Dublin Area 2016-2035, National Transport Authority

Table 2.4.1 Summary of Four Bus Corridors identified by the NTA

Number of Buses and Passenger Capacity in-bound to the City in the 7am to 8am Peak Hour

from Specific Locations on the Corridors^a

Bus corridor Current Cur		Current	BusConnects	BusConnects	
	No. of Buses	Passenger Capacity	No. of Buses	Passenger Capacity	
Kimmage-City Centre (at Mount Argus)	9 (3X54a; 6X9)	720	18 (6XF1; 6XF2; 6XF3)	1,440	
Tallaght- Terenure (at Terenure College)	19 (12X15; 4X49; 2X65; 1X65b)	1,520	10 (5XA1; 5XA3)	800	
Rathfarnham- City Centre (at junction with Rathdown Park)	12 (6X15b; 6X16)	960	18 (5XA2; 5XA4; plus 6X16; 2X24)	1,440	
Greenhills-City Centre (at Crumlin Hospital)	23 (6X27; 1X56a; 5X77a; 1X77x; 6X123; 4X151)	1,840	20 (4XD1; 4XD2; 4XD3; 2XD4; 2XD5 plus 2X22; 2X20)	1,600	
Totals	63	5,040	66	5,280	

Current frequencies are taken from the current on-line bus timetable at June 2020; under normal running, each bus has an assumed capacity of 80 passengers.
 Frequencies under BusConnects are taken from Dublin Area Bus Network Redesign Revised Proposal, Jarrett Walker and Associates, October 2019.

The most striking thing to emerge from the data, is the extremely limited ambition of *Busconnects* for South West Dublin, the number of buses increasing by only 3, that is from 63 to 66, and the number of passengers increasing by 240.

The revised *BusConnects* plan shows a doubling of city-bound buses in the peak hour from Mt Argus, which is on the 'F' spine. Taking the Rathfarnham and Tallaght-Terenure Corridors together, which feed into the 'A' spine, there would be <u>reduced</u> in-bound capacity in the peak hour. There would be <u>reduced</u> capacity from Crumlin Children's Hospital, which is on the 'D' spine.

How could this very small increase of 3 buses facilitate thousands of commuters in South West Dublin to leave the car at home? How could this be consistent with public transport policy whereby public transport capacity in South West Dublin would have to almost <u>treble</u> to enable it to reach the official target for the Greater Dublin Area of having 23% of trips on public transport – see paragraph 2.3.7. As commuting – to work college and school – is the single largest source of trips, it is clear that a substantial increase in public transport for commuting is required. This increased demand for public transport would not be met by the *BusConnects* proposal.



2.4.2 'Pinch points' on each corridor

A question arises: could the 'corridors' chosen by *Busconnects* accommodate the small projected numbers of buses easily or with difficulty? If the streets could accommodate the projected numbers of buses with ease, then perhaps a few extra buses could be run on the corridors. If, not, then no more buses could be included on the corridors. The selected 'pinch points' are: Terenure Road East (on the A spine); Dean Street (on the D spine); and the junction of St Stephens Green and Dawson Street (on the F spine).

2.4.2.1 Terenure Road East

Corridors 10 and 12 (from Tallaght and Rathfarnham) merge at Terenure Road East – currently a very narrow 2 Iane stretch of road – see the photo. According to the NTA, this would be the busiest corridor in Dublin.



Under *Busconnects*, buses would turn right from Rathfarnham Road into Terenure Road East. That road would also receive buses and general traffic from Terenure Place, which is right opposite Terenure Road East. Terenure Place would receive buses from Templeogue Road, which would only contain buses and bikes. General traffic which now uses Templeogue Road would be diverted at Templeogue Bridge and Templeville Road to the KCR. There they could go to town via Crumlin (Stannaway and Clogher Roads) or they could turn right and access Terenure via Terenure Road West: no doubt, many motorists would choose this option. In addition to receiving 20 'A' buses in the peak hour, Terenure Road East would be expected to also receive 6 'S4' orbital buses via Terenure Road West, giving a total of 26 buses per hour. This is a bus every 2.5 minutes, in addition to cars, vans, taxis, bikes etc.

Currently, Terenure Road East receives 19 in-bound buses in the peak hour and is highly congested in peak periods. To receive an additional 7 buses in the peak hour would be a formidable challenge.



In-bound Buses in Terenure Road East in the peak morning hour: Today vs 1973

It is instructive to compare current bus provision with provision of almost 50 years ago. How many in-bound buses entered Terenure Road East in the peak morning hour in 1973 compared with the peak hour today?

Today (peak hour 7-8am)	1973 (Peak hour 8-9am)
19 buses	20 buses
(12X15; 4X15a; 2X65; 1X65b)	(11X15A; 9X15B)

Many of today's suburban estates from which buses proceed to the city via Terenure Road East had not yet been developed in 1973. These 'new' estates include:

Limekiln Farm, Temple Manor, Willington, Osprey, Kennington, Wilderwood, Rushbrook, Orwell Park, Templeogue Wood, Domville, Rossmore, Cypress Downs, Coolamber, Cremorne, Knockcullen, Templeroan, Delaford, Orlagh, Woodfield, Scholarstown, Knocklyon, Glenvara, Carrigwood, Carriglea, Ballycullen, Beechdale, Dargle Wood, Ballyboden.

The question arises: Why did bus provision not increase dramatically to cater for thousands of additional potential commuters in these 'new' estates? The answer could lie in the narrow widths of important streets. For example, the entrance to Terenure Road East – between Vaughan's pub and Doyle's Auctioneers – is no wider today than in 1973. Could it be that 'peak buses' for morning commuters on Terenure Road East had already been reached 50 years ago? The NTA confirmed that it has no proposal to demolish either Vaughan's Pub or Doyle's Auctioneers to allow additional throughput of buses on this street^a.

^a John Fleming, NTA: Q and A following his address to Engineers Ireland, 20 November 2019

2.4.2.2 Dean Street

Dean Street is a narrow stretch of road on the D spine, which is at the bottom of Cork St. It has one in-bound lane. Like Terenure Road East, this is a very busy street with buses and general traffic and it is now the source of considerable congestion and delays in the peak morning period. Currently, 21 in-bound buses enter Dean Street in the peak morning hour and this would increase to 22 under *Busconnects*. Getting this number of buses through the street would continue to be challenging.



2.4.2.3 The junction of St Stephens Green and Dawson Street

Under *BusConnects*, in the peak morning hour, 18 F and 15 E buses would travel on the North side of St Stephens Green towards the junction with Dawson St. in addition to an unknown number of 'secondary' radial buses. There would also be taxis, provincial buses, tour buses, bikes etc.

At the corner of St. Stephens Green and Dawson St. (Elvery's corner), they would encounter at least 45 occasions when the junction would be closed to all traffic due to pedestrians having a 'green man'³. Heretofore, around 15 North-bound Luas trams went around Elvery's corner and another 15 did the same in a southerly direction. However, the frequency of these trams is being increased dramatically to 24-26 trams in each direction and the length of them is being increased also to 55 metres long. Thus, on around 50 occasions the junction would be closed to these buses due to these Luas trams. Altogether, on around 95 occasions in the peak hour, the junction would be closed to buses. Given these demands on this junction from pedestrians and Luas trams, getting 18 F and 15 E buses through the junction, in addition to provincial buses, tour buses, taxis and bikes, would be challenging.

2.5 Bus capacity

2.5.1 Summary of existing bus capacity and BusConnects

This is the summary line from Table 2.4.1, which shows the total number of in-bound buses on the 'A', 'D' and F' corridors from defined points in the peak morning hour.

	Current No. of Buses	Current Passenger Capacity	BusConnects No. of Buses	BusConnects Passenger Capacity
Totals	63	5,040	66	5,280

From our analysis, it is clear that these corridors could not accommodate significant increases in the number of buses in the peak hour.

³ According to *Enabling the City to Return to Work*, NTA, May 2020, "In order to reduce the time that people are waiting for pedestrian crossings to turn green, the maximum amount of time allocated to a complete traffic cycle, (allowing all movements in the junction operate, if demanded) has been reduced from 120 seconds to 80 seconds throughout the city. As the amount of time for the pedestrian green and amber man is based on the time taken to safely cross the road, and therefore remains the same, the additional time has been taken from that allocated to vehicles. This has resulted in shorter green times at all junctions and an expected reduction in traffic capacity of up to 30%. As traffic volumes increase, following advancement through the different phases of the government roadmap for easing of restrictions, and while the requirement for social distancing remains in place, the cycle length will remain capped at 80 seconds. This will result in major reduction in capacity for motorised vehicles going forward. The impact of this on public transport journey times and reliability will also require careful monitoring."



2.5.2 Inadequacy of public transport capacity

The capacity of all of the corridors which would serve South West Dublin – 'A', 'D' and 'F' – would be determined by the physical characteristics of city centre streets and junctions such as those above. It would be very challenging for the projected throughput of buses on these corridors to be realised. From this analysis, it is clear that:

- The current provision of buses is inadequate
- The capacity of Busconnects is inadequate
- At best it would scarcely exceed existing bus provision.

The context for this underwhelming outlook is that public transport provision in South West Dublin must be trebled in order to match the official target of 23 per cent of trips in the Greater Dublin Area to use public transport (see paragraph 2.3.7).

2.5.3 Has a 'bus only' solution been examined previously?

The demonstration above that buses alone cannot provide sufficient capacity for South West Dublin is not a surprise. In 2001, The Dublin Transportation Office published *A Platform for Change*. That Report modelled a 'bus only' solution. According to the Report:

"In summary, the analysis of the 'Comprehensive Bus' scenario established that buses alone could not address the problem because in many of the main transportation corridors the bus mode cannot provide the necessary capacity to cope with the forecast demand" (page 35).

The Report went on to recommend the provision of a metro from Tallaght to the Airport via Kimmage, Harolds X, City Centre and Finglas. It also recommended an orbital metro from Tallaght to Blanchardstown and on to Finglas⁴.

2.5.4 The obvious question

How is it possible that, 19 years after A Platform for Change, the NTA

- Proposes to spend a large sum of money on Busconnects
- As the supposed public transport 'solution' for South West Dublin
- Which has, according to the NTA, the busiest corridor in Dublin⁵
- o While refusing to even examine options which would have sufficient capacity?

Dublin Area Bus Network Redesign Revised Proposal, Jarrett Walker and Associates, October 2019, Page 95



⁴ According to A Platform for Change: "METRO is a light rail system that is similar to LUAS except that it is completely segregated throughout its entire length (that is, it has no on-street sections)." Most of the lines for these proposed metros would have been over ground.

SECTION 3 THE JUSTIFICATION FOR CONTINUING METROLINK TO SERVE SOUTH WEST DUBLIN

3.1 The current plan for MetroLink

The current NTA suggestion is that the Tunnel Boring Machine (TBM) be abandoned underground, south of Ranelagh near Beechwood, with a view to linking with and upgrading to metro standard the Green Line to Sandyford at a later date. However, the NTA also state that the Green Line can be made adequate to cater for passenger volumes for the next 15-20 years.

In other circumstances, perhaps such long-range planning would be commendable. However, given the potential demand in South West Dublin – a vast area with neither Luas, DART nor metro – isn't it surely appropriate to consider continuing the TBM towards the general Firhouse area?

There is no need at this stage to be dogmatic about the route – start point; end point or intermediate stations. The route can be best chosen after the proposed feasibility study.

3.2 The benefits of continuing MetroLink to Firhouse

The benefits would include:

- The huge time savings for all users of the metro faster than any other mode of travel
 leaving many workers, in the outer suburbs, with more family time.
- Providing Park & Ride/Cycle Parks in Firhouse and Spawell (on the N81) would remove many cars from
 - Commuter route N81, from places such as Tallaght, Brittas, Blessington,
 Baltinglass, Hacketstown and those on roads feeding into the N81
 - South city roads
 - The M50.
- It would deliver the transport policy objective of enabling thousands of commuters to leave their cars at home and avail of a superior transport service.
- Orbital routes and local trips are now more difficult due to traffic build up. Without a metro, this would worsen.
- With a metro, measures to deter car usage would become acceptable.
- Road space would be freed up which could benefit pedestrians, cyclists and buses.
- Reduced congestion and pollution.



3.3 The cost of continuing MetroLink to Firhouse

The original NTA idea was that *MetroLink* would go from Estuary (which is near Swords) to Sandyford and the total cost was to be of the order of €3bn. No updated cost estimates have been made available by the NTA. Conservatively, let us assume a 'high' cost per kilometre by apportioning the entire €3bn over the much shorter distance from Estuary to Beechwood. This yields an estimated cost per kilometre of €143m. The distance from St Stephens Green to Firhouse is c. 11 kms. Accordingly, we multiply 11 kms by €143m per km to give us a ballpark gross estimate of €1.6bn to extend *MetroLink* to Firhouse.

However, extending *MetroLink* to Firhouse would also lead to significant cost savings. The current proposal for *MetroLink* is to direct it from St Stephens Green towards Ranelagh. Specifically, there would be 2 kms of tunnel from St Stephens Green to Charlemont and Beechwood. The proposed tunnel section from St Stephens Green to Charlemont would merely duplicate underground a 'Green Line' service, which is already available over ground: this would deliver negligible or nil benefits for Green Line passengers. The proposed tunnel extension from Charlemont to Beechwood would carry no passengers and would function merely as an underground parking lot for metro trains and a cavern for storing the abandoned TBM.

Neither the proposed expensive 'duplicate' tunnel from St Stephens Green to Charlemont nor the expensive underground parking at Beechwood would be required if the TBM proceeded to Firhouse. Accordingly, we deduct 2X€143m or €286m, to result in an estimated net cost of extending *MetroLink* to Firhouse of €1.3bn.

3.4 Exchequer saving if MetroLink is continued to Firhouse

It is clear from our analysis and from the analysis in *A Platform for Change* (2001) that a metro linking South West Dublin to the city is required. The question arises:

"How much would the Exchequer save by building this metro in <u>conjunction</u> with MetroLink by directing the TBM to continue in a south west direction from St Stephens Green VERSUS building the Firhouse metro as a stand-alone project at a subsequent date?"

The main savings would be:

- The NTA proposal to build 2 kms of tunnel from St Stephens Green to Beechwood would not occur if the TBM proceeded from St Stephens Green to Firhouse.
- o If the Firhouse metro to the city were built as a standalone project, the *MetroLink* TBM would not be available to construct a subsequent tunnel from Firhouse to the city centre as it would have been abandoned under Beechwood. Thus, further costs would arise for the purchase, assembly and launch of the second TBM in Firhouse. These costs would not be incurred if *MetroLink* were continued to Firhouse.



o If the Firhouse metro were built as a standalone project, the second TBM would probably have to be stored ultimately under the city in an underground parking lot which would also accommodate Firhouse trains at this terminus. These costs would not be incurred if *MetroLink* were extended to Firhouse.

Taking these three items together, the total saving for the Exchequer in continuing *MetroLink* to Firhouse VERSUS building the Firhouse metro as a stand-alone project at a subsequent date would be considerable; as an initial estimate, these additional and unnecessary costs would amount to around €500m. These savings would be lost if the current NTA proposal of abandoning the TBM under Beechwood were to go ahead.

The Covid-19 virus has put a large hole in the Exchequer balance. Now, more than ever, throwing away c. €500m of scarce public funds would have no merit.

3.5 Need for an early feasibility study to continue MetroLink to Firhouse

Twenty-nine residents' associations and groups request that an early, independent feasibility study be carried out of continuing *MetroLink* to the general Firhouse area.

It is imperative that the management and conduct of the feasibility study is robust and independent. It is recommended that public and community representatives play a key role throughout the study.

Finally, the feasibility study should be undertaken without any further delay because:

- o BusConnects cannot meet the public transport needs of South West Dublin.
- The most cost-effective way to build the metro saving several hundred millions of euros – is as an integrated extension of MetroLink and there is no wish and no reason to delay MetroLink.



SECTION 4 THE NTA RESPONSE TO OUR ANALYSIS AND PROPOSED FEASIBILITY STUDY

4.1 When was the NTA advised of the analysis?

An earlier version of the above analysis was given to the NTA in April 2019 in response to their invitation for observations on the first NTA proposal on bus corridors. In that analysis the NTA was appraised of:

- The very small increase in public transport capacity which was then proposed by the NTA for South West Dublin
- The need for an early feasibility study into continuing MetroLink to South West Dublin to provide sufficient capacity.

In December 2019, after the intervention of Ministers Eoghan Murphy and Katherine Zappone, the NTA responded to the above analysis. The NTA documents are included in Appendix B.

4.2 The NTA response to the lack of public transport capacity in South West Dublin

The key point from the NTA response (see Appendix B) is contained in the following two sentences:

- i. "These figures do not represent the ultimate corridor capacities they simply represent the capacity based on the proposed 2019/2020 service frequency levels.....
- ii. It is worth being aware that a well-planned bus system can carry multiples of the number of passengers identified".

This response is highly problematic.

4.2.1 The first sentence

The Busconnects Report "Dublin Area Bus Network Redesign: Revised Proposal – October 2019" has over 200 pages and it is very detailed with many maps, numbers and tables. If there were any intention to depart greatly from the frequencies of service beyond those shown in the Report's tables, should not this have been explained in detail in the Report?

Did the NTA commission a major study of the bus network in Dublin while requiring the consultants to consider <u>only</u> the level of fulfilled demand that was served by buses in 2019 and 2020? Surely, additional public transport is required to cater for the modal shift from cars to public transport which was projected in the *Transport Strategy*?



4.2.2 The second NTA sentence

"It is worth being aware that a well-planned bus system can carry multiples of the number of passengers identified".

This sentence is imprecise. Let us assume that the NTA regard all *Busconnects* corridors as being well-designed, including those in South West Dublin. Is the NTA trying to say that all corridors can take "multiples of the number of passengers identified" in *Dublin Area Bus Network Redesign: Revised Proposal – October 2019*? How many "multiples" of buses do they think these corridors <u>can</u> take? If 2 is the smallest multiple, can we translate this sentence as meaning that the NTA is suggesting that all corridors can handle at least twice the numbers of buses projected in *Dublin Area Bus Network Redesign: Revised Proposal – October 2019*?

Let us take this idea to Terenure. Terenure Road East currently receives 19 inward buses in the peak morning hour. According to the first version of *Busconnects*, this would be increased to 30. In *Busconnects 2* (October 2019), this was revised downwards to 26 buses per hour, albeit with a new vague footnote which states that:

"Where peak hour frequencies are marked with an asterisk, peak hour frequency would be higher on parts of the route."

Dublin Area Bus Network Redesign: Revised Proposal – October 2019 provides no details regarding how many extra peak buses would be supplied or on what parts of the corridors they would be supplied! In other words, we do not know how many buses the NTA and Jarrett Walker are proposing! This vague approach is completely unacceptable in a serious report.

But how can one process the latest NTA (implied) suggestion in December 2019 that Terenure Road East could accept "multiples" of the number of buses proposed in the BusConnects Report? In other words, Terenure Road East could receive not 19 buses (as at present), not 30 buses (as proposed in BusConnects 1), not 26 buses (as proposed in BusConnects 2) but a "multiple" of this number, i.e. 52 buses per hour or perhaps more? The only explanation offered by the NTA is that Templeogue Road would be 'bus only'. However, no mention is made of the probability that much of the diverted car traffic would access Terenure Village via Terenure Road West. S4 orbital buses would also use Terenure Road West. Accordingly, traffic from Terenure Road West would have to be allowed through Terenure Village as otherwise the S4 orbital buses would not be able to pass through the Village. No mention is made of several key facilities in the heart of the Village which impede the movement of traffic through Terenure, i.e. St Joseph's Church and National School; three pedestrian crossings in addition to Terenure Cross; two supermarkets, each with parking for 100+ cars. No mention is made of the proposed new, difficult right turns that buses would have to make from Rathfarnham Road to Terenure Road East. In short this NTA assertion about 'multiples' of buses is unsupported for Terenure.

In truth, is not the NTA claim about "multiples" of buses merely an assertion, which has not been substantiated?



To further illustrate the unsubstantiated nature of the implied NTA claim that 'multiples' of the number of buses set out in the *Report* of Jarret Walker / NTA could travel in-bound in the peak morning hour along Terenure Road East, i.e. a minimum of 52 buses, let us compare the entrance to Terenure Road East with the entrance to Donnybrook Road⁶. The 'flagship' N11 Quality Bus Corridor (QBC) runs along this very wide road. Even at its 'pinch point' in Donnybrook Village, there is room for four lanes of traffic (vs two lanes in Terenure Road East). Notwithstanding its four lanes, the throughput of in-bound buses on this QBC in the peak morning hour is 31. What reality attaches to the NTA's implied suggestion that Terenure Road East (with only two lanes) could accommodate 52 buses or maybe more?

4.3 The NTA refusal to carry out a feasibility study of continuing *MetroLink* to Firhouse

The NTA has dismissed our request to have an early study of our proposal; instead they have stated that the appraisal of our proposal should await the next update of the Strategy for the Greater Dublin Area, by which time the opportunity to save the Exchequer c. €500m will have been lost. Their dismissal of our request is based on a 2008 feasibility study of an on-street Luas line starting in Dundrum – see Appendix B.

That proposed Luas line from Dundrum would have proceeded west via Churchtown and Nutgrove, to Willbrook. Then, it would have turned north via Rathfarnham, Terenure and Harolds X to Christchurch. The study found that:

- Many streets were too narrow to accommodate a Luas
- •There would not be enough passengers to justify it.

6				
Number of	in-bound buses in the	peak morning hour: Do	nnybrook Road vs Tere	enure Road East
Donnybrook Road	Terenure Road East	Terenure Road East	Terenure Road East	Terenure Road East
(4 lanes).	(2 lanes).	(2 lanes).	(2 lanes).	(2 lanes).
Today:	Today	NTA: Projected in	NTA: Projected in	NTA: "Multiple"
		BusConnects 1	BusConnects 2	suggestion in letter
		(January 2019)	(October 2019)	(December 2019)
31	19	30	26	52+
(1x116; 1x118;	(12X15; 4X15a;	(6XA1; 6XA2; 6XA3;	(5XA1; 5XA2; 5XA3;	(No detail)
7x145; 3x155;	2X65; 1X65b)	6XA4; 6XS4)	5XA4; 6XS4)	
4x39a; 7x46a;	***	188	**	
1x46e; 3x7b;	ACTUAL	"UNREALISTIC"	"V. CHALLENGING"	"UNSUBSTANTIATED"
1x7d; 3x84)				



However, this study is not relevant to our requested feasibility study for three reasons:

- That study is 12 years old. Over the intervening years, there have been many changes in population, house building, zoning and planning permissions. Also, our understanding of the consequences of emissions from vehicles is much clearer now than it was 12 years ago.
- 2) That study related to an on-street Luas, rather than a metro.
- 3) That study provides no evidence regarding likely passenger demand under our proposal. A key requirement for any expensive public transport infrastructure is to have strong start and end points. That study had a very weak starting point Dundrum. Why would someone in Dundrum take the proposed circuitous route to the city when they have the direct Luas Green Line available?

The end-point of the proposed Luas Line – Christchurch – is also very weak. It would be convenient if one's destination was the Civic Offices or the Courts complex. However, Christchurch is some distance from the city centre and one would most likely have to walk or take some other public transport, such as the Luas Red Line to reach one's destination.

By contrast, our proposal has not one but two strong starting points. As set out earlier, the greater Firhouse area has a large population and is the subject of major current and future development. Metro would be very attractive to many residents, by walking to it, using local link buses, cycle and ride, or park and ride. Passengers would be in the city in 20 minutes. The proposed station in the Spawell area would be effective in capturing many motorists coming in via the N81 from places such as Tallaght, Brittas, Blessington, Baltinglass, Hacketstown and those living on roads feeding onto the N81. It would have the potential to take much traffic from the M50.

Our proposal would have strong end points also – the Airport and Swords. Furthermore, it would have strong intermediate points, e.g.

- St Stephens Green (and its connection to the Green Line and Cross City Luas lines),
- Tara St and its connection to DART and the Red Luas Line; and
- o O'Connell St.

In short, the old Luas study quoted by the NTA has no relevance for our proposal.



SECTION 5 CONCLUSIONS

5.1 The need for a metro in South West Dublin

Only a metro can provide sufficient public transport capacity in South West Dublin. From the above analysis, it is clear that:

- BusConnects would, at best, provide only a very small increase in public transport capacity in the peak hour;
- o A feasibility study is required for continuing *MetroLink* towards Firhouse.

5.2 No further delay in carrying out a feasibility study of continuing *MetroLink* to Firhouse

Already the NTA has wasted more than a year since we first demonstrated that the capacity of *BusConnects* in South West Dublin would be completely inadequate and we requested that the NTA carry out an independent feasibility study of continuing *MetroLink* to Firhouse. As the provision of a metro service to South West Dublin is inevitable, the major cost savings for the Exchequer of providing this service as a continuation of *MetroLink* should not be thrown away.

Twenty-nine residents' associations and groups request that an early, independent feasibility study be carried out of con/tinuing *MetroLink* to the general Firhouse area.

5.3 Terms of Reference

The feasibility study should be managed by the NTA and carried out in an open and transparent manner. This means that local public representatives and community representatives should be consulted throughout the process. Specifically,

- The terms of reference for the feasibility study should be discussed and agreed between the NTA and public representatives and representatives of community groups;
- o The consultants should liaise with these representatives throughout the study;
- The consultants should present their draft findings, conclusions and recommendations to these representatives prior to their finalisation;
- The consultants should be solely responsible for their final report.

The South West Dublin Metro Group is available to assist with drawing up appropriate Terms of Reference for the feasibility study.

South West Dublin Metro Group

August 2020



Appendix A

List of Residents Associations and Groups in South West Dublin Metro Group

Association of Residents of Terenure

Beechdale Residents Association

Butterfield Residents Association

Firhouse and Bohernabreena Group

Fortfield and Templeville Residents Association

Hermitage Residents Association

Kimmage Road West Residents Association

Knocklyon Network

Landsdowne Park & District Residents Association

Lower Kimmage Road Residents Association

Mount Argus and Church Park Residents Association

Mount Argus Residents Association

Oakdale Residents Association

Orwell Park (Templeogue) Residents Association

Perrystown Manor Estate Residents

Rathfarnham Road Residents Association

Rathgar Residents Association

Rathgar Road Residents Association

Recorders Residents Association

St. Anne's Residents Association

Shanid Road Residents Association

Temple Manor and Wilkins Residents Association

Templeogue Tidy Towns Group

Templeogue Wood Residents Association

Terenure Residents Association

Terenure Road East Residents Group

Terenure West Residents Association

Woodfield Residents Association

WORK Residents Association



Appendix B

Correspondance from NTA to Ministers Zappone and Murphy

Dear Minister (Zappone)

I refer to your correspondence of 9th September on behalf of Sean Ward, Orwell Park (Templeogue) Residents Association regarding in relation to extending Metro Link to the south-east (*sic*) city area and the undertaking of a feasibility study for such a proposal. I apologise for the lengthy delay in responding to this query.

Metros are major infrastructure projects. Their cost is not measured in thousands or millions of Euro, but in billions of Euro. Metros represent the top level of the public transport spectrum in terms of carrying capacity, and are only applicable for areas with high densities of population and/or high density employment centres. To be economically justifiable, the volume of passengers must exceed the carrying capacity of a bus / bus rapid transit system or a light rail system.

In 2008 the Railway Procurement Agency (RPA) completed a feasibility study in respect of a proposed Luas Line from the City Centre to Rathfarnham – Luas Line E – which had been requested by the then Minister for Transport.

The scheme would be approximately 8.3 km long, would have 11 stops and would serve Harold's Cross, Terenure, Rathfarnham plus Nutgrove, terminating at Dundrum.

The feasibility study reviewed the population and employment statistics within the likely catchment area. It noted that population levels had decreased slightly over recent census periods and stated that "[g]iven that development in the area is of a low density and sprawling nature, with a lack of green field or brown field sites, it would appear unlikely that the population or employment figures would experience any substantial increase over the coming years."

The feasibility study assessed the likely demand plus the operating and revenue costs. Transport modelling for the project was carried out using a then forecast year of 2016. That modelling work indicated that the maximum number of passengers on the line in the am peak hour would be in the order of 850 passengers in one direction. This can be compared to about 5,000 passengers in the peak hour in one direction on the Green Line at present. In addition, the analysis also indicated that the fare revenue would not meet the operating cost of the line. Subsequent to the completion of the Line E Feasibility Report, further transport analysis was carried out on the potential of developing the Rathfarnham to City Centre Luas Line. As part of the process of developing an overall transport strategy for the Greater Dublin Area, then called "Vision 2030", the Luas Line to Rathfarnham was included in the transport modelling analysis undertaken in 2010.

The Luas line proposal was modelled under various overall strategy scenarios that were under consideration. The output from the modelling work indicated that the forecast passenger demand in 2030 for the Rathfarnham to City Centre Luas Line



would be between 1,235 and 1,300 passengers, depending on the overall strategy scenario being evaluated.

Similar to the earlier feasibility study work, the analysis undertaken for the 2030 draft transport strategy (Vision 2030) concluded that the level of passenger demand for this line would be low, equating to only about a quarter of the capacity of standard light rail line, and recommended against including the Rathfarnham to City Centre Luas Line in the overall transport strategy on that basis.

As the work undertaken previously was unable to support the development of a light rail line along this corridor, it similarly would not justify the provision of a metro route along the same corridor due to the low density nature of development along the corridor.

This position was reviewed during the preparation of the current Transport Strategy for the Greater Dublin Area 2016-2035, which similarly concluded that a bus-based public transport solution is the appropriate provision along this corridor.

Under the relevant legislation, the Transport Strategy for the Greater Dublin Area is required to be reviewed every six years. Accordingly, the next review of the transport strategy will commence in the second half of next year and is due to be completed at the start of 2022. As part of that review, there will be an analysis undertaken of any changes to population projections, development density, employment forecasts and future travel demand patterns since the finalisation of the current strategy. This will feed into a reassessment of the appropriate public transport solution in this sector of the city, which will include the evaluation of bus, light rail (Luas) and metro options.

I trust this clarifies the position in this matter

Yours sincerely

Hugh Creegan Deputy Chief Executive

National Transport Authority Dún Scéine Harcourt Lane Dublin 2 D02 WT20





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Dun Sceine, Harcourt Lane

1 01 879 8300

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Eoghan Murphy TD,
Minister for Housing, Planning and Local Government,
Custom House,
Dublin 1.
DO1 W6X0

2nd December 2019

Re: Correspondence from OPTRA

Dear Minister,

I refer to the correspondence from the Orwell Park (Templeogue) Residents Association (OPTRA) from a number of months ago in relation to a metro proposal from Charlemont to Firhouse. I apologise for the lengthy delay in responding on this matter.

The letter from OPTRA is predicated upon its conclusions that:

- 1. "Buses will not be able to provide sufficient capacity to enable people in Dublin South West to leave their cars at home and use public transport to get to work; [and]
- Even the modest passenger capacity outlined in BusConnects could not be achieved because that proposal features impossible scenarios in Terenure, Nassau Street and Bachelors Walk."

I propose to address each of the above in turn.

Bus Capacity

The position reached by OPTRA seems to be based on the number of buses proposed to use the various corridors under the network design proposals published last year. You will be aware that we published revised proposals in October of this year, which are the subject of an ongoing public consultation process.

It is worth noting that the service frequency proposals in both the 2018 and the 2019 proposals are reflecting the current passenger demand level. We are continually increasing service levels to match passenger demand and we would also see service levels increasing under the proposed new network as passenger demand increases.

The submission from OPTRA calculates passenger capacity based on the stated service levels for a 2019/2020 network, and calculates the "BusConnects Passenger Capacity" as 960 passengers on the Kimmage to City Centre corridor plus the Tallaght to Terenure corridor, 1,200 passengers on the Rathfarnham to City Centre corridor and 1,760 passengers on the Greenhills to City Centre corridor.

Tabhair cuairt ar www.TransportforIreland.ie le haghaidh eolais agus seirbhisí iompair phoiblí do chustaiméirí Vad www.TransportforIreland le for public, transport contomes unformation and services



These figures do not represent the ultimate corridor capacities – they simply represent the capacity based on the proposed 2019/2020 service frequency levels.

Once a network is established, the frequency of services on the various segments of the network can be calibrated and adjusted to match the emerging demand. Accordingly, it will be the case that as passenger demand increases, the frequency of the bus services will need to increase. It is worth noting that on some of the existing corridors crossing the canal, the number of passengers currently being carried in one hour is approximately 4,000 passengers (one direction only).

While not at all suggesting that this level of usage will occur on any of these corridors, it is worth being aware that a well-planned bus system can carry multiples of the number of passengers identified in the OPTRA document. Accordingly, the OPTRA conclusion that "[b]uses will not be able to provide sufficient capacity to enable people in Dublin South West to leave their cars at home and use public transport to get to work" is incorrect.

Impossible Scenarios at Terenure, Nassau Street and Bachelors Walk

The OPTRA document states "[e]ven the modest passenger capacity outlined in BusConnects could not be achieved because that proposal features impossible scenarios in Terenure, Nassau Street and Bachelors Walk."

Starting with Terenure, the difficulty for all of the bus routes approaching Terenure is that those buses are currently caught up in traffic congestion, impacting on bus journey times and their reliability plus punctuality. The Rathfarnham to City Centre Core Bus Corridor and the Tallaght to Terenure Core Bus Corridor propose to deal with this by providing bus priority on the Rathfarnham Road, Terenure Road East and Templeogue Road approaches. A significant part of this proposal is the inbound "Bus Gate" on Templeogue Road, which would remove private car inbound traffic on this link. In addition, the traffic signals in Terenure would be adjusted to operate more effectively for buses.

While we accept that these proposals will have some level of impact on car traffic at this location, we consider that the arrangement will more fairly reflect the "people" throughput at this junction, rather than the vehicle throughput.

In relation to Naasau Street, it is worth examining the city centre proposals which are available on page number 110 of the Revised Network Design Report published in October of this year – it can be accessed at https://busconnects.ie/media/1769/fullreport_chapter_7.pdf Because we intend to redistribute buses across the city centre under the new proposals, there will actually be fewer buses using Naasau Street than currently using the street at present.

In relation to Bachelor's Walk, a double bus lane was installed on this street about a year or so ago, and the number of buses planned for the street is fully capable of being accommodated. It is also worth noting that we have sought to remove bus turning movements from the O'Connell Street / Bachelor's Walk junction in the new design, which will make that junction operate more effectively.

Overall, there are no "impossible scenarios" in the revised bus network proposals, and the revised network is capable of operating at all locations.



Cycling

I also want to respond to the comments about cycling in the OPTRA document. It states:

"BusConnects would greatly worsen the provision for commuter cyclists in our area. If they chose to take a quiet route, they would be required to dismount; take circuitous routes; cross busy roads; re-enter corridors with no provision for cyclists; and endure longer journey times, not to mention all the safety issues that the above would bring. Alternatively, if they were to take the direct route on a bus corridor, they would lose the protection, which they now enjoy, on cycle lanes."

These assertions are plainly incorrect. There are virtually no safe, segregated cycling facilities along the corridors referenced in the OPTRA correspondence. BusConnects will deliver those facilities, mainly direct along the corridor, but occasionally through a safe off-line route. By segregated routes we mean a cycle track where there is a physical kerb separating cyclists from general vehicular traffic. Where there are existing cycle facilities on some of the roads in this area, they are generally just a white painted line on the carriageway, sometimes within an overall traffic lane. Painted white lines do not provide "protection" for cyclists, as incorrectly identified in the above statement.

The development of the proposals contained with the BusConnects Core Bus Corridor plans would represent a step-change in safe cycling provision for the south east of the City. It would provide safe cycling corridors which will suit all users, young and old, experienced and inexperienced cyclists.

Conclusion

The above information clarifies the position in relation to bus capacity and locational constraints.

Separately, I identified in earlier correspondence that previous work had been undertaken which was unable to support the development of a rail system along the corridor under consideration due to the low density nature of development along the corridor. This position was reviewed during the preparation of the current Transport Strategy for the Greater Dublin Area 2016-2035, which similarly concluded that a bus-based public transport solution is the appropriate provision along this corridor.

Under the relevant legislation, the Transport Strategy for the Greater Dublin Area is required to be reviewed every six years. Accordingly, the next review of the transport strategy will commence in the second half of next year and is due to be completed at the start of 2022. As part of that review, there will be an analysis undertaken of any changes to population projections, development density, employment forecasts and future travel demand patterns since the finalisation of the current strategy. This will feed into a reassessment of the appropriate public transport solution in this sector of the city, which will include the evaluation of bus, light rail (Luas) and metro options.

I trust that the above information is of assistance.

Yours sincerely,

Deputy Chief Executive.



South West Dublin and the Continuation of MetroLink







IMPROVEMENT IN COMMUTING TIMES







Metro South West

October 2020

SOUTH WEST DUBLIN AND THE CONTINUATION OF METROLINK

IMPROVEMENT IN COMMUTING TIMES

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- 6 Connectivity

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- 7 Journey times for long distance car commuters and the M50
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SOUTH WEST DUBLIN AND THE CONTINUATION OF *METROLINK*IMPROVEMENT IN COMMUTING TIMES

1 Introduction

- 1.1 The South West Dublin Metro Group (SWDMG) has established that buses on their own cannot deliver sufficient capacity to fulfil the public transport needs of the population of South West Dublin¹.
- 1.2 *MetroLink* is to come into the city from Estuary. However, the southern / south western route of *MetroLink* has not been decided². The current NTA proposal is to bring *Metrolink* from St Stephens Green to Charlemont with a further tunnel / layby orientated directly towards Beechwood to best enable later conversion of the Green Line Luas to metro standard. The section of tunnel from St Stephens Green to Charlemont would be of no benefit to any passenger³ and it would incur a high cost; and the section from Charlemont to near Beechwood would have no passengers either. In the view of SWMG, it would be much more cost-effective instead to continue to bore towards South West Dublin, where there is a real need for high capacity public transport³.
- 1.3 The Case for Continuing MetroLink to South West Dublin requested that an early Feasibility Study be carried out into continuing MetroLink to South West Dublin. One of the matters that will be important in the Feasibility Study is estimating the likely patronage of the continuation of MetroLink. Patronage will be important in estimating cash flows, the impact on pollution and the benefit-cost ratio.
- 1.4 The number of passengers availing of the continuation of *MetroLink* would be a function of:
 - (i) The population of the catchment area; and
 - (ii) The attractiveness of the metro service.

The Case for Continuing MetroLink to South West Dublin contained an analysis of the catchment population and concluded that this population is the same as for the Green Luas catchment⁴.

- 1.5 **This paper is concerned with the attractiveness of the proposed metro service.** A key element of the attractiveness of the continuation of *MetroLink* would be the improvements in commuting times that would arise in South West Dublin, if *MetroLink* were continued to the general Firhouse area. The focus is on morning peak time commuting. The approach used is to:
 - a) Estimate journey times to the GPO, O'Connell Street today from different districts within the area to be served by the continuation of MetroLink using the following modes of transport: car, bus and bike.

¹ The Case for Continuing MetroLink to South West Dublin, Dublin South West Metro Group, August 2020 https://documentcloud.adobe.com/link/review?uri=urn:aaid:scds:US:eb90ca39-fff8-4acd-9fe5-c1e92f4fb93e

² "We should have a discussion about where the tunnel goes. The current proposal, as I understand it, is to leave the machine in the ground somewhere around Ranelagh. We should have that discussion about whether it would make sense to go west or east from there, perhaps to UCD, perhaps to Sandyford." An Taoiseach, Dáil Éireann, 26 March 2019

³ The *MetroLink* line from Charlemont would duplicate underground the Green Luas Line to St Stephens Green.

⁴ The Case for Continuing MetroLink to South West Dublin, Dublin South West Metro Group, August 2020, paragraph 2.3.2.

- b) Assume entirely hypothetically, that the continuation of *MetroLink* would have stations at Spawell and Dodder Valley Park (beside Dodder Avenue).
- c) Estimate journey times from districts in South West Dublin to these metro stations by walking, cycling or driving, and onwards to O'Connell Street by metro.
- d) Compare the journey times today with the journey times which metro would provide.
- e) Consider the particular possibility that a Park and Ride at Spawell could remove many cars from the M50 and N81.
- f) All the estimated travel times by mode are taken from Google Maps and assume a departure time from home of 7.50am. Walking and cycling speeds are also taken from Google Maps.

Excluded are areas which are close to the Red or Green Luas lines. The main focus is on 'outer suburbs', i.e. below Walkinstown Avenue – St Peters Road – Templeville Road – Dodder Park Road. This is the most challenging part of the catchment area for the proposed metro. The reason for this is that as you go out further from the city, many more people will not live beside a metro station.

Note that the paper does not analyse the important role that local feeder buses could play in delivering passengers to these metro stations.

2 The area to be served by the continuation of MetroLink

Luas stop, Tallaght

2.1 The area served by the proposed continuation of *MetroLink* would lie between the Red and Green Luas lines. This area is shaped roughly like a triangle. The Luas stop in Tallaght is 12.3 kms from the confluence of the two Luas lines near the GPO (walking or by bike) and the Sandyford Luas stop is approximately the same distance from the GPO (11.7 kms). The distance between the Luas stop in Tallaght and the Luas stop in Sandyford is 13.3 kms. Thus, the area between the two Luas lines may be thought of as a rough triangle as follows:

Figure 1: Area served by a continuation of MetroLink to South West Dublin

Luas stop, Sandyford

At the base of the triangle, those living near Tallaght or Sandyford would have little need of the proposed metro service. The spotted areas denote places served already by one of the Luas lines. The approximate area served by the continuation of *MetroLink* is coloured blue. Note that this area extends below an imaginary line from Tallaght to Sandyford. The served area would include:

Tymon Heights, Carriglea, Carrigwood, Delaford, Glenvara, Scholarstown, Elkwood, Templeroan, Castlefield Manor, Beverley, Orlagh, Knockcullen, Woodfield, Boden Park, Moyville, Springvale, Dargle Wood, Oldcourt, Woodstown, Old Bawn, Rockbrook, Aylesbury, Seskin View, Cill Cais, Watermeadow, Killinarden, Jobstown, Kiltalown, Ellensborough, Kiltipper, Allenton, Daletree, Ballycullen, Beechdale.

This is not an exhaustive list.

3 Active modes of travel

3.1 Walking and cycling are the most healthy modes of travel and cause least damage to the environment. Following the pandemic, the NTA has advised that commuters should consider using active modes of travel over the following distances:

Table 3.1 NTA: Distances which may be suitable for active modes of travel⁵

Travel mode	1km	2kms	5kms	10kms+
Walking	•	•	•	
Cycling	•	•	•	•

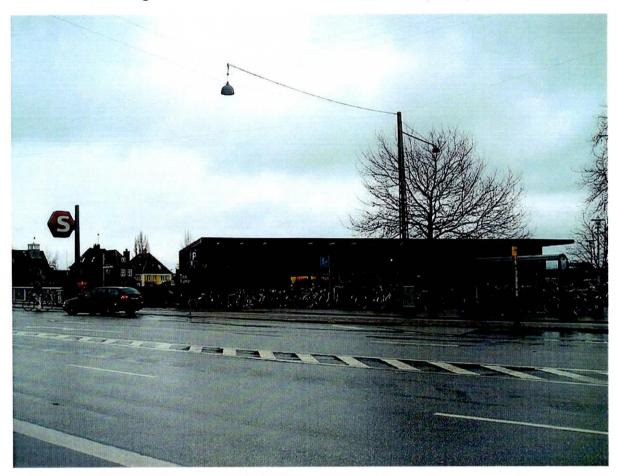
3.2 Cycling in Copenhagen is five times more popular than in Dublin⁶. In Copenghagen, particular attention is paid to ensuring that cycling trips take as little time as possible and that there is ample provision of cycle parking, including beside metro stations⁷. Here is a photo of a metro station, Svanemøllen, which is 6 kms from the centre of Copenhagen.

⁵ Enabling the City to Return to Work: Interim Mobility Intervention Programme for Dublin City, NTA, May 2020, page 7.

⁶ European Cycling Federation https://ecf.com/resources/cycling-facts-and-figures

⁷ https://use.metropolis.org/system/images/1556/original/Copenhagen Bicycle Strategy 2011-2025.pdf

Figure 2: Svanemøllen metro station outside Copenhagen



The photo shows the effective integration of cycling with metro in Copenhagen. People cycle to the metro station, park their bike and complete their journey by metro. They collect the bike on the way home.

4 Commuting times which relate to a hypothetical Metro station at Spawell

4.1 In the following table we show commuting times for a purely hypothetical metro location at Spawell in Templeogue. Both 'Cycle and Ride' and 'Park and Ride' would be available at this station. The assumed destination is the GPO, O'Connell Street, near the intersection of the two Luas lines and the proposed *MetroLink* station at the old Carlton cinema: a distance of 8.7 kms (by bike). According to the NTA, the *MetroLink* journey time from Dublin Airport to the city centre would be 20 minutes for a journey lenth of 11 kms. It is reasonable to assume (on a *pro rata* basis) that the journey time on the continuation of *MetroLink* from Spawell to the GPO, O'Connell Street would be 15 minutes.

Options shown are car, bus, bike and metro. Departing at 7.50 am, the journey times (per Google Maps) would be:

Table 4.1 Journey Times from Spawell to O'Connell Street, departing at 7.50 am

Transport Mode	Time				
Car	Up to 40 mins				
Bus	39 mins				
Bike	30 mins				
Metro	15 mins				

As we might expect, cycling is currently the fastest way to the city. However, Spawell is 8.7 kms from the city. Some people living in the general area of Spawell *may* view this cycling commute as being too long. The current alternatives are the car and the bus. Metro, if available, would be twice as quick as the bike.

- 4.2 Of course, not everyone can live right beside a metro station. Given the dimensions of the area to be served by the new metro (see solid blue area in Figure 1 above), it is unlikely that many people would be more than 5 kms from a hypothetical station. This fits comfortably within the NTA view that distances up to 5 km may be suitable for walking and distances up to 10 kms and more may be suitable for cycling see Table 3.1 above. In the following paragraphs and tables, the current commuting times (car, bus and bike) are compared to the commuting times that would be available with a metro station in Spawell.
- 4.3 The NTA is encouraging more people to use the bike to get to work: the target is to treble the number of commuters who cycle into the city⁸. However, the combination of a short cycle to a metro station together with a swift trip by metro would add greatly to the appeal of cycling. Table 4.2 shows commuting times today vs using <u>Cycle and Ride</u> to a metro station at Spawell.

⁸ See footnote 1.

Table 4.2 Current commuting times to the GPO compared with Cycle to Spawell plus Metro

←--Current options--→ ←----Cycle to metro option--→

Home	Distance (kms)	Car	Bus	Bike	Cycle	Time	Time
Location	To O'Connell St				+metro	saving	saving
	(by bike)	(up to) Mins.	Mins.	Mins.	Total Mins.	vs car Mins.	vs bus Mins.
Anne Devlin Park	8.5	40	39	30	23	17	16
Ashton Close	9.1	45	41	31	22	23	19
Ballyroan Crescent	8.9	45	45	30	23	22	22
Balrothery Estate	9.9	45	50	33	22	23	28
Bancroft Crescent	10.8	50	53	34	24	26	29
Beechfield Road	6.8	35	30	24	27	8	3
Beverley Avenue	9.8	45	39	33	23	22	16
Boden Park	9.2	45	43	32	25	20	18
Brookwood	9	40	44	31	27	13	17
Butterfield Crescent	7.1	35	35	26	26	9	9
Carriglea Drive	11.1	50	44	36	26	24	18
Carrigwood	10.8	45	43	36	26	19	17
Castlefield Manor	10.4	45	52	35	25	20	27
Coolamber Court	8.4	40	37	30	21	19	16
Dargle Wood	9.3	45	39	31	22	23	17
Delaford Drive	9.4	45	42	32	22	23	20
Elkwood	9.1	45	41	31	23	22	18
Glendown Grove	7.6	40	38	26	21	19	17
Glenvara	10.3	45	42	35	21	24	21
Hermitage Drive	8.6	40	40	30	30	10	10
Idrone Drive	9.2	45	43	32	21	24	22
Keadeen Avenue	8.1	40	38	27	25	15	13
Knockcullen Drive	8.9	40	38	31	22	18	16
Marian Park	7.8	40	44	28	24	16	20
Mountdown Avenue	8.1	35	42	28	23	12	19
Moyville	9.2	40	45	31	27	13	18
Orlagh Downs	10.9	45	49	36	26	19	23
Orwell Park Rise	8.2	40	40	27	19	21	21
Scholarstown Park	9.9	45	49	33	24	21	25
Springvale	9.4	45	53	31	27	18	26
Temple Manor Grove	8.8	40	37	29	23	17	14
Templeogue Wood	8	40	43	27	20	20	23
Templeroan Avenue	9.3	45	43	32	23	22	20

Continued...

Home	Kms from Home to O'Connell Street				Cycle plus metro	Time saving vs car	Time saving vs bus
Location		Car	Bus	Bike			
		Mins	Mins.	Mins	Mins	Mins	Mins
Templeville Drive	7.2	40	36	24	23	17	13
Tymon Ville Park	9.6	45	43	31	25	20	18
Washington Grove	8.4	40	47	29	22	18	25
Whitechurch	10.4	45	54	34	30	15	24
Whitecliff	8.5	40	42	30	27	13	15
Whitehall Road	6	30	28	21	24	6	4
Willbrook Estate	7	35	34	25	26	9	8
Willington Crescent	8.8	40	42	29	20	20	22
Woodfield	10.1	<u>45</u>	<u>48</u>	<u>34</u>	<u>26</u>	19	22
Totals		1765	1775	1275	1006	759	769
Average time saving (42 locations)	minutes vs car and	bus				18.1	18.3
Average time saving %						43.0%	43.3%

Notes:

- Existing car and bus users would have greatly reduced commuting times, if they switched to Cycle and Ride.
- A particular difficulty with car and bus commutes at present is that journey times vary widely, depending on functioning of traffic lights, traffic accidents, schools open, weather etc.;
- O With Cycle and Ride journey times would be predictable.
- The cycling times are not onerous; in the above table, they range from 6 15 minutes, which would be attractive to many people.
- 4.4 In considering a Walk plus metro option, we realise that not everyone can live right beside a metro station. However, Walk plus metro could be an attractive option for many people who live nearby, say within a 30 minute walk from Spawell (approximately 2.5kms). Table 4.3 shows commuting times today vs using <u>Walk plus Metro</u> to a metro station at Spawell.

Table 4.3 Current commuting times to the GPO compared with Walk to Spawell plus Metro

←-Current options-→ ←-Walk to metro option-→

Home	Distance (kms)	Car	Bus	Bike	Walk	Time	Time
Location	To O'Connell St	<u> </u>	·-		+metro	saving	saving
	(by bike)	(up to)			Total	vs car	vs bus
	· · · · · · · · · · · · · · · · · · ·	Mins.	Mins.	Mins.	Mins.	Mins.	Mins.
Ashton Close	9.1	45	41	31	39	6	2
Coolamber Court	8.4	40	37	30	31	9	6
Delaford Drive	9.4	45	42	32	37	8	5
Elkwood	9.1	45	41	31	41	4	0
Glendown Grove	7.6	40	38	26	35	5	3
Glenvara	10.3	45	42	35	33	12	9
Idrone Drive	9.2	45	43	32	35	10	8
Knockcullen Drive	8.9	40	38	31	37	3	1
Orwell Park Rise	8.2	40	40	27	27	13	13
Templeogue Wood	8	40	43	27	40	0	3
Templeroan Avenue	9.3	45	43	32	41	4	2
Willington Crescent	8.8	40	42	29	32	8	10
Totals		510	490	363	428	82	62
Average time saving min (12 locations)	utes vs car and bu	IS				6.8	5.2
Average time saving %						16.1%	12.7%

Notes:

- While walking is the slowest mode of travel, metro is very fast. The combination of these two modes yields time savings over a relatively wide area for Walk and Ride.
- o A particular difficulty with car and bus commutes at present is that journey times vary widely.
- o With Walk and Ride journey times would be predictable.
- o The walking times in the table range from 12 26 minutes, which would be attractive to many people.
- 4.5 There would be a 'Park and Ride' at Spawell. As an alternative to driving all the way into the city, would a short drive to Spawell plus a metro ride into the city be an attractive option? Table 4.4 shows commuting times today vs <u>Park and Ride</u> to a metro station at Spawell.

Table 4.4 Current commuting times compared with Drive to Spawell plus Metro

←-Current options-→ ←-Drive to metro option-→

Home	Distance (kms)	Car Bu	ıs	Bike	Drive +	Time saving		
		(up to)			Metro	vs car	vs bus	
		Mins.	Mins.	Mins.	Mins.	Mins.	Mins.	
						31		
Anne Devlin Park	8.5	40	39	30	21	19	18	
Ashton Close	9.1	45	41	31	22	23	19	
Ballyroan Crescent	8.9	45	45	30	22	23	23	
Balrothery Estate	9.9	45	50	33	22	23	28	
Bancroft Crescent	10.8	50	53	34	24	26	29	
Beechfield Road	6.8	35	30	24	24	11	6	
Beverley Avenue	9.8	45	39	33	22	23	17	
Boden Park	9.2	45	43	32	23	22	20	
Brookwood	9	40	44	31	24	16	20	
Butterfield Crescent	7.1	35	35	26	22	13	13	
Carriglea Drive	11.1	50	44	36	25	25	19	
Carrigwood	10.8	45	43	36	22	23	21	
Castlefield Manor	10.4	45	52	35	22	23	30	
Coolamber Court	8.4	40	37	30	19	21	18	
Dargle Wood	9.3	45	39	31	22	23	17	
Delaford Drive	9.4	45	42	32	21	24	21	
Elkwood	9.1	45	41	31	23	22	18	
Glendown Grove	7.6	40	38	26	20	20	18	
Glenvara	10.3	45	42	35	22	23	20	
Hermitage Drive	8.6	40	40	30	27	13	13	
Idrone Drive	9.2	45	43	32	24	21	19	
Keadeen Avenue	8.1	40	38	27	23	17	15	
Knockcullen Drive	8.9	40	38	31	21	19	17	
Marian Park	7.8	40	44	28	23	17	21	
Mountdown Avenue	8.1	35	42	28	20	15	22	
Moyville	9.2	40	45	31	25	15	20	
Orlagh Downs	10.9	45	49	36	24	21	25	
Orwell Park Rise	8.2	40	40	27	19	21	21	
Scholarstown Park	9.9	45	49	33	23	22	26	
Springvale	9.4	45	53	31	25	20	28	
Temple Manor Grove	8.8	40	37	29	22	18	15	
Templeogue Wood	8	40	43	27	19	21	24	
Templeroan Avenue	9.3	45	43	32	22	23	21	

Continued...

Home	Distance (kms)	Car	Bus	Bike	Drive	Time	Time
Location	To O'Connell St				+metro	saving	saving
	(by bike)	(up to)			Total	vs car	vs bus
		Mins.	Mins.	Mins.	Mins.	Mins.	Mins.
Templeville Drive	7.2	40	36	24	22	18	14
Tymonville Park	9.6	45	43	31	25	20	18
Washington Grove	8.4	40	47	29	22	18	25
Whitechurch	10.4	45	54	34	29	16	25
Whitecliff	8.5	40	42	30	29	11	13
Whitehall Road	6	30	28	21	21	9	7
Willbrook Estate	7	35	34	25	23	12	11
Willington Crescent	8.8	40	42	29	19	21	23
Woodfield	10.1	<u>45</u>	<u>48</u>	<u>34</u>	<u>33</u>	12	15
Totals		1765	1775	1275	973	792	802
Average time saving n (42 locations)	ninutes vs car ar	nd bus			9	19.1	19.4
Average time saving %						45.5%	45.8%

Notes:

- o The very significant time savings that would arise over a wide area for Park and Ride.
- A particular difficulty with car and bus commutes at present is that journey times vary widely.
- With Park and Ride journey times would be more predictable.
- The driving times range from 4 18 minutes, which would be more attractive to many people rather than driving all the way into the city. Less driving time means less congestion and less pollution.

5 Commuting times which relate to a hypothetical Metro station at Dodder Valley Park

In the following table we show commuting times for a purely hypothetical metro station to be located at Dodder Valley Park (beside Dodder Avenue) in Firhouse. Both 'Cycle and Ride' and 'Park and Ride' would be available at this station. The assumed destination is the GPO, O'Connell Street, near the intersection of the two Luas lines: a distance of 11.1 kms (by bike). According to the NTA, the *MetroLink* journey time from Dublin Airport to the city centre would be 20 minutes for a journey length of 11 kms. It is reasonable to assume that the journey time on the continuation of *MetroLink* from Dodder Valley Park to the GPO, O'Connell Street would also be 20 minutes.

Options shown are car, bus, bike and metro. Departing at 7.50 am, the journey times (per Google Maps) would be:

Table 5.1 Journey Times from Dodder Valley Park to O'Connell Street, departing at 7.50 am

Transport Mode	Time
Car	Up to 45 mins
Bus	52 mins
Bike	36 mins
Metro	20 mins

- We now consider the options for those who live in the general Firhouse area. As we might expect, cycling is the fastest way to the city at present. However, Dodder Valley Park is 11 kms from the city; accordingly, people living in the general Firhouse area would face, in the view of many, a long cycling commute. The alternatives are the car and the bus.
- 5.3 Table 5.2 shows commuting times today vs using <u>Cycle and Ride</u> to a metro station at Dodder Valley Park.

Table 5.2 Current commuting times compared with Cycle to Dodder Valley Park plus Metro

←-----Current options------→ ←Cycle to metro option→

Home	Distance (kms)	Car	Bus	Bike	Cycle	Time	Time
Location	To O'Connell St				+metro	saving	saving
	(by bike)	(up to)			Total	vs car	vs bus
		Mins.	Mins.	Mins.	Mins.	Mins.	Mins.
Allenten Drive	12.2	45	49	40	26	19	23
Allenton Drive	12.3	235		No.	26	24	
Aylesbury	12.7	50	55	41			29
Ballycullen Drive	11.4	45	47	39	29	16	18
Beechdale Place	11.7	45	52	39	28	17	24
Cill Cais, Old Bawn	13.4	50	56	43	28	22	28
Daletree Avenue	11.8	45	48	38	26	19	22
Dodderbrook	13.1	50	58	42	27	23	31
Ellensborough Drive	13.4	50	61	42	28	22	33
Jobstown	14.3	45	57	44	36	9	21
Killinardan Heights	14.4	50	50	44	31	19	19
Kiltalown Way	14.1	50	55	43	34	16	21
Kiltipper	13.7	50	65	43	29	21	36
Old Bawn	12.7	45	51	41	26	19	25
Oldcourt	13.4	45	61	43	29	16	32
Parkwood	12	50	57	39	25	25	32
Prospect	9.8	40	43	32	36	4	7
Rockbrook	11.8	45	64	37	39	6	25
Seskin View	11.7	45	48	37	26	19	22
Stocking Wood	10.9	45	47	38	32	13	15
Watermeadow Park	12.7	45	54	41	27	18	27
Woodstown Heights	11.4	45	48	39	30	15	18
Totals		980	1126	845	618	362	508
Average time saving (21 locations)	minutes vs car a	nd bus				17.2	24.2
Average time saving %						36.9%	45.1%

Notes:

- O The very significant time savings that would arise over a wide area for Cycle and Ride.
- Existing car and bus users would have greatly reduced commuting times, if they switched to Cycle and Ride.
- o A particular difficulty with car and bus commutes at present is that journey times vary widely.
- o With Cycle and Ride journey times would be predictable.
- o The cycling times range from 6 19 minutes, which would be attractive to many people.

In considering a Walk plus metro option, we realise that not everyone can live right beside a metro station. However, Walk plus metro could be an attractive option for many people who live nearby, say within a 30 minute walk from Dodder Valley Park (approximately 2.5kms). Table 5.3 shows commuting times today vs using <u>Walk plus Metro</u> to a metro station at Dodder Valley Park.

Table 5.3 Current commuting times compared with Walk to Dodder Valley Park plus Metro

←Current option→ ←Walk to metro option→

Home	Kms from				With metro (20 mins)				
Location	Home to	(up to)			plus Wall	k options			
	O'Connell Street	Car	Bus	Bike	Walk	Time	Time		
	(by bike)				+metro	saving	saving		
					Total	vs car	vs bus		
		Mins.	Mins.	Mins.	Mins.	Mins.	Mins.		
		(up to)							
Allenton Drive	12.3	45	49	40	38	7	11		
Aylesbury	12.7	50	55	41	42	8	13		
Ballycullen Drive	11.4	45	47	39	31	14	16		
Daletree Avenue	11.8	45	48	38	37	8	11		
Ellensborough Drive	13.4	50	61	42	50	0	11		
Old Bawn	12.7	45	51	41	41	4	10		
Seskin View	11.7	45	48	37	42	3	6		
Watermeadow Park	12.7	45	54	41	45	0	9		
Totals		325	366	280	295	30	71		
Average time saving minu	tes vs car and bus					5.5	10.9		
Average time saving %						12%	21%		

Notes:

- o The time savings that would arise over a wide area for Walk and Ride.
- A particular difficulty with car and bus commutes at present is that journey times vary widely.
- With Walk and Ride journey times would be predictable.
- The walking time ranges from 11 30 minutes, which could be attractive to many people.
- 5.5 There would be a 'Park and Ride' at Dodder Valley Park. As an alternative to driving all the way into the city, would a short drive to Dodder Valley Park plus a metro ride into the city be an attractive option? Table 5.4 shows commuting times today vs Park and Ride to a metro station at Dodder Valley Park.

Table 5.4 Current commuting times compared with Drive to Dodder Valley Park plus Metro

←----Current options-→ ← Drive to metro option→

Home	Kms from			_	With metr	o (20 mins)	
Location	Home to	(up to)			plus Drive	options_	
	O'Connell Street	Car	Bus	Bike	Drive	Time	Time
	(by bike)				+metro	saving	saving
					Total	vs car	vs bus
		Mins.	Mins.	Mins.	Mins.	Mins.	Mins.
		(up to)		_			
- <u>-</u>							
Allenton Drive	12.3	45	49	40	24	21	25
Aylesbury	12.7	50	55	41	26	24	29
Ballycullen Drive	11.4	45	47	39	27	18	20
Beechdale Place -	11.7	45	52	39	27	18	25
Cill Cais, Old Bawn	13.4	50	56	43	27	23	29
Daletree Avenue	11.8	45	48	38	26	19	22
Dodderbrook	13.1	50	58	42	28	22	30
Ellensborough Drive	13.4	50	61	42	26	24	35
Jobstown	14.3	45	57	44	34	11	23
Killinardan Heights	14.4	50	50	44	29	21	21
Kiltalown Way	14.1	50	55	43	34	16	21
Kiltipper	13.7	50	65	43	28	22	37
Old Bawn	12.7	45	51	41	26	19	25
Oldcourt	13.4	45	61	43	26	19	35
Parkwood	12	50	57	39	25	25	32
Prospect	9.8	40	43	32	32	8	11
Rockbrook	11.8	45	64	37	30	15	34
Seskin View	11.7	45	48	37	26	19	22
Stocking Wood	10.9	45	47	38	29	16	18
Watermeadow Park	12.7	45	54	41	26	19	28
Woodstown Heights	11.4	45	48	39	27	18	21
Totals		980	1126	845	583	397	543
Average time saving minutes (21 locations)	s vs car and bus					18.9	25.9
Average time saving %						40.5%	48.2%

Notes:

- o The very significant time savings that would arise over a wide area for Park and Ride.
- o A particular difficulty with car and bus commutes at present is that journey times vary widely.
- With Park and Ride journey times would be more predictable.
- The driving time ranges from 4 14 minutes, which would be attractive to many people rather than driving all the way into the city. Less driving time means less congestion and less pollution.
- 5.6 It might be thought: "Surely driving to a metro station is not to be recommended? Would not this give rise to pollution?" Across 21 locations, the average drive to the Dodder Valley Park metro station would take 8 minutes. Driving all the way into the city would take an average of 47 minutes. Thus, by driving to the metro station rather than driving all the way into the city, there would be a reduction of 83 per cent in driving time...and much less damage to the environment.

6 Connectivity

- 6.1 Even if one's destination was far from stations on the *MetroLink* line, the continuation of *MetroLink* to the general Firhouse area could provide very important opportunities to use public transport instead of the car. For example,
 - At the <u>St Stephens Green</u> MetroLink station, you could switch to the Luas Green Line and head towards Sandyford or Cabra (and possibly Finglas?).
 - At the <u>Tara Street</u> <u>MetroLink</u> station, you could change to the DART and head towards Malahide or Greystones.
 - At the MetroLink station on O'Connell Street, you could change to the Red Luas Line and head towards St James' Hospital or the IFSC.
 - O At the <u>Glasnevin</u> <u>MetroLink</u> station, you could access the North Western rail line (Sligo/Maynooth) and the South Western commuter line (Newbridge/Hazelhatch)⁹.
 - There would be numerous opportunities for bus connections.

In summary, the continuation of *MetroLink* to South West Dublin would provide a powerful means for residents to navigate large areas of the city (and beyond) without using the car.

7 Journey times for long distance car commuters and the M50

- 7.1 Here we look at the Park and Ride at the Spawell metro station and its potential to take cars off the road from the N81 and the M50. Spawell is located at Junction 11 on the M50 at the intersection with the N81. Currently, over 70,000 vehicles pass by Spawell every day on either the N81 or the M50.
- 7.2 As before, let us assume a purely hypothetical metro station in the general Spawell area (at the Spawell Complex), adjacent to the N81 and the M50. The metro station would have a 'Cycle and Ride' and a 'Park and Ride'. The distance to O'Connell Street is 8.7 kms. The journey time for metro would be 15 mins. The following table shows the travelling time options to O'Connell Street for car commuters from Spawell at 7.50 am.

⁹ According to the NTA: "Glasnevin is a key station. This is where MetroLink will interchange with larnród Éireann where the north-western line from Sligo/Maynooth to Dublin, and the southwestern commuter line from Newbridge/ Hazelhatch to Grand Canal Dock converge at Whitworth Road increasing demand for both MetroLink and larnród Éireann services." *METROLINK: Integrated Transport Integrated Life*, NTA, March 2019

Journey Times from Spawell to O'Connell Street by Car vs Metro, departing at 7.50 am

Transport Mode from Spawell	Time to O'Connell St
Car	Up to 40 mins
Metro	15 mins

- 7.3 The N81 is a National Primary Route, bringing in motorists from areas including Tallaght, Brittas, Hollywood, Blessington, Donard, Baltinglass, Kiltegan, Rathvilly, Tullow, Hacketstown, Tinahely etc.. Many motorists on the N81 would see:
 - o The huge disparity in journey times to the city centre (car vs metro) and
 - o The connectivity opportunities, which are listed in paragraph 6.1.

Would not the Spawell Park and Ride be attractive for many of these motorists? Not only would the journey time be much shorter, but it would be much more predictable. Also, for other 'non-N81' long distance motorists approaching the M50, the Park and Ride at Spawell could be an attractive option.

7.3 The original plan for the M50 was that it would enable people from outside Dublin to bypass the city. However, it is increasingly clogged up by motorists from within the M50 using it as a means of navigating within the M50. Would not the Park and Ride at Spawell be attractive for many of these motorists, particularly given its connectivity with DART and Luas as mentioned earlier?

8 Conclusions

- 8.1 The above analysis examined 63 locations in the outer suburbs of South West Dublin. The analysis shows that the continuation of *MetroLink* to South West Dublin would facilitate considerable time savings for many commuters across these suburbs. Accordingly, patronage of the metro service by commuters from these suburbs is likely to be substantial.
- 8.2 According to the EU Commission,

"The reliance on private motor vehicles to move people and goods is the main source of growing problems relating to air pollution and congestion. These issues lead to health, accessibility, and quality-of-life concerns for city inhabitants and can negatively impact businesses through increased delays and reduced reliability of the road transport network.

In response to these pressing issues, policy-makers are increasingly looking for ways to develop a more diverse and flexible transport system, and influence behaviours to encourage a shift away from the reliance on private cars. Cycling is increasingly viewed as a key part of a multi-modal and integrated transport system for several reasons:

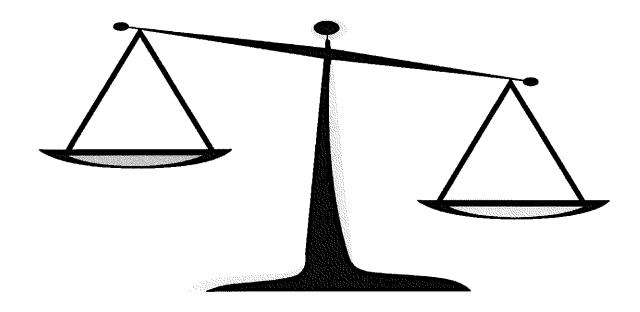
- It is a more cost-efficient option compared to other transport modes;
- It is a convenient transport mode for the high share of short journeys that dominate urban travel; and
- It has multiple co-benefits in terms of health, the environment and city liveability."¹⁰
- 8.3 A metro to South West Dublin would have positive effects on the environment and the health of residents. It would bring benefits to the community, the city and the country. There would be the saving of car energy and bus energy in the transfer to the more efficient new metro. There would be the benefits of less traffic on the roads making it safer for cyclists and pedestrians. There would be an improvement in health as more people would walk or cycle to the stations rather than using their car door to door.
- 8.4 An early feasibility study is awaited into continuing *MetroLink* to South West Dublin. This was agreed by all three political parties which form the Government.

South West Dublin Metro Group September 2020

¹⁰ https://ec.europa.eu/transport/themes/urban/cycling/guidance-cycling-projects-eu/cycling-policy-and-background_en

Indications for an Economic Appraisal of MetroLink from Estuary to Firhouse

Would Estuary to Firhouse be good Value for Money?



Metro South West October 2020

Metro South West

Indications for an Economic Appraisal of MetroLink from Estuary to Firhouse

1 Introduction

1.1 A cost-benefit analysis was carried out in 2018 of the *MetroLink* Scheme¹. At that time *MetroLink* was conceived as:

"A new metro service running from Swords (Estuary) via the Airport to the city centre (New Metro North- NMN) and an upgrade of the existing Luas Green Line to metro standard. This, therefore facilitates a metro line running from Swords to Sandyford via the airport and the city centre. It is assumed that the metro will connect with the Luas Green line at a tie-in point at Charlemont Luas stop."

1.2 However, the southern / south western route of *MetroLink* has not been decided². The current NTA proposal is to bring *Metrolink* from St. Stephens Green to Charlemont with a further tunnel / layby orientated directly towards Beechwood to best enable later conversion – in 20 years' time – of the Green Line Luas to metro standard³. The boring machine would have no further use, simply being stored there. There is no published cost-benefit analysis of this proposal.

1.3 In this document,

a) We use key metrics from the cost-benefit analysis (Estuary-Sandyford) to estimate indicative values for a *MetroLink* from Estuary to Firhouse⁴.

b) We ask:

Could the current NTA proposal to run *MetroLink* from Estuary to Charlemont/Beechwood be extended towards South West Dublin?

c) We compare

- the current NTA proposal Estuary-Charlemont/Beechwood which the NTA considers should be linked ultimately to upgrading the Green Luas Line to metro standard WITH
- o Estuary-Portobello/Cathal Brugha Barracks⁵, which could be continued to Firhouse.

https://www.metrolink.ie/assets/downloads/Public Consultation Document for the Preferred Route HR.p df

¹ MetroLink Scheme - Cost Benefit Analysis, Jacobs/SYSTRA, March 2018

² "We should have a discussion about where the tunnel goes. The current proposal, as I understand it, is to leave the machine in the ground somewhere around Ranelagh. We should have that discussion about whether it would make sense to go west or east from there, perhaps to UCD, perhaps to Sandyford."An Taoiseach, Dáil Éireann, 26 March 2019

⁴ This does not imply that Firhouse would be the best terminus for the continuation of *MetroLink* to South West Dublin. The proposed feasibility study of continuing *MetroLink* to South West Dublin should examine this issue

⁵ Again the feasibility study may discover another more suitable site.

1.4 It should be noted that all of the analysis in this document is preliminary and all locations which are postulated are hypothetical and subject to revision based on further analysis.

2 Cost-benefit Estuary-Sandyford⁶

- This route was 26 kms long and it was intended to carry 50m+ passengers per year⁷. Total Transport User Benefits were estimated over a 60-year period at €6,778m. It is worth noting that, as the Luas Green Line in 2017 already carried 15.9m passengers (before Luas Cross city was opened)⁸, the Transport User Benefits of transferring from car and bus to a superior public transport service (Luas) would have been attributed to the Luas Green Line when that project (Luas Green Line) underwent its economic appraisal. Accordingly, in this document, the Transport User Benefits attributed to MetroLink are assumed to have related to c. 34.1m passengers (50m-15.9m).
- 2.2 A range of costs was provided, from €3bn to €4bn.
- 2.3 The benefit to cost ratio had different values depending on the costs used as follows:

Table 2.1 Benefits and Costs MetroLink Estuary-Sandyford, Jacobs/SYSTRA March 2018

Capital expenditure costs	Transport User Benefits	Benefit to cost ratio
€3bn	€6.8bn	3.02
€3.25bn	€6.8bn	2.84
€3.5bn	€6.8bn	2.68
€3.75bn	€6.8bn	2.54
€4bn	€6.8bn	2.41

According to Jacobs/SYSTRA, these benefit to cost ratios would represent 'very high' Value for Money.

3 Indications for Cost-benefit Estuary-Firhouse

Passenger numbers

- 3.1 Estuary-Firhouse, at c. 27 kms, would be slightly longer than Estuary-Sandyford. As the catchment population for the continuation of *MetroLink* (St. Stephens Green-Firhouse) would be very similar to the Luas Green Line⁹, it could be expected that there would be equivalent passenger numbers on that portion of the line, i.e. 15.9m, as there were on the Luas Green Line in 2017 (before Luas Cross City was opened).
- 3.2 However, there is important evidence which shows that this figure of 15.9m passengers would need to be increased substantially to relate to Firhouse-St. Stephens Green.

⁶ MetroLink Scheme - Cost Benefit Analysis, Jacobs/SYSTRA, March 2018

⁷ https://www.metrolink.ie/assets/downloads/Report on Consultation on Emerging Preferred Route.pdf

⁸ Transport Omnibus 2017, CSO

⁹ The Case for Continuing MetroLink to South West Dublin, South West Metro Group, August 2020. Paragraph 2.3.2

- 3.3 In South West Dublin and the Continuation of MetroLink: Improvements in Commuting Times, Metro South West, October 2020¹⁰, commuting times to the GPO were computed for people living in 63 different locations throughout the outer suburbs¹¹ of the catchment area for the continuation of MetroLink to South West Dublin. Two hypothetical metro stations were postulated in Spawell and Dodder Valley Park. Assuming the commuters leave their homes at 7.50 am, the following questions were posed:
 - o How long does it now take commuters to reach the GPO by car, by bus and by bike?
 - How long would it take them if they cycled, walked or drove to one of these metro stations and took the metro to O'Connell Street?

Google Maps was used for all calculations.

3.4 The analysis showed that substantial time savings would arise for commuters who would leave their house at 7.50 am and use the metro rather than drive or get the bus to the GPO. Across the 63 locations, the average time savings would be as follows:

Table 3.1 Average Time Savings by using the Metro rather than the Car or the Bus to go to the GPO from South West Dublin: *MetroLink* catchment

Cycle to a metro station and take metro rather than driving all the way into town	Cycle to a metro station and take metro rather than taking the Bus all the way into town	Drive to a metro station and take metro rather than driving all the way into town	Drive to a metro station and take metro rather than taking the Bus all the way into town
17.8 mins.	20.3 mins.	18.4 mins.	21.3 mins.

3.5 In this document the same methodology is used in respect of 15 locations in the catchment area of the Luas Green Line in the outer suburbs of South East Dublin, i.e. below the orbital Churchtown Road, Taney Road, Mount Anville Road and Fosters Avenue. Across the 15 locations, with a departure time of 7.50 am, the average time savings would be as follows:

Table 3.2 Average Time Savings by using the Luas rather than the Car or the Bus to go to the GPO from South East Dublin: Luas Green Line catchment¹²

Cycle to a Luas stop and take Luas rather than <u>driving</u> all the way into town	Cycle to a Luas stop and take Luas rather than taking the <u>Bus</u> all the way into town	<u>Drive</u> to a Luas stop and take the Luas rather than <u>driving</u> all the way into town	Drive to a Luas stop and take the Luas rather than taking the Bus all the way into town
7.0 mins.	7.1 mins.	6.9 mins.	7.0 mins.

 $^{^{10}\,\}underline{\text{https://documentcloud.adobe.com/link/review?uri=urn:aaid:scds:US:4013503d-9fe7-4f65-b8d1-a380eafdb0c7}$

¹¹ Below St. Peters Road, Templeville Road, Dodder Park Road.

¹² Details are in the Appendix.

These average time savings in the Green Luas catchment are far lower than for the proposed *MetroLink* catchment in South West Dublin. Indeed, for 7 of the 15 locations in the Green Luas catchment, a quicker way of getting to town is available by <u>not</u> using the Luas. A similar circumstance - where the car or the bus was quicker than the metro - would not arise for <u>any</u> commuter in the 63 areas surveyed in South West Dublin.

- 3.6 Part of the explanation for the much higher improvements in commuting times in South West Dublin *if MetroLink were continued to Firhouse* lies in the very poor existing public transport capacity in South West Dublin. It has been shown that public transport capacity in South West Dublin is less than a quarter of that in South East Dublin¹³. And, South East Dublin has the N11-Stillorgan Road-Donnybrook Road, for which there is no equivalent in South West Dublin.
- 3.7 Thus, while many commuters in the Luas Green Line catchment have other attractive transport options, this would not be the case in the outer suburbs of South West Dublin, if *MetroLink* were continued to Firhouse.

In South West Dublin, the car has a very high modal share¹⁴. The combination of:

- o Substantial improvements in commuting times and
- A lack of other options

means that the advent of *MetroLink* to South West Dublin would bring about a large modal shift from car to metro and, inevitably, patronage of *MetroLink* would be very high in the outer suburbs of South West Dublin.

3.8 It is postulated that 15.9m passengers on the Luas Green Line in 2017 would be increased by 50 per cent to represent the metro patronage for the continuation of *MetroLink* to Firhouse. Thus, the original *MetroLink* projection of 50m+ passengers for Estuary-Sandyford would be increased to 58m+ for Estuary-Firhouse ((50m+(15.9*0.5)). All of the Transport User Benefits associated with these passengers would be attributable to *MetroLink*, including its continuation to Firhouse.

This would yield Transport User Benefits of €11.5bn (€6.8bn*58/34.1) for Estuary-Firhouse over a 60-year period.

(We also do a sensitivity test for only a 25 per cent increase on the 2017 Green Luas line passenger numbers. This would yield 54m passengers on Estuary-Firhouse. The associated Transport User Benefits would amount to €10.7bn (€6.8*54/34.1).)

- 3.9 Let us assume a 'high' capital cost per kilometre for metro construction €158m¹⁵. For 27 kms, from Estuary to Firhouse, the cost would be c. €4.3bn. Following Jacobs/STSTRA, a range of costs is shown from €4.3bn to €5.3bn.
- 3.10 The benefit to cost ratio would have different values depending on the costs used. We show the estimated Transport User Benefits and also the sensitivity value for lower Transport User Benefits (in brackets).

¹³ The Case for Continuing MetroLink to South West Dublin, South West Metro Group, August 2020. Paragraph 2.3.1

¹⁴ Transport Strategy for the Greater Dublin Area 2016-2035, National Transport Authority

¹⁵ Derived by allocating the estimated capital cost of Estuary-Sandyford (€3bn) to the much shorter distance Estuary-Beechwood (19 kms). This yields an estimated 'high' cost per kilometre of €158m.

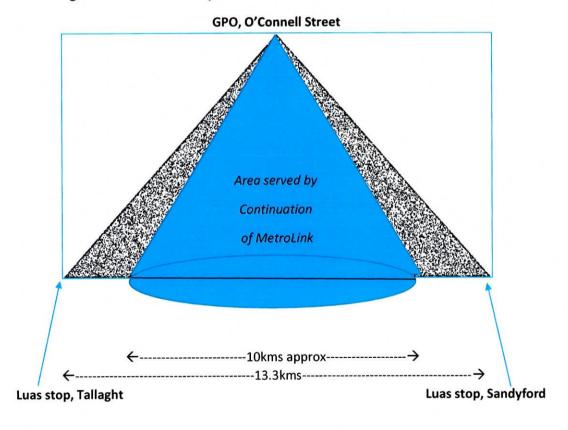
Table 3.3 Indicative Benefits and Costs MetroLink Estuary-Firhouse

Capital expenditure costs	Transport User Benefits	Benefit to cost ratio
€4.3bn	€11.5bn/(€10.7bn)	2.7/(2.5)
€4.8bn	€11.5bn/(€10.7bn)	2.3/(2.2)
€5.3bn	€11.5bn/(€10.7bn)	2.2/(2.0)

The precise values for the Benefit-cost ratio (as shown in the last column) are not important. The conclusion to be drawn here is that these values indicate that a full Benefit-cost appraisal of Estuary-Firhouse would be likely to return a high Benefit-cost ratio similar to the ratio which was estimated for Estuary-Sandyford.

- 4 Could the current NTA proposal to run *MetroLink* from Estuary to Charlemont/Beechwood be extended towards South West Dublin?
- 4.1 The area served by the proposed continuation of *MetroLink* to South West Dublin would lie between the Red and Green Luas lines. This area is shaped roughly like a triangle. The Luas stop in Tallaght is 12.3 kms from the confluence of the two Luas lines near the GPO (walking or by bike) and the Sandyford Luas stop is approximately the same distance from the GPO (11.7 kms). The distance between the Luas stop in Tallaght and the Luas stop in Sandyford is 13.3 kms. Thus, the area between the two Luas lines may be thought of as a rough triangle as follows:

Figure 4.1: Area served by a continuation of MetroLink to South West Dublin



4.2 It is proposed to install a *MetroLink* station at St. Stephens Green. As St. Stephens Green lies directly below O'Connell St., this would be a suitable location from which to direct *MetroLink* towards South West Dublin. From St. Stephens Green, the optimum route could be identified through the inner and outer suburbs of South West Dublin.

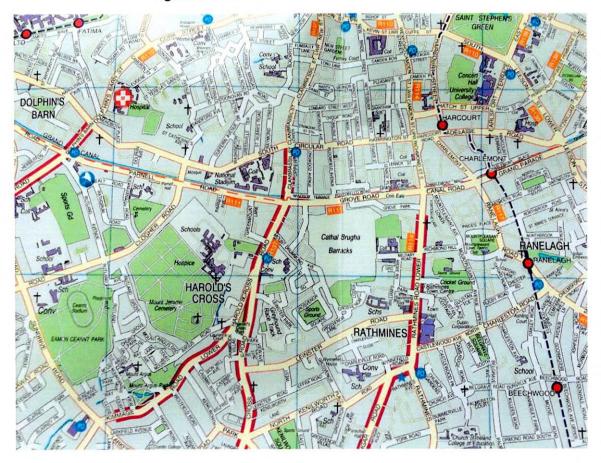


Figure 4.2 The inner suburbs of South West Dublin

- 4.3 However, if instead, *MetroLink* were to go from St. Stephens Green towards South <u>East</u> Dublin, the situation would change. While it would still be possible to continue *MetroLink* by guiding it towards the outer suburbs of South West Dublin to Terenure and beyond the inner suburbs of South West Dublin would have been bypassed. For example, it would appear from Figure 4.2 that if *MetroLink* were to go to Charlemont, the option of serving much of Harolds X would be lost. If *MetroLink* were to go nearly as far as Beechwood (which is the current NTA proposal), the opportunity of serving Harolds X <u>and</u> Rathmines would be lost.
- 4.4 Would there be a better alternative to sending *MetroLink* from St. Stephens Green to Charlemont/Beechwood? For example, why not send *MetroLink* from St. Stephens Green to Portobello/Cathal Brugha Barracks?

5 Economic Appraisal of Estuary-Charlemont/Beechwood

vs

Estuary-Portobello/Cathal Brugha Barracks

5.1 There is no published economic appraisal of the current NTA proposal to run *MetroLink* from Estuary to Charlemont/Beechwood.

Estuary-Charlemont/Beechwood

5.2 The distance from Estuary to St. Stephens Green is 17 kms and the distance from St Stephens Green to Charlemont (where it is proposed to build a metro station) is one kilometre and there is a further kilometre from Charlemont to Beechwood. The last kilometre would be used to facilitate turn backs, park trains and store the Tunnel Boring Machine. Thus, the total metro length would be 19 kms.

Estuary-Portobello/Cathal Brugha Barracks

5.3 The distance from Estuary to St. Stephens Green is 17 kms and the distance from St Stephens Green to Portobello (where there would be a metro station) is one kilometre and there is a further kilometre from Portobello to Cathal Brugha Barracks. The last kilometre would be used to facilitate turn backs, park trains and store the Tunnel Boring Machine. Thus, the total metro length would be 19 kms.

Comparison

- 5.4 Given that the lengths of the proposals are identical (19 kms), it can be expected that the capital costs of these competing proposals (Estuary-Cathal Brugha Barracks vs Estuary-Beechwood) would be very similar.
- 5.5 However, it can also be expected that the Transport User Benefits of Estuary-Cathal Brugha Barracks would exceed those of Estuary-Beechwood. The reason is that the proposed metro station at Charlemont would yield little or no passenger benefits, as the metro service from St. Stephens Green to Charlemont would merely duplicate the existing Luas Green Line service.

By contrast, the metro service linking Portobello to St. Stephens would bring significant passenger benefits to large numbers of people. These benefits would not merely displace existing benefits: they would be net additional passenger benefits.

5.6 Thus, the Benefit-cost ratio for Estuary-Portobello/Cathal Brugha Barracks is likely to exceed the Benefit-cost ratio for Estuary-Charlemont/Beechwood.

6 Conclusions

- 6.1 Preliminary indications are that Estuary-Firhouse would yield a 'very high' Benefit-cost ratio. However, a cost-benefit analysis should be carried out.
- 6.2 We can be quite confident that Estuary-Portobello/Cathal Brugha Barracks would yield a higher Benefit-cost ratio than Estuary-Charlemont/Beechwood.

South West Metro Group October 2020

Appendix

This Appendix concerns residents of the outer suburbs in the catchment of the Luas Green Line, i.e. below Churchtown Road – Taney Road – Mount Anville Road – Foster Avenue.

It shows:

- o Non-Luas commuting options (car/bus/bike) to the GPO, departing from home at 7.50 am.
- O Cycling, walking or driving to the nearest Luas stop and taking the Luas to the GPO.

Commuting in the outer suburbs of the Green Luas Line catchment: What are the possibilities for going to the GPO at 7.50am?

		<n< th=""><th>ot using</th><th>Luas></th><th><</th><th></th><th>Using Luas</th><th>Green Lin</th><th>e</th><th></th><th></th><th></th><th>·> <t< th=""><th>ime savings usi</th><th>ng Luas Green</th><th>Line</th></t<></th></n<>	ot using	Luas>	<		Using Luas	Green Lin	e				·> <t< th=""><th>ime savings usi</th><th>ng Luas Green</th><th>Line</th></t<>	ime savings usi	ng Luas Green	Line
		<non-< th=""><th>Luas po</th><th>sibilities></th><th><n< th=""><th>ith Lua</th><th>s: access to Luas stop</th><th>-></th><th><total .<="" th=""><th>Journ</th><th>ney time</th><th>with Luas></th><th>Saving vs ca</th><th>r Saving vs bus</th><th>Saving vs car</th><th>Saving vs bu</th></total></th></n<></th></non-<>	Luas po	sibilities>	<n< th=""><th>ith Lua</th><th>s: access to Luas stop</th><th>-></th><th><total .<="" th=""><th>Journ</th><th>ney time</th><th>with Luas></th><th>Saving vs ca</th><th>r Saving vs bus</th><th>Saving vs car</th><th>Saving vs bu</th></total></th></n<>	ith Lua	s: access to Luas stop	->	<total .<="" th=""><th>Journ</th><th>ney time</th><th>with Luas></th><th>Saving vs ca</th><th>r Saving vs bus</th><th>Saving vs car</th><th>Saving vs bu</th></total>	Journ	ney time	with Luas>	Saving vs ca	r Saving vs bus	Saving vs car	Saving vs bu
Home location	Distance	Car	Bus	Bike	Cycle	Walk	Drive Luas	Luas	Luas+	ι	.uas+	Luas+	Cycle+Luas	Cycle+Luas	Drive+Luas	Drive+Luas
	GPO	(up to)				stop	Journe	Cycle	١	Nalk	Drive				
	kms	Mins.	Mins.	Mins.	Mins.	Mins.	Mins.	Mins.	Mins.	r	Mins.	Mins.	Mins.	Mins.	Mins.	Mins.
Belarmine	12.6	60) 6	1 40	6	19	9 Glencairn	38	3	44	5	7 4	7 1	6 1	7 13	3 14
Blackglen Road	11.8	55	7	37	8	36	10 Balally	28	3	36	6	4 3	8 1	9 34	1 17	32
Broadford Rise	10.3	50) 4	35	7	32	10 Dundrum	25	5	32	5	7 3	5 1	8 16	5 15	13
Farmleigh Avenue	8.8	40) 4	1 27	6	20	12 Sandyford	33	3	39	5	3 4	5	1 :	2 -5	5 -4
Foxrock Avenue	11.6	55	4	9 39	14	38	12 Central Park	36	5	50	7	4 4	8	5 -:	1 7	
Kingstown Grove	11.1	55	5	7 36	9	31	10 Balally	28	3	37	5	9 3	8 1	8 20	17	
Linden Lea Park	9.3	40) 4	1 31	. 7	25	9 Sandyford	33	3	40	5	8 4	2	0 :	1 -2	
Mart Lane	12.1	60) 4	6 40	10	30	6 Carrickmines	43	3	53	7	3 4	19	7 -	7 1 :	
Meadow Grove	8.7	45	4	2 30	4	13	4 Dundrum	25	5	29	3	8 2	.9 1	6 13	3 10	
Monaloe Park	12.9	50	5	3 44	12	36	8 Laughanstown	49	9	61	8	5 5	-1	1 -	3 -7	
Mount Anville Park	7.9	35	5 4	3 28	7	22	8 Kilmacud	25	9	36	5	1 3	-	1	7 -2	
Priory Drive	8.4	40	3	5 29	15	43	10 Balally	28	3	43	7	1 3	- 8	3 -	3 2	2 -3
Stepaside Park	13.6	60	6	0 44	8	29	9 Glencairn	38	3	46	6	57 4	17 1	4 1	4 13	13
Sycamore Cres. Cab	. 12.8	60	5	7 43	8	24	5 Carrickmines	43	3	51	6	57 4	18	9	5 12	2 9
Watson Avenue	14	60	6	4 48	11	37	12 Brides Glen	52	2	63	8	9 6	-	3	1	1 (
Totals	165.9	765	76	7 551	132	435	134	528	3 (560	96	3 66	52 10	5 10	7 103	3 10
Averages	11.1	51.0	51.	1 36.7	7 8.8	29.0	8.9	35.2	. 4	4.0	64	.2 44	7.0	7.1	6.9	7.0

Jacobs

Metro to Knocklyon Feasibility Study

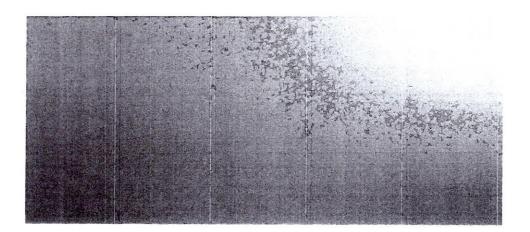
Metro to Knocklyon Feasibility Study Report

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Jacobs

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Executive Summary

This study was undertaken to consider the feasibility and suitability of a Metro system for serving the transport demand along the corridor from the city centre to Knocklyon in the south-west of the county. As outlined in this report, this study has first identified potential stop locations through a Multi Criteria Analysis to form potential Metro Alignments and subsequently modelled a pair of potential Metro alignments which are considered broadly representative of the range of potential Metro options for serving the transport corridor from Central Dublin to Knocklyon via Rathmines and Terenure and carried out a high level Cost Benefit Analysis.

Both alignments share an origin point at Ballycullen in the south, run northbound through the southern suburbs of Terenure and Rathmines before continuing northbound towards the city centre, a higher employment area. The first (Charlemont alignment) then continues to back <u>west</u> to integrate with MetroLink at Charlemont. The second (St. Stephen's Green link) continues north from Rathmines to link up with the current Metrolink alignment at an interchange point.

Prior to the demand forecasting and economic appraisal, a comparative Multi Criteria Analysis to identify indicative stop locations was undertaken against the objectives. This analysis objectives are fully addressed for the beginning of the proposed alignment but for some categories (e.g. integration with transport) are only partially met as the alignment reaches the south-west of Knocklyon and Ballycullen. Although selected with the goal of serving the areas within this corridor with the greatest trip generating potential, the forecast usage of the proposed alignments is seen to be relatively low, both in relation to loadings on the core Metro alignment and the available capacity offered. While modelling results show peak periods experience high volumes of travel inbound in the AM and outbound in the PM, other travel time periods and directions during the peak, e.g. outbound in the AM experienced low usage. This can relate to low density housing in the suburbs and lack of attractors to these suburbs, such as office and retail attractors. It should also be noted however that there was a small uplift in public transport usage based on the difference of both scenarios of 2.36%.

Subsequent analysis of the benefits and costs of the proposals show that both have a benefit cost ratio of below 1.0. Whilst the options are considered broadly feasible, this provides an initial indication that a Metro option is unlikely to be a cost-effective approach to enhancing public transport in this area of Dublin.

More detailed review of the demand forecasts supporting the appraisal highlights some of the challenges in developing a feasible Metro option to serve this.

The relative performance of the options appraised makes a very strong case for options of this type being fully integrated with the existing Metro as a through running service, which appears to offer a more attractive service, for similar or lower cost.

More positively however is the relative success of the Charlemont alignment in enabling access to the southern suburbs of Rathmines, Terenure and Knocklyon from the north. Although still modest relative to station usage levels for the existing MetroLink proposals, demand levels may be sufficient to support higher quality public transport proposals of a more modest character.

Metro to Knocklyon Feasibility Study Report



1. Introduction

The National Transport Authority requested Jacobs to undertake a feasibility study for a possible Metro line along the city centre to Knocklyon corridor. This study is to include an assessment of an indicative route(s), including indicative station locations, and investigate its feasibility from a technical, environmental, transport planning, demand and economic point of view.

This study does not include identification of a preferred route for a possible Metro line on the corridor, nor the suggestion of the preferred design on any section of the alignment considered. Should the proposed Metro be considered feasible and worthy of advancement, a further route option selection and design process would be required to advance specific proposals.

This feasibility study will identify a workable option within the study corridor based on the proposal put forward during the public consultation on both MetroLink and BusConnects, which would serve Harold's Cross / Rathmines, Terenure, Rathfarnham, and Knocklyon.

The overall aim of MetroLink is 'to provide a safe, high frequency, high capacity, fast, efficient and sustainable public transport service connecting swords, Dublin Airport, Irish Rail, DART, Luas, Dublin Bus and the city centre'. The stated aims of the scheme are:

- · Cater for the growing travel demand along the corridor;
- · Reduction of urban congestion;
- Facilitate connection to attractor nodes:
- Provision of interchanges and 'Park and Ride' improving transport integration;
- Attractive and accessible to all users:
- Support environmental sustainability;
- Support economic development; and,
- · Be segregated from other transport modes for optimal service.

During the course of public consultation on the full MetroLink proposal from Swords to Sandyford, an alternative alignment on the southside has been proposed for consideration, which would serve Harold's Cross/Rathmines, Terenure, Rathfarnham, and Knocklyon. The rational for this proposal put forward is that it would serve a sector of the Dublin Metropolitan Area which currently suffers from a significant public transport deficit; it would cause less disruption to transport services (Luas Green line) on the southside during construction; and, it would have less permanent adverse impacts on the urban environment and on accessibility for residents and businesses than the upgrade of the Luas Green Line.



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1.1 Report Structure

This report contains the following chapters:

- · Chapter 2: Definition / identification of the study area / corridor
- Chapter 3: Multi Criteria Analysis
- Chapter 4: Transport Modelling
- · Chapter 5: Cost Estimate
- Chapter 6: Economic Appraisal
- · Chapter 7: Summary
- Appendices

Metro to Knocklyon Feasibility Study Report

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2. Definition / Identification of the study area / corridor

2.1 Overview of Proposed Route Options

In developing options for consideration, route options were put forward and subsequently developed further for a feasibility study. While both route alignment options have a common origin at Knocklyon, their linkage to the city centre differs. Option A provides through running at Charlemont and continuing on the MetroLink alignment. Option B provides for a linked option to St. Stephen's Green, bypassing Charlemont station.

A Station location Multi Criteria Analysis (MCA) was prepared to analyse different options for stopping locations along the proposed Metro to Knocklyon alignment.

Table 2-1: Details of options for each proposed Station location

Area	Stop Options	Location Details		
Rathmines	Option A1 Harold's Cross	Harold's Cross Park		
	Option A2 Rathmines	Grounds of St. Louis' Convent		
Terenure	Option B1 Terenure	CYM Sports Club		
	Option B2 Terenure	Rathgar Tennis and Bowling Club		
Rathfarnham	Option C1 Rathfarnham	Grounds of Rathfarnham Castle, lands close to the northern entrance		
	Option C2 Rathfarnham	Open lands to the north east of Woodview Cottages		
Ballyboden	Option D Ballyboden	Coláiste Éanna Sports Grounds		
Knocklyon	Option E Knocklyon	Open private lands to the north of Scholarstown Road zoned for development		
Ballycullen	Option F Ballycullen	Lands zoned for development		

The proposed options are shown in Figure 2-1, within a 600m buffer zone.



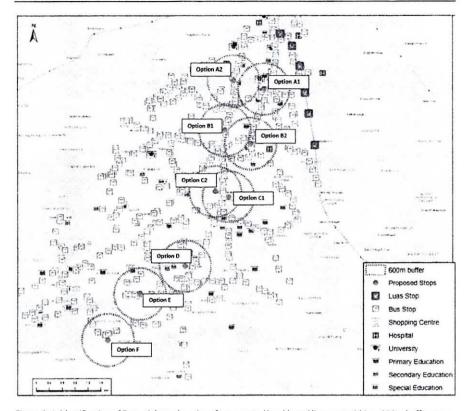


Figure 2-1: Identification of Potential stop locations for metro to Knocklyon Alignment within a 600m buffer zone

2.2 Analysis of Proposed Stations

Proposed station locations analysed in this section are based on the Assessment of Alternative Alignments that was undertaken for MetroLink, prepared by the National Transport Authority. This included undertaking a Multi Criteria Analysis for the alignment options, as well as each of the proposed station locations in order to be consistent with what was done previously for the MetroLink project. Each station location will be analysed within context of development plan zoning, observations from site visits, the surrounding catchment including population figures and key attractors, and the possibility of interchange with other modes of public transport. As such, each station will be assessed on its ability to fulfil the objectives of the full MetroLink scheme.

2.3 Assessment of Station Options

Each proposed station location has been assessed on its ability to meet the objectives of the full MetroLink scheme, such as public transport interchange, connection to attractor nodes and accessibility.

Option A1 Harold's Cross is located in an area with lesser used centre than Rathmines, with a limited mix of land uses and minimal pedestrian footfall. As a result, the location may not be attractive and accessible for all users. However, Option A2 Rathmines is in close proximity to Rathmines local centre. As such, Rathmines is zoned as a

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Key District Centre under the Dublin City Development Plan 2016–2022, with a core aim of developing a sustainable urban village, which would be supported through the provision of a MetroLink station. The proposed location would facilitate connection to a greater number of attractor nodes than Option A1 Harold's Cross and therefore would be attractive and accessible to more users in the area. Therefore, Option A2 Rathmines is the preferred stop.

Option B1 Terenure is located near a number of attractor nodes such as CYM Sports Club, Terenure local centre in the south, and a number of services to the north of the site. The area has high accessibility as there is a provision of bus lanes, cycle lanes and a taxi rank and shelter in close proximity to the proposed location, and as such provides interchanges with other modes of public transport, making it attractive and accessible for more users in the area. In comparison, Option B2 Terenure is also located in close proximity to a busy local centre, however there is a limited provision for interchange with other modes of public transport as no bus or cycle lanes are provided on Orwell Road, which predominantly serves the proposed station. As this station is only accessible via two small streets, it does not facilitate connection to attractor nodes as it is hidden from the main street. As a result, this location is not as accessible for all users. Therefore, Option B1 Terenure is the preferred stop in this area.

Option C1 Rathfarnham is located at Rathfarnham Castle and Playground which is a key trip generator in this area, as well as being close in proximity to Main Street, which includes a number of cafés, restaurants, shops and other services. As a result, economic development would be supported in this area if a MetroLink station was provided. The proposed station location also provides for interchange with other modes of public transport and whilst there is not a specific 'Park and Ride' designation there is a car park available close to the site, therefore making the station attractive and accessible to all users. Option C2 Rathfarnham is located within the Dodder Flood Zone, under the Dublin City Development Plan 2016-2022, and therefore new development in this area would be restricted without providing a detailed flood risk assessment. Additionally, there are limited attractor nodes surrounding this site, with a steep pedestrian path leading through a residential development to Main Street, therefore limiting the accessibility of the site. There is no bus lane present and there are no existing bus stops along the R112, thus providing no interchange with other modes of public transport. As a result, Option C1 Rathfarnham is the preferred stop in this area.

Option D Ballyboden is surrounded by a number of attractor nodes as there are several schools and colleges in the area, as well as local commerce. Further residential development has also taken place in the area in recent years and therefore the provision of a MetroLink station would cater for the growing travel demand in the area in an environmentally sustainable way. This location also provides for interchange with other modes of public transport due to the presence of existing bus stops, with the availability of cycle lanes and pedestrian footpaths making it attractive and accessible to all users. As such, Option D Ballyboden is the preferred location in this area, with no other options considered.

Option E Knocklyon is proposed to be in an area zoned for development under the Dublin City Development Plan 2016-2022, and therefore a station at this location would cater for the growing travel demand in the area. By locating in this area, interchanges with other modes of public transport are also provided which may reduce urban congestion, thus supporting environmental sustainability. Due to the station's proximity to several schools and Knocklyon Shopping and Community Centres, this location would also facilitate connection to attractor nodes, making the station attractive and accessible to all users. As a result, Option E Knocklyon is the preferred location in this area, with no other options considered.

Option F Ballycullen is proposed to be located in an area zoned for development under the Ballycullen-Oldcourt Local Area Plan, however it is situated in proximity to a limited number of trip attractors. Similarly, it is not served by sufficient public transport and therefore does not facilitate interchange, making it inaccessible for many users. Potentially a park and ride site can be used to facilitate interchange from private car users to Metro at this location. No other options have been considered for this location. Table 2-2 summarises the preferred stop for each area.



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Table 2-2: Summary of Preferred Station at Each Location along MetroLink to Knocklyon Alignment

Station	Station Option	Preferred Station	
Station A1 Harold's Cross	Station A2 Rathmines	Station A2 Rathmines	
Station B1 Terenure	Station B2 Terenure	Station B1 Terenure	
Station C1 Rathfamham	Station C2 Rathfarnham	Station C1 Rathfarnham	
Station D Ballyboden	-	Station D Ballyboden	
Station E Knocklyon	-	Station E Knocklyon	
Station F Ballycullen	-	Station F Ballycullen	

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3. Multi Criteria Analysis

3.1 Methodology

The Multi Criteria Analysis (MCA) evaluates the six stations options proposed for the alternative Metrolink alignment towards Knocklyon and Ballycullen. The preferred station options are those defined in Appendix C at the end of this report and comprise:

- 1) Station A2 Rathmines
- 2) Station B1 Terenure
- 3) Station C1 Rathfarnham
- 4) Station D Ballyboden
- 5) Station E Knocklyon
- 6) Station F Ballycullen

The options are evaluated based in the following criteria, which also align with the overall objectives of the Metrolink project, as shown in Table 3-1.

Table 3-1: Assessment Categories and Objectives

Category 1: Economy	Impact on economic growth and competitiveness				
	Population catchmentReduction of urban congestion				
Category 2: Integration with Government Policies	Compatibility with government policies				
	 Existing / proposed zoning and plans Approved planning applications Local, regional and national transport objectives 				
Category 3: Integration of Transport Networks	Integration of transport networks				
	 Station proximity to a park and ride facility Station proximity to bus stop(s) 				
Category 4: Accessibility and Social Inclusion	Social deprivation, geographic isolation and mobility / sensory deprivation				
	- Station proximity to an urban centre				

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- Station proximity to key attractor(s)
- Station proximity to a direct access from main road
- Conditions of pedestrian and cycling infrastructure

Category 5: Environment

Water, air, noise and architectural impacts

- Water and flooding
- Air quality and noise sensitive receptors
- Cultural heritage

Category 6: Safety

Number of transport related accidents

- Reduction of number of cars

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3.2 Multi Criteria Analysis Summary

From undertaking a detailed multi criteria analysis of the potential station locations, the findings show that for the majority, the objectives have been met, especially for Safety on the proposed alignment due to the potential reduction in car usage. Objectives have been partially met in terms of integration with policy and transport connections, as the majority of interchange will occur closer to the city centre, e.g. Rathmines and the opposite the further away from the city centre the alignment is, e.g. Knocklyon. Overall, the objectives have been met at different levels depending on location. As the level of how the objectives are being met change as the potential stations move outbound from the city centre, it may be worth future exploration of how to be better address the objectives of the suburbs in south-west. We acknowledge that a previous study, although not part of an option selection process, into the feasibility of a future LRT line in this part of the city was done in the past. This was ruled out due to space constraints along the route, however we must be cognisant of the fact that other options could be available to investigate in this part of the city. The preferred step locations will form routes that will be brought forward to a more detailed transport demand and sconomic appraisal.

Table 3-2: MCA Summary of proposed stops

	Stop A2 Rathmines	Stop B1 Terenure	Stop C1 Rathfarnham	Stop D Ballyboden	Stop E Knocklyon	Stop F Ballycullen	Full Route
Category 1: Economy			大学的	TO A VAC	Comment of the	不是我们的	《公司》
Category 2: Integration (policies)	APPEARED TO THE				THE PERSON		
Category 3: Integration (transport)	能能够完全的影	- 150 - To 150	是两個的時代		17 下神经加入40米	0年6世第15年	
Category 4: Accessibility and social inclusion	建筑是各种		公约。四月后度与	E Control			
Category 5: Environment	建筑建筑等	2016年7月		A Company	You don't take	10 P SAME SO YOU	S. Garage
Category 6: Safety	医 阿拉德马克氏	STATE STATE OF	是这种企业的	医 国内型 第2		110000000000000000000000000000000000000	经营营的定则
All Categories			B. 344 C. 3450	アンス は 日本できる	E Y	日にアルカルでとう。	14- 10- W

Colour Key	Description
	Fully addresses objectives
的人是一人为了。因为"上身	Addresses objectives well
	Partially Addresses objectives
Green Contra	Addresses objectives poorty
	Does not address objectives



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4. Transport Modelling

4.1 Future Transport Context

The performance of the proposed options has the potential to be highly influenced by the wider transport context including public transport enhancements in the adjacent local area.

The potential interfaces and interactions with other schemes are discussed further in the context of the modelling scenario assumptions.

4.2 Do Minimum Public Transport Network

The following schemes are assumed in the 2030 Do-NDP based scenario.

4.2.1 MetroLink

The MetroLink scheme is included in full in the 2030 Do-NDP scenario, with the assumption of a 2-minute (30 tph) headway

4.2.2 BusConnects

- Radial Core Bus Corridors
- BusConnects Fares / Ticketing
- BusConnects Routes and Services

4.2.3 Park and Ride

· Rail and Bus based P&R provision (partial implementation by 2028)

4.2.4 Rail

Interim DART Expansion (Pelletstown & Kishogue only)

4.2.5 Other

2030 assumptions regarding Cycling, National Roads, Regional and Local Roads and Demand Management remain as per the 2030 Do-NDP scenario.

4.3 Do Something (Metro Extensions)

Two metro schemes have been considered:

A - "Through running" (AAG): Metro Estuary - Ballycullen (Extension of Metrolink to the South)

B – "Linked St. Stephen's Green" (AAK): Metro St. Stephen's Green – Ballycullen (Separate Metro line connecting to MetroLink)

The alignments for both schemes are represented in Figure 4-1 and Figure 4-2.

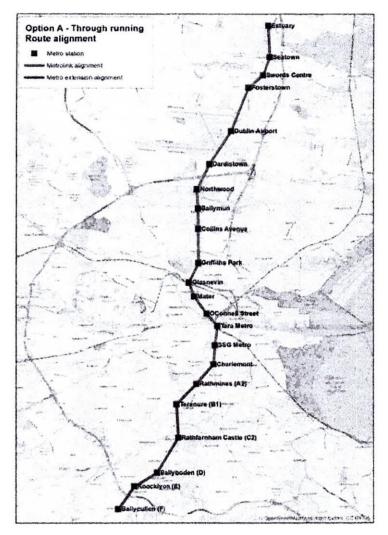


Figure 4-1: Option A through running alignment

4.4 Model Runs

Below is a list of the model runs and their related scenarios, as well as the modelled year.

Table 4-1: Model Run ID's

Run ID	Scenario	Modelled Year	metro -
AAF	Do Minimum	2030	Estuary - Charlemont
AAG	A – Through running	2030	Estuary - Ballycullen
AAK	B – Linked SSG	2030	Estuary – Charlemont + SSG - Ballycullen

+ > Seech word

4.5 Passenger Flow Comparisons

Metro line loadings for the AM, LT and PM peak in 2030 with Metro to Knocklyon in place using the through running alignment at Charlemont (AAG) and the linked alignment at St. Stephen's Green (AAK) for Northbound and Southbound are shown in Figures 4.3 – 4.8 below. Both the AAG and AAK scenarios are represented on the same chart to facilitate comparison.

From the results of the model runs using the Eastern Regional Model, the through running option Estuary to Ballycullen generates higher passenger flows than the <u>linked option</u> to St. Stephen's Green across all time periods and in both directions. The reason for the difference in flows is due to the need for passengers to interchange with the linked option at St. Stephen's Green, making longer journeys faster and therefore more attractive. Apart from the peak directions (AM inbound and PM outbound), passenger flows on the extended section from Charlemont to Ballycullen are below 2,000 passengers per hour.

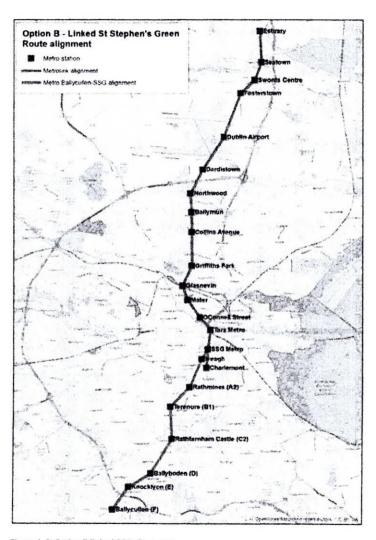


Figure 4-2: Option B linked SSG alignment

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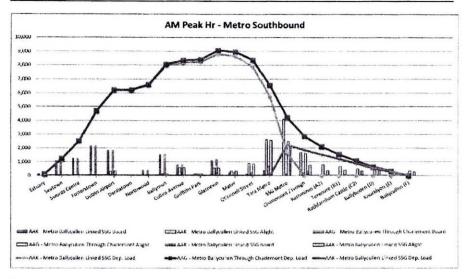


Figure 4-3: Passenger flows AM peak southbound

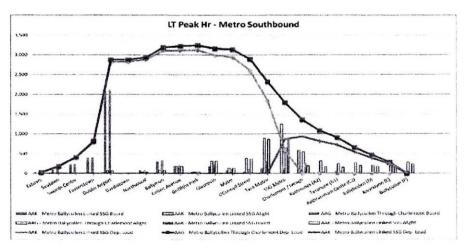


Figure 4-4: Passenger flows LT peak southbound

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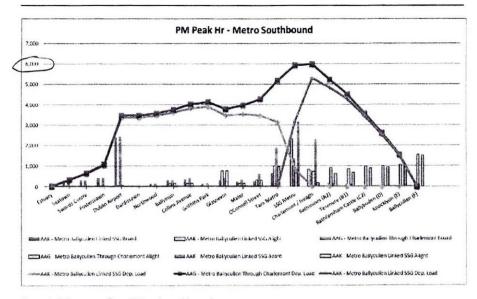


Figure 4-5: Passenger flows PM peak southbound



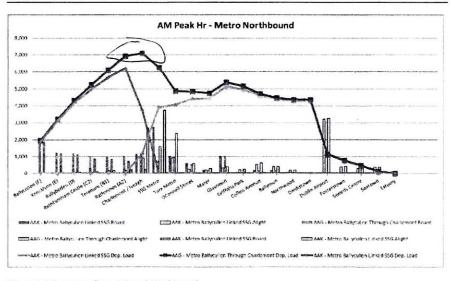


Figure 4-6: Passenger flows AM peak Northbound

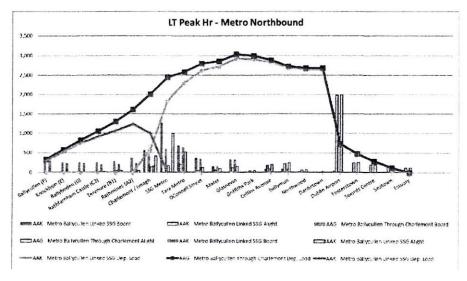


Figure 4-7: Passenger flows LT peak Northbound

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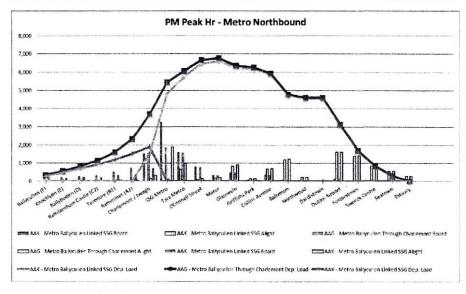


Figure 4-8: Passenger flows PM peak Northbound

Transport Demand and Mode share

Total modelled PT passengers per mode (boarding's) for the AM peak hour are summarised in Table 4-2.

Model run results show that the Metro extension to Ballycullen (AAG) increases the overall number of metro boarding's for the AM peak by circa 9,000 passengers compared to the Do Minimum, Half of that increase is coming from switching from the other PT modes:

- · 3,000 from urban bus
- 1,300 from Luas

The separate metro line linked at St. Stephen's Green (AAK) generates more metro boarding's (12,000+) than the option from Ballycullen to Charlemont (AAG). This is mostly due to transfers at St. Stephen's Green between the option from Ballycullen to Charlemont (AAG). This is mostly one to dollare to the state of boarding's with the two metro lines. Removing these intra-metro system transfers and the difference in terms of boarding's with the Do Minimum is similar to the option of Ballycullen to Charlemont.





Mode	Do Minimum	Through Running (AAG)	Difference AAG/Do Minimum	Linked (AAK)	Difference AAK/Do Minimum
DART	27,803	27,727	-76 (-0.27%)	27,587	-217 (-0.78%)
HEAVY RAIL	18,344	18,356	11 (+0.06%)	18,299	-45 (-0.25%)
LUAS	23,456	22,193	-1,263 (- 5.38%)	22,593	-863 (-3.68%)
URBAN BUS	88,805	85,820	-2,984 (- 3.36%)	85,546	-3,259 (- 3.67%)
OTHER BUS	15,860	15,840	-20 (-0.13%)	15,828	-32 (-0.2%)
METRO	16,728	25,565	8,837 (52.82%)	28,840	12,112 (+72.4%)
TOTAL	190,996	195,501	4,504 (2.36%)	198,693	7,697 (+4.03%)

To better understand the origin of the metro demand, the assigned Public Transport flow difference between the Do Minimum and the Do Something has been plotted. The purpose of these maps in Figures 4.9 – 4.12 below is to identify and quantify any transfer between PT modes (e.g. passengers switching from bus to metro).

The figures below show a similar pattern in both scenarios and for both time periods (AM & PM peak):

- Transfer of 300 passengers per hour form the Luas Green Line (AM inbound PM outbound)
- Transfer of 300 passengers per hour from the Luas Red Line (AM inbound PM outbound)
- Transfer of 800 1,00 passengers per hour from bus services along the corridor of Templeogue Terenure – Rathmines

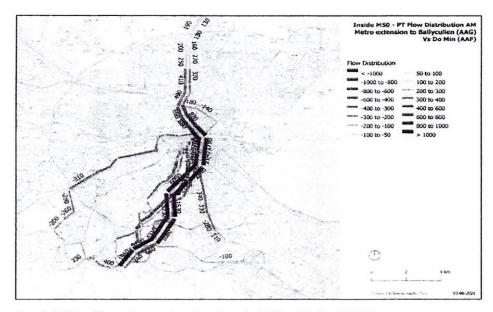


Figure 4-9: PT flow difference between through running option (AAG) and Do Min - 2030 AM

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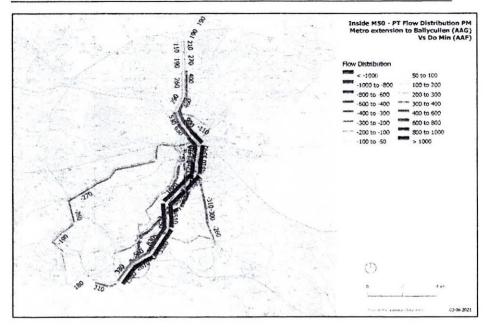


Figure 4-10: PT flow difference between through running option (AAG) and Do Min - 2030 PM

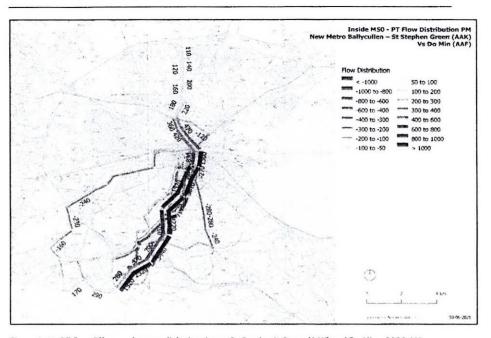


Figure 4-11: PT flow difference between linked option to St. Stephen's Green (AAK) and Do Min - 2030 AM

Figure 4-12: PT flow difference between linked option to St. Stephen's Green (AAK) and Do Min - 2030 PM

5. Cost Estimate

A joint costing exercise was undertaken to support a consistent value for money appraisal for the various Metro options being considered as part of the Metro to Knocklyon and the Metro UCD to Sandyford studies and costs were developed using a shared estimation approach for both sets of project options. As outlined below, these estimates capture the full range of key factors to allow for a comprehensive estimation of the Net Present Value of the costs, reflecting a specific understanding of the separate impacts of:

- Capital costs
 - Direct and indirect costs
 - Contractor overhead profit and insurance
 - Client costs
 - Land and property
 - Risk allowances
- · Operations and maintenance costs
- Assumed expenditure profiles
- Interface with MetroLink construction

5.1 Capital costs

Following review of the route options with the estimation team, initial capital costs were estimated for each option on the basis of the quantities of basic units. These included:

- Station underground (open cut or mined)
- Station surface
- · Vents/Escape shafts
- Metres of single bore twin track tunnel etc.
- Metres of track
- Numbers of trains
- · Location of and access to the maintenance depot
- Location of operation control centre and alternative spare
- Park-and-ride facility
- System wide installations (track, fencing, power supply, comms, signalling, etc.)

Where appropriate item costs were adjusted to control for factors such as:

- Urban or suburban settings (stations)
- Station depth
- Adjacency to railway lines
- Likely utilities



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Inside M50 - PT How Distribution AM New Metro Ballyculien - St Stephen Green (AAK)

50 to 100

100 to 200

200 to 200

400 to 600

Flow Distribution

< -1000

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5.2 Application of risk and optimism bias

Reflective of the very early stage of project development and the correspondingly low level of engineering detail available at this stage a Quantified Risk Assessment (QRA) has not been undertaken at this point. Reference Case Forecasting has instead been used to adjust for risk and optimism bias. As reported in the UK Government's Transport Appraisal Guidance, analysis by Oxford Global Projects recommends different optimism bias uplifts for different projects at different stages of the project lifecycle. These are summarised in Table 5-1 for the earliest stage of project development.

Table 5-1: Recommended optimism bias uplifts for different projects at different stages of the life of a transport

Category	ltem -	Stage 1 (Project Definition)
Roads	Motorway, trunk roads, local roads	46%
Rail	Metro, Light rail, Guided buses on tracks, line upgrades, high speed rail	56%
Fixed links	Bridges and Tunnels	55%
Building projects Stations and Terminal buildings		70%
IT projects	IT system development	69%
Land and property	Property purchases	33%
Rolling stock (new procurement)	Powered and unpowered vehicles	61%

As a complex project blending elements of Rail, Fixed link, land and property and rolling stock a blended allowance of 65% was applied to the total cost estimate. Although cautious, this is considered reasonable at this stage in the process, given the proportion of costs attributed to station construction, signalling and Rolling stock.

An initial cost was then built up for each option through application of previously developed library rates. This was then uplifted on an item by item basis to account for preliminary costs and then using global factors for contractor overheads, profits and bonds and sureties. Further allowances for client costs (indirect costs and land and property) were estimated for each option through comparison with the MetroLink scheme. Reflective of the low level of engineering detail available at this stage in the project development process a risk allowance of 65% was applied to the total cost estimate. The NTA cost management guidelines around contingency and other benchmarking criteria were considered as part of this study and was reflective of the level of design available.

The cost build-up for the two route options is summarised in Errorl Reference source not found. and Errorl Reference source not found. These costs are presented in Quarter four 2019 Euros, and are exclusive of VAT, which is addressed as part of the conversion to Net Present Costs. Regarding the difference in subtotal amounts between the two options, option presents a higher subtotal amount due to additional construction and infrastructure requirements in creating separate, longer tunnelling and also the construction of a large turnback facility at St. Stephen's Green to facilitate this option.

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Table 5–2: Metro Knocklyon, Ballycullen to Charlemont (through running), capital costs (factor costs, Q4 2019 prices, nearest €100,000).

Category	Item	Total (EUR) (Q4 2019)
Capital costs	Tunnels & Intervention shafts	549,900,000
	Subsurface stations	904,200,000
	Rolling stock	149,800,000
	Other	384,600,000
	Total	1,988,500,000
Client costs	Indirects	285,400,000
	Land and property	189,900,000
Sub-total		2,463,800,000
Risk & Optimism Bias	65%	1,601,500,000
Total		4,065,300,000

Table 5–3: Metro Knocklyon, Ballycullen to St Stephen's Green (linked), capital costs (factor costs, Q4 2019 prices, nearest €100.000).

Category	Item	Total (EUR) (Q4 2019)
Capital costs	Tunnels & Intervention shafts	612,100,000
	Subsurface stations	1,266,500,000
	Rolling stock	217,600,000
	Other	647,700,000
	Total	2,743,900,000
Client costs	Indirects	393,700,000
	Land and property	269,000,000
Sub-total		3,406,600,000
Risk & Optimism Bias	65%	2,214,300,000
Total		5,620,900,000

too high . some should be some or obove

5.3 Operations and maintenance

Independently to the capital cost estimation process, an allowance for operations and maintenance (0&M) costs of the proposed Metro Knocklyon route options was developed to capture the potential 0&M costs over a 60-year operational time horizon. For both the Metro Knocklyon and Metro UCD to Sandyford route options a total allowance of €600m (in 2011 prices and values) across the 60-year period is proposed as approximately representative with reference to the equivalent MetroLink projections.

5.4 Expenditure profile

To allow estimation of the present value of the capital and O&M costs, expenditure profiles were developed support this.



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5.4.1 Capital expenditure profile

For both proposed routes a four-year construction programme ending in 2030 was assumed with equal expenditure assumed in each year. At this stage, this assessment should be considered highly preliminary, and is proposed solely for the purpose of evaluating the present value of the costs.

5.4.2 O&M expenditure profile

Rather than following a pro-rata estimate of €10m per annum, 0&M expenditure was assumed to increase over the 60 year operation period, as the age of the assets increases, from €6.6m in the 1st year to €13.8m in year 60.

5.5 Construction price inflation

The potential impacts of Covid-19 and construction of MetroLink on construction prices are considered an area of significant uncertainty and remain to be confirmed.

Whilst a project of a scale of the MetroLink construction might be expected to drive increases in construction costs, this has not been quantified, and any impact would also be influenced by the timing of these proposals. Conversely, the schemes proposed may be in a position to benefit from efficiencies and lessons learned during the delivery of MetroLink.

No specific allowance has been made for the separate impacts of these issues, which are considered to fall under the overall allowance for Risk and Optimism bias.

5.6 Present value of costs

For use in the value for money appraisal, the costs have been adjusted for presentation in a 2011 market price basis and value, this has been undertaken in line with Transport Infrastructure Ireland's Project Appraisal Guidelines (PE-PAG-02030).

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The capital and 0&M costs are provided on a factor cost basis, for conversion to market cost basis for comparison with the potential user benefits, an uplift of 1.183 has been applied.

As per TII guidance the present value year has been taken as 2011, the capital costs have been deflated to 2011 values based on the observed Consumer Price Index for the period 2011– 2019. O&M costs were originally estimated on a 2011 basis.

Future year capital and O&M costs are similarly discounted to 2011 values with discount rates as per TII guidance of 4% for years 1–30 and 3.5% for years 31–60.

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Table 5-4: in Costs in (2011 Prices and Values, nearest €100,000).

Category	Option A Metro Knocklyon, Ballycullen to Charlemont (through running)	Option B Metro Knocklyon, Ballycullen to St Stephen's Green (linked)
Construction Cost	€2,257,000,000	€3,120,700,000
Operating Cost	€105,500,000	€105,500,000
Total Cost	€2,362,500,000	€3,226,200,000

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Economic appraisal

6.1 Introduction

A Public Transport User Benefits appraisal of the Dublin MetroLink (Metro extension to Knocklyon), scheme has been completed as part of the feasibility study. This appraisal has been conducted to identify the user benefits expected from scheme implementation. The Public Transport appraisal has been split into two distinct sections, corresponding to the two options described in the Transport Modelling chapter of the report: Option A "Through Running" (Metro Estuary-Ballycullen) Extension to the South and Option B "Linked St Stephen's Green" (Metro St Stephen's Green-Ballycullen) as a separate metro line to Metrolink. While the appraisal will foremostly provide an indicative value of user benefits expected from scheme implementation, comparisons between the two options will aid option selection. The appraisal of each alignment option has followed the same defined process.

The transport modelling outputs which underpin the economic appraisal have been produced using the National Transport Authority's (NTA) Regional Modelling System, developed as part of the Modelling Services Framework in collaboration with SYSTRA and Jacobs Engineering Ireland. The National Transport Authority's Regional Modelling System comprises the National Demand Forecasting Model, five large-scale, technically complex, detailed and multi-modal regional transport models and a suite of Appraisal Modules covering the entire national transport network of Ireland. The five regional models are focussed on the travel-to-work areas of the major population centres in Ireland. The Eastern Regional Model (ERM) has been used for this appraisal as it focuses on the travel-to-work areas of the population centre of Dublin and nearby regions. The ERM captures all day travel demand, thus enabling more accurate modelling of mode choice behaviour and increasingly complex travel patterns.

The appraisal has been conducted using the TUBA v1.9.4.

As specified in the economics file, the ERM, and Irish guidance, impacts will be modelled in four distinct time periods: AM, LT, SR and PM. The annualization factors used for each of these time periods are presented in Table 6-1 and are those provided by the NTA for scheme appraisal. The annualization factor in the LT period is higher than other periods due to its use in approximating off peak and weekend trips.

Table 6-1: Annualization factors used for appraisal

Time Period	Annualization factor
AM (07:00-10:00)	616
LT (10:00-13:00)	3,044
SR (13:00-16:00)	688
PM (16:00-19:00)	688

A sectoring file was used to aid analysis of the scheme impacts. The five sectors used for this analysis are shown in Figure 6-1 and in Table 6-2.





Table 6-2: Sectors

Sector Number	Description
1	Reference Metro
2	Metro Expansion
3	Rest of Dublin
4	Rest of GDA
5	External

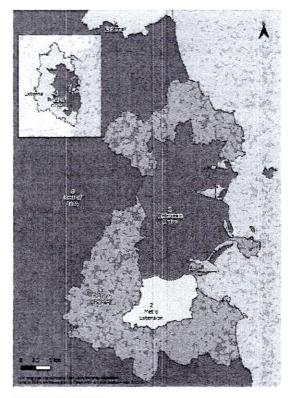


Figure 6-1: Sector Map

To align with the construction plan, the Public Transport User benefits appraisal has assumed a first year of 2030, with modelled years of 2030 and 2045. In line with PAG guidance, a 60-year appraisal period has been considered, meaning 2089 has been used as the horizon year. In line with the appraisal of the core MetroLink scheme, CUBE weighted generalised cost outputs were used for the appraisal of the public transport element of the scheme and standard outputs for the highway's element. The highways element is not affected by discrepancies in cost calculations in the CUBE / appraisal interface and so use of standard outputs is appropriate.



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6.2 Option A Through Running – Metro Estuary – Ballycullen Extension to the South

Jacobs

6.2.1 Introduction

Section 6.2 discusses the user and provider impacts expected to occur as a result of the Metro Estuary to Ballycullen MetroLink development, Southern Extension. An overview of this route option is provided in the Transport Modelling chapter of this report.

Option A is expected to provide connectivity from Ballycullen to the city centre, via Charlemont as part of a through service from Estuary to Ballycullen. It is expected to provide a total of €1.99bn (2011 prices and values) benefits over the appraisal period. This includes benefits through improved accessibility to and from the city centre via public transport, and benefits for highways users from decreased congestion as a result of modal shift away from private road vehicles.

Figure 6-2 illustrates the total combined Public Transport and Highways impact of the proposed scheme for trip origins. Positive benefits can be seen in the two sectors covering the entire alignment (Reference Metro and Metro Extension). Residents along the alignment will now have access to MetroLink, improving city centre access.

The Rest of Dublin Area to the west of the main route corridor experiences origin benefits as a result of the proposed scheme in a similar scale compared to the two central sectors. Further, the Rest of GDA Area is expected to experience disbenefits as a result of the scheme.

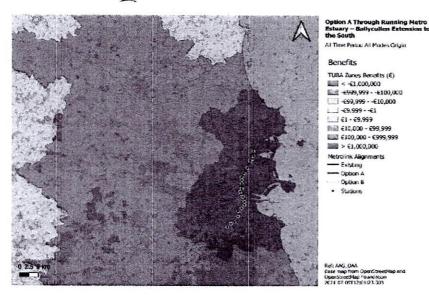


Figure 6-2: Total monetised user impact (€), all times periods, 2045, origin, 2011 prices and values.

Figure 6-3 illustrates the total combined Public Transport and Highways impact of the proposed scheme for trip destinations. It shows a similar distribution of impacts to Figure 6-2. Particularly, large benefits are expected to accrue for residents within the two central sectors. The majority of Dublin experiences net benefits as a result of

the proposed scheme. This is likely to be due to users benefitting from improved city centre access following the extension of the southern section of the MetroLink.

The Rest of GDA sector is expected to experience disbenefits as a result of the proposed scheme.

As outlined below these impacts are primarily driven by impacts on highway users. Congestion at a number of the junctions on the M50 is a known future issue with the modelling of these being potentially sensitive to relatively small demand changes – further exploration of the impacts here would be recommended as part of any further work on this option.

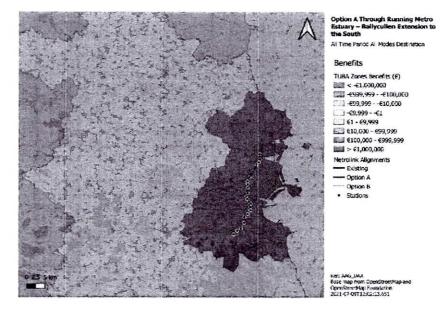


Figure 6-3: Total monetised user impact (€), all time periods, 2045, destination, 2011 prices and values. Further detail, disaggregated by journey type, is provided in Table 6-6 of this report.

6.2.2 Public Transport

Figure 6-4 illustrates the Public Transport impact of the proposed scheme for AM trip origins. This primarily considers the benefits arising for commuters travelling to work, mapped by their origin.

Generally, there are widespread low-level benefits across Dublin. The central sectors experience benefits of greater than €1m. The areas to the west of the scheme corridor experience the lowest benefit. Residents of these areas must travel the furthest to reach the scheme.



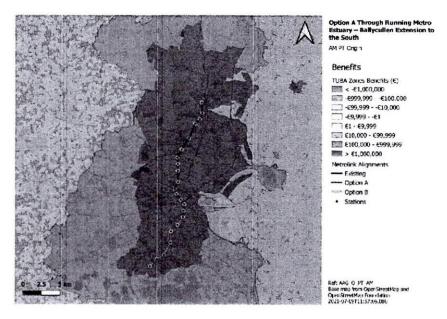


Figure 6-4: Total monetised user impact (€), AM, 2045, origins, 2011 prices and values.

Figure 6-5 illustrates the Public Transport impact of the proposed scheme for PM trip destinations. The general distribution of impacts is widespread, with benefits experienced in all sectors. The highest benefits are received in the two central sectors.

Both the Rest of Dublin and Rest of GDA Areas experience benefits but in a lower range compared to the central areas. Residents of these areas have to travel the furthest to reach the scheme.

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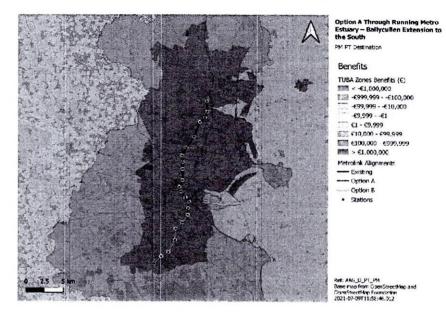


Figure 6-5: Total monetised user impact (€), PM, 2045, destinations, 2011 prices and values.

Table 6-3 shows the distribution of monetised public transport user time impacts by trip purpose. All five trip purposes receive a net monetised user time benefit as a result of the Option A Alignment. Leisure trips receive the greatest benefit with aggregate user benefits of €736,200,000 (2011 prices and values) across the 60-year appraisal period. Large benefits are also received by business and commuting users, while slightly smaller benefits are received by the educational and retired user groups.

The 'User Charges' column in **Table 6-3** indicates the welfare change for Public Transport users from the change in fare payments. A negative user charge value is expected for all trip purposes as a result of the Option A Alignment. The greatest disbenefit is expected for leisure trips, which sees disbenefits of over -1,500,000 (2011 prices and values).

As this is a public transport scheme there are no vehicle operating costs considered within this part of the appraisal because public transport users do not perceive them. Any costs associated with the additional Metro vehicles required to operate the scheme and their operations are captured within the costs estimates.

Table 6-3: Total monetised user impacts by trip purpose over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Trip Purpose	User Time impacts (€)	User Charges (€)
Business	426,200,000	-600,000
Commuting	311,800,000	-1,000,000
Leisure	736,200,000	-1,500,000
Education	-	-
Retired	-	-





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Table 6-4 shows the total monetised public transport user impacts accrued across the 60-year appraisal period disaggregated by time period. All four time periods are expected to receive net benefits over the 2030-2089 appraisal period. The LT time period is expected to receive approximately €590,200,000 (2011 prices and values) of benefits – the most of any time period. This is partly due to the high number annualization factor associated with this period, which is used to approximate off peak and weekend trips. Benefits in the AM and PM time periods are of a similar magnitude (approximately €350,000,000) (2011 prices and values), while the SR time period receives the lowest value of benefits.

The 'User Charges' column in Table 6-4 indicates the welfare change for Public Transport users from the change in fare payments. A negative user charge value is expected for all time periods as a result of the Option A Alignment. The greatest disbenefit is expected for AM trips, with disbenefits of over -€1,900,000 (2011 prices and values).

Table 6-4: Total monetised user impacts by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	User Time Impacts (€)	User Charges (€)
AM	392,200,000	-1,900,000
LT	590,200,000	-200,000
SR	156,300,000	-
PM	335,400,000	-1,000,000

Table 6-5 shows the change in operator revenue and indirect tax revenue as a result of the proposed scheme, disaggregated by time period. All four time periods are expected to see an increase in operator revenue as a result of the proposed scheme. This is because of an increase in MetroLink patronage for all time periods, with more people willing to use the scheme as a result of the proposed improvements. The greatest increase in operator revenue is experienced in the LT time period, with over €97,000,000 (2011 prices and values) increase in revenue. The increase in operator revenue in the AM and PM time periods is broadly similar.

A reduction in indirect tax revenue can be seen for all time periods, with the greatest reduction in the LT time period (over €11,000,000) (2011 prices and values). Indirect tax revenues are expected to fall as a result of the proposed scheme due to the increase in public transport patronage. Increased public transport usage is causes a re-allocation of expenditure towards public transport. As consumers spend a greater proportion of their income on public transport (which is not taxable) and less on alternative, taxable, consumption, indirect tax revenue falls.

Table 6-5: Total monetised provider impacts and changes in indirect tax revenues by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	Operator Revenue (PT fares) (€)	Indirect Taxes (€)
AM	54,200,000	-7,900,000
LT	97,400,000	-11,900,000
SR	21,500,000	-3,100,000
PM	49,900,000	-7,100,000

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6.2.3 Highways

Figure 6-6 illustrates the Highways impact of the proposed scheme for AM trip origins. This primarily considers the benefits arising for commuters travelling to work, mapped by their origin. The two central sectors see benefits on a similar scale, with the Rest of Dublin Area expected to experience lower benefits. The Rest of GDA area is expected to experience disbenefits as a result of the scheme.

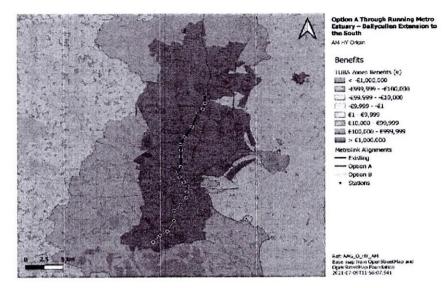


Figure 6-6: Total monetised user impact (€), AM, 2045, origins, 2011 Prices and Values.

Figure 6-7 illustrates the Public Transport impact of the proposed scheme for PM trip destinations. The distribution of impacts is similar to the AM Highway Origins map in Figure 6-6. However, the Metro Expansion Area south of the city centre is expected to experience lower benefits compared to AM trip origins.

Disbenefits are experienced by highways users in the Rest of GDA Area.





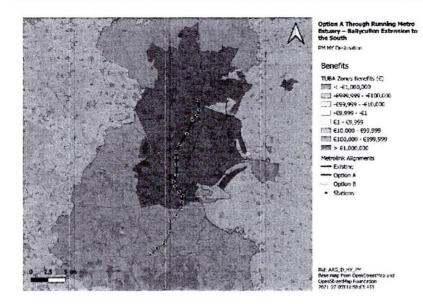


Figure 6-7: Total monetised user impact (€), PM, 2045, destination, 2011 prices and values.

Table 6-6 shows the distribution of monetised highways user time impacts by trip purpose. All five trip purposes experience a monetised user time benefit as a result of the Option A Alignment, with the greatest benefit being the €212,300,000 (2011 prices and values) received by business trips across the 60-year appraisal period.

A disbenefit as a result of user charge changes (national toll) can be seen for business trips, indicating this group sees the greatest increase in toll payments.

Table 6-6 also shows the change in welfare resulting from changes in vehicle operating costs for highways users as a result of the scheme. Positive welfare benefits can be seen for fuel and non-fuel vehicle operating costs across all five trip purposes, with the greatest benefit for business travel and commuting. Positive welfare benefits indicate highways users have to pay lower operating costs as a result of the MetroLink improvements. A large proportion of this benefit is likely to be due to a reduction in congestion.

Table 6-6: Total monetised user impacts and vehicle operating costs by trip purpose over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Trip Purpose	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non-fuel) (€)
Business	212,300,000	-500,000	1,600,000	3,600,000
Commuting	78,200,000	100,000	1,600,000	5,300,000
Leisure	17,000,000	300,000	200,000	700,000
Education	9,100,000	300,000	100,000	200,000
Retired	8,600,000	300,000	100,000	200,000



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Table 6-7 shows the distribution of monetised highways user time impacts, user charges and vehicle operating costs (fuel and non-fuel), disaggregated by time period. The greatest user time benefit is experienced in the AM time period, where benefits of €144,400,000 (2011 prices and values) accrue over the 60-year appraisal period. Time benefits are also experienced in the other time periods. These benefits are likely to accrue due to the reduction in highways congestion from the implementation of the MetroLink improvements allowing quicker road journeys.

Table 6-7 shows the benefit impact of changes in user charge payments (tolls) as a result of the proposed scheme, disaggregated by time period. Both the AM and LT time periods see a benefit from changes in user charge payments over the 60-year appraisal period. However, the benefit in the AM time period is smaller than €100,000. The benefits are likely to be the result of reduced travel on toll roads due to a decrease in congestion on non-toll roads. Disbenefits can be seen in the SR and PM time periods. This suggests highways users in these in the SR and PM time periods. This suggests highways users in these in the SR and PM time periods. This suggests highways users in these in the SR and PM time periods. time periods are paying more toll charges than they were previously.



Table 6-7 also shows the change in welfare from changes in vehicle operating costs for highway users as a result of the scheme. A benefit can be seen as a result of changes in both fuel and non-fuel vehicle operating costs for all time periods. This suggests highways users are spending less on vehicle operating costs either due to shorter highway or less congested highway journeys.

Table 6-7: Total monetised user impacts by time period over a 60-year Appraisal Period (2011 Prices and Values. nearest €100.000).

Time Period	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non-fuel) (€)
AM	144,400,000	-	1,300,000	2,800,000
LT	21,700,000	1,100,000	800,000	3,700,000
SR	61,200,000	-200,000	700,000	1,400,000
PM	97,800,000	-500,000	800,000	2,100,000

Table 6-8 shows the expected change in operator and indirect tax revenue as a result of the proposed scheme, disaggregated by time slice.

All time periods experience a reduction in indirect tax revenue over the 60-year appraisal period. This indicates a reduction in taxable expenditure on road travel by highways users travelling in these time periods.

Table 6-8: Total provider impacts and changes in indirect tax revenues by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	Operator Revenue National Toll (€)	Indirect Taxes (€)
AM	-600,000	-7,900,000
LT	-6,700,000	-11,900,000
SR	-800,000	-3,100,000
PM	-400,000	-7,100,000

Table 6-9 shows the distribution of monetised highways user time impacts, user charges and vehicle operating costs (fuel and non-fuel), disaggregated by vehicle type. The greatest user time benefits are experienced by car users, who received over 80% of all highway benefits generated by the proposed scheme. Positive benefits are experienced by all vehicle types. Car users also experience a benefit from the change in user charge payments, of approximately €400,000 (2011 prices and values).



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Table 6-9 also shows the change in welfare from changes in vehicle operating costs for highway users as a result of the scheme. Benefits are seen for all vehicle types for both fuel and non-fuel operating costs, implying reductions in operating costs for all vehicle types. The greatest benefits are experienced by car users.

Table 6-9: User benefits and changes in revenues by submode/vehicle type over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Vehicle Type	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non- fuel) (€)
Car	266,200,000	400,000	2,400,000	9,700,000
LGV	55,700,000	100,000	1,200,000	100,000
OGV1	3,300,000	-	-	200,000
OGV2	-	-	-	-
All	325,200,000	500,000	3,600,000	10,000,000

Table 6-10 shows the expected change in operator and indirect tax revenue as a result of the proposed scheme, disaggregated by vehicle type. A reduction in toll revenue of over €8,000,000 (2011 prices and values) is expected from car users. This is likely to be caused by car users switching to non-toll roads due to reductions in congestion as a result of the scheme. A decrease in indirect tax revenue is expected from all vehicle types as a result of the Option A Alignment over the 60-year appraisal period. This indicates a reduction in taxable expenditure on road travel by highways users travelling by these vehicle types.

Table 6-10: Total provider impacts and changes in indirect tax revenues by submode/vehicle type over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Vehicle Type	Operator Revenue National Toll (€)	Indirect Taxes (€)
Car	-8,400,000	-500,000
LGV	-100,000	-500,000
OGV1	-	-
OGV2	-	-
All	-8,500,000	-1,000,000

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6.2.4 Summary

NET BUSINESS IMPACT

TOTAL

Figure 6-8 presents the combined Highways and Public Transport Economic Efficiency of the Transport System (TEE) Tables over a 60-year Appraisal Period (2011 prices and values).

Economy: Economic Efficiency of the Transport System (TEE)

Consumer - Commuting user benefits	All Modes	Highway	Public Transport
Travel Time	€ 389,991	€ 78,218	€ 311,774
Vehicle operating costs	€ 6,904	€ 6,904	€0
User charges	-€ 827	€ 141	-€ 968
During Construction & Maintenance	€0	€0	€0
NET CONSUMER - COMMUTING BENEFITS	€ 396,068	€ 85,262	€ 310,806
Consumer - Other user benefits	All Modes	Highway	Public Transport
Travel Time	€ 770,831	€ 34,656	€ 736,176
Vehicle operating costs	€ 1,513	€ 1,513	€0
User charges	-€ 679	€819	-€ 1,498
During Construction & Maintenance	€0	€0	€0
NET CONSUMER - OTHER BENEFITS	€ 771,665	€ 36,988	€ 734,677

	All Modes	Highway		Public Transport	
Business		Road Personal	Road Freight	Bus Personal	Bus Freight
Travel Time	€ 638,491	€ 209,003	€ 3,309	€ 425,179	(
Vehicle operating costs	€ 5,218	€ 4,996	€ 223	€0	
User charges	-€ 1,148	-€ 455	-€ 45	-€ 649	
During Construction & Maintenance	€0	€0	€0	€0	
Subtotal	€ 642,561	€ 213,544	€ 3,487	€ 425,530	

Private Sector Provider Impacts	All Modes	Highway	Public Transport
Revenue	€ 214,543	-€ 8,460	€ 223,003
Operating costs	€0	€0	€0
Investment costs	€0	€0	€0
Grant/subsidy	€0	€0	€0
Subtotal	€ 214,543	-€ 8,460	€ 223,003

Peveloper contributions	€0	€0	€0
IET BUSINESS IMPACT	€ 857.104		

All entries are discounted present values in 2011 prices and values

nt Value of Transport Economic Efficiency Benefits (TEE)	€ 2,024,837
	Notes: Benefits appear as positive numbers, while costs appear as negative numbers.

Figure 6-8: Combined Highways and Public Transport TEE Tables (2011 Prices and Values, €000's)

Figure 6-9 shows the combined Highways and Public Transport Public Accounts (PA) Table over a 60-year Appraisal Period (2011 prices and values).

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Public Accounts			
Local Government Funding	ALL MODES	Highway	Public
Revenue	€0	€0	€0
Operating Costs	€0	€0	€0
Investment Costs	€0	€0	€0
Developer Contributions	€0	€0	€0
Grant/Subsidy Payments	€0	€0	€0
NET IMPACT	€0	€0	€0
Central Government Funding: Transport	ALL MODES	Highway	Public
Revenue	€0	€0	€0
Operating costs	€ 119,398	€0	€ 119,398
Investment costs	€ 2,423,313	€0	€ 2,423,313
Developer Contributions	€0	€0	€0
Grant/Subsidy Payments	€0	€0	€0
NET IMPACT	€ 2,542,711	€0	€ 2,542,711
Central Government Funding: Non-Transport			
Indirect Tax Revenues	€ 30,042	€ 955	€ 29,087
TOTALS			
Broad Transport Budget	€ 2,542,711	€0	€ 2,542,711
Wider Public Finances	€ 30,042	€ 955	€ 29,087

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers Note: All entries are present values discounted to 2011, in 2011 prices

Figure 6-9: Combined Highways and Public Transport PA Table (2011 prices and values, €000's)

Figure 6-10 shows the combined Highways and Public Transport Analysis of Monetised Costs and Benefits (AMCB) Table over a 60-year Appraisal Period (2011 prices and values).

Error! Reference source not found. Combined Highways AMCB Table (2011 prices and values, €000's)



It should be noted that no accident valuation has been undertaken as part of this appraisal. However, the impact is expected to be small in comparison to overall scheme benefits and of similar value across schemes.

The BCR for the scheme is 0.8. This represents a return of €0.80 for every €1 spent for direct transport users. Without consideration of other wider benefits which may be associated with the scheme, the Option A alignment provides poor value for money.

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6.3 Option B Linked St Stephen's Green - Metro St Stephen's Green-Ballycullen

6.3.1 Introduction

Section 6.3 of this report discusses the user and provider impacts expected to occur as a result of Option B, the Ballycullen to St Stephen's Green MetroLink development. An overview of Option B is provided in the Transport Modelling chapter of this report.

Option B is a standalone line which runs from Ballycullen to a separate terminus at St Stephen's Green station to the south of the city centre. It is designed to improve connectivity to and from the city centre for residents located to the south of Dublin. It is expected to provide a total of €1.82bn (2011 prices and values) benefits to Public Transport users over the appraisal period. This includes benefits through improved accessibility to and from the city centre via public transport.

Figure 6-11 illustrates the total combined Public Transport and Highways impact of the proposed scheme for trip origins. Positive benefits can be seen in the two sectors covering the entire alignment (Reference Metro and Metro Extension) as well as in the Rest of Dublin. Residents along the alignment will now have access to MetroLink, improving city centre access. The Rest of GDA Area is expected to experience slight disbenefits as a result of the scheme.

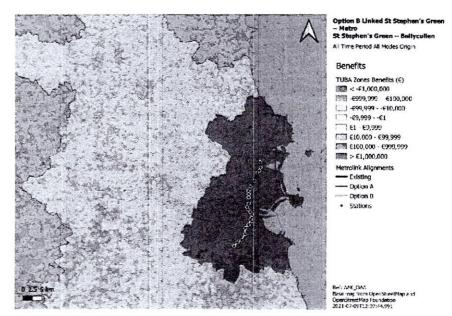
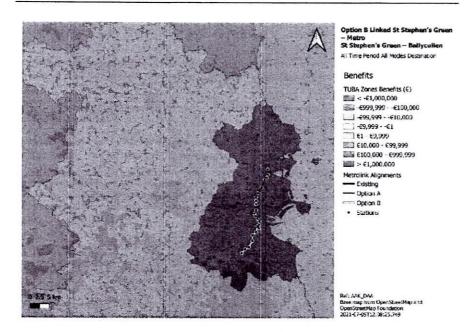


Figure 6-11: Total monetised user impact (€), all times periods, 2045, origin, 2011 prices and values.

Figure 6-12 illustrates the total combined Public Transport and Highways impact of the proposed scheme for trip destinations. It shows a similar distribution of impacts to Figure 6-11 with greater disbenefits as a result of the proposed scheme in the Rest of GDA Area.





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Figure 6-12 Total monetised user impact (€), all times periods, 2045, destination, 2011 prices and values.

6.3.2 Public Transport

Figure 6-13 illustrates the Public Transport impact of the proposed scheme for AM trip origins. This primarily considers the benefits arising for commuters travelling to work, mapped by their origin.

Generally, there are widespread benefits across Dublin. The highest benefits are received in the two central sectors with over €1m. The Rest of GDA Area will experience the lowest benefits as a result of the proposed scheme in the AM period.

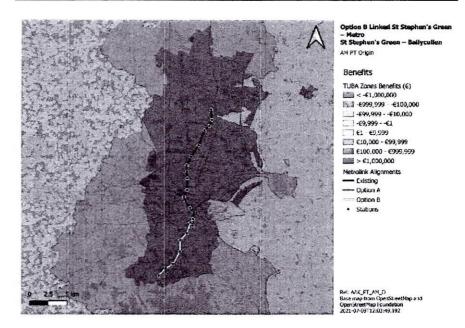


Figure 6-13: Total monetised user impact (\mathfrak{E}), AM, 2045, origins, 2011 prices and values.

Figure 6-14 illustrates the Public Transport impact of the proposed scheme for PM trip destinations. It shows a very similar distribution of benefits compared to Figure 6-13.



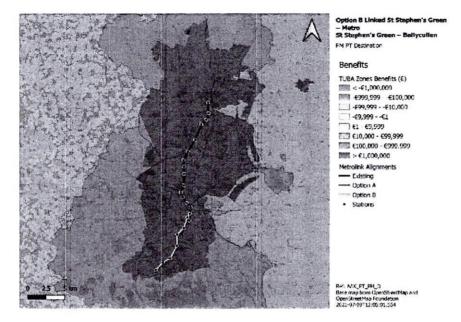


Figure 6-14: Total monetised user impact (€), PM, 2045, Destinations, 2011 prices and values,

Table 6-11 shows the distribution of monetised public transport user time impacts by trip purpose. All trip purposes receive a net monetised user time benefit as a result of the Option B Alignment. Leisure trips receive the greatest benefit, with aggregate user benefits of €697,900,000 (2011 prices and values) across the 60-year appraisal period. Benefits are distributed fairly consistently for business and commuting trip purposes.

The 'User Charges' column in Table 6-11 indicates the welfare change for Public Transport users from the change in fare payments. A positive user charge value is expected for Leisure trips as a result of the Option B Alignment. Negative user charges are expected for commuting trips.

Table 6-11: Total monetised user impacts by trip purpose over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Trip Purpose	User Time impacts (€)	User Charges (€)
Business	359,200,000	-
Commuting	373,000,000	-1,100,000
Leisure	667,900,000	1,300,000
Education	-	-
Retired	-	

Table 6-12 shows the total monetised public transport user impacts accrued across the 60-year appraisal period disaggregated by time period. All four time periods are expected to receive net benefits over the 2030-2089

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appraisal period. The LT time period is expected to receive approximately €525,000,000 (2011 prices and values) of benefits – the most of any time period. This is significantly higher than the AM and PM time periods.

The 'User Charges' column in Table 6-12 represents the welfare change for Public Transport users from the change in fare payments. A positive user charge value is expected for the LT and SR time periods as a result of the Option B Alignment, suggesting Public Transport users spend less on Public Transport fares than previous. The greatest benefit is expected for LT trips, with benefits of over €1,800,000 (2011 prices and values). Both AM and PM time period are expected to experience a negative user charge value as a result of the scheme.

Table 6-12: Total monetised user impacts by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	User Time impacts (€)	User Charges (€)
AM	382,100,000	-1,500,000
LT	525,400,000	1,800,000
SR	145,200,000	300,000
PM	347,300,000	-400,000

Table 6-13 shows the change in operator revenue and indirect tax revenue as a result of the proposed scheme, disaggregated by time period. All four time periods are expected to see an increase in operator revenue as a result of the proposed scheme. This is because of an increase in MetroLink patronage for all time periods, with more people willing to use the scheme as a result of the proposed improvements. The greatest increase in operator revenue is experienced in the LT time period, with an increase of approximately €55,900,000 (2011 prices and values) in revenue.

A reduction in indirect tax revenue can be seen for all time periods, with the greatest reduction in the LT time period (over €6,000,000) (2011 prices and values). Indirect tax revenues are expected to fall as a result of the proposed scheme due to the increase in public transport patronage. Increased public transport usage is causes a re-allocation of personal expenditure towards public transport. As consumers spend a greater proportion of their income on public transport (which is not taxable) and less on alternative, taxable, consumption, indirect tax revenue falls.

Table 6-13: Total monetised provider impacts and changes in indirect tax revenues by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	Operator Revenue (PT fares) (€)	Indirect Taxes (€)
AM	39,200,000	-5,400,000
LT	55,900,000	-6,800,000
SR	14,600,000	-2,000,000
PM	34,600,000	-4,700,000



6.3.3 Highways

Figure 6-15 illustrates the Highways impact of the proposed scheme for AM trip origins. This primarily considers the benefits arising for commuters travelling to work, mapped by their origin. The metro Extension Sector sees benefits with all other parts expected to experience disbenefits. This includes the Reference Metro sector.

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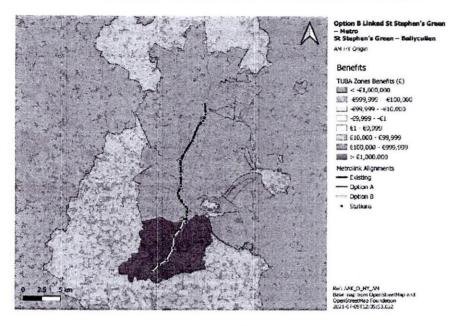


Figure 6-15: Total monetised user impact (€), AM, 2045, origins, 2011 Prices and Values.

Figure 6-16 illustrates the Highway impact of the proposed scheme for PM trip destinations. Whilst benefits are experienced by highway users in both the Metro Extension Area and the Rest of Dublin, the Reference Metro Area and the Rest of the GDA Area are expected to experience disbenefits.

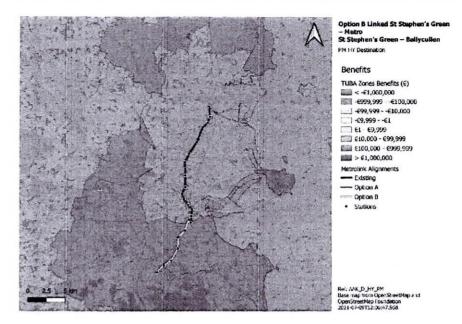


Figure 6-16: Total monetised user impact (€), PM, 2045, destination, 2011 prices and values.

Table 6-14 shows the distribution of monetised highways user time impacts by trip purpose. All five trip purposes experience a monetised user time benefit as a result of the Option B Alignment, with the greatest benefit being the €129,900,000 (2011 prices and values) received by business trips across the 60-year appraisal period. Disbenefits as a result of user charge changes (national toll) can be seen for all trip purposes apart from a minor increase lower than €100,000 for business trips.

Table 6-14 also shows the change in welfare resulting from changes in vehicle operating costs for highways users as a result of the scheme. Positive welfare benefits can be seen for fuel and non-fuel vehicle operating costs across all five trip purposes, with the greatest benefit for business travel and commuting. Positive welfare benefits indicate highways users have to pay lower operating costs as a result of the MetroLink improvements. A large proportion of this benefit is likely to be due to a reduction in congestion.

Table 6-14: Total monetised user impacts and vehicle operating costs by trip purpose over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Trip Purpose	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non-fuel) (€)
Business	129,900,000	-	900,000	2,200,000
Commuting	105,600,000	-900,000	2,000,000	4,900,000
Leisure	31,200,000	-200,000	300,000	700,000
Education	11,000,000	-200,000	100,000	100,000
Retired	11,000,000	-200,000	100,000	100,000





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Table 6-15 shows the distribution of monetised highways user time impacts, user charges and vehicle operating costs (fuel and non-fuel), disaggregated by time period. The greatest user time benefit is experienced in the LT time period, where benefits of €229,200,000 (2011 prices and values) accrue over the 60-year appraisal period. Time benefits are also experienced in the other time periods. These benefits are likely to accrue due to the reduction in highways congestion from the implementation of the MetroLink improvements allowing quicker road journeys.

Table 6-15 also shows the benefit impact of changes in user charge payments (tolls) as a result of the proposed scheme, disaggregated by time period. Both the AM and LT time periods see a disbenefit from changes in user charge payments over the 60-year appraisal period. This suggests highways users in these time periods are paying more toll charges than they were previously. Minor benefits are experienced in both the SR and PM time periods. The benefits are likely to be the result of reduced travel on toll roads due to a decrease in congestion on non-toll roads.

Table 6-15 also shows the change in welfare from changes in vehicle operating costs for highway users as a result of the scheme. A benefit can be seen as a result of changes in both fuel and non-fuel vehicle operating costs in the AM, LT and SR time periods. This suggests highways users are spending less on vehicle operating costs. However, disbenefits can be seen in the PM period.

Table 6-15: Total monetised user impacts by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non- fuel) (€)
AM	27,800,000	-400,000	400,000	300,000
LT	229,200,000	-1,300,000	2,500,000	6,900,000
SR	70,800,000	100,000	800,000	1,500,000
PM	39,100,000	200,000	-100,000	-600,000

Table 6-16 shows the expected change in operator and indirect tax revenue as a result of the proposed scheme, disaggregated by time slice. The LT, SR and PM time periods experience a reduction in indirect tax revenue over the 60-year appraisal period. This indicates a reduction in taxable expenditure on road travel by highways users travelling in these time periods. The PM time period experiences a slight increase in indirect tax revenue.

Table 6-16: Total provider impacts and changes in indirect tax revenues by time period over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Time Period	Operator Revenue National Toll (€)	Indirect Taxes (€)
AM	300,000	-200,000
LT	-5,200,000	-700,000
SR	-900,000	-300,000
PM	-800,000	200,000

Table 6-17 shows the distribution of monetised highways user time impacts, user charges and vehicle operating costs (fuel and non-fuel), disaggregated by vehicle type. The greatest user time benefits are experienced by car users, who received over 50% of all highways benefits generated by the proposed scheme. Positive benefits are experienced by all vehicle types. Car users experience disbenefit from the change in user charge payments, of approximately -€2,900,000 (2011 prices and values).

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Table 6-17 also shows the change in welfare from changes in vehicle operating costs for highway users as a result of the scheme. Benefits are seen for all vehicle types for both fuel and non-fuel operating costs, implying reductions in operating costs for all vehicle types. The greatest benefits are experienced by car users.

Table 6–17: User benefits and changes in revenues by submode/vehicle type over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Vehicle Type	User Time (€)	User Charges National Toll (€)	Vehicle Operating Cost (fuel) (€)	Vehicle Operating Cost (non- fuel) (€)
Car	145,100,000	-1,400,000	1,600,000	5,900,000
LGV	113,100,000	-700,000	1,900,000	500,000
0GV1	30,500,000	600,000	100,000	1,700,000
OGV2	-	-	-	-
All	288,700,000	-1,400,000	3,500,000	8,000,000

Table 6-18 shows the expected change in operator and indirect tax revenue as a result of the proposed scheme, disaggregated by vehicle type. A reduction in toll revenue of over €6,000,000 (2011 prices and values) is expected from car users. This is likely to be caused by car users switching to non-toll roads due to reductions in congestion as a result of the scheme. A decrease in indirect tax revenue is expected from all vehicle types as a result of the Option B Alignment over the 60-year appraisal period. This indicates a reduction in taxable expenditure on road travel by highways users travelling by these vehicle types.

Table 6-18: Total provider impacts and changes in indirect tax revenues by submode/vehicle type over a 60-year Appraisal Period (2011 Prices and Values, nearest €100,000).

Vehicle Type	Operator Revenue National Toll (€)	Indirect Taxes (€)
Car	-6,700,000	-100,000
LGV	700,000	-900,000
OGV1	-600,000	-
OGV2	-	-
All	-6,600,000	-1,000,000

6.3.4 Summary

For completeness, the tables are presented in their standard layout in the following pages (with the column for highways benefits included).

Figure 6-17 presents the Public Transport Economic Efficiency of the Transport System (TEE) Tables over a 60-year Appraisal Period (2011 prices and values).





High Personal € 99,402	Road Freight € 30,468	Public T Bus Personal	Public Transpor € 667,863 € 0 € 1,258
High Personal € 99,402	€ 6,931 -€ 91: -€ (€ 111,581 Highway € 53,232 -€ 1,503 -€ 553 -€ 0 € 54,182 way Road Freight € 30,468	Public T Bus Personal	€ (1,071 € (1,071,891 € (6,071,891 € 667,803 € 1,258 € (0,071,071) € (669,121
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High Personal € 99,402	Highway € 53,232 € 1,503 -€ 553 € 0 € 54,182 way Road Freight € 30,468	Public T Bus Personal	Public Transport € 667,863 € 0 € 1,258 € 0 € 669,121
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Personal € 99,402	Road Freight € 30,468	Bus Personal	-
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			umbers, while costs appear as negative numbers.

Figure 6-17: Public Transport TEE Tables (2011 Prices and Values €1000's).

Figure 6-18 shows the Public Transport Public Accounts (PA) Tables over a 60-year Appraisal Period (2011 prices and values).

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Public Accounts			
Local Government Funding	ALL MODES	Highway	Public
Revenue	€0	-	
Operating Costs			
Investment Costs	€0		
Developer Contributions	€0		
Grant/Subsidy Payments	€0		-
NET IMPACT	€0		
	€0	€0	€0
Central Government Funding: Transport	ALL MODES	Highway	Public
Revenue	€0		
Operating costs	€ 119,398		€0
Investment costs	€ 3,350,636		€ 119,398
Developer Contributions		€0	€ 3,350,636
Grant/Subsidy Payments	€0	€0	€0
NET IMPACT	€ 0 € 3,470,034	€0	€0
	€ 3,470,034	€0	€ 3,470,034
Central Government Funding: Non-Transport			
Indirect Tax Revenues	€ 19,853	€ 974	€ 18,878
TOTALS			
Broad Transport Budget	€ 3,470,034	€0	€ 3,470,034
Wider Public Finances	€ 19,853	€ 974	£ 18 979

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers. Note: All entries are present values discounted to 2011, in 2011 prices

Figure 6-18: Public Transport PA Tables (2011 Prices and Values €1000's).

Figure 6-19 shows the Public Transport Analysis of Monetised Costs and Benefits (AMCB) Table over a 60-year Appraisal Period (2011 prices and values).

It should be noted that no accident valuation has been undertaken as part of this appraisal. However, the impact is expected to be small in comparison to overall scheme benefits and of similar value across schemes.

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Analysis of Monetised Costs and Benefits	
Greenhouse Gases	€ 143
Economic Efficiency: Consumer Users (Commuting)	€ 483,479
Economic Efficiency: Consumer Users (Other)	€ 723,303
Economic Efficiency: Business Users and Providers	€ 629,850
Wider Public Finances (Indirect Taxation Revenues)	-€ 19,853
Present Value of Benefits (PVB)	€ 1,816,922
Broad Transport Budget	€ 3,470,034
Present Value of Costs (PVC)	€ 3,470,034
OVERALL IMPACTS	
Net Present Value (NPV)	-€ 1,653,112
Benefit to Cost Ratio (BCR)	0.5

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Figure 6-19: Public Transport AMCB Table (2011 Prices and Values €1000's).

The BCR for the scheme is 0.5. This represents a return of €0.50 for every €1 spent for direct transport users. Without consideration of other wider benefits which may be associated with the scheme, the Option B alignment provides poor value for money.

Metro to Knocklyon Feasibility Study Report

Conclusions and Recommendations

Following a demand-led approach, this study has reviewed the demand, economic, technical and environmental feasibility of two alternative Metro alignments which are considered broadly representative of the range of potential Metro options for serving the transport corridor from Central Dublin to Knocklyon via Rathmines.

Technical and environmental issues were reviewed at a high level, sufficient to provide initial confirmation of the expected feasibility around a number of key technical and environmental factors (including tunnel portal location, track alignment, feasibility of spoil removal from the portal site, avoidance of impacts on scheduled national monuments) and to support development of a scheme cost estimates.

Other more detailed aspects, for example disruption during construction, and potential land ownership constraints around the proposed station stop locations, have not been reviewed, but are considered resolvable during design development.

The demand subsequently assessed through use of the NTA's Regional Modelling System and, the results of which were taken forward to complete an assessment of the overall Transport User Benefits and calculate a benefit cost ratio (BCR) for each option. This was undertaken in line with the relevant guidance, and, as with the MetroLink scheme proposals was undertaken using a 60-year appraisal period.

The analysis of the benefits and costs of the proposals show that both have a benefit cost ratio (BCR) of below 1.0. This provides an initial indication that a Metro option is unlikely to be a cost-effective approach to enhancing public transport in this area of Dublin.

Although both options can be seen to offer a poor value of money in appraisal terms, there are significant differences between them, with the through running option offering a cheaper construction subtotal cost due to not having to construct a turnback facility and longer tunnelling as in the SSG linked option.

Review of the demand modelling results highlights that while demand in the AM is high for inbound movements, outbound movements are below 2,000 for off-peak periods. Similarly, for the PM period, demand is also high for outbound movements from the city centre towards Knocklyon.

It should also be noted that, population and employment densities within the corridor remain for the most part relatively low and the corridor is already served by a range of existing public transport services. It was also noted that previous studies for an LRT system in the south-west of the city were undertaken but ruled out, it should also be noted that future transport options in this part of the city should be investigated.

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Appendix A. Planning and Policy Background

An overview of the relevant National, Regional and Local land-use and transport planning policy which sets the context for the Metro scheme is presented in this section of the report.

A.1 National Level

Metro is supported by wide ranging National land-use and transport planning policy and plans, including:

- Smarter Travel A Sustainable Transport Future (DoT 2009), which sets out government policy to achieve
 a modal shift from the private car to public transport. It forms the basis on which all land-use and transport
 plans throughout the country are developed;
- Building on Recovery: Infrastructure and Capital Investment 2016-2021. This Capital Plan presents the
 Government's framework for infrastructure in Ireland over the period 2016-2021 and acknowledges that
 'the single largest project will be a new metro link in Dublin' indicating that the metro is scheduled to
 commence construction in 2021 and be operational by 2026/2027:
- The Draft National Planning Framework ('Ireland 2040 Our Plan') released in September 2017 replaces
 the National Spatial Strategy for Ireland 2002-2020. This document is a long term, 20-year National Plan
 which seeks to provide a 'spatial expression of government policy' and provide 'a decision-making
 framework from which other plans will follow such as Regional Plans, City and County Development
 Plans';
- The National Development Plan (2018 2027) sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework (NPF) and has a fundamental objective to enhance Ireland's public transport and the environmental sustainability of our mobility systems;
- The 'Strategic Investment Framework for Land Transport' (DTTaS 2015);
- The 'Climate Action and Low Carbon Development Act 2015';
- The 'National Mitigation Plan' (DCCAE 2017): and
- The 'Climate Action Plan' (DCCAE 2019).

A.2 Regional Level

At a regional planning level, Metro is supported by the following land-use and transport planning policy and plans:

 GDA Regional Planning Guidelines (RPGs) 2010–2022 - The Regional Planning Guidelines (RPGs) for the GDA 2010–2022 is a policy document which "aims to direct the future growth of the Greater Dublin Area over the medium to long term and works to implement the strategic planning framework set out in the National Spatial Strategy (NSS) published in 2002".

The RPGs specifically acknowledge the importance of Metro North in serving the airport through the provision of *a high capacity, high speed connection from the airport to the city centre, feeding local, regional and national public transport hubs, improving the connectivity and operation of the airport*;

Further reference is made to Metro North and its role in "providing opportunities to develop new integrated economic development areas or regenerate existing sites and to broaden sectoral business opportunities at strategic locations, taking advantage of fast access to the Airport and the City Centre";

The Greater Dublin Area Transport Strategy (2016–2035), which is currently under review identifies Metro
as a vital component of the overall, integrated public transport network for Dublin;

The GDA Transport Strategy and the RPGs are required under legislation to be consistent with each other. It is therefore the role of the Strategy "to establish the framework for the transport provision necessary to achieve the land use vision set out in the Regional Planning Guidelines"; and

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The purpose of the GDA Transport Strategy is "to contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods".

A.3 Local Level

At a local planning level, the planning context for Metro is set out within the Dublin City Council Development Plan (2016–2022) and the South Dublin County Council Development Plan (2016–2022). The NTA's Greater Dublin Area Transport Strategy (2016–2035) also provides context for Metro and the Ballycullen-Oldcourt Local Area Plan (2014) is relevant to a portion of the proposed route.

Dublin City Council Development Plan (2016-2022)

Core Strategy

The 'Core Strategy' of the City Development Plan supports Metro North through "the policies and objectives in this plan promote intensification and consolidation of Dublin City. This will be achieved in a variety of ways, including infill and brownfield development; regeneration and renewal of the inner city; redevelopment of strategic regenerations areas; and the encouragement of development at higher densities, especially along public transport catchments".

Policy and Objectives

Metro is supported by a number of land-use and transport policies and objectives within the City Development Plan, including specifically 'Policy MT3', which seeks "to promote and facilitate the provision of Metro, all heavy elements of the DART Expansion Programme including DART Underground (rail interconnector), the electrification of existing lines, the expansion of Luas, and improvements to the bus network in order to achieve strategic transport objectives".

Land Use Zoning

The City Development Plan seeks to ensure a balanced approach to land-use zoning whilst ensuring the necessary services, including public transport facilities, are in place to support planned growth.

South Dublin County Council Development Plan (2016-2022)

Transport & Mobility Strategy

The Transport & Mobility Strategy of the County Development Plan supports Metro through promoting "integrated strategy for transport and mobility that enhances access and movement within and through the County, while promoting change, in favour of sustainable modes". It also specifies that "the settlement, employment and transport strategies are aligned with the aim of strengthening the integration between employment, population and transport services".

Policy and Objectives

Metro is supported by a number of land-use and transport policies and objectives within the City Development Plan, including specifically 'TM2 Objective 1' which seeks to "secure the implementation of major public transport projects as identified within the relevant public transport strategies and plans for the Greater Dublin Area" and

'TM2 Objective 3' which seeks to "generate additional demand for public transport services through integrated land use planning and maximising access to existing and planned public transport services throughout the network".

Greater Dublin Area Transport Strategy (2016-2035)

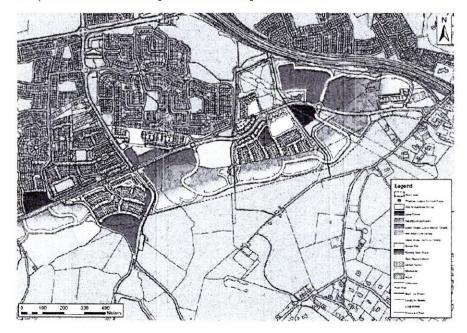
A portion of the proposed route falls under Corridor E (N81 Settlements – South Tallaght – Rathfarnham – to Dublin City Centre) of the GDA Transport Strategy.

*For the Metropolitan parts of this corridor, the performance of the Rathfamham Quality Bus Corridor is poor relative to others and requires enhancement. As such, a number of options, including Light Rail, have been examined. However, due to the land use constraints in the corridor and wing to the pressure on the existing road network, a Luas line was not deemed feasible. Instead, the emerging solution comprises a BRT to Tallaght via Rathfarnham and Terenure. This will result in a significant increase in capacity and reliability compared to existing public transport services and will balance public transport requirements with those of the private car. The BRT will be supplemented by a core radial bus corridor between Rathfarnham, Rathmines and the City Centre."

Ballycullen-Oldcourt Local Area Plan (2014)

Land Use and Density Strategy

The Strategy directs land uses and densities within three distinct areas (lower slope lands, mid slope lands and upper slope lands, where densities will vary according to the context. As such, it reflects the need to counterbalance some of the higher density residential development that has taken place on the eastern side of the Plan Lands, and the need to protect the setting of the Dublin Mountains, including the sloping topography, its visual prominence and natural heritage features such as hedgerows and streams.



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Accessibility and Movement Strategy

Access to upgraded Main Link Streets (Stocking Avenue, Hunters Road, Oldcourt Road) and the new Main Link Street will be prioritised in the form of direct pedestrian and cycle routes to help sustain and improve the relatively frequent public transport services on the eastern side of the Plan Lands, and improve the viability of such services on the western side.

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Appendix B. Identification of Study Area

B.1 Option A1 Harold's Cross

Option A1 Harold's Cross station is proposed to be located east of Rathmines at Harold's Cross Park, as shown in Figure B-1. It is a largely residential area served in the north, east and west by Harold's Cross Road (R137) and by a small access street in the south.

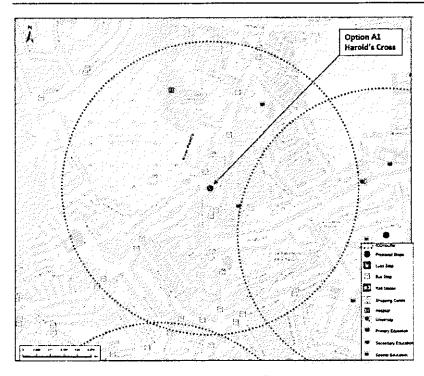


Figure B-1: Location of Option A1 Harold's Cross within 600m buffer

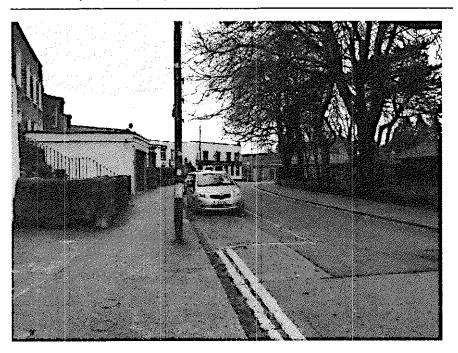


Figure B-2: Access Street south of Harold's Cross

2016 population data records a population of 11,335 people within the adjacent electoral divisions. The area is not listed within Dublin City Development Plan 2016-2022 zoning. The proposed station is mainly surrounded by a mix of semi-detached and terrace houses with some local commerce (see Figure B-3), and it is located in close proximity to Leinster Park Montessori, St. Claire's Convent National School and Mount Jerome cemetery. Our Lady's Hospice and Care Services is also close to the proposed location. The limited mix of land uses around the proposed station is set up for a lesser used local centre than Rathmines (see Figure B-5).



Figure B-3: Harold's Cross Rd (R137)



Figure B-4: Pedestrian Footpath at Harold's Cross Rd (west)

The area is served by the R137, which is a two-way single carriage way that includes a bus lane and shared cycle lane, with a number of bus stops along Kimmage Road Lower and Harold's Cross Road, allowing for options for interchange with bus services (see Figure B-6). Heavy car usage observed to the north and east of Harold's Cross Park with few pedestrians as junction layout north of park is not pedestrian friendly. The construction of approximately 150 residential units to the east of the park at site of St. Claire's Convent may bring more pedestrians to the area.



Figure B-5: Junction Layout North of Harold's Cross



Figure B-6: Bus Stop at Harold's Cross Rd (west)

From these observations the proposed station location meets a number of the MetroLink objectives. It caters for the growing travel demand in the area following completion of nearby development, as well as providing for interchange with other modes of public transport (bus). While the location does facilitate connection to some attractor nodes, these are minimal and therefore it may not be attractive and accessible to all users.

B.1.1 Option A2 Rathmines

Option A2 Rathmines is proposed to be located at the grounds of St. Louis' Convent in Rathmines, as shown in Figure B-7. The area is largely residential to the north, west and south of the station, with Rathmines centre to the east. The area is served by Charleville Road to the north and east, Grosvenor Road and Rathgar Road to the south, and Grosvenor Place to the west.



Figure B-7: Location of Option A2 Rathmines within 600m buffer zone



Figure B-8: Charleville Rd north of the station



Figure B-9: Grosvenor Road south of the station



Figure B-10: Rathgar Rd west of the station

2016 population data records a population of 14,435 people within the adjacent electoral divisions. Under the Dublin City Development Plan 2016–2022, Rathmines is zoned as a Key District Centre, with a core aim of the strategy seeking to develop sustainable urban villages, including Rathmines. As such, the proposed station is located within a mix of semi-detached houses and apartments. St. Louis' High School is within the grounds of the station, which is also in close proximity to Rathmines town centre where there are a number of cafés, restaurants, shops and other services.

The area is served by Grosvenor Road and Rathgar Road (R114) to the south, which are two-way single carriageways which merge to become Rathgar road (R114). Rathgar Road includes a shared bus and cycle lane northbound which merges into an advisory cycle lane, and a mandatory cycle lane southbound. Grosvenor Road does not have a bus or cycle lane in either direction but does have existing bus stops. There is a cycle-only exit from Charleville Road onto Rathgar Road. There is heavy car usage on all roads, with low pedestrian activity, however there are sufficient crossing facilities available.

Option A2 Rathmines suitably meets a number of the full MetroLink objectives. As it is an area of heavy car use and limited bus lanes, the provision of a MetroLink station could reduce levels of urban congestion in the area, also supporting environmental sustainability in this way. As this location is in close proximity to Rathmines town centre, it facilitates connection to attractor nodes in the area, therefore being attractive and accessible to all users. Similarly, being close in proximity to Rathmines, the provision of a station would facilitate further economic development in the area, thus contributing to its zoning as a Key District Centre.

B.1.2 Option B1 Terenure

Option B1 Terenure is proposed to be located within the grounds of CYM Sports Club on Terenure Road North, as shown in Figure B-11. The area is largely residential to the north, east and west beyond Terenure Sports Club, with

Terenure town centre to the south of the proposed location and limited services available to the north. The area is served by Terenure Road North (R137) leading to Harold's Cross Road northbound, and Rathfarnham Road (R114) southbound. St. Enda's Road to the east of the location is predominantly residential leading to Alexandra Terrace, Oaklands Terrace and Tower Avenue.

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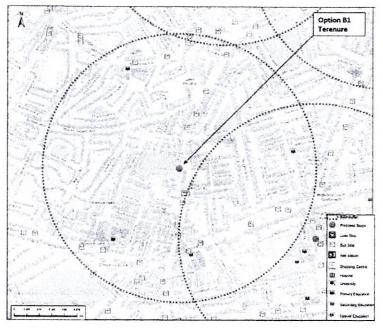


Figure B-11: Location of Option B1 Terenure within 600m buffer zone

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2016 population data records a population of 3154 people in the adjacent electoral divisions, and the area is listed as a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016-2022. The station is proposed to be located within the CYM Sports Club, which is surrounded by a number of cafés, restaurants, shops (including a Tesco, Lidl and Aldi) and other services north of the site and in Terenure town centre to the south. Manor Montessori School and Nursery and Highfield Montessori are also accessible from the proposed location.

The area is served by Terenure Road North (R137) which is a two-way single carriageway with advisory cycle lanes present in both directions. South of Eagle Hill Avenue the southbound advisory cycle lane merges to become a shared bus and cycle lane to accommodate existing bus stops along Terenure Road North. A taxi rank and shelter are also available nearby to the south of the proposed location. Behind the taxi rank there is also a car parking open to users all day. Whitton Road and St. Enda's Road to the east of the proposed location are both narrow and dominated by cars parking along both footpaths.

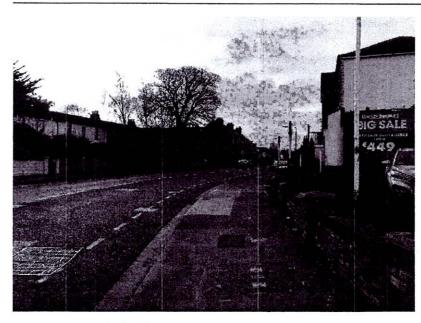


Figure B-12: Terenure Rd N (R137) east of the station

Based on these observations, Option B1 Terenure facilitates connection to few key attractors due to the limited transport public transport services in the area, however it might support economic development by encouraging people to travel to this area. The proposed location does provide integration with bus services and the nearby by car parking could be used as a 'Park and Ride' facility. As car usage is heavy in this area, the provision of a station may then reduce urban congestion by offering an alternative mode of transport.

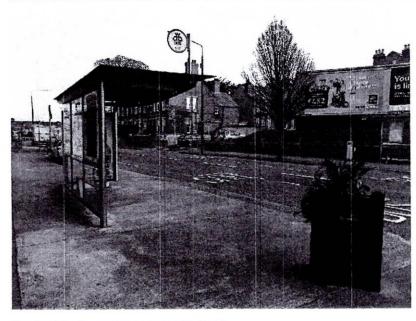


Figure B-13: Bus Stop near the proposed station (R137)



Figure B-14: Eaton Rd and existing car parking (south of the station)

B.2 Option B2 Terenure

Option B2 Terenure is proposed to be located on Orwell Road, close to Rathgar Tennis and Bowling Club, as shown in Figure B-15. The area is largely residential to the east, west and south, with some local commerce present in the north along Orwell Road. The area is served by Orwell Road, leading to Terenure Road East and Rathgar Road in the north, and leading to Zion Road to the south. Stratford Haven to the east is a private cul-de-sac, and Orwell Mews/Rathgar Park to the west are residential areas.

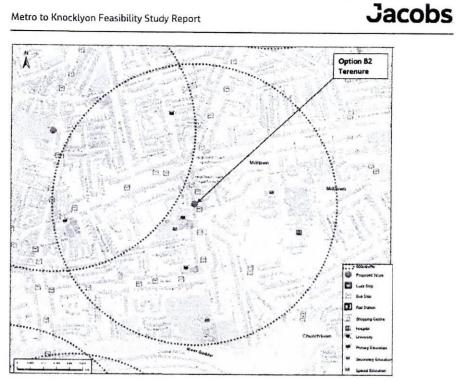


Figure B-15: Location of Option B2 Terenure within 600m buffer

2016 population data records a population of 4683 people in the adjacent electoral divisions, and the area is listed as a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016-2022. The proposed station is located adjacent to Rathgar Tennis and Bowling Club, with Stratford College, St. Peter's School and Zion Parish Primary School nearby. St. Luke's Hospital and St. Luke's Institute of Cancer Research Library are also in the area. There is a busy local centre north of the site with cafés, restaurants, shops and other services available.

The area is served by Orwell Road, which is a two-way single carriageway with no bus or cycle lanes. However, wide pedestrian footpaths are provided, and existing bus stops are present close to the proposed station. Zion Road also does not have a bus or cycle lane present. Rathgar Road to the north of the proposed location includes a mandatory cycle lane southbound, and bus lane northbound, however this is blocked by parked cars on the footpath.



Figure B-16: Orwell View - entry to the proposed location from Orwell Rd (east of the station)



Figure 8-17: Car parking at proposed site for location

Considering the full MetroLink scheme objectives, Option B2 Terenure provides some interchange with other modes of public transport and is located within a busy town centre. As such, the station may support the economic development of this area. The proposed station is hidden from the main street and can only be accessed by two small streets, therefore is not accessible for all users and does not facilitate connection to attractor nodes in the nearby area.

B.2.1 Option C1 Rathfamham

Option C1 Rathfarnham is proposed to be located at the grounds of Rathfarnham Castle close to the northern entrance on Castleview/Castleside Drive, as shown in Figure B-18. There are low density residential areas to the north and south of the site, with Castle Golf Club to the east, and Rathfarnham local centre to the west. The area is predominantly served by Rathfarnham Road (R114) to the west of the proposed site leading to Butterfield Avenue (R114) and Grange Road (R115/R821) southbound, with Castleview providing access to Rathfarnham Castle, and Castleside Drive leading into a large residential development.

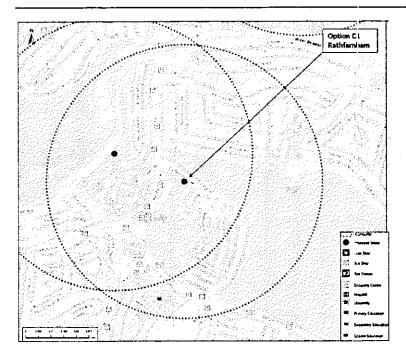


Figure B-18: Location of Option C1 Rathfarnham within 600m buffer zone

2016 population data records a population of 4575 people in the adjacent electoral divisions, and the area is listed as a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016-2022. Rathfarnham Castle and Playground provide key trip generators in the area, as well as the close proximity to Rathfarnham Main Street, which includes a number of cafés, restaurants, shops and other services (see Figure B-23).

The area is served by Rathfarnham Road (R114) to the west of the proposed station location, which is a two-way single carriageway with a shared bus and cycle lane northbound and southbound. Castleview and Castleside Drive are two-way single carriageways with no bus or cycle lanes. A number of bus stops exist along Rathfarnham Road, as well as a car parking facility west of Rathfarnham Castle. Sufficient pedestrian crossings are provided from Rathfarnham Road to both Main Street and Castleview.





Figure B-19: Rathfarnham Rd (west of the proposed station)



Figure B-20: Bus Stop along Rathfarnham Rd (west of the proposed station)

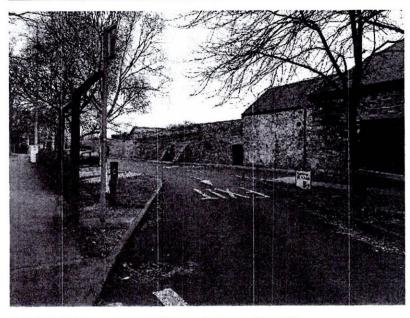


Figure B-21: Exit from car parking at Rathfarnham Castle, west of the station

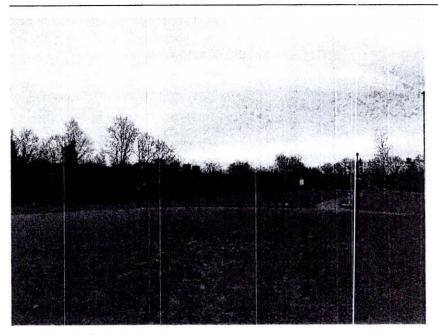


Figure B-22: Gardens of Rathfarnham Castle

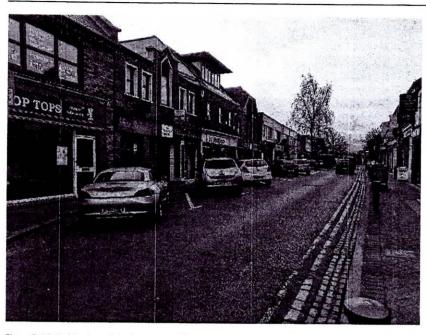


Figure B-23: Rathfarnham Main Street, west of the station

Option C1 Rathfarnham suitably meets the objectives of the full MetroLink scheme as it facilitates connection to attractor nodes such as Rathfarnham Castle and the town centre, thus supporting economic development in these areas. The proposed station location also provides for interchange with other modes of public transport and whilst there is not a specific 'Park and Ride' designation there is a car park available close to the site, therefore making the station attractive and accessible to all users.

B.2.2 Option C2 Rathfarnham

Option C2 Rathfarnham is proposed to be located in the open lands to the north-east of Woodview Cottages along the R112, as shown in Figure B-24. The station is proposed to be situated in a low-density residential area, with local commerce east of the site, and Bushy Park and the River Dodder to the west. The area is served by the R112, with pedestrian access to Woodview Cottages and Church Lane, leading to Main Street Rathfarnham.



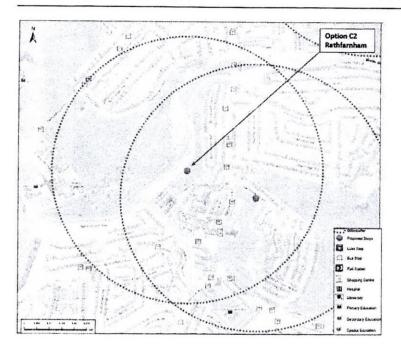


Figure B-24: Location of Option C2 Rathfarnham within 600m buffer zone

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Figure B-25: Proposed Site Location for Option C2 Rathfarnham

2016 population data records a population of 3891 people in the adjacent electoral divisions. The area is listed as an Architectural Conservation Area and a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016-2022 (see Figure B-26). Under the Dublin City Development Plan 2016-2022, this area is located within the Dodder Flood zone as shown in Figure 8, where new development is restricted in green areas without providing a detailed flood risk assessment. South Dublin County Council Development Plan 2016-2022 also proposes a Six Year Cycle Programme, within which the Dodder Greenway is proposed from Bohernabreena to Rathfarnham, linking to Dublin City Centre. There are limited attractor nodes surrounding this site, as passengers would be required to follow the steep pedestrian footpath through residential developments to access Main Street. Bushy Park is accessible from the east.

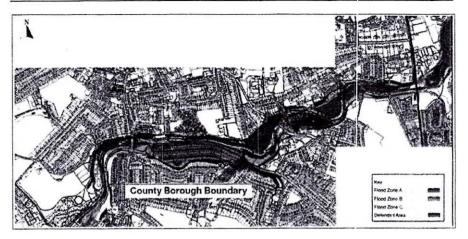


Figure B-26: Dublin City Development Plan 2016-2022 Dodder Flood Zone 12: Dundrum Road – Bushy Park Boundary

The area is served by the R112, which is a two-way single carriageway with a raised cycle path in both directions, which later becomes a shared cycle and pedestrian path. There is no bus lane present and there are no existing bus stops along this road, providing no interchange with other modes of public transport. There is one pedestrian crossing on the R112 to the south of Woodview Cottages, leading to an access point in Flushy Park.



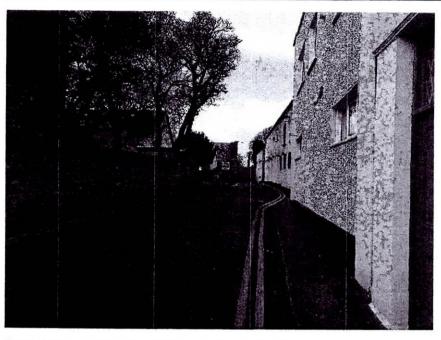


Figure B-27: Church Ln (access to the station from Rathfarnham Main St)

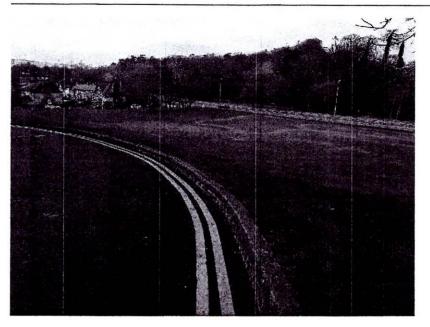


Figure B-28: Proposed location viewed from access road Church Ln

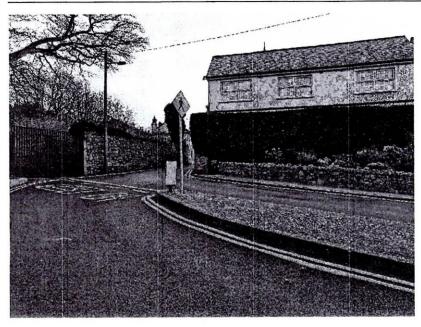


Figure B-29: Church Ln viewed from proposed location

Option C2 Rathfarnham does not suitably meet the objectives of the full MetroLink scheme as it does not facilitate connection to attractor nodes and therefore does not fully support economic development in the area. Similarly, this location does not provide for key interchanges with other modes of public transport and therefore it is not an attractive or accessible location for all users. In this way, it does not reduce urban congestion or support economic sustainability and users cannot use public transport to access the site.

B.2.3 Option D Ballyboden

Option D Ballyboden is proposed to be located at Coláiste Éanna Sports Grounds, as shown in Figure B-30. The proposed station is located in a residential area, with two schools and some local commerce surrounding the site. The area is served by Ballyboden Road (R115) along the eastern boundary of the site, Ballyroan Road (R817) to the north, and Ballyboden Way to the south. Hillside Park, Owendoher Lodge and Taylor's Crescent are also in close proximity to the site.

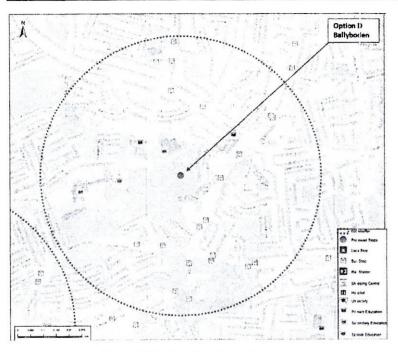


Figure B-30: Location of Option D Ballyboden within 600m buffer zone

2016 population data records a population of 8905 people in the adjacent electoral divisions, and the area is listed as a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016–2022. The area is largely residential with a mix of single, duplex and semi-detached houses present. Colaitsté Éanna School and Sports Grounds, Christian Brothers Secondary School, Kids Inc Creche and Montessori, Ballyroan Boys National School, Sapling Rathfarnham and Sancta Maria College are also in the area, with local commerce present to the east of the site along Ballyboden Road.

The area is served by Ballyboden Road (R115), which is a two-way single carriageway with pedestrian footpaths, an advisory cycle lane present in both directions, and existing bus stops. Ballyroan Road also has advisory cycle lanes and pedestrian footpaths present in both directions. There are raised cycle lanes and pedestrian footpaths present in both directions on Ballyboden Way. There is no designated bus lane, however there are existing bus stops on this road. Three pedestrian crossings are also present along Ballyboden Road.





Figure B-31: Ballyboden Rd (viewing south)



Figure B-32: Ballyboden Rd (viewing north)

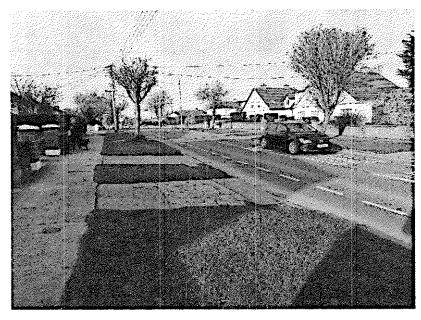


Figure B-33: Ballyroan Rd (east of the proposed site)

Option D Ballyboden suitably meets a number of the objectives of the full MetroLink scheme. Further residential development has taken place at Owendoher Grove, and on Scholarstown Road, south of Ballyboden Way, and therefore the proposed station location would cater for the growing travel demand in this area. Due to the number of schools, colleges and local commerce in the area, this location would facilitate connection to attractor nodes, and also support economic development in the area. This location also provides for interchange with other modes of public transport due to the presence of existing bus stops, with the availability of cycle lanes and pedestrian footpaths making it attractive and accessible to all users. This location therefore supports environmental sustainability by reducing the need for the private car.

B.2.4 Option E Knocklyon

Option E Knocklyon is proposed to be located at open private lands to the north of Scholarstown Road, as shown in Figure B-34. The area is largely residential in all directions, with St. Colmcille's Community School south of the site and Knocklyon Shopping and Community centres in the north. The area is served by Scholarstown Road to the west and south of the site, leading to Ballyboden Way and Templeroan Road in the east, and Knocklyon Road in the north.

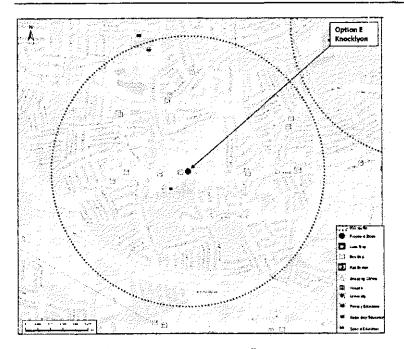


Figure B-34: Location of Option E Knocklyon within 600m buffer zone

2016 population data records a population of 16,763 people in the adjacent electoral divisions, and the area is listed as a Consolidation Area within the Gateway in the South Dublin County Council Development Plan 2016–2022, with the proposed location zoned for development under the Dublin City Development Plan 2016–2022. The proposed station location is in close proximity to Knocklyon Shopping Centre and Knocklyon Community Centre, as well as St. Colmcille's Junior and Senior National Schools at the north of the site. The east, south and west of the site are predominantly residential areas with a mix of single and semidetached houses.

The area is served by Knocklyon Road at the north of the site, which is a two-way single carriageway, with no bus or cycle lanes present, however there are pedestrian paths provided on both sides, separated by grass verges. Whilst there is no designated bus lane, there are existing bus stops along this road. Terr pleroan Road is a two-way single carriageway with no bus or cycle lanes present, however there are existing bus stops on this road. Pedestrian footpaths are also present on both sides of the road, separated by grass verges. Scholarstown Road at the south and west of the site is a two-way single lane carriageway, although this occasionally splits into dual lanes on approach to junctions. A shared raised cycle lane and pedestrian footpath is provided on both sides of the road, with existing bus stops also present.



Figure B-35: Proposed site location



Figure B-36: Scholarstown Rd (viewing west)

Option E Knocklyon suitably meets a number of the objectives of the full MetroLink scheme. As this area is zoned for development, a station at this location would cater for the growing travel demand in the area. By locating in this area, interchanges with other modes of public transport are also provided which may reduce urban congestion, thus supporting environmental sustainability. Due to the station's proximity to several schools and Knocklyon Shopping and Community Centres, this location would also facilitate connection to attractor nodes, making the station attractive and accessible to all users.

B.2.5 Option F Ballycullen

Option F Ballycullen is proposed to be located in lands zoned for development under the Ballycullen-Oldcourt Local Area Plan, as shown in Figure B-37. The proposed site is located in a predominantly residential area with Woodstown Shopping Centre at 1km to the north. The area is served by Stocking Avenue and Woodstown Avenue to the north and Ballycullen Road to the north-west and south-west. Small access roads of Woodstown Park and Woodstown Crescent also serve the area, as well as a pedestrian accessed route from Woodstown Avenue through to Woodstown Village.

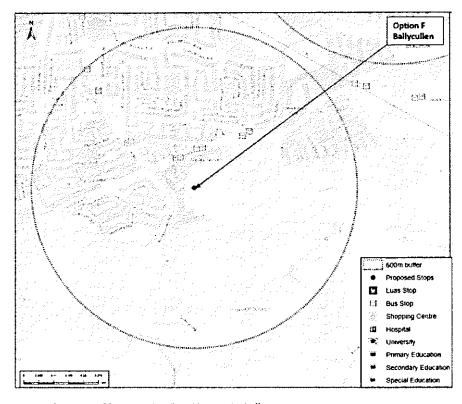


Figure B-37: Location of Option F Ballycullen within a 600m buffer zone

2016 population data records a population of 20,444 people in the adjacent electoral divisions, and the area is zoned for development under the Ballycullen-Oldcourt Local Area Plan. The proposed stop is mainly surrounded by detached and semi-detached houses. Other land uses include a Lidl, the Woodstown Shopping Centre and the Primacare Medical Centre, all within 1km from the proposed location.



Figure B+38: Proposed site location

Woodstown Avenue is a two-way single carriageway without bus or cycle lanes present. A pedestrian footpath is only provided on the northern side of the road. Stocking Avenue immediately adjacent to the north of the proposed stop is a two-way single carriageway with no bus lanes and cycle lanes that are shared with the pedestrian paths in both bounds. Ballycullen Road to the north-west of the site is a two-way single carriageway. An advisory cycle lane is present southbound, with a shared bus and cycle lane northbound. Ballycullen Road to the south-west of the site is a two-way single carriageway with a bus lane present northbound. A raised cycle lane is present southbound, with pedestrian footpaths on both sides of the road. There are 3 bus stops present on Ballycullen Road to the west of the proposed station. Daletree Drive, northwest of the proposed station, is a two-way single carriageway leading to residential developments. As such, it does not have bus lanes or cycle lanes present, with a pedestrian footpath present on one side of the road only.



Appendix C. Multi Criteria Analysis

Population Catchment

Population catchment within 1km was estimated for each of the station locations selected in Section 2.3. Estimations were made using ArcGIS modelling tools and Census Data 2016, therefore they do not include future population growth in areas set for further development such as Ballycullen. Results are shown in Table C-1.

Table C-1: Population within 1km from the stations

Station	Estimated Population within 1km catchment area	Population density (gross)
Station A2 Rathmines	14,760 inhabitants	47 inhabitants/hectare
Station B1 Terenure	11,997 inhabitants	39 inhabitants/hectare
Station C1 Rathfarnham	4,969 inhabitants	16 inhabitants/hectare
Station D Ballyboden	4,721 inhabitants	15 inhabitants/hectare
Station E Knocklyon	6,402 inhabitants	21 inhabitants/hectare
Station F Ballycullen	6,034 inhabitants	20 inhabitants/hectare
Full alignment (does not equal sum of the above)	46,316 inhabitants	-

Reduction in Urban Congestion C.1.1

As a new public transport corridor providing fast, efficient and reliable transit, it is expected that the proposed Metro to Knocklyon will reduce the number of vehicular trips during its operation and will facilitate a modal shift from private car onto public transport. Therefore, it is anticipated that the proposed Metro will drive a reduction in urban congestion and its associated economic costs.

Based on this, it is considered that the Metro to Knocklyon, with preferred station options starting at Rathmines and finishing at Ballycullen, would fully address Category 1 - Economy of this Multi Criteria Analysis (MCA).

C.2 Integration with Government Policies

- · Existing/proposed zoning and plans
- Approved planning applications
- Local, regional and national transport objectives

Appendix A includes general adherence to local, regional and national transport objectives While they comply with the GDA strategy, there is no specific mention of a Metro to Rathmines but a mention of movement of people etc. For this reason, the proposed Metro poorly integrates with these objectives, supporting their goals but not their specific plans.

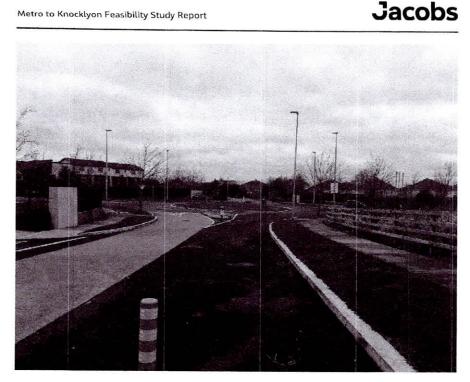


Figure B-39: Roundabout at Stocking Avenue (north of proposed site)



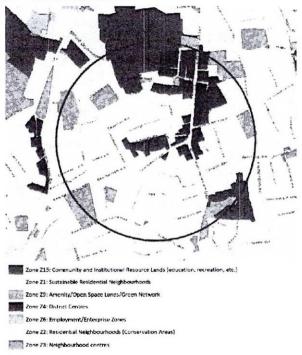


Figure C-1: Land Use Zoning at proposed site

According to Dublin City Council Development Plan 2016 – 2022, land use zoning for this station option is Z15 – Community and Institutional Resource Lands, such as education, recreation, community, green infrastructure and health.

The low-intensity residential area north of the site could be impacted by increased activity from the operation of a metro station. However, commerce and mixed uses along Rathmines Rd Lower (east of the site) could benefit from the operation of the station.

The station option in Rathmines is compatible with adjacent uses and minor impacts could be minimized. However, the construction of the station in this site would require the acquisition of lands from the Saint Louis High School.

There are no active planning applications which impact this site.

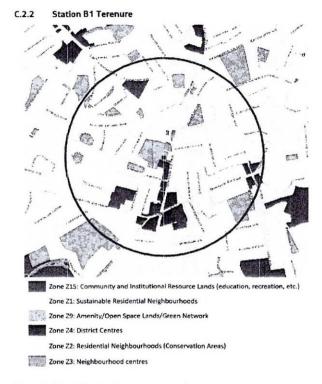


Figure C-2: Land Use Zoning at proposed site

According to Dublin City Council Development Plan 2016 – 2022, land use zoning for this station option is Z9 – Amenity / Open Space Lands / Green Network. The objective for this zoning is to provide and improve recreational amenity and open space and green networks.

Land uses adjacent to the proposed site are mid-intensity and the proposed metro station could support their further development. The construction of the station in this site would require the acquisition of lands from the Terenure Sports Club and therefore, the utilisation of an open space area, which is not in line with the specified zoning objectives.

There are no active planning applications which impact this site.



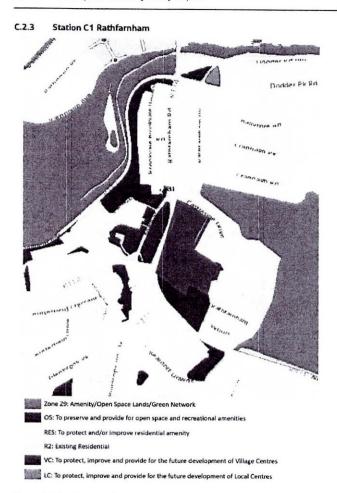


Figure C-3: Land Use Zoning at proposed site

Land Use Zoning for this station option is G1 - Open Space, with the objective to preserve and provide for open space and recreational activities under the South Dublin County Council Development Plan 2016 - 2022.

These low-intensity and predominantly residential land uses could be impacted by increased activity levels from the operation of a Metro station. In addition, the construction of the station would require acquiring lands from the Rathfarnham Castle which is classified as an open space and therefore is not in line with the defined zoning objectives.

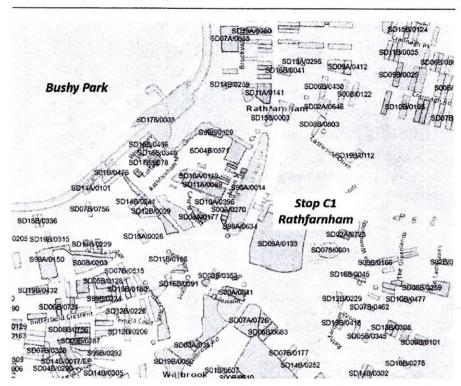
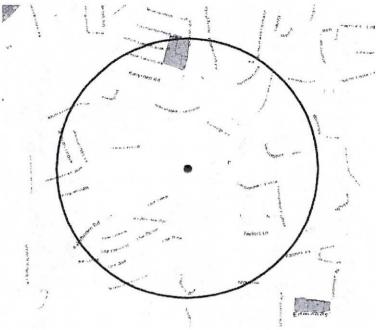


Figure C-4: South Dublin County Council planning application SD178/0003 (bright blue polygon) near proposed site

Planning applications SD178/0003 in the jurisdiction of South Dublin County Council is located adjacent to the proposed site, as seen in Figure C-4. This planning application was submitted by South Dublin County Council on 22/06/2017 as a Part VIII planning application. The application is in reference to the Dodder Greenway Scheme. This greenway aims to connect the linear parkland along the route, using the existing facilities within the Dodder Valley. The greenway route is approximately 14km in length and passes along the Dodder Valley from Orwell / Terenure through the outer suburbs of Tallaght to rural and upland Dublin to the entrance to the Bohernabreena reservoirs at Glenasmole. It will provide improved connectivity to communities, facilities and local business along the Dodder Valley corridor, using a shared pedestrian and cycle surface on the off-road sections, tying into suitable on-rod sections. The application includes a new 4m wide shared path through green area at Woodview Cottages and shared street along on Church Lane to Rathfarnham Main Street.

C.2.4 Station D Ballyboden



OS: To preserve and provide for open space and recreational amenities

RES: To protect and/or improve residential amenity

LC: Future development of Local Centres

Figure C-5: Land Use Zoning at proposed site

Land Use Zoning for this station option is Residential with the objective of protect and/or improve residential amenity under the South Dublin County Council Development Plan 2016 - 2022.

The adjacent low-intensity land uses could be impacted by increased activity levels from the operation of a metro station. Adjacent schools and existing commerce along Ballyboden Rd could benefit from the operation of a metro station. The station option in Ballyboden is somewhat compatible with adjacent uses and minor impacts could be minimized.

There are no active planning applications which impact this site.

C.2.5 Station E Knocklyon

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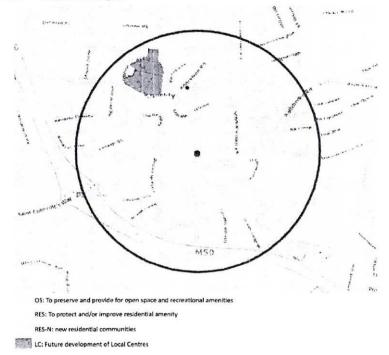
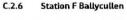


Figure C-6: Land Use Zoning at proposed site

Land Use Zoning for this station option is Residential with the objective of protect and/or improve residential amenity under the South Dublin County Council Development Plan 2016 - 2022.

The low-intensity land uses adjacent to the proposed site could be impacted by increased activity levels from the operation of a metro station. Additionally, the construction of the station in this site would require the acquisition of private lands. Therefore, the station option in Knocklyon is considered somewhat compatible with adjacent uses and minor impacts could be minimized.





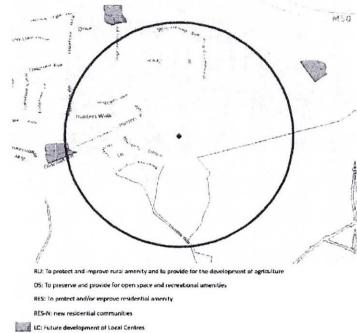


Figure C-8: Land Use Zoning at proposed site

Land Use Zoning for this stop option is R1 New or proposed residential, with the objective of providing for new residential communities in accordance with approved area plans under the South Dublin County Council Development Plan 2016 - 2022.

The quiet residential areas adjacent to the proposed site could be impacted by increased activity levels from the operation of a metro station. Therefore, the station option in Ballycullen is considered somewhat compatible with adjacent uses and minor impacts could be minimized.

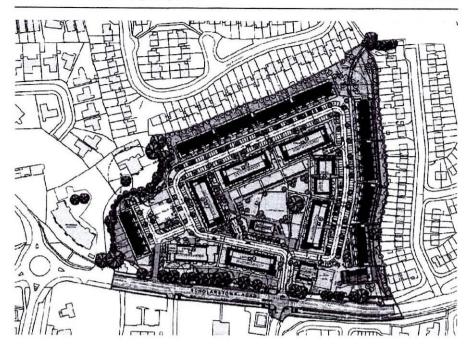
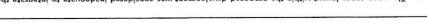


Figure C-7: South Dublin County Council planning application SHD3ABP-305878-19 at proposed site (Source: John Fleming Architects)

Planning application SHD3ABP-305878-19 in the jurisdiction of South Dublin County Council is located in the proposed site, as seen in Figure C-7. This planning application was submitted by Ardstone Homes Limited on 11/11/2019 and was granted permission on 09/03/2020. The application is in reference to the construction of 590 residential units, ancillary residential support facilities and commercial floorspace.



The open space layout within the proposed development was considered inadequate to integrate the areas at the east and west of the location, mainly due to the differences in height that would act as a barrier. This is against the objectives of the Ballycullen – Oldcourt Action Area Plan.

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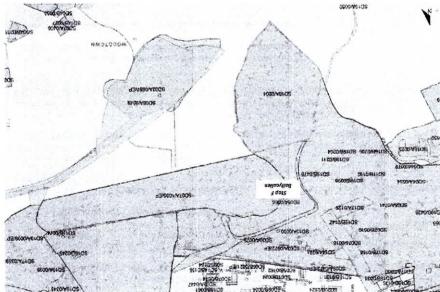


Figure C-10: South Dublin County Council planning application SD18A/O2O4 (bright blue polygon) near proposed site

Planning application SD18B/0204 in the jurisdiction of South Dublin County Council is located south-west of the proposed site, as seen in Figure C-10. This planning application was submitted by the Jones Investments Limited on the 01/06/19.

The proposed application consisted on a mixed-use scheme split into two sites (site & and site B) with a combined area of 10.14 hectares. Site & proposal consisted on a residential area comprising 65 residential units, including detacthed and semi-detached houses and apartment buildings, car and bike parking, access roads and private open apprec. Site & proposal consisted on an educational campus comprising a primary and a post primary school with a playing pitch, car and bike parking and soft landscaping.

This planning application was refused on June 2008 for various reasons mostly related to the noncompliance with the existing policies, plans and guidelines as indicated below:

Proposed Site A did not fully comply with the zoning established in the South Dublin County Council
Development Plan (2016 – 2022) and in the Ballycullen Oldcourt Plan (2014), in which the site is zoned
as both residential and potential primary school. In addition, the share of houses, apartment buildings and
open public spaces proposed for the site does not meet the requirements established in the mentioned
development plans.

Development proposed for Site B was opposite to the objectives presented in the National Planning
 Framework and South Dublin County Council Development plan which give priority to the intensification

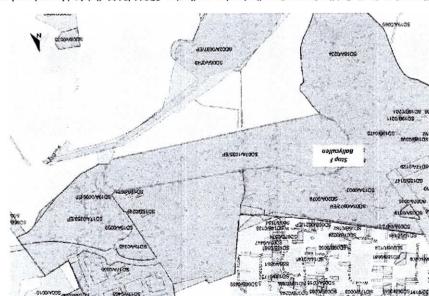


Figure C-9: South Dublin County Council planning application SD06A/0611 (bright blue polygon) near proposed site

Planning application SD06A/0611 in the jurisdiction of South Dublin County Council is located on the proposed site, as seen in Figure C-9. This planning application was submitted by the Ballycullen Limited Partnership on the 17/07/06.

The proposed application consisted on the construction of 396 residential units in a mix of 2, 4 and 4 storey buildings. The full development had a total gross floor area of 55,440 sqm. Vehicular access to the development is via 3 access roads.

This planning application was refused on September 2007 for the following reasons:

- The planning application was deemed 'obtrusive' due to the scale and height of the proposed development, which exceeded the dimensions established in the Ballycullen Oldcourt Action Area Plan
- The proposed application posed a considerable disruption to the existing contours and landforms in the
 site as it would require the level of the hillside into a platform to support the development. This was
 particularly relevant due to the proximity of the site to the Dublin Mountains.
- The proposed application was considered to be below the expected levels of residential amenity as indicated in the Residential Density Guidelines, therefore being inadequate for existing and future residents.
- The proposed development was considered to be opposite to the objective of the South Dublin County Development (2004 2010) to 'protect and preserve trees and woodland on the site', considering the high degree of proposed excavation and required cut down of existing trees.



and infill development of existing settlements within the Dublin Metropolitan Area. The site is zoned as rural lands and its development could encourage further urban sprawl. Additionally, the proposal does not comply with some of the rural economy objectives set in the South Dublin County Council Development Plan (2016 – 2022).

Jacobs

- It was considered that the development of school facilities in Site B under the existing transport conditions
 could encourage more journeys by car and discourage the use of more sustainable transport modes.
- The planning application failed to demonstrate that no detrimental impact on species protected under the Wildlife Acts (1976 and 2000), Birds Directive (1979) and Habitats Directive (1992).

C.3 Integration of Transport Networks

The following criteria was considered to assess the potential for integration of transport networks provided by the proposed Metro to Knocklyon stations.

- Station proximity to bus stop(s)
- Station proximity to other transport facilities (e.g. car parking; taxi rank; bike parking)

Proximity to public transport stops and other facilities is measured as the provision of transport facilities within 600m from the proposed station. Site locations served by bus routes that differ from the Metrolink alignment or that could function as feeder routes are considered to have higher contributions to the overall objectives of this category.

Proximity to Luas station has not been defined as criteria since the alternative alignment to Knocklyon and proposed stations are beyond 1km from both Red and Green Luas lines.

This analysis is based on the options selection analysis prepared in Section 2.2.

C.3.1 Station A2 Rathmines

This station option is located within the grounds of the St. Louis High School. There are several bus stops near the proposed station, mostly located at its east and south, along Rathmines Road Lower (R114), Rathgar Road, Grosvenor Road and Castlewood Avenue. This location facilitates interchange with bus services 83, 15, 15B, 65, 14, 18, 65B and 83A. Out of these, 15 (Main Street – Ballycullen), 14 (Maryfield Drive – Dundrum) and 18 (Palmerstown – Sandymount) serve areas not served by Metrolink.

Additionally, there are several stands for bikes provided within 600m from the proposed site, as shown in Figure C-11.

Based on the aspects above, the proposed station at Rathmines fully addresses Category 3 – Integration of Transport Networks.

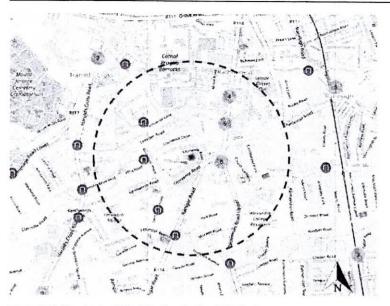


Figure C-11: Bike stands within 600m from Station A2 Rathmines

C.3.2 Station B1 Terenure

Station B1 Terenure is proposed to be located within the grounds of the CYM Sports Club. The street network around the station does not provide for on-street parking. However, the car parking within the Sports Ground. Alternatively, there is a taxi rank and a car park at the south-east of the proposed location, this last one available 24hour. In addition, there is a handful of bike racks within 600m from the proposed site, as shown in Figure C-12.

There few bus services operating at the bus stops located within 600m from the proposed station at Terenure. Most of these are located south and east of the station, along Terenure Road North, East and West. This location facilitates interchange with routes 15A, 16, 17 and 49. Out of these, 17 (Rialto – Blackrock) and 15A (Ringsend Rd – Limekiln Ave) are serving additional areas not served by Metrolink.

Based on the analysis above, the proposed station at Terenure Sports Club addresses Category 3 – Integration of Transport Networks well.

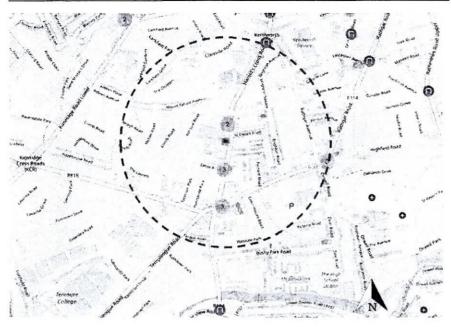


Figure C-12: Bike stands within 600m from Station B1 Terenure

C.3.3 Station C1 Rathfarnham

Station C1 Rathfarnham is located within the grounds of the Rathfarnham Castle. The street network around the location does not provide for on-street parking. There is a car parking at the west of the station currently serving visitors of the Castle. In addition, there is a handful of bike racks within 600m from the proposed site, as shown in Figure C-13.

There are several bus stops near the proposed station, mostly along the Rathfarnham Road at the east of the station and Grange Road at the south. This location facilitates interchange with routes 15B, 16, 17, 75 and 61. From these, 15B (Ringsend Rd – Dalriada Estate), 17 (Rialto – Blackrock) and 75 (The Square Tallaght – Dun Laoghaire) are serving areas not projected to be served by Metrolink.

Based on the analysis above, the proposed station at Rathfarnham addresses Category 3 – Integration of Transport Networks well.

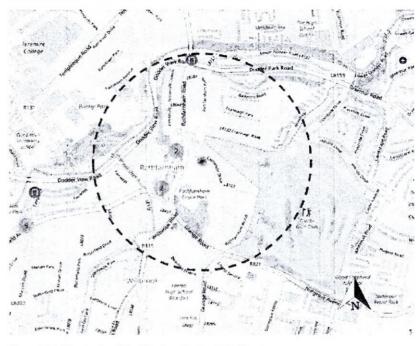


Figure C-13: Bike stands within 600m from Station C1 Rathfarnham

C.3.4 Station D Ballyboden

Station D Ballyboden is proposed to be located at Coláiste Éanna Sports Grounds. The street network comprises small residential streets in the northwest and the Ballyboden Way as the main road in the south, without provision of on-street parking. There are no bike racks provided within 500m from the proposed site, as shown in Figure C-14.

There are few bus services operating within the 600m buffer from the station, and most of the bus stops are located along the Ballyboden Way and Ballyboden Road at the south of the proposed location. The station only facilitates integration with routes 15B, 15D, 61, 161 and 175. From these, 15B (Ringsend Rd – Dalriada Estate), 15D (Ringsend Road – Church of Our Lady of Good Council), 175 (UCD – City West) and 161 (Rockbrook – Dundrum) are serving areas not projected to be served by Metrolink.

In 2012 South Dublin County Council, under a Part VIII planning application (SD128/0003), proposed the Tallaght to Ballyboden Cycle Route Scheme which included the construction of new off-road cycle tracks on Templeroan Road.

In 2016 South Dublin County Council, under a Part VIII planning application (SD168/0001), constructed a walking and cycling scheme which included upgrading and realignment of the existing footpath to a new walking and cycling route from Anne Devlin Park to Ballyroan Road, upgrading and realignment of the existing footpath to a new walking and cycling route from Ballyroan Road to Ballyroan Crescent including upgrading of existing access onto Ballyroan Road and upgrading and realignment of the existing access onto Ballyroan Crescent, and other works in the area.



Based on the aspects above, the proposed station at Ballyboden partially addresses Category 3 – Integration of Transport Networks.

Jacobs

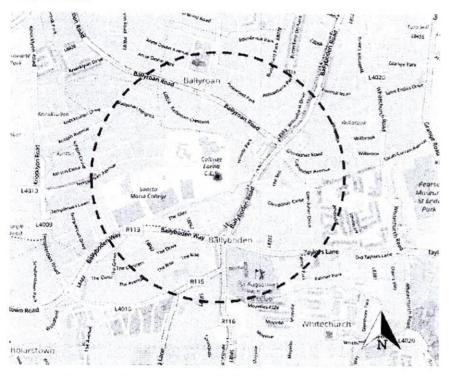


Figure C-14: Bike stands within 600m from Station D Ballyboden

C.3.5 Station E Knocklyon

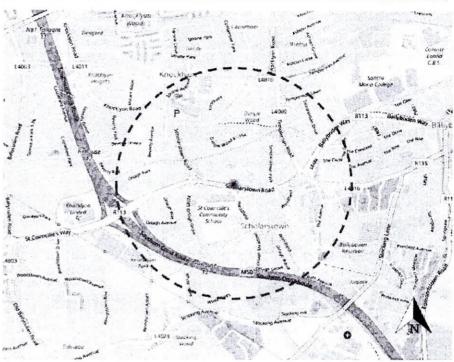
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Station D Knocklyon is proposed to be located at the undeveloped land between Knocklyon Rd and Scholarstown Rd, which compose the main roads near the station. None of these roads provides for on-street parking. There are no bike racks provided within 600m from the proposed site, as shown in Figure C-15

There are several stops along Scholarstown Rd within 600m from the station mostly served by bus routes 15 (Main Street – Ballycullen), 15B (Ringsend Rd – Dalriada Estate) and 175 (UCD – City West). All three routes offer access to areas not projected to be served by Metrolink.

In 2012 South Dublin County Council, under a Part VIII planning application (SD128/0003), proposed the Tallaght to Ballyboden Cycle Route Scheme which included the upgrade of an existing off-road cycle track on Scholarstown Road.

Based on the aspects above, the proposed station at Knocklyon addresses Category 3 – Integration of Transport Networks poorly.



Knocklyon reasibility Study Report

Figure C-15: Bike stands within 600m from Station E Knocklyon

C.3.6 Station F Ballycullen

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Option F Ballycullen Station is proposed to be located in lands zoned for development under the Ballycullen-Oldcourt Local Area Plan. The main street network near the location is formed by Stocking Avenue at the north and Ballycullen Road at the west, which do not provide on-street parking. There are no bike racks provided within 600m from the proposed site, as shown in Figure C-16.

Most of the stops within 600m from the station are located along Stocking Avenue and Ballycullen Rd and are only served by buses 15 (Main Street – Ballycullen) and 15B (Ringsend Rd – Dalriada Estate).

Based on the analysis above, the proposed station at Ballycullen addresses Category 3 – Integration of Transport Networks poorly.

This analysis is based on the options selection analysis prepared in Section 2.2.

C.4.1 Station A2 Rathmines

Jacobs

This proposed station is located within a quiet residential area. Charleville Rd at the north of the station does not lead back to a local centre but leads to many residential streets. The area is also in close proximity to the Rathmines town centre which comprises a number of cafes, restaurants, shops and other services. Key attractors within 600m from the station include Rathmines Library, Technological University Dublin, St. Louis Senior Primary School, Swan Shopping Centre and Lidl and Aldi supermarkets. Intensity of activities around the proposed station and Rathmines town centre is considered high.

This station option is located within the grounds of the St. Louis High School. The area is served by Grosvenor Road and Rathgar Road (R114) to the south, which are two-way single carriageways which merge to become Rathgar road (R114). The proposed station can be directly access from Charleville Rd at the north and Wynnefield Rd at the east Figure C-17. Direct access from Grosvenor Rd (main road) is limited by residential buildings but possible through Charleville Rd link to Grosvenor Rd which restricts vehicle access and gives priority to pedestrians and cyclists.

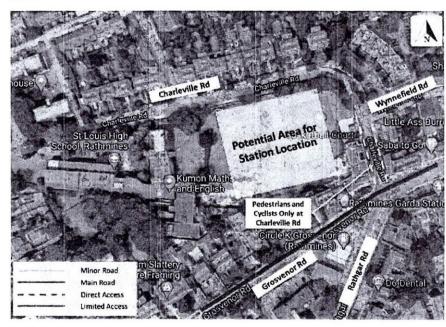


Figure C-17: Access to station from nearby roads - Stop A2 Rathmines

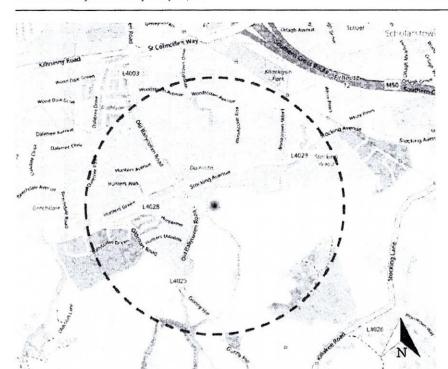


Figure C-16: Bike stands within 600m from Stop F Ballycullen

C.4 Accessibility and Social Inclusion

The following criteria was considered to assess the potential for social inclusion provided by the proposed stations.

- Station proximity to an urban centre
- Station proximity to key attractor(s) (hospital, school, university, shopping centre or park)

Proximity is considered to be adequate within 600m from the proposed stations.

In addition, the following criteria was considered to evaluate the potential for accessibility provided by the proposed stations.

- Station proximity to a direct access from main road
- Conditions of pedestrian and cycling infrastructure

Direct access and conditions of pedestrian and cycling infrastructure were evaluated within the immediate surroundings of the proposed stations.

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The proposed station is served by Terenure Road North (R137) which is a main north-south road connecting with Harold's Cross and Rathfarnham. Direct access for pedestrians, cyclists and motorised vehicles is possible to this road from the proposed station, as shown in Figure C-19.

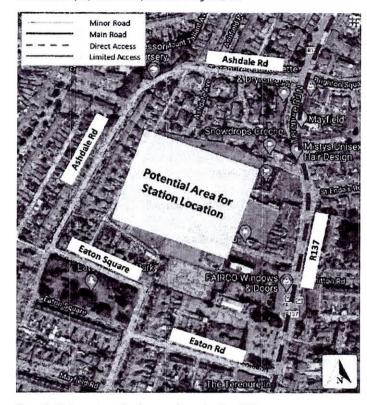


Figure C-19: Access to station from nearby roads - Stop B1 Terenure

The Terenure Road North section near the station is provided with wide pedestrian paths. However, there are few pedestrian crossings and not all the existing ones are provided with tactile pavement and dropped kerbs. Advisory cycle lanes are provided in both bounds of the road. One section of the advisory cycle lane in the southbound is interrupted to give space to on street-parking.

Based on the analysis above, the proposed station at Terenure addresses Category 4 – Accessibility and Social Inclusion well.

C.4.3 Station C1 Rathfarnham

This station is proposed to be located in the lands of the Rathfarnham Castle, within a low-density residential area. Around 200m from the station there a small local centre along the Main St, which comprises a number of shops, grocery store, restaurants and services. Intensity of activities around the proposed station and the Main St. is considered medium. There are no urban centres near to the proposed site.

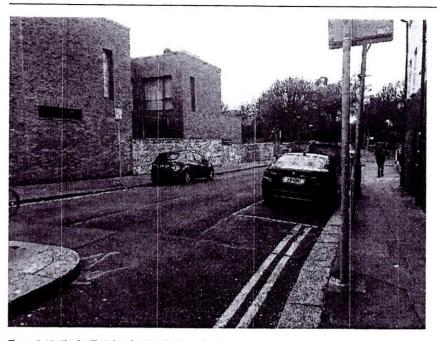


Figure C-18: Charleville Rd pedestrian / cycle only access

Advisory cycle lanes are provided along Rathgar Rd in both bounds with high demand of cyclists. No cycle lanes are provided along Grosvenor Rd. Pedestrian footpath and crossings are adequate in these two main roads.

Pedestrian footpaths along Charleville Rd are wide and well-lit with few pedestrian crossings towards St. Louis High School. Existing pedestrian crossings are not marked and do not have tactile pavement and dropped kerbs. Charleville Rd is a not busy residential road and provided speed bumps might suffice for safe crossing of pedestrians. There are no cycle lanes provided along this road.

Pedestrian footpaths along Wynnefield Rd are narrow and existing crossings at the junctions with R114 and Charleville Rd are not marked and not provided with tactile pavement and dropped kerbs.

Based on the analysis above, the proposed station at Rathmines addresses Category 4 – Accessibility and Social Inclusion well.

C.4.2 Station B1 Terenure

This station is proposed to be located in the grounds of the CYM Sports Club on Terenure Road North within a predominantly residential area. Terenure Village is a local centre located 600m from the proposed station and comprises a handful of cafes, restaurants and shops, including Lidl and Aldi. Other key attractors outside the local centre are Terenure Sports Club itself and Tesco Metro store, Eaton Square Park, community college and primary school, Rathgar Tennis and Bowling Club. Intensity of activities around the proposed station and Terenure town centre is considered medium.

Direct access to the proposed station is possible through Castleview, a residential street located at the north of the castle (see Figure C-20). The station could also be accessed from the Rathfarnham Rd at the west, passing the visitor's car parking serving the castle. However, this would require building a new path between the station and the road. Direct access limitations from Rathfarnham Rd are due to the wall separating the castle's gardens from the road.

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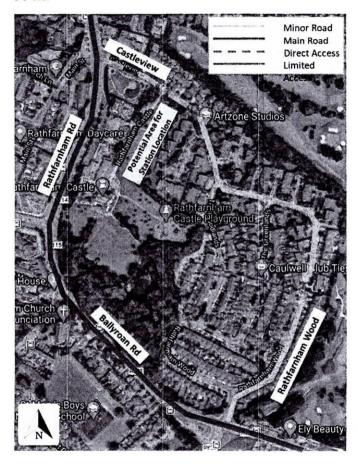


Figure C-20: Access to station from nearby roads - Stop C1 Rathfarnham

Castleview is a residential street with narrow and well-lit pedestrian footpaths. No cycling lanes are provided along this street. Pedestrian crossing at the junction with Rathfarnham Road is well marked and provided with tactile pavement and dropped kerbs.

Pedestrian footpaths along Rathfarnham Road are wide but often interrupted by greenery and road signs. There are a number of crossings along this road and are adequately marked and provided with tactile pavements and dropped kerbs. No cycle lanes are provided along Rathfarnham Rd.

Based on the analysis above, the proposed station at Rathfarnham addresses Category 4 – Accessibility and Social Inclusion poorly.

C.4.4 Stop D Ballyboden

This station is proposed to be located Coláiste Éanna Sports Grounds, which is a predominantly residential area with a number of schools also surrounding the site. Main key attractors within 600m from the station are education facilities, including Christian Brothers Secondary School, Scoil Naomh Padraig, Ballyroan Boys National School, Sancta Maria College, among others. There are few other key attractors within this area including Ballyboden Medical Practice and some grocery stores and restaurants.

Main access to the proposed station from Ballyboden Way in the south, Ballyboden Rd in the east and Ballyroan Cres in the north is currently not allowed for general traffic (see Figure C-21). In addition, the proposed location is separated from Ballyboden Way and Ballyboden Rd by a low-density private estate that would limit direct access to the main road.

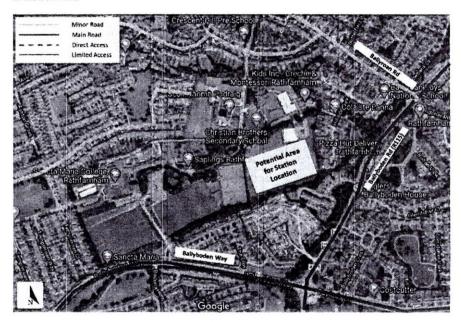


Figure C-21: Access to station from nearby roads - Stop D Ballyboden

Ballyboden Way, south west of the station, has a combination of shared pedestrian and cycle paths and advisory cycle lanes in the carriageway.

Ballyboden Rd (R115) has advisory cycle lanes in both side of the carriageway. Pedestrian footpaths have adequate widths, are well lit, and at some sections, are separated from carriageway by grass verge. There is a pedestrian crossing and a bus stop 50m from Owendoher Lodge. This pedestrian crossing is signalised, adequately marked and with tactile pavement. Pedestrian path along Ballyroan Rd are wide and separated from traffic by a wide grass verge. Cycle lanes shared with bus lanes are provided in both sides of the carriageway.



Based on the analysis above, the proposed station at Ballyboden partially addresses Category 4 – Accessibility and Social Inclusion.

Jacobs

C.4.5 Station E Knocklyon

This station is proposed to be located at open private lands to the north of Scholarstown Rd within a predominantly residential area. A local centre with schools and supermarkets is located within 600m north from the proposed station, including a SuperValu, the Knocklyon Shopping Centre, Knocklyon Community Centre, St. Colmcille's Senior and Junior National schools. Further facilities within this catchment area include a Spar shop and St. Collmcille's Community School. Intensity of activities around the proposed station is considered low.

The station is directly served by Scholarstown Rd (R113), which is an east-west regional road connecting Knocklyon, Ballyboden and Ballinteer. Direct access for pedestrians and cyclists is possible from this road to the proposed station, as show in Figure C-22.

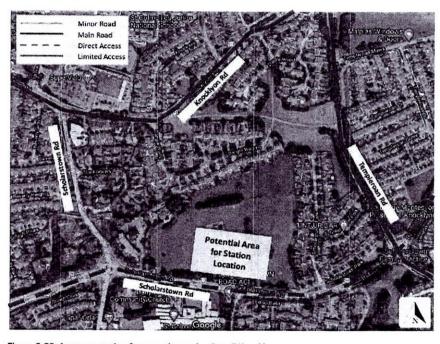


Figure C-22: Access to station from nearby roads - Stop E Knocklyon

Scholarstown Rd to the south provides shared pedestrian and cycle lanes in both sides of the carriageway. Pedestrian crossings are well marked and provide for tactile pavement (Figure C-23).

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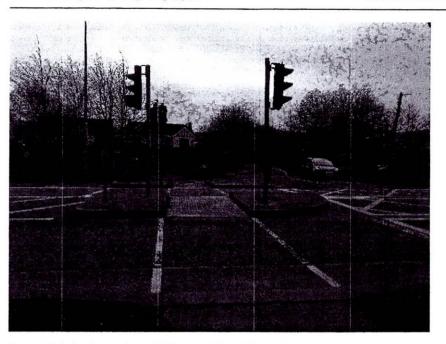


Figure C-23: Pedestrian crossing at Scholarstown Rd (south of station)

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Differently, at the west of the proposed location, Scholarstown Rd provides wide shared pedestrian and cycle paths only along the western side of the carriageway. During the site visit it was observed that cyclists do not use the shared cycle lane possibly due to an inadequate design of the access at the crossing point from the Scholarstown roundabout. No footpath is provided along the east side of the carriageway (Figure C-24).

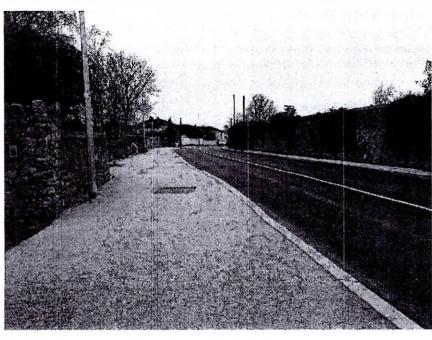


Figure C-24: Pedestrian footpath at Scholarstown Rd (west of station)

Based on the analysis above, the proposed station at Knocklyon partially addresses Category 4 – Accessibility and Social Inclusion.

C.4.6 Station F Ballycullen

This station is proposed to be located in lands zoned for development within a predominantly low-density residential area. Near 750m north from the location there is the Woodstown Shopping Centre which comprises most of the local services for Ballycullen, including a medical centre (see Figure C-25). At 500m from the station (around 10m walking) there is a lack of key attractors. The main facility within this catchment area is the Chuckleberries Creche & Montessori School. Intensity of activities around the proposed station is considered very low.



Figure C-25: Woodstown Shopping Centre

Direct access to the selected lands is currently possible through Stocking Avenue (see Figure C-26). As the proposed lands are set for future development, further direct pedestrian connections between the station and Stocking Ave could be provided.

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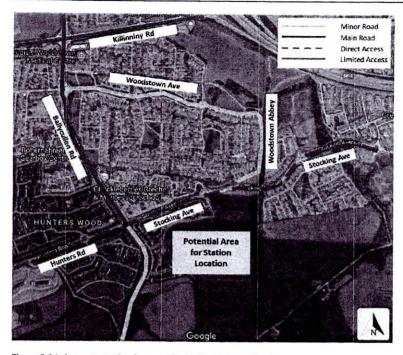


Figure C-26: Access to station from nearby roads - Stop F Ballycullen

Stocking Avenue provides for shared pedestrian and cycle paths of adequate width in both side of the carriageway. These paths are often separated from traffic by a grass verge. Crossings provide for tactile pavement and dropped kerbs.

Pedestrian footpaths along Ballycullen Rd have adequate widths, are well lit and separated from traffic by a grass verge.

Ballycullen Rd between Stocking Ave and Woodstown Ave provides for an advisory cycle lane shared with the Bus Lane for the southbound only. In some sections the cycle path and pedestrian footpath are shared.

Between Woodstown Ave and Killinniny Rd cycle lane is provided in both side of the carriageway and shared with the bus lane.

Based on the analysis above, the proposed station at Ballycullen partially addresses Category 4 – Accessibility and Social Inclusion.

C.5 Environment

The following criteria were considered to assess the environmental impacts of the proposed stations.

- Water / flood risk
- Air quality / Noise Sensitive Receptors

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Cultural Heritage

Negative impacts to air quality and noise were considered when evaluating the proposed sites. Impacts to groundwater were also considered, along with flood risks. The Record of Monuments and Places (RMP) and the National Inventory of Architectural Heritage (NIAH) were considered when assessing cultural heritage impacts.

This analysis is based on the options selection analysis prepared in Section 2.2.

C.5.1 Station A2 Rathmines

There are no surface waterbodies at the proposed site. The River Poddle is approximately 882m from the proposed site. The Ground Waterbody WFD Status 2013–2018 IE_EA_G_008 for the groundwater at the Proposed Site is Good. Ground waterbody IE_EA_G_008 is not at risk, There are no flood risk concerns at the proposed site.

The Proposed Site is in Air Quality Zone A - Dublin Conurbation. The air quality index is 2- Good.

The Sensitive Receptors are:

- Residential areas.
- · St Louis High School, and
- · Rathmines & Rathgar Junior School & Kindergarten.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents on Charleville Road, Grosvenor Road and Grosvenor Place as a result of the proposed works.

There are no RMP's or NIAH's at the proposed station location. There are a number of NIAH's approximately 500m from the site (Cathal Brugha Barracks - Reg. No. 50081028, Reg. No. 50081029 and Reg. No. 50081034).

Based on the above analysis, Station A2 Rathmines fully addresses Category 5 - Environment.

C.5.2 Station B1 Terenure

There are no surface waterbodies at the proposed site. The River Poddle is approximately 850m north of the proposed site. The Ground Waterbody WFD Status 2013-2018 IE_EA_G_008 for the groundwater at the Proposed Site is Good. There is no expected issue with flooding at the proposed site.

The Proposed Site is in Air Quality Zone A - Dublin Conurbation, The air quality index is 2- Good.

The Sensitive Receptors are:

- · Residential areas,
- Dublin School of Music,
- Manor Montessori School & Nursery.
- · Presentation Primary School & Secondary School,
- St. Joseph's BNS.
- · Every Bebe Montessori School,
- · Harold's Cross National School,
- Terenure Health Centre,
- Rathgar Methodist Church,
- Saint Joseph's Church,
- Terenure Sports Club, and
- CYM Rugby Football Club.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents on Ashdale Road, Eaton Square, St. Enda's Road, Whitton Road and Eagle Hill as a result of the proposed works. There are also a number of retail shops in the area.

The closest RMP is 200m from the proposed location. DU0022-080 consists of a Windmill. The National Monument Service - Zone of Notification identifies the extend of the monuments for the purposes of notification under Section 12 of the National Monuments Act (1930-2004), see Figure C-27. There are no NIAH's at the proposed station location.

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Based on the above analysis, Station B1 Terenure addresses Category 5 - Environment well.

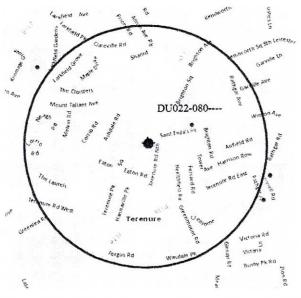


Figure C-27: National Monument Service - Zone of Notification at the Proposed Site. (www.webgis.archaeology.ie)

C.5.3 Station C1 Rathfarnham

There are three rivers in close proximity to the proposed site. The River Dodder is approximately 500m northwest of the proposed site. The Owendoher is approximately 170m west of the proposed site. The Dodder is approximately 400m east of the proposed site. The Ground Waterbody WFD Status 2013-2018 IE_EA_G_008 for the groundwater at the Proposed Site is Good. There is a low to medium probability of flooding from the River Dodder and Little Dodder at the proposed site. In a very extreme flood event.

The Proposed Site is in Air Quality Zone A - Dublin Conurbation. The air quality index is 2- Good.

The Sensitive Receptors are:

- Residential areas.
- Rathfarnham Dental Practice,
- Rathfarnham Daycare,
- Marley Montessori School,
- St. Mary's Boys National School,
- Rathfarnham Church of the Annunciation,
- Rathfarnham Parish Church of Ireland,
- Rathfarnham Castle Playground, and
- Rathfarnham Health Centre.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents Castleview Road, Castleview Drive, The Parklands and The Woodlands as a result of the proposed works.

There are NIAH's listed at the proposed station location; Rathfarnham Castle and the three outbuildings / stables. Rathfarnham Castle was built in the 16th century and is classified as a castle / fortified house. Rathfarnham Castle is also registered under the sites and monuments records as a National Protected Structure. The outbuildings and stables have over the last year couple of years undergone significant stabilization and conservation works. Works to the Castle by the Office of Public Works in 2015 unearthed a treasure trove of artefacts from the early 1600's including lead-crystal goblets, Chinese tea-sets, rare coins and armour. These works improved public access and facilities at the Castle as well as creating an elegant entrance courtyard off Rathfarnham Road. A Conservation Plan for the Council-owned lands in consultation with Office of Public Works, Statutory bodies as well as local groups and traders was produced by Shaffreys Conservation Architects and aims to address issues of archaeology, conservation and environmental impact for this site.

The National Monument Service - Zone of Notification identifies the extend of the monuments for the purposes of notification under Section 12 of the National Monuments Act (1930-2004), see Figure C-28.

Based on the above analysis, Station C1 Rathfarnham partially addresses Category 5 - Environment.

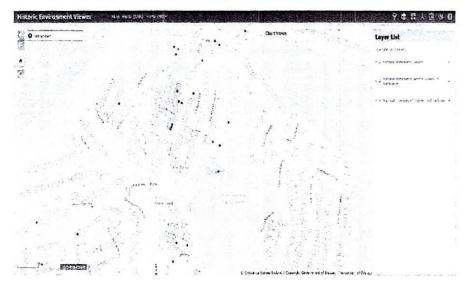


Figure C-28: National Monument Service – Zone of Notification at the Proposed Site. (www.webgis.archaeology.ie)

C.5.4 Station D Ballyboden

There is one river in close proximity to the proposed site. The Owendoher is approximately 160m from the proposed site. The Owendoher river body is classified as at Risk. The Ground Waterbody WFD Status 2013-2018 IE_EA_G_008 for the groundwater at the Proposed Site is Good. There is a low probability of flooding at the proposed site from the River Owendoher in a very extreme flood event. The proposed station location would not expect to be impacted from a flooding event.



Metro to Knocklyon Feasibility Study Report

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The Proposed Site is in Air Quality Zone A - Dublin Conurbation. The air quality index is 2- Good.

The Sensitive Receptors are:

- Residential areas.
- Sancta Maria College,
- CBS Secondary School Rathfarnham,
- Scoil Naomh Padraig.
- · Kids Inc Creche and Rathfarnham,
- Coláiste Éanna,
- Ballyroan Boys National School,
- Crescent Hill Pre School.
- Ballyboden Medical Practice,
- Rathfarnham Medical, and
- Ballyroan Parish Church.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents on Hillside Park and Owendoher Grove (currently being constructed) as a result of the proposed works. There are also some sports facilities in the area such as Éanna Basketball Club.

There are no RMP's in the vicinity of the proposed station location. There are a number of NIAH's in close proximity to the site (Ballyroan Gate Lodge - Reg. No. 11216053; St Mary's Convent - Reg. No. 11216034 and - Milepost-Reg. No. 11216002. See Figure C-29).

Based on the above analysis, Station D Ballyboden addresses Category 5 - Environment well.

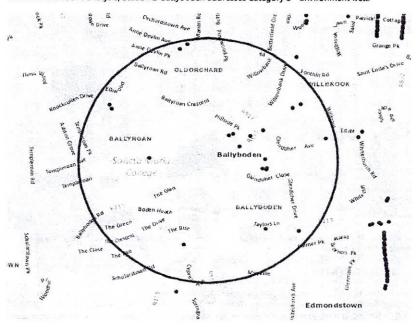


Figure C-29: National Monument Service – Zone of Notification at the Proposed Site. (www.webgls.archaeology.ie)

01

Metro to Knocklyon Feasibility Study Report

Jacobs

C.5.5 Station E Knocklyon

There are no surface waterbodies at the proposed site. The Ground Waterbody WFD Status 2013-2018 IE_EA_G_008 for the groundwater at the Proposed Site is Good. There is no potential flooding impact expected at the proposed site.

The Proposed Site is in Air Quality Zone A - Dublin Conurbation. The air quality index is 2- Good.

The Sensitive Receptors are:

- · Residential areas,
- · St. Colmcille's Community School,
- St. Colmcille's Senior National School,
- · St. Colmcille's Junior National School,
- St. Colmcille's Church.
- · Scholarstown Family Practice, and
- Ballycullen Community Church.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents on Scholarstown Road, Dargle Wood and Woodfield Road as a result of the proposed works. There are also some sports facilities in the area such as the Olympian Gymnastics Club.

There are no RMP's in the vicinity of the proposed station location. There are a number of NIAH's in close proximity to the site (Ros Mor Country House- Reg. No. 11216055; Willow House - Reg. No. 11216037 and Scholarstown House - Reg. No. 11216036. See Figure C-30).

Based on the above analysis, Station E Knocklyon addresses Category 5 - Environment well.

Jacobs

Based on the above analysis, Station F Ballycullen addresses Category 5 - Environment well.

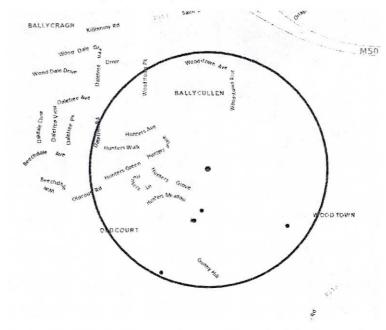


Figure C-31: National Monument Service - Zone of Notification at the Proposed Site. (www.webgis.archaeology.ie)

C.6 Safety

As a new public transport corridor providing fast, efficient and reliable transit, it is expected that the proposed Metro to Knocklyon will reduce the number of vehicular trips during its operation and will facilitate a modal shift from private car onto public transport. Decrease in the number of private cars is anticipated to drive a reduction in the number of accidents on road, therefore increasing safety for all users.

Based on this, it is considered that the Metro to Knocklyon, with preferred stop options starting at Rathmines and finishing at Ballycullen, would fully address Category 6 - Safety of this Multi Criteria Analysis (MCA).

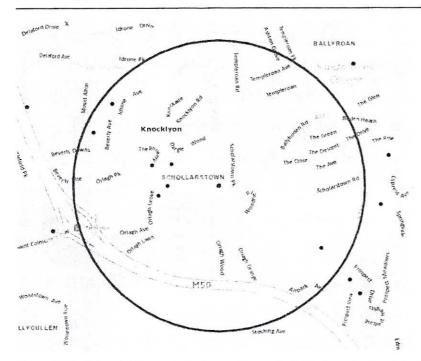


Figure C-30: National Monument Service - Zone of Notification at the Proposed Site. (www.webgis.archaeology.ie)

C.5.6 Station F Ballycullen

There is one waterbody in close proximity the proposed site. The Dodder is approximately 50m from the proposed site. The Dodder is classified as at Risk. The Ground Waterbody WFD Status 2013-2018 IE_EA_G_003 for the groundwater at the Proposed Site is Good. The Kilcullen groundwater body is not at Risk. There is no expected issue with flooding at the proposed site.

The Proposed Site is in Air Quality Zone A - Dublin Conurbation. The air quality index is 2- Good.

The Sensitive Receptors are:

- Residential areas.
- Chuckleberries Creche and Montessori School.

There are a number of residential houses in very close proximity to the Proposed Site. There is potential for negative impacts to residents on Stocking Avenue, Abbotts Grove Avenue and Stocking Wood Copse as a result of the proposed works.

There are no RMP's at the proposed station location. There are a number of NIAH's in close proximity to the site (Monument- Reg. No. 11220007; St Colmcille's Well - Reg. No. 11220020, Orlagh Retreat Centre - Reg. No. 11220008 and Woodtown Manor - Reg. No. 11221023). RMP DU022-028 (Ritual site - holy well) is 300m from the Proposed Site. See Figure C-31.

Metro to Knocklyon Feasibility Study

Description of Task

The NTA requires consultant support to undertake a feasibility study for a possible Metro line along the city centre to Knocklyon corridor. This study should include an an assessment of an indicative route, including indicative stations, and investigate its feasibility from a technical, environmental, transport planning and economic point of view. This study should culminate in the production of a Feasibility Study Report for the possible Metro scheme.

Proposed Approach.

The purpose of this feasibility study is not to identify the preferred route for a possible Metro line on the corridor nor is it to suggest the preferred design on any section of the alignment considered.

Instead, it is to investigate the technical, environmental, demand, and economic feasibility of a Metro along this corridor. Should the proposed Metro be considered feasible and worthy of advancement, a further route option selection and design process would be required to advance specific proposals.

A feasibility study is the first step in a process of assessing as to whether a Metro type system should be pursued further. This step precedes the identification of an emerging preferred route from a set of feasible route options, as part of a route slection process.

As part of this feasibility study we will identify a workable option within the study corridor based on the proposal put forward during the public consultation on both MetroLink and BusConnects, which would serve Harold's Cross/Rathmines, Terenure, Rathfamham, and Knocklyon.

Our approach will be based on the following;

Definition/Identification of the study area/corridor;

- The definition of needs and objectives for serving demand for travel on the corridor;
- The determination of a workable option (including indicative stations) for assessment;
- Identification of the proposed option strengths, weaknesses, opportunities and constraints (SWOC analysis) including how it sits with both transport and planning policy. To include a review of relevant national and regional policies (including the NTA's Transport Strategy 2016-2035, National Planning Framework, National Development Plan etc.);
- A qualitative Multi Criteria Analysis will be carried out under number of criteria that are based on DTTaS's Common Appraisal Framework against the defined objectives;
- A high level technical feasibility including an assessment of the high level impacts, the difficult issues to be resolved, including engineering, property, construction, traffic and environmental issues;
- Demand modelling assessment for the South West City quadrant to determine extent of demand to be catered for over the lifetime of the GDA Strategy up to 2040. This will involve using the ERM to test unconstrained PT options to serve the area. Model runs will be undertaken for the following years:
 - Year of opening assumed to be 2035
 - Forecast year 2065 (+30 years)
- An estimation of costs (Capital and O&M) and benefits (through Transport Demand modelling using the ERM for the prosed scheme), culminating in a Cost Benefit Analysis of the proposed scheme carried out in compliance with both the current Public spending Code and Common Appraisal Framework; and
- Culminating in a Feasibility Study report for a possible Metro line on this corridor.

Deliverables

Feasibility Study Report for the possible Metro line on this corridor including the following appendices;

- Transport Modelling Report;
- · Cost estimate as per the Cost Management Guidelines; and



Affirmation of outcome of 15th Nov 2020 StarLeaf Meeting.

16 messages

Thu, Nov 19, 2020 at 5:34 PM

Cc: GRIFFIN Kathleen <k

"darretdooceva

Ryan < E

Hi Garret and John

To: MCDONALD John <J

Thanks for the meeting on Thursday, regarding the NTA feasibility study "Metro to Knocklyon", which was very informative. Our takeaways from the meeting are:

- The feasibility study, which is underway in the NTA, is concerned with a 'stand-alone' metro from South West Dublin into the city rather than a continuation of MetroLink to South West Dublin. (A stand-alone metro would be much more expensive than a continuation of MetroLink to South West Dublin; furthermore a proposal to build a stand-alone metro which would start in South West Dublin and proceed into the city has, to the best of our knowledge, not been proposed anywhere to date)
- The geographical area of the study is Corridor E, as described in the Transport Strategy for the Greater Dublin Area 2016 to 2035, rather than the triangle between the Red and Green Luas lines. (These geographical areas are not the same a- see the attachment.)
- No change is possible to the Terms of Reference.
- There is no opportunity for community engagement with the consultants carrying out the feasibility study.
- The possible continuation of MetroLink from St Stephens Green to South West Dublin is outside the scope of the study.
- The possible continuation of MetroLink from Charlemont/Beechwood to South West Dublin is outside the scope of the study.
- If we have any observations on MetroLink, including its possible continuation to South West Dublin, the place to make these observations is An Bord Pleanála, when the NTA applies for a Railway Order in the middle of 2021.

The "Metro to Knocklyon" feasibility study, which is underway is one of series in preparation for the (legally required) updating of the Transport Strategy for the Greater Dublin Area 2016 to 2035. These studies will be used to prepare a draft updated text for the Strategy. At that stage, all of the underlying studies will be published and the draft Strategy will be subject of public consultation.

You said you would:

Ask the NTA to include 'Firhouse' in the title of the study.

.... compartantes. The reports are:

- 1. The Case for Continuing MetroLink to South West Dublin, August 2020
- 2. South West Dublin and the Continuation of MetroLink: Improvement in Commuting Times, September 2020
- 3. Indications for an Economic Appraisal of MetroLink from Estuary to Firhouse, October 2020.

41.

If we are mistaken in any of the above, I would be obliged if you would let me know in the next couple of days.

Stay safe,

Pauline Foster Metro South West

P.S. You suggested at the meeting that Corridor E is the same as the 'triangle' between the Red and Green Luas lines. While the map of Corridor E in the *Strategy* is very small, it would appear from our analysis (see attached) that it is considerably different from the 'triangle' between the Red and Green Luas lines. Accordingly, the feasibility study for the continuation of MetroLink to South West Dublin Should focus on the 'triangle'.

If you have any observations on the attached analysis, please let me know.

, i, . . .

Pauline

StarLeaf 15 Nov 2020 Corridor E and the Triangle Rev1.docx

Is Corridor E from the *Transport Strategy* for the Greater Dublin Area the same as the 'triangle' between the Red and Green Luas lines?

The Strategy maps are light on detail and hard to follow! However, it would appear that:

The western / north western boundary of Corridor E is the N81, which continues along the Templeogue Road (with a possible deviation via Wellington Road and Templeville Road) to Terenure; it then goes down Terenure Road North and Harolds X Road and goes as far as the South Circular Road.

This means that some locations which are east of the Red Luas Line and within the 'Triangle' lie outside the E corridor. In the outer suburbs, these areas include:

Bancroft, Tymonville, Balrothery, Greenhills, Cypress, Limekiln, Mountdown.

In the inner suburbs, i.e. north of St Peters Road, Templeville Road, the following areas are within the 'Triangle' but outside Corridor E:

Perrystown, Kimmage, Whitehall Road, Wainsfort, Fortfield, Walkinstown, Crumlin, Lower Kimmage Road, Stanaway Road, Clogher Road, Larkfield, Clareville, Sundrive.

- The eastern boundary of Corridor E seems to lie along Sandford Road, Dundrum Road, Ballinteer Road to the M50 and beyond. Thus, Corridor E appears to include areas to the east of the Green Luas Line as far down as Dundrum (i.e. these areas within Corridor E are outside the 'Triangle'); beyond Dundrum, the Corridor E boundary is to the west of the Green Luas line.
- in South West Dublin and the Continuation of MetroLink: Improvement in Commuting Times, it is shown that for 63 locations spread across the outer suburbs of the 'Triangle', significant improvements in commuting times would be achieved by walking, cycling or driving to a metro station and taking the metro into town. 10 out of 63 locations would be excluded from the analysis, if it were focused on Corridor E rather than the 'Triangle'. No doubt, many areas in the inner suburbs would also be excluded if analysis were focused on Corridor E rather than the 'Triangle' between the Red and Green Luas lines.

Conclusion

The required feasibility study should be focused on the 'Triangle' between the Red and Green Luas lines.

Summary of the buses proposed under BusConnects for Lower Rathmines Road

The following is a summary of the buses proposed for Lower Rathmines Road:

A1 would go to Ballycullen via Rathgar, Terenure, Templeogue and Knocklyon as per current route 15 and is to have 5 services an hour (which is regarded as grossly inadequate given current service level of up to 10 an hour).

A2 would go to Dundrum Luas via Rathgar, Terenure and Rathfarnham similar to the existing 16 in its outer route and is to have 5 services an hour.

A3 (which replaces existing 65 services) would go to Tallaght via Rathgar, Terenure and Templeogue Road and is to have five services an hour.

A4 would go to Nutgrove and Dundrum Luas via Rathgar, Terenure and Rathfarnham and is to have five services an hour.

80 is a bit like the current 14 ending in Dundrum but serving Rathmines Road Upper and Churchtown. It would have a frequency of between 4 and 5 an hour. The current 140 service which serves Upper Rathmines is to be discontinued.

81 is like the current 15A ex Limekiln via KCR, Terenure and Rathgar. It is to have a frequency of 3 an hour. It would however run on St Stephen's Green which is a good transfer point to and from *MetroLink*.

82 is like the current 83 but coming all the way from Killinarden via Crumlin and Sundrive and then running via Larkfield and Kenilworth to Rathmines. It is to have a frequency of 3 an hour. It would also run on St Stephen's Green, so that is the more logical transfer point.

In the aggregate these 7 services are the city bound services for most of the area from Tallaght across to Dundrum. This can be seen from the map "Your Local Area Plan Knocklyon, Rathfarnham, Templeogue, Terenure". They have the potential for a large transfer of passengers to and from *MetroLink*.

- G1 We note three separate documents which focus on the likely passenger traffic at Charlemont
 - 1 Appendix A9.2 to the EIAR and in particular p126 thereof 2 a slide presented on 3 Feb 2022 as part of an update on Charlemont metro 3 some tables in Metro to Knocklyon.Feasibility Study

all of these are in this Annex.

- G2 The first document suggests that in the morning peak in 2035, 1,742 passengers will get on MetroLink at Charlemont. We suspect two thirds of these are ex Luas. If 1200 people transfer ex Luas and there are 30 Luas an hour, that is an average 40 per Luas. These people will likely meet some of the 2607 passengers exiting MetroLink at Charlemont. We believe the infrastructure will not be able to deal with this. These figures (and the PM peak) are projected to increase in 2050 and 2065.
- In the evening peak 1304 are projected to alight from MetroLink but they will likely be crossing with the 2294 who are boarding. We suspect that most of the alighting passengers are destined for Luas so we again believe that 30 per tram will want to board. This is a lot of people to board a tram, likely to be full at that point. Passengers may stand at the entrance close to the stairs on a platform which has about 1.6 metres of usable space before the "keep clear zone" on the edge of the rail.
- The 3 Feb 2022 slide has different numbers 1,866 in the AM peak and 1,220 in the PM peak. More interestingly it suggests that 25% of the morning peak people and 23% of the evening peak people will be airport passengers. This gives a sense of the numbers that might add to the complexity of the interchange by having luggage. These passengers are unlikely to find the stairs only access attractive.
- We have done most analysis on the Knocklyon derived tables as these have been in our possession for some time. These suggest much higher numbers.
- The projections in the MSWG analysis seem to be inconsistent with charts appearing at paragraph 4.5 of the study *Metro to Knocklyon Feasibility Study*, NTA/Jacobs 2021. Note that the Jacobs/NTA figures are for 2030 and the charts seem to be attempting to forecast how many passengers would be on a Knocklyon origin or destined metro at Charlemont were there to be through running to Knocklyon. While this is an assessment of a different south bound metro line, one would expect that the number of people who might transfer between the Green Luas Line and *MetroLink* at Charlemont would be quite similar.

G7 The Jacobs/NTA charts suffer from not being clear as to what time period they relate to, but it could be inferred that they are looking at one hour in the morning peak, one hour off peak and one hour in the evening peak.

The charts suggest that in a southbound direction at Charlemont there would be 3000 passengers in the morning peak 1500 passengers in the off peak (LT Peak not explained) 6,000 passengers in the evening peak

They suggest that in a northbound direction at Charlemont there would be 7,000 passengers in the morning peak 2,000 passengers in the off peak 3,750 passengers in the evening peak

It is noted that the drop off in the evening peak at the next station Rathmines is to over 5,000 passengers. This implies that there are less than 1,000 locally destined passengers alighting at Charlemont with over 5/6ths of the passengers going further south. That mix is wholly inconsistent with what is projected in the documents submitted to you. If 5,000 passengers were to transfer to 30 south bound Luas trams that would be 167 passengers on average. This is simply not feasible.



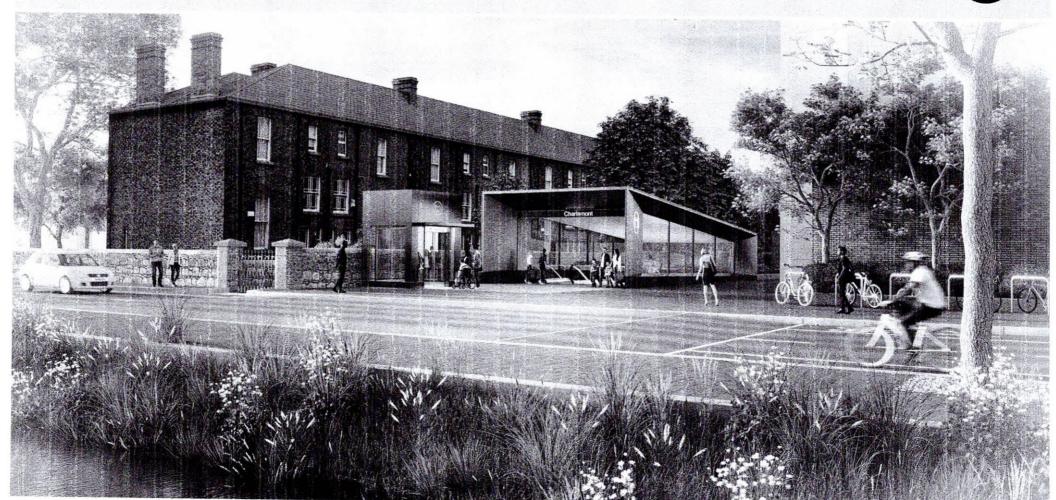
Appendix A. Boarding and Alighting Passengers

Scenario A 2035 Northbo Station		AM			LT			SR			PM	A STATE OF SALE
Station	Boarding	Alighting	Load	Boarding	Alighting	Load	Boarding	Alighting	Load	Boarding	Alighting	Load
Charlemont	1742		1742	902	0	902	1026	0	1026	2294	0	229
St Stephen's Green	647	11	2378	666	4	1564	916	2	1940	2201	1	449
Tara	1461	180	3659	930	78	2416	1165	80	3024	2472	329	663
O'Connell Street	1000	37	4621	594	14	2997	721	15	3731	1330	43	792
Mater	375	136	4860	252	55	3194	270	72	3929	457	173	820
Glasnevin	678	212	5327	158	94	3259	142	136	3934	319	744	778
Griffith Park	62	260	5129	36	60	3235	88	68	3954	145	236	769
Collins Avenue	221	661	4689	126	202	3160	290	266	3977	480	902	726
Ballymun	237	481	4445	115	278	2996	84	471	3590	126	1548	584
Northwood	110	209	4347	40	88	2948	31	123	3499	70	324	559
Dardistown and M50	0	0	4347	0	0	2948	0	0	3499	0	0	559
Dublin Airport	61	3287	1121	101	1994	1056	165	1866	1798	534	1663	446
Fosterstown	22	328	815	15	235	835	20	460	1358	51	1126	339
Swords Central	21	310	526	24	267	591	36	411	983	144	1074	246
Seatown	4	378	151	13	197	407	37	240	781	185	640	200
Estuary Park-and-Ride	0	151	0	0	407	0	0	781	0	0	2006	
Southbound Direction			THE RESIDEN		6.104	A MATERIAL TO			Harris Tra			
Estuary Park-and-Ride	2433	0	2433	433	0	433	537	0	537	603	0	60
Seatown	969	166	3236	170	10	593	159	42	654	288	47	84
Swords Central	1276	160	4352	292	16	870	217	26	845	302	33	111
Fosterstown	1959	53	6259	313	15	1167	208	21	1032	315	27	140
Dublin Airport	1842	771	7330	2294	75	3387	2641	78	3595	2542	147	379
Dardistown and M50	0	0	7330	0	0	3387	0	0	3595	0	0	379
Northwood	578	86	7822	119	40	3465	84	49	3629	161	79	387
Ballymun	1885	161	9546	411	101	3776	282	129	3783	392	211	405
Collins Avenue	1128	718	9956	246	249	3772	237	206	3814	394	223	423
Griffith Park	292	235	10013	61	60	3773	79	46	3847	149	67	431
Glasnevin	1176	319	10870	133	138	3768	95	147	3796	204	469	404
Mater	274	544	10601	73	254	3587	51	217	3630	163	226	398
O'Connell Street	86	1452	9235	19	623	2983	18	683	2965	56	668	337
Tara	193	3841	5587	52	1344	1691	48	1383	1629	107	1525	195
St Stephen's Green	1	2981	2607	2	664	1028	3	595	1037	8	657	130
Charlemont	0	2607	0	0	1028	<u> </u>	0	1037	0	0	1304	
Scenario A 2050 Northbo	ound Direction					4 7 7 7			ALCOHOLD STREET			
Station		AM			LT			SR			PM	
Station	Boarding	Alighting	Load	Boarding	Alighting	Load	Boarding	Alighting	Load	Boarding	Alighting	Load

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Charlemont MetroLink Station Update 3rd February





Charlemont - Interchange

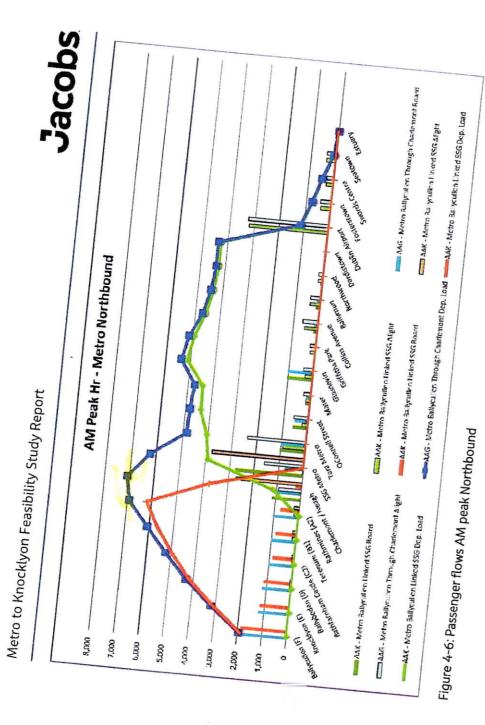


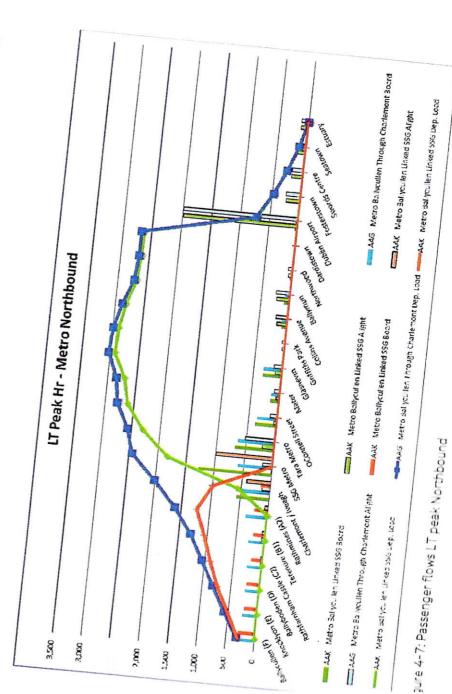
- Quality Interchange with LUAS;
 - Immediate interchange with existing LUAS;
 - Potential for increased capacity on LUAS from this point south in future when compared to potential locations further north;
 - Opportunity for future MetroLink extensions to south-west and south-east.

Boarding Metro at Charlemont								Alighting Metro at Charlemont						
Peak Hour	Total Boarding	Total Charlemont to Airport Flyers	% Airport Flyers of Total Boarders	From Luas to Metro to Airport Flyers	Zoneto Airport Flyers*	Bus to Airport Flyers*	Total Alighting	Total Airport Flyers to Charlemont	% Airport Flyers of Total Alighting	Airport Flyers to Luas	Airport Flyers to Zone**	Airport Flyers to Bus**		
АМ	1,866	458	~25%	213	147	98	2,232	235	~11%	119	87	29		
РМ	2,276	238	~11%	110	77	51	1,229	278	~23%	144	101	34		

^{*}Estimates based on 12hr % split of Total Transfers, using Boarding ratio of 60% From Zone, and 40% from Bus

^{**}Estimates based on 12hr % split of Total Transfers, using Alighting ratio of 75% To Zone, 25% to Bus







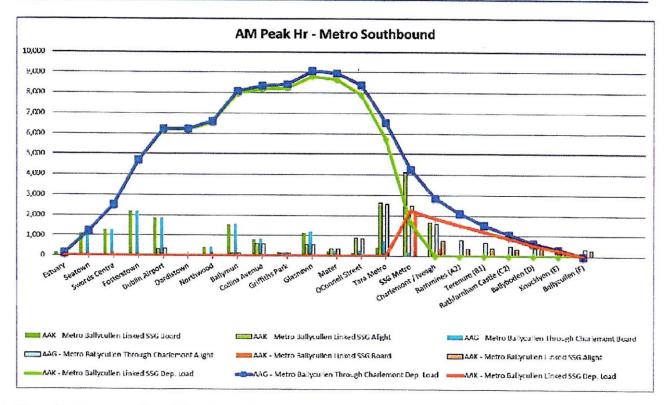


Figure 4-3: Passenger flows AM peak southbound

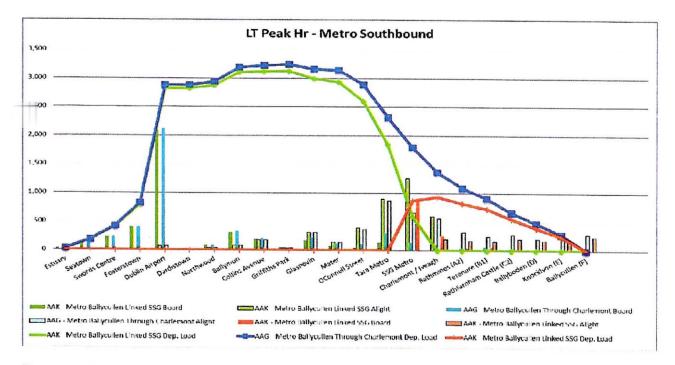


Figure 4-4: Passenger flows LT peak southbound



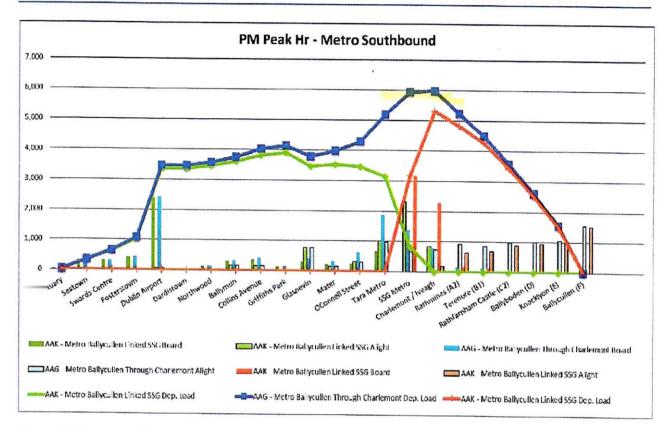


Figure 4-5: Passenger flows PM peak southbound

Further consideration of the deficiencies of Charlemont as a terminus

- H1 We believe there are many practical problems with the proposed *MetroLink* station at Charlemont, which are not addressed in the Railway Order application:
 - 1 Conflicting movements on the two platforms
 - 2 Escalators
 - 3 Lifts.

Conflicting movements on the two platforms

H2 We believe that there would be a lot of conflicting movements on the platforms if Charlemont became a *MetroLink*/Luas interchange

Entering and exiting the Luas platforms (current position)

Northbound platform

Passengers on Luas can exit (and enter from) either side of the canal by way of the stairs. There are 36 steps on the stairs. Passengers with mobility issues and needing a lift can only exit the south side of the canal. Unless a passenger has travelled in the wrong direction there is no reason why any passenger should cross the track.

Southbound platform

Passengers on Luas can exit (and enter from) the north side of the canal by way of the stairs. There are no stairs on the south side of the canal so a passenger wishing to exit there must walk across the track. Mobility issue passengers can also only exit the south side of the canal by crossing the track and using the lift. Currently, there is some pedestrian traffic which needs to be on the track.

Of course a barrier could be put down the middle of the track to stop this but it would need to extend some distance to dissuade persons from crossing where it ends.

Entering and exiting the Luas platforms (after *MetroLink*)

All of the above would continue to apply, save that there would now be a lift and stairs on the southbound platform. There would likely be a lot more people alighting on the northbound platform, the current people walking to nearby destinations and those boarding *MetroLink*.

All traffic alighting on the southbound platform would have stairs to access both sides of the canal. However, for *MetroLink*-bound passengers on the northbound platform, they would likely cross the tracks behind the Luas they have travelled on and go down the stairs in front of the Carrolls Building as this would be a more direct route. This would create the potential for a lot of pedestrian movement across the track. They could exit via the existing stairs but that is rather narrow and winding. A passenger with mobility issues would presumably use the lift on the northbound platform.

Waiting on the Luas platforms

No statistics seem to be provided in the application about current use of the station to access the Luas and this is unsatisfactory. Both platforms are currently quite busy, particularly the southbound one in the afternoon and early evening. This passenger traffic would be added to by many passengers exiting the *MetroLink* who would want to travel further south. It is predictable that this would add significantly to the numbers of passengers on the platform. Airport passengers would likely have bulky luggage. If a Luas was already crowded when arriving at Charlemont and passengers could not access that tram, there could be quite a build up of passengers. We note that the platform sits 10 metres above the canal and there would be heightened safety risks if the platform was very crowded. We believe there are serious safety issues and on *MetroLink's* own figures the number of passengers transferring ex *MetroLink* in a 12 hour period in 2035 would be 5,452 or 450 an hour, likely much greater at busy times.

Using the Luas platforms as a bridge

The plans submitted fail to provide a passenger bridge over the canal at Charlemont *MetroLink*. We believe that any passenger coming to or from Harcourt Terrace may choose to use the southbound platform as a bridge. There is potential for significant passenger traffic here as the O orbital bus route, which has the highest proposed frequency of all *BusConnects* routes would pass the end of Harcourt Terrace and it would be a short walk from there to *MetroLink* using the Luas station as a bridge.

We would submit that a *MetroLink* and Luas interchange at this point would result in many people crossing the line, crowded platforms and the potential for pedestrians on the bridge. This would create a lot of overcrowding and would be a safety risk. .

Escalators

We note that there is no provision for an escalator from street level to the Luas line. This means that passengers with luggage would be expected to haul their bags up and down stairs.

The lifts

There would be two lifts to exit Charlemont Luas, one at the southern end of each platform. The one at the southern end of the north bound platform would be very slow. If you called it when it was at the other level it would take at least one minute to arrive. There would be just about enough space for one wheelchair.

There is little detail in the plans as to the speed and capacity of the new lift to be provided. This is a significant omission.

It is our view that the lift capacity here is wholly inadequate for the volume of passengers who would have mobility issues.

Other Charlemont interchange issues

- H5 We see two other major Luas related problems at Charlemont
 - 1 The proposal in the final draft of the *Draft Strategy for the Greater Dublin Area* 2022-2042 for extra Luas lines at Charlemont
 - 2 The sheer number of passengers transferring to/from Luas to *Metrolink* at this point

The proposal in the final draft of the *Draft Strategy for the Greater Dublin Area 2022-2042* for extra Luas lines at Charlemont

The *Draft Strategy for the Greater Dublin Area 2022-2042* (at page 138) envisages two Luas lines converging at Charlemont, one from Tallaght and one from Sandyford. In addition, an area feasibility study related to Luas from Lucan envisages that line going to Charlemont also. All of this would render Charlemont the hub for much of south Dublin. There is no consideration of the implications of this in what has been in the application for a Railway Order.











MetroLink Update



- MetroLink Project Update
- National Development Plan
- Preliminary Business Case approval process underway
- Railway Order Planning Application Q2 2022
- Statutory Process to take 18-24mths (Q2 2024)
- Works to commence as soon possible following Grant of Railway Order

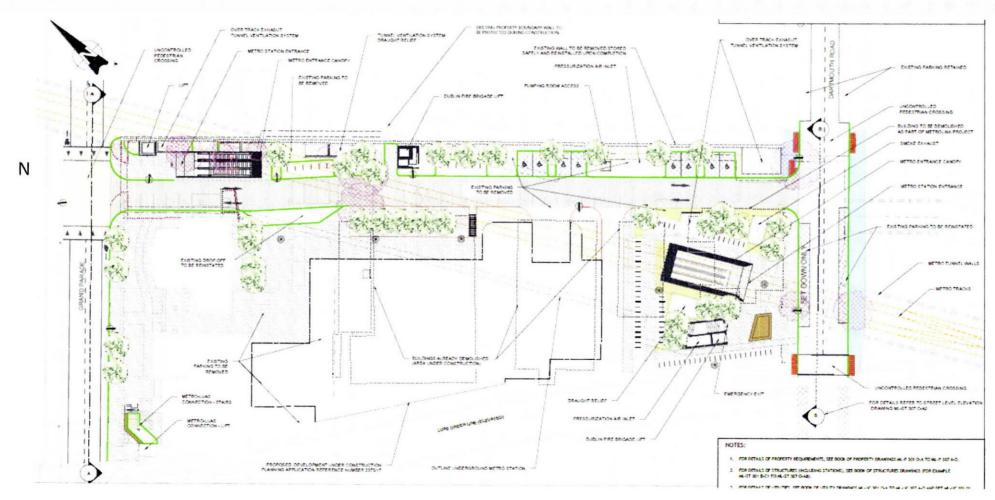
Charlemont Station Changes Since 2019



- Enhanced pedestrian connection with LUAS Charlemont stop developed
- New second entrance to station and ventilation/evacuation gallery connection added
- Tunnel termination point south of Charlemont reduced in length and additional side ventilation/pedestrian evacuation gallery from the station added to support tunnel safety;

Charlemont Station - Layout





Main Entrance – Grand Parade





Metro/LUAS Connection





Second Entrance - Dartmouth Road





Second Entrance- Dartmouth Road.

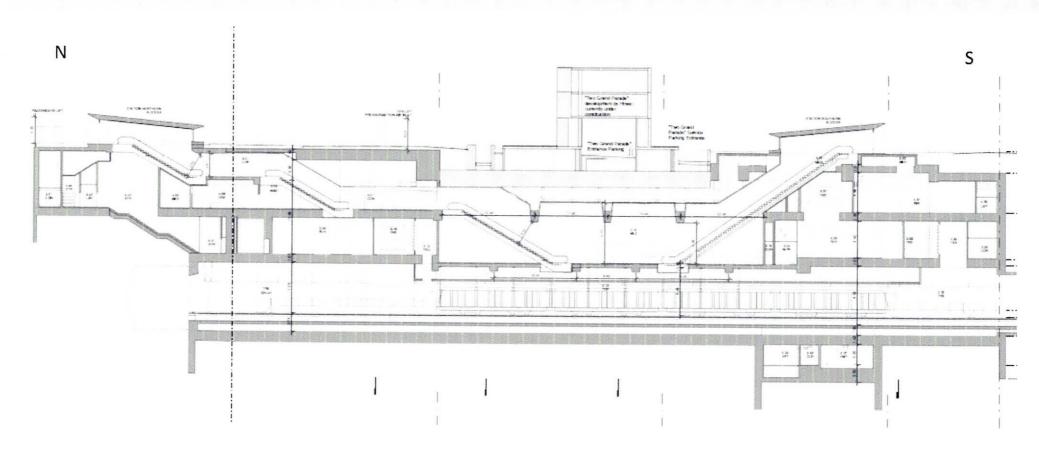


The additional southern entrance has been incorporated to:

- Better support station accessibility from the south of the station where modelling indicates strong demand from the Ranelagh area;
- Avoid overcrowding on the Grand Parade footpath by the station which is used for the interchange with the LUAS;
- Facilitate station access for cyclists and from vehicle drop off; and
- Provide additional resilience to passenger evacuation and emergency access in the event of an incident at the station.

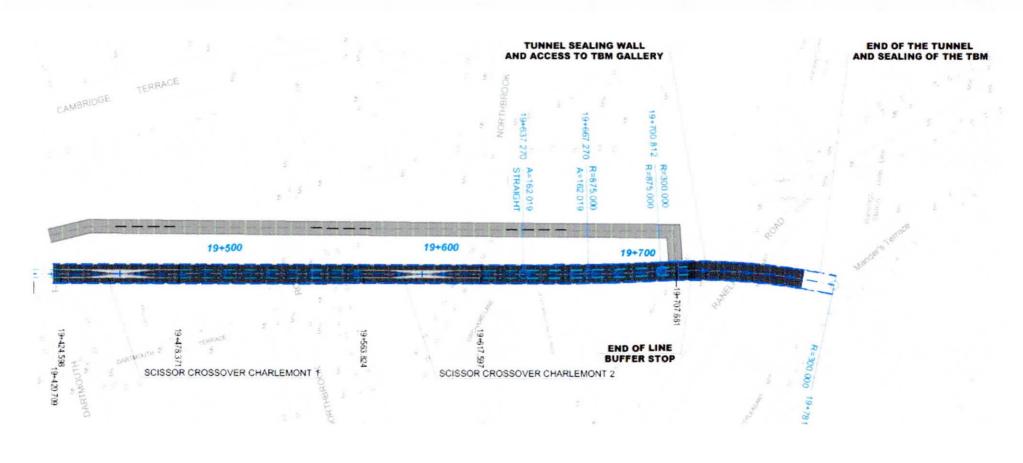
Charlemont Station Long Section





Main tunnel end point and new Evacuation Tunnel



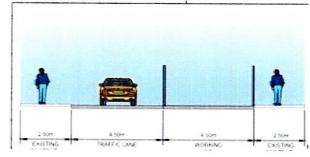


Charlemont Station Construction – AEW Dartmouth Terrace

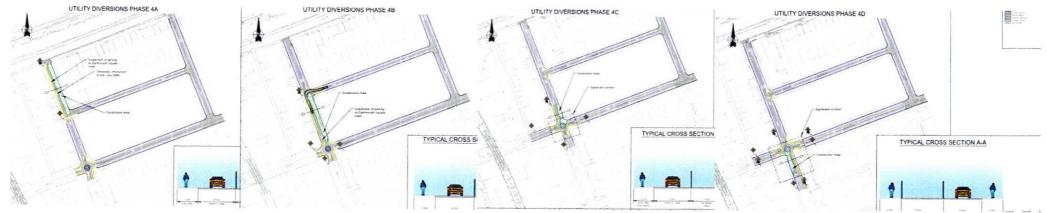


Dartmouth Square West - Cambridge Terrace sewer works. Approx 5-10 week duration.

- Works along Dartmouth Square West to be under progressive/ sectional work areas.
- Resident parking to be suspended to allow works
- to progress.
- · Works to be carried out in carriageway.
- · Eastern footpath on Dartmouth Square West to
- remain open



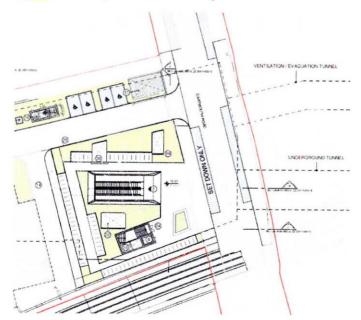


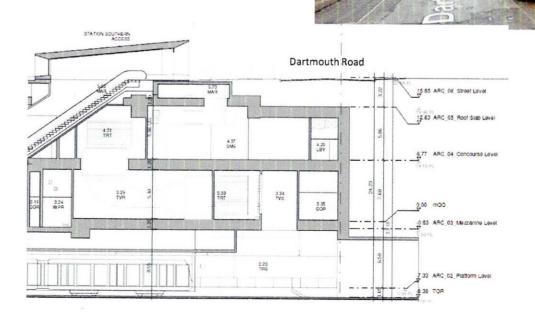


Main Station Works - Dartmouth Rd

M

- Dartmouth Road closed to traffic for 2.5 to up to 5 years to facilitate Utility diversions and Main station box works
- Works area will extend up to south footpath, though access to the properties will be maintained at all time.
- Environmental impacts will be mitigated, residents most affected by the works will be given the opportunity to relocate during critical work phases.

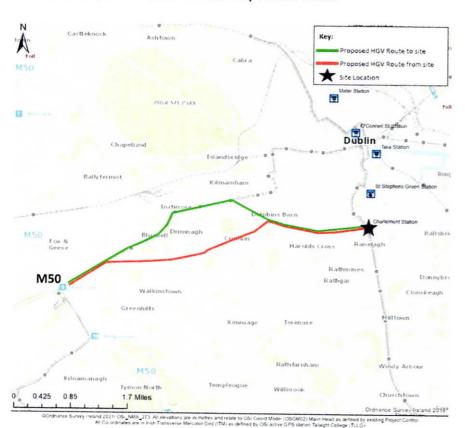




Charlemont Station Construction - Site Access and Spoil Removal



Construction traffic route to/from M50

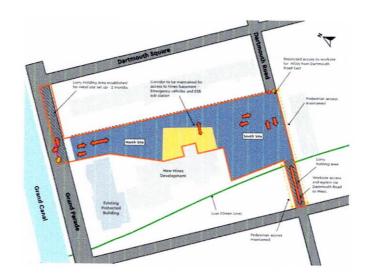


Local construction traffic route at Charlemont

Access to northern part of construction site is via Grand Parade.

Access to Southern part of construction site is principally via R117 Ranelagh Rd/Dartmouth Road.

Occasional HGV access required from Dartmouth Rd East for abnormal loads not able to pass under the LUAS bridge.



Next Steps.



- Complete the Environmental Impact Assessment Report
- Meet with residents to provide an update on our current plans
- Establish dialogue between the Resident groups and the recently appointed Independent Engineer (RINA)
- Apply for RO in Q2 2022

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Annex J

1 message

Brendan He To: Brendan Hen
 To: Brendan

Wed, Nov 23, 2022 at 9:30 AM

Since its inception in or about Autumn 2019, the steering group has held almost 100 meetings. Meetings include internal steering group meetings

meetings about quarterly with our affiliated residents groups

meetings with TDs and Senators in Dublin Bay South, Dublin South Central and Dublin South West Dáil constituencies meetings with councillors

meetings with members of the Oireachtas Transport Committee

meetings with other interested groups and individuals

We have made submissions on Dublin City and South Dublin Development Plans and on numerous transport related consultations, including the MetroLink Consultation 26 March to 21 May 2019 and the Greater Dublin Area Transport Plan 2022-2042. We have also made a number of in person and Zoom presentations.

Subject: Annex Impact on Canal
Date: 22 Nov 2022 at 17:46:21
To: Brendam Heneghan

We don't believe the TII has assessed the potential impact of the project on the Grand Canal fully. The Grand Canal is an

important wildlife corridor as a relatively continuous space through the south city. It is

heavily used by cyclists and obviously has potential as the city end of a long distance

cycle and walkway infrastructure. We note in the details of the plan a provision for a

layby presumably to allow drop off traffic. It is difficult to see that this layby does not

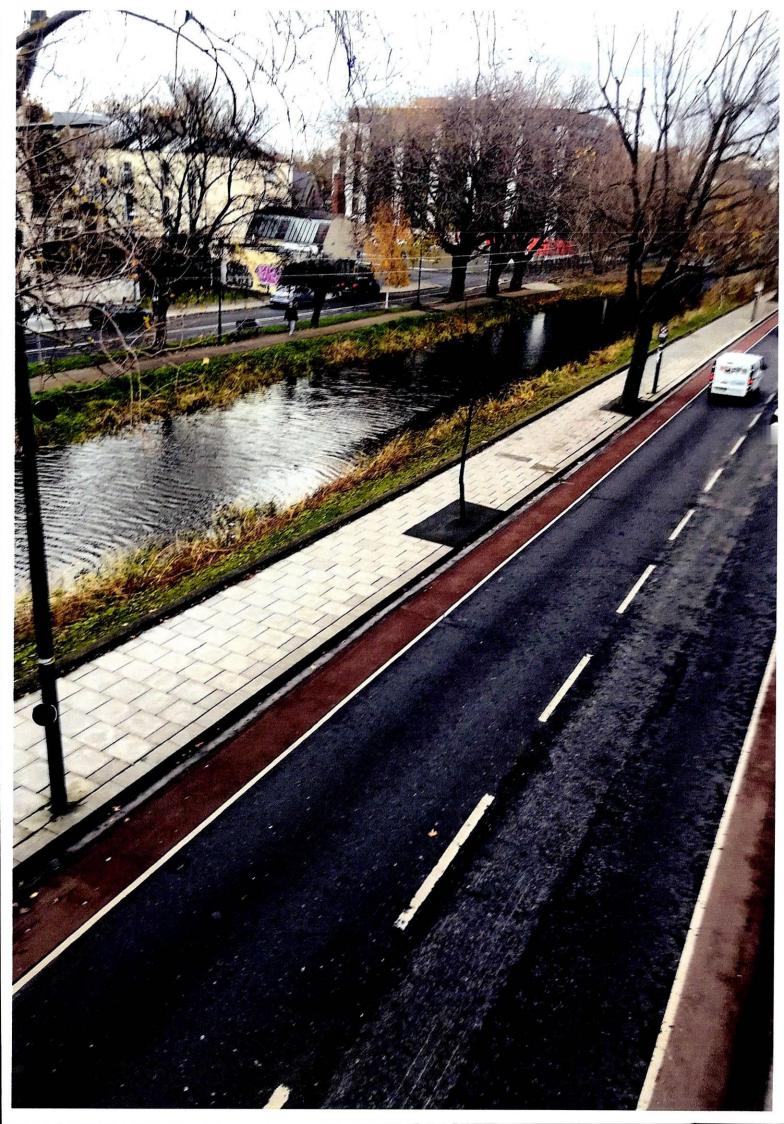
impact on the extensive reed bed on the side of the canal. It will also cause issues

with the trafifc flow on the canal.

See attached photo of the portion affected.

IMG_0425.jpg

Sent from my iPhone



2. The Emerging Preferred Route

2.1. Public Consultation

A public consultation took place from 22 March to 11 May 2018 along the full length of the route, including seven public events from Swords to Leopardstown.

Almost 8,000 submissions were received via phone, email, post and comment cards.

Many submissions expressed support for MetroLink particularly from Fingal where people have been waiting a long time for this key service.

"This infrastructure project is of strategic importance for the development of our city. As the success of our national economy is so dependent on the success of Dublin it is also vital to the wider community"—Stakeholder submission

The issue that attracted most submissions (67 per cent) was the proposed acquisition of lands at CLG Na Fianna on St Mobhi Road for use as the launch site for the tunnel boring machine at the Griffith Park station.

"CLG Na Fianna is one of the largest Gaelic sports and cultural centres in Ireland. With almost 4000 active and registered members and a wider associated community of many more, disruption to the activities would have an enormous and long lasting negative impact"

Stakeholder submission

The second biggest issue was the construction impact on Our Lady of Victories Church and Boys' National School at Collins Avenue.

Another area of concern was the proposed road closure at Dunville Avenue due to segregation of the upgraded Green Luas line.

"The permanent closure of Dunville Avenue to Beechwood would create huge hardship for local traffic and residents. It would be very obstructive to normal activities" - Stakeholder submission

Other submissions focused on disruption during construction at several sites, the elevation of the line near Swords, queries about tunnelling and access for cyclists.

"The project's planning must be made cycling friendly for people who will use MetroLink and those who live or work or commute past stations."

Stakeholder submission

When the consultation period ended concerns continued to be expressed about the impacts of the proposal to upgrade the Green Line to metro standard. While concerns initially focused on community segregation, the emphasis shifted to the issue of line-closure during construction.

"Green Line shut for up to 2 years causing commuter chaos – 45,000 daily commuters will lose the Luas service for between 9 and 24 months during construction."

- ReThinkmetrolink ie

Concerns were also raised by residents in College Gate, an apartment block located directly over the proposed MetroLink Tara station. This building also houses the Dublin City Council Sports and Fitness Markievicz centre. The Emerging Preferred Route proposed acquiring and demolishing the building. We received a detailed submission from residents who commented on:

".. the severe impact on College Gate apartments to build on a small percentage of the site. An alternative location for the station is proposed that we feel would be more suitable for the station at Tara Street." - Resident, College Gate

Along with the concerns raised, we indicated that a number of significant design decisions remained under consideration. These included:

- Tunnel type: twin or single bore tunnel.
- · Depot location and crossing the M50.
- Elevation of the metro line along the R132.

Every issue, whether from a large group or individual was studied by the relevant teams and where possible, alternatives researched to mitigate the concerns.

The National Transport Authority and Transport Infrastructure Ireland together with the engineering designers Jacobs Idom have carefully analysed and reviewed every aspect of the design.

The full consultation report detailing the public feedback on the Emerging Preferred Route is available on metrolink.ie

2.2. Preferred Route

At MetroLink we take seriously our obligations under the Aarhus Convention to facilitate public participation in decision making on major public infrastructure projects. This document is a comprehensive explanation of what we propose to do and why.

It lays out in detail our response to the public consultation on the Emerging Preferred Route; how this has affected technical proposals for the project; where we've been able to respond to feedback; where we haven't and if so, why.

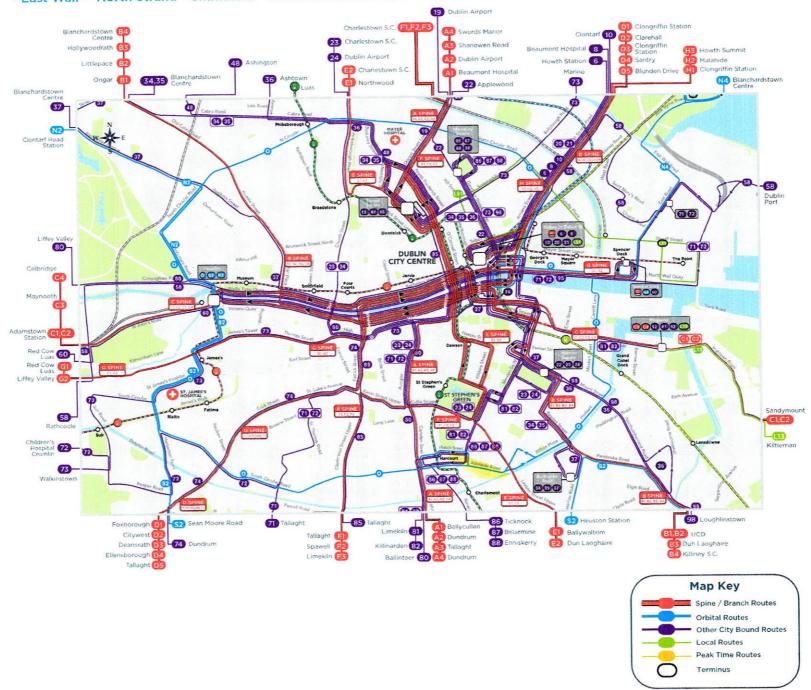
We are now seeking feedback on the Preferred Route. Your views are important to us. When you learn about the new route, please go to **metrolink.ie** to share your thoughts.

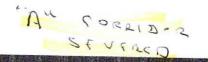


Your local area map

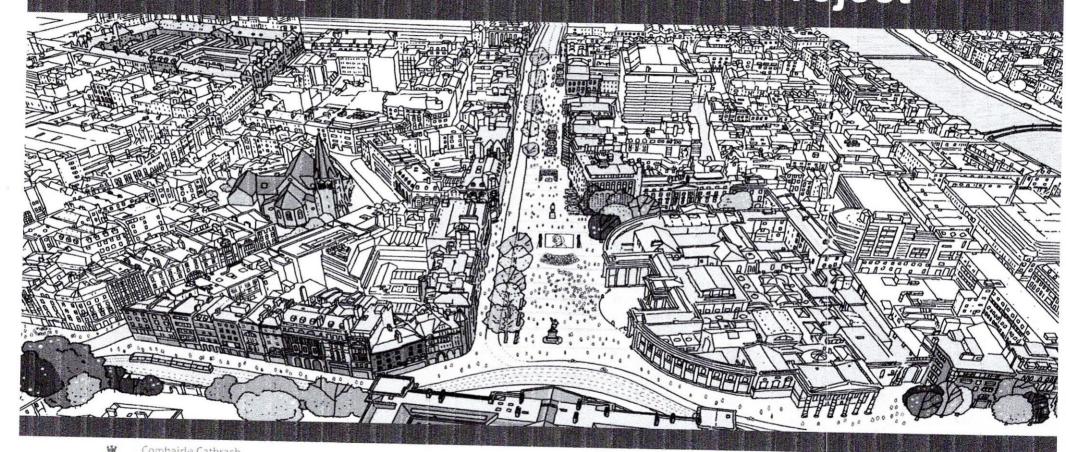
How BusConnects gets you where you v o go.

- Christchurch Dolphin's Barn Dublin City North Dublin City South
- East Wall North Strand Smithfield South Circular Road/Portobello





College Green Dame Street Project





Comhairle Cathrach Bhaile Átha Cliath Dublin City Council

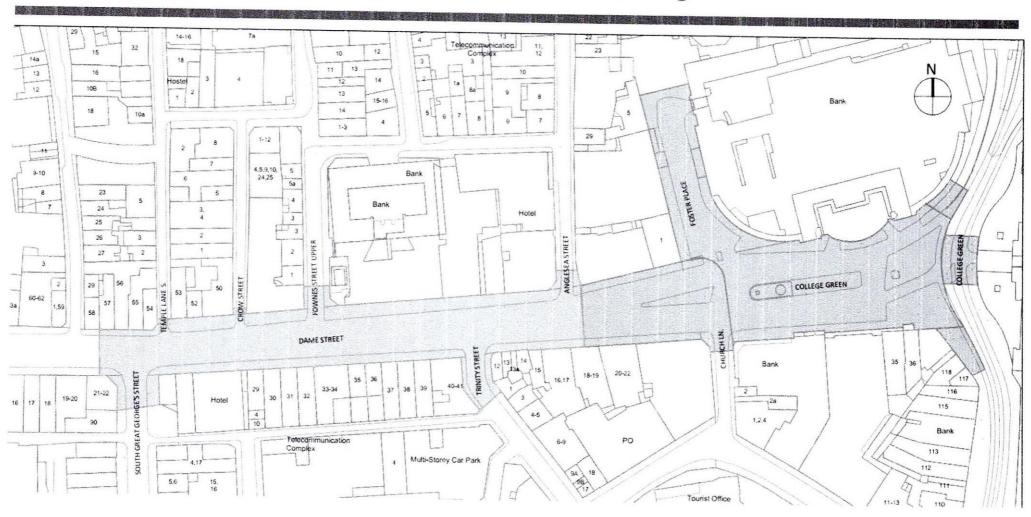
Project Update Sept 2022

College Green Dame Street Project Objectives

- To provide a world class multi-functional public space complementing the adjacent historical buildings
- To use the principles of universal design to provide an accessible space for all to enjoy
- To remove all through vehicular traffic in an east west direction
- To create a high quality pedestrian-priority space
- To provide a safe cycle route
- To prioritise sustainability and greening in the development of the design

Bhaile Átha Cliath Dublin City Council

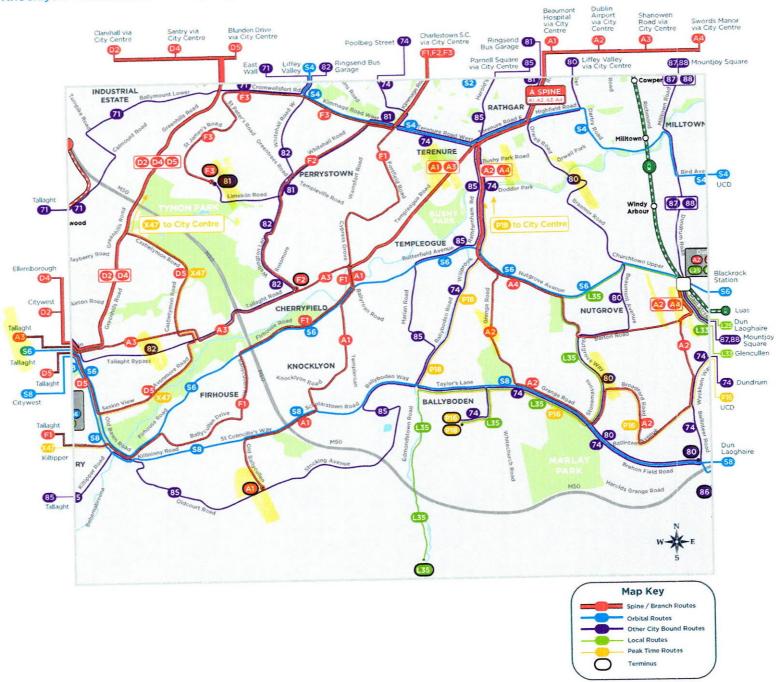
College Green Dame Street Project Extent



Your local area map

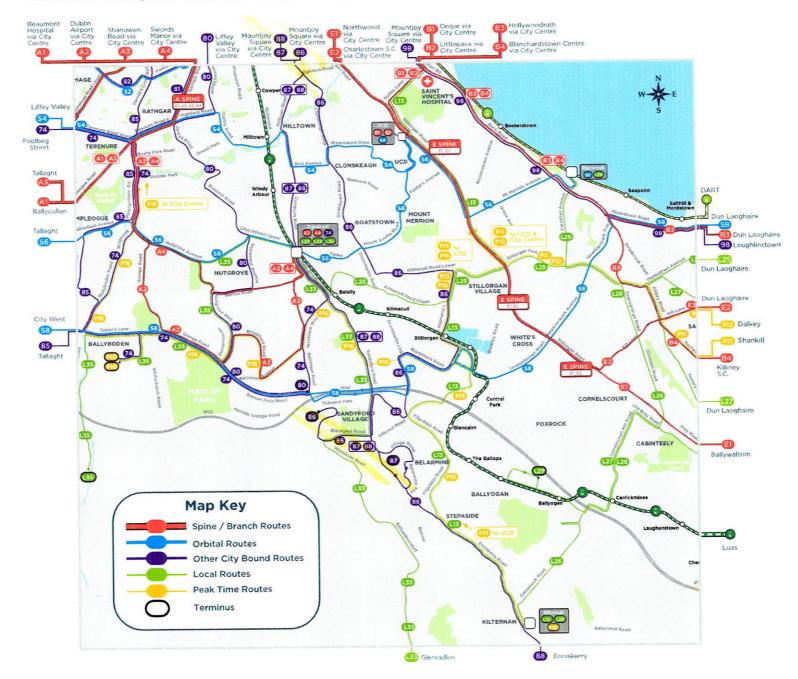
How BusConnects gets you where you w ____ go.

• Knocklyon • Rathfarnham • Templeogue • Terenure



Your local area map How BusConnects gets you where you to go.

- Balally Ballinteer Belfield Churchtown Clonskeagh Dundrum
- Goatstown Sandyford Stepaside Village Windy Arbour



Spine frequency tables

The number in each box is the expected time in minutes between buses. It is subject to adjustment in line with future passenger numbers.

	2 Pranches	Weekday	Saturday	Sunday
	& Branches	5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11	6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11	8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 1
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1	Beaumont - City Centre - Knocklyon	30 15 2 12 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	20 20 20 15 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30 3
2	Airport - City Centre - Ballinteer - Dundrum	30 15 12 12 12 12 12 12 12 12 12 12 12 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
3	DCU - City Centre - Tallaght	30 15 12 12 12 12 12 12 12 12 12 12 12 12 12	20 20 20 15 15 15 15 15 15 16 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
4	Swords - City Centre - Dundrum	30 15 12 12 12 12 12 12 12 12 12 12 12 12 12	The second secon	8 8 5 5 5 5 5 5 5 8 8 8 8
-SPINE	Blanchardstown SC - City Centre - UCD	8 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6	5 5 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
1	Ongar - City Centre - UCD	30 15 16 15 15 15 15 15 15 15 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 20 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
12	Ongar North - Clonsilla - City Centre - UCD	30 15 15 15 15 15 15 15 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 15 15 15	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
3	Tyrrelstown - City Centre - Dún Laoghaire	30 15 15 15 15 16 15 15 15 15 15 15 15 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
34	Blanchardstown SC - City Centre - Sallynoggin	30 IS 15 15 15 IS IS IS IS IS	20 20 26 15 15 15 15 15 15 15 15 15 15 15 15 15	
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-SPINE	Lucan - City Centre - Ringsend	60 30 8 8 30 30 30 30 30 8 8 8 30 30 30 30 60	30 30 30 30 30 30 30 30 30 30 30 30 30 3	30 30 30 30 30 30 30 30 30 30 30 30 30 3
C1	Adamstown - City Centre - Sandymount	60 30 8 15 30 30 30 30 30 30 15 8 15 30 30 30 30 30	30 30 30 30 30 30 30 30 30 30 30 30 30 3	30 30 30 30 30 30 30 30 30 30 30 30 30 3
C2	Adamstown - City Centre - Sandymount	80 30 30 30 30 30 30 30 30 30 30 30 30 30	30 30 30 30 30 30 30 30 30 30 30 30 30 3	30 30 30 30 30 30 30 30 30 30 30 30 30 3
C3	Maynooth - City Centre - Ringsend	60 30 30 30 30 30 30 30 30 30 30 30 30 30	50 30 30 30 30 30 30 30 30 30 30 30 30 30	30 30 30 30 30 30 30 30 30 30 30 30 30 3
C4	Celbridge - City Centre - Ringsend		5 5 5 4 4 4 4 4 4 4 4 4 5 5 5 5 6	2 6 5 5 5 5 5 5 5 5 6 8 8 8
D-SPINE	Malahide Rd - City Centre - Crumlin	30 15 15 15 15 30	20 20 20 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
D1	Clongriffin - City Centre - Grange Castle	30 5 15 15 10 10 7 13 75 15 15 15 15 15 15 15 15 30	20 20 20 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
D2	Clare Hall - City Centre - Citywest	30 15 15 15 15 15 15 15 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 16 16 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
D3	Clongriffin - City Centre - Clondalkin	30 5 5 5 70 70 70 70 70 70 70 70 70 70 70 70 70	40 40 40 30 30 30 30 30 30 30 30 30 30 30 40 40 40 40	60 60 40 40 40 40 40 40 40 40 60 60 60 60
D4	Swords Road - City Centre - Killinarden	60 30 30 30 30 30 50 30 30 30 30 30 30 30 30 30 30 30 30 30	40 40 40 30 30 30 30 30 30 30 30 30 30 30 40 40 40 40 60	60 60 40 40 40 40 40 40 40 40 60 60 60 60
D5	Edenmore - City Centre - Tallaght	60 30 30 30 30 30 30 30 30 30 30 30 30 30		10 10 8 8 8 8 8 8 8 8 8 10 10 10 10
E-SPINE	Ballymun - City Centre - Foxrock Church	10 5 4 4 5 5 5 5 5 5 4 4 4 5 5 5 5 5	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	20 20 15 15 15 15 15 15 15 15 15 15 20 20 20 20
E1	Northwood - City Centre - Bray Main St Ballywaltri	im 20 10 8 8 10 10 10 10 10 10 10 8 8 8 10 10 10 10 10 20	15 15 15 10 0 10 10 10 10 10 10 10 15 15 15 15 20	20 20 15 15 15 15 15 15 15 15 15 20 20 20 20
E2	Charlestown - City Centre - Dún Laoghaire	20 10 8 3 10 10 10 10 10 10 10 10 3 8 8 10 10 10 10 10 20		
F-SPINE		10 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	7 7 5 5 5 5 5 5 5 5 5 5 7 7 7	20 20 20 20 20 20 20 20 20 20 20 20 20 2
	Charlestown - Finglas Bypass - City Centre - Tallagh	t 30 IS 10 10 15 15 15 15 15 15 10 10 10 10 15 15 15 15 15 15	20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
FI	Charlestown - Finglas NW - City Centre - Templeogr	HERE NO. 10 10 10 10 10 10 10 10 10 10 10 10 10	20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 3	30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30
F2	Charlestown - Finglas SW - City Centre - Greenhills	30 15 10 10 15 15 15 15 15 15 15 10 10 10 10 15 15 15 15 15 15 3	20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
F3		TE . C. C. C. S. R. R. S. C. C. S. S. S. S. S. S.	5 10 10 10 5 5 8 8 8 8 8 8 8 8 10 10 0 10	15 15 16 16 16 16 10 10 10 10 10 10 10 10 10 10 10 10 15 15 15
G-SPINE		20 15 15 15 15 15 15 15 15 15 15 15 15 15	0 20 20 20 15 15 15 15 15 15 15 15 15 15 16 20 20 20 20 3	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
G1	Red Cow - City Centre - Spencer Dock	70 15 15 15 15 15 15 15 15 15 15 15 15 15	0 20 20 20 15 15 15 15 15 15 15 15 15 15 20 20 20 20 3	0 30 30 20 20 20 20 20 20 20 20 20 30 30 30 30
G2	Liffey Valley SC - City Centre - Spencer Dock		2 10 10 10 10 10 10 10 10 10 10 10 10 10	i 15 15 0 8 8 8 8 8 8 8 15 15 15 15
H-SPINE	Howth Rd - City Centre	15 8 8 3 8 8 8 8 8 8 6 8 8 8 8 8 8 8 8 8 8	0 20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	0 30 30 15 15 15 15 15 15 15 15 15 30 30 30 30
н	Clongriffin - Donaghmede - City Centre	30 15 15 15 15 15 15 15 15 15 15 15 15 15	0 40 40 40 30 30 30 30 30 30 30 30 30 30 40 40 40 40	0 60 60 30 30 30 30 30 30 30 30 60 60 60 60
H2	Portmarnock - Bayside - City Centre	60 30 30 30 30 30 30 30 30 30 30 30 30 30	40 40 40 70 70 70 30 30 30 30 30 30 30 40 40 40 40	0 60 60 30 30 30 30 30 30 30 30 30 60 60 60 60
Н3	Howth - Bayside - City Centre	60 30 30 30 30 30 30 30 30 30 30 30 30 30		

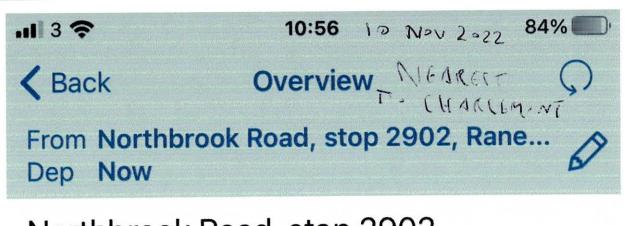
The full delivery of the new network is subject to additional funding from Government

Radial frequency tables

The number in each box is the expected time in minutes between buses. It is subject to adjustment in line with future passenger numbers.

Rad	ial Routes	Weekday Saturday	Sunday
Route	no. To and From	5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11	8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11
6	Howth Station - Summit - Watermill Rd - Abbey Street	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
8	Beaumont Hospital - Clontarf - Abbey Street	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
10	Clontarf - City Centre	10 15 6 10 15 15 15 15 15 15 15 10 6 10 15 15 15 15 15 15 20 20 20 20 20 15 15 15 15 15 15 15 15 15 15 15 20 20 20 20 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
19	Airport - Balbutcher Lane - Wadelai - Parnell Square	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
20	Malahide - Kinsealy - City Centre	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
21	Swords Business Park - Kinsealy - City Centre	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
22	Glen Ellan Rd - River Valley - City Centre	30 15 15 15 15 15 15 15 15 15 15 15 15 15	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
23	Charlestown - Glasanaon Rd Merrion Square	20 20 20 20 20 20 20 20 20 20 20 20 20 2	40 40 30 30 30 30 30 30 30 30 30 30 30 30 30
24	Airport - Charlestown - Ballygall Rd - Merrion Square	20 20 20 20 20 20 20 20 20 20 20 20 20 2	40 40 30 30 30 30 30 30 30 30 30 30 30 30 30
34	Blanch. SC - Coolmine - Castleknock - Burlington Rd.	20 8 15 20 20 20 20 20 20 15 8 15 20 20 20 20 20 30 30 30 30 30 20 20 20 20 20 20 20 20 20 20 30 30 30 30 30	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
35	Blanch. SC - Corduff - Castleknock - Burlington Rd.	20 15 15 20 20 20 20 20 20 15 15 15 20 20 20 20 20 20 20 20 20 20 20 20 20	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
36	Rathborne - City Centre - Ballsbridge	30 15 15 15 15 15 15 15 15 15 15 15 15 15	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
37	Blanch. SC - Castleknock - City Centre - Burlington Rd	20 20 20 20 20 20 20 20 20 20 20 20 20 2	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
48	Ashington Park - Parnell Square	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
52	Collinstown - Easton Road - City Centre - Ringsend	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
58	Rathcoole - City Centre - Dublin Port	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
60	Red Cow - Cherry Orchard - Decies Rd Spencer Docl	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6
71	Tallaght - Ballymount - Warrenmount - East Wall	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
72	Drimnagh - Warrenmount - East Wall	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
73	Marino - City Centre - Walkinstown	30 15 10 15 15 15 15 15 15 15 15 15 15 15 15 15	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
74	Dundrum - Whitechurch - Crumlin - City Centre	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
80	Liffey Valley - City Centre - Ballinteer	30 IS 10 10 IS 15 15 15 15 15 15 10 10 10 IS 15 15 15 10 30 30 30 30 30 30 30 30 30 30 30 30 30	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30
81	Greenhills - City Centre - Ringsend	20 15 15 20 20 20 20 20 20 15 15 15 20 20 20 20 20 30 30 30 30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30 30	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
82	Killinarden - Crumlin - Ringsend	20 20 20 20 20 20 20 20 20 20 20 20 20 2	60 60 30 30 30 30 30 30 30 30 30 30 30 30 30
85	Tallaght - Ballyboden - Harold's Cross - Parnell Square	30 15 10 10 15 15 15 15 15 15 16 10 10 10 15 15 15 15 15 15 15 15 15 15 15 15 15	30 30 20 20 20 20 20 20 20 20 20 30 30 30 30 30 30 30 30 30 30 30 30 30
86	Ticknock - Goatstown - Mountjoy Square	30 30 30 30 30 30 30 30 30 30 30 30 30 3	60 60 60 60 60 60 60 60 60 60 60 60 60
87	Belarmine - Dundrum - Mountjoy Square	60 60 60 60 60 60 60 60 60 60 60 60 60 6	
88	Enniskerry - Belarmine - Dundrum - Mountjoy Square	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60
98	Loughlinstown Drive - Dún Laoghaire - Mountjoy Sq.	60 60 60 60 60 60 60 60 60 60 60 60 60 6	60 60 60 60 60 60 60 60 60 60 60 60 60 6

The full delivery of the new network is subject to additional funding from Government



Northbrook Road, stop 2902





12:20 💂 44 towards DCU



12:33 💂 61 towards Eden Quay

13:20 📮 44 towards DCU

13:48 $\stackrel{\square}{\rightleftharpoons}$ 61 towards Eden Quay



Buses from/to From DCU To Enniskerry Operative Date: 26/01/2020 Version: TT 20.1

From DCU Towards Enniskerry



DCU , Cnoc na Fuiseoige , Sráid Uí Chonaill , Dún Droma , An Chéim , Áth na Sceire

	Monda	y to Frid	lay		Satur	day			Sunda	ay .		
Buses leave terminus at:	06:45p	07:00k	07:30	08:00k	07:30	08:30	09:30	10:30	09:30	10:30	11:30	12:30
	08:30	09:30	10:30	11:30	11:30	12:30	13:30	14:30	13:30	14:30	15:30	16:30
Route Variations	12:30	13:30	14:30	15:30	15:30	16:30	17:30	18:30	17:30	18:30	19:45	21:00
k Operates from Larkhill to O'Connell Street	16:30	17:30	18:45	19:45	19:45	21:00	22:00	23:00c	22:00	23:00c		
p Operates from Parnell Sq. East to	21:00	22:00	23:00c									
Enniskerry												
c From DCU, departs O'Connell Street at 23:30												

DCU >> 5mins >> Larkhill >> 25mins >> O'Connell St. >> 30mins >> Dundrum >> 15mins >> Stepaside >> 15mins >> Enniskerry

All times are off neak extimates.

From Enniskerry Towards DCU



Áth na Sceire , An Chéim , Dún Droma , Sráid Uí Chonaill , Cnoc na Fuiseoige , DCU

	Monda	Monday to Friday				Saturday				Sunday			
Buses leave terminus at:	06:35	07:15	08:15	09:30	07:00	08:00	09:00	10:15	09:00	10:00	11:00	12:00	
	10:30	11:30	12:30	13:30	11:30	12:30	13:30	14:30	13:15	14:30	15:30	16:30	
Route Variations	14:30	15:30	16:30	17:30	15:30	16:30	17:30	18:30	17:30	18:30	19:30	20:30	
d To Dundrum only	18:45	19:45	20:30	21:30	19:30	20:30	21:30	22:30c	21:30	22:30c	23:30d		
c From Enniskerry, departs O'Connell Street at 23:30	22:30c	23:30d			23:30d								

Enniskerry >> 15mins >> Stepaside >> 15mins >> Dundrum >> 30mins >> O'Connell St. >> 25mins >> Larkhill >> 5mins >> DCU

All times are off peak estimates

64		
are Stages	83 17 DCU	63 37 Dundrum Rd. (Ballinteer Rd.)
	82 18 Larkhill	62 38 Sandyford Rd. (Dundrum Town Centre)
	81 19 Collins Ave. (Larkhill Rd.)	61 39 Sandyford Rd. (Balally Cottages)
	80 20 Drumcondra Rd. Upr. (Griffith Ave.)	60 40 Sandyford Corner (Kilcross)
	79 21 Drumcondra Rd. Upr. (Clonturk Park)	59 41 Sandyford Village
	78 22 Drumcondra Rail Station	58 42 Murphystown Cross (Hillcrest)
	77 23 Dorset St. (North Circular Rd.)	57 43 Murphystown Rd.
	76 24 Dorset St. (North Frederick St.)	56 44 Kilgobbin Lane
	75 25 O'Connell St.	55 45 Stepaside Village
	74 26 Merrion Sq. / Clare St.	54 46 Jamestown (St. Norbert's)
	73 27 Earlsfort Terrace	53 47 Jamestown House
	72 28 Charlemont St.	52 48 Goldenball (Glenamuck Rd.)
	71 29 Ranelagh Rd. (Dartmouth Rd.)	51 49 Ballycorus Rd.
	70 30 Ranelagh (Chelmsford Rd.)	50 50 Kilternan (Willis)
	69 31 Sandford Rd. (Marlboro Rd.)	49 51 Kilternan Hotel
	68 32 Milltown (Ramleh Park)	48 52 The Scalp (Butlers)
	67 33 Milltown (Church)	47 53 Killegar House
	66 34 Dundrum Rd. (Bird Ave.)	46 54 Monastery Corner
	65 35 Dundrum Rd. (Columbanus Rd.)	45 55 Enniskerry (National School)
	64 36 Dundrum Rd. (Frankfort Park)	

22/11/22





Buses from/to From Eden Quay To Whitechurch Operative Date: 12/05/2019 Version: TT 9 1

From Eden Quay Towards Whitechurch



Cé Éidin , Raghnallach (Bóthar Chelmsford) , Baile an Mhuilinn , Ascaill an Gharráin Chnó (Acomhal Ascaill Beaumont) , An Tearnpall

	Monday - Friday			Satur	Saturday				Sunday				
Buses leave terminus at:	07:00	08:00	09:00r	09:30	08:30	09:30	10:30	11:30	10:30	11:30	12:30	13:30	
	10:45	12:00	13:15	14:30	12:30	13:30	14:30	15:30	14:30	15:30	16:45	17:45	
Route Variations	15:45	17:00	17:30r	18:15	16:45	17:45	19:00	20:00	19:00	20:00	21:00	22:00	
r To Rockbrook/Tibradden	19:15	20:15	21:15	22:15	21:00	22:00	23:00		23:00				
	23:15												

Eden Quay >> 20mins >> Ranelagh (Chelmsford Rd.) >> 10mins >> Milltown >> 10mins >> Nutgrove Ave. (Corner Beaumont Ave.) >> 13mins >> Whitechurch

From Whitechurch Towards Eden Quay



An Teampall Geal , Ascaill an Gharráin Chnó (Acomhal Ascaill Beaumont) , Baile an Mhuilinn , Raghnallach (Bóthar Chelmsford) , Cé Éidin

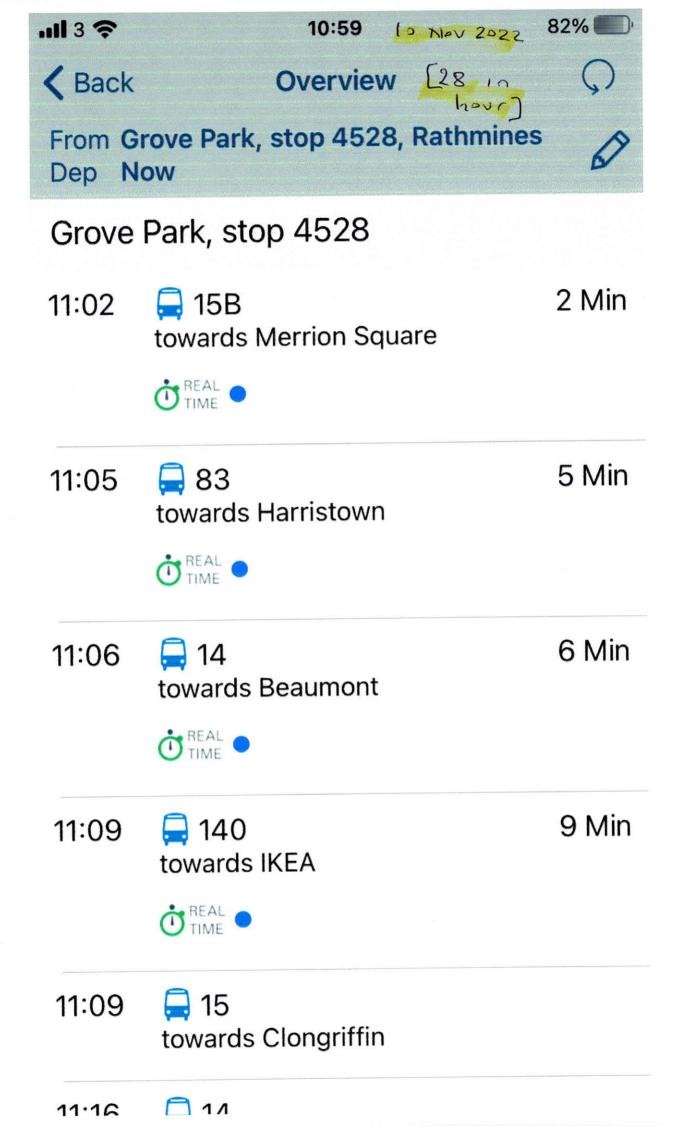
	Mond	Saturday				Sunday						
Buses leave terminus at:	06:00	06:30r	07:00r	08:00	07:15	08:15	09:30	10:30	09:30	10:30	11:30	12:30
	09:30	10:45	12:00	13:15	11:30	12:30	13:30	14:30	13:30	14:30	15:30	16:30
Route Variations	14:30	15:45	16:00r	17:00	15:30	16:30	18:00	19:00	18:00	19:00	20:00	21:00
From Rockbrook/Tibradden	18:15	19:15	20:15	21:15	20:00	21:00	22:00	23:00	22:00	23:00		
	22:15	23:15										

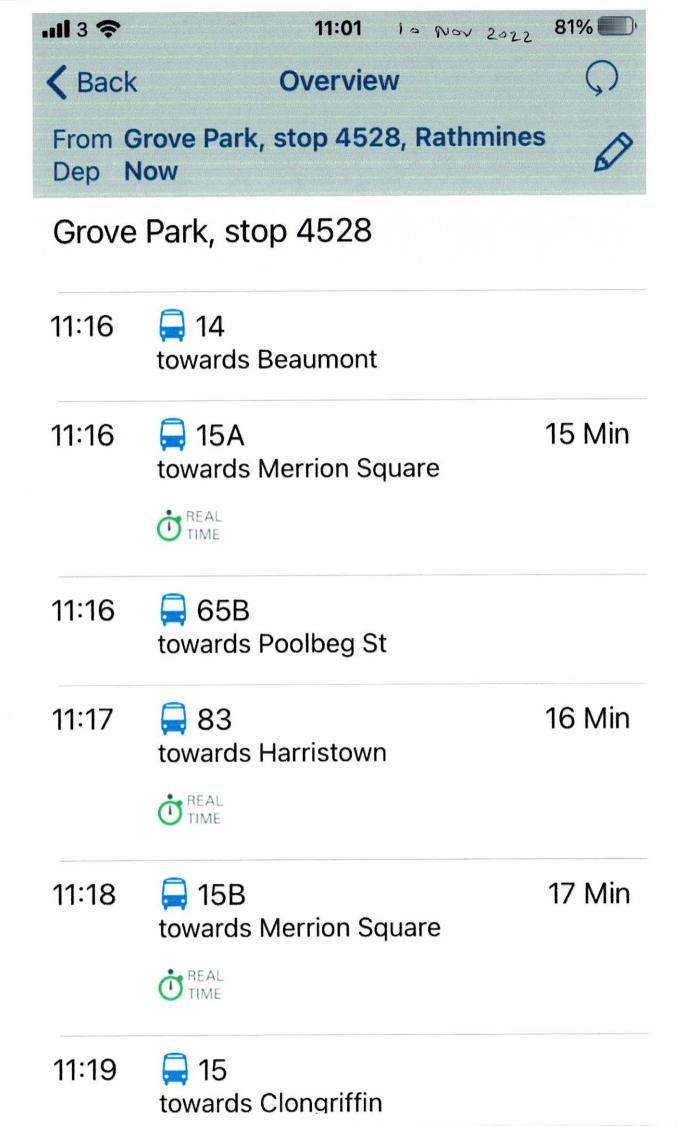
Whitechurch >> 13mins >> Nutgrove Ave. (Corner Beaumont Ave.) >> 10mins >> Milltown >> 10mins >> Ranelagh (Chelmsford Rd.) >> 20mins >> Eden Quay

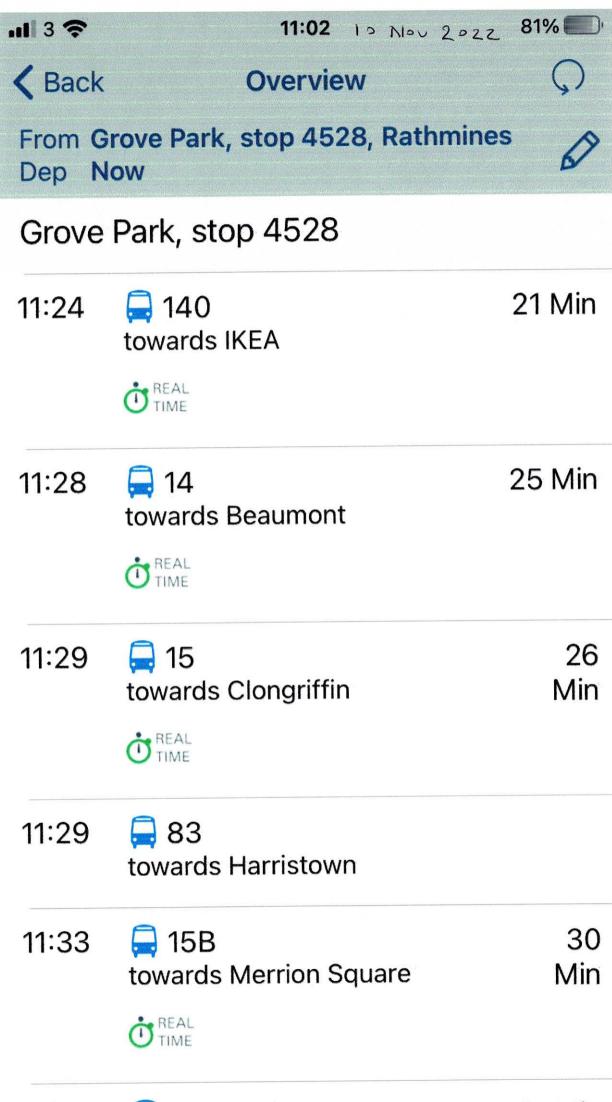
Fare Stages	25 75 Eden Quay	37 63 Nutgrove Ave. (Corner Beaumont Ave.)
	26 74 Merrion Sq. / Clare St.	38 62 Rathfarnham Church
	27 73 Earlsfort Terrace	39 61 Ballyboden Rd. (Ballyroan House)
	28 72 Charlemont Terrace	40 60 Ballyboden (Taylor's Lane)
	29 71 Ranelagh Rd. (Dartmouth Rd.)	41 59 Whitechurch Rd. (Grange Golf Club)
	30 70 Ranelagh (Chelmsford Rd.)	42 58 Whitechurch Rd. (Whitechurch Lodge)
	31 69 Sandford Rd. (Mariboro Rd.)	43 57 Whitechurch National School
	32 68 Milltown (Ramleh Park)	44 56 Taylor's Lane
	33 67 Milltown (Church)	45 55 Edmonstown Post Office
	34 66 Dundrum Rd. (Bird Ave.)	46 54 Reckett's Factory
	35 65 Dundrum Rd. (Columbanus Rd.)	47 53 Newtown House
	36 64 Dundrum Rd. (Frankfort Park)	48 52 Rockbrook

22/11/22











Dun Sceine, Lána Fhearchair Baile Átha Cliath 2, DO2 WT20

Diğn Sceine, Harcourt Lane Dublin 2, DO2 WT20

t 01 879 8300

info@nationaltransport.ie www.nationaltransport.ie

Jennifer Wall, Staff Officer, Dublin City Council, South East Area, Block 2 Floor 4, Civic Offices, Wood Quay, Dublin 8.

12 September 2022

Dear Ms. Wall,

I refer to your email of 16 June in relation to the Emergency Motion passed at the South East Area Committee meeting of Dublin City Council held on 13th June 2022. I apologise for the delay in responding.

Since your communication, the Government approved, on 5th July, the submission of the Railway Order application to An Bord Pleanala in respect of the MetroLink project, with that submission due to be made before the end of September. That approval is in respect of the current MetroLink proposal, extending from north of Swords to Charlemont in the south of Dublin City Centre. This transformative project will provide a fully segregated metro line along its alignment, most of which will be underground, and will include 16 stations along its route.

Given this development since the June meeting of the Committee, it is intended to proceed with the submission of the planned MetroLink project to An Bord Pleanala later this month. This will then trigger a statutory public consultation process, allowing submissions to be made in relation to the metro plans. It will then be a matter for An Bord Pleanala to adjudicate on those plans and determine the advancement of the project, with or without amendments.

The motion states "[t]his decision has significant implications for commuters and residents in the South East Area and South West of the City and ends the possibility/feasibility of a Metro South West at some future date, leaving only the very limited increase in capacity proposed by Bus Connects as the only solution for commuters in an area of forecasted population growth."

This is not the case. As identified in my letter of 23 May, the capability and flexibility to further extend the metro in the future, whether to connect onto the Luas Green Line or to provide a metro to the southwest or southeast of the city, is fully enabled and facilitated by the planned arrangements at

Charlemont, which future-proofs the opportunity for such extension. The MetroLink proposals would see the tunnel being extended just south of Charlemont Station, positioning that short extension such that it could facilitate a future metro connection to the Green Line or to a future metro to the south west or to the south east. In no way does the planned MetroLink scheme preclude or prevent a future extension to the southwest of the city.

Given the developments – in particular the Government's decision - since the Committee's motion, I hope that this written response provides sufficient information for the Committee and obviates the need for attendance.

Yours sincerely,

Hugh Creegan
Hugh Creegan,

Deputy Chief Executive.



Dún Scéine, Lána Fhearchair Baile Átha Cliath 2, DO2 WT20

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Jennifer Wall, Staff Officer, Dublin City Council, South East Area, Block 2 Floor 4, Civic Offices, Wood Quay, Dublin 8.

23 May 2022

Dear Ms. Wall,

I refer to the following motion passed at the March meeting of the South East Area Committee:

"This Area Committee urges the NTA to undertake the essential studies required to identify the best location for a City Centre Metrolink terminus and requests the attendance of the NTA at a meeting of the South East Area Committee to explain the rationale for the decision and future plans for Metro provision."

The MetroLink project has been the subject of extensive analysis as part of its development. This included comprehensive analyses in relation to alignment and station / terminus arrangements in the south city area. Various reports in relation to these studies are available at www.metrolink.ie.

As part of this process, integration with other high capacity public transport services, namely heavy rail and Luas (existing and future) was also considered as a significant component of the project. The MetroLink proposals provide key interchange opportunities with other public transport modes as it links with:

- · the DART system at Tara Station;
- the Luas system at Charlemont and O'Connell Street;
- multiple bus routes at various stations; and
- · heavy rail services at Glasnevin station.

The efficiency and speed at which the Metro can travel between stations is, among other things, a factor of the smoothness of the curvature of the track. Tight radii and variable track levels require lower speeds and can be cause for an uncomfortable passenger experience. Accordingly, the potential location of metro stations is heavily influenced by track alignment issues.

The determination of Tara Station as a key interchange station with DART services as part of the alignment options study and the location of stations at St Stephen's Green East and Charlemont, as an interchange with Luas Green Line, provides an alignment that offers high speeds and comfortable passenger experience.

Charlemont Station was selected as a key interchange between MetroLink and Luas Green Line as part of the Luas Green Line Tie-in study (2017) which is available at http://data.tii.ie/metrolink/alignment-options-study/study-2/metrolink-1-gl-tie-in-options-appraisal-report.pdf. Over recent months, various requests have emerged proposing that the MetroLink scheme be terminated at the St. Stephen's Green Station and not continued to Charlemont.

There are a number of reasons why Charlemont Station represents a better terminus and interchange location than an alternative of truncating MetroLink to terminate at the proposed St. Stephen's Green Station. These include:

The interchange arrangements at Charlemont, where MetroLink and the Green Line are
adjacent to each other, are much better than at the St. Stephen's Green Station. The very
beneficial feature of linking MetroLink to DART at Tara Station, allowing easy interchange
between those two modes, does dictate the metro alignment south of this station.
Accordingly, the proposed MetroLink station would be located along the St. Stephen's Green
East side of the park.

Passengers wishing to interchange between Luas and metro at a St Stephen's Green metro terminus, would face a 500m-walk along a route either through St Stephen's Green Park or along the footpath north of the Park, which adds significantly to the time for interchange and therefore the overall journey time for passengers and a less positive customer experience for all interchange users. This passenger experience would be reduced further for those with mobility or visual impairments as well as those travelling to/from the airport with luggage.

By way of contrast, the proximity of the metro to the Luas line at Charlemont provides for a positive customer experience for all users, with a short interchange distance and, due to the proximity, clear wayfinding and high visibility of interchange.

2. The capability and flexibility to further extend the metro in the future, whether to connect onto the Luas Green Line or to provide a metro to the southwest or southeast of the city, is much better enabled and facilitated by the planned arrangements at Charlemont, which future-proofs the opportunity for such extension. The MetroLink proposals would see the tunnel being extended just south of Charlemont Station, positioning that short extension such that it could facilitate a future metro connection to the Green Line or to a future metro to the south west or to the south east. In comparison, St. Stephen's Green is designated as a national monument. Terminating the metro at St. Stephen's Green would require the ability to re-excavate a second time in this area to accommodate the works necessary for a future extension. This is not considered to be either a desirable or an acceptable scenario given the availability of an alternative approach.

3. Because of the on-street nature of Luas from Charlemont northwards through the city centre, there is a lower level of potential tram capacity available north of Charlemont, reinforcing the case for the interchange between Luas and MetroLink to be at Charlemont rather than at St. Stephen's Green. The section of the Green Line between Charlemont and St. Stephen's Green would continue to run on-street along Adelaide Road, Harcourt Street and St. Stephen's Green West, passing through a number of significant road junctions including Harcourt Street / Hatch Street Upper and Harcourt Street / St. Stephen's Green South junctions.

This on-street running and junction interaction limits the number of trams that can operate on this section, likely to be a maximum of 24 trams per hour per direction. This results in less potential Luas passenger capacity than locating the terminus at Charlemont, which could ultimately be served by up to 30 trams per hour. Locating the interchange station at the location of maximum capacity avoids future capacity constraints emerging on the surface Luas section between Charlemont and St. Stephen's Green Luas stops.

The motion passed by the Committee also refers to "future plans for Metro provision". The NTA published its Draft Transport Strategy for the Greater Dublin Area 2022-2042 last November, with the public consultation extending until mid-January of this year. That draft strategy sets out a framework for the development of transport across the region. While it does not include for the development of further metros, other than MetroLink, during the period of the strategy, it does confirm the Charlemont terminus as the "appropriate location to facilitate any potential future metro extensions to serve the south west, south or south east of the city region should sufficient demand arise."

Finally, I note the request to attend a meeting of the Committee. Given the national extent of the NTA's functions, and limitations on personnel resources within the NTA, we have to rationalise our local authority meeting attendances and cannot facilitate all requests. Accordingly, we focus on attending full Council briefings, allowing coverage of a variety of topics, plus attendances at Transport SPC committee meetings. In light of the details provided above, I hope that this written response provides sufficient information for the Committee and obviates the need for attendance.

Yours sincerely,

Hugh Creegan,

Hugh Creegan

Deputy Chief Executive.





Text of emergency motion passed by by South East Area Committee 13 June 2022

1 message

Brendan Hernelburg brendannt grande grand com

Tue, Nov 22, 2022 at 4:11 PM

Emergency Motion for South East Area Committee 13/6/22

That this Committee:

- (1) calls on the Deputy CEO of the NTA to revise his decision not to attend a meeting of the South East Area Committee of Dublin City Council to discuss the rationale for the decision to locate the MetroLink Terminus at Charlemont instead of St. Stephen's Green.
- (2) calls on the Minister for Transport, Environment, Climate and Communications to:

(A)require the NTA/TII to carry out a comprehensive, transparent and up to date feasibility study for continuing MetroLink to South West Dublin.

(B)require the NTA/TII to make a minimal change to the MetroLink proposal to bring to An Bord Pleannala i.e. the last terminus on the southernmost end of the MetroLink to be decided (St. Stephen's Green Vs Charlemont) when a comprehensive feasibility study is available to Government. NTA/TII will then apply to ABP for a Variation of the Railway Order.

This minimal change to the signing of a Railway Order for MetroLink would ensure that construction of MetroLink could start without any delay while awaiting the outcome of a more up to date and relevant feasibility study for the southern terminus and the potential for a Metro South West extension at a future time.

While the NTA/TII have made a case for locating the terminus at Charlemont instead of St. Stephen's Green, they are not making themselves available to be challenged on the basis for this decision and the data and assumptions that underpin it. This decision has significant implications for commuters and residents in the South East Area and South West of the City and ends the possibility/feasibility of a Metro South West at some future date, leaving only the very limited increase in capacity proposed by Bus Connects as the only solution for commuters in an area of forecasted population growth.

POSTSCRIPT The Deputy CEO declined to attend the committee

DUBLIN CITY COUNCIL SOUTH EAST AREA COMMITTEE 14th March 2022

Motion 3 from Councillor Dermot Lacey

This Area Committee rejects the current National Transport Authority proposal to locate the Metrolink Terminus at Charlemont and urges the NTA to undertake the essential studies required to identify the best location for a City Centre terminus.

Report:

The Metrolink project is being delivered by Transport Infrastructure Ireland and as such, motions such as the above should in the first place be directed to TII for detailed response.

It should be noted that DCC have been working with TII on this project for a number of years and are satisfied that TII have undertaken the essential required studies to determine where this terminus should be.

Contact:

Eoin Corrigan, Senior Executive Engineer, tel.: 01 222 6454, email: eoin.corrigan@dublncity.ie

COMHAIRLE CONTAE ÁTHA CLIATH THEAS SOUTH DUBLIN COUNTY COUNCIL

South Dublin County Council Crest

MEETING OF SOUTH DUBLIN COUNTY COUNCIL

Monday, February 14, 2022

MOTION NO. 2

MOTION: Councillor Alan Edge

That this Council calls upon Minister Eamon Ryan: (i) To give proper consideration to the Feasibility Study on extending the Metro to Dublin South-West under the aegis of an independent working group to include political representatives. (ii) Without delay, to step in and bring to An Bord Pleanála a plan to bring MetroLink to St Stephens Green. Continuation of MetroLink to Dublin South-West would be a follow-on project thus effecting massive savings terms of cost and time

REPORT:

If this motion is agreed, a letter will be issued to the Minister for Transport and the Minister for the Environment, Climate and Communications. A response, when received, will be circulated to the Members.

DÁIL ÉIREANN

AN COMHCHOISTE UM IOMPAR AGUS CUMARSÁID

JOINT COMMITTEE ON TRANSPORT AND COMMUNICATIONS

Dé Máirt, 28 Meitheamh 2022 Tuesday, 28 June 2022

Tháinig an Comhchoiste le chéile ag 7 p.m.

The Joint Committee met at 7 p.m.

Comhaltaí a bhí i láthair / Members present:

Teachtaí Dála / Deputies	Seanadóirí / Senators	
John Lahart,*	Jerry Buttimer,	
Steven Matthews,	Gerry Horkan,	
Darren O'Rourke.	Mary Seery Kearney.+	

^{*} In éagmais / In the absence of Deputy Cathal Crowe.

Teachta / Deputy Kieran O'Donnell sa Chathaoir / in the Chair.

⁺ In éagmais le haghaidh cuid den choiste / In the absence for part of the meeting of Senator Jerry Buttimer.

to that request?

Chairman: It is something we collectively look at as a committee. The timescale on this is very short. We have had a lot of groups looking to come in. We have looked for submissions from groups that we can bring up with the NTA. It is very difficult but it is something we will consider as a committee.

Deputy John Lahart: I would be very grateful if the committee would consider it positively. I thank the Chairman.

Senator Mary Seery Kearney: I thank the witnesses for coming to the committee. On 4 May, in reply to a question from Deputy Steven Matthews, Mr. Creegan stated that for the NTA to look at transport initiatives they must be within the transport plan. Arising from that I want to look at the transport provisions within the plan. Section 12 of the plan sets out all the really big ticket items such as the MetroLink to the airport and to Lucan-Poolbeg, and the second line to Bray. There is no provision in it for the south-west city. The most recent census figures for those areas show: the south-west inner city population is 49,000; the Rathmines and Terenure population is 42,000; the Crumlin and Kimmage population is 41,500; the Templeogue and Rathfarnham area population is 43,000; the Ballyboden and Firhouse area population is 42,700; and in Tallaght the population is nearly 68,000 people. There is a great anxiety, which has already been articulated by Deputy Lahart, that a metro to south-west gets put into this plan as an addendum. We can put forward what we would really love to be put in as a paragraph. Like Deputy Lahart, I implore this committee to exercise its power under section 12 of the Dublin Transport Authority Act to make recommendations to the Minister: that metro to south-west be included; that we have an overturning of the feasibility study, which was inadequate; that there is a proper and fully comprehensive feasibility study put in for the inclusion of metro to southwest; and that this be included in this plan.

On top of these figures, the city edge development is being talked about. That is planned to be in place in ten years, which will add another 75,000 to 85,000 people resident there. The NTA has already acknowledged that it may need two Luas lines for that area. Within that, there are planned disruptions in the construction of BusConnects, which is reasonable and required to deliver on that. There will also be Luas construction on the same streets that will have just been set up and disrupted over a number of years. There is also potentially other forward planning for the likes of a metro to south-west, or otherwise. It makes much more sense to have a comprehensive overview of all of these provisions for the south-west area of the city. I would strongly ask that we would engage in that and to include it so the NTA can consider a metro to south-west in some form or other, even if it is in forward planning. Otherwise, this is going to be kicked down the road. It does not make sense to move ahead with other provisions when there is a very comprehensive possible solution here that should be included.

Attendant to that, I ask that the NTA comment on and reply, hopefully positively, to my next question. In early June, subject to a motion from Councillor Anne Feeney in Dublin City Council, an invitation was issued to the NTA to come into the council to discuss the issue of the MetroLink Charlemont terminus and the significant impact it has for commuters in the area and future transport needs. That was unanimously approved by the councillors. I ask that the NTA would reply positively to that invitation.

I apologise that I missed the NTA's opening statements as I was at another meeting. The draft plan was published in November. We are here now and there have been thousands of submissions in the meantime. The NTA encouraged those submissions, for which I am very

needs to serve that school. That is in there as a measure. That is something that has troubled us for a long time. Schools are being built in places where we are finding it very difficult to put in the type of connections that are needed to make it sustainable.

We recognise and committed in several places that rail freight will have to increase. It is definitely going to be part of the tools to meet the climate change target. I am not familiar with the issue in Dublin Port so there are probably details that are beyond what should be in the strategy.

Ms Anne Graham: Regarding assessing a project and focusing on time-based savings, that is a methodology we are obliged to follow because it is the methodology set out by the Department. We have made the case that this methodology should be changed to assess projects in a different way, which would then provide a lot more benefits for those sustainable projects, particularly walking and cycling projects. At the moment, the methodology is as set out so we are obliged to follow that at this time.

I think we responded to Deputy O'Rourke's questions. Obviously, we will respond further if there is any further follow-up. Deputy Lahart also looked at the taxi industry. I will give some facts and figures regarding where we are in terms of the numbers of vehicles in the industry post Covid. We are down about 11% in terms of vehicle licences from pre-Covid. Out of that, there are a number of inactive vehicle licences so there are about 3,200 that could return to the industry in the next 24 months post expiry - they remain connected to the industry and we hope to see as many of them as possible coming back to the industry. The number of those who are available to drive in Dublin has reduced by 5.5% since 2019. We are undertaking a driver recruitment campaign to encourage new applicants to take up driver licences. We hope that this campaign results in new driver licences, as was the case when we did a campaign a number of years ago, so that we can start building back up the sector post Covid. There is no doubt that it is still having an impact on availability at those core hours on Friday and Saturday nights.

As to whether it would make any difference if we were to allow what we would consider a more deregulated market in terms of ride hailing, there is a misconception that the old-style Uber, which was what it was offering, still operates in the UK and western Europe. This involved unlicensed drivers and unlicensed vehicles. In fact, in the UK, the regulations have been changed to permit only police-vetted and licensed drivers to operate even for ride share in London. The same is true for Belgium, Germany, Italy, Spain and France and many cities further afield in which Uber operates. Uber does not operate with unlicensed drivers in London. It is regulated by Transport for London in the same way as any private hire offering. Drivers must have a private hire vehicle driver licence from Transport for London. We would suggest that this regulatory model would also be used in Ireland so that Garda-vetted drivers would be used in terms of Uber services. That is currently the case with licensed taxi drivers. We would encourage that this remain the case for vehicle licences going through the regulatory model as well as driver licences.

Deputy Lahart spoke about communication around electric vehicle grants. We will ensure that we communicate more around the fact that we can pay the grant directly to the garage rather than the individual. The Deputy made the case that this seemed much more affordable for the taxi industry. If that is not clear in our guidelines, we will make it clearer.

Metro south west was the next issue.

Mr. Hugh Creegan: It was raised by a number of members. A piece of work that we have

done - I appreciate that not everyone agrees with it - indicates that metro south west does not stack up economically at the moment. That may change. The terminal point of the tunnel for the MetroLink, assuming it gets the go ahead and is built, is designed to facilitate a connection going either to the green line or to the south west. Alternatively, it could head over to UCD slightly circuitously. However, it most definitely facilitates a connection to metro south west, so it does not preclude such a connection in the slightest. Some groups are concerned that, by bringing it to Charlemont, we are effectively trying to prevent it from going to the south west. Absolutely not. Equally, there is an idea that St. Stephen's Green is the better location, but it is not. The location we have chosen allows the MetroLink to connect with the green line, if required in future, or into the south west, which is more likely.

In reviewing the strategy, which we have to do every six years, we have given a commitment - it is on page 143 of the strategy - that we will assess the requirement to provide additional metro lines in the greater Dublin area based on the updated forecast for travel and demands, emerging significant changes in line use, etc., including previously considered options for extending MetroLink southwards towards UCD, along the existing green line or towards south-west Dublin. We have committed in the strategy to re-examining the matter at the next review, which will be six years from now. Assuming MetroLink is allowed to proceed, nothing we are doing now will preclude a metro link from going to the south west. I hope this gives some comfort.

Chairman: I will come in on that point. The metro south west group has sent us a great deal of documentation and has made a suggestion, that the witnesses are probably fully aware of, that it would like to see included in the draft strategy. Its correspondence reads:

Metro South West Group would request that the text beneath goes into section 12.3 dealing with light rail as this is where the Strategy deals with both Metrolink and Luas type projects. We suggest that a new paragraph 12.3.15 be added dealing with the south west city and that this conclude with a Measure LRT14. Here is the suggested text:

"Paragraph 12.3.15:

The provision of public transport in the south west city was the subject of many submissions in the consultation process leading to this Strategy. The specific issues in the south west city include:

- The population in the area between Red and Green lines of nearly 350,000 people [I believe from the recent census that this has increased];
 - The predominantly narrow road infrastructure in the area;
 - The excessive concentration of buses in Terenure and Rathmines;
 - The greater modal shift to public transport needed to meet the city target:
 - The implications of the City Edge development.

Measure LRT14::

NTA will in the early stages of the plan examine the extension of the Metrolink into South West Dublin. This work will include a full reconsideration of the document entitled "Metro to Knocklyon Feasibility Study" and an extensive public consultation on the options available."

I am assuming that the witnesses are familiar with this. Has it been catered for in the latest draft?

Mr. Hugh Creegan: Yes, although perhaps not as explicitly as the group would like. We are committing in LRT2----

Chairman: What is LRT2?

Mr. Hugh Creegan: It is on page 143 of our document. We----

Chairman: Six years is a long time away. Can the NTA carry out that review earlier?

Mr. Hugh Creegan: It has to be completed within six years and we will be starting it within four. These reviews take time. That is the timeline to which we should be working.

Chairman: The NTA will carry out the feasibility study that the group is requesting.

Ms Anne Graham: In four years' time at the earliest.

Chairman: Can it be done any earlier?

Ms Anne Graham: No.

Chairman: Why not?

Ms Anne Graham: A strategy has to have a life of a particular time. This strategy will have a life of six years. A great deal of work is coming out of that strategy in terms of what is set out in the-----

Chairman: But the NTA is committed to meeting the request of the metro south west group.

Ms Anne Graham: At the review stage of this strategy, which is in four years' time.

Chairman: In layman's terms, why did the NTA not choose a light rail system in that area?

Mr. Hugh Creegan: We believe that the right solution is to get on with building the Bus-Connects corridors in that area. It has a number of BusConnects corridors. In looking forward 20 years, we believe that the right measure will be to upgrade two of those corridors to Luas lines instead of pursuing a metro solution, which would be very expensive. However, we are committed to revisiting this decision. If it needs to be changed in future, it can be. Right now, though, the strategy boils down to the need to get on with building the BusConnects corridors and delivering something. There is the potential for light rail in the longer term. If we need to reconsider the metro, we can do so. That is what our position boils down to.

Chairman: Within the latest draft, the NTA is giving a commitment that this review will take place.

Mr. Hugh Creegan: Yes.

Chairman: I apologise to Senator Seery Kearney. I did not wish to take up her time. It was just on that specific issue.

Senator Mary Seery Kearney: I thank the Chair for being so specific. I appreciate it.

A couple of issues are arising that are likely to affect the plans for the bus corridors, for

DÁIL ÉIREANN

AN COMHCHOISTE UM IOMPAR AGUS CUMARSÁID

JOINT COMMITTEE ON TRANSPORT AND COMMUNICATIONS

Dé Céadaoin, 4 Bealtaine 2022 Wednesday, 4 May 2022

Tháinig an Comhchoiste le chéile ag 1.30 p.m.

The Joint Committee met at 1.30 p.m.

Comhaltaí a bhí i láthair / Members present:

Teachtaí Dála / Deputies	Seanadóirí / Senators	
Joe Carey,	Jerry Buttimer,	
Cathal Crowe,	Gerard P. Craughwell,	
Michael Lowry,	Timmy Dooley,	
Steven Matthews,	Gerry Horkan,	
James O'Connor,	Mary Seery Kearney.+	
Darren O'Rourke,		
Ruairí Ó Murchú.		

⁺ In éagmais le haghaidh cuid den choiste / In the absence for part of the meeting of Senator Jerry Buttimer.

I láthair / In attendance: Deputies Emer Higgins and Brian Leddin and Senator Emer Currie.

Teachta / Deputy Kieran O'Donnell sa Chathaoir / in the Chair.

we will really have a battle to get people on public transport. What is the update on the express bus routes on the N11?

Mr. Hugh Creegan: I suppose there is a difference between the services and the infrastructure. The services can run as far as we need them to run. We certainly see ourselves putting a park and ride site in Wicklow and picking up people from there and another park and ride site around Fassaroe. I believe there is a third one planned along the corridor, but I have forgotten exactly where.

In terms of infrastructure, the section of the N11-M11 corridor that is being looked at in terms of providing bus priorities is from its junction with the M50, or the Loughlinstown roundabout, down as far as Kilmacanogue or the junction south of Kilmacanogue. After that, you are into Glen of the Downs, which has designations and everything else. It would phenomenally challenging to go further than that. We would be delighted to get bus priority all the way from north of Glen of the Downs to the Loughlinstown roundabout. Services could then gain benefit from that section while running as far south as we need them to run, certainly to Wicklow. Services coming from Gorey or further south could also use those sites.

Deputy Steven Matthews: The infrastructure needs to go further south than Glen of the Downs. It is achievable and doable. The NTA has responsibility for services and for making them attractive to encourage people onto them. If we do not have the infrastructure in place to make them run in a timely manner, however, it will not work. Is TII solely responsible for ensuring that infrastructure is in place while the NTA just provides the services that run on that infrastructure?

Mr. Hugh Creegan: Yes. TII is the lead authority on this. We are working in collaboration with TII, but the Deputy is right; responsibility lies with the local authority and TII while we provide the services afterwards. Deputy Matthews will be aware of the history of Glen of the Downs. It is a challenging area in which to carry out any infrastructure works. Perhaps it could be part of a second phase but the last thing we want is for potentially nothing to be done on the N11 because we were tackling a really challenging section and dealing with all sorts of issues. It could potentially represent a second phase to be done afterwards.

Senator Gerry Horkan: I thank Ms Graham and Mr. Creegan for coming in once again. Without meaning to take anything away from my colleagues from the greater Dublin area, as the first Dublin person to contribute, I have quite a few things to say if I can manage to squeeze them all into my six or seven minutes, or whatever the Cathaoirleach allows me.

Chairman: It is good to see the Senator's confidence in his knowledge of all things Dublin.

Senator Gerry Horkan: I thank the Cathaoirleach. I will try to become an expert on Limerick in the future but we will worry about Dublin for now.

Chairman: I would say that the Senator is an authority on Dublin and an expert on Limerick.

Senator Gerry Horkan: I thank the Cathaoirleach very much. I should stop now.

There is a lot of confusion and angst with regard to where we are with MetroLink and the Luas upgrade, both from people in places that have services and who want them to be better and from people in places that do not have services but who would like them. People almost seem to be competing with each other for funds, which they see as a scarce resource. There

seems to be quite a bit of confusion and a lack of clarity with regard to the metro. The Dublin Commuter Coalition has said that the southbound Luas upgrade should never have been abandoned and should continue at least as far as Sandyford, if not Cherrywood. The Metro South West action group, which our witnesses will be very familiar with, are also campaigning. I do not like to see this as an either-or scenario. Both areas deserve public transport capacity. If the Luas has shown us anything - and I was lucky enough to have been a councillor at the time and to have been on the very first Luas service from Sandyford to St. Stephen's Green on the day of its launch in 2004 - it is that, if you build it, they will come. The modal shift has taken place in Dundrum to such a degree that many of the bus routes that went through Dundrum, such as the 48A, were abandoned and scrapped because they were no longer necessary. The Luas line acts as a magnet. People are willing to walk those ten, 12 or 15 minutes because they know what awaits them once they get there. It is an absolute credit to everybody involved with the Luas, including the Railway Procurement Agency, which has since been absorbed into TII, the NTA and so on. Everybody else now wants a Luas, which is a challenge. There are not necessarily corridors available for a Luas everywhere but that is where metro and underground services come in.

I am often asked why the upgrade is to stop at Charlemont rather than at Stephen's Green. Why bring it that far and stop rather than going to a more central location in the city? I am sure some of my colleagues will come in on this as well. I am looking at a live application for permission to build 881 apartments on a single site at the old Dundrum Village Centre. There is an endless amount of development happening at Cherrywood and very significant development in Sandyford. That is before considering the mental hospital site, 700 student apartments to be built on the Goatstown Road and other developments. There is an enormous amount of development happening on the existing Luas green line.

There is also an enormous amount of development happening in Terenure, Harold's Cross and out towards Knocklyon and Firhouse. People there have the red line far away from them on one side and the green line far away on the other but there is very little between outside of BusConnects. BusConnects has a place but it does not have the same reliability of journey time and never can unless there are dedicated bus corridors. The 46A, which has the best bus corridor in the country - I was lucky enough to be a councillor representing an area covering a long stretch of that corridor from Cabinteely as far as Belfield - is a very good service but fares must be taken and other things happen on roads that do not generally happen on railway lines.

The Dublin Commuter Coalition's opening statement, which is to be delivered later and which the witnesses may or may not have seen, indicates that this plan is less ambitious than the last plan. It has played down what was being offered under the last plan. We are talking about Luas upgrades in 2042. Before the pandemic, the green line was full. If it was full before all of this development in Sandyford, Cherrywood and Dundrum is done, it will be much worse when those developments are complete if people are willing to use public transport. People want to use public transport but, if it is not available or if it is full, they will get back in their cars. What is happening with regard to Charlemont and why? Why is there less ambition now that before?

Ms Anne Graham: I will start and then maybe my colleague will join in. The reason Charlemont is proposed is so that the metro will connect to the green line. One of the issues-----

Senator Gerry Horkan: Could it be done at St. Stephen's Green?

Ms Anne Graham: What would it connect into at St. Stephen's Green?

Senator Gerry Horkan: The metro is to come as far as St. Stephen's Green and the green line goes that far.

Ms Anne Graham: Is the Senator referring to the east side?

Senator Gerry Horkan: I am referring to the north-south link. It is coming as far as Charlemont rather than St. Stephen's Green. What is the advantage of doing that?

Ms Anne Graham: It is to allow it to connect into the green line at Charlemont.

Senator Gerry Horkan: That is as opposed to connecting into the green line at St. Stephen's Green.

Ms Anne Graham: The metro will serve the other side of St. Stephen's Green, which would be far more disruptive.

Senator Gerry Horkan: Will Ms Graham explain that because I am not familiar with this concept regarding the other side of St. Stephen's Green.

Ms Anne Graham: The metro station is proposed for the east side of St. Stephen's Green as opposed to the west side, which is where the green line operates. We can all agree that the metro should be connected to the green line because we want to avoid the problems we had in terms of lines not being connected. That is what Luas cross city solved. It made sure that there were connections between the lines. The alignment that has been chosen runs alongside the east side of St. Stephen's Green because that it allows for an easier connection to Charlemont.

Mr. Hugh Creegan: There are three reasons why Charlemont is a better termination point for MetroLink that St. Stephen's Green. As has just been said, it is a much better interchange between the green line and the metro system. At Charlemont, the separation will be vertical rather than horizontal. In the case of St. Stephen's Green, a 500 m walk would be involved.

Senator Gerry Horkan: The metro could not have gone to the west side of St. Stephen's Green.

Mr. Hugh Creegan: No. The curves involved in coming through Tara Street Station, which was a critical connection for us, and then getting down to Charlemont would not allow us to go to the other side of St. Stephen's Green. The previously proposed metro north was to terminate at St. Stephen's Green and did not connect at Tara Street Station. Different options were available, but the decision to connect the DART system to the metro system and the consequent need to run the line close to Tara Street Station dictated an alignment and pushed us out----

Senator Gerry Horkan: It could not swerve back from Tara Street Station as far as the west side of St. Stephen's Green. Is that what Mr. Creegan is saying?

Mr. Hugh Creegan: It would not be an appropriate alignment. In short, no.

Senator Gerry Horkan: I am not sure that is the public domain. It may be known in engineering circles but the wider public is not aware of that.

Mr. Hugh Creegan: The Senator could be right, but that is the case. You would be left with a long walk between the metro station and the Luas green line so it would be a very poor interchange. We cannot tell elderly people that it is a good interchange because it is not. That is the first reason. The second is that the termination point at Charlemont in the current design

allows for three things. The first is it allows for a connection to the green line in the future at the point when that is required. It could also be extended out to the south west of Dublin in the Rathfarnham, Terenure, Tallaght and Knocklyon direction. The line would also be capable of going to the south east of Dublin, towards UCD, if required. They are decisions that can be made in the future but the termination-----

Senator Gerry Horkan: Would all of that - A, B or C - be underground?

Mr. Hugh Creegan: Yes. That termination point is set up in a manner that allows all of that do be done. It is the easiest place for us to set it up. The third reason is that between Charlemont and St. Stephen's Green the trams are run on-street. It comes up Harcourt Street and crosses St. Stephen's Green south, which limits the number of trams. It limits the number of passengers we can bring into St. Stephen's Green to connect to the metro even if we are willing to accept that 500 m walk. We can bring many more trams to Charlemont than we can to St. Stephen's Green. Therefore, in terms of feeding the metro, Charlemont is much better. As you can see, we have thought it through quite a bit and for those three reasons, the Charlemont location is the better of the two locations.

Senator Gerry Horkan: That explains some of the logic as to why Charlemont, as opposed to why not Charlemont, which comprised much of the narrative. What are the possibilities of a south-west metro delivering for an area that is relatively bereft of good, high-quality public transport, which does not have any quality bus corridors that are of the quality you might see on the Stillorgan Road and which does not have the DART or the Luas?

Ms Anne Graham: Not yet.

Senator Gerry Horkan: Is it the strategy?

Ms Anne Graham: BusConnects is a key part of the strategy. That is about delivering bus priority on a significant proportion of those key radial corridors into and across the city. What you see in terms of bus priority on the Stillorgan Road, which is one of the primary bus priority bus corridors, is to be replicated right across on the key corridors. With that level of priority, which moves the priority from the current 30% of its journey to up to 70% of its journey being on a high quality corridor, it improves the punctuality of those services and that makes them much more attractive for users.

Senator Gerry Horkan: I do not know what the percentage is on the Stillorgan Road but I would argue that there is bus priority almost the entire way from Cabinteely church into Leeson Street. There are tiny stretches of Donnybrook where it disappears but not really. Ms Graham is saying that the best Bus Connect can do in the general area between the red and the green Luas lines is about 70%, is that right?

Mr. Hugh Creegan: We are going higher than that, very close to 100%. It depends on which corridor it is and there are different solutions for different corridors but our target on BusConnects is to try to get end-to-end bus priority through different means along the full corridor to allow-----

Senator Gerry Horkan: Obviously, BusConnects is not just a south-west Dublin thing, it is an everywhere in Dublin thing. I have had representations from certain councillors in regard to negotiating compulsory purchase orders, CPOs. Does the NTA do the CPOs?

Ms Anne Graham: For this project, yes.

82. To ask the Minister for Transport if his attention has been drawn to the alternative proposal by a group (details supplied) for Metrolink which would opt for St. Stephen's Green rather than-Charlemont being the interchange between Metrolink and the Luas Green Line and continuing the Metrolink to an underground station at Portobello which could also facilitate future expansion of Metrolink to the south west of the city; and if he will make a statement on the matter. — Aengus Ó Snodaigh. [11978/22]

Thursday, 3 March 2022

Questions (82)



Aengus Ó Snodaigh Question:

82. Deputy Aengus Ó Snodaigh asked the Minister for Transport if his attention has been drawn to the alternative proposal by a group (details supplied) for Metrolink which would opt for St. Stephen's Green rather than Charlemont being the interchange between Metrolink and the Luas Green Line and continuing the Metrolink to an underground station at Portobello which could also facilitate future expansion of Metrolink to the south west of the city; and if he will make a statement on the matter. [11978/22]

View answer

Written answers (Question to Transport)



MetroLink is likely the largest ever public investment project in the history of the State and has been subject to extensive non-statutory public consultation since 2018. The strategic rationale for a metro corridor from north to south Dublin has been well established in numerous strategic transport frameworks, including most recently the statutory Transport Strategy for the Greater Dublin Area. The Preferred Route for the MetroLink project is that as consulted upon in 2019 and extends from North Dublin to Charlemont as available to view on the project's dedicated website www.metrolink.ie. The Preliminary Business Case for the project, as well as the environmental impact assessment reports and other associated planning documentation, is prepared on the basis of that Preferred Route. Subject to Government approval in the coming months, the project will proceed to the statutory planning process with submission of a Railway Order application to An

Bord Pleanála and will then be subject to further public consultation as part of that process.

It is my strong belief that we urgently need to see progress on delivery of major public transport infrastructure projects, including MetroLink. It is my view that this focus on delivery is one shared by both citizens and political representatives and, while I recognise there will always be different perspectives on the details of major projects such as MetroLink, my aim is to see this project move off the drawing board and into construction. In that regard I think it important to note that substantial changes to the planning and design of the project as evolved since 2018 through extensive public consultation will add significant delay to the delivery of the project

Suggested follow-up Parliamentary Question:

Based on the results of the Public Consultation *conclusion* in early 2019, that the Luas Green Line would no longer form part of the MetroLink line on the south side of Dublin, Metro South West Group put forward a suggested solution to the Public Transport deficit in South West Dublin (fully supported by Deputy Eamon Ryan when Presented in Dail Eireann (Oct 2019).

This entailed using St. Stephens Green as the point from which a MetroLink could in fact continue to South West Dublin. A Feasibility Study was requested.

Why has this suggestion been consistently ignored by NTA and indeed the Minister for Transport.

This suggestion has the potential to save the State up to €500m, and to facilitate the North-South Metro Line connecting nor only with the Luas Green Line but also the Luas Red Line.





ABP modern heptathlon

1 message



Tue, Nov 22, 2022 at 11:39 PM

10 May 202 }

Sir, - Further to "Metrolink terminus at Charlemont provides seamless Luas link, NTA says" (News, May 4th), drawings issued for the Charlemont Metro Station show two lines about 200 metres apart, one below ground and one on a bridge.

They are connected by three flights of escalators, a walk in the open and three flights of steps (apparently two-way).

The word "seamless" does not leap out as the way to describe this. - Yours, etc,

EUGENE BARRETT,

13 May 2022

A chara, - The journey between the two lines at the proposed Charlemont Metro station mentioned by Eugene Barrett (Letters, May 10th), namely "three flights of stairs, a walk in the open and three flights of steps", could be renamed the modern heptathlon. - Is mise,

LOMAN Ó LOINGSIGH,

Dublin 24.