THE CASE FOR CONTINUING *METROLINK* TO SOUTH WEST DUBLIN

South West Dublin Metro Group

August 2020

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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:

- 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.
- ~~o~~ 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 turn-back 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:

- To serve the needs of the residents of South West Dublin
- To enable us to make a substantial shift from the car to public transport and
- 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 Capacity	Dublin South West Capacity
DART: feasible capacity	15,000	0
Luas Green Line: feasible capacity	6,000	0
Buses: actual provision	3,600[a]	5,680[b]
Total	**24,600**	**5,680**

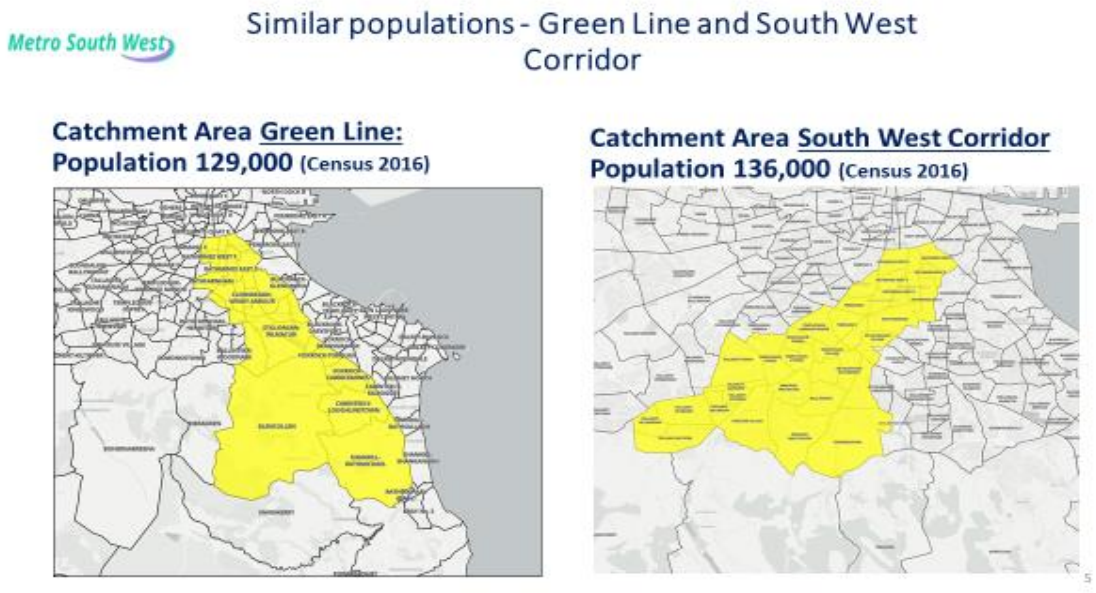
a At the entrance to Donnybrook Road: 1x116; 1x118; 7x145; 3x155; 4x39a; 7x46a; 1x46e; 3x7b; 1x7d; 3x84 = 31 buses.
On Merrion Road, at the junction with Ailesbury Road: 5x4; 2x7; 2x7a = 9 buses.
On Sandford Road at Gonzaga College: 3x11; 1x44; 1x61 = 5 buses.
The capacity of each bus is taken as 80 passengers.

b 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 South 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 almost three times its opening level to reach the target for the Greater Dublin Area of having 23% of trips on public transport (23÷9x1.09) =2.8[2].

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*.

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

[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.

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	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**

[a] 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 reduced in-bound capacity in the peak hour. There would be reduced capacity from Crumlin Children's Hospital, which is on the 'D' spine.

Could this very small increase of 3 buses facilitate thousands of commuters in South West Dublin to leave the car at home? Could this be consistent with public transport policy whereby public transport capacity in South West Dublin would have to almost treble 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 lane 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 *(12X15; 4X15a; 2X65; 1X65b)*	***20 buses*** *(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 Finglas[4].

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 Dublin[5]
- While refusing to even examine options which would have sufficient capacity?

[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.

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

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 conjunction 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.

- 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.

- 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 <u>without any further delay</u> because:

- *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 only 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 can 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 Road[6]. 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.

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

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

1) 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'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;
- 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;
- 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

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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]
2. *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.

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,

Hugh Greegan,
Deputy Chief Executive.