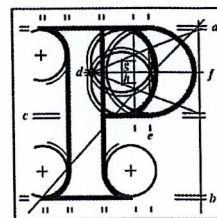


**Our Case Number: ABP-317121-23**

**Planning Authority Reference Number:**



**An  
Bord  
Pleanála**

Donal O'Brolchain  
100 Griffith Avenue  
Drumcondra  
Dublin 9  
D09 T6K3

**Date:** 13th September 2023

**Re:** BusConnects Swords to City Centre Bus Corridor Scheme  
Swords to Dublin City Centre

Dear Sir / Madam,

An Bord Pleanála has received your recent submission in relation to the above-mentioned proposed road development and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.

Please note that the proposed road development shall not be carried out unless the Board has approved it or approved it with modifications.

The Board has also received an application for confirmation of a compulsory purchase order which relates to this proposed road development. The Board has absolute discretion to hold an oral hearing in respect of any application before it, in accordance with section 218 of the Planning and Development Act 2000, as amended. Accordingly, the Board will inform you in due course on this matter. The Board shall also make a decision on both applications at the same time.

If you have any queries in relation to this matter, please contact the undersigned officer of the Board at [laps@pleanala.ie](mailto:laps@pleanala.ie)

Teil  
Glao Áitiúil  
Facs  
Láithreán Gréasáin  
Ríomhphost

Tel (01) 858 8100  
LoCall 1890 275 175  
Fax (01) 872 2684  
Website [www.pleanala.ie](http://www.pleanala.ie)  
Email [bord@pleanala.ie](mailto:bord@pleanala.ie)

64 Sráid Maoilbhríde  
Baile Átha Cliath 1  
D01 V902

64 Marlborough Street  
Dublin 1  
D01 V902

Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,



Eimear Reilly

Executive Officer

Direct Line: 01-8737184

HA02A

Teil  
Glao Áitiúil  
Facs  
Láithreán Gréasáin  
Ríomhphost

Tel  
LoCall  
Fax  
Website  
Email

(01) 858 8100  
1890 275 175  
(01) 872 2684  
[www.pleanala.ie](http://www.pleanala.ie)  
[bord@pleanala.ie](mailto:bord@pleanala.ie)

64 Sráid Maoilbhríde  
Baile Átha Cliath 1  
D01 V902

64 Marlborough Street  
Dublin 1  
D01 V902



100 Griffith Avenue  
Drumcondra  
Dublin  
D09 T6K3  
12 September 2023

An Bord Pleanála  
Strategic Infrastructure Division  
64 Marlborough Street,  
Dublin  
D01 V902

**Re. Bord Pleanála Case reference: HA06D.317121**  
**BusConnects Swords to City Centre Core Bus Corridor Scheme**

A Chara,

I ask An Bord Pleanála to reject this proposal on the following grounds.

1. Need is greater than the proposed scheme can meet
  - 1.1. A key assumption is that the population of the Greater Dublin area will reach 1.5m people by 2040.

*The population of the Greater Dublin Area (GDA) is projected to rise by 25% by 2040 (National Planning Framework (Government of Ireland 2018b)), reaching almost 1.5 million. This growth in population will increase demand for travel necessitating improved sustainable transport options to facilitate this growth.*

Source: Environmental Impact Assessment Report (EIAR) Volume 2 of 4 Main Report Swords to City Centre Core Bus Corridor Scheme Chapter 2 Page 1
  - 1.2. Census 2022 shows that the population of the Greater Dublin Area was, 1,458,154.
  - 1.3. On this basis alone, the proposed Scheme is based on a flawed analysis of the public transport need on this corridor.
2. **National Transport Authority(NTA) already decided that a bus based public transport service could not meet the demand on this corridor.**

See my submission of 16<sup>th</sup> December 2020 to the National Transport Authority's 3<sup>rd</sup> Round Public Consultation Appendix 1



- 2.1. pages 11 and 18 for extracts from report on Bus Rapid Transit Core Network Report
- 2.2. In 1996, it was recognised that there were more trip attractors generators on a then assess LRT line (now LUAS) linking Dublin City Centre – Drumcondra and Ballymun see p.30

### 3. Defective Data is a feature of this proposal

- 3.1. As an example, I draw your attention to the following statement. *The Proposed Scheme is located in the vicinity of a number of community and recreational receptors. (Chapter 10 Population. Par 10.3.2.1 p.12)*

Yet this section of the report does NOT mention

- Santry Stadium;
- Tolka Park, Richmond Road.

Similarly, in this section Croke Park is only mentioned as an employment location . This completely understates the impact of Croke Park as a major trip attractor/generator in terms of matches, concerts, conferences etc.

- 3.2. A large number of residential developments have been approved or been proposed for the Drumcondra area, all within the catchment area for this proposed core bus corridor
  - 3.2.1. SHD ABP-303296-18 Griffith Avenue with 7 blocks ranging in height from 4-8 storeys – now built as Griffith Wood;
  - 3.2.2. LRD 6015/22-S3 ABP-315584-23: Esmond Avenue on application for 3 apartment blocks 2-5 storeys in height;
  - 3.2.3. SHD ABP-312352-21: Richmond Road. Proposed 183 BTR apartments.;
  - 3.2.4. LRD6006/23-S3 ABP-317136-23 Richmond Road;
  - 3.2.5. LRD6009/23-S3 ABP 317438-2 on Richmond Road/Convent Avenue;
  - 3.2.6. DCC Reg. Ref No. 3406/23, Hampton, Grace Park Road.
- 3.3. In addition, other proposed developments have been refused or quashed. It is reasonable to assume that other applications will be made for the same sites
  - 3.3.1. SHD ABP-310860-21 Clonliffe Road
  - 3.3.2. DCC Reg 4353/19. ABP 306562 Richmond Avenue
  - 3.3.3. DCC Reg 3143/22: Convent Avenue
- 3.4. The number of schools shown for Drumcondra (5) given in *Table 10.4: Community Receptor Type* by Community Area (OSI 2020) ( Chapter 10 p. 12) seems understated, as I can name at least 7 ie.
  - 3.4.1. St. Patrick's Boys National School, Upper Drumcondra Road;
  - 3.4.2. Corpus Christi Girls National School, Home Farm Road;
  - 3.4.3. Drumcondra National School, Church Avenue;
  - 3.4.4. Educate Together National School, Grace Park Road;
  - 3.4.5. Pobalscoil Rosmini, Grace Park Road;
  - 3.4.6. Dominican School, Griffith Avenue;



- 3.4.7. Maryfield College, Glandore Road;
- 3.4.8. Clonturk College, Swords Road
- 3.4.9. Child Vision, Grace Park Road.

3.5. My search strategy may have lacked something, but I could not find Appendix B showing main attractors and generators for the entire route (See Figure 2) . It is not listed as heading in Appendix B in the Preliminary Design Report. (See Figure 1)

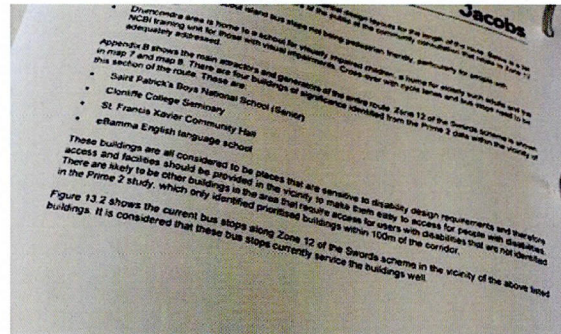
**Figure 1 Appendices in Preliminary Design Report**

Swords to City Centre Core Bus Corridor Preliminary Design Report		
14.7.1.1	Clonturk Avenue to Richmond Road	204
14.7.1.2	Richmond Road to Enniskerry Station	207
14.7.1.3	Enniskerry Station to Parnell Square including Clontarf Street Upper and Frederick Street North	210
15.	Summary Benefits/ How are we achieving the Objectives	212
Appendix A		215
Appendix A. Designers Risk Assessment		
Appendix B. Preliminary Design Drawings		
B.1	Site Location Map and Site Location Plan	
B.2	General Arrangement Drawings	
B.3	Mainline Plan and Profile	
B.4	Typical Cross Sections	
B.5	Landscaping General Arrangement	
B.6	Pavement Treatment Plans	
B.7	Fencing and Boundary Treatment	
B.8	Traffic Signs and Road Markings	
B.9	Street Lighting	
B.10	Junction Systems Design	
B.11	Proposed Surface Water Drainage Works	
B.12	11/12 Foul Sewer Asset Alterations	
B.13	ESB Asset Alterations	
B.14	GNW Asset Alterations	
B.15	RT Water Asset Alterations	
B.16	Telecommunications Asset Alterations	
B.17	Combined Existing Utilities Records	
B.18	Frank Flood General Arrangement	
B.19	Structures General Arrangement	
Appendix C. Relaxations and Resolutions		

3.6. It is clear that the NTA and its consultants are not up to date with recent developments. Clonliffe College Seminary was closed in 2018 – five years ago. Yet it is explicitly listed in one part of documents submitted for the proposed scheme.



Figure 2 Clonliffe College Seminary?

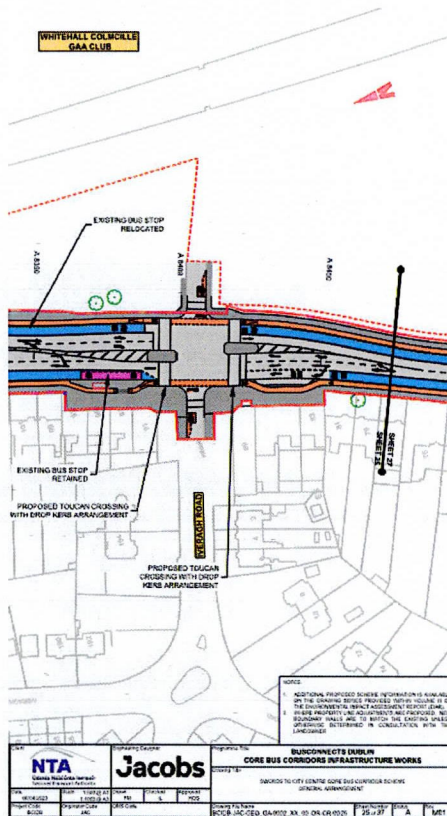


#### 4. NTA has failed to supervise the consultants.

4.1. Despite drawing attention to out of date information in my submission 16 December 2020 (see last pages), NTA has failed to ensure that obvious omissions are corrected in the May 2023 Environmental Impact Assessment Report Volume 1 General Arrangement Drawings eg,

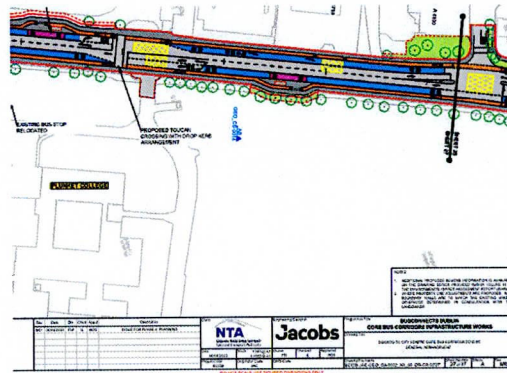
4.1.1. Why is a major development (DCC Reg. Ref. 3269/10; ABP Ref. PL29N.238685, as extended by DCC Reg. Ref. 3269/10x01) omitted in Drawing 25?

Figure 3 Missing Development -



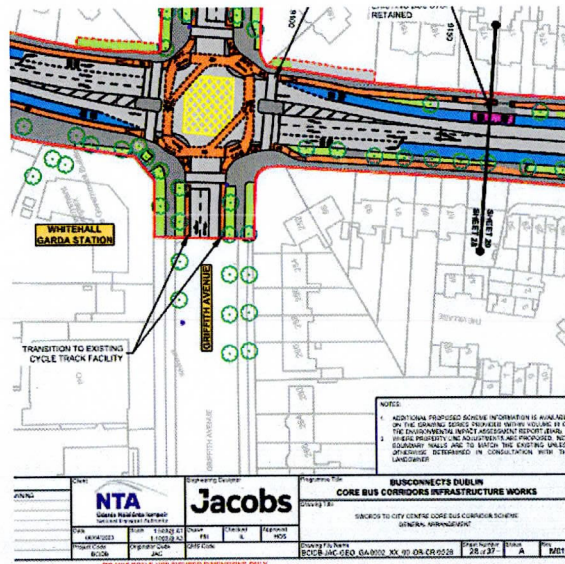
4.1.2. Where is Clonturk Community College (DCC Pl. Ref 2233/18) in Drawing 27?

**Figure 4 Clonturk Community College missing**



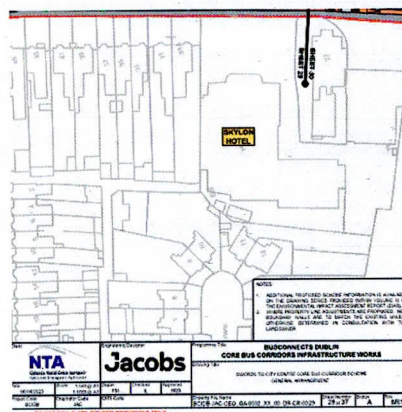
4.1.3. Whitehall Garda Station was closed more than 10 years ago. Why is it still shown in Drawing 28?

**Figure 5 Whitehall Garda Station closed in 2012 but not according to NTA!**



4.1.4. Why is LIDL in Drumcondra not shown in Drawing 29 see (PA Ref: 3811/11, ABP : PL29N.240376 ,as extended by 3811/11/x1 and 2687/19)?

**Figure 6 LIDL does not exist in Drumcondra – so says NTA!**





## 5. Tree/Hedge Removal

5.1. If approved as proposed, this will lead to the removal of

5.1.1. 180 individual trees;

5.1.2. 19 tree groups;

5.1.3. 9 hedges/parts of edges.

5.2. Of these 208 known carbon sequesters, less than 10% are assessed as having to be removed irrespective of the proposal.

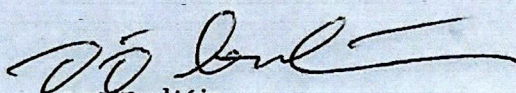
5.3. It is extraordinary that this proposed scheme will remove of trees in the centre of the Lower Drumcondra Road from the Railway Bridge to the Royal Canal, for road widening. Yet the same criteria is not applied to trees in the centre of Dorset Street. What kind of analysis underlies this arbitrary and whimsical proposal?

5.4. We are expected to believe that some of these will be replaced or translocated. Given the record of the National Transport Authority and Dublin City Council on, it is next to impossible to have any confidence that these public authorities will do what they say.

In summary, this proposal clearly represents a whimsical and arbitrary approach by the National Transport Authority to providing for the public transport needs on the central corridor in the North Dublin suburban area. The proposal shows a lack of awareness of recent developments in the Greater Dublin area, starting the population size and compounded by ignoring recent developments in the corridor. The lack of professionalism is clear from the failure to update maps (eg. Whitehall Garda Station has been closed for more than 10 years) although I explicitly mentioned this in my submission to NTA in December 2020.

We citizens deserve better service from our appointed public servants. This outdated proposal must be simply rejected as not fit-for-the purpose intended. Nor does it represent a good use of public resources.

Is mise



D. O'Brolchain



## **Appendix 1**

**D. O'Brolchain**

**Submission**

**16 December 2020**

**to**

**Re. Bus Connects Core Bus Corridor  
3<sup>rd</sup> round Public Consultation November 2020**



100 Griffith Avenue  
Drumcondra  
Dublin  
D09 T6K3  
16 December 2020

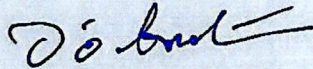
BusConnects Core Bus Corridor  
National Transport Authority  
Dún Scéine  
Harcourt Lane  
Dublin  
D02 WT20

**Re. Bus Connects Core Bus Corridor**  
**3<sup>rd</sup> round Public Consultation November 2020**

A chara,

I attach my submission on the latest consultation on this project

Is mise



Donal O'Brolcáin



- 1 It is clear from the Report on the BusConnects Consultation 2019<sup>1</sup> that the major concern is Capacity of the Bus Service ( Fig. 3.1 ). The level of concern expressed is more than half as much again as the two next highest topics.
  - 1.1 The Capacity Issue ranks highest in 23 of the 31 locations analysed by KMPG.
  - 1.2 The National Transport Authority(NTA) response lacks specificity and thus lacks credibility.
  - 1.3 By its own action, NTA has weakened it authority by its
    - 1.3.1 study on a Bus Rapid Transit (BRT) system which found that that system did not have adequate capacity to serve the potential passenger demand in Drumcondra and thus was not to be carried forward for further analysis;
    - 1.3.2 then commissioning a detailed study on a Swords-Drumcondra-City Centre BRT service, which also found that capacity would not be adequate

See my previous submissions where I give details of this arbitrary and whimsical policy-driven evidence making on the Sword Drumcondra-City Centre corridor (Appendix 1) together with options on how to cater for estimate passenger demand.

- 2 Similar lack of follow-through is evident in the Swords to City Core Bus Corridor – Draft Transport modelling Report<sup>2</sup>.
  - 2.1 It is clear that the highest daily movements on this corridor within Dublin City are between the junctions of Collins Avenue/R132 and Dorset Street Lower/Frederick Street North ( see Table 5.2 JCT Locations. Junction Identifiers 2-15 to 2-26, 2.34, 2-40 to 2.50) .
  - 2.2 Given this movement, there is no discussion on how the proposed bus service will cater to the transport demand which the movement data indicates.

---

<sup>1</sup> Report on Bus Connects Consultation 2019 National Transport Authority  
<https://busconnects.ie/media/1987/2019-consultation-report-170920.pdf>

<sup>2</sup> Swords to City Centre Core Bus Corridor - Draft Transport Modelling Report 21Oct 2020 marked Work-in-Progress  
<https://busconnects.ie/media/2142/02-swords-to-city-centre-cbc-draft-wip-transport-modelling-report-v1-final.pdf>



- 2.3 There is a clear lack of attention to detail in this report eg.
- 2.3.1 "The highest ATC daily flows are on Dorset Street north of Whitworth Road" It is clear that Dorset Street stops at Binns Bridge and the street continues as Drumcondra Road Lower.
- 2.3.2 Three further examples of a lack of attention to detail are in the maps in the Swords to City Centre Core Bus Corridor Draft Preferred Route Option Report November 2020<sup>3</sup>
- 2.3.2.1 Construction has started on a major apartment development on a site at the junction of Collins Avenue and Swords Road (see Appendix 2)
- 2.3.2.2 The site called Plunket College is also the site of Clonturk College, another secondary school with nearly 350 students during the academic year 2019-2020. (see Appendix 3)
- 2.3.2.3 Whitehall Garda Station was closed in 2012. It is now the location of the State Pathologist Office and the Dublin City Morgue (see Appendix 4)
- 2.3.2.4 Earlier this year, LIDL opened a store next to St. Patrick's College (see Appendix 5)

---

<sup>3</sup> Swords to City Centre Core Bus Corridor Draft Preferred Route Option Report November 2020  
<https://busconnects.ie/media/2111/02-draft-preferred-route-options-report.pdf>

## Appendix 1

### Submissions

July 2017

March 2019

December 2019



I welcome this study and approach which is long-overdue.

I reject the study's bona fides as it seems to operate on a number of assumptions which do not rely on evidence. Eg

1. Bus Rapid Transit (BRT) (p. 8);
2. The employment student density assumption (p. 24);
3. Effects of diesel-fuelled transport on public health.
4. Have the public authorities learnt anything?

### Bus Rapid Transit (p.8)

The National Transport Authority issued a report on Bus Rapid Transit in 2012.

In this report, it stated clearly that

*Overall, the link between the city centre and Swords has demand levels that exceed the capacity of a moderate capacity BRT system, in the longer term. While BRT may provide an interim partial transport solution in the shorter term, a higher capacity rail solution, such as a metro system, will ultimately be required on this corridor. In light of this, the Swords to City Centre BRT section has not been progressed to the later costing and appraisal sections of this feasibility study report.<sup>1</sup>*

Despite this, the National Transport Authority commissioned a detailed study on implementing on the City Centre – Drumcondra- Airport-Swords Corridor That study showed clearly that, with one exception, the capacity of BRT would NOT cater for the demand then identified on that corridor for the opening year of 2018. An October 2014 NTA report; shows that, with one exception, passengers forecast exceed the proposed BRT capacity even with the existing bus network still in place. This report assumes two separate BRT services south of the Airport, with maximum capacity of 2,700 ppdp. ie.

22.5 vehicles/hour on the Dublin Airport-Drumcondra-City Centre route, instead of the 15 vehicles/hour cited for BRT. These lack adequate capacity for the passengers forecast ie.

1. 1,800 .Passengers .Per direction .per hour (ppdp@4 minute frequency) is **exceeded by**
  - 40% in 2018 - the opening year for this proposed BRT;
  - 80% in 2033 -the forecast year.
2. 2,700 ppdp (@2.7 minute frequency) **exceeded by**
  - 22% in 2033 -the forecast year while being
  - at 95% capacity in 2018, the opening year for this proposed BRT.;;

(Source: ; National Transport Authority Swords/Airport to City Centre. Route

<sup>1</sup> Bus Rapid Transit (BRT) Core Dublin Network (BRT Report). National Transport Authority. October 2012.  
<http://www.nationaltransport.ie/wp-content/uploads/2012/11/Bus-Rapid-Transit-Core-Network-report.pdf>  
p. 50



Options Assessment Volume 1: Main Report (October 2014)

[http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route\\_Options\\_Assessment\\_Report.pdf](http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route_Options_Assessment_Report.pdf)

Transport Demand Analysis (Summary tables 10.5 and 10.6 p. 187) gives the result for the opening year 2018 and the forecast year 2033 for 2 route options.

Note that the same footnote points out that *It is anticipated that demand will increase following a reorganisation of Dublin Bus routes.*

Why are the public authorities trying shoehorn a new public transport system onto city streets shared with buses and Luas when it is obvious from NTA data that this BRT cannot meet the demand estimated for a route through Drumcondra?

Why go ahead with something so clearly not fit-for-purpose? If BRT goes ahead on the City Centre-Drumcondra-Airport-Swords route, it will be a very poor reflection on the competence of all those involved. This BRT is so poorly thought through that NTA is not using public funds to good effect for our capital city. It is a waste of resources.

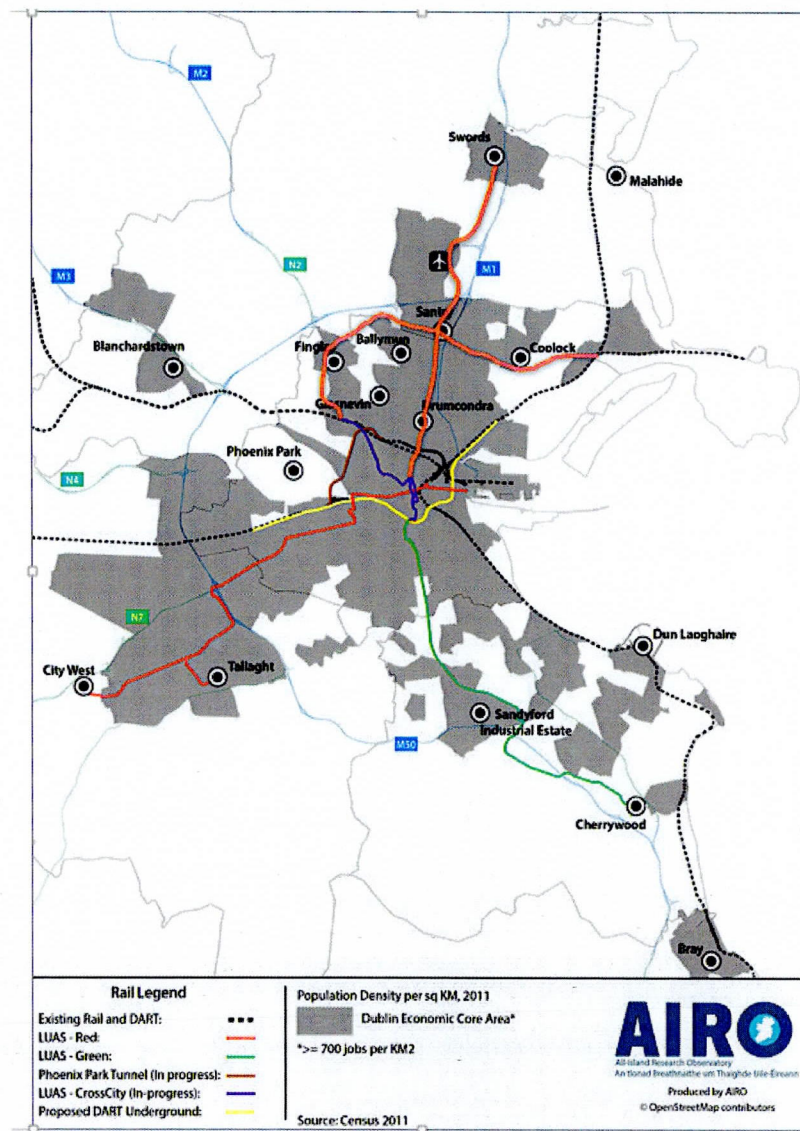
#### **Employment Student Density Assumption (p.24)**

Given that I have commissioned maps on Dublin's Core Economic Area and Population Density from the NUIM-based All Island Regional Observatory (AIRO) based on the 2011 Census, I remain to be convinced that the public authorities and their consultants use data to good effect, as it clear from the obsession with BRT. This report does not provide any basis for choosing the parameters given in Figures 27 and 28.

Based on these maps, I propose a NORTH CITY LUAS loop see Figures 1 and 2 as the basic public transport network for North Dublin. Bus services should be designed to feed this core network – not compete with it.

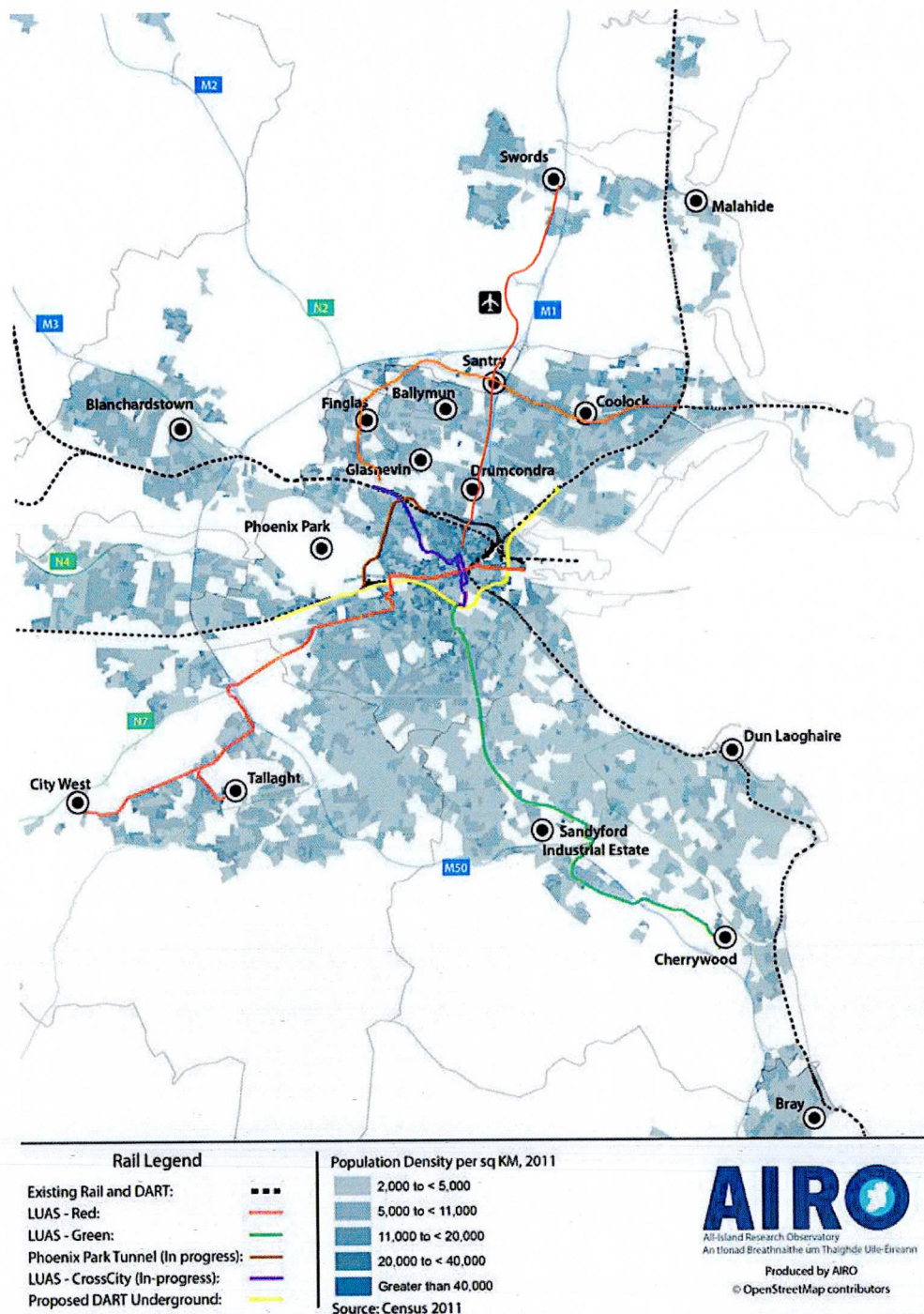


**Figure 1 A LUAS loop serving the North City part of Dublin's Core Economic Area with spurs to the Airport, Howth Junction and Swords**





**Figure 2 A LUAS Loop serving the North City population with spurs to the Airport, Howth Junction and Swords**



### Air quality

It is now widely accepted that emissions from diesel-fuelled vehicles have serious adverse effects on human health. Dublin buses (public and private) are diesel-powered. I cannot find any reference in this consultative document that the National Transport Authority and its advisers are paying any attention whatsoever to this factors.



This is extraordinary given that the Government currently is considering a new clean air strategy.<sup>2</sup>

This document points out that *"Vehicle emissions are a key source of health impacts from a range of air pollutant including NOx, particulate matter, black carbon and VOCs particularly in urban areas."*

### **Learning from previous work**

see attached extract from 1998 Inspectors Report on the first LRT (now LUAS) line enquiry

---

<sup>2</sup> Department of Communications, Climate Action and Environment. 2017. *Cleaning Our Air. Public Consultation to inform the development of a National Clean Air Strategy*. Dublin.



Dec 1998

The Inquiry was not satisfied that the noise implications of the depot had been fully dealt with in the primary evidence and requested additional information and assistance in that regard. Further evidence was given by Mr. O'Kelly on day 17 of the Inquiry. At page 183 of day 17, Mr. O'Kelly gave evidence of a recommendation of a continuous weighted noise level of 45 dBA measured at the nearest residential property over the period 23.00 hours to 07.00 hours, the measure interval to be 15 minutes. In addition there should be no clearly audible tones or impulsiveness in the character of the noise. On day 19 of the Inquiry Mr. Muiris O'Keeffe, on behalf of South Dublin County Council, was invited to give his views on this issue. He gave evidence that he would be inclined to follow the Environmental Protection Agency (EPA) guidelines on noise emissions. These stipulated both day and night-time continuous levels. He expressed the view that the guidelines were somewhat vague in that they refer to a measurement either at the site boundary or at sensitive locations which in this case would be the nearest dwelling. He further gave evidence that the value fixed by these guidelines is 45 dBA for night-time, that is between 10pm and 8am, 55 dBA for day-time.

It is clear that the question of noise emission from the depot remains to be fully addressed. The Inquiry has therefore decided to include a condition in respect of noise from that source. This condition is drafted in such a way that it will not operate should the depot become the subject of EPA control.

Subject to the foregoing, the noise and vibration aspects of the project appear to be satisfactory.

#### 2.1.4 Bus as an alternative

An issue raised on a number of occasions at the Inquiry was whether the same outcome could be achieved by using a similarly dedicated bus corridor between Tallaght and the City Centre along the same route without the necessity of the fixed rail installation.

The evidence of Mr. Steer and Mr. Christy O'Sullivan of Dublin Corporation are relevant in this regard.

Having considered the evidence, the Inquiry is satisfied that in order to create similar conditions of loading and unloading, ease of access and certainty, the limitations which would need to be imposed on buses (whether guided or not) servicing the route would be so stringent as to make their operation indistinguishable from a tram operation. Further the question of capacity was raised and it is accepted that similar capacity could only be achieved by an increased number of vehicles (with additional operating costs) or alternatively by increasing the size of the buses to make them indistinguishable from trams. For a fuller understanding of the background to this the relevant evidence of Mr. O'Sullivan and Mr. Steer should be consulted. The Inquiry is satisfied that buses do not represent a viable alternative to the proposal.

#### Conclusion

Taking into account all the factors mentioned above, the Inquiry concludes that the plans of CIE in the application meet the criteria necessary to be accepted as coherent.

#### References

##### *Transcripts*

1: P.67;95

2: P.14;17;70

16: P.100;121



## Bus connects

### Submission on Swords/Ballymun/Clongriffin – City centre routes

1. This project suggests a complete lack of integrity on the part of the public authorities proposing it.

#### Take the Swords -Drumcondra – City Centre route

Where is the evidence that this proposed Bus Connects Route route will have the capacity to meet passenger demand, particularly in the Drumcondra area, given that it appears to be very little different from that of the Bus Rapid Transit project?

In 2012, the National Transport Authority (NTA) report on the Bus Rapid Transit(BRT) stated

*It is on the northern section of this corridor – between Swords and the City Centre – that the high levels of demand arise.... Overall, the link between the city centre and Swords has demand levels that exceed the capacity of a moderate capacity BRT system, in the longer term. While BRT may provide an interim partial transport solution in the shorter term, a higher capacity rail solution, such as a metro system, will ultimately be required on this corridor. In light of this, the Swords to City Centre BRT section has not been progressed to the later costing and appraisal sections of this feasibility study report.<sup>1</sup>*

The NTA report also stated

*The key issue relating to any public transport system including BRT is its ability to have sufficient carrying capacity to meet existing demand and reserve capacity to meet future demand and to fulfil its transportation needs and objectives....BRT...should be viewed as a new, separate system with its own specific field of application but there can be an overlap zone between the higher end of BRT capacity and the lower end of LRT capacity<sup>2</sup>.*

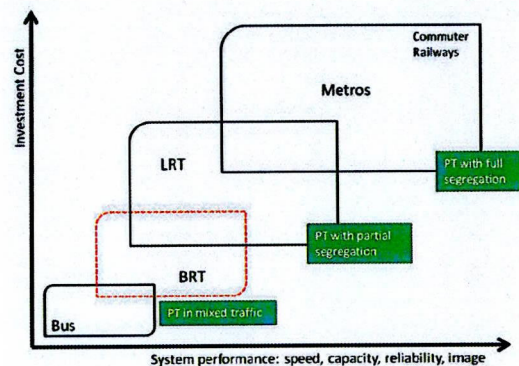
It is clear from Figure 1 (taken from the NTA Bus Rapid Transit Core Network Report that a LUAS service is needed to serve the passenger demands in the north part of Dublin City.

---

<sup>1</sup> Bus Rapid Transit (BRT) Core Dublin Network (BRT Report). National Transport Authority October 2012.  
<http://www.nationaltransport.ie/wp-content/uploads/2012/11/Bus-Rapid-Transit-Core-Network-report.pdf>  
p. 50

<sup>2</sup> BRT Report see footnote 1 above.p. 3



**Figure 1 Comparison of Public Transport modes**

Despite their own evidence that the BRT proposal for Swords-Drumcondra-City Centre was so defective as to drop any further consideration of the project, NTA went ahead to draw up detail proposals on the very route that they had already rejected.

*Later in 2014, we will apply for permission to An Bord Pleanála for the Swords/Airport to City Centre scheme, with applications for the Blanchardstown to UCD and the Clongriffin to Tallaght schemes to follow in 2015.<sup>3</sup>*

The NTA detailed report on the Bus Rapid Transit(BRT) proposal for a Swords-Drumcondra-City Centre route (October 2014)<sup>4</sup>; showed that, with one exception, passengers forecast exceed the proposed BRT capacity even with the existing bus network still in place. This report assumes two separate BRT services south of the Airport, with maximum capacity of 2,700 ppdph. ie.

22.5 vehicles/hour on the Dublin Airport-Drumcondra-City Centre route, instead of the 15 vehicles/hour cited for BRT. These lack adequate capacity for the passengers forecast ie.

- 1800 .Passengers/per direction/per hour (ppdph@4 minute frequency) is **exceeded by**
  - 40% in 2018 - the opening year for this proposed BRT;
  - 80%in2033-the forecast year.
- 2,700 ppdph (@2.7 minute frequency) **exceeded by**
  - 22%in2033-the forecast year while being
  - at 95% capacity in 2018, the opening year for this proposed BRT.

<sup>3</sup> <http://www.nationaltransport.ie/news/bus-rapid-transit-public-consultation-launched-today/>

<sup>4</sup> ; National Transport Authority Swords/Airport to City Centre. Route Options Assessment Volume 1: Main Report (October 2014)

[http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route\\_Options\\_Assessment\\_Report.pdf](http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route_Options_Assessment_Report.pdf)

;; Transport Demand Analysis (Summary tables D.5 and 10.6 p. 187) gives the result for the opening year 2018 and the forecast year 2033 for 2 route options. The same footnote to both tables states

*It is anticipated that demand will increase following a reorganisation of Dublin Bus routes.*



### **Clongriffin- City Centre Route.**

Anecdotal evidence already suggests that it is buses are overcrowded at morning peak times on this existing Malahide Road bus routes

### **Ballymun- City Centre route**

As this transport corridor is effectively the same as that served by the proposed MetroLink, is a Bus Connects project needed in this area?

#### **Advantages claimed for bus connects are exaggerated**

The NTA continues to claim that the standards needed for success of the bus connect

project are the same as for LUAS, just as it did for the Bus Rapid Transit(BRT) project

*The assumption used in this modelling analysis is that the **proposed BRT system will be a high quality service as outlined in the system concept, with characteristics more in line with a Luas service than the existing bus service. As a result, the modelling parameters used to define the BRT service (i.e. crowding curves, and transfer penalties) are more comparable to rail based modes than bus. In this way, potential demand for a high quality BRT service can be established. If the system concept is not fully implemented, it will result in reduced patronage and act as a disincentive to potential passengers transferring to public transport.***<sup>5</sup>

#### **Comparison with existing Bus Átha Cliath services**

<b>Claimed for Bus connects</b>	<b>Existing Dublin Bus Fleet</b>	<b>Difference</b>
Modern, attractive multi-door vehicles	Why not use the multi-doors on the many buses in the current fleet?	Managerial ineptitude
Uses own lane or shared bus lane	In what way is this different from the current bus lanes?	Not significant
Bus vehicle given priority at traffic signals	Why is this not being done at present for both buses and LUAS?	Current practice shows a complete failure of capacity to manage the street space. Why not do this now?
Off-board ticketing (tickets purchased in advance or Leap cards)	Why is this not being done at present for buses, as it is on LUAS and DART?	This shows incompetence in optimising the running time of buses. Why are we waiting for something that should have been done years ago?
Conveniently located stops with optimal spacing	Long overdue with the current bus service.	Why has this not been done prior to this?

<sup>5</sup> BRT Report see footnote 1 above.p. 46



## 2. Trees

The first principle in dealing with any risk is to avoid incurring it. Only if it is unavoidable, should mitigation measure be considered.

Bus Connect proposes to remove hundreds of trees in urban area. NTA proposes this in order to create more space for fossil-fuelled powered vehicles, in addition to allegedly creating some space for cyclists.

This flies completely in the face of refined and well-considered methods of mitigating the effects of climate change in urban areas, given that trees

- a. Absorb carbon dioxide;
- b. Absorb water;

See Appendix 1.

NTA also says it will replace trees .Given the complete about face of the NTA on a Bus Rapid Transist Rute through Drumcondra, it is clear that this public authority cannot be trusted to act in according with evidence, including its own evidence.

## 3. The public authorities cannot be trusted.

The preamble of the National Transport Authority / Transport Infrastructure Ireland report on the New Metro North Alignment Options Report 252252-ARP-RL-SW-RP-RC-0016 Issue 1 15 March 2018 Arup Par .1.1 p.7) misleads regarding the context for 2001 origin of a Metro system for the Greater Dublin Area,

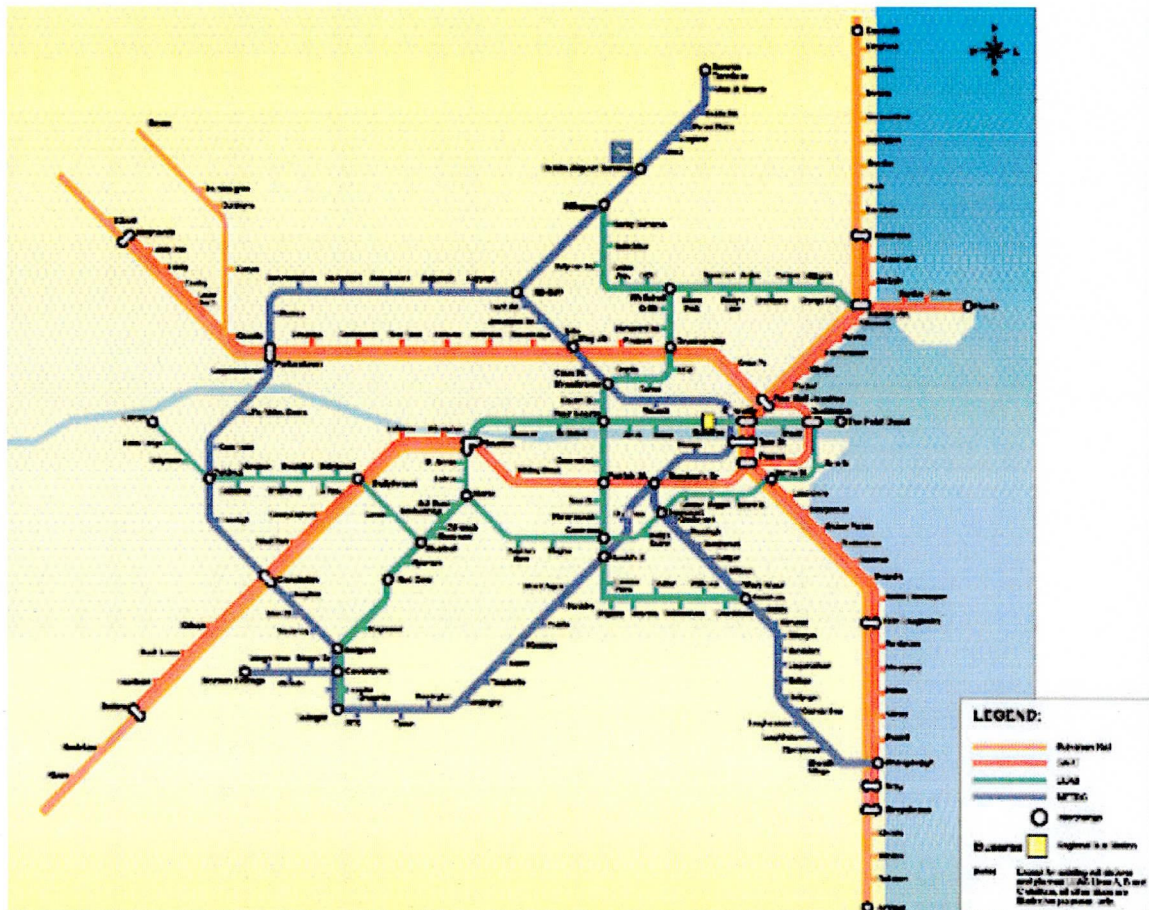
*The objective to provide a Metro connection between Dublin City Centre, the Airport and onwards to Swords was identified in the 2001 Dublin Transportation Office's (DTO) 'A Platform for Change (An integrated transportation strategy for the Greater Dublin Area 2000 to 2016)'. Based on this initial objective, a scheme called Metro North was proposed for development as part of the Government's 'Transport 21' investment programme in 2005 and a Railway Order for the scheme granted in 2010.*

given that Figure2 (Taken from the Platform for Change 2001 report)clearly shows

- a) Metro, as a loop, taking in the western and southwestern parts of the Greater Dublin Area with
  - south-north spurs to Swords and Shanganagh;
- b) The Metro link from Stephen's Green to the Airport was via Broadstone
- c) One LUAS line through Drumcondra with two spurs linking with Howth Junction and the then proposed Metro at Ballymun;
- d) A City-centre LUAS loop taking in the Docklands



**Figure 2 DTO A Platform for change November 2001 Figure 5.6**



It is clear from the DBulin Port Tunnel Enviroemental Impact Statement that there was to be only one carriageway on each side of the north portal.

This was the bais on which Dublin City council officials and their advisers presentated the case to a sworn public enquiry on the Dublin Port Tunnel project. All traffic assumptions were based on this analysis. The air quality and noise assumptions were derived from those traffic porjecgtson.

This was the basis on which the then Mnister for the environment signed the order authorising the construction of the Dublin Port Tunnel.

Later on, another carriageway was added to the inbound section near the north portal of the Tunnel.

Where is evidence that the public authorities redid the traffic projections for the Drumcondra area as part of that change. It is not at all clear that the public authorities exercised a sutyo of care in making that change.



100 Griffith Avenue  
Drumcondra  
Dublin  
D09 T6K3  
10 December 2019

Dublin Area Bus Network Redesign  
National Transport Authority  
Dún Scéine  
Harcourt Lane  
Dublin  
D02 WT20

### Re. Bus Connects

A chara,

National Transport Authority (NTA) reports and other evidence have long been clear that buses cannot provide the capacity for the known public transport demand on key routes in the north part of Dublin City, particularly in Drumcondra

It is now clear that these proposals are rooted in a 1960s mindset, based on road widening to create more space primarily for vehicles, powered in the most part by fossil fuels. The associated emissions are a clear and well-documented danger to human health.

This road widening will take place mainly outside the inner canal cordon. It is not at all clear journey times within the Greater Dublin Area will be shortened due to the failure of the public authorities to add other underground planes in the area bounded by the inner canal cordon, specifically for those solely traversing the inner city. This is particularly true of the eastern part of the Dublin City area, where much office building is still taking place. To sue streetspace more effectively, this part of Dublin needs another underground plane for cars.

In this context, it must be borne in mind that it is cheaper to build tunnels to for road traffic than for suburban rail transport, given the additional cost of underground stations for passengers to access public transport.

What kind of policy-making proposes

- A. Four Bus Connects routes (A1,A2, A3, A4) on the Drumcondra-City Centre corridor, given that there is clear evidence in NTA and other documents that buses do not have adequate capacity to cater for transport demand on this corridor?
- B. A Bus Connects route to Ballymun from the City Centre (Route E1) serving virtually the same corridor as that being served by the proposed MetroLink?

This is **evidence free policy making**. This is the type of thinking led to the celtic craziness and all that implied in terms of competence and knowledge not being applied systematically



to enhance the public domain for our common good. It is far from clear that the factors pointed to in the 2017 IMF Public Investment Management Assessment Report have been acted on.<sup>1</sup>

It is clear that the public authorities proposing these measures

1. have not learnt the lessons of previous considerations of measures to enhanced public transport in the Greater Dublin Area between the M50 and inner canal cordon;
2. completely disregard evidence, including material that they themselves have commissioned and published;
3. act without regard to other transport proposals on which €ms have already been spent. This suggests that these proposals are characterised by silo-based thinking by executive bodies which are out of control.

The public authorities involved in Bus Connects simply cannot be trusted in any promise they make. This applies to mutually reinforcing measures which would make it easier for people to move around the Dublin area for work, leisure and other purposes. These authorities have a recent history of

- i. not acting on evidence;
- ii. arbitrarily changing approved measures – in a stealthy non-transparent manner - without trying to mitigate the effects of these changes.

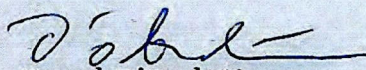
This project also shows a complete lack of understanding of the biosphere, as the basic working assumption is that trees be removed to create more road space. This is simply extraordinary at a time when it is known that trees

1. Enhance the air quality in urban areas;
2. Are natural carbon capture and storage (CCS) devices that already exist;
3. Mitigate flood risk.

I am left wondering about the integrity with which this process has been devised and is being pursued.

I attach my submission in support of these statements in addition to my earlier submission of 29<sup>th</sup> March 2019

Is mise



Donal O'Brolchain

---

<sup>1</sup> Ireland: Technical Assistance Report-Public Investment Management Assessment. Country Report No. 17/333. November 2017  
<https://www.imf.org/en/Publications/CR/Issues/2017/11/10/Ireland-Technical-Assistance-Report-Public-Investment-Management-Assessment-45383>



# Bus Connects

## Previous Considerations on enhancing public transport in North Dublin City

### Buses cannot provide the capacity needed

When considering buses as an alternative to what became on-street LUAS, the Inspector of the statutory enquiry on the then proposed Tallaght-City Centre LRT considered buses as an option. His report was very clear that buses were not adequate (see p.2)

#### 2.1.4 Bus as an alternative

An issue raised on a number of occasions at the Inquiry was whether the same outcome could be achieved by using a similarly dedicated bus corridor between Tallaght and the City Centre along the same route without the necessity of the fixed rail installation.

The evidence of Mr. Steer and Mr. Christy O'Sullivan of Dublin Corporation are relevant in this regard.

Having considered the evidence, the Inquiry is satisfied that in order to create similar conditions of loading and unloading, ease of access and certainty, the limitations which would need to be imposed on buses (whether guided or not) servicing the route would be so stringent as to make their operation indistinguishable from a tram operation. Further the question of capacity was raised and it is accepted that similar capacity could only be achieved by an increased number of vehicles (with additional operating costs) or alternatively by increasing the size of the buses to make them indistinguishable from trams. For a fuller understanding of the background to this the relevant evidence of Mr. O'Sullivan and Mr. Steer should be consulted. The Inquiry is satisfied that buses do not represent a viable alternative to the proposal.

When the NTA studied (in 2012) provision of a Bus Rapid Transit (BRT) system for Dublin, the report stated

*It is on the northern section of this corridor – between Swords and the City Centre – that the high levels of demand arise.... Overall, the link between the city centre and Swords has demand levels that exceed the capacity of a moderate capacity BRT system, in the longer term. While BRT may provide an interim partial transport solution in the shorter term, a higher capacity rail solution, such as a metro system, will ultimately be required on this corridor. In light of this, the Swords to City Centre BRT section has not been progressed to the later costing and appraisal sections of this feasibility study report.<sup>1</sup>*

Yet the NTA went ahead to commission a detailed study on the very route for which it found that BRT would NOT be suitable.

*Later in 2014, we will apply for permission to An Bord Pleanála for the Swords/Airport to City Centre scheme, with applications for the Blanchardstown to UCD and the Clongriffin to Tallaght schemes to follow in 2015.<sup>2</sup>*

<sup>1</sup> Bus Rapid Transit (BRT) Core Dublin Network (BRT Report). National Transport Authority. October 2012.  
<http://www.nationaltransport.ie/wp-content/uploads/2012/11/Bus-Rapid-Transit-Core-Network-report.pdf>  
p. 50

<sup>2</sup> <http://www.nationaltransport.ie/news/bus-rapid-transit-public-consultation-launched-today/>



It is clear that the question of noise emission from the depot remains to be fully addressed. The Inquiry has therefore decided to include a condition in respect of noise from that source. This condition is drafted in such a way that it will not operate should the depot become the subject of EPA control.

Subject to the foregoing, the noise and vibration aspects of the project appear to be satisfactory.

#### 2.1.4 Bus as an alternative

An issue raised on a number of occasions at the Inquiry was whether the same outcome could be achieved by using a similarly dedicated bus corridor between Tallaght and the City Centre along the same route without the necessity of the fixed rail installation.

The evidence of Mr. Steer and Mr. Christy O'Sullivan of Dublin Corporation are relevant in this regard.

Having considered the evidence, the Inquiry is satisfied that in order to create similar conditions of loading and unloading, ease of access and certainty, the limitations which would need to be imposed on buses (whether guided or not) servicing the route would be so stringent as to make their operation indistinguishable from a tram operation. Further the question of capacity was raised and it is accepted that similar capacity could only be achieved by an increased number of vehicles (with additional operating costs) or alternatively by increasing the size of the buses to make them indistinguishable from trams. For a fuller understanding of the background to this the relevant evidence of Mr. O'Sullivan and Mr. Steer should be consulted. The Inquiry is satisfied that buses do not represent a viable alternative to the proposal.

#### Conclusion

Taking into account all the factors mentioned above, the Inquiry concludes that the plans of CIE in the application meet the criteria necessary to be accepted as coherent.

#### References

1: P.67;95

2: P.14;17;70

16: P.100;121

#### 2.2 (b) Is the scale of property acquisition reasonable in view of the size of the project?

The purpose of this section is to deal with property acquisition on a general basis. Specific problems such as Arran Quay Terrace are dealt with on an individual basis.

In Area 1, the land to be acquired is for the most part in the ownership of South Dublin County Council. CIE require a small acquisition of 80sq metres from Ms. Sheila Watts. CIE also propose to acquire 648 sq metres from Mr. Desmond O'Neill which is the subject of a separate section in this report. Other property owners in Area 1 are Dublin Corporation and CIE itself.

In Area 2, all the property to be acquired is owned by South Dublin County Council with the exception of 381 sq metres occupied by Fiat Auto Ireland Ltd. In Area 3 small portions of property owned by property owners adjacent to the Red Cow roundabout such as Motokov (Ireland) Ltd, Motor Distributors Ltd and Nissan Ireland Forklift are to be acquired. The other land to be acquired in this area is owned by Dublin Corporation.

In Area 4, most of the property to be acquired is owned by the Minister for Arts, Heritage, Gaeltacht and the Islands or Dublin Corporation. Small amounts of property may be acquired from Dooneal Homes Ltd and the Board for the Employment of the Blind (10 sq metres only). Land occupied by Knorr Bestfoods Ltd, J. Lyons & Company, St. John Bosco Youth Centre and Dulux Paint is also marginally affected. Some 200 sq metres is to be acquired from the Good Counsel GAA Club.

In Area 5 some 48 different properties are listed for acquisition. More than 40 of these are occupied by Public Bodies.

In Area 6, 32 properties are listed for acquisition. The problems of Bargaintown and the occupiers of Arran Quay Terrace are separately considered in this report. CIE propose to acquire 908 sq metres from Irish Distillers Ltd who did not object



The National Transport Authority never provided any evidence of how it came to ignore its own findings on the adequacy of bus-based public transport on the Drumcondra Corridor.

Even that 2014 study found that the capacity of a BRT on a Swords-Dublin Airport-Drumcondra -City Centre route would not meet the estimated demand for public transport on that corridor.

That 2014 shows that, with one exception, passengers forecast would exceed the proposed RT capacity even with the existing bus network still in place<sup>3</sup>. This report assumed two separate BRT services south of the Airport, with maximum capacity of 2,700 ppdph. ie.

22.5 vehicles/hour on the Dublin Airport-Drumcondra-City Centre route, instead of the 15 vehicles/hour cited for BRT. These lack adequate capacity for the passengers forecast ie

1,800. passengers per direction per hour (ppdph@4-minute frequency) is **exceeded by**

40% in 2018 - the opening year for this proposed BRT;

80% in 2033 –the forecast year.

2,700 ppdph (@2.7-minute frequency) **exceeded by**

22% in 2033 – the forecast year while being

at 95% capacity in 2018, the opening year for this proposed BRT.

Note that the NTA ***anticipated that demand will increase following the reorganization of Dublin Bus routes.***

Bus Connects is clearly the long overdue reorganization of Dublin Bus routes mentioned in the 2014 NTA report on implementing BRT on a main transport corridor in North Dublin.

The NTA report also stated

***The key issue relating to any public transport system including BRT is its ability to have sufficient carrying capacity to meet existing demand and reserve capacity to meet future demand and to fulfil its transportation needs and objectives....BRT...should be viewed as a new, separate system with its own specific field of application but there can be an overlap zone between the higher end of BRT capacity and the lower end of LRT capacity<sup>4</sup>.***

---

<sup>3</sup> ; National Transport Authority Swords/Airport to City Centre. Route Options Assessment Volume 1: Main Report (October 2014)

[http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route\\_Options\\_Assessment\\_Report.pdf](http://www.nationaltransport.ie/wp-content/uploads/2014/10/Route_Options_Assessment_Report.pdf)

Transport Demand Analysis (Summary tables 10.5 and 10.6 p. 187) gives the result for the opening year 2018 and the forecast year 2033 for 2 route options. The same footnote to both tables states

*It is anticipated that demand will increase following a reorganisation of Dublin Bus routes.*

<sup>4</sup> BRT Report see footnote 1 above.p. 3



I suggest that the following obtain and read the documents referred in

- the Inspectors report on the City Centre – Tallaght LRT/LUAS line
- NTA documents referred to about

- a. National Transport Authority (NTA)
  - i. Members
  - ii. Staff
  - iii. Consultants employed by the National Transport Authority
- b. Minister for Transport, Tourism and Sport
  - i. Public servants employed that Minister's Department
- c. Minister for Public Expenditure and Reform
  - i. Public servants employed that Minister's Department
- d. Minister for Housing, Planning and Local Government
  - i. Public servants employed that Minister's Department
- e. Minister for Communications, Climate Action and Environment
  - i. Public servants employed that Minister's Department
- f. Mayors and Councillors elected to represent citizens living/working in
  - ii. Dublin City;
  - iii. Fingal;
  - iv. South Dublin
  - v. Dun Laoghaire Rathdown
  - vi.
- g. Members and staff of Joint Oireachtas Committee on
  - i. Transport, Tourism and Sport
  - ii. Transport, Tourism and Sport
  - iii. Finance, Public Expenditure and Reform, Taoiseach;
  - iv. Housing, Planning and Local Government;
  - v. Communications, Climate Action and Environment.
- h. Comptroller and Auditor General



Given the recent drive to increase

- housing density (as evidenced by the applications granted permission, developments currently being constructed, land sales)
- the capacity of existing

and add new educational institutions in the Drumcondra area

it is clear that the public authorities have not taken account of these factors.

This follows the form of those involved in both the Dublin Port Tunnel project and the first LRT/LUAS lines.

The **Dublin Port Tunnel** traffic projections assumed an LRT line from the City Centre - through Drumcondra to Ballymun. (see page 6)

These traffic projections were the basis for air quality and noise assessments given in the Environmental Impact Assessment (DPT EIS) prepared and considered by a statutory sworn inquiry.

This DPT EIS formed the basis for the elected members of the then Dublin Corporation to vary the then Dublin City Development Plan to provide for the building of the Dublin Port Tunnel.

Based on the Inspectors' Report, the then Minister for the Environment signed the order permitting the building of the Dublin Port Tunnel.

After the Minister signed the order, the public authorities added a second land to the southward bound carriageway near the northern portal. This provided an increase in the road space and thus almost certainly meant more traffic in the Whitehall-Drumcondra corridor. (see the Shantalla, Santry area and the Coolock interchange 7-11)

It does not seem that any attempt was made to re-assess the impact of this change on the air quality and noise in the areas studied the DPTEIS.



**Table 4.1: Principal Highway and Public Transport Schemes Within the DTO Forecast Year Do-Strategy Model**

2006/2016

Highway Schemes		Public Transport
• Northern Cross Route (M50)	• Blackhorse Avenue	• QBC City Centre to Bray
• Northern Cross Route extension to Malahide Road(M50)	• Ballybrack	• QBC City Centre to Churchtown
• Southern Cross Route (M50) inc. Green Route	• Ratoath Road	• QBC City Centre to Tallaght
• South Eastern Motorway Southern Section	• Coombe Relief Road	• QBC City Centre to Clondalkin
• Northern Motorway, Airport to Five Roads (M1)	• Cork Street to Dolphin's Barn	• QBC City Centre to Lucan
• Lucan to Kilcock (N4)	• Dundrum Relief Route	• QBC City Centre to Blanchardstown
• N7 Interchanges	• Macken Street Bridge	• QBC City Centre to Finglas
• Kilmacanogue - Glen O'Downs (N11)	• Naas Road - Blessington Road	• QBC City Centre to Swords
• Tallaght By-Pass Extension (N81)	• Newlands/Fonthill Road	• QBC City Centre to Malahide
• <b>Dublin Port Tunnel</b>	• Nangor/Fox & Geese	• <b>LRT City Centre to Ballymun /Airport</b>
• North Road Finglas (N2)	• Walkinstown - Saggart	• LRT City Centre to Tallaght
• White's Cross - Knocksinna (N11)	• Grange Road	• LRT City Centre to Cabinteely
• Ballinclea/Wyatville Road	• Kilmahuddrick Road	

QBC - Quality Bus Corridor,  
LRT - Light Rail Transport

Widening  
5 day  
Tel Call. Hugh Grogan (DPT) confirmed that Nangor St Bridge is not part of DPT model runs!



In the case of the traffic assessment all traffic forecasts have been specified as daily traffic flows in passenger car units (pcus) where

1 Car = 1 pcu  
Heavy Goods Vehicle or Bus = 3 pcu

Pcus rather than vehicles are used in the traffic model as it allows a weighting to be attached to larger vehicles reflecting the greater impact which they have on road capacity.

#### 4.8.7.3 ASSUMPTIONS AND TECHNICAL LIMITATIONS

The 1991 DTI model was established on the basis of forecast planning scenarios operating until 2011 based upon land use scenario B (DTI, para. 7.2.6). New planning scenarios were produced as part of the 1996 update to the year 2016, and embedded into a trip attraction/generation model (TAGM) managed by the DTO. The TAGM produced the basis for the 2003 and 2018 traffic forecasts used in the evaluation of the proposed DPT.

While the base year 1996 model was taken to be fully validated, the future highway network was modified in the locality of the scheme to reflect current proposals.

Given the consistent degree of congestion on the highway network during peak periods the extensive 1995 observed traffic surveys were taken as a good representation of a base case traffic volumes for this impact study. Update surveys were however undertaken in 1997 for the junctions at Shantalla and Coolock to assess the traffic effects of the northern cross route on base flow on Swords Road/M1. These traffic data were also used to assess the relative change in noise and air quality, during the 1995-1997 period.

Proposed highway schemes, quality bus corridors and LRT lines (see Table 4.1), included in the model for the DTI have been assumed to be valid for the purposes of evaluating the effects of the proposed scheme. The DTI highway and public transport schemes, listed in Table 4.1, are incorporated within the DTO 'do-something' model.

Other management measures, including Park & Ride sites, environmental traffic cells and traffic calming are set out in Table 11.1 'DTI Strategy and Investment Programme' of the DTI Final Report.

Cal Call Wed 5 July '98  
(Dro) from U.C. Gault.  
Probably assumes LRT  
- Drumcondra Road.  
Dro Model assumes 2006/2016



comprising sections of East Wall Road, North Wall Quay, Castleforbes Road and Sheriff Street Upper.

## 2.6.2 INTERCHANGES

### 2.6.2.1 COOLOCK LANE INTERCHANGE

The development of the Coolock Lane Interchange has been based upon the siting rationale for the portals as explained in Appendix N. In general the layout (as shown in ~~Figure~~ <sup>From</sup> Figure S7) has been evolved from the consideration of the following issues:

- Traffic forecasts for the 2018 design year;
- Existing motorway layout and highway boundaries;
- Existing Coolock Lane Interchange
- Proximity of existing housing;
- Existing services;
- Landscaping;
- Cut & cover tunnel, motorway casing and portal layout;
- Architectural treatment of the above ground structures;
- Proximity and access of M50.

The design has balanced these requirements and sought to minimise landtake and visual intrusion, whilst tying-in with existing road levels on the motorway as quickly as possible. The proposed interchange will not affect the existing bridges over the M1 motorway at Coolock Lane.

Access to the DPT would be from the M1 only and not from the existing Coolock Lane Interchange. Access to the single lane access roads between Santry and Shantalla over the tunnel would be available at Coolock Lane Interchange.

### 2.6.2.2 NORTH PORT

The proposed junction at the North Port as explained in Section 2.5.4 and illustrated in Figure S9 balances the following requirements:

- Unaltered*
- traffic forecasts for the 2018 design year;
  - accommodating port growth and internal road layout proposals;
  - tie-in with Dublin Corporation proposals for improvements to East Wall Road;
  - development proposals within the port area,

particularly Eastpoint Business Park.

The basic principles of the proposed junction are to provide for:

- separate links to and from the port, with no right-turn conflict;
- maximise free-flow movements for both port and city traffic;
- early separation of the public highway from internal port roads;
- raised main alignment to accommodate new underpass for port traffic;
- accommodate Dublin Corporation proposals at East Wall Road Junction;
- incorporate signalised junction designed with reserve capacity for growth in port traffic.

## 2.6.3 DUBLIN-BELFAST RAILWAY

The proposed scheme would pass under the Dublin-Belfast railway line via a boxed section sequentially constructed to minimise disruption to rail services. Temporary arrangements would be made, during construction activities, to maintain the DART and mainline rail services.

### 2.6.4 ALFIE BYRNE ROAD

As a result of vertical alignment requirements for the River Tolka crossing, it would be necessary to raise the vertical alignment of Alfie Byrne Road to overpass the proposed scheme. This would be on the same horizontal alignment as present, but at a steeper gradient of 4.0% to achieve the necessary clearance. A similar gradient would be provided for the cycle track.

Alfie Byrne Road is currently in a cut and the proposed alignment raises the road on embankment above existing ground level as it crosses the tunnel. This embankment would be incorporated in the landscape proposals for the scheme.

### 2.6.5 FAIRVIEW CUT & COVER

As the proposed scheme passes through areas previously used for landfill of municipal waste, it is necessary to undertake precautionary measures during excavation, handling and disposal of these materials. Details of these



DUBLIN  
PORT  
TUNNEL

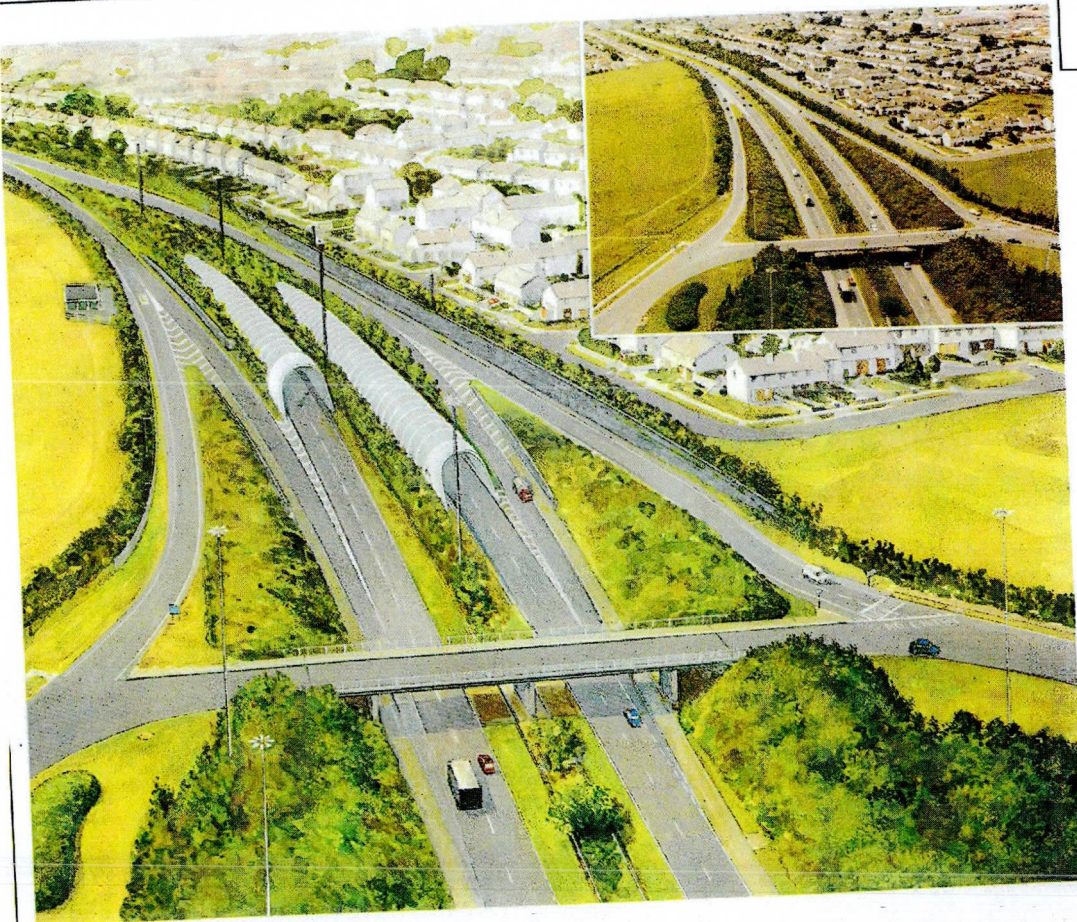
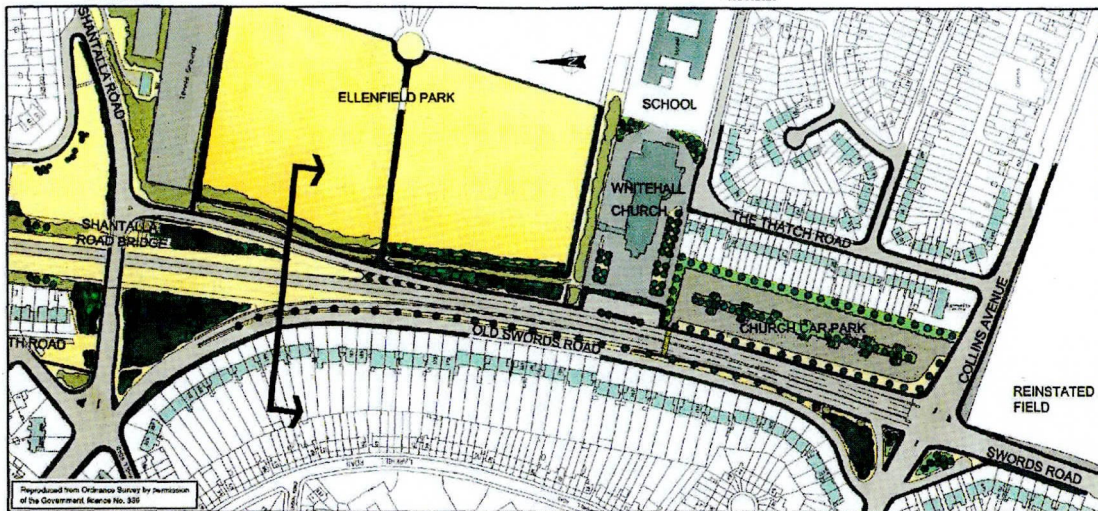


FIGURE V1 : PERSPECTIVE IMAGE OF  
NORTHERN PORTAL



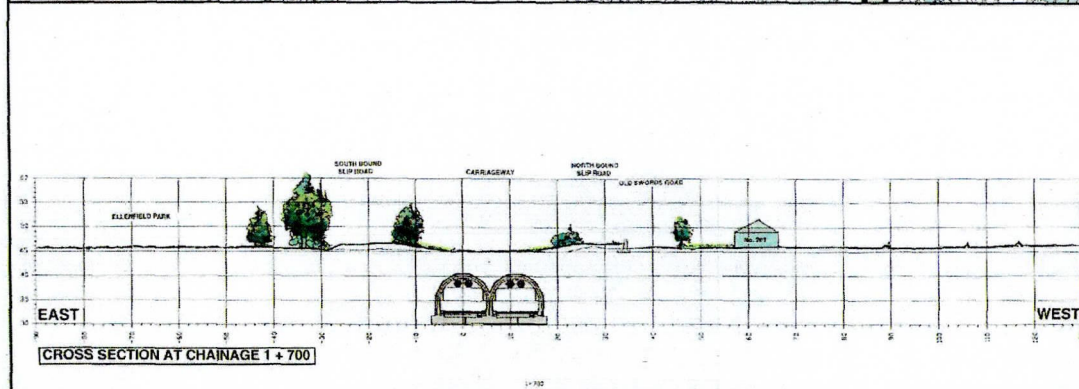


## DUBLIN PORT TUNNEL

### LEGEND

- Trees Planted at Opening Year, 2003 (mixed species)
- Shrubs planted at Opening Year, 2003
- Existing Vegetation (being retained)
- Open Grassland Areas
- Reinstated Church Car Park
- Institutional Buildings
- Footpaths
- Roads
- Pelican Crossing
- Route of Constructed Tunnel
- Photomontage Viewpoints

NOTE  
For clarity, vegetation shown in summer months.



0 75 150  
SCALE (in metres)

Figure L7 : LANDSCAPE SETTING:  
AT DESIGN YEAR, 2018  
WHITEHALL

Scale : 1:2,500



## DUBLIN PORT TUNNEL

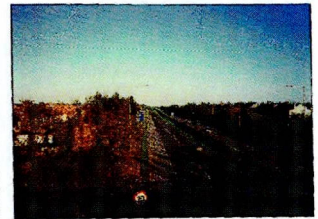


FIGURE V6: PHOTOMONTAGE IN YEAR 2018  
LOOKING NORTH FROM  
SHANTALLA ROAD BRIDGE



A 1996 **A Comparative Socio-Economic Evaluation of the Tallaght - Ballymun I Dundrum Light Rail Lines** (commissioned by the Department of Transport from Oscar Faber) found that there were more trip attractors/generators per kilometre on the City Centre-Drumcondra-Ballymun then proposed LRT/LUAS line than the two lines which were subsequently built and extended. see page 13

The attached Catchment **Analysis** (based on 2016 Census)- prepared by consultants Roughan & O'Donovan on the latest proposal for Metrolink shows clearly that the potential public transport demand has increased on the City Centre-Drumcondra- Dublin Airport corridor. In terms of population and employment, this catchment area of this corridor is greater than that estimated for the now -proposed Metrolink route. Note that I include this with the full permission of the private company which commissioned it and submitted it to Transport Infrastructure Ireland request for comments on Metrolink. see pages 14-20

What twisted logic calls for

- A. Four Buns Connects routes (A1, A2, A3, A4) on the Drumcondra-City Centre corridor, given that there is clear evidence in NTA and other documents that buses do not have adequate capacity to cater for transport demand on this corridor?
- B. Bus Connects route to Ballymun from the City Centre (Route E1) serving virtually the same corridor as that being served by the proposed MetroLink

given the

Population density;

Employment patterns

shown on the maps on pages 20-21? These maps are based on Census 2016 and have the existing commuter rails lines superimposed, together with the proposed route for MetroLink as in early 2018.



### A Comparative Socio-Economic Evaluation of the Tallaght - Ballymun / Dundrum Light Rail Lines

To summarise, the average service density for each route is:

- Tallaght 1.87
- Ballymun 2.63
- Dundrum 1.36

The results for the Tallaght-Ballymun and Tallaght-Dundrum lines as a whole are 2.1 and 1.7 metres per route metre respectively. The intensity of service relocation for Tallaght-Ballymun is therefore some 24% higher than for the Tallaght-Dundrum.

#### 4.4.3

#### Intensity of Use

Intensity of use was measured by the length of frontage per route metre and the number of attractors/generators per route kilometre. Summary results are presented in Table 4.3 and detailed results in Appendix E. As might be expected, the inner city sections had the highest intensity of use.

**Table 4.3 Intensity of Use Indicators**

Section	Density of Major Attractors/Generators number per route km	Frontage Density metres per route metre
Tallaght Sq. - Treepark	1.44	0.09
Treepark - Fox & Geese	.44	0.01
Fox & Geese - Davitt	7.96	1.26
Davitt - Inchicore	2.60	1.72
Inchicore - Kilmainham	3.31	2.09
Kilmainham - Heuston	20.00	1.88
Heuston - Chancery St.	18.32	1.42
Chancery St. - O'Connell St.	21.56	2.73
<b>Tallaght Route</b>	<b>7.79</b>	<b>1.01</b>
O'Connell St. - Trinity College	3.33	2.02
Trinity College - Harcourt	21.33	1.96
Harcourt - Charlemont	20.00	1.85
Charlemont - Dundrum	0.00	0.00
<b>Dundrum Route</b>	<b>7.81</b>	<b>0.68</b>
O'Connell St. - Parnell	30.36	1.42
Parnell - Gardiner	15.7	1.91
Gardiner - St. Alphonsus	7.27	1.81
St. Alphonsus - St. Patrick's	3.90	2.49
St. Patrick's - Griffith	4.92	2.16
Griffith - Collins	15.12	1.55
Collins - DCU	2.86	1.89
DCU - Glasnevin	1.59	2.22
Glasnevin - Ballymun	9.68	2.59
<b>Ballymun Route</b>	<b>9.61</b>	<b>2.00</b>





4a Windsor Terrace, Church Road, Malahide, Co. Dublin  
t +353 1 8450969 e info@genvest.ie [genvest.ie](https://www.genvest.ie)

The Project Manager

MetroLink

Transport Infrastructure Ireland

Parkgate Business Centre

Parkgate Street

Dublin 8

Date: 11/05/2018

Subject: MetroLink Public Consultation

A chara,

In 2006, William Murray & Associates made a submission to the route selection process for the then Metro North project, advocating an eastern route option – generally east of the R132 north of Drumcondra. The eastern route was proposed to pass through Drumcondra, Whitehall, Santry, Kilmore, and Clonshaugh, with a stop provided in each place. The currently proposed Metro alignment instead runs through Phibsboro, Glasnevin and Ballymun. Refer to enclosed Drawing Figure 1.

The 2006 submission was supported by comprehensive planning, economic and engineering analysis in favour of the proposed alignment. All of the analysis demonstrated a robust business case in favour of the eastern route, which would serve a larger population catchment, support significant redevelopment of brownfield sites, and would not differ appreciably from the then-proposed RPA alignment cost-wise. Furthermore, the eastern alignment would have the significant advantage of serving catchments not already served by high quality public transport along existing QBCs.

The intervening period has seen various developments, the most significant and relevant of which is the BusConnects project. The state has committed €2bn in funding to this project under the National Planning Framework. This will see a comprehensive redesign of Dublin's bus network to enhance the reliability and quality of service along the principal bus corridors. This plan will see considerable investment in enhanced public transport along the Ballymun and Swords Quality Bus Corridor [QBC] corridors. The proposed MetroLink route will duplicate these QBCs.





4a Windsor Terrace, Church Road, Malahide, Co. Dublin  
t +353 1 8450969 e info@genvest.ie [genvest.ie](https://www.genvest.ie)

A route further east would service an entirely new catchment in the 3km wide gap between the R132 Swords QBC and R107 Malahide QBC corridors. This would complement and enhance, rather than duplicate, the upgraded BusConnects QBC network. It would also open up extensive landbanks to development and urban regeneration – far more so than in the case of the currently indicated corridor through Ballymun. The 2006 assessment further demonstrated that it would serve a larger existing and future residential population. Our analysis of the 2016 census has shown that this remains the case.

The terms of reference for the 2017 Metro Alignment Study included a study area centred on the earlier RPA Central Route, which was in 2006 the RPA's preferred route. The Study Area did not include the extensive area between the R132 and R107 QBCs that is currently unserved by high quality public transport. This is incomprehensible, especially having regard to the considered and detailed representations made to the 2006 Metro North public consultations. While TII has made significant adjustments to the 2006 alignment in the city centre and the north inner suburbs based on a detailed re-appraisal of the route, the same effort hasn't been made in scrutinising the alignment further north, where the currently proposed route will traverse relatively low population areas in Glasnevin and Ballymun.

The Environmental Impact Assessment process requires a comprehensive assessment of available alternatives. What has been done to date for MetroLink falls far short of this requirement. We appreciate that the new MetroLink project is at an early stage, and that not all assessments have yet been undertaken. However, it is concerning that even the preliminary assessments have been undertaken based on an excessively limited study area. The ultimate railway order application will require a comprehensive route options assessment in order to demonstrate to An Bord Pleanála that the scheme presented for planning best achieves the objectives of the project. This assessment must include detailed consideration of a route east of the R132, which we believe will better serve the needs of the city and the region.

The 2006 submission, and an updated population catchment analysis based on the 2016 census data are appended herewith. We, and other local businesses and stakeholders, are available to discuss these with TII at any stage.

Is mise le meas,

**Johnny Howard**  
Director



t +353 1 8450969

m [REDACTED]  
[REDACTED]





### Emerging Preferred Route vs Eastern Variation Route Catchment Analysis

2016 Census data for the electoral divisions within the catchment of the section of the MetroLink 'Emerging Preferred Route' between the Royal Canal and Dublin Airport and the 2006 Eastern Route Variation has been collated and assessed, and are summarised in **Table 1** below.

**Table 1:** 2016 CSO Summary Data for Metrolink 'Emerging Preferred Route' and Eastern Route Variation

Route	<u>Emerging Preferred Route Catchment</u>	<u>Eastern Route Variation Catchment</u>
Population	73,071	75,890
Employed	33,092	36,176
Education	8,883	8,501

Detailed analysis for the 'Emerging Preferred Route' is presented in **Table 2** below. Similar data for the 2006 Eastern Route Variation, proposed in the 2006 submission to the Metro North public consultation, was assessed and is presented in **Table 3**. The total resident population numbers within each electoral division have been considered, along with the numbers of people employed and in education within the division as these people are likely to use the proposed MetroLink service as part of their daily commute.

The catchment area considers the 2km corridor around each route option. As the electoral division boundaries do not always align with the catchment corridor of each proposed route option, catchment factors have been applied to each electoral division according to the approximate proportion of the area that falls into the catchment corridor.

#### **Roughan & O'Donovan | Consulting Engineers**

Arena House, Arena Road, Sandyford, Dublin, Ireland, D18 V8P6.

T: +353 1 2940800 E: info@rod.ie W: www.rod.ie

DIRECTORS: Harry Meighan (Managing) Tony Dempsey Marc Jones (UK) Mark Kilcullen Séamus Mac Gearailt Jim Thorpe (UK)

Roughan and O'Donovan Ltd, registered in Ireland at the above address No. 223146



**Table 2: 2016 CSO Data for MetroLink 'Emerging Preferred Route' (from CSO SAPMAPS):**

<u>Electoral Division</u>	<u>Totals on Emerging Preferred Route</u>			<u>Factored Totals on Emerging Preferred Route</u>			
	<u>Population</u>	<u>Employed</u>	<u>Education</u>	<u>Factor</u>	<u>Population</u>	<u>Employed</u>	<u>Education</u>
Rotunda A	5,965	3,231	616	35%	2,088	1,131	216
Mountjoy B	3,963	1,987	674	65%	2,576	1,292	438
Ballybough B	3,698	1,954	406	75%	2,774	1,466	305
Inns Quay A	3,919	1,626	387	100%	3,919	1,626	387
Botanic C	2,222	1,211	285	100%	2,222	1,211	285
Botanic B	3,481	1,800	419	100%	3,481	1,800	419
Drumcondra South C	3,517	1,665	510	100%	3,517	1,665	510
Whitehall A	3,286	1,085	834	90%	2,957	977	751
Whitehall B	4,128	1,688	643	85%	3,509	1,435	547
Ballymun C	6,112	2,147	709	100%	6,112	2,147	709
Airport	5,018	2,938	372	100%	5,018	2,938	372
Ballymun B	4,379	1,397	422	100%	4,379	1,397	422
Ballymun D	2,458	770	246	100%	2,458	770	246
Ballymun E	1,562	635	149	100%	1,562	635	149
Ballygall C	3,521	1,314	354	100%	3,521	1,314	354
Botanic A	3,174	1,514	331	90%	2,857	1,363	298
Cabra East A	5,650	3,054	592	75%	4,238	2,291	444
Arran Quay A	1,785	866	315	90%	1,607	779	284
Inns Quay B	3,666	1,954	503	65%	2,383	1,270	327
Cabra East B	3,737	1,618	300	95%	3,550	1,537	285
Drumcondra South A	5,064	2,868	514	20%	1,013	574	103
Whitehall C	2,153	968	217	65%	1,399	629	141
Turnapin	1,700	822	174	30%	510	247	52
Balgriffin	3,113	1,464	183	1%	31	15	2
Ballymun A	4,765	2,059	371	25%	1,191	515	93
Ballygall B	1,887	711	1,887	20%	377	142	377
Ballygall D	2,531	1,123	180	45%	1,139	505	81
Cabra East C	4,085	2,077	434	30%	1,226	623	130
Arran Quay B	4,166	2,289	451	35%	1,458	801	158
<b>Totals</b>	<b>Population</b>	<b>Employed</b>	<b>Education</b>		<b>Population</b>	<b>Employed</b>	<b>Education</b>
	104,705	48,835	13,478		73,071	33,092	8,883





**Table 3: 2016 CSO Data for Eastern Route Variation (from CSO SAPMAPS):**

<u>Electoral Division</u>	<u>Totals on Eastern Route Variation</u>			<u>Factored Totals on Eastern Route Variation</u>			
	<u>Population</u>	<u>Employed</u>	<u>Education</u>	<u>Factor</u>	<u>Population</u>	<u>Employed</u>	<u>Education</u>
Rotunda A	5,965	3,231	616	35%	2,088	1,131	216
Mountjoy B	3,963	1,987	674	65%	2,576	1,292	438
Ballybough B	3,698	1,954	406	100%	3,698	1,954	406
Mountjoy A	5,389	2,819	629	20%	1,078	564	126
Ballybough A	3,718	1,540	357	50%	1,859	770	179
Drumcondra South B	1,697	976	177	100%	1,697	976	177
Drumcondra South A	5,064	2,868	514	100%	5,064	2,868	514
Grace Park	5,806	2,669	603	50%	2,903	1,335	302
Whitehall D	3,456	1,568	281	100%	3,456	1,568	281
Beaumont F	3,590	1,629	391	90%	3,231	1,466	352
Beaumont A	2,463	1,011	206	100%	2,463	1,011	206
Beaumont B	4,962	2,074	358	60%	2,977	1,244	215
Kilmore B	2,681	899	180	100%	2,681	899	180
Kilmore A	3,660	1,659	400	100%	3,660	1,659	400
Priorswood A	1,618	708	131	95%	1,537	673	124
Balgriffin	3,113	1,464	183	5%	156	73	9
Airport	5,018	2,938	372	30%	1,505	881	112
Turnapin	1,700	822	174	100%	1,700	822	174
Whitehall C	2,153	968	217	100%	2,153	968	217
Whitehall B	4,128	1,688	643	50%	2,064	844	322
Whitehall A	3,286	1,085	834	65%	2,136	705	542
Drumcondra South C	3,517	1,665	510	100%	3,517	1,665	510
Botanic A	3,174	1,514	331	35%	1,111	530	116
Botanic B	3,481	1,800	419	100%	3,481	1,800	419
Botanic C	2,222	1,211	285	100%	2,222	1,211	285
Inns Quay A	3,919	1,626	387	100%	3,919	1,626	387
Inns Quay B	3,666	1,954	503	65%	2,383	1,270	327
Arran Quay A	1,785	866	315	90%	1,607	779	284
Cabra East A	5,650	3,054	592	100%	5,650	3,054	592
Kilmore D	2,032	807	147	5%	102	40	7
Kilmore C	1,490	446	133	15%	224	67	20
Priorswood E	2,839	1,230	185	35.0%	994	431	65
<b>Totals</b>	<b>Population</b>	<b>Employed</b>	<b>Education</b>		<b>Population</b>	<b>Employed</b>	<b>Education</b>
	110,903	52,730	12,153		75,890	36,176	8,501

**Roughan & O'Donovan | Consulting Engineers**

Arena House, Arena Road, Sandyford, Dublin, Ireland, D18 V8P6.

T: +353 1 2940800 E: info@rod.ie W: www.rod.ie

DIRECTORS: Harry Meighan (Managing) Tony Dempsey Marc Jones (UK) Mark Kilcullen Séamus Mac Gearailt Jim Thorpe (UK)

Roughan and O'Donovan Ltd, registered in Ireland at the above address No. 223146





Comparison of the totals within the catchment of each route shows that the overall population within the catchment area of the '*Eastern Route Variation*' is higher than along the current '*Emerging Preferred Route*' and therefore the TII should consider the Eastern Route Variation as a viable option for MetroLink.

**Roughan & O'Donovan | Consulting Engineers**

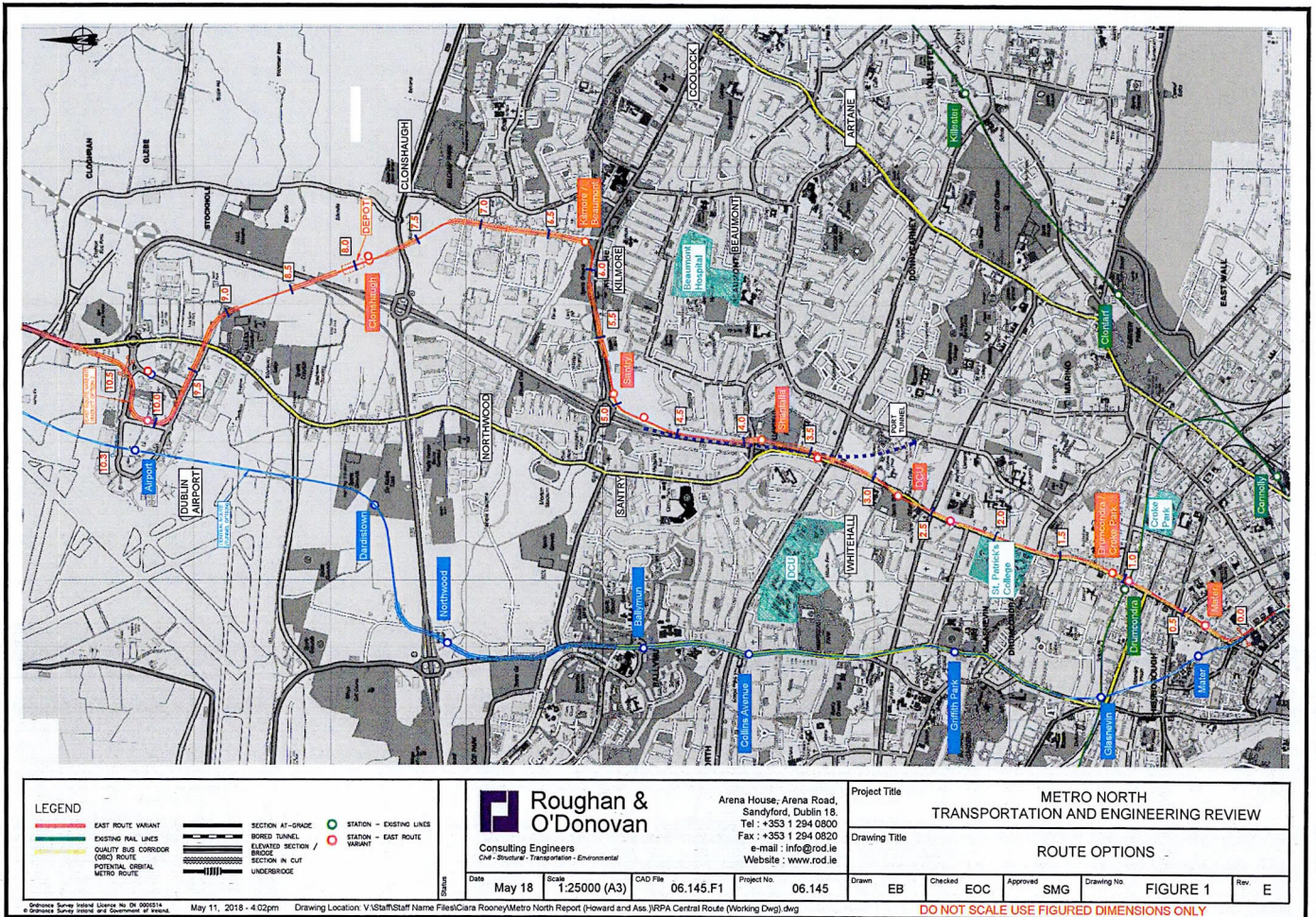
Arena House, Arena Road, Sandyford, Dublin, Ireland, D18 V8P6.

T: +353 1 2940800 E: info@rod.ie W: www.rod.ie

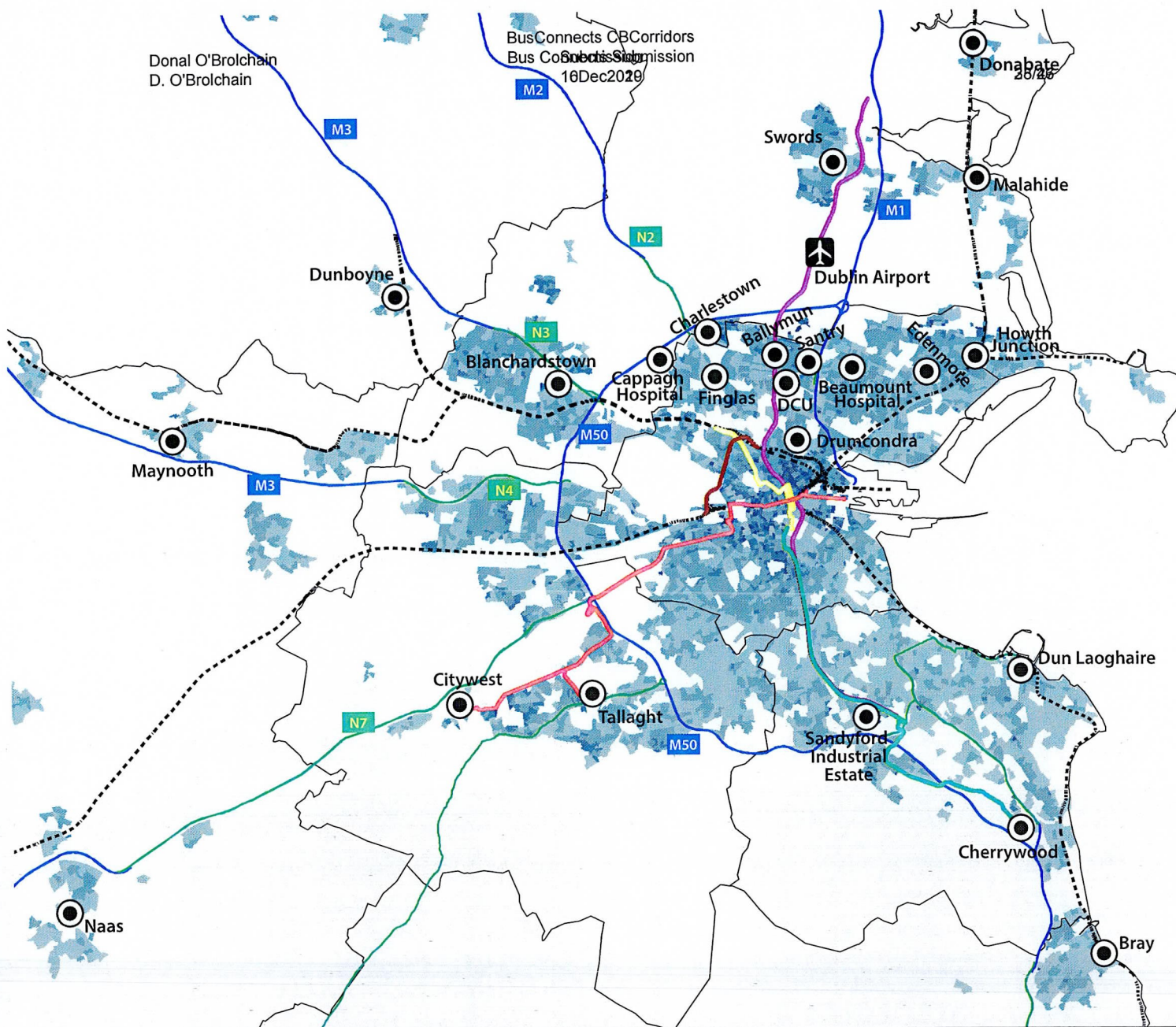
DIRECTORS: Harry Meighan (Managing) Tony Dempsey Marc Jones (UK) Mark Kilcullen Séamus Mac Gearailt Jim Thorpe (UK)

Roughan and O'Donovan Ltd, registered in Ireland at the above address No. 223146









### Rail Legend

Existing Rail and DART:

LUAS - Red:

LUAS - Green:

LUAS CrossCity:

Metro Link (Proposed):

Phoenix Park Tunnel:



### Population Density per sq KM, 2016

2,000 to < 5,000

5,000 to < 11,000

11,000 to < 20,000

20,000 to < 40,000

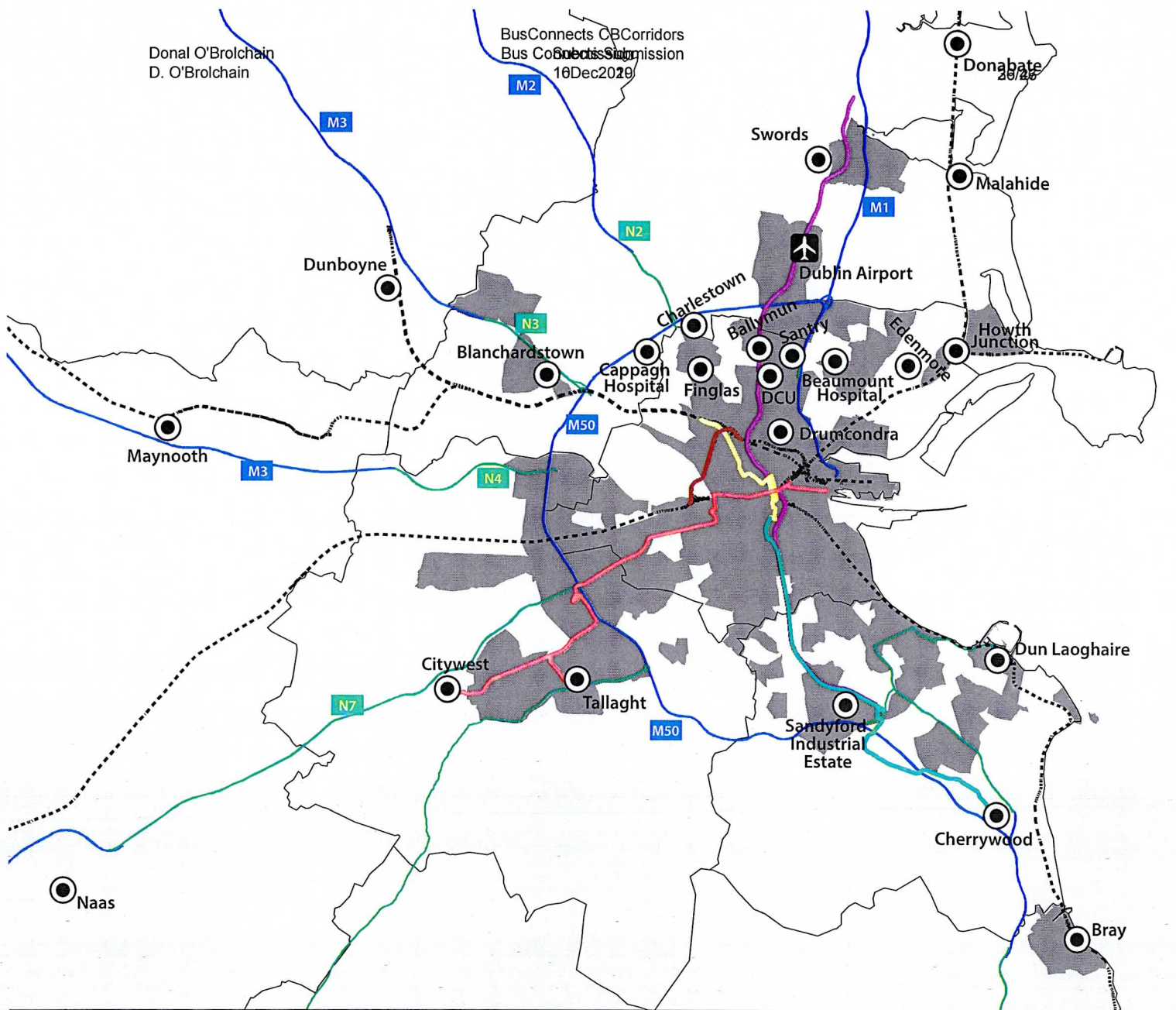
Greater than 40,000

Source: Census 2016

**Spatial Insight**  
solutions

© OpenStreetMap contributors





### Rail Legend

Existing Rail and DART:

LUAS - Red:

LUAS - Green:

LUAS CrossCity:

Metro Link (Proposed):

Phoenix Park Tunnel:



Dublin Economic Core Area\*

\* $\geq 700$  jobs per KM2

Source: Census 2016

Spatial Insight  
solutions

© OpenStreetMap contributors



## **Trees in the urban environment**

This project shows a complete lack of understanding of the biosphere, as the basic working assumption is that trees must be removed to create more road space. This is simply extraordinary at a time when it is known that trees

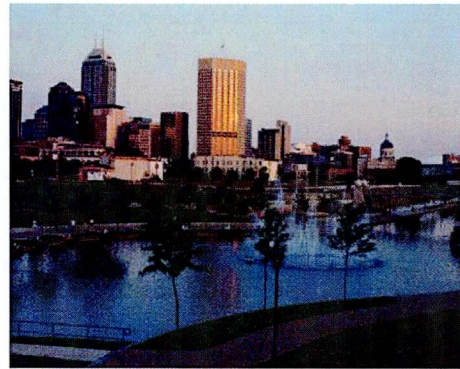
1. Enhance the air quality in urban areas;
2. Are natural carbon capture and storage (CCS) devices that already exist;
3. Mitigate flood risk.

See attached note on the value of Urban Tree from the City of Indianapolis, USA



## Benefits of Urban Trees

Compiled by Keep Indianapolis Beautiful, Inc.



### TREES IMPROVE THE ENVIRONMENT

#### Air Quality/Pollution Reduction

- Trees help to clean the air by “catching” airborne pollutants such as ozone, nitrogen oxides, sulfur dioxides, carbon monoxide, carbon dioxide, and small particulates less than 10 microns in size.<sup>3</sup>
- Planting trees remains one of the cheapest, most effective means of drawing excess CO<sub>2</sub> from the atmosphere.<sup>15</sup>
- There is up to a 60% reduction in street level particulates with trees.<sup>1</sup>
- One tree that shades your home in the city will also save fossil fuel, cutting CO<sub>2</sub> buildup as much as 15 forest trees.<sup>16</sup>
- Each year an average acre of mature trees absorb up to 26 pounds of carbon dioxide from the air, which is equal to the amount of CO<sub>2</sub> produced by driving a car 26,000 miles.<sup>8</sup>

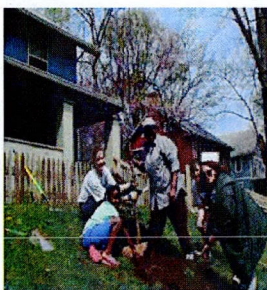
#### Water Quality/Erosion

- Trees reduce topsoil erosion, prevent harmful land pollutants contained in the soil from getting into our waterways, slow down water run-off, and ensure that our groundwater supplies are continually being replenished. For every 5% of tree cover added to a community, storm water runoff is reduced by approximately 2%.<sup>1</sup>
- Trees help communities across the country avoid millions of dollars in storm water management costs.<sup>18</sup>
- Trees reduce soil erosion when planted along streams and waterways.<sup>18</sup>
- Trees can intercept between 7 percent and 22 percent of storm water runoff from impermeable surfaces.<sup>17</sup>

#### Energy Savings

- Homeowners that properly place trees in their landscape can realize savings up to 58% on daytime air conditioning and as high as 65% for mobile homes. If applied nationwide to buildings not now benefiting from trees, the shade could reduce our nation’s consumption of oil by 500,000 barrels of oil/day.<sup>12</sup>
- Projections suggest that 100 million additional mature trees in US cities (3 trees for every unshaded single family home) could save over \$2 billion in energy costs per year.<sup>10</sup>

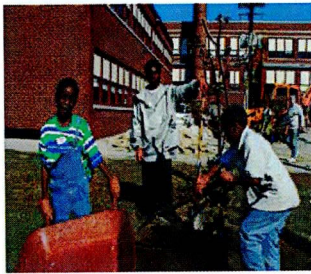
### A CANOPY FOR COMMUNITY AND SOCIETAL WELL-BEING



#### Trees Reduce Crime, Increase Public Safety and Build Community

- A University of Illinois study finds that trees in urban areas are directly correlated with lower levels of fear, fewer incivilities, and less violent and aggressive behavior.<sup>4</sup>
- In an inner-city neighborhood, the greener the residence, the lower the crime rate. Residents reported fewer violent crimes and property crimes in green neighborhoods as compared to those that were barren.<sup>4</sup>
- Researchers found fewer reports of physical violence in homes that had trees outside the buildings. Of the residents interviewed, 14% of residents living in barren conditions have threatened to use a knife or gun against their children versus 3% for the residents living in green conditions.<sup>15</sup>





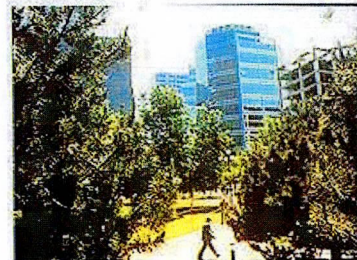
- Trees have the potential to reduce social service budgets, decrease police calls for domestic violence, strengthen urban communities, and decrease the incidence of child abuse according to the study. Chicago officials heard that message in 2005. The city government spent \$10 million to plant 20,000 trees, a decision influenced by Kuo's and Sullivan's research, according to the *Chicago Tribune*.
- Researcher Kuo suggests that "cities would do well having nature outside every doorstep."<sup>4</sup>

### The Healing Power of Trees

- School children with ADHD show fewer symptoms and girls show more academic self-discipline if they have access to natural settings.<sup>19</sup>
- Researchers found fewer reports of physical violence in homes that had trees outside the buildings. Of the residents interviewed, 14% of residents living in barren conditions have threatened to use a knife or gun against their children versus 3% for the residents living in green conditions.<sup>15</sup>
- Studies have shown that hospital patients with a view of trees out their windows recover much faster and with fewer complications and require fewer pain-killing medications than similar patients without such views.<sup>13</sup>
- A Texas A & M study indicates that trees help create relaxation and well being.<sup>18</sup>
- A U.S. Department of Energy study reports that trees reduce noise pollution by acting as a buffer and absorbing 50% of urban noise.<sup>18</sup>
- Reduced air pollution from the presence of trees helps to ameliorate respiratory problems, such as asthma—the leading serious chronic illness among children.<sup>17</sup>
- Trees can provide protection against skin cancer by reducing UV-B exposure (the most damaging type of solar radiation) by about half, according to a study by Richard Grant, Purdue University; and Gordon Heisler, USDA Forest Service.<sup>17</sup>
- Time spent in nature reduces mental fatigue, restoring the ability to concentrate and pay attention.<sup>4</sup>
- Exposure to even small amounts of trees and grass aids concentration, leading to greater effectiveness.<sup>4</sup>

### MONEY DOES GROW ON TREES!

- Large, mature street trees are found to be the most important indicator of attractiveness in a community.<sup>17</sup>
- Property values increase 5-15% when compared to properties without trees (depends on species, maturity, quantity and location)<sup>18</sup>
- Shoppers are willing to pay up to 11 percent more for products purchased in shops along tree-lined streets than they would pay for the same item in a barren setting.<sup>17</sup>
- The quality of products were perceived as being better in shopping districts having trees versus those with barren sidewalks.<sup>17</sup>
- Shoppers stay longer in plazas that have trees.<sup>17</sup>
- Appraised property values of homes that are adjacent to parks and open spaces are typically 8-20% higher than those of comparable properties elsewhere.<sup>17</sup>
- Strategically placed trees can cut summer air conditioning costs for businesses by as much as 50 percent or more.<sup>17</sup>
- Rental rates of commercial office properties were approximately 7% higher on sites having quality landscape, including trees.<sup>17</sup>
- Office workers with a view of nature are more productive, report fewer illnesses, and have higher job satisfaction.<sup>17</sup>







## What are the threats facing Indianapolis trees?

- **Pollution and urban sprawl.** As cities and suburbs expand, our forests shrink - meaning all of the benefits of those trees are lost.
- Indianapolis ranks 8<sup>th</sup> worst in the country for fine particulate matter pollution.
- American Forests recommends that a city have an average tree cover of 45%. Currently, Indianapolis has a tree cover of 24%. Center Township has a tree cover of 15%.
- **In Indianapolis, there has been a 25% loss in tree canopy measured during the last three decades.** An IUPUI study using aerial photography measured changes in the urban forest from 1962 to 1993 in 41 randomly selected census tracts.
- **There has been a 37% loss in wooded lands in Marion County from 1980 to 2000.** IUPUI measured this loss by using Landsat Thematic Mapping technology. The equivalent of 20 square miles of woods has been lost in Marion County since 1980.
- IUPUI Research shows a direct correlation between income and tree canopy. A study of 41 census tracts found lower income neighborhoods often have significantly less canopy cover.
- The emerald ash borer is decimating Indiana ash trees, estimated at 6% of Indiana's trees, and is at Marion County's doorstep.
- The IUPUI/Center for Urban Policy and the Environment forecasts that **growth in Central Indiana over the next 40 years will outpace development since Indianapolis was founded. In 2000, 1076 square miles of land were urbanized. By 2040, an additional 1,167 square miles will be developed.**

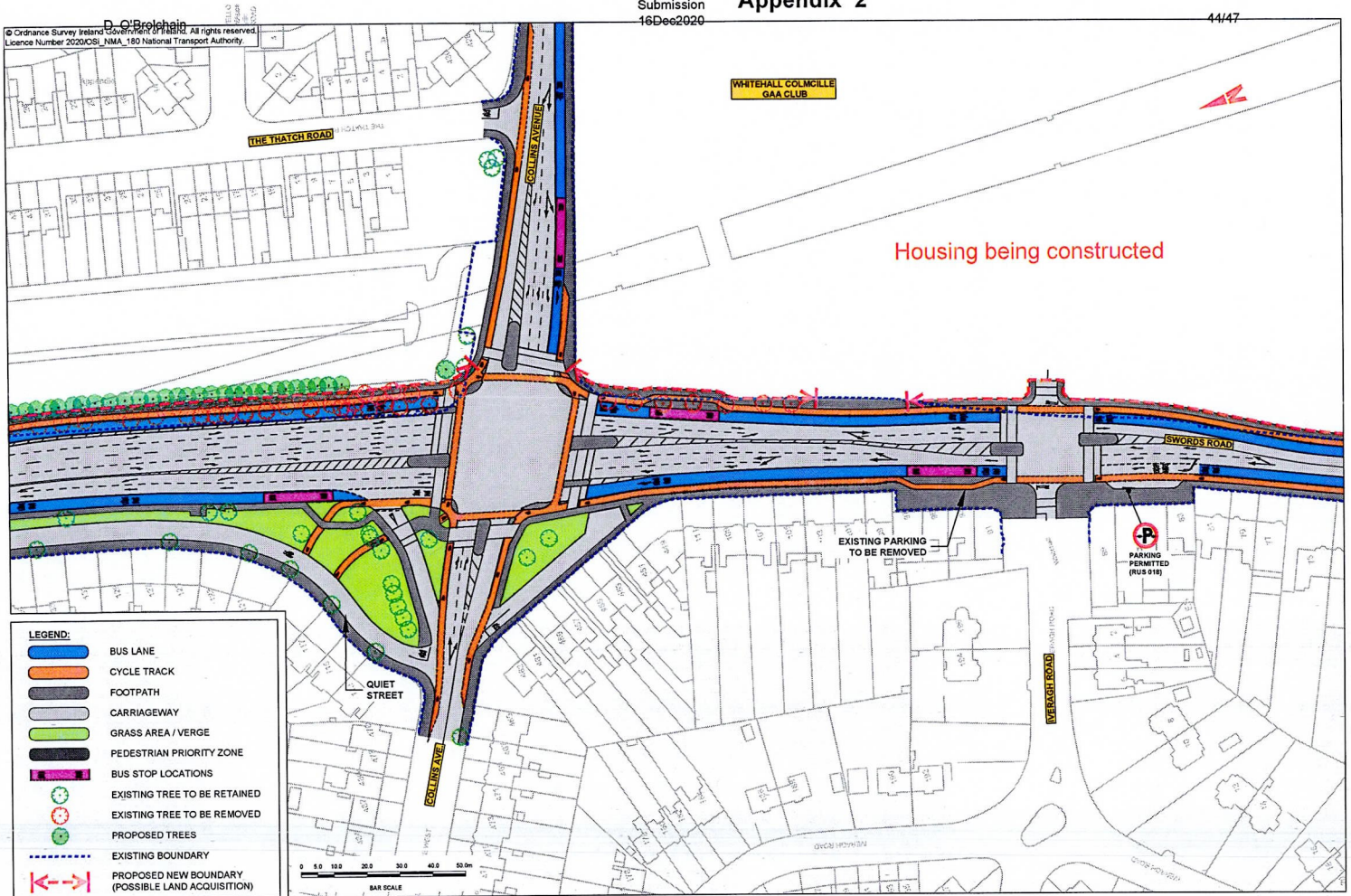
## How can you help?

Call Keep Indianapolis Beautiful, Inc. at 317-264-7555, or visit us on the web at [www.kibi.org](http://www.kibi.org).

## References

1. Coder, Dr. Kim D., "Identified Benefits of Community Trees and Forests", University of Georgia, October, 1996.
2. USDA Forest Service Pamphlet #R1-92-100
3. International Society of Arboriculture Tree Care Bulletin, Benefits of Trees
4. Kuo, F.E. 2001, "Environment and Crime in the Inner City: Does Vegetation Reduce Crime?" *Environment and Behavior*, Volume 33, Number), pp 343-367.---[www.herliuic.edu](http://www.herliuic.edu)
5. Kuo, F.E., 1998 *Fertile Ground for Community: Inner-City Neighborhood Common Spaces*. *American Journal of Community Psychology*, 26 [www.herliuic.edu](http://www.herliuic.edu)
6. Georgia Urban Forest Council; University of Illinois at Urbana Champaign; [www.cucf.com](http://www.cucf.com)
7. Kuo, F.E. 2003. The role of arboriculture in healthy social ecology. *Journal of Arboriculture*, 29, 3, 148-155
8. Nowak, David J., "Benefits of Community Trees", (Brooklyn Trees, USDA Forest Service General Technical Report, in review)
9. Galveston-Houston Association for Smog Prevention (GHASP), "Trees and Our Air", January, 1999.
10. McAloney, Mike. Arguments for Land Conservation: Documentation and Information Sources for Land Resources Protection, Trust for Public Land, Sacramento, CA, December, 1993
11. Michigan State University Extension, Urban Forestry #07269501, "Benefits of Urban Trees"
12. American Forests, "The Case for Greener Cities", Autumn 1999.
13. American Forests, "How Trees Fight Climate Change", 1999.
14. Crompton, J.L. 2001. *Parks and Economic Development*. Chicago, IL. *American Planning Association*
15. Prow, Tina., "The Power of Trees", Human Environmental Research Laboratory at University of Illinois.
16. National Arbor Day Foundation pamphlet #90980005
17. Georgia Urban Forestry Publication, *Shade-Healthy Trees, Healthy Cities, Healthy People*, 2004
18. [www.colorado.trees.org](http://www.colorado.trees.org), Benefits of Trees
19. Coping with ADD: The Surprising Connection to Green Play Settings, *Environment and Behavior*. Vol. 33 No. 1. January 2001. 54-77, 2001 Sage Publications, Inc.



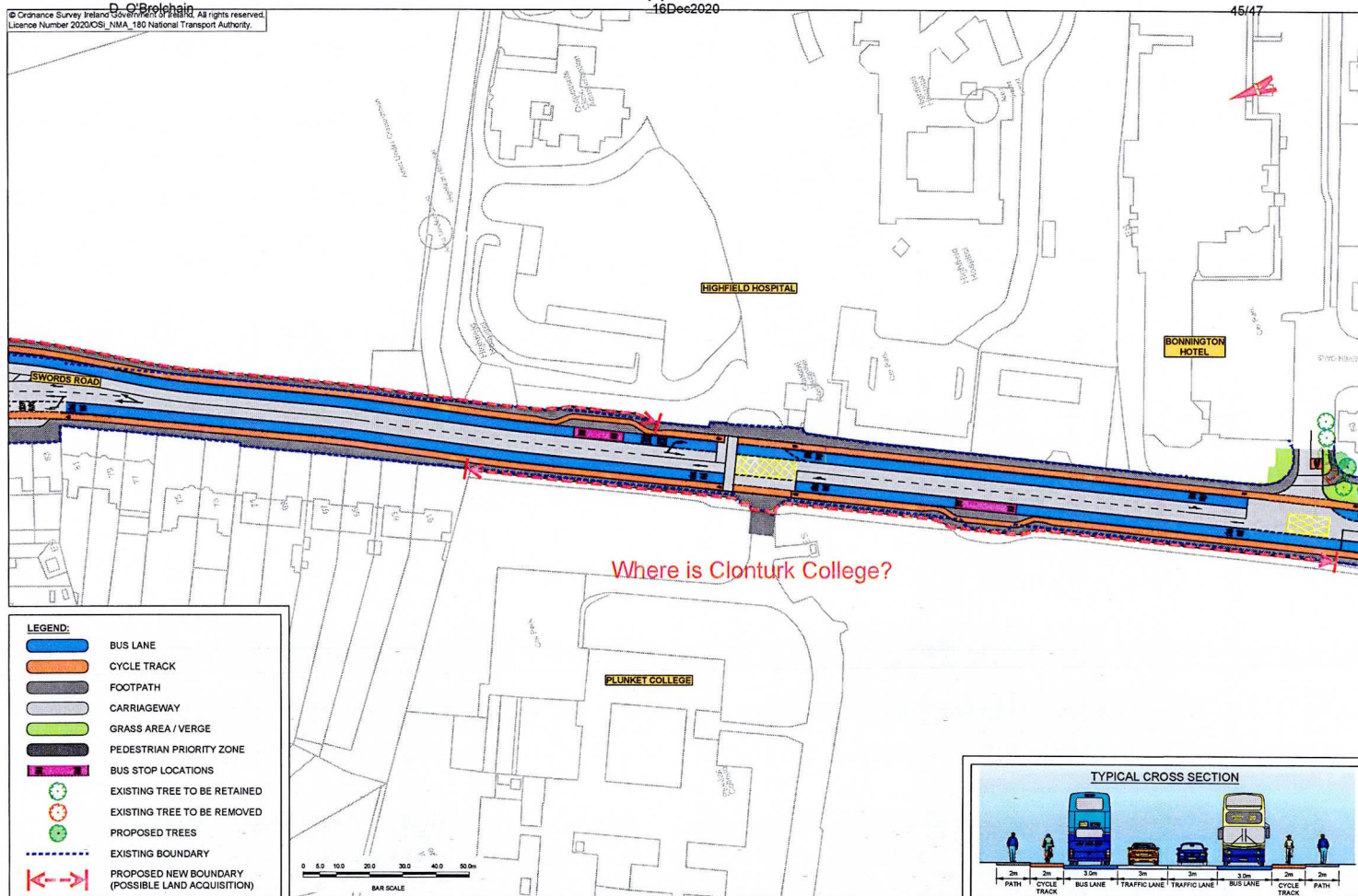




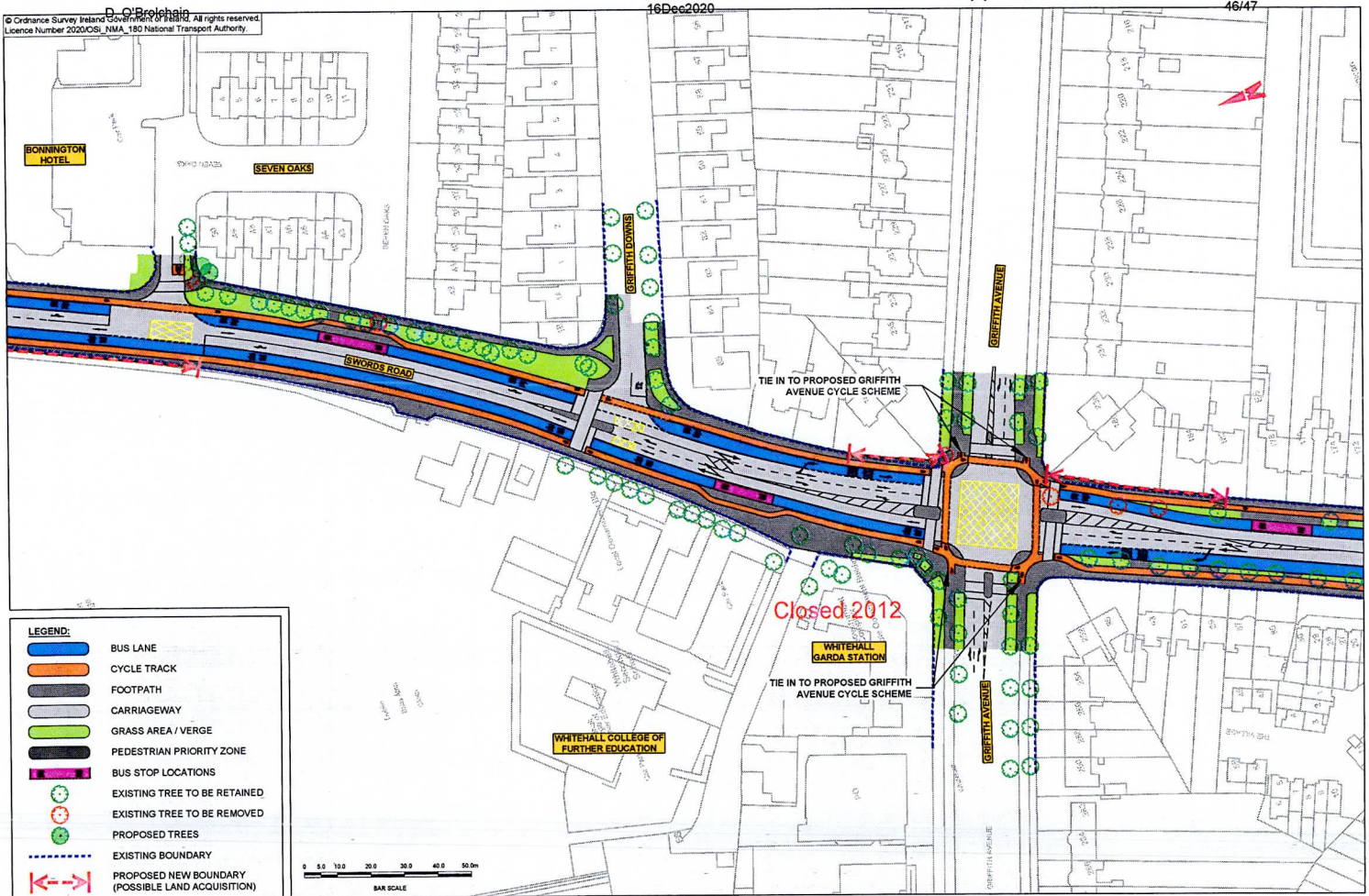
# BusConnects CBCorridors Appendix 3 16Dec2020

© Ordnance Survey Ireland Government of Ireland. All rights reserved.  
Licence Number 2020/CSI\_NMA\_180 National Transport Authority.

45/47









D. O'Brien  
© Ordnance Survey Ireland Government of Ireland. All rights reserved.  
Licence Number 2020/CSI\_NMA\_150 National Transport Authority.

