Our Case Number: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 3rd February 2022

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation.

Please be advised that the Board is satisfied that the holding of any further pre-application consultation meetings is not warranted. It has accordingly closed the pre-application consultation process in respect of this proposed development and it is now open to the prospective applicant to lodge an application to the Board for a railway order.

A copy of the full documentation relating to the Board's pre-application file is enclosed for your information including a copy of the written record of the pre-application consultation meetings between An Bord Pleanála and the prospective applicant. A copy of the pre-application consultation file can be made available for public inspection at this stage and must be associated with any application file documentation when such an application is made. In this regard please note that the Board has directed the prospective applicant to include a statement in the public notices of any application for a railway order indicating that the application will be made available for public inspection at the offices of the local authority (as well as the offices of the Board) and on a stand alone website. The Board would therefore be obliged if you could make the necessary arrangements in this regard following receipt of the copies of any application documentation from the prospective applicant.

Please note that the public will have the right to make submissions on the application only to An Bord Pleanála and within a time limit which will be specified in the public notices (copies of same will accompany the application documentation) and the public should be alerted to this fact when inspecting the file. It is the Board's intention that all of the application documentation will remain available for public inspection during the currency of the application.

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Láithreán Gréasáin	**Website**	www.pleanala.ie
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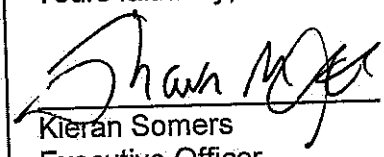
64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Thank you for your co-operation in this matter.

Yours faithfully,



Kieran Somers
Executive Officer
Direct Line: 01-8737250

NC12

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Our Case Number: ABP-302010-18

An Bord Pleanála

Dublin City Council North
Planning & Development
Civic Offices
Block 4, Floor 3
Wood Quay
Dublin 8

Date: 3rd February 2022

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

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Our Case Number: ABP-302010-18

An Bord Pleanála

Fingal County Council
Planning Department
County Hall
Main Street
Swords
Co. Dublin

Date: 3rd February 2022

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir / Madam,

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Our Case Number: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 10th December 2021

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer to the above mentioned pre-application consultation. The Board considers that the pre-application consultation in respect of this case is concluded and it is open to you to now lodge an application for a railway order.

The Board wish to reiterate that the holding of the consultations shall not prejudice the Board in the performance of its function to determine the application for a railway order and cannot be relied upon in the formal planning process or in any legal proceedings.

Attached is a list of prescribed bodies to be notified of the application of the proposed development.

Please also find enclosed a full copy of the Board's pre-application consultation file which must be associated with the application documentation and made available for public inspection at the offices of the Railway Procurement Agency when the application is lodged. Two copies of any valid submissions/observations received by the Board in respect of the application will also be forwarded to you by the Board and you are requested to make a copy available for public inspection with the application documentation.

If you have any queries in relation to the matter, please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-8737250

NC11

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Judicial review of An Bord Pleanála decisions under the provisions of the Planning and Development Act, 2000, as amended

A person wishing to challenge the validity of a Board decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Board.

The validity of a decision taken by the Board may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(7) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks beginning on the date on which notice of the Board's decision was firt published. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, **www.citizensinformation.ie.**

Disclaimer: The above is intended for information purposes. It does not purport to be a legally binding interpretation of the relevant provisions and it would be advisable for persons contemplating legal action to seek legal advice.

ABP-302010-18

The following is a schedule of prescribed bodies considered relevant by the Board:

(a) Department of Transport
(b) Department of the Environment, Climate and Communications
(c) Department of Tourism, Culture, Arts, Gaeltacht, Sports and Media
(d) Department of Housing, Local Government and Heritage
(e) Dublin City Council
(f) Fingal County Council
(g) Irish Water
(h) An Chomhairle Ealaíon
(i) Fáilte Ireland
(j) An Taisce
(j) The Heritage Council
(k) The Commissioners of Public Works
(l) Dublin Airport Authority
(m) EirGrid
(n) ESB
(o) Health Service Executive
(p) Health and Safety Authority
(q) Inland Fisheries Ireland
(r) Eastern and Midland Regional Assembly
(s) National Transport Authority
(t) Waterways Ireland
(u) Commission for Regulation of Utilities
(v) Commission for Railway Regulation
(w) Córas Iompair Éireann

An Bord Pleanála

Board Direction
BD-009647-21
ABP-302010-18

At a meeting held on 10/12/2021, the Board considered the documents and submissions on file generally and the report of the Inspector.

The Board considered and accepted the points put forward by the applicant and the Inspector, namely that the proposed MetroLink project can be considered to be "railway works" as defined in the Transport (Railway Infrastructure) Act 2001, as amended. The Board agreed with the list of Prescribed Bodies, as recommended by the Inspector, to whom the application documents should be forwarded for their consultation and consideration, and also agreed to close the consultation.

Board Member Dave Walsh **Date:** 10/12/2021

An Bord Pleanála

Memorandum
ABP-302010-18

To: Dave Walsh - Chairperson

From: Kieran Somers – Executive Officer

Re: ABP-302010-18

Date: 3rd December, 2021

Please find attached herein the inspector's report dated the 26th November, 2021 regarding the above-mentioned pre-application consultation request.

File herewith for SID determination.

3rd December, 2021

An Bord Pleanála

Inspector's Report

Proposed Development

Metro for Swords - Dublin Airport - Dublin City Centre

Prospective Applicant:	Transport Infrastructure Ireland (TII)
Planning Authorities:	Dublin City Council Fingal County Council
Nature of Development:	Railway Infrastructure
Inspector:	Kevin Moore

1.0 LEGISLATIVE PROVISIONS

I note the definition of 'strategic infrastructure development' as set out in section 3 of the Planning and Development Act, 2000 (as amended). This includes the following:

' strategic infrastructure development ' means — ...

(*g*) any proposed railway works referred to in section 37(3) of the Transport (Railway Infrastructure) Act 2001 (as amended by the Planning and Development (Strategic Infrastructure) Act 2006), ...

The Board will note that metro development would constitute a 'strategic infrastructure development' for the purposes of the Planning and Development Act.

Regarding pre-application consultation, the following are the relevant provisions of section 50 of the *Planning and Development (Strategic Infrastructure) Act 2006* as they relate to pre-application consultation for railway infrastructure:

50.— The Transport (Railway Infrastructure) Act 2001 is further amended by inserting the following sections after section 47A (inserted by *section 49*):

"Discussions with Board before making an application.

47B.— (1) The Agency, CIÉ or any other person who proposes to apply for a railway order in accordance with section 37(1) shall, before making the application, enter into consultations with the Board in relation to the proposed railway works.

(2) Such a person is referred to subsequently in this section and in section 47C as a 'prospective applicant'.

(3) In any consultations under subsection (1), the Board may give advice to the prospective applicant regarding the proposed application and, in particular, regarding—

(*a*) the procedures involved in making an application under this Part and in considering such an application, and

(*b*) what considerations, related to proper planning and sustainable development or the environment, may, in the opinion of the Board, have a bearing on its decision in relation to the application.

Section 47B: supplemental provisions.

47C.— (1) A prospective applicant shall, for the purposes of consultations under section 47B,

supply to the Board sufficient information in relation to the proposed railway works so as to enable the Board to assess those works.

(2) The Board may, at its absolute discretion, consult with any other person who may, in the opinion of the Board, have information which is relevant for the purposes of consultations under section 47B in relation to the proposed railway works.

(3) The holding of consultations under section 47B shall not prejudice the performance by the Board of any other of its functions under this Act or the Planning and Development Act 2000 or regulations under either of those Acts and cannot be relied upon in the formal planning process or in legal proceedings.

(4) The Board shall keep a record in writing of any consultations under section 47B in relation to proposed railway works, including the names of those who participated in the consultations, and a copy of such record shall be placed and kept with the documents to which any application in respect of the proposed railway works relates.

2.0 THE PRE-APPLICATION PROCESS

2.1. A request by Transport Infrastructure Ireland (TII) to enter into pre-application consultations in relation to the proposed Metrolink development was received by the Board on 28th June, 2018 in accordance with section 47B of the *Transport (Railway Infrastructure) Act 2001*, as inserted by section 50 of the *Planning and Development (Strategic Infrastructure) Act 2006*. The Board's representatives met with the prospective applicant on the following dates:

2.2. Seven Pre-Application Consultation meetings took place between An Bord Pleanála (the Board) and the prospective applicant on the following dates:

6th December, 2018

29th May, 2019

8th November, 2019

28th October, 2020

31st March, 2021

15th September, 2021

28th October, 2021

2.3. The Board's representatives had further meetings with representatives of Dublin City Council, Fingal County Council, the Office of Public Works and the Department of Culture, Heritage and the Gaeltacht, and the National Transport Authority on the following dates:

Dublin City Council 3rd September, 2019

Fingal County Council 16th September, 2019

Office of Public Works and the Department of Culture, Heritage and the Gaeltacht 18th September, 2019

National Transport Authority 17th December, 2019.

2.4. This Report is prepared following the request by the prospective applicant to close the Pre-Application Consultations between the applicant and the Board. This Report provides an overview of the proposed project and gives a summary of the meetings between the prospective applicant and the Board and between the Board and other public bodies. I attach a list of Prescribed Bodies who it is considered should be forwarded copies of the application.

3.0 THE PROPOSED DEVELOPMENT

3.1. Overview

MetroLink proposes to provide a high speed, high capacity, high frequency public transport service for people travelling along the Swords/Airport to City Centre corridor in Dublin and finishing at Charlemont station, with a total length of 19km. It would be an automated system, having a 90-second headway at peak periods and a three-minute headway during off-peak periods. It is estimated that it would carry 50 million passengers annually. 16 stations would be provided. The scheme would have linkages with Dublin Airport, Irish Rail, Dart and Luas services. The underground section of the scheme would be tunnelled in two places using a single bore tunnel – south of Dublin Airport northwards under the Airport and from Northwood to Charlemont. The stations for the underground section would be constructed using the 'cut-and-cover' method.

3.2. Alignment and Stations

The proposed development would be as follows:

- The scheme would begin at a station at ground level at Estuary, north of Swords, where a multi-storey park and ride facility would be provided.
- The route would proceed along the east side of the R132 below the road level. Three further stations would be provided to serve Swords and would be at ground level on the east side of the R132 – Seatown, Swords Central, and Fosterstown. The road crossings in the Swords area would be by cut-and-cover.
- The route would then proceed to Dublin Airport where it would be underground under the Ground Transportation Hub below the existing T2 surface parking.
- It would then arise out of tunnel to Dardistown, where the depot and a ground level station would be developed. This station would not be opened at the initial phase of the scheme.
- The route would cross over the M50 via a new bridge and would proceed to the Tunnel Boring Machine (TBM) launch site.
- Northwood station would be developed underground under the R108.
- The tunnel would proceed to Ballymun, where an underground station would be developed on the west side of the R108 at the location of a former shopping centre site.
- The tunnel would proceed southwards to Collins Avenue, where an underground station would be developed on the east side of Our Lady of Victories Church.
- Proceeding further south, a ventilation and intervention shaft would be provided at Albert College Park.

- Beyond this, an underground station would be developed at Griffith Park on the east side of St. Mobhi Road.
- At Glasnevin there would be an underground station developed at the junction of Finglas Road/Botanic Road adjoining the Royal Canal, where there would be interchange with the Dublin/Sligo rail line and the Newbridge to Grand Canal Dock rail line.
- The route would continue southwards and an underground station would be developed at the Mater on the south side of Eccles Street.
- An underground station would be developed on the west side of O'Connell Street under the former Carlton Cinema site.
- The route would then proceed to Tara Street where an underground station would be developed and where there would be interchange with DART and Irish Rail services.
- It would then proceed to St. Stephen's Green where an underground station would be developed on St. Stephen's Green East.
- The scheme would terminate at Charlemont where an underground station would be developed. The development would include for the turn back of trains.

The construction phase is estimated to take approximately 7 years. The proposed tunnelling works are intended to occur on a 24/7 basis. It would take approximately 15 months to construct the Airport tunnel and approximately 69 months for the City tunnel.

4.0 POLICY CONTEXT

4.1. The development of a metro system is consistent with national, regional and local policy, which includes the following:

National

Project Ireland 2040 – National Planning Framework

Project Ireland 2040 – National Development Plan

Regional

Regional Spatial Economic Strategy (RSES) for the Eastern and Midland Region

Transport Strategy for the Greater Dublin Area

Fingal/North Dublin Transport Strategy

Local

Fingal County Development Plan

Dublin City Development Plan

5.0 PRE-APPLICATION CONSULTATION

5.1. Seven Pre-application consultation meetings were held with the prospective applicant. The following is a summary of these meetings:

6th December, 2018

It was understood that this first meeting constituted an information-gathering exercise to gauge an understanding of the scope of the proposed development. The prospective applicant gave an overview of the proposed development, which at that stage comprised a metro rail line extending between Estuary Park and Ride to the north of Swords, via Dublin Airport to Dublin City Centre, and then connecting to the existing Luas Green Line and providing metro services to Sandyford. Reference was made to the national, regional and local policy context for the proposal. Public consultation and changes arising were referenced. The principal elements of the scheme were outlined. The format of the Environmental Impact Assessment Report was discussed. Key issues expected to arise were viewed by the prospective applicant as including alternatives and construction waste management. The Board's representatives asked that the issue of alternatives would fully address the implications of the scheme for the operation of the Luas Green Line and requested further elucidation regarding the disposal of construction materials.

29th May, 2019

The prospective applicant gave an update on changes to the proposed development, which included the omission of the connection to the existing Luas Green Line and the last stop being provided at Charlemont Station. The Board was informed that an interchange would be provided at Charlemont and the tunnel boring works would allow for future connection to the Green Line. The preferred route would provide 16 stations and a single bore tunnel was proposed for the scheme. Station locations were identified and outstanding consultations with interested parties were outlined. Details of public consultation were set out. It was confirmed that over-site development was envisaged for the stations at

Ballymun, O'Connell Street, and Charlemont and the options for Tara Street were outlined. The potential impacts to St. Stephen's Green were set out. Materials management arising from the construction were discussed further.

8th November, 2019

The prospective applicant was informed of the meetings the Board's representatives had held with Dublin City Council, Fingal County Council, the Office of Public Works and the Department of Culture, Heritage and the Gaeltacht. The prospective applicant reported a number of alterations to the scheme, including provision of a viaduct at Balheary Park and alteration to the location of the proposed Dardistown Depot. An update on the development of the proposed works at Glasnevin and on public consultations was given. Discussion on materials management and the provision of a power supply at the construction and operational phases took place. The proposed structure for the EIAR was set out.

The Board's representatives brought up a number of high-level issues for discussion relating to the Swords area, the North City area, and the South City area. With regard to the Swords area, these related to the justification of the Swords to Dublin Airport corridor and its alignment, the future role of the R132 and access to stations, with particular regard to Swords Central station and the consideration of extending the station under the R132. For the North City area, the rationale for Glasnevin being favoured over Drumcondra was queried, with regard given to the proximity to the Luas Green Line and accessibility to Croke Park. For the South City area, the selection of the east side of St. Stephen's Green was queried, given the distance from Grafton Street and the possible future interchange with the Dart Underground. The appropriateness of the selection of Charlemont Station, in light of the decision to omit the Luas Green

Line upgrade, was also queried. Other matters raised related to the location of Collins Avenue Station relative to Dublin City University.

28th October, 2020

The prospective applicant provided details on the power supply/grid connection for the proposed development and clarified that a separate application would be made for the permanent connection. Consultation with local authority stakeholders and design changes arising were outlined. The proposed development of the scheme in the Swords area was addressed, with discussion focused on the form and access to Swords Central station and justification for the Seatown station. Further details were provided on the depot location and the park and ride facility. Discussions with Dublin City Council on city centre station design were outlined. Clarity was provided on the selection of the locations for the Collins Avenue, Glasnevin and St. Stephen's Green stations. The design of the Charlemont station was also addressed. Further consultation with other transportation and waste management stakeholders was outlined.

31st March, 2021

The prospective applicant noted the production of the "St. Stephen's Green Station Options Report" and the "Strategic Principles Report". The nature and extent of the rail corridor to form the Railway Order application were outlined and proposed limits of deviation were clarified. Details were outlined on the following stations – Seatown, Swords central, Fosterstown, Dublin Airport, Northwood, Ballymun, Collins Avenue, and Griffith Park. Reference was also made to the proposed R132 Connectivity Project by Fingal County Council, to co-ordination with the BusConnects project, and to ESB works. Association with DART Plus,

the replacement of playing fields at parklands, and the extent of works at O'Connell Street station were also discussed. Further stakeholder engagement and the considerations on the management of waste materials were outlined.

15th September, 2021

The prospective applicant presented details of project elements, including station types, the park and ride facility, and the depot. Details were outlined on the following stations –Glasnevin, Mater, O'Connell Street, Tara Street, St. Stephen's Green, and Charlemont. Key consultations with stakeholders were referred to and further discussion arose in relation to deviation limits for the scheme and on access to the Swords Central station.

28th October, 2021

This final meeting addressed the urban realm design for the stations and other constituent element of the proposed scheme to be included as part of the application. An overview of the construction programme was set out, including the phases involved, the tunnelling component, working hours, etc. The approach set out in the EIAR to accompany the upcoming application was also outlined, with considerations on alternatives, noise and vibration, settlement, traffic and transport, biodiversity, soils and geology, the urban realm and landscape, architectural heritage, cumulative impacts, and sustainability. A summary of public consultations to date was provided. The prospective applicant set out its intended timeline for the lodgment of the railway order application.

Documents provided to the Board during the consultations included" Metrolink Preferred Route, March 2019", "St. Stephen's Green Station Study: Location Assessment Report", and "Strategic Development Principles Report".

6.0 CONSULTATION WITH PUBLIC BODIES

6.1 The following consultations were undertaken by the Board's representatives in accordance with section 47C(2) as inserted by section 50 of the Planning and Development (Strategic Infrastructure) Act 2006:

Dublin City Council

The range of issues discussed at a meeting on 3rd September, 2019 included:

- Interconnectivity with other modes of transport, including cycling and BusConnects;
- Over-site development at city stations;
- Inter-connectivity of stations with pedestrian movement;
- The TBM launch site and the development of City Council land,
- Demolition at Tara Street; and
- Spoil management.

Fingal County Council

The range of issues discussed at a meeting on 16th September, 2019 included:

- The design of and accessibility to Swords Central station;
- The provision of the open cut along the R132;
- The development of the R132 as an urbanised roadway;

- Compatibility of Swords Masterplans with the development of the metro;
- Residential expansion in the Swords area and connectivity to the metro;
- Operational hours of the scheme;
- The level of service to Swords; and
- The location of Dardistown depot.

Office of Public Works and the Department of Culture, Heritage and the Gaeltacht

The range of issues discussed at a meeting on 18th September, 2019 included:

- The maintenance of St. Stephen's Green as a public park;
- Need for further surveys.
- The site selection for the St. Stephen's Green Station;
- An alternative location at Earlsfort Terrace;
- The negative impact of the scheme on the Green;
- Potential impacts for other buildings in the OPW's portfolio.

National Transport Authority

The range of issues discussed at a meeting on 17th December, 2019 included:

- The provisions of the scheme for the Swords area;
- The park and ride component;
- The location of Collins Avenue station;
- Alignment and selection of Glasnevin;
- The St. Stephen's Green station selection; and

- The selection of Charlemont as a terminal.

7.0 CONCLUSION

7.1. Further to section 47B of the *Transport (Railway Infrastructure) Act 2001*, as inserted by section 50 of the *Planning and Development (Strategic Infrastructure) Act* 2006, Transport Infrastructure Ireland entered into consultations with the Board prior to submitting an application for the proposed MetroLink. The Board gave advice to TII regarding the procedures involved and what considerations relating to the effects of the proposed development on the environment and the proper planning and sustainable development may have on its decision in relation to the application. During the meetings held, advice was provided as noted on the file attached.

7.2. The applicant now wishes to close the consultation stage and, following this stage, the applicant may apply to the Board for a railway order for the proposed development.

7.3. A recommended list of Prescribed Bodies, who should be forwarded copies of the application documentation, is as follows:

(a) Department of Transport
(b) Department of the Environment, Climate and Communications
(c) Department of Tourism, Culture, Arts, Gaeltacht, Sports and Media
(d) Department of Housing, Local Government and Heritage
(e) Dublin City Council
(f) Fingal County Council
(g) Irish Water
(h) An Chomhairle Ealaíon
(i) Fáilte Ireland

(j) An Taisce

(j) Heritage Council

(k) The Commissioners of Public Works

(l) Dublin Airport Authority

(m) EirGrid

(n) ESB

(o) Health Service Executive

(p) Health and Safety Authority

(q) Inland Fisheries Ireland

(r) Eastern and Midland Regional Assembly

(s) National Transport Authority

(t) Waterways Ireland

(u) Commission for Regulation of Utilities

(v) Commission for Railway Regulation

(w) Córas Iompair Éireann

Kevin Moore

Senior Planning Inspector

26th November, 2021

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta | Date 17 November 2021 Ár dTag | Our Ref. CAP_ML_L0205 Bhur dTag | Your Ref. ABP-302010-18

Re: MetroLink ABP 302010 7th Pre application meeting minutes.

Dear Mr Somers,

Thank you for the minutes of the meeting dated 28th October 2021. With regard to the minutes, we would suggest the following clarifications:

Current text re settlement.

Settlement – the prospective applicant provided a summary of its current assessment (Stages 1, 2a/2b and 3). The prospective applicant said that the preliminary assessment of potential damage to buildings/structures will be undertaken by the appointed contractor and added that a preliminary analysis was undertaken for buildings identified in the moderate damage category. The prospective applicant also added that the outcome of the preliminary analysis (Stage 2b) showed that seven buildings will progress to a Stage 3 analysis (pre-construction stage for high-risk categories). The prospective applicant also outlined mitigation measures that can be employed to address settlement, these included pile wall treatments and compensation grouting. The prospective applicant said that specific mitigation measures used at each site will need to be identified by the contractor based on a Stage 3 assessment.

Suggested changes:

Settlement – the prospective applicant provided a summary of the settlement assessment process (Stages 1, 2a/2b and 3) noting that Stages 1 and 2a had been undertaken to-date. A preliminary analysis (Stage 2b) had been undertaken for buildings identified in the moderate damage category. The prospective applicant added that the outcome of the preliminary analysis showed that seven buildings will progress to a Stage 3 analysis (pre-construction stage for high-risk categories). The prospective applicant said that the furthermore detailed assessment of potential damage to buildings/structures will be undertaken by the appointed contractor.

Current text re Traffic and Transport

The prospective applicant said that the busiest scenarios and their impact on the wider network had been assessed.

Suggested changes:

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Transport Infrastructure Ireland

METROLINK

The prospective applicant said that the busiest scenarios and their impact on the wider network had been assessed.

Current text re Railway Order Application

The prospective applicant re-stated its current intention to lodge the subsequent planning application in Quarter 2 2022.

Suggested changes:

The prospective applicant re-stated its current intention to lodge the subsequent planning application in **Quarter *2*** 2022.

Yours sincerely,

Aidan Foley.

Aidan Foley,
Project Director MetroLink

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Our Case Number: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 1st November 2021

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the 7th meeting of the 28th October, 2021.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

PC07

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An Bord Pleanála

Record of Meeting ABP-302010-18 7th meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	7th		
Date	28th October 2021	**Start Time**	11 a.m.
Location	N/A	**End Time**	1.05 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Ronan Hallissey, Jacobs		
John Keogh, Jacobs		
Aidan Foley, TII		
Nigel O'Neill, TII		
Anne Kiernan, TII		
Neil Cowie, Jacobs		
Matt Foy, Jacobs		

Introduction

The Board referred to its previous meeting with the prospective applicant of the 15th September, 2021 and enquired as to whether the prospective applicant had any comments to make on the record of this meeting. The prospective applicant replied that it had no comments to make on this record.

The prospective applicant provided an update on the project at the current time. The prospective applicant reported that the EIAR to accompany the planning application is nearing completion and that the Book of Reference is expected to be completed by early 2022. The prospective applicant said that its current intention is to lodge the railway order application in Quarter 2 of 2022. As regards the proposed St, Stephen's Green Station, the prospective applicant also reported that consultations with representatives of the OPW are ongoing.

Presentation by prospective applicant

The prospective applicant set out its intended agenda for the instant meeting which included items such as the urban realm design, an overview of the proposed construction phase and intended approach as regards the EIAR to accompany the planning application.

Urban realm design

The prospective applicant outlined the intended urban realm design with regard to the following constituent elements of the proposed development:

- Station entrance for Estuary Station
- Park and ride facility for Estuary Station
- Proposed viaduct for Broadmeadow and Ward River
- Station entrance for Seatown Station
- Platform for Seatown Station
- Station entrance for Swords Central Station
- Station entrance for Fosterstown Station
- Station entrance for Dublin Airport Station
- Proposed M50 Bridge
- Northwood Station
- Station entrance for Ballymun Station and public realm
- Collins Avenue Station
- Griffith Park Station
- Glasnevin Station
- Mater Station
- Tara Street Station including public realm
- St. Stephen's Green Station including station entrance
- Charlemont Station

The following design element features were also referred to by the prospective applicant:

- Underground station concourse level
- Underground station mezzanine level
- Underground station platform level
- Train livery
- Entrance portals for proposed stations
- Skylights for proposed stations
- Passenger lifts for proposed stations
- Service lifts for proposed stations

In response to the Board's query on the matter, the prospective applicant confirmed that in essence all of the public realm improvement works proposed will be included as part of the planning application (i.e. will be included within the red line boundary).

Construction phase of proposed development

The prospective applicant set out the intended construction phase of the proposed development which consisted of enabling works, main civil engineering works, railway systems installation, site finalisation works and systems testing and commissioning. The prospective applicant also outlined the indicative construction programme. With respect to the matter of tunnels required to be constructed, the prospective applicant said that the proposed Airport Tunnel would take approximately 15 months to construct and the proposed City Tunnel would take approximately 69 months to construct (total of approximately 7 years). The prospective applicant said that tunnelling would occur on a 24/7 basis in order to realise the proposed construction programme, to reduce the duration of impacts and to reduce settlement risk; it added that the proposed 24/7 tunnelling approach is an industrial standard. The prospective applicant also outlined the standard construction working hours for the proposed development as well as non-standard/extended working hours (for elements of the project including tunnelling, station excavations and roadworks). With regard to construction works at the proposed Glasnevin Interchange Station, the prospective applicant said that there would be a requirement for possession to be taken of the existing railway lines (Kildare and Maynooth lines) owing to the nature and complexity of works at this particular site; the prospective applicant added that it has held consultations with representatives of Iarnrod Eireann in this respect. The prospective applicant reported that a draft Construction Environmental Management Plan has been developed for the project and that this document will be included as part of the EIAR. The prospective applicant referred to some of the topics which will be addressed in this document and also referred to a number of support documents which will inform the draft CEMP.

EIAR

The prospective applicant referred to the EIAR which will accompany the planning application and some of the main topics which will be addressed in this:

- Alternatives – the prospective applicant said that this topic will be considered in Chapter 7 of the EIAR and will include consideration of matters such as Metro North, the emerging preferred route and the construction phase. In response to the Board's query on the matter, the prospective applicant said that the metro option was favoured above bus route or Luas options with respect to the numbers it would be able to accommodate; it added that this matter will be addressed in this chapter of the EIAR.
- Noise and vibration – this matter will be examined in the EIAR with respect to ground boring and blasting. A blasting strategy has been developed for the proposed development and the prospective applicant said that it is confident that appropriate mitigation can be applied at relevant blasting locations. Specific measures will also be applied at locations such as Trinity College.
- Settlement – the prospective applicant provided a summary of its current assessment (Stages 1, 2a/2b and 3). The prospective applicant said that the preliminary assessment of potential damage to buildings/structures will be undertaken by the appointed contractor and added that a preliminary analysis was undertaken for buildings identified in the moderate damage category. The prospective applicant also added that the outcome of the preliminary analysis (Stage 2b) showed that seven buildings will progress to a Stage 3 analysis (pre-construction stage for high-risk categories). The prospective applicant also outlined mitigation measures that can be employed to address settlement; these included pile wall treatments and compensation grouting. The prospective applicant said that specific mitigation measures used at each site will need to be identified by the contractor based on a Stage 3 assessment.
- Traffic and Transport – with respect to construction phase assessment methodology, the prospective applicant referred to the Scheme Traffic Management Plan (which covers both the enabling and main works of the project). The prospective applicant said that the busiest scenarios and their impact on the wider network assessed. The construction phase assessment

has also considered localised impacts on matters such as general traffic and public transport; the prospective applicant said that the overall strategic network would be able to accommodate the additional traffic, but that residual impacts will remain for general traffic, cyclists and parking. The prospective applicant also referred to some of the remedial measures outlined in the Strategic Traffic Management Plan, including the establishment of a traffic management forum and a mobility management plan. The prospective applicant referred to the operational phase assessment for the proposed development and said that this had utilised the National Transport Authority's East Regional Model (ERM, 2016). The various model scenarios were set out by the prospective applicant and operational phase outcomes referred to (increase in public transport mode share, notable improvements in public transport journey times, overall reductions in car trips and changes to usage of other public transport modes).

- Biodiversity – the prospective applicant presented a map of designated sites and confirmed that a Natura Impact Statement will also accompany the planning application. The prospective applicant stated that robust assessments have taken place with respect to protected species and natural habitats and will be included in this chapter of the EIAR. The prospective applicant said that a No Net loss assessment will also identify and quantify any habitat loss resulting from the proposed development.
- Soils and Geology – the prospective applicant said that the EIAR will contain an estimated quantity of excavated materials (soil, mixed and rock). The prospective applicant reported that an Article 27 notification to the EPA will be initiated shortly and that it is proposed that circa 70% of excavated material will be managed/re-used in this regard. The prospective applicant advised that an analysis is ongoing to define the use of excavated material and that five rounds of geotechnical investigation have been carried out to date.
- Urban realm and landscape – the prospective applicant set out the key features with respect to this topic and said that a linear park is proposed on the R132 (circa from Estuary Roundabout to Fosterstown). With regard to the EIAR, 24 Local Landscape Character Areas will inform the EIAR baseline and a total of 116 photomontages have been generated for the EIAR. The

prospective applicant said that there will be potential construction phase impacts due to required tree felling. The prospective applicant added that the proposed landscape design and replanting measures would serve to enhance the receiving environment for areas in the vicinity of the proposed development. In response to the Board's query on the matter, the prospective applicant said that the proposed linear park along the R132 would seek to align with the current proposals of Fingal County Council for this particular street. The prospective applicant also confirmed that the proposed linear park will form part of the instant project.

- Architectural Heritage – the prospective applicant reported that desktop studies and surveys have been carried out with respect to this topic; it added that 175 affected areas/features along the route of the proposed development have been identified and that specific mitigation measures are proposed for each location.
- Cumulative impacts – the prospective applicant set out the proposed methodology with regard to this which includes four stages and is cognisant of other developments in the vicinity of the proposed development (approximately 300 in total). The prospective applicant also referred in particular to strategic housing projects and significant transport projects (including the BusConnects and Dart+ projects) with respect to cumulative impacts arising from the proposed development.
- Sustainability – the prospective applicant referred to its environmental strategy (TII 2019) and the Project Sustainability Plan in the context of the proposed development.

Consultations

The prospective applicant provided a summary of the public consultations held to date and advised also of the key stakeholders it has engaged with in respect of the proposed development; these include the relevant local authorities, the OPW and the NPWS.

Railway Order Application

The prospective applicant set out its intended timeline for the lodgement of the subsequent railway order application; it confirmed that this would likely be the final

meeting in the pre-application consultation meeting. The prospective applicant re-stated its current intention to lodge the subsequent planning application in Quarter 2022.

Conclusion

The record of the instant meeting will issue to the prospective applicant in the meantime. The prospective applicant may submit any comments it has on the record for the file. It is then open to the prospective applicant to formally request closure of the pre-application consultation process.

Brendan Wyse
Assistant Director of Planning
1st November 2022

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta | Date 23 September 2021 Ár dTag | Our Ref. CAP_ML_L0201 Bhur dTag | Your Ref. ABP-302010-18

Re: MetroLink

Dear Mr Somers,

Thank you for the minutes of the meeting dated 31th March 2021. As per my email dated 19th April, we note that Northwood station due to its depth beneath road level will not require a "concourse level" as recorded in the minutes.

We further note for clarity that that the Railway Order application will be assessed in a scenario whereby the R132 project is realised and **also in a scenario where it is not realised in advance of Metrolink.**

Yours sincerely,

Aidan Foley

Aidan Foley,
Project Director MetroLink

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Our Case Number: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 23rd September 2021

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the sixth meeting of the 15th September, 2021.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

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64 Sráid Maoilbhríde, Baile Átha Cliath 1, D01 V902
64 Marlborough Street, Dublin 1, D01 V902

Jm: Foley Aidan <Aidan.Foley@tii.ie>
Sent: Thursday 23 September 2021 15:49
To: Kieran Somers <K.Somers@pleanala.ie>
Cc: Shaun McGee <S.McGee@pleanala.ie>
Subject: RE: 302010 record

Kieran,

Thank you for your record of the meeting. I will revert shortly with any comments we may have.

On a related issue you will recall that I had emailed you with some minor comments on the record of the meeting dated 31st March but neglected to issue you a letter to this affect as you had requested . I will send that letter to you this afternoon.

Separately we would like to have the next pre-app meeting on the either the 28th or 29th of October if this would suit ABP diaries.

Regards,

Aidan.

Aidan Foley| C.Eng|Project Director MetroLink| Transport Infrastructure Ireland| Parkgate Business Centre, Parkgate Street, Dublin 8, Ireland|
Phone + 353 1 6463567| Mob +353 86 0427357|Fax +353 1 646 3601|

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amháin. Más rud é go bhfuair tú an ríomhphost seo trí bhotún, cuir sin in iúil do postmaster[redacted], le do thoil, agus scrios an ríomhphost bunaidh agus aon cheangaltáin.

From: Kieran Somers <K.Somers@pleanala.ie>
Sent: Wednesday 22 September 2021 14:01
To: Foley Aidan <Aidan.Foley@tii.ie>
Cc: Shaun McGee <S.McGee@pleanala.ie>
Subject: 302010 record

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Good afternoon Aidan.

Please find attached an electronic copy of the record of last Wednesday's meeting on the proposed Metrolink project.

A copy will also issue to you in the post in due course.

Kind regards

Kieran Somers

Kieran Somers
Executive Officer
LAPS-SIDS
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902
Teil: 01-8737250
Facs: 01-8722684

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An Bord Pleanála

Record of Meeting ABP-302010-18 6th meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	6th		
Date	15th September 2021	**Start Time**	11 a.m.
Location	N/A	**End Time**	12.50 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Ronan Hallissey, Jacobs		
John Keogh, Jacobs		
Aidan Foley, TII		
Nigel O'Neill, TII		
Jorge Bernabeu Larena, Jacobs		

The meeting commenced at 11 a.m.

Introduction:

The Board referred to its previous meeting with the prospective applicant of the 31st March, 2021 and enquired as to whether the prospective applicant had any comments to make on the record of this meeting. The prospective applicant replied that it had no comments to make on the record of this meeting.

The Board's representatives recapped on the previous meeting held and some of the matters which had arisen at this meeting. The Board noted the submission of the Stephen's Green Alternatives Report in the meantime and noted that the prospective applicant had indicated that further engagements had been due to take place with representatives of the OPW. The Board also noted that it had been recently forwarded a copy of the Strategic Principles Report. The Board also said that its understanding was that the R132 scheme has been lodged with it by Fingal County Council. With respect to the issue of Article 27 and waste management, the Board indicated that it did not consider that a meeting between it and the EPA was necessary or appropriate at this time.

Presentation by prospective applicant:

The prospective applicant provided the Board's representatives with an update on the project since the time of the previous meeting. The prospective applicant reported progress with regard to stakeholder consultation and the preparation of plans and particulars (including the EIAR, NIS and photomontages). The prospective applicant also reported on the preparation of some 600 drawings including reference design drawings, property drawings and utility diversion drawings. The prospective applicant advised of its current intention to lodge the subsequent railway order application in either Quarter 1 or Quarter 2 2022. It said that it expects to have all technical documentation completed by the end of 2021, but that it will have to await formal approval of the business plan prior to the lodgement of the railway order application. The prospective applicant also reported that further work is required with respect to the preparation of the Book of Reference for the proposed scheme and that further engagement is required with the OPW in relation to the proposed station at Stephen's Green. With regard to the Strategic Principles Report, the prospective applicant noted that it seeks to address some of the underlying design issues of the proposed scheme such as the location of certain stations.

The prospective applicant provided the Board's representatives with details of the project elements. With regard to station types, the prospective applicant presented details of a typical retained cut station and a typical underground station cross section.

With regard to Estuary Station and Park & Ride, a draft of the landscape plan was presented; the prospective applicant said that this element of the proposed development would provide connectivity to existing and planned development areas in North Swords and would be designed to accommodate future new settlement at Lissenhall. The proposed park & ride facility would be designed to accommodate 3,000 parking spaces and would be located on a main radial route to the city region. The prospective applicant added that this facility would allow users access to the city centre by means of sustainable transport modes and would also facilitate the efficient functioning of Dublin Airport and Dublin Port. With regard to the proposed

facility, the prospective applicant provided details of the cross section of the station and the proposed layout for the park & ride. In response to the Board's query on the matter, the prospective applicant confirmed that the proposed park & ride facility would be a multi-storey building and it presented a draft ground floor plan of the structure in question.

The prospective applicant referred to the Dardistown Depot location and said that the main entrance for this is to be located on the Old Airport Road. The prospective applicant said that long-term future plans for the area were factored into the design and layout of the depot. It said that use of the depot complies with the General Employment land use zoning objective for the area and that the Dardistown Station will be open initially for depot staff. The prospective applicant added that the station will be constructed as part of the railway order works and that the future use of the station for members of the public would be delivered in line with development on surrounding lands.

With respect to Glasnevin Station, the prospective applicant said that this would comprise a multimodal interchange station which would be more complex than other stations. It added that the design of this station would provide for efficient interchange capability with the existing Iarnrod Eireann Station, with the Bus Connects project and for cycling connections. A proposed landscaping layout for the station was presented by the prospective applicant.

With regard to the Mater Station, the prospective applicant provided the Board's representatives with details of the proposed layout and views of the proposed station. The prospective applicant noted that the station will be underground at this location and that this is a particularly sensitive location with respect to its proximity to the hospital and a number of protected structures (including St. Joseph's Church and a nearby park). In response to the Board's query on the matter, the prospective applicant confirmed that all illustrated works at this location would be within the scope of the project and railway order works.

In relation to the proposed O'Connell Street Station, the prospective applicant said that this will be located under the proposed Hammersons development site on the western side of O'Connell Street. The prospective applicant said that the design of the proposed station would facilitate new commercial development overhead and it

ded that it is engaged in on-going consultations with representatives of Hammersons. The prospective applicant also noted that all works necessary to carry out the proposed development at this location would be included in the scope of the project and railway order works. In response to the Board's query on the matter, the prospective applicant said that its understanding was that the Hammersons applications are due to be lodged with Dublin City Council circa end of 2021/early 2022. The prospective applicant added that it expects these applications to be made prior to the lodgement of the railway order application.

With regard to the Tara Street Station, the prospective applicant said that this will facilitate future development at this location.

In relation to the proposed station at Stephen's Green, the prospective applicant said that it was fully cognisant of the national importance of the park and has sought to progress proposed reinstatement works with this in mind. The prospective applicant reported further engagements with representatives of the OPW and advised that it has committed to the production of a further study with regard to physical structures associated with the proposed station being located outside the boundary of the park. The prospective applicant said that it will further engage with the OPW once it has completed this study and will then make a decision on whether to proceed with this alternative proposal. The Board's representatives noted this and reiterated the view that it would be preferred if agreement could be reached with the OPW and any outstanding issues resolved prior to the making of the application. The prospective applicant restated its view that the proposed station location is the correct one.

With regard to the Charlemont Station, the prospective applicant said that this is to be located under and adjacent to the Hines development which is currently under construction. The prospective applicant advised that the station will incorporate two entrances (northern entrance from Grand Parade and southern entrance from Dartmouth Road) and would provide connectivity to the adjacent Luas stop via new stairs and lift at Grand Parade. The prospective applicant also noted some design modifications at this location with respect to residential dwellings in the vicinity.

In relation to the matter of stakeholder engagement, the prospective applicant reported on key consultations that it has held since March 2021; these included engagements with Fingal County Council, Dublin City Council, the OPW, Irish Rail and various utility providers. The prospective applicant advised that engagements with representatives of ESB Networks are continuing with regard to the matter of proposed cable route options to facilitate the proposed development. The prospective applicant advised that ESB Networks intend to carry out further studies in the meantime and it noted that any subsequent section 182A application would likely follow sometime after the lodgement of its own application. The prospective applicant also noted that consultations with the DAA are also on-going.

With respect to the issue of waste which would be generated by the proposed works, the prospective applicant noted that a further round of investigations has been conducted in order to characterise spoil material arising. The prospective applicant said that it estimates that 70% of such material will be notified to the EPA as being dealt with under Article 27 and it reiterated that it is seeking to reduce the disposal of waste to licenced facilities as much as possible. The prospective applicant advised of on on-going engagement/consultations with regard to both the EPA and the Eastern and Midlands Waste Authority. It also added that a chapter in the EIAR will address this issue.

The prospective applicant restated the overall need for the project and noted that it is fully supported at all levels of planning and transport policy. The prospective applicant said that the proposed development aligns with the National Strategic Outcomes of the National Planning Framework with particular regard to the matters of sustainable mobility; compact growth; the transition to a low carbon and climate-resilient society; enhanced regional connectivity; quality international connectivity; a strong economy; enhanced amenity and heritage; and access to quality childcare, education and healthcare facilities.

With regard to the recent Derryadd wind farm High Court judgement, the prospective applicant noted the implications of this judgement and said that any concerns it might have for its own project would centre on the matters of limits of deviation and the presentation of plans and particulars. The Board said that this would be a matter which it could give further consideration to but noted that an application of this type is required to clearly set out limits of deviation; the Board added that this, in turn, would facilitate a clear understanding of the design envelope of the proposed development. The prospective applicant noted this and stated that it has done a considerable amount of work with regard to limits of deviation for the project; it also added that a report to accompany the application would deal with the assessment of limits of deviation.

In relation to the proposed station at Swords, the prospective applicant advised that it hadn't advanced any proposal for an underground connection as it expects the R132 scheme to be approved in due course. The prospective applicant added that the scheme in question would deliver traffic calming measures on the R132 which would facilitate safe access to the proposed station for pedestrians.

Finally, the prospective applicant stated its intention to hold one further meeting with the Board's representatives prior to the closure of the pre-application consultation process. The prospective applicant outlined the areas it would wish to address at this final meeting which included the key environmental issues pertaining to the project.

With regard to the formal closure of the pre-application consultation process, the Board's representatives advised that the prospective applicant should allow for a number of weeks (approximately 4 – 6 weeks) from the time of receipt of the closure letter to the issue of the final notification by the Board.

Conclusion:

It will be a matter for the prospective applicant to revert to the Board for the proposed further meeting in October 2021. The record of the instant meeting will issue to the prospective applicant in the meantime.

pp. Nicholas Meehan

Brendan Wyse
Assistant Director of Planning
Sept. 2021

ESB Networks – MetroLink Briefing Note

This briefing note sets out the status of the discussions held with ESB Networks (ESBN) across a series of meetings to establish an agreement on the routes and delivery arrangements for both permanent and temporary power supply cables for the MetroLink project.

Permanent Power Supply Cables

The current design for the MetroLink project envisions two main substation locations that will in turn provide the power supply for the entire railway system. These substations are located at:

- Dardistown (in proximity to the proposed location for the depot)
- Estuary (in proximity to the station and the Park & Ride structure)

The rationale for selecting the location of the substations at Dardistown and Estuary and the reasonable alternative locations considered will be addressed within the Description of Alternatives chapter of the Metrolink EIAR.

Extensive discussions have taken place over the past 12 months to establish the cable routes that ESBN propose to use to install the significant cable infrastructure required to supply the two metro substations. The information on the proposed routes and details on the method of installation are of significant importance to TII as the environmental impact of these works will need to be properly assessed as part of the overall Environmental Impact Assessment Report (EIAR) to be developed for the scheme proper. This also includes any ancillary ESBN buildings required as part of delivering mains supply into the MetroLink system. The requirement for any ancillary ESBN buildings and environmental impacts associated with the construction, operation and maintenance will be assessed within the Metrolink EIAR.

The proposed routes for the installation of the supply cables is indicated below. These routes are considered indicative by ESBN, with the final design details to be established one ESB International (ESB's design partner) become involved. However, there is a sufficient degree of confidence in the routes to allow Jacobs/IDOM to commence walkovers and surveys for a baseline environmental assessment. Routes in dark green (fig 1) are proposed to be installed within existing duct infrastructure and a significant portion of the cable routes along the R132 to the north (fig 2) are proposed to be installed within the same alignment of the MetroLink scheme, which will negate the level of assessment required. In addition, the cable route section in orange in figure 1 is internal network upgrade works required for ESBN's overall network and is not required specifically for the MetroLink scheme.

Within the Metrolink EIAR, alternative supply cable routes considered by ESBN will be addressed within the Description of Alternatives chapter of the EIAR.

It is currently TII's position that:

- Within the Metrolink EIAR, construction and operational impacts per environmental factor will be assessed for the worst-case indicative route e.g. façade to façade or full width of the road as appropriate. Cable route sections in Dark Green, Light Green, Red and Blue require assessment within the Metrolink EIAR; and
- In relation to the cable route section in Orange, it has been confirmed that should this work not be progressed for ESBN's overall network, supply to Metrolink via the Light Green route is

not precluded. Therefore, assessment of the cable route section in Orange is not required within the Metrolink EIAR.

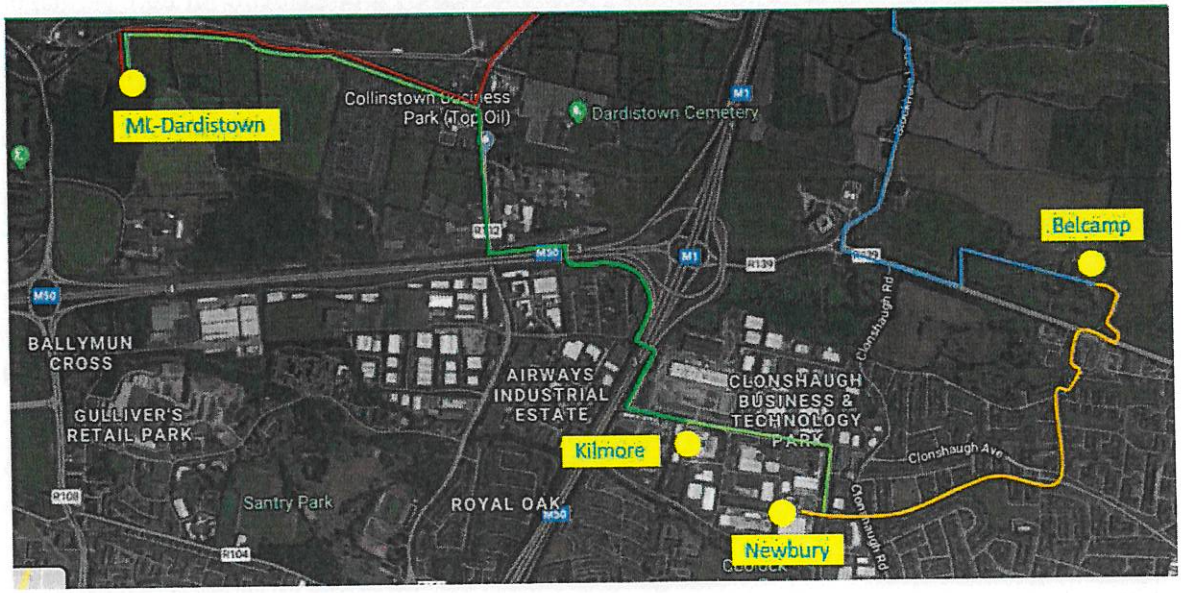

Figure 1: Cable routes south of airport

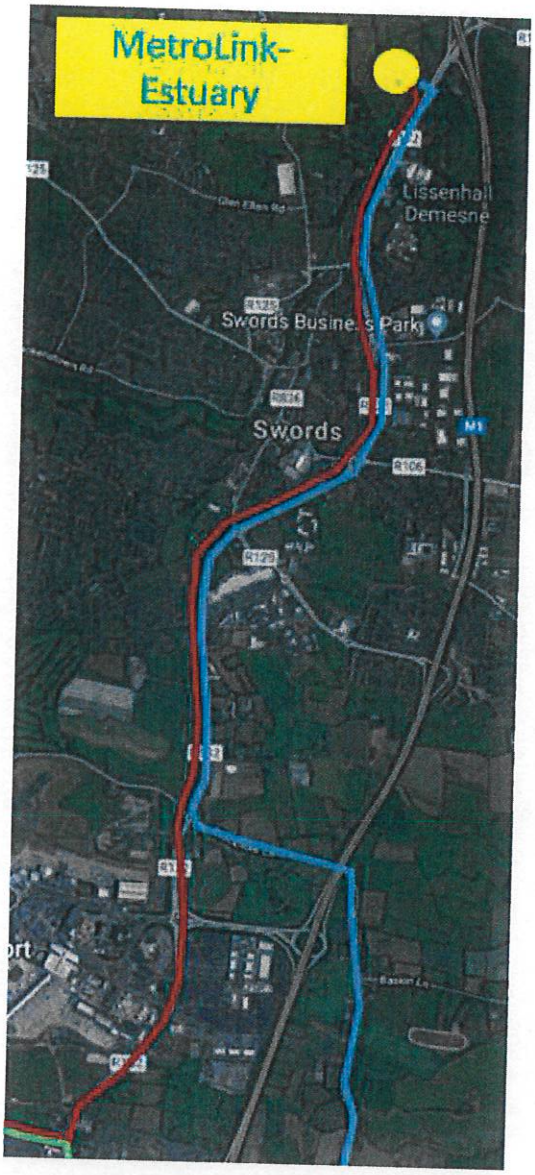

Figure 2: Cable routes north of airport

Concerning planning considerations, there is a potential programme mismatch between the development of the more detailed design for the cable routes and TII's planned RO submission date of Q3 2020. As such, it is in TII's interest to ensure the design of the cable routes does not become the critical path for finalisation of the Railway Order application. This does introduce a risk that the detailed design carried out by ESBN will make modifications to the route and subsequently introduce additional environmental impacts out with those assessed within the EIAR. Guidance is required on this.

Consequently, TII has stated our preference that ESBN submit the planning applications for these works. In turn, ESBN have expressed their preference that TII include these works within our Railway Order application. TII require guidance on this matter to ensure our position is robust.

Temporary Power Supply Cables

As part of the delivery phase of the works, two separate work staging areas will be required for the support of the tunnel boring machines (TBMs). These staging areas will require significant power supplies for the duration of the works to supply the operation of the TBMs and TII have applied to ESBN for these connections. Similar to the permanent supplies, two cable routes from an ESBN substation have been identified by ESBN and those routes are illustrated on the map below.

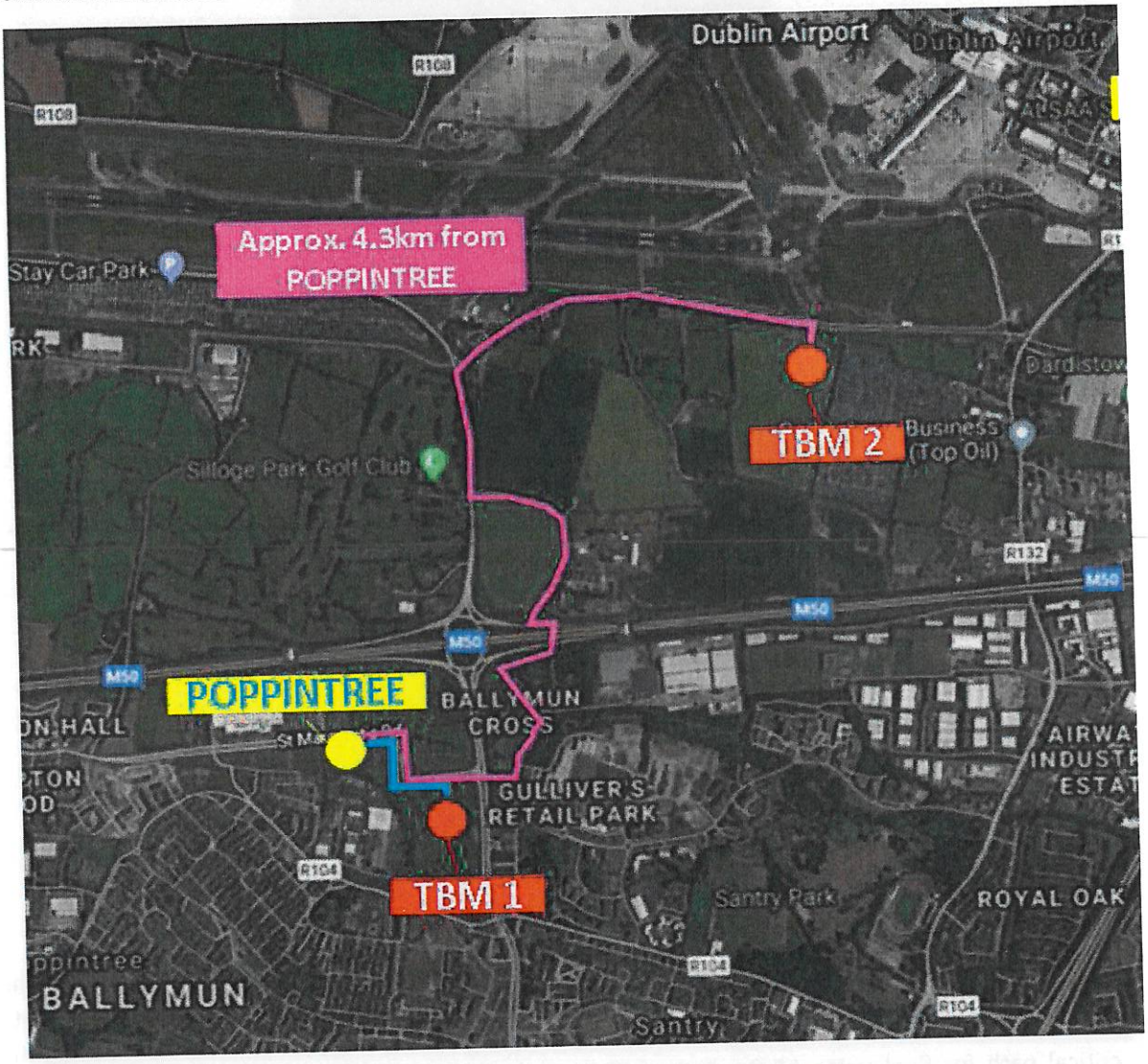

Figure 3: ESBN Temporary Power Supply Routes

Similar to the permanent supply cable routes, ESBN have classed these routes as indicative but with a degree of certainty to allow an environmental assessment to be carried out for MetroLink's EIAR. In contrast to the permanent supplies, TII have considered that as these cables are specifically required to supply the staging areas during the delivery phase and are therefore required at an earlier stage in the programme than the permanent supplies, the installation works for these cables are required to be included within MetroLink's RO application. One note for consideration is that while the cable routes are deemed to be temporary, the cables and ducting infrastructure will be retained by ESBN for possible future use. As above, TII require guidance on this matter to ensure our position is robust.

The TBM launch locations have been selected as part of the wider scheme development and alternatives assessment. Therefore, connection to these two locations is fixed, thus limiting the number of alternatives that could be considered by ESBN. This constraint will need to be detailed within the Metrolink Description of Alternatives chapter of the EIAR.

It is currently TII's position that construction stage impacts per environmental factor will be assessed for the worst-case indicative route e.g. full width of the road. Both the Blue and Purple cable route sections require assessment.

As stated above, the cable and ducting infrastructure is not required during the Operational phase of Metrolink but will be retained by ESBN for possible future use. Therefore, it is currently envisaged that the long-term permanent impacts, associated with the cables and ducting infrastructure, will not be assessed within the Metrolink EIAR.

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MetroLink

Strategic Development Principles Report

ML1-JAI-GEN-ROUT_XX-RP-Y-00003 | P01.1

2021/07/19

JACOBS IDOM

MetroLink

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Table of Acronyms

Acronym	Meaning
ABP	An Bord Pleanála
BRT	Bus Rapid Transport
CAP	Climate Action Plan
CDP	County Development Plan
DART	Dublin Area Rapid Transit
DCC	Dublin City Council
DCDP	Dublin City Development Plan
DCU	Dublin City University
EIAR	Environmental Impact Assessment Report
EPR	Emerging Preferred Route
ESB(N)	Electricity Supply Board (Networks)
FCC	Fingal County Council
FDI	Foreign Direct Investment
FDP	Fingal Development Plan
GDA	Greater Dublin Area
GDACN	Greater Dublin Area Cycle Network
LAP	Local Area Plan
MASP	Metropolitan Area Strategic Plan
MCA	Multi-Criteria Assessment
NDP	National Development Plan
NPF	National Planning Framework
NSO	National Strategic Objective
NTA	National Transport Authority
OPW	Office of Public Works
PSZ	Public Safety Zone
QBC	Quality Bus Corridor
RPA	Railway Procurement Agency
RSES	Regional Spatial and Economic Strategy
SFTS	South Fingal Transport Study
TBM	Tunnel Boring Machine
TII	Transport Infrastructure Ireland
TPH	Trains per hour

Acronym	Meaning
UCD	University College Dublin
UCN	Urban Cycle Network

1. Vision

1.1 Introduction

Dublin has seen substantial growth in its population, levels of employment and its status as a city of international reach and influence, particularly in the last 30 years. It is the key driver of the Irish economy, contributing 40% of Gross Value Added in 2018. In attracting international investment, Dublin has proved an outstanding success, with supporting 97,000 Foreign Direct Investment jobs, and receiving over $3bn in investment in 2018. The region is the home to five universities, with over 120,000 students.

Over the years to 2031 and with a 2040 horizon, the Dublin metropolitan area will build on our strengths to become a smart, climate resilient and global city region, expanding access to social and economic opportunities and improved housing choice, travel options and quality of life for people who live, work, study in or visit the metropolitan area. (Dublin Metropolitan Area Strategic Plan Vision)

The city ranks highly in international comparisons over many categories. However, the city faces challenges as it grows and responds to the demands for better quality of life, environment and accessibility to its attractions.

Housing and transportation are identified as areas in which the city has not kept up with the demands placed on it with a lack of affordable housing in the city leading to longer distance commuting, heavily reliant on private cars. Congestion in the city has placed a significant burden on residents and businesses and, without intervention, would continue to impact on quality of life and the attractiveness of the city as an environment for business, tourism and recreation.

MetroLink will transform Dublin's public transport system – faster travel times, climate change benefits, reducing traffic congestion, opening up economic and housing opportunities, facilitating urban improvements, and contributing to an enhanced quality of life in the region, from its projected opening date in 2027.

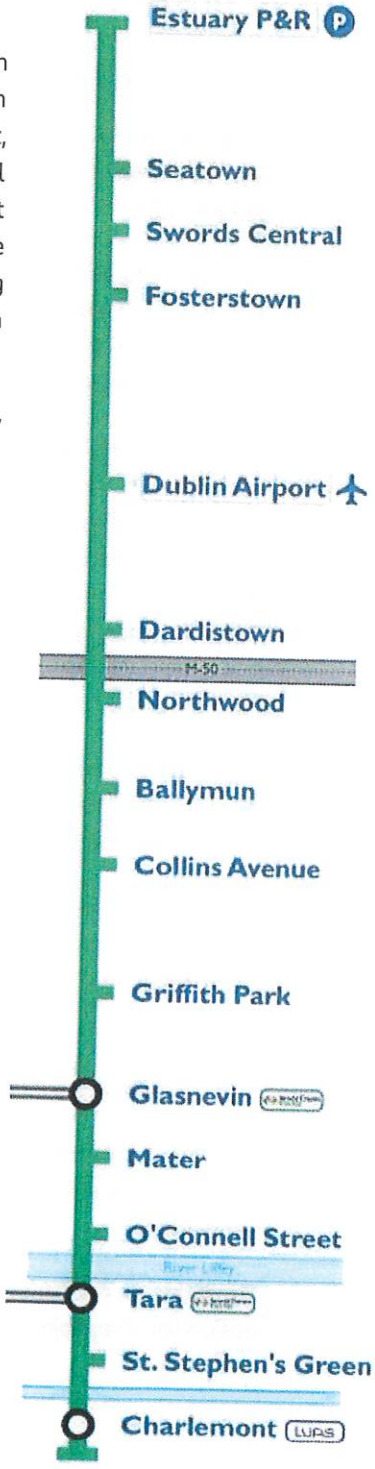
MetroLink will make a strong contribution to Ireland's climate change response, directly encouraging a movement to more sustainable transport modes and trip decisions. Reductions in congestion will contribute to a reduction in greenhouse gas emissions.

MetroLink is the key element in transforming Dublin's public transport network

MetroLink gives the city region the opportunity to develop in a coherent, planned manner, opening up lands of strategic importance that can be developed on sustainable principles, connecting high-density, mixed-use areas by way of high-quality public transport, largely on previously developed lands in Swords, the largest town in Fingal. The route will improve connections to Dublin Airport and Dublin city centre and through transport integration, link the Swords corridor to public transport options across the city region.

2. MetroLink Overview

The proposed MetroLink scheme is the development of a north-south urban railway service that will run between Estuary, north of Swords and Charlemont in south Dublin City Centre, connecting key destinations including Dublin Airport, Dublin City University, Mater Hospital and the City Centre. In addition, it will provide critical interchanges with the Dublin Airport, Irish Rail services at Glasnevin, DART services (at Tara Street, Dublin Bus and Luas Green Line services (at Charlemont) and the Luas Red line services (at Abbey Street). Along the length of the entire scheme there will be opportunities to interchange with bus services.



The proposed Project will be a "metro", which differs from DART and InterCity services operated by Iarnród Éireann and Luas services due to:

- A higher service frequency;
- Designed to carry more people shorter distances;
- Fully segregated from other road users including cars and pedestrians. This will be achieved by operating a segregated line mostly in tunnel under Dublin City with some segments on the surface or within retain cut; and
- Driverless vehicles automatically controlled from a remote location

The proposed alignment for the MetroLink scheme runs from Estuary station, north of Swords, southwards towards Dublin City via Dublin Airport, a route length of approximately 19km. The route will include 16 new stations (11 underground), a Park and Ride facility for 3,000 vehicles at Estuary Station, a maintenance depot at Dardistown, and ancillary infrastructure. The rolling stock will be comprised of 64m long, high-floor trains. It is envisaged that at peak times MetroLink will be capable of operating a train every 90 seconds, with the proposed system capable of carrying at least 20,000 passengers per direction per hour. The overall project objective of the MetroLink scheme, as established by the NTA and TII, and as informed by planning policy context, is "*to provide a safe, high frequency, high capacity, fast, efficient and sustainable public transport light rail service connecting Swords, Dublin Airport and Dublin City Centre.*"

3. Project History

3.1 Project Development History

The concept for a modern metro system in Dublin was originally included in the 2001 "Platform for Change" report, by the former Dublin Transportation Office (DTO).[1]

Subsequently, as part of an integrated transportation strategy for the Greater Dublin Area (GDA), Metro North (from Swords to St. Stephen's Green) was adopted as government policy with the launch of the Transport 21 programme in 2005.

Three potential routes for Metro North were published by the Railway Procurement Agency (RPA) in February 2006, through Finglas on the former Broadstone railway alignment, through Ballymun, and through Whitehall respectively. After public consultation, the RPA announced in October 2006 that they had selected a route known as the 'East/Central Combined Route', which ran through Ballymun. Following some modifications and additional detail, the RPA applied for a Railway Order to An Bord Pleanála (ABP) in September 2008.

In October 2010, ABP approved the Metro North Railway Order. However, following a review by the Department for Transport, Tourism and Sport in November 2011, Metro North Project was indefinitely deferred.

Project History

2001 Platform for Change

2005 Transport 21

2008 Application for Railway Order

2010 Railway Order approved

2011 project deferred

2015 Fingal / North Dublin Transport Study

2015 relaunch of Metro North

2016 Transport Strategy for the Greater Dublin Area 2016-2035

2018 MetroLink Launched

2019 Preliminary Design

The NTA commissioned the Fingal/North Dublin Transport Study[2] to identify the optimum long-term public transport solution to connect Dublin city centre, Dublin Airport and Swords. 25 public transport options were appraised initially, reduced to a shortlist of six schemes publishing its findings in 2015.

Metro North was relaunched in September 2015.

In 2016, NTA published the Transport Strategy for the Greater Dublin Area 2016-2035 that sets out transport infrastructure and services in the Greater Dublin Area (GDA) over the period, including Metro from Swords to Sandyford.

Consultation on the Emerging Preferred Route for MetroLink was published in early 2018. In 2019, the preliminary design for the project was published for consultation.

[1] DTO later formed part of the National Transport Authority (NTA)
[2] National Transport Authority: Fingal/ North Dublin Transport Study- Two Stage Appraisal Report, June 2015

3.2 Three Anchors of MetroLink

3.2.1 Fingal/North Dublin Transport Study 2015

The National Transport Authority (NTA) commissioned the Fingal/North Dublin Transport Study to identify the optimum long-term public transport solution to connect Dublin city centre, Dublin Airport and Swords. Improved public transport provision along the corridor has been an important objective and the study aimed to provide clarity on the most feasible long-term approach. The anticipated population and employment growth is likely to have a significant impact on travel demand, with population the north of the study area generating increased travel demand for city centre and Airport bound employment trips. The Study identified Swords and Dublin Airport as a combined cluster with activity in aviation infrastructure and airport related services, as well as transport and logistics. Future opportunities in the areas of high-tech manufacturing, high-value services, science and technology are encouraged within the cluster. The study noted that even if the highest capacity bus system was implemented, its maximum capacity would be in the region of 4,500 passengers per direction per hour which would not meet the expected demand in the area and thus both a comprehensive new bus network and a rail solution would be needed.

Subsequently, the National Transport Authority (NTA) Transport Strategy for the Greater Dublin Area, 2016-2035 identified a Metro service as the preferred public transport mode to address the transport needs of the Swords-Airport-City Centre corridor.

3.2.2 Transport Strategy for the Greater Dublin Area 2016-2035

The Transport Strategy for the Greater Dublin Area 2016-2035 fulfils the statutory requirement of the Dublin Transport Authority Act 2008. All development plans within the Greater Dublin Area are required to be consistent with it.

The strategy includes three major infrastructure projects: DART expansion; BusConnects; and a New Metro North. Regarding New Metro North, the strategy proposes that the originally studied Metro North tunnel should be extended southwards to meet the Luas Green Line in the general Ranelagh area.

MetroLink complies with, and robustly supports, the policies set out in NTA's Transport Strategy for the Greater Dublin Area (GDA) 2016-2035, as it will offer a high-quality, high-capacity, high-frequency, green and sustainable cross-city public transport mode along one of the key radial transport corridors of Dublin within which:

- the car mode share, for all trip purposes is 72%;
- the public transport mode share for all trip purposes is 12%;
- there is a significant amount of population/employment growth planned;
- the forecast growth in transport demand is very high; and
- it will be necessary for the anticipated growth in trips crossing the M50 (and the Royal Canal) to be mainly catered for by public transport; due to the limited scope for further increases in road capacity.

3.2.3 Project Ireland 2040 - National Planning Framework and National Development Plan

The National Planning Framework (NPF) is the Government's strategic framework to guide development and investment to enhance the wellbeing and quality of life of Irish people. The NPF establishes ten National Strategic Outcomes, as follows:

1. Compact growth;
2. Enhanced regional accessibility;
3. Strengthened rural economies and communities;
4. Sustainable mobility
5. Strong economy supported by enterprise, innovation and skills;
6. High-quality international connectivity;
7. Enhanced amenity and heritage;
8. Transition to sustainable energy;
9. Sustainable management of water and other environmental resources; and
10. Access to quality childcare, education and health services.

In addition to these National Strategic Outcomes and their supporting actions, the NPF sets the strategic context for the growth of Dublin to the year 2040. The NPF specifically references MetroLink as one of the key future growth enablers for Dublin city to improve transport mobility via strategic infrastructure as bullet pointed below:

- *Delivering the key rail projects set out in the Transport Strategy for the Greater Dublin Area (GDA) including Metro Link, DART expansion and the Luas green line link to Metro Link'* (National Planning Framework 2018, p.37); and
- *'Improving access to Dublin Airport, to include improved public transport access, connections from the road network from the west and north and in the longer term, consideration of heavy rail access to facilitate direct services from the national rail network in the context of potential future* electrification' (National Planning Framework 2018, p.37).

MetroLink has been developed to achieve the NPF goals by way of delivering a high-quality, green, sustainable key public transport mode, that helps the transition towards a low carbon and climate resilient society. This will ensure the creation of a more attractive, liveable urban place accommodating the projected growth of this corridor of the city region by 2040.

4. Project Aims and Objectives

The development of the MetroLink project is guided by a series of overarching objectives, setting the criteria against which project decisions are made, and are governed by the following overarching objective

'to provide a sustainable, safe, efficient, integrated and accessible public transport service between Swords, Dublin Airport and Dublin City Centre'

The objectives address core values of TII and NTA in developing transport solutions for the city region and have been developed with regard to the principles of proper planning and sustainable development, reflecting national aspirations for creating a better quality of life for the residents, workers and visitors to the Dublin region.

Project Objectives
Sustainable Mobility
Transport Integration
Land Use Coordination
Combating Climate Change
High Quality Experience

4.1 Sustainable Mobility

'Cater for existing public transport demand and support long-term patronage growth along this corridor through the provision of a high frequency, high capacity public transport service which supports sustainable economic development and population growth'

Project decisions aim to optimize connection by public transport within the corridor, maximise the opportunity to increase public transport share, looking to identify and connect to key nodes for housing, employment and community infrastructure, either directly or by way of efficient interchange with other public transport options.

4.2 Integration with other transport providers

'Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved inter-modal connectivity and integration with other public transport services and connectivity for national and international visitors using Dublin Airport'

Collaboration will be crucial to providing a consistent and seamless experience for the public regardless of the operator. The Dublin transport network comprises a wide choice of modes, including bus, light rail, commuter rail, private car, cycling, pedestrian. The project is designed to optimize connection to sustainable modes and allow seamless transfer.

MetroLink will require to be integrated with the existing ticketing systems in place in the Greater Dublin Area, and additionally it shall be capable to use future systems that will be in place by the time of commissioning of the metro

The proposed Project was an aspiration of the Greater Dublin Area Transport Strategy 2011–2030 published in 2011. It was a long-term outlook which is still very much relevant today and necessary for the survival and enhancement of Dublin as a renowned global city.

MetroLink has been consistently supported in all planning and transportation policy for decades and is a core element in the strategic framework for growth of the Dublin region.

4.3 Effective Land Use and Transport Coordination

'Enable compact growth, unlock regeneration opportunities and more effective use of land in Dublin, for present and future generations, through the provision of high capacity Public Transport whilst integrating into the existing public realm'

Project decisions relating to routing and design respond to historic, cultural and social context of the city, respecting the distinct character of the areas through which it passes, designing solutions that minimise impacts on existing communities, integrating new infrastructure through contemporary considered design and setting a positive example for new growth and urban renewal.

The project has been developed with an underpinning set of Urban Realm Principles

- Vibrant Communities: Metrolink embraces a diverse approach to placemaking and seeks to become a catalyst for emerging vibrant communities by adopting a flexible approach to the urban realm design, which accommodates a variety of land uses whilst also enhancing existing heritage and local identity. Reinstating the exiting public realm to restore each specific location's unique character identity where appropriate and recognising opportunities to contribute towards positive urban and environmental outcomes augment the public realm and make positive interventions to enhance the vicinity of each station location. The project serves areas of both relative disadvantage and affluence, connects area with deprivation through high quality public transport to the wider amenities of the city, while making those areas more attractive to investment and growth.

- Connectivity: It is imperative to create well connected, accessible and permeable places, promoting a modal shift towards a more sustainable vision, encouraging walking, cycling and use of public transport. with priority of access being pedestrians, then bicycles, then other forms of public transport.

- Green Infrastructure: Metrolink promotes an integrated green infrastructure strategy that capitalises on the existing assets of the site's context and introduces a modern sustainable approach, focusing on biodiversity and sustainable drainage.

- Fit for Future: The urban realm should embody a flexible and sustainable transit orientated approach combining innovation and heritage that can evolve and develop over time. Metrolink aims to add value to the exiting context and foster opportunities to facilitate oversite and adjacent site development where appropriate.

4.4 Combating Climate Change

'Deliver an efficient, low carbon and climate resilient public transport service, which contributes to a reduction in congestion on the road network in the Dublin Region and which supports the advancement of Ireland's transition to a low emissions transport system and delivery of Ireland's emission reduction targets'

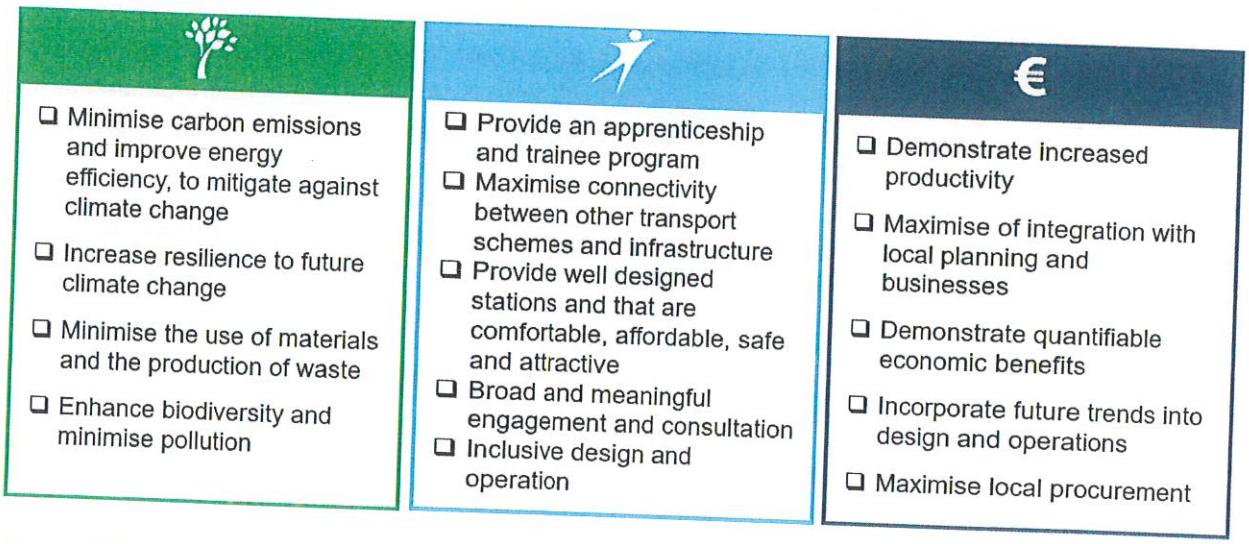
Project decisions include measure to address climate change, in station design, orientation, maximising natural light, minimizing heating requirement, power sources, building technologies and drainage, as well as directly through increasing public transport share.

Underscoring Metrolink project decisions is the Sustainability Vision (currently in draft)

*Sustainability for MetroLink means constructing and operating an **efficient, low carbon and climate resilient** metro system, which better connects Ireland's communities, unlocks regeneration opportunities and enables **compact growth** for present and future generations.*

This establishes objectives under three themes

- Environmental;
- Community Commitment; and
- Socio-economic.



4.5 High Quality Experience

Provide a high standard of customer experience including provision for clean, safe, modern vehicles and a reliable and punctual service with regulated and integrated fares.

The core of the Metrolink Design Vision has been established around three factors that are identified as key to delivering a successful Metrolink Design:

- Clear design principles as a foundation for all design matters.
- Strong design leadership to carry these principles through to project completion.
- Client commitment to the design.

The Architectural design principles are;

- Efficiency: It is crucial to develop an efficient station design that optimises its engineering process and creates a station layout that minimises travel distance within the stations themselves and time between interchange transport connections.

- People Focused: Providing an inclusive and accessible environment that creates an uplifting experience for both passengers and staff.
- Safe & Secure: A design that provides public spaces that can be easily monitored and are safe for all users.
- Legible: A simple and easy to navigate station design. Legible spaces that provide intuitive routes from and to trains, supported by clear sightlines and wayfinding
- Sense of Place: Create consistent front of house environments that can be adapted to their individual contexts to reflect the place where they are located. Commonality in design that can still reflect the identity of the local area.
- Timeless: The Metrolink should be designed so that structures can be easily maintained, modified and changed in time without disrupting the station's normal operation. A future-proofed building that can adapt to changing needs. and should allow for construction of the identified future extensions to the network.
- Sustainable: A low energy project that considers the environment and actively seeks to reduce the impacts caused by its construction and operation.
- Value for Money: Metrolink should apply an economy of scale, where standardisation and modular design processes will capture a positive cost-benefit while maintaining quality and commonality across all Metrolink stations.

The NTA Greater Dublin Area Transport Strategy states that transport infrastructure and services must be inclusive for all by virtue of their design and layout.

Even with modifications in recent years, older forms of public transport that weren't designed with accessibility as a priority often provide challenges to some passengers with reduced mobility or sensory impairments.

MetroLink will incorporate universal design from inception with "accessibility for all" at the core of the project.

The entire system, including stations, levelboarding trains and platforms will be fully accessible for wheelchair and pushchair users. This will also make luggage easier to handle.

The trains will be equipped with audio and visual 'next stop' announcements to assist people with visual or hearing difficulties.

All written, printed, online and verbal communication of travel information and other news to the public will be produced in a clear, legible and easily understood manner using plain language.

The screens protecting the platform edge prevent falls onto the tracks bringing extra safety.

5. Need for the Project

5.1 Growth and Development

As Dublin continues to grow it will face greater challenges in managing the pressures to accommodate employment, new population and delivering a high quality of life.

Project Ireland 2040: National Planning Framework forecasts a 25% increase in the population and a 30% increase in jobs in the Dublin area by 2040. The Dublin Metropolitan Area Strategic Plan envisages a population of 1.65 million in the metropolitan area by 2031 and increase of 250,000 (18%) from 2016.

Employment is at its highest ever level in the State, with the Central Statistics Office reporting that in the second half of 2018, employment growth in the previous 24 consecutive quarters rose to 2,255,000 people in employment. Dublin city centre has maintained its position as the pre-eminent location for jobs, with the trend being likely to continue.[3] Technology companies and other major employers are continuing to grow, particularly in city centre locations, which increases both the challenge and the imperative to get people to and from work in a reliable, affordable and sustainable manner.

Fingal is the fastest growing county in Ireland, having a population increase of 8% between 2011 and 2016, a rate twice that of the State overall. In addition, there is significant population and employment growth planned for this corridor, therefore producing an urgent need for high-capacity public transport solutions to be implemented in Fingal/ North Dublin.

In 2019, Dublin Airport handled a record 32.9 million passengers, as well as directly employing 19,200 people on site or in its environs. The airport is developing plans to enable it to accommodate up to 55 million passengers per annum. In addition, the airport is developing as a significant employment node for the north of the city for office and other intensive uses not directly connected to aviation uses. Providing a high-quality additional public transport mode to the airport, relieving congestion on the surrounding road network and improving journey time and reliability will add to the attractiveness of the airport and support its growth plans.

While Dublin consistently scores well in ranking for the most liveable cities, performance in public transport, congestion and housing availability and affordability are regularly identified as disadvantages for the city[4].

Currently, Dublin's public transport system struggles to meet existing demand and hence will not be in a position to address this future growth without intervention. If the current public transport system in the corridor is not improved it is likely that:

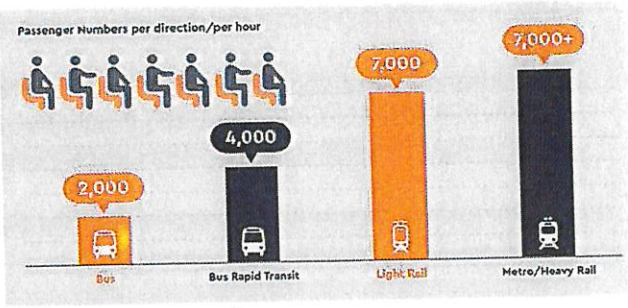
- Traffic congestion will worsen, undermining the city's competitive advantage and hindering its expected economic growth;
- Targets to reduce transport emissions will not be met, undermining plans to transition Ireland to a low carbon, climate resilient and environmentally friendly sustainable economy; and

[3] Dublin currently ranks 1st in the FDI European Cities and Regions of the Future 2018/19 rankings for Economic Potential for large cities
[4] Dublin ranked as the 9th most congested city in the TomTom Traffic Index in 2019

- Journey times will become longer and more unreliable, having a negative impact on people's well-being and their ability to access all opportunities available in the Dublin area.

5.2 Why a Metro Solution?

The Fingal/North Dublin Transport Study 2015 examined the preferred outcome for public transport in the corridor to provide clarity on the most feasible long-term approach with a horizon year of 2033. It compared and appraised heavy rail, light rail and Bus Rapid Transit (BRT) options. It concluded that heavy rail options for this corridor would prove technically difficult, as well as being constrained by the need to share existing rail corridors. This would significantly limit the potential capacity of services, contributing to a poor economic performance.



In relation to BRT, the assessment concluded that BRT services on this corridor would not provide sufficient capacity to meet the long-term identified passenger demand, only carrying a maximum 4,500 passengers per direction per hour during the busiest peaks.

The study concluded that light rail infrastructure presents the best opportunity to respond to travel demand in terms or operational and technical feasibility, which included options such as MetroLink, or an extension to the Luas Cross City scheme. The study concluded that the delivery of a full metro system is the preferred option for this corridor for a number of reasons:

- It has the highest capacity for additional public transport trips in the AM peak travel period of all the assessed options;
- It provides a new strategic public transport corridor in the region, avoiding reliance on either the existing heavy rail lines or the Luas Cross-City line, adding direct connections to new nodes of activity including the north city centre at O'Connell Street and the south city centre at St Stephen's Green;
- This level of segregation also allows for potential growth in the future due to its significant capacity;
- It generates the highest level of highway and public transport benefits, demonstrating that it is the scheme most likely to encourage modal shift from car to public transport;
- It provides a maximum level of accessibility to social deprived areas in the north of the city and opens up connectivity to employment, health and education facilities;
- It integrates very well with spatial policies for the area and supports future growth areas within the study area; and

- It could potentially be extended southwards in the longer term to alleviate high travel demand on the Luas Green Line.

MetroLink shows very high levels of demand across the day, projected to 2057. In the AM peak, maximum flows are close to 12,000 passengers southbound and over 10,000 for northbound trips. In the PM peak, flow peaks at close to 9,000 for northbound and for southbound trips. Lunchtime shows flows of up to 5,000 northbound and 6,500 southbound, with higher flows at times of school runs. Each of these projections demonstrate that the system requires a Metro scale capacity to meet the demand on the corridor.

AM Peak statistics in 2057

12,000 Southbound peak ridership

3,900 board at Tara Street

9,500 alight at Dublin Airport

For northbound trips, Tara Station shows the highest number boarding MetroLink at each modelled period, with over 3,800 at the AM peak. The busiest station for alighting is Dublin Airport at each modelled period, with 7,900 alighting at the AM peak.

For southbound trips, Tara Street and Dublin Airport are the busiest stations, with over 6,000 boarding at Dublin Airport in the PM peak, and 3,800 alighting at Tara Street in the AM peak.

5.3 Sustainable Mobility & Modal Shift

Over 70% of all trips in the GDA are made by car[5], and as such, there are critical levels of congestion on roads, especially key routes like the M50 where high value economic trips such as transporting food and other goods are at risk from commuting traffic. Similarly, of the 40% of workers in Swords who commute to Dublin city centre, two thirds are commuting by car. An effective and efficient public transportation system is required to encourage a modal shift away from private car use, and towards the use of public transport. The census found that the number of public transport users in 2016 was up 21% compared to the previous census in 2011, indicating that a modal shift is occurring, however without the provision of a more frequent and higher-capacity service, this modal shift will become constrained by existing capacity on the network.

The objectives of the project are consistent with NSO 4 of the National Planning Framework which highlights the need to provide a cleaner, quieter environment through progressively electrifying the mobility systems and also providing well-functioning, an integrated public transport system, enhancing competitiveness, sustaining economic progress and enabling sustainable mobility choices for citizens. A key aim of NSO 4 identifies the need to "Deliver the key public transport objectives of the Transport Strategy for the Greater Dublin Area 2016-2035 by investing in projects such as New Metro Link" (p.142). With this aim in mind the proposed MetroLink will provide for a better option of public transport, minimising the requirement for the car and therefore helping to achieve a cleaner and quieter environment. Whilst doing this it will also support an integrated public transport system by serving a number of destinations throughout Dublin and sustain economic progress and competitiveness by creating high quality, accessible and reliable public transport.

Figure 1 shows the overall increased modal share for public transport users including MetroLink over the do-minimum scenario in the year 2060, identifying significant shifts, particularly in the areas north of the M50.

[5] Transport Strategy for the Greater Dublin Area 2016-2035

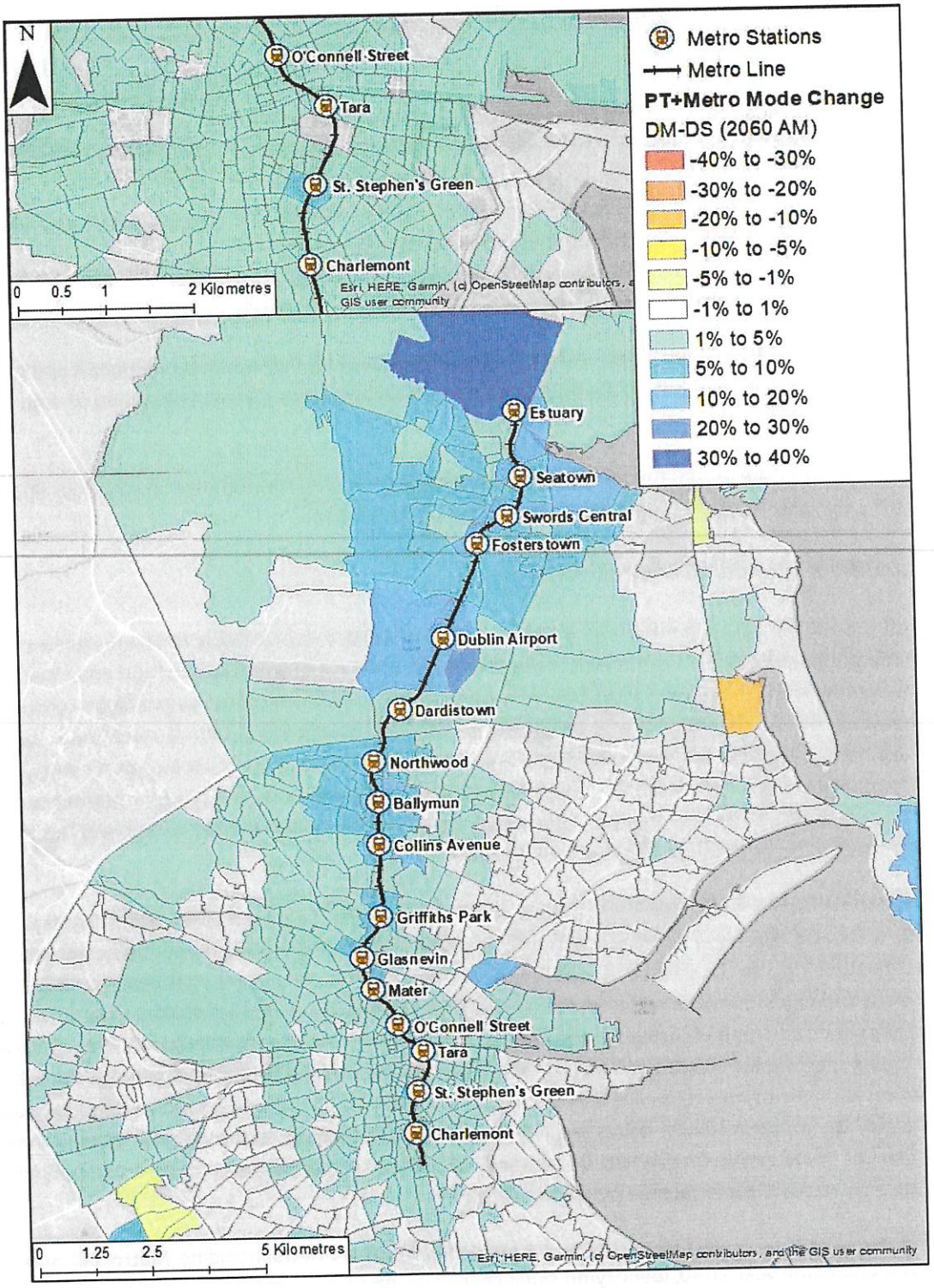


Figure 1 PT (Including MetroLink) Mode Share Change between Do Minimum and Do Scheme scenarios – 2060 AM

5.4 Connectivity-Developing the Network

MetroLink, BusConnects and DART expansion are three major transport infrastructure projects included in Project Ireland 2040. Together they will enable the development of reliable, sustainable, affordable, integrated public transport network that will support the economy in a sustainable way, making Dublin a better place to live, work, shop or visit. Therefore, integration and connectivity with these other networks is imperative to MetroLink so as to achieve an effective and efficient public transport network across Dublin.

MetroLink will not only integrate with Dublin Airport, but also two major Iarnród Éireann lines: the north-western line from Sligo/Maynooth to Dublin, and the south-western commuter line from Newbridge/Hazelhatch to Grand Canal Dock, converging at Whitworth Road near Glasnevin Station. MetroLink will also connect with DART and Iarnród Éireann services at Tara Street and Luas at Charlemont, O'Connell Street and St. Stephen's Green. BusConnects services will integrate along the entirety of the MetroLink route to allow convenient interchanges for passengers. Similarly, MetroLink stations have been incorporated within the Greater Dublin Area Cycle Network to facilitate further multi-modal travel across Dublin. A Park and Ride facility will also be provided at the most northernly station, Estuary, so as to facilitate public transport use even on the outskirts of the city.

5.5 Airport Access

In 2019, Dublin Airport handled a record 32.9 million passengers, as well as directly employing 19,200 people on site or in its environs. While Dublin Airport is currently served by a large network of bus and coach routes, serving both the wider Dublin area and intercity links to the rest of Ireland, this is not sufficient to meet the long-terms aspirations of the airport as a transport hub and future employment location. There is significant urgency for additional public transport solutions to be provided to increase further its public transport share. '*Review of Future Capacity Needs at Ireland's State Airports*' prepared by Oxford Economics identifies surface access as a potential constraint on Dublin Airport being able to meet its long-term aspirations.

'High-Quality International Connectivity' is crucial for overall international competitiveness and addressing opportunities and challenges from Brexit, as identified in NSO6 of the NPF. This National Strategic Outcome specifically calls out MetroLink as a project for its delivery, *"Enhancing land-side access, particularly in public transport terms, such as through the Metro Link project in Dublin"*

5.6 Sustainability and Climate Change

NSO 8 identifies that "The National Climate Policy Position establishes the national objective of achieving transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050". MetroLink aims to reduce congestion and private car dependency and use throughout Dublin by providing a fast and reliable source of public transport. The potential reduction of cars would help achieve lower greenhouse gas emissions and as a result encourage the transition to a low carbon, competitive, climate-resilient and environmentally sustainable economy. The proposed Park and Ride facility will also encourage less travel distances for those outside public transport catchments.

The project has developed a Project Sustainability Plan, which sets out how sustainability will be embedded into the design, construction and operation of MetroLink. Performance targets, initiatives and outcomes will be adopted

across key policy areas from the design stage through to its operation. The Project Sustainability Plan is a 'live' document and will be 'owned' by the MetroLink project team and reviewed and refreshed at appropriate points during the project lifecycle, for example project milestones or completion of lifecycle stages.

MetroLink offers wide-reaching sustainability benefits to both Dublin and Ireland across Transport Infrastructure Ireland's three corporate sustainability themes (the environment, society and the economy)[6]. A summary of these benefits is presented in Table 1.

Table 1: MetroLink benefits – environment, society and economy

Environment	Society	Economy
• An electrified mass transport option offering a new, carbon neutral modal choice for public transport passengers and road users alike. This will help Ireland in advancing to meet its sustainability and GHG emissions goals. • An effective public transport system also creates an opportunity to change the road user mix – which can lead to more efficient and effective use of the road network, improving journey times, air quality, and energy use. • Further GHG emission reductions through the replacement of existing car and public transport options that use conventional fossil fuels. Metro trips typically emit seven times less CO_2 than the current equivalent car journey[7]. • Fewer conventional vehicles on the road means	• Promote an improvement in health for users who combine an active travel mode (e.g. walking and cycling to and from stations) with using public transport. • Improved air quality and reduced noise will benefit all those in Dublin. • Provide a safe, reliable, comfortable, and faster trips between Fingal and Dublin and within the city. • More public transport choice and faster, more reliable journey times offers easier access to jobs and services such as health services and education. • Where the main sections of the line are underground, it avoids community severance and disruption and disturbance. • Trains are efficient on space within a city. MetroLink trains will be capable of carrying 500 passengers at the comfortable loading	• Significant employment during the construction and operational stages. • An Apprenticeship and trainee programme will offer opportunities for upskilling. • MetroLink will offer an affordable alternative to car use. • MetroLink will improve connectivity between Dublin, Ireland, and the rest of the world, giving regular, reliable and affordable travel to and from Dublin Airport. • New transport connections will give business and property developers the confidence to invest in new areas, regenerating previously underpopulated or neglected areas. Dublin's prosperity can diffuse into new areas. • Combined health benefits could mean a reduction in lost-time due to better health.

[6] Transport Infrastructure Ireland. *TII Statement of Strategy 2021 to 2025.* Available at: https://www.tii.ie/tii-library/statements-of-strategy/statement-of-strategy-2021-2025/tii-statement-of-strategy-2021-2025-final.pdf

[7] Unife – the European Rail Industry. Rail: The backbone of Sustainable Transport. Available at: https://sustainabledevelopment.un.org/content/documents/3761sandor.pdf

Environment	Society	Economy
improved air quality in Dublin and reduced noise. • Opportunities for the protection and enhancement of biodiversity where feasible.	parameter of four people per square metre. • MetroLink is designed to scale up to meet future demand. Additional trains will be added to the fleet over the course of the first 25 years of operation.	• As a significant infrastructure project, MetroLink provides supply chain and employment opportunities to local businesses.

5.7 Compact Growth

MetroLink directly supports the strategic plans of the local authorities along the route. Fingal County Council has developed its future housing and employment plans for Swords so as to encourage high density development in close proximity to MetroLink, largely on lands that are underutilized.

Compact growth enables more people to be located closer to employment and recreational opportunities, encouraging sustainable modes of transport and discourage car dependence. This will have the potential to have a positive transformational effect; encouraging economic development, focusing investment, building upon existing assets, less time spent commuting and good access to quality educational services, health services and jobs.

This is consistent with the National Planning Framework NSO1, which identifies the need to carefully manage sustainable growth of compact cities, towns and villages. NSO 1 identifies that "all our urban settlements contain many potential development areas, that are suitable and capable of re-use to provide housing, jobs, amenities and services, but which need a streamlined and coordinated approach to their development, with investment in enabling infrastructure and supporting amenities, to realise their potential" Infrastructure includes the development of integrated transport to cater for these strategic areas.

Compact growth is about creating more attractive and sustainable cities, towns and villages where people can both live and work, rather than the sprawl of urban development. Urban settlements contain jobs, amenities, services and potential development areas. The potential development areas are described in the NPF as:

'Making better use of under-utilised land and buildings, including 'infill', 'brownfield' and publicly owned sites and vacant and under-occupied buildings…'. (Project Ireland 2040, NFP, p22. 2018)

As such, the delivery of the proposed MetroLink scheme is identified within a number of land-use and transport policy and objectives within the Fingal Development Plan, including specifically Section 1.6, Strategic Policy, where it states that the Development Plan will *"seek the development of a high quality public transport system throughout the County and linking to adjoining counties, including the development of the indicative route for New Metro North (emphasis added) and Light Rail Corridor, improvements to railway infrastructure including the DART Expansion Programme, Quality Bus Corridors (QBCs) and Bus Rapid Transit (BRT) systems, together with enhanced facilities for walking and cycling considered as key".*

The consolidation of effective public transport options and strategic land-use objectives can therefore create a spatial focus for public activities and reduce urban sprawl.

Dublin represents 40.1% (€109,610m) of the State's total Gross Value Added (GVA) and is home to the strongest performing sectors of the economy

Dublin was ranked as Europe's 2nd most attractive city for Foreign Direct Investment by the Financial Times in 2018, ranking 2nd in Europe for business-friendliness and 2nd for economic potential. However, the potential for future economic growth could be hindered if the transport infrastructure of the city is not upgraded.

250 global financial institutions;
25 different banks;
18 of the world's top 25 med tech companies;
12 of the world's top 20 insurance companies;
9 of the world's top 10 pharmaceutical companies;
5 global software companies; and
4 global aviation leasers

A strong economy is one that will depend on creating places that can foster enterprise and innovation and attract investment and talent. It will require the coordination of growth and place making with investment in world class infrastructure.

MetroLink will support this outcome by improving public transport infrastructure that will cater for economic hubs such as Dublin Airport. It will also create a number of jobs that will support economic growth in Dublin.

6. Design Decisions

6.1 Key Decisions

Based on the principles established above, building on investigations and research carried out, examining technical feasibility, compliance with public policy, cost, potential trip patterns and environmental comparisons, the preliminary design of the project has been developed.

A series of key strategic decisions have been made that led to the design as set out in the preliminary design report and to be brought forward to Railway Order.

6.2 Station Parameters

A fundamental requirement of the proposed project is to ensure that it delivers adequate capacity to meet future demands for the catchment, as part of the wider transport network upgrades and connectivity in the region, enabling public transport to be more attractive to those who want to use it. 20,000 passengers per direction per hour has been set as the required ultimate capacity. Stations are located to serve catchments approximately 1km apart and recognizing key attractors and connections.

Underlying the design decisions is a recognition of the need to create a positive urban design, to suitably incorporate the project into the urban grain and create positive urban spaces, respecting the heritage value and historic importance of much of the townscape with which the project interacts. For each station, the actual sites have been selected to minimize land take, seeking to avoid demolition where possible and reduce the extent of disruption to surrounding communities.

This led to a project decision to limit train lengths to 64m so that platform lengths would reduce. To ensure that the required capacity can be achieved, this resulted in a need for greater train frequency, which can be most effectively and safely achieved with fully segregated, automated, high floor vehicles.

The architectural concept sets the parameters for the station designs. Stations will include works at surface level necessary for the operation and safety of the project. These works include light wells, stairs, escalators, emergency access and ventilation shafts. Cycle parking will be provided in line with National Cycle Manual guidance.

Design of at surface areas, including creation of appropriate public realm and, where necessary, mitigation of at surface features is being further refined following the preliminary design completion.

6.3 Vertical Alignment and Design

MetroLink has sought to provide the scheme at the most effective cost to the taxpayer. This has influenced the project in all areas, the most prominent of which in design terms is in relation to the vertical alignment of the track.

The project team has examined where the alignment can run at surface, open cut or cut and cover, which can assist in reducing project costs. This design approach is proposed where it be achieved with acceptable effects on the environment through which it runs and how it can make a positive impact on the developing urban character. Where the route passes through the established and historic urban fabric of Dublin city and where it passes through Dublin Airport, the route is in tunnel.

Shorter station boxes have been developed, which provides both environmental and cost benefits, while also providing adequate capacity. These include reduction of impact on public spaces, having a smaller footprint, and quicker construction.

The decision to use a single bore rather than a twin bore tunnel eliminates many complexities, it has the potential to reduce the construction programme and associated costs.

6.4 Network Connectivity and Interchange

For public transport systems to function efficiently they must be fully integrated, where different modes of transport complement each other. This principle of integration and accessibility is a key driver of the Project

The proposed Project will provide key interchanges with BusConnects corridors, Luas Green Line services at O'Connell Street, St. Stephen's Green and Charlemont, and DART and Irish Rail services, including future Dart+, at Glasnevin and Tara Street. A Park and Ride facility is also proposed for the most northern station along the route, at Estuary.

The stations with the highest number of people boarding from active modes (zone) in the morning peak in 2060 (in the scenario where the GDA Transport Strategy has been implemented), include Dublin Airport and Ballymun, with approximately 3,000 trips each. Tara Metro Station has approximately 3,500 trips transferring from bus and rail/DART, whilst Glasnevin has 1,600 transferring from rail and 400 from bus. O'Connell Street and Charlemont have approximately 700 and 900 boarding from the LUAS.

In terms of trips alighting, Dublin Airport has significantly more trips transferring from the MetroLink to walking compared to other stations, with approximately 9,500 trips, however these people are mainly walking from the airport terminals. Charlemont Station has over 850 passengers transferring onto the LUAS, whilst O'Connell Street Station has close to 600 passengers transferring onto the LUAS.

The stations with the highest number of people boarding from active modes (zone) in the evening peak hour include the O'Connell Street, Tara, St. Stephen's Green and Charlemont, with approximately 3,000 trips each. Charlemont shows approximately 1000 passengers transferring from the public transport system, with approximately 700 of these transferring from the Luas. Tara shows highest number of passengers transferring from bus, with approximately 700 passengers, with an additional 500 passengers transferring from rail/DART.

In terms of trips alighting, during evening peak Dublin Airport has significantly more trips transferring from the MetroLink to walking compared to other stations, with approximately 3,000 trips, however these people are mainly walking from the airport terminals. O'Connell Street has over 1,000 people transferring onto the LUAS, whilst Charlemont has close to 800 people transferring to the LUAS.

6.5 Integration

The level of integration between modes is dependent on the station location and characteristics.

- At Fosterstown, Northwood, Ballymun, Collins Avenue, Griffith Park and Glasnevin, the proposed BusConnects stops will be located adjacent the station to enhanced bus service.

- At Glasnevin, the works include full integration and tie in with the DART+ expansion programme of modern electrified services in the Greater Dublin Area. The works include the Kildare and Maynooth line services.
- At Tara Street, the southern MetroLink station exit is adjacent to the entrance to the DART station. The works will tie in with the DART Coastal Southside DART Line Improvement Works. It is noted that Irish Rail is separately investigating works to the DART station that will increase capacity of the station in light of current demands and how the station could improve connections to MetroLink
- At Dublin Airport, connection to the terminal buildings will be via external at grade connections. The station will be located where daa intends to develop a Ground Transportation Centre. The station design will facilitate future incorporation into that development.
- At Charlemont the northern MetroLink station exit is proximate to the stairs to the Luas station. Work is currently under way to examine how to improve connectivity from MetroLink to its surroundings.

6.6 Park and Ride Facility and Termination at Estuary

The Park and Ride facility is a key component of the GDA Transport Strategy and is viewed as a means of increasing the accessibility of the public transport network to a population that might not otherwise have access to it. Strategic sites for Park and Ride facilities are generally located on the outskirts of built-up area, located on the main orbital route to the city, and close to strategic radial routes prior to congestion commencing. The Transport Strategy identifies Park and Ride as being appropriate to serve MetroLink, north of Swords.

A site to the north of Swords and to the south of the M1 was chosen as a Park and Ride facility due to its potential to offer a competitive journey time into Dublin city centre and allows users to bypass congestion on the M1/N1, M50 and R132 Swords Road. This location will include provision for 3,000 parking spaces adjacent to the northern-most proposed station at Estuary accessed by way of a new road that forms the first part of the construction of the Swords Western Distributor Road, a key distributor road for Fingal County Council. The P&R is dual purpose to facilitate commuters needing to travel into the city centre using public transport, while allowing the efficient functioning of two major international gateways (Dublin Port and Dublin airport).

The station at Estuary will also serve the future community of Lissenhall, identified for development in the medium term by Fingal County Council. Development of this new area will be subject to a new Local Area Plan (LAP) that is to be prepared by Fingal County Council. Estuary station will enable accessible connectivity north to this new community separating access to the station between connectivity to the community from the western side of the station and access to the station for the Park and Ride facility from the eastern side. MetroLink has been designed to facilitate extension of the project north of Estuary through Lissenhall, should this be required in the future.

6.7 Swords and R132 Swords bypass

Fingal County Council designates Swords as one of two 'Metropolitan Consolidation Towns' in the Fingal Development Plan 2017-2023 at the top of their settlement hierarchy, with a strategic role in the development of the county. Strong transport links are a key requirement to achieve this policy goal, together with associated integration of land use.

The route along the R132 was identified in the Swords / North Dublin Transport Study as the preferred location for MetroLink. This was subsequently confirmed in the Emerging Preferred Route for the project.

Estuary Station and Park and Ride is further north than the permitted station in Old Metro North. This facilitates a rebalancing of station locations along the R132 to serve adjoining catchments. The 'new' Seatown station directly serves the north of the existing town, including the area of the previous terminal station in Old Metro North.

Development along this route facilitates sustainable expansion of population and employment with the highest potential residential units, in line with masterplans for key development lands, that provide compact growth with access to a strong public transport, cycling and walking network. This is centred on the three stations at Seatown, Swords Central and Fosterstown as well as connections from Estuary Station to its catchment development areas.

The route along the R132 Swords Road is well connected to existing communities in Swords, generally located to the west of the town. They are connected to the R132 Swords Road through walking and cycling facilities that are being improved in advance of and together with MetroLink. The route is accessible to the Main Street of the town from Swords Central and Seatown stations.

Policy has been developed by Fingal County Council, changing the nature of the R132 Swords Road, from a fast-moving distributor road to one which functions as an urban street with defined crossing points, which are safe and convenient for all road users so that it becomes a more urban boulevard with a 50 km per hour speed limit. This will result in higher permeability, better pedestrian and cycling connectivity and overcomes the severance that it currently creates. Fingal County Council lodged their R132 Connectivity Project for the road alteration works along the R132 Swords Road in May 2021 to ABP. A decision is due October 2021.

A viaduct is proposed over Broadmeadow and Ward River. This is due to the potential flood risk in the area. The proposed viaduct will be of a similar height to the embankment which was previously proposed at the location.

6.8 Dublin Airport Station

Dublin Airport Station is unchanged in location from the previous Metro North scheme, being below ground adjacent to the Ground Transportation Hub with easy surface level access to Terminals 1 and 2.

6.9 Depot and Station at Dardistown

The Depot location for MetroLink has been subject to a comprehensive site selection process to find the optimal location, examining locations close to Estuary station, as well as locations within the Dardistown area. The selected option is at the north west of the Dardistown lands, consistent with the area identified in the statutory LAP for Depot use. The location is at lands restricted in use by the Dublin Airport Outer Public Safety Zone, where depot use is permitted given its low intensity of employment. The Depot also includes access roads from the R108 and Old Airport Road and the works for a future station, which can be delivered in line with development of the overall land bank by its owners. The layout makes an allowance for future road upgrades identified as objectives of the Fingal Development Plan, although the road objective is not required or delivered by MetroLink.

6.10 M50 Crossing

The metro will run on a viaduct (elevated track) over the M50. There are operational benefits in relocating the train maintenance depot to the Dardistown area on the surface which means that the Preferred Route alignment now needs to pass over the M50 motorway. For the Preferred Route the TBM launch site at Griffith Park under this

scheme will be relocated to Northwood and single bore tunnelling would progress continuously from there southwards to Charlemont, thereby dealing with many of the concerns raised during consultation. This design decision will also reduce costs compared to an underground option.

6.11 Northwood and TBM Launch

Northwood station covers the catchment to the north of Ballymun. This differs from EPR stage which identified the launch site at the Na Fianna GAA grounds at Mobhi Road. The change came through the response to consultations and additional investigation works. The station box will be built under the junction of R108 and Northwood Avenue allowing passengers to access the station from either side of the radial city access road. Northwood will also be the main site where a tunnel boring machine (TBM) will launch from. The single bore option allows for the continuous running of the TBM north to south thereby providing a good location (next to M50) for materials management

6.12 Ballymun Station

The station at Ballymun supports the regeneration of this key north city suburb.

At EPR stage, the station was located under the Ballymun Road. For the Preferred Route, the station location is on the site immediately to the west, adjacent to the site of the future retail-led, town centre development.

6.13 Collins Avenue and DCU

Collins Avenue Station serves DCU and the surrounding residential catchment centred on Collins Avenue. It is located adjacent to Our Lady of Victories church, moved from under Ballymun Road following the EPR stage to tie in more with the proposed Bus Connects proposals. The amended location will reduce disruption to road traffic flows during construction.

Given the distance between Collins Avenue and Griffith Park stations, there is a requirement for an intervention shaft, to comply with the relevant European Standard for safety in railway tunnels. The shaft is situated to the western boundary of Albert College Park. This park is the only open ground on the MetroLink route between the stations large enough to accommodate an intervention shaft (6,500sqm site approximately), thus avoiding direct impacts on residential properties. In the event of an emergency, a safe area on the surface for evacuation of passengers will be available to accommodate up to 1,000 persons.

6.14 Griffith Park

Griffith Park station is located at the Home Farm Football Club pitch at the grounds of Whitehall College of Further Education. This is a change from the EPR which located the station on the neighbouring grounds of Na Fianna GAA. This change resulted from the response to public consultation in 2018 to mitigate the potential impacts on community infrastructure from a TBM launch site. This change was possible due to the decision to move from twin bore to single bore tunnel and the decision to launch the TBM from Northwood, leading to a smaller site requirement, as well as there being fewer sensitive receptors, such as schools, sports facilities and residential areas, thus the potential environmental impacts arising from the location would be less significant.

6.15 Glasnevin Station

In determining the preferred route for the project, a number of route alignment options were considered and assessed using a multi-criteria assessment (MCA) approach[8]. Glasnevin Station emerged from the Preferred Route stage as the most appropriate station location. A key criterion within this assessment is the level of public transport integration facilitated at the proposed station location. This included a comparison of how to interchange with both the Maynooth and Kildare Railway Lines, at either the existing Drumcondra railway station or the development of a new station at Glasnevin. These station options were considered with respect to consistency with GDA Transport Strategy, public transport patronage, and passenger transfer from other public transport modes. The changing planning and transport context arising from the GDA Transport Strategy and South Fingal Transport Study, the development of the Dart + schemes as well as land use changes in the interim have brought about a change from the decision made in respect of the permitted Metro North scheme.

How transport services will be provided in the future is an essential element of the Transport Strategy for the Greater Dublin Area 2016-2035, dealing with both the level of service and the integration of services, as well as identifying that the public transport network needs to, amongst other things:

- Provide appropriate coverage of the region;
- Increase opportunities to transfer between modes and services;
- Provide fast and convenient access to major travel destinations throughout the region;
- Be easily understood to both local and visiting passengers; and
- Deliver reliable and predictable journey times.

As a result, the choice of station location will directly impact on how successfully this network can be achieved. Table 2 summarises the assessment undertaken to compare the benefits or otherwise of Drumcondra and Glasnevin stations.

Table 2 - Assessment of station options at Drumcondra or Glasnevin

	Glasnevin	Drumcondra
Station Catchments	Some overlap between the catchments of Griffith Park, Glasnevin and Mater stations. Mater covers some 32% of the catchment of Glasnevin and 12% of Glasnevin catchment is covered by Griffith Park.	Significant overlap between the catchments of stations at Griffith Park, Drumcondra and Mater. Mater covers some 60% of the catchment of Drumcondra and 20% of the Drumcondra catchment is covered by Griffith Park
Interchange with Kildare Line & Maynooth Line	30m horizontal interchange between metro and rail platforms. Closest horizontal and vertical alignments allowing ease of interchange across all combinations of rail and	110m horizontal interchange between metro and rail platforms with the Kildare Line and Maynooth Line separate interchange point for each line.

[8] New Metro North Alignment Options Report (Arup, 2018)

	metro. New platforms/station required to serve the existing rail line.	Significant vertical and horizontal divergence between existing rail lines compounded by the underground nature of metro alignment. New platforms required to serve Docklands Line.
Interchange with Bus	A number of the routes have destinations in the south of the city which would be served by Metro and/or the Luas Green Line. There is limited duplication of the routes and very limited opportunity for earlier transfer. The journey time savings make transfer from bus very attractive.	A number of routes along this corridor present earlier opportunities for transfer to Metro or mode switching with a number of routes serving the same corridor with duplication of services. Interchange from bus is likely to have occurred earlier along the route
Patronage	24 hr = 143,700 AM Peak = 3,450 Local =500 Rail = 2,400 Bus = 500	24 hr = 137,900 AM Peak = 2,500 Local =330 Rail = 1,800 Bus = 400
Journey Time Reductions	Maynooth Line 16 mins Kildare Line 13 mins	Maynooth Line 13 mins Kildare Line 10 mins

Based on the analysis undertaken, a station at Glasnevin provides better access for the local population to the Metro system while also providing better levels of integration with the heavy rail and bus network thereby making a greater contribution to achieving the goals of the NTA Transport Strategy for the Greater Dublin Area.

The works proposed include the construction of the Glasnevin Station, including the platforms for a new interchange with Irish Rail commuter services. This also includes the works to realign the tracks to serve the commuter station. Glasnevin Station has been designed to be able to accommodate future electrification of the Kildare and Maynooth lines.

The station at Glasnevin would also serve the surrounding area. The identified distinct catchment area for a station at Glasnevin would be larger than for Drumcondra. The proximity of Drumcondra to Griffith Park and Mater would mean that 80% of its potential catchment would already be served by those two alternative stations. This is in contrast to 44% of the catchment of Glasnevin being served by those two other stations. Hence the benefits in terms of providing increased access to the proposed Project would be significantly larger at Glasnevin than at Drumcondra.

In terms of bus connections, the Glasnevin location is on a number of bus routes that do not link other proposed Project stations. In contrast, many of the bus routes passing Drumcondra also pass close to other proposed Project stations and therefore provide alternative locations for interchange from bus to metro. This means that the Glasnevin location again would again provide increased opportunities for access to the proposed Project.

6.16 Mater Station

Mater Station is located under Four Masters Park in front of the original entrance to the Mater Hospital. This differs from the previous Metro North project which was on a different alignment in the direction of a Drumcondra station. The choice of a station at Glasnevin meant that the only feasible option for a station was at the Four Masters Park area.

The station will require works to the park which is a Protected Structure, including relocation of the cross and the removal and reinstatement of railings. The park will be reconfigured and returned to open space use on completion of construction.

6.17 O'Connell Station

The Preferred Route has identified O'Connell Street station, which is located under the 'Carlton site' on Upper O'Connell Street, and is currently unoccupied. This is a change from the EPR which located the station under the road. This change will reduce construction impacts on transport, notably on Luas and bus, as well as maintaining the public realm during this period. It also reduces the potential for significant cumulative impacts arising from other transport projects.

Design of the station is taking place in consultation with the current landowners who are preparing planning applications for the development of the site over the station box.

Further design changes were also introduced during the design development of the proposed station in order to reduce the potential impacts on architectural heritage in the area. The station box layout was reconfigured to avoid the requirement for demolition of numbers 42, 59 and 60 O'Connell Street, which are of significant architectural value.

6.18 Tara Station

Tara Station is a critical piece in MetroLink, providing connectivity in the network to DART and commuter rail within a high-density city office area.

It is recognized that existing buildings above will be required to be demolished, comprising the College Gate complex of 70 apartments, Markievicz Sports and Leisure Centre, 8 residential units owned by Dublin City Council and two other buildings.

Following public consultation, in response to submissions opposing the demolition of the properties, eight further route options were investigated, including three options submitted by residents as well as a mined option and alternative realignments of the route to the east of the Tara Street DART Station. The proposed solution limits disruption to the DART station and train services and retains good interchange with Tara Street DART Station, of key significance given the high passenger number interchanging here. The surrounding land is zoned for city centre scale commercial and residential use. The scheme facilitates potential oversite development that reinstates the building lines of Tara Street and Townsend Street and creates a plaza area with good connectivity through the city centre.

6.19 St Stephen's Green Station

St Stephen's Green Station, together with Charlemont, is the main station serving the southern commercial core of Dublin city centre. It is located to the east side of St Stephen's Green. The previous Metro North scheme combined a Metro and a DART Underground station at the north west corner of the Green. The east side was selected for MetroLink because it is the option that best supports the important new interchange to Tara Street Dart station and Charlemont Luas station, it has a significantly lower impact on the amenity of St Stephen's Green than the heavily used north western corner, and it has reduced impacts on the operation of the Green Line Luas.

The station is largely located under the park and the adjacent promenade outside the park to the east. This followed an options appraisal against assessment criteria including Economy, Environmental and Engineering, discarding options that were not considered feasible, and conducting an MCA of remaining options to ascertain the preferred location. The selected site performed best against the criteria in the assessments.

While the selected site impacts directly on St Stephens Green East and St Stephen's Green Park which is a National Monument (RMP DU018-020334) and contains Protected Structures (RPS 7751-7761), it reduces the most significant impacts when compared to alternative options, having particular regard to landscape and visual impacts, impacts on transport and traffic and the requirement for utility diversions (notably a Victorian sewer). The detail of the design incorporating mitigation measures are being refined and progressed with consultation with Dublin City Council and OPW to minimize effects on the National Monument, representing a much-reduced impact when compared to the previous approved Metro North scheme.

6.20 Charlemont Station

Charlemont Station is the final MetroLink station and provides interchange connectivity to Luas Green Line services for onwards southwards connections, in addition to providing transport connectivity to residential and commercial demand both north and south of the Grand Canal.

The station is located in the lands to the rear of No. 2 Grand Parade (the former Carroll's building) which is the subject of planning permission for Hines Development (trading as Grand Parade Property Trading Company DAC) for a significant mixed-use office and residential development which will be positioned over a significant section of the station box structure. The Grand Parade development has commenced and the works in the planning permission for this development includes the provision of enabling works for the MetroLink station. As a result, the Railway Order application will include only those additional works required to complete the station structure.

The Railway Order will incorporate proposals for easy and accessible interchange with the Charlemont Luas Stop via on-street connections to the west of the MetroLink station, in addition to providing better accessibility for those accessing the MetroLink station from the north of the Grand Canal.

6.21 Luas Green Line

The Transport Strategy for the Greater Dublin Area 2016-2035 includes proposals for an extension to the Swords to City Centre metro scheme called "Metro South". This extends the metro to Sandyford (and onto Cherrywood) as a high-capacity metro system. A variant of this proposal was developed that connected the Green Line into the new metro system just south of the Charlemont underground station (near Ranelagh) and upgraded the Luas line

infrastructure and all intermediate stations up to full metro standard with a terminus station at Sandyford, and an interchange with the Sandyford to Cherrywood Luas line.

A Multi Criteria Analysis was undertaken to identify the preferred tie in point between MetroLink and the Luas Green Line, that could ultimately facilitate a tie-in to a future 'Metro South'. This MCA identified Charlemont as that preferred tie-in.

The project design team reviewed and took cognisance of the significant amount of feedback received through the Public Consultation process. In addition, more accurate survey data was collected which identified and confirmed impact on trunk utilities in the area. One of the measures to de-risk this was to develop design options that could resolve the potential clash with the utilities and resolve the key concern raised during the public, namely the severance arising from the closure of Dunville Avenue where the at-surface segregated metro crosses the road. The project team also reviewed the existing Luas Green Line system to determine if alterations to the existing infrastructure and the addition of longer light rail vehicles could provide for future capacity requirements. Design development was a key input into the decision, e.g. the proposal to have a high floor vehicle solution meant there were more significant potential impacts on the green line than were known at EPR stage.

Following an engineering and operational analysis, it was determined that the medium-term capacity requirements for the Luas Green Line can be achieved within its own permitted operations, without a need to significantly interrupt the service. By doing so, MetroLink will avoid impacts on a key transport artery for the southern catchment areas at a time when significant construction impacts will occur in Dublin city centre impacting on transport movements. The MetroLink scheme has been designed to ensure that a metro extension onto the Green Line (or any other potential metro extension alternatives developed in future transport policies) are not precluded, and the impact on MetroLink operations during these future tie-in works is unaffected.

6.22 Other Key Issues

6.22.1 DART Underground

The project has taken full cognisance of the policy objective to develop a DART Underground project as part of the overall Transport Strategy for the Greater Dublin Area 2016-2035. The re-opening of the Phoenix Park Tunnel to passenger services and the development of enhancements to the Kildare and Maynooth lines through Glasnevin has changed the context for DART Underground. TII has determined that a new DART Underground route selection study is to be carried out, including examining the appropriate route through the city centre. This may or may not follow the existing route. The study will take MetroLink stations into account and will examine how it can integrate with MetroLink project decisions.

6.22.2 Waste

The removal and treatment of spoil material from the tunnel is a significant issue for the project to resolve. It is estimated that in the order of 3.0 million cubic metres of soil, stone and made ground material will be excavated to construct the MetroLink tunnel, station boxes, open cut, and cut and cover sections and associated infrastructure of the proposed Project. Allowing for backfill, this corresponds to a total surplus of excavated material of approximately 2.9 million tonnes. TII is consulting with a number of potential site owners to identify appropriate end use solutions for the material to be excavated. The materials management strategy for the project is based on the principle of maximizing reuse and recycling of material generated by the project. To this end, TII is also

consulting with the Environmental Protection Agency regarding the lodgement of a notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 for re-use of materials as a by-product.

The spoil material will be transferred back out of the tunnels via a conveyer belt. The tunnel entrance points are at Dublin Airport South Portal and Northwood Station. The spoil will be transferred by HGV directly to the proposed disposal site, or the spoil transfer site. Both tunnel boring entrances have been selected due to their close proximity to Junction 4 of the M50. The central spoil site will also be accessed via a dedicated on and off slipway on the N2.

6.22.3 ESB Connections

Power to operate MetroLink will be facilitated by way of two substations (at Dardistown and the Airport North Portal) and the necessary connection from the national grid. Details are currently being confirmed with ESB. Connections from national infrastructure to serve MetroLink, will be subject to its own consent application to ABP under Section 182A of the Planning and Development Acts and the proposed substations for MetroLink will form part of the Railway Order Application.

6.23 Other Stakeholders

As the scheme develops to Reference Design, additional consultations will continue to ensure that MetroLink takes into account the views of landowners, communities and other stakeholders.

7. Policy Compliance

7.1 National and Regional Policy

MetroLink is consistent with the body of planning and transport policy that applies at a National, Regional and Local level.

At a national level, the NPF and NDP specifically call out MetroLink as a critical project to achieve the goals for the Dublin region[9]. In addition, MetroLink directly contributes to the delivery of each of the National Strategic Outcomes, notably in terms of NSO1 Compact growth; NSO4 Sustainable mobility; NSO5 Strong economy supported by enterprise, innovation and skills; NSO6 High-quality international connectivity; NSO8 Transition to sustainable energy; and NSO10 Access to quality childcare, education and health services.

The descriptions of High-quality international connectivity and NSO5 Sustainable mobility contain policies, actions and investment that specifically references the proposed Project.

> NSO4 '*Expand attractive public transport alternatives to car transport to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer-term population and employment growth in a sustainable manner … investing in projects such as* ***New Metro Link,***
>
> (National Planning Framework 2018, p.142)

Specifically, the Climate Action Plan 2019, which highlights the strategic importance of the implementation of major sustainable -mobility projects such as DART expansion, proposed Project, and the bus connects programme.

MetroLink project will help deliver several of the National Strategic Outcomes (NSO). High-capacity public transport strongly supports the concept of 'Compact Growth', as identified in NSO1 and integrated transport will improve accessibility.

Similarly, the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region, supports MetroLink through its Regional Strategic Outcomes: Number 2 - Compact Growth and Urban Regeneration, Number 4 - Healthy Communities; Number 6 - Integrated Transport and Land Use; Number 9 - Support the Transition to Low Carbon and Clean

[9] *Delivering the key rail projects set out in the Transport Strategy for the Greater Dublin Area (GDA) including Metro Link, DART expansion and the Luas green line link to Metro Link'* (National Planning Framework 2018, p.37); and

'Improving access to Dublin Airport, to include improved public transport access, connections from the road network from the west and north and in the longer term, consideration of heavy rail access to facilitate direct services from the national rail network in the context of potential future electrification' (National Planning Framework 2018, p.37).

Energy; Number 14 - Global City Region; and Number 15 – Enhanced Strategic Connectivity.

The RSES incorporates the Dublin Metropolitan Area Strategic Plan which identifies the strategic planning and investment framework to enable growth. MetroLink is explicitly cited in the MASP as being critical to its achievement. The MASP identifies strategic corridors and quarters to deliver sustainable compact growth integrated with public transport. The Metro Corridor from Dublin city centre to Swords is identified as one of the strategic corridors and is dependent on the delivery of Metro to achieve its targets.

> *The development of the proposed MetroLink project, subject to appraisal and delivery post 2027, will unlock significant long-term capacity in Swords-Lissenhall and in South Fingal - Dublin Airport, subject to the protection of airport capacity and accessibility. (RSES 2019-2031, p. 102).*

7.2 Fingal County Council

MetroLink is critical to the achievement of the vision for the county as set out in adopted planning policy.

The Core Strategy of the Fingal Development Plan 2017-2023 identifies a Metro scheme serving Swords as an imperative for the town's future sustainable development. In addition, the residential capacity for the county is directed to lands in accordance with a hierarchy of settlements, with Swords as one of the two 'Consolidated Towns' that will accommodate the majority of future housing. This capacity is unlocked by the provision of a Metro project.

Policy has been developed so that with the delivery of MetroLink comes the opportunity to soften the R132 Sword Road so that it becomes a more urban boulevard with higher permeability, better pedestrian and cycling connectivity and overcomes the severance that it currently creates.

> *The indicative route for new Metro North will facilitate the optimal development of Swords into the future and the Council will maximise the benefits of and the efficient use of the Metro for the benefit of those living and working in the town.*

In particular, the Metro Economic Corridor zoning objective facilitates high intensity development in proximity to the identified MetroLink corridor, while a series of masterplans have been adopted that are predicated on the Metrolink corridor. These masterplans bring more active frontages to the R132 Swords Road, propose intensive, public transport led development, with strong connectivity across Swords.

Fingal County Council has sought approval for a project to improve connectivity across the R132 Swords Road through signalising junctions and rebalancing road space to more sustainable modes. This proposal will also contribute to improving the urban environment that Metrolink will further enhance.

MetroLink is currently refining its design so that it can achieve the aspirations of Fingal County Council to increase the quality of life in Swords and maximise the potential for MetroLink to transform Swords.

The development of the MetroLink will explicitly support:

- the development of high-tech research and development opportunities at Lissenhall East;
- the role of Dublin Airport as a Global Gateway;
- the role of Dublin Airport as County Fingal's largest employer;

- the creation of a station at Dardistown will act as a catalyst for the development of the zoned land identified in the Dardistown LAP lands;
- the reduction of car dependency and support sustainable modes of transport/smarter travel.

7.3 Dublin City Council

MetroLink is identified as a strategic project underlying the core strategy of the Dublin City Development Plan 2016-2022. The city incorporates high-quality sustainable mobility as an integral part of its vision.

MetroLink complies with the zoning objectives for all of its proposed locations.

The design of MetroLink is sensitive to the existing built urban fabric. It recognises that the creation of a sense of place around MetroLink stations is a key component how the project responses to its environment, including architectural character, Protected Structures, cultural value, social importance, local historic context and effects on local amenities.

The project supports areas of strategic importance to Dublin City Council. The station serving Ballymun is at the centre of the community and supports its regeneration in line with the adopted LAP. Glasnevin Station facilitates integration of transport services. The station at O'Connell Street has been integrated into a site for future development, contributing to the further improvement to the principal street of the city. At Tara Station, the station creates a new plaza serving Metro and DART passengers as well as the high-density development in its vicinity while facilitating the reinstatement of the urban blocks in the area. Charlemont Station is integrated into a mixed-use development site. In each of these sites, MetroLink respects the character of station locations and facilitates city scale development over the stations, while creating appropriate and attractive urban realm.

At St Stephen's Green, Mater, Griffith Park and Collins Avenue, the design reinstates the open space overhead following completion of the construction phase.

The design is being refined in consultation and collaboration with Dublin City Council and other stakeholders in the city to ensure that all design parameters are addressed.

8. Public Consultation

8.1 Ongoing Consultation

We are committed to ongoing public consultation of the proposed route. We have conducted two-route wide public consultations: on the Emerging Preferred Route in 2018 preferred route in 2019. In 2021 we conducted a smaller local area consultation on a specific aspect of the alignment, where changes were made to the Preferred Route and where, as the design developed, more detailed information emerged. It was decided that rather than waiting for Railway Order application to announce these to the public, the MetroLink Project team would instead hold non statutory local area consultations to provide these updated designs to the public and allow time for feedback and further design input. The consultation that took place was Albert College Park Tunnel Intervention Shaft.

9. Conclusions

As Dublin continues to grow and develop, it faces significant challenges to manage the projected increase in population, employment numbers and in associated transport movements in a way that delivers a high quality of life for residents, employees and visitors.

The National Planning Framework - Ireland 2040 sets ambitious targets for growth across the city region based on strong sustainable principles, notably, prioritising high density, mixed use development, close to high-capacity public transport corridors, transitioning to sustainable energy use, enhancing access to social services for all, with 50% of growth on brownfield sites.

The northern corridor from Dublin city centre to Swords via Dublin Airport represents one of the identified strategic corridors for growth in the region to 2040. MetroLink is specifically identified within the National Planning Framework and in the Dublin Metropolitan Area Strategic Plan as a priority project that directly delivers on each of these principles of development.

MetroLink comprises a project that builds on the knowledge and experience from the previous Metro North project, which received a Railway Order in 2011. MetroLink responds to the updated policy and development context in the city, cognisant of current budget assumptions, taking advantage of new technologies and using additional studies into the most appropriate routing and design.

The project has the underlying objectives to deliver a high-capacity, frequent, high-quality metro line linking Swords, Dublin Airport, Irish Rail, DART, Dublin Bus and Luas services, creating fully integrated public transport in the Greater Dublin area.

The decision to select a single bore, high-floor, automated operation with 90 second headroom was taken to optimise the ability to deliver the capacity requirements and to future proof demand to the design year of 2057.

The architectural principles seek to provide a coherent response across all stations, to deliver natural light from the surfaces into the station concourses, providing shorter station boxes to reduce impact on above ground public spaces, and providing a modern, and positive presence in public areas for this major public project. The project delivers new public spaces that interface with the public realm, to facilitate walking and cycling access, and proving a focal point to these future nodes of interaction between transport interchange and the built environment around it.

The routing and design of the project reflect the underlying objectives, seeking to best meet the technical requirements in a way that respects the character and context of the existing environment, and facilitating the future development of the areas through which it passes.

In response to these needs, MetroLink will provide significant additional capacity to the Dublin transport network by:

- extending rail connectivity from Swords through the city centre and onwards to Charlemont;
- interchanging with DART at Tara Street, with the Luas Green Line at Charlemont, with the Luas Red line at O'Connell Street, with suburban rail at a new station at Glasnevin, with international air services at Dublin Airport and through Park and Ride facility connections from a wider north county catchment;

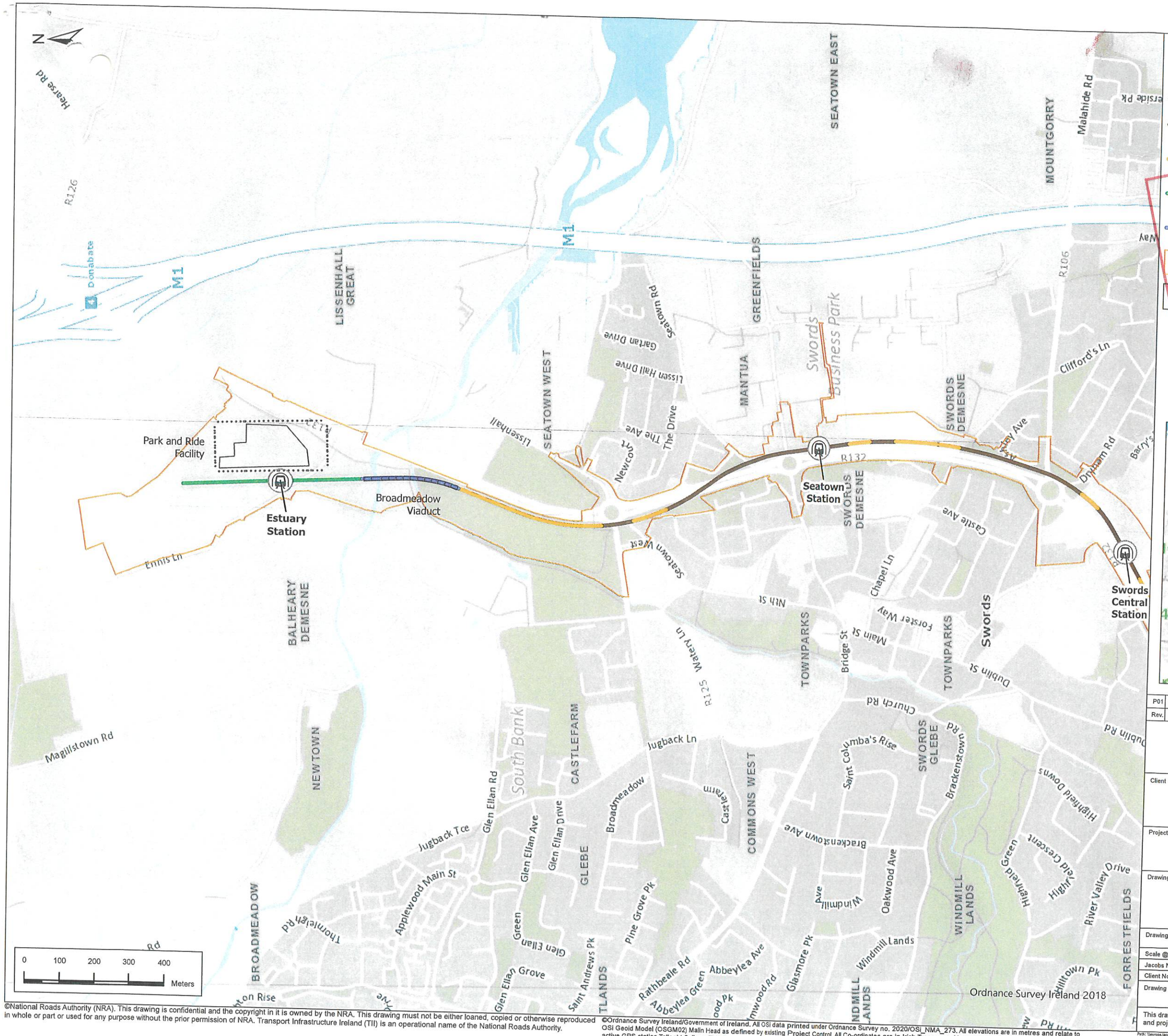
- making a new strategic interchange at Glasnevin, connecting Kildare Line, Maynooth Line, Bus Connects and MetroLink at a single location;
- terminating at Charlemont, proving the optimal location for onwards connection on the Luas Green Line, facilitating potential future extension of the Metro service as part of a future project;
- providing enhanced connectivity to employment, education, medical and other community infrastructure at DCU, Mater Hospital, Trinity College and the wider city centre;
- facilitating the sustainable growth of the city through opening up development lands for higher intensity, particularly at Dardistown and Swords.

The project meets the requirements of all planning and transport policy at national, regional and local level. The project is an integral part of the growth strategy for the region, being a spine to support significant future development.

Within the Fingal County Council area, the project opens up Swords to transformation, allowing Swords to become an exemplar in high quality of life, able to prioritise sustainable mobility, changing the character of the R132 Swords Road to an urban street connecting communities and employment location, that can support future population growth and associated services. Airport connectivity and links to Dublin city centre further enhance the role and importance of the county in the city region's expansion. Further scheme development is being developed in consultation with Fingal County Council.

Within the Dublin City Council area, the project responds to the city's character, history and culture. With largely underground infrastructure, the principal physical impacts are where stations and ancillary works interface with the public realm. From the preliminary design, additional design work is being developed to ensure that this interface takes appropriate measures to facilitate pedestrian and cycle movement, respects the existing urban structure, allows future overhead development and enhances public spaces.

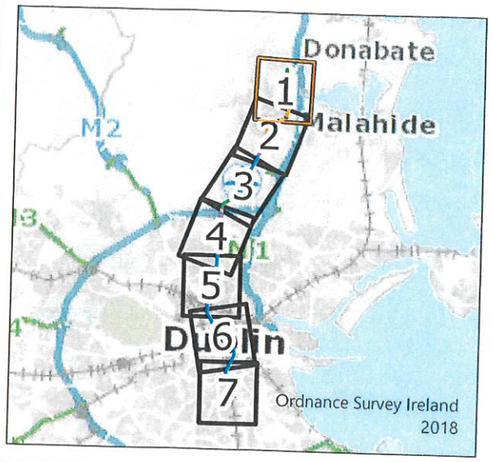
Further consultation is ongoing with local authorities, OPW, statutory stakeholders and other interested parties to bring forward a final scheme to Railway Order application stage, comprehensively assessed through the Environmental Impact Assessment and Habitats Directive processes, that responds to the needs and objectives that will deliver a Metro project fit for a city of Dublin's stature into the long-term.



Legend

Alignment

- Cut & Cover
- Retained Cut
- Surface
- Viaduct
- Railway Order Application Boundary
- Structural Elements
- Station Locations



AN BORD PLEANÁLA
15 SEP 2021
LTR DATED FROM
LDG- 302000-18
TDP-

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
P01	9/8/2021	For Review	FND	RH	RH	NC

JACOBS
IDOM

Client: TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

Project: METROLINK

Drawing Title: Figure 1.1 Map of MetroLink Sheet 1 of 7

Drawing Status: Draft

Scale @ A3: 1:10,000 — DO NOT SCALE

Jacobs No.: 32108600

Client No.:

Drawing No.: ML1-JAI-EIA-ROUT_XX-DR-Y-01001 — Rev P01

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Legend

Alignment

- Cut & Cover
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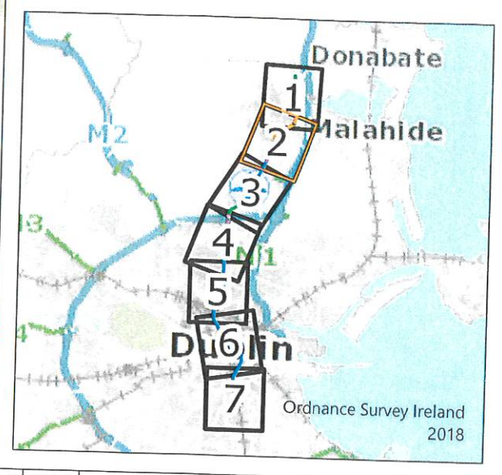
- Surface
- Tunnel
- Railway Order Application Boundary
- Structural Elements
- Portal Locations
- Station Locations



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JACOBS IDOM

Client: Transport Infrastructure Ireland

Project: METROLINK

Drawing Title: Figure 1.1 Map of MetroLink
Sheet 2 of 7

Drawing Status: Draft

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Legend

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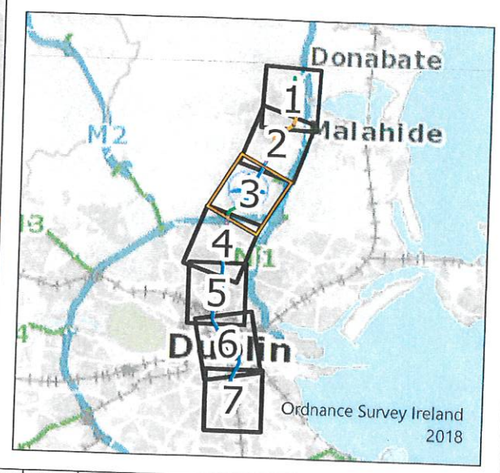

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JACOBS IDOM

Client: TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

Project: METROLINK

Drawing Title: Figure 1.1 Map of MetroLink
Sheet 3 of 7

Drawing Status: Draft

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Legend

Alignment

- Cut & Cover
- Incline
- Retained Cut
- Tunnel
- Viaduct
- Railway Order Application Boundary
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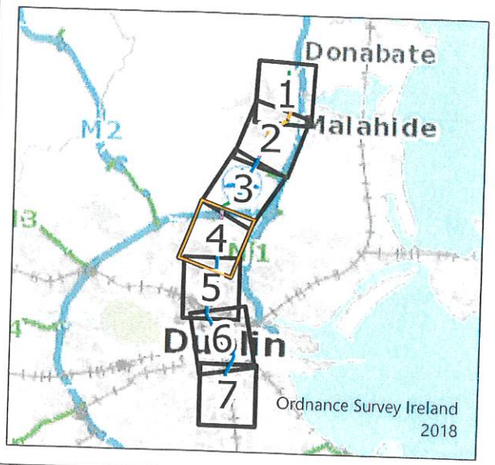

Collins Avenue Station

Ballymun Station

Northwood Station

M50 Bridge

City Tunnel

0 100 200 300 400 Meters

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P01	9/8/2021	For Review	FND	RH	RH	NC

JACOBS IDOM

Client: TII Transport Infrastructure Ireland

Project: METROLINK

Drawing Title: Figure 1.1 Map of MetroLink
Sheet 4 of 7

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Legend

Alignment

- Tunnel
- Railway Order Application Boundary
- Structural Elements
- Station Locations

City Tunnel

Collins Avenue Station

Griffith Park Station

Glasnevin Station

Dromcondra

Donabate

Malahide

Dublin

Ordnance Survey Ireland 2018

0 100 200 300 400 Meters

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Project: METROLINK

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Sheet 5 of 7

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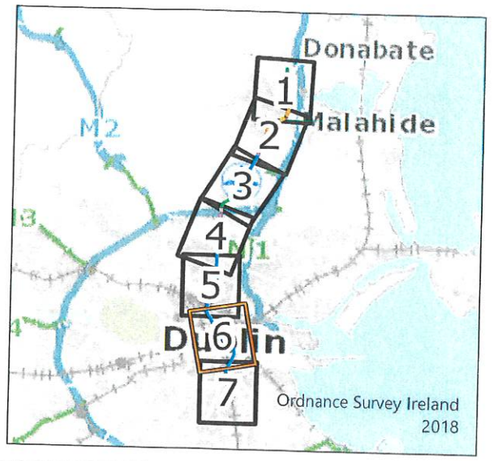

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Sheet 6 of 7

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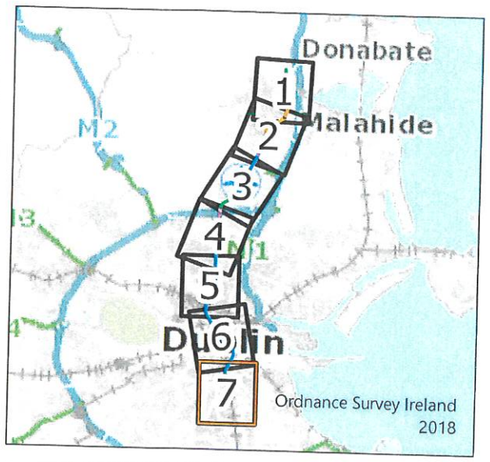

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An Bord Pleanála

Record of Meeting ABP-302010-18 5th meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	5th		
Date	31st March, 2021	**Start Time**	11.15 a.m.
Location	N/A	**End Time**	1.20 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Ronan Hallissey, Jacobs		
John Keogh, Jacobs		
Aidan Foley, TII		
Nigel O'Neil, TII		
Neil Cowie, Jacobs		

The meeting commenced at 11.15 a.m.

Introduction:

The Board referred to its previous meeting with the prospective applicant of the 28th October, 2020 and noted that the prospective applicant had forwarded some comments on the record of this meeting by way of email.

The prospective applicant provided a brief update on the progress of the project and advised that the business case for the project is now before the Department for approval. The prospective applicant said that it expects a decision in this regard to be forthcoming in June of this year and its current intention is to lodge the subsequent Railway Order application with the Board circa end of July/early August.

Presentation by prospective applicant:

The prospective applicant advised the Board of actions which have been taken in relation to the project since the time of the previous meeting; these include the production of the St. Stephen's Green Station Options Report and the Strategic Principles Report. The prospective applicant noted that it had previously forwarded the St. Stephen's Green Station Options Report to the Board and will forward the Strategic Principles Report in due course. In relation to consultations with the OPW regarding the St. Stephen's Green Station Options Report, the prospective applicant reported that a meeting is due to take place with this body in the coming weeks. The prospective applicant said that the preferred station location for St. Stephen's Green

is set out in the options report and that it hopes to resolve this issue with the OPW prior to the lodging of the Railway Order application. With regard to the pre-application consultation process, the prospective applicant set out its intended schedule with the Board which provides for three further meetings following this one; it is intended that these will be done on a monthly basis.

With respect to the Railway Order Application boundary, the prospective applicant employed an Interactive Project Mapper and outlined for the Board's representatives the nature and extent of the proposed rail corridor with reference to various alignments, interventions, proposed structures and utilities and land-take required to facilitate the proposed development. At the Glasnevin station location, the prospective applicant said that a change of the vertical alignment will be required here to allow the interchange station to be constructed; further works to facilitate the DART Plus project will also be required at this location, but these will not form part of the Metrolink Railway Order application; however, all cumulative effects arising will be assessed in the EIAR to accompany the application.

With regard to the proposed rail route corridor, as demonstrated, the Board's representatives said that a copy of this would be beneficial for its understanding of the project generally. The prospective applicant said that it would supply this. In relation to the proposed limits of deviation to be applied for the proposed route corridor, the Board noted the fact that these were slightly different to the Metro North application and it advised the prospective applicant to address the reasons for any localised variations.

With regard to the railway elements of the proposed development, the prospective applicant provided details with regard to the following proposed stations:

- Seatown Station – details of the proposed station were provided by the prospective applicant as well as details of the revisions intended under the local authority's R132 project; the prospective applicant clarified that the works required for the R132 project would not be included in the Railway Order application.
- Swords Central Station – the prospective applicant advised that it will be having further consultations with Fingal County Council in relation to connection arrangements at this location and it noted the Board's position on

this issue as expressed in previous meetings. The Board for its part reiterated its opinion on this matter as stated in the records of these previous meetings.

- Fosterstown Station – the prospective applicant noted that further work has yet to be done with regard to landscaping arrangements at this location. A crossing point onto the R132 will be provided for here and the prospective applicant also noted that an existing Smyths Toystore will have to be removed in order to facilitate the proposed development.
- Dublin Airport Station – the prospective applicant noted that this particular station will be fully located underground and noted that consultations with the DAA are still on-going. In response to the Board's query on the matter, the prospective applicant said that the matter of connectivity with the airport will be demonstrated in the Railway Order application.
- Northwood Station – the prospective applicant noted that this will be located under the R108 and will consist of concourse, mezzanine and platform levels; it also advised that consultations have taken place with the BusConnects project team in relation to this station.
- Ballymun Station – the prospective applicant noted that this will be located on the west side of the R108; an area of open space will be provided above ground.
- Collins Avenue Station – the prospective applicant noted that this will be cognisant of the proposed BusConnects road layout.
- Griffith Park Station – the prospective applicant noted that a reinstatement of playing pitches affected by the proposed development will be provided for here; there will also be a tie-in into the BusConnects project.

The prospective applicant referred to pertinent related elements to the project as follows:

- R132 Connectivity Project – the prospective applicant said that this is a separate project on the R132 in Swords; it will involve changes to the road layout and also entail pedestrian facilities. The prospective applicant stated that proposed works for this project will not form part of the Railway Order Application for the Metrolink project; the Railway Order Application will be designed to tie into the R132 Connectivity Project and it is intended that this project will be applied for in advance of Metrolink. The prospective applicant

also noted that the R132 project will be pursued by the relevant local authority regardless of the delivery of the Metrolink project and it said that its understanding was this application would be made to the Board pursuant to section 177AE of the Planning and Development Act 2000, as amended; it noted that public consultations have recently concluded on this. The prospective applicant said that the Railway Order application will be assessed in a scenario whereby the R132 project is realised and also in a scenario where it is not.

- BusConnects – the prospective applicant stated that the Metrolink project has co-ordinated with the proposed design of the BusConnects project and has also provided sufficient space for this project to be realised. The prospective applicant stated that, in most locations, Metrolink is not proposing a new layout for roads, but that some road upgrades are proposed as part of the project (such as the R108 at the Collins Avenue Station location and pedestrian crossings on the R132 at the Fosterstown and Swords Central Station locations). In a general context, the prospective applicant noted that the BusConnects project intends a phased lodgement of applications to take place during 2021. The prospective applicant also said that an agreement is in place with the NTA with respect to delivery of the two projects. The Board for its part noted that a pre-application request for the BusConnects project has recently been lodged with it. In response to the Board's query on the matter, the prospective applicant said that there would be a potential for some works overlaps on the two projects in certain areas, but it added that this would not occur on a city-wide basis. The prospective applicant also said that its overall intention would be to avoid clashes in this regard and to also avoid cumulative effects of works where possible.

- ESB works – the prospective applicant advised that the Railway Order Application will include for a temporary connection in terms of power supply required for the construction phase of the project. With respect to the permanent connection which will be required for the operational phase of the project, the prospective applicant advised that a separate planning application pursuant to section 182A of the Act will be necessary. The prospective

applicant added that proposed works in relation to this will be fully assessed in the EIAR to accompany the Railway Order application. In answer to the Board's query on the matter, the prospective applicant said that proposed substations would also be included in the Railway Order application.

- DART Plus – the prospective applicant advised that this project will provide for upgrade and electrification in respect of the Kildare and Maynooth lines; it added that separate Irish Rail consent applications will be required for these proposed works. The prospective applicant advised that the Railway Order Application will include the construction of the station box for the Metrolink and DART Plus projects and also alignment changes necessary to deliver an interchange station at Glasnevin. With respect to this particular project and others (such as the R132 and BusConnects), the Board's representatives noted that cumulative effects might be a significant issue on the instant project from a public perspective.

- Playing Fields Replacement – the prospective applicant said that there will be an interface provided for with existing playing pitches along the proposed route (at Balheary Park, Dardistown, Albert College Park and Griffith Park locations). The prospective applicant advised that the pitches in question will require reinstatement or redesign and that such works will form part of the Railway Order Application. The prospective applicant said that certain pitches may be provided for outside the boundary of the Railway Order Application and that any replacement pitches off-site will not form part of the application. The prospective applicant also advised that all pitch provisions arising from the application will be fully assessed in the EIAR.

- O'Connell Street Station – the prospective applicant reported on on-going engagement/consultations with landowners in this area and design development co-ordination (with particular regard to consultations with representatives from Dublin City Council and the Department regarding protected structures in the area). The prospective applicant said that there will now be a reduction in the impact of proposed works on 59 and 60 O'Connell Street. With respect to the proposed development by

Hammerson's, the prospective applicant said that the current intention is to lodge this in proposed phases (circa early Quarter 2 2021 and circa late Quarter 2 2021). The prospective applicant also advised that the Railway Order Application will include all works necessary to provide the proposed station in this location.

With regard to stakeholder engagement, the prospective applicant provided the Board's representatives with an update on this. Key consultations which have taken place with October 2020 include Fingal County Council, Dublin City Council, the OPW, Irish Rail, the Mater Hospital, Trinity College, Waterways Ireland, the DAA and certain utility providers.

In relation to drawings to be produced in respect of the proposed development, the prospective applicant said that preparation work has begun on these and said that they will describe the project in full. The prospective applicant said that the project drawings will be A1 in terms of size and there will be approximately 600 drawings which will describe alignment and structures along the proposed route; these will not include property drawings. The prospective applicant added that key dimensions will be provided on the drawings and it also stated its intention to included drawings with respect to utilities. Noting this, the Board's representatives said that the more information that can be provided, the better as long as this would not lead to an issue of over-complexity. The prospective applicant noted this and, with regard to utility drawings, said that these would be provided as a separate pack of drawings. The Board also enquired as to whether any 3D visualisations are intended as part of the application. The prospective applicant replied that such visualisations are to be prepared, but a decision has yet to be taken on whether these would be incorporated into the EIAR; it also pointed out that the 3D visualisations would be provided on a project website; it also noted that approximately 120 photomontages will be prepared.

With regard to any decision to indicate proposed tunnelling works/substratum elements as part of the red line boundary of the proposed development, the prospective applicant indicated its intention to take legal advice on this; it said it would revert to the Board on the matter in due course.

With respect to materials and waste management, the prospective applicant noted that Article 27 is one of the key project elements which it is seeking to address. The prospective applicant noted the significant amount of spoil material which would arise from the proposed development (proposed station boxes and tunnelling works) and said that it is seeking to have this spoil material classified under Article 27 for re-use on 3rd party sites. The prospective applicant advised of on on-going engagement/consultations with respect to Article 27 in terms of the EPA and Eastern Midlands waste region; a separate consent will be required from the EPA. The prospective applicant said that the key mitigation measure with regard to waste will be identified in the EIAR; it also stated that the residual impacts assessment section of the EIAR will address the potential environmental effects in the event that the Article 27 application to the EPA is not approved. The prospective applicant expressed its hope that the Article 27 application will be approved but said that other scenarios are also being considered. The Board's representatives noted this and said that the approach being taken appears reasonable. The prospective applicant enquired as to whether the Board might consider having a meeting with representatives of the EPA on this issue as part of the instant pre-application process. The Board said that it would consider this request and revert to the prospective applicant on it in due course.

Conclusion:

In line with the prospective applicant's pre-application roadmap, the next meeting with the Board is due to take place circa the end of April 2021. It will be a matter for the prospective applicant to revert to the Board on potential dates for this. The record of the instant meeting will issue to the prospective applicant in the meantime.

The meeting concluded at 1.20 p.m.

Brendan Wyse

Assistant Director of Planning

6 April 2021

Shaun McGee

From: Kieran Somers <K.Somers@pleanala.ie>
Sent: Monday 29 March 2021 12:04
To: Foley Aidan
Cc: Kelly Sarah
Subject: RE: MetroLink Pre Applications meetings 2021

Thanks Aidan – noted so.

Kieran

From: Foley Aidan <Aidan.Foley@tii.ie>
Sent: Monday 29 March 2021 12:03
To: Kieran Somers <K.Somers@pleanala.ie>
Cc: Kelly Sarah <Sarah.Kelly@tii.ie>
Subject: RE: MetroLink Pre Applications meetings 2021

Kieran,

I am hoping to have the presentation to you tomorrow. The proposed agenda is provided below and the presentation will follow this. You will note 2 additional item have been added (Article 27/Approach to Drawing Contents) since our last correspondence on the 10TH March.

ABP Consultation 5 – Focus on Strategic Issues (Agenda): March 2021

- Update of actions arising from last meeting with ABP
- Confirm proposed Pre-application Meeting Schedule
- Overall extent of Project (Railway Order Boundary)
- Project Elements (Part 1)
  - Vertical/Horizontal alignment
  - R132 Stations and Dublin Airport
  - Northern Stations – Northwood, Ballymun, Collins Avenue, Griffith Park
- Other Consents – ESBN, R132, Bus Connects, Irish Rail, Sport Facilities, Third Party Applications
- Update on Stakeholder Engagement
- **Article 27 Waste Management**
- **Approach to Drawings content**

Regards,

Aidan.

Aidan Foley| C.Eng| Project Director MetroLink| Transport Infrastructure Ireland| Parkgate Business Centre, Parkgate Street, Dublin 8, Ireland|
Phone + 353 1 6463567| Mob +353 86 0427357|Fax +353 1 646 3601|

From: Kieran Somers <K.Somers@pleanala.ie>
Sent: Monday 29 March 2021 09:14
To: Foley Aidan <Aidan.Foley@tii.ie>
Cc: Kelly Sarah <Sarah.Kelly@tii.ie>
Subject: RE: MetroLink Pre Applications meetings 2021

Good morning Aidan.

In advance of our pre-app meeting this coming Wednesday morning, could you send me on the powerpoint presentation for sometime tomorrow please.

Kind regards

Kieran

From: Foley Aidan <Aidan.Foley@tii.ie>
Sent: Friday 12 March 2021 15:26
To: Kieran Somers <K.Somers@pleanala.ie>
Cc: Kelly Sarah <Sarah.Kelly@tii.ie>
Subject: RE: MetroLink Pre Applications meetings 2021

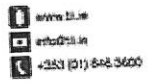
Kieran,

Thanks for that. We will go with the 31st March at 11am. Look forward to seeing you then.

Regards,

Aidan.

Aidan Foley| C.Eng| Project Director MetroLink| Transport Infrastructure Ireland| Parkgate Business Centre, Parkgate Street, Dublin 8, Ireland|
Phone + 353 1 6463567| Mob +353 86 0427357|Fax +353 1 646 3601|



From: Kieran Somers <K.Somers@pleanala.ie>
Sent: Thursday 11 March 2021 15:44
To: Foley Aidan <Aidan.Foley@tii.ie>
Cc: Kelly Sarah <Sarah.Kelly@tii.ie>
Subject: RE: MetroLink Pre Applications meetings 2021

Good afternoon Aidan.

Thanks again for your email of yesterday and the attached document which I passed onto Brendan and Kevin.

Having discussed this, we are agreeable to the approach as set out regarding future meetings at the end of each month. For the end of March, our suggested dates are as follows:

Tuesday 30th March – 11 a.m.

Or

Wednesday 31st March – 11 a.m.

Please revert to me as to your team's preference and I will seek to organise thereafter.

Kind regards

Kieran

From: Foley Aidan <Aidan.Foley@tii.ie>
Sent: Wednesday 10 March 2021 08:50
To: Kieran Somers <K.Somers@pleanala.ie>
Cc: Kelly Sarah <Sarah.Kelly@tii.ie>
Subject: MetroLink Pre Applications meetings 2021

Kieran,

I hope you are keeping well. As agreed at the pre application meeting on 29th October 2020, we would like make arrangements for future pre-application meetings leading up to the submission of a Railway Order for the scheme this summer.

The attached memo provides more details and suggests a high-level schedule and an agenda for each meeting. I would be grateful if you could consider the document and revert with some possible dates and times for the meetings. Please feel free to give me a call if you need any clarification.

Regards,

Aidan.

Aidan Foley| C.Eng| Project Director MetroLink| Transport Infrastructure Ireland| Parkgate Business Centre, Parkgate Street, Dublin 8, Ireland|
Phone + 353 1 6463567| Mob +353 86 0427357|Fax +353 1 646 3601|

From: Kieran Somers <K.Somers@pleanala.ie>
Sent: Monday 4 November 2019 15:00
To: Foley Aidan <Aidan.Foley@tii.ie>
Subject: Friday meeting

External Email Warning

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Good afternoon Aidan.

In advance of next Friday morning's meeting, I attach electronic copies of the records of th[illegible]oard[illegible] ecent meetings with representatives from Dublin City Council, Fingal County Council and the OPW.

You might acknowledge receipt by return please and circulate them to colleagues who will be attending Friday's meeting.

Kind regards

Kieran

Kieran Somers
Executive Officer
Laps-Sids Section
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902
Teil: 01-8737250
Facs: 01-8722684

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Bonneagar Iompair Éireann
Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta	Date 09 December 2020	Ár dTag	Our Ref. CAP_ML_L0163	Bhur dTag	Your Ref. ABP-302010-18

Re: MetroLink

Dear Mr Somers,

Thank you for the minutes of the meeting dated 28th October 2020.

With regard to the minutes, the only clarification that I would make, is in regard to Tara Street Station. TII are currently designing the station box with a surface level connection only. Consideration is being given to making provision for a level -1 connection at some time in the future.

Yours sincerely,

Aidan Foley,
Project Director MetroLink

AN BORD PLEANÁLA
LTR DATED
LDG-
ABP-

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta | Date 09 December 2020 Ár dTag | Our Ref. CAP_ML_L0163 Bhur dTag | Your Ref. ABP-302010-18

Re: MetroLink

Dear Mr Somers,

Thank you for the minutes of the meeting dated 28th October 2020.

With regard to the minutes, the only clarification that I would make, is in regard to Tara Street Station. TII are currently designing the station box with a surface level connection only. Consideration is being given to making provision for a level -1 connection at some time in the future.

Yours sincerely,

Aidan Foley,
Project Director MetroLink

AN BORD PLEANÁLA
09 DEC 2020
LTR DATED _____ FROM _____
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ABP- _____

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Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta | Date 19 November 2020 Ár dTag | Our Ref. CAP_ML_L0160 Bhur dTag | Your Ref.

Re: MetroLink

Dear Mr Somers,

Further to our pre-application consultation meeting dated 28th October 2020, please find enclosed the "St Stephen's Green Station Study: Location Assessment Report" setting out the options considered for the location of St Stephens Green Station.

The "Strategic Development Principles Report" referred to during our discussions is currently being finalised and will be forwarded to you in due course.

Yours sincerely,

Aidan Foley

Aidan Foley,
Project Director MetroLink

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St Stephen's Green Station Study: Location Assessment Report

ML1-JAI-EGN-MS15_XX-RP-Y-00001| P02

2020/01/21

AN BORD PLEANÁLA
28 OCT 2020
LTR DATED ____ FROM ____
LDG- ____
ABP- ____

Project No:	32108600
Document Title:	St Stephen's Green Station Study: Assessment Report
Document No.:	ML1-JAI-EGN-MS15_XX-RP-Y-00001
Revision:	P04
Date:	2020/01/21
Client Name:	TII / NTA
Client No:	
Project Manager:	Neil Cowie
Author:	Andrew Dooney
File Name:	ML1-JAI-EIA-MS15_ZZ-RP-Z-00001

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Revision	Date	Description	Author	Checker	Reviewer	Approver
P04	14/02/2020		AD	RH	RH	NC
P03	14/02/2020		RH	AD	AD	NC
P02	21/01/2020		AD	RH	RH	NC
P01	29/11/2019		AD	RH	RH	NC

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Executive Summary

MetroLink

The MetroLink Project is a high capacity, high frequency, modern and efficient metro rail line running for 19km from Swords to Charlemont linking Dublin Airport, Irish Rail, Dart, Dublin Bus and Luas Services creating a fully integrated public transport in the Greater Dublin Area. MetroLink will be segregated from all other traffic and transport systems including pedestrians and cyclists. This will be achieved through Dublin City by having the system underground, meaning that MetroLink can operate a very frequent system to meet the transport needs of the areas served, without impacting or being impacted by other transport movements. Furthermore, the underground system will ensure that the construction phase impacts through a densely populated urban area will be minimised.

The current project programme envisages that construction of the project could commence in 2021, if a Railway Order Application to An Bord Pleanála was successful and would be operational by 2027, following a six year construction period.

St Stephens Green

St Stephen's Green is located in the heart of Dublin City Centre and its location and layout is central to providing the character and identity to this area of the city. St Stephens Green consists of a high-quality urban space, which is a significant attractor for over 8 million visitors every year. St Stephen's Green is also a designated National Monument, is listed on the Dublin City Council Record of Protected Structures (RPS) and contains many features of high architectural value. The current park layout still retains the original Victorian design of William Sheppard.

St Stephens Green also functions to provide space for the movement and circulation of people through and around the St Stephen's Green area. The road network around St Stephen's Green Park provides critical access points into to the City Centre for public transport systems and for other transport modes.

Proposed Station and St Stephen's Green

An underground station at St Stephen's Green East was identified as part of the Emerging Preferred Route (EPR) ARUP (2018). An in-depth multidisciplinary analysis was undertaken to determine the EPR. This analysis considered different options for a station location in the St Stephens Green area including station locations on the west side of St Stephen's Green, in a more central location in St Stephen's Green and at St Stephen's Green East. Other options with no stations at all in this location were also assessed. The assessment undertaken identified the EPR with a station at St Stephen's Green East for the following reasons:

- The EPR best serves passenger demand along the corridor;
- The EPR serves more key trip attractors than other options through the city including St Stephen's Green, the National Concert Hall, cultural institutions such as the National Gallery and the National Museum (Natural History & Archaeology). Furthermore, this route option serves key commercial, retail and office trip attractors such as Grafton Street;
- The EPR provides excellent interchange opportunities with other public transport modes as it links with the DART (at Tara St), Luas (at O'Connell St & Charlemont), multiple bus routes and heavy rail services at Glasnevin. The assessment found that route options that featured an interchange with the DART line at Tara Street to perform well against the Public Transport Interchange criteria. Locating a station at Tara Street constrains the possible tunnel alignments, when terminating the line at Charlemont due to tunnel boring machine turning constraints and operational considerations for the tunnel alignment. This means that the location of an interchange station at Tara Street was a key driver for the location of a station on St Stephen's Green East; and

- The EPR resulted in potential environmental impacts particularly for Archaeology, Architecture and Cultural Heritage and Landscape, but it was identified that the majority of impacts could be mitigated during design.

St Stephen's Green East – Potential Station Location Assessment

Following the identification of St Stephen's Green East as the best general location for a MetroLink station, a further multi-disciplinary analysis was undertaken in order to identify the optimum location for a station at St Stephens Green East having regard to Engineering, Environmental and Economy criteria. Seven potential station locations were identified on St Stephens Green East and Earlsfort Terrace (refer to Figures 5.1-5.7 for details of potential station locations). These locations were assessed having regard to the following:

- The importance of St Stephen's Green Park as an historical public park which maintains its Victorian layout and features extensive tree, shrub and flower planting that enhance the architectural features of the park. The park is one of the most important green spaces in the centre of Dublin and attracts significant numbers of visitors each year;

- The Architectural Heritage of the area having particular regard to St Stephen's Green Park which is designated as a National Monument (RMP DU018-020334) and is listed on the Dublin City Council Record of Protected Structures (RPS 7751-7761). Furthermore, there are a number of buildings on the east side of St Stephen's Green which may be impacted by potential station locations as they feature extensive cellars that protrude underneath the roadway;

- The importance of St Stephen's Green East as a transport corridor for public transport, private vehicles, cyclists and pedestrians. It should be noted that during the AM peak hour, 384 buses used the corridor to access the City Centre;

- The presence of multiple utilities underneath the roadway on St Stephen's Green East and the requirement for major diversions of those utilities. Particular attention was given to the requirement to divert a 1,800mm brick "ovoid" Victorian sewer under St Stephen's Green East and 1,710mm reinforced plastic mortar ovoid sewer situated underneath Hume Street as diversions of these utilities could extend the constructon period by 12 months or more, causing significant additional impacts; and

- The requirement for an intervention shaft between the St Stephen's Green Station and Tara Street in the event that the distance between these stations is greater than 1,000m. An intervention shaft is a significant structure that would be required to allow for emergency services to access the MetroLink tunnel in the event of an emergency. The intervention shaft would need to be located between Tara Street and St Stephen's Green and would cause significant additional impacts if required.

St Stephen's Green East - Preferred Station Location – Preliminary Assessment

A number of potential station locations (Locations 1, 2, 3 and 7) were identified as being more than 1000m from Tara Station. This would mean that an intervention shaft would be required. The most appropriate location for an intervention shaft would be any available open spaces i.e Trinity College Dublin or Merrion Square. This requirement resulted in these locations performing poorly against several criteria in the preliminary assessment. In particular, the locations performed poorly against Economy and Environmental criteria due to the increased capital cost and environmental impacts associated with construction of an intervention shaft at identified sensitive locations. Given these unfavourable factors locations 1-3 and 7 were not progressed for further analysis. It should also be noted that station location 7 (Earlsfort Terrace) would also require the diversion of the Victorian sewer along Earlsfort Terrace which would mean that this option would perform poorly against Economy and Environmental criteria due to a prolonged construction period resulting in additional costs and environmental

impacts. Finally, Location 7 performs poorly against the overall Project Objective criterion as a station located at Earlsfort Terrace would not provide good public transport network legibility due a lack of key trip attractors. In this regard it is significantly inferior to options on St Stephen's Green East.

The proposed station (Location 4) is situated beneath the roadway on St Stephen's Green East will require the 1,800mm diameter Victorian sewer and the Hume Street sewer to be diverted to allow for the construction of this station. This is considered very technically challenging and would require an extended construction period of 12 months. This station location also performed poorly against the environmental criteria as a result of the requirement to close St Stephen's Green East and Hume Street to public transport and traffic during construction and due to the potential direct impacts on properties on the east side of St Stephen's Green which are listed on the RPS. In addition, despite being within the carriageway of St Stephen's Green East, there would be direct impacts on the St Stephen's Green Park. In terms of the economy criteria, the cost of utility diversions would be significant, and this caused this location to perform moderately in regard to this criterion. As a result of the poor performance against the engineering (constructability) and environmental criteria, Location 4 was not progressed for further analysis.

Locations 5 and 6 were brought forward for further analysis involving a further multicriteria analysis (MCA) using Environmental and Economy criteria. Both of these station locations would have a direct impact on St Stephen's Green Park, but due to the proposed station locations they avoid the following impacts;

- Diversion of the Victorian sewer and Hume Street sewer and associated impacts resulting from a more extensive construction area and duration;
- The closure of St Stephen's Green East to public transport and traffic during the Construction Phase; and
- Direct impacts on buildings listed on the RPS on Stephen's Green East.

St Stephen's Green East - Preferred Station Location – Preferred Location

The outcome of the further MCA analysis of Location 5 and 6 was that Location 5 was chosen as the preferred location for the proposed MetroLink station as it significantly reduces the impact on St Stephen's Green Park when compared to Location 6. Location 5 results in the requirement for less tree felling and vegetation removal when compared with Location 6. In addition, the long-term impacts on St Stephen's Green Park are significantly less for Location 5 as the main surface elements of the proposed station are largely located outside of the current extent of St Stephen's Green Park.

Furthermore, the choice of Location 5 allows for the long-term impacts of the station to be significantly mitigated by replanting trees and other vegetation, in addition to the reinstatement of existing elements of architectural heritage. In addition, high-quality design of station "pop-ups" would allow for the development of a high-quality urban environment in the north eastern corner of St Stephen's Green.

However, Location 6 performs better against the economic criteria than Location 5 as the station is located entirely under St Stephen's Green Park which would significantly lower the construction, reinstatement of roadway and utility diversion costs.

Overall, Location 5 has been chosen as the preferred station location for St Stephen's Green East. This is in order to mitigate the potential impacts on St Stephen's Green Park, reduce the overall construction phase impacts by avoiding the requirement for an intervention shaft, significant utility diversions and retain transport and traffic movements on St Stephen's Green East during the construction phase.

Station Location 5 will now be subject to further design development and potential impacts will be assessed, with mitigation measures recommended. The outputs of the assessment and recommended mitigation measures will be presented in the EIAR for the project.

1. Introduction

This report outlines the robust assessment process that has been undertaken in order to identify the optimum MetroLink station location serving the south City Centre area and St Stephen's Green. The identification of a preferred station location was achieved by employing a multiple stage assessment process as outlined below:

- Identification of the Emerging Preferred Route (EPR) for MetroLink;
- Identification of a preferred route for MetroLink and;
- A four-stage assessment to identify a preferred station location at St Stephen's Green.

Each stage of the assessment process was undertaken by multidisciplinary teams, including environmental specialists, led by Transport Infrastructure Ireland (TII).

2. St Stephen's Green

2.1 Introduction

St Stephen's Green is located in the heart of Dublin and its location and layout is central to providing the character and identity to this area of the city. St Stephen's Green consists of a high-quality urban space, which provides an attractive location for those living, working and visiting the city. St Stephen's Green also functions to provide space for the movement and circulation of people through and around the area. The road network around St Stephen's Green Park provide critical access points into to the City Centre for public transport systems and for other transport modes.

2.2 St Stephen's Green Park

St Stephen's Green Park is Irelands best known public park and consists of a 9 hectare park that maintains its late Victorian layout to this day, with shrub planting, extensive flower beds and perimeter tree planting and a substantial ornamental lake. The park is also home to many monuments and sculptures as well as other elements of archaeological, architectural and cultural heritage such as the decorative railings that surround the park.

The park functions as one of the principal amenity sites in Dublin City Centre, offering the public a peaceful refuge from the city, with attractors such as a Children's playground, a bandstand (regularly used for events) and the multitude of gardens within the boundaries of the Park.

St Stephen's Green Park is a National Monument the extent of which is defined by the kerb line of the perimeter footpath. A detailed cultural heritage background of the constraints present on both St Stephen's Green Park (East) and St Stephen's Green East has been prepared by TII and is attached as Appendix A to this report. A summary historical and cultural heritage background is provided in Section 2.2.1.

2.2.1 St Stephen's Green – Historical and Cultural Heritage Context

Historically the name St Stephen's Green originates from the 13th century St Stephen's Leper Hospital and Church, which was located c.300m to the east on the intersection of present day Stephens Street Lower and Mercer Street. During the medieval and post-medieval periods the lands of St Stephen's Green comprised marshy commonage, which extended as far as the River Dodder and was used by the citizens of the city for grazing livestock.

The park was originally established for the citizens of Dublin in 1653 as a 60 acre site. In 1664 the City Assembly decided that the plot of ground could be used to generate income for the city and a central area of twenty-seven acres (10.9 hectares) was marked out which would define the park boundary, with the remaining ground being let out into ninety building lots. The annual rent generated from the lease of these plots were to be used to not only to supplement the economy, but also to build walls and paving around the park and provide for its overall maintenance. The external boundary of the park was enclosed by a stonewall (c.1670-72) with wooden gates, gravel walks (1667-1687) and a watch house (c. 1683) constructed. Due to the fact that this was marshland a broad perimeter drainage ditch was also constructed to drain the park and facilitate the use of the promenade for recreational purposes. This took the form of a ha-ha with a stone revetment on the park side. As a condition of the lease, each tenant was required to plant six sycamore trees near the wall, in order to create the desired 'promenade'. This should have totalled 510 trees set out in rows of two, but tenants were notorious for not complying with this agreement, while many opted towards the preferred Lime and Ash trees thus resulting in a mix of planting, and historic references to the 'Lime Walk' promenade (McCabe 2011, 61-3; Figure 2.1 and Figure 2.2).

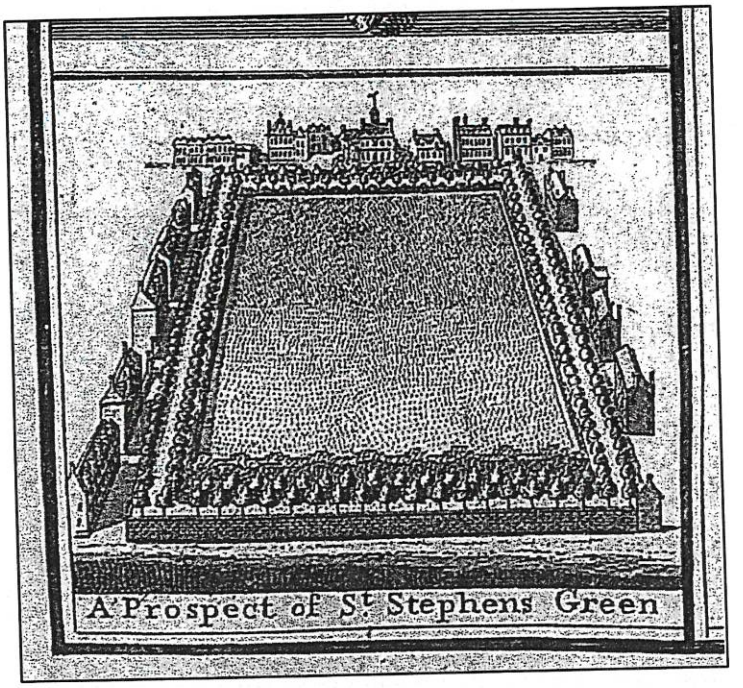


Figure 2.1: Extract from Charles Brooking's 1728 Map of the City of Dublin, illustrating the enclosing boundary wall and Lime Walk on St Stephen's Green (Copyright Irish Historic Towns Atlas).

Figure 2.2: St Stephen's Green, Dublin' Malton (1796). Note Lime Walk Promenade with internal perimeter ditch (revetment wall defined by low hedgerow) and animals grazing the park interior. (Copyright National Library of Ireland).

In 1670 the first paid gardeners were employed to tend to the park, the interior of which predominantly comprised meadow land which was let for pasture and annually harvested for hay until 1766-67. At this time it passed to the Lord Mayor who used it for dairy cows and horses, while the Assembly, in response to the overall improvement activities of the Wide Street Committee throughout the city, instigated further repairs of the gravel walks, means of access and commissioned additional gardeners (McCabe 2011 181-2). However, due to an ongoing financial deficit the park fell into disrepair and did not receive a major investment in upkeep until it was privatised in 1814 under the auspices of which it was extensively landscaped. This entailed the infilling of the perimeter ditch, the removal of the original boundary wall and the sale of the trees on the promenade (Lime Walk; McCabe 2011, 257)). This early 19th century redesign entailed the enclosing of the park by a dwarf wall with an '*ornamental palisade of about six feet high, outside this is a gravel walk, bordered by octagonal granite pillars, connected by chains, and surmounted by lampposts*' (Heffernan 1861, 72; see Figure 2.3). This work effectively decreased the size of the park such that the location of the former perimeter ditch, Lime Walk and boundary wall now lie under the present day roadway.

Figure 2.3: View of St Stephen's Green North c. 1828-30 by H. Madden (after McCabe 2011). Note absence of Lime Walk, perimeter ditch, and limited interior planting.

The park again fell into disrepair and was redesigned from 1877-1880 under the patronage of Ardilaun Guinness, who as a promoter of the St Stephen's Green Act of 1877, ensured the park would permanently remain open to the public. The layout that was achieved during this period, which included the insertion of large corner gates and the replacement of the perimeter walls and railings, is largely what is in place today, with the notable exceptions of the northeast and southwest corners where respectively the Wolfe Tone Memorial and Fusiliers Arch now stand.

Figure 2.4: View of St Stephen's Green North. Note entrance gates illustrated were erected 1877-1880.

In terms of archaeological heritage, St Stephen's Green Park is a Recorded Monument and Place (RMP DU018-020334-). As the location of St Stephen's Green Park was commonage prior to 1635, and outside the medieval town, there is low potential for the presence of sub-surface archaeological stratigraphy other than that directly related to the park itself. Therefore the likely remains which survive, external to the park railings and beneath the surrounding footpath and carriageway relate to the parks perimeter 17th century perimeter ditch and boundary wall. Evidence for both these features was found on St Stephen's Green North during the construction of Luas Cross City. This work identified that the plinth wall and railings, which currently enclose the park, rest directly on the revetment wall of the 17th century perimeter ditch, using the latter as a foundation (Figure 2.5). The boundary wall, comprising rough limestone blocks, was identified towards the central carriageway of St Stephen's Green North.

Figure 2.5: Images of the revetment wall of the perimeter ditch as it relates to the present day railings and plinth of the park's perimeter boundary (RPS 7751). Identified on St Stephen's Green North (Rubicon Heritage Ltd.)

Additional remains external to the park are likely to be related to the various phases of dwelling houses that lined its sides including coal cellars, building/boundary wall foundations and drainage features (e.g. wells).

With reference to the interior of the park, it is not expected that significant sub-surface archaeological stratigraphy will be present as the area has historically either been used for grazing or as park space. Items likely to be found will be landscaping features (e.g. gravel walks and planting beds) and drainage ditches. During exploratory works on St Stephen's Green as a component of the old Metro North works, remains of the park's gate pier, removed from the north-west corner in 1907 to accommodate the erection of Fusiliers Arch, were identified. These remain in situ (see Figure 2.6). It is possible that similar remains may survive on the north-east corner, where the railings were removed to accommodate the insertion of the Wolfe Tone statue. As insurgents used the park during the 1916 Easter Rising there is a potential that the defensive ditches they dug internal to the park boundary may be identified during any ground disturbance works. This could also include spent bullets and other munitions, or other war related items.

Figure 2.6: The remains of gate piers erected in 1877-1880, and removed in 1907 to accommodate the erection of Fusiliers Arch.

In terms of architectural heritage various elements of St Stephen's Green Park have also been designated as Protected Structures. On its eastern boundary these include:

- Railings, gates and plinth walls of perimeter boundary on St Stephen's Green (RPS 7751);
- Surrounding bollards and traditional-style lampposts (RPSs 7752).

Additional protected structures include the bandstand, a pavilion, fountains, the superintendent's house and several statues representing notable individuals such as the statue of Countess Markievicz and Robert Emmet (Record of Protected Structures (RPSs) 7753–7761 DCC). St Stephen's Green Park is also an Historic Garden and Designed Landscape as listed in the National Inventory of Architectural Heritage (NIAH).

The west side of the park is dominated by Fusiliers Arch (1907) and a substantial (3 acre) ornamental lake with a central tree covered Pulham rockwork. The perimeter of the park, in particular its eastern side is vegetated by a combination of mature trees (including several significant specimens of Oak, London Plain and Elm) and shrubs.

The northeast entrance to St Stephen's Green, now functions as a broad plaza with fan detail paving which is dominated by the Wolfe Tone Monument (1967) comprising a three-meter bronze statue set against the architect Keating's curved line of granite monoliths ('Tone Henge'; Figure 2.7). The Hungry Heart 'Famine' Memorial is located to the rear of this. The insertion of these statues and monuments, necessitated the removal of the northeast gates which are now located in the grounds of Kilkenny Castle (Margaret Gormley OPW, pers comm.). Although the 19th century gates were removed to accommodate the insertion of these items in 1967, two of the original gate piers do survive, one either side of the entrance way (Figure 2.8)

Figure 2.7: Wolfe Tone statue and 'Tone Henge' on the north-east corner of St Stephen's Green

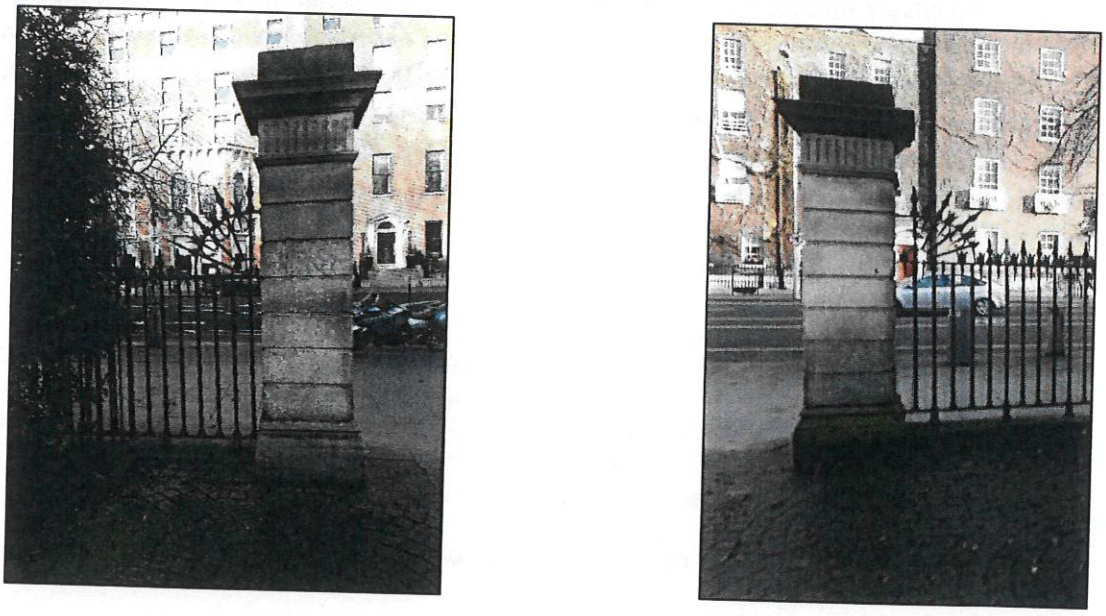


Figure 2.8: 19th century gate piers and fan detail railings on the north-east corner of St Stephen's Green

Within the parks south-east corner stands 'The Three Fates', by German artist Josef Wackerle, donated to Ireland by West German after World War II (Casey 2005, 533).

With reference to the above, as the boundary elements (railings RPSs 7751 and bollards -RPSs 7752) of the park are Protected Structures adopting the precautionary principle all items within its curtilage should be considered protected, with each item contributing to its distinct architectural and cultural heritage.

The park was original bounded to north, east and west by Dublin's historic tramlines of which sub-surface remains may survive. The historic ovid sewer line, which surrounds the park, is also of industrial heritage merit.

2.2.2 Conservation Plan

The Office of Public Works (OPW) have developed a Draft St Stephen's Green Park Conversation Management Plan (OPW 2015) which aims to conserve the unique Victorian character of St Stephen's Green that has remained largely intact since the 1880s. The Conservation Management Plan's strategy for the future has a strong conversation and restoration objective for all aspects of the park including built and natural features. Relevant objectives include:

- To protect and conserve the historic landscape character of St Stephen's Green Park;
- To protect the historic setting of St Stephen's Green and conserve its archaeological and architectural heritage; and
- To preserve the peace and tranquillity of the Green.

The mature vegetation, specifically the trees make up an important element of the cultural heritage value of St Stephen's Green Park. This is reflected in the specific objectives of the Draft St Stephen's Green Park Conversation Management Plan (OPW 2015) relating to landscape which states:

> *'To ensure that trees and plantations continue to thrive in the Green, using species that are appropriate to the setting and soil conditions. Such features are fundamental in creating the landscape character by defining spaces and in directing views within the Green. Sustaining the current balance between open space and plantations is essential to the landscape character. The form, structure and species diversity and character of plantations will be conserved, and new plantations established by sensitive management including felling, remedial work and appropriate replanting.'*

2.3 Landscape & Visual Amenity

The area next to the perimeter fence of the park vegetated by an unbroken line made up of a mixture of trees and shrubs. These provide a visually impermeable barrier between the urban environment and the green space inside St Stephen's Green Park. The upper canopy of the tree line along St Stephen's Green East is dominant by impressive specimens of Holm Oak (Quercus Ilex), Sycamore (*Acer Pseudoplatanus*), Horse Chestnut (*Aesculus Hippocastanum*), Wych Elm (*Ulmus Glabra*) and London Plane (*Plantanus x hispanica*). The majority of these trees have been classified as being in good condition.

The under canopy is dominated by Holy (*Ilex Aquafolium*) and Cherry trees (*Prunus Sp.)*

2.4 Amenity

St Stephen's Green is one of the most important green spaces in the centre of Dublin. Dublin City Council (DCC) have defined St Stephen's Green as a "Flagship Park" in the Dublin City Parks Strategy 2017-2022 (DCC, 2016).

St Stephen's Green Park has been defined as such in recognition of the significance of the park as a visitor and tourist attraction.

There are four main entrances to the park, with 14 entrances overall which allow safe access and egress to the park, seven days a week during opening hours. The Draft St Stephen's Green Park Conservation Management Plan (OPW, 2015) identifies that passive recreation is encouraged in the park and that the park offers a number of attractions such as the following:

- A clean, well maintained park in the middle of the city;
- A historic property open to all on a daily basis;
- A playground;
- Heritage features, statues, buildings and park furniture;
- Trees, shrubs and flower beds and borders;
- Water features;
- Wildlife; and
- Cultural events/lunchtime concerts.

In 2009, eight million visitors were recorded visiting the park and park users range from members of the public walking through the park, active walkers and joggers, lunchtime visitors, family groups and tourists.

3. Emerging Preferred Route and St Stephen's Green

3.1 Introduction

The Emerging Preferred Route (EPR) including a proposed underground station at St Stephen's Green East was identified based on an in-depth multidisciplinary analysis presented in ARUP (2018).

3.2 Methodology used in the Identification of the EPR

A study area was defined for the project as outlined in Figure 3.1. This study area was then split into three discrete study areas which included:

- Study Area A: City Centre (within which St Stephen's Green Station is located);
- Study Area B: Area B: Ballymun/Dublin Airport; and
- Study Area C: Swords.

Following this, all possible route options within each study area were identified and a preliminary analysis was undertaken to assess these options. All possible route options within each study area were identified and screened using a Pass/Fail Preliminary Assessment. Then the route options that passed this preliminary assessment were assessed using a two stage Multi Criteria Analysis (MCA) against a defined set of criteria. The criteria used are in line with the criteria outlined in the Common Appraisal Framework for Transport Projects and Programmes (DTTAS 2016) and included for a full environmental assessment of the route options.

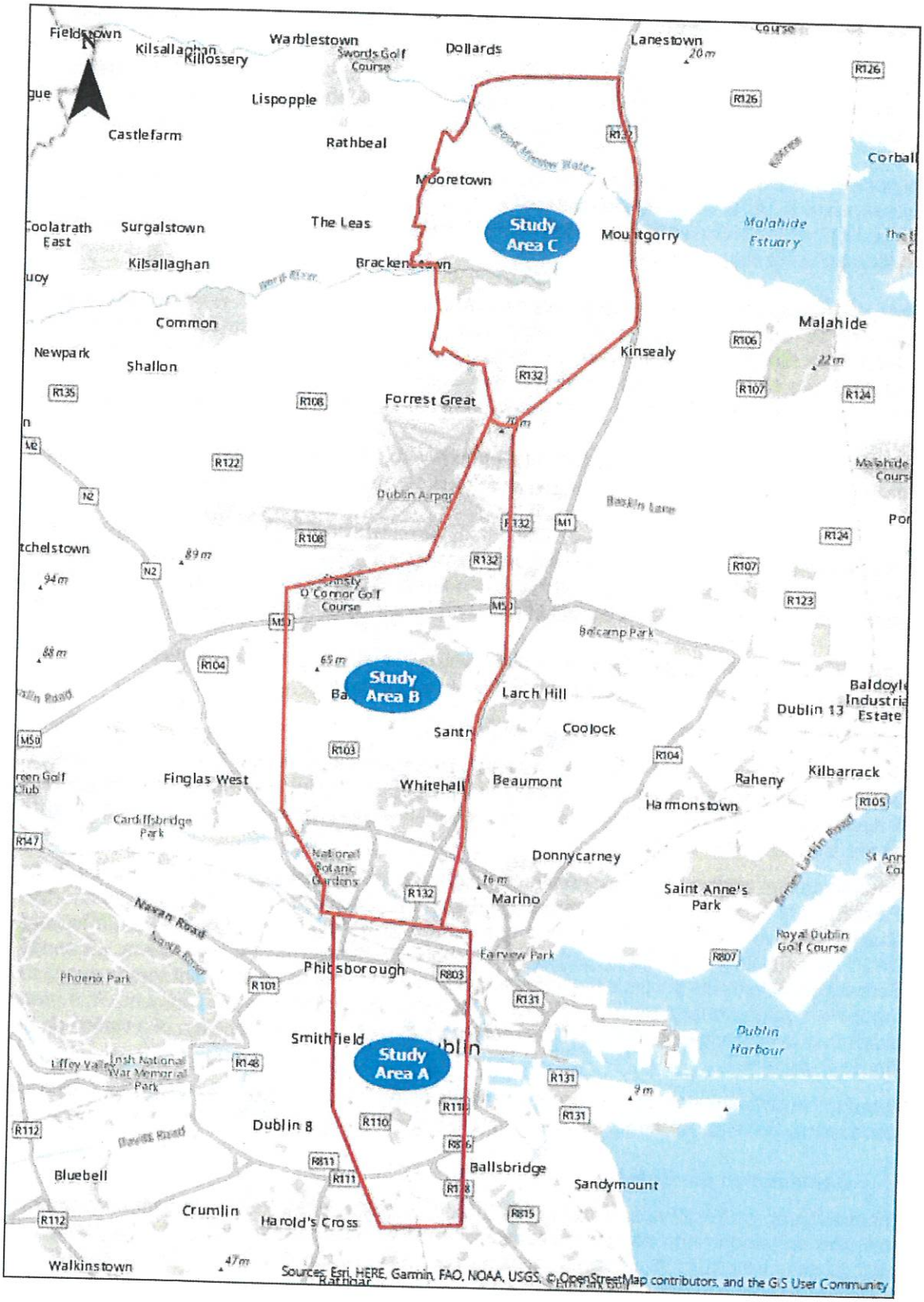


Figure 3.1: EPR Study Area

3.2.1 Assessment Outcomes

The preliminary assessment of possible options was carried out which identified 20 assessment options across the study areas which merited further consideration and analysis. In order to enhance the analysis, concept designs were developed for each of these options to allow for more a detailed assessment.

Six routes options in Study Area A (which includes the St Stephen's Green area) were developed and assessed for the first stage MCA. These route options took different paths through Study Area A and included station location options at St Stephen's Green West, St Stephen's Green East, St Stephen's Green Central and options with no station location at St Stephen's Green.

The first stage MCA identified St Stephen's Green East, St Stephen's Green West and with no station at St Stephen's Green as feasible options for Study Area A that would be subject to further analysis during the second stage MCA analysis. The route option with a station location in the centre of St Stephen's Green was ruled out on the basis of the Stage 1 MCA analysis as this option would have the potential to directly impact the core of St Stephen's Green, its ornamental ponds, bridge, ornamental fountains, mature trees and park structure.

Overall, following the first stage MCA a total of eight options within the overall study area were identified for further consideration; three in Study Area A, three in Study Area B and two in Study Area C.

The eight options were spread across the three study areas (See Fig 3.1) and were combined in various permutations to develop 10 end-to-end route options, each running from Estuary (Swords) to the tie-in location at Charlemont. The ten end-to-end route options were then subjected to a second stage MCA. This MCA included a full transport demand assessment, cost benefit analysis and environmental assessment for each of the 10 options.

The Stage 2 MCA identified the EPR for the project which included a proposed station at St Stephen's Green East. The EPR compared most favourably to other options overall as it:

- Best serves passenger demand along the corridor;
- Serves more key trip attractors than other options through the city including St Stephen's Green, the National Concert Hall, the Cultural Institutions such as the National Gallery and the National Museum (Natural History & Archaeology). Furthermore, this route option serves key commercial, retail and office trip attractors such as the IFSC and Grafton Street;
- Provides excellent interchange opportunities with other public transport modes as it links with the DART (at Tara Street), Luas (at O'Connell Street and Charlemont), multiple bus routes and heavy rail services at Glasnevin. The MCA analysis found route options in Study Area A that featured an interchange with the DART at Tara Street performed well against the Public Transport Interchange criteria. Locating a station at Tara Street constrains the possible tunnel alignment options to reach Charlemont station due to tunnel boring machine turning constraints and operational considerations for the tunnel alignment. This means that the location of an interchange station at Tara Street was a key driver for the location of a station on St Stephen's Green East; and
- Resulted in potential environmental impacts particularly for Archaeology, Architecture & Cultural Heritage and Landscape, however it was identified that the majority of impacts could be mitigated during design.

3.2.2 Consultation on the EPR

Public consultation on the EPR occurred between 22 March and 11 May 2018. Submissions were received during this consultation period and one specific response related to St Stephen's Green. This response related to the proximity of school children in the area to noise and construction phase impacts on St Stephen's Green and difficulties reinstating the park post construction.

3.3 Description of the Proposed EPR at St Stephen's Green East

The alignment at St Stephen's Green that was presented as part of the EPR is shown on Figure 3.2.

For the EPR, the station at St Stephen's Green was developed to the point of an indicative station box location with some station elements shown. The station was located within the roadway and footpath of St Stephen's Green East where the construction area would have directly impacted St Stephen's Green East and St Stephen's Green Park. The station was situated to make use of the footpath and open area adjacent to the Wolfe Tone Memorial on the eastern corner of St Stephen's Green for:

- Ingress and egress to and from the station (adjacent to the Wolfe Tone Memorial);
- Emergency lifts and stairs from the footpath; and
- Ventilation shafts located on the existing footpath.

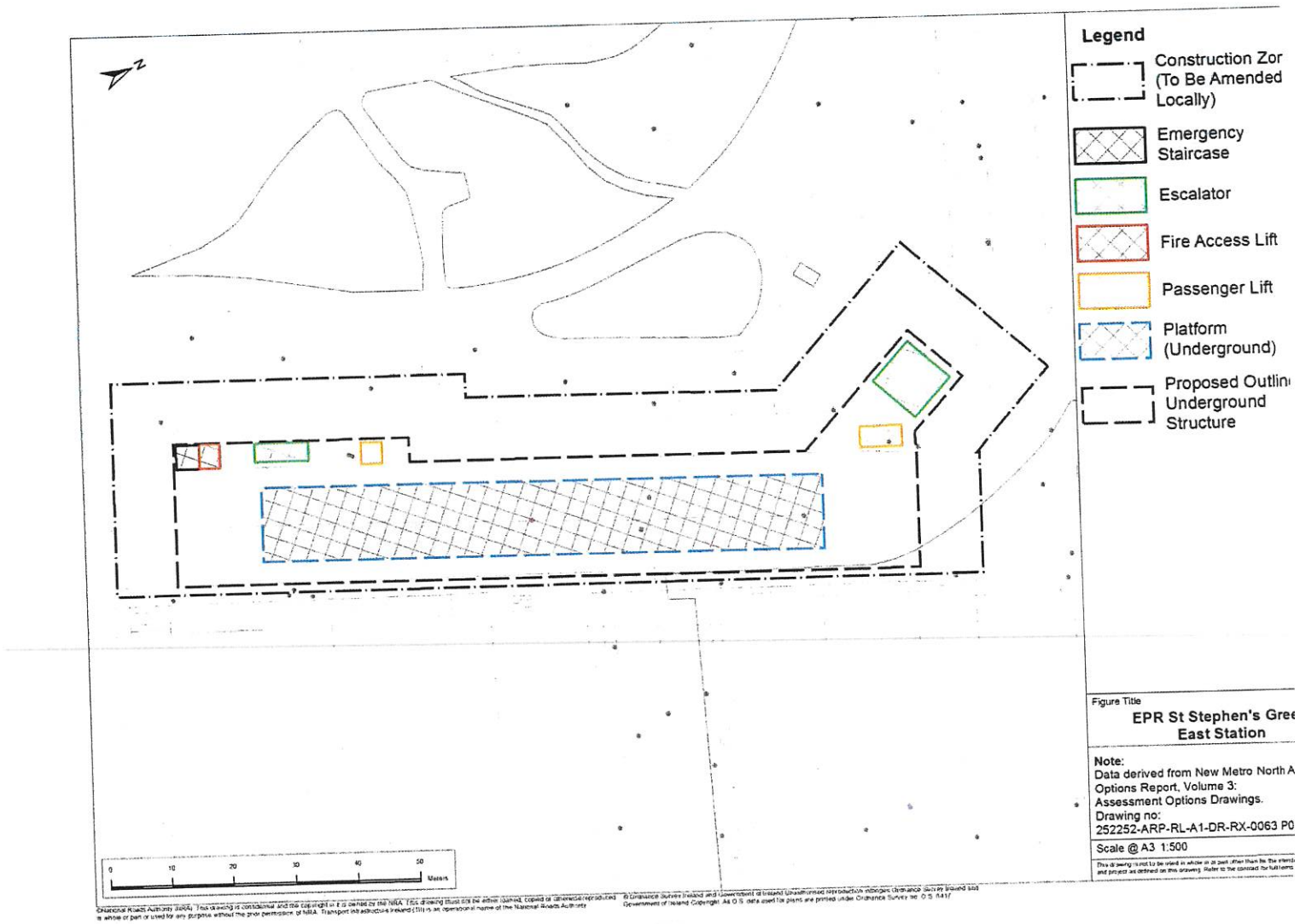


Figure 3.2: EPR Alignment and St Stephen's Green East Station

4. Preferred Route and St Stephen's Green Station

4.1 Introduction

As outlined in Section 3, the EPR for the project was identified and this route option included for a proposed station location on St Stephen's Green East.

Following the identification of the EPR, a programme of public consultation was undertaken on the EPR led by the National Transport Authority (NTA)/TII as described in Section 3.2.2 above. A review of submissions received has led to further analysis of the EPR resulting in a number of significant changes to the proposed project, including one that is particularly relevant here and this is the change from a proposed twin bore tunnel to a single bore tunnel.

This means that rather than having separate tunnels, one for each rail line, both north and south bound lines would run in parallel through a single tunnel. The single bore tunnel option has a number of distinct advantages, the most significant of which means that the project can be constructed in a shorter timeframe, thereby reducing the construction phase impacts of the proposed project. However, a single bore tunnel also requires for the provision of intervention shafts where the distance between stations is greater than 1,000m. Article 19(3) of Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways (EU216) establishes a maximum distance between lateral and/or vertical emergency exits of 1,000m for single bore tunnels.

Furthermore, a significant reduction in station box size was introduced and this means that the construction phase and operational phase impacts of the Preferred Route would be less significant than those for the EPR. (Refer to Figure 4.1 and Figure 4.2 for details of the preliminary design for the proposed station at St Stephen's Green East. These design changes have been factored into the determination of the optimum location for the preferred station location at St Stephen's Green East.

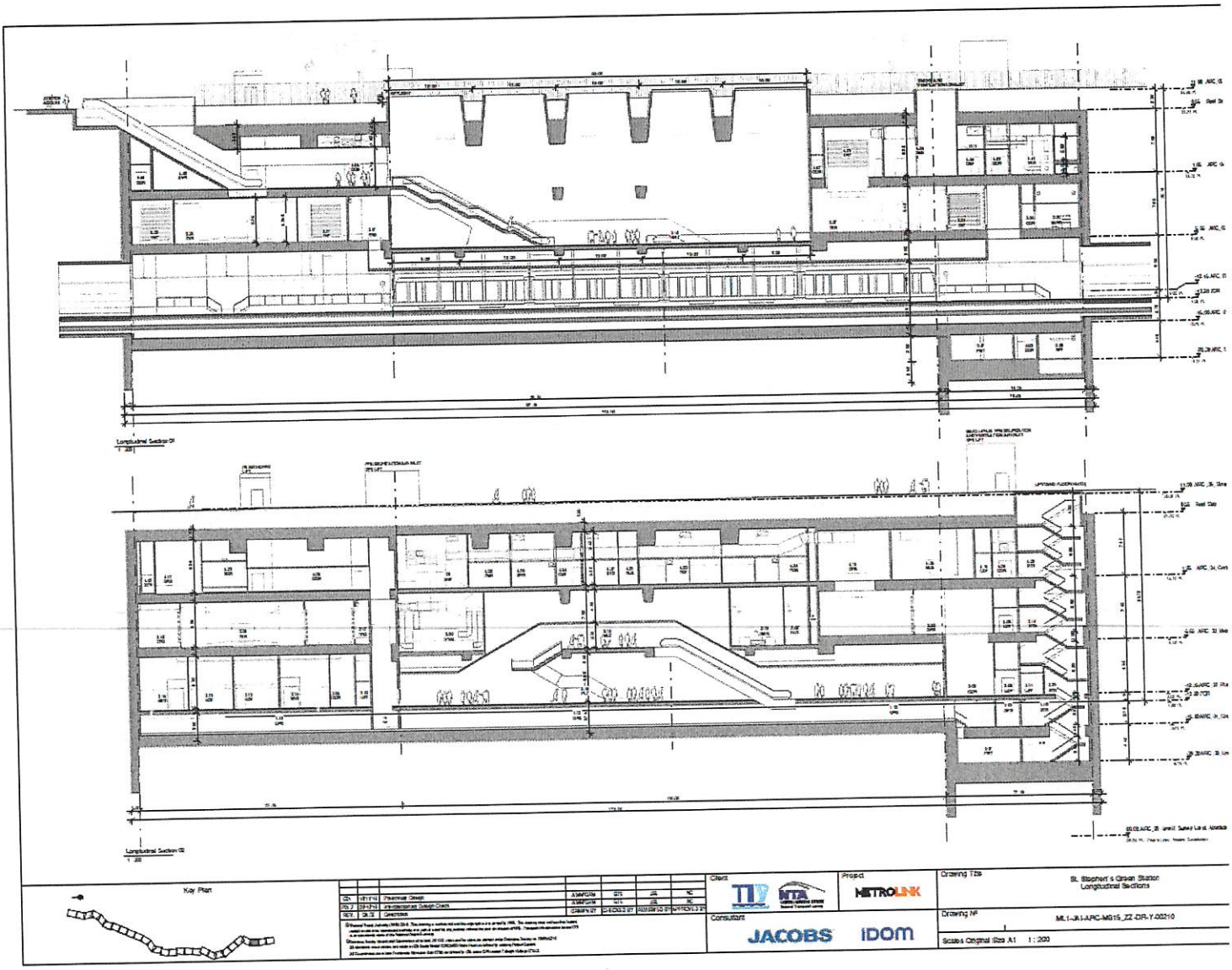


Figure 4.1: Preliminary Design of St Stephen's Green Station - Long Section

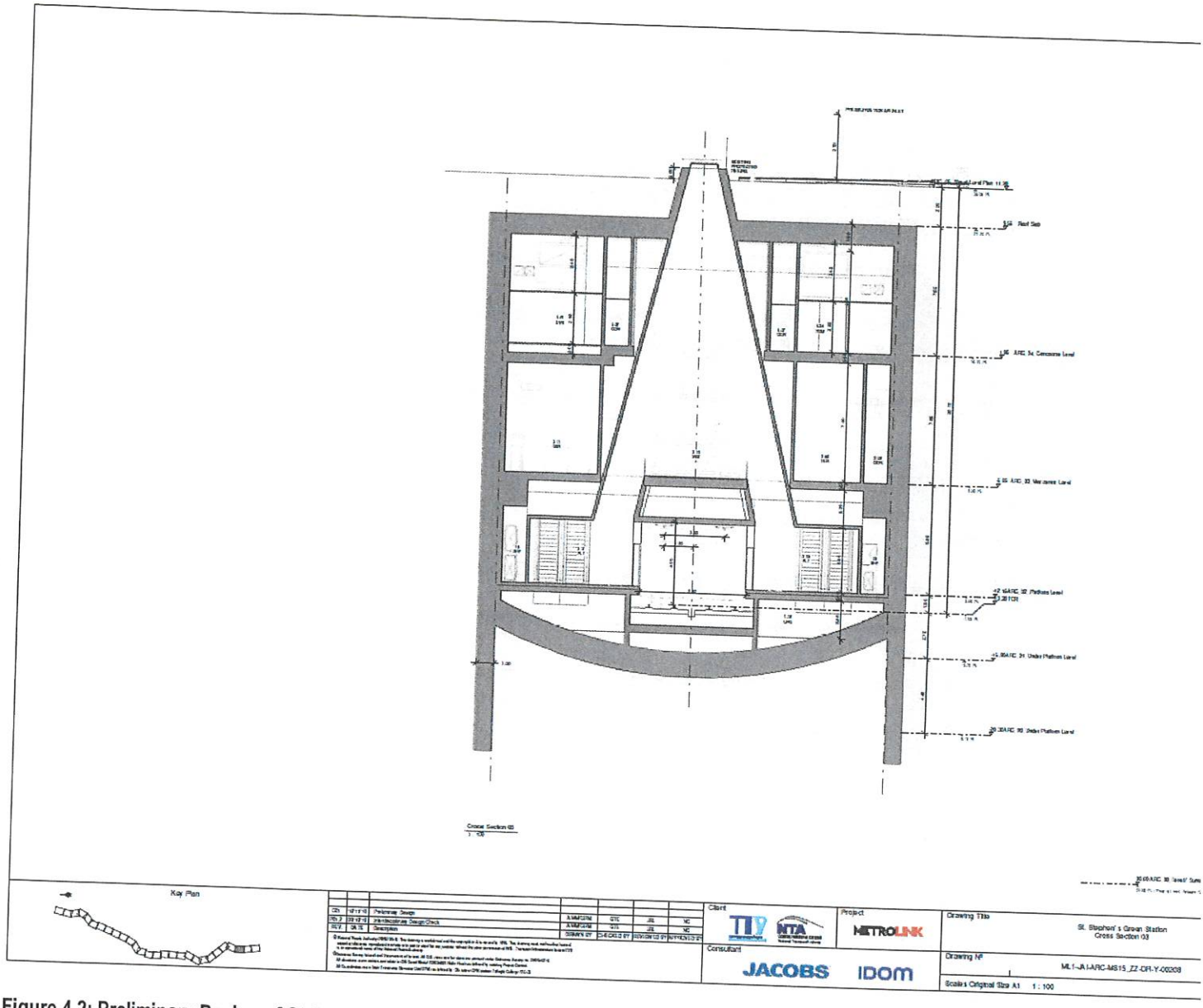


Figure 4.2: Preliminary Design of St Stephen's green - Cross Section

4.2 Methodology for the determination of the Preferred Station Location at St Stephen's Green East

A four-stage options assessment was undertaken to identify the preferred station location at St Stephen's Green East. The analysis was undertaken in line with the Project Appraisal Guidelines (TII 2016) and The Common Appraisal Framework (DTTS 2016) to provide a robust framework for comparing options. The assessment stages are outlined in Figure 4.3 below:

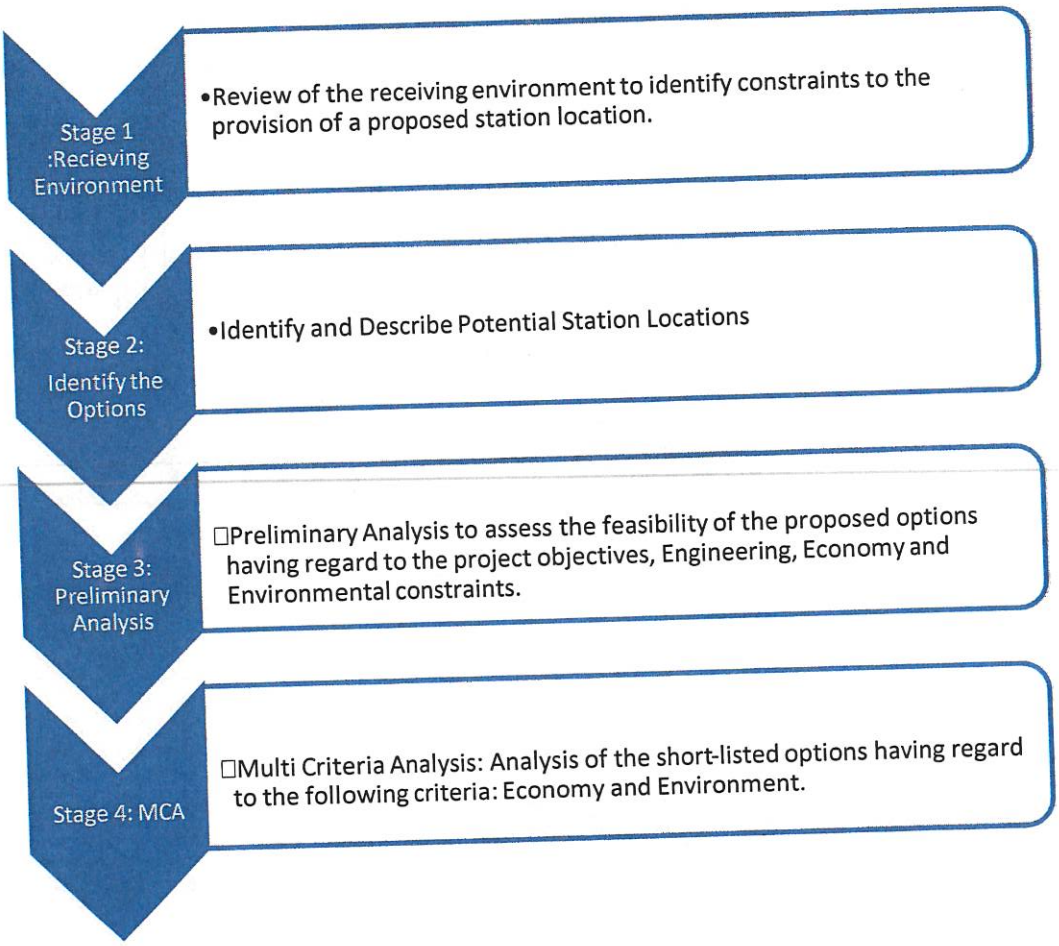


Figure 4.3: Outline Assessment Methodology

4.2.1 Stage 1: Review of the Receiving Environment

New Metro North - Alignment Options Report (TII 2018) identified an EPR alignment connecting Tara Street and Charlemont with a station location at St Stephen's Green East (Refer to Section 3 of this report for further information on the assessment undertaken). On the basis of providing a station location on St Stephen's Green East, a desk top study of the receiving environment was undertaken to identify the principal constraints that should be considered when identifying the preferred location for a station on St Stephen's Green East.

4.2.2 Stage 2: Identification and Description of Potential Station Locations.

The project team held a series of internal workshops to review the outputs of the desk top assessment of the receiving environment and to develop a number of potential station location options, which are described in Section 5 of this Report.

4.2.3 Stage 3: Preliminary Analysis

The preliminary analysis undertaken consisted of a qualitative assessment of potential station locations based on the criteria identified in Project Appraisal Guidelines (TII 2016). (Refer to Table 4.1)

Table 4.1: Criteria used for Stage 3 Assessment

Criteria	Sub-Criteria	Criteria Description	Note
Environmental	Potential for adverse impacts	Minimise the potential for adverse impact on the natural and built environment and the community.	Environmental criteria were assessed given the potential for impacts for the station locations.
Engineering	Constructability	This criterion considers if the station option can be constructed having regard to the identified constraints and opportunities within the study area	The constructability criterion was assessed given the potential differentiation between station locations.
Economy	Cost	This criterion considers the cost of each of the proposed station options.	This criterion was assessed given the cost implications of differing station locations.

The proposed Project objectives were also assessed to ensure the station location options developed were consistent with relevant project objectives such as the following:

- Be designed to integrate appropriately into the existing public realm; and
- Be planned, constructed and operated in an environmentally sustainable manner.

All locations identified in Stage 2 were assessed against the relevant criteria identified above with the intention to identify the locations that are feasible and worth analysing further utilising the MCA analysis in Stage 4.

4.2.4 Stage 4: Multi Criteria Analysis

Stage 4 involved taking the locations which remained following the Stage 3 preliminary analysis and subjecting them to a more detailed MCA analysis to decide on a preferred station location.

The characteristics and potential impacts of each station location have been assessed against the following criteria in Table 4.2.

Table 4.2: Stage 4 MCA Sub-Criteria

Criteria	Description
Economy	The impacts of a transport investment on economic growth and competitiveness are assessed under the economic impact and economic efficiency criteria
Environment	Environment embraces a range of impacts such as emissions to air, noise and ecological and architectural impacts.

4.2.4.1 Economy

For this assessment, it is assumed that the operating and maintenance cost of each station option is equal. However, the construction costs may vary depending on the location of the station having regard to the following:

- Indicative station construction costs;
- Ground level reinstatement costs;
- Major utility diversion costs;
- The requirement for an intervention shaft; and
- Other project infrastructure required at each location.

Estimates of these costs for each station location are used to differentiate between each station option.

4.2.4.2 Environment

The MCA has regard to all the environmental sub-criteria identified in Table 4.3 below. As identified in Table 4.3 some criteria were not considered to differentiate between options as the environmental impacts were deemed similar.

Table 4.3: Environmental MCA Sub-Criteria

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
Air & Climate	Yes	It is considered that the project will have a largely positive impact on air and climate during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in emissions. However, there is potential for impacts on sensitive receptors during the construction phase due to emissions. Emissions of relevance during this phase include NOx and Particulate Matter (PM10).	Sensitive receptors within 100m of each station box location were identified and considered and assessed to identify potential impacts. St Stephen's Green is considered as a single sensitive receptor. However, the degree of impact on St Stephen's Green is considered in this analysis as a proxy for the impact on the immediate environment during the construction phase.

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
Noise & Vibration	Yes	It is considered that the project will have a largely positive impact in terms of noise and vibration during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in noise. However, there is potential for impacts on sensitive receptors during the construction phase.	Sensitive receptors within 100m of each station box location were identified and considered and assessed to identify potential impacts. St Stephen's Green is considered as a single sensitive receptor. However, the degree of impact on St Stephen's Green is considered in this analysis as a proxy for the impact on the immediate environment during the construction phase.
Resource & Waste Management	No	For the purposes of this analysis the station box and excavation area required for each of the options assessed is assumed to be the same. As a result, the quantity of spoil material and/or waste generated will be similar for each option and is not considered to be a differentiator. For the operational phase, the resources required, and waste produced from each station box option would be similar and as a result not considered as a differentiator.	Not applicable.
Biodiversity	Yes	Each station box location will have potential to impact on local biodiversity within St Stephen's Green. Potential for impacts are associated with the construction phase and following construction and re-establishment of the park impacts are minimised.	The assessment undertaken for each of the station box locations is qualitative and entails the identification of the potential impacts on biodiversity within and surrounding St Stephen's Green Park.
Agriculture	No	The location of the station box is fully located within an urban setting with no potential impact on agricultural activity.	Not Applicable
Non-Agricultural Properties	Yes	Potential for direct impacts on a number of land holdings and properties.	The assessment consists of a count of the land holdings directly impacted by each station box location.
Architectural Heritage	Yes	Potential for direct impacts on several elements of architectural heritage during the construction and operational phases.	A qualitative assessment of potential direct impacts from on elements of architectural heritage from each station box and associated construction works.

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
		Potential for impacts are primarily associated with the construction phase. Following construction, important architectural features such as the park such as railings and monuments will be reinstated.	
Archaeology	Yes	Potential for direct impacts on several elements of archaeology arising during the construction phase and the location of station elements.	The assessment consists of an analysis of directly impacted known archaeology and potential subsurface archaeology.
Landscape & Visual	Yes	Potential for significant impacts on the landscape and visual amenity at St Stephen's Green East Potential for impacts are associated with the construction phase and following construction and re-establishment of the park impacts are minimised.	Assessment involved the qualitative assessment of visual impacts and includes an identification of significant tree loss within each potential station location's construction area.
Soils & Geology	No	All station box locations potentially impact on the made ground to the same geographical extent. All station box locations impact on Dark limestone and shale bedrock of the Lucan Formation to the same geographical extent.	Not Applicable.
Hydrology	No	There are no surface water features potentially impacted by any of the station box locations. There is potentially a historical channel crossing the east of St Stephen's Green to the lakes within the green. However, OPW identified that this channel does not act as a water source for the lakes at St Stephen's Green.	Not Applicable
Hydrogeology	No	There are no known groundwater wells or springs impacted by any of the station box locations. All station box locations impact on a locally important aquifer to the same geographical extent.	Not Applicable
Traffic and transport	Yes	Potential for significant impact on traffic and transport during construction depending of station box location for each option. Long term	Assessment consists of the review of modelling of impacts on surrounding road network. It also assesses impacts on public transport and the

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
		operational impacts were not considered a differentiator as each of the station locations would have a similar positive impact in the long term.	Dublin City Council Heavy Goods Vehicles (HGV) strategy, cyclists and pedestrians.
Utilities	Yes	Potential for impacts on several utilities that require diversion to construct the station box.	The assessment involved identifying the utilities present that are potentially affected by each option.
Population and Human Health	Yes	Potential Socio-Economic impacts for each station box locations during the construction phase of the project. Human Health impacts were not considered a differentiator due to the similarity between location for this discipline. During the operational phase, it is considered that there will be a similar positive impact arising from each of the proposed station box locations.	The assessment involved a qualitative classification of negative impacts, during the construction phase. An assessment of the operational benefits was also undertaken.
Radiation and Stray Current	No	Not considered a differentiator as there is no potential for impacts on sensitive receptors arising from the proposed station box locations.	Not Applicable.

4.3 Receiving Environment/Local Constraints

As with all other City Centre locations, St Stephen's Green East is particularly constrained for the location of a proposed station and associated infrastructural works. The main constraints are discussed in this Section under the following headings:

- Transport/Traffic;
- Landscape/Streetscape and Visual Amenity;
- Biodiversity;
- St Stephen's Green - Railings, Monuments and other features; and
- Important adjacent Buildings and Cellars.

4.3.1 Transport/Traffic

St Stephen's Green East plays an important role in the city's transport network. It is designated as a secondary strategic pedestrian route, and as a primary cycle route in the Greater Dublin Area Cycle Network Plan (NTA 2013). It is also a busy route for vehicular traffic and is one of the designated Heavy Good Vehicle (HGV) routes within the City Centre, which forms the City Centre HGV Management Strategy (DCC 2007) for heavy goods vehicles. As such, the maintenance of the south-north movements on the street is key to the maintenance of services attending the Grafton Street area.

St Stephen's Green East is also a busy artery for public transport services from the south-east of the city and further afield and is used by over 50 different Public Service Obligations (PSO) and commercial bus routes.

A baseline survey was undertaken for the MetroLink project in this area and on this basis, extensive transport modelling work was undertaken. The modelling output identified the following traffic and transport movements at St Stephen's Green East during the AM Peak:

- Bus routes: 384 buses including the following routes: 84x, 11, 145, 155, 32x, 41x, 46a, 757, 7b, 7d, 142, 37, 44 and 61;
- Private vehicles: 1,711 Private Car Units (PCU);
- 594 cyclists (travelling both north and south); and
- 3,319 pedestrians during AM Peak.

St Stephen's Green East is an important link in Dublin's bus network and is the main route in and out of the City Centre for buses coming from the south-east. Cross city routes such as 155 from Bray to Ballymun and the 11 from Sandyford Business District. to St Pappin's Road in Glasnevin rely on St Stephen's Green East for their services. Therefore, closure of this street would result in significant disruption to these services, providing no service to the Dawson Street area. Similarly, the 46a service from Dun Laoghaire to the Phoenix Park operates approximately every 7-8 minutes during the AM Peak, contributing greatly to the number of buses utilising St Stephen's Green East during this time. This service would face considerable disruption if St Stephen's Green East was closed, as it would be required to be redirected which would result in a significant delay to a number of services.

Partial or full restriction of pedestrian movements in this area during construction would also negatively impact access to and from the Grafton Street area. North-south and south-north pedestrian movements are prioritised under the Dublin City Development Plan (DCC 2016-2022) and Dublin City Centre Transport Study (DCC 2015). Therefore, these movements have local importance.

St Stephen's Green East also forms part of a proposal for a car-park access plan to remove vehicles from the core central area. Closure of this street would restrict this access and increase the number of vehicles within the City Centre.

All of the above mentioned transport and traffic movements are of strategic importance to the city and could have signifiant impacts if interrupted. Reasonable alternative routes could be provided for pedestrian, cyclists and access to multi-storey car parks, however there are no reasonable routes for goods and delivery traffic, or for the volume of north-south and south-north bus traffic.

4.3.2 Landscape/ Streetscape and Visual Amenity

The streetscape on St Stephen's Green East is dominated on the eastern side by a mixture of Georgian architecture and modern buildings. St Stephen's Green Park lines the western side of St Stephen's Green East. The footpath on the western side of St Stephen's Green East contains:

- 17 street trees (Caucasian Lime) to the east side of the park's perimeter fence. 13 of which are within the indicative construction areas for the proposed Project station locations.
- Protected structures which are situated on the footpath of St Stephen's Green within the curtilage of the National Monument:
    - Railings, gates and plinth walls of perimeter boundary on St Stephen's Green (RPSs 7751); and
    - Surrounding bollards and traditional-style lamp-posts (RPSs 7752).

The area next to the perimeter fence of the park is vegetated by an unbroken line made up of a mixture of trees and shrubs. These provide a visually impermeable barrier between the urban environment and the green space inside St Stephen's Green Park. A tree survey was undertaken for the eastern side of St Stephen's Green Park for the purpose of the MetroLink project. This survey covered all areas that would potentially be impacted by a station location. The tree survey was undertaken by a fully qualified arborist in line with *British Standard 5837: 2012 – Trees in relation to design, demolition and construction – Recommendations*.

The tree survey identified 136 No. of mature trees within the study area. The upper canopy of the tree line along St Stephen's Green East is dominated by impressive specimens of Holm Oak (Quercus Ilex), Sycamore (*Acer Pseudoplatanus*), Horse Chestnut (*Aesculus Hippocastanum*), Wych Elm (*Ulmus Glabra*) and London Plane (*Plantanus x hispanica*). The majority of these trees have been classified as being in good condition.

The under canopy is dominated by Holy (*Ilex Aquafolium*) and Cherry trees (*Prunus Sp.)*.

A number of station location options would require the felling of a number of the trees identified in St Stephen's Green Park as described for each station location option in Section 6 and 7.

4.3.3 Biodiversity

Comprehensive biodiversity surveys were undertaken at St Stephen's Green. Surveys including a habitat survey, a Breeding Bird and a Bat detector survey has been undertaken at St Stephen's Green for the purposes of the MetroLink project.

On the basis of a desk-based assessment, the above mentioned surveys and in the context of the surrounding environment, St Stephen's Green is considered to be of local ecological value (higher value). St Stephen's Green Park is characterised by the following habitat types (Fossitt, 2000):

- Amenity Grassland (Improved) (GA2)
- Scattered Trees and Parkland (WD5); and
- Hedgerows (WL1) and Treelines (WL2)

Bats (Common pipistrelle & Leisler's bat) have also been recorded in the tree line and the mature trees here have potential to contain Bat Roosts. In addition, one red-listed and four amber listed bird species were recorded here during the Breeding bird survey.

A number of station location options would require the felling of a number of the trees and the removal of vegetation which would impact on the biodiversity at St Stephen's Green Park as is described for each station location option in Section 9.

4.3.4 St Stephen's Green Park (East) - Cultural Heritage Items

Within the National Monument on its Eastern boundary are several protected structures. These include:

- Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East (RPSs 7751 - 7752);
- The bollards and traditional-style lamp posts which line the footpath (RPSs 7752); and
- Sculptures

A summary of each of these structural elements of St Stephen's Green are provided below. For the outputs of an in-depth analysis of these cultural heritage items please refer to Appendix A.

4.3.4.1 Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East; RPS 7751-7752)

The railings are substantial, with closely spaced spear-topped railings rising off a cut-granite plinth. The railings terminate at the northern end of St Stephen's Green East at a neoclassical granite pier at the edge of the Wolfe Tone memorial plaza. The bollards are of granite, each topped with an iron boss that originally carried chains that ran from one bollard to the next. These are set at the kerb line of the pavement adjacent to the park. About a metre back from the kerb is a line of lamp standards in the style of traditional oil or gas lamps. Two types of lamp standards surround the green and these are

- A three lantern cast-iron version located on each corner illuminating the gates/access ways, and
- A single lantern cast-iron version aligned with the perimeter kerb

The footpath alongside the park was re-laid with granite flagstones, bordered by granite kerb stones. These are of high quality but are not heritage elements.

4.3.4.2 Sculptures on St Stephen's Green Park (East)

The Wolfe Tone Monument, and the Hungry Heart Famine Memorial are situated on the south western edge of the plaza area that makes up the north eastern corner of St Stephen's Green Park. These are not protected structures but form part of the architectural heritage of the park. The monument consists of a substantial paved area at the north-eastern corner of the park in which stands a bronze sculpture representing Wolfe Tone standing on a granite plinth. This is backed by a segmental array of tall granite columns (Tone Henge), behind which is a second, smaller array of columns. The plaza area is paved with granite blocks laid in a pattern of sweeping curves. To the rear of the granite columns, within the enclosed area of the park, is a bronze sculpture representing the Great Famine of the 1840s. Both the Wolfe Tone memorial and the Famine memorial were produced by Edward Delaney in the 1960s.

4.3.5 Protected Structures and associated features on St Stephen's Green East

There are ten protected buildings between Merrion Row, and Leeson St Lower on St Stephen's Green East These are listed in Table 4.4 below. The primary constraint relating to the protected buildings is the potential for coal cellars to be present under the eastern footpath and carriageway of the St Stephen's Green East. An indicator for the presence of cellars is often the presence of cast-iron coalhole covers in the footway to the front of a building. There are no coalhole covers in the footway on the eastern side of St Stephen's Green; however, the footway has been entirely re-laid with concrete flags and it is possible that any surviving coalhole covers were lost in that project. The kerbstones on the eastern side of the street are of heritage significance, as is the cast-iron pillar box outside number 50 St Stephen's Green and which dates from the 1870s.

The protected structures on the eastern side of St Stephen's Green are generally Georgian in style and vary in scale. At the northern end of the eastern side number 39-40 is an Edwardian bank building and its neighbour at number 41 is a Georgian-style house dating from the 1740s with later dormers added. Numbers 42 and 43 were built as a pair in the 1740s and are Dutch-billy style houses, with the gabled fronts later rebuilt with parapets. Numbers 44 to 49 were built in the 1970s and have no heritage significance. Numbers 50 to 56 were built in the third quarter of the eighteenth century and are substantial houses. Number 51 is particularly large and was later further enlarged by the addition of wings.

Building and Address	RPS reference number
39-40 St Stephen's Green East	7780
41 St Stephen's Green East	7781
42-43 St Stephen's Green East	7782
50 St Stephen's Green East	7783
51 St Stephen's Green East	7784
52 St Stephen's Green East	7785
53 St Stephen's Green East	7786
54 St Stephen's Green East	7787
55 St Stephen's Green East	7788
56 St Stephen's Green East	7789
Railings, gates and plinth walls of perimeter boundary on St Stephen's Green	7751
Surrounding bollards and traditional-style lamp-posts	7752

Table 4.4: List of Buildings on the RPS on St Stephen's Green East

4.3.6 Amenity

The location of the potential station locations being considered for the MetroLink are at the eastern extent of St Stephen's Green Park. As such they are removed from some of the bigger visitor attractors within the park, such as the central area of Victorian floral displays, the Lime Walk, the Lakes, Playground, the Guinness Plot and the Band Stand.

However, the potential impact of Station Locations on the amenity value of St Stephen's Green Park is related to the extent of ingress of each option into the park and this is outlined in Section 9.

4.4 Engineering Considerations

The main engineering considerations that were considered during this analysis are discussed in this Section under the following headings:

- Intervention Shaft Requirement; and
- Diversion of Utilities.

4.4.1 Intervention Shaft Requirement

The railway tunnel design for the proposed Project must comply with appropriate fire safety standards. The single bore tunnel configuration requires emergency exit points to allow safe egress from the tunnel during an emergency.

In the case of an emergency, ground level is reached by evacuation shafts that are connected to the tunnel. Article 19(3) of Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways (EU216), establishes the requirement for a maximum distance between emergency exit points of 1,000m.

Due to this requirement, a number of potential station locations at St Stephens Green East assessed in this Report with a distance of more than 1,000m between Tara Street and the station would require an additional intervention shaft to allow for emergency evacuation.

4.4.1.1 Function of an Intervention Shaft

The tunnel intervention shaft should be a significant structure (Figure 4.4) and would have the following primary functions:

- It allows emergency services to access the underground system in an emergency situation;
- It provides a safe route for passengers to escape from the tunnel during an emergency;
- It assists in controlling/managing smoke extraction in emergency situations;
- It assists in providing ventilation for passenger comfort in normal day-to-day operations and
- It provides draught relief during the normal operation of the line, enabling the movement of air in or out when a train passes.

4.4.1.2 Construction Phase

The construction of the tunnel intervention shaft is a significant construction project that would last up to three years. It would require the mobilisation of a substantial quantity of machinery, materials and other auxiliary equipment. Most of the construction work would be below ground level and would require the excavation of a vertical shaft of approximately 15m diameter, which would extend 30m below ground level.

The shaft construction method would ultimately be selected by a works contractor. However an appropriate construction method would be to advance a secant pile wall into the weathered rockhead, followed by drill and blast methods below rockhead for further excavation. Furthermore, blasting would also be required for the subsurface passage connections to the main tunnel because they would likely be located below rockhead level. An example of a typical shaft under construction using secant piling is shown in **Error! Reference source not found.** below.

The temporary area required for the construction compound during the construction period would be greater than the area which would be ultimately required for the completed tunnel intervention shaft.

4.4.1.3 Location of an Intervention Shaft

The availability of suitable locations for an intervention shaft to be constructed and operated between St Stephen's Green and Tara Stations is limited given the built-up nature of the area. The tunnel alignment runs beneath public

buildings including the National Museum of Ireland, Leinster House (House of the Oireachtas), and Trinity College. Locating a suitable place to construct an intervention shaft in this area would be challenging given the type of land use and potentially sensitive receptors in the vicinity. For the purposes of this report it is assumed that the most appropriate locations for an intervention shaft would be more open areas at the eastern end of Trinity College or on Merrion Square.

Figure 4.4: Intervention Shaft being Constructed by Secant Pilling Method

4.4.2 Diversion of Utilities

There are several utilities known to be situated within the road corridor and footpath of St Stephen's Green East. These include:

- An 1,800mm brick "ovoid" Victorian sewer situated in central position running north south 3m beneath the road surface. An example of which is shown in Figure 4.5;
- A 1,710mm reinforced plastic mortar "ovoid" sewer situated beneath the surface of Hume Street that joins the St Stephen's Green East sewer described above where the streets intersect;
- Water mains beneath the cycle lane on the western side of St Stephen's Green East;
- ESB high voltage cable beneath the cycle lane on the western side of St Stephen's Green East;
- Gas mains, Eir and ESAT/British Telecom cables beneath the traffic lanes of St Stephen's Green East; and
- Water mains, ESB High Voltage and Eir cables beneath the eastern footpath of St Stephen's Green East

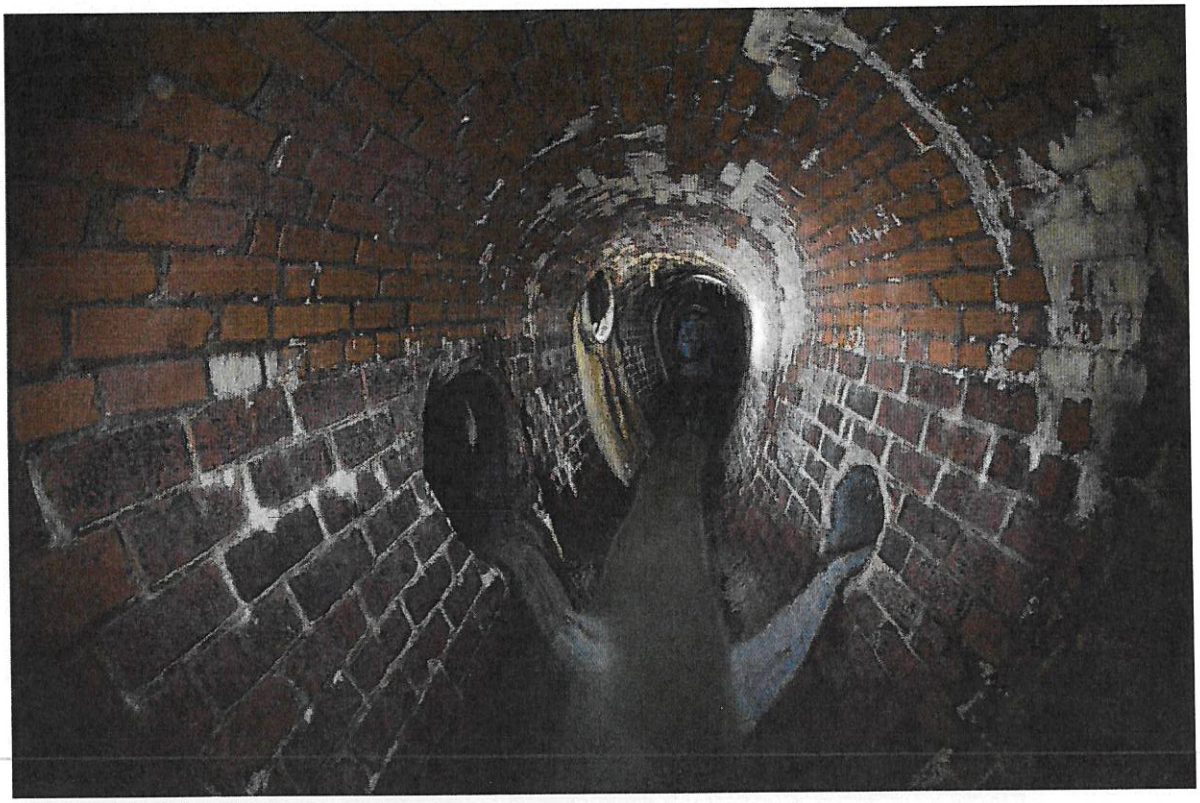


Figure 4.5: Typical Victorian Brick Sewer

There are no utilities under the western footpath of St Stephen's Green East which is within the National Monument boundary of St Stephen's Green Park.

4.4.2.1 Construction Requirements for Utility Diversions

Due to the depth of the Victorian sewer at St Stephen's Green East and in order to limit the extent of the surface works, the sewer diversions would be installed by trenchless techniques between two shafts/chambers approximately 6m diameter wide and 5m deep at suitable positions to the north and south of the potential station box location.

It would be necessary to install a temporary bypass system and subsequently divert the existing sewer services from above and around the sewer connection and diversion launch box areas. This would require the diversion of the footpath and two eastern traffic lanes on St Stephen's Green East. Furthermore, it may be necessary to close Hume Street to construct a temporary pump station to redirect the flow from the Hume Street sewer. However, once in place the use of trenchless techniques along St Stephen's Green East should allow Hume Street to be reopened.

As the existing sewer is beneath the centre of the road the launch chamber would need to be extended to the west to form the connections onto the north and south ends of the existing sewer, maintaining through flow at all times. When ready the side connections would be connected into the new sewer and the temporary bypass system disconnected. The through system would then be connected at the upstream end.

While the diversion of the Victorian sewer on St Stephen's Green East is the main constraint here, the diversion of other utilities would also require sequenced closure of alternate lanes right across the roadway.

It is estimated that two traffic lanes on St Stephen's Green East could be closed for 12 months or more in the event that significant utility diversions are required.

5. Potential Station Locations

5.1 Introduction

Seven potential station location options were developed for St Stephen's Green East. The Station Location options were developed using internal multidisciplinary workshops, where potential station locations were developed having regard to the constraints identified during the Stage 1 Review of the Receiving Environment analysis.

A description of each of the potential station locations are detailed in this section of the Report.

5.2 Location 1

Location 1 is situated primarily within the carriageway of St Stephen's Green East as shown in Figure 5.1**Error! Reference source not found.**. This station location has the following features:

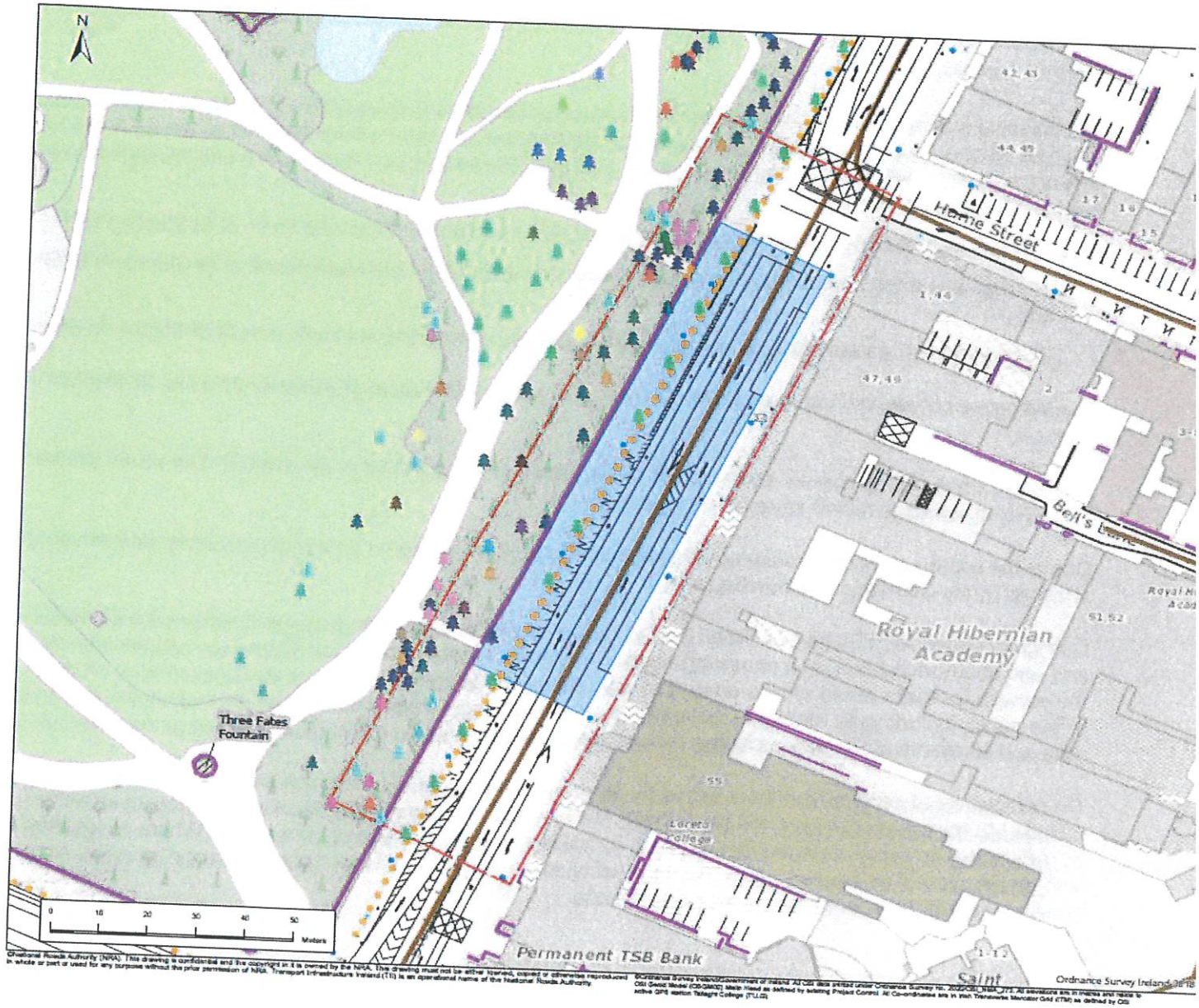
- The station box western extent is situated directly in line with St Stephen's Green East Park's eastern fence; and
- The eastern extent is situated in line with the footpath on the eastern side of St Stephen's Green East.

The indicative construction area as shown in Figure 5.1 takes in the entire footpath of the eastern side of St Stephen's Green and encroaches approximately 12m into St Stephen's Green Park.

The Victorian sewer described under St Stephen's Green East would require diversion east (away from St Stephen's Green Park) under the footpath on the street's eastern side. Another sewer situated under Hume Street joins the sewer running north/south under St Stephen's Green East. The station box has been located far enough south to avoid the point where these two sewers join. However, locating the station box to avoid the sewer makes the distance between Stephen's Green and Tara Stations greater than 1,000m resulting in the need for an intervention shaft at either Trinity College Dublin or Merrion Square.

For this location, St Stephen's Green East would be closed to through traffic and pedestrians during the construction phase. The entire area within the indicative construction site would be closed to the public including areas of St Stephen's Green Park. Vegetation and trees would be cleared fully within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement following construction.

On completion of the construction phase there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present in addition to the station entrance. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as would some ventilation shafts.


N
Three Fates Fountain
Royal Hibernian Academy
Permanent TSB Bank
Ordnance Survey Ireland

5.3 Location 2

The potential station Location 2 station box is situated further west than Location 1. While it is situated partially within St Stephen's Green East and partially within St Stephen's Green Park the location allows for an additional lane of traffic to remain open during construction. This position is shown in Figure 5.2 and the station box location has the following features:

- The central axis of the station box sit slightly west of the eastern perimeter fence of St Stephen's Green Park;
- The western extent is situated approximately 17m west of the perimeter fence of St Stephen's Green Park; and
- The station box eastern extent is situated so it aligns with the closest traffic lane to St Stephen's Green Park.

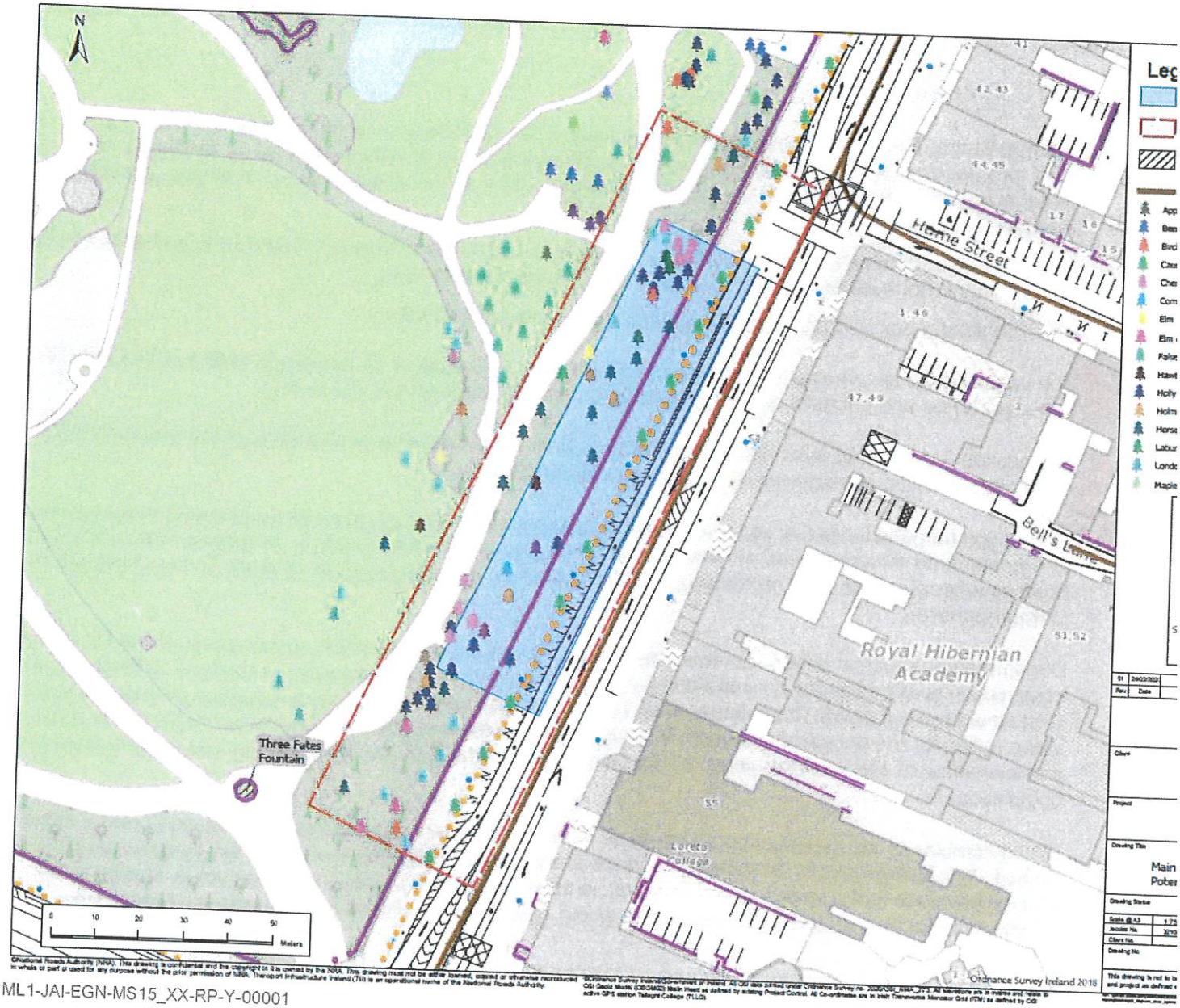
The indicative construction area as shown in Figure 5.2 encroaches approximately 27m into St Stephen's Green Park.

Location 2 does not require the sewer under St Stephen's Green East to be diverted. The sewer situated under Hume Street which joins this sewer is also avoided.

Due to the more southerly location of the station location, there would be a requirement for an intervention shaft at either Trinity College or Merrion Square.

During construction St Stephen's Green East would be partially closed to through traffic with two northbound traffic and one southbound bus lane remaining open. Using the indicative construction area, pedestrian access along the eastern footpath would remain open. The entire area within the indicative construction area would be closed to the public including St Stephen's Green Park. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement.

On completion of construction there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present within the park in addition to the entrance to the station which includes elevators and MetroLink signage. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as will some ventilation shafts.



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5.4 Location 3

Potential Station Location 3 would be situated entirely within St Stephen's Green Park as shown in Figure 5.3 and is, in turn, located further west than Location 2. This location is designed to avoid St Stephen's Green East carriageway and the footpath and protected structures that are situated there. This station location has the following features:

- The station box central axis sits approximately in line with the pathway that runs in a north-south direction within the north-eastern portion of St Stephen's Green Park; and
- The station box is located entirely within St Stephen's Green Park.

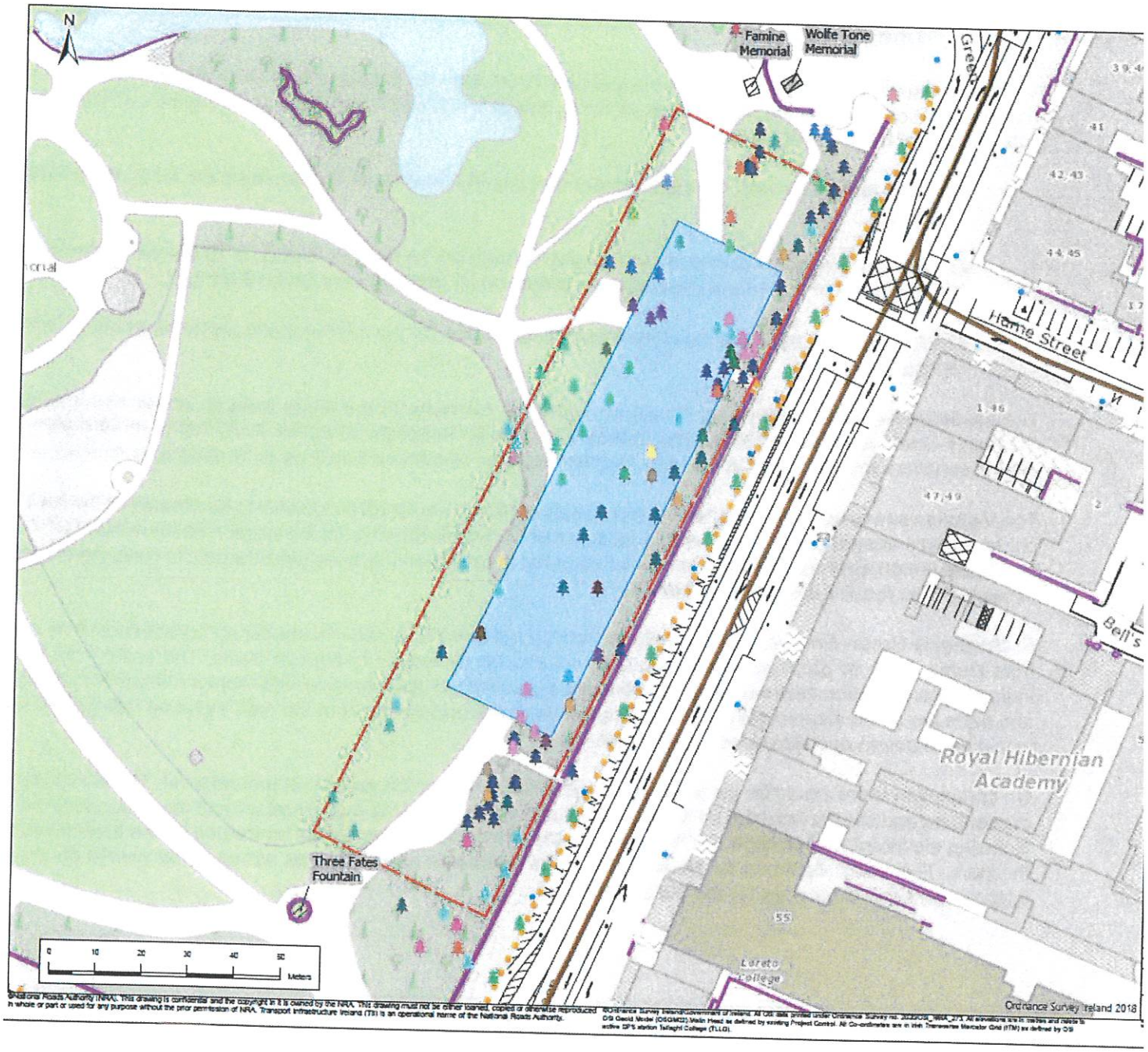
The indicative construction area as shown in Figure 5.3 is situated so its eastern boundary is just within park's perimeter fence and encroaches approximately 40m into St Stephen's Green Park.

As Location 3 is situated within St Stephen's Green Park it is situated far enough west not to require the diversion of utilities within the carriageway of St Stephen's Green East.

The station box and indicative construction area are situated far enough south avoid the north eastern plaza and the monuments situated there. However, this means the distance between St Stephen's Green and Tara St Stations is greater than 1,000m resulting in the need for an intervention shaft at either Trinity College Dublin or Merrion Square.

During the construction phase, the roadway on St Stephen's Green East will remain open. Using the indicative construction area pedestrian access along the eastern and potentially the western footpaths of St Stephen's Green East would remain open. The entire area of the park located within indicative construction area would be closed to the public for the construction phase. Vegetation and trees would be cleared from within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement on completion.

On completion of the construction phase there would be permanent elements of the station present within the park. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and MetroLink signage. The station box is situated too far west for lifts to be located on the footpath so these would need to be located within St Stephen's Green Park.


N
Famine Memorial
Wolfe Tone Memorial
Three Fates Fountain
Royal Hibernian Academy
Loreto College
Hume Street
Bell's
0 10 20 30 40 50
Meters
Ordnance Survey Ireland 2018

5.5 Location 4

Potential station Location 4 is situated in a similar east/west axis to Location 1 but is located 31m further north. It is situated primarily within the carriageway of St Stephen's Green East as shown in Figure 4.4. The station box location has the following features:

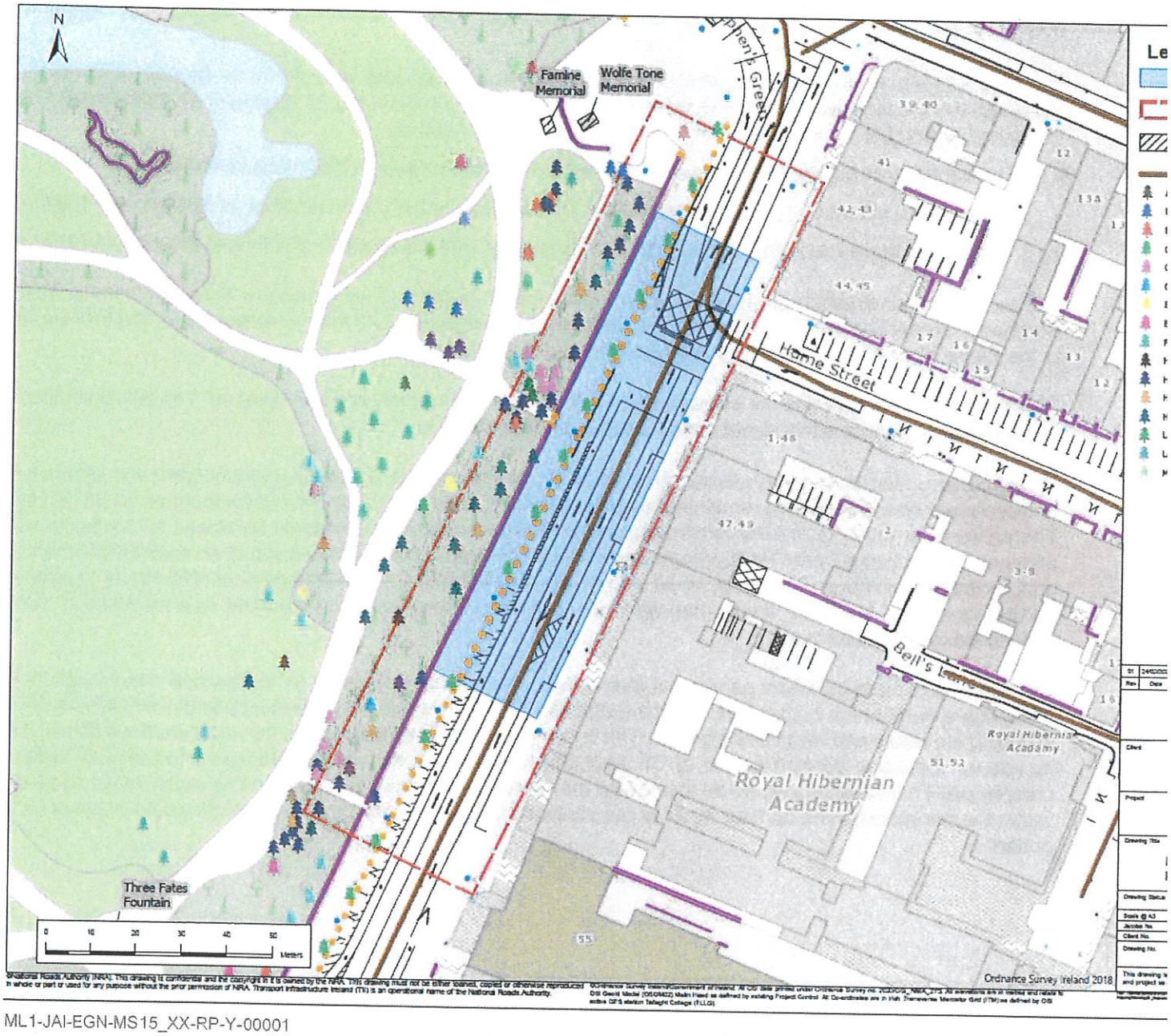
- The station box western extent is situated directly in line with St Stephen's Green East Park's eastern fence;
- The eastern extent is situated in line with the footpath on the eastern side of St Stephen's Green East but also takes in the front steps of several properties on St Stephen's Green East; and
- The northern extent of the station box is located across the junction between Hume St and St Stephen's Green East.

The indicative construction area as shown in Figure 4.4 takes in the entire footpath of the eastern side of St Stephen's Green and encroaches approximately 12m into St Stephen's Green Park. The north eastern corner of the construction area takes in the steps and accessways for several buildings on St Stephen's Green East

The Victorian sewer under St Stephen's Green East would require diversion east to be situated under the footpath on the street's eastern side. The sewer situated under Hume Street joins the sewer running north/south under St Stephen's Green East The station box is located at the point where these two sewers join meaning the Hume St sewer will also require diversion eastwards.

St Stephen's Green East would be closed to through traffic and pedestrians during construction. The right turn from Hume St to St Stephen's Green East would also be closed to through traffic. The entire area within the indicative construction area would be closed to the public including areas of St Stephen's Green Park. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for replacement.

On completion there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and signage. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as will some ventilation shafts. No intervention shaft is required for this station location.



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5.6 Location 5

Location 5 is situated partially within St Stephen's Green East and partially within St Stephen's Green Park. However, the location allows for three lanes of traffic to remain open during construction. This position is shown in Figure 5.5 and the station box location has the following features:

- The central axis sits slightly west of the eastern perimeter fence of St Stephen's Green Park;
- The western extent is situated approximately 17m west of the perimeter fence of St Stephen's Green Park;
- The station box eastern extent is situated so it aligns with the closest traffic lane to St Stephen's Green Park.

The indicative construction area as shown in Figure 5.5 is located so its eastern boundary intrudes onto of St Stephen's Green East's carriageway and encroaches approximately 27m into St Stephen's Green Park. It takes in the Wolfe Tone Memorial and Hungry Heart Memorial locations.

Location 5 would not require the sewer under St Stephen's Green East to be diverted. The sewer situated under Hume Street which joins this sewer would also not be impacted.

During construction St Stephen's Green East would be partially closed to through traffic with two northbound traffic and one southbound bus lanes remaining open. Pedestrian access along the eastern footpath would remain open. The entire area within indicative construction area shown in Figure 5.5 would be closed to the public including areas of St Stephen's Green Park. Vegetation would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement. The Wolfe Tone Memorial and Hungry Heart Memorial are located within the indicative construction area and as a result would be moved and stored for reinstatement.

On completion there would be permanent elements of the station present on the surface. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and MetroLink signage. The entrance would be situated on the southern edge of the plaza that makes up the north eastern corner of St Stephen's Green Park and incorporated into the park entrance on completion. The lifts shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as would some ventilation shafts. No intervention shaft would be required for this option.

N
Famine Memorial
Wolfe Tone Memorial
Stephen's Green
Hamie Street
Bell's Lane
Royal Hibernian Academy
Three Fates
Ordnance Survey Ireland 2018

5.7 Location 6

This station location would be located entirely within St Stephen's Green Park as shown in Figure 5.6. This location is designed to avoid St Stephen's Green East road, the footpath and buildings that are situated there. The station box location therefore has the following features:

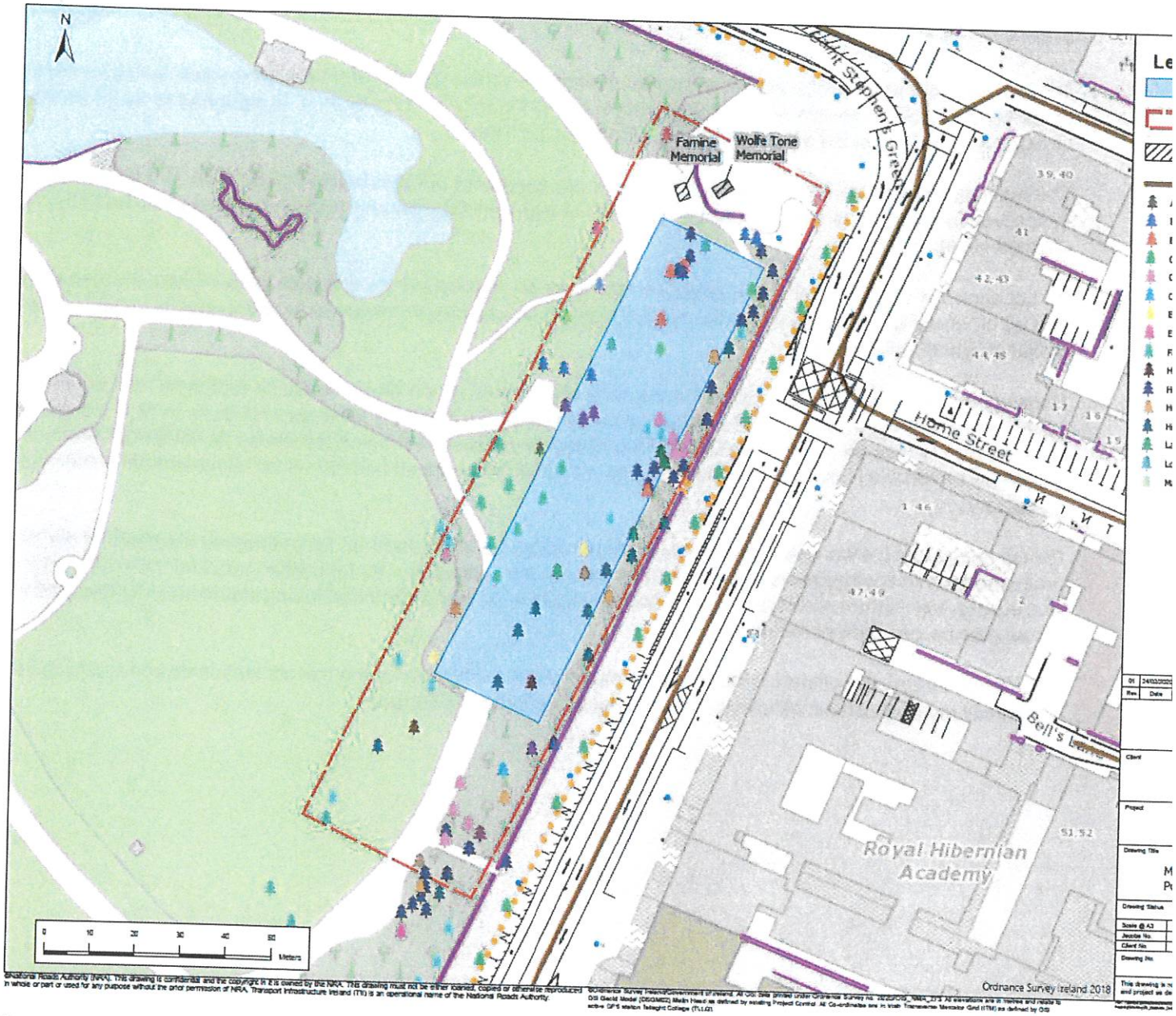
- The station box central axis and the tunnel sit approximately in line with the pathway that runs in a north-south direction within the north-eastern portion of St Stephen's Green Park; and
- This station location is located fully within St Stephen's Green Park.

The indicative construction area as shown in Figure 5.6 is situated so its eastern boundary is just within park's perimeter fence and encroaches approximately 40m into St Stephen's Green Park. The station box and indicative construction area envelop the north eastern plaza and the monuments situated there. These monuments would be moved prior to the construction phase and stored in a secure location for reinstatement.

As Location 6 is situated within the St Stephen's Green Park it does not require the diversion of any utilities.

During construction St Stephen's Green East would remain open. Using the indicative construction area pedestrian access along the eastern and potentially the western footpaths of St Stephen's Green East would remain open. The entire area of park within indicative construction area would be closed to the public. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for replacement as necessary.

On completion there would be permanent elements of the station present within the park. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights and the entrance to the station including elevators and MetroLink signage would be present. This location would affect the interior concept design of the station as skylights would potentially not be feasible so far into the park.


N
Famine Memorial
Wolfe Tone Memorial
Saint Stephen's Green
Home Street
Bell's Lane
Royal Hibernian Academy
Ordnance Survey Ireland 2018

5.8 Location 7

This potential station location would be located entirely within the Earlsfort Terrace roadway and also the footprint of buildings on either side of the street as shown in Figure 5.7. This location is designed to avoid St Stephen's Green Park by moving the station south onto Earlsfort Terrace.

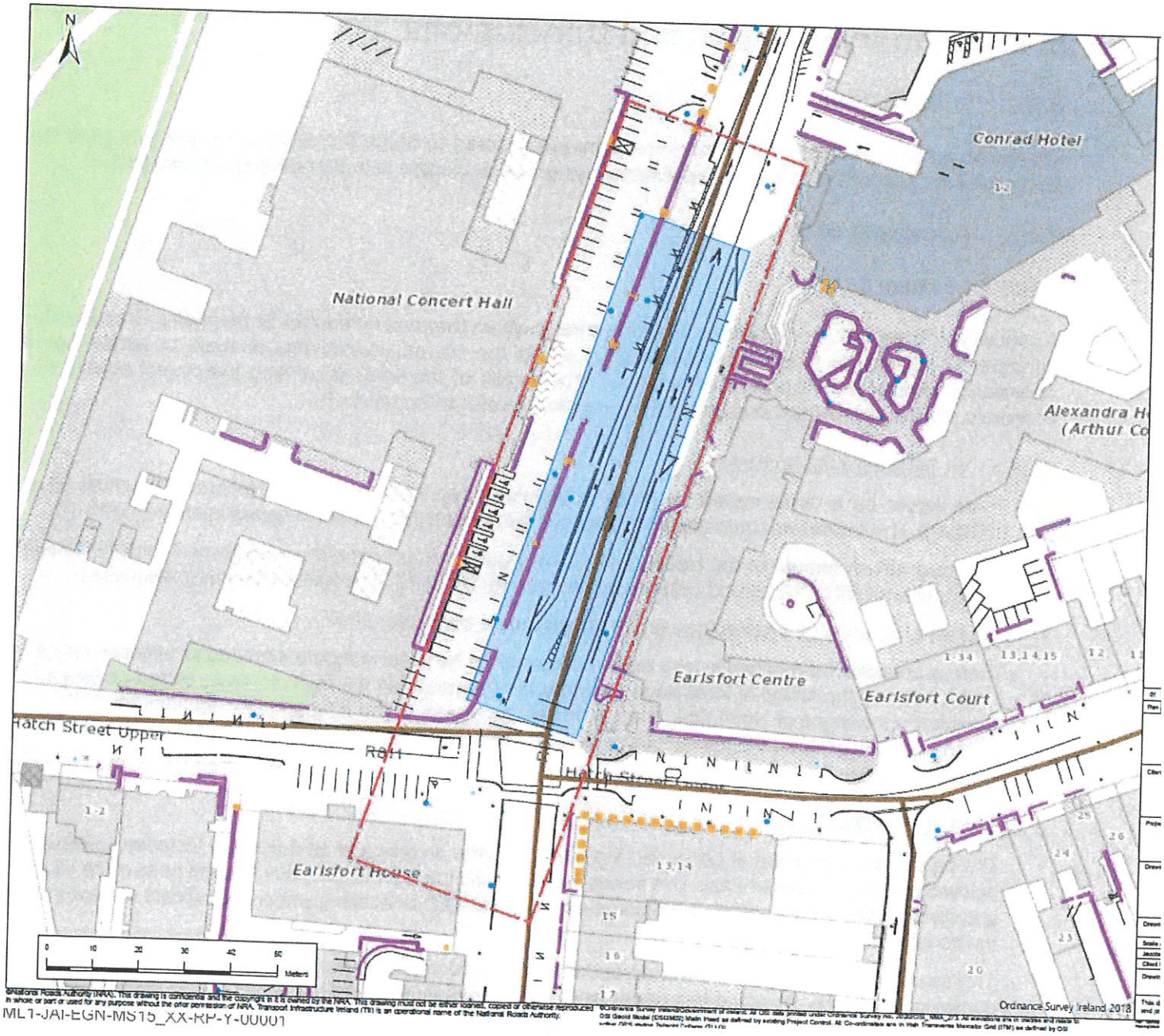
The indicative construction area conflicts with the access to an office building and a hotel. The station box and indicative construction area occupies the width of Earlsfort Terrace and extends to the front steps to the National Concert Hall.

As Location 7 is situated within Earlsfort Terrace it would require the diversion of the 1,800mm Victorian Sewer and all other utilities present under the road. These would require diversion to the east directly impacting on the buildings situated there.

Earlsfort Terrace would be closed for the duration of construction phase including footpaths and the entrances to buildings adjacent to or within the indicative construction area. Street trees and trees in front of the National Concert Hall would be removed within the construction area. Architectural elements within the grounds of the National Convert Hall, including walls and gates would be removed and stored for reinstatement on completion as necessary.

On completion of the construction phase, there would be a requirement for permanent elements of the station to be located within footpaths along Earlsfort Terrace. These include lifts for passengers and the emergency access and egress. Ventilation shafts, sky lights and the entrance to the station including elevators and MetroLink signage would also be permanent features.

A station location on Earlsfort Terrace would impact the feasibility of the current station design as skylights would potentially not be feasible within the carriageway of Earlsfort Terrace.



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6. Preliminary Analysis and Conclusions

6.1 Introduction

The seven options described in Section 5 have been subjected to Stage 3 preliminary analysis as described in Section 4.2.3 to ascertain if they are feasible and should be subjected to further Stage 4 assessment.

6.2 Appraisal of Options

6.2.1 Location 1

As shown in Figure 5.1, Location 1 is situated primarily within the road corridor of St Stephen's Green East. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.1.1 St Stephen's Green Park

- There would be a direct impact on in St Stephen's Green Park which is a National Monument (DU018-020334-). The indicative construction area within the National Monument is approximately 717m^2;
- Protected structures within the National Monument curtilage including the eastern perimeter fence railings and plinth wall (RPS 7751) and bollards and lampposts (RPS 7752) would be directly impacted;
- If present, subsurface archaeology would potentially be impacted; and
- There is potential for medium to long term impacts on the National Monument related to landscape and visual impacts due to the felling of trees and vegetation clearance within the park. Trees impacted include mature, dominant specimens of Holm Oak and Sycamore. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.1.2 Victorian Sewer

- The provision of a station at Location 1 would require the diversion of an 1,800mm Victorian sewer situated below St Stephen's Green East. This sewer is of strategic importance and serves large parts of the city centre and as a result, the diversion of the same would be difficult to achieve without significant disruption during the construction phase;
- The sewer would need to be diverted underneath the footpath on the eastern side of the road during the construction phase. Diverting this sewer would be extremely technically challenging, expensive and difficult to achieve due to its age, shape, depth and size. This would create significant additional construction related impacts to those associated with constructing the station box resulting in a larger construction footprint and extended construction phase; and
- The sewer diversion would require the St Stephen's Green East road to be closed for the duration of the construction phase which would result in significant disruption to pedestrians, public transport and traffic on this critical transport corridor. There is potential for direct impacts on the cellars of a number of buildings listed on the RPS located on the eastern side of St Stephen's Green East. These buildings are Listed in Table 4.4 of this Report.

6.2.1.3 Transport & Traffic

- In addition to the sewer diversion, the location of the station box in the road corridor would also require the closure of all traffic lanes on St Stephen's Green East during construction;

- The closure of St Stephen's Green East would result in the diversion of 384 bus movements during the AM peak; and approximately 1,711 Passenger Car Units (PCU) that utilise St Stephen's Green East in the AM peak would also be displaced. These diversions would result in significant increased traffic congestion in the surrounding area of the city as a result for the duration of the construction phase, with the AM and PM peak hours seeing the worst impacts.

6.2.1.4 Intervention Shaft

- The position of Location 1 means that an additional intervention shaft would be required between Location 1 and Tara Station;
- The provision of an intervention shaft would result in a significantly increased construction phase with an additional construction site required at a sensitive location between Tara Street and St Stephen's Green East This would result in significantly increased costs and environmental impacts associated with this construction; and
- There would be additional permanent environmental impacts associated with the permanent surface structures, access roads and other elements required for the intervention shaft.

6.2.1.5 Overall

Overall due the above factors, Location 1 scores poorly against all criteria assessed. Due to the overall poor performance against all assessment criteria Location 1 was not considered to be a feasible station location and was not taken forward for further analysis.

6.2.2 Location 2

Potential station location is illustrated in Figure 5.2. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.2.1 St Stephen's Green Park

- Location 2 would have a greater impact on St Stephen's Green Park (than Location 1) as it is situated further west, and more vegetation removal would occur during construction. The indicative construction area would occupy approximately 2,157m^2 of the park;
- The National Monument would experience potentially medium to long term direct landscape and visual impacts due to the felling of trees and vegetation clearance within the park;
- As with Location 1 the protected structures within the National Monument curtilage, including perimeter fence railings and plinth, bollards and lamp posts, would be directly impacted. They would be removed prior to construction and reinstated following construction;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.2.2 Victorian Sewer

- The 1,8000 Victorian sewer would be maintained and would not require diversion for this potential station location.

6.2.2.3 Traffic and Transport

- St Stephen's Green East would be partially closed to allow the construction of the station box for this potential station location. However, enough capacity for car, bus and HGV traffic would be maintained with some disruption anticipated.

6.2.2.4 Intervention Shaft

- As with Location 1, Location 2 is located such that an intervention shaft would be required. As a result, the same significant impacts as described for Location 1 would result here.

6.2.2.5 Overall

This location performs poorly against Project Objective, Economy and Environmental criteria. Performance against the Engineering criteria is moderate as the diversion of the Victorian sewer would be avoided. However, due to the overall poor performance against assessment criteria Location 2 was not considered to be a feasible option and as result was not taken forward for further analysis.

6.2.3 Location 3

Potential station location is illustrated in Figure 5.3. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.3.1 Victorian sewer

- The 1,800 Victorian sewer on St Stephen's green East would be maintained for this potential station location.

6.2.3.2 Traffic and Transport

- Traffic and transport routes on St Stephen's Green East would not be directly impacted for this station location during the construction phase.

6.2.3.3 Intervention shaft

- The position of Location 3 means that an additional intervention shaft would be required between Location 3 and Tara Station. Potential impacts of this would be in line with those described for Location 1.

6.2.3.4 St Stephen's Green Park

- The provision of a station at Location 3 would have medium to long term impacts on the National Monument. The perimeter fence railings and plinth and other protected structures on the footpath (and within the curtilage of the National Monument) would be directly impacted; and
- As with Locations 1 and 2 there would be impacts on protected structures, undiscovered archaeology, trees and vegetation within St Stephen's Green Park. However, as the station box and indicative construction area are located entirely within the park there would be more significant direct impacts than for other station locations due to more significant tree and vegetation clearance. The indicative construction area for this location would occupy approximately 2,704m2 of the area of the National Monument. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.3.5 Overall

This location performs moderately against the engineering assessment criteria as the Victorian sewer on St Stephen's Green East is maintained but this station location still requires an intervention shaft to be constructed. The potential station location performs poorly against Economy criteria due to the need for an intervention shaft. The location performs poorly against environmental criteria as the location is entirely within St Stephen's Green park and due to the requirement for an Intervention Shaft. Due to the overall poor performance against assessment criteria this location was not considered to be viable and was not progressed for further analysis.

6.2.4 Location 4

Potential station location is illustrated in Figure 5.4. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.4.1 Victorian Sewer

- The provision of a station at Location 4 would require the diversion of an 1,800mm Victorian sewer situated below St Stephen's Green East as with Location 1. The strategic importance of the sewer would create significant construction phase impacts and add significant cost;
- The location of the station box would also require a sewer under Hume Street to be diverted. This sewer has a junction with the Victorian sewer. This would create additional traffic impacts on Hume Street and its junction with St Stephen's Green East; and
- Diverting the sewer underneath the footpath would result in potential direct impacts on the cellars of a number of buildings listed on the RPS on St Stephen's Green East. These buildings are listed in Section 4.3.5 of this report.

6.2.4.2 Traffic and Transport

- As described for Location 1, Location 4 would require the closure of St Stephen's Green East traffic lanes during construction due to the location of the station box;
- All bus, car and pedestrian traffic would need to be diverted away from this location resulting in significant impacts. These diversions would result in significant increased traffic congestion in the surrounding area of the city as a result for the duration of the construction phase, with the AM and PM peak hours seeing the worst impacts.

6.2.4.3 Intervention shaft

- No intervention shaft would be required for potential station location 4.

6.2.4.4 St Stephen's Green Park

- St Stephen's Green Park would be directly impacted in a similar way to Location 1 although situated 31m further north along St Stephen's Green East. The indicative construction area within the National Monument is 729m2;
- Protected structures within the National Monument would be directly impacted including the perimeter fence railings and plinth, bollards and lampposts;
- If present, subsurface archaeology would potentially be impacted;
- Landscape and visual impacts would occur due to the felling of trees and vegetation clearance within the park. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.4.5 Overall

The full closure of St Stephen's Green East during the construction phase, including its junction with Hume Street would prevent all traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. These factors all trigger a poor rating against the environment criteria;

Constructing the station under St Stephen's Green East increases the construction cost due to factors such as reinstating the road surface and diversion of utilities. This results in a poor performance against the engineering criteria. The additional cost associated with this results in a moderate performance against the economy criteria. Due to the overall poor performance against assessment criteria this location was not considered to be viable and was not progressed to Stage 4.

6.2.5 Location 5

Location 5 is situated partially within the road corridor of St Stephen's Green East as shown in Figure 5.5. It is similar to Location 2 but is moved further north along St Stephen's Green East to avoid the requirement for an intervention shaft.

The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.5.1 St Stephen's Green Park

- The construction phase would impact directly on St Stephen's Green Park having regard to architectural heritage, archaeology, biodiversity and landscape impacts. The indicative construction area would occupy approximately 2,181m2 of the park. The plaza in the north eastern corner of St Stephen's Green Park including the Wolfe Tone Memorial and Hungry Heart memorial would be directly impacted in addition to protected structures (railings and plinth, bollards and lampposts) and undiscovered archaeology;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.5.2 Victorian sewer

- The 1,800mm Victorian sewer would be maintained during construction with no requirement for a diversion.

6.2.5.3 Traffic and Transport

- St Stephen's Green would be partially closed during construction as described for Location 2. Bus, PCU and HGV traffic movements would be disrupted but satisfactorily maintained to minimise traffic impacts.

6.2.5.4 Intervention shaft

- No intervention shaft would be required if a station was built at this location.

6.2.5.5 Overall

Location 5 has a moderate performance against the project objective criteria requiring the project to be sustainably constructed and operated and to be integrated into the public realm. However, this station location delivers a poor performance against the environment criteria due to direct impacts on the National Monument, particularly during the construction phase. Reduced construction risk within St Stephen's Green Park means Location 5 achieves moderate performance against the engineering sub-criteria for constructability. While there are potential impacts on the receiving environment, utilities and traffic, Location 5 was deemed to have performed sufficiently against the assessment criteria to warrant further assessment under the Stage 4 MCA process.

6.2.6 Location 6

Location 6 is situated entirely within the boundary St Stephen's Green Park. It is similar to Location 3 but is further north removing the need for an intervention shaft.

The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.6.1 St Stephen's Green Park

The station box and indicative construction area are entirely within St Stephen's Green Park. The indicative construction area would occupy 2,704m^2 of the National Monument resulting in significant direct impacts on existing trees and vegetation including:

- Felling of trees and clearance of other vegetation within the park would cause medium to long term impacts on the park;
- The eastern extent of the indicative construction area would directly impact protected structures including railings and plinth, bollards and lampposts. The plaza in the north eastern corner of St Stephen's Green Park including the Wolfe Tone Memorial and Hungry Heart memorial would also be impacted;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.6.2 Victorian Sewer

- The Victorian Sewer on St Stephen's Green East would not require diversion during the construction phase.

6.2.6.3 Traffic and Transport

- Traffic and transport routes on St Stephen's Green East would not be directly impacted.

6.2.6.4 Intervention shaft

- No Intervention shaft would be required for this location

6.2.6.5 Overall

Location 6 performs poorly against the Project Objective criterion as integrating station elements entirely within the park environment would be difficult to achieve without significant landscape and visual impacts. However, constructing the station within St Stephen's Green Park reduces construction costs. This allows Location 6 to achieve a good performance against the economy criteria. The construction phase impacts would be significant on St Stephen's Green Park particularly potential impacts on architectural heritage, archaeology, biodiversity and the landscape and visual amenity. This results in a poor performance against environment criteria.

While there are potentially significant impacts on St Stephen's' Green Park, this option has advantages in not impacting traffic and utilities on St Stephen's Green East and lower costs of reinstatement post construction. Therefore, Location 6 was deemed to warrant further analysis under the Stage 4 MCA process.

6.2.7 Location 7

Location 7 is situated entirely within Earlsfort Terrace and does not impact on St Stephen's Green directly. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this

potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.7.1 St Stephen's Green Park

There would be no direct impact on St Stephen's Green Park arising from this potential station location.

6.2.7.2 Victorian Sewer

- Location 7 would require a significant diversion of the Victorian Sewer on Earlsfort Terrace. This sewer diversion would be very difficult to achieve given the very limited space either side of the station box on Earlsfort Terrace without impacting on properties such as the National Concert Hall.

6.2.7.3 Transport &Traffic

- Traffic and transport routes on Earlsfort Terrace would be directly impacted for the duration of the construction phase.

6.2.7.4 Intervention shaft

- The position of Location 7 means that an additional intervention shaft would be required between Location 7 and Tara Station. Potential impacts of this would be in line with those described for Location 1.

6.2.7.5 Overall

Location 7 performs poorly against the Project Objective criterion as a station located at Earlsfort Terrace would not provide good public transport network legibility due a lack of key trip attractors in this area. Furthermore the location would not perform as well in terms of public transport interchange or customer patronage levels as other options due to the location further from key city centre locations and within 450m of Charlemont Station. In this regard it is significantly inferior to options on St Stephen's Green East.

This location performs poorly against the engineering assessment criteria as the Victorian sewer along Earlsfort Terrace requires diversion and there would be a requirement for an intervention shaft to be constructed. The location performs poorly against economy criteria due to the need for an intervention shaft. The location performs poorly against environmental criteria as the location would impact on nearby sensitive receptors such as the National Concert Hall and an adjacent hotel during the construction phase. Furthermore, the construction of this station entirely within Earlsfort Terrace would require significant traffic and public transport diversions during the construction phase. Due to the overall poor performance against all of the assessment criteria this location was not considered to be viable and was not progressed to Stage 4.

6.2.8 Stage 3 Preliminary Analysis Outcome

An appraisal table has been prepared and is shown below in Table 6.1. The table collates and summarises the appraisal of each potential station location under each of the assessment criteria.

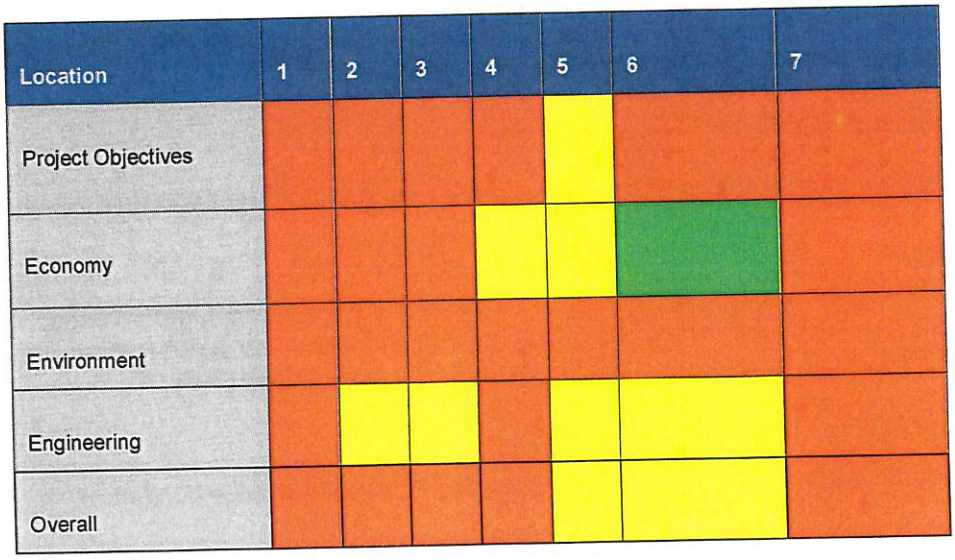

Table 6.1: Summary of Results of Stage 3 Analysis

The results show Locations 1 to 3 and 7 perform poorly against the economy appraisal criteria due to the need for an intervention shaft. Location 7 would also require the diversion of a significant length of the Victorian sewer. Locations 1-4 and 7 perform poorly against the environmental criteria due to environmental impacts associated with the required Intervention shaft. Location 4 also performs poorly against this criterion due to impacts on traffic and utilities.

Location 5 performs better overall when compared with other locations because:

- It does not require an intervention shaft or the diversion of the Victorian sewer. It is an "intermediate" option as it avoids the more significant construction phase impacts associated with Locations 1-3 and 7 and
- It avoids the more significant impacts on St Stephen's Green Park associated with Locations 4 and 6.

On this basis it is recommended that Location 5 proceed to Stage 4 assessment.

Location 6 performs well against the economy criterion as it is located entirely within the St Stephen's Green Park and therefore avoids the more expensive reinstatement costs associated with road surfaces and utility diversions. The location within the park and associated direct impacts however drives a poor performance against the environmental criteria. However, it performs moderately well against the engineering criterion as it does not require an intervention shaft, utility or traffic diversions. This coupled with good performance against the economy criteria means that Location 6 will proceed to Stage 4 assessment.

The nature of the constraints in the study area mean that options 5 and 6 perform poorly against certain criteria but are advanced for further assessment because they are considered more feasible from a cost, engineering and environmental perspective than Locations 1-4 and 7.

It is therefore recommended that Options 5 and 6 are progressed to the Stage 4 MCA process.

7. Multi-Criteria Analysis and Conclusions

7.1 Introduction

A MCA was undertaken for Stage 4 using economic and environmental criteria.

7.2 Assessment summaries

The proposed station locations are assessed having regard to their potential economic and environmental impacts. Engineering criteria are not considered further here as the station locations to be analysed are both feasible from an engineering perspective.

7.2.1 Location 5

Detail on the principle environmental and economic constraints and opportunities are provided below for potential station location 5. These were identified as part of a full multidisciplinary analysis undertaken for this potential station location. For full details of the analysis utilising the economic and environmental criteria, please refer to Appendix C.

7.2.1.1 St Stephen's Green

- The station box and indicative construction area could have direct impacts on mature trees and other vegetation on the eastern edge of St Stephen's Green Park. An estimated 75 trees are located within the proposed construction area including 55 that are mature. Of these 4 are A2[1] rated, 1 is A3 and 33 are B2 trees. Of these one is a London Plane, one is a "dominant" Wych Elm (which has a B2 rating). The above-mentioned trees would require felling to allow for the construction of the station box resulting in medium to long term impacts on the landscape & visual amenity of the area and the setting of the National Monument;
- The eastern edge of the station box and construction area directly impacts protected structures within the National Monument boundary. These structures include railings and plinth wall, bollards and lampposts. These impacts would occur for the length of the station box and indicative construction area during the construction phase. However, all of these elements of architectural heritage would be reinstated following the completion of the construction phase;
- There is potential for significant impacts on unrecorded sub-surface archaeology within the park including a 17th Century perimeter wall and ditch. The impacts on subsurface archaeology would be for the length of the construction area but particularly for the area where the station box would be excavated, and diaphragm walls constructed;
- In the long term, there would be a small number of station elements visible at the surface level including the main station access, lift shafts, ventilation shafts and the proposed station skylights. The most significant of these elements including the main station access and the lift shafts would be located largely outside of the St Stephen's Green Park area. While this would still be within the curtilage of the National Monument, these elements would be integrated into the area with good design;
- In the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.
- This station location would not require the diversion of the Victorian sewer which means that the construction phase associated with this station location would be much less significant than if this diversion was required.

[1] In accordance with tree quality assessment BS5837:2012

Furthermore, there would be no direct impacts on properties contained on the Dublin City Council Record of Protected Structures (RPS) on the east side of St Stephen's Green East;

7.2.1.2 St Stephen's Green East – Traffic & Transport

- Location 5 would require some minor diversions of utilities including water, gas and communications lines that are situated under the northbound traffic lanes of St Stephen's Green East. However, this station location does not require the diversion of the Victorian sewer which would mean that the construction phase associated with this station location would be much less significant than if this diversion was required;
- Location 5 would require works within the road carriageway of St Stephen's Green East. This location would require the roadway of St Stephen's Green East to be partially closed to through traffic with two northbound traffic and one southbound bus lane remaining open. Pedestrian access along the eastern footpath would remain open. As a result, some transport and traffic disruption would occur during the construction phase, particularly during AM and PM peak hours. However, a transport and traffic assessment of this option identified that the impacts on public transport and traffic movements in the area would be manageable.

7.2.1.3 Overall

- This location achieved good performance against the economy criterion based on construction and surface reinstatement costs;
- A range of performance results against the environmental criteria occurred. The performance was found to be poor or very poor for impacts associated with mature tree loss within the park and impacts on the National Monument generally. However, the station location performed well against Traffic and Transport and Utilities (material assets) criteria due to being able to avoid significant constraints relevant to these disciplines.

7.2.2 Location 6

Detail on the principle environmental and economic constraints and opportunities are provided below for potential station location 6. These were identified as part of a full multidisciplinary analysis undertaken for this potential station location. For full details of the analysis utilising economic and environmental criteria, please refer to Appendix C.

7.2.2.1 St Stephen's Green

- Impacts on the National Monument would be similar to those described for Location 5 in the preceding section including direct impacts on protected structures and archaeology. However, the impacts would be more significant due to Location 6 being located completely within St Stephen's Green Park.
- 98 trees would be within the construction area including 70 that are mature. Of these 16 are A2, 1 is A3 and 35 are B2 trees. Of these four are London Plane, one is a "dominant" Wych Elm. The above-mentioned trees would require felling to allow for the construction of the station box resulting in medium to long term impacts, which would be more significant than for Location 5;
- All station elements including "pop-ups" would be located within the park including lift shafts, ventilation shafts and the proposed station skylights. These would be difficult to integrate into the park setting.

- This station location would not require the diversion of the Victorian sewer which means that the construction phase associated with this station location would be much less significant than if this diversion was required. Furthermore, there would be no direct impacts on properties contained on the Dublin City Council Record of Protected Structures (RPS) on the east side of St Stephen's Green East;

7.2.2.2 St Stephen's Green East – Traffic & Transport

- Location 6 avoids direct impacts on traffic and transport networks along St Stephen's Green East as the station location and the required construction area would be fully located within St Stephen's Green park;
- Location 6 would not require utility diversions at St Stephen's Green East. As a result, the construction phase associated with this station location would be much less significant than if utility diversions were required.

7.2.2.3 Overall

- Location 6 performs better against the economy criteria than Location 5. Surface reinstatement of park or green space is relatively economical when compared with road surface construction or utility diversions. These factors improve the Location 6 performance against the economic criteria when compared to Location 5;
- Location 6 performs very poorly against most environmental criteria especially those associated with the National Monument due to the fact that the station location is fully within St Stephen's Green park requiring a more significant footprint within the park during the construction and operational phase. Location 6 would require all above ground elements (pop ups) to occur within the park while Location 5 would have a less significant impact on the park, as some of the more significant surface elements would be located outside of the fence line of the park.

7.3 Stage 4: MCA outcomes

An appraisal summary table has been prepared which collates and summarises the MCA of Locations 5 and 6 in Table 7.1below.

CRITERIA	LOCATION 5	LOCATION 6
ECONOMY		
Cost		
ENVIRONMENTAL		
Air and Climate		
Noise and Vibration		
Biodiversity		
Non-Agricultural Properties		
Cultural Heritage: Archaeology		
Cultural Heritage: Architectural Heritage		
Landscape and Visual		
Traffic and Transport		
Utilities		
Population and Human Health		

Table 7.1: Stage 4 MCA

8. St Stephen's Green Station Preferred Location

The choice of a preferred location for a MetroLink Station at St Stephen's Green East was determined based on a robust assessment process of a number of potential station locations. This built on earlier completed work in ARUP (2017) which identified St Stephen's Green East as the best location for a MetroLink station.

The Stage 3 multicriteria analysis ruled out Locations 1 to 4 and 7 due to poor performance against Project Objectives, economy, environmental and engineering criteria. The poor performance of Locations 1-3 and 7 was due in part to the need to construct an Intervention Shaft between St Stephen's Green and Tara Street. In addition, station locations that required the Victorian and Hume Street sewers to be diverted and the full closure of St Stephen's Green East or Earlsfort Terrace to public transport and traffic during the construction phase were not taken to Stage 4 for further assessment.

Locations 5 and 6 were brought forward to Stage 4 where a further MCA was undertaken using Environmental and Economy criteria. Both of these station locations have a direct impact on St Stephen's Green Park, but due to the proposed station locations they avoid the following impacts;

- Diversion of the Victorian sewer and Hume Street sewer and associated impacts resulting from a more extensive construction area and duration;
- The closure of St Stephen's Green East to public transport and traffic during the construction phase; and
- Direct impacts on buildings listed on the RPS on St Stephen's Green East.

The outcome of the Stage 4 MCA was that Location 5 was chosen as the preferred location for the proposed MetroLink station as it significantly reduces the impact on St Stephen's Green Park when compared to Location 6. Location 5 results in the requirement for less vegetation removal and trees to be felled to allow for the construction of the station when compared with Location 6. In addition, the long term impacts on St Stephen's Green Park are significantly less for Location 5 as the main surface elements of the proposed station are largely located outside of the current extent of St Stephen's Green Park.

Furthermore, the choice of Location 5 allows for the long term impacts of the station location to be significantly mitigated by replanting of trees and other vegetation, in addition to the reinstatement of existing elements of architectural heritage. In addition, high-quality design of station "pop-ups" would allow for the development of a high quality urban environment in the north eastern corner of St Stephen's Green.

Station Location 5 will now be subject to further design development and potential impacts will be assessed, with mitigation measures recommended. The outputs of the assessment and recommended mitigation measures will be presented in the EIAR for the project.

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Appendix A. Cultural Heritage Background: St Stephen's Green Park and St Stephen's Green East

A.1 Introduction

This appendix has been prepared by TII to supplement the Jacobs/Idom St Stephen's Green Station Study Assessment Report. It provides an illustrated cultural heritage background of various heritage constraints identified for both St Stephen's Green Park and St Stephen's Green East. The information presented was utilised as background information for the purposes of developing an in-depth understanding of St Stephen's Green as an input into identifying the preferred station location.

A.2 St Stephen's Green Park (East) - Cultural heritage items

The items of cultural heritage on the east side of St Stephen's Green Park, can be broken down into the following categories, noting these do not address the design of the parks Victorian landscape itself which is addressed by the appropriate Landscape and Visual Specialist. In addition, this appendix addresses only those elements, which lie within the construction zone of the various MetroLink St Stephen's Green station options:

1. Perimeter railings, gates and plinth wall of the perimeter boundary (RPS 7751);
2. The surrounding bollards and traditional-style lamp-posts (RPS 7752) which help define the perimeter footpath of the park; and
3. Sculptures

A.2.1 Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East; RPS 7751 - 7752)

From its origins, St Stephen's Green Park has traditionally been an enclosed park. In the 17th and 18th century this was achieved by means of an external masonry wall. In 1815 this was changed to a dwarf (6-8 inch high) granite plinth wall with a 6 foot high cast-iron railing, external to which lay a 25 foot gravel (and possible grass) walk delineated by a row of granite bollards linked by chains (Figure A1.1). The railings were manufactured in the foundry of Abraham Mason on 10 Dawson Street (McCabe 2011, 258-9) and had spearhead finials intervened with daggers. No trees were planted on the walk from 1815-1870, and it was illuminated by lampposts which were set onto the surrounding bollards.

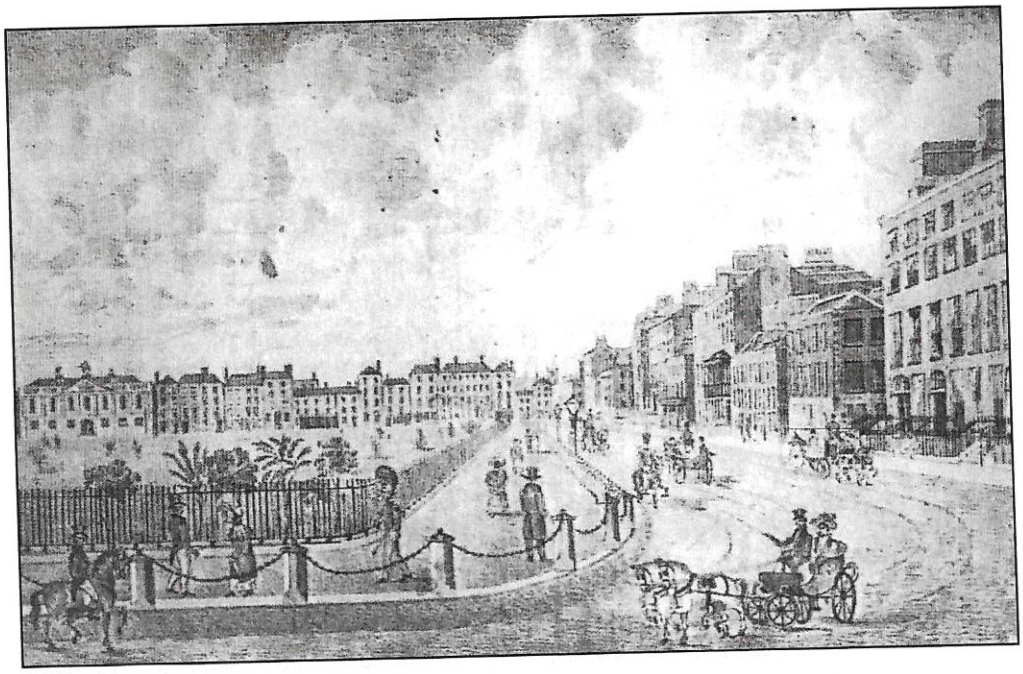


Figure A1.1: View of St Stephen's Green North c. 1828-30 by H. Madden (after McCabe 2011). Note absence of Lime Walk, perimeter ditch, and limited interior planting.

From 1877-1880 under the auspices of Ardilaun Guinness, the park was enclosed with new railings, replicating the design of 1815. The latter were used where suitable to define internal elements of the park with low foot rails also installed defining internal gravel paths. Large cast-iron access gates were inserted onto each of the parks four corners, with wicket gates also installed three each on the south and north sides, two to east and west. The latter number has been increased to five to accommodate access to additional features such as the twentieth century Toilet Block. The granite bollards and chains were retained and continue (minus the chains) to define the perimeter of the park today (Figures A1.2 – A1.4). The perimeter path was a likely to initially have comprised a mix of gravel and paving, with drawings from 1901 showing a change to a mix of concrete and gravel (Figure A1.3). These drawings also illustrate the design and spacing of the historic street furniture (bollards [73 no.], lamp standards [12 no] and tree guards) on St Stephen's Green Park East (see Figure A1.4).

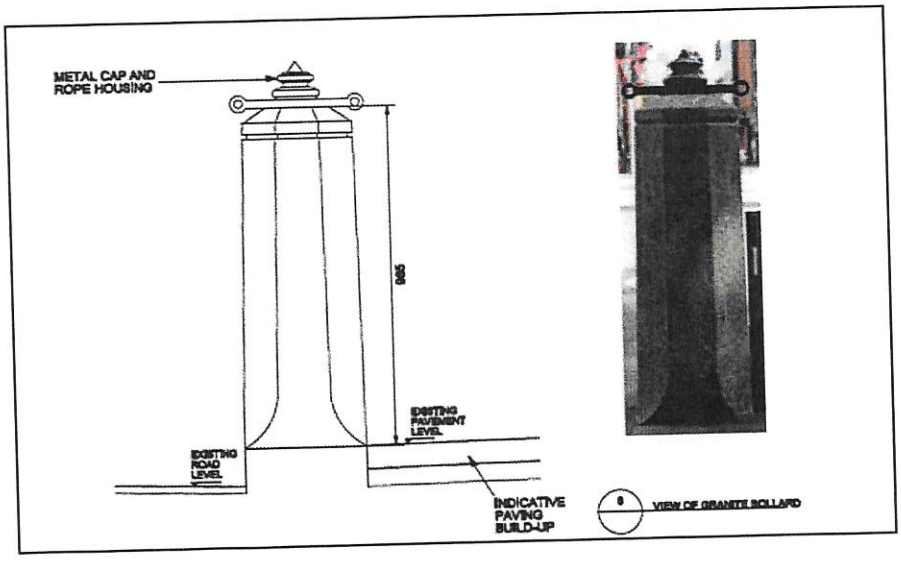


Figure A1.2: Detail of existing bollards on St Stephen's Green Park (TII)

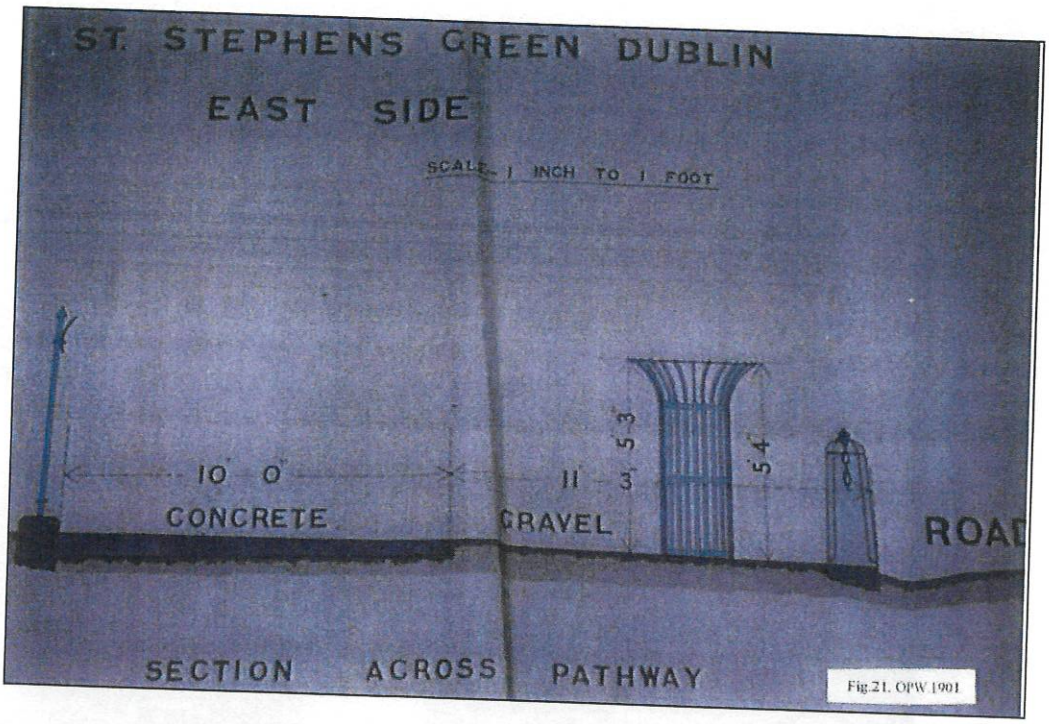


Figure A1.3: Section of the perimeter path of St Stephen's Green East, dated 1901 (Extracted from Duchas)

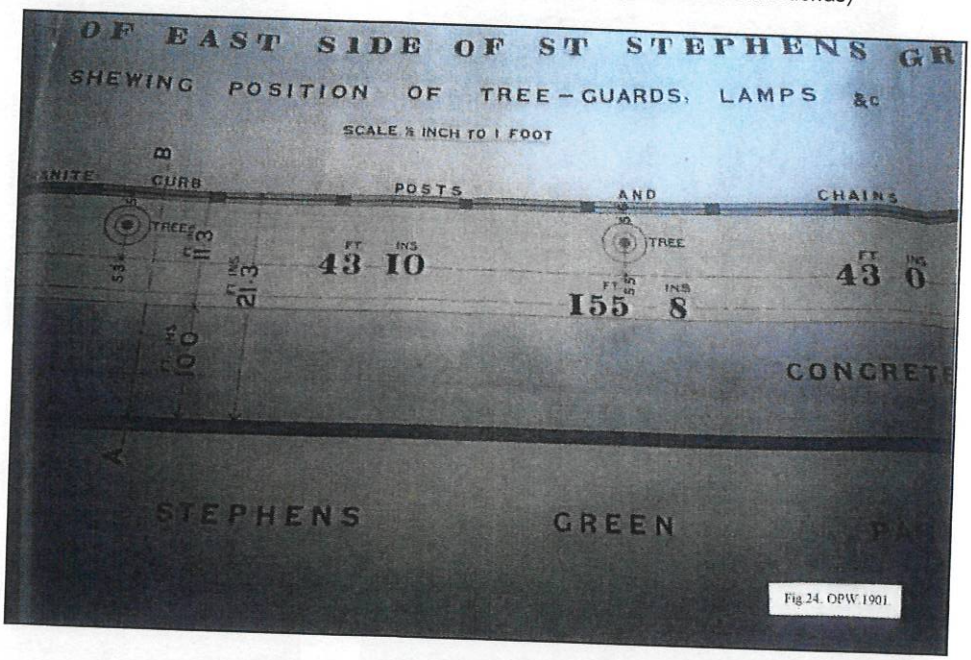


Figure A1.4: Layout of historic street furniture on St Stephen's Green East, dated 1901 (Extracted from Duchas)

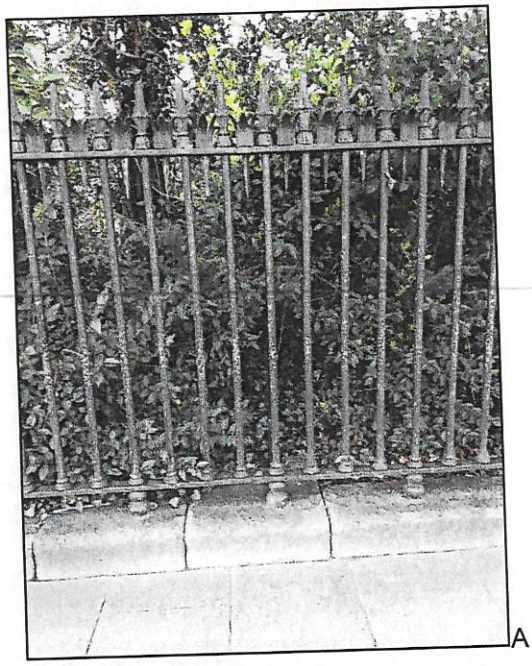
In the 1990 the park's gates and railings underwent a substantial programme of repair and conservation by the Office of Public Works with some rails being replaced with cast-iron replicas (OPW 2015; Lotts 2009). It is likely that the square profile back stays may have been procured at this time, and that the Victorian backstays were of a more ornate cast iron style. A backstay is present on every 16th rail.

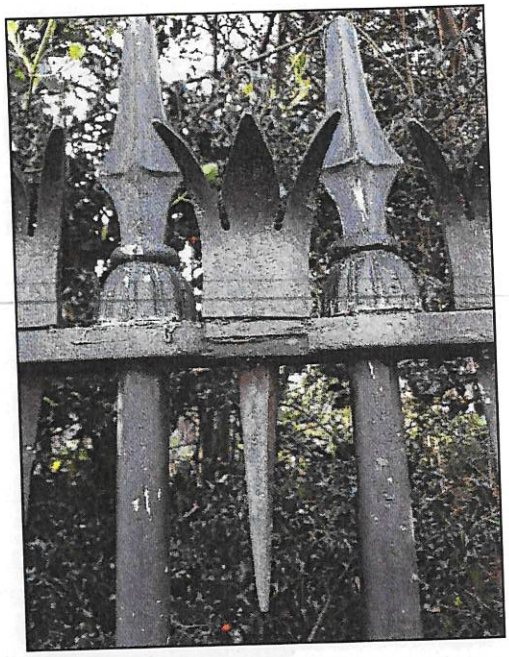
It was noted in a visual inspection of the railings and plinth wall undertaken in February 2020 that the railings continue to be maintained in overall good condition, though some deterioration of the paint was recorded. With

reference to the finials, occasional rust was noted, with a small number of finials also missing (Figure A1.6). The upper and lower wrought iron horizontal rails are also in good condition, though some rusting of scarf joints and exposed fixings was noted. The lead fixing of the feet of the railings was generally good, but some separation was noted, indicating failure of the lead adhesion to the socket over time.

The plinth walls granite blocks showed fracturing likely to do with weathering and reorganisation of the rails (with some empty sockets noted), only occasional large fractures were noted. The mortar was flushed and in need of repair (Figure A1.6).

The current traditional style lamp standards are protected structures, and are later additions to the park's Victorian design. Two types of lamp standards surround the green – a three lantern cast-iron version located on each corner illuminating the gates/access ways, and a single lantern cast-iron version (manufactured at the local Hammond Lane Foundry) aligned with the perimeter kerb (Figure A1.7).


A


B

C

D

Figure A1.6: Visual survey of railings on St Stephen's Green East (**A**: railings with deteriorated paint. **B**: rust on horizontal rail scarf joint. **C**: missing spear head finials. **D**: failure of lead fixing, note chipped and weathered plinth. **E**: evidence of previous rearrangement of railings (empty sockets), flushed mortar and chipped and weathered plinth.

Figure A1.7: Details of traditional style lamp standards (single lantern to left and three lantern to right) on the perimeter of St Stephen's Green Park (TII)

A.2.2 Sculpture on St Stephen's Green Park (East)

The north-east corner of St Stephen's Green Park is defined by a plaza housing three sculptures and the vestigial remains of the late 19th century gate piers. The former comprise:

- The Wolfe Tone Memorial;
- Tone Henge (granite monoliths); and
- Hungry Heart Famine Memorial (most commonly referred to as the 'Famine Memorial').

A fourth sculpture 'The Three Fates' is located within the south-east entrance of the Park.

A.2.3 The Wolfe Tone Memorial and 'Tone Henge'

Theobald Wolfe Tone (1763-1798), a son of a protestant coach maker and qualified lawyer was the founder of the Society of United Irishmen who led a team of French revolutionaries on two occasions to Ireland in an attempt to overthrow the English rule. The first attempt in 1796 entailed 14,000 troops but these troops and their ships were dispersed by storm. The second attempt during the 1798 rebellion comprised 3000 troops, who arrived in Ireland in September of that year in small parties around the coast. He was sentenced to death on 10th November 1798, but on the day of his intended hanging he sought to thwart the English, and slit his own throat with a penknife, dying from his own injuries on the 19th November. In 1898 the Wolfe Tone Memorial Committee was established, but their plans of a commemorative statue for Wolfe Tone did not materialise until a government grant of £15,000 was provided, along with a site for the statue on the site for the statue, on the north-east corner of St Stephen's Green Park (https://www.irishtimes.com/opinion/february-8th-1971-1.459563).

On foot of a competition, the commission to develop the memorial was awarded to Mayo sculptor Eddie Delaney (1930-2009) and the architect Noel Keating (https://www.irishtimes.com/culture/modern-ireland-in-100-artworks-1964-wolfe-tone-by-edward-delaney-1.2393337). Delaney was responsible for the sculpture, with Keating responsible for the curved line of granite monoliths behind it (see Figure A1.8). It took three years for the sculpture and installation to be completed, with the opening ceremony presided by President de Velera taking place on the 18 November 1967, with the date chosen in mind of the upcoming 50th anniversary of the Easter Rising.

Unfortunately, due to its symbolism Wolfe Tone's statue became a target for Loyalist activity and the monument was blown up in the early hours of the morning of 8th February 1971. It is believed it was a glycerine bomb, placed low down on the statue shearing its trunk and head (Figure A1.9). Very little other damage was caused by the explosion, other than the shattering of windows on nearby properties (https://www.irishtimes.com/opinion/february-8th-1971-1.459563). The statue was repaired by Delaney within a number of months, as he was able to recast the damaged elements.

Both the Wolfe Tone Memorial statue and the Tone Henge monoliths survive in very good condition.

Figure A1.8 Wolfe Tone statue and 'Tone Henge' on the north-east corner of St Stephen's Green Park

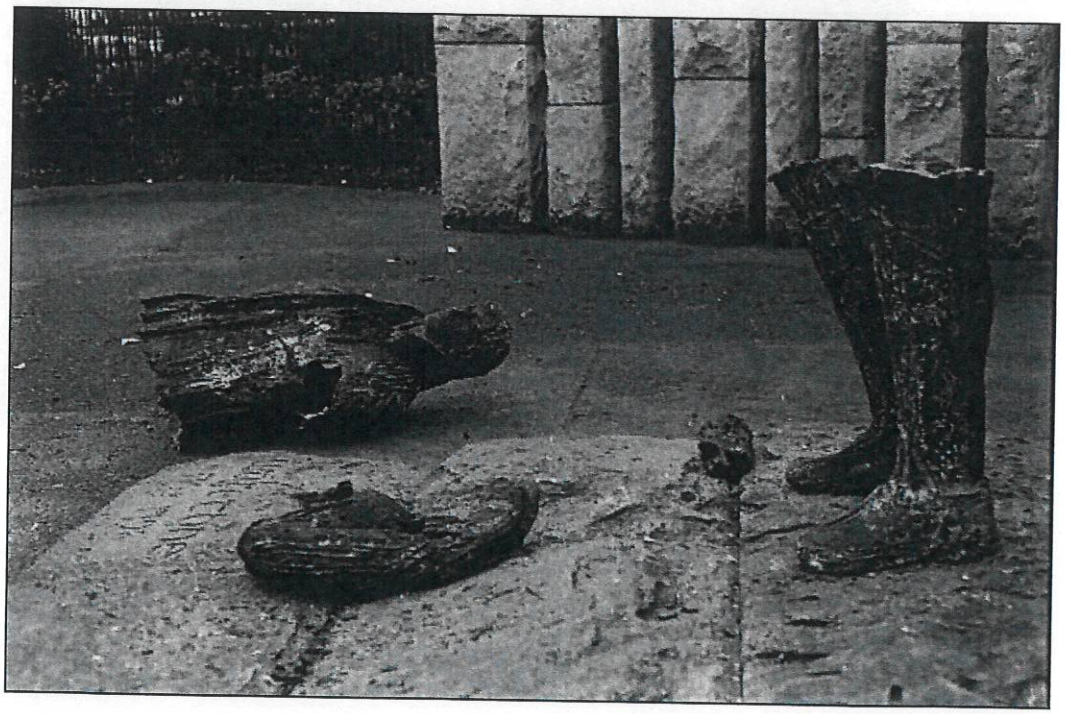


Figure A1.9: The Wofe Tone Memorial after the bombing of February 1971. (Copyright Irish Photo Archive).

A.2.4 The Hungry Heart Famine Memorial

The Hungry Heart Famine memorial, more commonly referred to as the Famine Memorial, was also sculpted by Delaney and forms an intrinsic component of the Wolfe Tone Memorial, sitting to its rear (Figure A1.10). The memorial comprises three abstract bronze figures (2 standing, 1 sitting) and a dog sitting on granite slabs, representing victims of the Great Famine of 1845-9. Delaney believed that the famine was directly linked to the failed 1798 rebellion, and with reference to the victims depicted stated '*I would like to have depicted him in French uniform, plumed hat and victorious sword. But history decided otherwise*' (https://www.theguardian.com/artanddesign/2009/oct/19/edward-delaney-obituary).

Overall the memorial is in a good state of preservation but some damage does exist. The standing figure to east is holding both a decorated cane and spoon, which it is using to feed the seated figure. The cane head is missing and in need of repair, exposing the interior of this element of the sculpture to further water damage (Figure A1.11). The dowels supporting the standing figure to the west are also exposed both at the front and to the rear, again exposing the statue to water damage. Pitting of the bronze is apparent on the rear of the dog sculpture.

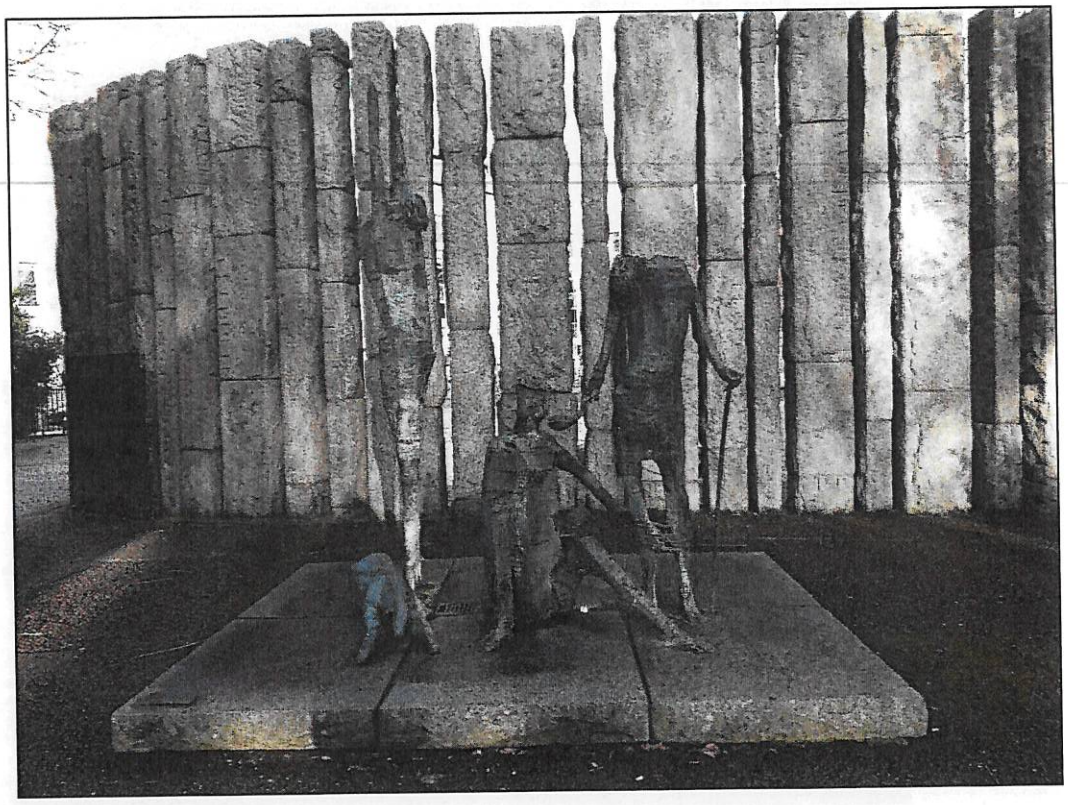


Figure A1.10: Delaney's Hungry Heart 'Famine' Memorial, 1967.

Figure A1.11: Detail of the Hungry Heart Famine Memorial elements. (A: missing cane head. B: Exposed dowels in feet. C. exposed dowel heads in feet, and pitting on dog).

A.2.5 The Three Fates

As previously mentioned a fourth sculpture the "Three Fates" Fountain, by German artist Josef Wackerle, donated to Ireland by the German Federal Republic in 1956, in thanks for the generosity shown to German people after World War II (Casey 2005, 533).

From 1946-9 'Save the German Children Society' via the Irish Red Cross, brought nearly 500 German children to Ireland to help them recover from the trauma of the war. The sculpture comprises three bronze figures in a fountain and is based on norse mythology representing Urd (past) Verdandi (present) and Skuld (future). The three fates are cast by the sculptor 'spinning and measuring the thread of man's destiny'. The attached plaque states 'This fountain, designed by the sculptor Josef Wackerle, is the gift of the people of the German Federal Republic to mark their gratitude for Ireland's help after the war of 1939-45. The bronze group portrays the three legendary fates spinning and measuring the thread of man's destiny' (https://meetingwater.wordpress.com/erik-hollabaugh/fountain-of-the-three-fates/)

A.3 Protected Structures and associated features on St Stephen's Green East

This street located on the east side of St Stephen's Green Park, was first laid out in 1664 as both a perimeter walk for the park and as lots for residential development (Lennon 2008, 19). The street is defined in the north by the junction of St Stephen's Green North/Merrion Row and in the south by the intersection of St Stephen's Green South/Leeson Street/Earlsfort Terrace. It was first illustrated as an unnamed street on De Gomme's map of 1673 with approximately three houses fronting onto its eastern side. Development of its street frontage appears to have been completed by the time of its recording by Thomas Dineley in 1681 (McCabe 2011, 64-65). On Brooking's Map of 1728 the street is unnamed, and a large plot on the southwest corner appears undeveloped or in use as a green. The street is first named as 'Monk's Walk' on Rocque's map of 1756 (Figure A1.12).

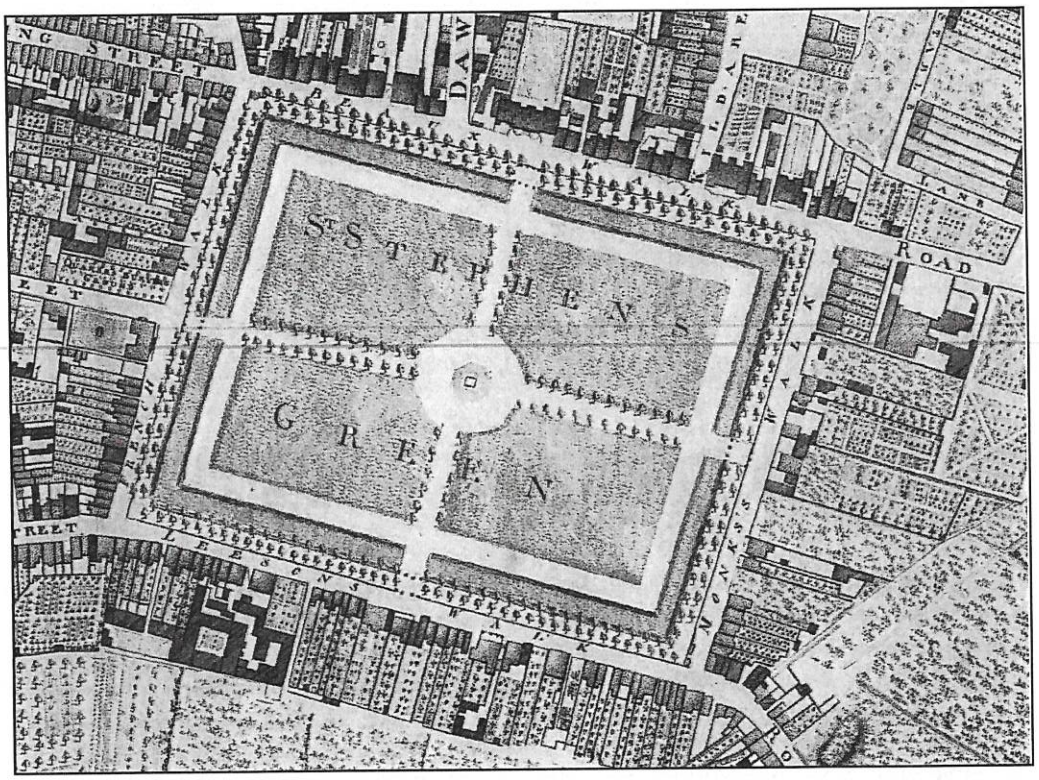


Figure A1.12: Extract from Rocque's '*Exact Survey of the City and Suburbs of Dublin*', 1756. Note irregular development of property plots on Monk's Walk (St Stephen's Green East; copyright IHTA).

The street is first named as St Stephen's Green East on the 1st edition 6" Ordnance Survey (OS) map (1843). It is depicted in great detail on the 1st edition OS 5':1 mile map (1847; Figure A1.13). In 1775 the streets surrounding the park were described as being 'so extremely irregular, that there are scarcely two of the same height, breath, materials or architecture' (Casey 2005, 531) however, on this map the street frontage is shown as having undergone extensive redevelopment with a well aligned property frontage illustrated. All properties are shown with substantial light wells and access steps to front; many are depicted with elaborate gardens to rear.

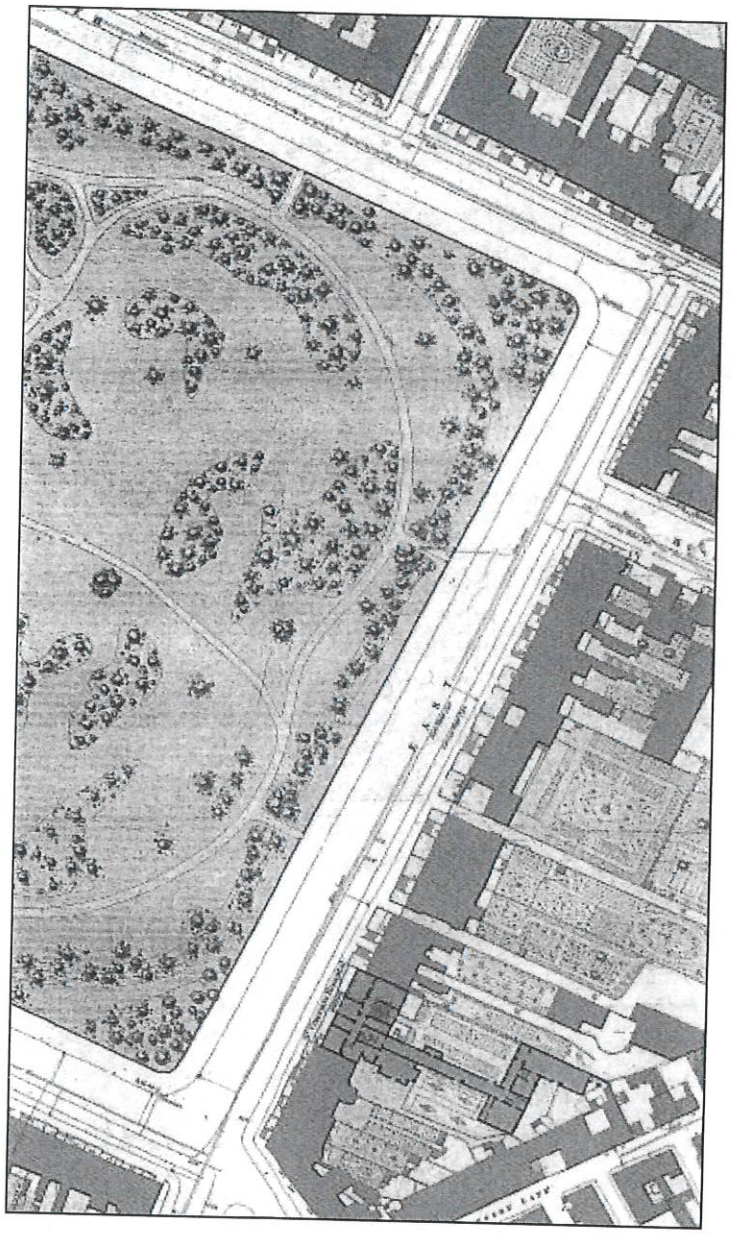


Figure A1.13: Extracts from Sheet 27 1st edition OS 5':1 mile map (1847), showing St Stephen's Green East

The street, which is part of a Conservation Area is currently defined by 22 properties (No's 39-60) of which twelve (Nos 39-43 and 50-56) are Protected Structures (RPSs 7780-7789). St Stephen's Green East is also a Conservation Area (refer to Table A1).

No	Street	Name	Date of Current Building	Date of 1st Building if different	RPS No.
39	St Stephen's Green East	Bank of Ireland	1913	NA	7780
40	St Stephen's Green East	Bank of Ireland	1913	NA	7780
41	St Stephen's Green East	Residence	1745-1746	NA	7781
42	St Stephen's Green East	Boston College	1745-1746	pre 1756	7782
43	St Stephen's Green East	Boston College	1745-1746	pre 1756	7782
44	St Stephen's Green East	Ivor FitzPatrick	1969	pre 1756	N/A
45	St Stephen's Green East	Ivor FitzPatrick	1969	pre 1756	N/A
46	St Stephen's Green East	Housing Finance Authority	1969	18th century	N/A
47	St Stephen's Green East	IPUT Headquarters	1969	pre 1756	N/A
48	St Stephen's Green East	IPUT Headquarters	1969	pre 1756	N/A
49	St Stephen's Green East	IPUT Headquarters	1969	N/A	N/A
50	St Stephen's Green East	Office of Public Works	1771-1772	pre-1756	7783
51	St Stephen's Green East	Office of Public Works	1760	pre-1673	7784
52	St Stephen's Green East	Office of Public Works	1771-1772	N/A	7785
53	St Stephen's Green East	Loreto College	1771-1772	N/A	7786
54	St Stephen's Green East	Loreto College	Modified 1970s	pre 1756	7787
55	St Stephen's Green East	Loreto College	Modified 1970s	pre 1756	7788
56	St Stephen's Green East	PTSB	1760 with 1975-8 modifications	pre 1756	7789
57	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
58	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
59	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
60	St Stephen's Green East	—	1980	1760/pre 1756	N/A

Table A1: Properties lining St Stephen's Green East

Eight mid-18th century houses survive on St Stephen's Green East (Nos 41, 42, 43, 50, 51, 52, 53 and 56) the remainder date to the late 18th/early 19th and 20th century (Casey 2005, 541-544). Those of the late 18th/early 19th century are typical Georgian style, comprising 3-5 storey over basement structures, with open basement area and coal cellars (beneath footpath) to fore (Figure A1.14). The front door of each building has a series of elevated granite steps providing access over the basement area, others also have steps to the basement area itself, providing a separate means of access for servants and delivery men to the basement and coal cellars (where present). A number of buildings have, or originally had, side laneways providing access to the rear of the buildings; for terraced buildings, rear access was typically provided by means of a stable lane.

Examination of the available cartographic sources indicates that some of the properties plots may have experienced two to three distinct phases of complete rebuilding, while others were often heavily altered during the 20th century.

Nos 39-40: on Rocque's map of 1756 a single building is depicted on these two plots with a centrally positioned door, though the rear garden appears to have comprised two distinct plots. The 1st edition OS map of 1847 indicates that this earlier building was replaced by two typically Georgian buildings, each with a separate entrance to south. These buildings were demolished and rebuilt from 1912-1913 as the Bank of Ireland. A decorative coal hole cover, is present on the uppermost entrance step into the building (Figure A1.15); the cellar beneath is concrete (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B10).

No 41: Constructed 1745 for Mrs Ruth Croker, it maintains original ceilings and staircase (Casey 2005, 540-1), the building was heavily renovated and extended throughout the 20th century (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B9).

No 42-43: Originally two separate buildings constructed 1754 by Benjamin Rudd, some original panelling survives but the buildings were heavily remodelled in the 20th century by David Crowley Architects (Casey 2005, 251). Now functioning as Boston College. There is a late 19th and mid-late 20th century extension to rear.

Nos 44-45: Two properties were illustrated on Rocque's map of 1756, the facades of which protruded out from the main building line. The subsequent buildings on the 1st edition OS map of 1847, maintain a constant building line, suggesting the properties were rebuilt in the late 18thcentury, with No 45 having a porch extension to south. It is probable that these were rebuilt c.1768 when the adjacent Hume Street was laid out. These buildings were demolished and rebuilt as modern offices in 1969 (Casey 2005, 541).

Nos 46-49: No 47 and 48 were illustrated on Rocque's map of 1756, with Nos 46 and 49 shown as vacant plots with irregular frontage. All four buildings, which Casey (2005, 541) states were of 1760 date, are shown as regular fronted properties on the 1st edition OS map of 1847. These, along with Nos 44-45 were demolished in 1969.

Nos 50-52: Nos 50 was illustrated on Rocque's map of 1756 and, was rebuilt in 1771 by Gustavus Hume, who also built No 52. No 51, was originally illustrated on de Gomme's map of 1673 and rebuilt by the owners grandson George Paul Monck *c.*1760. In 1848 it functioned as the Museum of Geology, with tiles of polished Irish stone from this date still on display in the entrance hallway. Original decorative wall and ceiling plasterwork survives in both Nos 50 and 51. No. 52 retains much of its extravagant decorative features including Rocco cornices while the *piano noble* was decorated by Flemish artist *Pieter de Gree c.*1785-1789. This property has substantially been extended to rear, and the original laneway to north has been built over to link with No 51. Of significance is that No 52 also houses three early medieval cross slabs (RMPs DU018-238---- — DU018-240----)

Nos 53 – 55: Now functioning as Loreto College, No 53 was constructed in 1771. Nos 54-55 were illustrated on Rocque's map of 1756, with a starkly similar building plan shown on the 1st edition OS map of 1847, suggesting the properties were maintained throughout the 18th and 19th centuries. The buildings contain

Rocco plasterwork and joinery of c. 1770 date, but have been much altered and extended to accommodate their use as a school.

No 56-60: No 56 was constructed c.1760, replacing a smaller two-bay structure which, along with Nos 57-60 were illustrated on Rocque's map of 1756. The buildings were used as St Vincent's Hospital from the 1830's. The exterior of these buildings was substantially redeveloped from 1975-78, with the properties now functioning as a bank. However much of the internal decoration of No 56 survives, including Late Baroque and Rococo decorative plasterwork (Casey 2005, 543-4). In 1980 No 60 was completely rebuilt, but one of the original ceilings was retained and reinstated.

No 61:demolished in 1799 by the Wide Street Commission to accommodate the widening of Leeson Street.

Nos 62-64: demolished in 1839 to accommodate the construction of Earlsfort Terrace (Casey 2003, 544; Figure A1.14).

A.3.1 Coal Cellars

It is likely that all of the original buildings on this street had associated coal cellars, for storing fuel. In the majority of cases, these are likely to have been located to the fore of each building beneath the current street pavement and may extend out beneath the present carriageway. Georgian coal cellars were typically filled from the footpath via a coal chute which was sealed with a coal hole cover. Typically, each two to three bay property had two coal cellars, with larger properties having up to five. Each coal cellar had an access door allowing movement between the cellar and the basement area.

In light of the multiple building phases represented on St Stephen's Green East, it is possible that multiple phases of coal cellar construction also took place, with each phase surviving to various degrees of preservation below the current street surface. Multiple phases of coal cellar construction was recorded on Dominick Street during recent Luas Cross City works, with the mid-18th century cellar located outside of the late 18th century cellar.

It is likely that the alignment of the main sewer functions as an indicator of the westward extent of the majority of the cellars, as the property owners would not have permitted its construction to impact or impede on the functioning of their coal cellars. Where an historic property has been demolished and replaced (e.g. 44-49, 56-60), new works are generally confined to the basement and basement area, thus the original coal cellars often continue to survive beneath the footpath (see Figure A1.14).

Only one property on St Stephen's Green East has a surviving coal hole cover (Nos 39-40). Unusually a MetroLink survey of No 43 St Stephen's Green East identified that the coal cellar was located to the rear of the building, which along with its coal chute survives in fair condition. It is probable that a similar arrangement existed for No 42 as both properties were built by the same developer (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B8). No 51 has an unusually large and low basement area to front, mimicking its 17th century predecessor. As there appears to be insufficient head height between the pavement level and floor of the basement area, it is possible that any original coal cellars may also have been to rear with easy access provided by the carriageway to south.

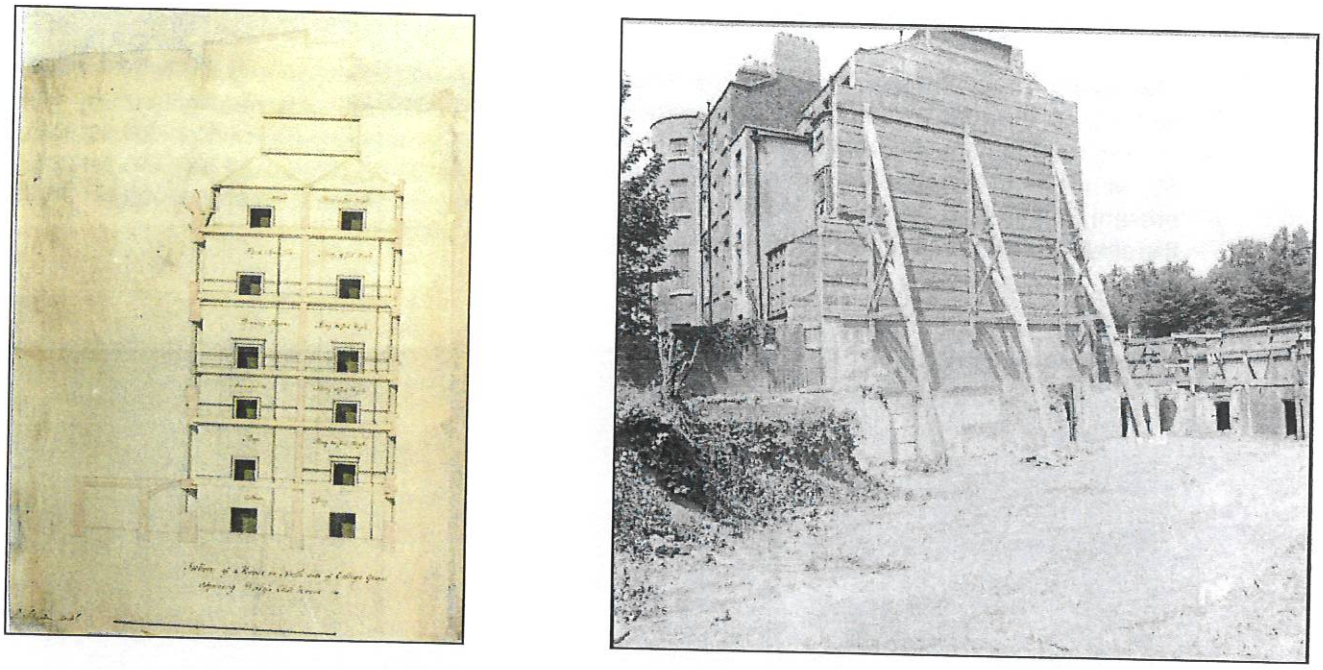


Figure A1.14: Left: Wide Street Commission map No 528, College Green, showing typical cross-section of a Georgian building with 'Basement' (beneath building proper), 'Basement area' and coal cellars to fore (Copyright Dublin City Archives). Right: the demolition of Nos 62-64 in 1839 – note coal cellar doors visible beneath street level to fore of image (Copyright National Library of Ireland).

Historic Street Furniture and Paving

The paving of St Stephen's Green East comprises concrete slabs predominantly retained by historic granite kerbstones. To the fore of Nos 39-45 the footpath has been widened, with the alignment of the original granite kerbing retained in the centre of the path (Figure A1.15 [C]). A probable mason's mark is located to the fore of No 55, with a single coalhole cover present on the steps to Nos 39-40 (Figure A1.15 [A]). An historic post box is present on the street to the fore of No 50. A sculpture – Trace by Grace Weir (1988) –stood on the pavement at the streets northern end but was removed to storage by DCC in 2015.

Figure A1.15: Historic Street Furniture on St Stephen's Green East: Coal Hole Cover (Nos 39-40), original Granite kerbline retained towards path centre (Nos 39-45) and probable Mason's Mark (No. 55)

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Appendix B. Stage 3 Preliminary Analysis Summary Table

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATION
Project Objectives	**Design to Integrate appropriately into the existing public realm.**	This station location requires the provision of surface elements of the project into the existing public realm which is within the curtilage of the National Monument. The construction of an intervention shaft structure between Location 1 and Tara St Station would result in an impact having regard to public realm integration. Overall the required station infrastructure and the intervention shaft would be difficult to integrate into the public realm impacting performance against this Project Objective.	This station location requires t surface elements of the projec public realm which is within the National Monument. The construction of an interven between Location 2 and Tara S result in an impact having rega integration. Overall the required station infr intervention shaft would be diffi into the public realm impacting against this Project Objective.
	Rank		
	Planned, constructed and operated in a sustainable manner.	Construction phase impacts of Location 1 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. The project provides a sustainable transport option to St Stephen's Green station which will have positive impacts and is aligned with this Project Objective. Overall Location 1 has Poor performance against this Project Objective.	Construction phase impacts of L result in poor performance agair Objective. These are detailed fu Environmental criteria assessme The project provides a sustainab option to St Stephen's Green sta have positive impacts and is alig Project Objective. Overall Location 2 has a Poor pe against this Project Objective.
	Rank		
Economy	**Capital Cost**	Constructing the station at this location would increase the construction cost of a typical station box by approximately 10%. The additional costs arise from staged and constrained construction in the road carriageway, associated traffic management and significant utility diversions. The need to construct an additional Intervention Shaft, would increase the overall cost by approximately 25%.	The station is located at the edge carriageway and as a result has a impact on utility diversions with le management and less potential m requirements. Based on this, cons station at this location would incre construction cost of a typical stati approximately 7%. The need to construct an addition Shaft, would increase the overall approximately 25%.
	Rank		

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATION 2
Environmental		This option has an overall poor performance against the environmental objective. This location requires the closure of St Stephen's Green East road during the construction phase, including its junction with Hume Street. This would disrupt existing traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. This includes bus routes, and HGV access. The 1800mm Victorian sewer situated below St Stephen's Green East would need to be diverted under the eastern footpath during construction. This would be technically difficult and may directly impact protected cellars situated below St Stephen's Green East and the footpath. While this option is primarily within the road corridor the station box and construction zone would have a direct significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPS 7751) and bollards and lampposts (RPS 7752). Subsurface archaeology would potentially be impacted. Street trees on St Stephen's Green East would need to be removed.as would a number of mature trees within St Stephen's Green Park. This location requires an intervention shaft between St Stephen's Green and Tara Station resulting in very significant impacts on potential sites at Trinity College or Merrion Square.	This option has an overall poor pe against the environmental objecti This location requires the partial c Stephen's Green East during con lanes can be kept open to traffic v adequate to maintain flows resulti impacts on existing bus and the H some delays but no diversions. The 1800mm Victorian sewer bel Green East would not require div While this option is primarily withi corridor the station box and cons would have a direct very significa Stephen's Green Park which is a Monument and (RMP DU018-02 would be a direct impact on east fence railings and plinth wall (RP bollards and lampposts (RPSs 7 archaeology would potentially be Street trees on St Stephen's Gre need to be removed as would a trees within St Stephen's Green This location requires an interve between St Stephen's Green an resulting in very significant impa Trinity College or Merrion Squar intervention shaft requirement is reason for this location's poor e performance.
	Rank		
Engineering	**Constructability**	This option has an overall poor performance against the constructability objective. The characteristics of the sewer make a diversion to allow the construction of the station box technically challenging. It is a an old, relatively large (1800mm) egg-shaped sewer constructed of brick buried 3.5m below St Stephen's Green East. The construction of an intervention shaft would be challenging given the potential site locations which have limited space and significant environmental constraints. This is due to potentially feasible locations for an intervention shaft being sensitive.	This option has an overall mod against the constructability obj 1800mm sewer is maintained diversion. The construction of an interve challenging given the potentia have limited space and signifi constraints. This is due to pot locations for an intervention s

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATIO
	Rank		
Conclusion		Due to a poor performance against all sub-criteria this option will not proceed to MCA stage.	Due to a poor performance ag environmental criteria this opt to MCA stage.

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5
Project Objectives	**Design to Integrate appropriately into the existing public realm.**	Initial design considers station integration into the existing public realm which is within the curtilage of the National Monument. Design features that assist in achieving this include sensitive design of station "pop ups" and to ensure appropriate replacement of protected structures impacted during construction e.g. perimeter fence railings. This station location allows entrance/egress to form part of the plaza area at the North Eastern corner of St Stephen's Green Park improving integration. Overall ongoing impacts from station infrastructure would be challenging to integrate into the public realm impacting performance against this Project Objective.	Initial design considers station existing public realm which is v of the National Monument. Des assist in achieving this include station "pop ups" and to ensure replacement of protected struct during construction e.g. perime This station location allows entr form part of the plaza area at th corner of St Stephen's Green P integration. Overall ongoing impacts from st would be challenging to integr realm impacting performance a Objective.
	Rank		
	Planned, constructed and operated in a sustainable manner.	Construction phase impacts of Location 4 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. This primarily relates to utility diversions and traffic impacts. The project provides a sustainable transport option to St Stephen's Green station which would have positive impacts and is aligned with this Project Objective. Overall Location 4 performs poorly against this Project Objective	Construction phase impacts of Lo result in moderate performance a Project Objective. These are deta Environmental criteria assessmer The project provides a sustainabl option to St Stephen's Green stat have positive impacts and is aligr Project Objective. Overall Location 5 has a Mode against this Project Objective.

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5
	Rank		
Economy	**Cost**	Constructing the station at this location increases the construction cost of a typical station box by approximately 10%. The additional costs arise from staged and constrained construction in the carriageway, associated traffic management, significant utility diversions work as well as a higher degree of mitigation during the works, due to the proximity of existing buildings.	Constructing the station at this lo the construction cost of a typical approximately 7%. The station is edge of the carriageway and so impact on utility diversions, less management and less potential requirements.
	Rank		
Environmental		This option has an overall poor performance against the environmental objective. This location requires the closure of St Stephen's Green East during the construction phase, including its junction with Hume Street. This would disrupt existing traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. This includes bus routes, HGV access. The 1800mm sewer situated below St Stephen's Green East would need to be diverted into the eastern footpath during construction. A 1710mm sewer beneath Hume St that joins the St Stephen's Green East sewer would also require diversion. This would be technically difficult and may directly impact protected cellars situated below St Stephen's Green East and the footpath. While this option is primarily within the road corridor the station box and construction zone would have a direct very significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPSs 7751) and bollards and lampposts (RPSs 7752). Subsurface	This option has an overall poor against the environmental obje This location requires the parti Stephen's Green East during c lanes can be kept open to traff adequate to maintain flows res impacts on existing bus and th some delays but no diversions The Victorian sewer below St East would not require diversi While this option is primarily w corridor the station box and co would have a direct significan Stephen's Green Park which i Monument and (RMP DU018- would be a direct impact on e fence railings and plinth wall (bollards and lampposts (RPS archaeology potentially impa Street trees on St Stephen's need to be removed as woul trees within St Stephen's Gre

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5
		archaeology potentially impacted, and tree removal would be necessary. There would be a direct impact on the steps in front of several protected structures on St Stephen's Green East which are: • 42-43 St Stephen's Green East (RPSs 7782) • 50 St Stephen's Green East (RPSs 7783)	
	Rank		
Engineering	**Constructability**	This option has an overall poor performance against the constructability objective. The characteristics of the sewer make a diversion to allow the construction of the station box technically challenging. It is an old, relatively large egg-shaped sewer constructed of brick buried 3.5m below St Stephen's Green East. Risk exists in relation to traffic management, public safety and management of monuments and other architectural features within the National Monument.	This option has an overall mod against the constructability obje 1800mm sewer is maintained o diversion Risk exists in relation to traffic n public safety and management other architectural features loca National Monument. Mitigation r of suitable reinstatement of St S Park.
	Rank		
Conclusion		Due poor performance against environmental and constructability sub-criteria this option will not proceed to MCA stage.	Due to a moderate performance criteria with the exception of l option will be taken forward and MCA.

Colour	Description
	Overall good performance against the criteria
	Overall moderate performance against the criteria
	Overall poor performance against the criteria

Appendix C. Stage 4 Appraisal Summary Table

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION 6
Economy	**Cost**	Construction of the station at this location increases the construction cost of a typical station box by approximately 7%. The station is located at the edge of the carriageway and so has more limited impact on utility diversions, less traffic management and less potential mitigation requirements.	Constructing the station within ' Green is the most economical (options, as none of the previou additional construction impacts
	Rank		
Environmental	**Air Quality and climate**	Potential for impacts on sensitive receptors during the construction phase due to emissions. Emissions of relevance during this phase include NOx and Particulate Matter (PM10). Receptors within 100m of the indicative construction zone include commercial premises, a college and a secondary school on the eastern side of St Stephen's Green East. A hotel is situated on the northern side St Stephen's Green North. A medical clinic and art gallery are also within 100m of the indicative construction zone. During construction the park next to the indicative construction zone will continue to function as a public park and resulting in potential air quality impacts on park users. Climate related impacts are potentially GHG emissions from construction traffic and embodied energy from construction materials. Positive impact on air quality and climate during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in emissions.	Potential for impacts on sensiti during the construction phase emissions. Emissions of releva phase include NOx and Particu (PM10). Receptors within 100r indicative construction zone in commercial premises, a colleg secondary school on the easte Stephen's Green East. A hotel the northern side St Stephen's medical clinic and art gallery a 100m of the indicative constru During construction the park r indicative construction zone w function as a public park and potential air quality impacts o Location 6 is entirely within th more potential impacts on pa also further away from recept Stephen's Green East. Climate related impacts are p emissions from construction t embodied energy from consti Positive impact on air quality during the operational phase to modal shift from private ve MetroLink and the resultant r emissions.
	Rank		
	Noise and Vibration	Potential for noise impacts during construction due to close proximity of sensitive receptors including schools, hotels, office space and recreational/greenspace (including a children's playground). Potential for vibration impacts during construction due to the advancement of the TBM and station box works near sensitive receptors. Potential for operational impacts from train movements on buildings north of station.	Potential for noise impacts d due to close proximity of co properties and users of St S This option is further away f St Stephens Green but clos including children's playgro Potential for vibration impa construction due to the adv TBM and station box works receptors. Potential for operational im

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION
			(due to increases in light, noi disturbance). The station pos within the park exacerbates s impacts on St Stephen's Gree biodiversity.
	Rank		
	Non-Agricultural Buildings	100m buffer from construction area has identified potential impacts on sensitive receptors including an art gallery, a college, a secondary school, and a medical clinic. Potential construction impacts include noise, vibration and air quality.	100m buffer from constructior identified potential impacts on receptors including an art gall secondary school, and a med Potential construction impacts vibration and air quality. This l west than Locations 4 and 5 a performance against this crite
	Rank		
	Cultural Heritage: Architectural Heritage	Direct impact on St Stephens Green Park which is a National Monument, an RMP and an RPS (RMP DU018:020334: RPS 7751-7761). Direct impact on railings and plinth (RPSs 7751) and bollards and lampposts (RPSs 7752). Potential direct impact on the Wolfe Tone statue, and the Hungry Heart Famine memorial during construction as these structures fall within the indicative construction area. Potential for a direct long-term visual impact on St Stephens Green East due to the felling of trees and the removal of vegetation and a direct permanent moderate visual impact on the street at operation phase due to location of station infrastructure including lifts, skylights and ventilation.	Direct impact on St Stephens which is a National Monument RPS (RMP DU018:020334: RI Direct impact on railings and p 7751) and bollards and lampp 7752). Potential direct impact on the \ statue, and the Hungry Heart F during construction as these st within the indicative constructi location the northern extent of is in very close proximity to the memorial increasing impacts. Potential for a direct long term St Stephens Green East due t trees and removal of vegetatio permanent moderate visual im street at operation phase due t station infrastructure including and ventilation.
	Rank		
	Cultural Heritage: Archaeology	Potentially significant impacts on unrecorded sub-surface archaeology area within park including a 17th Century perimeter wall and ditch for the length of the station box and indicative construction area. Potential impacts on subsurface remains of historic tramline on St Stephen's Green East.	Potentially very significant impa unrecorded sub-surface archae within park including a 17th Ce wall and ditch for the length of t and indicative construction are
	Rank		
	Landscape and	Very significant direct on/loss of vegetation of	Very significant direct impact o

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION 6
	Traffic and transportation	The following potential impacts were identified during the construction period: • Closure of the footpath on the western side of St Stephen's Green East would interfere on north and southbound movements of 361 pedestrians in the AM Peak hour; • Reduced east and westbound pedestrian permeability through the St Stephen's Green Park; • 292 cyclists (AM Peak hour) would be affected by the capacity reduction on St Stephen's Green East; • Existing dedicated cycle lanes are potentially compromised by width reduction. Alternative routes to northbound cyclist movements (279 cyclists in the AM Peak) would be necessary; • Removal of existing Dublin Bike station at St Stephen's Green East; • Slight impact on existing bus routes. No bus stops need to be re-located or removed; • Removal of on street parking on St Stephen's Green East, between R110 St Stephen's Green and Merrion Row; • Slight impact on wider traffic due to the reduction of one northbound lane, however, the remaining lanes have the capacity to absorb the traffic.	The following potential impacts during the construction period: • Pedestrian movement Stephen Green Park v affected by the closur pedestrian access poi Stephen's Green East
	Rank		
	Utilities	Water mains, Telecoms, Gas and HV ESB impacted by station box location. No sewer diversion required on St Stephen's Green East or Hume St due to more western location compared to option 6	Minimal impact on utilities as l inside park.
	Rank		
	Population and Human Health	This option maintains a balance between impacts to commuter flows and traffic around the green and access for pedestrians through the North-Eastern entrance (though reduced) during the construction phase. However, its proximity to Merrion Row's restaurants, cafes, hotel, shops and bars would significantly impact on their operation during the construction phase but would greatly benefit	Decreased or eliminated acce east entrance during the cons which serves as a meeting po venue at present, will impact tourism in the area. This option heavily impacts u and accessibility of the park. so it minimises disruption to

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Metro Link

Transport Infrastructure Ireland

St Stephen's Green Station Study: Location Assessment Report

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Executive Summary

MetroLink

The MetroLink Project is a high capacity, high frequency, modern and efficient metro rail line running for 19km from Swords to Charlemont linking Dublin Airport, Irish Rail, Dart, Dublin Bus and Luas Services creating a fully integrated public transport in the Greater Dublin Area. MetroLink will be segregated from all other traffic and transport systems including pedestrians and cyclists. This will be achieved through Dublin City by having the system underground, meaning that MetroLink can operate a very frequent system to meet the transport needs of the areas served, without impacting or being impacted by other transport movements. Furthermore, the underground system will ensure that the construction phase impacts through a densely populated urban area will be minimised.

The current project programme envisages that construction of the project could commence in 2021, if a Railway Order Application to An Bord Pleanála was successful and would be operational by 2027, following a six year construction period.

St Stephens Green

St Stephen's Green is located in the heart of Dublin City Centre and its location and layout is central to providing the character and identity to this area of the city. St Stephens Green consists of a high-quality urban space, which is a significant attractor for over 8 million visitors every year. St Stephen's Green is also a designated National Monument, is listed on the Dublin City Council Record of Protected Structures (RPS) and contains many features of high architectural value. The current park layout still retains the original Victorian design of William Sheppard.

St Stephens Green also functions to provide space for the movement and circulation of people through and around the St Stephen's Green area. The road network around St Stephen's Green Park provides critical access points into to the City Centre for public transport systems and for other transport modes.

Proposed Station and St Stephen's Green

An underground station at St Stephen's Green East was identified as part of the Emerging Preferred Route (EPR) ARUP (2018). An in-depth multidisciplinary analysis was undertaken to determine the EPR. This analysis considered different options for a station location in the St Stephens Green area including station locations on the west side of St Stephen's Green, in a more central location in St Stephen's Green and at St Stephen's Green East. Other options with no stations at all in this location were also assessed. The assessment undertaken identified the EPR with a station at St Stephen's Green East for the following reasons:

- The EPR best serves passenger demand along the corridor;
- The EPR serves more key trip attractors than other options through the city including St Stephen's Green, the National Concert Hall, cultural institutions such as the National Gallery and the National Museum (Natural History & Archaeology). Furthermore, this route option serves key commercial, retail and office trip attractors such as Grafton Street;
- The EPR provides excellent interchange opportunities with other public transport modes as it links with the DART (at Tara St), Luas (at O'Connell St & Charlemont), multiple bus routes and heavy rail services at Glasnevin. The assessment found that route options that featured an interchange with the DART line at Tara Street to perform well against the Public Transport Interchange criteria. Locating a station at Tara Street constrains the possible tunnel alignments, when terminating the line at Charlemont due to tunnel boring machine turning constraints and operational considerations for the tunnel alignment. This means that the location of an interchange station at Tara Street was a key driver for the location of a station on St Stephen's Green East; and

- The EPR resulted in potential environmental impacts particularly for Archaeology, Architecture and Cultural Heritage and Landscape, but it was identified that the majority of impacts could be mitigated during design.

St Stephen's Green East – Potential Station Location Assessment

Following the identification of St Stephen's Green East as the best general location for a MetroLink station, a further multi-disciplinary analysis was undertaken in order to identify the optimum location for a station at St Stephens Green East having regard to Engineering, Environmental and Economy criteria. Seven potential station locations were identified on St Stephens Green East and Earlsfort Terrace (refer to Figures 5.1-5.7 for details of potential station locations). These locations were assessed having regard to the following:

- The importance of St Stephen's Green Park as an historical public park which maintains its Victorian layout and features extensive tree, shrub and flower planting that enhance the architectural features of the park. The park is one of the most important green spaces in the centre of Dublin and attracts significant numbers of visitors each year;

- The Architectural Heritage of the area having particular regard to St Stephen's Green Park which is designated as a National Monument (RMP DU018-020334) and is listed on the Dublin City Council Record of Protected Structures (RPS 7751-7761). Furthermore, there are a number of buildings on the east side of St Stephen's Green which may be impacted by potential station locations as they feature extensive cellars that protrude underneath the roadway;

- The importance of St Stephen's Green East as a transport corridor for public transport, private vehicles, cyclists and pedestrians. It should be noted that during the AM peak hour, 384 buses used the corridor to access the City Centre;

- The presence of multiple utilities underneath the roadway on St Stephen's Green East and the requirement for major diversions of those utilities. Particular attention was given to the requirement to divert a 1,800mm brick "ovoid" Victorian sewer under St Stephen's Green East and 1,710mm reinforced plastic mortar ovoid sewer situated underneath Hume Street as diversions of these utilities could extend the constructon period by 12 months or more, causing significant additional impacts; and

- The requirement for an intervention shaft between the St Stephen's Green Station and Tara Street in the event that the distance between these stations is greater than 1,000m. An intervention shaft is a significant structure that would be required to allow for emergency services to access the MetroLink tunnel in the event of an emergency. The intervention shaft would need to be located between Tara Street and St Stephen's Green and would cause significant additional impacts if required.

St Stephen's Green East - Preferred Station Location – Preliminary Assessment

A number of potential station locations (Locations 1, 2, 3 and 7) were identified as being more than 1000m from Tara Station. This would mean that an intervention shaft would be required. The most appropriate location for an intervention shaft would be any available open spaces i.e Trinity College Dublin or Merrion Square. This requirement resulted in these locations performing poorly against several criteria in the preliminary assessment. In particular, the locations performed poorly against Economy and Environmental criteria due to the increased capital cost and environmental impacts associated with construction of an intervention shaft at identified sensitive locations. Given these unfavourable factors locations 1-3 and 7 were not progressed for further analysis. It should also be noted that station location 7 (Earlsfort Terrace) would also require the diversion of the Victorian sewer along Earlsfort Terrace which would mean that this option would perform poorly against Economy and Environmental criteria due to a prolonged construction period resulting in additional costs and environmental

impacts. Finally, Location 7 performs poorly against the overall Project Objective criterion as a station located at Earlsfort Terrace would not provide good public transport network legibility due a lack of key trip attractors. In this regard it is significantly inferior to options on St Stephen's Green East.

The proposed station (Location 4) is situated beneath the roadway on St Stephen's Green East will require the 1,800mm diameter Victorian sewer and the Hume Street sewer to be diverted to allow for the construction of this station. This is considered very technically challenging and would require an extended construction period of 12 months. This station location also performed poorly against the environmental criteria as a result of the requirement to close St Stephen's Green East and Hume Street to public transport and traffic during construction and due to the potential direct impacts on properties on the east side of St Stephen's Green which are listed on the RPS. In addition, despite being within the carriageway of St Stephen's Green East, there would be direct impacts on the St Stephen's Green Park. In terms of the economy criteria, the cost of utility diversions would be significant, and this caused this location to perform moderately in regard to this criterion. As a result of the poor performance against the engineering (constructability) and environmental criteria, Location 4 was not progressed for further analysis.

Locations 5 and 6 were brought forward for further analysis involving a further multicriteria analysis (MCA) using Environmental and Economy criteria. Both of these station locations would have a direct impact on St Stephen's Green Park, but due to the proposed station locations they avoid the following impacts;

- Diversion of the Victorian sewer and Hume Street sewer and associated impacts resulting from a more extensive construction area and duration;
- The closure of St Stephen's Green East to public transport and traffic during the Construction Phase; and
- Direct impacts on buildings listed on the RPS on Stephen's Green East.

St Stephen's Green East - Preferred Station Location – Preferred Location

The outcome of the further MCA analysis of Location 5 and 6 was that Location 5 was chosen as the preferred location for the proposed MetroLink station as it significantly reduces the impact on St Stephen's Green Park when compared to Location 6. Location 5 results in the requirement for less tree felling and vegetation removal when compared with Location 6. In addition, the long-term impacts on St Stephen's Green Park are significantly less for Location 5 as the main surface elements of the proposed station are largely located outside of the current extent of St Stephen's Green Park.

Furthermore, the choice of Location 5 allows for the long-term impacts of the station to be significantly mitigated by replanting trees and other vegetation, in addition to the reinstatement of existing elements of architectural heritage. In addition, high-quality design of station "pop-ups" would allow for the development of a high-quality urban environment in the north eastern corner of St Stephen's Green.

However, Location 6 performs better against the economic criteria than Location 5 as the station is located entirely under St Stephen's Green Park which would significantly lower the construction, reinstatement of roadway and utility diversion costs.

Overall, Location 5 has been chosen as the preferred station location for St Stephen's Green East. This is in order to mitigate the potential impacts on St Stephen's Green Park, reduce the overall construction phase impacts by avoiding the requirement for an intervention shaft, significant utility diversions and retain transport and traffic movements on St Stephen's Green East during the construction phase.

Station Location 5 will now be subject to further design development and potential impacts will be assessed, with mitigation measures recommended. The outputs of the assessment and recommended mitigation measures will be presented in the EIAR for the project.

1. Introduction

This report outlines the robust assessment process that has been undertaken in order to identify the optimum MetroLink station location serving the south City Centre area and St Stephen's Green. The identification of a preferred station location was achieved by employing a multiple stage assessment process as outlined below:

- Identification of the Emerging Preferred Route (EPR) for MetroLink;
- Identification of a preferred route for MetroLink and;
- A four-stage assessment to identify a preferred station location at St Stephen's Green.

Each stage of the assessment process was undertaken by multidisciplinary teams, including environmental specialists, led by Transport Infrastructure Ireland (TII).

2. St Stephen's Green

2.1 Introduction

St Stephen's Green is located in the heart of Dublin and its location and layout is central to providing the character and identity to this area of the city. St Stephen's Green consists of a high-quality urban space, which provides an attractive location for those living, working and visiting the city. St Stephen's Green also functions to provide space for the movement and circulation of people through and around the area. The road network around St Stephen's Green Park provide critical access points into to the City Centre for public transport systems and for other transport modes.

2.2 St Stephen's Green Park

St Stephen's Green Park is Irelands best known public park and consists of a 9 hectare park that maintains its late Victorian layout to this day, with shrub planting, extensive flower beds and perimeter tree planting and a substantial ornamental lake. The park is also home to many monuments and sculptures as well as other elements of archaeological, architectural and cultural heritage such as the decorative railings that surround the park.

The park functions as one of the principal amenity sites in Dublin City Centre, offering the public a peaceful refuge from the city, with attractors such as a Children's playground, a bandstand (regularly used for events) and the multitude of gardens within the boundaries of the Park.

St Stephen's Green Park is a National Monument the extent of which is defined by the kerb line of the perimeter footpath. A detailed cultural heritage background of the constraints present on both St Stephen's Green Park (East) and St Stephen's Green East has been prepared by TII and is attached as Appendix A to this report. A summary historical and cultural heritage background is provided in Section 2.2.1.

2.2.1 St Stephen's Green – Historical and Cultural Heritage Context

Historically the name St Stephen's Green originates from the 13th century St Stephen's Leper Hospital and Church, which was located c.300m to the east on the intersection of present day Stephens Street Lower and Mercer Street. During the medieval and post-medieval periods the lands of St Stephen's Green comprised marshy commonage, which extended as far as the River Dodder and was used by the citizens of the city for grazing livestock.

The park was originally established for the citizens of Dublin in 1653 as a 60 acre site. In 1664 the City Assembly decided that the plot of ground could be used to generate income for the city and a central area of twenty-seven acres (10.9 hectares) was marked out which would define the park boundary, with the remaining ground being let out into ninety building lots. The annual rent generated from the lease of these plots were to be used to not only to supplement the economy, but also to build walls and paving around the park and provide for its overall maintenance. The external boundary of the park was enclosed by a stonewall (c.1670-72) with wooden gates, gravel walks (1667-1687) and a watch house (c. 1683) constructed. Due to the fact that this was marshland a broad perimeter drainage ditch was also constructed to drain the park and facilitate the use of the promenade for recreational purposes. This took the form of a ha-ha with a stone revetment on the park side. As a condition of the lease, each tenant was required to plant six sycamore trees near the wall, in order to create the desired 'promenade'. This should have totalled 510 trees set out in rows of two, but tenants were notorious for not complying with this agreement, while many opted towards the preferred Lime and Ash trees thus resulting in a mix of planting, and historic references to the 'Lime Walk' promenade (McCabe 2011, 61-3; Figure 2.1 and Figure 2.2).

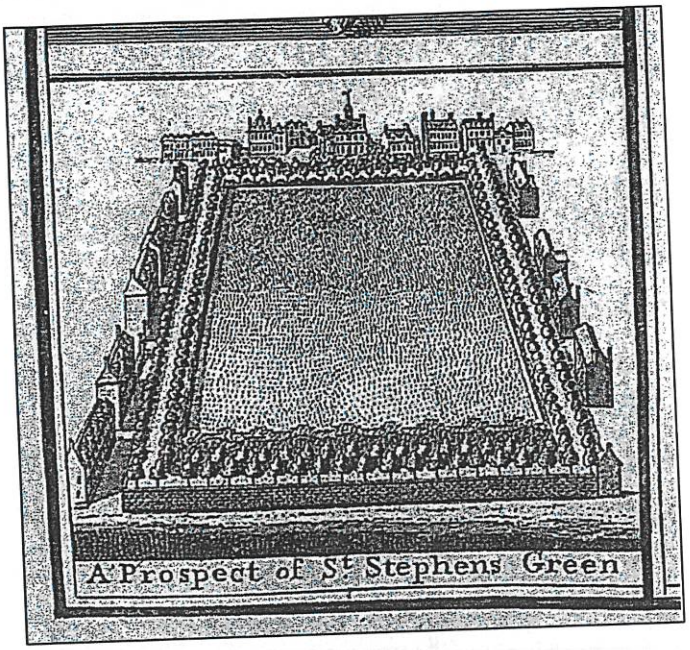

Figure 2.1: Extract from Charles Brooking's 1728 Map of the City of Dublin, illustrating the enclosing boundary wall and Lime Walk on St Stephen's Green (Copyright Irish Historic Towns Atlas).

Figure 2.2: St Stephen's Green, Dublin' Malton (1796). Note Lime Walk Promenade with internal perimeter ditch (revetment wall defined by low hedgerow) and animals grazing the park interior. (Copyright National Library of Ireland).

In 1670 the first paid gardeners were employed to tend to the park, the interior of which predominantly comprised meadow land which was let for pasture and annually harvested for hay until 1766-67. At this time it passed to the Lord Mayor who used it for dairy cows and horses, while the Assembly, in response to the overall improvement activities of the Wide Street Committee throughout the city, instigated further repairs of the gravel walks, means of access and commissioned additional gardeners (McCabe 2011 181-2). However, due to an ongoing financial deficit the park fell into disrepair and did not receive a major investment in upkeep until it was privatised in 1814 under the auspices of which it was extensively landscaped. This entailed the infilling of the perimeter ditch, the removal of the original boundary wall and the sale of the trees on the promenade (Lime Walk; McCabe 2011, 257)). This early 19th century redesign entailed the enclosing of the park by a dwarf wall with an '*ornamental palisade of about six feet high, outside this is a gravel walk, bordered by octagonal granite pillars, connected by chains, and surmounted by lampposts*' (Heffernan 1861, 72; see Figure 2.3). This work effectively decreased the size of the park such that the location of the former perimeter ditch, Lime Walk and boundary wall now lie under the present day roadway.

Figure 2.3: View of St Stephen's Green North c. 1828-30 by H. Madden (after McCabe 2011). Note absence of Lime Walk, perimeter ditch, and limited interior planting.

The park again fell into disrepair and was redesigned from 1877-1880 under the patronage of Ardilaun Guinness, who as a promoter of the St Stephen's Green Act of 1877, ensured the park would permanently remain open to the public. The layout that was achieved during this period, which included the insertion of large corner gates and the replacement of the perimeter walls and railings, is largely what is in place today, with the notable exceptions of the northeast and southwest corners where respectively the Wolfe Tone Memorial and Fusiliers Arch now stand.

Figure 2.4: View of St Stephen's Green North. Note entrance gates illustrated were erected 1877-1880.

In terms of archaeological heritage, St Stephen's Green Park is a Recorded Monument and Place (RMP DU018-020334-). As the location of St Stephen's Green Park was commonage prior to 1635, and outside the medieval town, there is low potential for the presence of sub-surface archaeological stratigraphy other than that directly related to the park itself. Therefore the likely remains which survive, external to the park railings and beneath the surrounding footpath and carriageway relate to the parks perimeter 17th century perimeter ditch and boundary wall. Evidence for both these features was found on St Stephen's Green North during the construction of Luas Cross City. This work identified that the plinth wall and railings, which currently enclose the park, rest directly on the revetment wall of the 17th century perimeter ditch, using the latter as a foundation (Figure 2.5). The boundary wall, comprising rough limestone blocks, was identified towards the central carriageway of St Stephen's Green North.

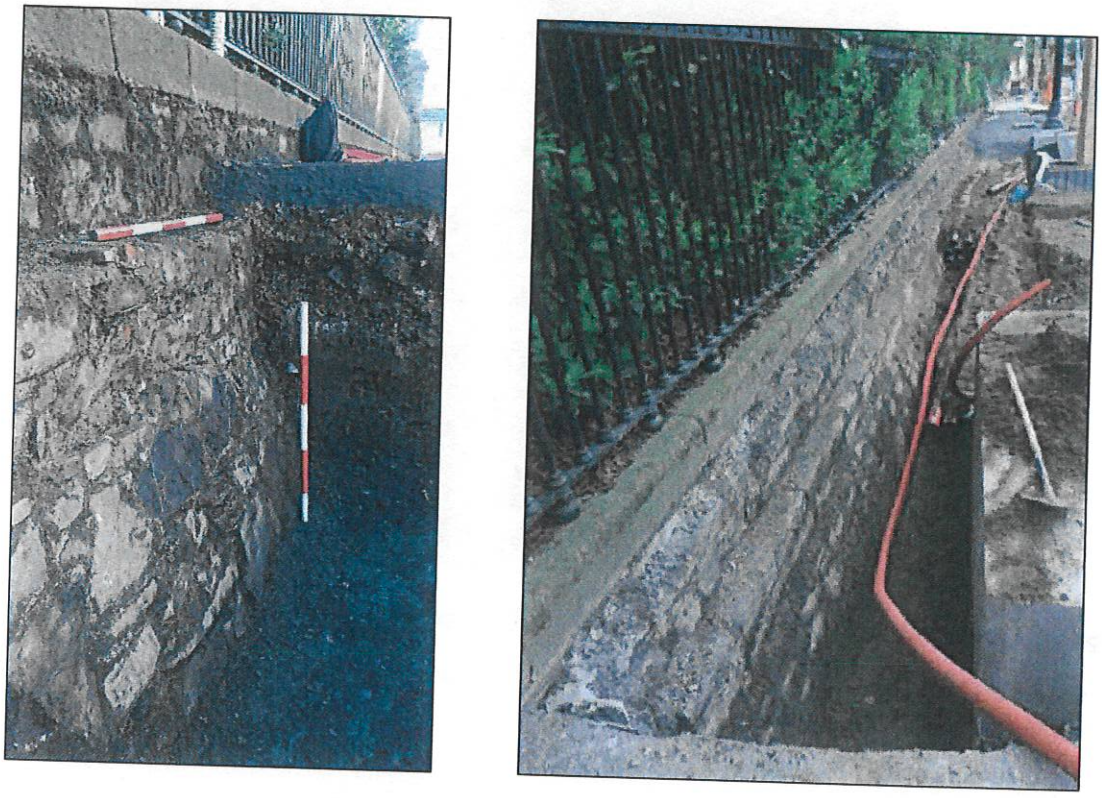

Figure 2.5: Images of the revetment wall of the perimeter ditch as it relates to the present day railings and plinth of the park's perimeter boundary (RPS 7751). Identified on St Stephen's Green North (Rubicon Heritage Ltd.)

Additional remains external to the park are likely to be related to the various phases of dwelling houses that lined its sides including coal cellars, building/boundary wall foundations and drainage features (e.g. wells).

With reference to the interior of the park, it is not expected that significant sub-surface archaeological stratigraphy will be present as the area has historically either been used for grazing or as park space. Items likely to be found will be landscaping features (e.g. gravel walks and planting beds) and drainage ditches. During exploratory works on St Stephen's Green as a component of the old Metro North works, remains of the park's gate pier, removed from the north-west corner in 1907 to accommodate the erection of Fusiliers Arch, were identified. These remain in situ (see Figure 2.6). It is possible that similar remains may survive on the north-east corner, where the railings were removed to accommodate the insertion of the Wolfe Tone statue. As insurgents used the park during the 1916 Easter Rising there is a potential that the defensive ditches they dug internal to the park boundary may be identified during any ground disturbance works. This could also include spent bullets and other munitions, or other war related items.

Figure 2.6: The remains of gate piers erected in 1877-1880, and removed in 1907 to accommodate the erection of Fusiliers Arch.

In terms of architectural heritage various elements of St Stephen's Green Park have also been designated as Protected Structures. On its eastern boundary these include:

- Railings, gates and plinth walls of perimeter boundary on St Stephen's Green (RPS 7751);
- Surrounding bollards and traditional-style lampposts (RPSs 7752).

Additional protected structures include the bandstand, a pavilion, fountains, the superintendent's house and several statues representing notable individuals such as the statue of Countess Markievicz and Robert Emmet (Record of Protected Structures (RPSs) 7753–7761 DCC). St Stephen's Green Park is also an Historic Garden and Designed Landscape as listed in the National Inventory of Architectural Heritage (NIAH).

The west side of the park is dominated by Fusiliers Arch (1907) and a substantial (3 acre) ornamental lake with a central tree covered Pulham rockwork. The perimeter of the park, in particular its eastern side is vegetated by a combination of mature trees (including several significant specimens of Oak, London Plain and Elm) and shrubs.

The northeast entrance to St Stephen's Green, now functions as a broad plaza with fan detail paving which is dominated by the Wolfe Tone Monument (1967) comprising a three-meter bronze statue set against the architect Keating's curved line of granite monoliths ('Tone Henge'; Figure 2.7). The Hungry Heart 'Famine' Memorial is located to the rear of this. The insertion of these statues and monuments, necessitated the removal of the northeast gates which are now located in the grounds of Kilkenny Castle (Margaret Gormley OPW, pers comm.). Although the 19th century gates were removed to accommodate the insertion of these items in 1967, two of the original gate piers do survive, one either side of the entrance way (Figure 2.8)

Figure 2.7: Wolfe Tone statue and 'Tone Henge' on the north-east corner of St Stephen's Green

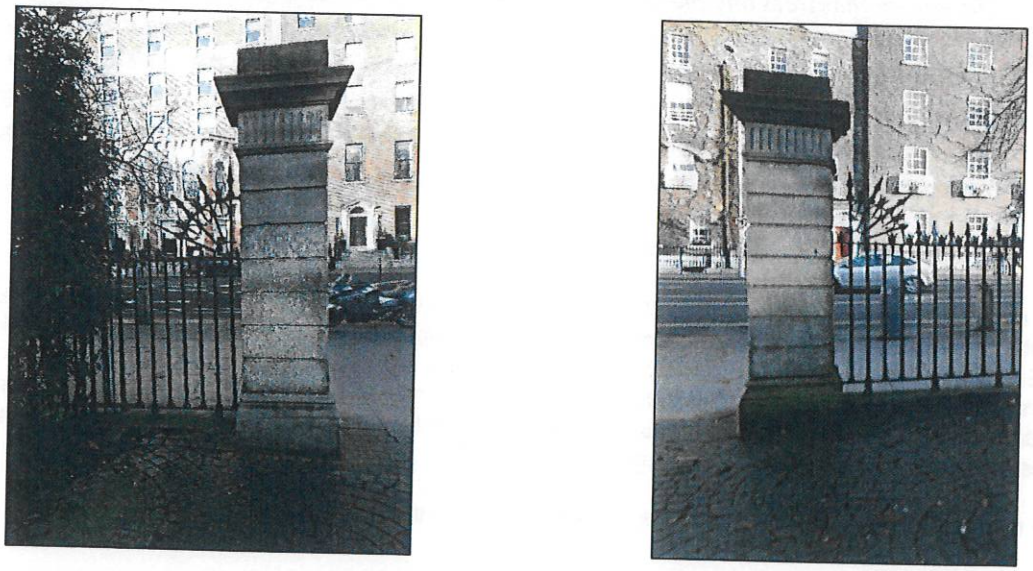

Figure 2.8: 19th century gate piers and fan detail railings on the north-east corner of St Stephen's Green

Within the parks south-east corner stands 'The Three Fates', by German artist Josef Wackerle, donated to Ireland by West German after World War II (Casey 2005, 533).

With reference to the above, as the boundary elements (railings RPSs 7751 and bollards -RPSs 7752) of the park are Protected Structures adopting the precautionary principle all items within its curtilage should be considered protected, with each item contributing to its distinct architectural and cultural heritage.

The park was original bounded to north, east and west by Dublin's historic tramlines of which sub-surface remains may survive. The historic ovid sewer line, which surrounds the park, is also of industrial heritage merit.

2.2.2 Conservation Plan

The Office of Public Works (OPW) have developed a Draft St Stephen's Green Park Conversation Management Plan (OPW 2015) which aims to conserve the unique Victorian character of St Stephen's Green that has remained largely intact since the 1880s. The Conservation Management Plan's strategy for the future has a strong conversation and restoration objective for all aspects of the park including built and natural features. Relevant objectives include:

- To protect and conserve the historic landscape character of St Stephen's Green Park;
- To protect the historic setting of St Stephen's Green and conserve its archaeological and architectural heritage; and
- To preserve the peace and tranquillity of the Green.

The mature vegetation, specifically the trees make up an important element of the cultural heritage value of St Stephen's Green Park. This is reflected in the specific objectives of the Draft St Stephen's Green Park Conversation Management Plan (OPW 2015) relating to landscape which states:

> *'To ensure that trees and plantations continue to thrive in the Green, using species that are appropriate to the setting and soil conditions. Such features are fundamental in creating the landscape character by defining spaces and in directing views within the Green. Sustaining the current balance between open space and plantations is essential to the landscape character. The form, structure and species diversity and character of plantations will be conserved, and new plantations established by sensitive management including felling, remedial work and appropriate replanting.'*

2.3 Landscape & Visual Amenity

The area next to the perimeter fence of the park vegetated by an unbroken line made up of a mixture of trees and shrubs. These provide a visually impermeable barrier between the urban environment and the green space inside St Stephen's Green Park. The upper canopy of the tree line along St Stephen's Green East is dominant by impressive specimens of Holm Oak (Quercus Ilex), Sycamore (*Acer Pseudoplatanus*), Horse Chestnut (*Aesculus Hippocastanum*), Wych Elm (*Ulmus Glabra*) and London Plane (*Plantanus x hispanica*). The majority of these trees have been classified as being in good condition.

The under canopy is dominated by Holy (*Ilex Aquafolium*) and Cherry trees (*Prunus Sp.)*

2.4 Amenity

St Stephen's Green is one of the most important green spaces in the centre of Dublin. Dublin City Council (DCC) have defined St Stephen's Green as a "Flagship Park" in the Dublin City Parks Strategy 2017-2022 (DCC, 2016).

St Stephen's Green Park has been defined as such in recognition of the significance of the park as a visitor and tourist attraction.

There are four main entrances to the park, with 14 entrances overall which allow safe access and egress to the park, seven days a week during opening hours. The Draft St Stephen's Green Park Conservation Management Plan (OPW, 2015) identifies that passive recreation is encouraged in the park and that the park offers a number of attractions such as the following:

- A clean, well maintained park in the middle of the city;
- A historic property open to all on a daily basis;
- A playground;
- Heritage features, statues, buildings and park furniture;
- Trees, shrubs and flower beds and borders;
- Water features;
- Wildlife; and
- Cultural events/lunchtime concerts.

In 2009, eight million visitors were recorded visiting the park and park users range from members of the public walking through the park, active walkers and joggers, lunchtime visitors, family groups and tourists.

3. Emerging Preferred Route and St Stephen's Green

3.1 Introduction

The Emerging Preferred Route (EPR) including a proposed underground station at St Stephen's Green East was identified based on an in-depth multidisciplinary analysis presented in ARUP (2018).

3.2 Methodology used in the Identification of the EPR

A study area was defined for the project as outlined in Figure 3.1. This study area was then split into three discrete study areas which included:

- Study Area A: City Centre (within which St Stephen's Green Station is located);
- Study Area B: Area B: Ballymun/Dublin Airport; and
- Study Area C: Swords.

Following this, all possible route options within each study area were identified and a preliminary analysis was undertaken to assess these options. All possible route options within each study area were identified and screened using a Pass/Fail Preliminary Assessment. Then the route options that passed this preliminary assessment were assessed using a two stage Multi Criteria Analysis (MCA) against a defined set of criteria. The criteria used are in line with the criteria outlined in the Common Appraisal Framework for Transport Projects and Programmes (DTTAS 2016) and included for a full environmental assessment of the route options.

Figure 3.1: EPR Study Area

3.2.1 Assessment Outcomes

The preliminary assessment of possible options was carried out which identified 20 assessment options across the study areas which merited further consideration and analysis. In order to enhance the analysis, concept designs were developed for each of these options to allow for more a detailed assessment.

Six routes options in Study Area A (which includes the St Stephen's Green area) were developed and assessed for the first stage MCA. These route options took different paths through Study Area A and included station location options at St Stephen's Green West, St Stephen's Green East, St Stephen's Green Central and options with no station location at St Stephen's Green.

The first stage MCA identified St Stephen's Green East, St Stephen's Green West and with no station at St Stephen's Green as feasible options for Study Area A that would be subject to further analysis during the second stage MCA analysis. The route option with a station location in the centre of St Stephen's Green was ruled out on the basis of the Stage 1 MCA analysis as this option would have the potential to directly impact the core of St Stephen's Green, its ornamental ponds, bridge, ornamental fountains, mature trees and park structure.

Overall, following the first stage MCA a total of eight options within the overall study area were identified for further consideration; three in Study Area A, three in Study Area B and two in Study Area C.

The eight options were spread across the three study areas (See Fig 3.1) and were combined in various permutations to develop 10 end-to-end route options, each running from Estuary (Swords) to the tie-in location at Charlemont. The ten end-to-end route options were then subjected to a second stage MCA. This MCA included a full transport demand assessment, cost benefit analysis and environmental assessment for each of the 10 options.

The Stage 2 MCA identified the EPR for the project which included a proposed station at St Stephen's Green East. The EPR compared most favourably to other options overall as it:

- Best serves passenger demand along the corridor;
- Serves more key trip attractors than other options through the city including St Stephen's Green, the National Concert Hall, the Cultural Institutions such as the National Gallery and the National Museum (Natural History & Archaeology). Furthermore, this route option serves key commercial, retail and office trip attractors such as the IFSC and Grafton Street;
- Provides excellent interchange opportunities with other public transport modes as it links with the DART (at Tara Street), Luas (at O'Connell Street and Charlemont), multiple bus routes and heavy rail services at Glasnevin. The MCA analysis found route options in Study Area A that featured an interchange with the DART at Tara Street performed well against the Public Transport Interchange criteria. Locating a station at Tara Street constrains the possible tunnel alignment options to reach Charlemont station due to tunnel boring machine turning constraints and operational considerations for the tunnel alignment. This means that the location of an interchange station at Tara Street was a key driver for the location of a station on St Stephen's Green East; and
- Resulted in potential environmental impacts particularly for Archaeology, Architecture & Cultural Heritage and Landscape, however it was identified that the majority of impacts could be mitigated during design.

3.2.2 Consultation on the EPR

Public consultation on the EPR occurred between 22 March and 11 May 2018. Submissions were received during this consultation period and one specific response related to St Stephen's Green. This response related to the proximity of school children in the area to noise and construction phase impacts on St Stephen's Green and difficulties reinstating the park post construction.

3.3 Description of the Proposed EPR at St Stephen's Green East

The alignment at St Stephen's Green that was presented as part of the EPR is shown on Figure 3.2.

For the EPR, the station at St Stephen's Green was developed to the point of an indicative station box location with some station elements shown. The station was located within the roadway and footpath of St Stephen's Green East where the construction area would have directly impacted St Stephen's Green East and St Stephen's Green Park. The station was situated to make use of the footpath and open area adjacent to the Wolfe Tone Memorial on the eastern corner of St Stephen's Green for:

- Ingress and egress to and from the station (adjacent to the Wolfe Tone Memorial);
- Emergency lifts and stairs from the footpath; and
- Ventilation shafts located on the existing footpath.

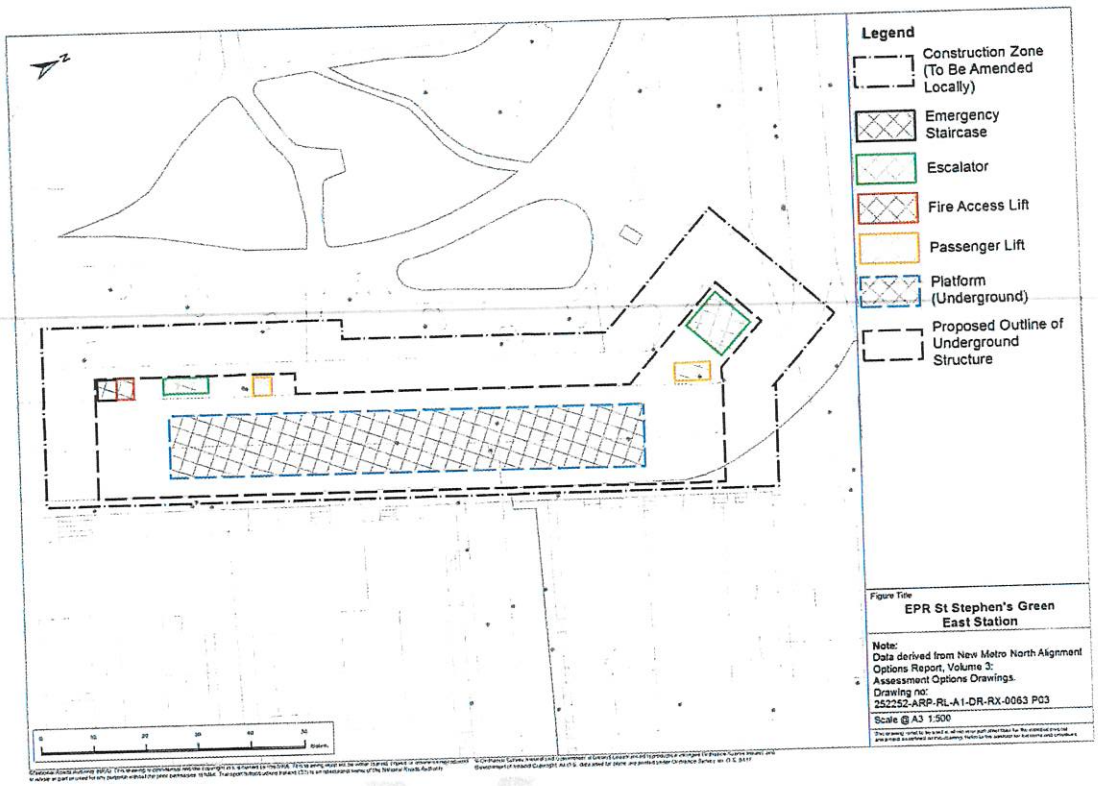

Figure 3.2: EPR Alignment and St Stephen's Green East Station

4. Preferred Route and St Stephen's Green Station

4.1 Introduction

As outlined in Section 3, the EPR for the project was identified and this route option included for a proposed station location on St Stephen's Green East.

Following the identification of the EPR, a programme of public consultation was undertaken on the EPR led by the National Transport Authority (NTA)/TII as described in Section 3.2.2 above. A review of submissions received has led to further analysis of the EPR resulting in a number of significant changes to the proposed project, including one that is particularly relevant here and this is the change from a proposed twin bore tunnel to a single bore tunnel.

This means that rather than having separate tunnels, one for each rail line, both north and south bound lines would run in parallel through a single tunnel. The single bore tunnel option has a number of distinct advantages, the most significant of which means that the project can be constructed in a shorter timeframe, thereby reducing the construction phase impacts of the proposed project. However, a single bore tunnel also requires for the provision of intervention shafts where the distance between stations is greater than 1,000m. Article 19(3) of Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways (EU216) establishes a maximum distance between lateral and/or vertical emergency exits of 1,000m for single bore tunnels.

Furthermore, a significant reduction in station box size was introduced and this means that the construction phase and operational phase impacts of the Preferred Route would be less significant than those for the EPR. (Refer to Figure 4.1 and Figure 4.2 for details of the preliminary design for the proposed station at St Stephen's Green East. These design changes have been factored into the determination of the optimum location for the preferred station location at St Stephen's Green East.

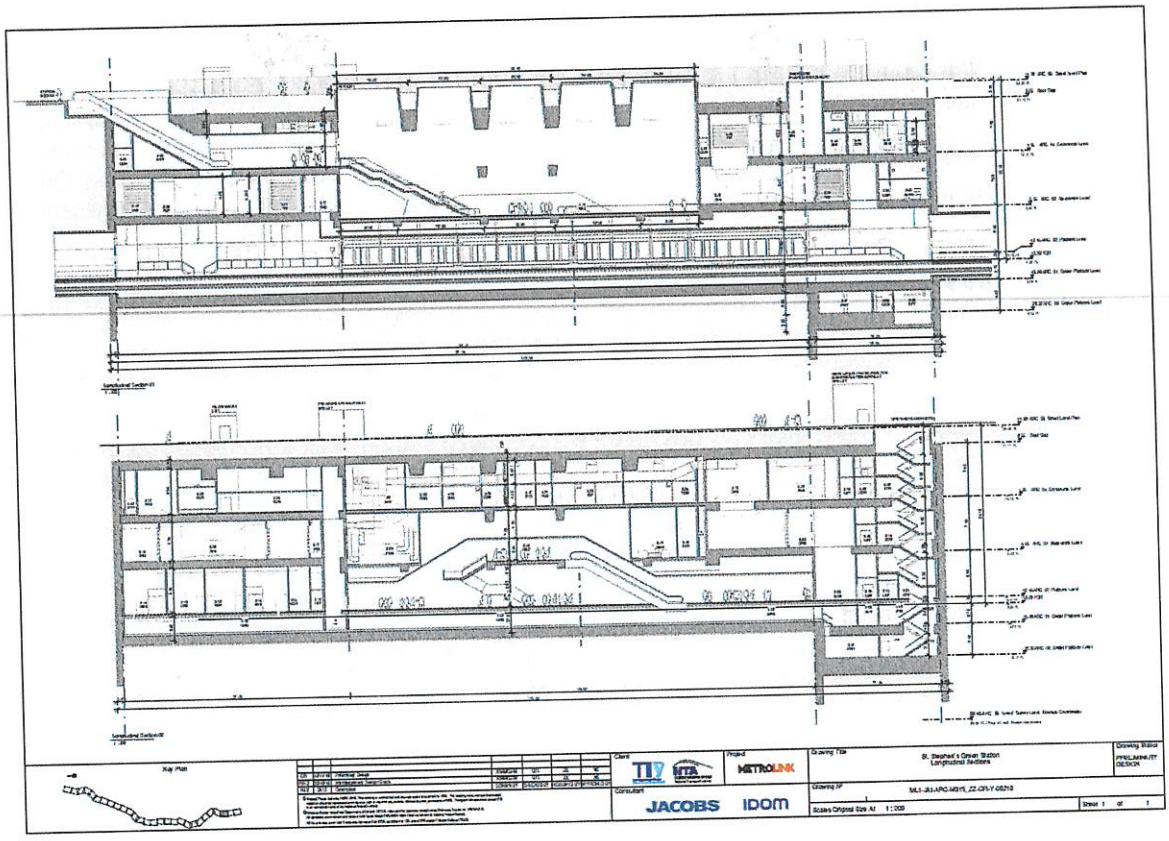

Figure 4.1: Preliminary Design of St Stephen's Green Station - Long Section

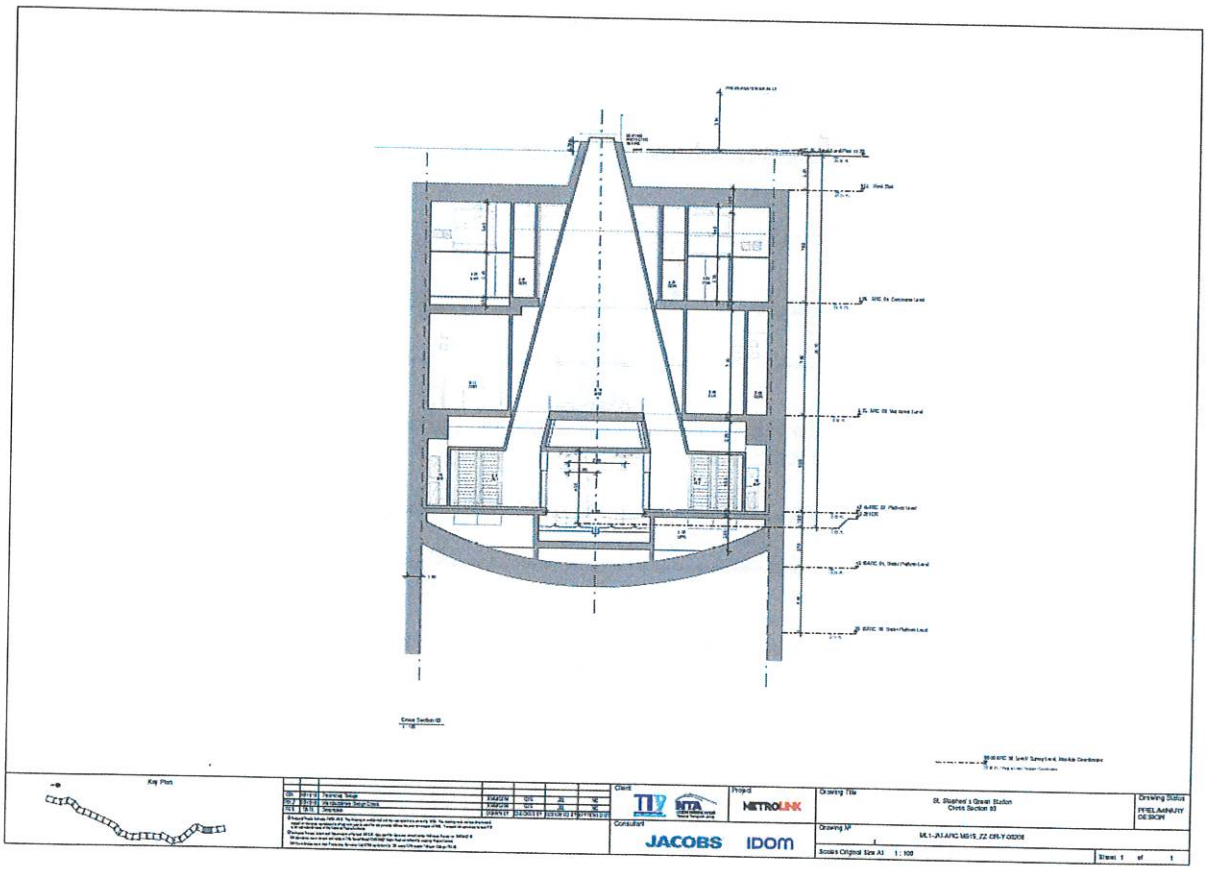

Figure 4.2: Preliminary Design of St Stephen's green - Cross Section

4.2 Methodology for the determination of the Preferred Station Location at St Stephen's Green East

A four-stage options assessment was undertaken to identify the preferred station location at St Stephen's Green East. The analysis was undertaken in line with the Project Appraisal Guidelines (TII 2016) and The Common Appraisal Framework (DTTS 2016) to provide a robust framework for comparing options. The assessment stages are outlined in Figure 4.3 below:

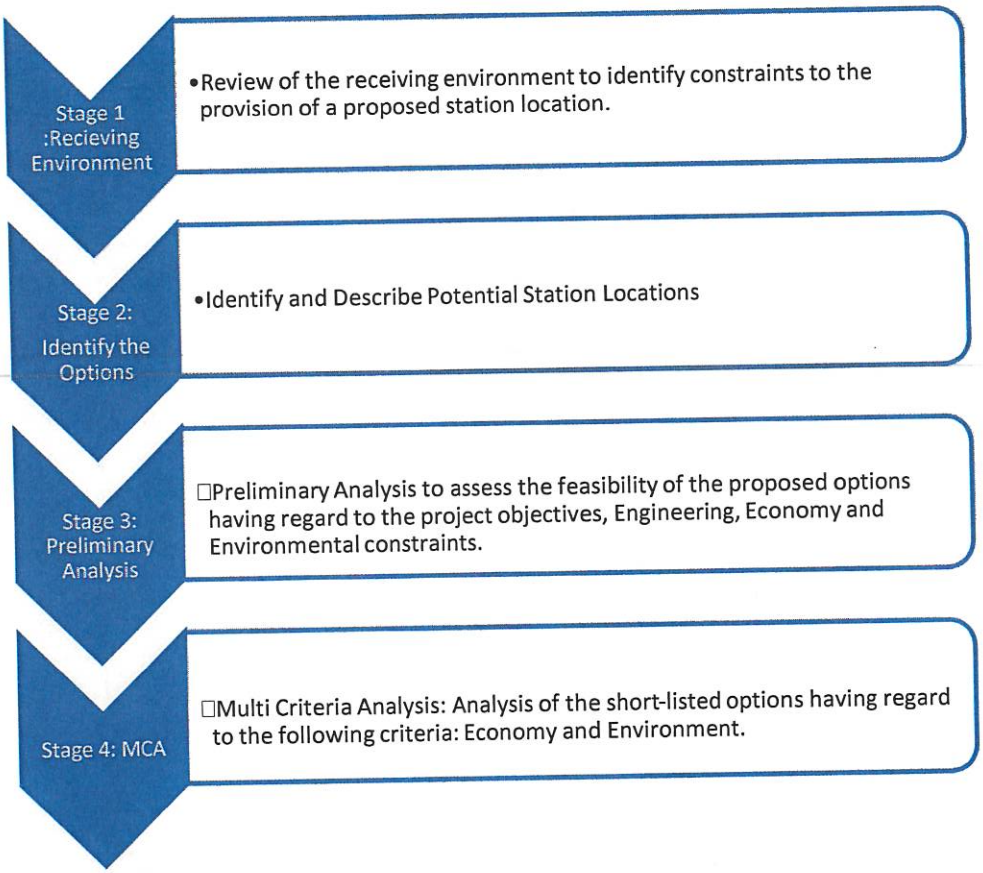

Figure 4.3: Outline Assessment Methodology

4.2.1 Stage 1: Review of the Receiving Environment

New Metro North - Alignment Options Report (TII 2018) identified an EPR alignment connecting Tara Street and Charlemont with a station location at St Stephen's Green East (Refer to Section 3 of this report for further information on the assessment undertaken). On the basis of providing a station location on St Stephen's Green East, a desk top study of the receiving environment was undertaken to identify the principal constraints that should be considered when identifying the preferred location for a station on St Stephen's Green East.

4.2.2 Stage 2: Identification and Description of Potential Station Locations.

The project team held a series of internal workshops to review the outputs of the desk top assessment of the receiving environment and to develop a number of potential station location options, which are described in Section 5 of this Report.

4.2.3 Stage 3: Preliminary Analysis

The preliminary analysis undertaken consisted of a qualitative assessment of potential station locations based on the criteria identified in Project Appraisal Guidelines (TII 2016). (Refer to Table 4.1)

Table 4.1: Criteria used for Stage 3 Assessment

Criteria	Sub-Criteria	Criteria Description	Note
Environmental	Potential for adverse impacts	Minimise the potential for adverse impact on the natural and built environment and the community.	Environmental criteria were assessed given the potential for impacts for the station locations.
Engineering	Constructability	This criterion considers if the station option can be constructed having regard to the identified constraints and opportunities within the study area	The constructability criterion was assessed given the potential differentiation between station locations.
Economy	Cost	This criterion considers the cost of each of the proposed station options.	This criterion was assessed given the cost implications of differing station locations.

The proposed Project objectives were also assessed to ensure the station location options developed were consistent with relevant project objectives such as the following:

- Be designed to integrate appropriately into the existing public realm; and
- Be planned, constructed and operated in an environmentally sustainable manner.

All locations identified in Stage 2 were assessed against the relevant criteria identified above with the intention to identify the locations that are feasible and worth analysing further utilising the MCA analysis in Stage 4.

4.2.4 Stage 4: Multi Criteria Analysis

Stage 4 involved taking the locations which remained following the Stage 3 preliminary analysis and subjecting them to a more detailed MCA analysis to decide on a preferred station location.

The characteristics and potential impacts of each station location have been assessed against the following criteria in Table 4.2.

Table 4.2: Stage 4 MCA Sub-Criteria

Criteria	Description
Economy	The impacts of a transport investment on economic growth and competitiveness are assessed under the economic impact and economic efficiency criteria
Environment	Environment embraces a range of impacts such as emissions to air, noise and ecological and architectural impacts.

4.2.4.1 Economy

For this assessment, it is assumed that the operating and maintenance cost of each station option is equal. However, the construction costs may vary depending on the location of the station having regard to the following:

- Indicative station construction costs;
- Ground level reinstatement costs;
- Major utility diversion costs;
- The requirement for an intervention shaft; and
- Other project infrastructure required at each location.

Estimates of these costs for each station location are used to differentiate between each station option.

4.2.4.2 Environment

The MCA has regard to all the environmental sub-criteria identified in Table 4.3 below. As identified in Table 4.3 some criteria were not considered to differentiate between options as the environmental impacts were deemed similar.

Table 4.3: Environmental MCA Sub-Criteria

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
Air & Climate	Yes	It is considered that the project will have a largely positive impact on air and climate during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in emissions. However, there is potential for impacts on sensitive receptors during the construction phase due to emissions. Emissions of relevance during this phase include NOx and Particulate Matter (PM10).	Sensitive receptors within 100m of each station box location were identified and considered and assessed to identify potential impacts. St Stephen's Green is considered as a single sensitive receptor. However, the degree of impact on St Stephen's Green is considered in this analysis as a proxy for the impact on the immediate environment during the construction phase.

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
Noise & Vibration	Yes	It is considered that the project will have a largely positive impact in terms of noise and vibration during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in noise. However, there is potential for impacts on sensitive receptors during the construction phase.	Sensitive receptors within 100m of each station box location were identified and considered and assessed to identify potential impacts. St Stephen's Green is considered as a single sensitive receptor. However, the degree of impact on St Stephen's Green is considered in this analysis as a proxy for the impact on the immediate environment during the construction phase.
Resource & Waste Management	No	For the purposes of this analysis the station box and excavation area required for each of the options assessed is assumed to be the same. As a result, the quantity of spoil material and/or waste generated will be similar for each option and is not considered to be a differentiator. For the operational phase, the resources required, and waste produced from each station box option would be similar and as a result not considered as a differentiator.	Not applicable.
Biodiversity	Yes	Each station box location will have potential to impact on local biodiversity within St Stephen's Green. Potential for impacts are associated with the construction phase and following construction and re-establishment of the park impacts are minimised.	The assessment undertaken for each of the station box locations is qualitative and entails the identification of the potential impacts on biodiversity within and surrounding St Stephen's Green Park.
Agriculture	No	The location of the station box is fully located within an urban setting with no potential impact on agricultural activity.	Not Applicable
Non-Agricultural Properties	Yes	Potential for direct impacts on a number of land holdings and properties.	The assessment consists of a count of the land holdings directly impacted by each station box location.
Architectural Heritage	Yes	Potential for direct impacts on several elements of architectural heritage during the construction and operational phases.	A qualitative assessment of potential direct impacts from on elements of architectural heritage from each station box and associated construction works.

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
		Potential for impacts are primarily associated with the construction phase. Following construction, important architectural features such as the park such as railings and monuments will be reinstated.	
Archaeology	Yes	Potential for direct impacts on several elements of archaeology arising during the construction phase and the location of station elements.	The assessment consists of an analysis of directly impacted known archaeology and potential subsurface archaeology.
Landscape & Visual	Yes	Potential for significant impacts on the landscape and visual amenity at St Stephen's Green East Potential for impacts are associated with the construction phase and following construction and re-establishment of the park impacts are minimised.	Assessment involved the qualitative assessment of visual impacts and includes an identification of significant tree loss within each potential station location's construction area.
Soils & Geology	No	All station box locations potentially impact on the made ground to the same geographical extent. All station box locations impact on Dark limestone and shale bedrock of the Lucan Formation to the same geographical extent.	Not Applicable.
Hydrology	No	There are no surface water features potentially impacted by any of the station box locations. There is potentially a historical channel crossing the east of St Stephen's Green to the lakes within the green. However, OPW identified that this channel does not act as a water source for the lakes at St Stephen's Green.	Not Applicable
Hydrogeology	No	There are no known groundwater wells or springs impacted by any of the station box locations. All station box locations impact on a locally important aquifer to the same geographical extent.	Not Applicable
Traffic and transport	Yes	Potential for significant impact on traffic and transport during construction depending of station box location for each option. Long term	Assessment consists of the review of modelling of impacts on surrounding road network. It also assesses impacts on public transport and the

Environmental Aspect	Included as a sub-criterion	Rationale	Assessment
		operational impacts were not considered a differentiator as each of the station locations would have a similar positive impact in the long term.	Dublin City Council Heavy Goods Vehicles (HGV) strategy, cyclists and pedestrians.
Utilities	Yes	Potential for impacts on several utilities that require diversion to construct the station box.	The assessment involved identifying the utilities present that are potentially affected by each option.
Population and Human Health	Yes	Potential Socio-Economic impacts for each station box locations during the construction phase of the project. Human Health impacts were not considered a differentiator due to the similarity between location for this discipline. During the operational phase, it is considered that there will be a similar positive impact arising from each of the proposed station box locations.	The assessment involved a qualitative classification of negative impacts, during the construction phase. An assessment of the operational benefits was also undertaken.
Radiation and Stray Current	No	Not considered a differentiator as there is no potential for impacts on sensitive receptors arising from the proposed station box locations.	Not Applicable.

4.3 Receiving Environment/Local Constraints

As with all other City Centre locations, St Stephen's Green East is particularly constrained for the location of a proposed station and associated infrastructural works. The main constraints are discussed in this Section under the following headings:

- Transport/Traffic;
- Landscape/Streetscape and Visual Amenity;
- Biodiversity;
- St Stephen's Green - Railings, Monuments and other features; and
- Important adjacent Buildings and Cellars.

4.3.1 Transport/Traffic

St Stephen's Green East plays an important role in the city's transport network. It is designated as a secondary strategic pedestrian route, and as a primary cycle route in the Greater Dublin Area Cycle Network Plan (NTA 2013). It is also a busy route for vehicular traffic and is one of the designated Heavy Good Vehicle (HGV) routes within the City Centre, which forms the City Centre HGV Management Strategy (DCC 2007) for heavy goods vehicles. As such, the maintenance of the south-north movements on the street is key to the maintenance of services attending the Grafton Street area.

St Stephen's Green East is also a busy artery for public transport services from the south-east of the city and further afield and is used by over 50 different Public Service Obligations (PSO) and commercial bus routes.

A baseline survey was undertaken for the MetroLink project in this area and on this basis, extensive transport modelling work was undertaken. The modelling output identified the following traffic and transport movements at St Stephen's Green East during the AM Peak:

- Bus routes: 384 buses including the following routes: 84x, 11, 145, 155, 32x, 41x, 46a, 757, 7b, 7d, 142, 37, 44 and 61;
- Private vehicles: 1,711 Private Car Units (PCU);
- 594 cyclists (travelling both north and south); and
- 3,319 pedestrians during AM Peak.

St Stephen's Green East is an important link in Dublin's bus network and is the main route in and out of the City Centre for buses coming from the south-east. Cross city routes such as 155 from Bray to Ballymun and the 11 from Sandyford Business District. to St Pappin's Road in Glasnevin rely on St Stephen's Green East for their services. Therefore, closure of this street would result in significant disruption to these services, providing no service to the Dawson Street area. Similarly, the 46a service from Dun Laoghaire to the Phoenix Park operates approximately every 7-8 minutes during the AM Peak, contributing greatly to the number of buses utilising St Stephen's Green East during this time. This service would face considerable disruption if St Stephen's Green East was closed, as it would be required to be redirected which would result in a significant delay to a number of services.

Partial or full restriction of pedestrian movements in this area during construction would also negatively impact access to and from the Grafton Street area. North-south and south-north pedestrian movements are prioritised under the Dublin City Development Plan (DCC 2016-2022) and Dublin City Centre Transport Study (DCC 2015). Therefore, these movements have local importance.

St Stephen's Green East also forms part of a proposal for a car-park access plan to remove vehicles from the core central area. Closure of this street would restrict this access and increase the number of vehicles within the City Centre.

All of the above mentioned transport and traffic movements are of strategic importance to the city and could have signifiant impacts if interrupted. Reasonable alternative routes could be provided for pedestrian, cyclists and access to multi-storey car parks, however there are no reasonable routes for goods and delivery traffic, or for the volume of north-south and south-north bus traffic.

4.3.2 Landscape/ Streetscape and Visual Amenity

The streetscape on St Stephen's Green East is dominated on the eastern side by a mixture of Georgian architecture and modern buildings. St Stephen's Green Park lines the western side of St Stephen's Green East. The footpath on the western side of St Stephen's Green East contains:

- 17 street trees (Caucasian Lime) to the east side of the park's perimeter fence. 13 of which are within the indicative construction areas for the proposed Project station locations.
- Protected structures which are situated on the footpath of St Stephen's Green within the curtilage of the National Monument:
    - Railings, gates and plinth walls of perimeter boundary on St Stephen's Green (RPSs 7751); and
    - Surrounding bollards and traditional-style lamp-posts (RPSs 7752).

The area next to the perimeter fence of the park is vegetated by an unbroken line made up of a mixture of trees and shrubs. These provide a visually impermeable barrier between the urban environment and the green space inside St Stephen's Green Park. A tree survey was undertaken for the eastern side of St Stephen's Green Park for the purpose of the MetroLink project. This survey covered all areas that would potentially be impacted by a station location. The tree survey was undertaken by a fully qualified arborist in line with *British Standard 5837: 2012 – Trees in relation to design, demolition and construction – Recommendations*.

The tree survey identified 136 No. of mature trees within the study area. The upper canopy of the tree line along St Stephen's Green East is dominated by impressive specimens of Holm Oak (Quercus Ilex), Sycamore (*Acer Pseudoplatanus*), Horse Chestnut (*Aesculus Hippocastanum*), Wych Elm (*Ulmus Glabra*) and London Plane (*Plantanus x hispanica*). The majority of these trees have been classified as being in good condition.

The under canopy is dominated by Holy (*Ilex Aquafolium*) and Cherry trees (*Prunus Sp.).*

A number of station location options would require the felling of a number of the trees identified in St Stephen's Green Park as described for each station location option in Section 6 and 7.

4.3.3 Biodiversity

Comprehensive biodiversity surveys were undertaken at St Stephen's Green. Surveys including a habitat survey, a Breeding Bird and a Bat detector survey has been undertaken at St Stephen's Green for the purposes of the MetroLink project.

On the basis of a desk-based assessment, the above mentioned surveys and in the context of the surrounding environment, St Stephen's Green is considered to be of local ecological value (higher value). St Stephen's Green Park is characterised by the following habitat types (Fossitt, 2000):

- Amenity Grassland (Improved) (GA2)
- Scattered Trees and Parkland (WD5); and
- Hedgerows (WL1) and Treelines (WL2)

Bats (Common pipistrelle & Leisler's bat) have also been recorded in the tree line and the mature trees here have potential to contain Bat Roosts. In addition, one red-listed and four amber listed bird species were recorded here during the Breeding bird survey.

A number of station location options would require the felling of a number of the trees and the removal of vegetation which would impact on the biodiversity at St Stephen's Green Park as is described for each station location option in Section 9.

4.3.4 St Stephen's Green Park (East) - Cultural Heritage Items

Within the National Monument on its Eastern boundary are several protected structures. These include:

- Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East (RPSs 7751 - 7752);
- The bollards and traditional-style lamp posts which line the footpath (RPSs 7752); and
- Sculptures

A summary of each of these structural elements of St Stephen's Green are provided below. For the outputs of an in-depth analysis of these cultural heritage items please refer to Appendix A.

4.3.4.1 Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East; RPS 7751-7752)

The railings are substantial, with closely spaced spear-topped railings rising off a cut-granite plinth. The railings terminate at the northern end of St Stephen's Green East at a neoclassical granite pier at the edge of the Wolfe Tone memorial plaza. The bollards are of granite, each topped with an iron boss that originally carried chains that ran from one bollard to the next. These are set at the kerb line of the pavement adjacent to the park. About a metre back from the kerb is a line of lamp standards in the style of traditional oil or gas lamps. Two types of lamp standards surround the green and these are

- A three lantern cast-iron version located on each corner illuminating the gates/access ways, and
- A single lantern cast-iron version aligned with the perimeter kerb

The footpath alongside the park was re-laid with granite flagstones, bordered by granite kerb stones. These are of high quality but are not heritage elements.

4.3.4.2 Sculptures on St Stephen's Green Park (East)

The Wolfe Tone Monument, and the Hungry Heart Famine Memorial are situated on the south western edge of the plaza area that makes up the north eastern corner of St Stephen's Green Park. These are not protected structures but form part of the architectural heritage of the park. The monument consists of a substantial paved area at the north-eastern corner of the park in which stands a bronze sculpture representing Wolfe Tone standing on a granite plinth. This is backed by a segmental array of tall granite columns (Tone Henge), behind which is a second, smaller array of columns. The plaza area is paved with granite blocks laid in a pattern of sweeping curves. To the rear of the granite columns, within the enclosed area of the park, is a bronze sculpture representing the Great Famine of the 1840s. Both the Wolfe Tone memorial and the Famine memorial were produced by Edward Delaney in the 1960s.

4.3.5 Protected Structures and associated features on St Stephen's Green East

There are ten protected buildings between Merrion Row, and Leeson St Lower on St Stephen's Green East These are listed in Table 4.4 below. The primary constraint relating to the protected buildings is the potential for coal cellars to be present under the eastern footpath and carriageway of the St Stephen's Green East. An indicator for the presence of cellars is often the presence of cast-iron coalhole covers in the footway to the front of a building. There are no coalhole covers in the footway on the eastern side of St Stephen's Green; however, the footway has been entirely re-laid with concrete flags and it is possible that any surviving coalhole covers were lost in that project. The kerbstones on the eastern side of the street are of heritage significance, as is the cast-iron pillar box outside number 50 St Stephen's Green and which dates from the 1870s.

The protected structures on the eastern side of St Stephen's Green are generally Georgian in style and vary in scale. At the northern end of the eastern side number 39-40 is an Edwardian bank building and its neighbour at number 41 is a Georgian-style house dating from the 1740s with later dormers added. Numbers 42 and 43 were built as a pair in the 1740s and are Dutch-billy style houses, with the gabled fronts later rebuilt with parapets. Numbers 44 to 49 were built in the 1970s and have no heritage significance. Numbers 50 to 56 were built in the third quarter of the eighteenth century and are substantial houses. Number 51 is particularly large and was later further enlarged by the addition of wings.

Building and Address	RPS reference number
39-40 St Stephen's Green East	7780
41 St Stephen's Green East	7781
42-43 St Stephen's Green East	7782
50 St Stephen's Green East	7783
51 St Stephen's Green East	7784
52 St Stephen's Green East	7785
53 St Stephen's Green East	7786
54 St Stephen's Green East	7787
55 St Stephen's Green East	7788
56 St Stephen's Green East	7789
Railings, gates and plinth walls of perimeter boundary on St Stephen's Green	7751
Surrounding bollards and traditional-style lamp-posts	7752

Table 4.4: List of Buildings on the RPS on St Stephen's Green East

4.3.6 Amenity

The location of the potential station locations being considered for the MetroLink are at the eastern extent of St Stephen's Green Park. As such they are removed from some of the bigger visitor attractors within the park, such as the central area of Victorian floral displays, the Lime Walk, the Lakes, Playground, the Guinness Plot and the Band Stand.

However, the potential impact of Station Locations on the amenity value of St Stephen's Green Park is related to the extent of ingress of each option into the park and this is outlined in Section 9.

4.4 Engineering Considerations

The main engineering considerations that were considered during this analysis are discussed in this Section under the following headings:

- Intervention Shaft Requirement; and
- Diversion of Utilities.

4.4.1 Intervention Shaft Requirement

The railway tunnel design for the proposed Project must comply with appropriate fire safety standards. The single bore tunnel configuration requires emergency exit points to allow safe egress from the tunnel during an emergency.

In the case of an emergency, ground level is reached by evacuation shafts that are connected to the tunnel. Article 19(3) of Regulation (EU) 2016/796 of the European Parliament and of the Council of 11 May 2016 on the European Union Agency for Railways (EU216), establishes the requirement for a maximum distance between emergency exit points of 1,000m.

Due to this requirement, a number of potential station locations at St Stephens Green East assessed in this Report with a distance of more than 1,000m between Tara Street and the station would require an additional intervention shaft to allow for emergency evacuation.

4.4.1.1 Function of an Intervention Shaft

The tunnel intervention shaft should be a significant structure (Figure 4.4) and would have the following primary functions:

- It allows emergency services to access the underground system in an emergency situation;
- It provides a safe route for passengers to escape from the tunnel during an emergency;
- It assists in controlling/managing smoke extraction in emergency situations;
- It assists in providing ventilation for passenger comfort in normal day-to-day operations and
- It provides draught relief during the normal operation of the line, enabling the movement of air in or out when a train passes.

4.4.1.2 Construction Phase

The construction of the tunnel intervention shaft is a significant construction project that would last up to three years. It would require the mobilisation of a substantial quantity of machinery, materials and other auxiliary equipment. Most of the construction work would be below ground level and would require the excavation of a vertical shaft of approximately 15m diameter, which would extend 30m below ground level.

The shaft construction method would ultimately be selected by a works contractor. However an appropriate construction method would be to advance a secant pile wall into the weathered rockhead, followed by drill and blast methods below rockhead for further excavation. Furthermore, blasting would also be required for the subsurface passage connections to the main tunnel because they would likely be located below rockhead level. An example of a typical shaft under construction using secant piling is shown in **Error! Reference source not found.** below.

The temporary area required for the construction compound during the construction period would be greater than the area which would be ultimately required for the completed tunnel intervention shaft.

4.4.1.3 Location of an Intervention Shaft

The availability of suitable locations for an intervention shaft to be constructed and operated between St Stephen's Green and Tara Stations is limited given the built-up nature of the area. The tunnel alignment runs beneath public

buildings including the National Museum of Ireland, Leinster House (House of the Oireachtas), and Trinity College. Locating a suitable place to construct an intervention shaft in this area would be challenging given the type of land use and potentially sensitive receptors in the vicinity. For the purposes of this report it is assumed that the most appropriate locations for an intervention shaft would be more open areas at the eastern end of Trinity College or on Merrion Square.

Figure 4.4: Intervention Shaft being Constructed by Secant Pilling Method

4.4.2 Diversion of Utilities

There are several utilities known to be situated within the road corridor and footpath of St Stephen's Green East. These include:

- An 1,800mm brick "ovoid" Victorian sewer situated in central position running north south 3m beneath the road surface. An example of which is shown in Figure 4.5;
- A 1,710mm reinforced plastic mortar "ovoid" sewer situated beneath the surface of Hume Street that joins the St Stephen's Green East sewer described above where the streets intersect;
- Water mains beneath the cycle lane on the western side of St Stephen's Green East;
- ESB high voltage cable beneath the cycle lane on the western side of St Stephen's Green East;
- Gas mains, Eir and ESAT/British Telecom cables beneath the traffic lanes of St Stephen's Green East; and
- Water mains, ESB High Voltage and Eir cables beneath the eastern footpath of St Stephen's Green East

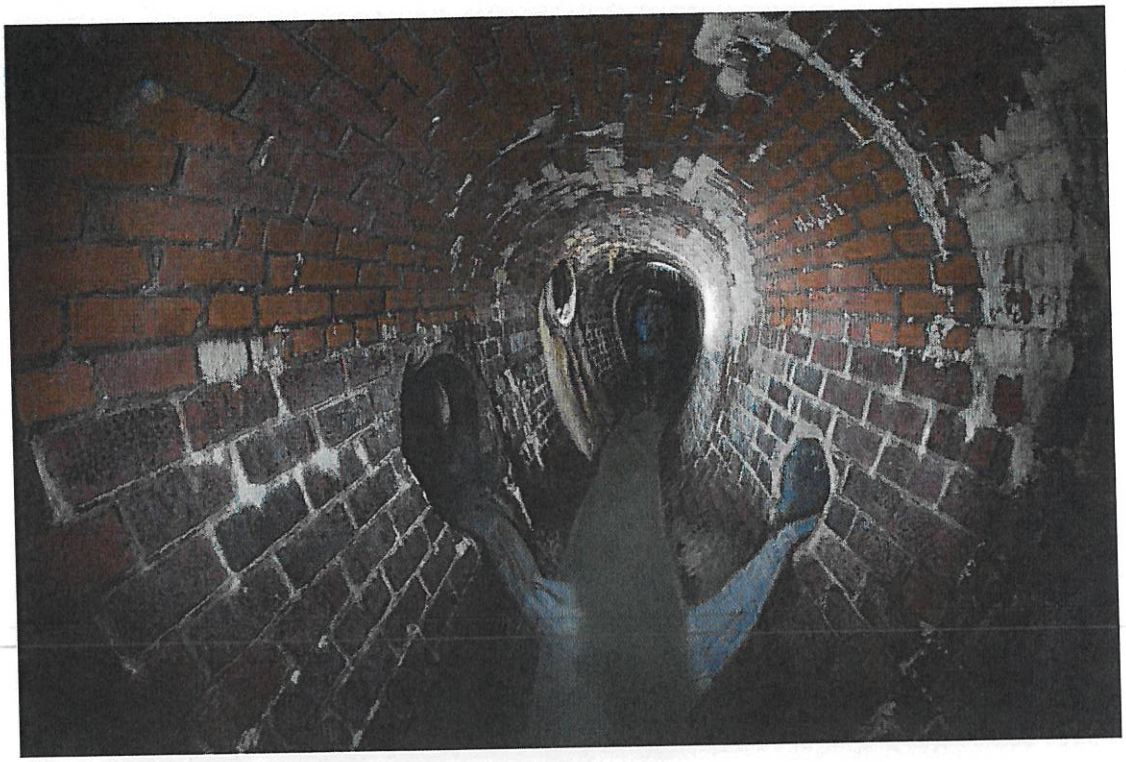

Figure 4.5: Typical Victorian Brick Sewer

There are no utilities under the western footpath of St Stephen's Green East which is within the National Monument boundary of St Stephen's Green Park.

4.4.2.1 Construction Requirements for Utility Diversions

Due to the depth of the Victorian sewer at St Stephen's Green East and in order to limit the extent of the surface works, the sewer diversions would be installed by trenchless techniques between two shafts/chambers approximately 6m diameter wide and 5m deep at suitable positions to the north and south of the potential station box location.

It would be necessary to install a temporary bypass system and subsequently divert the existing sewer services from above and around the sewer connection and diversion launch box areas. This would require the diversion of the footpath and two eastern traffic lanes on St Stephen's Green East. Furthermore, it may be necessary to close Hume Street to construct a temporary pump station to redirect the flow from the Hume Street sewer. However, once in place the use of trenchless techniques along St Stephen's Green East should allow Hume Street to be reopened.

As the existing sewer is beneath the centre of the road the launch chamber would need to be extended to the west to form the connections onto the north and south ends of the existing sewer, maintaining through flow at all times. When ready the side connections would be connected into the new sewer and the temporary bypass system disconnected. The through system would then be connected at the upstream end.

While the diversion of the Victorian sewer on St Stephen's Green East is the main constraint here, the diversion of other utilities would also require sequenced closure of alternate lanes right across the roadway.

It is estimated that two traffic lanes on St Stephen's Green East could be closed for 12 months or more in the event that significant utility diversions are required.

5. Potential Station Locations

5.1 Introduction

Seven potential station location options were developed for St Stephen's Green East. The Station Location options were developed using internal multidisciplinary workshops, where potential station locations were developed having regard to the constraints identified during the Stage 1 Review of the Receiving Environment analysis.

A description of each of the potential station locations are detailed in this section of the Report.

5.2 Location 1

Location 1 is situated primarily within the carriageway of St Stephen's Green East as shown in Figure 5.1**Error! Reference source not found.**. This station location has the following features:

- The station box western extent is situated directly in line with St Stephen's Green East Park's eastern fence; and
- The eastern extent is situated in line with the footpath on the eastern side of St Stephen's Green East.

The indicative construction area as shown in Figure 5.1 takes in the entire footpath of the eastern side of St Stephen's Green and encroaches approximately 12m into St Stephen's Green Park.

The Victorian sewer described under St Stephen's Green East would require diversion east (away from St Stephen's Green Park) under the footpath on the street's eastern side. Another sewer situated under Hume Street joins the sewer running north/south under St Stephen's Green East. The station box has been located far enough south to avoid the point where these two sewers join. However, locating the station box to avoid the sewer makes the distance between Stephen's Green and Tara Stations greater than 1,000m resulting in the need for an intervention shaft at either Trinity College Dublin or Merrion Square.

For this location, St Stephen's Green East would be closed to through traffic and pedestrians during the construction phase. The entire area within the indicative construction site would be closed to the public including areas of St Stephen's Green Park. Vegetation and trees would be cleared fully within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement following construction.

On completion of the construction phase there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present in addition to the station entrance. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as would some ventilation shafts.

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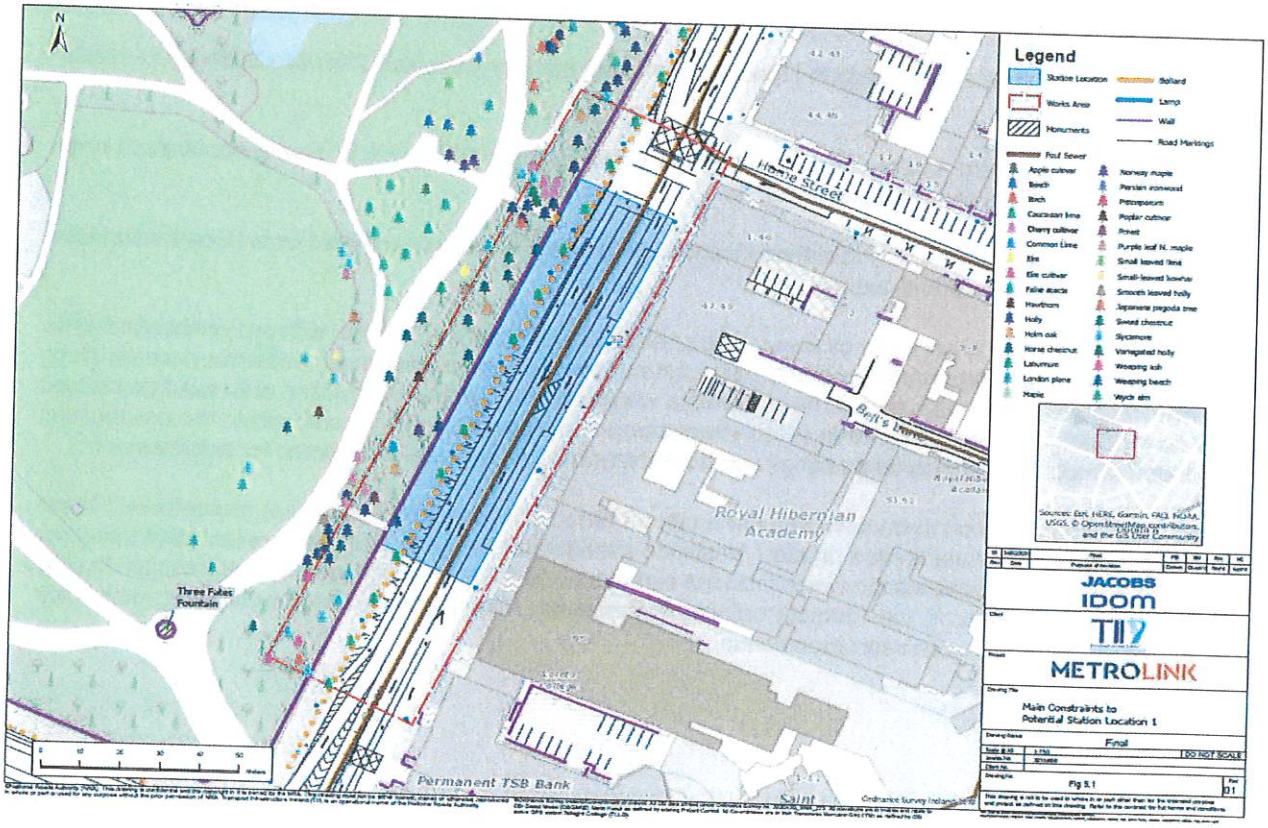
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Station Location
Works Area
Monuments
Foul Sewer
Bollard
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Apple cultivar
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Caucasian lime
Cherry cultivar
Common Lime
Elm
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False acacia
Hawthorn
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Holm oak
Horse chestnut
Laburnum
London plane
Maple
Norway maple
Persian ironwood
Pittosporum
Poplar cultivar
Privet
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Small leaved lime
Small-leaved lowthor
Smooth leaved holly
Japanese pagoda tree
Sweet chestnut
Sycamore
Variegated holly
Weeping ash
Weeping beach
Wych elm
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
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Bell's Lane
Royal Hibernian Academy
Three Fates Fountain
Permanent TSB Bank
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Main Constraints to Potential Station Location 1
Final
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Fig 3.1
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5.3 Location 2

The potential station Location 2 station box is situated further west than Location 1. While it is situated partially within St Stephen's Green East and partially within St Stephen's Green Park the location allows for an additional lane of traffic to remain open during construction. This position is shown in Figure 5.2 and the station box location has the following features:

- The central axis of the station box sit slightly west of the eastern perimeter fence of St Stephen's Green Park;
- The western extent is situated approximately 17m west of the perimeter fence of St Stephen's Green Park; and
- The station box eastern extent is situated so it aligns with the closest traffic lane to St Stephen's Green Park.

The indicative construction area as shown in Figure 5.2 encroaches approximately 27m into St Stephen's Green Park.

Location 2 does not require the sewer under St Stephen's Green East to be diverted. The sewer situated under Hume Street which joins this sewer is also avoided.

Due to the more southerly location of the station location, there would be a requirement for an intervention shaft at either Trinity College or Merrion Square.

During construction St Stephen's Green East would be partially closed to through traffic with two northbound traffic and one southbound bus lane remaining open. Using the indicative construction area, pedestrian access along the eastern footpath would remain open. The entire area within the indicative construction area would be closed to the public including St Stephen's Green Park. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement.

On completion of construction there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present within the park in addition to the entrance to the station which includes elevators and MetroLink signage. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as will some ventilation shafts.

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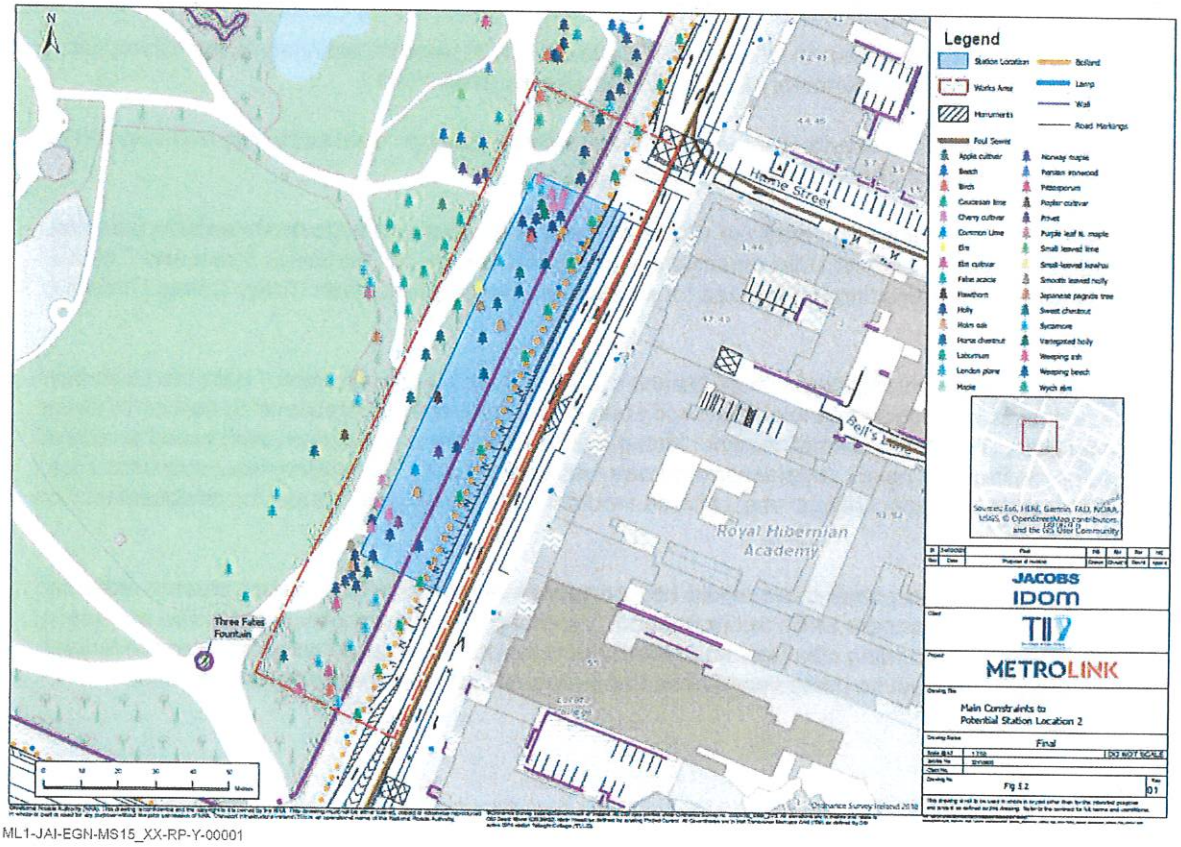
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Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, GIS User Community
Harcourt Street
Royal Hibernian Academy
Three Fates Fountain
Ordnance Survey Ireland 2018
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Main Constraints to Potential Station Location 2
Final
Fig 3.2

5.4 Location 3

Potential Station Location 3 would be situated entirely within St Stephen's Green Park as shown in Figure 5.3 and is, in turn, located further west than Location 2. This location is designed to avoid St Stephen's Green East carriageway and the footpath and protected structures that are situated there. This station location has the following features:

- The station box central axis sits approximately in line with the pathway that runs in a north-south direction within the north-eastern portion of St Stephen's Green Park; and
- The station box is located entirely within St Stephen's Green Park.

The indicative construction area as shown in Figure 5.3 is situated so its eastern boundary is just within park's perimeter fence and encroaches approximately 40m into St Stephen's Green Park.

As Location 3 is situated within St Stephen's Green Park it is situated far enough west not to require the diversion of utilities within the carriageway of St Stephen's Green East.

The station box and indicative construction area are situated far enough south avoid the north eastern plaza and the monuments situated there. However, this means the distance between St Stephen's Green and Tara St Stations is greater than 1,000m resulting in the need for an intervention shaft at either Trinity College Dublin or Merrion Square.

During the construction phase, the roadway on St Stephen's Green East will remain open. Using the indicative construction area pedestrian access along the eastern and potentially the western footpaths of St Stephen's Green East would remain open. The entire area of the park located within indicative construction area would be closed to the public for the construction phase. Vegetation and trees would be cleared from within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement on completion.

On completion of the construction phase there would be permanent elements of the station present within the park. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and MetroLink signage. The station box is situated too far west for lifts to be located on the footpath so these would need to be located within St Stephen's Green Park.

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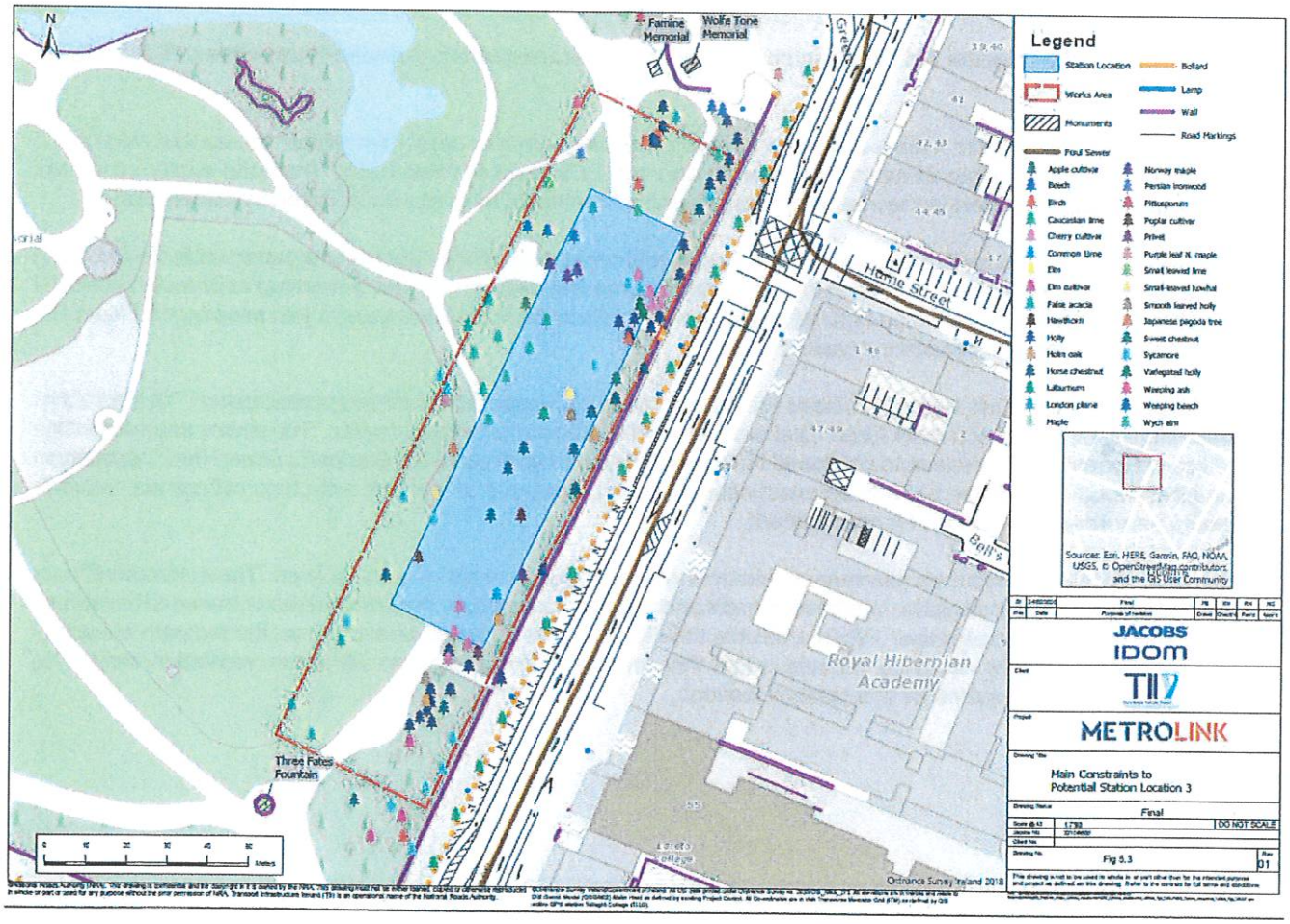
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Wolfe Tone Memorial
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Hume Street
Bell's
Royal Hibernian Academy
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Wych elm
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
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METROLINK
Main Constraints to Potential Station Location 3
Final
DO NOT SCALE
Fig 5.3
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Ordnance Survey Ireland 2018

5.5 Location 4

Potential station Location 4 is situated in a similar east/west axis to Location 1 but is located 31m further north. It is situated primarily within the carriageway of St Stephen's Green East as shown in Figure 4.4. The station box location has the following features:

- The station box western extent is situated directly in line with St Stephen's Green East Park's eastern fence;
- The eastern extent is situated in line with the footpath on the eastern side of St Stephen's Green East but also takes in the front steps of several properties on St Stephen's Green East; and
- The northern extent of the station box is located across the junction between Hume St and St Stephen's Green East.

The indicative construction area as shown in Figure 4.4 takes in the entire footpath of the eastern side of St Stephen's Green and encroaches approximately 12m into St Stephen's Green Park. The north eastern corner of the construction area takes in the steps and accessways for several buildings on St Stephen's Green East

The Victorian sewer under St Stephen's Green East would require diversion east to be situated under the footpath on the street's eastern side. The sewer situated under Hume Street joins the sewer running north/south under St Stephen's Green East The station box is located at the point where these two sewers join meaning the Hume St sewer will also require diversion eastwards.

St Stephen's Green East would be closed to through traffic and pedestrians during construction. The right turn from Hume St to St Stephen's Green East would also be closed to through traffic. The entire area within the indicative construction area would be closed to the public including areas of St Stephen's Green Park. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for replacement.

On completion there would be permanent elements of the station present at ground level. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and signage. Where possible the lifts and shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as will some ventilation shafts. No intervention shaft is required for this station location.

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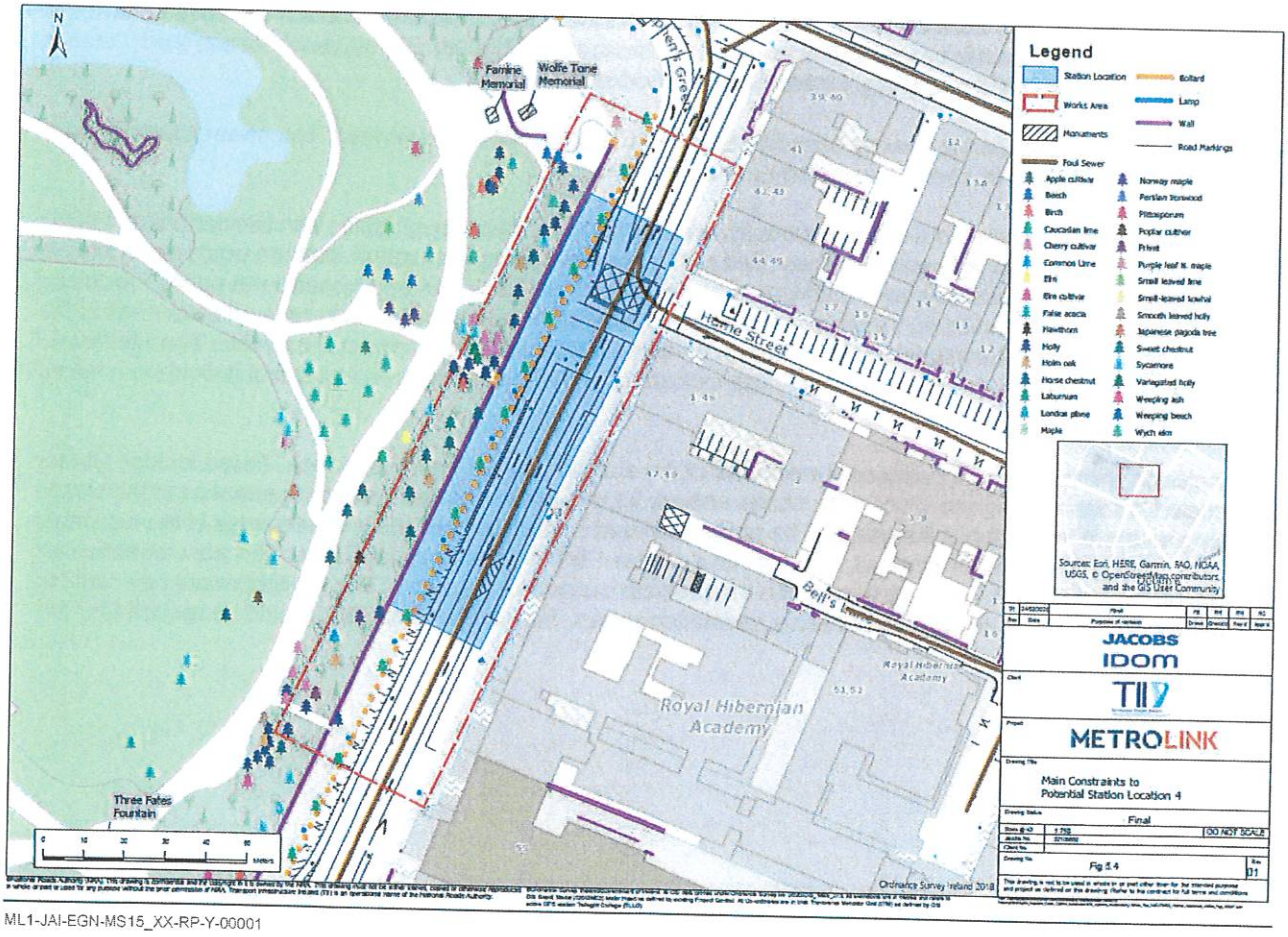
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Famine Memorial
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Cherry cultivar
Common Lime
Elm
Elm cultivar
False acacia
Hawthorn
Holly
Holm oak
Horse chestnut
Laburnum
London plane
Maple
Norway maple
Persian Ironwood
Pittosporum
Poplar cultivar
Privet
Purple leaf N. maple
Small leaved lime
Small-leaved lowhal
Smooth leaved holly
Japanese pagoda tree
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Sycamore
Variegated holly
Weeping ash
Weeping beech
Wych elm
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METROLINK
Main Constraints to Potential Station Location 4
Final
DO NOT SCALE
Fig 5.4
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Ordnance Survey Ireland 2018

5.6 Location 5

Location 5 is situated partially within St Stephen's Green East and partially within St Stephen's Green Park. However, the location allows for three lanes of traffic to remain open during construction. This position is shown in Figure 5.5 and the station box location has the following features:

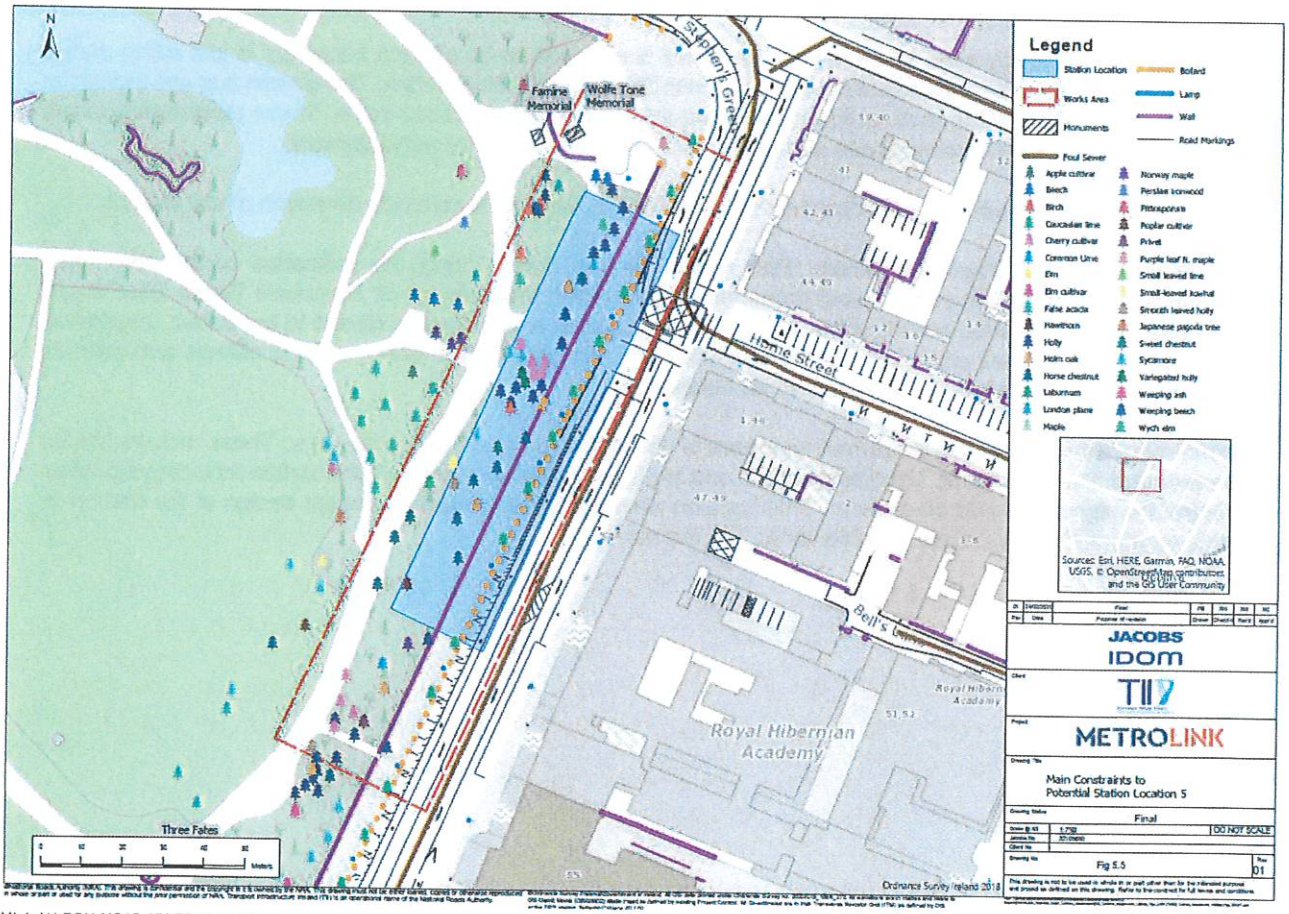
- The central axis sits slightly west of the eastern perimeter fence of St Stephen's Green Park;
- The western extent is situated approximately 17m west of the perimeter fence of St Stephen's Green Park;
- The station box eastern extent is situated so it aligns with the closest traffic lane to St Stephen's Green Park.

The indicative construction area as shown in Figure 5.5 is located so its eastern boundary intrudes onto of St Stephen's Green East's carriageway and encroaches approximately 27m into St Stephen's Green Park. It takes in the Wolfe Tone Memorial and Hungry Heart Memorial locations.

Location 5 would not require the sewer under St Stephen's Green East to be diverted. The sewer situated under Hume Street which joins this sewer would also not be impacted.

During construction St Stephen's Green East would be partially closed to through traffic with two northbound traffic and one southbound bus lanes remaining open. Pedestrian access along the eastern footpath would remain open. The entire area within indicative construction area shown in Figure 5.5 would be closed to the public including areas of St Stephen's Green Park. Vegetation would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for reinstatement. The Wolfe Tone Memorial and Hungry Heart Memorial are located within the indicative construction area and as a result would be moved and stored for reinstatement.

On completion there would be permanent elements of the station present on the surface. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights would be present and the entrance to the station including elevators and MetroLink signage. The entrance would be situated on the southern edge of the plaza that makes up the north eastern corner of St Stephen's Green Park and incorporated into the park entrance on completion. The lifts shafts would be located on the footpath outside of the park. The skylights would be situated within the perimeter of the park as would some ventilation shafts. No intervention shaft would be required for this option.


N
Famine Memorial
Wolfe Tone Memorial
St Stephen's Green
Hume Street
Bell's Lane
Royal Hibernian Academy
Three Fates
Ordnance Survey Ireland 2018
Legend
Station Location
Works Area
Monuments
Foul Sewer
Bollard
Lamp
Wall
Road Markings
Apple cultivar
Beech
Birch
Caucasian lime
Cherry cultivar
Common Lime
Elm
Elm cultivar
False acacia
Hawthorn
Holly
Holm oak
Horse chestnut
Laburnum
London plane
Maple
Norway maple
Persian ironwood
Pittrosporum
Poplar cultivar
Privet
Purple leaf N. maple
Small leaved lime
Small-leaved lowhat
Smooth leaved holly
Japanese pagoda tree
Sweet chestnut
Sycamore
Variegated holly
Weeping ash
Weeping beech
Wych elm
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
JACOBS
IDOM
TII
METROLINK
Main Constraints to Potential Station Location 5
Final
DO NOT SCALE
Fig 5.5
01

5.7 Location 6

This station location would be located entirely within St Stephen's Green Park as shown in Figure 5.6. This location is designed to avoid St Stephen's Green East road, the footpath and buildings that are situated there. The station box location therefore has the following features:

- The station box central axis and the tunnel sit approximately in line with the pathway that runs in a north-south direction within the north-eastern portion of St Stephen's Green Park; and
- This station location is located fully within St Stephen's Green Park.

The indicative construction area as shown in Figure 5.6 is situated so its eastern boundary is just within park's perimeter fence and encroaches approximately 40m into St Stephen's Green Park. The station box and indicative construction area envelop the north eastern plaza and the monuments situated there. These monuments would be moved prior to the construction phase and stored in a secure location for reinstatement.

As Location 6 is situated within the St Stephen's Green Park it does not require the diversion of any utilities.

During construction St Stephen's Green East would remain open. Using the indicative construction area pedestrian access along the eastern and potentially the western footpaths of St Stephen's Green East would remain open. The entire area of park within indicative construction area would be closed to the public. Vegetation and trees would be cleared within the construction area and elements of the park including railings and bollards would be removed and stored for replacement as necessary.

On completion there would be permanent elements of the station present within the park. These include lifts for passengers and the fire brigade. Ventilation shafts and sky lights and the entrance to the station including elevators and MetroLink signage would be present. This location would affect the interior concept design of the station as skylights would potentially not be feasible so far into the park.

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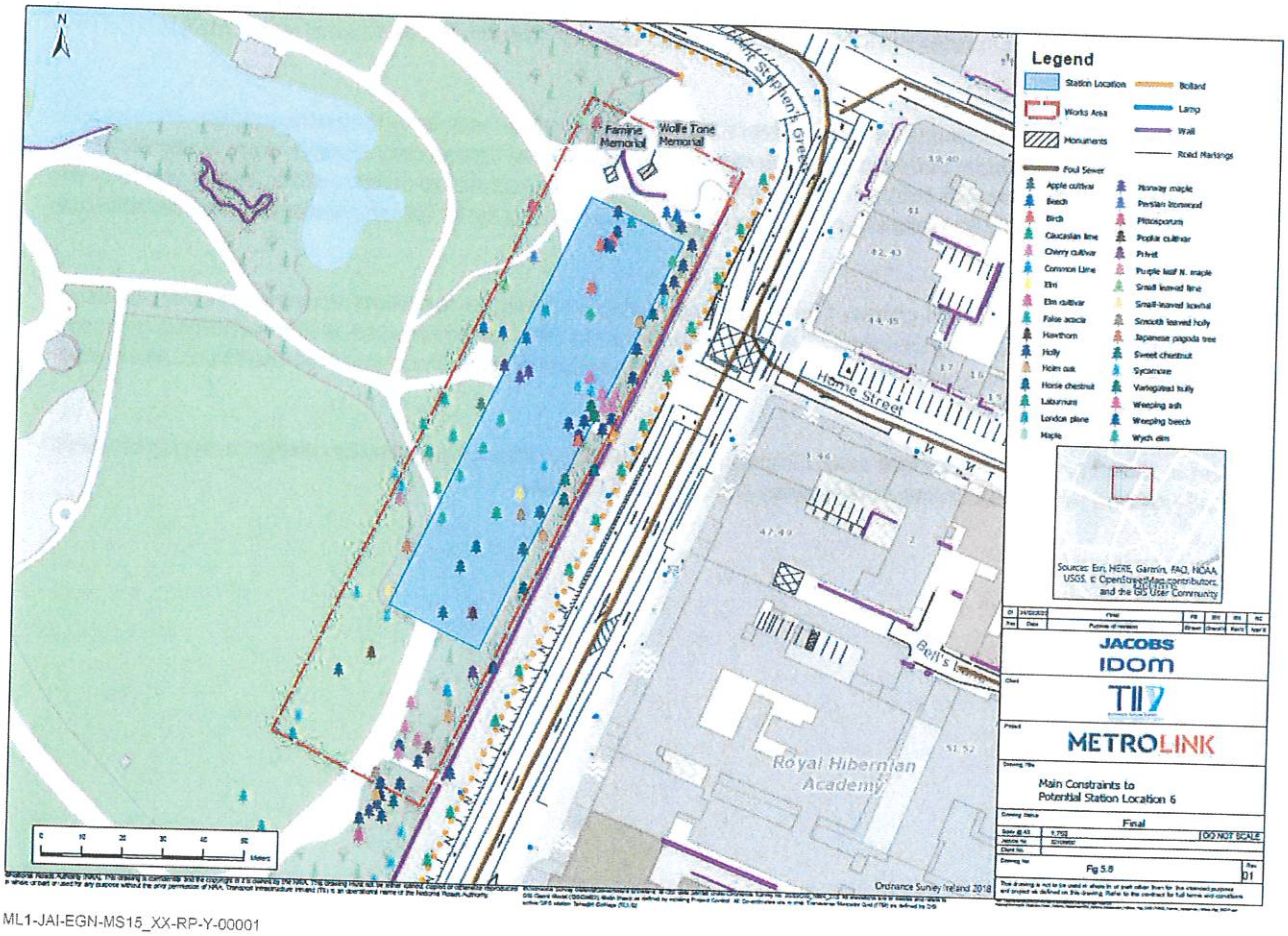
Famine Memorial
Wolfe Tone Memorial
St Stephen's Green
Hume Street
Royal Hibernian Academy
Ordnance Survey Ireland 2018
Legend
Station Location
Works Area
Monuments
Foul Sewer
Bollard
Lamp
Wall
Road Markings
Apple cultivar
Beech
Birch
Caucasian lime
Cherry cultivar
Common Lime
Elm
Elm cultivar
False acacia
Hawthorn
Holly
Holm oak
Horse chestnut
Laburnum
London plane
Maple
Norway maple
Persian ironwood
Pittosporum
Poplar cultivar
Privet
Purple leaf N. maple
Small leaved lime
Small-leaved lowhal
Smooth leaved holly
Japanese pagoda tree
Sweet chestnut
Sycamore
Variegated holly
Weeping ash
Weeping beech
Wych elm
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
JACOBS IDOM
TII
METROLINK
Main Constraints to Potential Station Location 6
Final
DO NOT SCALE
Fig 5.8
01

5.8 Location 7

This potential station location would be located entirely within the Earlsfort Terrace roadway and also the footprint of buildings on either side of the street as shown in Figure 5.7. This location is designed to avoid St Stephen's Green Park by moving the station south onto Earlsfort Terrace.

The indicative construction area conflicts with the access to an office building and a hotel. The station box and indicative construction area occupies the width of Earlsfort Terrace and extends to the front steps to the National Concert Hall.

As Location 7 is situated within Earlsfort Terrace it would require the diversion of the 1,800mm Victorian Sewer and all other utilities present under the road. These would require diversion to the east directly impacting on the buildings situated there.

Earlsfort Terrace would be closed for the duration of construction phase including footpaths and the entrances to buildings adjacent to or within the indicative construction area. Street trees and trees in front of the National Concert Hall would be removed within the construction area. Architectural elements within the grounds of the National Convert Hall, including walls and gates would be removed and stored for reinstatement on completion as necessary.

On completion of the construction phase, there would be a requirement for permanent elements of the station to be located within footpaths along Earlsfort Terrace. These include lifts for passengers and the emergency access and egress. Ventilation shafts, sky lights and the entrance to the station including elevators and MetroLink signage would also be permanent features.

A station location on Earlsfort Terrace would impact the feasibility of the current station design as skylights would potentially not be feasible within the carriageway of Earlsfort Terrace.

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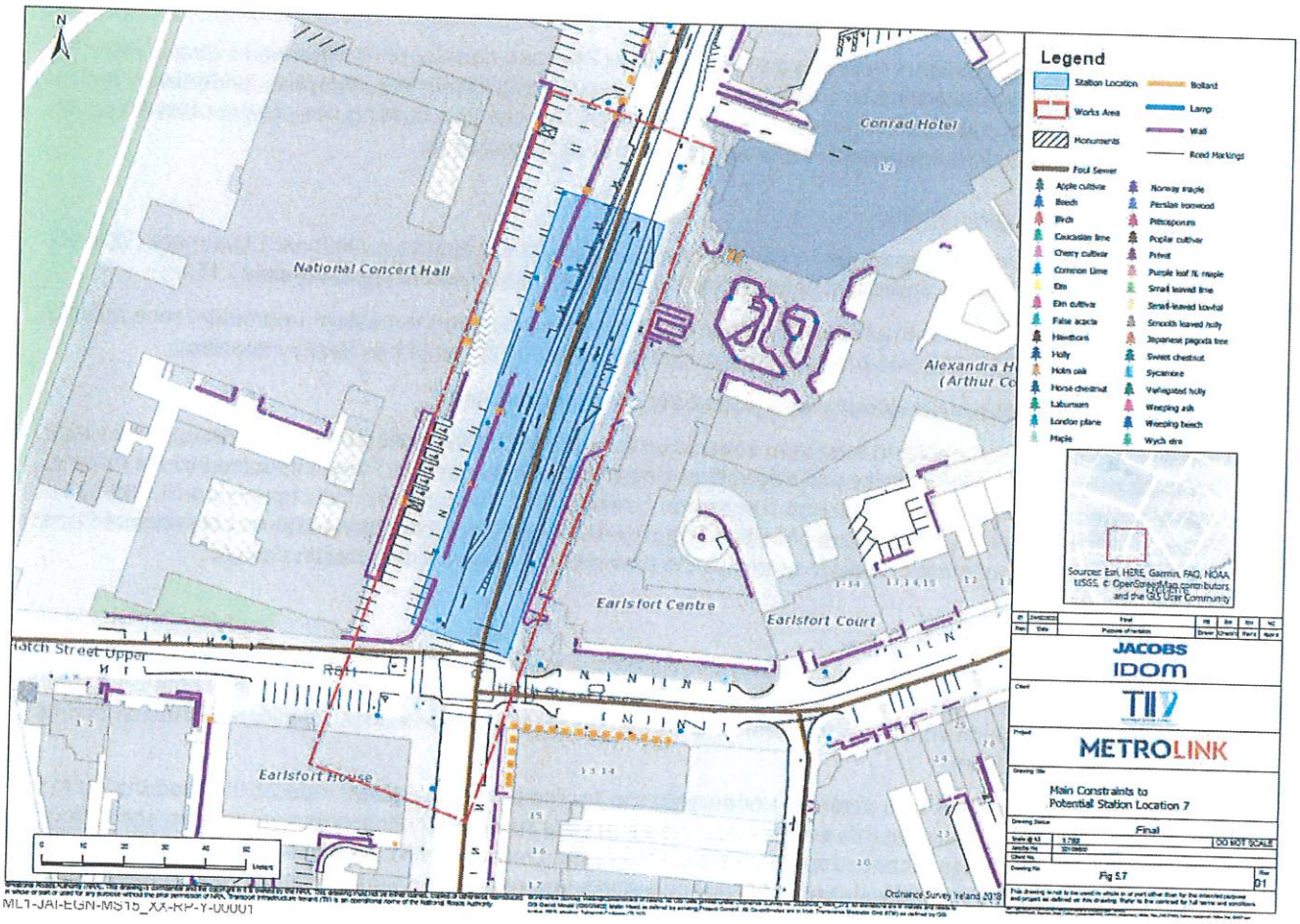

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6. Preliminary Analysis and Conclusions

6.1 Introduction

The seven options described in Section 5 have been subjected to Stage 3 preliminary analysis as described in Section 4.2.3 to ascertain if they are feasible and should be subjected to further Stage 4 assessment.

6.2 Appraisal of Options

6.2.1 Location 1

As shown in Figure 5.1, Location 1 is situated primarily within the road corridor of St Stephen's Green East. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.1.1 St Stephen's Green Park

- There would be a direct impact on in St Stephen's Green Park which is a National Monument (DU018-020334-). The indicative construction area within the National Monument is approximately 717m^2;
- Protected structures within the National Monument curtilage including the eastern perimeter fence railings and plinth wall (RPS 7751) and bollards and lampposts (RPS 7752) would be directly impacted;
- If present, subsurface archaeology would potentially be impacted; and
- There is potential for medium to long term impacts on the National Monument related to landscape and visual impacts due to the felling of trees and vegetation clearance within the park. Trees impacted include mature, dominant specimens of Holm Oak and Sycamore. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.1.2 Victorian Sewer

- The provision of a station at Location 1 would require the diversion of an 1,800mm Victorian sewer situated below St Stephen's Green East. This sewer is of strategic importance and serves large parts of the city centre and as a result, the diversion of the same would be difficult to achieve without significant disruption during the construction phase;
- The sewer would need to be diverted underneath the footpath on the eastern side of the road during the construction phase. Diverting this sewer would be extremely technically challenging, expensive and difficult to achieve due to its age, shape, depth and size. This would create significant additional construction related impacts to those associated with constructing the station box resulting in a larger construction footprint and extended construction phase; and
- The sewer diversion would require the St Stephen's Green East road to be closed for the duration of the construction phase which would result in significant disruption to pedestrians, public transport and traffic on this critical transport corridor. There is potential for direct impacts on the cellars of a number of buildings listed on the RPS located on the eastern side of St Stephen's Green East. These buildings are Listed in Table 4.4 of this Report.

6.2.1.3 Transport & Traffic

- In addition to the sewer diversion, the location of the station box in the road corridor would also require the closure of all traffic lanes on St Stephen's Green East during construction;

- The closure of St Stephen's Green East would result in the diversion of 384 bus movements during the AM peak; and approximately 1,711 Passenger Car Units (PCU) that utilise St Stephen's Green East in the AM peak would also be displaced. These diversions would result in significant increased traffic congestion in the surrounding area of the city as a result for the duration of the construction phase, with the AM and PM peak hours seeing the worst impacts.

6.2.1.4 Intervention Shaft

- The position of Location 1 means that an additional intervention shaft would be required between Location 1 and Tara Station;
- The provision of an intervention shaft would result in a significantly increased construction phase with an additional construction site required at a sensitive location between Tara Street and St Stephen's Green East This would result in significantly increased costs and environmental impacts associated with this construction; and
- There would be additional permanent environmental impacts associated with the permanent surface structures, access roads and other elements required for the intervention shaft.

6.2.1.5 Overall

Overall due the above factors, Location 1 scores poorly against all criteria assessed. Due to the overall poor performance against all assessment criteria Location 1 was not considered to be a feasible station location and was not taken forward for further analysis.

6.2.2 Location 2

Potential station location is illustrated in Figure 5.2. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.2.1 St Stephen's Green Park

- Location 2 would have a greater impact on St Stephen's Green Park (than Location 1) as it is situated further west, and more vegetation removal would occur during construction. The indicative construction area would occupy approximately 2,157m^2 of the park;
- The National Monument would experience potentially medium to long term direct landscape and visual impacts due to the felling of trees and vegetation clearance within the park;
- As with Location 1 the protected structures within the National Monument curtilage, including perimeter fence railings and plinth, bollards and lamp posts, would be directly impacted. They would be removed prior to construction and reinstated following construction;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.2.2 Victorian Sewer

- The 1,8000 Victorian sewer would be maintained and would not require diversion for this potential station location.

6.2.2.3 Traffic and Transport

- St Stephen's Green East would be partially closed to allow the construction of the station box for this potential station location. However, enough capacity for car, bus and HGV traffic would be maintained with some disruption anticipated.

6.2.2.4 Intervention Shaft

- As with Location 1, Location 2 is located such that an intervention shaft would be required. As a result, the same significant impacts as described for Location 1 would result here.

6.2.2.5 Overall

This location performs poorly against Project Objective, Economy and Environmental criteria. Performance against the Engineering criteria is moderate as the diversion of the Victorian sewer would be avoided. However, due to the overall poor performance against assessment criteria Location 2 was not considered to be a feasible option and as result was not taken forward for further analysis.

6.2.3 Location 3

Potential station location is illustrated in Figure 5.3. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.3.1 Victorian sewer

- The 1,800 Victorian sewer on St Stephen's green East would be maintained for this potential station location.

6.2.3.2 Traffic and Transport

- Traffic and transport routes on St Stephen's Green East would not be directly impacted for this station location during the construction phase.

6.2.3.3 Intervention shaft

- The position of Location 3 means that an additional intervention shaft would be required between Location 3 and Tara Station. Potential impacts of this would be in line with those described for Location 1.

6.2.3.4 St Stephen's Green Park

- The provision of a station at Location 3 would have medium to long term impacts on the National Monument. The perimeter fence railings and plinth and other protected structures on the footpath (and within the curtilage of the National Monument) would be directly impacted; and
- As with Locations 1 and 2 there would be impacts on protected structures, undiscovered archaeology, trees and vegetation within St Stephen's Green Park. However, as the station box and indicative construction area are located entirely within the park there would be more significant direct impacts than for other station locations due to more significant tree and vegetation clearance. The indicative construction area for this location would occupy approximately 2,704m2 of the area of the National Monument. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.3.5 Overall

This location performs moderately against the engineering assessment criteria as the Victorian sewer on St Stephen's Green East is maintained but this station location still requires an intervention shaft to be constructed. The potential station location performs poorly against Economy criteria due to the need for an intervention shaft. The location performs poorly against environmental criteria as the location is entirely within St Stephen's Green park and due to the requirement for an Intervention Shaft. Due to the overall poor performance against assessment criteria this location was not considered to be viable and was not progressed for further analysis.

6.2.4 Location 4

Potential station location is illustrated in Figure 5.4. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.4.1 Victorian Sewer

- The provision of a station at Location 4 would require the diversion of an 1,800mm Victorian sewer situated below St Stephen's Green East as with Location 1. The strategic importance of the sewer would create significant construction phase impacts and add significant cost;
- The location of the station box would also require a sewer under Hume Street to be diverted. This sewer has a junction with the Victorian sewer. This would create additional traffic impacts on Hume Street and its junction with St Stephen's Green East; and
- Diverting the sewer underneath the footpath would result in potential direct impacts on the cellars of a number of buildings listed on the RPS on St Stephen's Green East. These buildings are listed in Section 4.3.5 of this report.

6.2.4.2 Traffic and Transport

- As described for Location 1, Location 4 would require the closure of St Stephen's Green East traffic lanes during construction due to the location of the station box;
- All bus, car and pedestrian traffic would need to be diverted away from this location resulting in significant impacts. These diversions would result in significant increased traffic congestion in the surrounding area of the city as a result for the duration of the construction phase, with the AM and PM peak hours seeing the worst impacts.

6.2.4.3 Intervention shaft

- No intervention shaft would be required for potential station location 4.

6.2.4.4 St Stephen's Green Park

- St Stephen's Green Park would be directly impacted in a similar way to Location 1 although situated 31m further north along St Stephen's Green East. The indicative construction area within the National Monument is 729m2;
- Protected structures within the National Monument would be directly impacted including the perimeter fence railings and plinth, bollards and lampposts;
- If present, subsurface archaeology would potentially be impacted;
- Landscape and visual impacts would occur due to the felling of trees and vegetation clearance within the park. However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.4.5 Overall

The full closure of St Stephen's Green East during the construction phase, including its junction with Hume Street would prevent all traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. These factors all trigger a poor rating against the environment criteria;

Constructing the station under St Stephen's Green East increases the construction cost due to factors such as reinstating the road surface and diversion of utilities. This results in a poor performance against the engineering criteria. The additional cost associated with this results in a moderate performance against the economy criteria. Due to the overall poor performance against assessment criteria this location was not considered to be viable and was not progressed to Stage 4.

6.2.5 Location 5

Location 5 is situated partially within the road corridor of St Stephen's Green East as shown in Figure 5.5. It is similar to Location 2 but is moved further north along St Stephen's Green East to avoid the requirement for an intervention shaft.

The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.5.1 St Stephen's Green Park

- The construction phase would impact directly on St Stephen's Green Park having regard to architectural heritage, archaeology, biodiversity and landscape impacts. The indicative construction area would occupy approximately 2,181m2 of the park. The plaza in the north eastern corner of St Stephen's Green Park including the Wolfe Tone Memorial and Hungry Heart memorial would be directly impacted in addition to protected structures (railings and plinth, bollards and lampposts) and undiscovered archaeology;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.5.2 Victorian sewer

- The 1,800mm Victorian sewer would be maintained during construction with no requirement for a diversion.

6.2.5.3 Traffic and Transport

- St Stephen's Green would be partially closed during construction as described for Location 2. Bus, PCU and HGV traffic movements would be disrupted but satisfactorily maintained to minimise traffic impacts.

6.2.5.4 Intervention shaft

- No intervention shaft would be required if a station was built at this location.

6.2.5.5 Overall

Location 5 has a moderate performance against the project objective criteria requiring the project to be sustainably constructed and operated and to be integrated into the public realm. However, this station location delivers a poor performance against the environment criteria due to direct impacts on the National Monument, particularly during the construction phase. Reduced construction risk within St Stephen's Green Park means Location 5 achieves moderate performance against the engineering sub-criteria for constructability. While there are potential impacts on the receiving environment, utilities and traffic, Location 5 was deemed to have performed sufficiently against the assessment criteria to warrant further assessment under the Stage 4 MCA process.

6.2.6 Location 6

Location 6 is situated entirely within the boundary St Stephen's Green Park. It is similar to Location 3 but is further north removing the need for an intervention shaft.

The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.6.1 St Stephen's Green Park

The station box and indicative construction area are entirely within St Stephen's Green Park. The indicative construction area would occupy 2,704m^2 of the National Monument resulting in significant direct impacts on existing trees and vegetation including:

- Felling of trees and clearance of other vegetation within the park would cause medium to long term impacts on the park;
- The eastern extent of the indicative construction area would directly impact protected structures including railings and plinth, bollards and lampposts. The plaza in the north eastern corner of St Stephen's Green Park including the Wolfe Tone Memorial and Hungry Heart memorial would also be impacted;
- However, in the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.

6.2.6.2 Victorian Sewer

- The Victorian Sewer on St Stephen's Green East would not require diversion during the construction phase.

6.2.6.3 Traffic and Transport

- Traffic and transport routes on St Stephen's Green East would not be directly impacted.

6.2.6.4 Intervention shaft

- No Intervention shaft would be required for this location

6.2.6.5 Overall

Location 6 performs poorly against the Project Objective criterion as integrating station elements entirely within the park environment would be difficult to achieve without significant landscape and visual impacts. However, constructing the station within St Stephen's Green Park reduces construction costs. This allows Location 6 to achieve a good performance against the economy criteria. The construction phase impacts would be significant on St Stephen's Green Park particularly potential impacts on architectural heritage, archaeology, biodiversity and the landscape and visual amenity. This results in a poor performance against environment criteria.

While there are potentially significant impacts on St Stephen's' Green Park, this option has advantages in not impacting traffic and utilities on St Stephen's Green East and lower costs of reinstatement post construction. Therefore, Location 6 was deemed to warrant further analysis under the Stage 4 MCA process.

6.2.7 Location 7

Location 7 is situated entirely within Earlsfort Terrace and does not impact on St Stephen's Green directly. The principle constraints and opportunities identified during the full multidisciplinary analysis undertaken for this

potential station location are detailed below. For full details of the analysis utilising the project objectives, the economic, environmental and engineering criteria, please refer to Appendix B.

6.2.7.1 St Stephen's Green Park

There would be no direct impact on St Stephen's Green Park arising from this potential station location.

6.2.7.2 Victorian Sewer

- Location 7 would require a significant diversion of the Victorian Sewer on Earlsfort Terrace. This sewer diversion would be very difficult to achieve given the very limited space either side of the station box on Earlsfort Terrace without impacting on properties such as the National Concert Hall.

6.2.7.3 Transport &Traffic

- Traffic and transport routes on Earlsfort Terrace would be directly impacted for the duration of the construction phase.

6.2.7.4 Intervention shaft

- The position of Location 7 means that an additional intervention shaft would be required between Location 7 and Tara Station. Potential impacts of this would be in line with those described for Location 1.

6.2.7.5 Overall

Location 7 performs poorly against the Project Objective criterion as a station located at Earlsfort Terrace would not provide good public transport network legibility due a lack of key trip attractors in this area. Furthermore the location would not perform as well in terms of public transport interchange or customer patronage levels as other options due to the location further from key city centre locations and within 450m of Charlemont Station. In this regard it is significantly inferior to options on St Stephen's Green East.

This location performs poorly against the engineering assessment criteria as the Victorian sewer along Earlsfort Terrace requires diversion and there would be a requirement for an intervention shaft to be constructed. The location performs poorly against economy criteria due to the need for an intervention shaft. The location performs poorly against environmental criteria as the location would impact on nearby sensitive receptors such as the National Concert Hall and an adjacent hotel during the construction phase. Furthermore, the construction of this station entirely within Earlsfort Terrace would require significant traffic and public transport diversions during the construction phase. Due to the overall poor performance against all of the assessment criteria this location was not considered to be viable and was not progressed to Stage 4.

6.2.8 Stage 3 Preliminary Analysis Outcome

An appraisal table has been prepared and is shown below in Table 6.1. The table collates and summarises the appraisal of each potential station location under each of the assessment criteria.

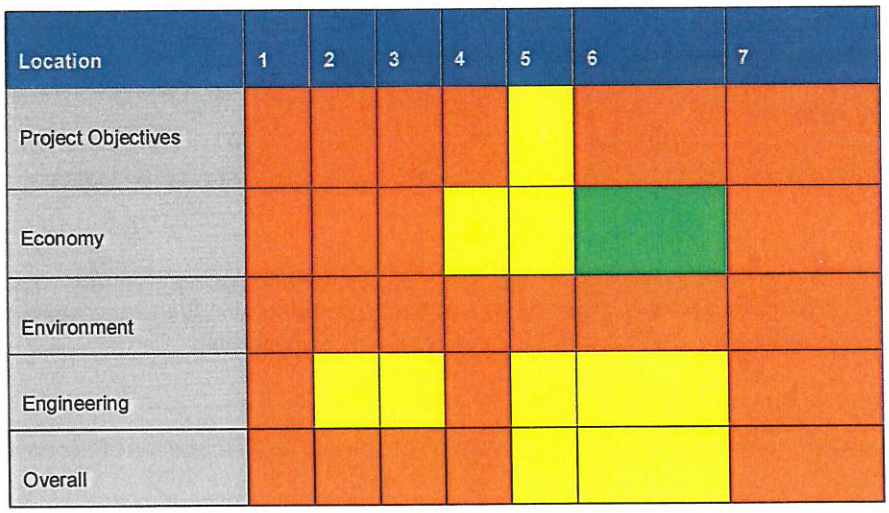

Table 6.1: Summary of Results of Stage 3 Analysis

The results show Locations 1 to 3 and 7 perform poorly against the economy appraisal criteria due to the need for an intervention shaft. Location 7 would also require the diversion of a significant length of the Victorian sewer. Locations 1-4 and 7 perform poorly against the environmental criteria due to environmental impacts associated with the required Intervention shaft. Location 4 also performs poorly against this criterion due to impacts on traffic and utilities.

Location 5 performs better overall when compared with other locations because:

- It does not require an intervention shaft or the diversion of the Victorian sewer. It is an "intermediate" option as it avoids the more significant construction phase impacts associated with Locations 1-3 and 7 and
- It avoids the more significant impacts on St Stephen's Green Park associated with Locations 4 and 6.

On this basis it is recommended that Location 5 proceed to Stage 4 assessment.

Location 6 performs well against the economy criterion as it is located entirely within the St Stephen's Green Park and therefore avoids the more expensive reinstatement costs associated with road surfaces and utility diversions. The location within the park and associated direct impacts however drives a poor performance against the environmental criteria. However, it performs moderately well against the engineering criterion as it does not require an intervention shaft, utility or traffic diversions. This coupled with good performance against the economy criteria means that Location 6 will proceed to Stage 4 assessment.

The nature of the constraints in the study area mean that options 5 and 6 perform poorly against certain criteria but are advanced for further assessment because they are considered more feasible from a cost, engineering and environmental perspective than Locations 1-4 and 7.

It is therefore recommended that Options 5 and 6 are progressed to the Stage 4 MCA process.

7. Multi-Criteria Analysis and Conclusions

7.1 Introduction

A MCA was undertaken for Stage 4 using economic and environmental criteria.

7.2 Assessment summaries

The proposed station locations are assessed having regard to their potential economic and environmental impacts. Engineering criteria are not considered further here as the station locations to be analysed are both feasible from an engineering perspective.

7.2.1 Location 5

Detail on the principle environmental and economic constraints and opportunities are provided below for potential station location 5. These were identified as part of a full multidisciplinary analysis undertaken for this potential station location. For full details of the analysis utilising the economic and environmental criteria, please refer to Appendix C.

7.2.1.1 St Stephen's Green

- The station box and indicative construction area could have direct impacts on mature trees and other vegetation on the eastern edge of St Stephen's Green Park. An estimated 75 trees are located within the proposed construction area including 55 that are mature. Of these 4 are A2[1] rated, 1 is A3 and 33 are B2 trees. Of these one is a London Plane, one is a "dominant" Wych Elm (which has a B2 rating). The above-mentioned trees would require felling to allow for the construction of the station box resulting in medium to long term impacts on the landscape & visual amenity of the area and the setting of the National Monument;
- The eastern edge of the station box and construction area directly impacts protected structures within the National Monument boundary. These structures include railings and plinth wall, bollards and lampposts. These impacts would occur for the length of the station box and indicative construction area during the construction phase. However, all of these elements of architectural heritage would be reinstated following the completion of the construction phase;
- There is potential for significant impacts on unrecorded sub-surface archaeology within the park including a 17th Century perimeter wall and ditch. The impacts on subsurface archaeology would be for the length of the construction area but particularly for the area where the station box would be excavated, and diaphragm walls constructed;
- In the long term, there would be a small number of station elements visible at the surface level including the main station access, lift shafts, ventilation shafts and the proposed station skylights. The most significant of these elements including the main station access and the lift shafts would be located largely outside of the St Stephen's Green Park area. While this would still be within the curtilage of the National Monument, these elements would be integrated into the area with good design;
- In the long term the impacts on St Stephen's Green Park would be less significant once planting is re-established, architectural features are reinstated and following the enhancement of the area through the provision of a high-quality station design.
- This station location would not require the diversion of the Victorian sewer which means that the construction phase associated with this station location would be much less significant than if this diversion was required.

[1] In accordance with tree quality assessment BS5837:2012

Furthermore, there would be no direct impacts on properties contained on the Dublin City Council Record of Protected Structures (RPS) on the east side of St Stephen's Green East;

7.2.1.2 St Stephen's Green East – Traffic & Transport

- Location 5 would require some minor diversions of utilities including water, gas and communications lines that are situated under the northbound traffic lanes of St Stephen's Green East. However, this station location does not require the diversion of the Victorian sewer which would mean that the construction phase associated with this station location would be much less significant than if this diversion was required;
- Location 5 would require works within the road carriageway of St Stephen's Green East. This location would require the roadway of St Stephen's Green East to be partially closed to through traffic with two northbound traffic and one southbound bus lane remaining open. Pedestrian access along the eastern footpath would remain open. As a result, some transport and traffic disruption would occur during the construction phase, particularly during AM and PM peak hours. However, a transport and traffic assessment of this option identified that the impacts on public transport and traffic movements in the area would be manageable.

7.2.1.3 Overall

- This location achieved good performance against the economy criterion based on construction and surface reinstatement costs;
- A range of performance results against the environmental criteria occurred. The performance was found to be poor or very poor for impacts associated with mature tree loss within the park and impacts on the National Monument generally. However, the station location performed well against Traffic and Transport and Utilities (material assets) criteria due to being able to avoid significant constraints relevant to these disciplines.

7.2.2 Location 6

Detail on the principle environmental and economic constraints and opportunities are provided below for potential station location 6. These were identified as part of a full multidisciplinary analysis undertaken for this potential station location. For full details of the analysis utilising economic and environmental criteria, please refer to Appendix C.

7.2.2.1 St Stephen's Green

- Impacts on the National Monument would be similar to those described for Location 5 in the preceding section including direct impacts on protected structures and archaeology. However, the impacts would be more significant due to Location 6 being located completely within St Stephen's Green Park.
- 98 trees would be within the construction area including 70 that are mature. Of these 16 are A2, 1 is A3 and 35 are B2 trees. Of these four are London Plane, one is a "dominant" Wych Elm. The above-mentioned trees would require felling to allow for the construction of the station box resulting in medium to long term impacts, which would be more significant than for Location 5;
- All station elements including "pop-ups" would be located within the park including lift shafts, ventilation shafts and the proposed station skylights. These would be difficult to integrate into the park setting.

- This station location would not require the diversion of the Victorian sewer which means that the construction phase associated with this station location would be much less significant than if this diversion was required. Furthermore, there would be no direct impacts on properties contained on the Dublin City Council Record of Protected Structures (RPS) on the east side of St Stephen's Green East;

7.2.2.2 St Stephen's Green East – Traffic & Transport

- Location 6 avoids direct impacts on traffic and transport networks along St Stephen's Green East as the station location and the required construction area would be fully located within St Stephen's Green park;
- Location 6 would not require utility diversions at St Stephen's Green East. As a result, the construction phase associated with this station location would be much less significant than if utility diversions were required.

7.2.2.3 Overall

- Location 6 performs better against the economy criteria than Location 5. Surface reinstatement of park or green space is relatively economical when compared with road surface construction or utility diversions. These factors improve the Location 6 performance against the economic criteria when compared to Location 5;
- Location 6 performs very poorly against most environmental criteria especially those associated with the National Monument due to the fact that the station location is fully within St Stephen's Green park requiring a more significant footprint within the park during the construction and operational phase. Location 6 would require all above ground elements (pop ups) to occur within the park while Location 5 would have a less significant impact on the park, as some of the more significant surface elements would be located outside of the fence line of the park.

7.3 Stage 4: MCA outcomes

An appraisal summary table has been prepared which collates and summarises the MCA of Locations 5 and 6 in Table 7.1below.

CRITERIA	LOCATION 5	LOCATION 6
ECONOMY		
Cost		
ENVIRONMENTAL		
Air and Climate		
Noise and Vibration		
Biodiversity		
Non-Agricultural Properties		
Cultural Heritage: Archaeology		
Cultural Heritage: Architectural Heritage		
Landscape and Visual		
Traffic and Transport		
Utilities		
Population and Human Health		

Table 7.1: Stage 4 MCA

8. St Stephen's Green Station Preferred Location

The choice of a preferred location for a MetroLink Station at St Stephen's Green East was determined based on a robust assessment process of a number of potential station locations. This built on earlier completed work in ARUP (2017) which identified St Stephen's Green East as the best location for a MetroLink station.

The Stage 3 multicriteria analysis ruled out Locations 1 to 4 and 7 due to poor performance against Project Objectives, economy, environmental and engineering criteria. The poor performance of Locations 1-3 and 7 was due in part to the need to construct an Intervention Shaft between St Stephen's Green and Tara Street. In addition, station locations that required the Victorian and Hume Street sewers to be diverted and the full closure of St Stephen's Green East or Earlsfort Terrace to public transport and traffic during the construction phase were not taken to Stage 4 for further assessment.

Locations 5 and 6 were brought forward to Stage 4 where a further MCA was undertaken using Environmental and Economy criteria. Both of these station locations have a direct impact on St Stephen's Green Park, but due to the proposed station locations they avoid the following impacts;

- Diversion of the Victorian sewer and Hume Street sewer and associated impacts resulting from a more extensive construction area and duration;
- The closure of St Stephen's Green East to public transport and traffic during the construction phase; and
- Direct impacts on buildings listed on the RPS on St Stephen's Green East.

The outcome of the Stage 4 MCA was that Location 5 was chosen as the preferred location for the proposed MetroLink station as it significantly reduces the impact on St Stephen's Green Park when compared to Location 6. Location 5 results in the requirement for less vegetation removal and trees to be felled to allow for the construction of the station when compared with Location 6. In addition, the long term impacts on St Stephen's Green Park are significantly less for Location 5 as the main surface elements of the proposed station are largely located outside of the current extent of St Stephen's Green Park.

Furthermore, the choice of Location 5 allows for the long term impacts of the station location to be significantly mitigated by replanting of trees and other vegetation, in addition to the reinstatement of existing elements of architectural heritage. In addition, high-quality design of station "pop-ups" would allow for the development of a high quality urban environment in the north eastern corner of St Stephen's Green.

Station Location 5 will now be subject to further design development and potential impacts will be assessed, with mitigation measures recommended. The outputs of the assessment and recommended mitigation measures will be presented in the EIAR for the project.

9. References

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Dublin City Council (2016); Dublin City Development Plan (DCC 2016-2022).

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Transport Infrastructure Ireland (TII) (2016); Project Appraisal Guidelines for National Roads Unit 7.0 - Multi Criteria Analysis.

Appendix A. Cultural Heritage Background: St Stephen's Green Park and St Stephen's Green East

A.1 Introduction

This appendix has been prepared by TII to supplement the Jacobs/Idom St Stephen's Green Station Study Assessment Report. It provides an illustrated cultural heritage background of various heritage constraints identified for both St Stephen's Green Park and St Stephen's Green East. The information presented was utilised as background information for the purposes of developing an in-depth understanding of St Stephen's Green as an input into identifying the preferred station location.

A.2 St Stephen's Green Park (East) - Cultural heritage items

The items of cultural heritage on the east side of St Stephen's Green Park, can be broken down into the following categories, noting these do not address the design of the parks Victorian landscape itself which is addressed by the appropriate Landscape and Visual Specialist. In addition, this appendix addresses only those elements, which lie within the construction zone of the various MetroLink St Stephen's Green station options:

1. Perimeter railings, gates and plinth wall of the perimeter boundary (RPS 7751);
2. The surrounding bollards and traditional-style lamp-posts (RPS 7752) which help define the perimeter footpath of the park; and
3. Sculptures

A.2.1 Perimeter railings, gates, plinth wall, bollards and lamp standards (St Stephen's Green East; RPS 7751 - 7752)

From its origins, St Stephen's Green Park has traditionally been an enclosed park. In the 17th and 18th century this was achieved by means of an external masonry wall. In 1815 this was changed to a dwarf (6-8 inch high) granite plinth wall with a 6 foot high cast-iron railing, external to which lay a 25 foot gravel (and possible grass) walk delineated by a row of granite bollards linked by chains (Figure A1.1). The railings were manufactured in the foundry of Abraham Mason on 10 Dawson Street (McCabe 2011, 258-9) and had spearhead finials intervened with daggers. No trees were planted on the walk from 1815-1870, and it was illuminated by lampposts which were set onto the surrounding bollards.

Figure A1.1: View of St Stephen's Green North c. 1828-30 by H. Madden (after McCabe 2011). Note absence of Lime Walk, perimeter ditch, and limited interior planting.

From 1877-1880 under the auspices of Ardilaun Guinness, the park was enclosed with new railings, replicating the design of 1815. The latter were used where suitable to define internal elements of the park with low foot rails also installed defining internal gravel paths. Large cast-iron access gates were inserted onto each of the parks four corners, with wicket gates also installed three each on the south and north sides, two to east and west. The latter number has been increased to five to accommodate access to additional features such as the twentieth century Toilet Block. The granite bollards and chains were retained and continue (minus the chains) to define the perimeter of the park today (Figures A1.2 – A1.4). The perimeter path was a likely to initially have comprised a mix of gravel and paving, with drawings from 1901 showing a change to a mix of concrete and gravel (Figure A1.3). These drawings also illustrate the design and spacing of the historic street furniture (bollards [73 no.], lamp standards [12 no] and tree guards) on St Stephen's Green Park East (see Figure A1.4).

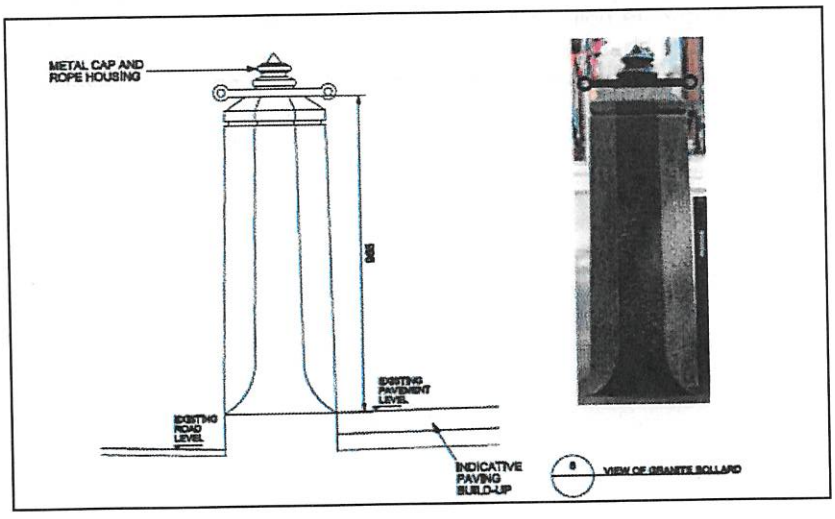


Figure A1.2: Detail of existing bollards on St Stephen's Green Park (TII)

Figure A1.3: Section of the perimeter path of St Stephen's Green East, dated 1901 (Extracted from Duchas)

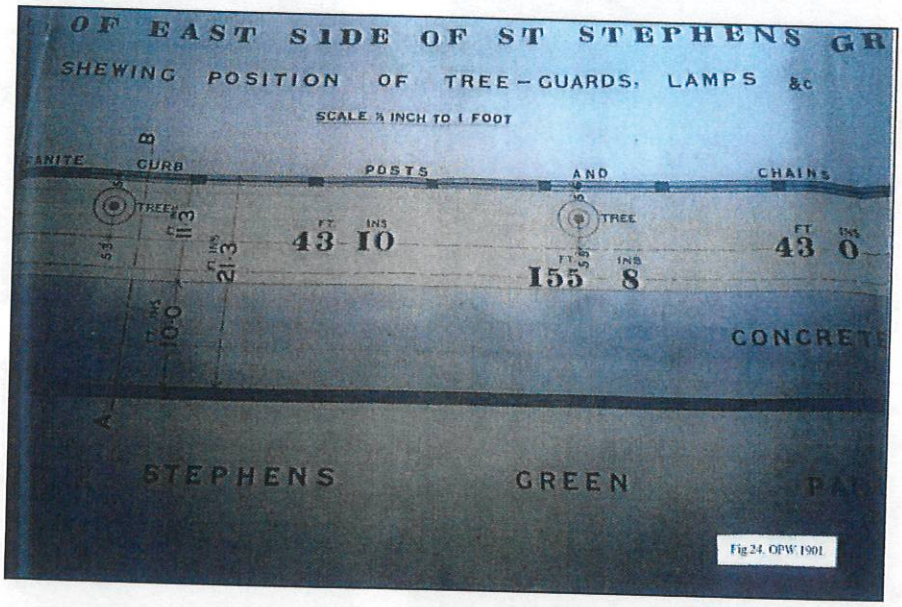


Figure A1.4: Layout of historic street furniture on St Stephen's Green East, dated 1901 (Extracted from Duchas)

In the 1990 the park's gates and railings underwent a substantial programme of repair and conservation by the Office of Public Works with some rails being replaced with cast-iron replicas (OPW 2015; Lotts 2009). It is likely that the square profile back stays may have been procured at this time, and that the Victorian backstays were of a more ornate cast iron style. A backstay is present on every 16th rail.

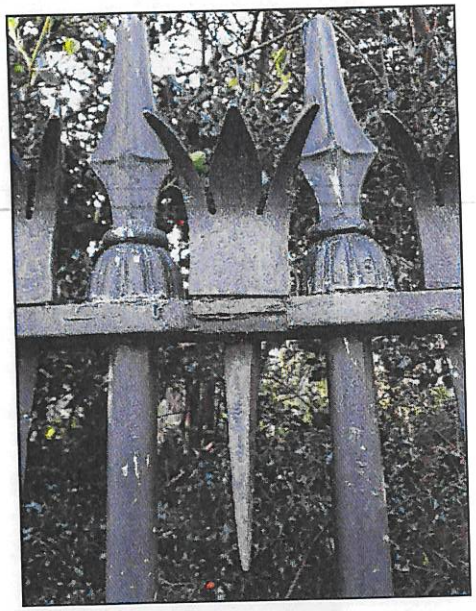
It was noted in a visual inspection of the railings and plinth wall undertaken in February 2020 that the railings continue to be maintained in overall good condition, though some deterioration of the paint was recorded. With

reference to the finials, occasional rust was noted, with a small number of finials also missing (Figure A1.6). The upper and lower wrought iron horizontal rails are also in good condition, though some rusting of scarf joints and exposed fixings was noted. The lead fixing of the feet of the railings was generally good, but some separation was noted, indicating failure of the lead adhesion to the socket over time.

The plinth walls granite blocks showed fracturing likely to do with weathering and reorganisation of the rails (with some empty sockets noted), only occasional large fractures were noted. The mortar was flushed and in need of repair (Figure A1.6).

The current traditional style lamp standards are protected structures, and are later additions to the park's Victorian design. Two types of lamp standards surround the green – a three lantern cast-iron version located on each corner illuminating the gates/access ways, and a single lantern cast-iron version (manufactured at the local Hammond Lane Foundry) aligned with the perimeter kerb (Figure A1.7).

A


B

C

D

Figure A1.6: Visual survey of railings on St Stephen's Green East (**A**: railings with deteriorated paint. **B**: rust on horizontal rail scarf joint. **C**: missing spear head finials. **D**: failure of lead fixing, note chipped and weathered plinth. **E**: evidence of previous rearrangement of railings (empty sockets), flushed mortar and chipped and weathered plinth.

Figure A1.7: Details of traditional style lamp standards (single lantern to left and three lantern to right) on the perimeter of St Stephen's Green Park (TII)

A.2.2 Sculpture on St Stephen's Green Park (East)

The north-east corner of St Stephen's Green Park is defined by a plaza housing three sculptures and the vestigial remains of the late 19th century gate piers. The former comprise:

- The Wolfe Tone Memorial;
- Tone Henge (granite monoliths); and
- Hungry Heart Famine Memorial (most commonly referred to as the 'Famine Memorial').

A fourth sculpture 'The Three Fates' is located within the south-east entrance of the Park.

A.2.3 The Wolfe Tone Memorial and 'Tone Henge'

Theobald Wolfe Tone (1763-1798), a son of a protestant coach maker and qualified lawyer was the founder of the Society of United Irishmen who led a team of French revolutionaries on two occasions to Ireland in an attempt to overthrow the English rule. The first attempt in 1796 entailed 14,000 troops but these troops and their ships were dispersed by storm. The second attempt during the 1798 rebellion comprised 3000 troops, who arrived in Ireland in September of that year in small parties around the coast. He was sentenced to death on 10th November 1798, but on the day of his intended hanging he sought to thwart the English, and slit his own throat with a penknife, dying from his own injuries on the 19th November. In 1898 the Wolfe Tone Memorial Committee was established, but their plans of a commemorative statue for Wolfe Tone did not materialise until a government grant of £15,000 was provided, along with a site for the statue on the site for the statue, on the north-east corner of St Stephen's Green Park (https://www.irishtimes.com/opinion/february-8th-1971-1.459563).

On foot of a competition, the commission to develop the memorial was awarded to Mayo sculptor Eddie Delaney (1930-2009) and the architect Noel Keating (https://www.irishtimes.com/culture/modern-ireland-in-100-artworks-1964-wolfe-tone-by-edward-delaney-1.2393337). Delaney was responsible for the sculpture, with Keating responsible for the curved line of granite monoliths behind it (see Figure A1.8). It took three years for the sculpture and installation to be completed, with the opening ceremony presided by President de Velera taking place on the 18 November 1967, with the date chosen in mind of the upcoming 50th anniversary of the Easter Rising.

Unfortunately, due to its symbolism Wolfe Tone's statue became a target for Loyalist activity and the monument was blown up in the early hours of the morning of 8th February 1971. It is believed it was a glycerine bomb, placed low down on the statue shearing its trunk and head (Figure A1.9). Very little other damage was caused by the explosion, other than the shattering of windows on nearby properties (https://www.irishtimes.com/opinion/february-8th-1971-1.459563). The statue was repaired by Delaney within a number of months, as he was able to recast the damaged elements.

Both the Wolfe Tone Memorial statue and the Tone Henge monoliths survive in very good condition.

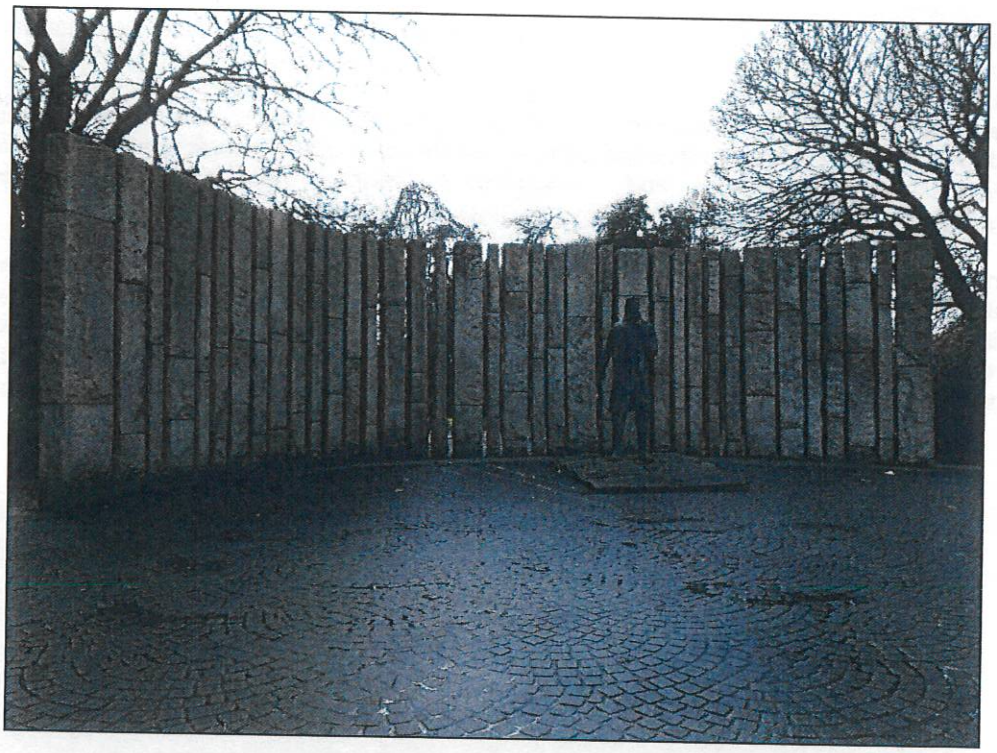


Figure A1.8 Wolfe Tone statue and 'Tone Henge' on the north-east corner of St Stephen's Green Park

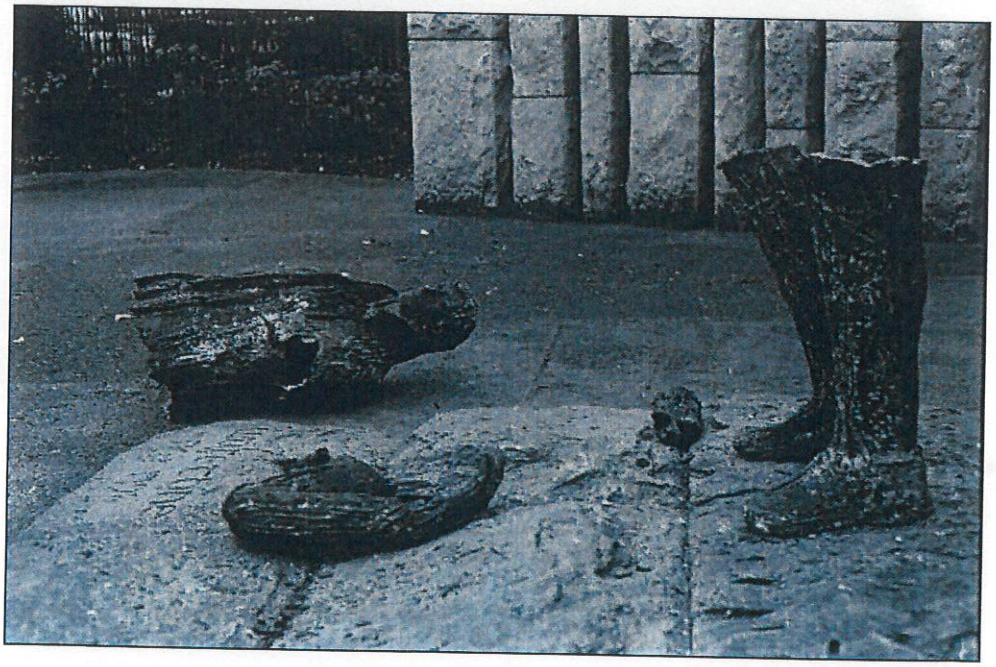


Figure A1.9: The Wofe Tone Memorial after the bombing of February 1971. (Copyright Irish Photo Archive).

A.2.4 The Hungry Heart Famine Memorial

The Hungry Heart Famine memorial, more commonly referred to as the Famine Memorial, was also sculpted by Delaney and forms an intrinsic component of the Wolfe Tone Memorial, sitting to its rear (Figure A1.10). The memorial comprises three abstract bronze figures (2 standing, 1 sitting) and a dog sitting on granite slabs, representing victims of the Great Famine of 1845-9. Delaney believed that the famine was directly linked to the failed 1798 rebellion, and with reference to the victims depicted stated '*I would like to have depicted him in French uniform, plumed hat and victorious sword. But history decided otherwise*' (https://www.theguardian.com/artanddesign/2009/oct/19/edward-delaney-obituary).

Overall the memorial is in a good state of preservation but some damage does exist. The standing figure to east is holding both a decorated cane and spoon, which it is using to feed the seated figure. The cane head is missing and in need of repair, exposing the interior of this element of the sculpture to further water damage (Figure A1.11). The dowels supporting the standing figure to the west are also exposed both at the front and to the rear, again exposing the statue to water damage. Pitting of the bronze is apparent on the rear of the dog sculpture.

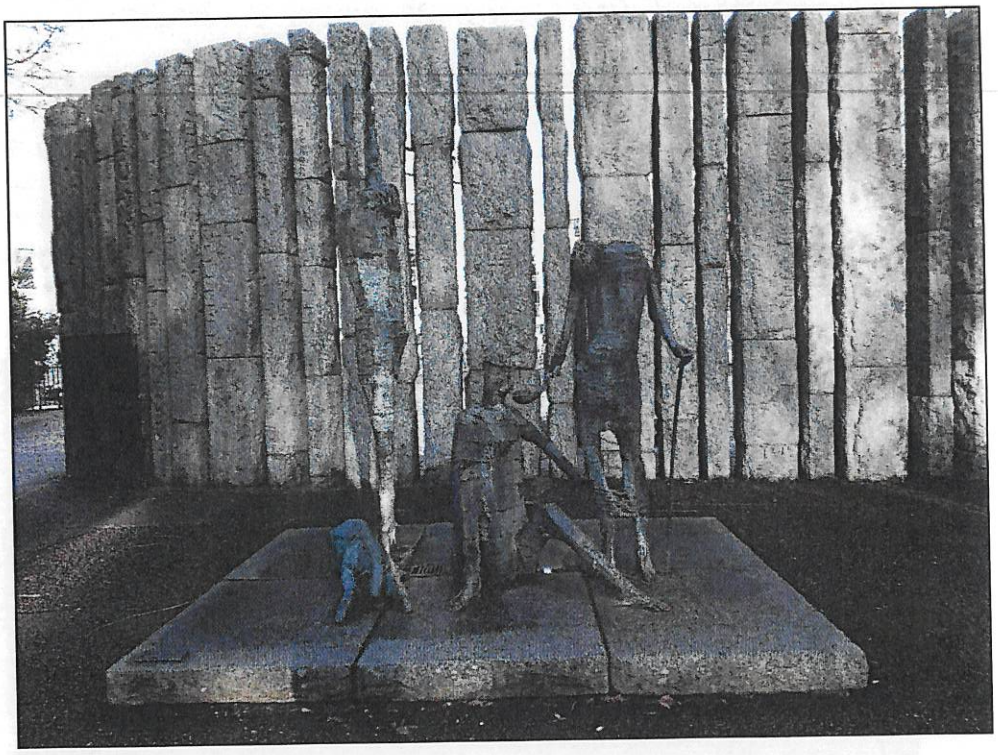


Figure A1.10: Delaney's Hungry Heart 'Famine' Memorial, 1967.

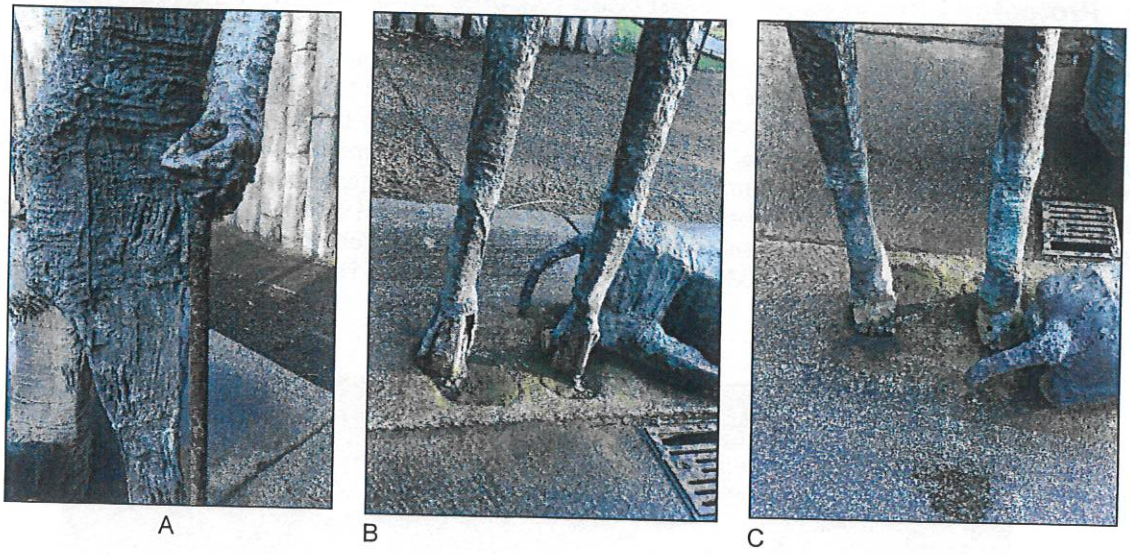


Figure A1.11: Detail of the Hungry Heart Famine Memorial elements. (A: missing cane head. B: Exposed dowels in feet. C. exposed dowel heads in feet, and pitting on dog).

A.2.5 The Three Fates

As previously mentioned a fourth sculpture the "Three Fates" Fountain, by German artist Josef Wackerle, donated to Ireland by the German Federal Republic in 1956, in thanks for the generosity shown to German people after World War II (Casey 2005, 533).

From 1946-9 'Save the German Children Society' via the Irish Red Cross, brought nearly 500 German children to Ireland to help them recover from the trauma of the war. The sculpture comprises three bronze figures in a fountain and is based on norse mythology representing Urd (past) Verdandi (present) and Skuld (future). The three fates are cast by the sculptor 'spinning and measuring the thread of man's destiny'. The attached plaque states 'This fountain, designed by the sculptor Josef Wackerle, is the gift of the people of the German Federal Republic to mark their gratitude for Ireland's help after the war of 1939-45. The bronze group portrays the three legendary fates spinning and measuring the thread of man's destiny' (https://meetingwater.wordpress.com/erik-hollabaugh/fountain-of-the-three-fates/)

A.3 Protected Structures and associated features on St Stephen's Green East

This street located on the east side of St Stephen's Green Park, was first laid out in 1664 as both a perimeter walk for the park and as lots for residential development (Lennon 2008, 19). The street is defined in the north by the junction of St Stephen's Green North/Merrion Row and in the south by the intersection of St Stephen's Green South/Leeson Street/Earlsfort Terrace. It was first illustrated as an unnamed street on De Gomme's map of 1673 with approximately three houses fronting onto its eastern side. Development of its street frontage appears to have been completed by the time of its recording by Thomas Dineley in 1681 (McCabe 2011, 64-65). On Brooking's Map of 1728 the street is unnamed, and a large plot on the southwest corner appears undeveloped or in use as a green. The street is first named as 'Monk's Walk' on Rocque's map of 1756 (Figure A1.12).

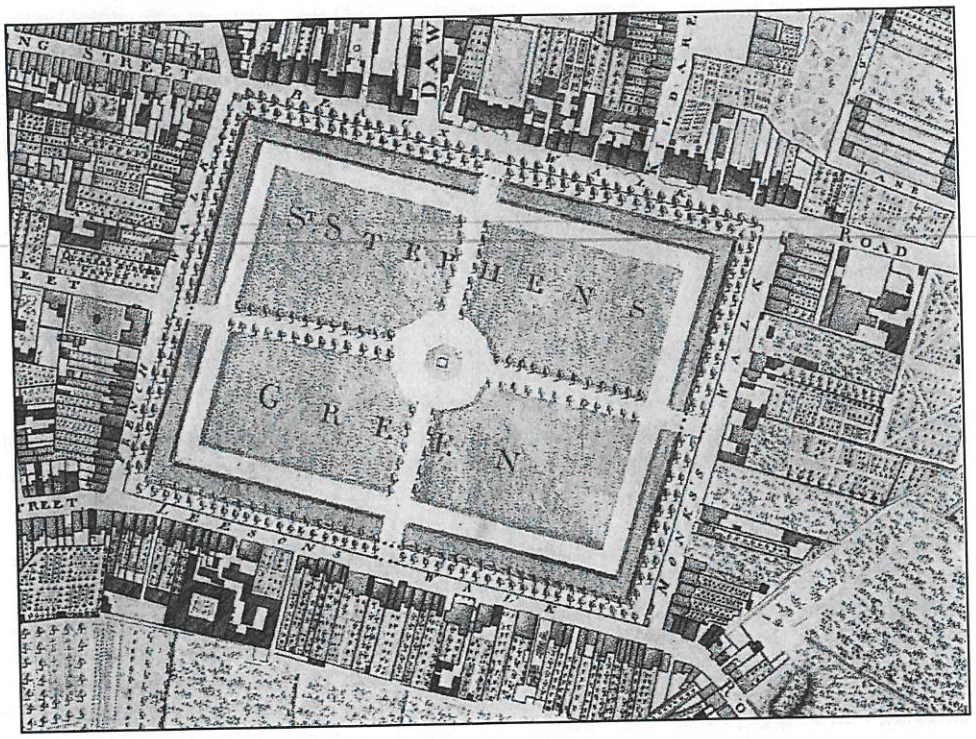


Figure A1.12: Extract from Rocque's '*Exact Survey of the City and Suburbs of Dublin*', 1756. Note irregular development of property plots on Monk's Walk (St Stephen's Green East; copyright IHTA).

The street is first named as St Stephen's Green East on the 1st edition 6" Ordnance Survey (OS) map (1843). It is depicted in great detail on the 1st edition OS 5':1 mile map (1847; Figure A1.13). In 1775 the streets surrounding the park were described as being 'so extremely irregular, that there are scarcely two of the same height, breath, materials or architecture' (Casey 2005, 531) however, on this map the street frontage is shown as having undergone extensive redevelopment with a well aligned property frontage illustrated. All properties are shown with substantial light wells and access steps to front; many are depicted with elaborate gardens to rear.

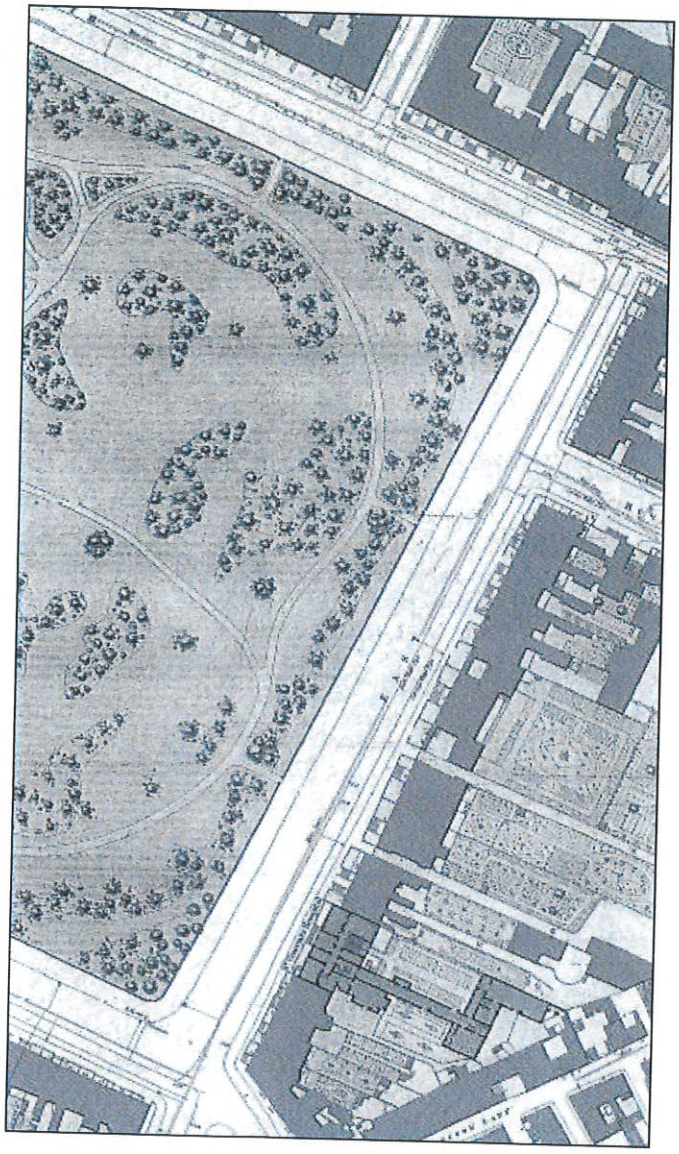


Figure A1.13: Extracts from Sheet 27 1st edition OS 5':1 mile map (1847), showing St Stephen's Green East

The street, which is part of a Conservation Area is currently defined by 22 properties (No's 39-60) of which twelve (Nos 39-43 and 50-56) are Protected Structures (RPSs 7780-7789). St Stephen's Green East is also a Conservation Area (refer to Table A1).

No	Street	Name	Date of Current Building	Date of 1st Building if different	RPS No.
39	St Stephen's Green East	Bank of Ireland	1913	NA	7780
40	St Stephen's Green East	Bank of Ireland	1913	NA	7780
41	St Stephen's Green East	Residence	1745-1746	NA	7781
42	St Stephen's Green East	Boston College	1745-1746	pre 1756	7782
43	St Stephen's Green East	Boston College	1745-1746	pre 1756	7782
44	St Stephen's Green East	Ivor FitzPatrick	1969	pre 1756	N/A
45	St Stephen's Green East	Ivor FitzPatrick	1969	pre 1756	N/A
46	St Stephen's Green East	Housing Finance Authority	1969	18th century	N/A
47	St Stephen's Green East	IPUT Headquarters	1969	pre 1756	N/A
48	St Stephen's Green East	IPUT Headquarters	1969	pre 1756	N/A
49	St Stephen's Green East	IPUT Headquarters	1969	N/A	N/A
50	St Stephen's Green East	Office of Public Works	1771-1772	pre-1756	7783
51	St Stephen's Green East	Office of Public Works	1760	pre-1673	7784
52	St Stephen's Green East	Office of Public Works	1771-1772	N/A	7785
53	St Stephen's Green East	Loreto College	1771-1772	N/A	7786
54	St Stephen's Green East	Loreto College	Modified 1970s	pre 1756	7787
55	St Stephen's Green East	Loreto College	Modified 1970s	pre 1756	7788
56	St Stephen's Green East	PTSB	1760 with 1975-8 modifications	pre 1756	7789
57	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
58	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
59	St Stephen's Green East	PTSB	1975-1978	1760/pre 1756	N/A
60	St Stephen's Green East	—	1980	1760/pre 1756	N/A

Table A1: Properties lining St Stephen's Green East

Eight mid-18th century houses survive on St Stephen's Green East (Nos 41, 42, 43, 50, 51, 52, 53 and 56) the remainder date to the late 18th/early 19th and 20th century (Casey 2005, 541-544). Those of the late 18th/early 19th century are typical Georgian style, comprising 3-5 storey over basement structures, with open basement area and coal cellars (beneath footpath) to fore (Figure A1.14). The front door of each building has a series of elevated granite steps providing access over the basement area, others also have steps to the basement area itself, providing a separate means of access for servants and delivery men to the basement and coal cellars (where present). A number of buildings have, or originally had, side laneways providing access to the rear of the buildings; for terraced buildings, rear access was typically provided by means of a stable lane.

Examination of the available cartographic sources indicates that some of the properties plots may have experienced two to three distinct phases of complete rebuilding, while others were often heavily altered during the 20th century.

Nos 39-40: on Rocque's map of 1756 a single building is depicted on these two plots with a centrally positioned door, though the rear garden appears to have comprised two distinct plots. The 1st edition OS map of 1847 indicates that this earlier building was replaced by two typically Georgian buildings, each with a separate entrance to south. These buildings were demolished and rebuilt from 1912-1913 as the Bank of Ireland. A decorative coal hole cover, is present on the uppermost entrance step into the building (Figure A1.15); the cellar beneath is concrete (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B10).

No 41: Constructed 1745 for Mrs Ruth Croker, it maintains original ceilings and staircase (Casey 2005, 540-1), the building was heavily renovated and extended throughout the 20th century (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B9).

No 42-43: Originally two separate buildings constructed 1754 by Benjamin Rudd, some original panelling survives but the buildings were heavily remodelled in the 20th century by David Crowley Architects (Casey 2005, 251). Now functioning as Boston College. There is a late 19th and mid-late 20th century extension to rear.

Nos 44-45: Two properties were illustrated on Rocque's map of 1756, the facades of which protruded out from the main building line. The subsequent buildings on the 1st edition OS map of 1847, maintain a constant building line, suggesting the properties were rebuilt in the late 18thcentury, with No 45 having a porch extension to south. It is probable that these were rebuilt c.1768 when the adjacent Hume Street was laid out. These buildings were demolished and rebuilt as modern offices in 1969 (Casey 2005, 541).

Nos 46-49: No 47 and 48 were illustrated on Rocque's map of 1756, with Nos 46 and 49 shown as vacant plots with irregular frontage. All four buildings, which Casey (2005, 541) states were of 1760 date, are shown as regular fronted properties on the 1st edition OS map of 1847. These, along with Nos 44-45 were demolished in 1969.

Nos 50-52: Nos 50 was illustrated on Rocque's map of 1756 and, was rebuilt in 1771 by Gustavus Hume, who also built No 52. No 51, was originally illustrated on de Gomme's map of 1673 and rebuilt by the owners grandson George Paul Monck *c.*1760. In 1848 it functioned as the Museum of Geology, with tiles of polished Irish stone from this date still on display in the entrance hallway. Original decorative wall and ceiling plasterwork survives in both Nos 50 and 51. No. 52 retains much of its extravagant decorative features including Rocco cornices while the *piano noble* was decorated by Flemish artist *Pieter de Gree c.*1785-1789. This property has substantially been extended to rear, and the original laneway to north has been built over to link with No 51. Of significance is that No 52 also houses three early medieval cross slabs (RMPs DU018-238---- — DU018-240----)

Nos 53 – 55: Now functioning as Loreto College, No 53 was constructed in 1771. Nos 54-55 were illustrated on Rocque's map of 1756, with a starkly similar building plan shown on the 1st edition OS map of 1847, suggesting the properties were maintained throughout the 18th and 19th centuries. The buildings contain

Rocco plasterwork and joinery of c. 1770 date, but have been much altered and extended to accommodate their use as a school.

No 56-60: No 56 was constructed c.1760, replacing a smaller two-bay structure which, along with Nos 57-60 were illustrated on Rocque's map of 1756. The buildings were used as St Vincent's Hospital from the 1830's. The exterior of these buildings was substantially redeveloped from 1975-78, with the properties now functioning as a bank. However much of the internal decoration of No 56 survives, including Late Baroque and Rococo decorative plasterwork (Casey 2005, 543-4). In 1980 No 60 was completely rebuilt, but one of the original ceilings was retained and reinstated.

No 61:demolished in 1799 by the Wide Street Commission to accommodate the widening of Leeson Street.

Nos 62-64: demolished in 1839 to accommodate the construction of Earlsfort Terrace (Casey 2003, 544; Figure A1.14).

A.3.1 Coal Cellars

It is likely that all of the original buildings on this street had associated coal cellars, for storing fuel. In the majority of cases, these are likely to have been located to the fore of each building beneath the current street pavement and may extend out beneath the present carriageway. Georgian coal cellars were typically filled from the footpath via a coal chute which was sealed with a coal hole cover. Typically, each two to three bay property had two coal cellars, with larger properties having up to five. Each coal cellar had an access door allowing movement between the cellar and the basement area.

In light of the multiple building phases represented on St Stephen's Green East, it is possible that multiple phases of coal cellar construction also took place, with each phase surviving to various degrees of preservation below the current street surface. Multiple phases of coal cellar construction was recorded on Dominick Street during recent Luas Cross City works, with the mid-18th century cellar located outside of the late 18th century cellar.

It is likely that the alignment of the main sewer functions as an indicator of the westward extent of the majority of the cellars, as the property owners would not have permitted its construction to impact or impede on the functioning of their coal cellars. Where an historic property has been demolished and replaced (e.g. 44-49, 56-60), new works are generally confined to the basement and basement area, thus the original coal cellars often continue to survive beneath the footpath (see Figure A1.14).

Only one property on St Stephen's Green East has a surviving coal hole cover (Nos 39-40). Unusually a MetroLink survey of No 43 St Stephen's Green East identified that the coal cellar was located to the rear of the building, which along with its coal chute survives in fair condition. It is probable that a similar arrangement existed for No 42 as both properties were built by the same developer (ORS Survey 2019, 191_182-ORS-XX-XX-RP-B-13b-B8). No 51 has an unusually large and low basement area to front, mimicking its 17th century predecessor. As there appears to be insufficient head height between the pavement level and floor of the basement area, it is possible that any original coal cellars may also have been to rear with easy access provided by the carriageway to south.

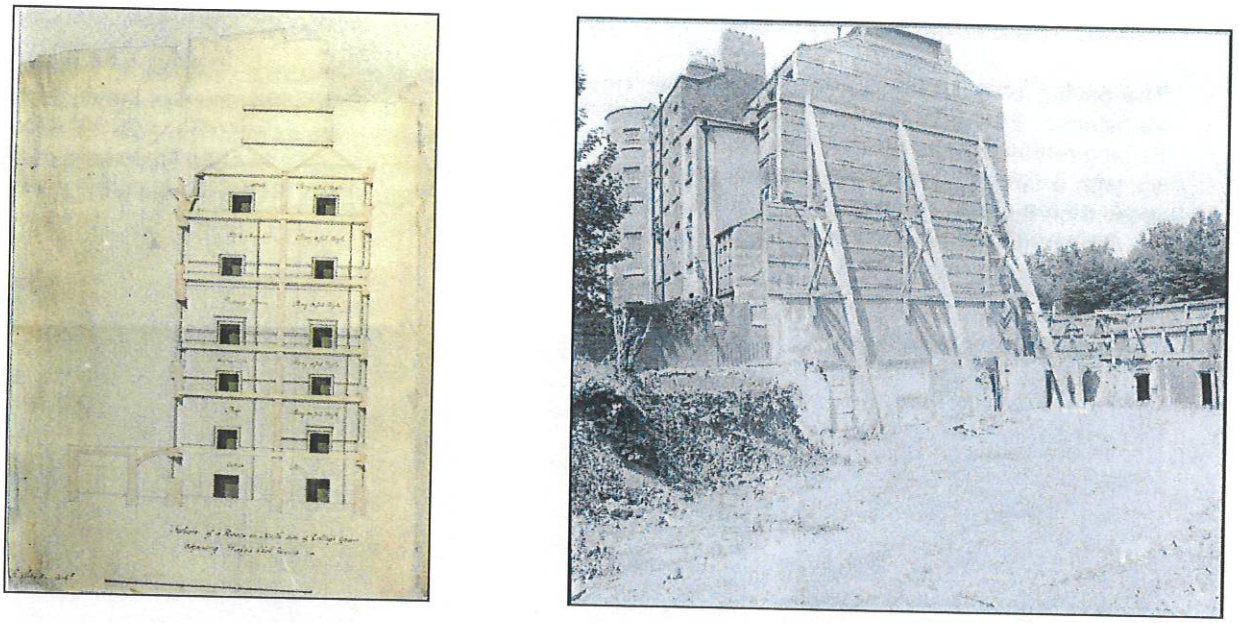


Figure A1.14: Left: Wide Street Commission map No 528, College Green, showing typical cross-section of a Georgian building with 'Basement' (beneath building proper), 'Basement area' and coal cellars to fore (Copyright Dublin City Archives). Right: the demolition of Nos 62-64 in 1839 – note coal cellar doors visible beneath street level to fore of image (Copyright National Library of Ireland).

Historic Street Furniture and Paving

The paving of St Stephen's Green East comprises concrete slabs predominantly retained by historic granite kerbstones. To the fore of Nos 39-45 the footpath has been widened, with the alignment of the original granite kerbing retained in the centre of the path (Figure A1.15 [C]). A probable mason's mark is located to the fore of No 55, with a single coalhole cover present on the steps to Nos 39-40 (Figure A1.15 [A]). An historic post box is present on the street to the fore of No 50. A sculpture – Trace by Grace Weir (1988) –stood on the pavement at the streets northern end but was removed to storage by DCC in 2015.

Figure A1.15: Historic Street Furniture on St Stephen's Green East: Coal Hole Cover (Nos 39-40), original Granite kerbline retained towards path centre (Nos 39-45) and probable Mason's Mark (No. 55)

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Appendix B. Stage 3 Preliminary Analysis Summary Table

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATION 2	LOCATION 3	Notes
Project Objectives	Design to Integrate appropriately into the existing public realm.	This station location requires the provision of surface elements of the project into the existing public realm which is within the curtilage of the National Monument. The construction of an intervention shaft structure between Location 1 and Tara St Station would result in an impact having regard to public realm integration. Overall the required station infrastructure and the intervention shaft would be difficult to integrate into the public realm impacting performance against this Project Objective.	This station location requires the provision of surface elements of the project into the existing public realm which is within the curtilage of the National Monument. The construction of an intervention shaft structure between Location 2 and Tara St Station would result in an impact having regard to public realm integration. Overall the required station infrastructure and the intervention shaft would be difficult to integrate into the public realm impacting performance against this Project Objective.	This station location requires the provision of surface elements of the project into the existing public realm which is within the curtilage of St Stephens Green Park. The construction of an intervention shaft structure between Location 3 and Tara St Station would result in an impact having regard to public realm integration. Overall the required station infrastructure and the intervention shaft would be difficult to integrate into the public realm impacting performance against this Project Objective.	The Station location options are assessed against the Project Objectives here.
	Rank				
	Planned, constructed and operated in a sustainable manner.	Construction phase impacts of Location 1 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. The project provides a sustainable transport option to St Stephen's Green station which will have positive impacts and is aligned with this Project Objective. Overall Location 1 has Poor performance against this Project Objective.	Construction phase impacts of Location 2 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. The project provides a sustainable transport option to St Stephen's Green station which will have positive impacts and is aligned with this Project Objective. Overall Location 2 has a Poor performance against this Project Objective.	Construction phase impacts of Location 3 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. Impacts from station location being entirely within St Stephen's Green Park. The project provides a sustainable transport option to St Stephen's Green station which will have positive impacts and is aligned with this Project Objective. Overall Location 3 has a Poor performance against this Project Objective.	
	Rank				
Economy	Capital Cost	Constructing the station at this location would increase the construction cost of a typical station box by approximately 10%. The additional costs arise from staged and constrained construction in the road carriageway, associated traffic management and significant utility diversions. The need to construct an additional Intervention Shaft, would increase the overall cost by approximately 25%.	The station is located at the edge of the road carriageway and as a result has a more limited impact on utility diversions with less traffic management and less potential mitigation requirements. Based on this, construction of the station at this location would increase the construction cost of a typical station box by approximately 7%. The need to construct an additional Intervention Shaft, would increase the overall cost by approximately 25%.	Constructing the station within the St Stephens Green is the most cost effective of options 1-3, as construction can be completed more quickly and there are no requirements for utility diversions or significant traffic management. The need to construct an additional Intervention Shaft, would increase the overall cost by approximately 25%.	This criterion considers the cost of each of the proposed station options.
	Rank				

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATION 2	LOCATION 3	Notes
Environmental		This option has an overall poor performance against the environmental objective. This location requires the closure of St Stephen's Green East road during the construction phase, including its junction with Hume Street. This would disrupt existing traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. This includes bus routes, and HGV access. The 1800mm Victorian sewer situated below St Stephen's Green East would need to be diverted under the eastern footpath during construction. This would be technically difficult and may directly impact protected cellars situated below St Stephen's Green East and the footpath.	This option has an overall poor performance against the environmental objective. This location requires the partial closure of St Stephen's Green East during construction. Three lanes can be kept open to traffic which are adequate to maintain flows resulting in moderate impacts on existing bus and the HGV routes with some delays but no diversions. The 1800mm Victorian sewer below St Stephen's Green East would not require diversion.	This option has an overall poor performance against the environmental objective. Traffic and transport impacts are not significant as the station box and construction areas do not directly impact St Stephen's Green East. This location would have a direct very significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern park railings and plinth wall (RPSs 7751). Subsurface archaeology would potentially be impacted. The position of the station box is entirely within the park and requires a large amount of tree removal. Street trees are outside the indicative construction area so may be able to be retained.	Minimise the potential for adverse impact on the natural and built environment and the community. Selected key constraints identified.
		While this option is primarily within the road corridor the station box and construction zone would have a direct significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPS 7751) and bollards and lampposts (RPS 7752). Subsurface archaeology would potentially be impacted. Street trees on St Stephen's Green East would need to be removed as would a number of mature trees within St Stephen's Green Park. This location requires an intervention shaft between St Stephen's Green and Tara Station resulting in very significant impacts on potential sites at Trinity College or Merrion Square.	While this option is primarily within the road corridor the station box and construction zone would have a direct very significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPSs 7751) and bollards and lampposts (RPSs 7752). Subsurface archaeology would potentially be impacted. Street trees on St Stephen's Green East would need to be removed as would a number of mature trees within St Stephen's Green Park This location requires an intervention shaft between St Stephen's Green and Tara Station resulting in very significant impacts on potential at Trinity College or Merrion Square. The intervention shaft requirement is the primary reason for this location's poor environmental performance.	This location requires an intervention shaft between St Stephen's Green and Tara Station resulting in very significant impacts on potential at Trinity College or Merrion Square.	
	Rank				
Engineering	Constructability	This option has an overall poor performance against the constructability objective. The characteristics of the sewer make a diversion to allow the construction of the station box technically challenging. It is a an old, relatively large (1800mm) egg-shaped sewer constructed of brick buried 3.5m below St Stephen's Green East. The construction of an intervention shaft would be challenging given the potential site locations which have limited space and significant environmental constraints. This is due to potentially feasible locations for an intervention shaft being sensitive.	This option has an overall moderate performance against the constructability objective. While the 1800mm sewer is maintained other utilities require diversion. The construction of an intervention shaft would be challenging given the potential locations which have limited space and significant environmental constraints. This is due to potentially feasible locations for an intervention shaft being sensitive.	This option has overall moderate performance against the constructability objective. The station box would be constructed within St Stephen's Green Park. Construction phase constraints include undertaking the construction work in close proximity to park users and the requirement to minimise construction impacts on the park including on trees and other park features and subsurface archaeology. The construction of an intervention shaft would also be challenging given the potential locations which have limited space and significant environmental constraints. This is due to	This criterion considers if the station option can be constructed having regard to the identified constraints and opportunities within the study area

Assessment Criteria	Assessment Sub-Criteria	LOCATION 1	LOCATION 2	LOCATION 3	Notes
				potentially feasible locations for an intervention shaft being sensitive.	
	Rank				
Conclusion		Due to a poor performance against all sub-criteria this option will not proceed to MCA stage.	Due to a poor performance against economic and environmental criteria this option will not proceed to MCA stage.	Due to poor performance in economic and environmental criteria this option will not proceed to MCA stage	

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5	Location 6	Location 7	Notes
Project Objectives	**Design to Integrate appropriately into the existing public realm.**	Initial design considers station integration into the existing public realm which is within the curtilage of the National Monument. Design features that assist in achieving this include sensitive design of station "pop ups" and to ensure appropriate replacement of protected structures impacted during construction e.g. perimeter fence railings. This station location allows entrance/egress to form part of the plaza area at the North Eastern corner of St Stephen's Green Park improving integration. Overall ongoing impacts from station infrastructure would be challenging to integrate into the public realm impacting performance against this Project Objective.	Initial design considers station integration into the existing public realm which is within the curtilage of the National Monument. Design features that assist in achieving this include sensitive design of station "pop ups" and to ensure appropriate replacement of protected structures impacted during construction e.g. perimeter fence railings. This station location allows entrance/egress to form part of the plaza area at the North Eastern corner of St Stephen's Green Park improving integration. Overall ongoing impacts from station infrastructure would be challenging to integrate into the public realm impacting performance against this Project Objective.	Initial design considers station integration into the existing public realm which is within the curtilage of the National Monument. Design features that assist in achieving this include sensitive design of station "pop ups" and to ensure appropriate replacement of protected structures impacted during construction e.g. perimeter fence railings. Location 8 is entirely within St Stephen's Green Park so pop ups must also be placed within the park creating operation impacts. Overall ongoing impacts from station infrastructure would be challenging to integrate into the public realm impacting performance against this Project Objective.	Appropriate reinstatement of commercial buildings directly impacted on the eastern side of the street would be required. Protected structures impacted during construction would require reinstatement e.g. perimeter fence and access to the National Concert Hall. Overall impacts during construction e.g. direct impact on commercial property would be significant and public realm integration during operation phase difficult to achieve as a result. This triggers a poor performance against this Project Objective.	These Project Objectives are those relevant to the St Stephen's Green Station assessment.
	Rank					
	Planned, constructed and operated in a sustainable manner.	Construction phase impacts of Location 4 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. This primarily relates to utility diversions and traffic impacts. The project provides a sustainable transport option to St Stephen's Green station which would have positive impacts and is aligned with this Project Objective. Overall Location 4 performs poorly against this Project Objective	Construction phase impacts of Location 5 would result in moderate performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. The project provides a sustainable transport option to St Stephen's Green station which would have positive impacts and is aligned with this Project Objective. Overall Location 5 has a Moderate performance against this Project Objective.	Construction phase impacts of Location 6 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. Impacts from station location being entirely within St Stephen's Green Park.	Construction phase impacts of Location 7 would result in poor performance against this Project Objective. These are detailed further in the Environmental criteria assessment below. Impacts relate to station location requiring significant utility diversions that would directly impact existing commercial property present on eastern side of Earlsfort Terrace. The project does provide a sustainable transport option to the area but the location is sub-optimum due to less trip attractors, potential for lower patronage	

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5	Location 6	Location 7	Notes
					and a sub optimum location for interchange. Overall Location 6 performs poorly against this Project Objective. Overall Location 6 performs poorly against this Project Objective.	
	Rank					
Economy	Cost	Constructing the station at this location increases the construction cost of a typical station box by approximately 10%. The additional costs arise from staged and constrained construction in the carriageway, associated traffic management, significant utility diversions work as well as a higher degree of mitigation during the works, due to the proximity of existing buildings.	Constructing the station at this location increases the construction cost of a typical station box by approximately 7%. The station is located at the edge of the carriageway and so has more limited impact on utility diversions, less traffic management and less potential mitigation requirements.	Constructing the station within the St Stephens Green is the most economical of all the options, as none of the previously stated additional construction impacts occur.	Constructing the station at this location increases the construction cost of a typical station box by approximately 10%. The additional costs arise from constrained construction in the carriageway, associated traffic management, significant utility diversions work as well as a significant of mitigation during and after works, due to the proximity of existing buildings and direct impacts and compensation required.	This criterion considers the cost of each of the proposed station options.
	Rank					
Environmental		This option has an overall poor performance against the environmental objective. This location requires the closure of St Stephen's Green East during the construction phase, including its junction with Hume Street. This would disrupt existing traffic movements from St Stephen's Green East to Kildare Street and Merrion Row. This includes bus routes, HGV access. The 1800mm sewer situated below St Stephen's Green East would need to be diverted into the eastern footpath during construction. A 1710mm sewer beneath Hume St that joins the St Stephen's Green East sewer would also require diversion. This would be technically difficult and may directly impact protected cellars situated below St Stephen's Green East and the footpath. While this option is primarily within the road corridor the station box and construction zone would have a direct very significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPSs 7751) and bollards and lampposts (RPSs 7752). Subsurface	This option has an overall poor performance against the environmental objective. This location requires the partial closure of St Stephen's Green East during construction. Three lanes can be kept open to traffic which are adequate to maintain flows resulting in moderate impacts on existing bus and the HGV routes with some delays but no diversions. The Victorian sewer below St Stephen's Green East would not require diversion. While this option is primarily within the road corridor the station box and construction zone would have a direct significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on eastern perimeter fence railings and plinth wall (RPSs 7751) and bollards and lampposts (RPSs 7752). Subsurface archaeology potentially impacted. Street trees on St Stephen's Green East would need to be removed as would a number of mature trees within St Stephen's Green Park.	This option has an overall poor performance against the environmental objective primarily relating to the significance on impacts on the St Stephen's Green Park. Traffic and transport impacts are not significant as the station box and construction areas do not directly impact St Stephen's Green East. This location would have a direct very significant impact on St Stephen's Green Park which is a National Monument and (RMP DU018-020334-). There would be a direct impact on St Stephen's Green East park railings and plinth wall (RPSs 7751)..Subsurface archaeology would be potentially impacted. The position of the station box is entirely within the park and therefore requires a large amount of tree removal.	This option has an overall poor performance against the environmental objective primarily relating to the significance on impacts on the Earlsfort Terrace during construction and buildings on both sides of the street. Traffic and Transport impacts of closing Earlsfort Terrace are not as significant as with St Stephen's Green East. However, Earlsfort Terrace would be closed to public transport and traffic movements for the duration of construction. While this option is primarily within the road corridor the station box and construction zone would have a direct significant impact on The National Concert Hall (RPS 2425). There would be a direct impact on perimeter fence railings which form part of the protected structure and bollards and lampposts (RPSs 7752). Potentially for subsurface archaeology to be impacted. Street trees and trees within the National Convert Hall ground wouldrequire removal.	Minimise the potential for adverse impact on the natural and built environment and the community. Selected key constraints identified.

Assessment Criteria	Assessment Sub-Criteria	Location 4	Location 5	Location 6	Location 7	Notes
		archaeology potentially impacted, and tree removal would be necessary. There would be a direct impact on the steps in front of several protected structures on St Stephen's Green East which are: • 42-43 St Stephen's Green East (RPSs 7782) • 50 St Stephen's Green East (RPSs 7783)				
	Rank					
Engineering	Constructability	This option has an overall poor performance against the constructability objective. The characteristics of the sewer make a diversion to allow the construction of the station box technically challenging. It is an old, relatively large egg-shaped sewer constructed of brick buried 3.5m below St Stephen's Green East. Risk exists in relation to traffic management, public safety and management of monuments and other architectural features within the National Monument.	This option has an overall moderate performance against the constructability objective. While the 1800mm sewer is maintained other utilities require diversion Risk exists in relation to traffic management, public safety and management of monuments and other architectural features located within the National Monument. Mitigation risks exist in terms of suitable reinstatement of St Stephen's Green Park.	This option has an overall moderate performance against the constructability objective. The scale of the construction required to build the station box is technically challenging within St Stephen's Green Park, which is designated as a National Monument. However, there is no requirement for the diversion of a significant sewer and traffic management requirements are minimised.	This option has an overall poor performance against the constructability objective. The characteristics of the Victorian sewer beneath Earlsfort Terrace make a diversion to allow the construction of the station box technically challenging. It is an old, relatively large ovoid sewer constructed of brick buried more than 3m below the road surface. There is limited space to divert the sewer east around the station box without a direct impact on commercial buildings. The width of Earlsfort Terrace means the National Concert Hall steps would also be directly impacted and require reconstruction. This would be technically challenging to undertake and maintain integrity of the National Concert Hall façade.	This criterion considers if the station option can be constructed having regard to the identified constraints and opportunities within the study area.
	Rank					
Conclusion		Due poor performance against environmental and constructability sub-criteria this option will not proceed to MCA stage.	Due to a moderate performance against all sub-criteria with the exception of Environment, this option will be taken forward and subjected to an MCA.	Due to moderate performance against the engineering criteria and the good performance against the economy criteria this option will be taken forward and subjected to an MCA.	Due to a poor performance against all criteria this option will not proceed to MCA stage.	

Colour	Description
	Overall good performance against the criteria
	Overall moderate performance against the criteria
	Overall poor performance against the criteria

Appendix C. Stage 4 Appraisal Summary Table

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION 6	Notes
Economy	Cost	Construction of the station at this location increases the construction cost of a typical station box by approximately 7%. The station is located at the edge of the carriageway and so has more limited impact on utility diversions, less traffic management and less potential mitigation requirements.	Constructing the station within the St Stephens Green is the most economical of all the options, as none of the previously stated additional construction impacts occur.	This criterion considers the cost of each of the proposed station options.
	Rank			
Environmental	Air Quality and climate	Potential for impacts on sensitive receptors during the construction phase due to emissions. Emissions of relevance during this phase include NOx and Particulate Matter (PM10). Receptors within 100m of the indicative construction zone include commercial premises, a college and a secondary school on the eastern side of St Stephen's Green East. A hotel is situated on the northern side St Stephen's Green North. A medical clinic and art gallery are also within 100m of the indicative construction zone. During construction the park next to the indicative construction zone will continue to function as a public park and resulting in potential air quality impacts on park users. Climate related impacts are potentially GHG emissions from construction traffic and embodied energy from construction materials. Positive impact on air quality and climate during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in emissions.	Potential for impacts on sensitive receptors during the construction phase due to emissions. Emissions of relevance during this phase include NOx and Particulate Matter (PM10). Receptors within 100m of the indicative construction zone include commercial premises, a college and a secondary school on the eastern side of St Stephen's Green East. A hotel is situated on the northern side St Stephen's Green North. A medical clinic and art gallery are also within 100m of the indicative construction zone. During construction the park next to the indicative construction zone will continue to function as a public park and resulting in potential air quality impacts on park users. Location 6 is entirely within the park and has more potential impacts on park users but is also further away from receptors on St Stephen's Green East. Climate related impacts are potentially GHG emissions from construction traffic and embodied energy from construction materials. Positive impact on air quality and climate during the operational phase of the project due to modal shift from private vehicles to the MetroLink and the resultant reduction in emissions.	Minimise the potential for adverse impact on the natural and built environment and the community. Selected key constraints identified.
	Rank			
	Noise and Vibration	Potential for noise impacts during construction due to close proximity of sensitive receptors including schools, hotels, office space and recreational/greenspace (including a children's playground). Potential for vibration impacts during construction due to the advancement of the TBM and station box works near sensitive receptors. Potential for operational impacts from train movements on buildings north of station.	Potential for noise impacts during construction due to close proximity of commercial properties and users of St Stephens Green. This option is further away from receptors on St Stephens Green but closer to park users including children's playground. Potential for vibration impacts during construction due to the advancement of the TBM and station box works near sensitive receptors. Potential for operational impacts from train movements on buildings north of station location including a hotel for this option.	
	Rank			
	Biodiversity	In the context of the surrounding environment, the impacted area is of local ecological importance (higher value). Potential impacts on the Common pipistrelle and Leisler's bat recorded along this tree line. One red-listed (Herring Gull) and four amber-listed (i.e. robin, mistle thrush, starling and swift) bird species recorded during breeding bird surveys. In absence of mitigation, residual significant impact of a local importance (higher value) due to a direct loss of habitat; and, indirect impact on bats and birds (due to increases in light, noise and human disturbance).	In the context of the surrounding environment, the impacted area is of local ecological importance (higher value). Impacts on Common pipistrelle and Leisler's bat recorded along this treeline. As described in visual impacts above direct impact on mature trees in an area of scattered trees and parkland and ornamental/non-native shrub. One red-listed (Herring Gull) and four amber-listed (i.e. robin, mistle thrush, starling and swift) bird species recorded during breeding bird surveys. In absence of mitigation, residual impact of local importance (higher value) due to a direct loss of habitat; an indirect impact on habitats because of habitat degradation/reduction in air quality; and, indirect impact on bats and birds	

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION 6	Notes
			(due to increases in light, noise and human disturbance). The station position entirely within the park exacerbates significance of impacts on St Stephen's Green Park and biodiversity.	
	Rank			
	Non-Agricultural Buildings	100m buffer from construction area has identified potential impacts on sensitive receptors including an art gallery, a college, a secondary school, and a medical clinic. Potential construction impacts include noise, vibration and air quality.	100m buffer from construction area has identified potential impacts on sensitive receptors including an art gallery, a college, a secondary school, and a medical clinic. Potential construction impacts include noise, vibration and air quality. This location is further west than Locations 4 and 5 allowing better performance against this criterion.	
	Rank			
	Cultural Heritage: Architectural Heritage	Direct impact on St Stephens Green Park which is a National Monument, an RMP and an RPS (RMP DU018:020334: RPS 7751-7761). Direct impact on railings and plinth (RPSs 7751) and bollards and lampposts (RPSs 7752). Potential direct impact on the Wolfe Tone statue, and the Hungry Heart Famine memorial during construction as these structures fall within the indicative construction area. Potential for a direct long-term visual impact on St Stephens Green East due to the felling of trees and the removal of vegetation and a direct permanent moderate visual impact on the street at operation phase due to location of station infrastructure including lifts, skylights and ventilation.	Direct impact on St Stephens Green Park which is a National Monument, an RMP and an RPS (RMP DU018:020334: RPS 7751-7761). Direct impact on railings and plinth (RPSs 7751) and bollards and lampposts (RPSs 7752). Potential direct impact on the Wolfe Tone statue, and the Hungry Heart Famine memorial during construction as these structures fall within the indicative construction area. For this location the northern extent of the station box is in very close proximity to the Hungry Heart memorial increasing impacts. Potential for a direct long term visual impact on St Stephens Green East due to the felling of trees and removal of vegetation and a direct permanent moderate visual impact on the street at operation phase due to location of station infrastructure including lifts, skylights and ventilation.	
	Rank			
	Cultural Heritage: Archaeology	Potentially significant impacts on unrecorded sub-surface archaeology area within park including a 17th Century perimeter wall and ditch for the length of the station box and indicative construction area. Potential impacts on subsurface remains of historic tramline on St Stephen's Green East.	Potentially very significant impacts on unrecorded sub-surface archaeology area within park including a 17th Century perimeter wall and ditch for the length of the station box and indicative construction area.	
	Rank			
	Landscape and Visual	Very significant direct on/loss of vegetation of eastern side of St Stephen's Green Park. 75 trees are within the construction zone including 55 that are mature. Of these 4 are A2, 1 is A3 and 33 are B2 trees. Of these one is a London Plane, one is a "dominant" Wych Elm. 15 are Holly which are not notable individual specimens but when grouped together provide a screening function on the eastern park boundary. Operational phase impacts while trees planted grow and re-establish. Operational visual impacts from station related infrastructure (lifts, escalators and ventilation) within St Stephen's Green Park and footpath of St Stephen's Green East which is within the National Monument boundary.	Very significant direct impact on/loss of vegetation of eastern side of St Stephen's Green Park. 98 trees are within the construction zone including 70 that are mature. Of these 16 are A2, 1 is A3 and 35 are B2 trees. Of these four are London Plane, one is a "dominant" Wych Elm. 13 are Holly which are not notable individual specimens but when grouped together provide a screening function. The significance of impacts are exacerbated by the station position entirely within St Stephen's Green Park and the no. of mature tree removal necessary. Operational phase impacts while trees planted re-establish. Operational visual impacts from station related infrastructure (lifts, escalators and ventilation) within St Stephen's Green Park. As this option is located completely within the park boundary the pop ups in St Stephen's Green park.	
	Rank			

Assessment Criteria	Assessment Sub-Criteria	LOCATION 5	LOCATION 6	Notes
	Traffic and transportation	The following potential impacts were identified during the construction period: • Closure of the footpath on the western side of St Stephen's Green East would interfere on north and southbound movements of 361 pedestrians in the AM Peak hour; • Reduced east and westbound pedestrian permeability through the St Stephen's Green Park; • 292 cyclists (AM Peak hour) would be affected by the capacity reduction on St Stephen's Green East; • Existing dedicated cycle lanes are potentially compromised by width reduction. Alternative routes to northbound cyclist movements (279 cyclists in the AM Peak) would be necessary; • Removal of existing Dublin Bike station at St Stephen's Green East; • Slight impact on existing bus routes. No bus stops need to be re-located or removed; • Removal of on street parking on St Stephen's Green East, between R110 St Stephen's Green and Merrion Row; • Slight impact on wider traffic due to the reduction of one northbound lane, however, the remaining lanes have the capacity to absorb the traffic.	The following potential impacts were identified during the construction period: • Pedestrian movements to and from St Stephen Green Park would be affected by the closure of two existing pedestrian access points on St Stephen's Green East.	
	Rank			
	Utilities	Water mains, Telecoms, Gas and HV ESB impacted by station box location. No sewer diversion required on St Stephen's Green East or Hume St due to more western location compared to option 6	Minimal impact on utilities as box located inside park.	
	Rank			
	Population and Human Health	This option maintains a balance between impacts to commuter flows and traffic around the green and access for pedestrians through the North-Eastern entrance (though reduced) during the construction phase. However, its proximity to Merrion Row's restaurants, cafes, hotel, shops and bars would significantly impact on their operation during the construction phase but would greatly benefit them post-construction.	Decreased or eliminated access to the north east entrance during the construction phase which serves as a meeting point and events venue at present, will impact park amenity and tourism in the area. This option heavily impacts upon the amenity and accessibility of the park. However, in doing so it minimises disruption to commuting, traffic and access to businesses and institutions along St Stephen's Green East. It eliminates access via the North-Eastern park entrance, which is critical to the flow of people during the day (business viability). Furthermore, due to its placement requiring a route realignment, it is will have impacts both north and south of St Stephen's Green.	
	Rank			

Shaun McGee

From: Shaun McGee
Sent: Tuesday 10 November 2020 13:17
To: info@tii.ie
Subject: ABP-302010-18 - Record of the 4th Meeting
Attachments: ABP-302010-18 - Record of the 4th Meeting.pdf

Hi,

Please find enclosed - ABP-302010-18 - Record of the 4th Meeting

Hard copy will issue via post.

Regards

Shaun

(F)

Our Case Number: ABP-302010-18

An Bord Pleanála

Peter Walsh
Director of Capital Programme
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 10th November 2020

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the forth meeting of the 28th October 2020.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

PC07

Teil	Tel	(01) 858 8100
Glao Áitiúil	LoCall	1890 275 175
Facs	Fax	(01) 872 2684
Láithreán Gréasáin	Website	www.pleanala.ie
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64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

An Bord Pleanála

Record of Meeting ABP-302010-18 4th meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	4th		
Date	28th October, 2020	**Start Time**	11 a.m.
Location	N/A	**End Time**	1.25 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Peter Walsh, TII		
Ronan Hallissey, Jacobs		
John Keogh, Jacobs		
Aidan Foley, TII		
Nigel O'Neil, TII		
Neil Cowie, Jacobs		
Neill McClements, Grimshaw		

The meeting commenced at 11 a.m.

Introduction:

The Board referred to its previous meeting with the prospective applicant of the 8th November 2019. The Board enquired if the prospective applicant had any comments it wished to make on the record of this meeting. The prospective applicant replied that it had no comments to make on the record.

The Board's representatives did a brief overview of key matters which had been raised with the prospective applicant at the previous meeting; it also noted that the prospective applicant had provided it with legal advice on the issue of power supply/grid connection in relation to the proposed development.

Presentation by prospective applicant:

With respect to the power supply/grid connection, the prospective applicant's current intention is to apply for a temporary connection (for the purposes of the construction phase of the project) as part of the Railway Order Application with the permanent connection (for the operational phase of the project) being lodged by way of a separate application pursuant to section 182A of the Planning and Development Act 2000, as amended. The Board's representatives noted this position (as per the legal advice provided) and indicated that such an approach would appear to be the most appropriate. With regard to the proposed substations, the Board queried if these

should form part of the section 182A application as opposed to the Railway Order Application; the prospective applicant is to consider the matter further.

With respect to the intended timeline, the prospective applicant signalled its intention to lodge the Railway Order Application circa June 2021 and to then lodge the section 182A application thereafter. The prospective applicant said that it would be very difficult to have a section 182A application prepared any sooner than this. The Board indicated a preference for dealing with both applications concurrently.

The prospective applicant outlined the nature and extent of stakeholder engagement since the time of the previous meeting. It reported that significant engagement has taken place with bodies such as Fingal County Council, Dublin City Council, the DAA, Irish Rail and members of the public. Based on consultation responses, the prospective applicant said that a number of significant design changes have been made to the proposed development.

The prospective applicant referred to the proposed route along the R132 which has been identified as the preferred location for the MetroLink Project in Swords. It noted that there has been major growth in the area and it has the threshold population to support the development of the project. The proposed route is more accessible from locations such as Swords Central and Seatown Station. The route would enable the R132 to become an urban boulevard with higher permeability.

The prospective applicant said that it has sought to address concerns raised by Fingal County Council and that it has had regard to the Fingal Development Plan 2017 – 2023. The prospective applicant outlined the nature and extent of urban integration which it expects will take place at this location with regard to the proposed development. It said that the proposed route would maximise station accessibility, would maximise the potential to successfully integrate the MetroLink Project with future and existing development and would minimise the level of community severance. At the Swords Central location, the prospective applicant said that the proposed development would serve to promote strong and attractive urban elevations along the R132 and would also ensure good and convenient permeability for pedestrians and cyclists; it added that the proposed station at this location would serve as a catalyst for joined-up development. The prospective applicant said that the emerging MetroLink Frameworks sets out the conditions that

are central to delivering quality urban locations around the four proposed stations in the Swords area generally.

In relation to Swords Central specifically, and connectivity between east and west, the Board's representatives enquired as to whether any consideration had been given to extending the station under the R132. The prospective applicant replied that integrated pedestrian crossings are the intention here as they would provide more pedestrian-friendly facilities as opposed to underpasses. The Board clarified that it was not suggesting underpasses but rather the extension of the proposed station at this location in order to facilitate safer passenger movement. The Board also noted that, notwithstanding proposals for the R132 vis-à-vis traffic calming measures, the road in question would still remain a significant thoroughfare for traffic. The prospective applicant replied that it is not considering such an alternative arrangement at the current time but will give further consideration to the matter.

The prospective applicant also set out the future development framework with respect to the proposed Seatown and Fosterstown Stations. It said that the proposed design of the stations in question would serve to enhance public realm spaces and would provide an opportunity to improve the surrounding urban landscape. The architecture which is emerging for the proposed stations was aimed at giving them a strong identity and making them easily visible to road users and pedestrians. It added that such design will also assist in the regeneration of the areas in question and further enhance the passenger experience.

With regard to the proposed Seatown station, the Board's representatives commented that robust justification will have to be provided for its inclusion particularly in the context of four stations being proposed for the Swords area. The Board noted the fact that the proposed Seatown station was previously omitted from its decision on the Metro North project and emphasised that the merits for its inclusion with regard to footfall and patronage would have to be clearly set out in any planning application. The Board added that the prospective applicant might wish to consider demonstrating how the Seatown station is required in light of development in the area since the time of the Metro North decision and in the context of future planned development in the area.

The prospective applicant provided the Board's representatives with an update on the location of the proposed depot following consultations with Fingal County Council. It reported that 10 location options had been explored at the Dardistown location and added that the location for the proposed depot (adjacent to Dardistown Station) would minimise the impact on High Technology Zoned Lands as well as utilising the General Employment Lands further north within the Dublin Airport Public Safety Zones.

With respect to the Estuary Station and Park & Ride, the prospective applicant said that a baseline study has led to changes to this since the preliminary design phase. There are on-going consultations with Fingal County Council with regard to this and the prospective applicant advised that it is also seeking to locate a substation here if at all possible. It also noted that attenuation ponds will be included with respect to the proposed Park & Ride facility.

The prospective applicant referred to the proposed station at Dublin Airport. Consultations are on-going with the DAA. The prospective applicant added that the proposed station here will be fully compatible with future plans for Dublin Airport.

With respect to Dublin City Centre, the prospective applicant said that there are regular consultations with Dublin City Council to ensure that proposed stations will be consistent with the existing public realm. The prospective applicant said that it has been trying to keep the station boxes as small as possible without affecting the overall passenger experience. It said that its intention is to provide an intuitive environment for passengers with consideration of matters such as natural light in the proposed stations. The prospective applicant set out the intended design for stations (Singular Inclined Volume) which it said would deliver an integrated station environment, would provide clear wayfinding and would reduce the station box length. The internal design of proposed stations was also set out by the prospective applicant.

The prospective applicant referred to the proposed station at Tara Street which it identified as a key station location given the interchange at this location between Dart and MetroLink. The prospective applicant said that a multi-criteria analysis of options for station location was employed here having regard to the road network and transportation network. The prospective applicant said that the key principles

and drivers for the proposed station at Tara Street included the creation of new jobs in the vicinity, the delivery of a vibrant, sustainable, permeable and pedestrian-friendly development and improved opportunities for intermodal travel and interchange. It reported that consultations with Dublin City Council are on-going and that it is having regard to matters such as the density of development in the surrounding area as well as regard to existing and future development. The Board's representatives enquired as to whether passengers changing from the Metro to Dart would do so internally as opposed to in an external setting. The prospective applicant confirmed that such would be the case and that a seamless connection is the overall intention.

The prospective applicant referred to the proposed station at Collins Avenue. It said that the choice of location here is chiefly premised on the accessibility from DCU and the surrounding residential area. The prospective applicant said that the proposed location at Collins Avenue would minimise traffic disruption during the construction phase and also added that the proposed Bus Connects route has informed the location of the station here. The prospective applicant noted the previous issues raised by the Board with respect to the station location and said that a substantial amount of analysis and assessment has informed its decision in this regard.

With respect to the proposed station at Glasnevin, the prospective applicant said that this has been chosen over Drumcondra with regard to matters such as a better opportunity for interchange with the Kildare and Maynooth line, the more viable opportunity for interchange with bus routes and slightly higher patronage figures as regards daily use. The prospective applicant referred to previous queries raised by the Board with respect to the decision to choose Glasnevin over Drumcondra for interchange. It said that Glasnevin affords the opportunity for an enhanced interchange with less environmental interventions required. The Board reiterated its concerns that the proposed alignment might be too close to the Luas Green Line in this area. The prospective applicant replied that this matter can be sufficiently justified in the planning application and that the projected patronage figures are robust.

In relation to the proposed O'Connell Street Station, the prospective applicant reported that the proposed station has now been changed from O'Connell Street to

the adjacent Dublin Central proposed development site (slightly to the west). It said that this modification will result in less impacts on O'Connell Street as a whole. The prospective applicant advised that consultations have been taking place with the Department of Culture, Heritage and the Gaeltacht and with Dublin City Council. Potential impacts on the protected facades of existing buildings in the vicinity are being considered and assessed and the prospective applicant said that it wishes to minimise impacts on protected structures. The prospective applicant added that there will be no direct impact on the Moore Street National Monument.

With respect to the proposed station at St. Stephen's Green, the prospective applicant said that the location of the station at the east of the park was selected to facilitate the interchange at Tara Street and Charlemont. The prospective applicant said that the selected location would reduce the impacts on the National Monument and would also serve to avoid potential construction phase impacts on the operation of the Luas Green Line. The prospective applicant reported that the design of the proposed station is being refined and progressed in consultation with relevant stakeholders.

Following further engagement with the Office of Public Works (OPW), the prospective applicant indicated that the OPW has expressed a fundamental objection to the location of the proposed station at Stephen's Green. It said that the OPW had asked it to explore the possibility of an alternative station location outside of the footprint of the park. With respect to such alternatives, the prospective applicant said that it could provide the Board with details of the options assessed. The prospective applicant also indicated that it intends to have further discussions with the Department of Transport and the NTA on this particular matter.

With regard to Charlemont Station, the prospective applicant said that the design of the station here has been modified to minimise the impact on properties at Dartmouth Square West. The prospective applicant also said that the proposed station design would be consistent with the Hines Group Development at 2 Grand Parade. The proposed intervention tunnel would ensure that no additional intervention shaft would be required south of Charlemont. As part of the forthcoming planning application, the prospective applicant said that it would provide reports

justifying the inclusion of Charlemont for the terminus and interchange point vis-à-vis the Luas Green line.

The prospective applicant referred to the Transport Strategy for the Greater Dublin Area 2016 – 2035 which identifies strategically important projects. The prospective applicant said that it has held consultations with representatives from Irish Rail and Dart+ in order to review matters such as the Glasnevin Interchange Station, the Tara Street Dart Station and the EIAR baseline and assessment. Consultations have also taken place with Bus Connects to review the design and locations of interchanges, the cumulative construction phase impacts and the EIAR baseline and assessment.

With respect to materials and waste management, the prospective applicant said that a review of available licenced capacity was being conducted and that consultations are on-going with representatives of the Eastern-Midlands Region. The prospective applicant said that there would be a preference for the minimisation of waste material and that re-use on site is being considered. The disposal of contaminated material and other material would only be considered as a last resort. The prospective applicant confirmed that the Huntstown facility, and others, are still under consideration for the waste management element of the project.

Conclusion:

The prospective applicant indicated its preference to hold further pre-application consultation meetings with the Board prior to closure of the process. Such meetings would be an opportunity to discuss various development components in more detail. The Board's representatives said they would seek to facilitate the prospective applicant in this regard. Going forward, it was suggested that a meeting could be held every six to eight weeks depending on case work and availability of staff. The onus is on the prospective applicant to request a further meeting with the Board.

In the meantime, it was agreed that the prospective applicant will forward to the Board its Strategic Principles Development document as well as a document setting out details of the options considered for the location of the St. Stephen's Green station.

The meeting concluded at 1.25 p.m.

Brendan Wyse

Assistant Director of Planning

9 Oct 20.

Shaun McGee

From: Foley Aidan
Sent: Thursday 15 October 2020 16:36
To: Kieran Somers
Cc: Kelly Sarah
Subject: Proposed Agenda

Follow Up Flag: Follow up
Flag Status: Flagged

Kieran,

Please see below our proposed agenda for the meeting. We are conscious that is has been some time since we were into see you and that in the intervening period the design had advanced considerably. It is a long agenda, however we are confident that we will get through the items within the time available.

As with previous meetings will issue you with a presentation in advance.

Regards,

Aidan.

Proposed Agenda

- Public/Stakeholder Engagement
- Urban Realm
- Bus Connects
- Grid Connection (ESBN)
- Estuary Station, P&R
- R132
- Depot Location
- Glasnevin
- Collins Avenue
- OCS
- Tara St
- SSG
- Charlemont
- Materials & Waste Management
- Proposed Agenda for Future Pre-Application Meetings

Aidan Foley| C.Eng| Project Director MetroLink| Transport Infrastructure Ireland| Parkgate Business Centre, Parkgate Street, Dublin 8, Ireland|
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Bonneagar Iompair Éireann
Transport Infrastructure Ireland

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin 1
D01 V902

Dáta | Date 29 September 2020 Ár dTag | Our Ref. CAP_ML_L0154 Bhur dTag | Your Ref.

Re: MetroLink

Dear Mr Somers,

As you will be aware TII, have been considering the preferred planning route for the provision of temporary and permanent power supply to the MetroLink project and have sought legal advice in this regard. A summary of this advice is attached to this letter for your information.

By way of outline, the legal advice states as follows:

1. The power supply would normally be constructed by ESBN/EirGrid under its statutory powers and in those circumstances would not need to be included in the RO application;
2. The RO application should cover all works up to the point of connection with the transmission system/national grid i.e. including the Estuary and Dardistown sub-stations but not beyond those points;
3. An application under section 182A is required for all grid connection cables at a voltage level of 110kV or higher. Counsel advise that such an application would normally be made by ESBN/EirGrid;
4. All aspects of the supply of mechanical and electrical power, temporary and permanent, required for Metrolink should be included in the EIAR for the RO application, notwithstanding that assessment will also have been included in the EIAR prepared for the Section 182A/ 182B application.

We are available to meet to discuss this matter with you and propose a meeting towards the end of October. We are available on the 22nd or 23rd of October please let me know if these dates are available and I will make the necessary arrangements. We will also take the opportunity to provide you with an update the developing preliminary design and EIAR for the Scheme.

Yours sincerely,

Aidan Foley

Aidan Foley,
Project Director MetroLink

Encl: ESBN MetroLink Briefing Note & Opinion-MetroLink-DMcG-CB-30-8-20-1-15

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

SUMMARY OF LEGAL ADVICE

Introduction

1. The following is a summary of the Opinion we previously furnished.

2. The current design for MetroLink envisages the provision of **two main substations** located at **Dardistown** (in proximity to the proposed depot) and **Estuary** (in proximity to the proposed Park & Ride) that will in turn provide the power supply for the entire MetroLink railway system.

3. Advice is sought in relation to providing *the* most robust legal process for the installation of what will be significant cable infrastructure required to supply the two Metro (ESB) substations at Dardistown and Estuary with electricity. In this regard we are cognisant of the fact that the Oireachtas has authorised **An Bord Pleanála** to be the competent authority for orders and approvals made under the PDA 2000 and the 2001 Act.

4. Accordingly, these advices address the question of *vires* in relation to **electricity supply** for the MetroLink project and in this regard we set out what we believe is captured by (i) a proposed Railway Order (the 'RO') under the Transport (Railway Infrastructure) Act 2001 (as amended) (the '2001 Act') and (ii) section 182A and section 182B of the Planning and Development Act 2000 (as amended) (the 'PDA 2000') in any applications which would be made to An Bord Pleanála.

5. We note that discussions have been ongoing for some time with ESBN to establish agreement on the routes and delivery arrangements for both permanent and temporary power supply cables for the MetroLink project. A careful delineation and division in the provision of power supply as between TII and the ESBN/EirGrid within each of their respective statutory competences necessarily includes an application pursuant to sections 182A/182B of the PDA 2000 by the latter where the transmission of electricity is by means of a high voltage line and the voltage is 110 kilovolts or more.

Statutory Interpretation

6. As we have referred to above, the role of An Bord Pleanála is paramount in the consideration of these matters.

7. For example, section 4 of the Planning and Development (Strategic Infrastructure) Act 2006 (the '2006 Act') inserted sections 182A, 182B, 182C and 182D into the PDA 2000 so that applications for the provision of electricity transmission and gas infrastructure would be made for approval *directly* to An Bord Pleanála.

8. In addition, section 49 of the 2006 Act also substituted sections 37 to 47A (and section 50 of the 2006 Act substituted a new section 47B) into the 2001 Act. In a similar vein, these new sections were primarily intended to *transfer responsibility* for the approval of a railway order *from* the Minister for Transport *to* An Bord Pleanála and to make certain related amendments to procedures for judicial review applications.

9. While no cross reference is made between the (then) new provisions introduced by the 2006 Act, the aim of the legislation was to allow applications to be made directly to An Bord Pleanála (rather than the planning authority or the relevant Minister) for certain categories of strategic infrastructure (also known as Seventh Schedule) development including high voltage electricity transmission systems and railways – metro, light and heavy. We note that *strategic infrastructure development* includes any proposed development referred to in section 182A(1) of the PDA 2000 (as amended)[1] *and* any proposed railway works referred to in section 37(3) of the 2001 Act as amended by the 2006 Act.[2]

10. As matters stand, the approval process for a RO under the 2001 Act does not 'speak to'[3] the approval process under section 182A/B of the PDA 2000 for the development of high voltage electricity transmission systems where the voltage is 110 kilovolts or more.

11. We do not believe that the Oireachtas intended a situation to arise where the provision of *precisely the same cable infrastructure* required to supply the two metro substations at Dardistown and Estuary would be the subject matter of two simultaneous – but different– applications for approvals to An Bord Pleanála. While we note that as a general principle the grant of one statutory consent will not always relieve a person of the requirement to obtain another and that there are many examples of where a developer who has obtained planning permission has to obtain statutory consents such as an IPC licence, a waste water discharge licence, a foreshore licence etc, it should abe borne in mind, however, that these examples primarily relate to the situation where *the other consent* is granted by a *different* decision maker. In contrast, in this case, An Bord Pleanála is the *sole* decision-maker for the approval under both statutory codes.

12. This is borne out by a consideration of the statutory provisions in the PDA 2000 and the 2001 Act.

13. For example, section 182A(1) of the PDA 2000 provides that:

> "Where a person (hereafter referred to in this section as the 'undertaker') intends to carry out development comprising or for the purposes of electricity transmission, (hereafter referred to in this section and section 182B as 'proposed development'), the undertaker shall prepare, or cause to be prepared, an application for approval of the development under section 182B and shall apply to the Board for such approval accordingly."

14. This subsection is expressed in mandatory terms and subsection (3) stipulates that: "The proposed development shall not be carried out unless the Board has approved it with or without modifications." (Underlining added).

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[1] Section 2(1)(d) of the PDA 2000 (as amended).
[2] Section 2(1)(g) of the PDA 2000 (as amended).
[3] An example of where this has been done can be seen in section 22(3) of the Energy (Miscellaneous Provisions) Act 2006 where the requirements of sections 181A, 182A and 182C of the PDA 2000 are disapplied in certain specified circumstances.

15. A similar requirement is found in section 37(4) of the 2001 Act which provides that: "The construction of railway works, the subject of an application for a railway order under this Part, shall not be undertaken unless the Board has granted an order under section 43." (Underlining added).

16. We also note that previous Railway Orders that have been granted by An Bord Pleanála define "Apparatus" as including any sub-station, inspection chamber, junction box, booster station, pipe, sewer, drain, duct, tunnel, conduit, wire, cable, fibre, insulator, and such other thing *as may be used by an* ***Undertaker*** for or in connection with the provision of a service to the public.

17. Consistent with how the term is used in section 182A(1) of the PDA 2000, we note that typically a Railway Order differentiates between a "***Railway Undertaking***" – i.e. any person who has been granted a railway order or another person with whom that person has made arrangements under section 43(5) of the Act and includes the person who made the application for this Order – in this case TII, on the one hand, and an "***Undertaker***" which is defined in some of the Railway Orders examined as meaning any person or body with power and authority in relation to apparatus to relocate or cause it to be relocated as provided for in the RO, for example, ESBN, on the other.

18. We note that the requirement for approval under section 182A of the PDA 2000 applies in respect of "development comprising or for the purposes of electricity transmission". Subsection (9) provides in that regard that:

> In this section "transmission", in relation to electricity, shall be construed in accordance with section 2(1) of the Electricity Regulation Act 1999..."

19. The definition in section 2(1) in Act is in the following terms:

> "transmission", in relation to electricity, means the transport of electricity by means of a transmission system, that is to say, a system which consists, wholly or mainly, of high voltage lines and electric plant and which is used for conveying electricity from a generating station to a substation, from one generating station to another, from one substation to another or to or from any interconnector or to final customers but shall not include any such lines which the Board may, from time to time, with the approval of the Commission, specify as being part of the distribution system but shall include any interconnector owned by the Board."

20. We also, however, place some emphasis on *section 182A(9)* of the PDA 2000 which then goes on to extend that definition as follows:

> "...but, for the purposes of this section, the foregoing expression, in relation to electricity, shall also be construed as meaning the transport of electricity by means of –
>
> (a) a high voltage line where the voltage would be 110 kilovolts or more, or

(b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not."

21. Again, we do not believe that the Oireachtas intended a situation to arise that the provision of *the same cable infrastructure* required to supply the two proposed MetroLink substations at Dardistown and Estuary would be the subject matter of two separate and simultaneous 'approval applications' to An Bord Pleanála.

22. Accordingly, we are of the view that a harmonious interpretation and application of those provisions of the PDA 2000 which provide for the development of high voltage electricity transmission systems where the voltage is 110 kilovolts or more and the 2001 Act which provides for railway works (which may include reliance on such electricity transmission systems) can be achieved by a careful division of responsibility.

Interface with ESBN

23. Under the current unbundling arrangements in Ireland, the following is our understanding of the division of responsibility: the transmission system operator transmits electrical power from generation plants over the electrical grid and controls the balance between the supply of electricity from the plants and the demand from the consumer. The distribution system operator manages the distribution of the electricity from the transmission system to the consumers. Therefore ESB owns the transmission system infrastructure; Eirgrid determines its development and operation; and, ESB Networks Ltd carries out the construction and maintenance of the infrastructure at the direction of Eirgrid. With regard to distribution, ESB remains the distribution system owner, with a distribution system owner's licence, and ESB Networks Ltd. is the distribution system operator, with a distribution system operator licence.

24. Our understanding is that all of the permanent connections from the national grid to the MetroLink substations will require the transmission of electricity by means of a high voltage line where the voltage will be 110 kilovolts or more. In our view, having regard to the current state of the applicable legislation, this *will necessitate* an application for approval pursuant to section 182A and 182B of the PDA 2000.

Supply of power

Permanent Power Supply: from Grid to MetroLink

25. In relation to the *permanent* grid connection power supply, we understand that ESB have indicated that the 110kV permanent connections will be provided from *existing* ESB substations at **Belcamp** and **Newbury** but that the permanent connection cable routes to get to MetroLink have yet to be designed and the routes are at this stage are merely indicative and may include existing ESB ducting.

26. We understand that Underground HV cable ducting (of approximately 22km in length) is required to get from **ESB Belcamp** and **ESB Newbury** substations to the new MetroLink HV (110kV) substations at **Estuary** and **Dardistown** and to run between the two new MetroLink HV (110kV substations). We also understand that

notwithstanding that the ESB indicative routes require one of the three cables to be rated at 220kV, all permanent connections to MetroLink will be at 110kV.

27. We are of the view that the provision of this cabling of 110 kilovolts or more, which is required from **ESB Belcamp** and **ESB Newbury substations** to the new MetroLink HV (110kV) substations at **Estuary** and **Dardistown** and to run between the two new MetroLink HV (110kV substations) should be provided for by the making of an application for approval under section 182A/section 182B of the PDA 2000 to An Bord Pleanála and as set out in A&L Goodbody's advices of 24 January 2020. We would expect that in the normal course such an application would be made by ESBN/EirGrid.[4]

Substations

28. We are of the view that the draft RO under the 2001 Act should include provision for the **two new** MetroLink HV (110kV) substations and associated works which are required to be constructed at **Estuary** and within the **Dardistown depot** and which will comprise (i) a Utility Company Compound and structure (which will be handed over to the utility company on completion) and (ii) a Customer Compound, which will remain a MetroLink asset.

Temporary Power Supply: from Grid to MetroLink

29. In relation to the temporary grid connection power supply, we understand that ESB have indicated that the MV (20kV or 10kV) temporary connections will be provided from an *existing* ESB substation at **Poppintree**.

30. The ESB temporary connection cable routes to get to MetroLink have yet to be designed and presently it is assumed that all temporary connection cable route ducting will be entirely new infrastructure. New underground ESB MV cable ducting (of about 5km) is required to get from the ESB Poppintree substation to two new temporary MetroLink MV substations at each of the two Tunnel Boring Machine (TBM) launch sites at **Dardistown** and **Northwood**.

31. Accordingly, we are of the view that the provision of this cabling would in the normal course be provided for by ESBN within its own powers but will also be assessed as part of the EIAR for the RO.

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[4] In relation to the EIARs which would be submitted with such applications, we note that there have been a number of challenges over the last number of years to projects on the basis that there has been a failure to carry out a holistic assessment of all of the construction and operational impacts, particularly where there are multiple consents required. A recent example can be seen in *Harrington v EPA* [2020] IECA 84. While these challenges have generally been unsuccessful, we would advise taking a conservative approach and including as part of the assessment of the project any works that may be asserted to be part of it even if can be argued that the test of functional interdependence applied in cases such as *O'Grianna v An Bord Pleanala* [2014] IEHC 632 and *An Taisce v An Bord Pleanala* [2015] IEHC 633 is not satisfied.

Substations

32. We are of the view that the draft RO under the 2001 Act should include provision for the **two new** temporary MetroLink MV substations that are required to be constructed, one at each of the two Tunnel Boring Machine (TBM) launch sites at **Dardistown** and **Northwood** and we understand that these MV substations will be rated at 20kV or 10kV, dependent on the voltage level yet to be determined by ESB MV design team.

Internal Power Supply

33. We are of the view that the 'internal' power supply, including distributing along MetroLink to substations, the rolling stock and platforms – which is entirely new infrastructure – should be provided for in the draft RO under the 2001 Act.

34. In this regard we understand that the internal electricity supply distributing along MetroLink will be entirely new infrastructure and will be entirely MetroLink infrastructure not involving ESB.

35. Accordingly, from the two new MetroLink HV (110kV) substations, at Estuary and Dardistown, power will be distributed over new 20kV MetroLink cables to run the length of MetroLink. These 20kV cables will feed power to new MetroLink MV auxiliary substations (20kV/400VAC) and MV traction substations (20kV/1.5kVdc) along the line.

36. We understand that the preliminary design developed to date proposes eight MetroLink combined traction and auxiliary substations (20kV/1.5kV + 20kV/400VAC) and nineteen auxiliary substations (20kV/400VAC). The MV traction substations derive and distribute the traction supply 1.5kVdc to the overhead conductor for the trains. The MV auxiliary substations derive and distribute low voltage power (400VAC and 230VAC), for use in stations, ventilation shafts, depot, tunnel services.

Conclusion

37. While an important consideration, it does not appear to us that – (i) the legitimate objective of avoiding the development of a more detailed design of the cable by ESBN from becoming a delaying factor in the application for a RO or (ii) the fact that temporary power for TBMs comes at an earlier stage than the permanent supply – can be dispositive of the *legal question* as to the permanent provision of cabling of 110 kilovolts or more which we understand is required from the ESB Belcamp and ESB Newbury substations to the new MetroLink HV (110kV) substations at Estuary and Dardistown and to run between the two new MetroLink HV (110kV substations). In our view, as set out above, an application to An Bord Pleanála for approval for this cabling is required pursuant to section 182A/section 182B of the PDA 2000.

38. Accordingly, the following suggestions address what we consider to be the options which provide *the* most robust position for applications which are to be made to An Bord Pleanála:

(a) We note that independent of – and separate to – the proposed RO for MetroLink, ESBN have been considering internal network upgrade works required for its overall network and it would be of assistance to ascertain what application was being contemplated by ESBN under such a proposal;

(b) We recommend that the provision of **power supply** to and from the national grid, on a permanent and temporary basis, and 'internally' (within the MetroLink works) should be provided for in the manner which we have advised above at **paragraphs 25 to 36.** In summary, the power supply would normally be constructed by ESBN/EirGrid under its statutory powers and in those circumstances would not need to be included in the RO application; the RO application should cover all works up to the point of connection with the transmission system/national grid i.e. including the Estuary and Dardistown sub-stations but not beyond those points; an application under section 182A is required for all grid connection cables at a voltage level of 110kV or higher. In our view, such an application would normally be made by ESBN/EirGrid; all aspects of the supply of mechanical and electrical power, temporary and permanent, required for Metrolink should be included in the EIAR for the RO application, notwithstanding that assessment will also have been included in the EIAR prepared for the Section 182A/ 182B application.

(c) In the alternative, if it was intended that the *permanent provision* of cabling of *110 kilovolts or more* which is required from the ESB Belcamp and ESB Newbury substations to the new MetroLink HV (110kV) Substations at Estuary and Dardistown and to run between the two new MetroLink HV (110kV substations) should be part of a proposed draft RO application under the 2001 Act *rather than* applied for under section 182A and section 182B of the PDA 2000, we are of the view that a legislative amendment would be required to the PDA 2000 or the 2001 Act which 'spoke to' and/or expressly disapplied section 182A and section 182B of the PDA 2000 when a RO is applied for under the 2001 Act (by way of example we have already referenced in these advices section 22(3) of the Energy (Miscellaneous Provisions) Act 2006 where the requirements of sections 181A, 182A and 182C of the PDA 2000 have been disapplied in certain specified circumstances).

Declan McGrath SC
Conleth Bradley SC
28 September 2020

Our Case Number: ABP-302010-18

An Bord Pleanála

Hugh Creegan, Deputy Chief Executive
National Transport Authority
Dún Scéine
Harcourt Lane
Dublin 2
D02 WT20

Date: 23rd December 2019

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the meeting of the 17th December 2019.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-8737250

NC07

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64 Marlborough Street, Dublin 1, D01 V902

An Bord Pleanála

Record of Meeting
ABP-302010-18

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre Corridor.		
Case Type	Pre-application consultation		
Meeting	Meeting with National Transport Authority		
Date	17/12/19	**Start Time**	3 p.m.
Location	Offices of NTA	**End Time**	5 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737250
Representing NTA		
Hugh Creegan, Deputy Chief Executive		
Eoin Gillard, Head of Public Transport Investment		

Introduction

The Board indicated that the meeting was essentially an information-gathering exercise. A record of the meeting would be taken and this would be made public at the closure of the pre application consultation process. A copy of the record will be forwarded to the NTA.

The Board noted that the purpose of pre-application consultations with respect to railway order applications is to advise on procedural issues and any matters related to proper planning and sustainable development and the environment which, in the opinion of the Board, might have a bearing on the decision on any subsequent application.

The Board set out the progress of pre-application consultations to date. It advised that three meetings have been held with the prospective applicant. Meetings with representatives from Dublin City Council, Fingal County Council and the Office of Public Works/Department of Culture, Heritage and the Gaeltacht have also taken place.

The Board noted the fact that the development, as originally proposed, had been intended to extend from Estuary, Swords, to Sandyford, including an upgrade of the Luas Green Line. Subsequently, the proposed development was amended to omit the Luas Green Line link. The preferred route document was published in March 2019.

At the third meeting with the prospective applicant, on the 8th November 2019, the Board focussed, in particular, on a number of high level issues relating to Swords, the North City and the South City. These issues formed the basis of the consultation with the NTA as follows.

Swords

The Board's representatives questioned if the proposed corridor from Swords to Dublin Airport is justified at the present time and if the proposed alignment is the correct one with regard to the existing and future development of Swords. The Board also raised the matter of the future role of the R132 and access to proposed stations. It also queried the number of stations proposed for the Swords area (four in

total, The Board referred to Fingal County Council's ambitious future plans for Swords.

The NTA referred to the transport strategy for the Dublin Area which it said had identified the corridor selected for the proposed development. It said that the primary driver for the said corridor was expected commuter demand. While Dublin Airport was also an important driver in this regard, it was not the most important one.

With regard to existing and future development in the Swords area, the NTA noted that Fingal County has been the largest growing county in the State in recent years. With respect to the selected corridor for the proposed development, the NTA acknowledged that a robust case will have to be made for this in the application. In relation to the proposed alignment, the NTA indicated that it was appropriate and noted that the Fingal/North Dublin Transport Study envisages the transitioning of the R132 into an urban road. Proposals include a change to the environment of the road to reduce traffic speeds and the dominance of cars. In this context there is a need for further consideration, in conjunction with Fingal County Council, of access options to the stations, particularly Swords Central. The preferred approach is for at-grade crossings.

The Board's representatives suggested that the overall picture regarding the future development of Swords, and integration with Metro Link, is somewhat unclear at the present time. The NTA indicated that the decision to opt for the east side of Swords was predicated on the location of significant residential and employment centres there. It also noted that Swords at present is very spread out geographically and that serving the area with one corridor is challenging. It agreed that further work with Fingal County Council would be necessary in order to bring clarity to these matters.

The Board's representatives noted the proposed provision of park-and-ride facilities as part of the proposed development. The NTA said that such facilities are an important component of the proposed development and noted a core objective to decrease the number of cars entering Dublin City Centre. The Board's representatives indicated that, first and foremost, the proposed alignment should properly serve residential and business users in the immediate hinterland.

With regard to the Board's concern on the number of stations proposed in the Swords area, the NTA acknowledged that this would have to be fully justified in the forthcoming application.

North City

The Board's representatives queried the rationale for Glasnevin being favoured over Drumcondra, noting that the Metro North alignment had included the latter. The Board noted, in particular, that the proposed alignment runs very close to the recently extended Luas Green Line. The Board suggested that a robust case would have to be made for the selection of the Glasnevin alignment and queried as to whether there might be a catchment overlap with the Luas Green Line.

The NTA replied that the decision to position the proposed alignment on the Glasnevin side was one that it was satisfied with given the inter-changeability this offers with other commuter and mainline services. It accepted that a strong case will have to be made as part of the planning application for this decision. The NTA also confirmed that Irish Rail is committed to providing its proposed new station concurrently with the MetroLink Project.

South City

The Board's representatives queried the selection of the east side of Stephen's Green as the appropriate location for the proposed station, noting the distance from the Grafton Street shopping area and the Metro North proposal for the station at the north west corner of the Green. The Board also noted the fact that the OPW and the Department had raised significant concerns with regard to this particular proposal during the course of its meeting held in September. Possible future interchange with the Dart Underground was also raised. The Board also queried if the Charlemont Station was still appropriate given the decision to omit the Luas Green Line upgrade from the project and the likelihood that Charlemont would effectively be a terminus for the Metro for a very considerable period of time.

The NTA indicated that further discussions were due to be held with the Department of Culture, Heritage and the Gaeltacht in relation to the St. Stephen's Green proposal. Noting the Department's expressed concerns on the location of the proposed station, the NTA said its intention would be to resolve any such issues

prior to the lodging of a Railway Order Application. The NTA also said that it is comfortable with the proposal for St. Stephen's Green and outlined some of the principal reasons for choosing the east side of the park. The NTA also noted the concentration of businesses and offices in the area to the east side of St. Stephen's Green.

With regard to the Dart Underground Project, the NTA said that this will proceed at some point in the future but that the alignment is likely to be different to the one previously approved. It particularly noted that the opening of the Phoenix Park Tunnel to commuter traffic has significantly changed the context for Dart Underground. The Board indicated that clarity on the future delivery of the Dart Underground Project would be important vis-à-vis the instant proposal.

With regard to the future status of Charlemont as a terminus for the project, the NTA said that the intention here was that it would provide a high-level of connectivity between the proposed development and the existing Luas Green line. The NTA said that truncating the scheme at St. Stephen's Green would not make sense as the connectivity between the two lines would be much poorer in such a scenario. The NTA also referred to future plans to introduce a one-fare pass which would readily facilitate inter-changeability between various transport modes such as Luas and Dart.

Other Matters

With regard to the proposed Collins Avenue Station, the Board queried if it should be located further south so as to better facilitate DCU. The NTA replied that the location of the proposed station here was predicated on the basis of inter-changeability with the strategic Bus Connects corridor proposed for Collins Avenue. The NTA also noted the large residential catchment area in the vicinity of the proposed station.

Conclusion

A copy of the record of the instant meeting will be forwarded to the NTA. The record will be made available to the prospective applicant and will be on the public file when the pre-application consultation case is formally concluded.

Brendan Wyse

Assistant Director of Planning

23 December 2019

An Bord Pleanála

Record of Meeting ABP-302010-18 3rd meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	3rd		
Date	8th November, 2019	**Start Time**	11 a.m.
Location	Parnell Room	**End Time**	1.35 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Ellen Morrin, Senior Administrative Officer		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Peter Walsh		
Ronan Hallissey		
John Keogh		
Aidan Foley		

The meeting commenced at 11 a.m.

Introduction:

The Board referred to its previous meeting with the prospective applicant of the 29th May, 2019. The Board enquired if the prospective applicant had any comments it wished to make on the record of this meeting. The prospective applicant replied that it had no comments to make.

The Board's representatives referred to the meetings they have held with representatives of Dublin City Council, Fingal County Council, the Office of Public Works and Department of Culture, Heritage and the Gaeltacht since the time of the previous meeting; they also informed the prospective applicant that they have met with the SID division of the Board.

Presentation by prospective applicant:

The prospective applicant began its presentation by giving an update on the project programme since the time of the previous meeting. It reported that the preliminary design stage is due to be concluded before the end of November 2019 and said that significant consultations have taken place with regard to the preliminary design. The prospective applicant said that its current intention is to lodge the Railway Order application circa September 2020.

With respect to the project generally, the prospective applicant reported some alterations as follows:

- A viaduct is now proposed in the location of Balheary Park. This is to address potential flood risk in that area. The proposed viaduct would be a similar height to the embankment which was previously proposed at this location.
- The location of the proposed Dardistown Depot (previously proposed at a south-east location) has been altered following consultations with relevant stakeholders (particularly Fingal County Council). In response to the Board's query on the matter, the prospective applicant confirmed that the new location for the depot is similar to that proposed under the Metro North project.
- With respect to proposed interchange works at Glasnevin, the prospective applicant acknowledged that this is a challenging aspect of the overall project given the proposed Dart expansion plans, the proximity to residential properties and various constraints and sensitive receptors in the vicinity. It said that consultations with representatives of Irish Rail are on-going and that Irish Rail is especially concerned that impacts to the existing Kildare and Maynooth lines be as minimal as possible. The prospective applicant said that there is an agreement in principle on alignment/arrangements. It noted, in particular, that weekend and night-time construction works may now be entailed as part of the project in this area. From a planning perspective, the prospective applicant said that all upgrade works for the Metrolink Interchange will be included in the proposed development.

  In response to the Board's question, the prospective clarified that the permission to be sought will include consent for Irish Rail's proposed new station, but that the actual carrying out of this particular piece of infrastructure will be the remit of Irish Rail. The prospective applicant said that the current assumption is that Irish Rail will have completed all of its development works by the time Metro Link is ready to commence operations. It is seeking a commitment from NTA on this point.

The prospective applicant provided the Board with an update on consultations. It referred to a public consultation which was carried out between 26th March and 21st

May 2019 which resulted in over 2,000 submissions. Some of the main issues raised included concerns raised over planned CPOs of properties, the importance of cycle facilities, access for cyclists and pedestrians and impacts on St. Stephen's Green.

With respect to materials management and a proposed waste strategy, the prospective applicant reported that it has consulted widely on this in order to identify re-use options for waste materials. The prospective applicant said that it has sought to identify suitable locations for the acceptance of materials and that such a location at Huntstown (approximately 6.5 kilometres from the Northwood TBM launch site) has emerged as a preferred option. The Huntstown location would be capable of accepting all waste material (with the exception of contaminated material) and that this would also include materials extracted from stop-box locations. It added that negotiations with the proprietors of Huntstown are on-going.

In relation to grid connections required to serve the project, the prospective applicant reported that extensive consultations have taken place with ESB Networks and Eirgrid. Consultations with ESBN to date have sought to identify the preliminary requirements of proposed substation locations and specifications and cable routes to connect into the existing 110kV network. The prospective applicant said that two 110kV substations are planned at Estuary and Dardistown and that a temporary power source to facilitate the operation of the TBM will emanate from Poppintree.

The prospective applicant re-stated the overall objective of the project and referred to its on-going consultations with Irish Rail (in relation to Glasnevin and Tara Street), Bus Connects, DAA (with respect to Dublin Airport) and the NTA (regarding the Luas Green line). With respect to the proposed station at Dublin Airport, the prospective applicant agreed that it was of particular significance and indicated that it would be designed appropriately and in a user-friendly manner.

The prospective applicant set out the proposed structure for the EIAR.

In relation to the groundborne noise and vibration, the prospective applicant reported that baseline surveys are in progress and consultations have been held with all relevant stakeholders.

With respect to landscape and visual surveying, the prospective applicant reported on-going consultations with Fingal County Council and Dublin City Council.

Discussion:

The Board's representatives said that they wished to focus on a number of high level issues that might require further consideration. The issues had been raised with the SID division of the Board. The discussion focussed on three distinct geographical areas, as follows:

- **Swords Area** – The Board's representatives enquired as to whether the prospective applicant is absolutely satisfied that the proposed corridor from Swords to Dublin Airport is justified at this time and that the proposed alignment in this particular section of the project is correct with regard to existing and future development in Swords. The Board also raised the matter of the future role of the R132 and access to proposed stations, in particular at Swords Central. It queried if consideration had been given to extending the station access under the R132. The prospective applicant acknowledged that it may need to engage further with Fingal County Council in relation to its overall vision for Swords and the future role of the R132.

- **North City Area** – The Board's representatives queried the rationale for Glasnevin being favoured over Drumcondra, noting that the Metro North alignment had included the latter. The Board noted, in particular, that the proposed alignment runs very close to the recently extended Luas Green Line. The Board suggested that a robust case would have to be made for the selection of the Glasnevin alignment.
  The prospective applicant indicated that the Glasnevin option allows for easier interchange with two existing rail lines (Maynooth and Kildare) and that this would facilitate greater interconnectivity for passengers.
  The Board's representatives also referred to Croke Park (and associated events which are held at this location) as a very significant trip attractor and to the works already carried out at the Mater Hospital to facilitate the Metro North project in the context of considering the proposed alignment. The prospective applicant said that Croke Park has made a submission to it on the

preliminary design. They also clarified that the works carried out at the Mater site were very limited in scope.

- **South City Area** – The Board's representatives queried the selection of the east side of Stephen's Green as the appropriate location for the proposed station, noting the distance from the Grafton Street shopping area and the Metro North proposal for the station at the north west corner of the Green. Possible future interchange with the Dart Underground was also raised. The Board also queried if the Charlemont Station was still appropriate given the decision to omit the Luas Green Line upgrade from the project and the likelihood that Charlemont would effectively be a terminus for the Metro for a very considerable period of time.
  The prospective applicant indicated that a combination of factors had determined the location of the station on the east side of St. Stephens Green as opposed to the west side.

Other matters:

- With regard to the proposed Collins Avenue Station, the Board queried if it should be located further south so as to better facilitate DCU. The prospective applicant indicated that the proposed location was predicated on the enhanced connectivity the proposed station would allow vis-à-vis Collins Avenue and the R108, whilst also facilitating access to the grounds of DCU.
- The prospective applicant undertook to forward to the Board some pertinent plans and particulars emanating from the conclusion of the preliminary design stage. These should be available circa December 2019.

Conclusion:

The prospective applicant undertook to revert to the Board for a further meeting circa February 2020.

The meeting concluded at 1.35 p.m.

Brendan Wyse

Assistant Director of Planning

3 Dec. 2019

Helen Keane

From: Helen Keane
Sent: Wednesday 2 October 2019 09:22
To: 'David.Murray@fingal.ie'
Subject: ABP-302010-18 - Proposed MetroLink for Swords-Airport-City Centre Corridor
Attachments: ABP-302010-19 - Record of Meeting - 16th September 2019.pdf

Good morning David,

Please find enclosed a copy of the written record of the meeting of the 16th September 2019 held in the offices of An Bord Pleanála.

If you have any queries in relation to the matter, please contact (01) 8588100. Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Regards,
Helen

O se Number: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 26th September 2019

Re: Proposed Metro Link for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to acknowledge receipt of your letter dated 23rd September 2019.

The contents of your letter have been noted.

The Board will revert to you later, regarding your request for a further pre-application consultation meeting.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

NC04

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Bonneagar Iompair Éireann
Transport Infrastructure Ireland

AN BORD PLEANÁLA
LDG- _____
ABP- _____
24 SEP 2019
Fee: € _____ Type: _____
Time: _____ By: Post

METROLINK

Mr Kieran Somers
An Bord Pleanála
64 Marlborough Street
Dublin
D01 V902

Dáta	Date 23 September 2019	Ár dTag	Our Ref. CAP_ML_L097	Bhur dTag	Your Ref.

Re: An Bord Pleanála Ref. ABP-302010-18

Proposed pre-application consultation Meeting on Metrolink Project

Dear Kieran,

I am following up with you on our previous pre-application consultation letter (Our Ref: CAP_ML_L094, dated 17th August 2019). We would welcome a further opportunity for an additional pre-application consultation meeting to address the MetroLink project having regard to the following:

- Review of Previous Minutes
- Update on the Current Project Programme;
- Alterations to the project since the last pre-application consultation;
- Details of Public Consultation;
- Update on Materials Management & Waste Strategy;
- Grid Connections;
- Glasnevin Interchange Station;
- Interaction with other rail / public transport projects;
- Environmental Impact Assessment Report Structure;
- Environmental Impact Assessment: Ground borne Noise & Vibration & Landscape & Visual; and
- An Bord Pleanála MetroLink Consultations.

We will make ourselves available for the above requested pre-application consultation meeting on a date that is appropriate for you.

Yours sincerely,

Aidan Foley, Project Director

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An Bord Pleanála

Record of Meeting
ABP-302010-18

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre Corridor.		
Case Type	Pre-application consultation		
Meeting	Meeting with the Office of Public Works and The Department of Culture, Heritage and the Gaeltacht		
Date	18/09/19	**Start Time**	10:05 a.m.
Location	Offices of the Office of Public Works	**End Time**	12.18 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Maeve Williams

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Maeve Williams, Executive Officer	m.williams@pleanala.ie	01-8737287

Representing the Office of Public Works		
Martin Bourke (Assistant Secretary General)		
Catherine Eddery (PO)		
Alan Dalton (APO)		
John Cahill (Assistant Principal Architect, Conservation & Project Management / Capital Projects)		
Ger Harvey (Assistant Principal Architect)		
Rosemary Collier (PO)		
Margaret Gormley (Chief Park Superintendent)		

Department of Culture, Heritage and the Gaeltacht		
Nessa Foley (APO)		
Sean Kirwan (Senior Archaeologist Grade 1)		
Mark Keegan (Archaeologist)		
Nicola Matthews (Senior Architect		

Introduction

An Bord Pleanala (The Board) outlined the scope and purpose of the meeting.

It indicated that the meeting was essentially an information gathering exercise. A record of the meeting would be made and a copy forwarded to the Office of Public Works (OPW) and The Department of Culture, Heritage and the Gaeltacht (DCHG) for comments in due course. The record, together with any comments received, would be placed on the public file at the closure of the pre-application consultation process.

The Board noted the function of pre-application consultations with respect to railway order applications which is to advise the prospective applicants [Transport Infrastructure Ireland (TII)] on procedural matters and on considerations related to proper planning and sustainable development and the environment which, in the opinion of the Board, might have a bearing on the decision on any subsequent application.

The Board outlined details of the pre-application consultations held to date. It advised that two meetings have been held with TII. The Board has also met with representatives of Dublin City Council and Fingal County Council.

With regard to the project generally, the Board said its' current understanding is that TII intends to lodge an application some time in 2020. It noted that the development as originally proposed involved the metro extending from Estuary (Swords) to Sandyford (along the Luas Green Line). More recently, the project has been amended to omit the Luas Green Line. The preferred route document was published in March 2019. The Board said that it expects to have a third meeting with TII around the end of October.

Operational and Construction Phases – Key Issues

DCHG referred to the legal status of St. Stephens Green, from the St. Stephens Green Dublin Act 1877 to the present day, including its' status as a national monument, and to the applicable consent regime.

OPW indicated its' general support for the metro project and that it has had extensive engagement with TII. More detail is still required in relation to design, construction methodologies, building surveys etc. It was also noted that significant elements of the project are still subject to change, including the specific design of the St. Stephens Green station.

OPW noted that, in addition to St. Stephens Green, the tunnel alignment, as currently proposed, also runs under a number of other sensitive state buildings and properties (eg. Government Buildings and Botanic Gardens).

DCHG considered that the impact of the proposed station at St. Stephens Green would be profound and negative. Concerns raised included ; impacts on heritage value; impacts on trees; impacts from the light well structures over the station; and impacts arising from the station access being located within the Green. The Department is open to discuss options in relation to these matters. It also referred to the current lack of clarity in relation to the full extent of the proposed construction envelope at the Green.

OPW generally concurred with the view of DCHG. It referred to the importance of the Green as Dublins' oldest city park, its' heritage value and its' current significance in terms of visitors/users. It queried how these values (somewhat intangible) were weighed against considerations applied to the decision not to place the station structure in the roadway (St. Stephens Green East) so as to avoid disrupting traffic or relocating other infrastructure (eg. mains sewer). Earlsfort Terrace was suggested as a possible alternative location for the station.

OPW queried the use of a standardised station design at all stop locations and suggested that a more bespoke approach should be adopted, particularly at sensitive locations such as St. Stephens Green. It also questioned if cut/cover was the only option considered for the station construction.

OPW referred to; the wildlife/habitats value of the Green; wildlife linkages to other squares (eg. Merrion Square); pedestrian circulation patterns; and to the opening hours of the Green – it closes at 4.00pm in winter and 9.00pm in summer.

OPW referred to other potential construction impacts, including; dust (including impacts on trees generally in the Green); noise; and consequential impacts on visitors/tourists in their use of the Green.

The Board indicated that the application documentation would be required to be comprehensive and to convey a complete understanding of the entire project, including construction methodologies.

The Board queried if discussions held to date with TII had included consideration of any possible tie-in with DART Underground at St. Stephens Green. OPW/DCHG indicated that this matter had not arisen. They also indicated that the matter of deviation limits had not been discussed.

OPW referred to the other significant state buildings, beyond St. Stephens Green, that would be potentially affected by the proposed development. These included Government Buildings and the associated museums and galleries. Concerns included; possible impacts relating to electromagnetic radiation; and structural issues and impacts on Dail committee rooms and recording facilities in the basement areas of Leinster House. There was also the question of possible impacts on the future development potential of these sites. Proposed mitigation measures would be very important.

The Board referred to the likelihood of the application including a Property Owners Protection Scheme and detailed agreements with individual property owners similar to the approach employed in the previous Metro North project. Any approval granted would reference these and also include requirements, by condition, for specific additional mitigation measures for specific locations where warranted.

Conclusion:

OPW indicated that, in due course, it would submit a written summary of the issues it raised at the meeting.

The board advised that a copy of the record of the meeting would be forwarded to the OPW/DCHG. The record, as well as any submission received, would be made available to the prospective applicant and would be placed on the public file when the pre-application consultation phase is formally concluded.

B Wyse

Brendan Wyse

Assistant Director of Planning

8 Oct. 2019

An Bord Pleanála

Record of Meeting ABP-302010-18

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre Corridor.		
Case Type	Pre-application consultation		
Meeting	Meeting with Fingal County Council		
Date	16/09/19	**Start Time**	11 a.m.
Location	Offices of Fingal County Council	**End Time**	12.50 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Rob Mac Giollarnáth

Attendees on behalf of An Bord Pleanála
Brendan Wyse, Assistant Director of Planning
Kevin Moore, Senior Planning Inspector
Rob Mac Giollarnáth, Executive Officer r.macgiollarnath@pleanala.ie 01-8737247

Attendees on behalf of Fingal County Council
Peter Byrne - Senior Planner
David Murray – Acting Senior Planner
Paul Carroll - Senior Engineer
Linda Lally - Senior Executive Engineer
Larry Loughnane - Senior Executive Engineer
Colm Campbell - Assistant Engineer

Introduction

The Board outlined the scope and purpose of the meeting.

It indicated that the meeting was essentially an information-gathering exercise. A record of the meeting would be made and a copy forwarded to the local authority for their comments in due course. The record would be placed on the public file at the closure of the pre-application consultation process.

The Board noted that the function of pre-application consultations with respect to railway order applications is to advise the prospective applicants [Transport Infrastructure Ireland (TII)] on procedural issues and on considerations related to proper planning and sustainable development or the environment which, in the opinion of the Board, might have a bearing on the decision on any subsequent application.

The Board outlined details of pre-application consultations held to date. It advised that two meetings have been held with the prospective applicant. The Board have also met with representatives of Dublin City Council and a meeting has been arranged with the Office of Public Works (in relation to St. Stephens Green).

With regard to the project generally, the Board said its current understanding is that an application is intended to be lodged some time in 2020. It noted that the development as originally proposed had been intended to extend from Estuary to Sandyford (along the route of the Luas Green Line). More recently, the proposed development has been amended to omit the route of the Luas Green Line. The preferred route document was published in March 2019. The Board said that it

expects a third meeting to take place with the prospective applicant prior to the end of October 2019.

Operational Phase – Key Issues

Fingal County Council indicated that it is generally supportive of the project. It favoured the open cut approach in Swords along the R132 road, as opposed to the elevated line previously proposed for Metro North. It would look to achieve a 'best fit' solution regarding the R132 to aid the movement of pedestrians/cyclists and to avoid any severance issues that the new line could create.

As part of the draft design it was generally suggesting at-grade crossings at station locations. The Council had engaged urban design consultants to consider the crossing points at the proposed stations – sketch drawings provided. A plus 1 crossing was also being considered at the proposed Swords Central Station linking to the Pavillions Shopping Centre on the other side of the R132. The Board queried if underground/tunnel entrances to stations (under the R132) had been considered. Fingal County Council indicated that TII were looking at likely pedestrian flows at stations. It also suggested that tunnel access would remove a degree of interaction between passengers and the streetscape. In relation to the possibility that the open cut might be covered, and constructed in such a way as to support overhead construction in due course, the Council agreed that this might be an attractive option but referred to cost implications. It was concentrating on the station crossing points for now.

Fingal County Council referred to the planned future growth of Swords to a population of c.100,000. Currently the population of the town is around 43,000. As part of the proposed development of the town it would seek to urbanise the R132

through built form and various traffic measures while at the same time maintaining a high capacity for traffic. There would be a need to redesign certain junctions in order to give pedestrians greater priority. There would be an emphasis generally on creating new links for pedestrians and cyclists to enable ease of access to both the town centre and the metro.

The Council referenced a number of masterplans that have been completed, including; Swords; Barrysparks and Crowcastle; Fosterstown; and Estuary West. It also referred to the Local Area Plan for Lissenhall, the largest future development area in Swords, which is currently in preparation.

It is not clear as yet as to what the proposed operational hours of the Metro service would be. The Council would prefer that a service would begin early in the mornings to enable employees of Dublin Airport to utilise the Metro from Swords.

The Board raised the issue of whether or not a fully robust case could be made to justify the proposed Metro Link to Swords. In reply Fingal County Council referred to the projected population growth, the 100,000 target figure likely to be reached by about 2040, and the likely project completion around 2026-2028. It also referred to the substantial employment growth planned for Swords. It was stated that there were a number of interventions required to achieve this growth, one of which was the construction of the Metro Link to Swords itself. It was also stated that Swords will be one of the key growth areas in Fingal and likewise Fingal will be a key growth area in the Dublin region. The Council does not consider that the proposed park and ride at Estuary is likely to generate capacity issues at the airport.

Fingal County Council indicated that the development of a metro link to Swords would have a bearing on the future projected growth of traffic at Dublin Airport. The

Council had been factoring in the development of the Metro Link into their Local Area Plans and into the planning permissions that had been granted for a number of years. There was a public interest dividend in the development of the Metro Link to Swords. There was also a dividend to the public in transport terms in association with other public transport projects such as Bus Connects.

It was generally agreed that the maximum effective distance for commuters to walk to a Metro station was about 1 km. For development lands at greater distances the Council is planning cycling corridors to assist with connectivity. Proper cycling lock-up facilities at stations, therefore, would be desirable. Discussions with TII are ongoing in relation to these matters.

Issues were raised concerning the number of stations proposed at Swords (4) and whether they would be fully utilised (noting the Boards omission of the Seatown Station in Metro North) and also whether route changes/alternatives had been proposed. The Council indicated that an underground route along the alignment of Main Street would have been the preferred route. It is also considered that the four stations at Swords are necessary and suggested that Dardistown Station be operational at project completion stage. It was also suggested that the frequency of service Swords-Airport should be similar to Airport-City Centre but not necessarily the same at all times.

There were no details yet as to the ultimate design of the metro station at Dublin Airport. The Council emphasised that the station would, in effect, be the key metro station for the country so the design should reflect this.

Fingal County Council queried the proposed location of the depot at Dardistown and emphasised the importance of achieving the most efficient use of developable land at this location.

Construction Phase – Key Issues

The Council is anticipating that there would be a significant level of traffic disruption during construction. It would be seeking to keep the R132 open during this time and would be relying on a comprehensive Construction Management Plan.

Community liaison would be carried out when more detail is received from TII.

Conclusion:

A copy of the record of the meeting will be forwarded to the Council. The record will be made available to the prospective applicant and will be on the public record when the pre-application consultation case is formally concluded.

The meeting concluded at 12.50 p.m.

Brendan Wyse
Assistant Director of Planning
30 Sept. 2019

Rob M. Giollarnáth

From: David Murray <David.Murray@fingal.ie>
Sent: Tuesday 17 September 2019 11:23
To: Rob Mac Giollarnáth
Subject: RE: meeting

Good Morning Rob,

The relevant personnel were:-

Peter Byrne - Senior Planner
David Murray - a/Senior Planner
Paul Carroll - Senior Engineer
Linda Lally - Senior Executive Engineer
Larry Loughnane - Senior Executive Engineer
Colm Campbell - Assistant Engineer

I also wish to clarify, that regarding the public safety zones and red approach zones at Dublin Airport, the draft Variation No.1 to the Fingal Development Plan 2017 – 2023 proposes to remove the red approach zones to the airport and replace them with a aerodrome operators safeguarding map. The existing inner and outer public safety zones are not proposed for amendment by the draft variation.

Best regards,

David.

From: Rob Mac Giollarnáth <r.macgiollarnath@pleanala.ie>
Sent: 17 September 2019 11:06
To: David Murray <David.Murray@fingal.ie>
Subject: FW: meeting

Hi David,

You might furnish the names of the attendees of yesterday's meeting to me when you can.

Thanks

Rob

From: Rob Mac Giollarnáth
Sent: Monday 16 September 2019 15:40
To: David.Murray@fingal.ie
Subject: meeting

Hi David,

Thanks for meeting us today.
Could you forward a list of the attendees and their titles so I can add them to the record of the meeting.
Thanks
Rob

This email and any files transmitted with it are confidential and may be legally privileged. It is intended solely for the addressee. If you are not the intended recipient, any disclosure, copying, distribution or any action taken or omitted to be taken in reliance on it, is prohibited and may be unlawful. If you have received this electronic message in error, please notify the sender or itservicedesk@fingal.ie. Internet communications cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete. Therefore, we do not accept responsibility for any errors or omissions that are present in this message, or any attachment, that have arisen as a result of e-mail transmission. This message has been swept by Anti-Virus software.

Tá an ríomhphost seo agus aon chomhad a ghabhann leis faoi rún agus d'fhéadfadh sé a bheith faoi phribhléid dhlíthliúil. Is ar an seolaí amháin atá sé dírithe. Mura tú an faighteoir beartaithe, tá cosc ar aon nochtadh, cóipeáil, dáileadh, nó aon ghníomh a dhéanamh nó a fhágáil ar lár i dtaca leis an ríomhphost agus d'fhéadfadh sin a bheith mídhleathach. Má tá an ríomhphost seo faighte agat trí dhearmad, cuir an seoltóir nó itservicedesk@fingal.ie ar an eolas. Ní féidir cumarsáid idirlín a ráthú a bheith slán nó saor ó earráidí mar d'fhéadfadh faisnéis a bheith idircheaptha, truaillithe, caillte , scriosta, nó teacht déanach nó neamhiomlán . Dá bhrí sin , ní féidir linn glacadh le freagracht as aon earráidí nó easnaimh atá sa teachtaireacht seo , nó aon iatán , a tháinig chun cinn mar thoradh ar an tarchur ríomhphoist . Tá an teachtaireacht cuardaithe ag bogearraí Frithvíreas

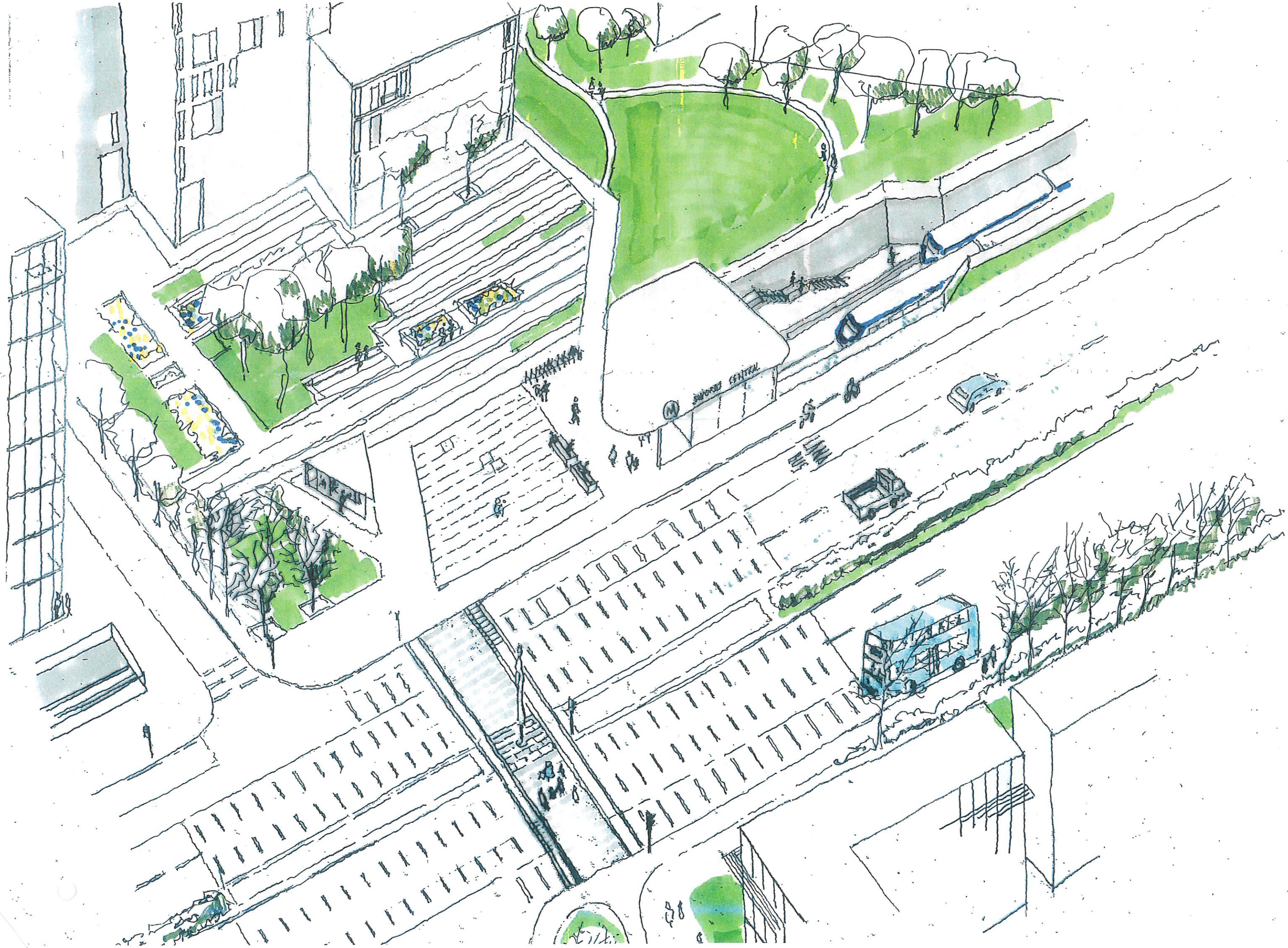
An Bord Pleanála

Metro Link ABP Ref 302010 Pre-Application Consultation with Fingal County Council

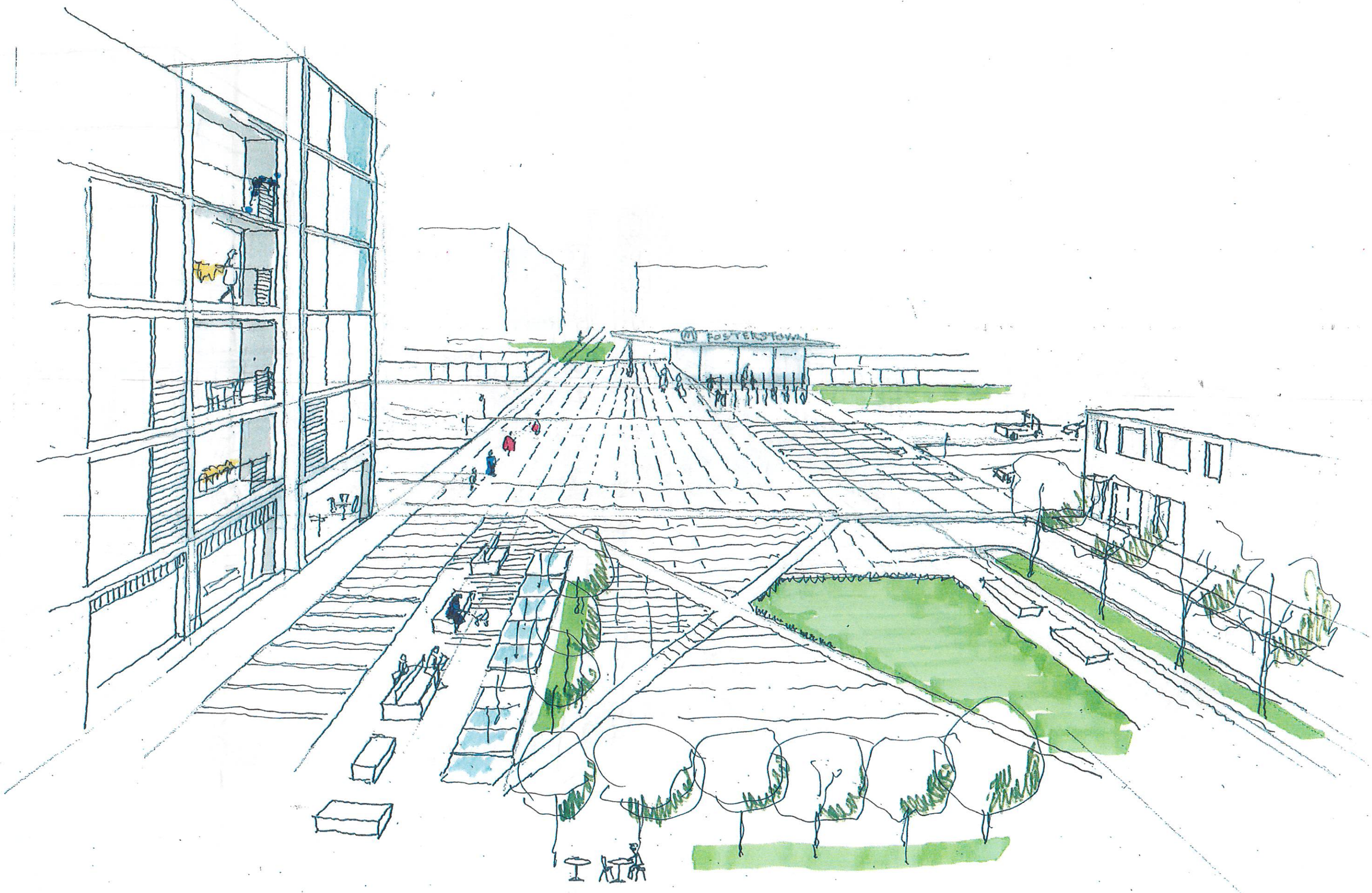
Date	16 September 2019
Start Time	11.00AM
Location	Fingal County Council Offices, Swords, County Dublin.

Agenda

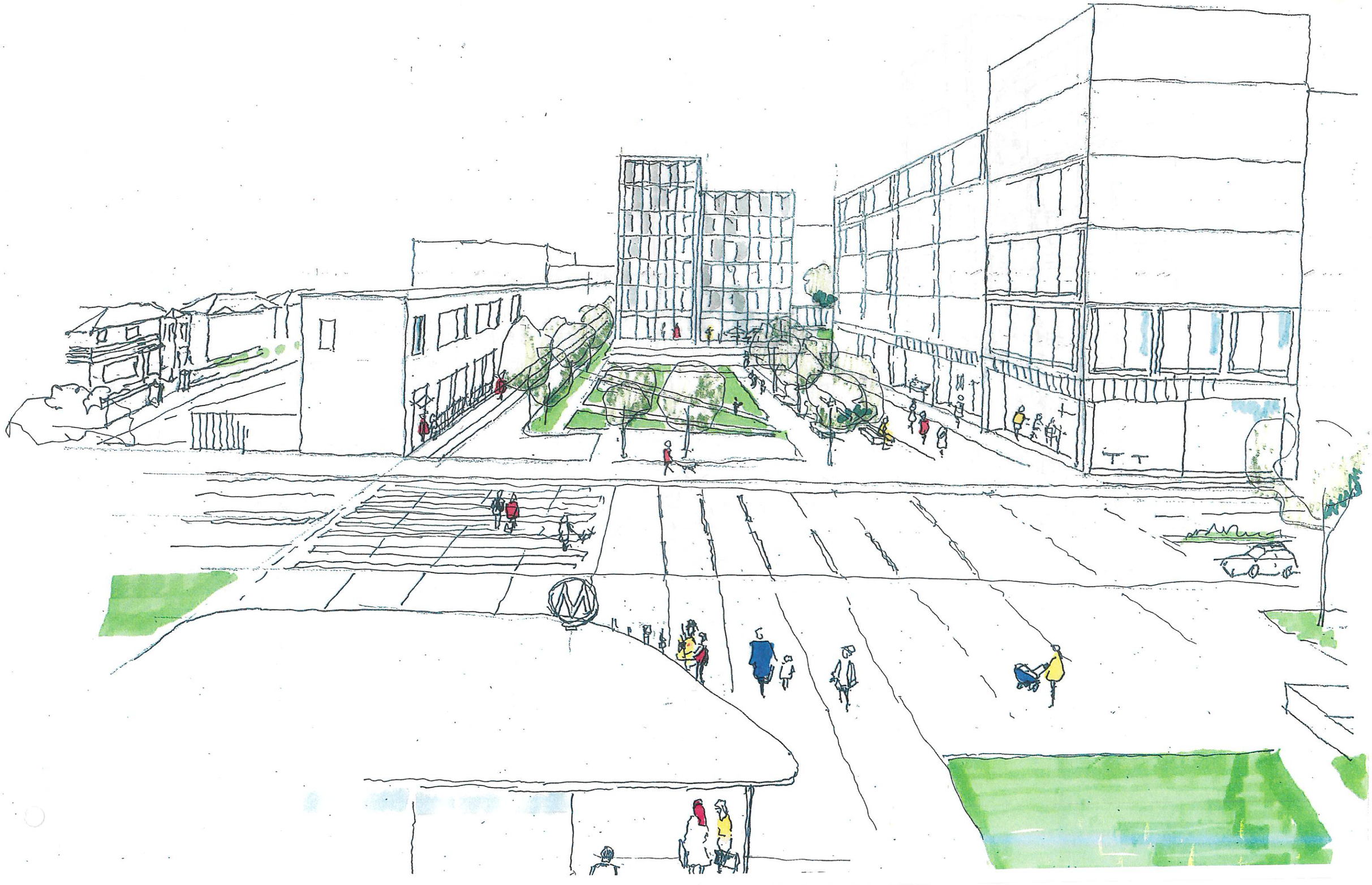
Number	Topic
1	Introductions [ABP & FCC]
2	Scope of Meeting [ABP]
3	Background [ABP]
4	Operational Phase – Key Issues [FCC]
5	Construction Phase – Key Issues [FCC]
6	Site Specific Issues [FCC]
7	Close


AVENIDA CENTRAL

looking east
from west



looking west
Fostes town from ~~west~~ ~~east~~



An Bord Pleanála

Record of Meeting
ABP-302010-18

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre Corridor.		
Case Type	Pre-application consultation		
Meeting	Meeting with Dublin City Council		
Date	03/09/19	**Start Time**	11 a.m.
Location	Offices of Dublin City Council	**End Time**	12.45 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737250
Representing Dublin City Council		
John O'Hara, Planning Officer		

Bernard Rennick, Senior Engineer, Roads and Traffic		
Brendan O'Brien, A/Executive Manager, Traffic		
Andy Walsh, Senior Engineer, Roads and Traffic		
Edel Kelly, Senior Transportation Officer		
Heidi Thorsdalen, Senior Executive Planner, Transportation Planning Division		
Chris Manzira, Senior Executive Engineer, Sustainable Mobility Projects		
Maggie O'Donnell, BusConnects		

The meeting commenced at 11 a.m.

The Board indicated that the meeting was essentially an information-gathering exercise. A record of the meeting would be taken which would be made public at the closure of the pre application consultation process. A copy of the record will be forwarded to the Council.

The Board noted that the function of pre-application consultations with respect to railway order applications is to advise on procedural issues and any other matters pertaining to proper planning and sustainable development which, in the opinion of the Board, might have a bearing on any decision.

The Board set out the progress of pre-application consultations to date. It advised that two meetings have been held with the prospective applicant. Meetings with representatives from Fingal County Council and the Office of Public Works have also been arranged.

With regard to the project generally, the Board said its current understanding is that an application is intended to be lodged some time in 2020. It noted the fact that the development as originally proposed had been intended to extend from Estuary to Sandyford (along the route of the Luas Green Line). Since that time, the proposed

development has been amended to omit the route of the Luas Green Line from the project. A preferred route document was published in relation to this revision in March 2019. The Board said that it expects a third meeting to take place with the prospective applicant prior to the end of 2019.

Discussion on the operational phase:

The local authority said that it is generally supportive of the project having regard to policies and objectives such as the National Planning Framework. It noted the importance of the project in terms of urban regeneration and the forming of a transport link between Dublin Airport and the city centre.

Referring to a presentation which it had on the project in May 2019, the local authority stated its view that the interaction between the project and other modes of transport still needs to be developed and explained further.

In relation to the proposed stops at Northwood and Ballymun, the local authority noted the mass and density of development in these locations and said that these stops should be future-proofed for future third party development. With respect to Ballymun in particular, the local authority said its preference would be that the existing streetscape is preserved; as an alternative to this, it said that a public plaza area might be accepted by it if no other option is available. The local authority emphasised that O'Connell Street on the other hand must be maintained with regard to the existing streetscape.

The local authority noted the importance of the project with regard to Dublin Airport and also welcomed the proposed integration at Glasnevin which would facilitate Irish Rail users. The proposed link-up to the Dart service at Tara Street was also welcomed.

With respect to the eastern side of St. Stephen's Green, the local authority said that there is a greater degree of clarity with regard to development in this area now. It noted that the proposed station here will be mostly located in the Green but straddling the footpath somewhat.

The local authority said that public safety through design is of particular importance and raised other issues such as the proposed operation of stations, impacts and interactions with BusConnects corridors, the amount of parking and cycle provisions provided and accessibility to stations. Noting that preliminary design details are due to be released by the prospective applicant in the next month or so, it expects to have a greater degree of clarity on such matters.

The local authority noted the importance of passenger movements with respect to stations and how volumes of such movements will be a significant feature of the project once operational. It also remarked in a general sense that the project represents a potential opportunity to deliver on public realm works and improvements.

The local authority representatives emphasised the importance of ensuring that a robust environmental impact assessment report (EIAR) is produced for the project, including, where relevant, assessments of cumulative effects (in relation, for example, to matters such as existing rail lines and BusConnects corridors).

In response to the Board's query on the matter, the local authority said that, to the best of its knowledge, the Dart Underground project is currently in a state of abeyance. It suggested that the prospective applicant might be in a position to offer some clarity on its' status.

Discussion on the construction phase:

The local authority commented that, while not as challenging as the previous Metro North proposal, the construction phase of the proposed development would have potential implications for areas such as Stephens Green East, the Mater Hospital and Tara Street. The local authority noted that the proposed development will have significant effects on traffic movements in the city and also noted that routes for the removal of spoil from construction sites have not yet been agreed.

The local authority said that matters such as construction methodology and the general impacts of construction works will be more fully understood once preliminary design details are available. Having regard to previous projects, such as the Luas Cross City, the local authority expects that working groups will be established to consider and discuss details pertaining to the construction phase. The local authority said that it will need to fully understand the nature and extent of impacts arising from construction works (such as noise and vibration) and proposed timelines. Different approaches to construction will be required in different areas depending on specific sensitivities. It also noted the importance of positive and robust engagement with affected third parties and stakeholders. With regard to other transport projects such as BusConnects, the local authority said that an understanding of the phasing of such projects would be of particular importance.

With respect to matters such as construction site compounds and impacts on potential high-density third-party proposals in areas such as Northwood, the local authority noted that there are no specific proposals available just yet. With respect to proposed stations along the route of the project, the local authority said that its understanding is that mining may be required at some locations.

In relation to proposed demolition works, the local authority noted the significant amount of such works in the Tara Street area. It said that future-proofing should be provided for here with respect to proposed development going forward. In a general context, the local authority also remarked that the integration with the existing Irish Rail line needs to be more fully explored at this location.

With regard to potential damage to residential dwellings arising from tunnel boring machines, the local authority indicated its expectation that relevant surveys would be conducted prior to commencement of such works. Noting this, the Board said its understanding is that a property owner protection scheme will be in place.

The Board enquired as to whether the local authority had any opinion of the nature and extent of public consultations to be carried out. The local authority noted the importance of such consultations and said that the benefits of the project to the city as a whole should be promoted by the prospective applicant. It noted that positive engagements had been carried out during the public consultation phase of the Luas Cross City project.

With respect to the design of station boxes, the local authority said that it has only seen a generic design to date. It said that specific designs of station boxes should be appropriate for specific locations, should integrate with the surrounding area and facilitate mobility.

In relation to any future projects of a similar nature, the local authority said that this should not be considered to be a stand-alone metro, but rather the first of several that might be required by the city. The proposed development does not preclude any future routes/alignments that might be considered necessary.

Conclusion:

A copy of the record of the instant meeting will be forwarded to the Council. The record will be made available to the prospective applicant and will be on the public record when the pre-application consultation case is formally concluded.

The meeting concluded at 12.45 p.m.

Brendan Wyse

Assistant Director of Planning

9 Sept. 2019

K. Moore

Our Ref: ABP-302010-18

An Bord Pleanála

Aidan Foley
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 19th August 2019

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer to your letter dated 13th August. 2019, about the above-mentioned case. The contents of your letter have been noted.

The Board will revert to you at a later date.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

Teil Tel (01) 858 8100
Glao Áitiúil LoCall 1890 275 175
Facs Fax (01) 872 2684
Láithreán Gréasáin Website www.pleanala.ie
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64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

AN BORD PLEANÁLA
LDG-
ABP-
15 AUG 2019
Fee: € 965 Type:
By: Post

ABP-302010-19

METROLINK

Mr Kieran Somers
An Board Pleanála
64 Marlborough Street
Dublin
D01 V902

Dáta	Date 13 August 2019	Ár dTag	Our Ref. CAP_ML_L094	Bhur dTag	Your Ref.

Re: ABP Record of 2nd Pre-App meeting

Dear Kieran,

Thank you for the written record of our meeting with you on 29th May 2019, we can confirm that we consider these to be an accurate record of the meeting.

With regard to your request for specific updates in relation to elements of the revised scheme, please note that all of this information is currently being updated and prepared by TII. We will be in a position to provide all of the information to you in November by which time, we anticipate that we will have finalised any modifications the preferred route arising from the second non-statutory public consultations and developed the Preliminary design and Proposed Construction methodology for the scheme.

In advance of issuing the requested information, we would welcome an opportunity for a further pre-application consultation meeting to provide you with a further update on the project having regard to the following:

- Update on the Current Project Programme;
- Alterations to the project since the last pre-application consultation;
- Details of Public Consultation;
- Update on Materials Management & Waste Strategy;
- Grid Connections;
- Glasnevin Interchange Station;
- Environmental Assessments: Ground borne Noise & Vibration & Landscape & Visual;

Yours sincerely,

Aidan Foley

Aidan Foley, Project Director

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

Bonneagar Iompair Éireann
Ionad Gnó Gheata na Páirce
Sráid Gheata na Páirce
Baile Átha Cliath 8
Éire, D08 DK10

Transport Infrastructure Ireland
Parkgate Business Centre
Parkgate Street
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Ireland, D08 DK10

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+353 (0)1 646 3601

O Ref: ABP-302010-18

An Bord Pleanála

Peter Walsh
Director of Capital Programmes
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 2nd July 2019

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the 2nd meeting of the 29th May 2019.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

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64 Marlborough Street
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D01 V902

An Bord Pleanála

Record of Meeting
ABP-302010-18 2nd meeting

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line. Estuary to St. Stephen's Green, Dublin.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	2nd		
Date	29/5/2019	**Start Time**	11 a.m.
Location	Cathal Brugha Room	**End Time**	1.35 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Fergal Kilmurray

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Josephine Hayes, Senior Executive Officer		
Fergal Kilmurray, Executive Officer	f.kilmurray@pleanala.ie	01-8737266

Representing the Prospective Applicant		
Peter Walsh, Director of Capital Programmes, TII		
Aidan Foley- Metrolink Project Director		
Neil Cowie - Jacobs Project Director		
Ronan Hallissey - Jacobs Senior Environmental Coordinator		
John Keogh – Jacobs		

The meeting commenced at 11 a.m.

Introduction:

Following introductions, the prospective applicant indicated that they had no comments on the record of the 1st meeting.

The Board's representatives said that they had become aware of significant changes to the proposed development since the 1st meeting. It had been decided to await clarity on the scope of the proposed changes before meeting with the Strategic Infrastructure Division of the Board.

Presentation by the prospective applicant:

The prospective applicant gave an update and highlighted the changes to the proposed development since the last meeting which included the following:

- The key change is that the route will no longer include the existing Luas Green Line. The Green Line section of the overall scheme would be carried out at an appropriate point in the future as a standalone project. The tunnel boring works would allow for future connectivity to the Green Line. As there would be no change to the Green Line, no major closure would be required to the Luas line as part of the proposed development. Incremental improvements to the Green Line to increase its capacity by providing up to 30 trams per hour (55m long) would be proposed to be delivered as a separate project.

- A preferred route of 16 new stations. The final stop at the southern end would be Charlemont Station.
- The pursuit of a single tunnel bore option over a double bore tunnel.
- A park and ride facility at Estuary.
- Ballymun Station sited under the old Ballymun Shopping Centre.
- Revisions to the M50 crossing and location of the depot site.
- Relocation of the Griffith Park Station from Na Fianna GAA Club to Home Farm FC.
- Discussions ongoing with Irish Rail about the interchange at Glasnevin Station.
- Relocation of O'Connell Station to the old Carlton Cinema site.

It was clarified that the depth of the tunnel below ground level would be approximately 23/24 metres.

The prospective applicant indicated Q.2 2020 as the target for lodgement of the Railway Order Application. Allowing circa 1 year for the decision period it was planned to commence construction in late 2021 with service commencing in 2027.

The prospective applicant provided details of the location of the proposed station box at Dublin Airport. It was stated that consultation has been undertaken with the DAA in relation to the works.

Details of two possible locations for construction site compounds at the Airport portal, i.e. on DAA and Whitehall Rangers grounds near to the proposed Dardistown Future Station, were provided. The prospective applicant also provided details of the possible construction site compound at the Northwood launch site.

The prospective applicant detailed public consultations to date and noted the consultations are ongoing. Stakeholders and statutory consultees including Dublin City Council, Fingal County Council, Office of Public Works and the Department of Culture, Heritage, and the Gaeltacht are also engaged. It was submitted that feedback and concerns raised will be addressed in the EIAR.

In providing details of cross section at the proposed Seatown Station (Swords), the Board's representatives noted that the proposal to provide a station at Seatown was omitted in the previous Metro North decision by the Board and that further consideration may be required to be given to this matter.

It is intended that the Tunnel Boring Machine (TBM) would operate 24/7 in order to reduce the duration of construction phase, to reduce construction cost and to reduce risk of

additional settlement. Mitigation measures in relation to the impact of the 24/7 tunnelling were provided which included temporary re-housing for short durations. A similar approach was provided for under the previous Metro North proposal.

It was submitted that Tara Street Station is a key interchange location for the project and that eight options were assessed. The original EPR location (Demolition of College Gate and Ashford House) was stated to perform best from an interchange, cost, and risk perspective and would minimise impacts on traffic and utilities, while also permitting over-site development. It is also intended that the proposed scheme would allow for the over-site development at the O'Connell, Charlemont and Ballymun Stations.

Potential direct impacts on existing features, the setting and land area of St Stephen's Green, on properties on St. Stephens Green East and on utilities were set out. An analysis is being undertaken to evaluate the various impacts in order to finalise the station location and design.

The prospective applicant also provided details on the materials management for the proposed development. A wide set of options for re-use, recycle and disposal of material is being considered. The Board representatives undertook to provide feedback in relation to this matter at a future meeting.

Further to the documentation already submitted the Board representatives indicated that some updates in relation to the revised scheme would be of benefit to the pre-application process. These include:

Illustrations /Drawings (indicative)

Stop Box construction methodology

End of line arrangement at Charlemont

Intervention Shaft in City Centre area

Connectivity between stop and airport terminal at Dublin Airport

Interchanges with other transport along the route

Underpasses and overpasses along the route

Deviation Limits

Updates

Overview of Risk Assessment and Risk Management related to geotechnical issues

Justification for Seatown Stop

Construction waste / disposal of spoil strategy

Construction site compound locations

Griffith Park Station

Glasnevin Stop configuration

Tara Street Stop configuration

St. Stephen's Green configuration

Over-site Development at Ballymun, O'Connell Street and Charlemont

Conclusion:

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The meeting concluded at 1.35pm..

B Wyse

Brendan Wyse

Assistant Director of Planning

2 July 2019

Our F P-302010-18

An Bord Pleanála

Peter Walsh
Director of Capital Programmes
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 2nd July 2019

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the 2nd meeting of the 29th May 2019.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7250

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Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

An Bord Pleanála

Record of Meeting
ABP-302010-18 2nd meeting

Case Reference / Description	ABP-302010-18 Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line. Estuary to St. Stephen's Green, Dublin.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	2nd		
Date	29/5/2019	**Start Time**	11 a.m.
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The meeting concluded at 1.35pm.

Brendan Wyse

Assistant Director of Planning

2 July 2019

Our Ref: ABP-302010-18

An Bord Pleanála

Peter Walsh
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 3rd May 2019

Re:
Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir

I have been asked by An Bord Pleanála to acknowledge receipt of your letter dated 2nd of May 2019 and your request for a second pre-application meeting.

The contents of your letter are noted and the Board will revert to you later.

If you have any queries in relation to this matter, please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7107

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Facs Fax (01) 872 2684
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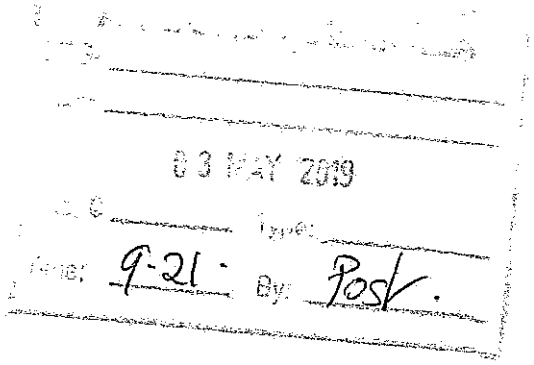
64 Marlborough Street
Dublin 1
D01 V902

ABP - 302010 - 19.

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Mr. Kieran Somers,
An Bord Pleanala,
64 Malborough Street, Dublin 1,
DOI V902



Dáta | Date 02/05/2019 Ár dTag | Our Ref. ML_CAP_L0084 Bhur dTag | Your Ref.

Re: Request for Pre-Application Consultations in Relation to Proposed Railway Works under Section 47B of the Transport (Railway Infrastructure) Act 2001, as inserted by Section 50 of the Planning and Development (Strategic Infrastructure) Act 2006. The proposed development is referred to as MetroLink.

Dear Kieran,

TII requests a second pre-application consultation meeting in relation to the MetroLink at An Bord Pleanála's earliest convenience.

Since the first pre-application meeting of 6th December 2018, the project design has developed and the Preferred Route has been identified. A non-statutory public consultation in relation to the Preferred Route commenced on 26th March. A document which describes the design developments since the Emerging Preferred Route has been produced. A copy will be sent to you by post and is available electronically at the following link https://www.metrolink.ie/assets/downloads/Public_Consultation_Document_for_the_Preferred_Route_HR.pdf .

Please advise me of dates which are acceptable to An Bord Pleanála and of any material that might be of assistance to An Bord Pleanála in advance of the meeting.

Yours sincerely,

Peter Walsh

Director of Capital Programme

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

Bonneagar Iompair Éireann
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Baile Átha Cliath 8
Éire, D08 DK10

Transport Infrastructure Ireland
Parkgate Business Centre
Parkgate Street
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Ireland, D08 DK10

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METROLINK

2nd Pre-Application Consultation

29th May 2019.

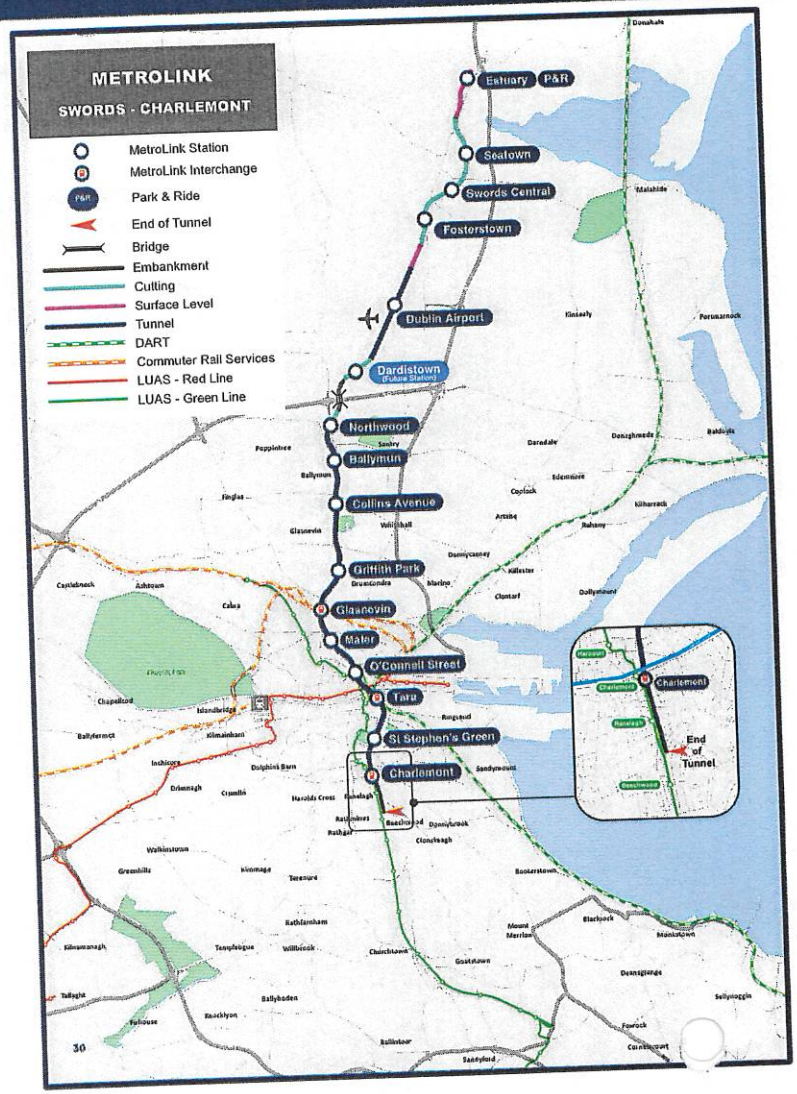
AN BORD PLEANÁLA
29 MAY 2019
LTR DATED _____ FROM _____
LDG-
ABP-302010-18

Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040 | NTA Údarás Náisiúnta Iompair National Transport Authority | TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

METROLINK

Agenda

- Update on MetroLink Project;
- Consultation;
- Planning Considerations;
- Station Options;
- Next Steps.



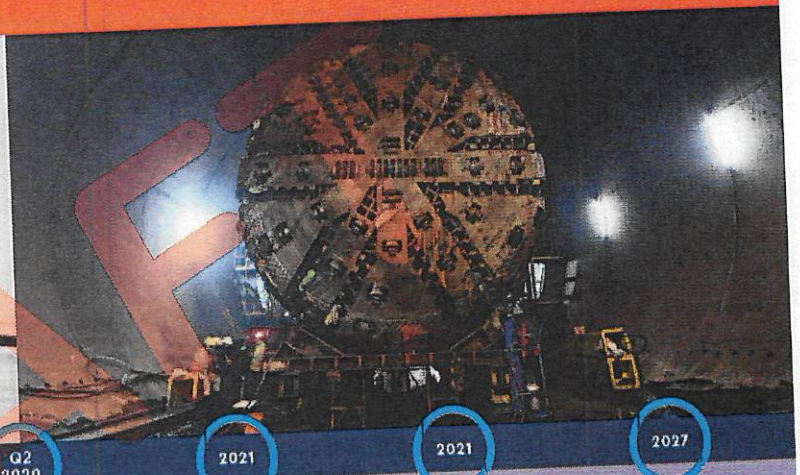
METROLINK

Update on MetroLink Project

METROLINK

METROLINK

Project Schedule



Q4 2017 — Alignment Options Study - Identification of Emerging Preferred Route

Q1 2018 — Emerging Preferred Route Public Consultation

Q1 2019 — Preferred Route Public Consultation

Q2 2020 — Railway Order Application to An Bord Pleanála

2021 — An Bord Pleanála Decision (Anticipated)

2021 — CONSTRUCTION STAGE
Approximately 6 years

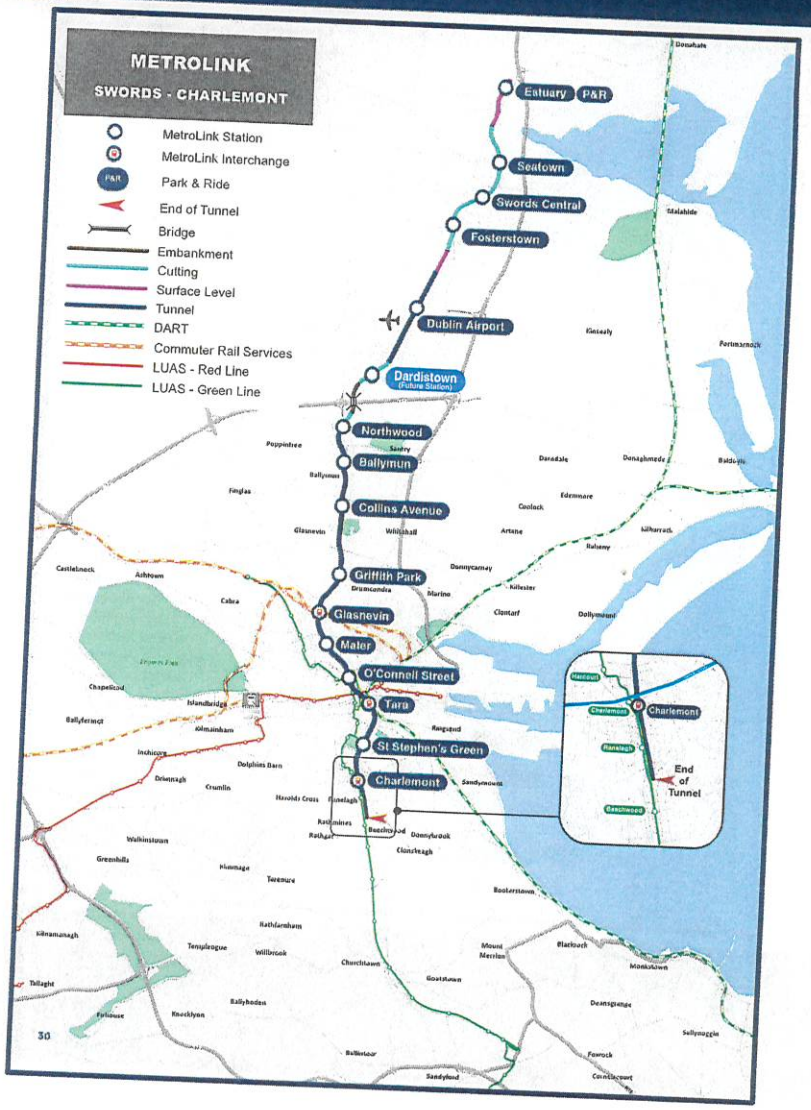
2027 — MetroLink operational
2027

OBJECTIVE:
To provide a safe, high-frequency, high-capacity, fast, efficient and sustainable public transport service linking Swords, Dublin Airport, Irish Rail, DART, Luas, Dublin Bus and the city centre.

METROLINK

Preferred Route - Changes

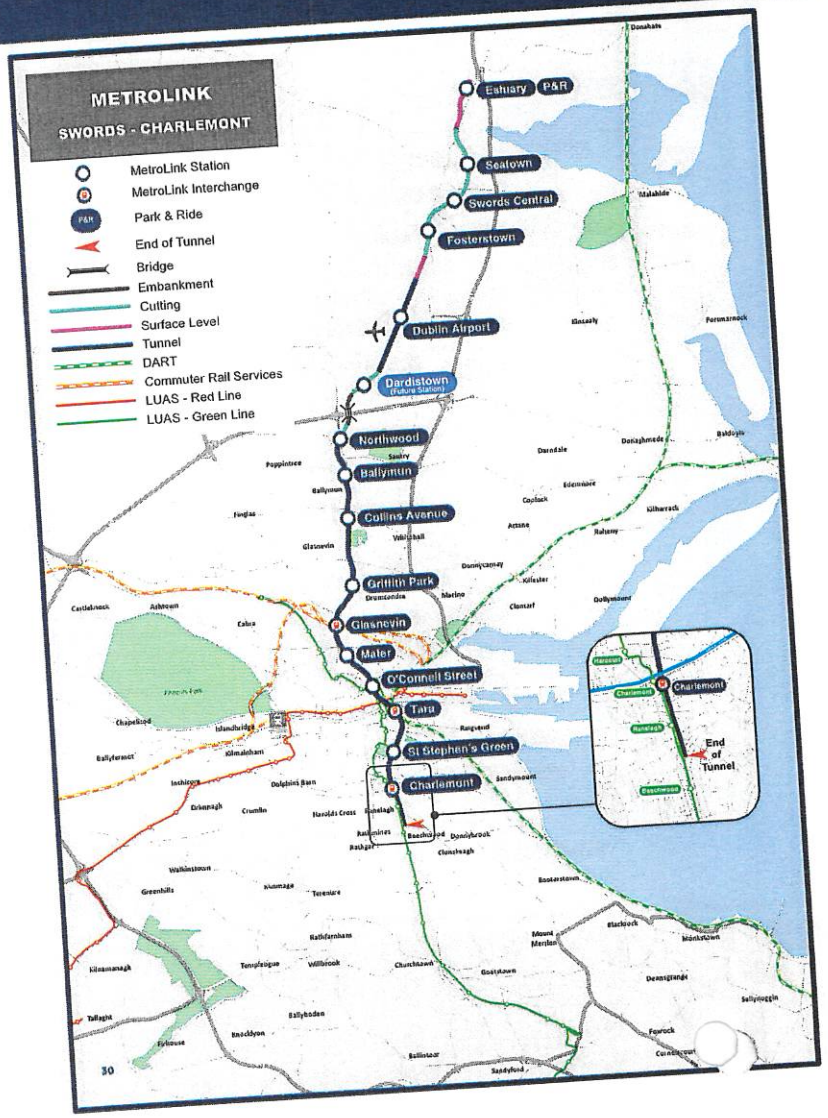
- 16 New Stations (including Dardistown is proposed for the future);
- At Grade, Elevated and underground track;
- A Stabling and Maintenance Depot;
- Park & Ride;



METROLINK

Preferred Route - Changes

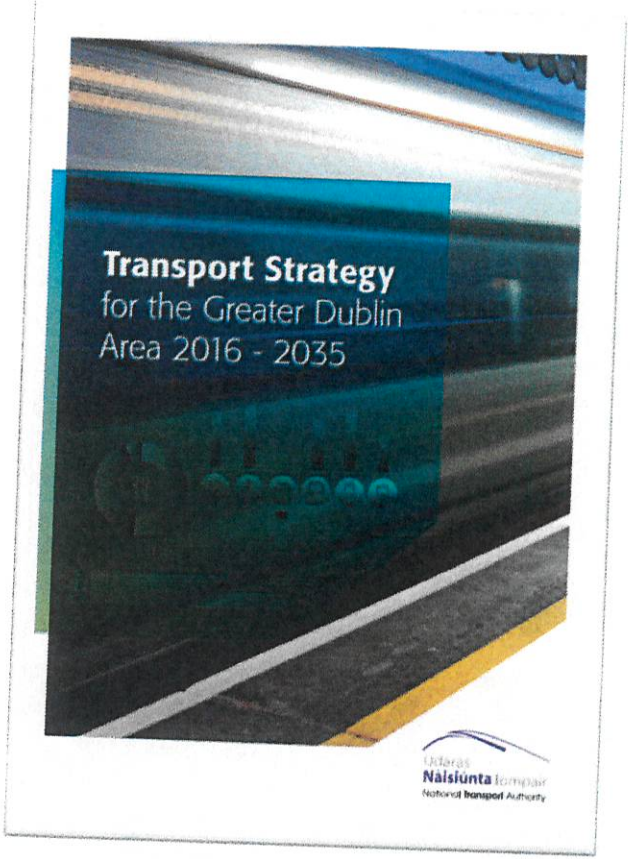
- Tunnel type;
- Tunnel length;
- Swords Bypass (R132);
- M50 crossing and depot;
- Northwood;
- Ballymun Station;
- Griffith Park Station;
- Glasnevin Station;
- O'Connell Station;
- St Stephen's Green station;
- Charlemont Station;
- **Green Line Metro Upgrade.**



METROLINK

Green Line

- Need to upgrade Green Line arises from expected growth at key locations - Cherrywood, Sandyford and Dundrum - and planned extension to Bray;
- Number of people seeking to travel on Green Line in future years will exceed carrying capacity of the Luas system, requiring its upgrade to a metro service;
- Originally the connection and upgrade necessitated a shorter closure of the Green Line. Revised proposals to extend the tunnel and to tunnel beneath Dunville Avenue significantly increased the closure duration.
- Many people concerned about need to close the Green Line now for a prolonged period. Need to upgrade Green Line to metro standard will not arise for some time - in the region of 20 years.
- Alternative approach: Northern section of MetroLink to be built now and Green Line conversion to occur at appropriate point in the future.



METROLINK

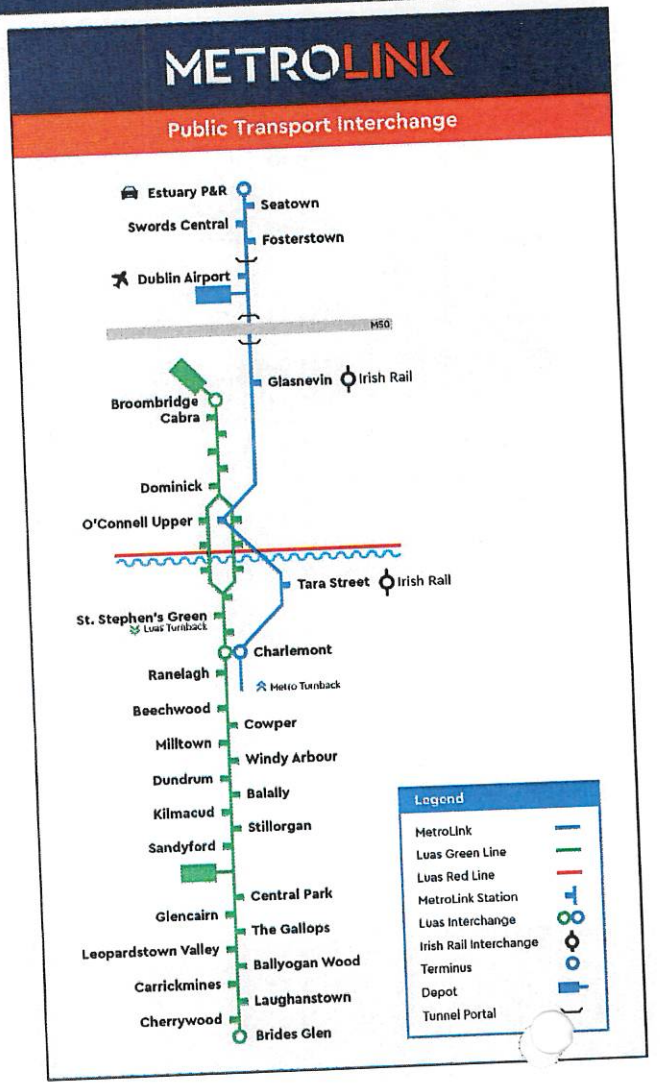
Proposed Alternative Approach

Overall metro delivered in 3 stages:

1. Swords to Charlemont: Interchange, not direct connection to Green Line. ***Tunnel boring works to allow future connection to Green Line completed as part of this phase. No change to the Green Line and no major closure required;***

2. Incremental improvements to the Green Line to increase its capacity by providing up to 30 trams per hour (55m long). ***To be delivered as separate project.***

3. Based on current strategy – c. two decades from now, connection to be made from MetroLink to Green Line at Beechwood. Future strategy changes can be accommodated.



METROLINK

Meeting demand on the Green Line

- **Phase 1:** Current project will provide capacity of about 8,800 passengers by extending existing 26 trams to 55 metres and adding 8 new 55 trams to the Green Line fleet. This phase will be completed in 2022;

- **Phase 2:** Increase capacity to about 11,000 passengers by operating 30 x 55 metre trams per hour (each direction);

- **Phase 3:** Green Line upgraded to MetroLink providing capacity of up to 20,000 passenger per hour per direction.

Phase 1 Capacity should meet demand up to year 2028 or later

Phase 2 Capacity should meet demand up to year 2039 or later

Phase 3 Capacity should meet all foreseeable demand

METROLINK

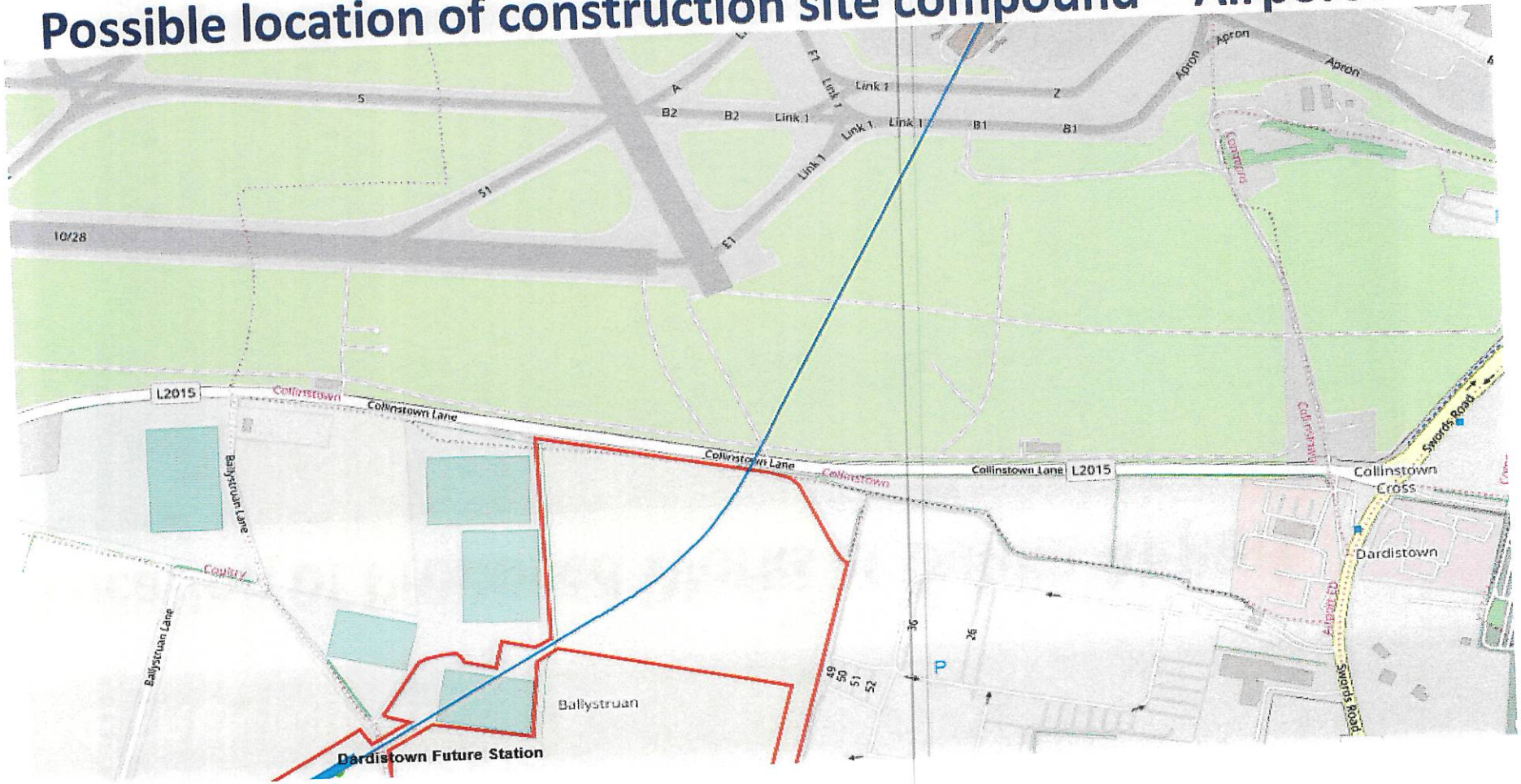
Update on MetroLink Project Requested Information

METROLINK

Location of Proposed Works at Dublin Airport

METROLINK

Possible location of construction site compound – Airport Portal



METROLINK

Locations of construction site compounds – Northwood Launch Site

Site requirements include:

1. A large area (green, approx. 30,000m2) without too many restrictions (bottlenecks, hills, roads, etc...)

2. Open-cut portal area (orange) – to allow launch and operation of the TBM independently of the station. Minimum 60m long, but may need to be 120m long

3. Construction servicing space around station (brown), keeping this separate from the tunnelling site

4. Construction servicing space around portal (pink), for tunnelling works

METROLINK

Consultation

METROLINK

Public Consultation - EPR

- Public consultation period ran from 22nd March to 11th May 2018.
- Close to 8,000 submissions received.
- Main concerns raised:
  - Griffith Park Station /CLG Na Fianna – over 5,000 submissions.
  - Collins Avenue Station/ Lady of Victories Church - over 900 submissions.
  - Beechwood Station/Ranelagh - over 400 submissions.
- Other concerns included; Swords Bypass (R132), Glasnevin Station and Tara Station.
- Assessed changes to the scheme to address issues raised.
- Now presenting the " Preferred Route".

METROLINK

Public Consultation - PR

- Public consultation period ran from 26th March to 21st May 2019.
- Close to 2,000 submissions received.
- Main concerns raised:
  - Impacts on residential sensitive receptors along R132;
  - Royal Canal Greenway;
  - Mater Station Location;
  - Tara Station Location;
  - Charlemont Station Location;
  - Luas Green Line Upgrade to Metro Standard;

METROLINK

Stakeholder Consultation

- Dublin City Council;
- Fingal County Council;
- Dublin Airport Authority;
- Mater Hospital/Rotunda Hospital;
- Trinity College Dublin;
- Office of Public Works;
- Irish Water;
- Utility Providers;
- Stakeholders along the route;
- EIA Scoping – Prescribed Bodies;

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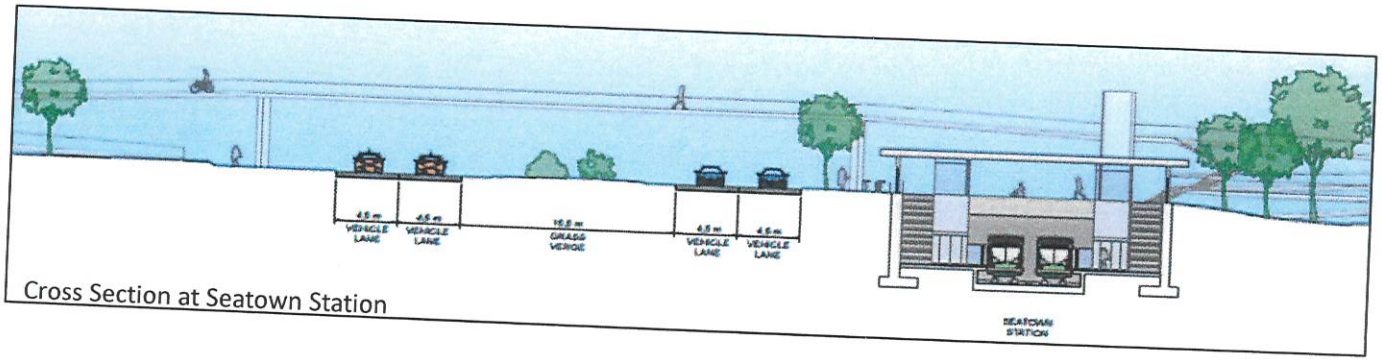
Planning Considerations

METROLINK

Connectivity

- Intent to optimise design to provide connectivity with existing or approved infrastructure;
- Intent to optimise design to allow for (but not including) connectivity to future developments/infrastructure;
- Intent to optimise design and not to preclude future Development Plan strategies;

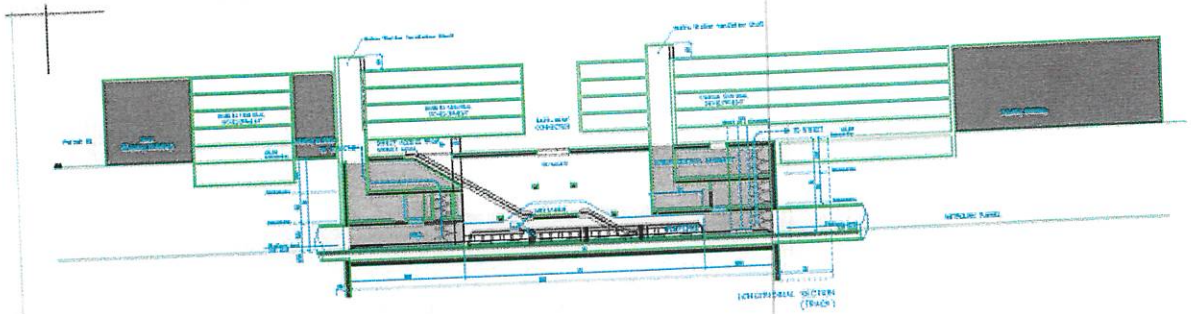


Cross Section at Seatown Station

METROLINK

Over-Site Development

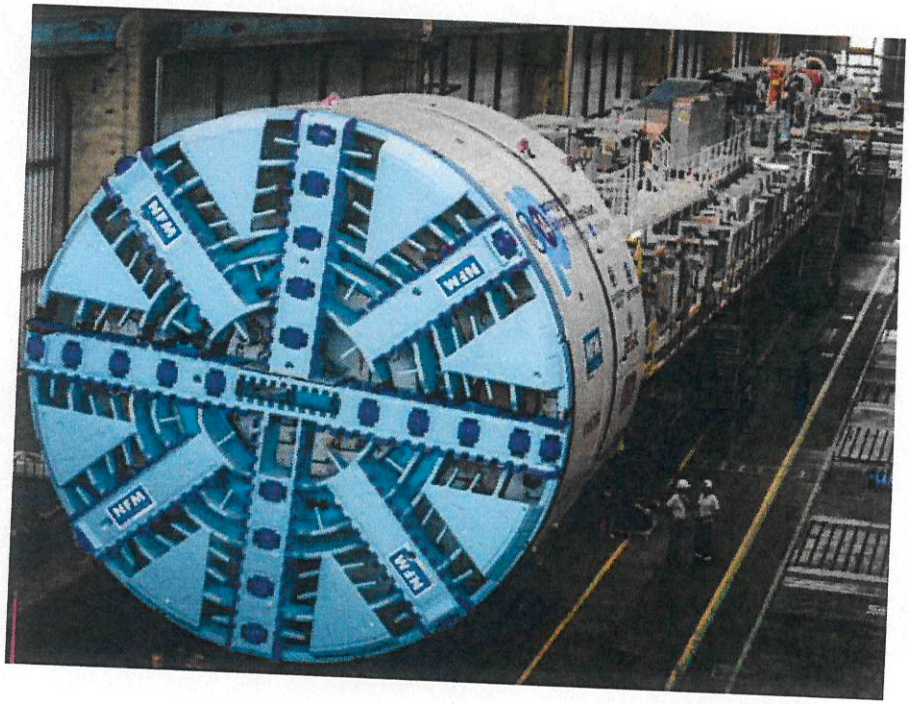
- O'Connell, Charlemont & Ballymun;
- Ongoing consultation with land owners/developers;
- Design to allow for but not including Over-site development (OSD);
- Design not to preclude future Over-site development;
- EIAR to consider impacts of MetroLink project and potential cumulative impacts with OSD;
- In the EIAR – clear understanding of phasing is critical.



METROLINK

24/7 TBM Advancement

- 24/7 TBM advancement proposed in order to
  - Reduce duration of construction phase;
  - Reduce construction cost;
  - Reduce risk of additional settlement;
- However potential for noise & vibration impacts;
- Requirement for effective communication in advance of TBM;
- Potential requirement for temporary re-housing for v short durations;
- TII to devise scheme to manage impacts;



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Station Options

METROLINK

Tara Street Station – Options Assessment

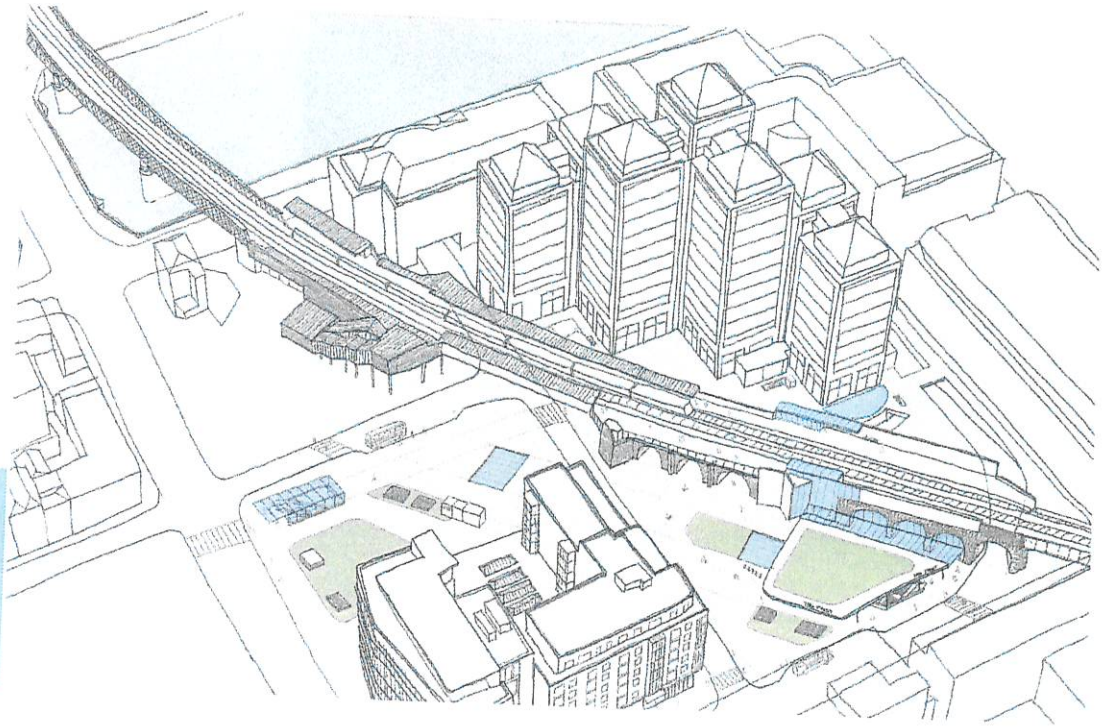
Key Interchange Location for the project;

Eight Options assessed;

Location very constrained:

- Potential Property Impacts;
- Utilities Impacted;
- Traffic Impacts;
- Construction Phase Impacts

Option 0 – Original EPR location (Demolition of College Gate and Ashford house) performs best from an interchange and cost, risk perspective and minimises impacts on traffic & utilities.



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St Stephen's Green East Locations

- Potential to Impact on SSG/Traffic/Utilities and Properties;
- Undertaking review of Preferred Location to minimise impacts;
  - All locations directly impact St Stephen's Green
- Locations include:
  - Fully under R138/St Stephen's Green East;
  - Half in SSG;
  - All within the SSG;
  - Shifted 31m north of Preferred Route to avoid the need for an intervention shaft.

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Key Constraints

- The need for an intervention shaft (TCD or Merrion Square);
- Direct impacts on a National Monument including:
  - Protected structures;
  - Archaeological features, and;
  - Mature trees and ecological features;
  - Amenity Value;
- Traffic impacts during construction;
- Utility diversions – sewer under R138 and Hume St, and;
- Protected buildings on St Stephen's Green East - bollards, lamp posts, buildings and their cellars.

- MCA being undertaken to evaluate impacts of each location.

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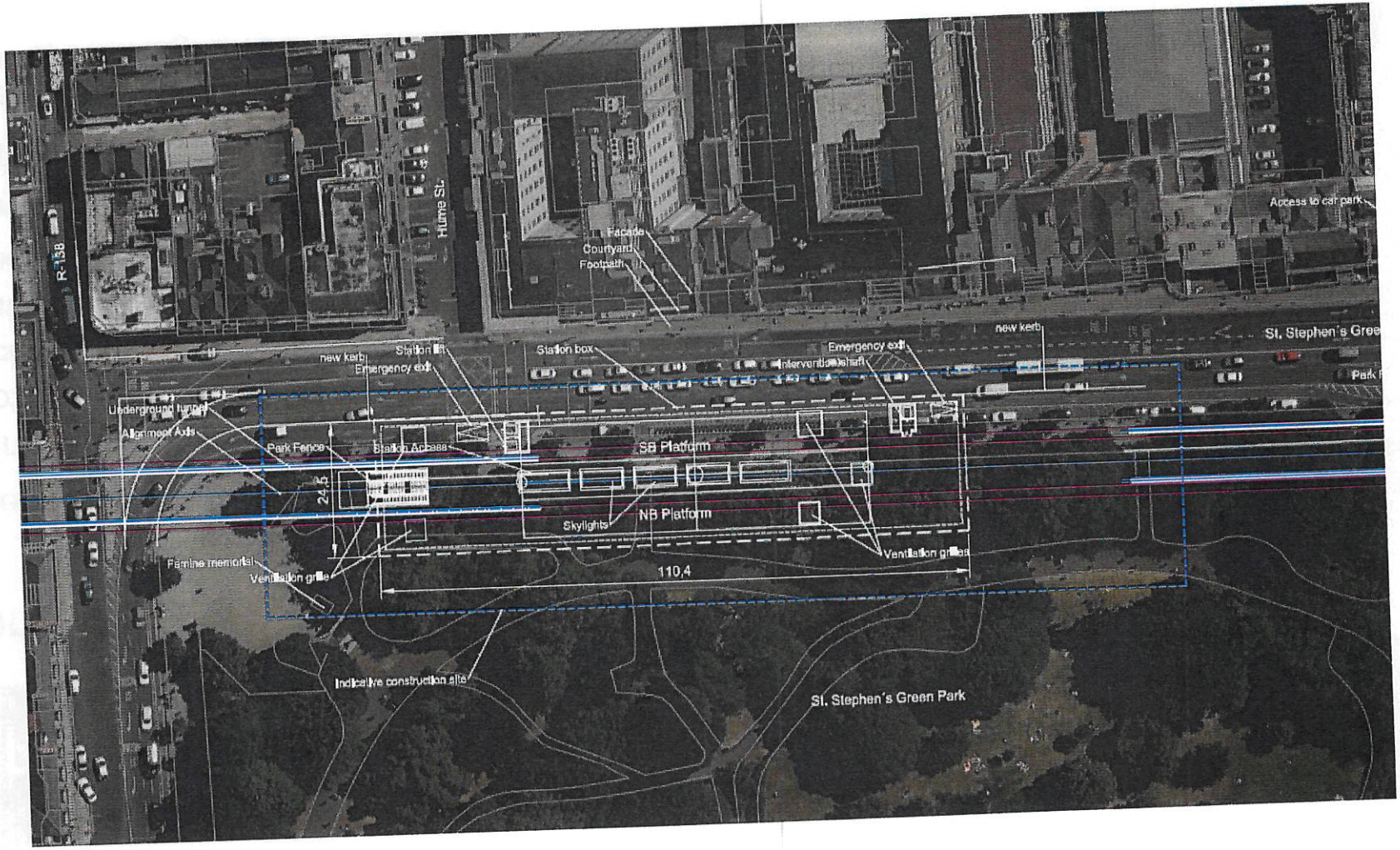
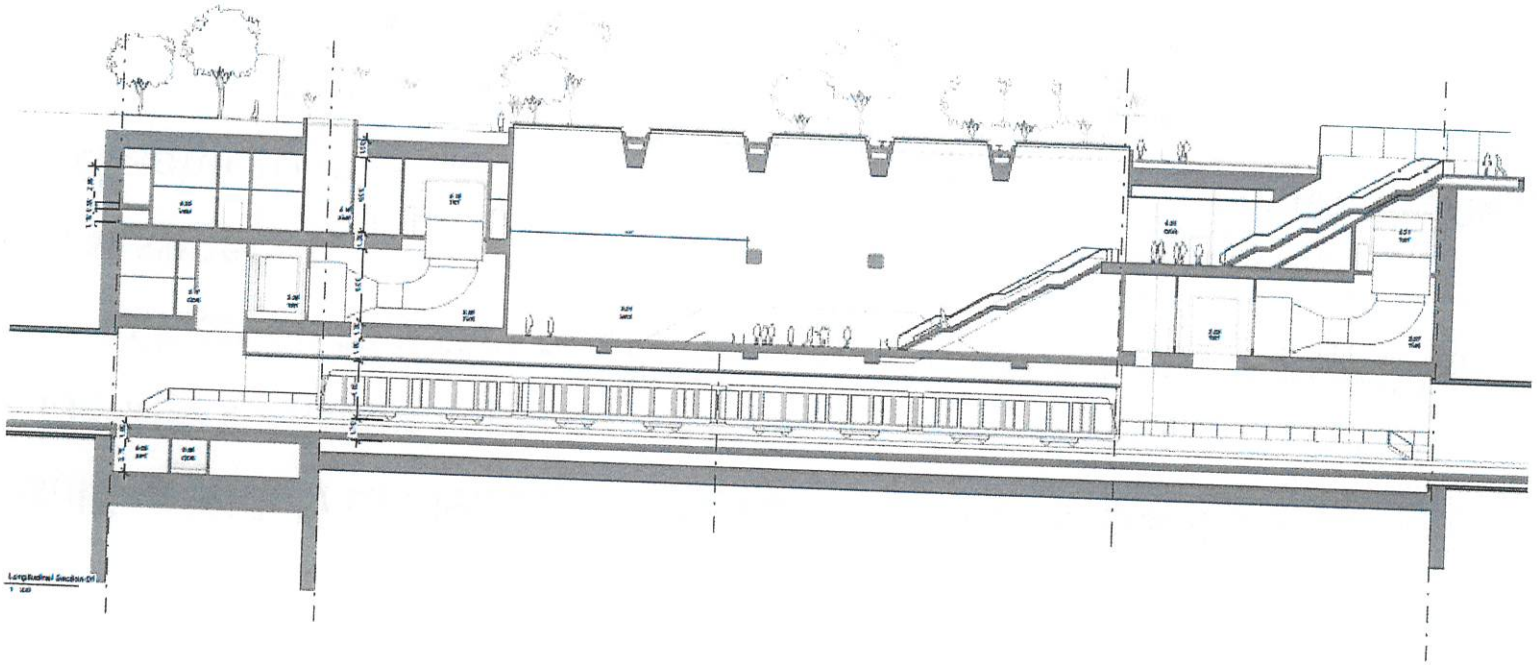

R138
Hume St.
Facade
Courtyard
Footpath
Access to car park
new kerb
Station box
Emergency exit
Intervention shaft
St. Stephen's Gree
Park
Underground tunnel
Alignment Axis
Park Fence
Station Access
SB Platform
24.4
NB Platform
Skylights
Ventilation grille
Famine memorial
110.4
Indicative construction site
St. Stephen's Green Park

Typical Station Layout



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Materials Management

- TII consulting widely to identify re-use options for materials;
- EIAR – Identify sufficient capacity for disposal of material;
- However mitigation to direct re-use, recycle of material where possible;
- Traffic assessment to identify haul routes to M50;
- Climate chapter to make assumptions with regard to average haul distances;

- Pleanála indicated that the Board may develop an opinion on this approach?

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National Transport Authority

Project Ireland 2040
Building Ireland's Future

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Transport Infrastructure Ireland

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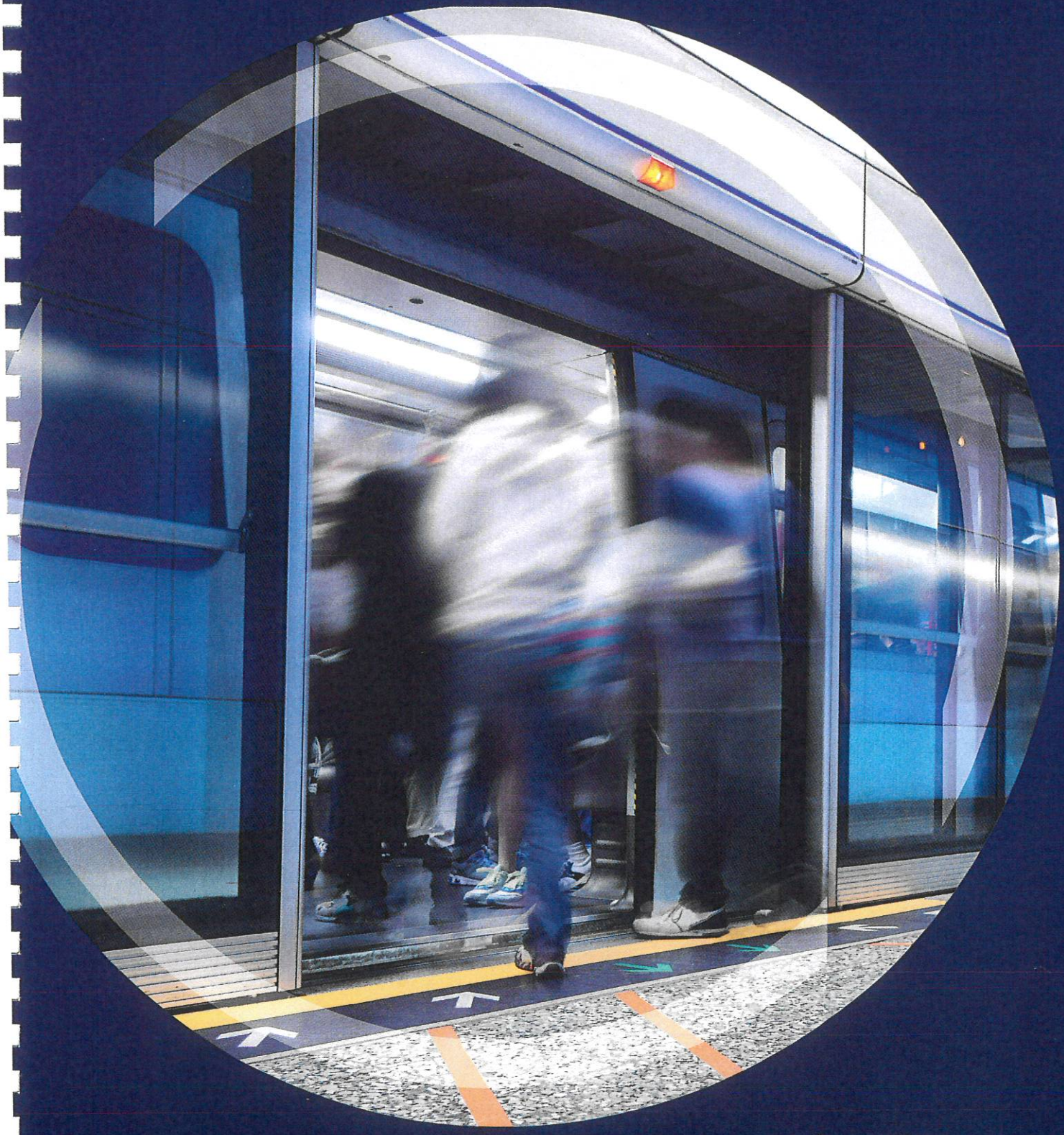
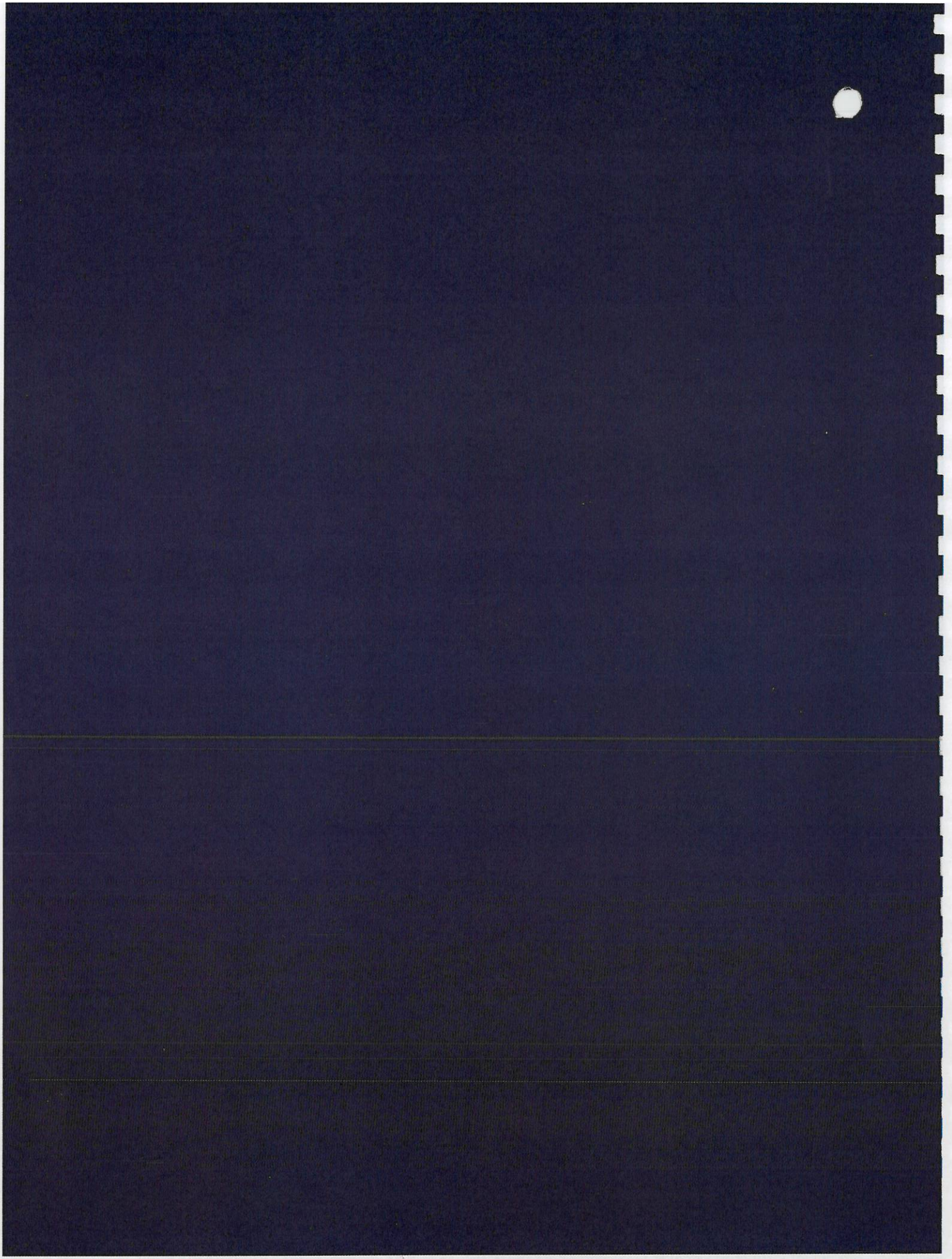
Integrated Transport. Integrated Life.



Preferred Route

March 2019



Project Ireland 2040
Building Ireland's Future

NTA
Údarás Náisiúnta Iompair
National Transport Authority

TII
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

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AN BORD PLEANÁLA
03 MAY 2019
FROM
LTR DATED
LDG-
ABP-

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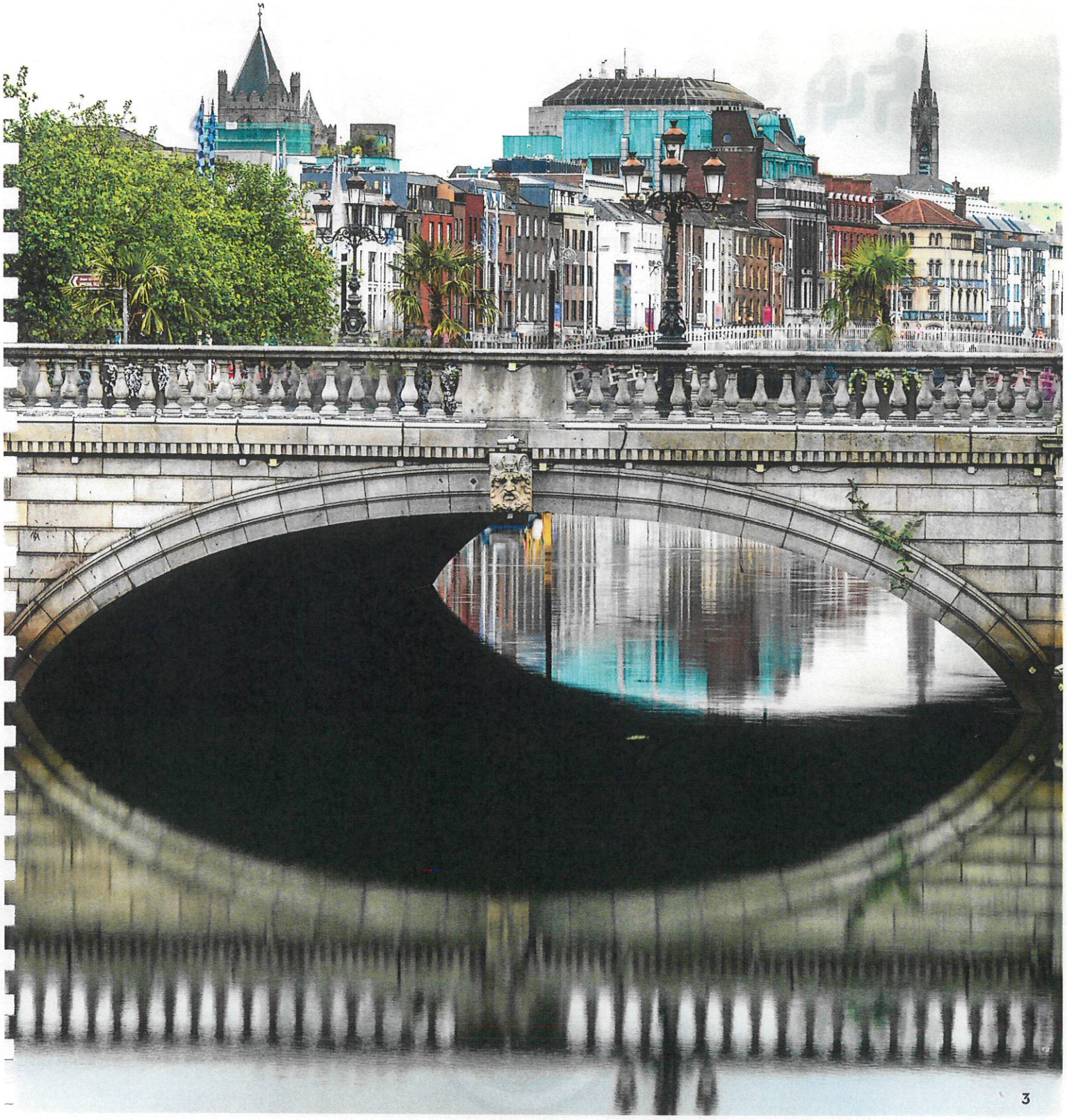


METROLINK

Key Facts

LINKING

Dublin Airport ⇄ Iarnród Éireann ⇄ DART ⇄ Luas ⇄ BusConnects

PASSENGERS

Cater for **20,000** passengers per direction per hour

Carry up to **50 million** passengers per annum

JOURNEY TIME & DISTANCE

19 kilometre route connecting Swords, Dublin Airport, city centre and Charlemont

20 minutes
travel time from city centre to Dublin Airport

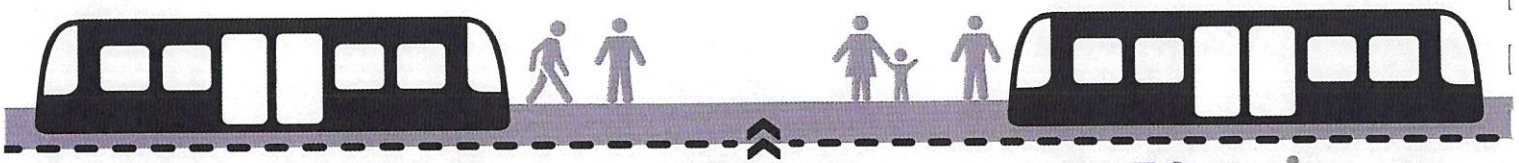
25 minutes
from city centre to Swords

3,000
car spaces at Estuary Park & Ride

4,000
jobs during construction phase

Helping Ireland meet climate change targets

STATIONS & VEHICLES



« 60+ metres »
vehicle length

15 new
Metro stations

« 30 trains »
per hour in each direction

Passenger Services to commence in **2027**

1. Introduction

Welcome to MetroLink

Last year, the National Transport Authority and Transport Infrastructure Ireland published the Emerging Preferred Route for a north-south, high-frequency metro line linking Swords, Dublin Airport, Irish Rail, DART, Dublin Bus and Luas services, creating fully integrated public transport in the Greater Dublin area.

This proposal was the merger of two projects, Metro North and Metro South, which have been proposed for over two decades. They were included in the Transport Strategy for the Greater Dublin Area 2016–2035 developed by the National Transport Authority.

MetroLink, BusConnects and DART expansion are three major transport infrastructure projects included in Project Ireland 2040. Together they will enable the development of reliable, sustainable, affordable, integrated public transport that will support the economy, help Ireland meet its climate change targets and make Dublin a better place to live, work, shop or visit.

In March/April 2018, we asked for your views on the Emerging Preferred Route. We've listened and made significant changes to the MetroLink route which we hope will address your concerns and deliver a better project.

Now we are seeking your views on the Preferred Route.

Dublin Airport to city centre in 20 minutes

Linking Dublin Airport, Irish Rail, DART and Luas

3000 Park & Ride spaces

Helping Ireland meet its climate change targets

Cater for 20,000 passengers per direction per hour

2. The Emerging Preferred Route

2.1. Public Consultation

A public consultation took place from 22 March to 11 May 2018 along the full length of the route, including seven public events from Swords to Leopardstown.

Almost 8,000 submissions were received via phone, email, post and comment cards.

Many submissions expressed support for MetroLink particularly from Fingal where people have been waiting a long time for this key service.

> "This infrastructure project is of strategic importance for the development of our city. As the success of our national economy is so dependent on the success of Dublin it is also vital to the wider community"
> - Stakeholder submission

The issue that attracted most submissions (67 per cent) was the proposed acquisition of lands at CLG Na Fianna on St Mobhi Road for use as the launch site for the tunnel boring machine at the Griffith Park station.

> "CLG Na Fianna is one of the largest Gaelic sports and cultural centres in Ireland. With almost 4000 active and registered members and a wider associated community of many more, disruption to the activities would have an enormous and long lasting negative impact"
> - Stakeholder submission

The second biggest issue was the construction impact on Our Lady of Victories Church and Boys' National School at Collins Avenue.

Another area of concern was the proposed road closure at Dunville Avenue due to segregation of the upgraded Green Luas line.

> "The permanent closure of Dunville Avenue to Beechwood would create huge hardship for local traffic and residents. It would be very obstructive to normal activities"
> - Stakeholder submission

Other submissions focused on disruption during construction at several sites, the elevation of the line near Swords, queries about tunnelling and access for cyclists.

> "The project's planning must be made cycling friendly for people who will use MetroLink and those who live or work or commute past stations."
> - Stakeholder submission

When the consultation period ended concerns continued to be expressed about the impacts of the proposal to upgrade the Green Line to metro standard. While concerns initially focused on community segregation, the emphasis shifted to the issue of line-closure during construction.

"Green Line shut for up to 2 years causing commuter chaos – 45,000 daily commuters will lose the Luas service for between 9 and 24 months during construction"
- ReThinkmetrolink.ie

Concerns were also raised by residents in College Gate, an apartment block located directly over the proposed MetroLink Tara station. This building also houses the Dublin City Council Sports and Fitness Markievicz centre. The Emerging Preferred Route proposed acquiring and demolishing the building. We received a detailed submission from residents who commented on:

"...the severe impact on College Gate apartments to build on a small percentage of the site. An alternative location for the station is proposed that we feel would be more suitable for the station at Tara Street."
- Resident, College Gate

Along with the concerns raised, we indicated that a number of significant design decisions remained under consideration. These included:

- Tunnel type: twin or single bore tunnel.
- Depot location and crossing the M50.
- Elevation of the metro line along the R132.

Every issue, whether from a large group or individual was studied by the relevant teams and where possible, alternatives researched to mitigate the concerns.

The National Transport Authority and Transport Infrastructure Ireland together with the engineering designers Jacobs Idom have carefully analysed and reviewed every aspect of the design.

The full consultation report detailing the public feedback on the Emerging Preferred Route is available on **metrolink.ie**

2.2. Preferred Route

At MetroLink we take seriously our obligations under the Aarhus Convention to facilitate public participation in decision making on major public infrastructure projects. This document is a comprehensive explanation of what we propose to do and why.

It lays out in detail our response to the public consultation on the Emerging Preferred Route; how this has affected technical proposals for the project; where we've been able to respond to feedback; where we haven't and if so, why.

We are now seeking feedback on the Preferred Route. Your views are important to us. When you learn about the new route, please go to **metrolink.ie** to share your thoughts.

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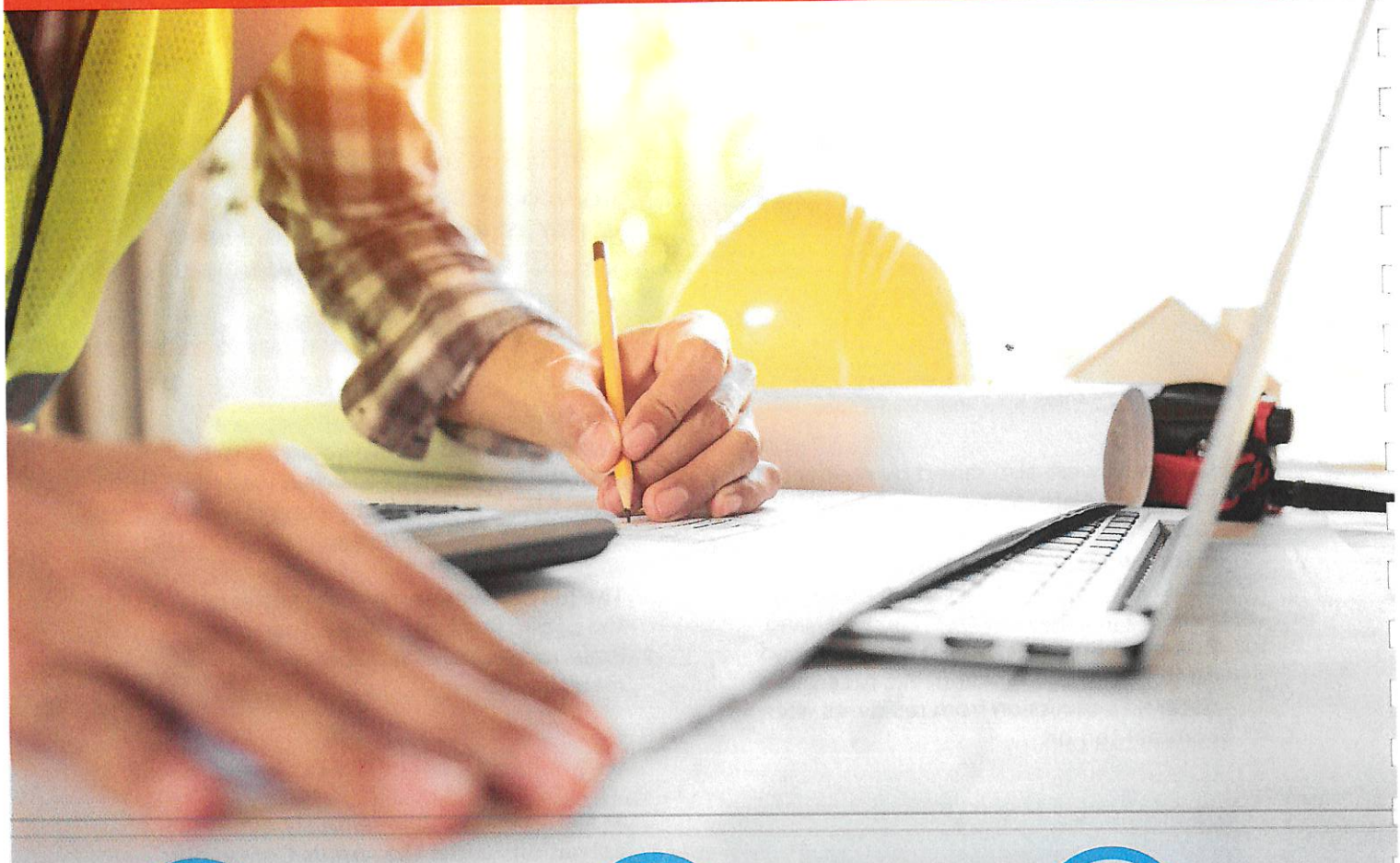
Project Schedule



Q4 2017

Alignment Options Study - Identification of Emerging Preferred Route

Q1 2018

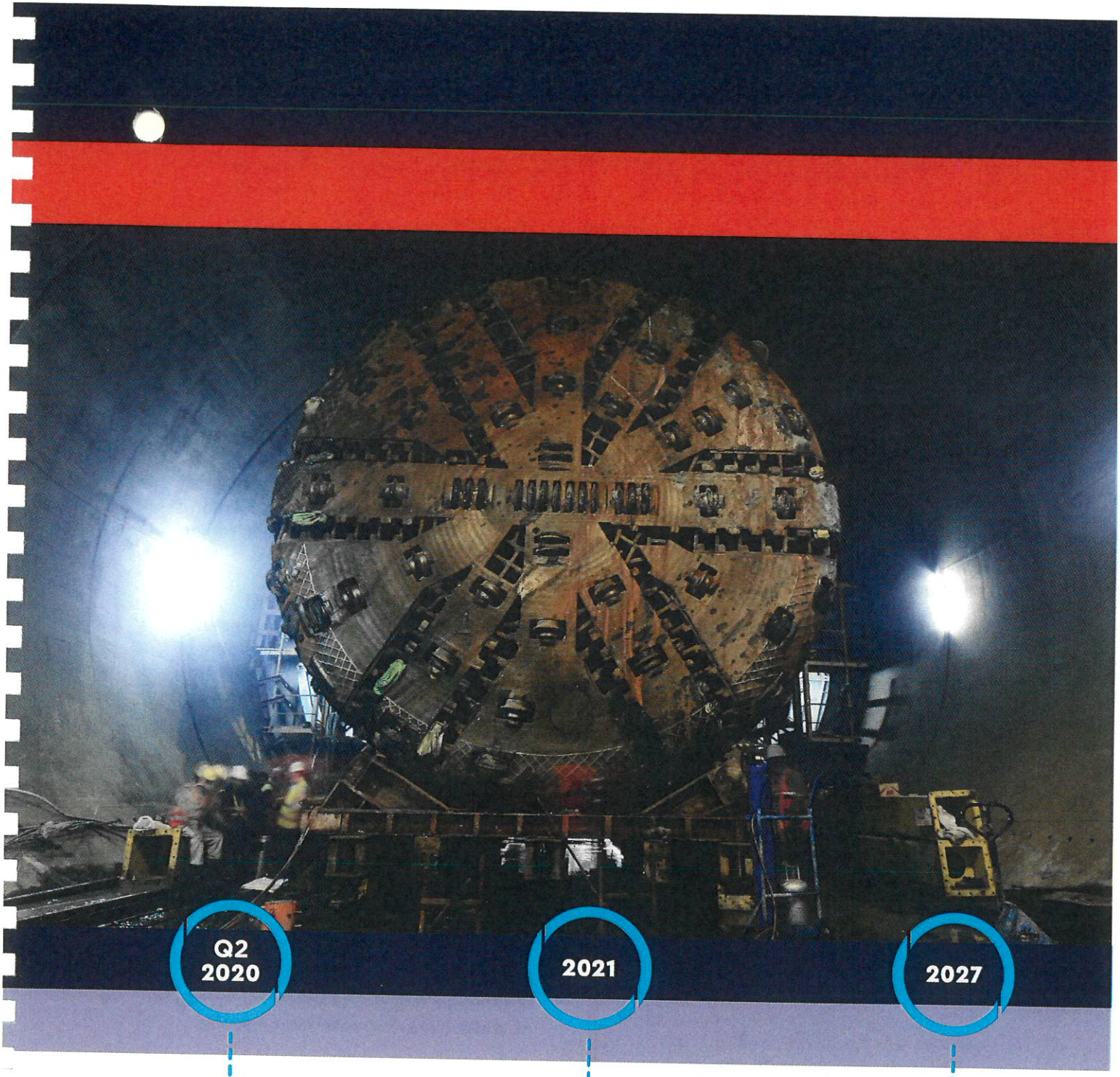
Emerging Preferred Route Public Consultation

Q1 2019

Preferred Route Public Consultation

OBJECTIVE:

To provide a safe, high-frequency, high-capacity, fast, efficient and sustainable public transport service linking Swords, Dublin Airport, Irish Rail, DART, Luas, Dublin Bus and the city centre.



Q2 2020

Railway Order Application to An Bord Pleanála

2021

An Bord Pleanála Decision (Anticipated)

2027

MetroLink operational **2027**

3. Transport Strategy for the Greater Dublin Area

3.1. Transport and Cities

More than half the world lives in cities and by 2030 that will increase to 60 per cent. Ireland is no different.

Cities have always been shaped by transport. Most of our cities were founded where rivers met the seas, and later, canals and railways became the foundations on which cities flourished.

In the 20th century the car changed the shape of cities by enabling urban sprawl. This has many consequences. It allows people more space to live. That feels good but as individuals and a society we pay a price for that, including:

- Long commutes.
- Costly provision of public services.
- Climate change impacts due to carbon emissions from fuel.
- Health impacts – people who rely on cars walk less than those who use public transport.
- Ability to find employment – if you can't get to a job, it's harder to find a job.
- Difficulty accessing health services and education, especially for low income groups.

This power of transportation to shape how we live and where we live is one of the pillars of Project Ireland 2040. The National Planning Framework projects a 20 to 25 per cent growth in population in Dublin by 2040, resulting in a total population of about 1.4 million for the Dublin region alone.[1]

The Framework sets out national goals to provide the housing we need through compact urban development and sustainable mobility – especially in Dublin, our principal economic driver. Dublin desperately needs housing and the imperative is to provide that housing within the existing urban footprint.

The Framework notes that while Ireland ranks within the top twenty countries in the world in areas such as quality of life[2] and environmental performance,[3] Dublin is outside the top thirty cities in the world for liveability.[4]

Current and future residents must have environmentally sustainable public transport to make living in Dublin more liveable.

1. National Planning Framework p29
2. Economic Intelligence Unit 2013
3. Environmental Performance Index 2014
4. Mercer Index 2017 and 2018

3.2. Transport Strategy for the Greater Dublin Area 2016–2035

The age of the car has changed many aspects of our society, but we've reached a point where there are critical levels of congestion on the roads, especially on key routes like the M50 where high value economic trips such as transporting food and other goods are at risk from commuting traffic. Over 70 per cent of all trips in the Greater Dublin Area are made by car.[5] Relieving traffic congestion is a critical consideration for our whole society.

To address these issues, the National Transport Authority developed the Transport Strategy for the Greater Dublin Area 2016–2035. This sets the framework for transport development across the wider Dublin area for the next twenty years.

The Strategy concludes that:

- A significant increase in public transport is required.
- A safe cycling network is badly needed.
- All day travel demand from all groups in society must be considered.
- The road network in Dublin has reached capacity and there is limited scope to expand it.
- Most importantly, Ireland is required to decarbonise its transport sector radically. Public transport consumes significantly less energy per passenger km than cars.

Experience has shown that the best way to get people out of cars is to provide attractive, affordable and reliable public transport, but across the world public transport has historically suffered under-investment.

The strategy proposes three major infrastructure projects:

- MetroLink;
- BusConnects; and
- DART expansion.

5. Transport Strategy for the Greater Dublin Area 2016-2035 Chapter 3

3.3. Integrated Transport

The purpose of the National Development Plan is to ensure that public investment is targeted towards projects that will fulfill the objectives of the National Planning Framework.

With housing and transport so inextricably linked, the National Development Plan is directing investment towards large scale public transport infrastructure.

Public transport functions best when it's properly integrated. Different modes should complement each other – not compete. A "silo" approach where each type of transport is treated separately isn't sufficiently useful or attractive to get people out of cars.

Park and ride enables commuters to access public transport; buses connect with rail; and different rail lines like DART, Intercity, Luas and MetroLink interconnect with each other. When people can change from one mode of transport to another seamlessly, with timetables and ticketing fully integrated, we open up public transport to all sectors of society.

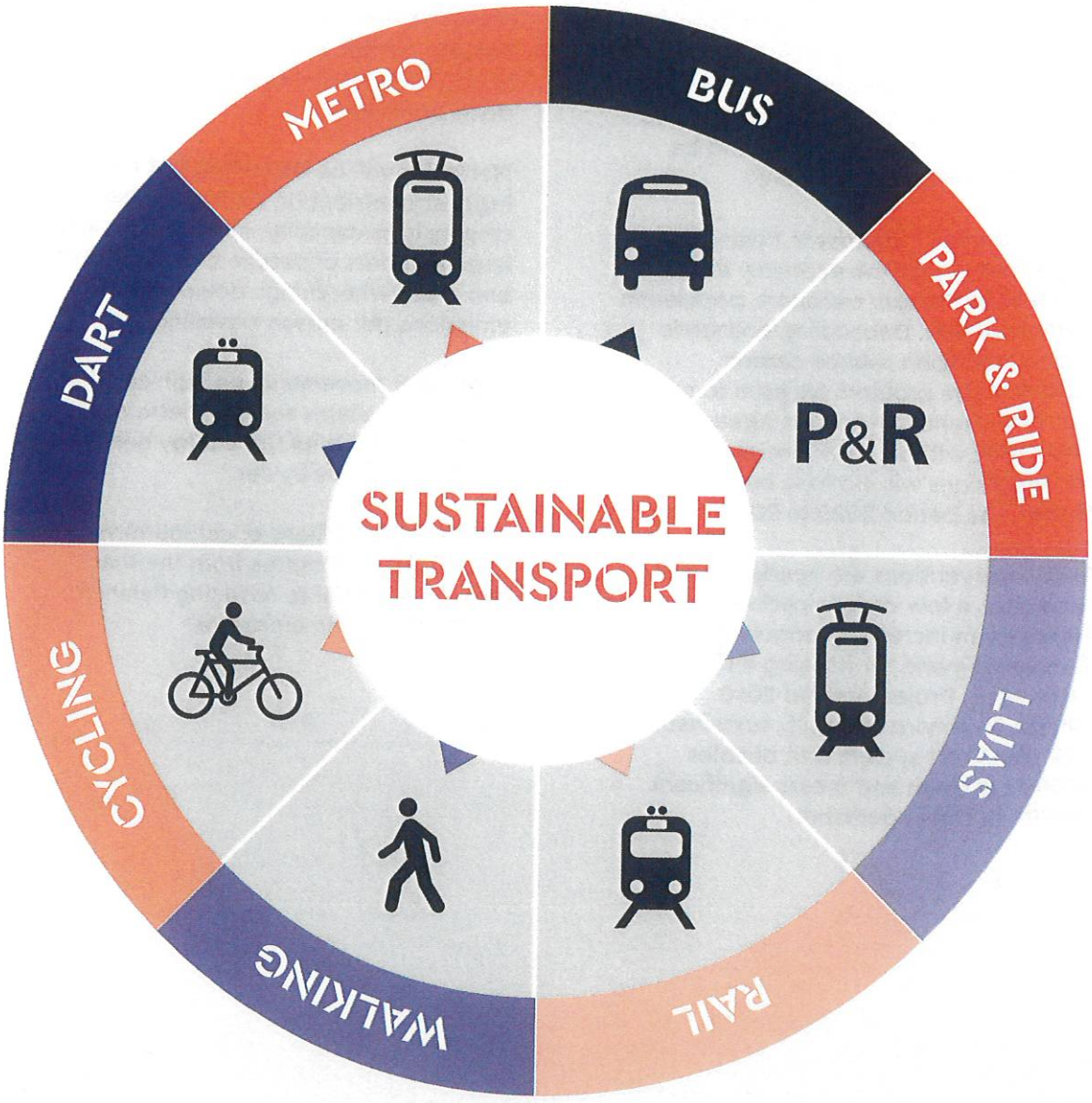
This principle of integration and accessibility is a key driver of the MetroLink route.

That's why our alignment is taking advantage of the opportunity to integrate with other major transport hubs – not just Dublin Airport. MetroLink will connect with two major Iarnród Éireann lines; the north-western line from Sligo/Maynooth to Dublin, and the south-western commuter line from Newbridge/Hazelhatch to Grand Canal Dock. These converge at Whitworth Road near Glasnevin.

MetroLink will also connect with DART and Iarnród Éireann services at Tara Street and Luas at Charlemont, O'Connell Street, and St Stephen's Green.

BusConnects is being designed to create convenient interchanges along the entire MetroLink route. This integration of public transport is the key strategy behind MetroLink.

Integrated Transport. Integrated Life.



3.4. Climate Change Targets

The transport sector has been the fastest growing source of Ireland's greenhouse gas emissions. Between 1990 and 2016, transport emissions increased by 139.3 per cent with road transport increasing by 145 per cent.[6]

Nearly 20 per cent of Ireland's greenhouse gas emissions come from transport and it accounts for the largest share of energy use.[7] The European Commission's Strategy for Low-Emission Mobility (July 2016) states that "by mid-century, greenhouse gas emissions from transport will need to be 60 per cent lower than 1990 and be firmly on the path towards zero".

Transport demand and use in Ireland is strongly linked with the economy and in the case of passenger transport, population and employment. Decoupling economic gain from transport related carbon emissions is the problem we have to solve. The Environmental Protection Agency projects that without intervention transport sector emissions will increase by 11.3 per cent over the period 2020 to 2035.[8]

Radical interventions are needed to shift Ireland onto a low carbon pathway as it manages an increasing population and more demand for housing and employment. Project Ireland 2040 proposes an environmentally sustainable public transport system that enables economic growth and meets significant increases in travel demand.

The plan focuses on a decisive shift away from polluting and carbon-intensive systems and investment in public transport in Dublin including MetroLink, DART expansion, and BusConnects. This expansion of attractive and sustainable public transport alternatives to private based car transport will reduce congestion and emissions.

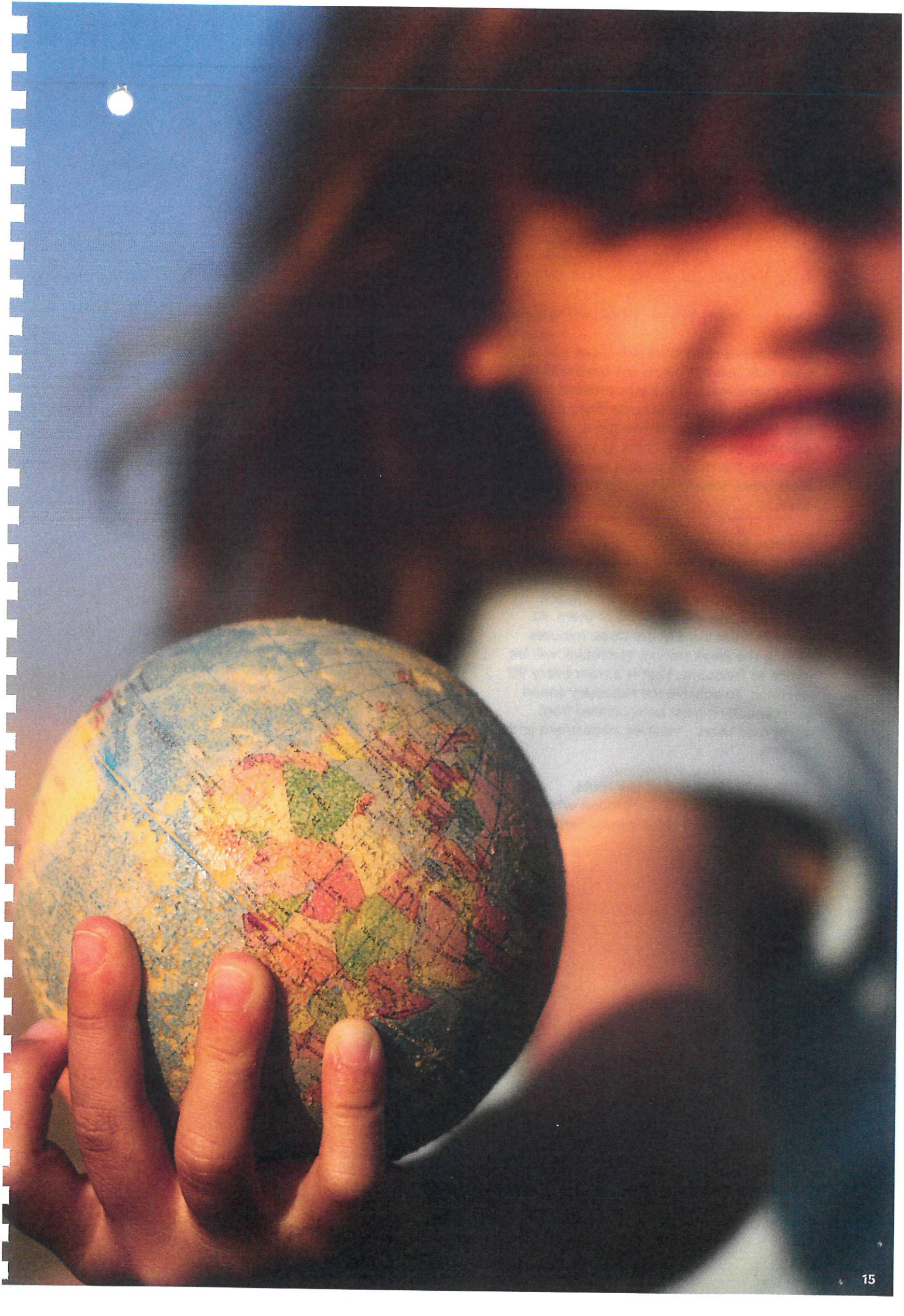
MetroLink also features in the National Mitigation Plan[9] as an important measure to set transport on a path way to decarbonisation.

MetroLink will be electrified, but its biggest contribution to climate change targets is its capacity: a metro can carry large numbers of people on a daily basis and that's what brings down carbon emissions per person travelling.

Passenger movements on high capacity urban rail systems such as metro require less than a tenth of the energy needed to move individuals by car.

By removing millions of car journeys and vehicle kilometres from the road, MetroLink is vital to reducing Ireland's transport carbon emissions.

6. EPA Ireland's Final Greenhouse Gas Emissions 1990–2016
7. SEAI Energy in Transport 2014
8. EPA Ireland's Greenhouse Gas Emissions Projections: 2016–2035
9. National Mitigation Plan 2017



4. Why do we need MetroLink?

4.1. What is a metro?

There are many kinds of urban rail systems.

In Dublin we're familiar with Luas – a tram that can run along the road with other vehicles and is easily crossed by pedestrians and cyclists. Its integration into the road network has great advantages but also limits its speed and capacity. Trams get caught in traffic and must travel slowly to be safe to other road users.

A metro is something quite different. When large numbers of people need to move around, you need more trains, more often. MetroLink trains will be bigger, faster and there'll be more of them. At present, Luas runs every three minutes during the peak period. MetroLink will be twice as frequent. That is a train every 90 seconds. To achieve the necessary speed and capacity it must be separated from other road users – vehicles, pedestrians and cyclists.

That's why for most of the route, MetroLink will run underground where it can achieve all of this independently of the road network.

4.2. Why does Dublin need MetroLink?

4.2.1. Future Demand & Capacity

As outlined in Section 3.1 the population of Dublin is projected to increase to 1.4 million by 2040. In terms of employment, the city centre has maintained its position as the pre-eminent location for jobs and at the highest levels of intensity[10]. The trend is likely to continue. For example, technology companies like Google and Facebook are continuing to migrate to the Docklands area.

The level of employment is now at its highest level ever in the State. In the second half of 2018, the Central Statistics Office reported employment growth in the previous 24 consecutive quarters rising to 2,255,000 people in employment.[11] This is good news for the country and the people, but increases both the challenge and the imperative to get people to and from work in a reliable, affordable and sustainable manner.

10. Transport Strategy for the Greater Dublin Area 2016–2035 p30
11. CSO Labour Force Employment Series Q22018

4.2.2. Swords to the city centre

Fingal is the fastest growing region in Ireland. Its population increased by 8 per cent between Census 2011 and Census 2016, more than twice that of the State overall.[12]

Dublin Airport, as Ireland's main international gateway, handled a record-breaking 31.5 million passengers in 2018. Dublin Airport supports 117,300 jobs in the Irish economy, and 19,200 of these are employed directly at the airport and its environs. Yet there is no rail connection to get either passengers or employees to our biggest transport hub.

According to the 2016 Census, Fingal is the top county from which workers flow into Dublin city. Nearly 8,000 of the 20,000 workers in Swords commute to work there.[13] Cars are used for 72 per cent of all trips in this sector of the city and public transport's share of trips is only 12 per cent, mostly concentrated on the coastal DART line.

In addition, there is significant population and employment growth planned for this corridor.

The Fingal North Dublin Transport Study 2015 considered several alternatives to serve this corridor. Under BusConnects this route will be upgraded to a core radial corridor with improved dedicated bus and cycle lanes. This will result in a greatly improved bus service.

However, the transport study noted that even if we managed to implement the highest capacity bus system, Bus Rapid Transit, its maximum capacity is 4,500 passengers per direction per hour. This doesn't meet the expected demand and so a north-south metro is needed.

The proposed new alignment creates integration and connectivity between other transport hubs, such as Dublin Airport, Iarnród Éireann and DART.

12. Census 2016 Population Change and Historical Perspective p11
13. Census of Population 2016 – Profile 6 Commuting in Ireland

5. MetroLink Design Concept Development

5.1. Overview

Following the first consultation we reviewed the entire design of the route. Some issues affect the entire scheme. Others affect specific stations. In this chapter we discuss some of the issues affecting the fundamental design of the scheme and then in Chapter 7 we lay out the full Preferred Route.

The main issues affecting the overall design are automating MetroLink, tunnel type and the arrangements in relation to the Green Line upgrade. The Preferred Route Design Development Report, analysing the engineering options at key points, is available at metrolink.ie

Benefits of Automated Trains

Safety
Flexibility
Reliability

5.2. Automated Trains

Since MetroLink will be segregated from all other traffic, including pedestrians and cyclists, we have a great opportunity to make it a driverless system. Other train lines are adapting automation into their existing systems which is challenging. MetroLink has a significant advantage as we can design for automation from the start.

MetroLink will model itself on the Copenhagen Metro and the fully automated lines on the Barcelona Metro, which utilise proven automated train control systems.

The trains are supervised from a control centre run by operational, security and safety staff who can monitor every carriage, station and platform through CCTV and communicate with passengers by public address. Passengers can contact controllers directly from their carriage.

Since operators no longer need to work in isolation driving the train, the entire focus of staff switches to passengers' needs. With technology doing so much of the work, train staff become customer-facing, which improves the experience for customers.

Automated systems are extremely safe as the capacity for human error is eliminated and advanced signalling technology improves safety. The platform edge is blocked by screens to prevent anyone falling onto the tracks. When the metro has fully stopped, the train doors line up with screen doors and they open simultaneously so passengers can board the train safely. Then they close together, and the train moves off.

Timetables are both more flexible and reliable as trains can adapt to changing circumstances quickly. Choosing automation also fed into the decision on tunnel types, which will be discussed in the next section.

5.3. Tunnel Types

The underground section of MetroLink is constructed by two separate methods. The stations are constructed using the "cut-and-cover" method – excavating the site from ground level and covering it up again.

The tunnels between stations are bored using Tunnel Boring Machines. At the time of the first consultation, we were reviewing the options on tunnel configuration.

There were two options. Our initial proposal was to bore two separate tunnels (twin bore) each with their own track, one for northbound trains and one for southbound trains. We were also exploring the option to bore a single larger tunnel with the two tracks – north and south – laid side by side.

Based on further research, we've decided to proceed with the single bore tunnel. This decision has significant advantages across the entire scheme.

5.3.1. The Twin Bore Proposal

Originally, we proposed two tunnels constructed by four tunnel boring machines (TBMs). The first pair would be launched north of Dublin Airport, and bore two tunnels southwards to the route's half way point at the playing fields of CLG Na Fianna and Home Farm FC on St Mobhi Road in Glasnevin, from where they would be extracted. This is also the point where the Griffith Park station is to be located.

At the same time, a second pair of TBMs would be launched from the CLG Na Fianna site and tunnel southwards to Charlemont from where they would be extracted. The tunnel would rise out of the ground here to come up to the level of the Green Line.

This meant there would be an extensive construction site on the CLG Na Fianna/ Home Farm FC grounds for up to seven years. This would have impacted on the community in two ways. First, the locality would lose vital sports and social amenities for an extended period of time. Second, there would be significant HGV traffic carrying the extracted material from the tunnels at Glasnevin. While this would be managed it would, nevertheless, have had a significant impact on traffic in a residential city area.

Similarly, there would be major works at the Charlemont end of the route where the tunnel would rise of out of the ground to meet and connect to the Green Line.

5.3.2. The Single Bore Proposal

The single bore tunnel vastly reduces the scale of works and the impact on the city. Under the Preferred Route, we propose to bore the tunnel in two phases.

A TBM will enter the ground south of Dublin Airport and bore a short tunnel northwards under the airport. Then it will be extracted and relaunched at Northwood and tunnel the whole way to Charlemont.

The new launch site at Northwood is further out of the city and nearer to the M50, so this takes much of the HGV activity out of the city. The southern launch site for the Dublin Airport section is also nearer the M50. The trucks carrying the excavated material will have a shorter distance to travel to disposal sites, which places a smaller burden on the roads and the environment.

The single bore tunnel eliminates many complexities of the twin bore making construction simpler and faster, which reduces costs. Reducing the number of TBMs offers the potential for savings.

In addition, in a twin bore tunnel cross-passages are constructed between the tunnels to allow for evacuations in an emergency. But these have to be mined manually after the boring and no work can start on the tracks until they are completed. This slows down construction.

Advantages Single Bore

- Reduces number of TBMs
- CLG Na Fianna no longer launch and extraction site
- Construction simplified
- HGV traffic shifted closer to M50

5.4. Safety in a Single Bore Tunnel

Although twin bore tunnels have traditionally been the norm, internationally the trend is moving towards developing metro projects using a single bore arrangement. From a safety perspective, twin bores offered an obvious evacuation strategy in case of an incident or emergency in the tunnel. However, the move to automated trains has created opportunities to address this issue and offer comparable levels of safety.

- Passenger evacuation

If an emergency causes the train to stop between stations, passengers need to evacuate. In a twin bore tunnel with non-automated trains they exit via the carriage doors onto a narrow side platform or shelf. They proceed to one of the cross-passages that connect the twin tunnels at intervals. Since passengers exit the train quicker than they can move down the platform, sometimes this can lead to overcrowding on the narrow walkways.

The move to automated trains offers new opportunities for evacuation that work well in a single bore tunnel. Since there is no driver cab, the front and back of the train is designed to open up and drop down as a ramp onto the track slab. Passengers can exit the train in an orderly manner and move away from the train quickly. This front-back evacuation from an automated train can be used in a twin bore tunnel too, but the space is narrower. In a single bore the extra space is useful. In addition, side evacuation from the train doors onto the vacant adjacent track can also be enabled.

In a twin bore, emergency services use the non-affected tunnel and connecting cross passages to access the train. In a single bore, the bigger tunnel allows them to get closer to the emergency area and have more space to operate.

ASD
212

5.5. The Green Line

The MetroLink proposals published in 2018 envisaged a metro service operating from Swords through the city centre to Sandyford. Between Sandyford and Charlemont the existing Luas Green Line would be upgraded to metro standard and the metro service would replace the existing Luas trams along this section.

The need to upgrade the Green Line arises from the expected passenger growth at key locations along this corridor – in particular, Cherrywood, Sandyford and Dundrum – and the planned extension of the line further southwards to Bray. Taking account of those developments, the number of people seeking to travel on the Green Line in future years will exceed the carrying capacity of the Luas system, requiring its upgrade to a metro service.

But the need to upgrade the Green Line to metro standard will not arise for some time – in the region of twenty years. However, many people are concerned about the need to close the Green Line now for a prolonged period to allow its conversion to a metro system.

We propose an alternative approach that allows the new section of metro line to be built now and the Green Line conversion to occur at an appropriate point in the future.

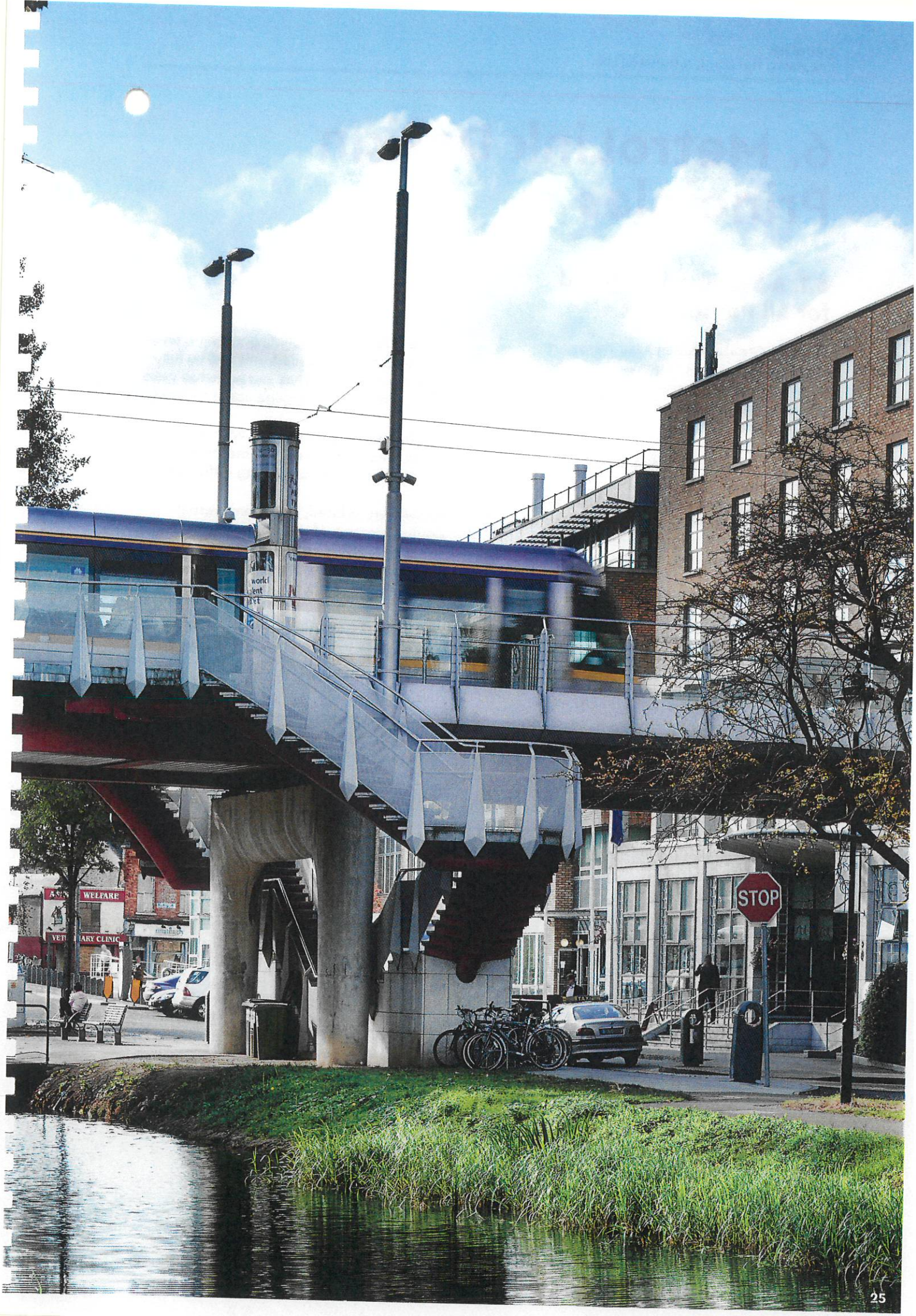
Under this arrangement the overall metro system from Swords to Sandyford would be delivered on a phased basis. The first phase – the current phase – would comprise the development of the section from Swords to Charlemont, without connecting to the Green Line. But, crucially, the required tunnel boring works to allow the future connection to the existing Luas line would be completed as part of this phase. While the last station would be Charlemont, the bored tunnel would continue to, and terminate south of Ranelagh, aligned to facilitate a future connection onto the Luas line.

A separate phase, potentially two decades from now, would see the connection made from the MetroLink tunnel termination point onto the Green Line. Because the tunnel boring works would have been completed as part of the first phase, the tie-in works would all be constructed from the surface and no bored tunnelling work would be required. All of the details regarding that tie-in and conversion of the existing line would be worked out at that future point and do not need to be developed now.

During the period between the completion of the metro from Swords to Charlemont and the ultimate tie-in to the Green Line at a point in the future, there will be a need to increase the carrying capacity of the Luas Green Line. This will be dealt with as a separate project and will deliver capacity enhancements on an incremental basis over this period.

The MetroLink project will now comprise the delivery of a metro system between Swords and Charlemont with a short tunnel continuation to Ranelagh facilitating a future tie-in to the Green Line. This tunnel extension south of Ranelagh will enable trains to cross-over between tracks and turn back for their return journeys in addition to allowing storage of trains for service commencement at the start of daily operations.

The Green Line route will remain open throughout the development of the route now proposed. When MetroLink is completed, Green Line passengers can connect with MetroLink at Charlemont, St Stephens Green and O'Connell Street for a fast service to Dublin Airport and Swords.


WELFARE
STOP

6. MetroLink Design Principles

6.1. A Service Designed for all Passengers

The NTA Greater Dublin Area Transport Strategy states that transport infrastructure and services must be inclusive for all by virtue of their design and layout.

Even with modifications in recent years, older forms of public transport that weren't designed with accessibility as a priority often provide challenges to some passengers with reduced mobility or sensory impairments.

MetroLink will incorporate universal design from inception with "accessibility for all" at the core of the project.

The entire system, including stations, level-boarding trains and platforms will be fully accessible for wheelchair and pushchair users. This will also make luggage easier to handle.

The trains will be equipped with audio and visual 'next stop' announcements to assist people with visual or hearing difficulties.

All written, printed, online and verbal communication of travel information and other news to the public will be produced in a clear, legible and easily understood manner using plain language.

The screens protecting the platform edge prevent falls onto the tracks bringing extra safety.

6.2. Cycling and walking

A key objective of the Greater Dublin Area Transport Strategy is to increase the share of cycling as a form of transport. MetroLink is part of an integrated strategy to provide sustainable mobility. A number of detailed submissions were received with regard to how MetroLink can improve integration with cycling.

In response to those submissions and in line with the National Cycle Policy Framework we intend to ensure that cycling arrangements are appropriately considered during the design of MetroLink. This will include items such as covered bike parking, which we will include at stations wherever feasible.

In addition, underpasses and footbridges will be designed so that they are easily accessible to bikes. As we develop proposals around each particular station and associated traffic management and control, we will ensure that cycle safety is a key consideration.

In accordance with the Transport Strategy, MetroLink will ensure that where feasible permeability and accessibility of public transport stops and stations for local communities is maintained and enhanced.

6.3. Station Design

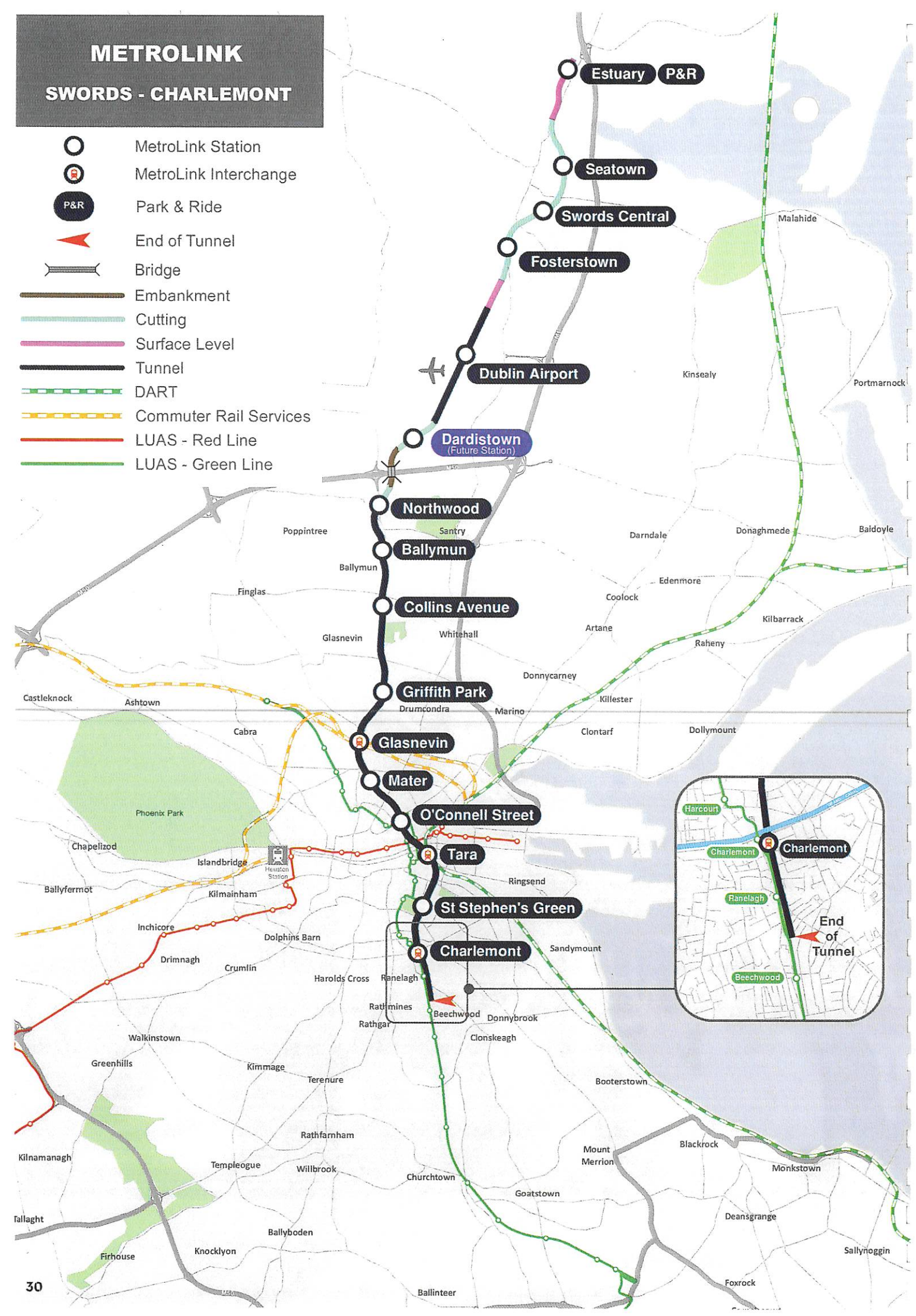
The station locations have been chosen to make them accessible to the greatest number of people, both from their homes and places of work. The architecture of the stations is important as this is the space passengers will experience most. The design concept for MetroLink stations has been developed by Grimshaw Architects and applied by Idom, the Spanish engineers who have designed metros all around the world including Barcelona.

As urban transport systems have evolved so too has station design, especially at ground level where we expect something more than mere access to an escalator. Modern stations are expected to interact with the urban environment and increase rather than decrease the value of the public space. These may change as the design develops but show where we are right now in the process.

Our design vision has the following goals;

- **People focused**
  the stations should be inclusive, accessible, and enjoyable to use by all passengers.
- **Safe and secure**
  there should be clear lines of sight with few corners, so people can see who and what is coming towards them.
- **Efficiency**
  the stations need to provide elegant engineering solutions.
- **Legibility**
  navigation should be naturally intuitive; the space uncluttered and clear up-to-date information easily accessible.
- **Sense of place**
  the design should be appropriate to Dublin and provide context and character.
- **Timeless**
  the stations should be future-proofed and be easy to maintain and operate.
- **Sustainable**
  MetroLink will reduce traffic congestion, encourage regeneration where needed and operate along clean-thinking lines being low carbon where possible.
- **Value for money**
  MetroLink will leverage standardisation and economies of scale in station construction to achieve cost effectiveness.

1 St. Stephen's Green
2 St. Stephen's Green
3 St. Stephen's Green
1 min
4 mins
7 mins


METROLINK
SWORDS - CHARLEMONT
MetroLink Station
MetroLink Interchange
P&R
Park & Ride
End of Tunnel
Bridge
Embankment
Cutting
Surface Level
Tunnel
DART
Commuter Rail Services
LUAS - Red Line
LUAS - Green Line
Estuary
P&R
Seatown
Swords Central
Fosterstown
Dublin Airport
Dardistown
(Future Station)
Northwood
Ballymun
Collins Avenue
Griffith Park
Glasnevin
Mater
O'Connell Street
Tara
St Stephen's Green
Charlemont
Harcourt
Charlemont
Ranelagh
End of Tunnel
Beechwood
Malahide
Kinsealy
Portmarnock
Poppintree
Santry
Darndale
Donaghmede
Baldoyle
Ballymun
Finglas
Edenmore
Coolock
Kilbarrack
Artane
Whitehall
Glasnevin
Raheny
Donnycarney
Castleknock
Ashtown
Drumcondra
Marino
Killester
Cabra
Clontarf
Dollymount
Phoenix Park
Chapelizod
Islandbridge
Heuston Station
Ballyfermot
Kilmainham
Ringsend
Inchicore
Dolphins Barn
Sandymount
Drimnagh
Crumlin
Harolds Cross
Ranelagh
Rathmines
Rathgar
Beechwood
Donnybrook
Clonskeagh
Walkinstown
Greenhills
Kimmage
Terenure
Booterstown
Rathfarnham
Kilnamanagh
Templeogue
Willbrook
Churchtown
Mount Merrion
Blackrock
Monkstown
Goatstown
Deansgrange
Tallaght
Ballyboden
Firhouse
Knocklyon
Sallynoggin
Foxrock
Ballinteer
M50
30

7. The Preferred Route

Having reviewed the Emerging Preferred Route, all the concerns raised during the consultation and the major design decisions, we have now arrived at the Preferred Route. We've been able to respond in a meaningful way to most of the issues raised, some of which have been addressed in earlier chapters.

In this chapter we lay out the full Preferred Route. Maps and drawings of each station are in Appendix B.

The Preferred Route Design Development Report, analysing the engineering options at key points, is available at metrolink.ie

MetroLink will be a high-capacity, high-frequency rail line running from Swords to Charlemont, linking Dublin Airport, Irish Rail, DART, Dublin Bus and Luas services, creating fully integrated public transport in the Greater Dublin area.

As well as linking major transport hubs, MetroLink will connect key destinations including Swords, Ballymun, the Mater Hospital, the Rotunda, Dublin City University and Trinity College.

Much of the 19 kilometre route will run underground, an exciting innovation for Irish public transport.

MetroLink will carry up to 50 million passengers annually, cutting journey times from Swords to the city centre to 25 minutes. It will change the way we travel – and how we live.

7.1. Estuary Park-and-Ride

MetroLink begins at ground level at Estuary where a 3000-vehicle, multi-storey park-and-ride facility will be located. We're pulling the location of the station and park-and-ride site slightly south and west from the Emerging Preferred Route. This will minimise the impact on Lissenhall Bridge – a national monument – and it will lie south of the proposed Swords Western Ring Road.

7.2. R132

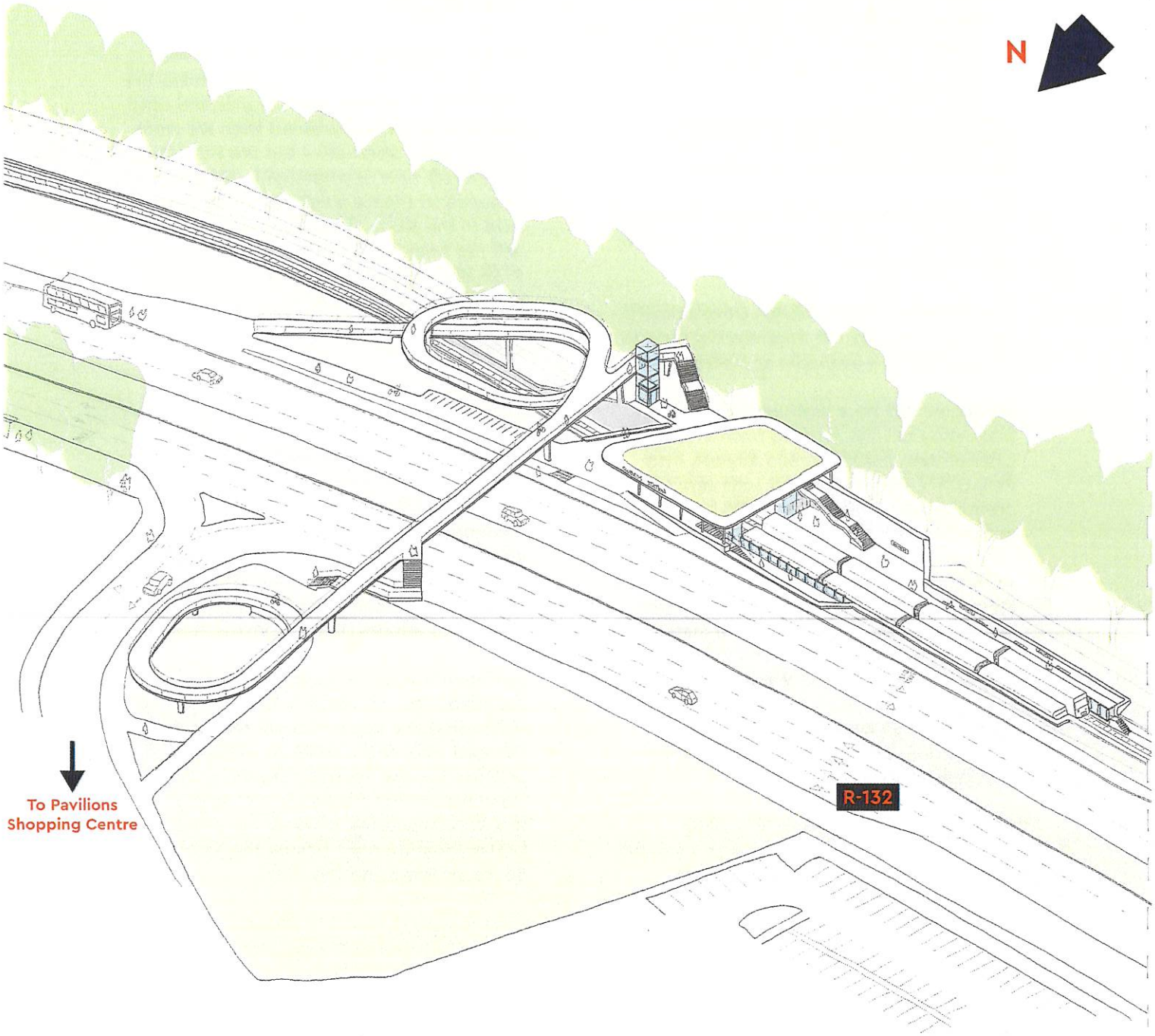
In the Emerging Preferred Route, it was proposed to elevate the rail line above the R132 from Seatown, past Swords and onto Fosterstown. We explained then we were exploring an alternative but are pursuing an entirely new arrangement. We now propose to create a cutting to the east side of the R132. This means MetroLink will run below the road level along the R132 alleviating concerns about its visual impact. The stations which were on the central median will all be moved to this side of the road.

7.3. Seatown

From the depot at Estuary, the route commences to the west side of the R132. The line is adjacent to the pitches at Balheary Park, similar to the proposal under the old Metro North route. We'll be consulting closely with the stakeholders here to mitigate any impacts, especially in relation to access during construction.

Between the Estuary and Seatown roundabouts, the route crosses under the R132 using the cut and cover method to the east side of the road. As explained in Section 7.2, the Seatown station is moving from the central median to the east of the R132 in cutting. It's now in a much better location right beside the junction of Seatown Road and the R132.

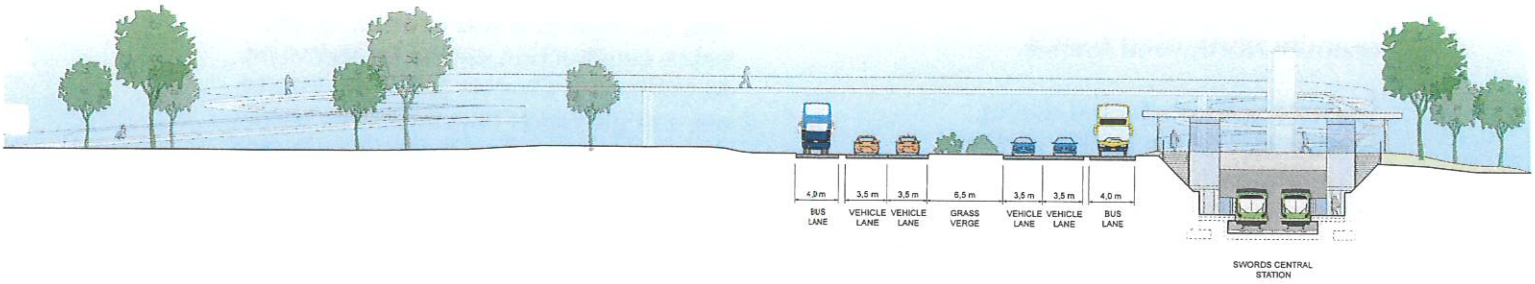
Swords Central Station



7.4. Swords Central

The proposed Swords station was previously located in the median of the R132, south of the Malahide Road roundabout – across the road from the Pavilions Shopping Centre. Now, it will move off the road to the east and a footbridge will provide better and safer connection to the shopping centre, bus stops and Swords town centre.

Swords Central Station Cutting



7.5. Fosterstown

The Fosterstown station was located just north of Airside Retail Park on the R132. It is moving south a little closer to the retail park. We'll construct a footbridge for pedestrians and cyclists so that people in the Boroimhe development will have easy access.

The line will continue to follow the R132 and go under the Nevinstown Lane junction. Then, just south of the Texaco station, it will go under the R132 to cross to the west side and continue on in cutting towards Dublin Airport. On the north side of the Naul Road, it will go into the tunnel that will take it under the airport.

7.6. Dublin Airport

There will be two sections of tunnel and the first of these is a short one under Dublin Airport under the proposed ground transportation hub located at what is now the T2 surface car park. We're developing the design of this station in consultation with the Dublin Airport Authority to minimise impact on the airport operation but maximise the benefits to passengers.

7.7. Dardistown and M50

The metro will rise out of the tunnel after Dublin Airport and the whole alignment from Dardistown to Ballymun has moved slightly to the west.

Estuary was originally proposed as the site of the main train depot, but we now consider that Dardistown is a more efficient location for managing train storage. The area has been zoned for employment in the Local Development Plan and we propose to build the station when it is further developed. The proposed alignment will impact on the grounds of Whitehall Rangers Football Club. We will work closely with the club to provide alternative pitches.

This change informed the decision on whether to go under or over the M50 at the R108 interchange as was discussed during the Emerging Preferred Route consultation. Now that Dardistown is the site of the depot and the trains will be on the surface, it makes more sense to cross over rather than under the M50.

7.8. Northwood

As explained in Chapter 5, the change from a twin to single bore tunnel affects Northwood. This will now be the launch site for the TBM that will bore southwards to Charlemont. This site was selected as there is sufficient land for the works and, being closer to the M50, reduces the travelling distance of HGVs removing material from the tunnel.

The Northwood station itself is moving slightly south. Under the Emerging Preferred Route, it was just north of the Gulliver's Retail Park Home Base outlet. The Preferred Route proposal is to pull it south of the retail park.

The station will now sit directly under the junction of the R108 and Northwood Avenue – the development entrance. This will allow passengers to access the station from either side of the R108 without having to cross a busy road. This is far more convenient, especially to those living opposite Northwood Avenue.

The R108 will be affected during construction of the station and we will arrange diversions around the site to maintain movement. We will liaise closely with the local community to mitigate issues concerning access and construction.

When construction of the tunnel is completed, the launch site will made available for a residential/employment development.

7.9. Ballymun

The Ballymun station is moving slightly. It will now lie adjacent to the R108 partly under the site of the old shopping centre, where plans are in place for a new mixed use quarter following demolition of the old centre. This will cause far less disruption during construction and we believe is a much better solution for Ballymun.

7.10. Collins Avenue

Concerns were raised about the impact of construction of this station particularly on Our Lady of Victories church, and the nearby Our Lady of Victories National School. We've considered these concerns and examined the constraints carefully. Unfortunately, we have limited options for realignment in the area due to the difficulty of diverting traffic.

However, we will ensure that all mitigation measures possible will be taken during construction of the station to minimise disruption. This will include careful site management, protection measures for the stained-glass windows of the church, maintaining access to the church and school and strict construction traffic management.

7.11. Griffith Park

Originally it was proposed that the CLG Na Fianna pitches on St Mobhi Road would be used for the launch and extraction site for the tunnel boring machines, which is why so much land was needed for the entire construction period for MetroLink. As outlined in Chapter 5, the decision to use a single rather than twin bore tunnel, means this site will no longer be a launch site for a TBM.

We consulted with the various stakeholders here and discussed options around the construction of the Griffith Park station itself. These included not building a station here at all, or locating it under either the Na Fianna or Home Farm FC pitches. With three schools and the sports facilities nearby, it's a great location for a metro station. Therefore, in consultation with Home Farm and in line with a more compact station design, we propose to construct it under the Home Farm FC soccer pitch. This means the pitch will be unavailable during construction but will be fully restored afterwards.

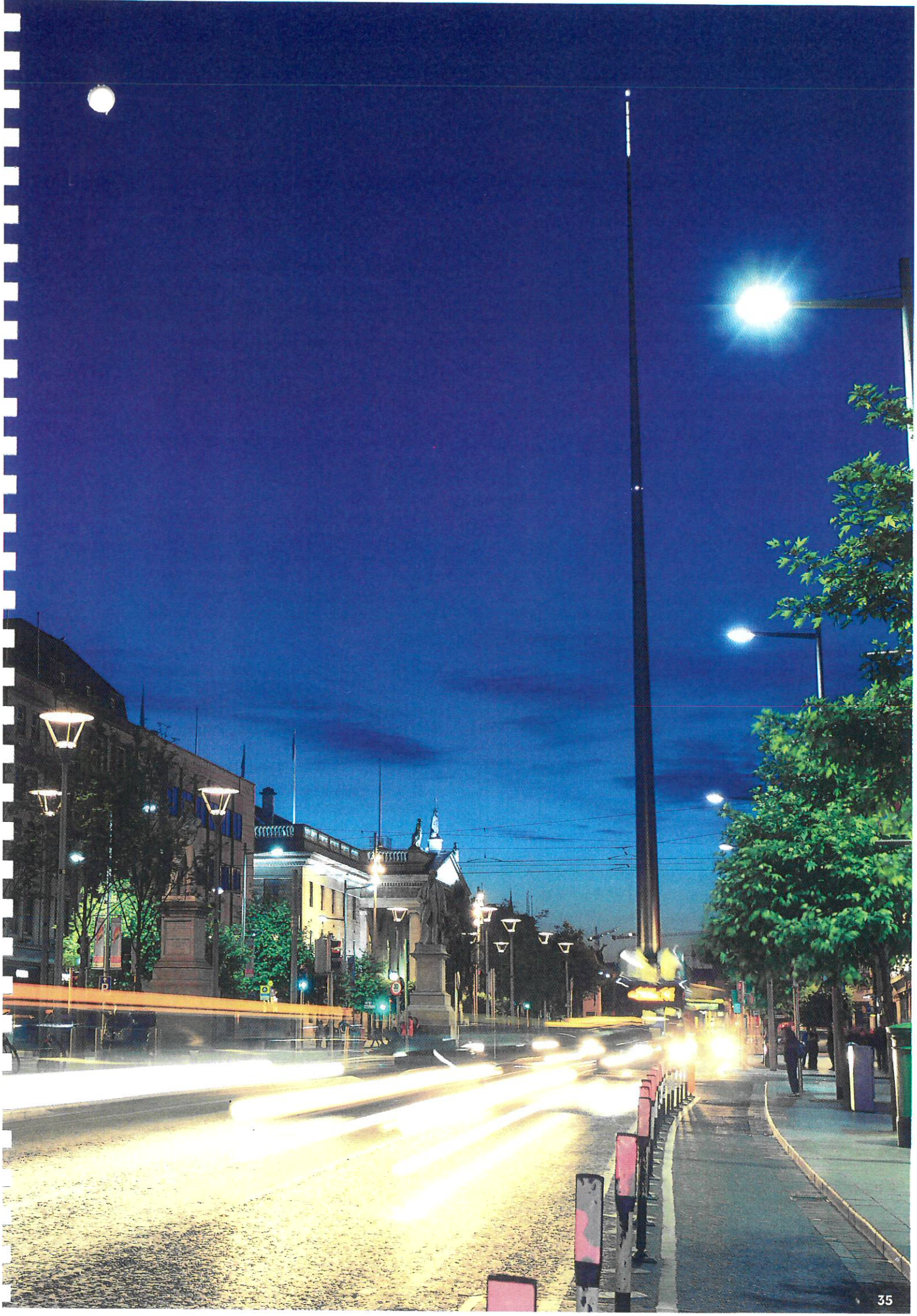
The decision to move the launch site significantly reduces truck movements. During station construction there will be strict traffic management and safe arrangements for pedestrians here.

An emergency intervention shaft for the tunnel, will be located in the grounds of Albert College Park.

7.12. Glasnevin

Glasnevin is a key station. This is where MetroLink will interchange with Iarnród Éireann where the north-western line from Sligo/Maynooth to Dublin, and the south-western commuter line from Newbridge/Hazelhatch to Grand Canal Dock converge at Whitworth Road increasing demand for both MetroLink and Iarnród Éireann services. The station location and design are changing slightly so we can avoid impacting the Court Apartment building at Dalcassian Downs.

The scope of the works has increased and is impacting on property to the west of the station. We will work with the local community on issues around construction and with Iarnród Éireann on the interconnection.



7.13. Mater

The Mater station will lie under the small park known as the Mater Plot or the Four Masters Park, which will provide convenient access to the Mater Hospital, St Joseph's Church, Berkeley Street and this north inner-city location. Prior to construction the architectural structures and sculptures will be carefully removed, preserved and restored on completion of the works. Access to the church will be maintained during construction.

This is a challenging site to construct as temporary road closures will be necessary. We will work closely with the local community to manage these. The detailed plans will be submitted as part of the railway order application.

7.14. O'Connell Street

The location and construction of this station in the original proposal would have presented a significant challenge to maintain services on the Luas cross-city line and vehicular traffic on O'Connell Street. An opportunity has arisen to create an integrated station off the street under what was the old Carlton cinema, which is being redeveloped. We are working with the owners of this site to integrate the station into the proposed development.

7.15. Tara

Tara is an important station as MetroLink will interconnect with DART and Iarnród Éireann services here, one of the major strategies behind the new alignment. The Emerging Preferred Route necessitated acquiring and demolishing the College Gate complex and the Sport and Fitness Markievicz centre owned by Dublin City Council. While the site would be available afterwards for new development, the loss of the current apartment block and valued public amenity is a serious impact.

As the financial and social costs here are so high, we've spent significant time and resources investigating alternatives.

These included:

- Locating the station under the Hawkins House development;
- Moving the station north such that it is predominantly located beneath Ashford House, Tara Street and buildings immediately north west of Tara Street;
- Moving the station south so that it is predominantly beneath Townsend Street and;
- Mining beneath College Gate so that the building need not be demolished.

While these options if implemented may save the College Gate building, each involved the demolition of other residential developments. One would require the full or partial closure of Tara Street to traffic and another requires the full or partial closure of Townsend Street and diversion of large sewers running beneath the station itself.

Mining under College Gate was considered in detail. However this would require moving everyone out of the building during construction for a period of up to two years. It adds significant risks and costs associated with mining to the project.

We have therefore reluctantly concluded that the original proposal remains the most feasible option for construction of the MetroLink station at Tara Street.

We realise this has a severe impact and will take whatever measures we can to mitigate the impact on the residents and users of the fitness centre. We propose to assist residential tenants to secure alternative accommodation and pay the costs of their new accommodation for up to one year. For owner-occupier apartments, we will provide assistance in locating and securing an alternative property, in addition to paying appropriate compensation. With regard to the Sport and Fitness Centre, we are consulting with Dublin City Council on a plan to build a replacement facility. We'll consult with all stakeholders here closely in the near future on these plans.

The full report on the study of these alternatives is on **metrolink.ie**

7.16. St Stephen's Green

This station will be located as previously proposed at St Stephen's Green East. We're moving the station back slightly from Merrion Row to allow Hume Street to remain open during construction easing the impact on traffic. We're also moving it further west under St Stephen's Green to avoid closing the road during construction and avoid a major sewer that would otherwise require diversion. We are consulting closely with Dublin City Council and the Office Of Public Works on this proposal.

7.17. Charlemont

As discussed in Section 5.3, the most significant change to the Emerging Preferred Route relates to the interface with the existing Green Line and Charlemont Station. In the original proposal, the tunnel emerged above ground just south of Charlemont and connected to the Green Line. This involved major works in the area of Charlemont and Ranelagh and would have involved the temporary closure of a section of the Green Line to enable these works.

Under the revised proposals, MetroLink will terminate at Charlemont and the connection to the Green Line will be postponed to a future date when passenger demand necessitates its provision.

Charlemont station will still be constructed by the cut-and-cover method but there will be no tunnel portal here. There will still be various temporary road closures required, and parts of some gardens will have to be temporarily acquired, but other property acquisitions proposed under the Emerging Preferred Route will not go ahead now.

7.18. After Charlemont

The TBM will continue boring for approximately 650 metres past Charlemont and will terminate underground south of the Ranelagh Luas stop. This terminating tunnel section will be used to construct cross-over arrangements so trains can cross lines and turn back in service, in addition to storing some out of service trains for more efficient operations commencement each day. Importantly, this final tunnel section will be aligned to enable its potential connection to the Green Line in the future.

8. Business Case

8.1. Our approach

MetroLink is categorised as a "mega-project". Mega-projects are defined as large-scale, complex ventures that typically cost €1 billion or more; take many years to develop and build; involve multiple public and private stakeholders; are transformational and bring benefits to many people. Also, mega-projects are usually "once-off" projects, making them challenging for designers and project leadership to forecast costs accurately. This happens across the private and public sector and around the world.

It is important before making a final decision to proceed with MetroLink that a robust cost forecast is developed. Cost forecasting for a one-off mega-project is a challenging process when taking risks and uncertainties into account. We must rely on valid and reliable data from past international projects. We will ensure that best practice is adopted for developing the final forecast cost ranges, rather than relying solely on conventional estimating methodologies.

The forecast of costs can only be established when the final arrangements for the project are sufficiently clear, and the design has been sufficiently advanced to allow a proper realistic assessment of the base costs.

8.2. International Expertise

In October of last year, TII commenced a collaboration with Professor Bent Flyvbjerg and Dr Alexander Budzier of Oxford Global Projects.

Professor Flyvbjerg is the BT Professor and Chair of Major Programme Management at the Oxford Said Business School. He is the most cited scholar in the world in megaproject management, and among the most cited in social science methodology. Dr Budzier is CEO of Oxford Global Projects and a researcher at the Oxford Said Business School. His area of specialisation is in major programme management.

Together they have authored or edited ten books and more than 200 papers in professional journals and edited volumes that have been translated into more than 20 languages. They serve as advisor and consultant to government and business, including the US and UK governments and several Fortune 500 companies. They have worked on some of the largest projects in the world, on all aspects from front-end planning, delivery, and rescue of failing projects.

With the assistance of Oxford Global Projects and access to its database of previous similar project outcomes, we will put in place a comprehensive approach to forecasting project costs. This will ensure that Government decision makers have the best cost forecast information available to them. When final decisions about the project need to be made, all of this information will be included in the overall business case.

8.3. The Business Case

Major projects require comprehensive business cases to be developed and approved before the plans proceed to implementation. A business case is a detailed document that sets out a rationale for the proposal, the basis of selecting the intended scheme, the benefits that would arise from its implementation, cost details for its implementation, risks associated with the scheme and various other details. For a major project in Ireland, there are two significant milestones in the business case process.

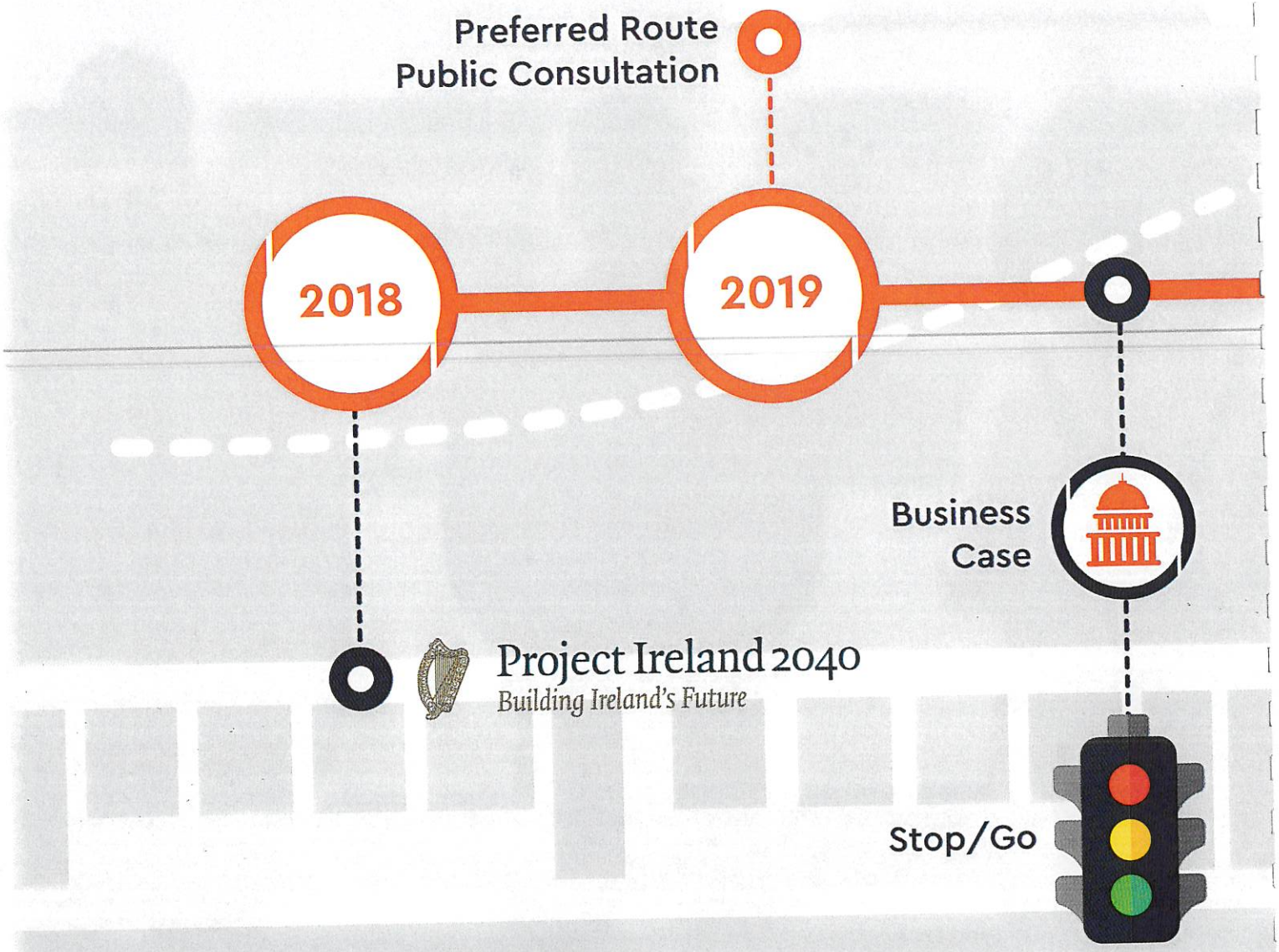
The first is when we submit a Business Case to Government for its consideration, prior to making the application for a Railway Order. The second stage occurs subsequent to the planning process, when the final scheme details are fully known. At that stage an updated Business Case is submitted for consideration by the Government in order to inform the final decision on progressing the project into the construction stage.

It is the intention of Transport Infrastructure Ireland and the National Transport Authority that each of these business cases will be published so that people will be able to review and assess the implications of the project.

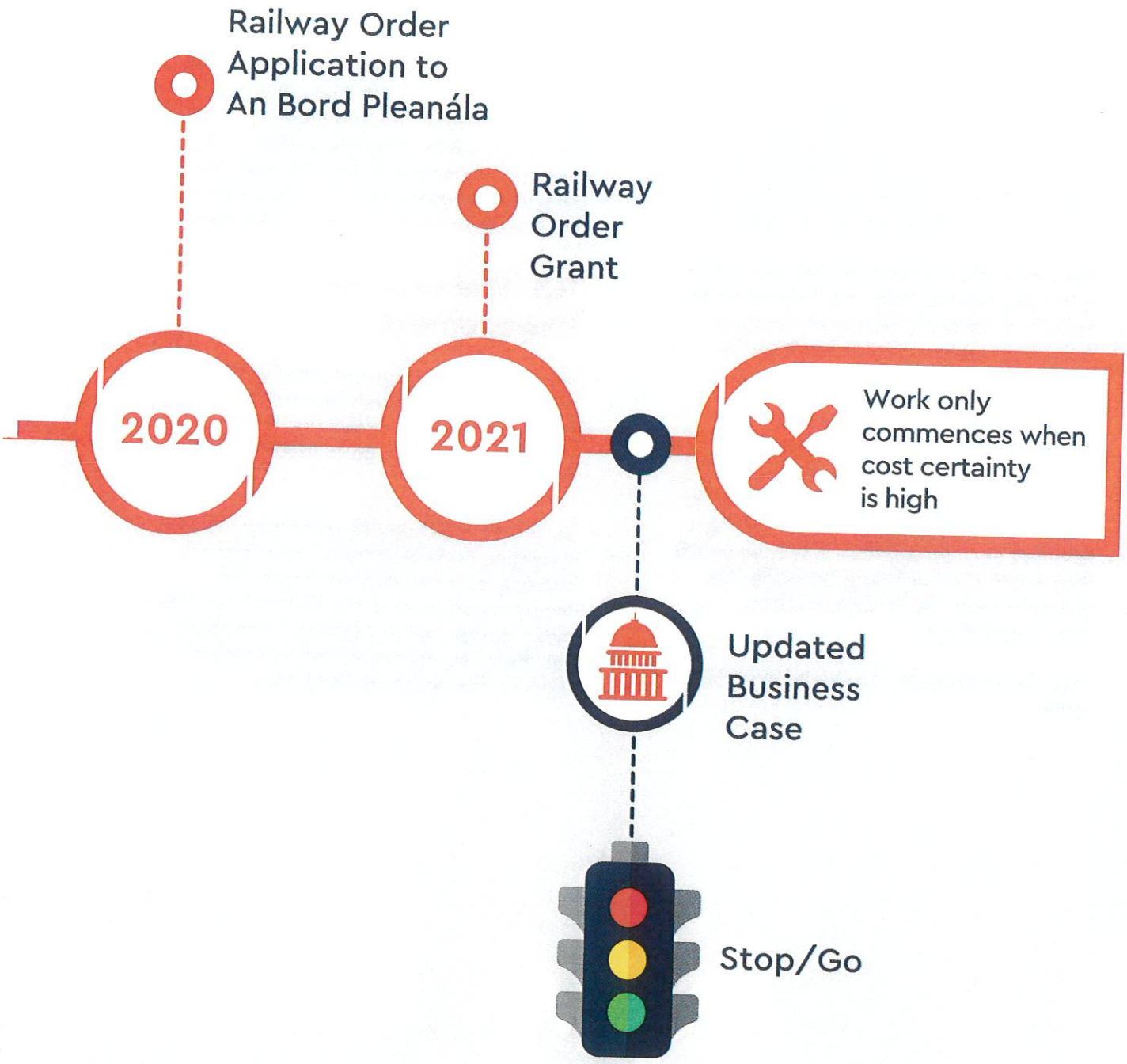
METROLINK

Decision To Build Process

Planning



Decision making process


Railway Order
Application to
An Bord Pleanála
Railway
Order
Grant
2020
2021
Work only
commences when
cost certainty
is high
Updated
Business
Case
Stop/Go

9. Next Steps

9.1. The Railway Order Process

Our application to An Bord Pleanála for a Railway Order is broadly similar to the planning process with which most people are familiar.

MetroLink is categorised as Strategic Infrastructure Development (SID) and so we apply directly to An Bord Pleanála for permission. The railway order application process is set out in the Transport (Railway Infrastructure) Act 2001 as amended by the Strategic Infrastructure Act 2006.

We expect that An Bord Pleanála will conduct a full oral hearing. At an oral hearing all the authors of relevant reports and experts will give evidence and be available for questioning.

Any person or body may make a submission or observation in writing to the Board in relation to the application and / or the Environmental Impact Assessment Report. Further information on making a submission / observation in writing to the Board and oral hearing procedures are available from the Board's website www.pleanala.ie

We expect to make the application during 2020.

9.2. Property Acquisition

MetroLink will require the acquisition of a number of residential and commercial properties and we are committed to ensuring that these are managed in a fair and equitable manner. We intend to engage with property owners at the earliest possible opportunity and if your property is affected by surface works you will already have heard from us. We know that this can be a stressful and prolonged process, so owners will be assigned a designated person from MetroLink who will keep you personally updated of current proposals and any changes as the design develops.

9.3. Stakeholder Engagement

We want to hear from you. Having read this document, if there's any aspect of the design or process that you have a comment on, please go to metrolink.ie and make a submission.

As you can see from the consultation on the Emerging Preferred Route, we've listened carefully to everyone's comments and incorporated much of the feedback into the latest design. Tell us what you think about the Preferred Route and we'll continue to work on the design development.

Here are the ways you can contact us:

1. Public Consultation Events
Members of the MetroLink team will be available to meet personally with you and discuss the proposals in more detail.

2. MetroLink.ie
The website has a detailed interactive GIS map of the route, a copy of this document and all the underlying reports. You can make a submission on the website and register to receive updates on the project.

- **Phone**
  1800 333 777
  Monday to Friday 8.30am-5.30pm
- **Email**
  info@metrolink.ie
- **Twitter**
  @metrolink_irl
- **Post**
  MetroLink
  Transport Infrastructure Ireland
  Parkgate Business Centre
  Parkgate Street
  Dublin 8
  D08 DK10

9.4. Information, Public Consultation Report and Data Protection

Having regard to the importance of the non-statutory public consultation process in the development of public infrastructure schemes, and in order to ensure that all interested parties can contribute freely to this process, the identities of parties who make submissions as part of the MetroLink non-statutory public consultation exercise will be viewed as confidential by TII/NTA, and treated as such.

All parties should be aware, however, that TII and NTA are subject to the provisions of the **Freedom of Information Act (FOI) 2014 and the Access to Information on the Environment (AIE) Regulations 2007-2014.** Information on FOI and AIE is available at www.foi.gov.ie and www.ocei.ie, respectively.

A summary report of key issues submitted at public consultation stage will be published on the MetroLink website, www.metrolink.ie

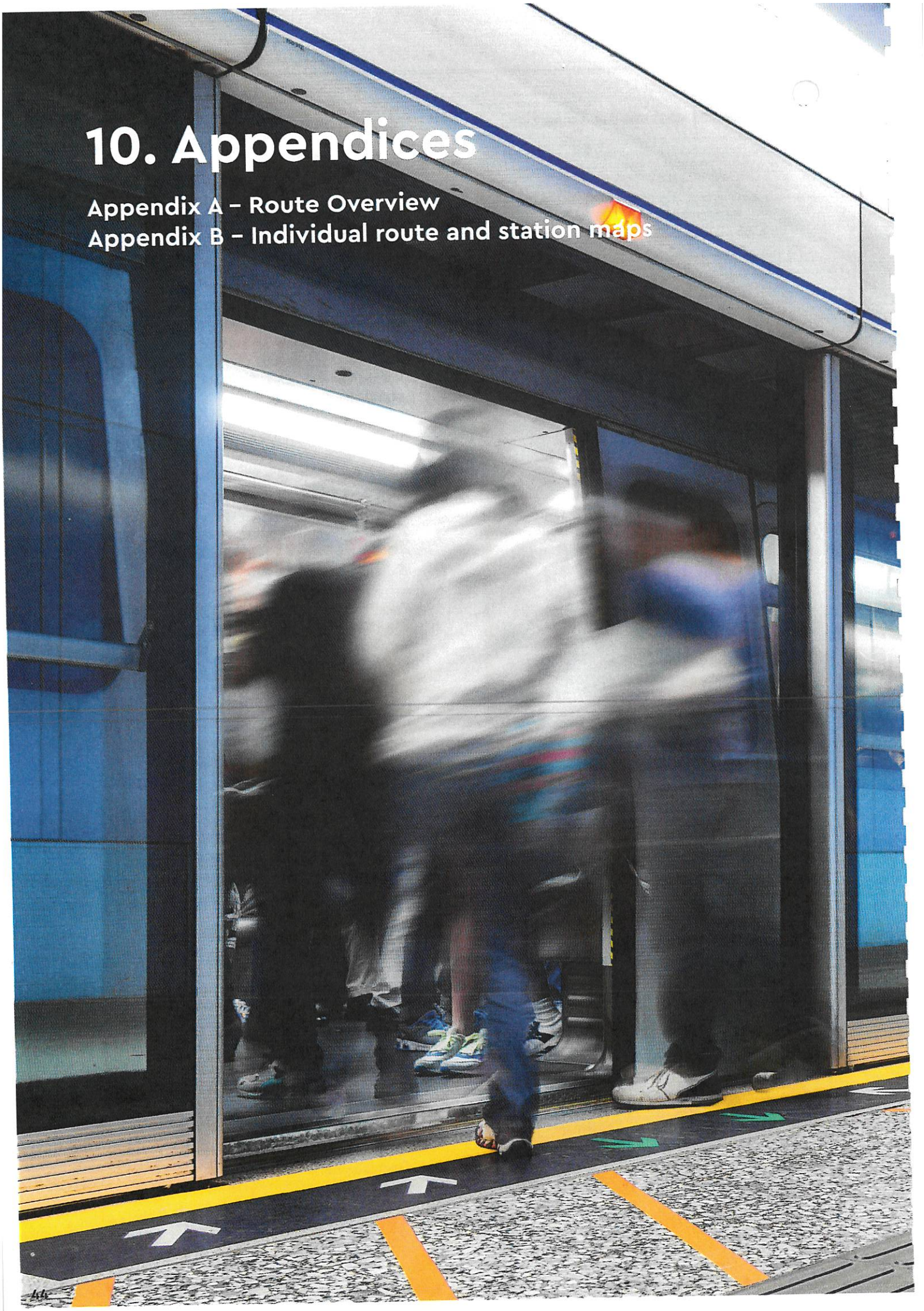
Extracts from submissions may be included in the report. Personal information and any commercially sensitive information will be omitted from any published extracts of submissions.

TII and NTA are committed to protecting the rights and privacy of individuals in compliance with the **General Data Protection Regulation and the Data Protection Acts 1988 to 2018.**

By making a submission under this public consultation exercise, you are indicating your acknowledgement of and consent to the above.

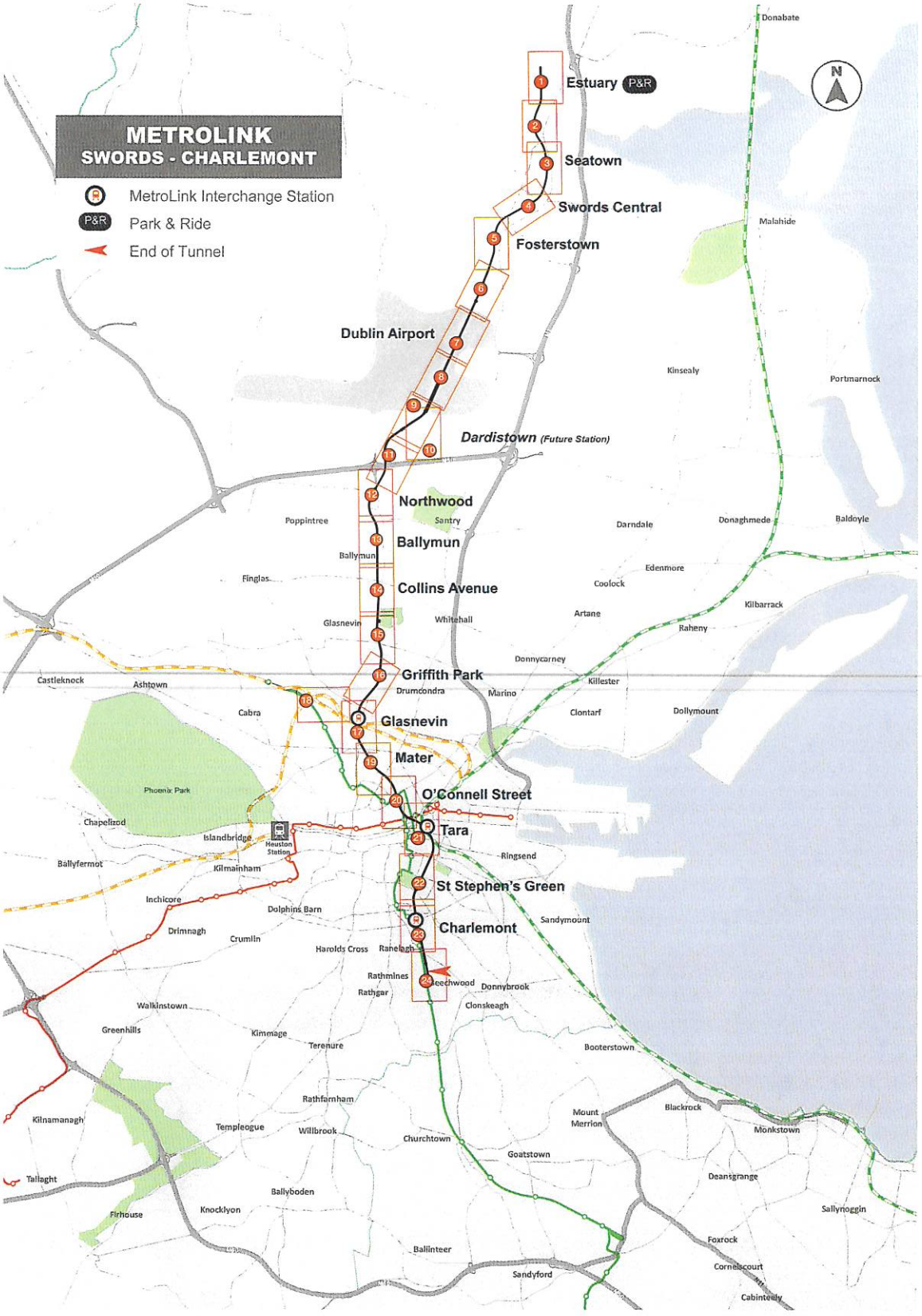
10. Appendices

Appendix A – Route Overview
Appendix B – Individual route and station maps



A. Route Overview

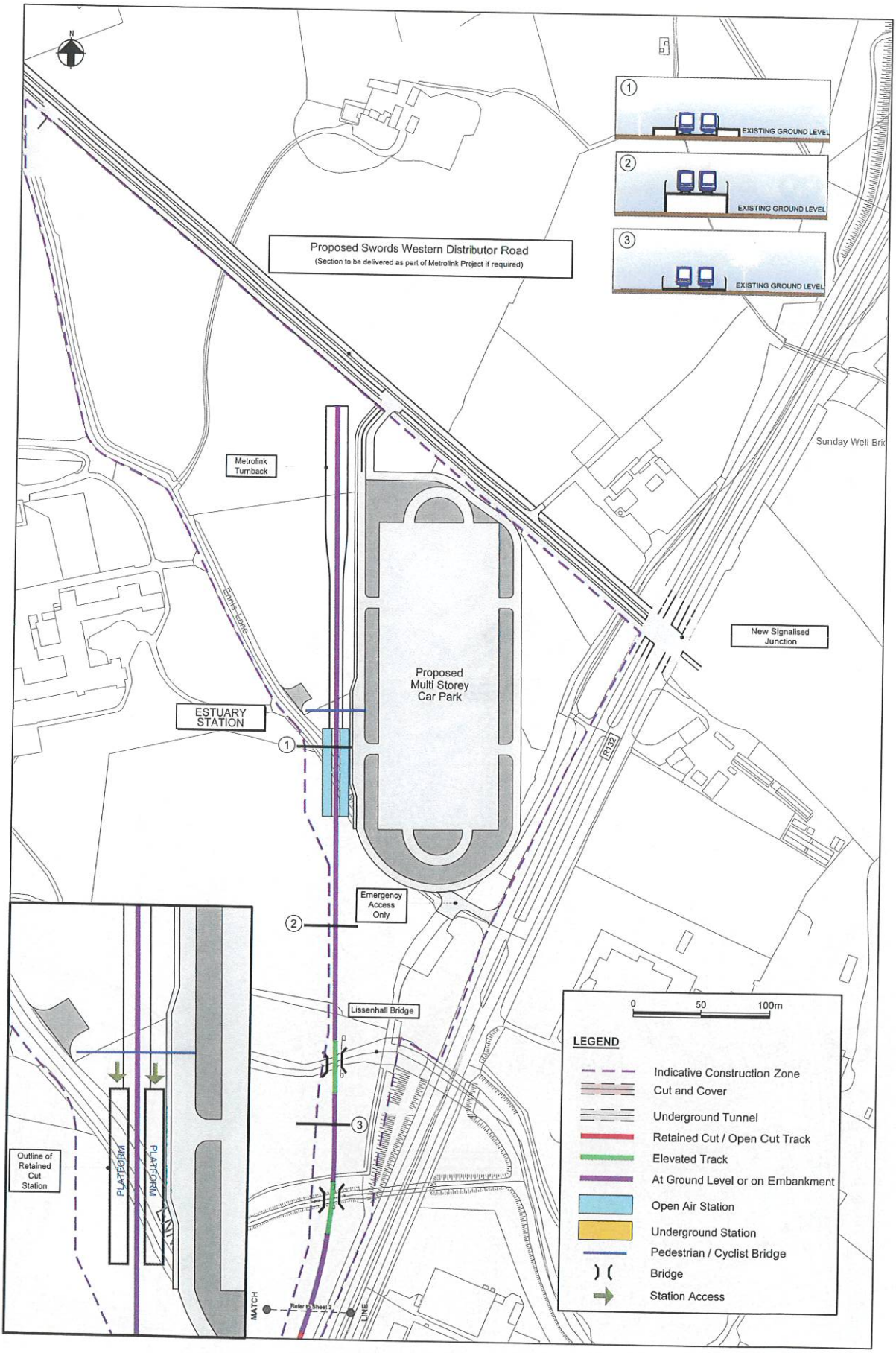
The areas outlined on the map below indicate the individual route & station maps on the following pages.



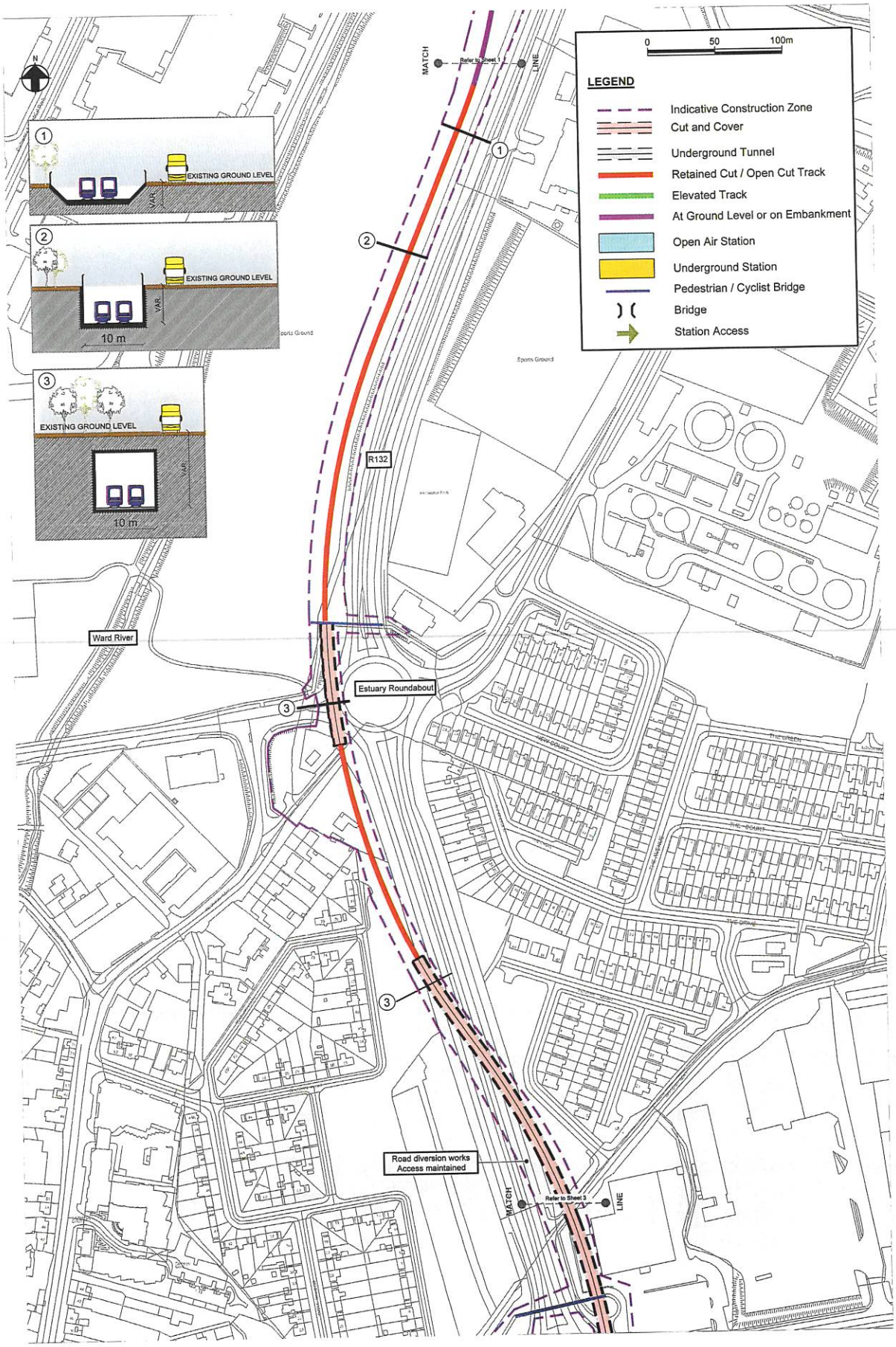
The design details indicated as part of the Preferred Route on the following maps is indicative only and is subject to change following consultation and as part of the design development process.

B. Individual route and station maps

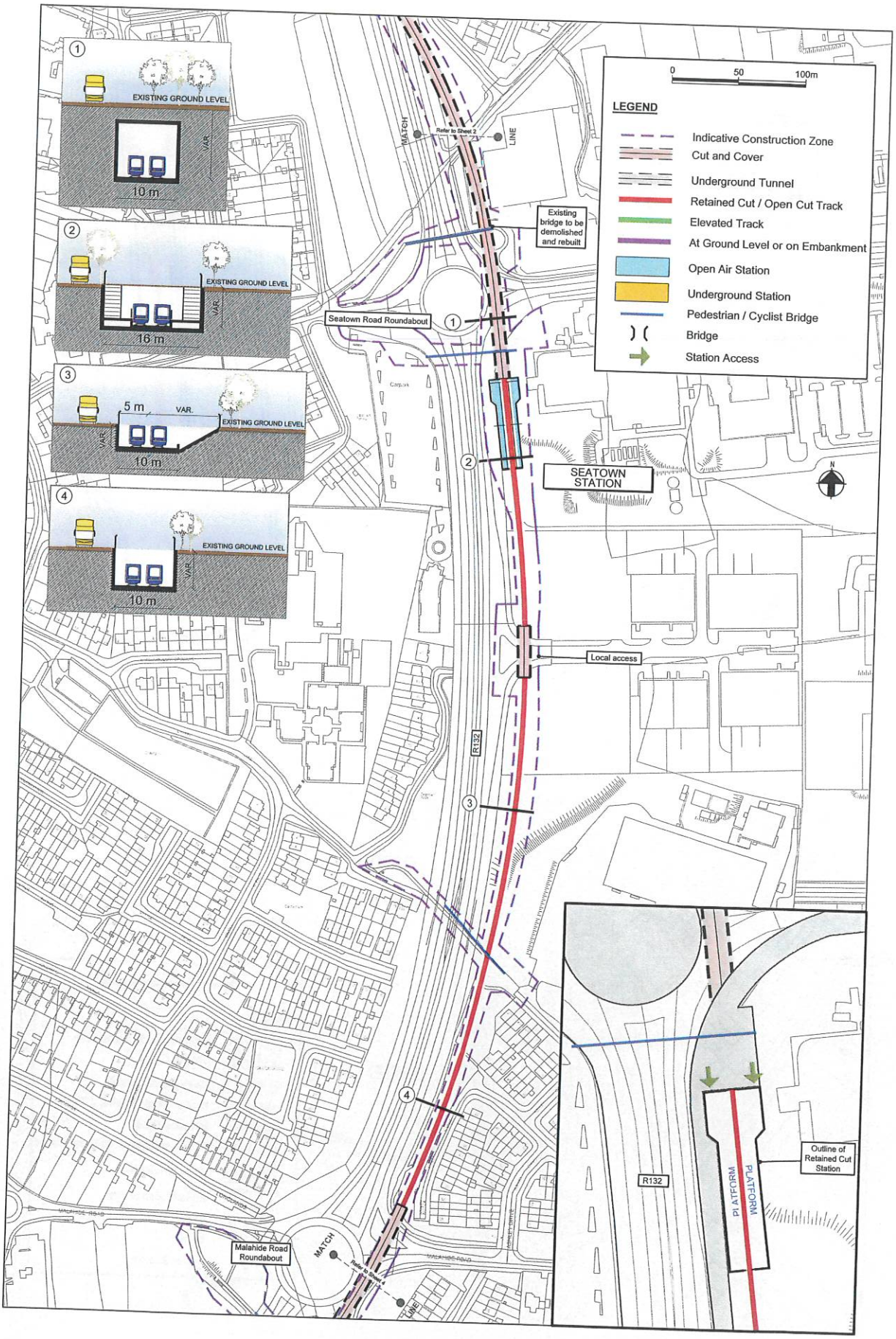
1. Estuary



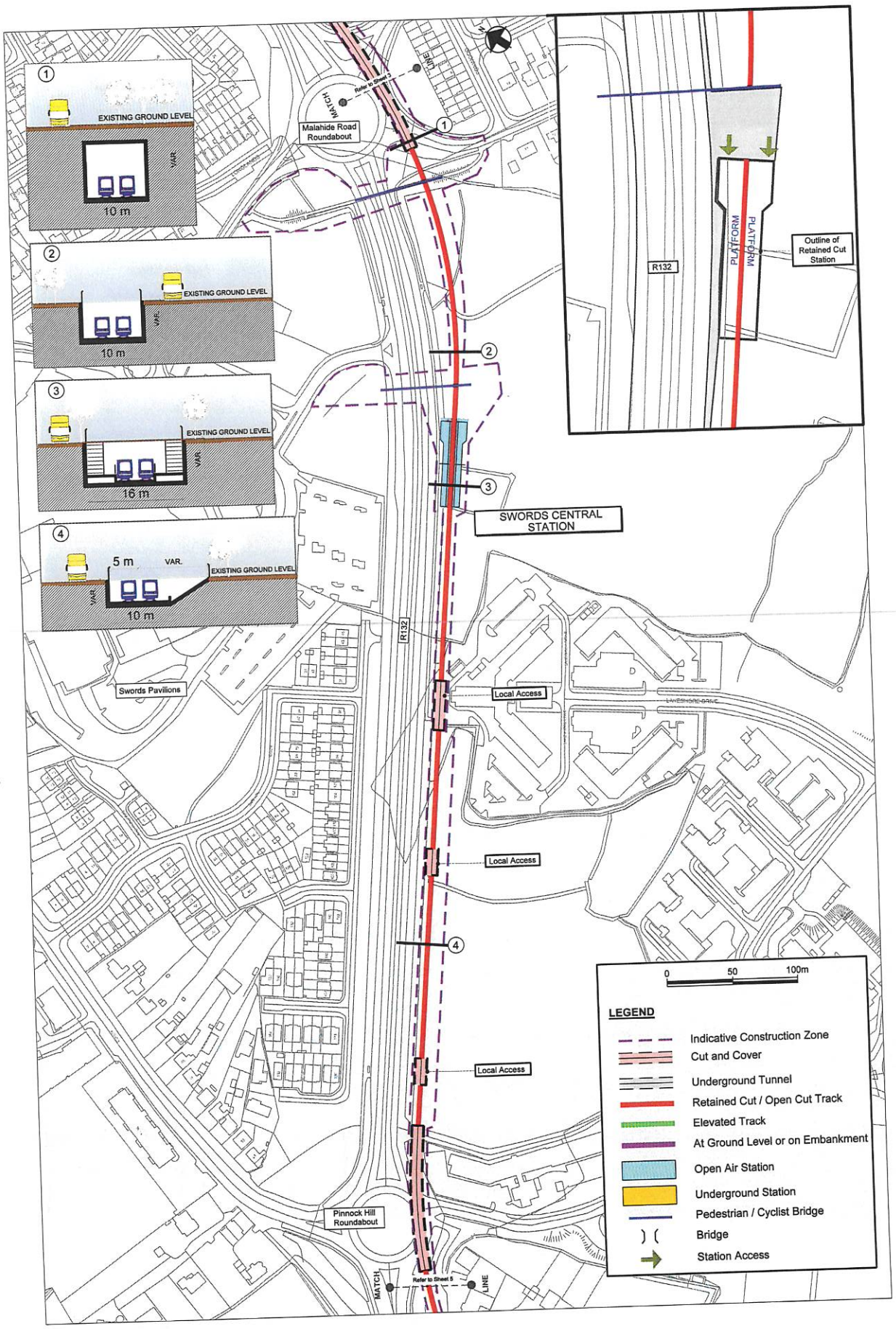
2. Estuary Roundabout



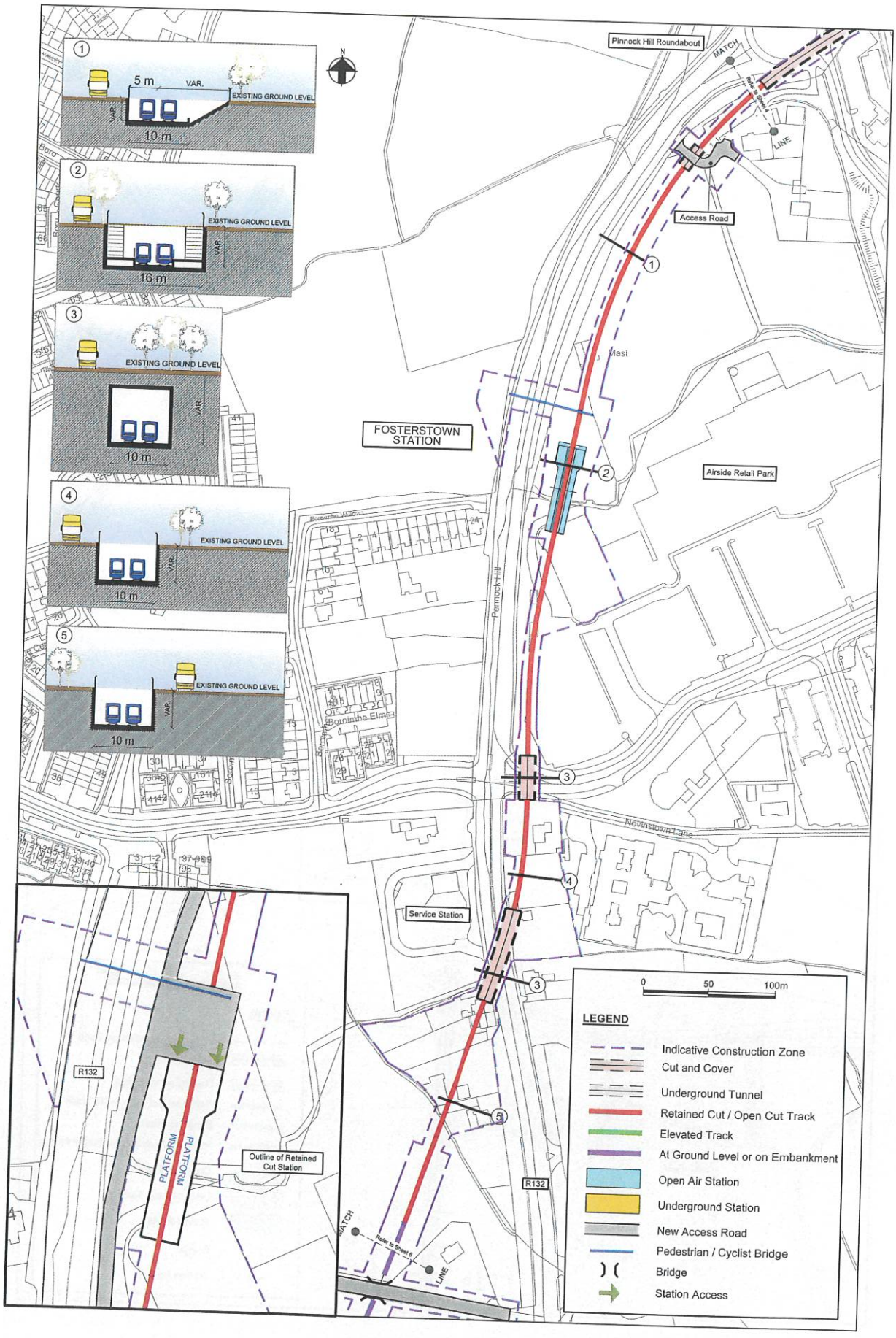
3. Seatown


1
EXISTING GROUND LEVEL
VAR.
10 m
2
EXISTING GROUND LEVEL
VAR.
16 m
3
5 m
VAR.
EXISTING GROUND LEVEL
VAR.
10 m
4
EXISTING GROUND LEVEL
VAR.
10 m
0
50
100m
LEGEND
Indicative Construction Zone
Cut and Cover
Underground Tunnel
Retained Cut / Open Cut Track
Elevated Track
At Ground Level or on Embankment
Open Air Station
Underground Station
Pedestrian / Cyclist Bridge
Bridge
Station Access
MATCH
Refer to Sheet 2
LINE
Existing bridge to be demolished and rebuilt
Seatown Road Roundabout
SEATOWN STATION
Local access
R132
Malahide Road Roundabout
MATCH
Refer to Sheet 1
LINE
R132
PLATFORM
PLATFORM
Outline of Retained Cut Station

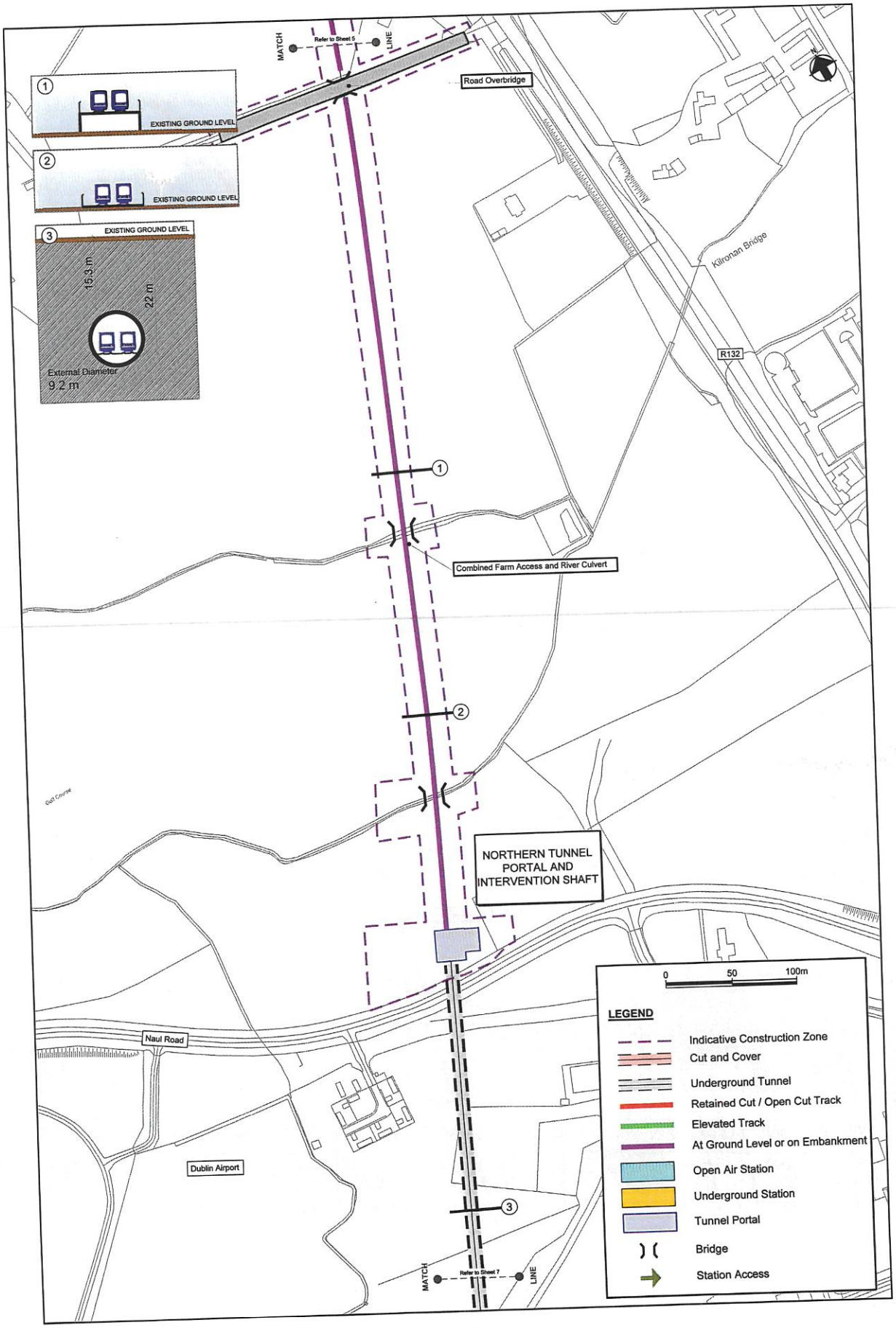
4. Swords Central



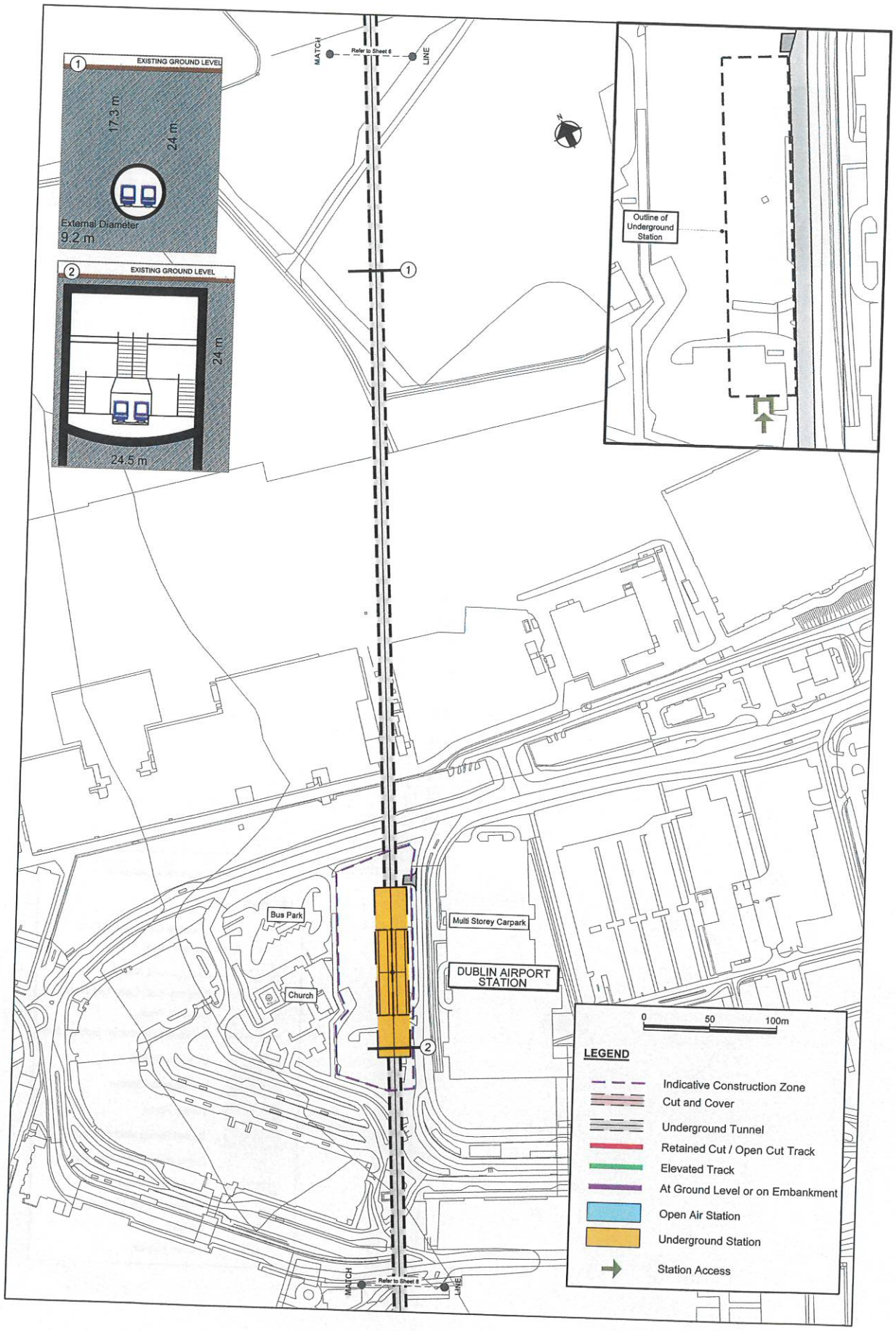
5. Fosterstown



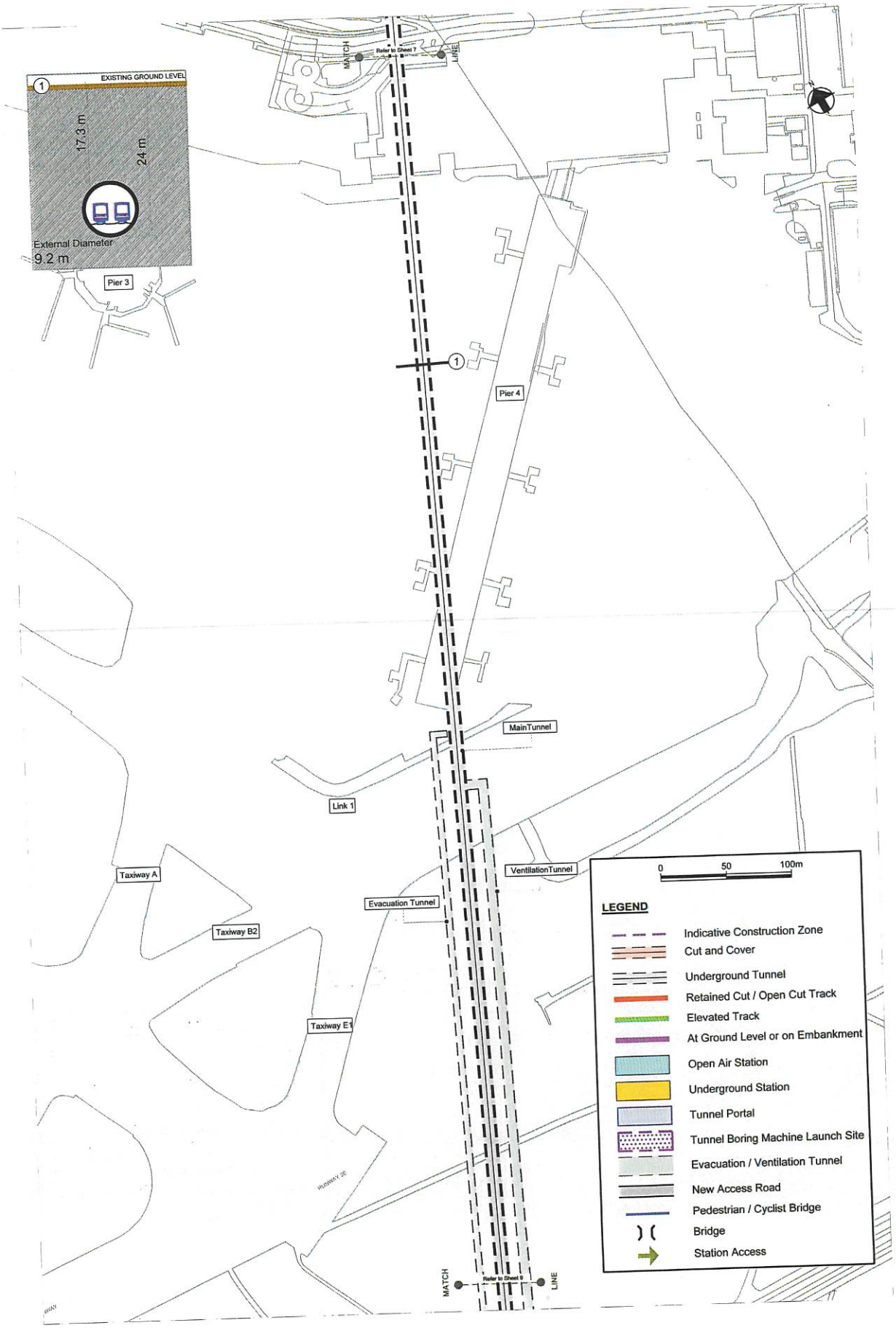
6. Northern Tunnel Portal and Intervention Shaft



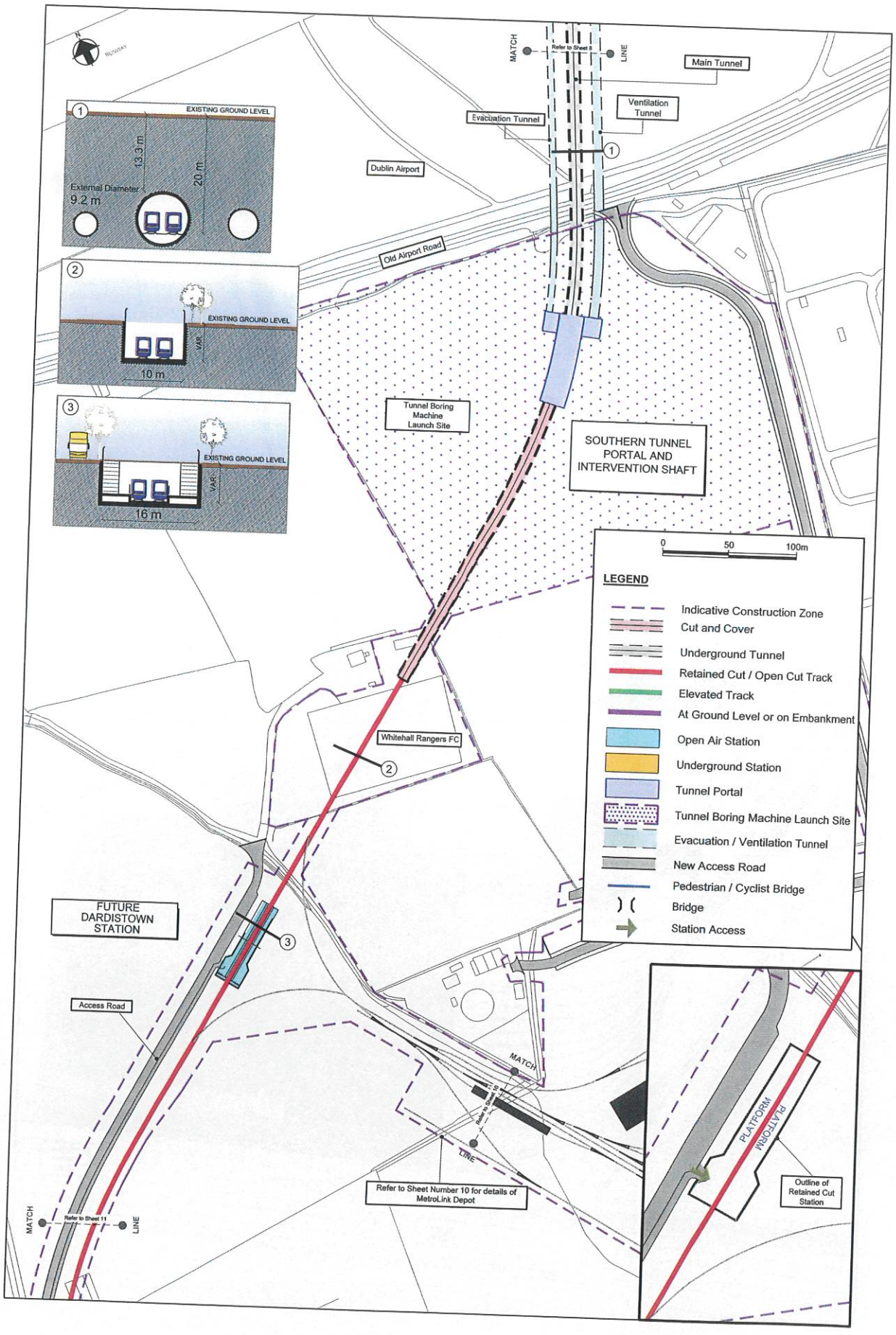
7. Dublin Airport



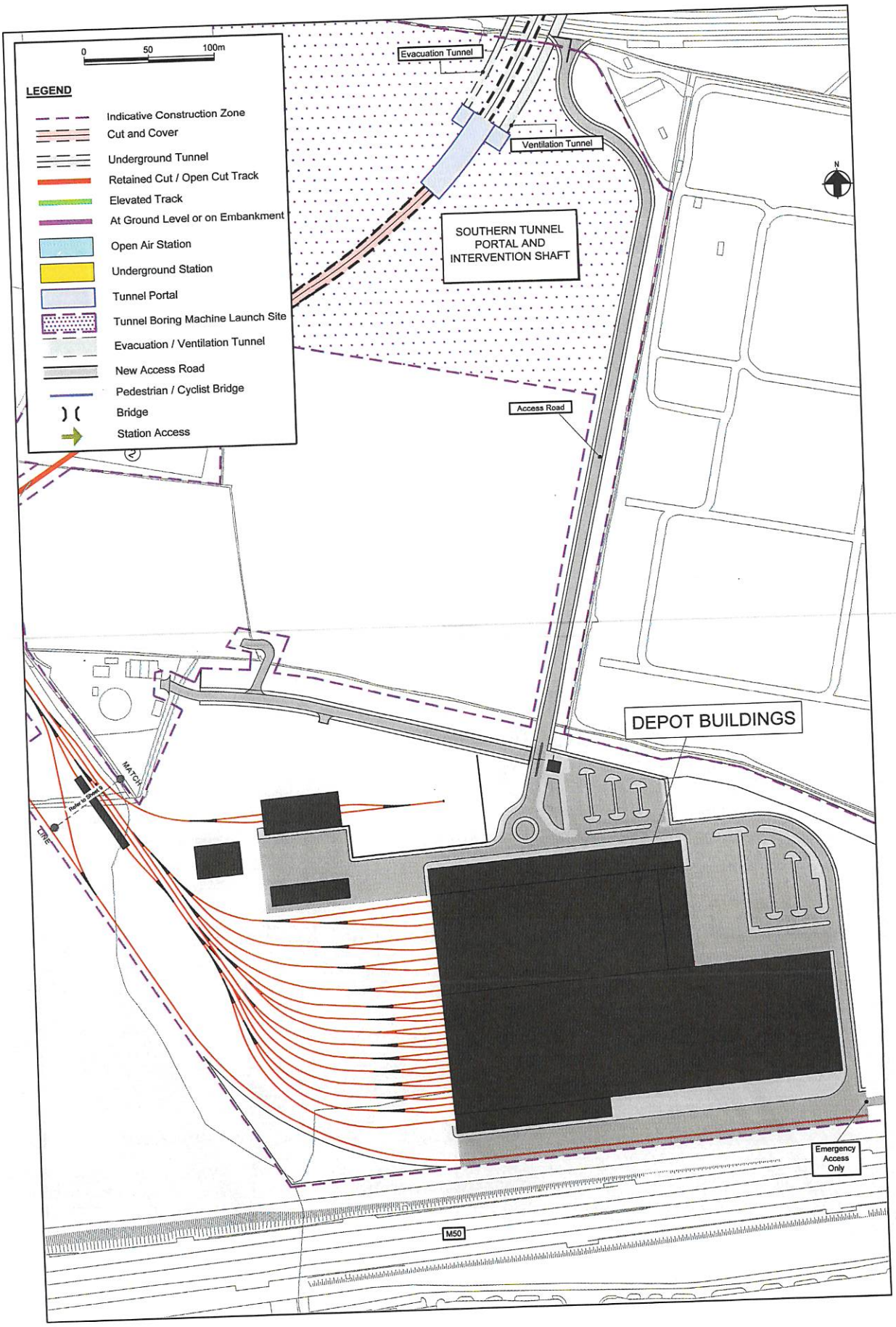
8. Dublin Airport (Continued)



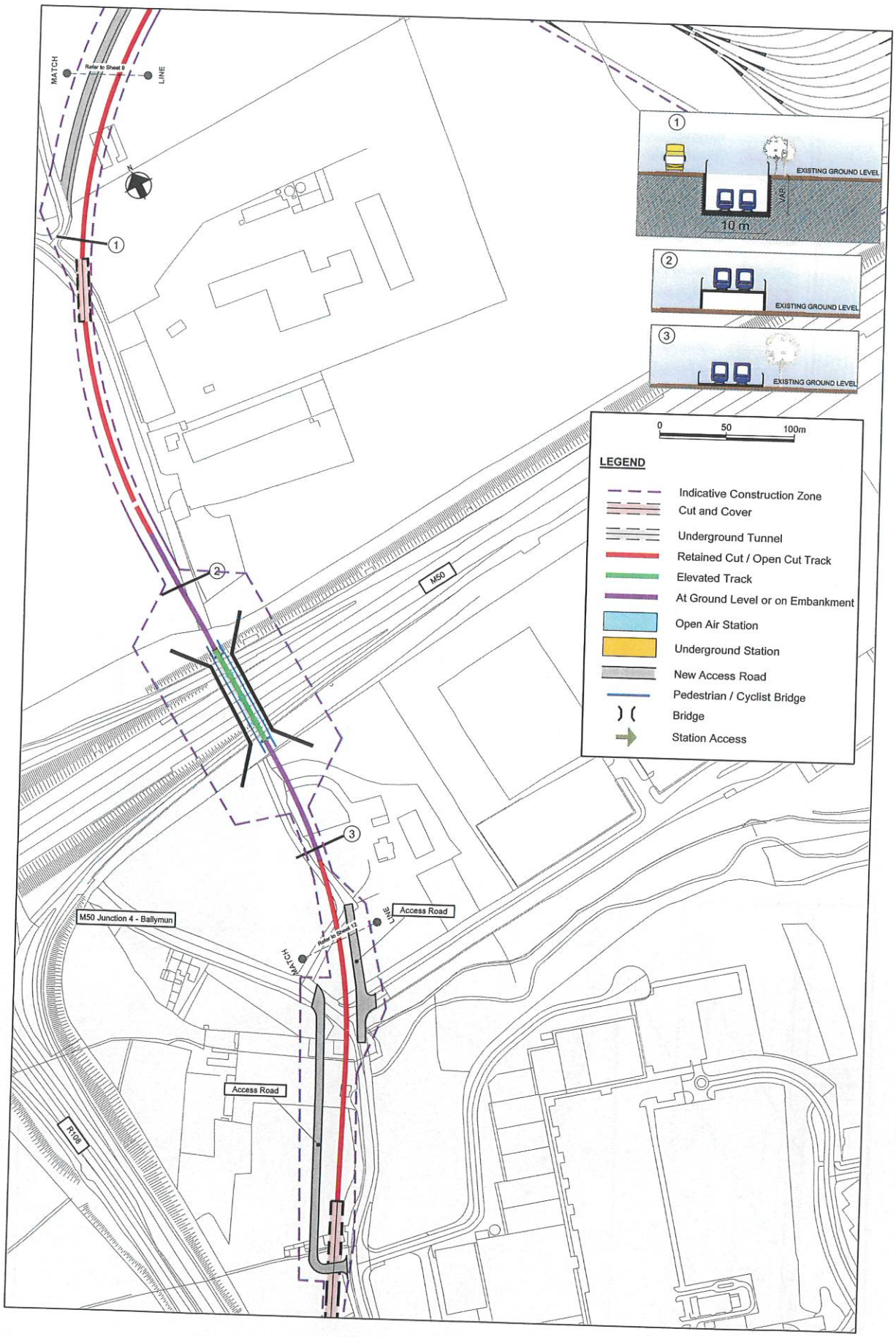
9. Dardistown (Future Station)



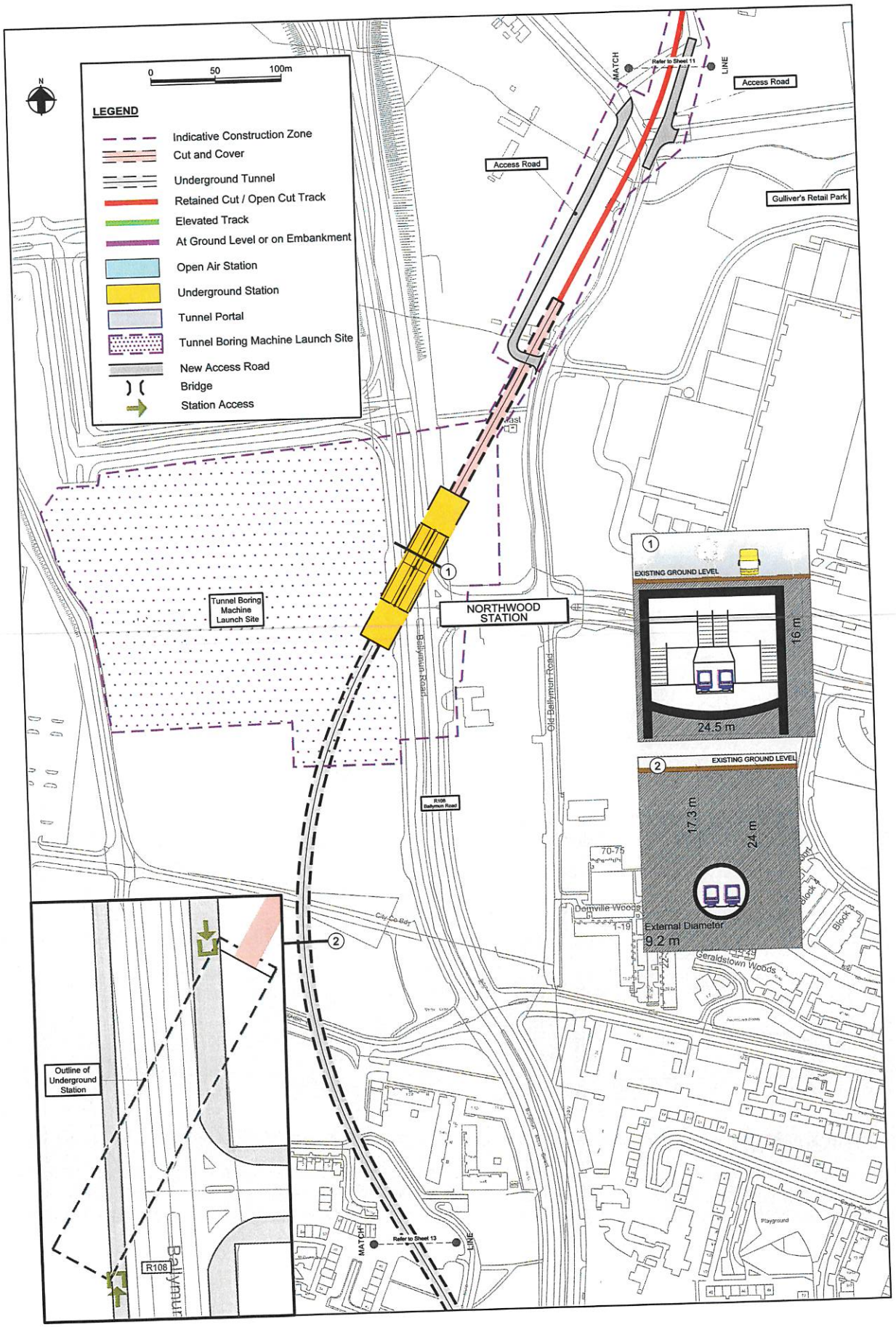
10. Dardistown Depot



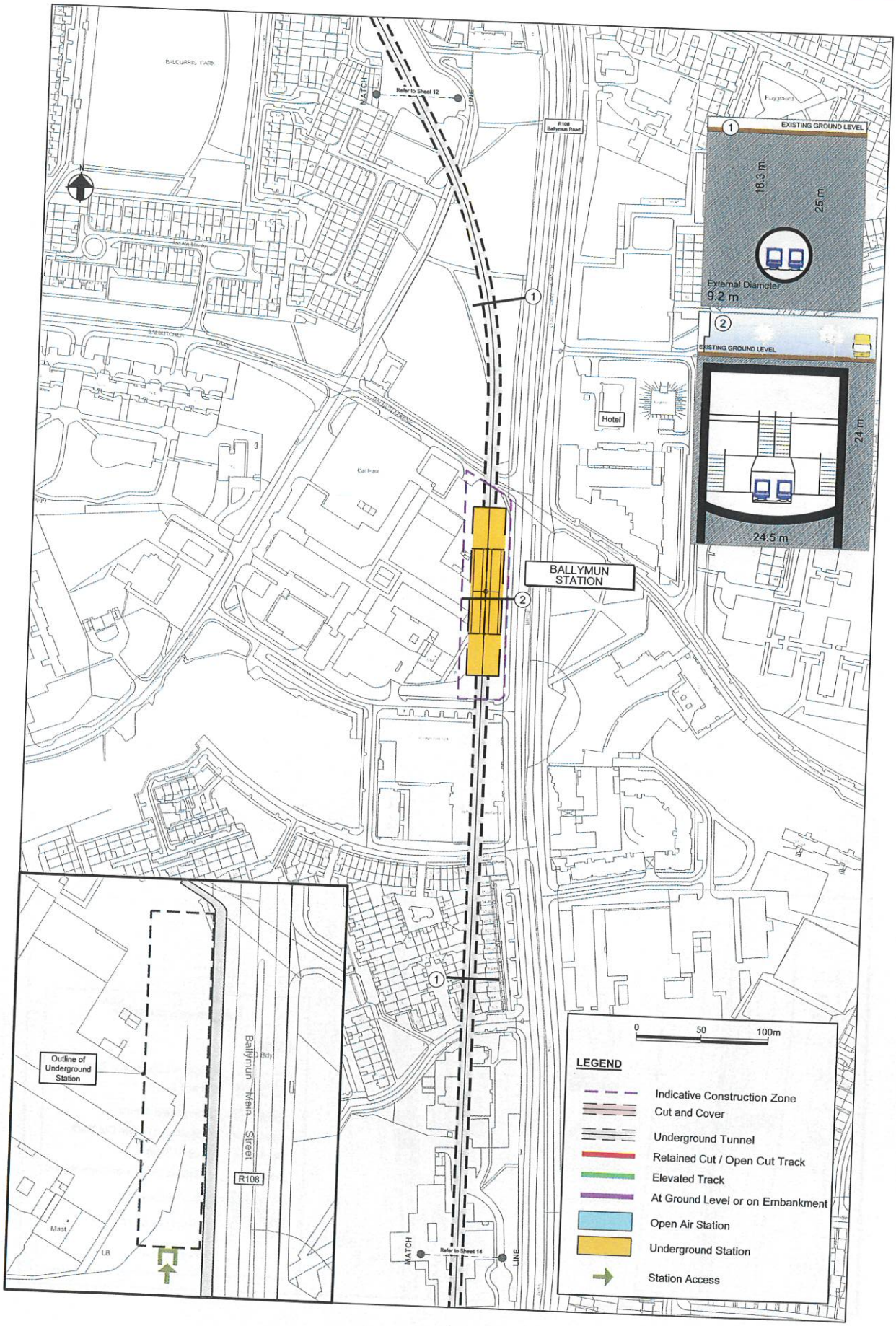
11. M50


MATCH
Refer to Sheet 0
LINE
1
2
3
EXISTING GROUND LEVEL
VAR.
10 m
EXISTING GROUND LEVEL
EXISTING GROUND LEVEL
0
50
100m
LEGEND
Indicative Construction Zone
Cut and Cover
Underground Tunnel
Retained Cut / Open Cut Track
Elevated Track
At Ground Level or on Embankment
Open Air Station
Underground Station
New Access Road
Pedestrian / Cyclist Bridge
Bridge
Station Access
M50
M50 Junction 4 - Ballymun
Access Road
Access Road
R108

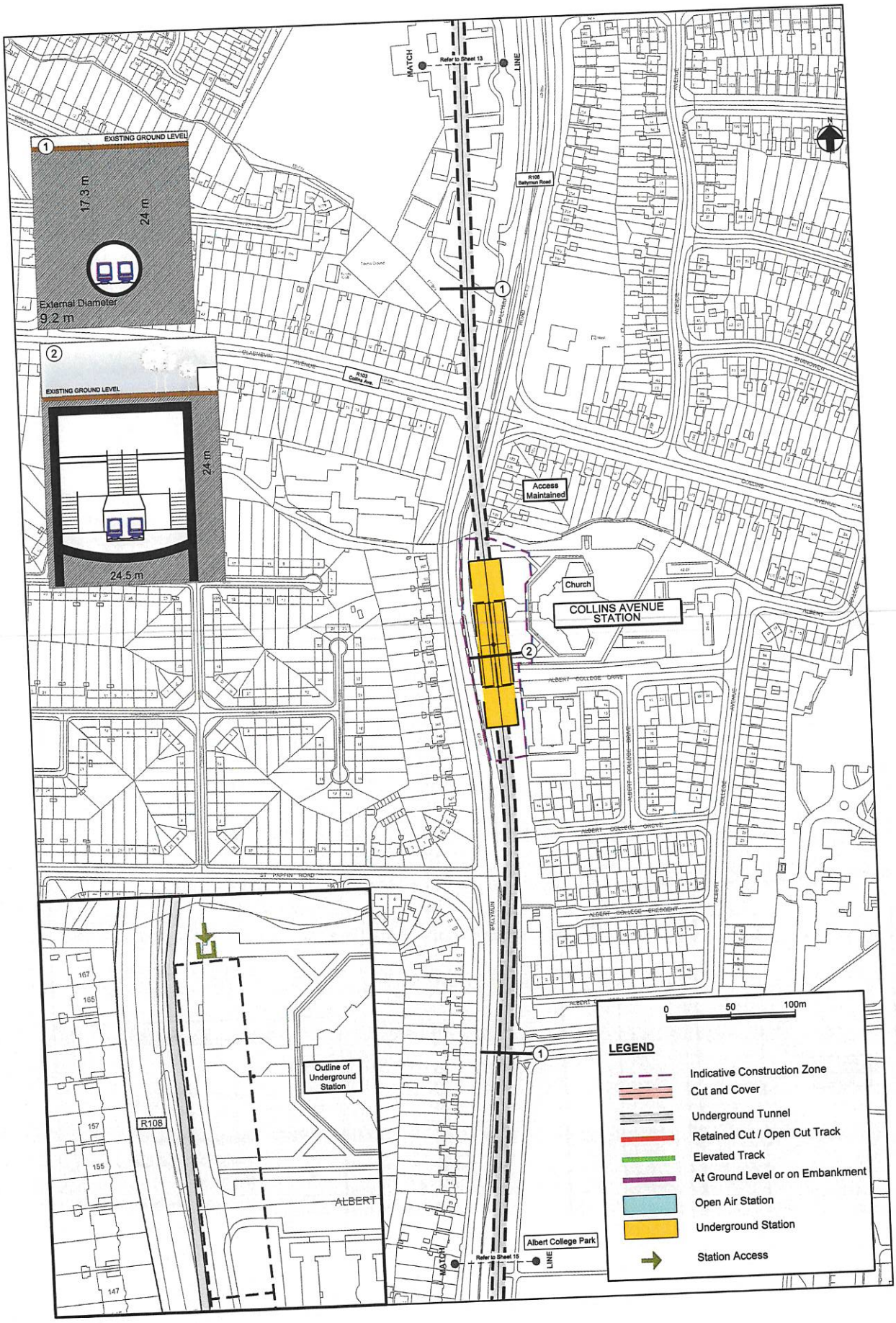
12. Northwood



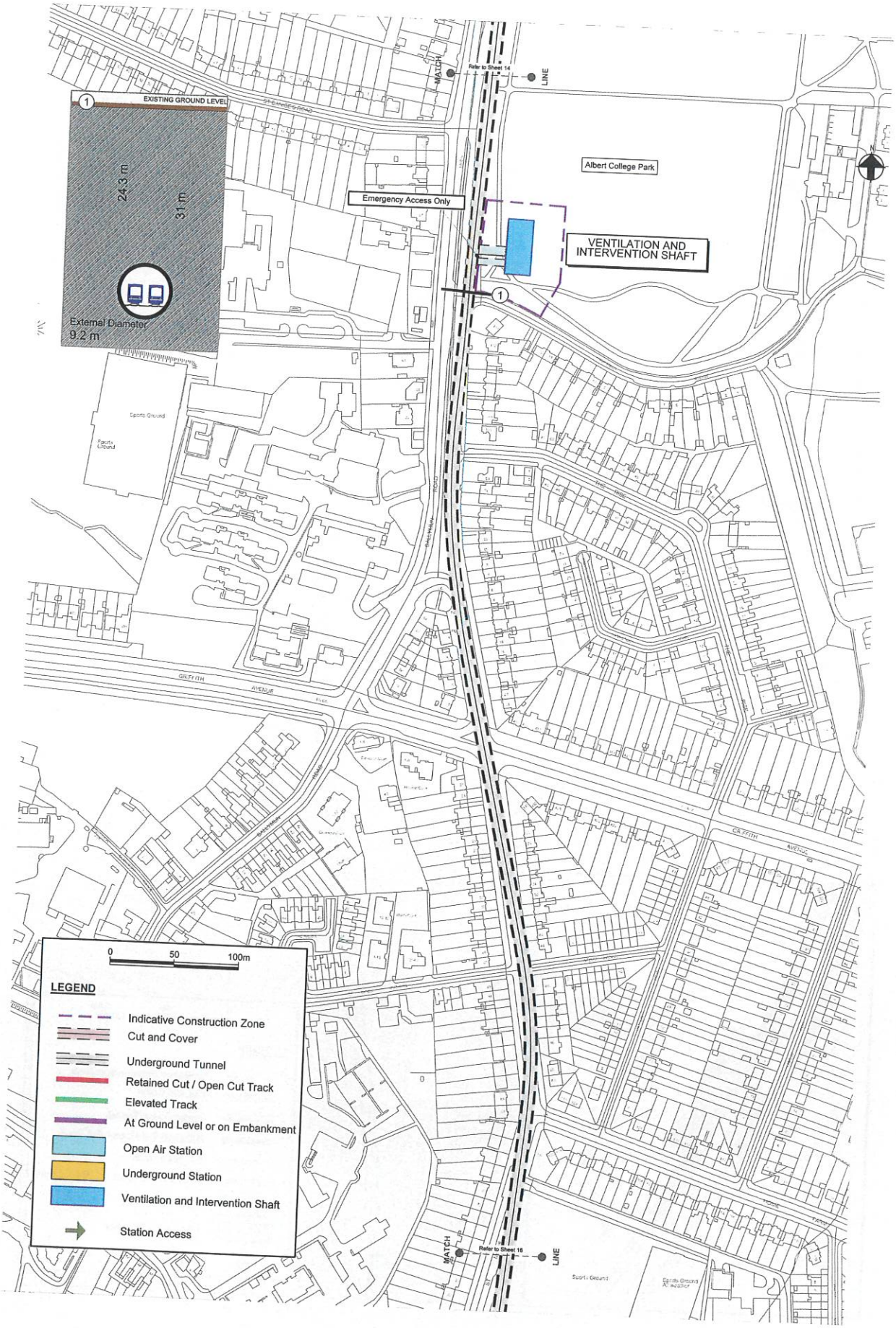
13. Ballymun


BALCURRIS PARK
MATCH
Refer to Sheet 12
LINE
R108
Ballymun Road
N
1
EXISTING GROUND LEVEL
18.3 m
25 m
External Diameter
9.2 m
2
EXISTING GROUND LEVEL
24 m
24.5 m
Hotel
BALLYMUN
STATION
Outline of
Underground
Station
Ballymun Main Street
R108
Mast
LB
MATCH
Refer to Sheet 14
LINE
0
50
100m
LEGEND
Indicative Construction Zone
Cut and Cover
Underground Tunnel
Retained Cut / Open Cut Track
Elevated Track
At Ground Level or on Embankment
Open Air Station
Underground Station
Station Access

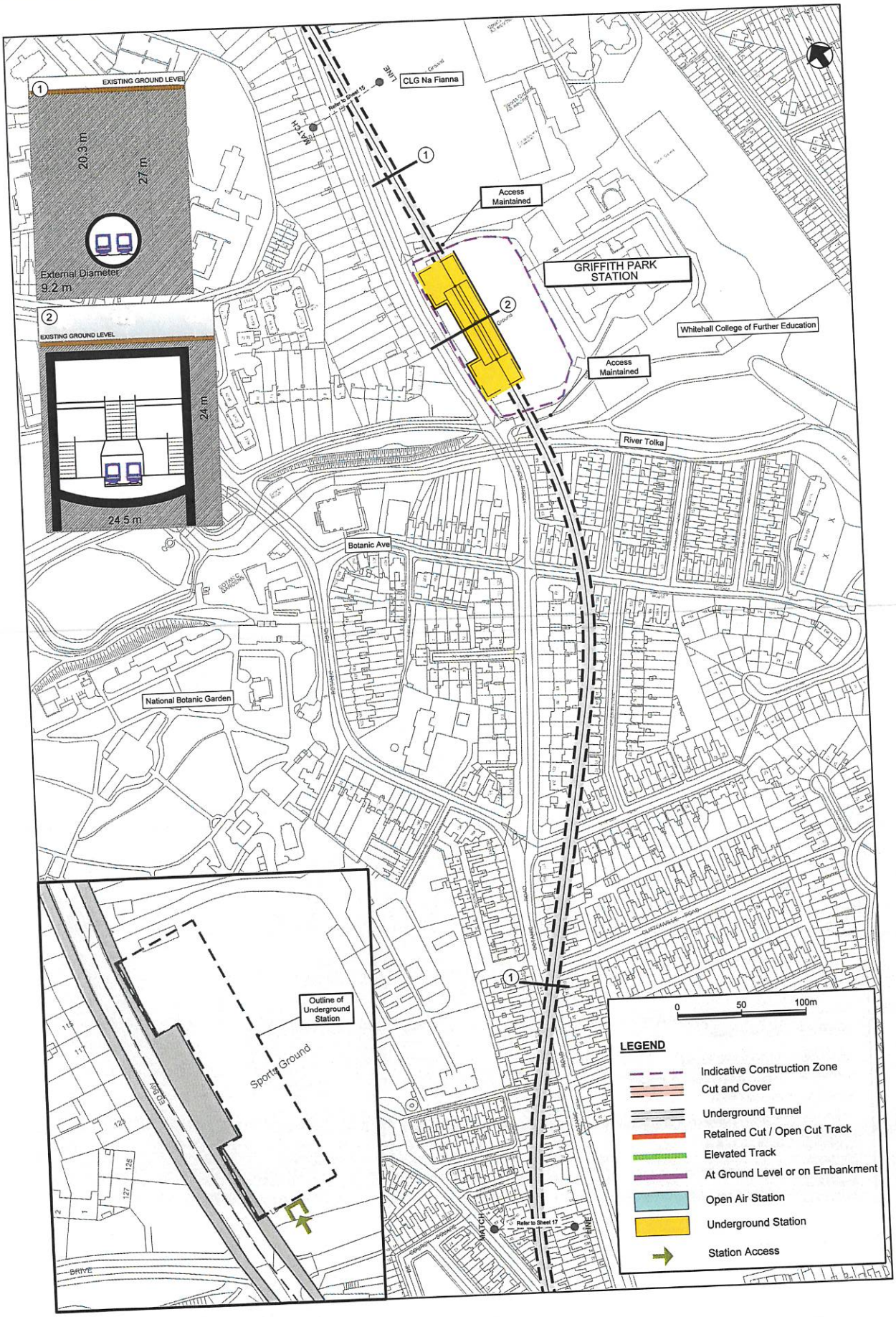
14. Collins Avenue



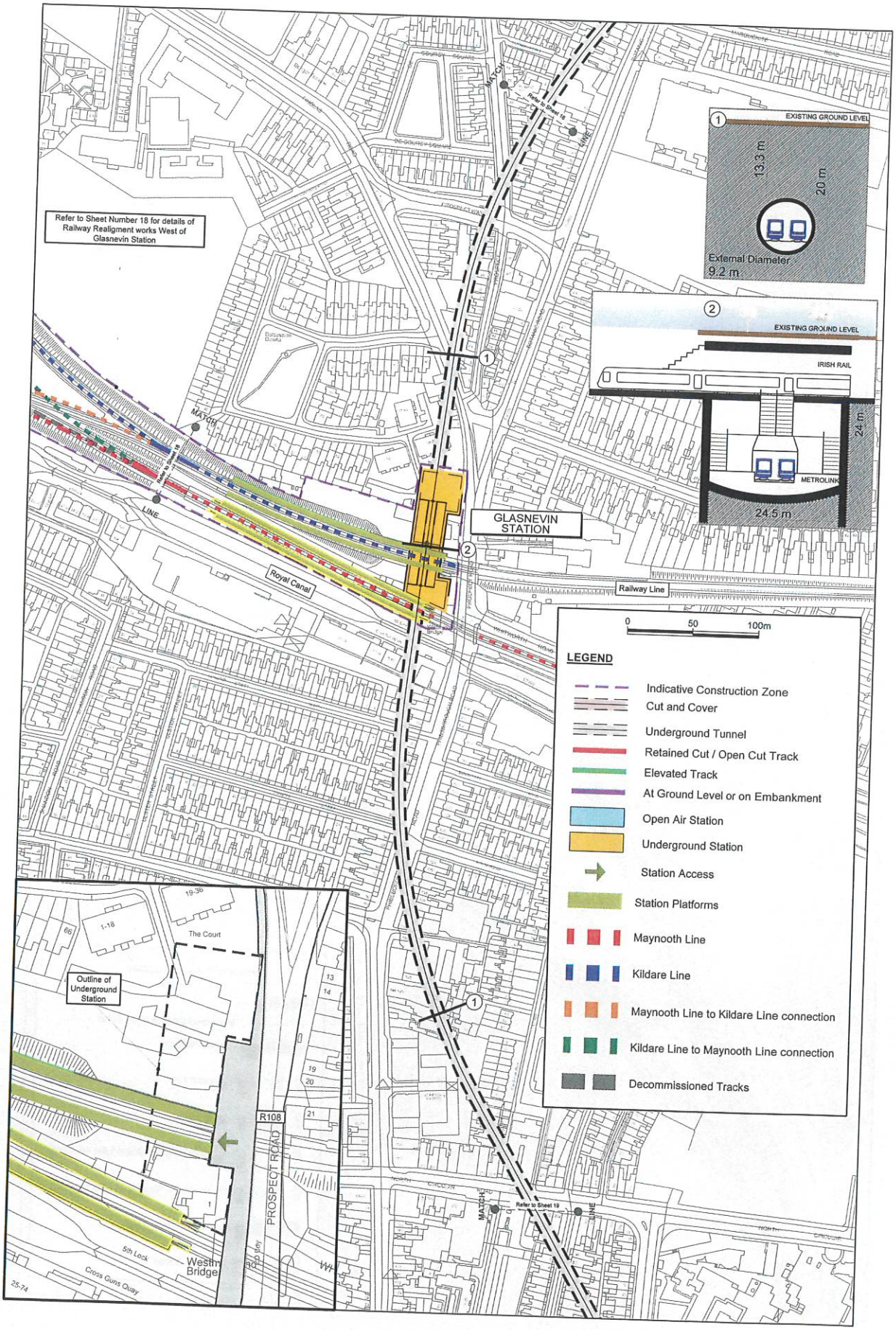
15. Albert College Park Intervention and Ventilation Shaft



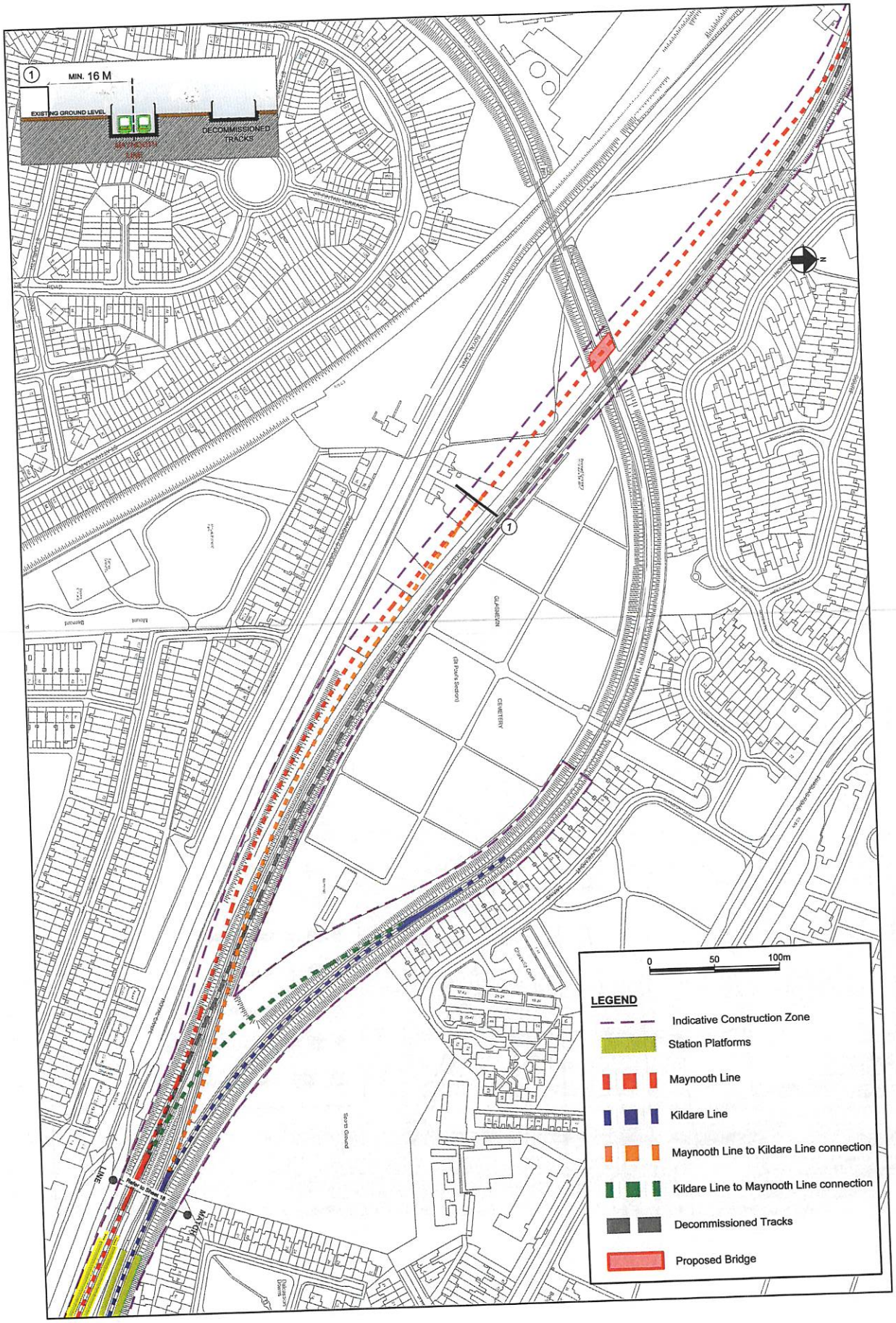
16. Griffith Park



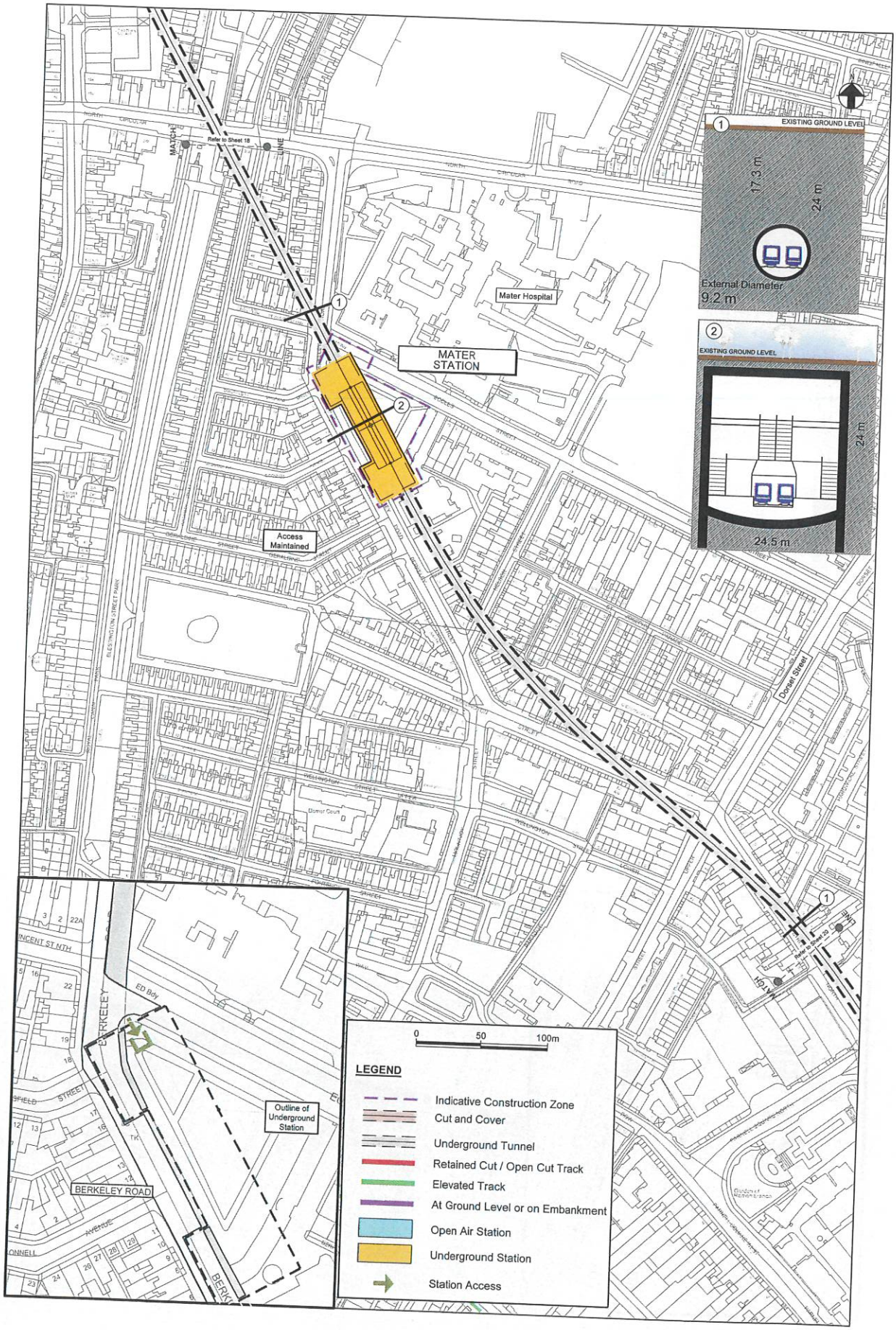
17. Glasnevin



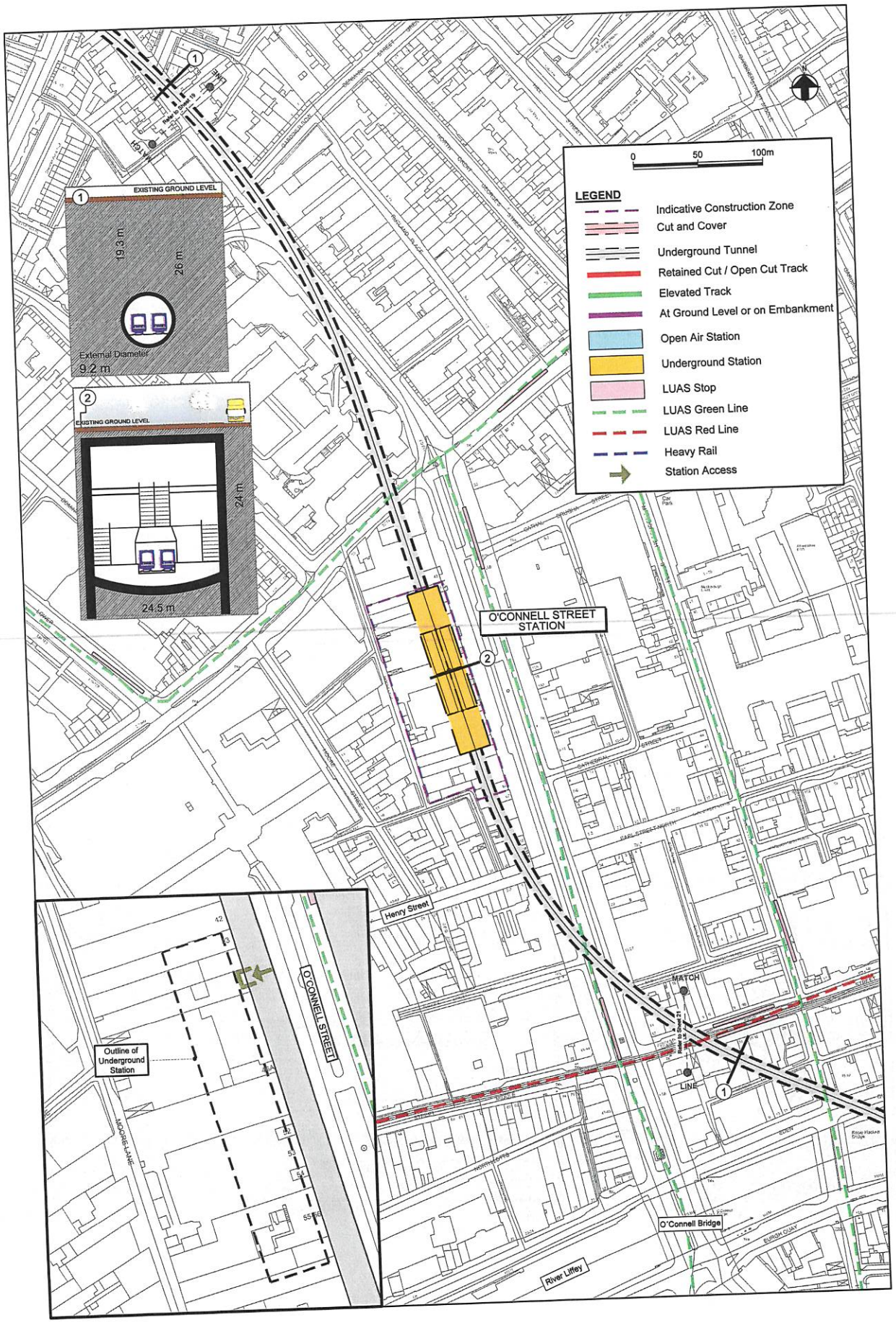
18. Railway Realignment West of Glasnevin Station



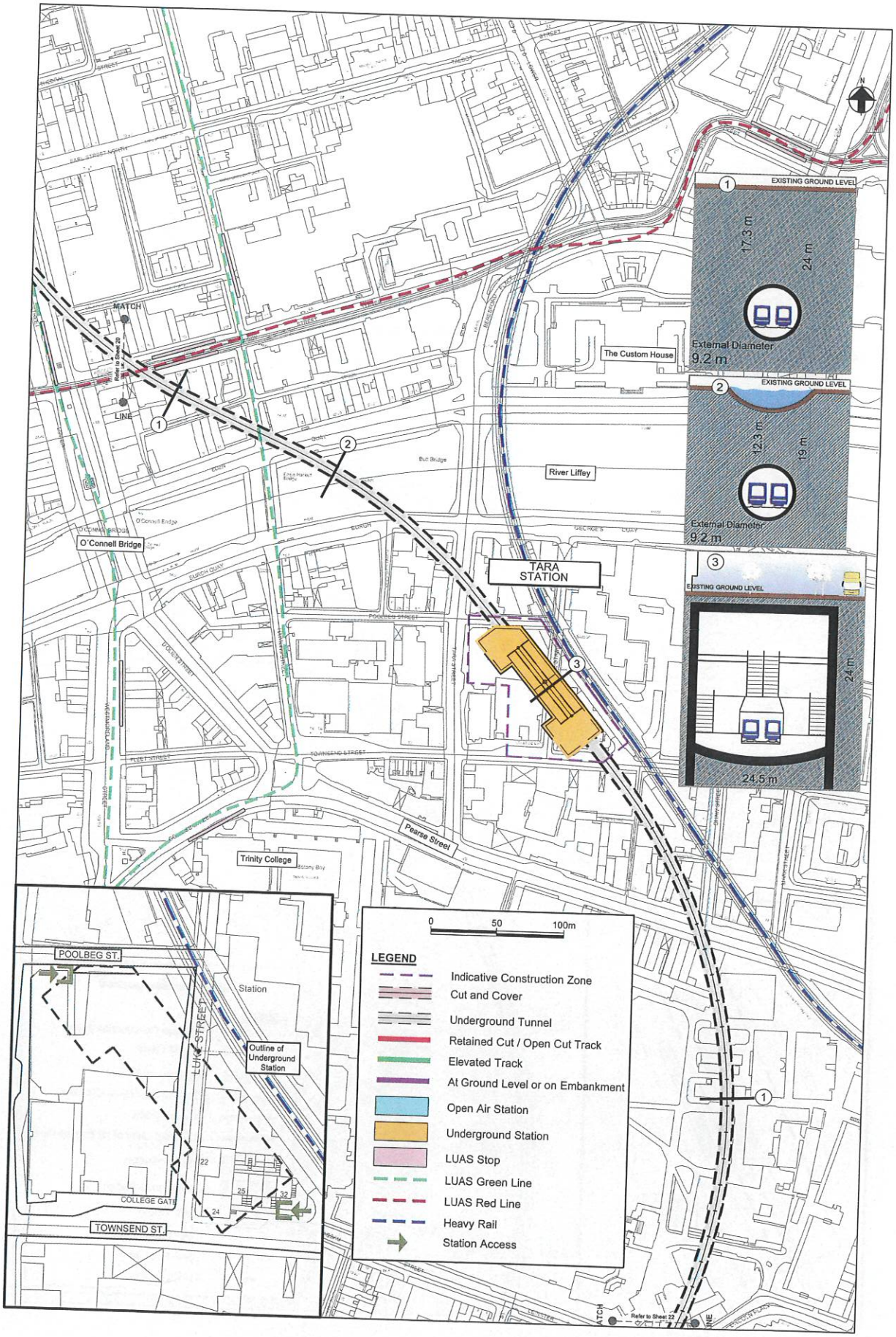
19. Mater


MATER STATION
Mater Hospital
Access Maintained
Refer to Sheet 18
MATCH LINE
EXISTING GROUND LEVEL
17.3 m
24 m
External Diameter 9.2 m
EXISTING GROUND LEVEL
24 m
24.5 m
Dorset Street
Outline of Underground Station
BERKELEY ROAD
0 50 100m
LEGEND
Indicative Construction Zone
Cut and Cover
Underground Tunnel
Retained Cut / Open Cut Track
Elevated Track
At Ground Level or on Embankment
Open Air Station
Underground Station
Station Access

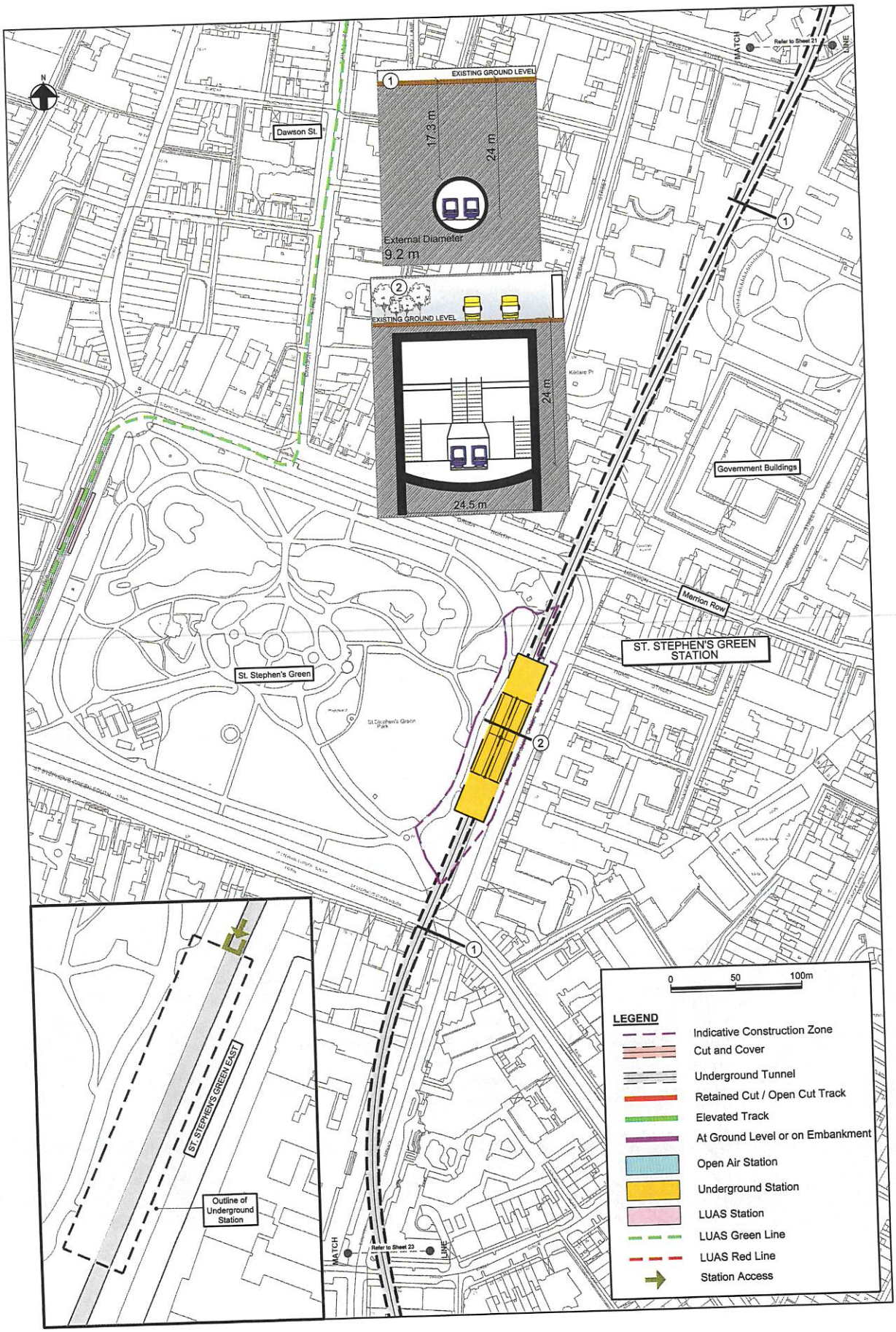
20. O'Connell Street



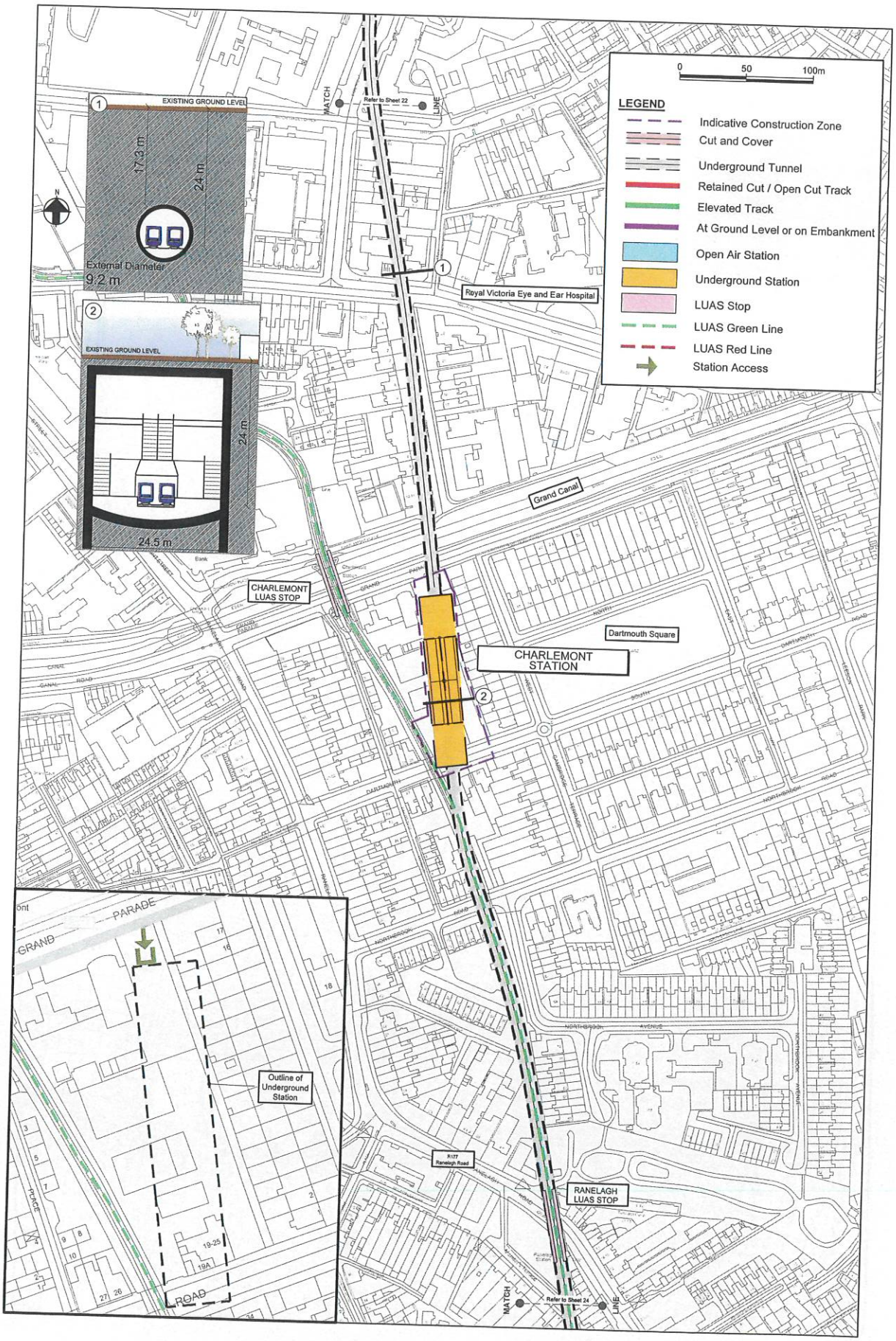
21. Tara


MATCH
LINE
Refer to Sheet 20
O'Connell Bridge
River Liffey
The Custom House
TARA STATION
Pearse Street
Trinity College
EXISTING GROUND LEVEL
17.3 m
24 m
External Diameter 9.2 m
12.3 m
19 m
24 m
24.5 m
POOLBEG ST.
Station
LUKE STREET
Outline of Underground Station
COLLEGE GATE
TOWNSEND ST.
0 50 100m
LEGEND
Indicative Construction Zone
Cut and Cover
Underground Tunnel
Retained Cut / Open Cut Track
Elevated Track
At Ground Level or on Embankment
Open Air Station
Underground Station
LUAS Stop
LUAS Green Line
LUAS Red Line
Heavy Rail
Station Access
Refer to Sheet 22

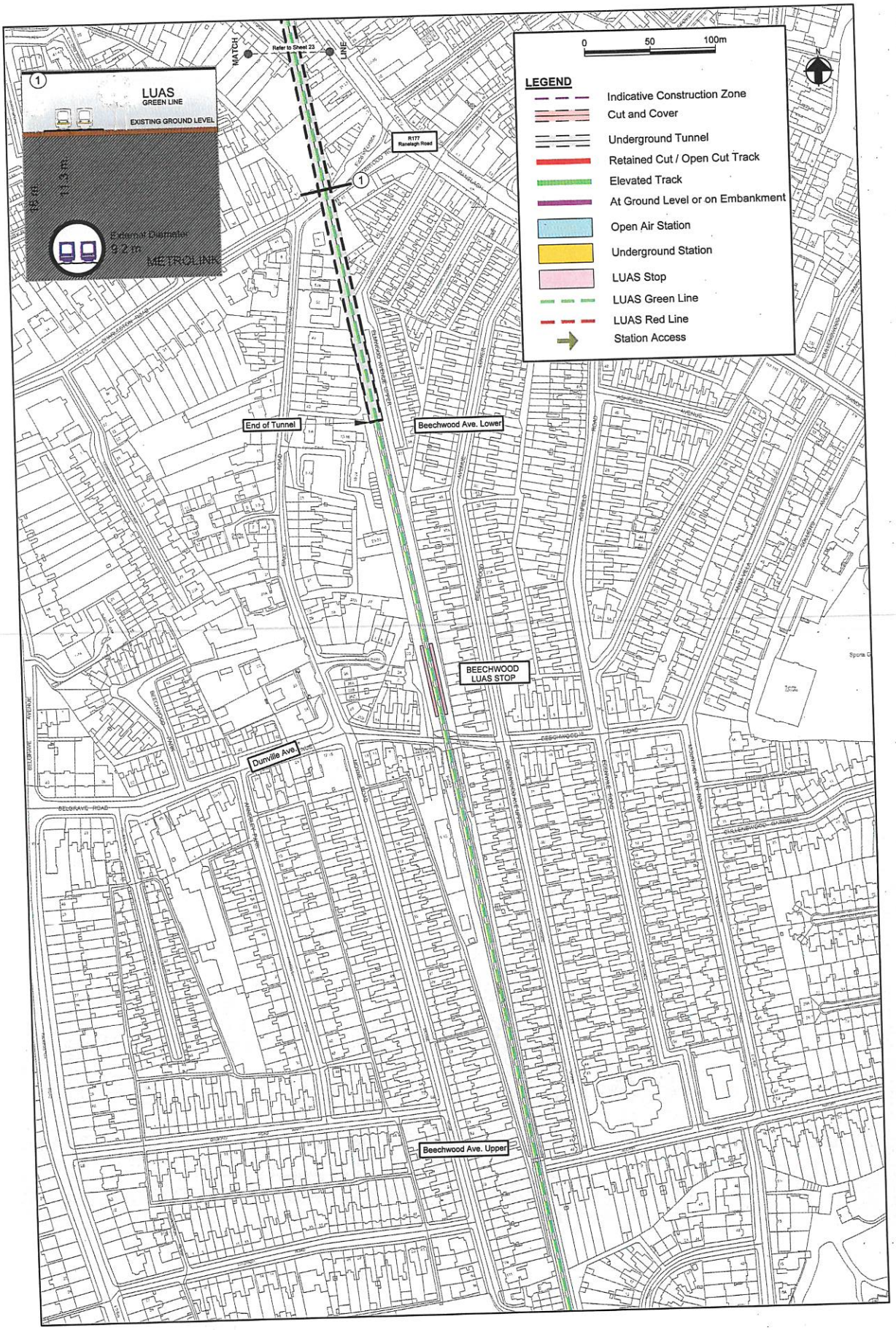
22. St Stephen's Green



23. Charlemont



24. Beechwood



METROLINK

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Freephone: 1800 333 777
Operating Hours: Mon–Fri, 8.30am–5.30pm

www.metrolink.ie

Project Ireland 2040
Building Ireland's Future

NTA
Údarás Náisiúnta Iompair
National Transport Authority

TII
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Our Ref: ABP-302010-18

Your Ref: Transport Infrastructure Ireland (TII)

An Bord Pleanála

Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 13th December 2018

Re:
Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir / Madam

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

Please find enclosed a copy of the written record of the meeting of the 6th December, 2018.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

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

Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-8737107

Encls. PC07

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Glao Áitiúil LoCall 1890 275 175
Facs Fax (01) 872 2684
Láithreán Gréasáin Website www.pleanala.ie
Ríomhphost Email bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

An Bord Pleanála

Record of Meeting ABP-302010-18 1st meeting

Case Reference / Description	ABP-302010-18 Proposed Metrolink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.		
Case Type	Pre-application consultation		
1st / 2nd / 3rd Meeting	1st		
Date	6th December, 2018	**Start Time**	11 a.m.
Location	Parnell Room	**End Time**	1.25 p.m.
Chairperson	Brendan Wyse	**Executive Officer**	Kieran Somers

Attendees		
Representing An Bord Pleanála		
Staff Member	**Email Address**	**Phone**
Brendan Wyse, Assistant Director of Planning		
Kevin Moore, Senior Planning Inspector		
Ellen Morrin, Senior Administrative Officer		
Kieran Somers, Executive Officer	k.somers@pleanala.ie	01-8737107

Representing the Prospective Applicant		
Peter Walsh, Director of Capital Programmes, TII		
Aidan Foley, MetroLink Project Director		
Ronan Hallissey, EIAR Co-ordinator		
Neil Cowie, Design Team		

The meeting commenced at 11 a.m.

Introduction:

The Board referred to the letter received from the prospective applicant requesting pre-application consultations and advised the prospective applicant that the instant meeting essentially constituted an information-gathering exercise for the Board; it also invited the prospective applicant to outline the nature of the proposed development and to highlight any matters it wished to receive advice on from the Board.

The Board mentioned general procedures in relation to the pre-application consultation process as follows:

- The Board will keep a record of this meeting and any other meetings, if held. Such records will form part of the file which will be made available publicly at the conclusion of the process. The record of the meeting will not be amended by the Board once finalised, but the prospective applicant may submit comments on the record which will form part of the case file.
- A further meeting or meetings may be held in respect of the proposed development.

- Further information may be requested by the Board and public consultations may also be directed by the Board.
- The Board may hold consultations in respect of the proposed development with other bodies.
- The holding of consultations does not prejudice the Board in any way and cannot be relied upon in the formal planning process or any legal proceedings.

Presentation by prospective applicant:

The prospective applicant gave an overview of the proposed development which comprises the provision of a high capacity and high frequency metro rail line which will extend between Estuary Park and Ride, north of Swords, via Dublin Airport to Dublin City Centre. The proposed development will then connect to the existing Luas Green Line in the south city area, providing through running metro services to Sandyford. The prospective applicant noted that the proposed development has a similar alignment to that of Metro North. The transport project to be delivered will be an automated system having 90-second headway at peak periods, 3-minute headway during off-peak periods, and an average speed of 40 kilometres per hour.

The prospective applicant set out the overall project objective which is 'to provide a safe, high frequency, high capacity, fast, efficient and sustainable public transport service connecting Swords, Dublin Airport, Dublin City Centre and Sandyford.' The prospective applicant said that it is envisaged that the proposed development:

- Will cater for existing and future public transport travel demand along the defined corridor
- Will provide a modern, attractive and accessible service to all users
- Have a design which will integrate appropriately into the existing public realm
- Will be segregated from other transport modes
- Will contribute to a reduction in urban congestion and the enhancement of sustainable transport provision in the region

- Will support the continued economic development of the Dublin area and Ireland as a whole
- Will deliver a high-quality service with journey-time reliability along the corridor
- Will be planned, constructed and operated in an environmentally-sustainable manner
- Will support public transport network integration by providing high quality passenger interchange points, which facilitate convenient transfer between public transport modes at key locations in the study area
- Will facilitate connection to key trip attractions
- Will facilitate the provision of a 'strategic Park and Ride' for the M1 Motorway corridor

The prospective applicant set out the general context for the proposed development and referred to documents such as the National Planning Framework 2040, the National Development Plan 2018 – 2027, the Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022, the Transport Strategy for the Greater Dublin Area 2016 – 2035 and the current development plans for Fingal County, Dublin City and Dun Laoghaire-Rathdown County.

With respect to previous planning, the prospective applicant referred to the Metro North project which was approved by the Board in 2010. The prospective applicant said that a review of this project had been undertaken which had examined whether the optimum solution had been identified; based on this, a preferred route for the instant project has emerged.

The prospective applicant said that a public consultation was held between the 22nd March and the 11th May, 2018 with respect to a Luas Green Tie-In Study, an Alignment Options Study and a Luas Green Line Metro Upgrade Study. The prospective applicant reported that approximately 8,000 submissions were received in response to this public consultation; some of the issues raised in these submissions related to vibration and ground movement, disruption arising from construction, health and safety concerns, visual impact, impact on properties and impacts on cultural heritage. The prospective applicant also remarked that a substantial portion of submissions had focused on the Griffith Park location and also

Collins Avenue; it added that the proposed update of the existing Luas Green Line had raised some concern in submissions. The proposed Glasnevin station location had also raised concerns with respect to proposed acquisition of properties in the area. The prospective applicant said that all concerns with respect to the proposed development have been considered and will lead to a proportionate design response. A further public consultation phase will take place in 2019 with regard to the finalised preferred route.

With regard to the preferred route for the proposed development, the prospective applicant noted the key changes which have been made following the initial public consultation stage. These include:

- A single bore tunnel
- The relocation of the proposed depot from Estuary to Dardistown (south of the Airport)
- Tunnel Boring Machine launch site relocation to Northwood
- Relocation of the proposed Ballymun station to the west side of the R108
- Open-cut approach along the eastern side of the Swords Bypass/R132 as opposed to previously proposed elevated structure. The prospective applicant said that it has had discussions with Fingal County Council in relation to this.
- Re-configuration of the proposed Glasnevin station to reduce impacts on residential properties in the area
- Re-location of the proposed O'Connell Street stop from the central area to the western side
- Proposed Tara Street stop being re-examined with respect to existing apartments at College Gate
- Change in location of the Luas Green Line tie-in to an area south of Ranelagh; the interchange between the Metro and the Luas Green Line is now re-located from Charlemont to Beechwood. Responding to the Board's query on the matter, the prospective applicant said that some back gardens might be required to facilitate proposed development in this area, but that there would be no demolition of properties required.

Responding to the Board's questions, the prospective applicant said that the design speed of the trains would be up to 80 kilometres per hour, with an average speed of 40 kilometres per hour. The approximate travel time for the entire length of the route will be 50 minutes to 1 hour.

The principal elements of the proposed development will comprise:

- 16 new stations
- 9 upgraded Luas Green Line stations
- An upgrade of the Luas Green Line between Beechwood and Sandyford to metro standard
- Underground (single-bore) and above-ground sections
- Depot at Dardistown
- Strategic Park and Ride with 3,000 parking spaces at Estuary Station

The prospective applicant said that ancillary elements of the proposed development would include grid connections, utility diversions, road diversions and access arrangements. Drainage design is also progressing and the proposed Irish Rail Interchange at Glasnevin will require further studies.

With respect to timelines, the prospective applicant stated its current intention to lodge the formal planning application with the Board early in 2020. The preliminary design stage will continue until April 2019.

In relation to environmental impact assessment, the prospective applicant stated that a draft EIA Scoping Report will be issued and that consultation with prescribed bodies, key stakeholders and members of the public will take place. The planning application will include an Environmental Impact Assessment Report and an Appropriate Assessment Screening Report. Having regard to the scale of the proposed development, the prospective applicant acknowledged that effects on European Sites cannot be ruled out and that a Natura Impact Statement will be necessitated. The prospective applicant also set out the main contents of the Environmental Impact Assessment Report, which will include a non-technical summary. Appendices will include additional reports such as a flood risk assessment.

With respect to proposed mitigation measures, the Board's representatives said that it would be preferable if a separate document were furnished setting out a list of such mitigation measures. This could be attached as an appendix to the EIAR accompanying the planning application. Responding to this, the prospective applicant said that it intends to prepare such a chapter.

The prospective applicant said that its approach will be to present the EIAR on a topic rather than a geographical basis.

Noting the prospective applicant's intention to provide a 'Digital EIAR' to facilitate members of the public, the Board's representatives emphasised the need to ensure that this would be entirely consistent with the substantive planning application documentation. It was also pointed out that a stand-alone website has to be provided as part of the process in order to facilitate members of the public; generally, the Board asks that this not be altered or added to unless it directs otherwise.

The prospective applicant identified the key issues it expects will arise with regard to the proposed development as it moves to planning application stage. These included, in particular, the issues of alternatives and construction materials/waste management.

In relation to the issue of alternatives, the Board emphasised that this should include setting out a robust rationale for the proposed development and including, in particular, fully addressing the implications for the operation of the Luas Green Line.

With respect to materials/waste management, the prospective applicant said that it would wish to develop an understanding of what the Board's requirements in relation to this might be. The prospective applicant remarked that a difficulty which arises is defining and being exact about the end-use of materials and how and where these will be processed. It said that it intends to engage further with representatives from the EPA and that it would envisage the requirement for licensing following any approval which might issue in relation to the Railway Order. Noting this, the Board's representatives said that they might be in a position to elicit the opinion of the SID division of the Board on this and other matters. With respect to disposal of materials, the Board said that some further elucidation regarding potential locations (either

authorised or proposed) might be useful from its perspective. The Board also noted that the issue of haul routes and construction traffic management would likely be of interest to third parties. With regard to the prospective applicant's mention of an outline strategy for disposal of materials on the Metro North project, the Board's representatives said that they might be able to offer further advice on this at a later date.

Conclusion:

The Board's representatives said that they would have a meeting with the SID division of the Board in the meantime to elicit any preliminary opinions the Board may have vis-à-vis the proposed development. With regard to plans and particulars which might be of benefit in furthering the Board's understanding of the case, the prospective applicant was advised that such details might include:

- Drawings to appropriate scales
- Proposed station locations
- Sections at key locations
- Points at which underground sections change to over-ground and, likewise, over-ground to underground
- Locations of construction site compounds
- Tunnelling methodology
- Location of proposed works at Dublin Airport
- Further details on proposed depot at Dardistown
- The overall rationale for the proposed development with particular regard to the operation of the Luas Green Line

The prospective applicant said that its preference would be to have a further meeting with the Board circa February 2019; at that point, it said that it would be in a position to provide further definitive information on some of the matters raised at the instant meeting.

As well as other information mentioned above, the Board's representatives suggested that a route selection document might be forwarded prior to the holding of a further meeting.

The meeting concluded at 1.25 p.m.

Brendan Wyse
Assistant Director of Planning

AN BORD PLEANÁLA
06 DEC 2018
LTR DATED _____ FROM _____
LDG- 302010-18

1st Pre-Application Consultation

An Bord Pleanála

6th December 2018

Agenda

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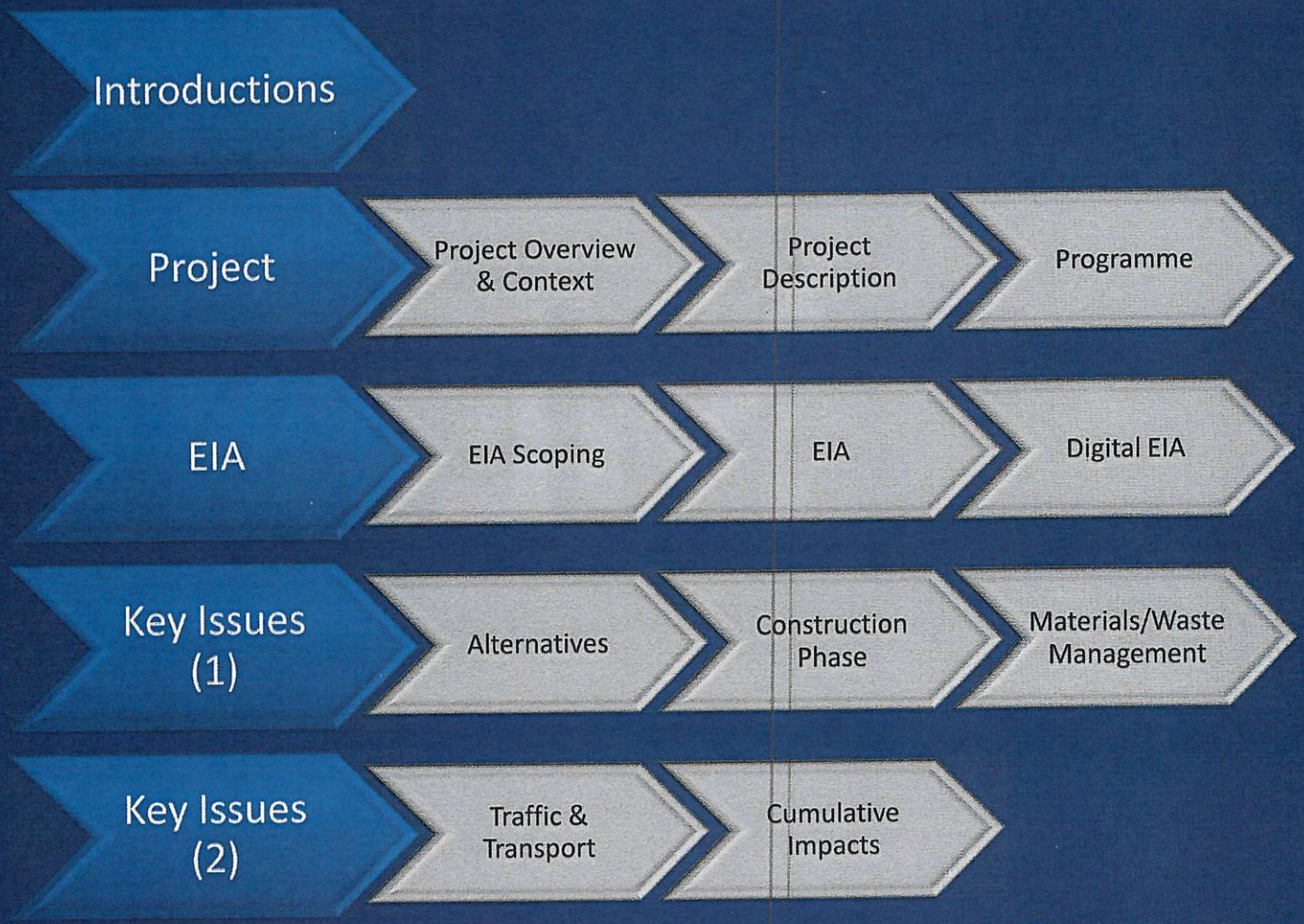

Introductions

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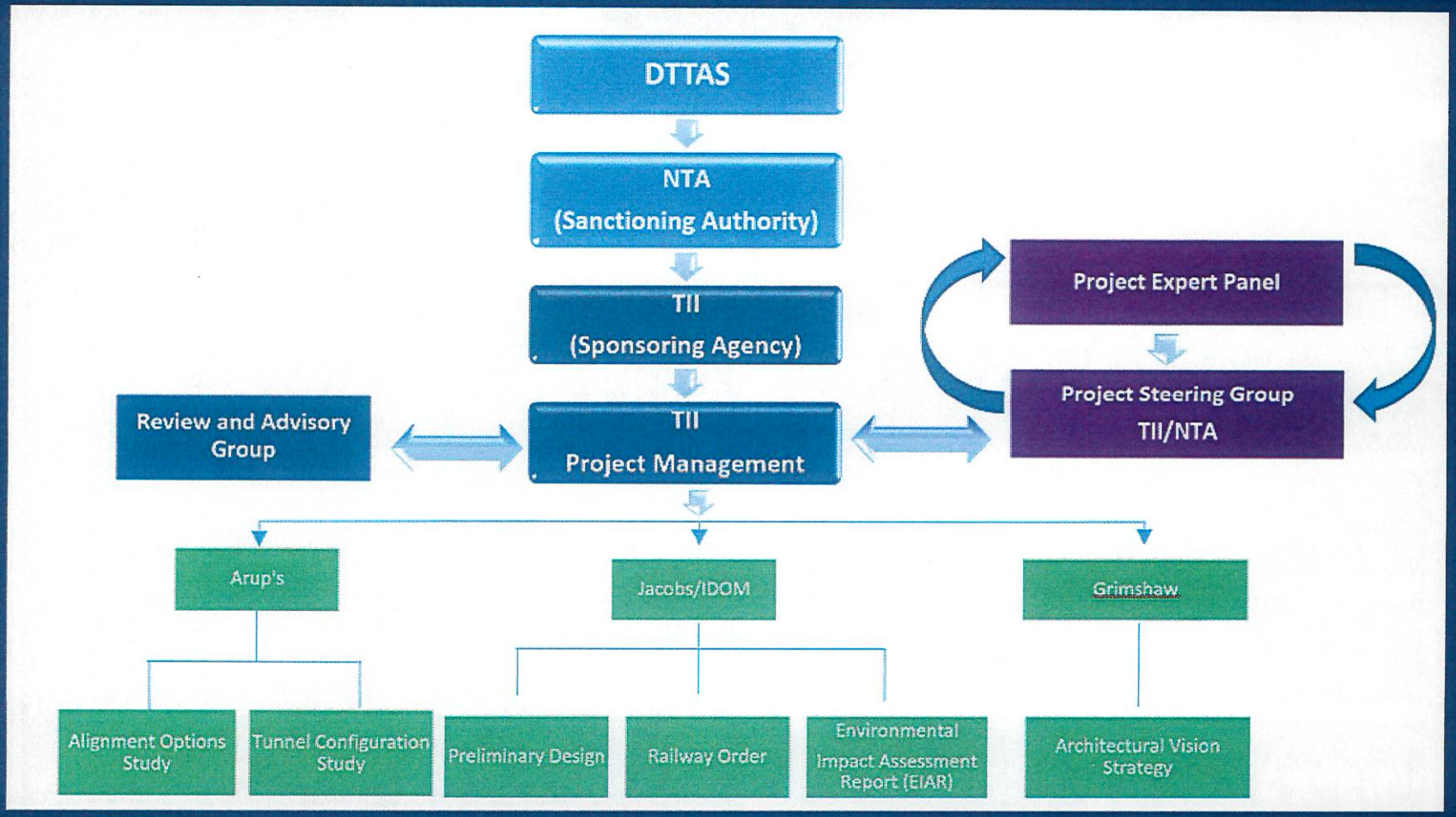

Introductions

METROLINK

IDOM
Design

Wojciech Krysa - Jacobs
Design, Utilities, Drainage

Ronan Hallissey
Environmental Lead

Maria O'Shaughnessy / Andrew Dooney / Hannah Cullen
EIA Coordination

John Kehoe/Meryl Leung
Planning

Sean Higgins
Document Control

Paul Walsh / Paul Brennan - Jacobs
GIS

EIA Specialists

AWN – Avril Challoner **Air Quality & Climate**	AWN – Jennifer Harmon **Noise & Vibration (air)**	Rupert Taylor – Rupert Taylor **Noise & Vibration (ground)**	Mitchell & Assoc. – Dave Kirkwood, Ciaran Keating **Landscape & Visual**
IAC – Faith Bailey **Archaeological, Architectural and Cultural Heritage**	Historic Building Consultants – Rob Goodbody **Archaeological, Architectural and Cultural Heritage**	Scott Cawley –Andrew Speer/Aebhin Cawley **Biodiversity**	Jacobs – Ewan Pringle **Land & Soils**
AWN – Teri Hayes **Hydrology**	AWN – Teri Hayes/Pat Groves **Hydrogeology**	Jacobs – John Paul Fitzgerald **Traffic & Transport**	Future Analytics – Stephen Purcell **Socio Economics**
CHI – Martin Hogan **Human Health**	CEI – John McAuley **Electromagnetic Compatibility & Stray Current**	Phillip Farrelly – Phillip Farrelly **Agronomy**	Jacobs – Ewan Pringle **Material Assets & Waste**

Project Overview

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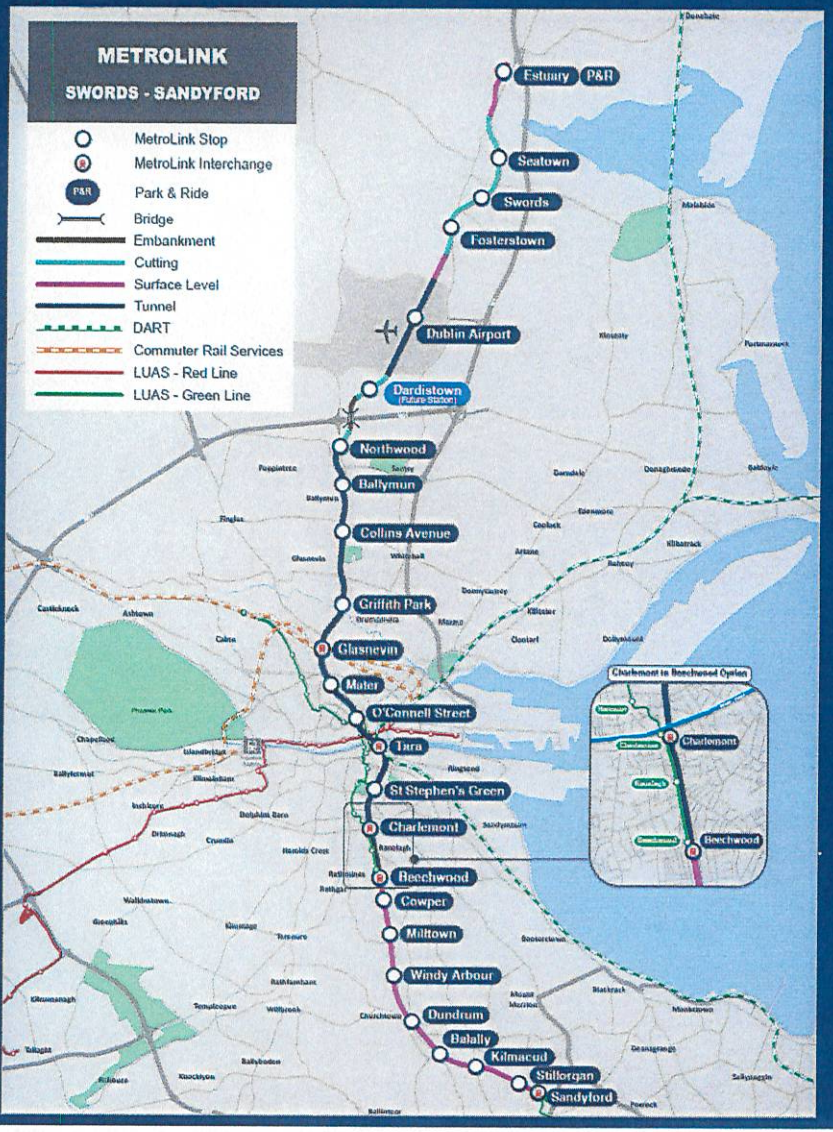
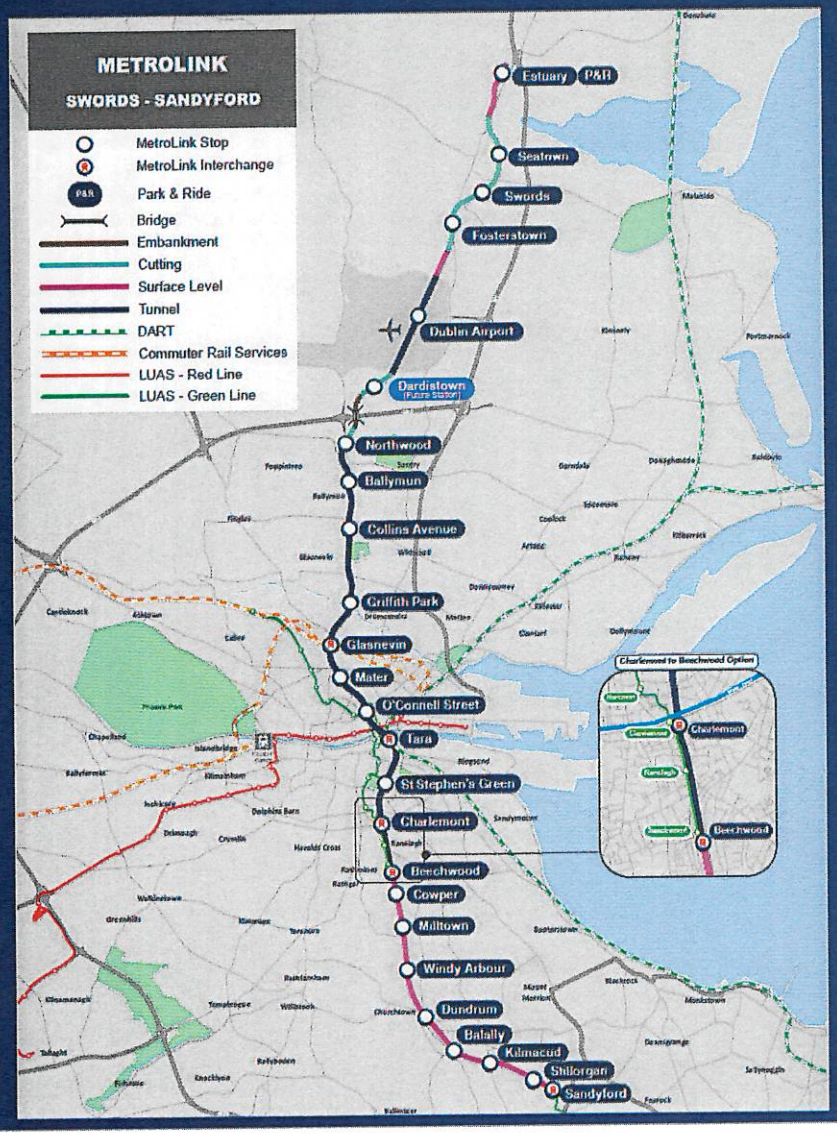


The proposed Project comprises the provision of a high capacity, high frequency, modern and efficient metro rail line between Estuary Park & Ride, north of Swords via Dublin Airport to Dublin City Centre. The proposed Project will then connect to the existing Luas Green Line in the South City area, providing through running metro services to Sandyford.

Project Overview

METROLINK



The overall project objective is:
'To provide a safe, high frequency, high capacity, fast, efficient and sustainable public transport service connecting Swords, Dublin Airport, Dublin City Centre and Sandyford.'

In delivering this overall objective the proposed Project will:

- Cater for existing and future public transport travel demand along the defined corridor;
- Be modern, attractive and accessible to all users;
- Be designed to integrate appropriately into the existing public realm;
- Be segregated from other transport modes;
- Contribute to a reduction in urban congestion and the enhancement of sustainable transport provision in the Region;
- Support the continued economic development of the Dublin area and Ireland as a whole;

Project Context

METROLINK

- Deliver a high-quality service with journey-time reliability along the corridor;
- Be planned, constructed and operated in an environmentally sustainable manner;
- Support public transport network integration by providing high quality passenger interchange points, which facilitate convenient transfer between public transport modes at key locations in the study area;
- Facilitate connection to key trip attractors; and
- Facilitate the provision of a 'strategic Park and Ride' for the M1 Motorway corridor.

Project Context -Planning

METROLINK

- National Policy
  - ✓ Project Ireland 2040 – National Planning Framework;
  - ✓ Project Ireland 2040: National Development Plan 2018 – 2027
  - ✓ National Mitigation Plan
- Regional Policy
  - ✓ Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022;
  - ✓ Draft Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031;
  - ✓ Transport Strategy for the Greater Dublin Area 2016 – 2035;
  - ✓ Fingal/North Dublin Transport Study 2015;
  - ✓ South East Corridor Study 2015;
- Local Policy
  - ✓ Fingal County Development Plan 2017 – 2023;
  - ✓ Dublin City Development Plan 2016 – 2022;
  - ✓ Dún Laoghaire-Rathdown County Development Plan 2016 – 2022;

Project Context – "Old" Metro North

METROLINK

- "Old" Metro North project was approved under the application for railway order under section 43 of the Transport (Railway Infrastructure) Act 2001 as amended by the Planning and Development (Strategic Infrastructure Act 2006) and as amended by the Planning and Development (Amendment) Act 2010. (An Bord Pleanála Reference PL06F.NA0003)
- Dardistown Depot & Spoil Management Strategy was approved under separate application (An Bord Pleanála Reference PL06F.NA0007);
- Review of "Old" Metro North – Emerging Preferred Route (EPR);

Project Context – MetroLink EPR

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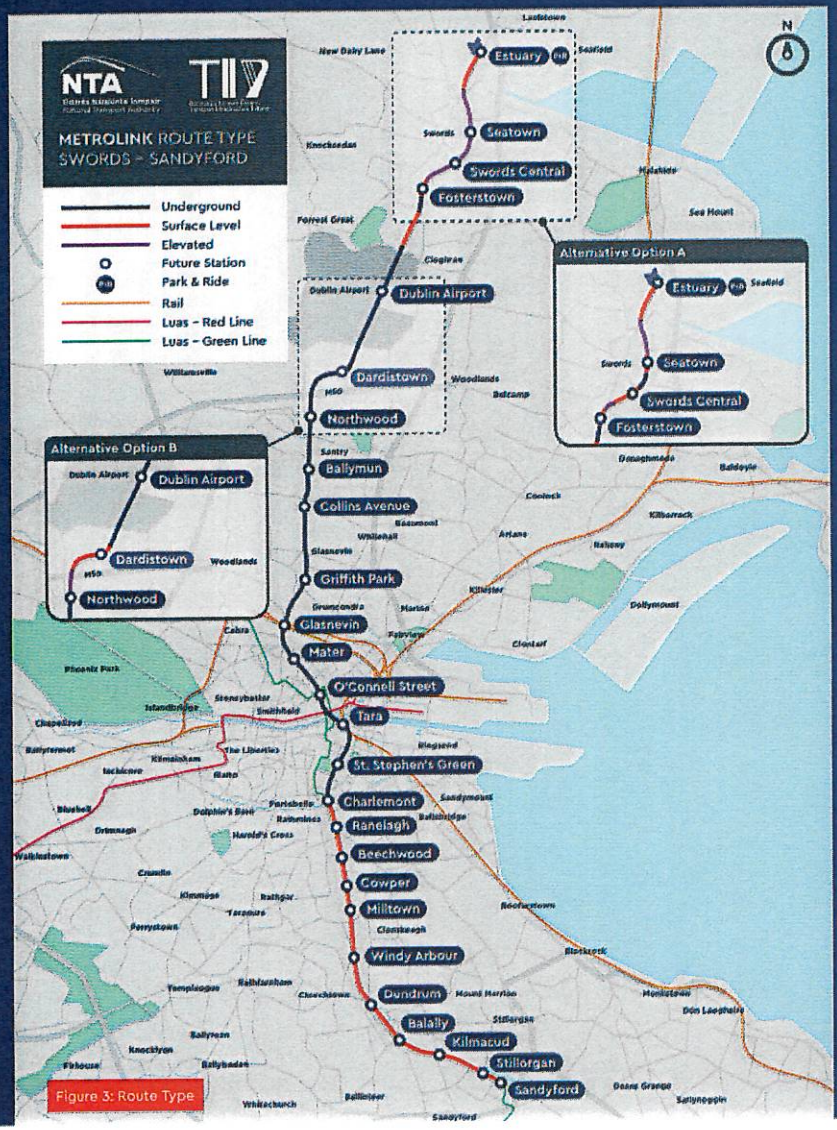
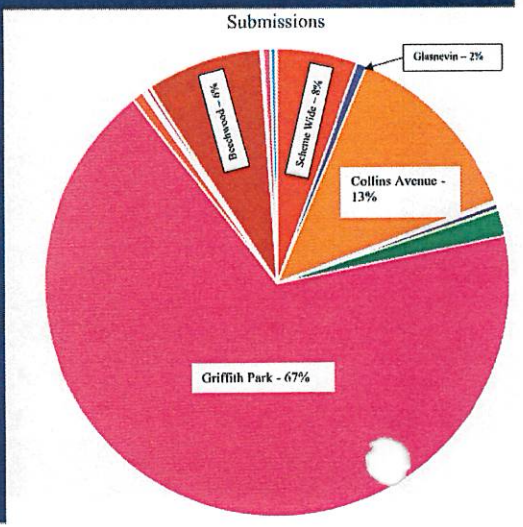


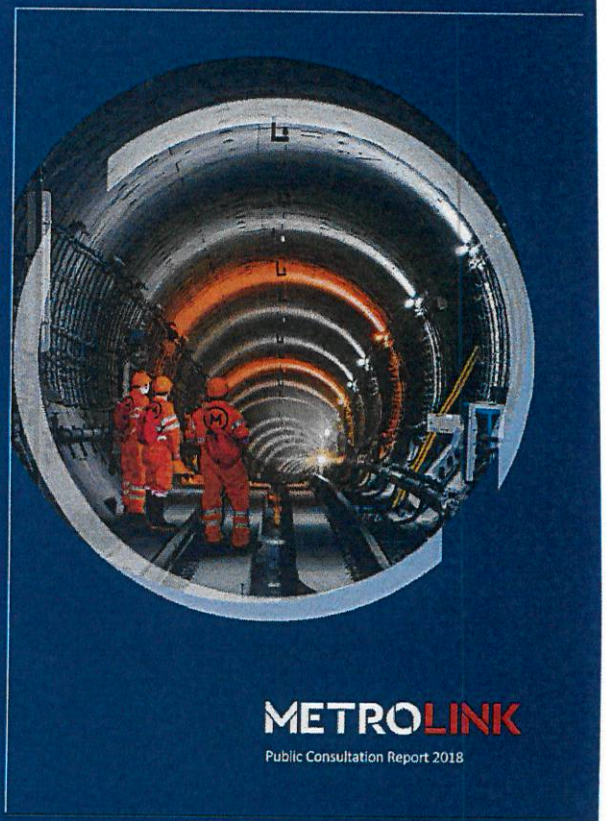
Figure 3: Route Type

- Public Consultation (March 22nd – 11th May 2018):
  - Luas Green Line Tie-In Study;
  - Alignment Options Study;
  - Luas Green Line Metro Upgrade Study;
- Response to Public Consultation;
  - 8,000 submissions;



Project Context – MetroLink EPR

- Scheme Wide concerns:
  - Vibration and ground movement;
  - Disruption during construction due to increases in traffic movements;
  - H&S concerns due to construction generated dust and noise;
  - Green Line upgrade and disruption;
  - Community severance;
  - Access arrangements along GL;
  - Visual intrusion from pedestrian bridges;
  - Property impacts;
  - Impact on proposed developments or planning applications;
  - Ensuring integration with the cycling, walking and bus networks;
  - Cultural Heritage.



Project Context – MetroLink Preferred Route

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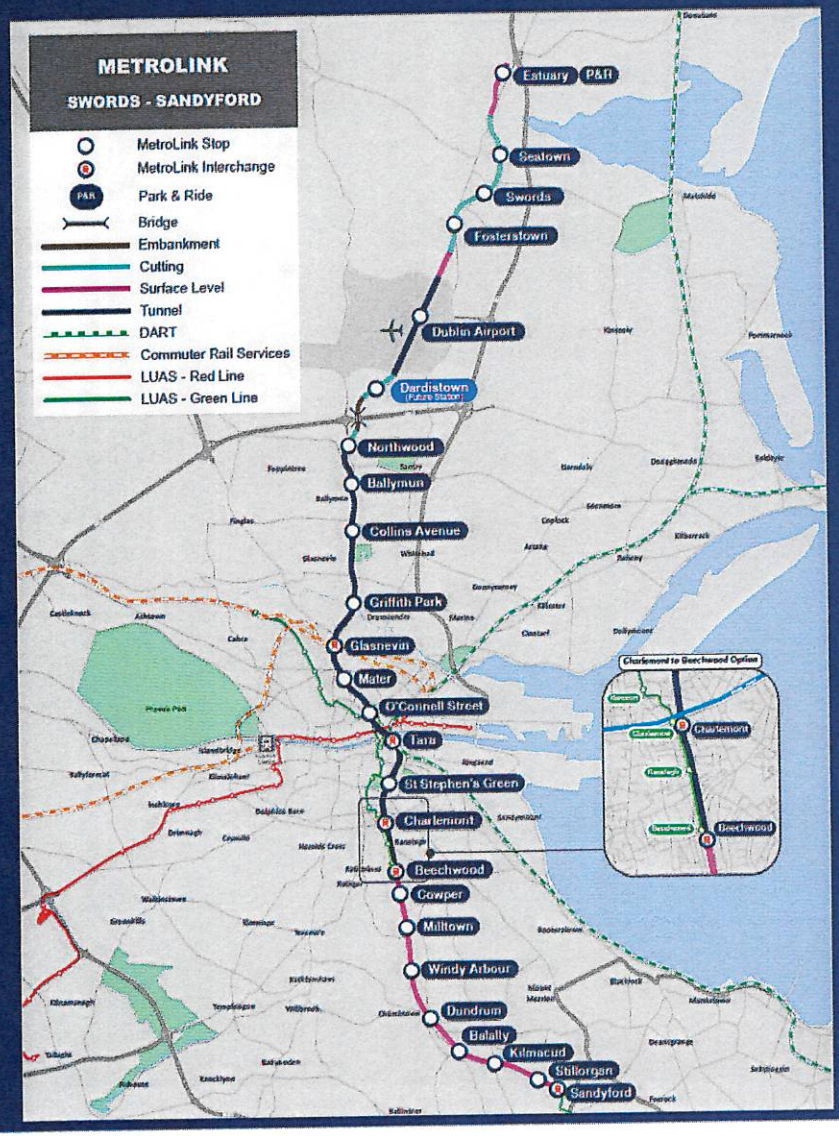

- The following key changes are proposed for *Preferred Route;*
  - *Single Bore Tunnel;*
  - *Route along R132;*
  - *Depot at Dardistown;*
  - *Bridge over M50;*
  - *Northwood & Ballymun Stations;*
  - *TBM Launch Site & Griffith Park Station;*
  - *O'Connell St;*
  - *Tara St;*
  - *Green Line Tie In;*
  - *Green Line – Improved Access/Reduced Segregation.*

Project Description – Principal Elements

METROLINK

- 16 new stations;
- 9 upgraded Luas Green Line stations;
- An upgrade of the Luas Green Line between Beechwood and Sandyford to metro standard;
- Underground (Single-Bore) and above ground sections;
- Depot at Dardistown; and
- Strategic Park & Ride with 3,000 parking spaces at Estuary Station north of Swords.

Project Description - Ancillary

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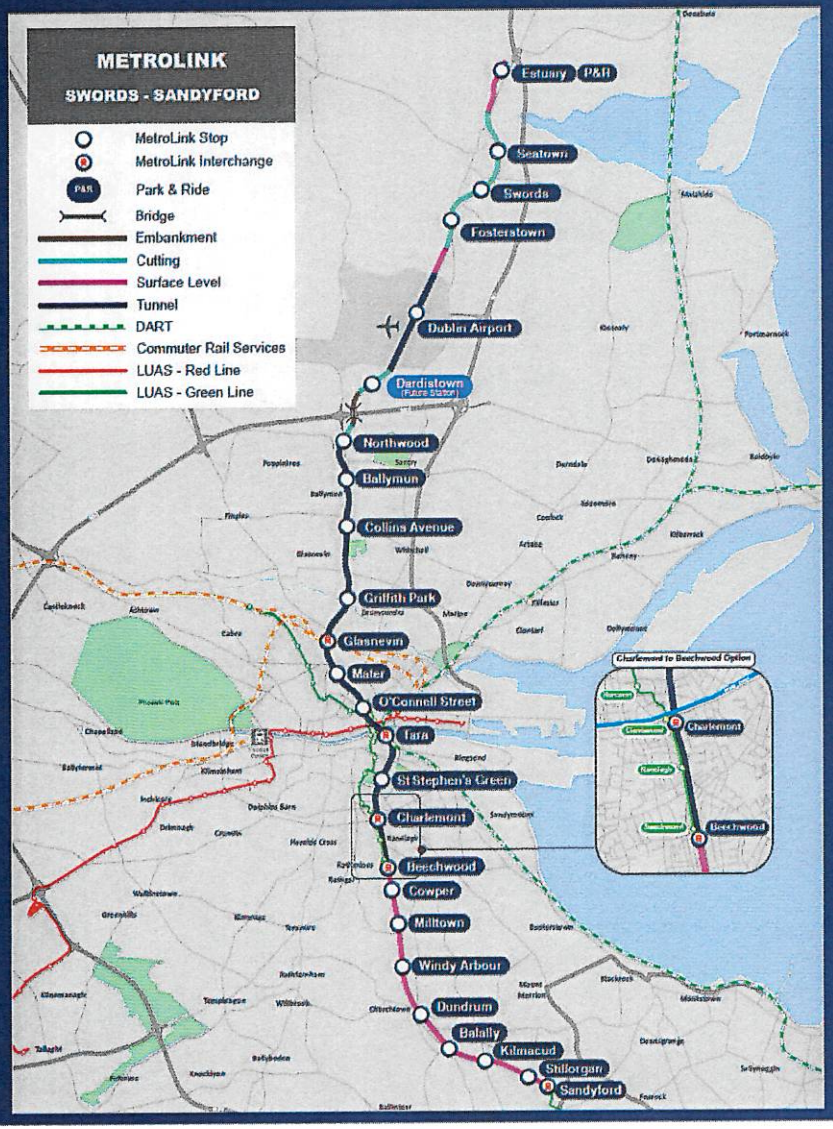

- Grid Connections – main substations are *likely* to be located at Dardistown and Milltown;
- Utility Diversions;
- Drainage Design – Discharges;
- Irish Rail Interchange - Glasnevin
- Road Diversions and Access Arrangements;

Project Description – Construction Phase

METROLINK

- Construction Phase Description;
- Construction Environmental Management Plan;
- Construction Phase Traffic/Transport Management Plan;
- Waste and Materials Management.

Project Description - Programme

METROLINK

Environmental Impact Assessment

METROLINK

- EIA Scoping;
  - No formal Scoping;
  - Draft EIA Scoping Report to be issued;
  - Consultation with prescribed bodies, key stakeholders & public.

- The key objectives of the EIA Scoping Report are to:
  - Provide a description of the proposed Project;
  - Identify likely significant effects which may arise during construction and operation of the proposed Project and which are proposed to be addressed in detail in the EIAR;
  - Identify potential environmental effects which may be partially or wholly omitted from the EIAR (scoped out);
  - Outline proposed assessment methodologies;
  - Outline the likely contents of the EIAR; and
  - Form a basis of common reference for consultation about the scope and methodology for the EIAR.

Environmental Impact Assessment

METROLINK

- Environmental Impact Assessment Report;
- Appropriate Assessment;
  - AA Screening;
  - Natura Impact Statement.
- Technical Appendices

Environmental Impact Assessment Report

METROLINK

Volume 1 - Non-Technical Summary: Presentation of the EIAR in a concise and engaging manner which allows the public and key stakeholders to understand the proposed project and the key issues associated with it.

Volume 2 - Introduction & Project Description: This section provides the project description, comprising information on the site location, design and scale of the project and the physical characteristics of the project having regard to the construction and operational phases. This section also includes a description of the reasonable alternatives assessed and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

Volume 3 – Environmental Baseline & Assessment: An accurate and comprehensive description of the environmental baseline is provided which outlines the current condition, sensitivity and significance of relevant environmental factors which will be potentially affected. The assessment identifies and assesses the likely significant effects during construction and operation and provides a description of the mitigation measures and monitoring required to ensure that significant adverse environmental effects are minimised.

Volume 4 – Figures: Clear and consistent drawings, illustrations and models cross-referenced in the EIAR. These include site location maps, designs and appearance of the project.

Volume 5 – Appendices: A collection of technical reference information supporting the EIAR chapters.

Digital Presentation - "Digital EIAR"

Key Issues

METROLINK

- Alternatives;
  - *a description of the **reasonable alternatives** studied by the developer, which are relevant to the project and its specific characteristics, and an **indication of the main reasons for the option chosen**, taking into account the effects of the project on the environment.*
- Construction Phase Impacts;
  - Construction Phasing & Impacts;
  - Socio-Economic;
  - Noise & Vibration;
  - Traffic & Transport;
  - Settlement;
- Materials/Waste Management;
  - Capacity;
  - Haulage Routes.

Key Issues

METROLINK

- Traffic & Transport.
  - Construction Phase;
  - Operational Phase;
- Cumulative Impacts.

THANK YOU

METROLINK

NTA
Údarás Náisiúnta Iompair
National Transport Authority

TII
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

An Bord Pleanála

Memorandum
ABP-302010-18

To: Brendan Wyse – Assistant Director of Planning

From: Kieran Somers – Executive Officer

Re: ABP-302010-18

Date: 11th July, 2018

Please find enclosed herein a request to enter into pre-application consultations pursuant to section 47B of the Transport (Railway Infrastructure) Act 2001, as amended, in respect of the proposed MetroLink which was received by the Board on the 28th June, 2018.

File submitted for preliminary assessment and inspectorate allocation.

11th July, 2018

Our Ref: ABP-302010-18

An Bord Pleanála

Chief Executive Officer
Fingal County Council
County Hall
Main St
Swords

Date: 10th July 2018

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir / Madam

Please be advised that the Board has received a request to enter into pre-application consultations in relation to the above mentioned proposed development. This request has been received in accordance with section 47B of the Transport (Railway Infrastructure) Act, 2001, as amended.

If you have any queries please do not hesitate to contact the Board.

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

Yours faithfully,

pp

Kieran Somers
Executive Officer
Direct Line: 01-873 7107

ail
o Áitiúil
reán Gréasáin
ghost

Tel (01) 858 8100
LoCall 1890 275 175
Fax (01) 872 2684
Website www.pleanala.ie
Email bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Our Ref: ABP-302010-18

An Bord Pleanála

Chief Executive Officer
Dublin City Council
Civic Offices
Block 4, Floor 3
Wood Quay
Dublin 8

Date: 10th July 2018

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir / Madam

Please be advised that the Board has received a request to enter into pre-application consultations in relation to the above mentioned proposed development. This request has been received in accordance with section 47B of the Transport (Railway Infrastructure) Act, 2001, as amended.

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Yours faithfully,

Kieran Somers
Executive Officer
Direct Line: 01-873 7107

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Facs **Fax** (01) 872 2684
Láithreán Gréasáin **Website** www.pleanala.ie
Ríomhphost **Email** bord@pleanala.ie

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D01 V902

64 Marlborough Street
Dublin 1
D01 V902

Our Ref: ABP-302010-18

An Bord Pleanála

Peter Walsh
Director of Capital Programme
Transport Infrastructure Ireland (TII)
Parkgate Business Centre
Parkgate Street
Dublin 8

Date: 10 July 2018

Re: Proposed MetroLink for Swords-Airport-City Centre corridor which includes connection to the existing Luas Green Line.
Estuary to St. Stephen's Green, Dublin.

Dear Sir,

An Bord Pleanála has received your request to enter into pre-application consultations under section 47B of the Transport (Railway Infrastructure) Act, 2001 as amended in respect of the above mentioned proposed development. A receipt for the fee lodged of €4,500 is enclosed.

Please be advised that the amendments introduced by the Planning and Development (Amendment) Act, 2010 provide for the Board to recover its costs in conducting pre-application consultations. These costs together with costs incurred by the Board in determining any application made to it will be included in the Board's decision. The Board will offset any application fees paid by the applicant against its costs.

Further advice or details in relation to the above will be provided by the Board at pre-application consultation meetings (if held).

The Board will revert to you in due course in respect of the request.

If you have any queries in the meantime please contact the undersigned office of the Board.

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

Yours faithfully,

pp

Kieran Somers
Executive Officer
Direct Line: 01-873 7107

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64 Marlborough Street
Dublin 1
D01 V902

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Diarmuid Collins
Senior Administrative Officer,
Strategic Infrastructure
An Bord Pleanála,
64, Marlborough Street,
Dublin 1.

AN BORD PLEANÁLA
TIME _____ BY Post
ABP-302010-18
28 JUN 2018
LTR DATER _____ FROM _____
PL SIDS/LaPS

Dáta	Date 26th June 2018	Ár dTag	Our Ref. TII18-102259	Bhur dTag	Your Ref.

Re: Request for Pre-Application Consultations in Relation to Proposed Railway Works under Section 47B of the Transport (Railway Infrastructure) Act 2001, as inserted by Section 50 of the Planning and Development (Strategic Infrastructure) Act 2006. The proposed development is referred to as MetroLink.

Dear Mr Collins,

The National Transport Authority's (NTA) Transport Strategy for the Greater Dublin Area, 2016-2035 identified a Metro service as the preferred public transport mode to address the transport needs of the Swords-Airport-City Centre corridor. It also envisaged the upgrading of the existing Luas Green Line between Ranelagh and Sandyford to a Metro level of service.

Project Ireland 2040, National Development Plan (2018-2027) combined those two projects to form MetroLink ("The Scheme"). MetroLink will provide a high speed, high capacity, high frequency, modern and efficient public transport service for people travelling along the Swords/Airport to City Centre corridor in Dublin. In addition, the Scheme will connect to the existing Luas Green Line (an existing surface light rail line) in the South City area, enabling through running metro services from Swords to Sandyford, giving an overall Scheme length (and an overall metro length) of approximately 26 kilometres. It is intended that the Scheme will commence construction in 2021 and will be open to passenger services by 2026/27.

Transport Infrastructure Ireland (TII) as Sponsoring Agency are responsible for bringing the scheme through the statutory process, detailed design and construction stages. On the 22nd March 2018 following the completion of a Route Assessment Study, TII published an Emerging Preferred Route for the Scheme. A non-statutory public consultation then commenced which concluded on the 11th May 2018.

NTA/TII have begun the process of reviewing all of the submissions received during the course of the public consultations. The Emerging Preferred Route will be reviewed having regard to those submissions and changes to the Emerging Preferred Route may be proposed to address issues raised during the public consultation. It is intended that NTA/TII will then publish a "Preferred Route" for the scheme in Q3 2018, on which the public will again be invited to submit their views. The Preferred

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

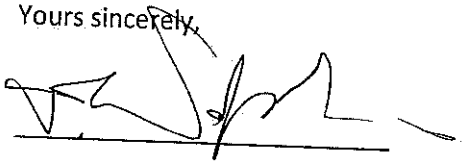
Route will then proceed to planning and it is anticipated that a Railway Order Application to An Bord Pleanála will be made in Q3 2019 in accordance with section 37(1) of the Transport (Railway Infrastructure) Act, 2001 as amended.

In advance of making the Railway Order Application, TII would like to engage in pre-application consultations with An Bord Pleanála under section 47B of the Transport (Railway Infrastructure) Act 2001, as inserted by Section 50 of the Planning and Development (Strategic Infrastructure) Act 2006, at the earliest opportunity.

I attached a map which outlines the MetroLink Emerging Preferred Route for your information.

I look forward to your advice in relation to the commencement of the pre-application consultation process and any advice you may have in relation to material or information An Bord Pleanála would find helpful in considering this request.

Yours sincerely,



Peter Walsh

Director of Capital Programme

Figure 3: Route Type

METROLINK

5th Pre-Planning Application Consultation

31 March 2021

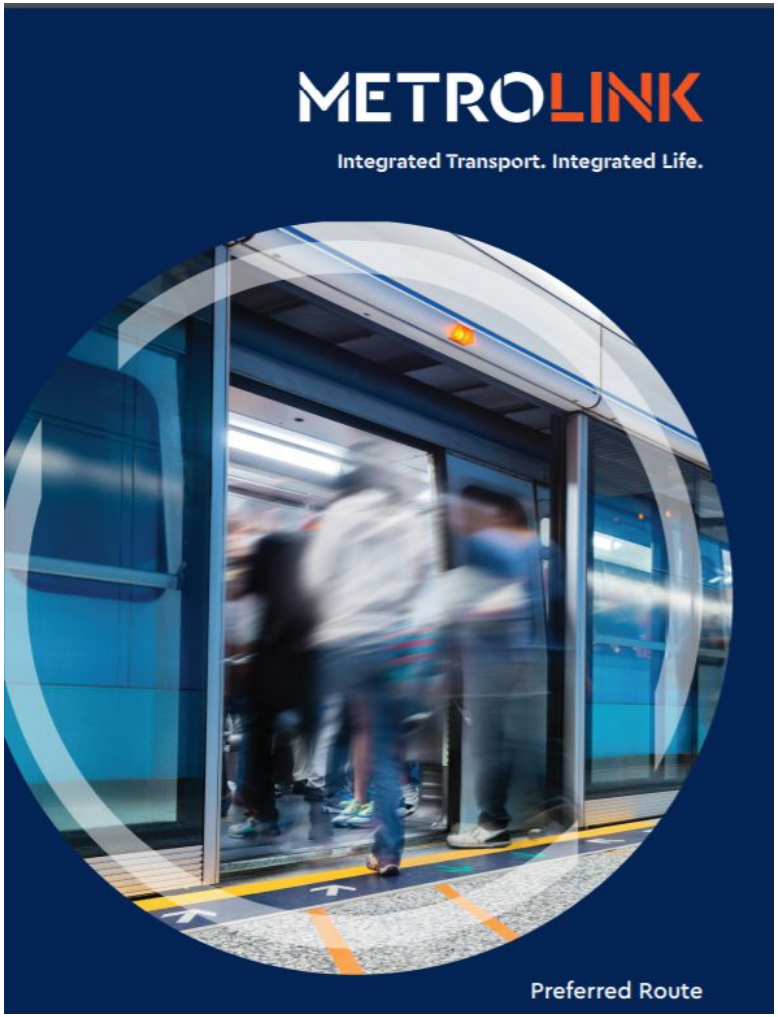
Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040 | NTA Údarás Náisiúnta Iompair National Transport Authority | TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

Agenda

1. Actions arising from previous pre-application consultation (October 2020)
2. Confirm pre-application meeting schedule
3. Extent of Project
4. Railway Elements – Part 1
    - Vertical / horizontal alignment
    - North of M50
    - North City
5. Related Elements
6. Stakeholder Engagement
7. Article 27 Waste Management
8. Approach to Drawings

Actions arising from previous meeting

- St. Stephen's Green Station options report
- Pre-application Consultation roadmap
- Strategic Principles Report



Confirm pre application meeting schedule

ABP Consultation 6 - Focus is on Scheme Design: April 2021

- Update of actions arising from last meeting with ABP
- Project Need
- Project elements (Part 2)
- City Stations – Mater, O'Connell, Tara, St. Stephen's Green, Charlemont
- Estuary Station and Park & Ride
- Dardistown/Depot Location
- Glasnevin Station
- Construction

ABP Consultation 7 - Environmental Matters: May 2021

- Update of actions arising from last meeting with ABP
- Update on project progress
- Key Environmental issues
- Groundbourne Noise & Vibration
- Settlement
- Transport & Traffic
- Alternatives
- Biodiversity and NIS
- Soils Geology & Hydrogeology
- Landscape & Visual Assessment
- Architectural Heritage
- Cumulative & In-combination Effects

ABP Consultation 8 – Update on any final Project Changes and Close Out: June 2021

- Agenda for pre-application consultation:
- Update of actions arising from last meeting with ABP
- Focus on Final Project Confirmation
- Changes following reference design and EIA mitigation
- Lodgement Strategy
- Management of Documentation to ABP (Physical and Digital)
- Public notices and Statutory Forms
- Agreement on Public Display etc.

Railway Order Application Boundary

Figure 1.1 | MetroLink Map

Railway Order Application Boundary

- Interactive Project Mapper run through
- Highlight extent of Railway Order works area beyond immediate rail alignment, e.g.
  - Railway Order works to public roads
  - Works to Irish Rail lines within Metrolink
  - Works to sports pitches
  - Utilities works
  - Construction areas
  - Note separate ESB application for works under S182A

Railway Elements – Part 1

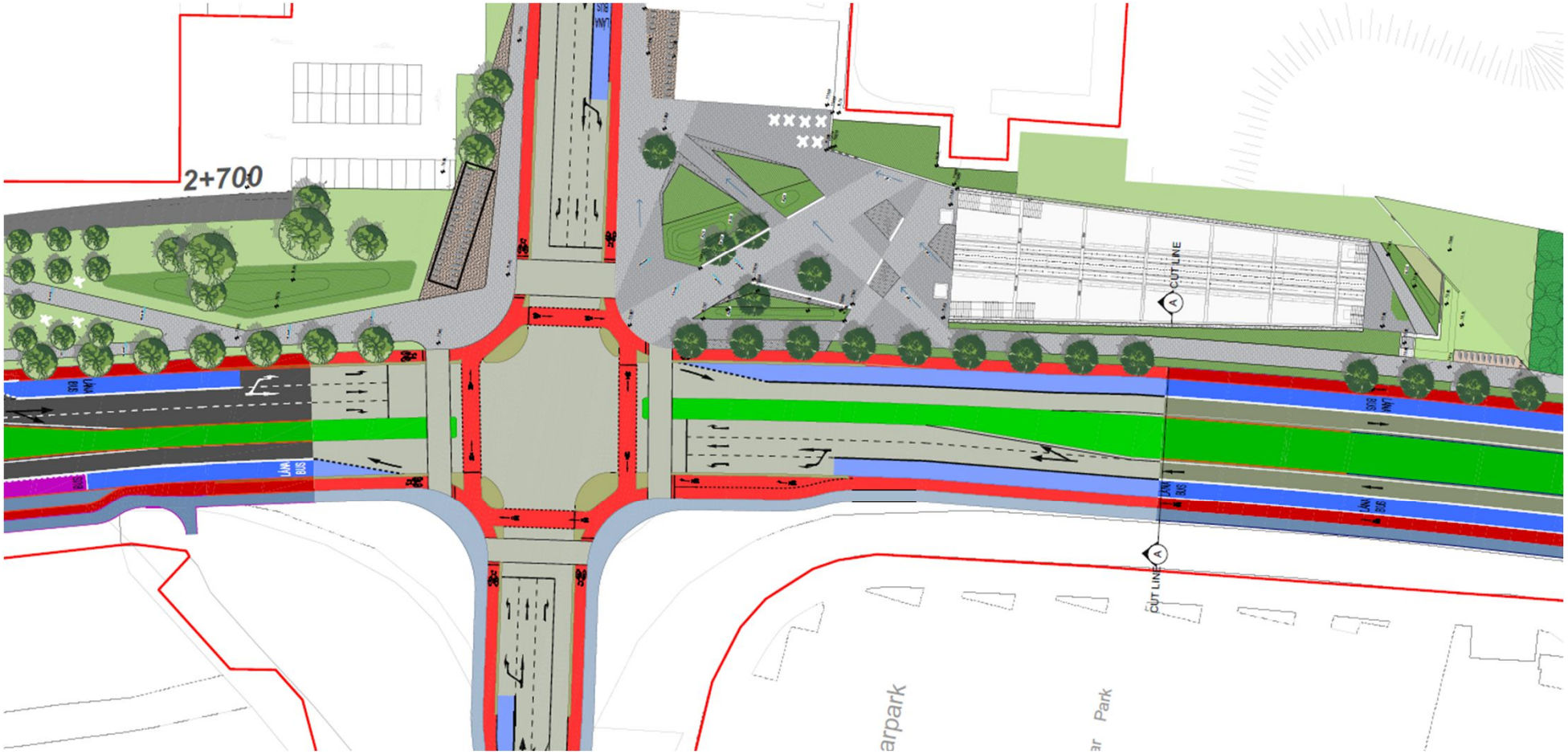
Vertical / Horizontal Alignment

Project Element	Vertically (upwards) (m)	Vertically (downwards) (m)	Horizontally (west of centre line) (m)	Horizontally (east of centre line) (m)
Surface works (not impacting on operational public roadways)	2	2	5	5
Surface works (not impacting on operational public roadways)	1	1	2.5	2.5
Tunnel Alignment	10	5	15	15
Retained Cut and Cut and Cover Alignment	1	1	2.5	2.5

*Typical limits of deviation

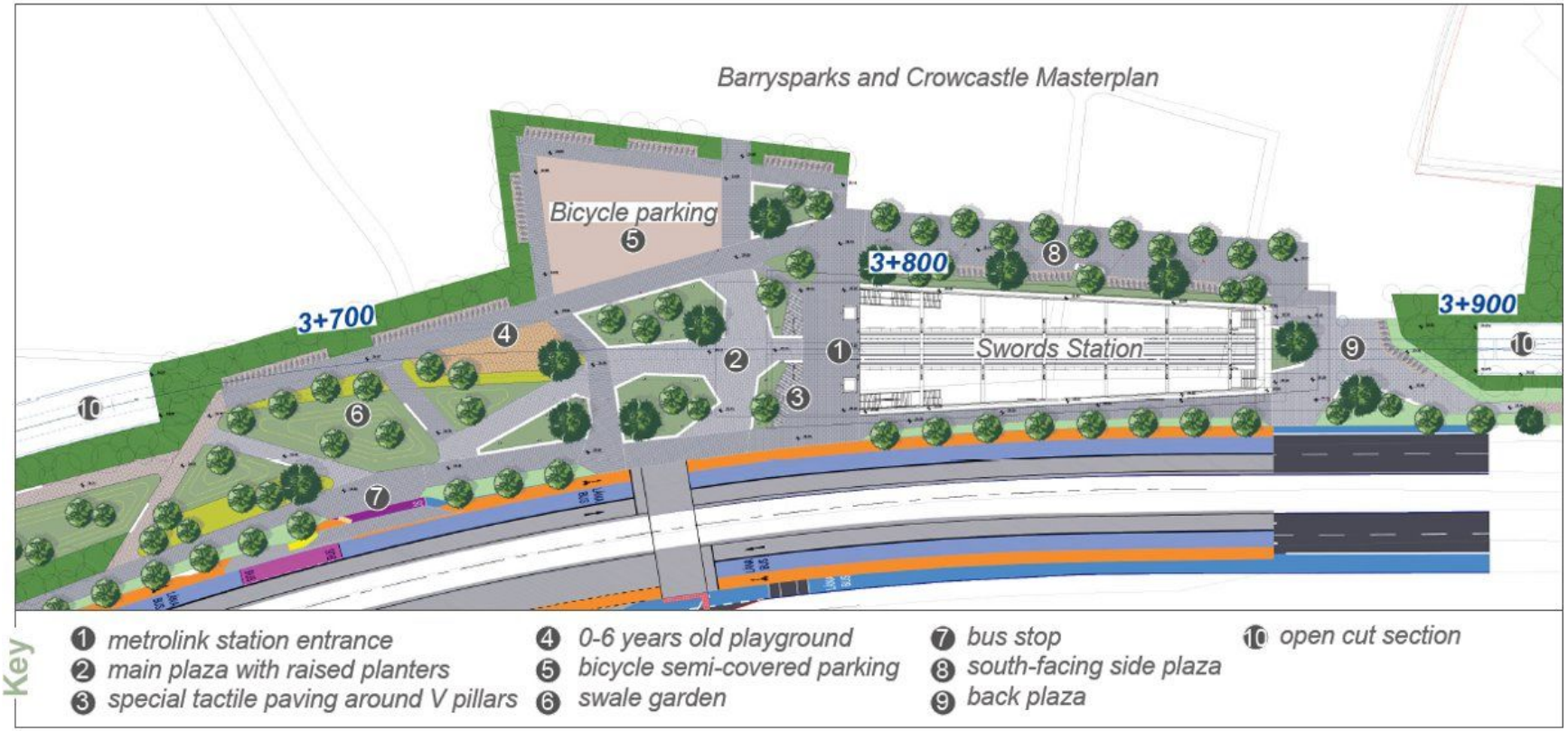
North of M50

R132 stations – Seatown



R132 stations – Swords Central

SWORDS CENTRAL LANDSCAPE CONCEPT
Draft plan

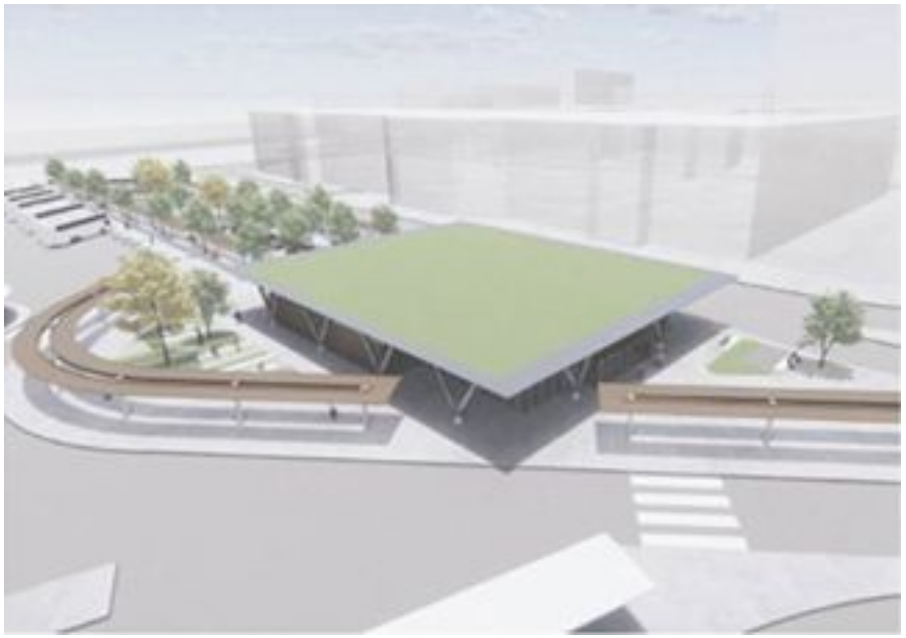


R132 stations – Fosterstown

DRAFT PLAN

Fosterstown station

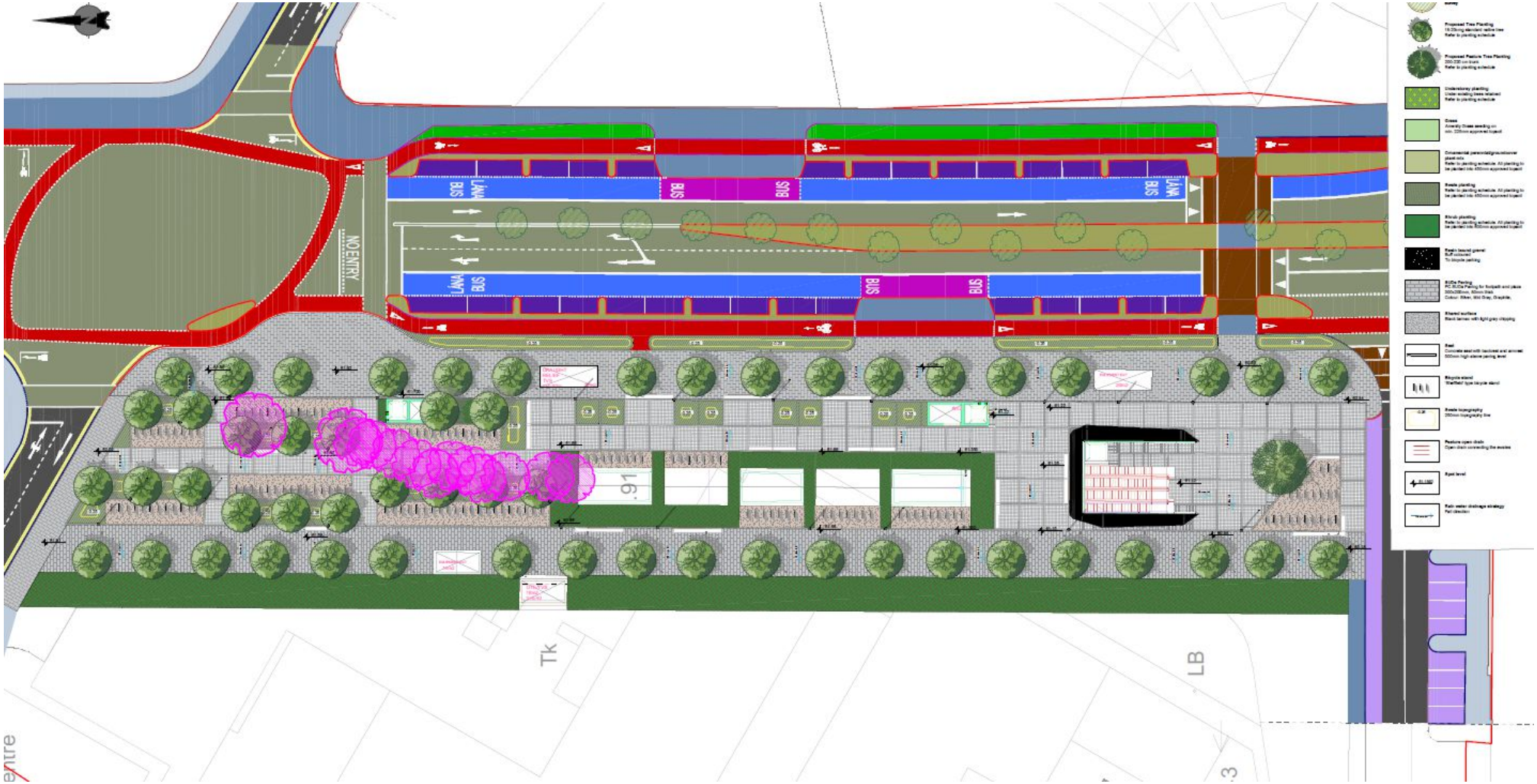
Dublin Airport



North City

Northwood Station

Ballymun Station



Collins Avenue Station

Griffith Park Station

Related Elements

Related Elements

- R132 Connectivity project
- BusConnects
- ESB
- Glasnevin
- Sports Facilities
- O’Connell Street

R132 Connectivity Project

- Separate Project to signalise R132 in Swords
  - Project need is independent of Metrolink
  - Signalisation of roundabouts on R132
  - Changes to road layout
  - Pedestrian, cycle facilities
- Works not part of Metrolink Railway Order
- Railway Order designed to tie into R132 Connectivity Project
- R132 Connectivity to be lodged in advance of Metrolink

BusConnects

- Metrolink has coordinated with design of BusConnects
- Metrolink has provided space to allow BusConnects to happen
- In most locations, Metrolink is not proposing a new layout for road
  - i.e. Metrolink designed to tie-in to future BusConnects layout
- Some road upgrades are proposed in Metrolink, e.g.
  - Vents at Collins Avenue Station are within central median of R108
  - R132 pedestrian crossings proposed at Fosterstown and Swords Central stations
- BusConnects proposing phased lodgement of applications in 2021

ESB

- Temporary Connection: Inclusion in MetroLink Railway Order Application;
- Permanent Connection: Application under Section 182A of Planning and Development Acts
  - Full Assessment in EIAR.

Dart Plus

- Kildare Line and Maynooth Line upgrade and electrification
- Separate Irish Rail consent applications for these works
- Metrolink Railway Order to include
  - Construction of the station box for Metrolink and Dart Plus
  - alignment changes to Irish Rail necessary to deliver an interchange station at Glasnevin

Playing Fields Replacement

- Metrolink Interface with existing playing pitches along route
  - Balheary Park (Fingallians and Swords Rovers)
  - Dardistown (NaFianna, Starlights, Whitehall Rangers)
  - Albert College Park (GAA and soccer pitches)
  - Griffith Park (Home Farm FC)
- Pitches will require reinstatement or redesign
  - Reinstated pitches in existing location will form part of the Railway Order
- Certain pitches may be provided outside the Railway Order Application Boundary
  - Replacement pitches off-site will not form part of the RO
- All pitch provision arising from the Metrolink project will be assessed within the EIAR

O’Connell Street Station

- Ongoing engagement with landowners (Hammersons)
- Design development coordination
  - Informed by DCHG and DCC consultation
  - Reduction in impact on 59, 60 O’Connell Street
- Hammerson’s propose phased lodgement of planning applications
  - Early Q2 2021
  - Late Q2 2021
- Metrolink RO to include all works necessary to deliver station

Stakeholder Engagement

- Key Consultations since October 2020
  - Fingal County Council
  - Dublin City Council
  - OPW
  - Irish Rail
  - Mater Hospital
  - Trinity College
  - Waterways Ireland
  - Dublin Airport Authority
  - Utility Providers

Article 27 Notification

Article 27 Notification

- Ongoing engagement on Article 27 notification
  - EPA
  - Eastern Midlands Waste Region
- Key mitigation measure in EIAR
- Further GI underway to identify likelihood of Article 27 appropriate material

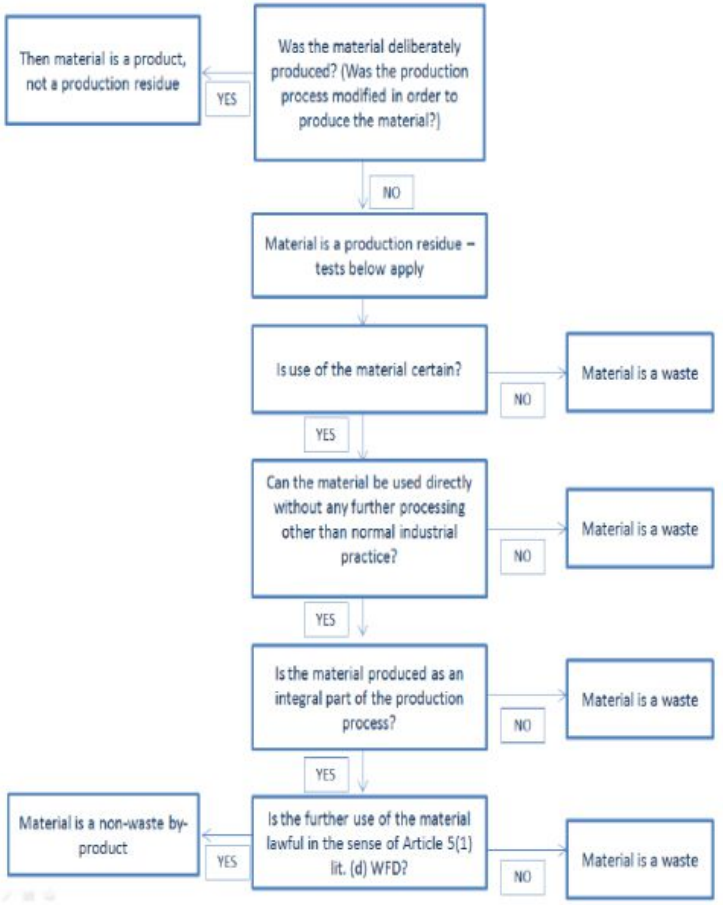


Figure 1 Decision tree for determining whether a material is a by-product (Source: Commission guidance)

Drawing Standards

Drawing Standards

- Progression in detail since Metro North
  - Scales and size
  - Level of information
  - Comparison with SID applications
- Drawings that describe the MetroLink project from Book 1 (alignment) and Book 2 (structures) – in the order of 600
  - Does not include property drawings

AOB

MetroLink Route Map
Legend
Future MetroLink Station
MetroLink Line
Estuary
Balheary Viaduct
Seatown
Swords Central
Fosterstown
North Portal – tunnel ends
Dublin Airport
South Portal – tunnel starts
Dardistown
Dardistown Proposed Future Station
M50 Overpass
Northwood
Tunnel starts
Ballymun
Collins Avenue
Albert College shaft
Griffith Park
Glasnevin
Mater
O'Connell St.
Tara
St Stephen's Green
Charlemont
Tunnel Ends
Figure 1.1 | MetroLink Map

Any questions?

METROLINK

6th Pre-Planning Application Consultation

15 September 2021

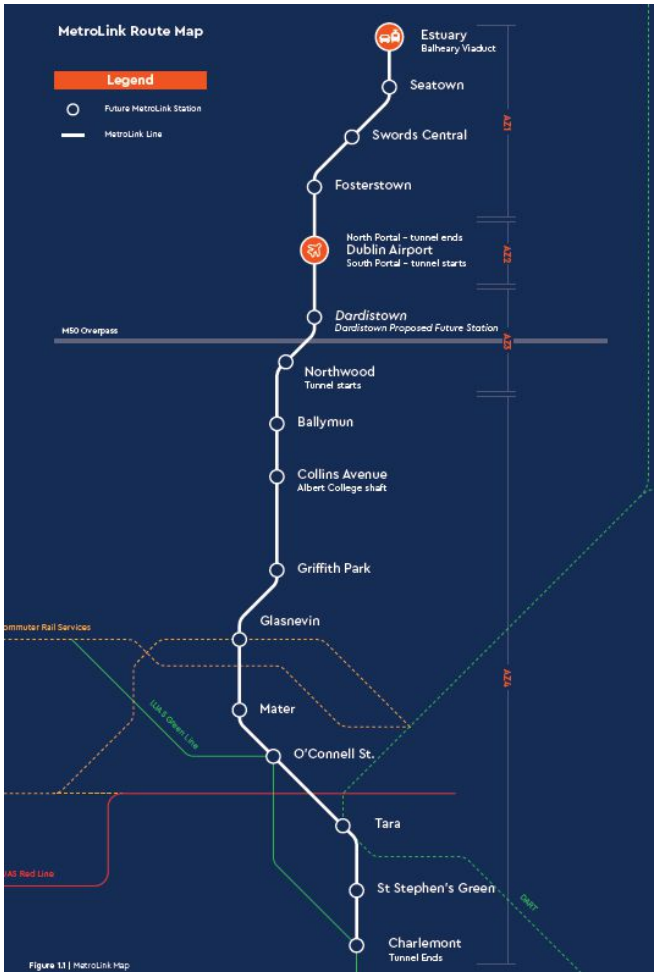
Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040 | NTA Údarás Náisiúnta Iompair National Transport Authority | TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

Agenda

Figure 1.1 | MetroLink Map

1. Project Update
2. Actions arising from previous pre-application consultation
3. Project Elements
4. Stakeholder Engagement
5. Waste
6. Project Need
7. Railway Order Drawings
8. AOB – incl. Closure of Consultation

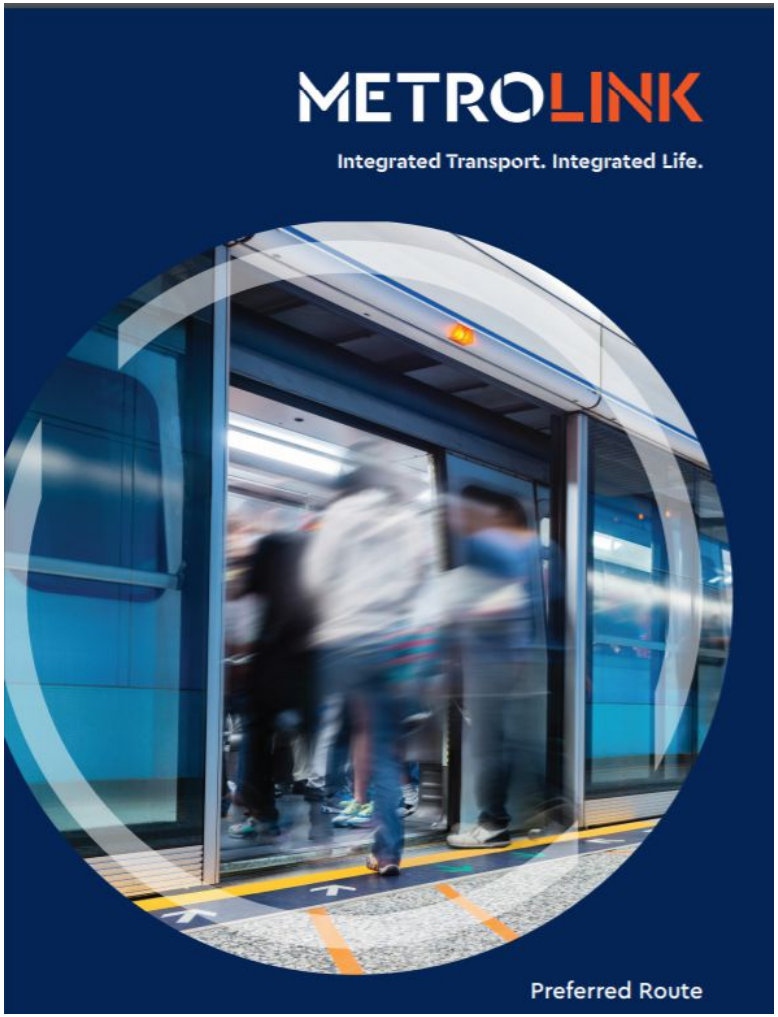
Project Update and Actions Arising



Project Update

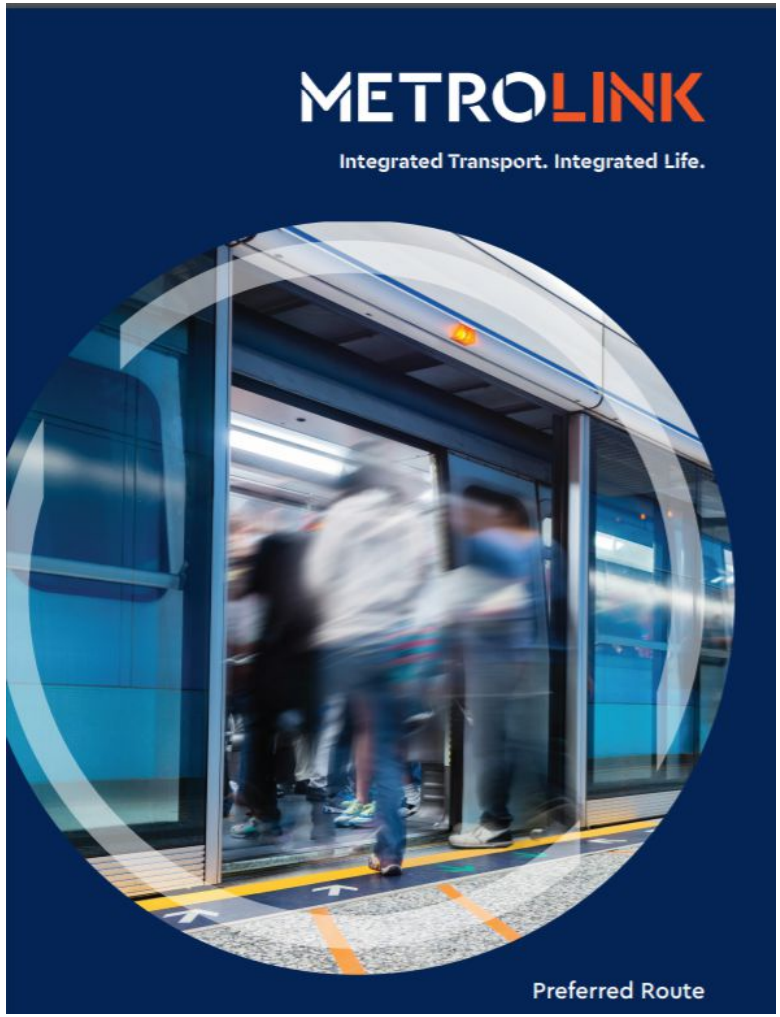
Progress on:

- Stakeholder Consultation
- EIAR and NIS
- Preparation of 120 photomontages
- Preparation of 600 drawings, including:
  - Reference Design drawings
  - Property drawings
  - Utility drawings
- RO Documentation
- RO ready for submittal by end of 2021
- Lodgement will following Business Case approval (Q1/Q2 2022)



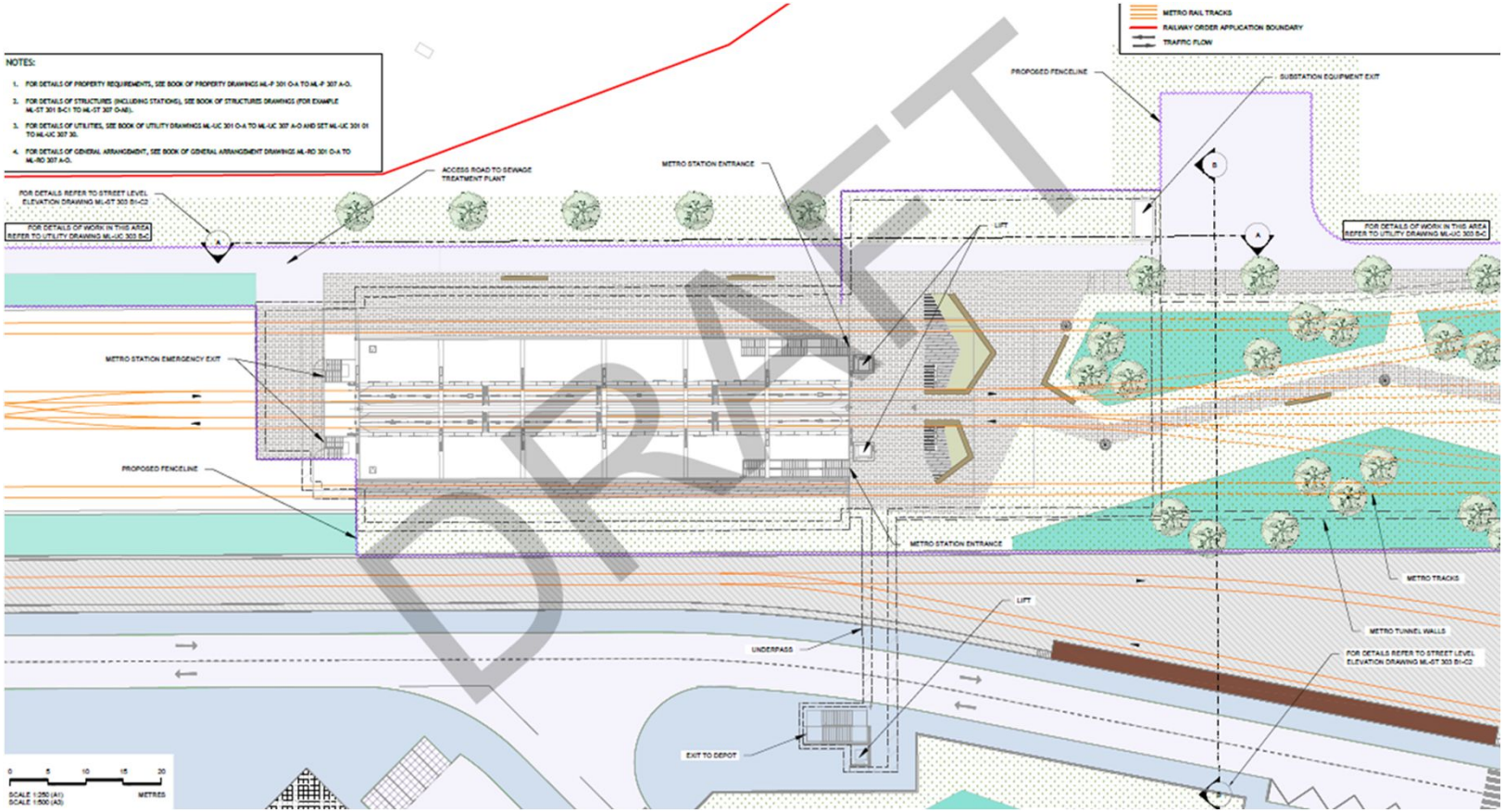
Actions arising from previous meeting

- Strategic Principles Report
- Feedback from the Board on Article 27 discussions with EPA

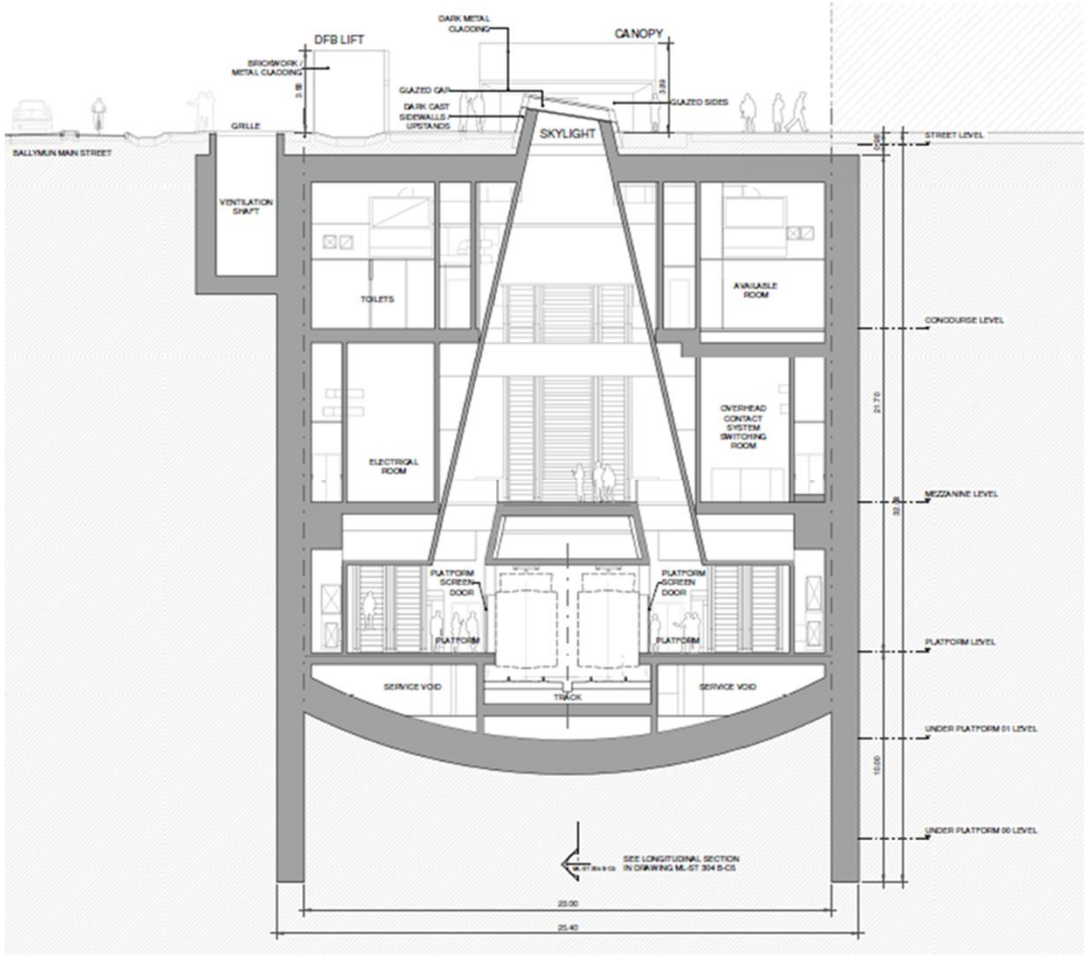


Project Elements –
Station Types

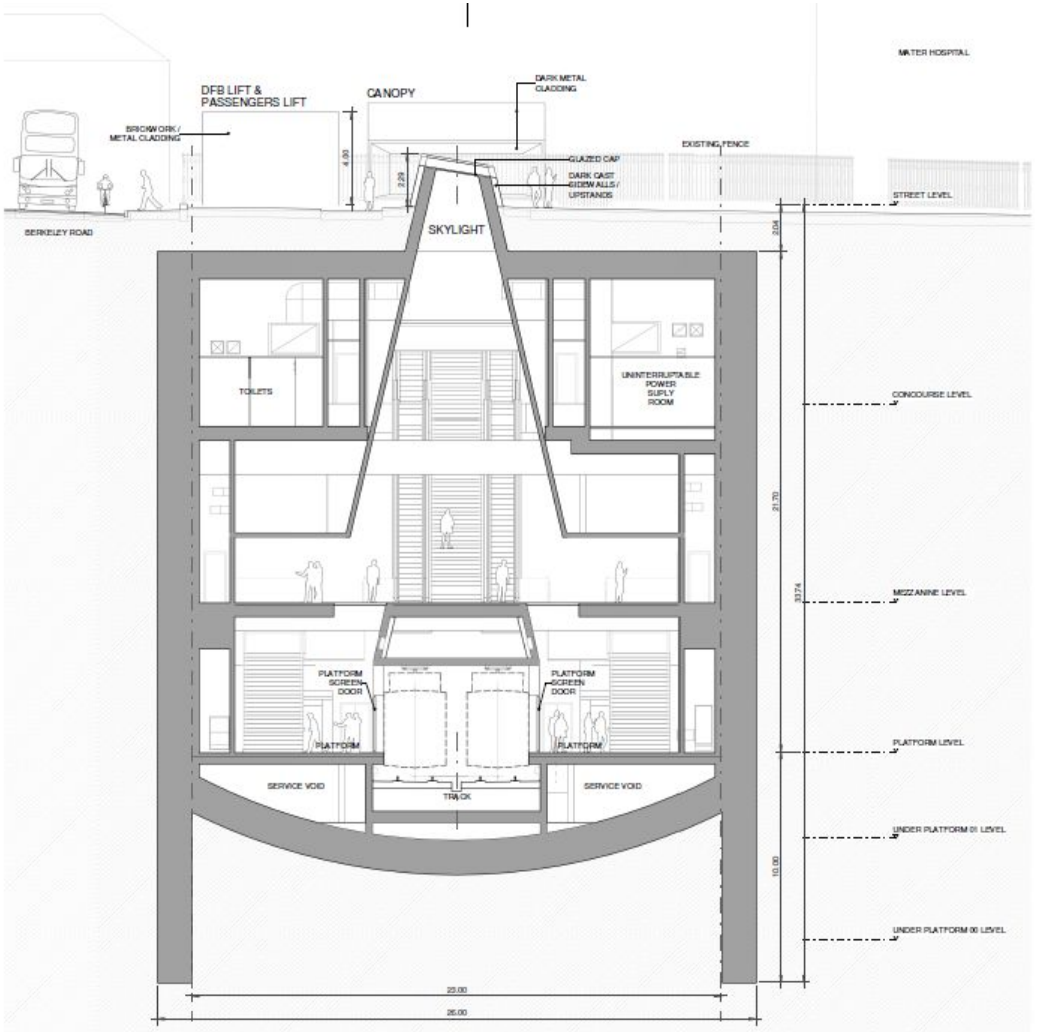
Typical Retained Cut Station



Typical Underground Station Cross Section



Typical Cut and Cover



Project Elements – Part 2

Remaining Stations

Park and Ride

Depot

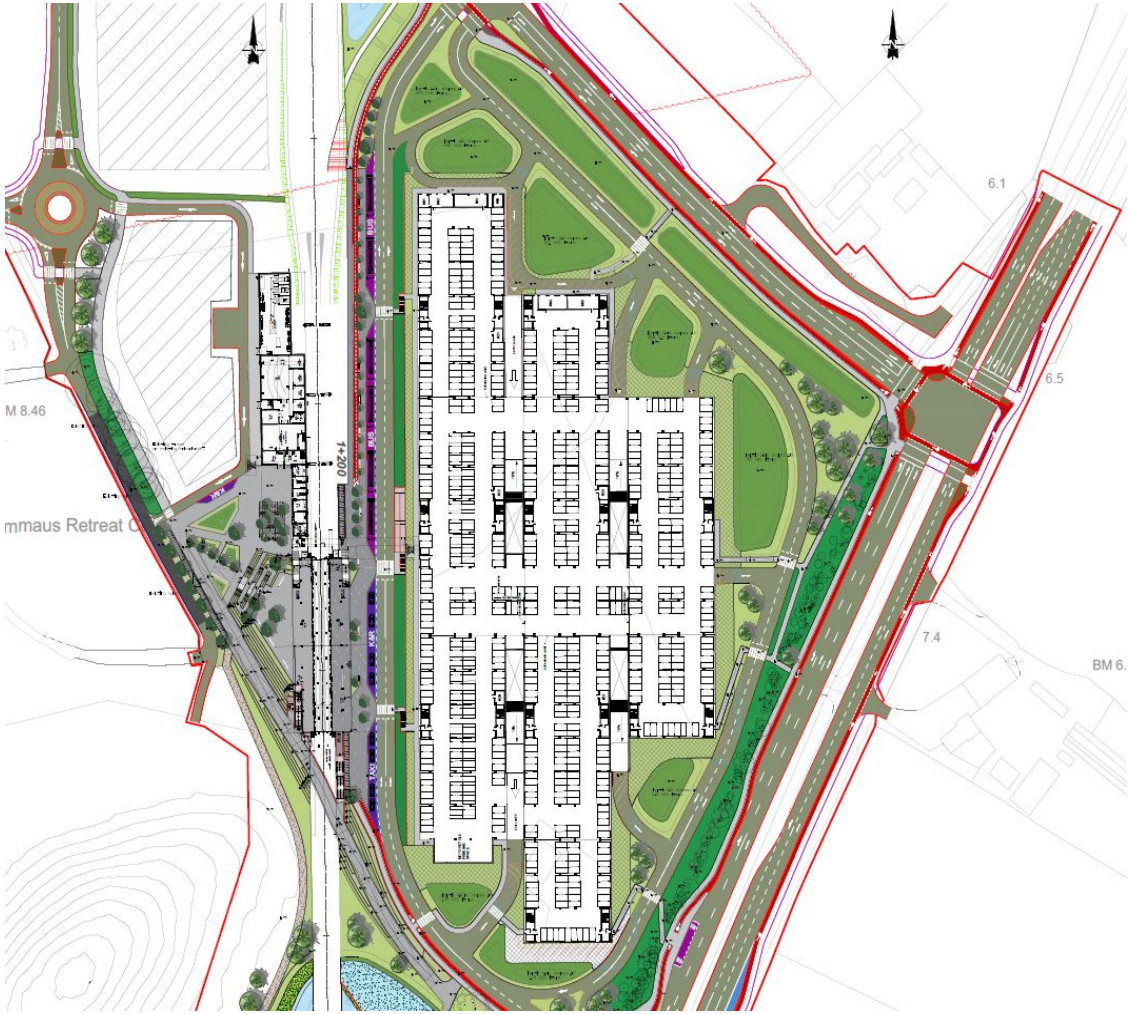
Estuary Station and Park & Ride

- Northern Termination Station for Metrolink

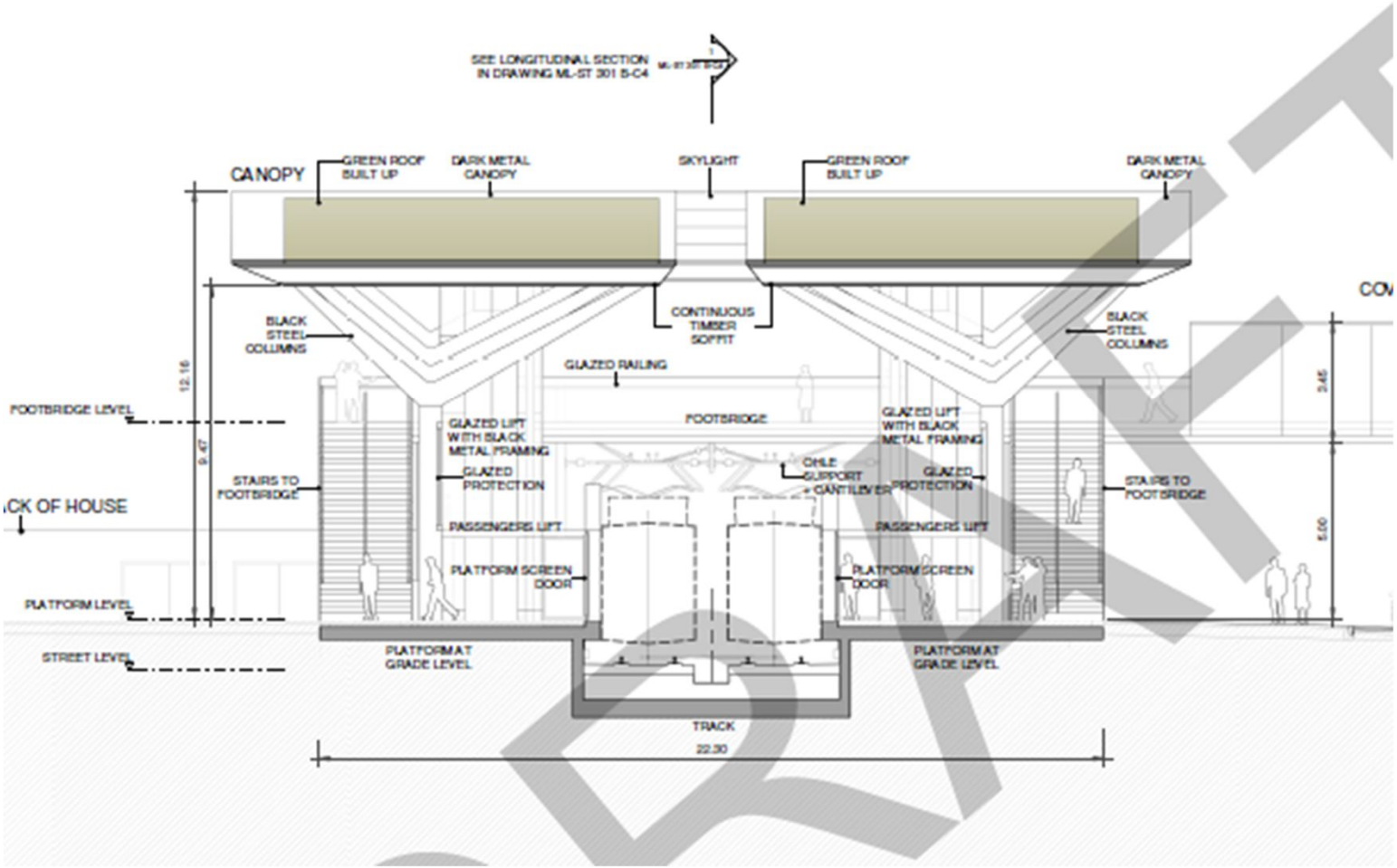
- Connectivity to existing and planned development areas in North Swords
- Designed to accommodate future new settlement at Lissenhall
- Construction of part of Swords Western Distributor Road for road and cycle connectivity

- Strategic location for a Park and Ride facility
  - Designed to accommodate 3,000 parking spaces
  - Supported in Transport Strategy for the Greater Dublin Area 2016-2035
  - Located on a main radial route to the city region
  - Allows users access the city centre using sustainable transport modes
  - Allows the efficient functioning of Dublin Airport and Dublin Port
  - Captures vehicle movements before M50

Estuary Station and Park & Ride Layout



Estuary Station Cross Section



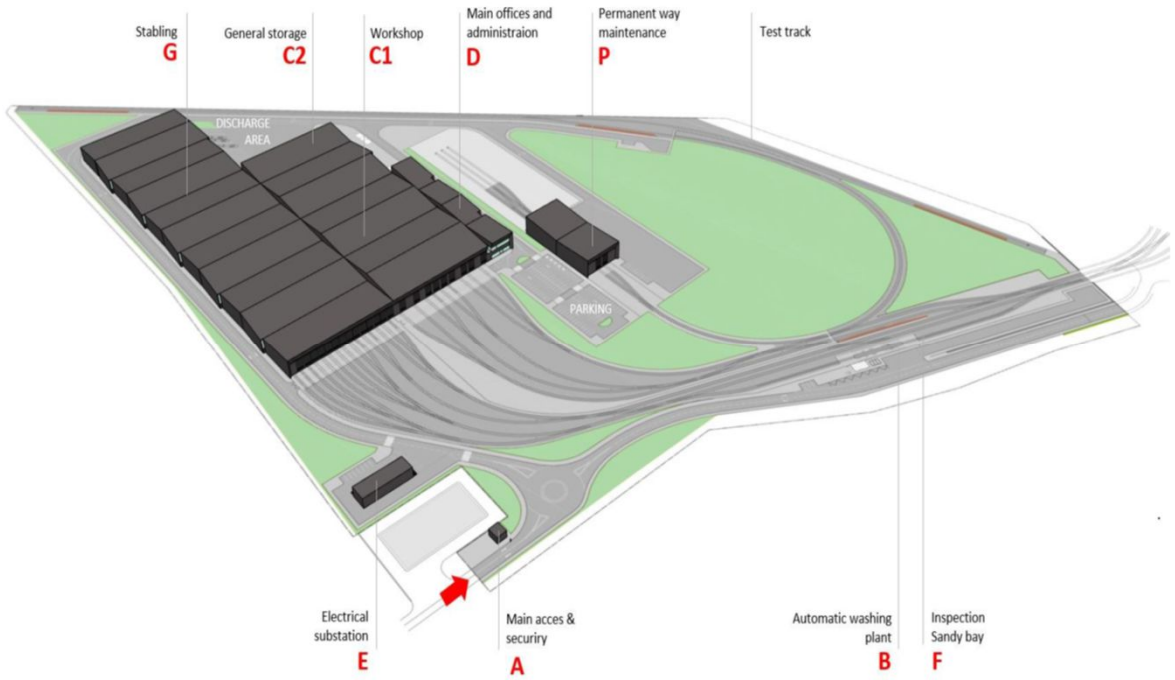
Park and Ride Layout

Estuary Park & Ride

Looking north west from R132

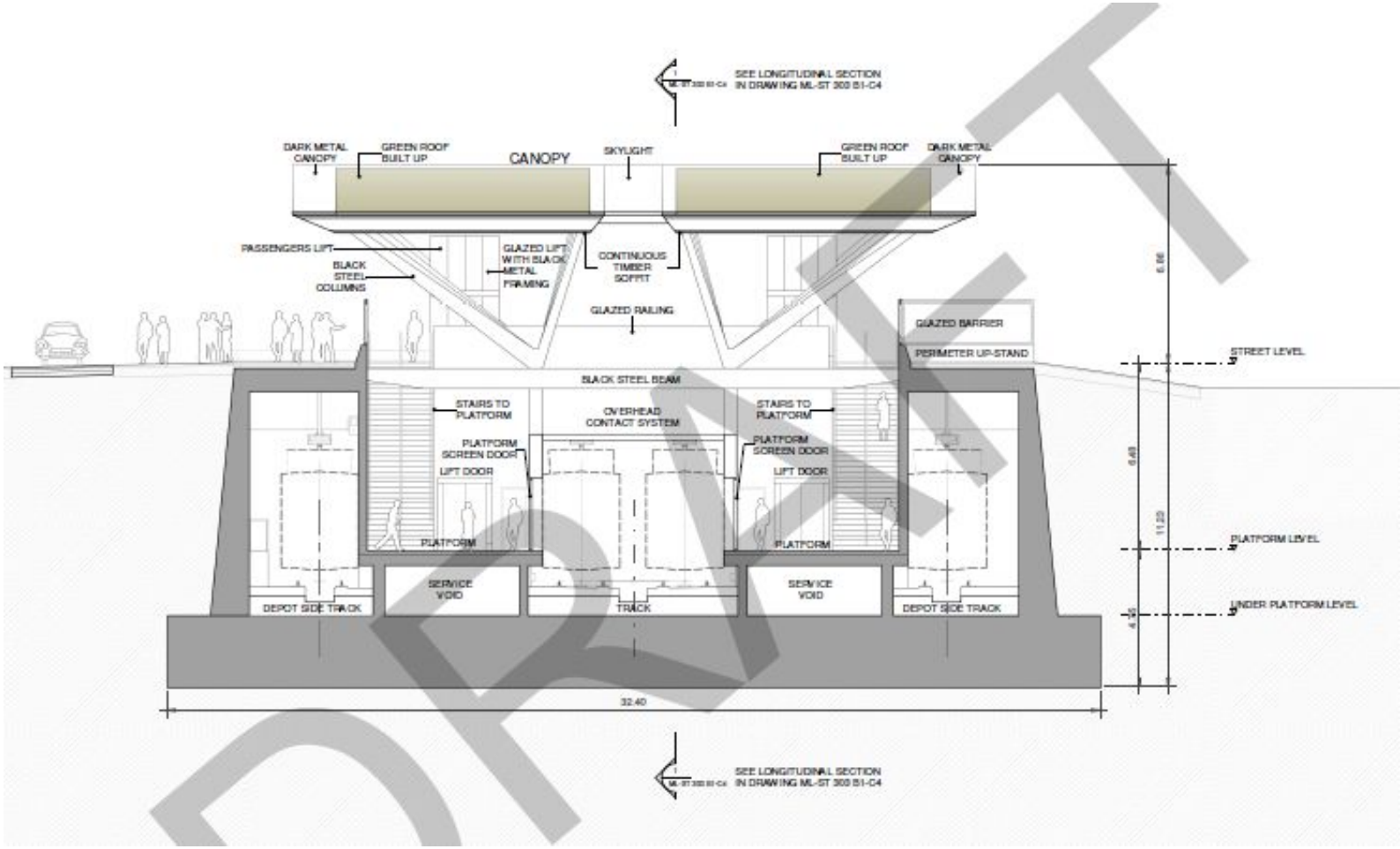
Dardistown Depot Location

- The Depot main entrance is from the Old Airport Road
- Depot use complies with the General Employment land use zoning objective
- Dardistown station open initially for depot staff
- Future public station in line with delivery of development on surrounding lands



Dardistown Depot

Dardistown Station: Cross Section



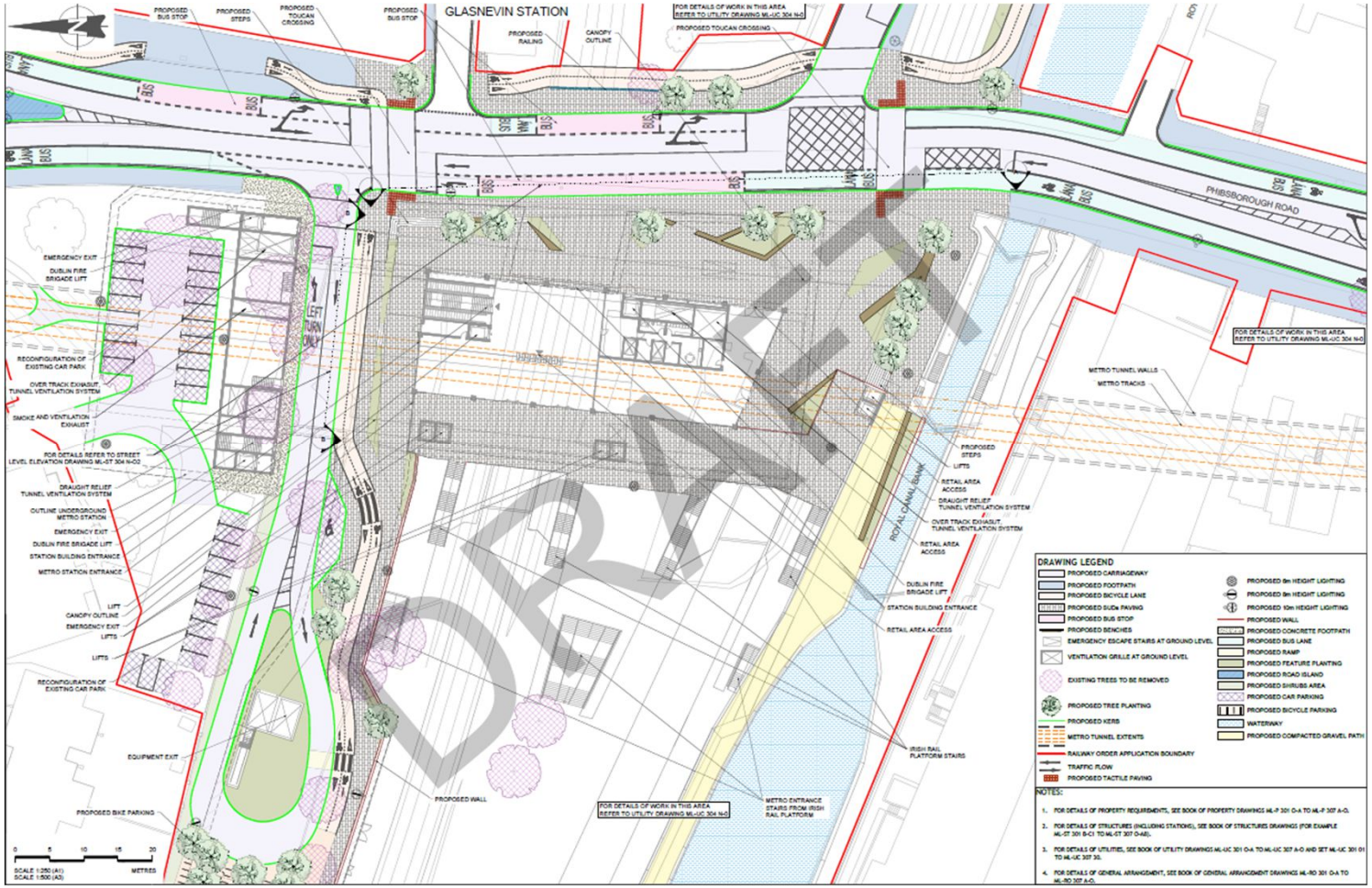
Dardistown Photomontage

Looking south westerly direction from Old Airport Road

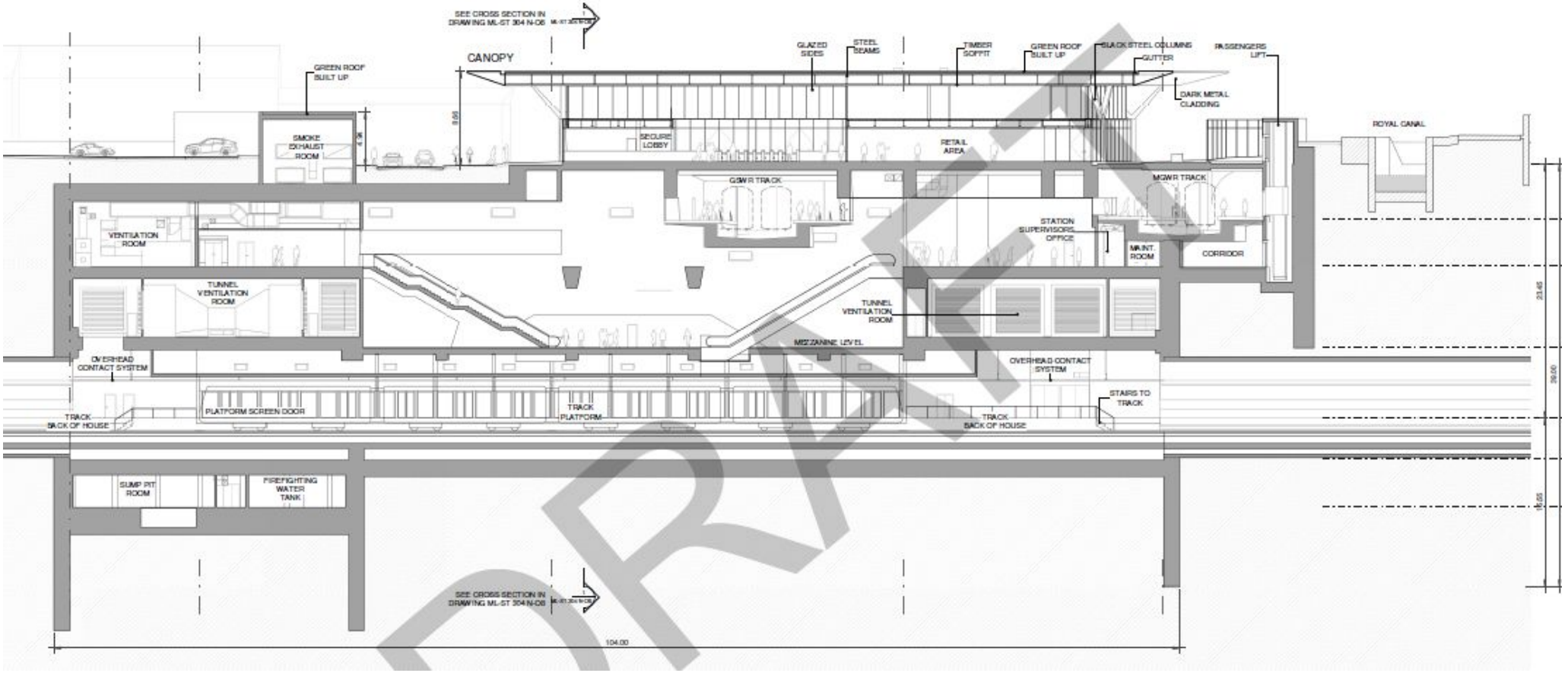
Glasnevin Station

- A multimodal interchange station
- More complex than other stations
- The design facilitates efficient interchange capability with
  - Iarnród Éireann Station
  - Bus Connects
  - Cycling

Glasnevin Station: Layout

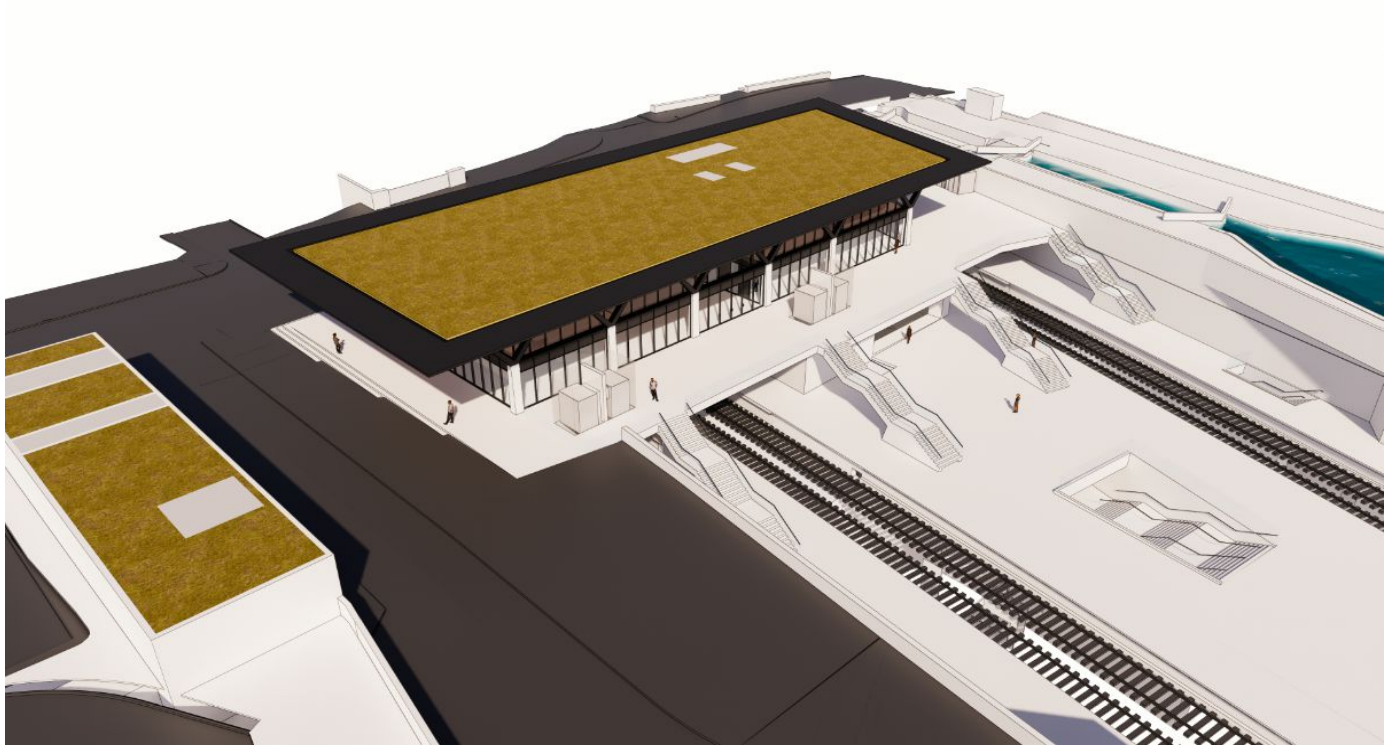


Glasnevin Station: Long Section



Glasnevin Station

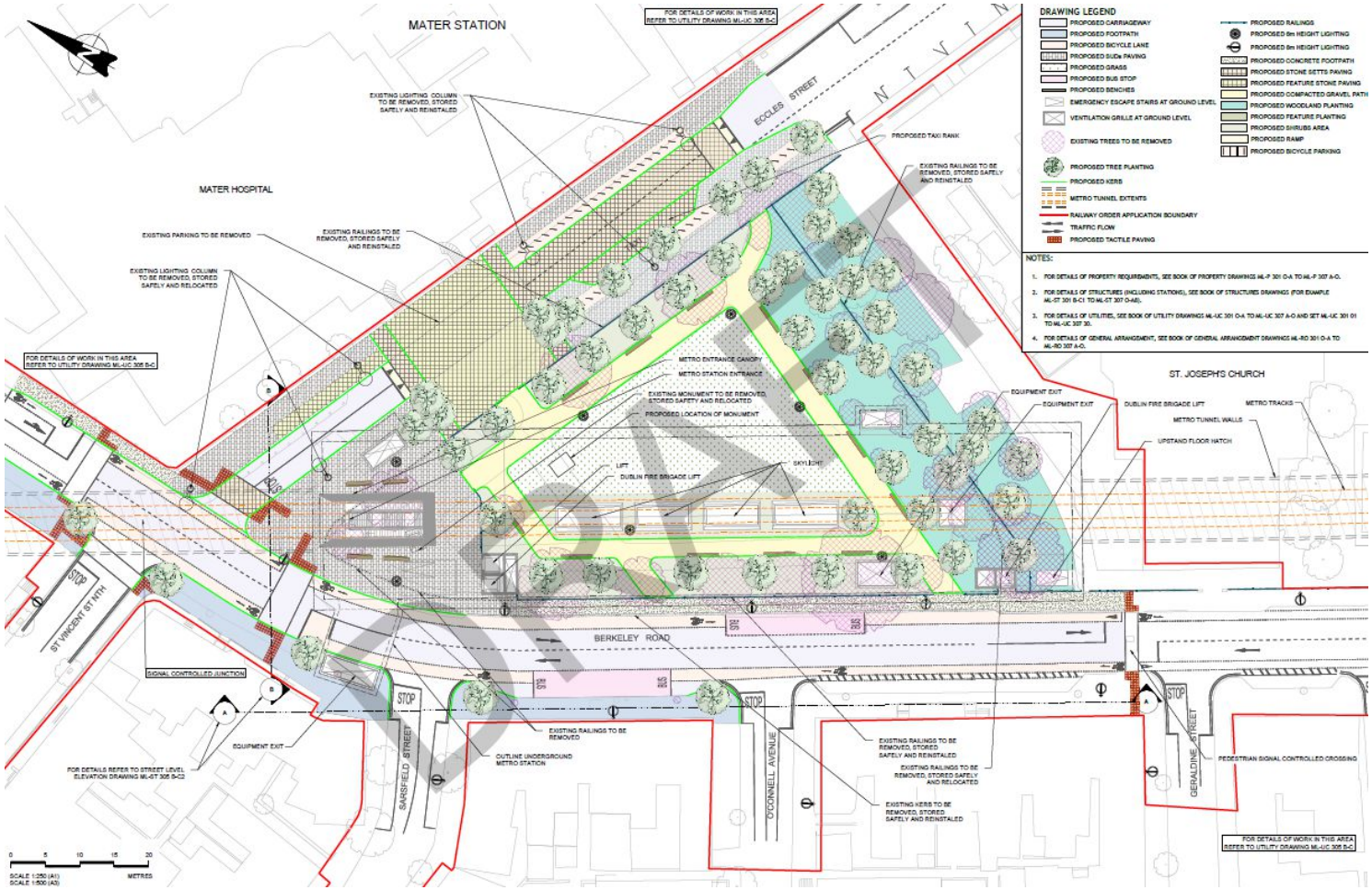
Glasnevin Aerial View
(North West)



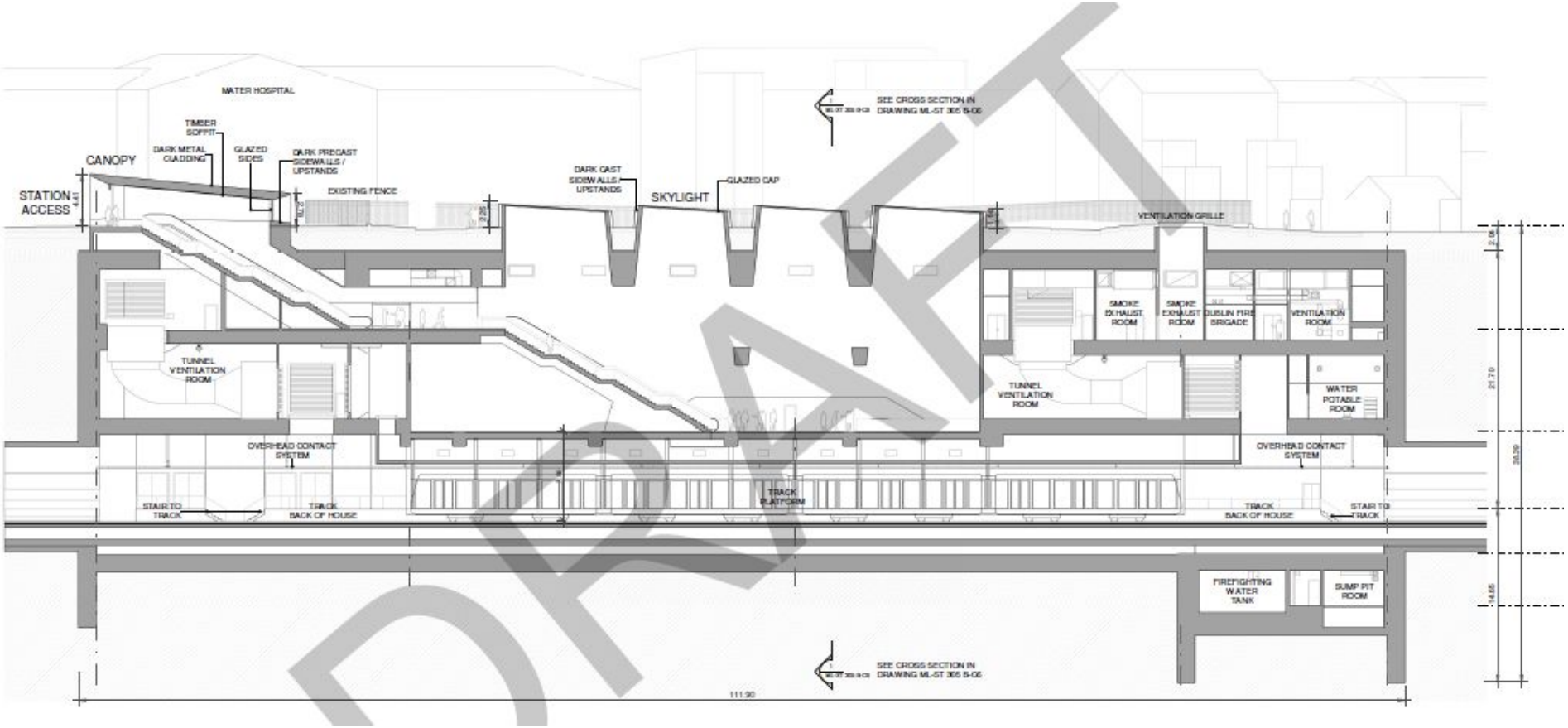
Glasnevin Station

View west from Whitworth Road

Mater Station: Layout



Mater Station: Long Section



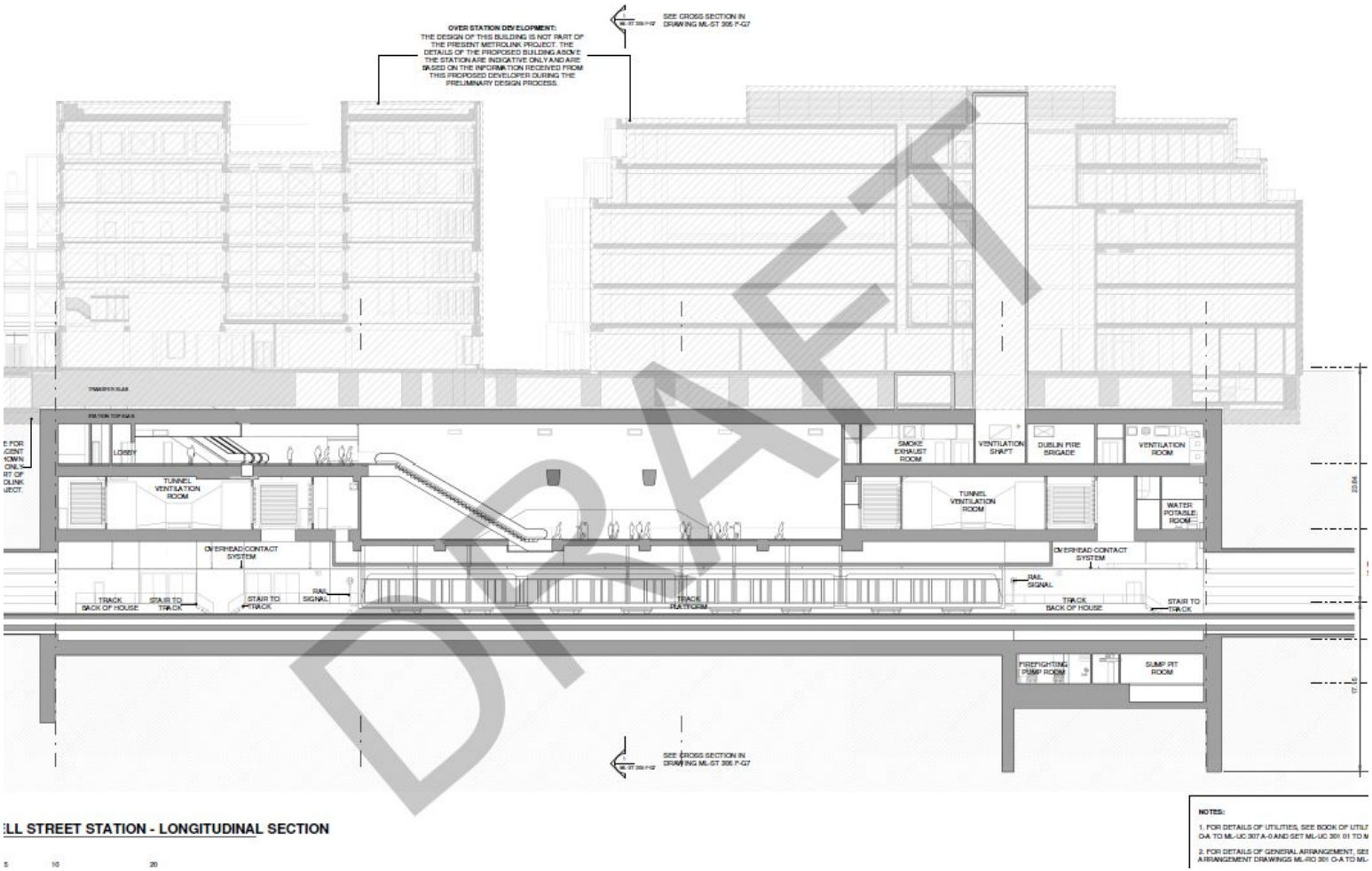
Mater Station

Aerial View

O’Connell Street Station

- O’Connell Street Station will be located under the proposed Hammersons development site on the western side of O’Connell Street
- The design of this station will be facilitate new commercial development overhead
- Ongoing consultations with Hammersons

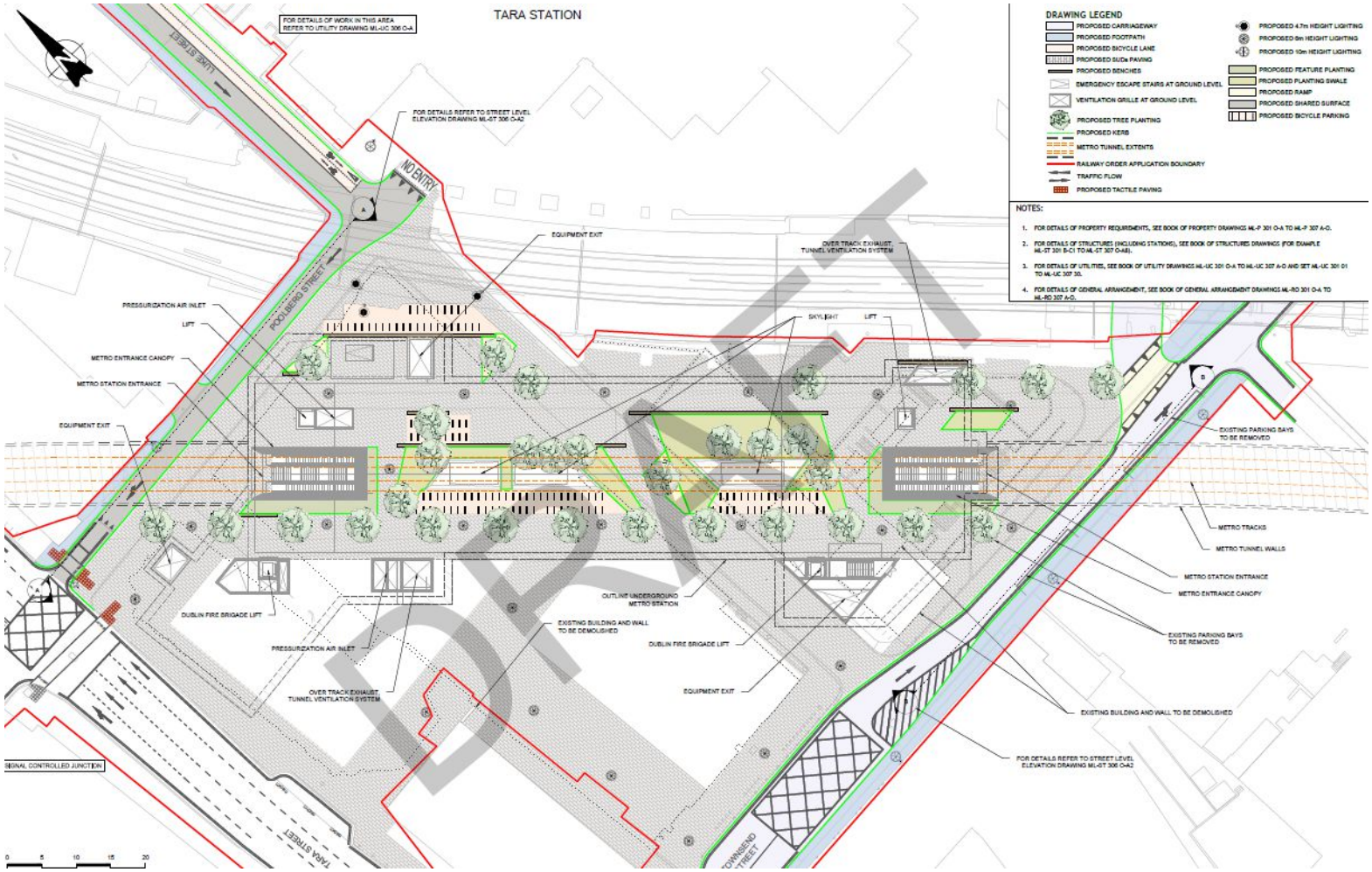
O’Connell Street Station: Long Section



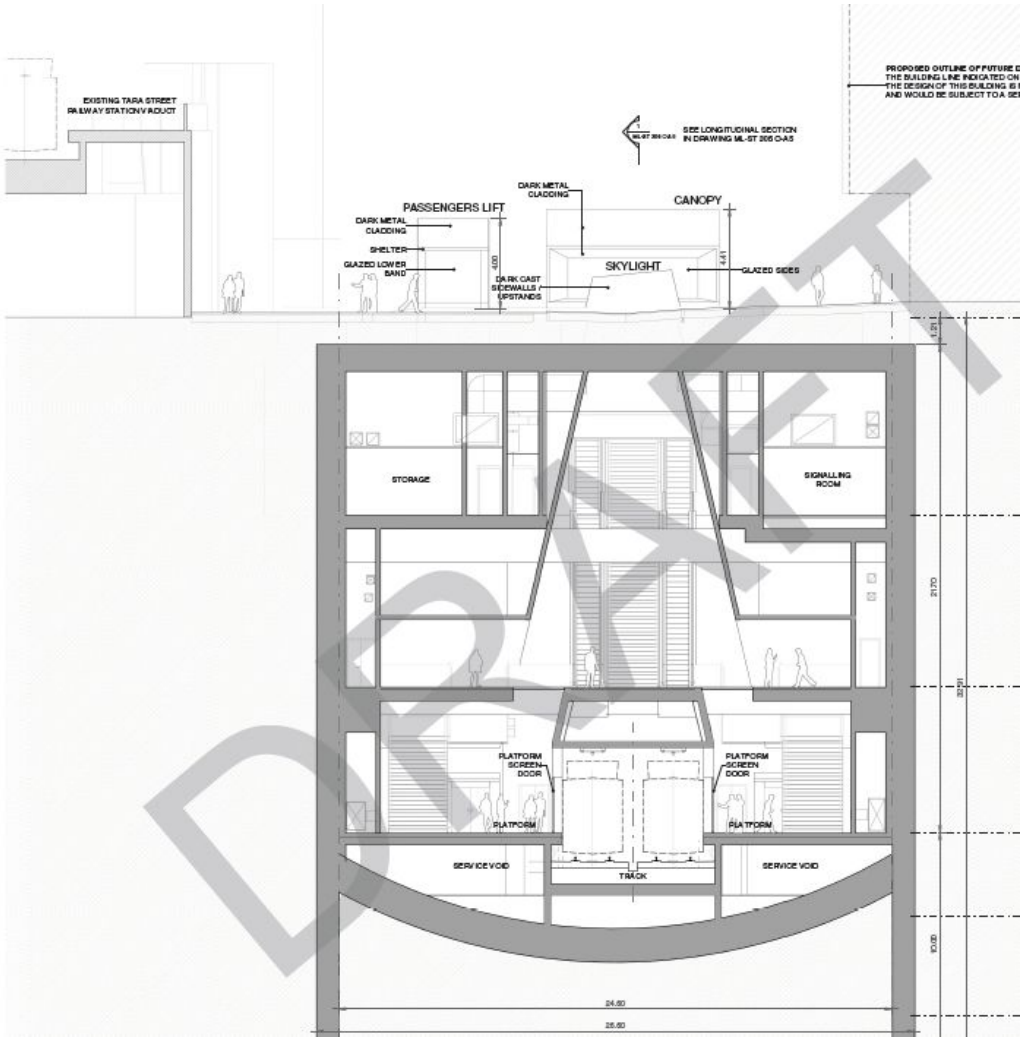
LL STREET STATION - LONGITUDINAL SECTION

NOTES:

Tara Street Station



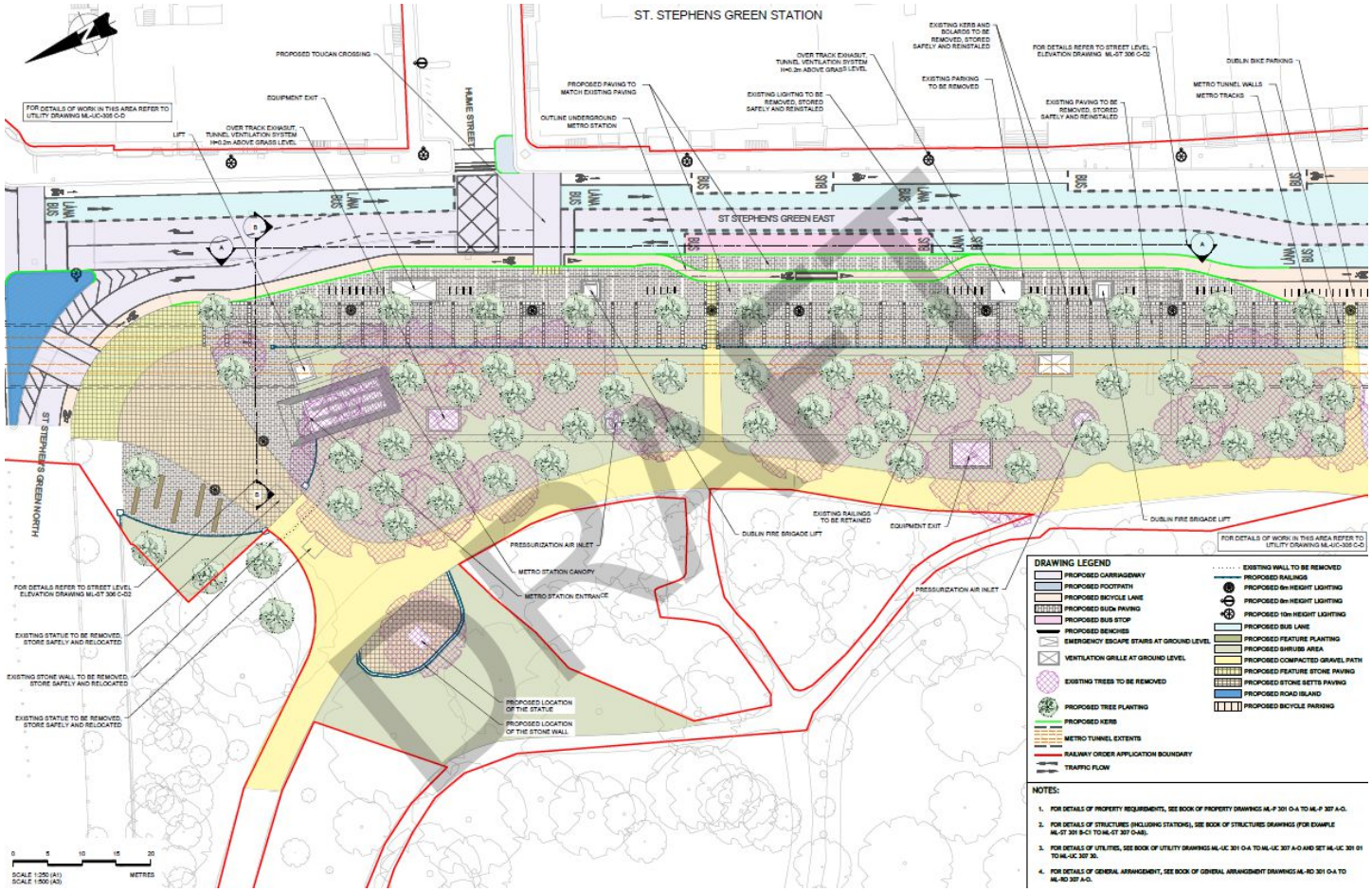
Tara Street Station: Cross Section



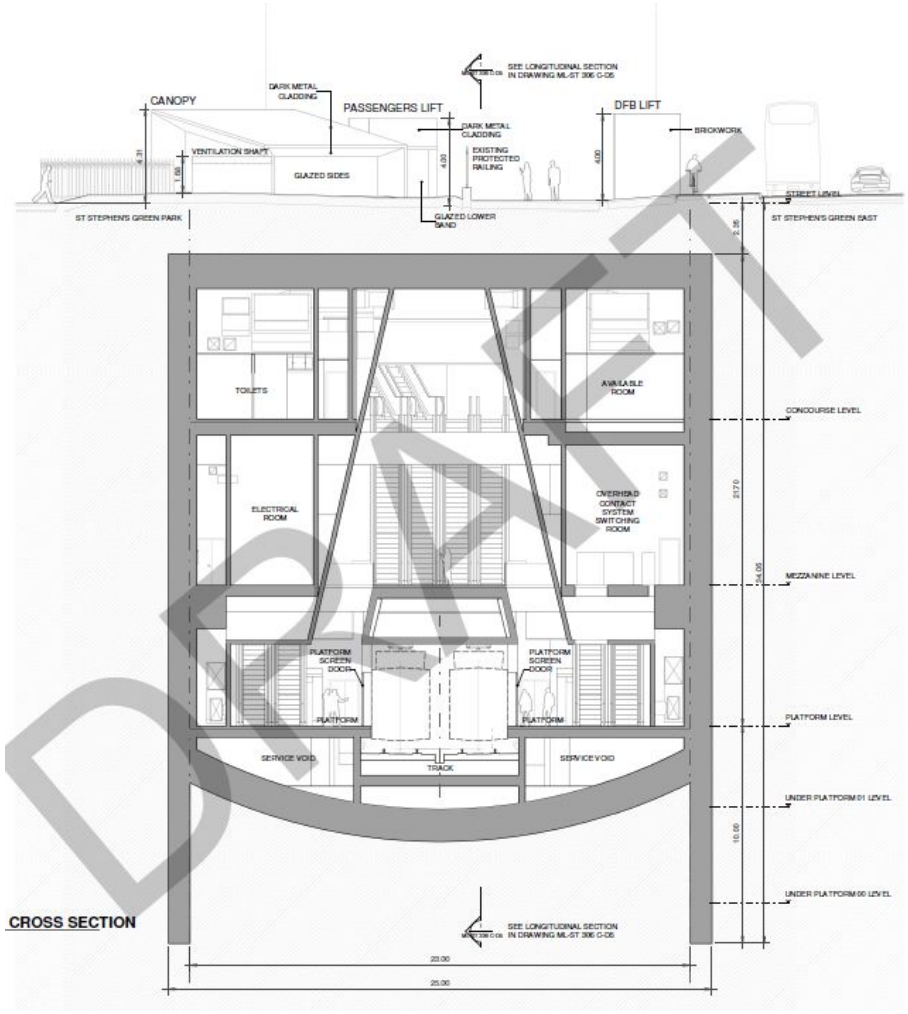
Tara Street Station

View north west from Townsend Street

St Stephen's Green Station: Layout



St Stephen's Green Station: Cross Section

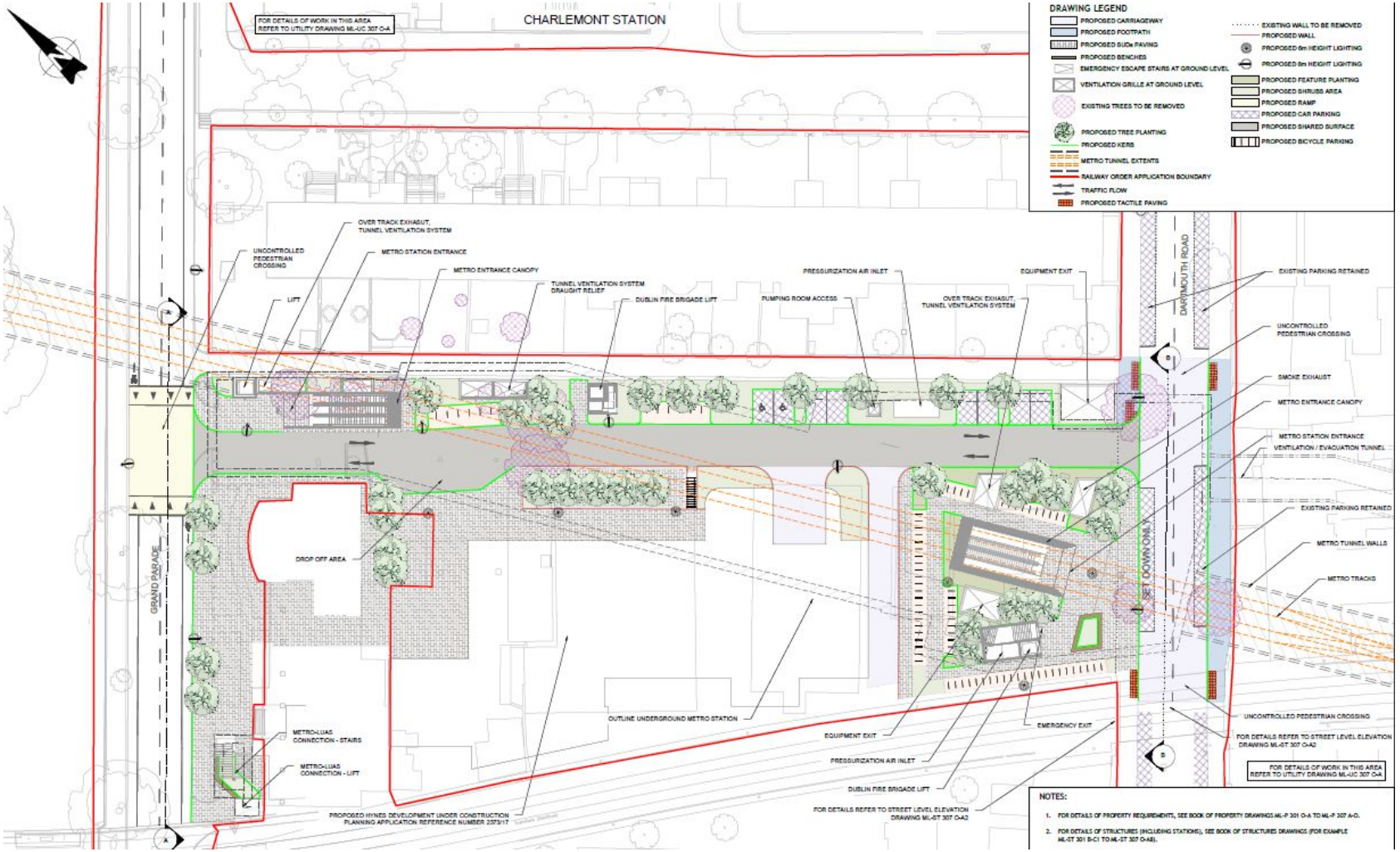


Charlemont Station

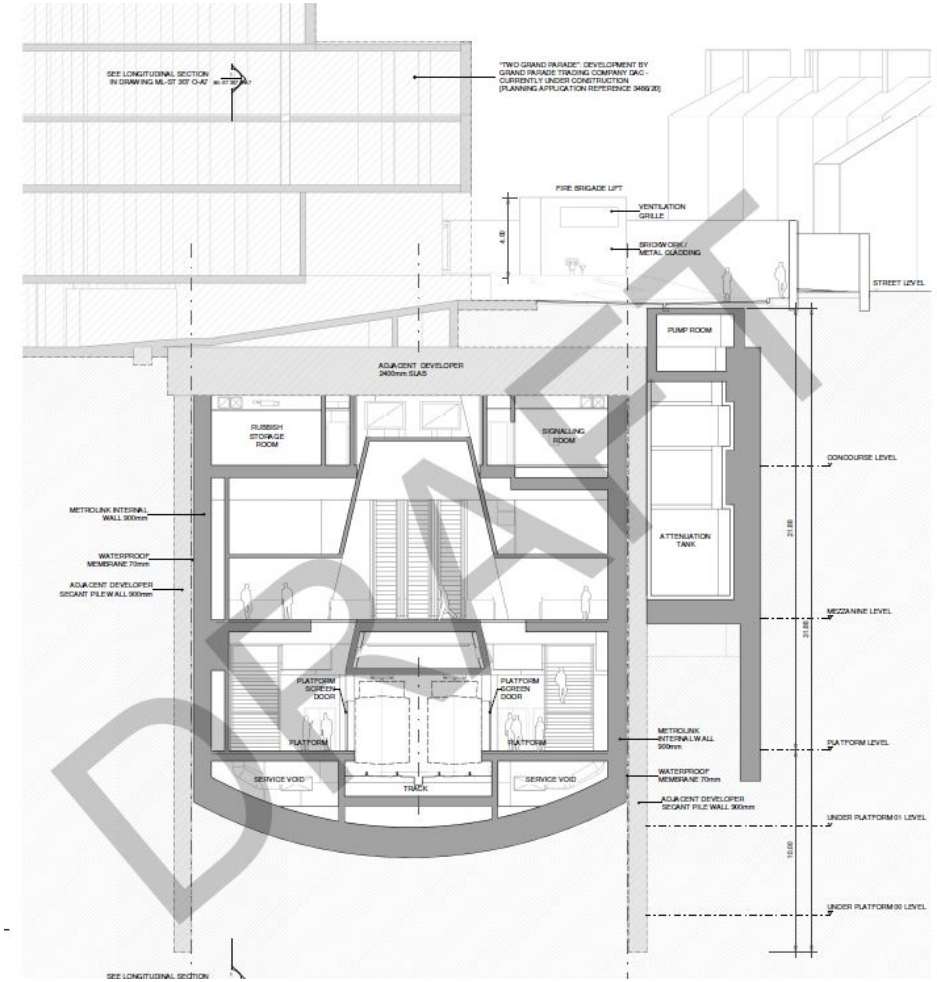
- Located under and adjacent to the Hines development, currently under construction
- The station incorporates two entrances
  - northern entrance from Grand Parade
  - southern entrance from Dartmouth Road
- Connectivity to adjacent Luas stop via new stairs and lift at Grand Parade

- Tunnel extends southwards to incorporate turnback facility for trains
- Separate side ventilation / evacuation tunnel

Charlemont Station: Layout



Charlemont Station: Cross Section



DRAFT

Charlemont Station

view south
across Grand
Parade

Charlemont Station

View north from Dartmouth Road

Stakeholder Engagement

Stakeholder Engagement

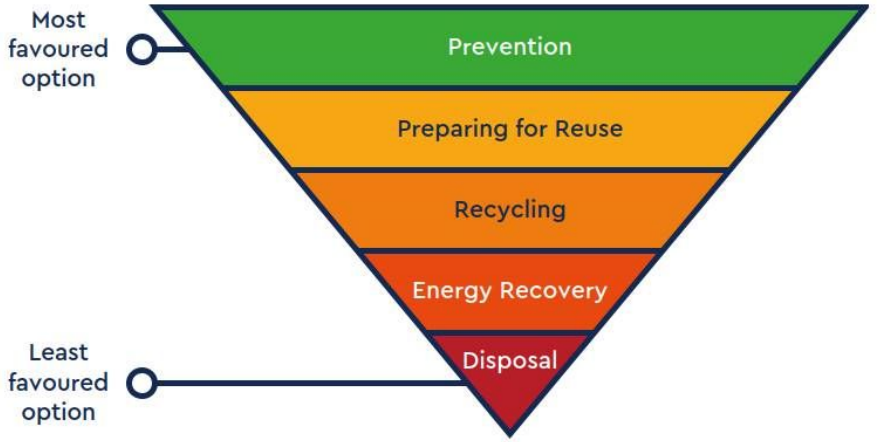
- Key Consultations since March 2021
  - Fingal County Council
  - Dublin City Council
  - OPW
  - Irish Rail
  - Mater Hospital
  - Trinity College
  - Waterways Ireland
  - Utility Providers
  - ESBN

Waste

MetroLink Route Map
Legend
Future MetroLink Station
MetroLink Line
Estuary
Balheary Viaduct
Seatown
Swords Central
Fosterstown
North Portal – tunnel ends
Dublin Airport
South Portal – tunnel starts
Dardistown
Dardistown Proposed Future Station
M50 Overpass
Northwood
Tunnel starts
Ballymun
Collins Avenue
Albert College shaft
Griffith Park
Glasnevin
Mater
O'Connell St.
Tara
St Stephen's Green
Charlemont
Tunnel Ends
Figure 1.1 | MetroLink Map

Waste

- Design to minimise generation of spoil material
- Quantification and characterisation of spoil material
- Article 27 By-Product Notification to the Environmental Protection Agency (estimated at 70%)
- Disposal of inert, non hazardous and hazardous waste material at appropriately licenced facilities



Project Need

Project Need

- Fully supported at all levels of Planning and transport policy
  - National Planning Framework and National Development Plan
  - RSES for the Eastern and Midland Region
  - Transport Strategy for the Greater Dublin Area 2016-2035
  - Dublin City Development Plan 2016-2022 and Fingal Development Plan 2017-2023

- Rail solution necessary for this corridor as identified in Fingal North Dublin Study 2015

- Aligns with National Strategic Outcomes of National Planning Framework, notably
  - Sustainable Mobility
  - Compact Growth
  - Transition to Low Carbon and Climate-Resilient Society
  - Enhanced Regional Connectivity
  - Quality International Connectivity
  - Strong Economy supported by Enterprise, Innovation and Skills
  - Enhanced Amenity and Heritage
  - Access to Quality Childcare, Education and Health Services

Railway Order Drawings

Railway Order Drawings

- Railway Order Application Boundary
- Implications of Derryadd Judgement

AOB
Final Consultation
Close out of Consultation

Proposed Final Consultation – October 2021

- Construction
- Key Environmental issues
  - Groundbourne Noise & Vibration
  - Settlement
  - Transport & Traffic
  - Alternatives
  - Biodiversity, No Net Loss and NIS
  - Soils, Geology & Hydrogeology
  - Landscape & Visual Assessment
  - Architectural Heritage
  - Cumulative & In-combination Effects
- Sustainability

AOB

- Steps to close out consultation
- Timelines

Any questions?

METROLINK

7th Pre-Planning Application Consultation

28 October 2021

Rialtas na hÉireann Government of Ireland | Tionscadal Éireann Project Ireland 2040 | NTA Údarás Náisiúnta Iompair National Transport Authority | TII Bonneagar Iompair Éireann Transport Infrastructure Ireland

Agenda

- Urban Realm Design;
- Overview of Construction Phase;
- EIAR;
  - Alternatives;
  - Groundborne Noise & Vibration;
  - Settlement;
  - Traffic and Transport;
  - Biodiversity;
  - Soils, Geology/Materials Management;
  - Landscape;
  - Architectural Heritage;
  - Cumulative Impacts;
  - Sustainability.
- Process to Railway Order Submission;

Estuary – Station Entrance

Estuary Station / P&R

Broadmeadow and Ward River Viaduct

Seatown Station

Seatown – Platform

Swords Central – Aerial View

Swords Central – Station Entrance

Fosterstown – Station Entrance

Dublin Airport – Aerial View

Dublin Airport – Entrance View

Dublin Airport – Internal View

M50 Bridge

Northwood – Aerial View

Ballymun – Entrance View

Ballymun – Public Realm

Collins Avenue – Aerial View

Collins Avenue – Eye-level View

Griffith Park – Aerial View

Griffith Park – Entrance View

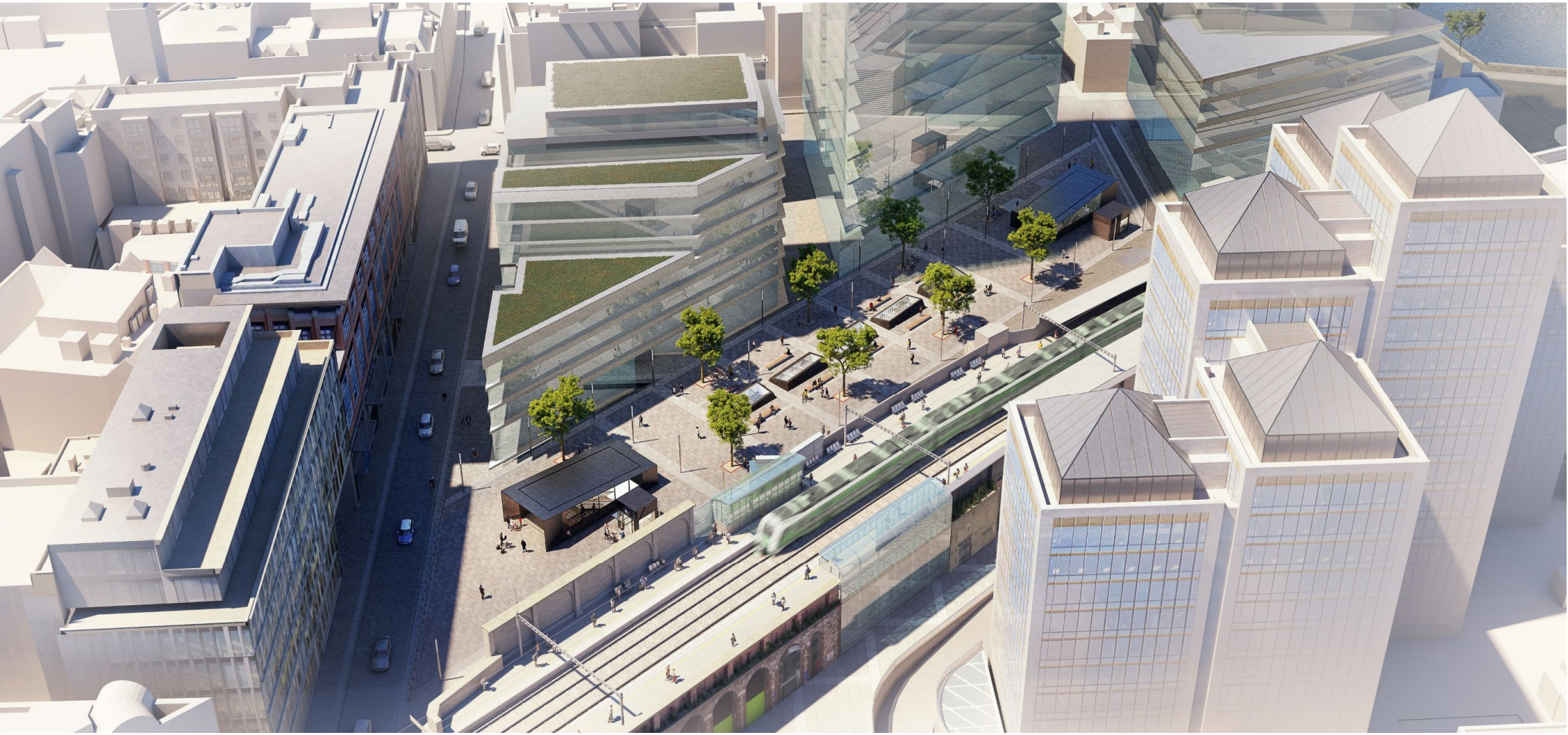
Glasnevin – North View

Glasnevin – South View

Mater – Street Level View

Mater – Park View

Tara – Aerial View



Tara – South Entrance

Tara – South Entrance

Tara – Entrance Portal

Tara – Public Realm

St. Stephen's Green – Aerial View

St. Stephen's Green – Station Entrance

St. Stephen's Green – Green View

Charlemont – North Entrance / LUAS View

Charlemont – North Entrance

Charlemont – South Entrance Aerial

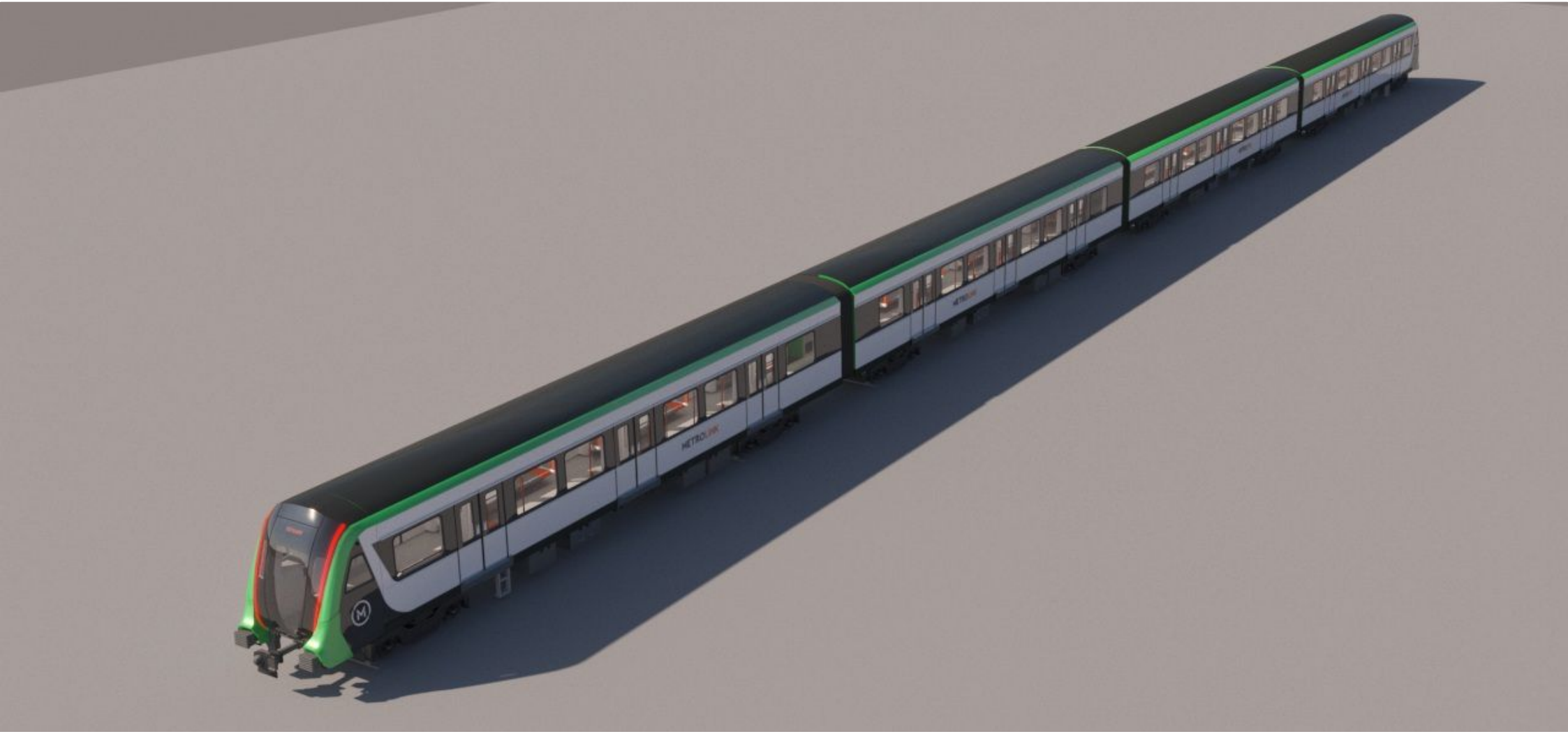
Underground Station
Concourse Level

Underground Station Mezzanine Level

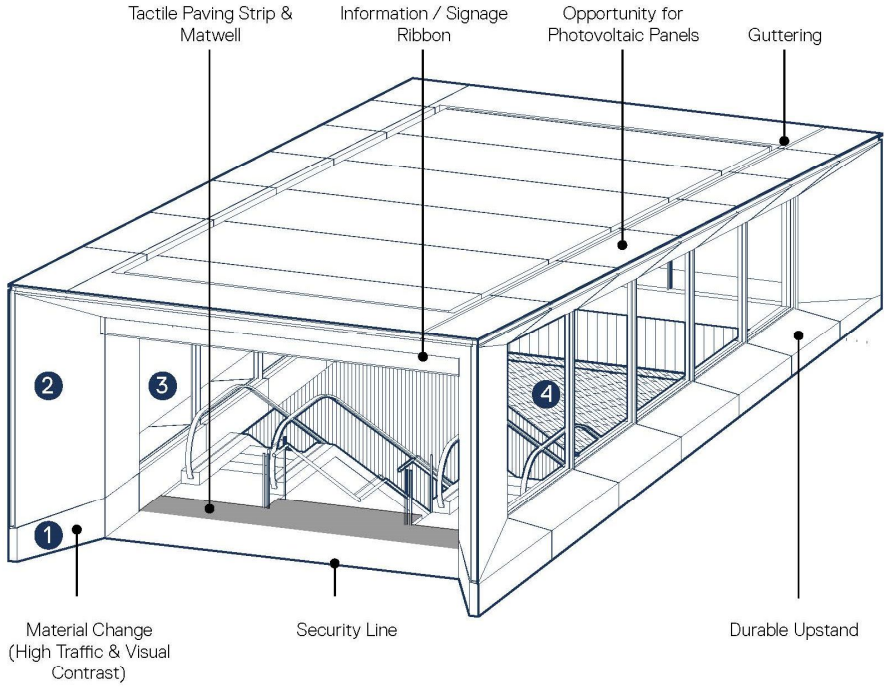
Underground Station Platform Level

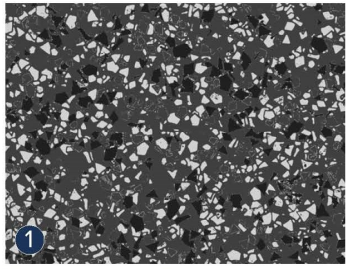
Train Livery

Train Livery



Common Components – Entrance Portals





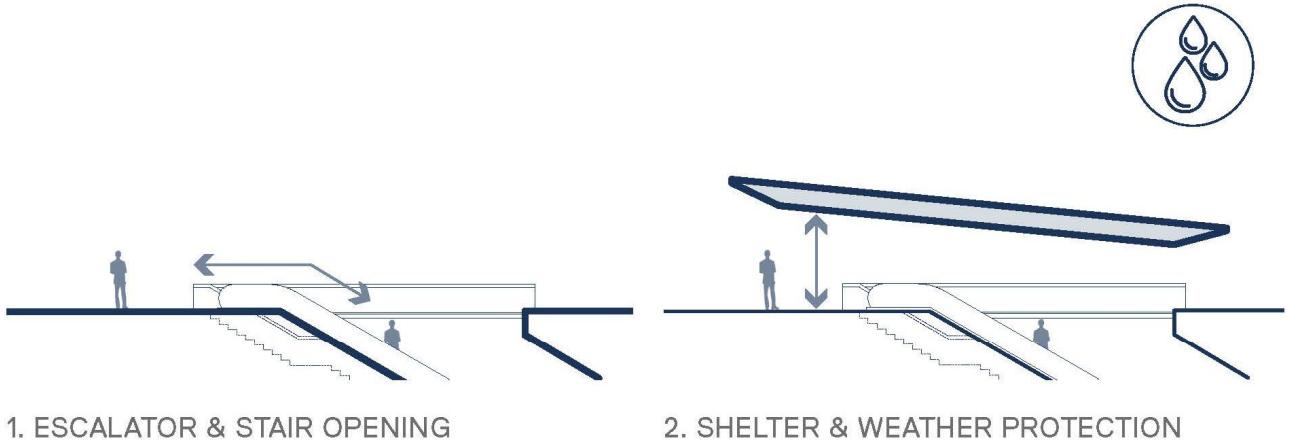
Dark precast sidewalls / upstands

Dark metal cladding for visual contrast

Glazed sides & mullions

Timber soffits

Key Principles – Entrance Portals



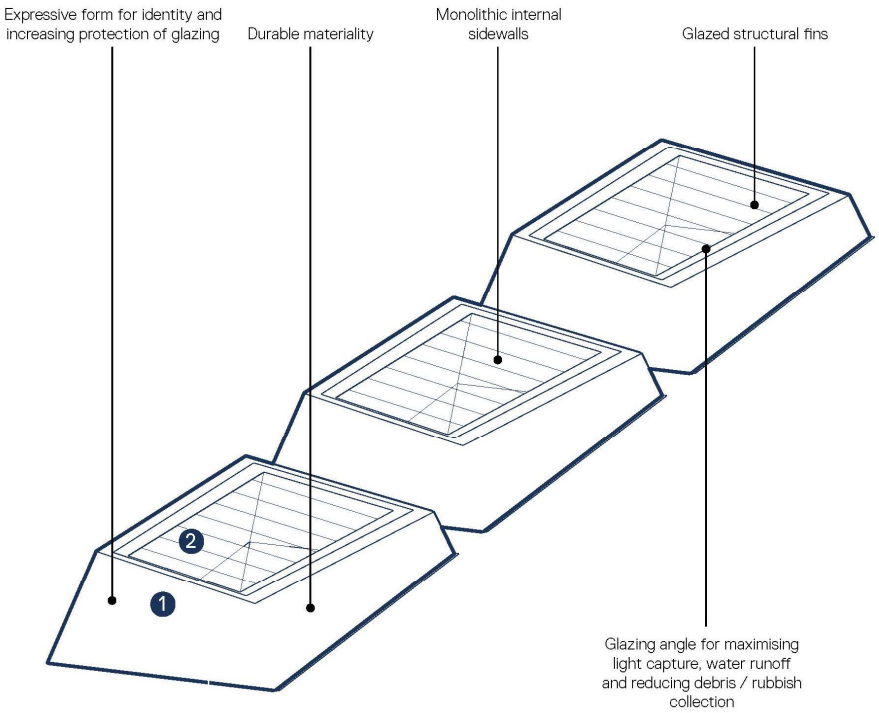
1. ESCALATOR & STAIR OPENING

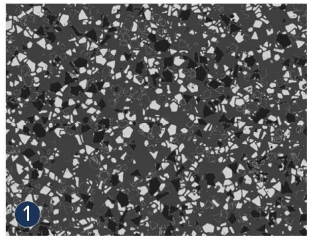
2. SHELTER & WEATHER PROTECTION

3. SAFETY & SECURITY

4. VISUAL CONNECTIVITY, CONTEXT + IDENTITY

Common Components – Skylights

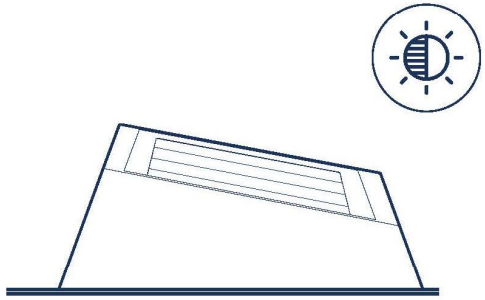




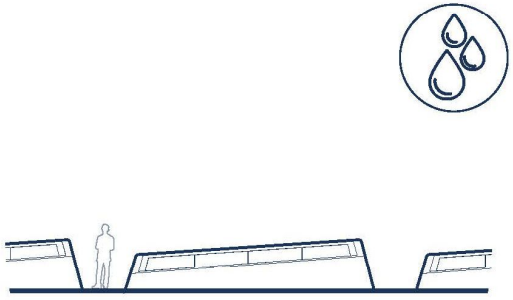
Dark precast sidewalls / upstands

Glazed top surfaces

Key Principles – Skylights

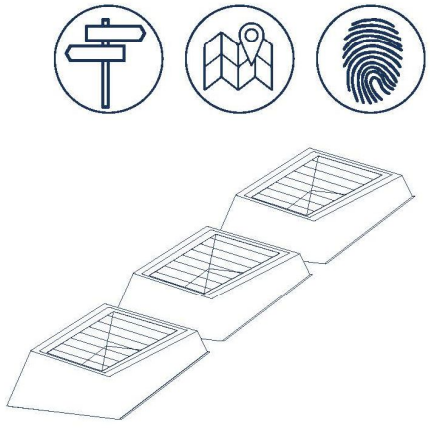


ENVIRONMENTAL PERFORMANCE



VISUAL PERMEABILITY &
CONTEXTUAL INTEGRATION

ROBUSTNESS, DURABILITY & SECURITY

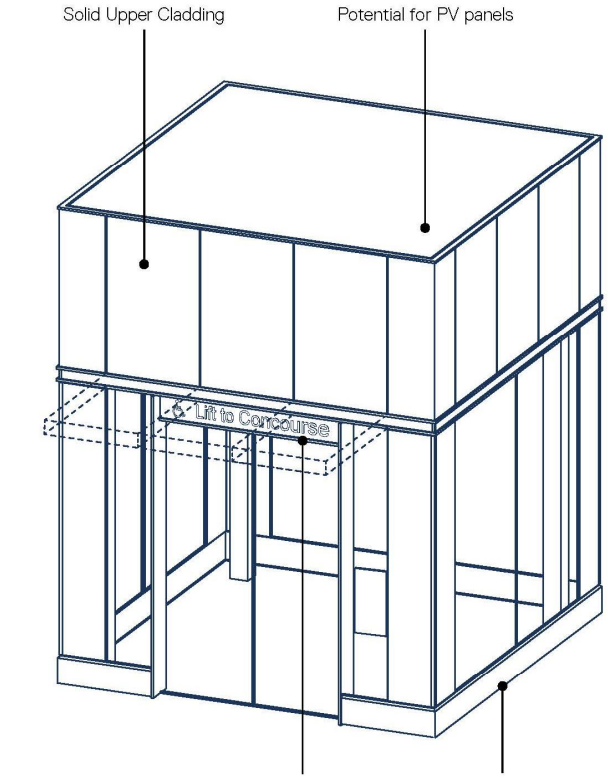


LINE-WIDE IDENTITY & BRANDING

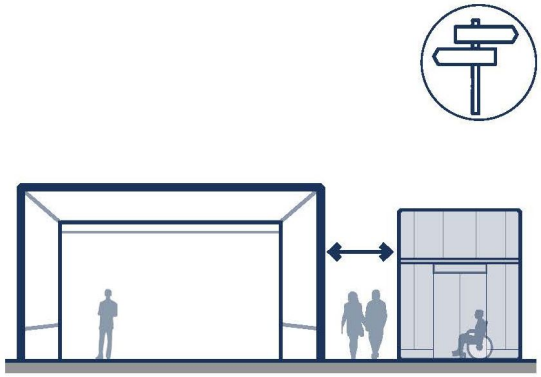
Common Components – Passenger Lifts

Dark metal cladding for visual contrast

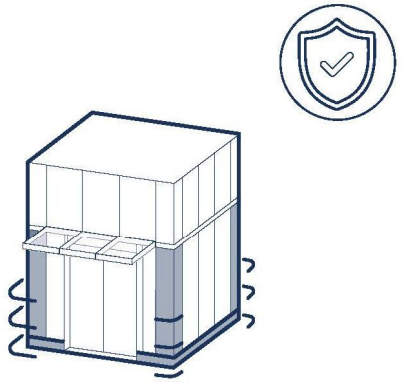
Glazed sides & mullions



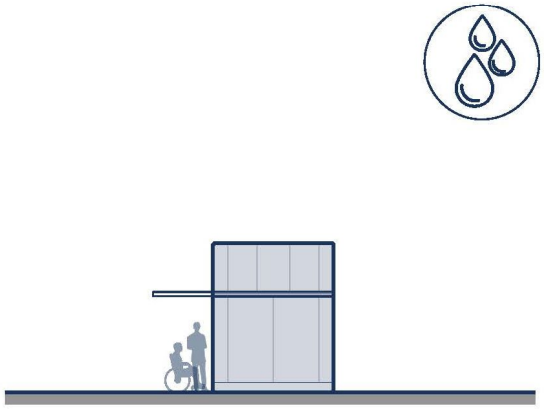
Key Principles – Passenger Lifts



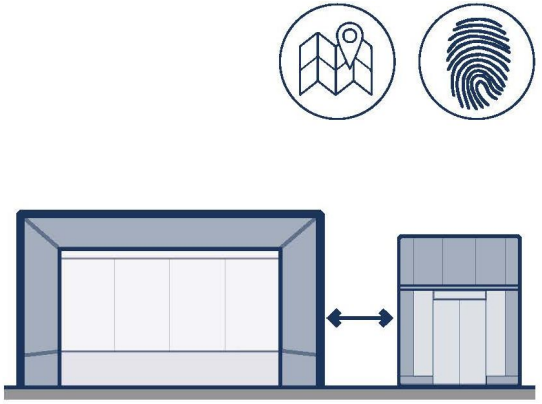
1. UNIVERSAL ACCESS + WAYFINDING



2. DURABILITY + SECURITY

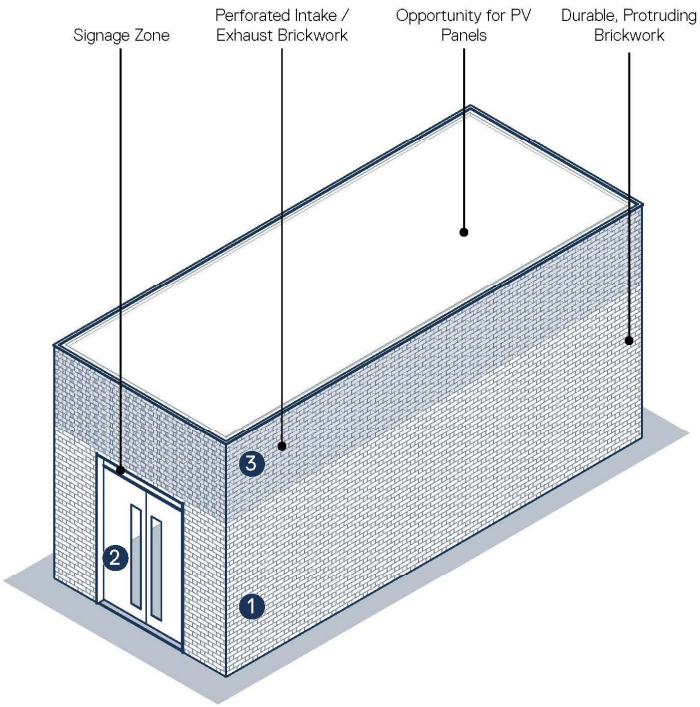


3. SHELTER + SAFETY



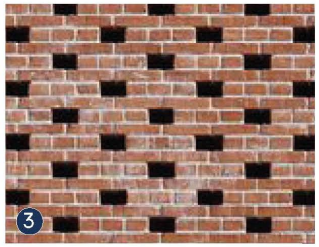
4. IDENTITY + CONTEXT

Common Components – Service Lifts



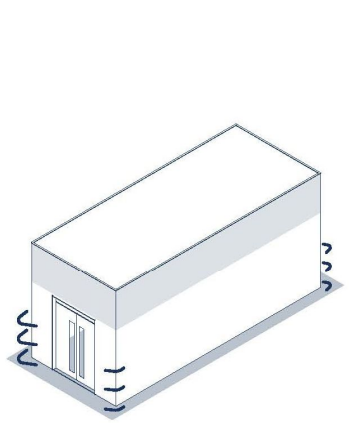
Relief + Perforated Brickwork

Dark Metal Doors + Trim

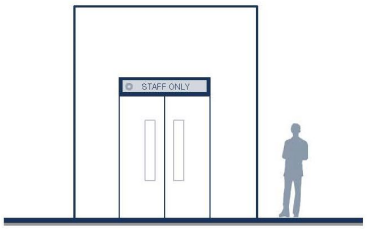


Perforated Intake / Exhaust Brickwork

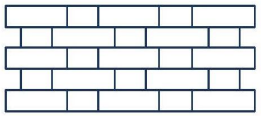
Key Principles – Service Lifts



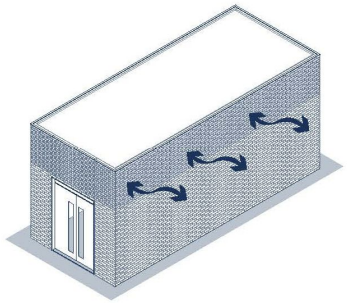
1. DURABILITY + SECURITY



2. SECONDARY WAYFINDING



3. CONTEXT + IDENTITY



4. PERFORMANCE / FUNCTION

Overview of Construction Phase

- Construction Phase;
- Construction Programme;
- Tunnel Boring Machine (TBM);
- Construction Hours;
- Construction Environmental Management Plan.

Construction Phase

Enabling Works

- Pre-construction surveys and monitoring
- Site establishment and erection of temporary fencing
- Establishment of construction compounds, site office and security
- Site preparation and enabling works
- Utility diversions
- Vegetation clearance
- Invasive species clearance
- Installation of monitoring
- Demolition

Main civil engineering works

- Excavation, earthworks and construction of structures including stations, tunnels, intervention shafts, cuttings, embankments, bridges and viaducts
- Construction of new roads and access routes
- Road realignments and modifications

Railway systems installation

- Installation of railway track, overhead line equipment, train controls and telecommunication systems
- Installation of mechanical, electrical and operating equipment
- Construction of power supply infrastructure and connection to the electricity transmission grid

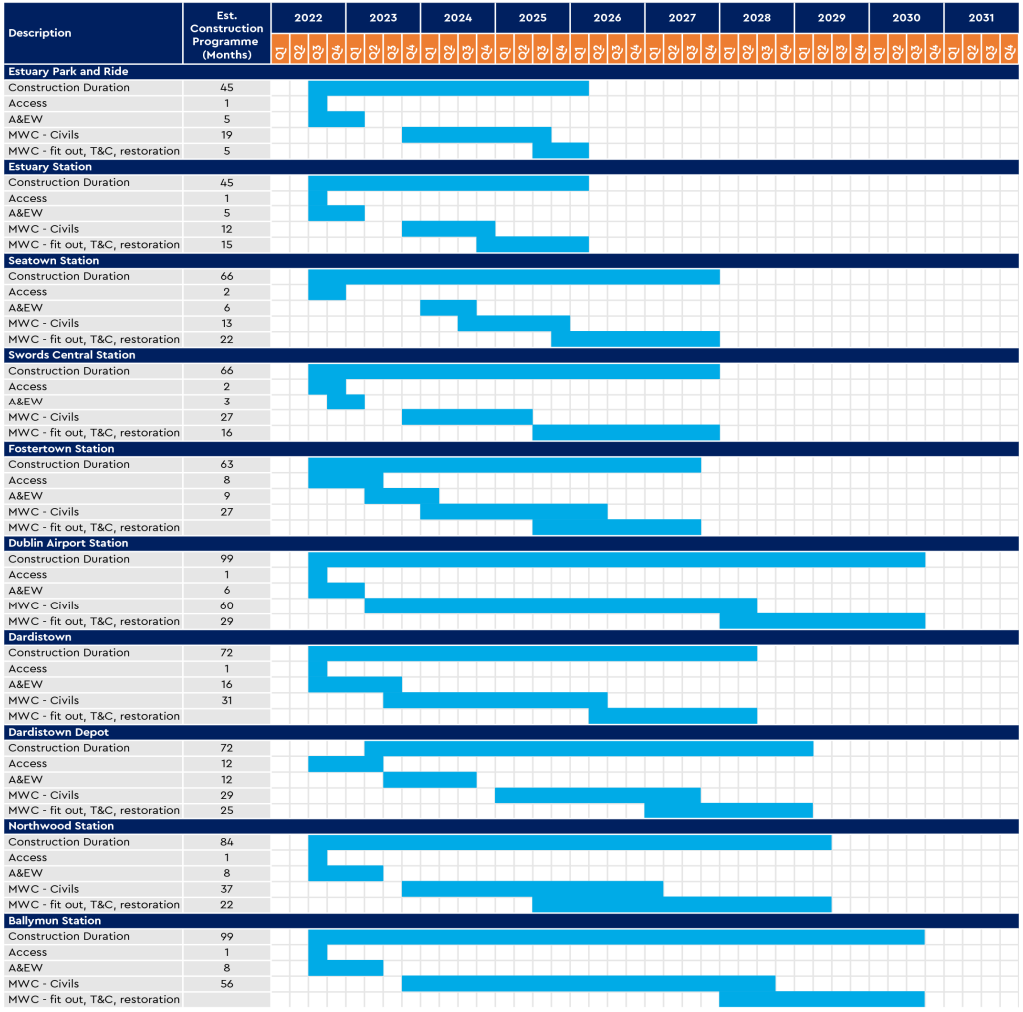
Site finalisation works

- Removing construction compounds
- Land reinstatement, such as agricultural land and parks
- Planting, landscaping and erection of permanent fencing

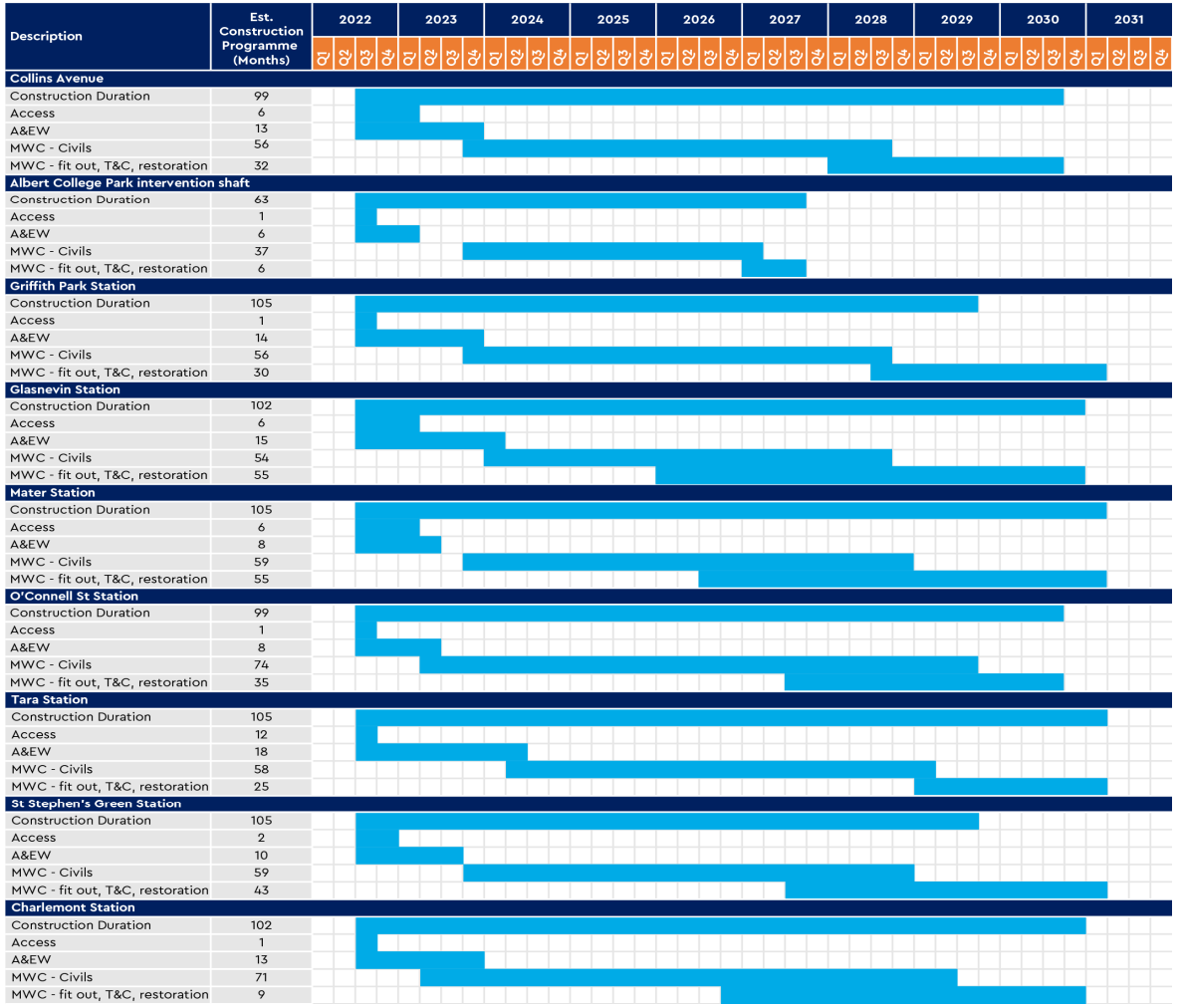
Systems testing & commissioning

- Testing the railway systems
- Commissioning the railway
- Trial Running

Indicative Construction Programme



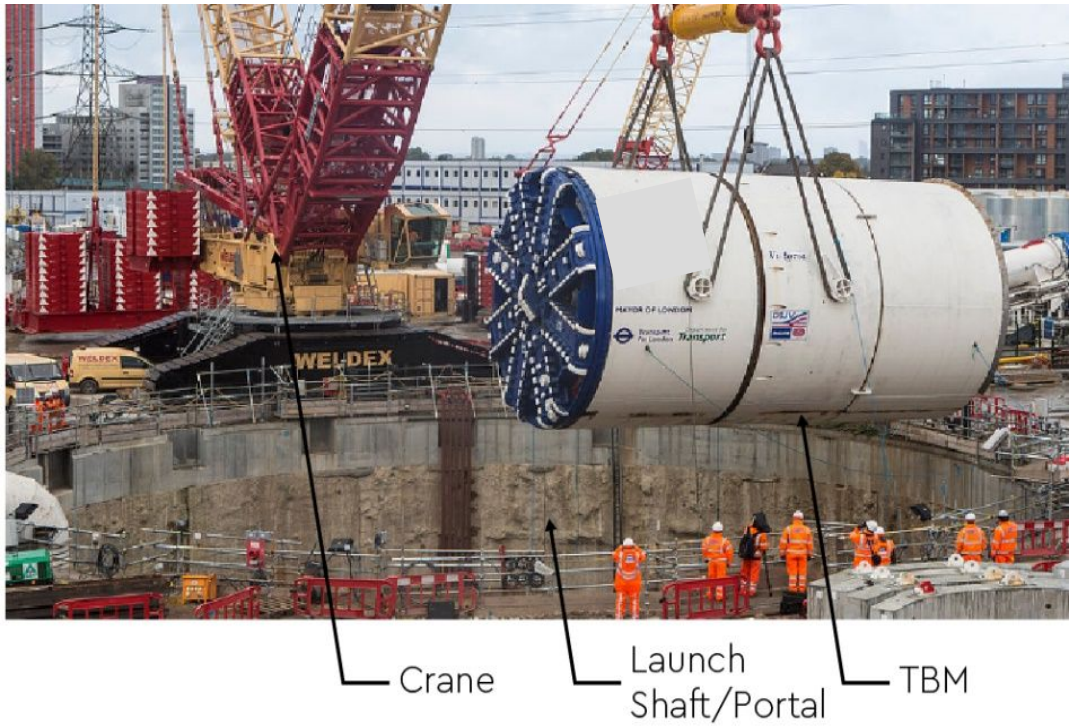
Description	Est. Construction Programme (Months)
Estuary Park and Ride	
Construction Duration	45
Access	1
A&EW	5
MWC - Civils	19
MWC - fit out, T&C, restoration	5
Estuary Station	
Construction Duration	45
Access	1
A&EW	5
MWC - Civils	12
MWC - fit out, T&C, restoration	15
Seatown Station	
Construction Duration	66
Access	2
A&EW	6
MWC - Civils	13
MWC - fit out, T&C, restoration	22
Swords Central Station	
Construction Duration	66
Access	2
A&EW	3
MWC - Civils	27
MWC - fit out, T&C, restoration	16
Fostertown Station	
Construction Duration	63
Access	8
A&EW	9
MWC - Civils	27
MWC - fit out, T&C, restoration	
Dublin Airport Station	
Construction Duration	99
Access	1
A&EW	6
MWC - Civils	60
MWC - fit out, T&C, restoration	29
Dardistown	
Construction Duration	72
Access	1
A&EW	16
MWC - Civils	31
MWC - fit out, T&C, restoration	
Dardistown Depot	
Construction Duration	72
Access	12
A&EW	12
MWC - Civils	29
MWC - fit out, T&C, restoration	25
Northwood Station	
Construction Duration	84
Access	1
A&EW	8
MWC - Civils	37
MWC - fit out, T&C, restoration	22
Ballymun Station	
Construction Duration	99
Access	1
A&EW	8
MWC - Civils	56
MWC - fit out, T&C, restoration	



Description	Est. Construction Programme (Months)
Collins Avenue	
Construction Duration	99
Access	6
A&EW	13
MWC - Civils	56
MWC - fit out, T&C, restoration	32
Albert College Park intervention shaft	
Construction Duration	63
Access	1
A&EW	6
MWC - Civils	37
MWC - fit out, T&C, restoration	6
Griffith Park Station	
Construction Duration	105
Access	1
A&EW	14
MWC - Civils	56
MWC - fit out, T&C, restoration	30
Glasnevin Station	
Construction Duration	102
Access	6
A&EW	15
MWC - Civils	54
MWC - fit out, T&C, restoration	55
Mater Station	
Construction Duration	105
Access	6
A&EW	8
MWC - Civils	59
MWC - fit out, T&C, restoration	55
O'Connell St Station	
Construction Duration	99
Access	1
A&EW	8
MWC - Civils	74
MWC - fit out, T&C, restoration	35
Tara Station	
Construction Duration	105
Access	12
A&EW	18
MWC - Civils	58
MWC - fit out, T&C, restoration	25
St Stephen's Green Station	
Construction Duration	105
Access	2
A&EW	10
MWC - Civils	59
MWC - fit out, T&C, restoration	43
Charlemont Station	
Construction Duration	102
Access	1
A&EW	13
MWC - Civils	71
MWC - fit out, T&C, restoration	9

Tunnel Boring Machine (TBM)

- Two tunnels:
  - Airport Tunnel (approx. 15 months in duration)
  - City Tunnel (approx. 69 months in duration)
  - Total duration of tunnelling – 84 months (seven years)
- 24 hours per day:
  - Industry Standard;
  - Required to achieve programme and reduce the duration of impacts;
  - Required to reduce Settlement Risk.



Standard Construction Working Hours

Day	Typical Working Hours
Monday to Friday:	07:00hrs to 19:00hrs (this includes a half hour to prepare site at each end, giving 11 hours working: 07:30hrs to 18:30hrs)
Saturday:	07:00hrs to 13:00hrs (this includes a half hour to prepare site at each end, giving 6 hours working: 07:30hrs to 12:30hrs)
Sunday / Bank & Public Holiday:	None (apart from the exceptions listed below (i.e. tunnelling activities and Glasnevin Interchange works))
Standard Holidays:	Two weeks at Christmas and four days at Easter (plus other standard holidays)

Non-Standard Working Hours

- Standard working days will apply as previously set out on weekdays (excluding Bank and Public Holidays) and Saturdays.
- However, the following activities will require extending working hours:

  - **Tunnelling** including the passage of the Tunnel Boring Machine (TBM) through the station and associated activities (e.g. clean-out, track bed, tracklaying, mechanical and electrical (M&E) fit-out) will be carried out on a 24 hour a day, seven days a week basis;

  - **Concrete Pours:** Some large concrete pours may require extended hours, working on into the evening, subject to agreement with Local Authority;

  - **Station excavation** in rock (drilling and moving rock underground): will be carried out on a 24 hour a day basis for five and half days (no Saturday afternoon or Sunday working);

  - **Roadworks** (as required or agreed by the relevant local authorities): may be extended to overnight working, except Sundays;

  - **'Special' deliveries:** may require extended hours or overnight deliveries, subject to agreement with local authorities; and

  - **Possession work for GSWR & MGWR:** will be carried out on a 24 hour a day, seven days a week basis.

Construction Working Hours at Glasnevin

- Due to the complexity of the construction works at Glasnevin Interchange Station, there will be a requirement for possession to be taken of the existing railway lines. Following consultation with Iarnród Éireann,

  - Closure of the Midland Great Western Railway (MGWR) (Maynooth Line) railway for a period of 21 months is proposed and;

  - Closure of the Great Southern and Western Railway (GSWR) (Kildare Line) railway for five months;

  - Possession work for GSWR & MGWR: May require work to be carried out on a 24 hour a day, seven days a week basis, subject to agreement with Local Authorities.

CEMP

- A draft Construction Environmental Management Plan developed;
- This document will be appended to the EIAR
- The draft CEMP covers a range of topics such as:
  - Environmental Management Procedures
  - General Site Operations
  - Emergency Response Plan
  - Environmental Management
- A number of technical support documents feeds into the draft CEMP including:
  - Non-Native Invasive Species Management Plan;
  - Dust Minimisation Plan
  - Outline Noise & Vibration Management Plan

EIAR

- Alternatives
- Noise & Vibration;
  - GBN&V
  - Criteria v limits – limits unless agreed with the LA.
- Settlement
- Traffic and Transport
- Biodiversity
- Soils, Geology
- Landscape
- Architectural Heritage
- Cumulative Impacts
- Sustainability

- Consultation Update;
- Process to Railway Order Submission;

EIA Structure – Front cover of EIAR

EIAR Structure	
Chapter	**Description**
Volume 1 Non-Technical Summary	
Non-Technical Summary	Summary of the EIAR in non-technical language.
Volume 2 Introduction and Project Description	
Chapter 1	Introduction
Chapter 2	Methodology in Preparation of the EIAR
Chapter 3	Background to the MetroLink Project
Chapter 4	Description of the MetroLink Project
Chapter 5	MetroLink Construction Phase
Chapter 6	MetroLink Operational Phase
Chapter 7	Consideration of Alternatives
Chapter 8	Consultation
Volume 3 Environmental Baseline and Assessment	
Book 1 Population and Human Health	
Chapter 9	Traffic and Transport
Chapter 10	Human Health
Chapter 11	Population and Land Use
Chapter 12	Electromagnetic Compatibility & Stray Current
Chapter 13	Airborne Noise & Vibration
Chapter 14	Ground-borne Noise & Vibration
Book 2 Biodiversity, Land, Soil, Water, Air and Climate	
Chapter 15	Biodiversity
Chapter 16	Air Quality
Chapter 17	Climate
Chapter 18	Hydrology
Chapter 19	Hydrogeology
Chapter 20	Soils & Geology

Book 3 Material Assets, Cultural Heritage and Landscape	
Chapter 21	Land Take
Chapter 22	Infrastructure & Utilities
Chapter 23	Agronomy
Chapter 24	Resource & Waste Management
Chapter 25	Archaeology & Cultural Heritage
Chapter 26	Architectural Heritage
Chapter 27	The Landscape
Chapter 28	Risk of Major Accidents and Disasters
Book 4 Interactions between the Factors, Cumulative Impacts and Mitigation Measures	
Chapter 29	Interactions between the various environmental aspects.
Chapter 30	Cumulative impacts of interaction between other projects and MetroLink.
Chapter 31	Summaries of the route wide mitigation and monitoring proposed.
Volume 4 Figures	
Figures	Graphics and plans supporting the EIAR chapters, illustrating the proposed project and environmental information. Figure reference numbers correspond to the relevant EIAR chapter (e.g. Figure 7.1 relates to Chapter 7)
Volume 5 Appendices	
Appendices	Technical reference information supporting the EIAR chapters, such as calculations and detailed background data. Appendix numbers correspond to the relevant EIAR chapter (e.g. Appendix 7.1 relates to Chapter 7)

Alternatives

- Alternatives are considered in Chapter 7 of the EIAR and include consideration of:
  - “Old” Metro North
  - Fingal/North Dublin Transport Study;
  - Emerging Preferred Route;
  - Preferred Route;
    - Twin bore vs single bore tunnel
    - Operational Phase strategy
    - Rolling stock
    - Depot location
    - Alignment alterations
    - Station and intervention shaft locations
  - Construction Phase – Methodologies & Compound Locations;

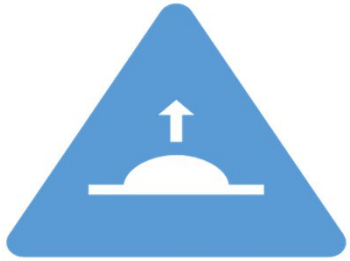
Groundborne N&V

Potential Impacts	Relevant Sensitive Receptors	Scale of Likely Significant Effects (in absence of mitigation)	Mitigation
Tunnel Boring Machine	Any buildings within modelled contours	Exceedences for up to two weeks Sound levels of approximately 50 dBA above the tunnel	Consultation and timing Temporary Rehousing
Blasting (for station box excavation)	Any buildings within modelled contours	No exceedances for Air over Pressure	Blasting Strategy - Developed and modelled. Test blasts – and refinement of the blast strategy. Building surveys.
Mechanical Excavation	Any buildings within contours	Exceedances in the vicinity of station boxes (O'Connell Tara St, St Stephens Green & Charlemont.)	Expanding grout/sawing. Blasting
Operation	TCD, Auditoria, studios etc	Capable of full mitigation	Track support design TCD specific measures

Groundborne Noise & Vibration - Blasting

Blasting is being carried out during the Construction Phase in order to reduce the project programme

Blasting will be managed by a Blasting Strategy Document that is currently being progressed and will accompany the EIAR



Any impacts that are identified as a result of blasting will undergo mitigation

Settlement - Summary of Current Assessment

- Stage 1:
  - Generation of settlement contours & maximum ground slope;
  - Screening of buildings/structures for Further Assessment;

- Stage 2a/2b:
  - Preliminary assessment of potential damage to buildings/structures;

- Stage 3 (pre construction):
  - Detailed building specific analysis (in high risk categories);

Settlement – Assessment

Phase 2b Assessment

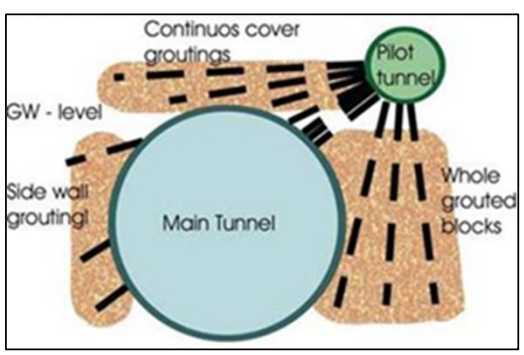
- Phase 2b will be undertaken by the appointed contractor but a preliminary Phase 2b analysis was undertaken for buildings identified in the moderate damage category from Phase 2a

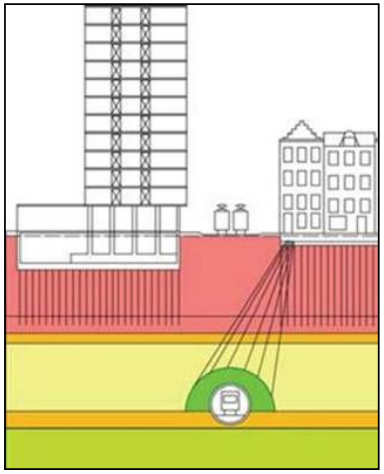
- The outcome of the preliminary Phase 2b analysis showed that 7 buildings will progress to a Phase 3 analysis
  - 2No. would progress due to building damage alone
  - 2No. would progress due to building damage and being a special structure
  - 2No. would now be in the Slight Damage Category and are progressing due only to being special buildings
  - 1No. would now be in the Slight Damage Category and progresses due to the basement being >4m deep.

Settlement – Mitigation

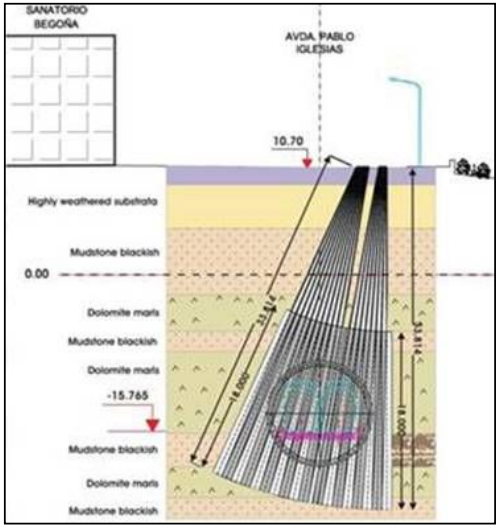
- Mitigation measures that can be employed to address settlement include:
  - Jet/Soil grouting
  - Pile wall treatments
  - Compensation grouting
  - Close monitoring by the contractor of the TBM face pressure to minimise ground/water loss at the cutting face when in slurry mode
- Specific measures used at each site will need to be identified by a contractor based on a stage 3 assessment

Examples of Soil Grouting

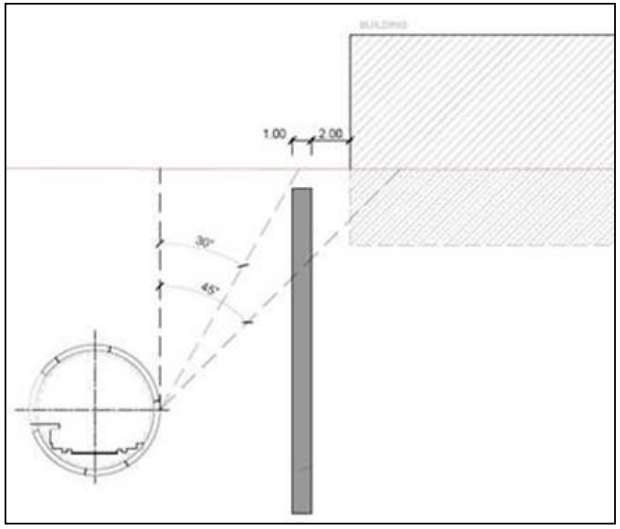


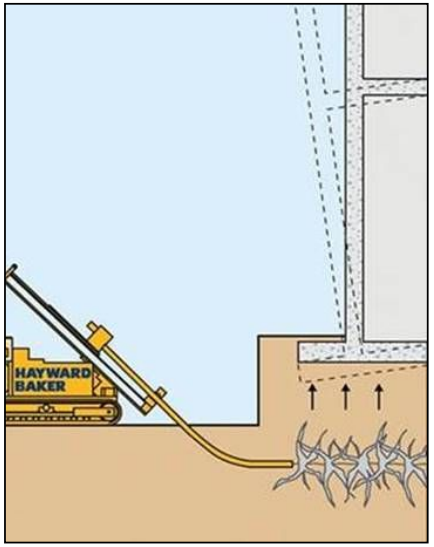


Example of Jet Grouting



Example of Pile Wall Treatment





Example of Compensation Grouting

Traffic and Transport: Construction Phase Assessment Methodology

- Scheme Traffic Management Plan
  - **Outlines the impacts** on all user groups;
  - Methodology takes into account the **duration** and **type of impact** (a lane closure, a loss of width, length of diversion…) to determine **severity** of impact;
  - Outlines impact at each of the construction sites (stations, portals, M50 crossing);
  - Covers both Enabling Works and Main Works;

- Strategic Impact
  - Identified the busiest scenarios (scenarios with highest volume of construction vehicles) north of the M50, and south of the M50;
  - Assessed the impact of the busiest scenarios on the wider network;

Construction Phase Assessment Outcomes and Mitigation

- Localised Impacts:
  - Localised impacts on General Traffic – along R132, Collins Avenue, Mater…
  - Localised impacts on Public Transport – along R132, Tara Street
  - Limited impacts on cyclists/pedestrians/parking/loading in select locations

- Overall strategic network is able to accommodate the additional traffic
  - Residual impacts remain for General Traffic, Cyclists and Parking

- Reduction/remedial measures outlined in the STMP include:
  - Establishment of a Traffic Management Forum – with key stakeholders;
  - Potential localised restrictions (e.g. around school times at relevant locations)
  - Mobility Management Plan- monitoring, management, reporting structures

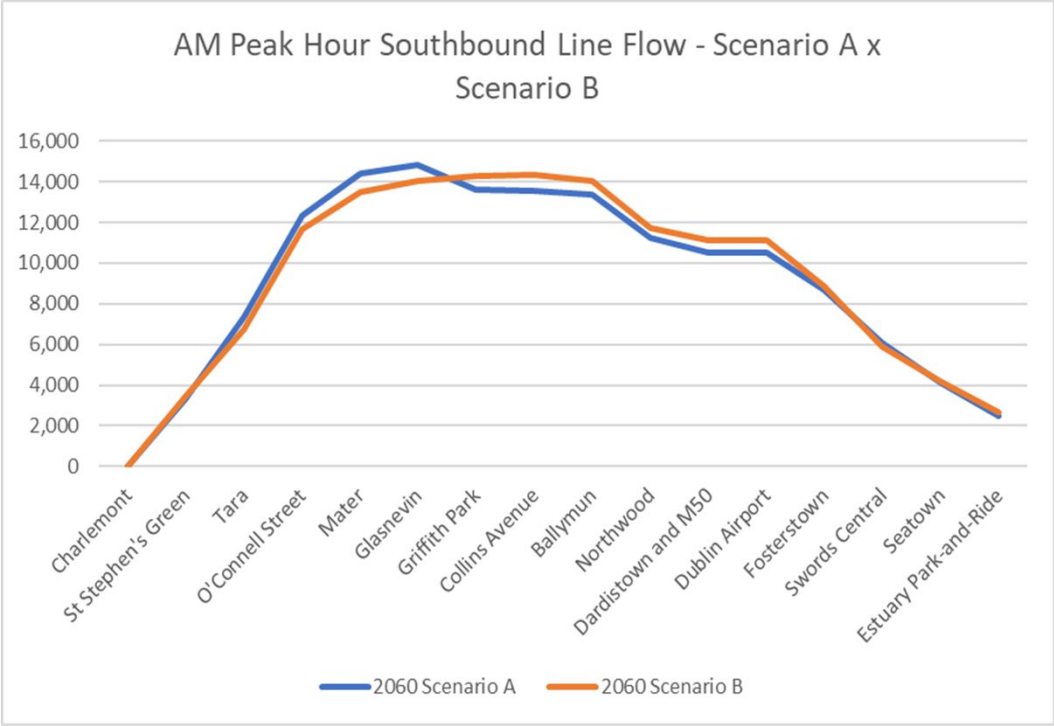
Traffic & Transport Assessment – Operational Phase Assessment

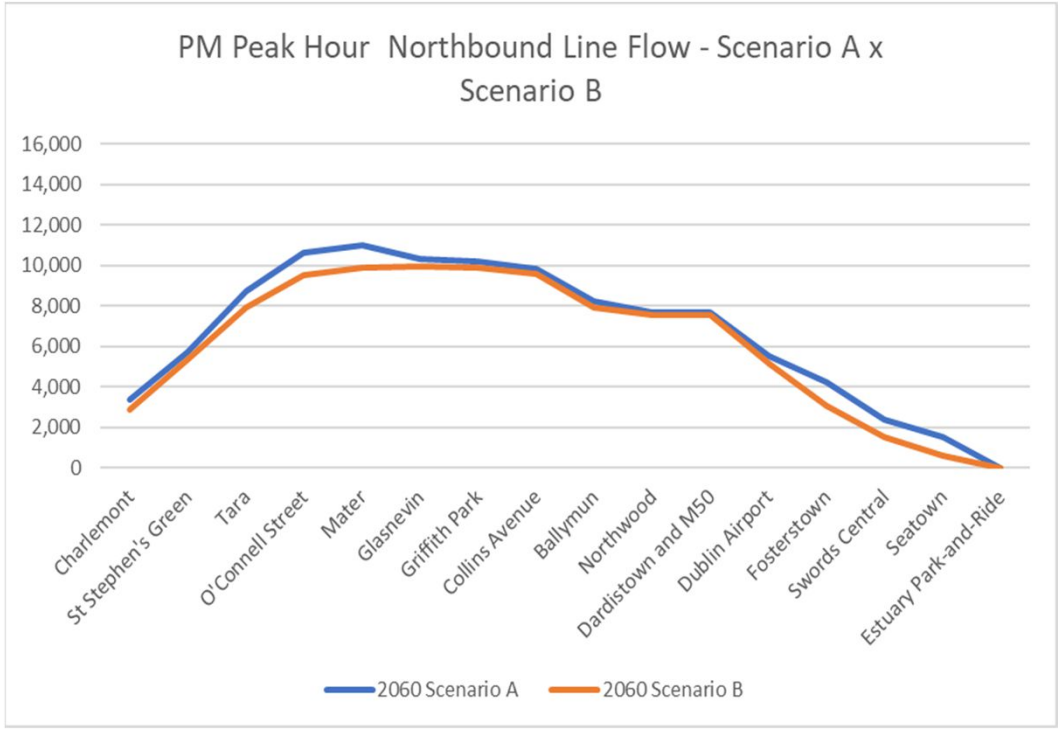
- Utilised East Regional Model (ERM, 2016)
- Model Scenarios
  - A 'Do-Minimum (Committed) Scenario - Scenario A
  - A 'Do Minimum (Likely Future) Scenario – Scenario B
  - A 'Do Scheme' scenario for both Do Minimum scenarios
  - Opening Year (OY) 2030, OY + 15 Years 2045, OY + 30 Years 2060 (for both scenarios)

Scenario A Forecast Years	Scenario B Forecast Years
Core Business Case Run 2030	National Development Plan 2030
Core Business Case Run 2045	GDA Transport Strategy 2045
Core Business Case Run 2060	GDA Transport Strategy 2060

Operational Phase Outcomes Passenger Demand – Scenario A v Scenario B

- AM Peak Hour southbound 2060 - highest volume of passengers at Glasnevin in Scenario A (almost 15,000 passengers
- PM Peak Hour northbound 2060 – highest volume of passengers at Mater in Scenario A (approx. 11,000 passengers)





Operational Phase Outcomes

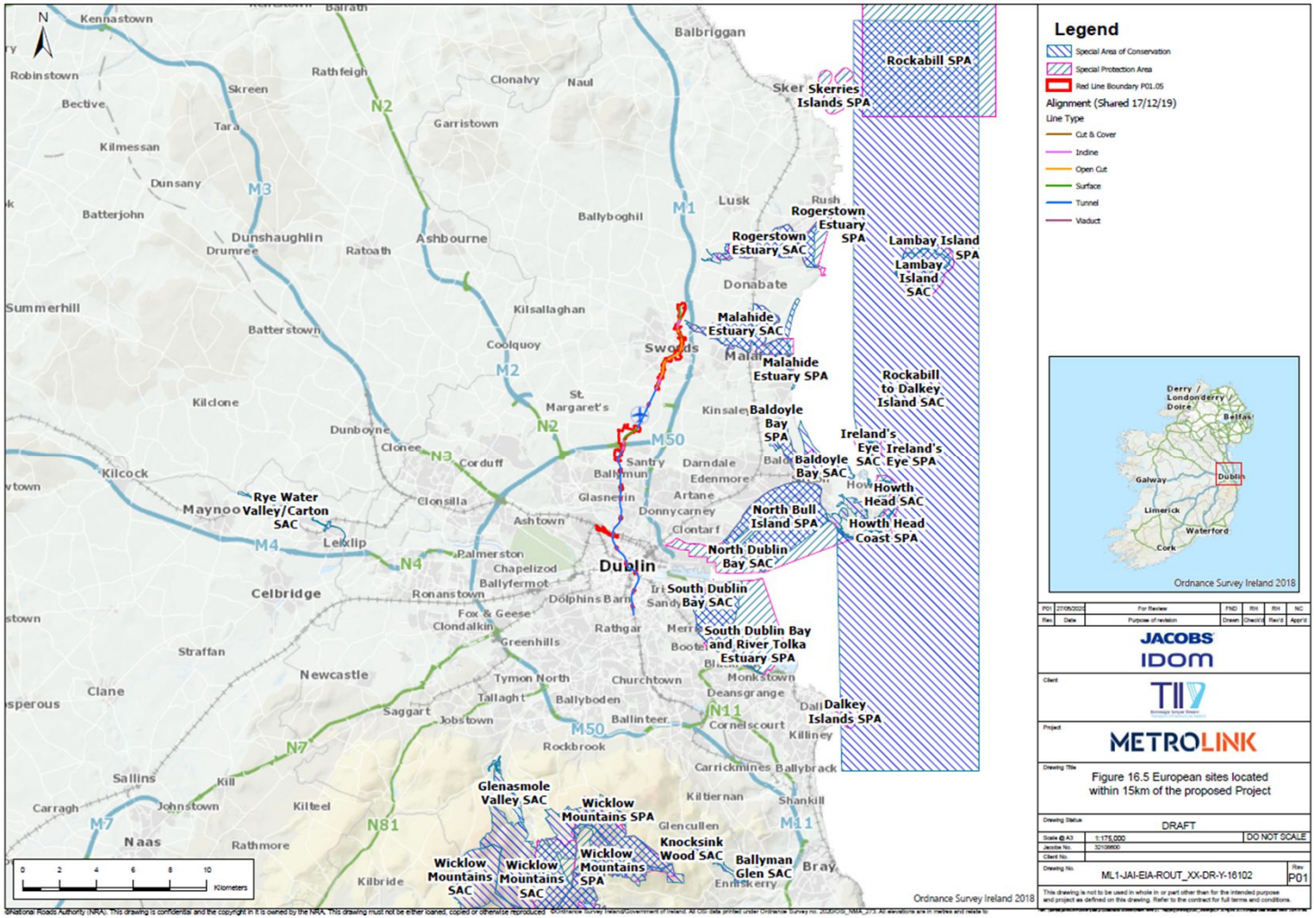
- **Increase in public transport mode share along the corridor** *(e.g Swords area sees increase of approx. 5-20 percentage points in PT mode share per zone, Dublin Airport increase of 10-30 percentage points)*

- **Notable improvements in public transport journey times** *(e.g saving of 41mins from Swords Pavillions to Glasnevin, saving of 25mins from Dublin Airport to Sandyford)*

- **Overall reductions in car trips** *(some increase in traffic on northern approaches to the Park and Ride site)*

- **Changes to usage of other public transport modes** *(reduction in bus usage, increase in usage of Kildare and Maynooth lines)*

Biodiversity – Map of Designated Sites



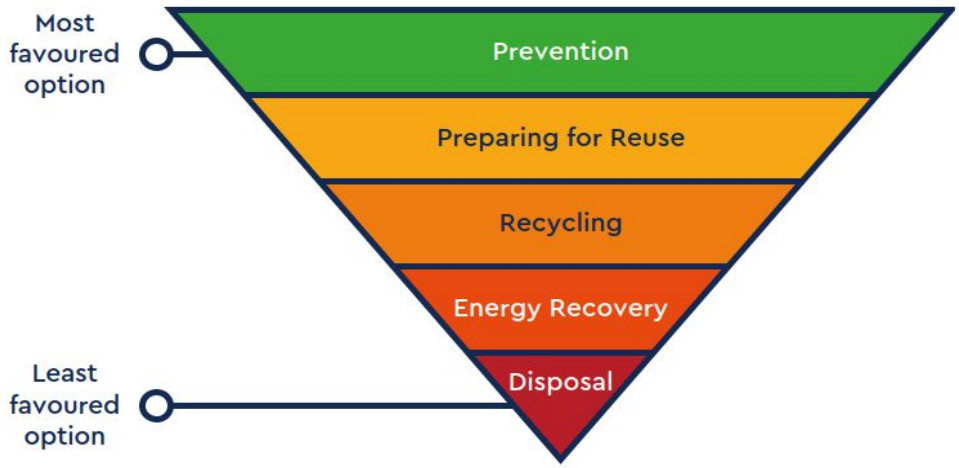
- EIAR;
- Natura Impact Statement (NIS) &
- No Net Loss assessments.

Soils, Geology – Estimated Quantity of Excavated Material

Section	Estimate of Excavated Material Quantities (m^3)			
	Soil	Mixed	Rock	Total
Total Excavated Material	**1,895,716**	**155,302**	**974,570**	**3,025,588**
Backfill Required (Dardistown Depot), plus assumed material kept on site for bunds, landscaping and the like at Park & Ride				**99,931**
Total Surplus Excavated Material				**2,925,657**

Soils, Geology & Waste

- Article 27 has been launched to the EPA to manage circa 70% of material
- Analysis is ongoing to define the use of material
- Five rounds of Geotechnical Investigation (GI) was carried out
- Results from GI were used to characterise excavated material



Urban Realm/Landscape

Key Features

- Urban realm/landscape design is consistent with the strategy previously presented
- A Linear Park is proposed on the R132

EIAR Baseline

- The local landscape baseline environment is described in terms of 24 Local Landscape Character Areas (LLCAs)
- There has been 116 photomontages generated for the EIAR

EIAR Impacts

- Potential Construction Phase impacts due to tree felling;
- Proposed landscape design and replanting and applying No Net Loss principles will enhance the receiving environment for areas around the proposed Project.

Landscape – Lissenhall Bridge (Draft)

Landscape – Lissenhall Bridge (Draft)

Landscape: Collins Avenue – View from Church (Draft)

Landscape: Collins Avenue – View of Station (Draft)

Architectural Heritage

- Desktop study and surveys were carried out to collate data for the chapter
- There are 175 affected features along the proposed Project
- Specific mitigation measures have been identified for each location
- Typical mitigation measures that are included are:
  - Removing and reinstating the feature,
  - Providing protection for the feature such as hoardings,
  - Recording the feature by means of photography and written description,
  - Monitoring of vibration by means of vibration monitors

Impact Reference	Affected Feature	Impact Assessment Prior to Mitigation
AHI- 1	BH-2: Demesne of Lissenhall Little. Short sections of wall survive adjacent to gateway and alignment of driveway still extant	The construction of Estuary Station and associated works will directly impact these sections of wall and the remnants of the driveway resulting in their total loss. The magnitude of this impact is high, but the impact affects features of low heritage value, so the effect is considered to be slight.
AHI- 2	BH-3: Balheary Demesne	The construction of the scheme, including Estuary Station, the realignment of Ennis Lane and associated works will directly impact on 500m of the demesne wall of the former Balheary House resulting in its removal. The magnitude of this impact is high, and the demesne wall is a surviving feature of Balheary demesne; the effect will be significant.

Potential Direct Impacts During Construction Phase

Impact Reference	Affected Feature	Mitigation Measures
AHI-1	BH-2: Demesne of Lissenhall Little.	The wall is to be recorded by means of photography and written description prior to demolition. The impact would decrease to not significant following mitigation.
AHI-2	BH-3: Balheary Demesne	The wall is to be recorded by means of photography and written description prior to demolition. The impact would decrease to moderate following mitigation:

Proposed Mitigations

Cumulative Impacts

Methodology

- Four stages: 1. Identification of Other Developments, 2. Shortlisting, 3. Information Gathering and 4. Assessment
- Two types of other developments: Local Authority Planning Applications (1km study area) and Major Developments (SIDS, SHDs and major projects that are in pre-planning phases) (15km study area)
- Desktop study carried out to identify a list of other developments
- Once the other developments went through a shortlisting more information was gathered on the projects and the list was sent to the specialists for their assessment

Shortlisting Criteria for LA Planning Applications

Cumulative Impacts – Important Outputs

Potential Residual Cumulative Impacts with the proposed Project with other transport projects are identified below

BusConnects

- Cumulative Impacts identified with Traffic & Transport, Airborne Noise & Vibration, Biodiversity and Landscape

DART+ Programme

- Cumulative Impacts identified with Traffic and Transport and Airborne Noise & Vibration

Sustainability

- TII's Environmental Strategy (TII 2019)
- "*commits to strive to incorporate sustainability principles into the development and operation of the national road, light rail and metro networks; therefore, contributing to social wellbeing, supporting economic efficiency, and protecting, restoring and enhancing environmental systems for future generations*."
- The Project Sustainability Plan (PSP)

MetroLink Priority Areas	TII SIP – Sustainability Principles	MetroLink Sustainability Objective
EN1: Climate Change Mitigation and Adaptation	2 – Enable safe and resilient networks and services 5 – Transition to net zero	Support Ireland's climate ambitions to achieve net zero by 2050. Improve energy efficiency and increase resilience to future climate change.
EN2: Materials and Resources	3 – Collaborate for a holistic approach 4 – Deliver end-to-end improvements 5 – Transition to net zero	Minimise the use of materials, natural resources and the production of waste.
EN3: Biodiversity	6 – Create total value for society	Enhance biodiversity and minimise pollution.
EN4: Heritage	6 – Create total value for society	Promote protection of and access to heritage.

Sustainability

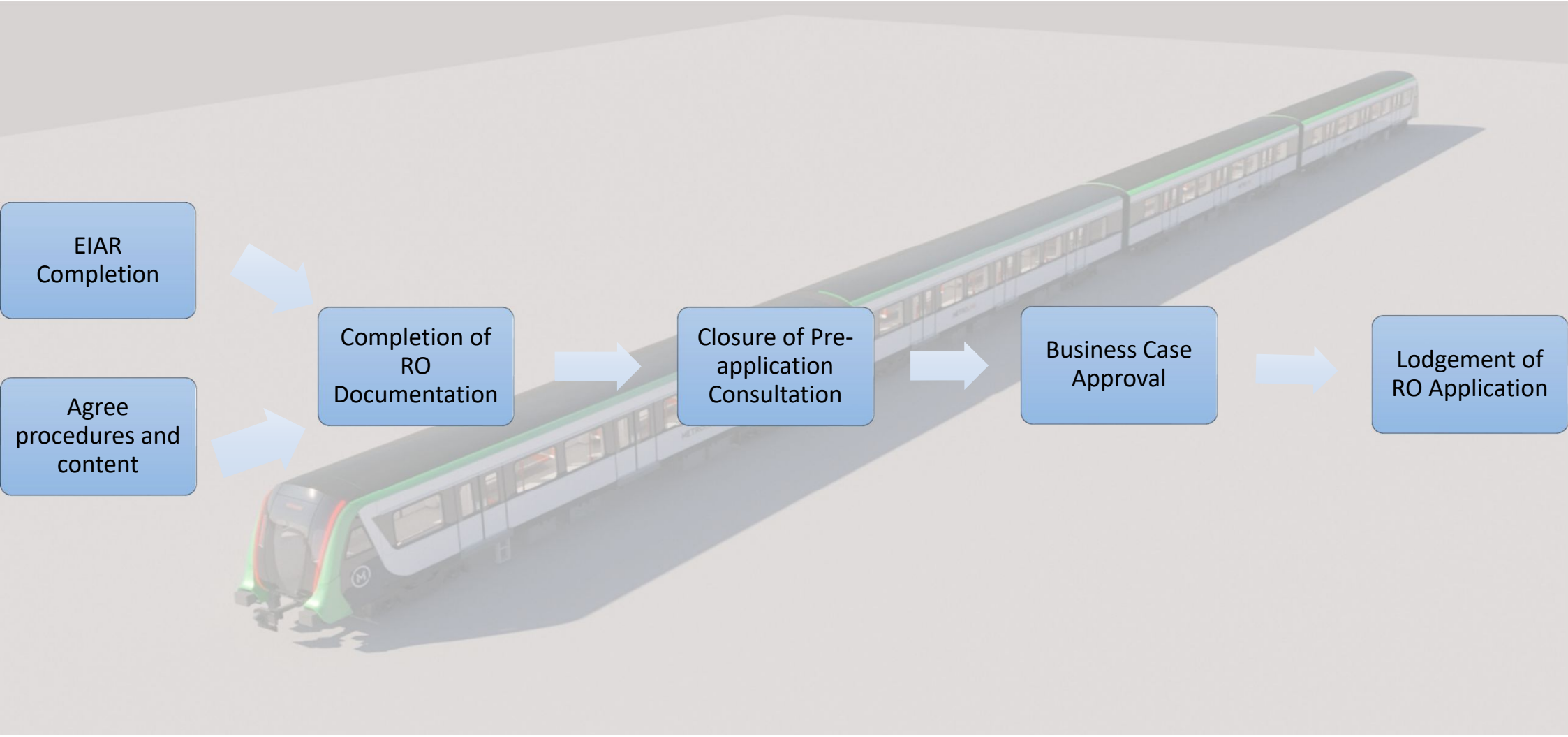
MetroLink Priority Areas	TII SIP – Sustainability Principles	MetroLink Sustainability Objective
CC1: Skills and Learning	3 – Collaborate for a holistic approach 6 – Create total value for society	Provide opportunities to upskill, learn and develop in the construction and transport sector.
CC2: Community and Engagement	3 – Collaborate for a holistic approach 4 – Deliver end-to-end improvements	Broad and meaningful engagement and consultation with all stakeholders.
CC3: Safety	2 – Enable safe and resilient networks & services	Deliver and operate MetroLink safely, leading by example.
CC4: Health and Wellbeing	4 – Deliver end-to-end improvements 6 – Create total value for society	Demonstrate and deliver health and wellbeing benefits.
SE1: Connectivity	1 – Provide effective, efficient and equitable mobility	Facilitate connectivity between MetroLink and other transport services and modes of transport.
	1 – Provide effective, efficient and equitable mobility 2 – Enable safe and resilient networks & services	Deliver well designed stations using the principles of universal design, that are accessible to all, safe, comfortable, and attractive.
SE2: Productivity	2 – Enable safe and resilient networks & services 3 – Collaborate for a holistic approach 4 – Deliver end-to-end improvements	Demonstrate increased productivity during construction and associated with the delivery of MetroLink.
SE3: Facilitating growth and planning for the future	2 – Enable safe and resilient networks & services 3 – Collaborate for a holistic approach	Collaborate with local planning and local and international businesses to deliver sustainable growth. Allow for future trends in growth within the designs and operations.
SE4: SME and Local Spend	6 – Create total value for society	Encourage and include local and small and medium-sized companies to engage in tendering opportunities.

Consultation

- Emerging Preferred Route Public Consultation ran for seven weeks from 22 March – 11 May 2018
  - 7,591 submissions received
- Preferred Route Public Consultation ran for eight weeks from Tuesday 26 March until Tuesday 21 May 2019
  - 2,132 submissions received
- Local area consultation on the Albert College Park Tunnel Intervention Shaft
- A statutory public consultation on the entire project as part of the Railway Order application

- Notable stakeholders consulted to date include:
  - Dublin City Council
  - Fingal County Council
  - Office of Public Works
  - Trinity College Dublin
  - Dublin Airport Authority
  - ESBN
  - Mater Hospital
  - National Parks & Wildlife Services
  - Inland Fisheries Ireland
  - Dublin Fire Brigade

Progress to Railway Order



METROLINK

Any questions?