



METROLINK

Public Consultation 2018









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NTA
 Údarás Náisiúnta Iompair
 National Transport Authority

TII
 Bonnagar Iompair Éireann
 Transport Infrastructure Ireland

METROLINK ROUTE MAP SWORDS – SANDYFORD

-  MetroLink Route
-  Future Station
-  Park & Ride
-  Rail
-  Luas – Red Line
-  Luas – Green Line

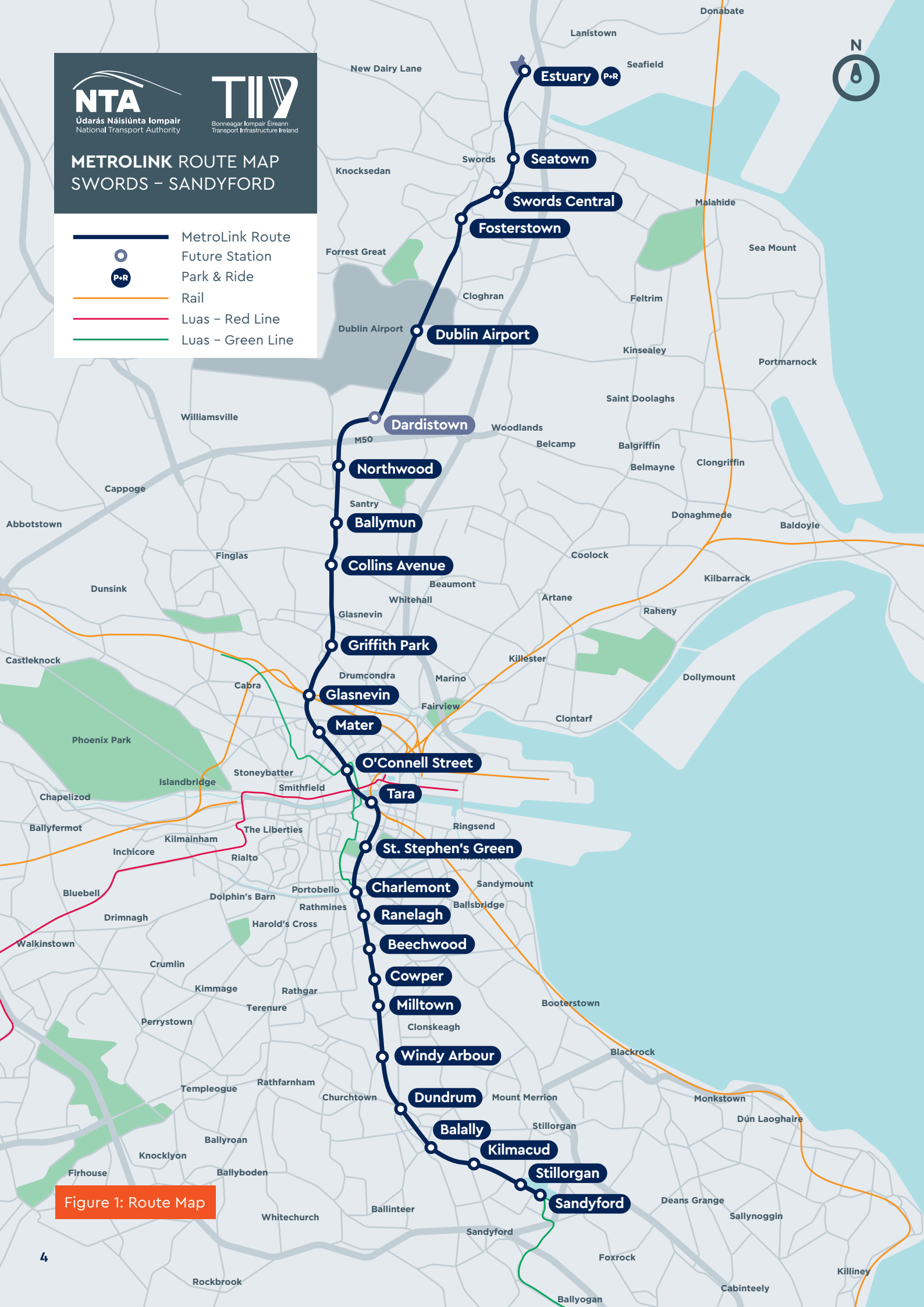


Figure 1: Route Map

01. Introduction

Project Description

The MetroLink project is the development of a north-south urban railway service that will run between Swords and Sandyford, connecting key destinations including Dublin Airport and the City Centre along the 26km route.

A large proportion of the route will be underground, including where it passes under the important city centre area and Dublin Airport. The underground section will terminate close to Charlemont Stop on the Luas Green Line, where the metro will connect to, and run southwards on, the existing Luas Green Line. The Luas Green Line will be upgraded to metro standard as part of the project.

There will be a total of 25 stations (including 15 new stations), 3,000 additional Park and Ride spaces, and a journey time of approximately 50 minutes from Swords to Sandyford. A map of the overall proposed route is shown in Figure 1 on the opposite page.

What is a Metro?

Metro is the most commonly term used to describe a high-frequency, high capacity, electric, intra-urban railway system.

Metros are fully segregated from other transport modes, often running in tunnels or on viaducts, to allow them to operate at reliable frequencies and speeds, unimpeded by the need to stop at traffic and pedestrian junctions. Metro systems often, but not always, feature sections of underground railway and underground stations but can also include surface level stations when required.

Background

A metro project connecting Swords and Dublin City Centre has been proposed and suggested for many years. A detailed proposal was developed for a scheme extending from St. Stephen's Green to Swords and received planning approval from An Bord Pleanála in 2010. However, due to Ireland's subsequent and significant economic downturn, the Government decided to postpone the project in 2011.

In 2015, the National Transport Authority (NTA) published the Fingal/North Dublin Transport Study Report, which assessed the need for a metro solution against various alternatives that had been identified. It concluded that a metro scheme was the appropriate solution to meet the public transport needs of the Swords – Airport –City Centre corridor. The Government has included MetroLink (from Swords to Sandyford) in the National Development Plan 2018–2027 published in February 2018, with a planned completion date of 2027.

Public Consultation

We recognise that it is important to involve the public, businesses, residents, local authorities, political representatives and all other key stakeholders at the earliest opportunity. We welcome support, insights and observations for this proposed project.

The information in this document sets out, in summary form, the rationale for the project, the process undertaken to assess various scheme options, and describes the "Emerging Preferred Route" for the project. This Emerging Preferred Route is the proposal identified as being (subject to this public consultation process), the optimum route for the project.

The information provided represents a summary of the work undertaken. Further details are available in various reports available on the MetroLink website – **www.metrolink.ie**

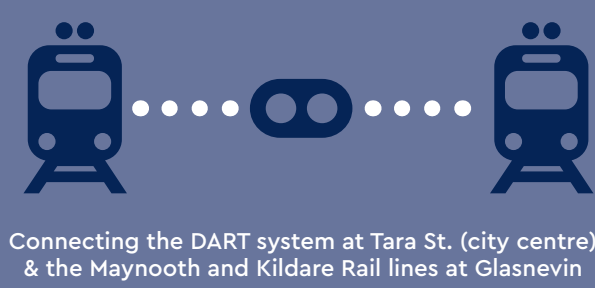
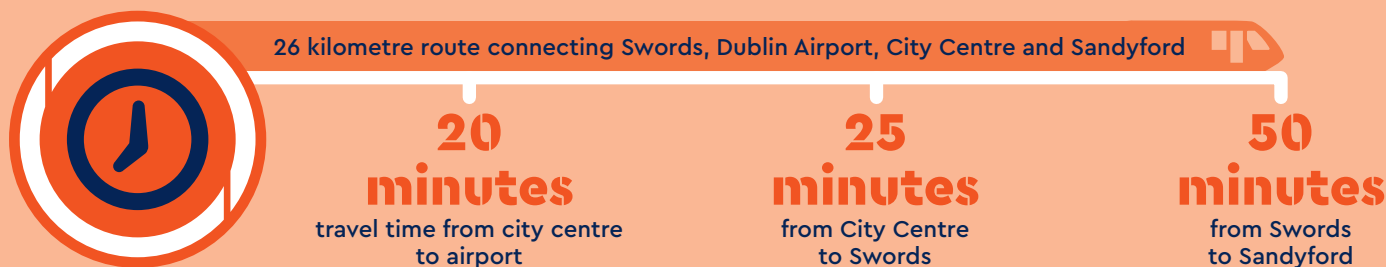


MetroLink - Key Facts

PASSENGERS



JOURNEY TIME AND DISTANCE



STATIONS & VEHICLES



Preliminary cost estimate is approximately **€3 billion***

*subject to change as the public consultation progresses and final design is agreed

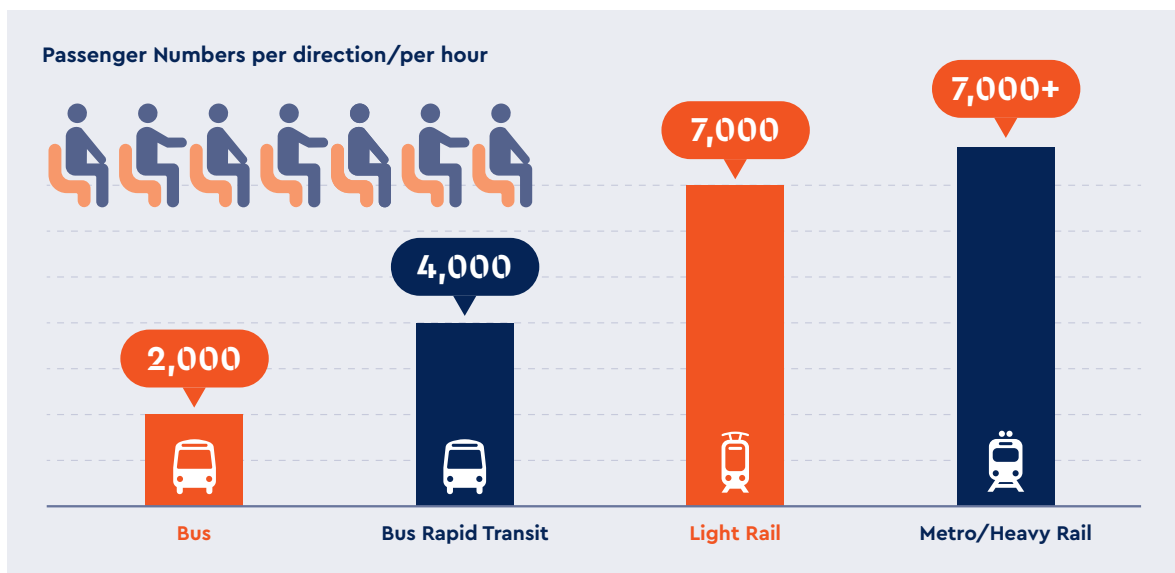
02. Why Build MetroLink?

Public Transport Modes and Capabilities

Designing public transport schemes requires forecasting the likely future passenger demand along the relevant corridor. Once the predicted passenger numbers are identified, the appropriate public transport mode to meet that demand can be identified from the graphic below.

Public Transport Mode Capacities

For high levels of passenger demand, a metro or heavy rail solution, (such as the DART) is required. Other modes do not have the carrying capacity to meet higher passenger demand levels.



Future Passenger Demand

Dublin is growing and its transport needs are increasing. More people are now living and working in the capital. The recently published "Project Ireland 2040 – National Planning Framework" projects a 20% to 25% growth in population in Dublin by 2040, resulting in a total population of about 1.4 million for the Dublin region alone.

Already, Fingal is the fastest growing region in Ireland, with its population increasing by 8 per cent between the Census 2011 and Census 2016, more than twice that of the State overall. Dublin Airport, as Ireland's main international gateway, handled a record-breaking 29.6 million passengers in 2017 and is projected to grow significantly over the coming years.

Transport modelling to forecast future passenger numbers for MetroLink was undertaken using the NTA's Regional Transport Model which provides a highly sophisticated computer simulation of future transport patterns. Future passenger numbers of 15,000 passengers per direction per hour were identified during the busiest peak hours for this corridor. Therefore, at these levels of projected passenger usage, a metro or heavy rail system is needed to provide sufficient capacity for the likely usage. A bus system or a standard Luas line will not be able to accommodate the forecast number of passengers.

Green Line Capacity

During 2017, the numbers carried by the Luas Green Line in the busiest morning peak hour was approximately 5,000 passengers in the northbound direction. The introduction of new 55 metre length trams, and the extension of the existing trams, will increase the Green Line capacity up to approximately 8,000 passengers per direction per hour based on a three minute frequency.

The extension of the Green Line in December 2017 to include Luas Cross City has already seen a significant increase in passenger numbers over the entire route of the Green Line. In addition, as areas such as Cherrywood and Sandyford are further developed in the coming years, the passenger demand on the Green Line will further increase. Analysis undertaken with the NTA's Regional Transport Model indicates that by 2027, the level of demand on the line will exceed the carrying capacity of the Luas system, even with the introduction of longer trams.

Over the next two decades, passenger demand levels on the Green Line will reach approximately 11,000 passengers in the northbound direction, and expected to grow to approximately 13,000 passengers by 2057. This is beyond the carrying capacity of a standard Luas system and an upgrade to a metro system is required.



NTA
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National Transport Authority

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Transport Infrastructure Ireland

METROLINK STUDIES

- MetroLink Route
- Future Station
- Park & Ride
- Rail
- Luas - Red Line
- Luas - Green Line



Figure 2: Route Study

03. Route Selection Process

MetroLink Studies

The route and extent of the MetroLink scheme was established following the completion of three specific studies. An Alignment Options study was carried out to determine the optimum route for MetroLink from Dublin City Centre to Swords. The Green Line Tie-in study was undertaken to establish the optimum location to join MetroLink to the existing Luas Green Line and the Green Line Metro Upgrade study was carried out to determine the feasibility of upgrading the existing Luas Green Line to Metro standard. Figure 2 on the opposite page identifies the three studies. The following is a short summary of each of the specific studies. Please note the full studies are available on www.metrolink.ie

Alignment Options Study (Study 1)

The objective of the Alignment Options study was to carry out a comprehensive and robust route option selection process to identify an emerging preferred route for the section of the MetroLink serving the Swords to Dublin City Centre transport corridor. A total of 34 feasible routes were identified over the length of the corridor. Following an initial assessment, ten of these routes were selected for further detailed assessment following which a single option was identified as the Emerging Preferred Route.

Green Line Tie-in Study (Study 2)

The objective of the Luas Green Line Tie-in Study was to identify the preferred location for the future tie-in of MetroLink to the existing Luas Green Line. The study identified ten, possible tie-in locations on the existing Green Line between St. Stephen's Green and Milltown. Following detailed assessment, the preferred tie-in location was identified. The preferred tie-in is located immediately south of Charlemont Luas Station on Grand Parade in Dublin 6.

Green Line Metro Upgrade Study (Study 3)

The Green Line Metro Upgrade study was carried out to determine the extent of the infrastructure works required to upgrade the current Luas Green Line to a fully segregated Metro standard between Charlemont and Sandyford. The study details some of the infrastructure modifications required to facilitate the continuation of the MetroLink services beyond Charlemont to Sandyford.

To achieve metro service levels a number of modifications and enhancements are proposed including changes to existing road junctions, vehicular and pedestrian access across the Luas Line and Luas stops. Modification at stations will include such things as the installation of a pedestrian over-bridge at each Luas Stop.

METROLINK

Project Schedule



Q4
2017

Q1
2018

Q3
2019

Alignment Options Study -
Identification of Emerging
Preferred Route



Emerging Preferred Route
Public Consultation



Railway Order Application
to An Bord Pleanála



OBJECTIVE:

To provide a safe, high frequency, high capacity, fast, efficient and sustainable public transport service connecting Swords, Dublin Airport, Dublin City Centre and Sandyford.

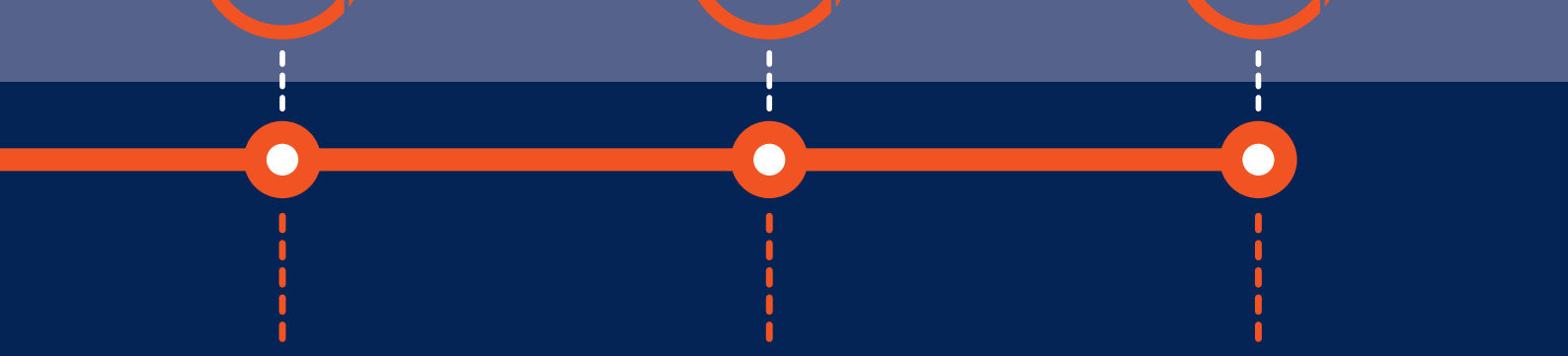


2020



2021

2027



An Bord Pleanála Decision
(Anticipated)



CONSTRUCTION STAGE
Approximately 6 years



MetroLink operational
2027

**METROLINK ROUTE TYPE
SWORDS – SANDYFORD**

- Underground
- Surface Level
- Elevated
- Future Station
- P+R Park & Ride
- Rail
- Luas – Red Line
- Luas – Green Line

Alternative Option B

Dublin Airport **Dublin Airport**

Dardistown

Northwood

Alternative Option A

Estuary **Estuary** **P+R** Seafield

Seaton

Swords Central

Fosterstown

Figure 3: Route Type

04. Emerging Preferred Route for MetroLink

Route Alignment

The Emerging Preferred Route for MetroLink commences at Estuary Station which is located immediately north of Swords. This is also the location for the proposed 3,000 park and ride car spaces. From Estuary the route proceeds south on lands adjacent to the western boundary of the R132, rising onto an elevated structure which passes over Estuary and Seatown, Malahide and Pinnock Hill roundabouts, with stations located at Seatown and Swords Central. The route returns to existing ground level immediately south of the Pinnock Hill roundabout travelling along the central median of the R132 to Fosterstown Station. From Fosterstown Station the route enters a short tunnel beneath the R132, rising to travel at surface level on lands adjacent to the western boundary of Swords Road until it goes underground immediately north of Dublin Airport.

The route, now in tunnel, passes beneath Dublin Airport where an underground station is proposed at the designated ground transportation hub. MetroLink continues in tunnel beneath the M50 motorway to a station at Northwood Business Park while providing for a possible future station at Dardistown. The route continues southwards in tunnel beneath the R108 to Ballymun Station, which is located just south of the junction with Shangan Road. From Ballymun Station the route continues to Collins Avenue Station, located on the eastern side of the R108 in front of the Church of Our Lady of Victories, and then onwards to Griffith Park Station, located on St. Mobhi Road.

The route continues south, generally following the R108 to Glasnevin Station where a major interchange station connecting with the Maynooth and Kildare mainline rail services is proposed. The route then travels southeast to Mater Station located in the public park fronting St Joseph's Church and onwards to O'Connell Street Station which is located at the junction of O'Connell Street and Parnell Street East.

From O'Connell Street Station the route continues south to Tara Station where a major interchange station providing connections to the DART system is proposed and then on to St. Stephen's Green Station, which is located on east side of the Green. From St. Stephen's Green Station the route continues to Charlemont Station, located to the rear of No. 2 Grand Parade. The route exits Charlemont Station and rises to connect to the existing Luas Green Line to facilitate through running of Metro services onwards to Sandyford. Direct passenger interchange with Luas Green Line services between Broombridge and Charlemont, will be provided at Charlemont Station.

From Charlemont Station, MetroLink will run along the existing Luas Green Line through Ranelagh, Beechwood, Cowper, Milltown, Windy Arbour, Dundrum, Balally, Kilmacud, Stillorgan and Sandyford. The existing Green Line will be upgraded to facilitate fully segregated Metro services which will include junction modifications where the existing Luas line crosses Dunville Avenue and St. Raphael's Road. Metrolink services will turn back at Sandyford with Luas services continuing onwards to Brides Glen.

Alternative Route Options

There are two locations along the route where an alternative option for MetroLink is under consideration. These locations are (a) between Fosterstown Station and Estuary Station and (b) between Northwood Station and Airport Station.

Alternative Option A: Fosterstown and Estuary Station

As an alternative to the current route between Fosterstown and Estuary Stations, which runs on an elevated structure along the central median of the R132, further consideration is being given to running the majority of the route at surface level along the central median of the R132, with grade separation at Estuary, Seatown, Malahide and Pinnock Hill roundabouts. This arrangement is shown in Figure 3 and in Appendix C.

Alternative Option B: Northwood and Airport Station

As an alternative to the current route between Northwood and Airport Stations, which runs in tunnel beneath the M50, further consideration is being given to a route which emerges from tunnel at Northwood Station, passes over the M50 to the proposed future station at Dardistown and re-enters the tunnel immediately south of old airport road. This alternative route is shown in Figure 3 and in Appendix C.

Alternative Tunnel Types

Twin tunnel arrangement

The Emerging Preferred Route has been developed on the basis of a twin tunnel arrangement – one tube for the northbound metro and a second tube for the southbound metro – with cross passages connecting the two tubes at regular intervals for emergency purposes. This twin tunnel layout is illustrated in Figure 4.

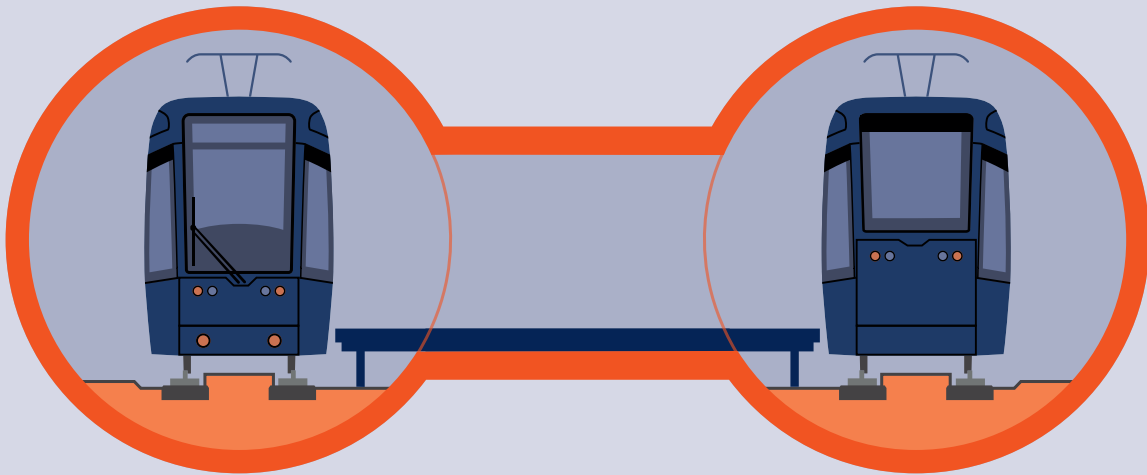
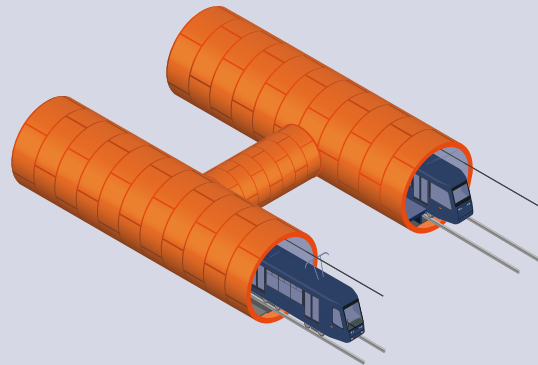


Figure 4: Twin tunnel arrangement

Single tunnel arrangement

An alternative arrangement is also under consideration, where both the northbound and southbound metros would run in a single, larger tunnel. This arrangement is shown in Figure 5. This single tunnel option will be further assessed to establish its cost and construction advantages.

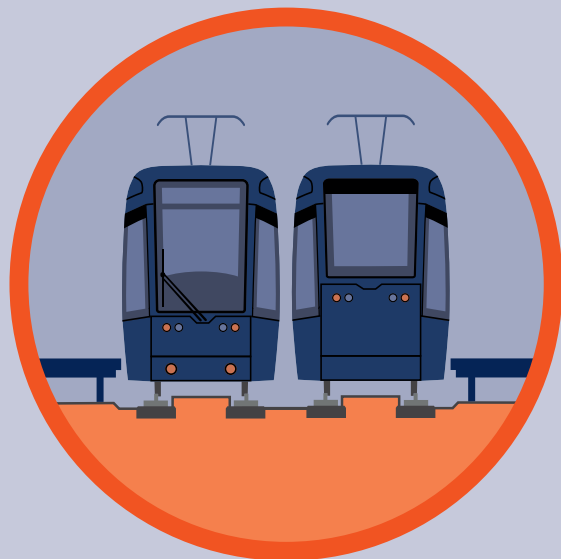
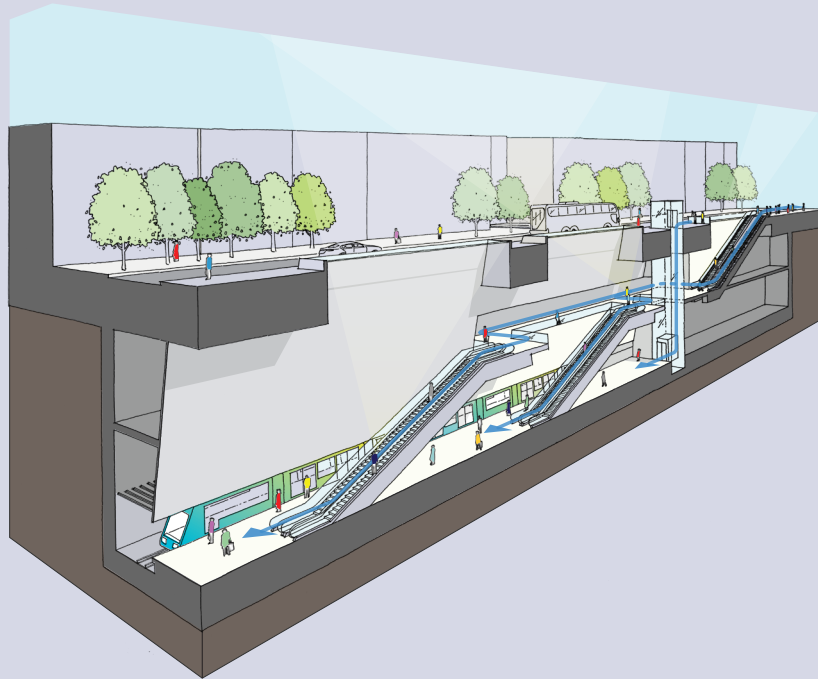


Figure 5: Single tunnel arrangement

Stations

The MetroLink project will have 25 stations in total, 15 of which will be new and the remaining 10 will be upgraded stations on the Green Line. Some of the stations will be underground and others at surface level. The final design and construction style of stations will be developed during the design phase of the project. MetroLink will endeavour to provide state of the art, accessible and integrated stations across the route. Illustrations of typical underground stations are shown below.

Underground Station



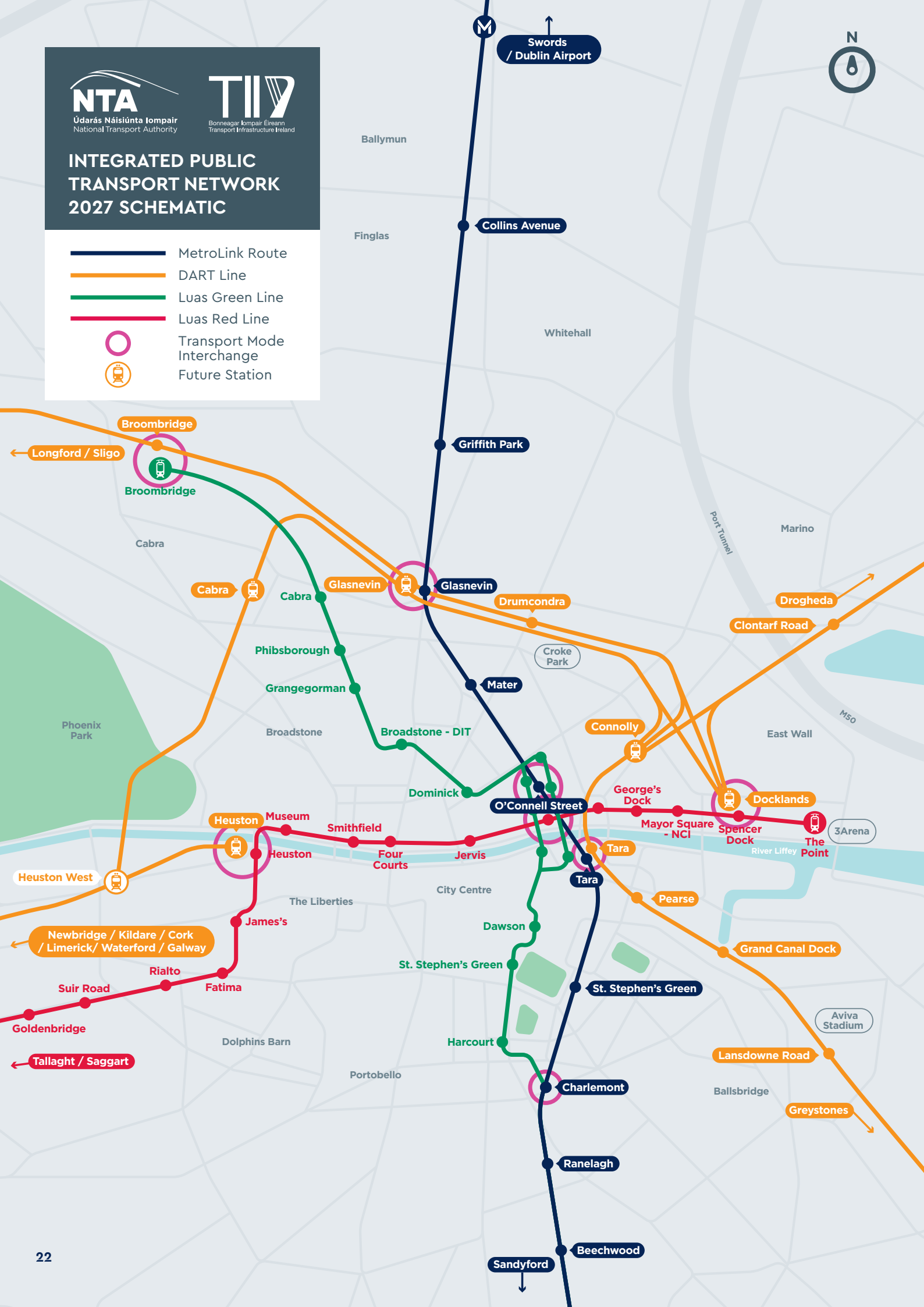
Understation – Platform View





**INTEGRATED PUBLIC
 TRANSPORT NETWORK
 2027 SCHEMATIC**

- MetroLink Route
- DART Line
- Luas Green Line
- Luas Red Line
- Transport Mode Interchange
- Future Station



05. Integration with other transport modes

MetroLink will provide new and important public transport connection opportunities along its route. These will include interchanges with the commuter rail services at Tara Station and Glasnevin Station. At Tara Station the new MetroLink station will be fully integrated into the existing mainline rail station, providing an efficient linkage for passengers transferring between metro and DART services. At Glasnevin a new integrated MetroLink and commuter rail station will be provided which will facilitate passengers transferring between metro and commuter rail services on the Maynooth and Kildare lines.

MetroLink will also link with key routes of the bus system and the separate BusConnects project will ensure ease of connection between buses and the metro at the relevant stations. In addition, MetroLink also connects with the Luas system at O'Connell Street, Charlemont and Sandyford.

A park and ride facility for over 3,000 cars at Estuary will allow for commuters to leave their cars and use the metro service to access the city, reducing overall road congestion.



06. Issues and Challenges

MetroLink is Ireland's largest public transport infrastructure project for many decades. As with all projects of this size and scale, it will bring numerous issues and challenges which need to be effectively and sensitively addressed. All possible efforts will be made to address these issues and challenges at the earliest stages of public consultation and design. There are a number of obvious issues specific to a project of this type which are detailed below, and the public consultation phase will identify others.

Property Acquisition

This project requires the acquisition of a number of residential and commercial properties. The NTA and Transport Infrastructure Ireland (TII) are committed to ensuring that these acquisitions are managed in a fair and equitable manner and will provide assistance to any affected parties.

It is our intention to engage with potentially affected property owners at the earliest possible stage of this planning process. MetroLink will have a designated communications and liaison team to engage with individuals and all property owners on a case by case basis.

Upgrading the existing Green Line to Metro Standard

The tie-in of MetroLink to the existing Green Line and the upgrade of the line to Metro standard will be challenging and will involve disruption to the existing Green Line services during construction works. NTA and TII will work closely with stakeholders to ensure that upgrade works are efficiently planned and co-ordinated so as to minimise disruption of the existing service and inconvenience to customers and local stakeholders.

Scheme Traffic Management

During the construction stage, it is essential that impacts of the construction works on public transport providers, residents, pedestrians, cyclists, road users and businesses are mitigated and managed effectively. Working closely with affected stakeholders, a scheme traffic management plan will be developed to achieve this aim. Regular and timely engagement with affected stakeholders and the communication of planned works will be ensured.

Noise, Vibration and Ground Settlement

NTA and TII understand and appreciate the concerns of residents, businesses and other stakeholders may have in relation to potential noise, vibration and ground settlement issues typically associated with tunnelling projects. In accordance with the requirements of the amended Environmental Impact Assessment Directive (2014/52/EU) and the Transport (Railway Infrastructure) Act 2001 as amended, NTA and TII are required to prepare an Environmental Impact Assessment Report (EIAR) for the Scheme.

The EIAR will form an integral element of the submission to secure statutory approval from An Bord Pleanála and will detail the nature and extent of the project, its effect on environmental aspects (including noise, vibration and ground movement) and the likely impacts and measures which will be taken to reduce or monitor these impacts.

Materials and Recycling

The MetroLink construction works will generate significant volumes of soil, stone and waste materials. NTA and TII will ensure that effective waste management, which includes reducing, reusing and recycling remains a priority throughout the design and construction phases of MetroLink. NTA and TII will assist designers in the preparation of the statutory Construction and Demolition Waste Plan in the EIAR. Throughout scheme development there will be dialogue between stakeholders with regards to effective waste management. There will be full compliance with the Waste Management Acts 1996-2011 at all project phases.

Cultural Heritage

As with any construction project MetroLink has the potential to impact on our Cultural Heritage. This includes, but is not limited to, sites of archaeological and architectural heritage significance. NTA and TII will endeavour to avoid all unnecessary impacts on this non-renewable resource. This will be achieved through the EIAR process and through consultation with all relevant stakeholders. In terms of archaeological heritage impacts, TII operate under a Code of Practice with the Department of Arts, Heritage and the Gaeltacht which reflects TII's commitment to appropriately protecting this resource.





07. Costs and Benefits

Benefits

There will be many benefits of the MetroLink project which will support the future development and growth of Dublin's capital city.

- It will greatly enhance public transport capacity and accessibility to the city centre and the surrounding corridor for commuters, businesses, retail, education, tourism and the overall sustainability of the city.
- There will be an improvement for domestic and international travel connections provided by access to and from Dublin airport and through the national rail and road network.
- There will be decreased road traffic congestion on journeys to and from the Airport and crossing the city from North to South. MetroLink will include a park and ride for over 3,000 vehicles at Estuary, Swords.
- There will be faster journey times with high frequency and high reliability by MetroLink between Swords, the airport, city centre and towards Sandyford.
- There will be a more integrated and improved quality of interchanges with Luas, DART, Irish Rail and bus transport hubs across the city with more direct journey opportunities.
- MetroLink can enhance social inclusion, providing new links from urban areas of Dublin to jobs and services in the city and across the suburbs.
- The project will support both the regeneration of existing areas and the development of new areas.
- It will generate employment during construction and operation and will support economic growth once operational.
- The metro system will support the environment by promoting a modal shift from car to public transport. This will help reduce emissions and energy consumption in addition to improving air quality and reducing road congestion.

Costs

The estimated cost, in current year values, of the MetroLink scheme is approximately €3 billion. This is a preliminary estimate, in advance of public engagement and fully developed designs. The exact cost can only be fully established subsequent to taking on board the outcome of this public consultation process, the further development of the project and the finalisation of the planning process.

Cost Benefit Analysis

Subsequent to this public consultation process, a Preliminary Business Case will be prepared for the MetroLink project which will provide a comprehensive appraisal of the project, inclusive of the quantification of its benefits and its costs. In line with the Public Spending Code, this will be subsequently updated, following finalisation of the design of the project, to a Detailed Business Case which will form part of the final decision making process for the project. It is intended that the business case for the MetroLink project will be made publicly available.

In advance of the preparation of the comprehensive preliminary business case, a cost benefit analysis has been prepared based on the current project details. A copy of this analysis is available on the MetroLink website - www.metrolink.ie - and indicates that the project has a very positive economic performance, with benefits of approximately double its costs, excluding the additional wider economic impacts likely to be delivered by the project.





08. Communications and Stakeholder Engagement

MetroLink will affect many people during its planning, development and construction stages. We are committed to working proactively with all stakeholders to ensure their concerns are listened to and acted upon where feasible and practical. It is only through active engagement with the whole community that we can ensure the project is delivered successfully through all stages of its development.

MetroLink local liaison representatives will be available to meet with the community and provide regular updates on the project. The project website www.metrolink.ie provides extensive information on MetroLink and users can access the site to find out more about the project and download copies of the key studies that have been carried out to date.

We have established a dedicated Freephone number (1800 333 777) where you can talk to members of the MetroLink team. You can also send any comments or observations you may have on the MetroLink to consultations@metrolink.ie



09. Implementation and Next Steps

The route selection process included options identification and feasibility studies to identify the Emerging Preferred Route as detailed in this document. Once the public consultation process is complete all feedback, insights and considerations received will then be assessed. Following a full appraisal of the feedback a public consultation report will be published by the end of 2018.

The final design of the scheme will be based on an analysis using a multi-criteria framework, results of parallel work considering funding, technical design, procurement options and the views of key stakeholders. An application for a Railway Order, comprising the final design scheme, will be submitted to An Bord Pleanála during Q3 of 2019.

A further public consultation will be undertaken in 2019 as part of the statutory planning consent process. This will include a report assessing the environmental impacts of the project as well as final details of any property land acquisitions needed for the scheme.

Subject to receipt of planning approval, construction of the project is expected to commence in 2021 with MetroLink open for passenger use in 2027.



10. Public Consultation

Submissions are invited in relation to the proposals set out in this Public Consultation Document.

Written submissions and observations may be made by:

Online:

Through the online form in the "Public Consultations" section of the website at **www.metrolink.ie**

Or by Email to:

consultations@metrolink.ie

Or by post to:

MetroLink

Transport Infrastructure Ireland,
Parkgate Business Centre,
Parkgate Street,
Dublin 8, D08 DK10

The closing date for receipt of submissions and observations is set out in the "Public Consultations" section of the website.

All submissions must include the full name and address of the person making the submission and where relevant the name of the body or organisation represented.

Please note that submissions are subject to Freedom of Information Act. Submissions may be published in full on the MetroLink website.



Appendices



A. Route Overview

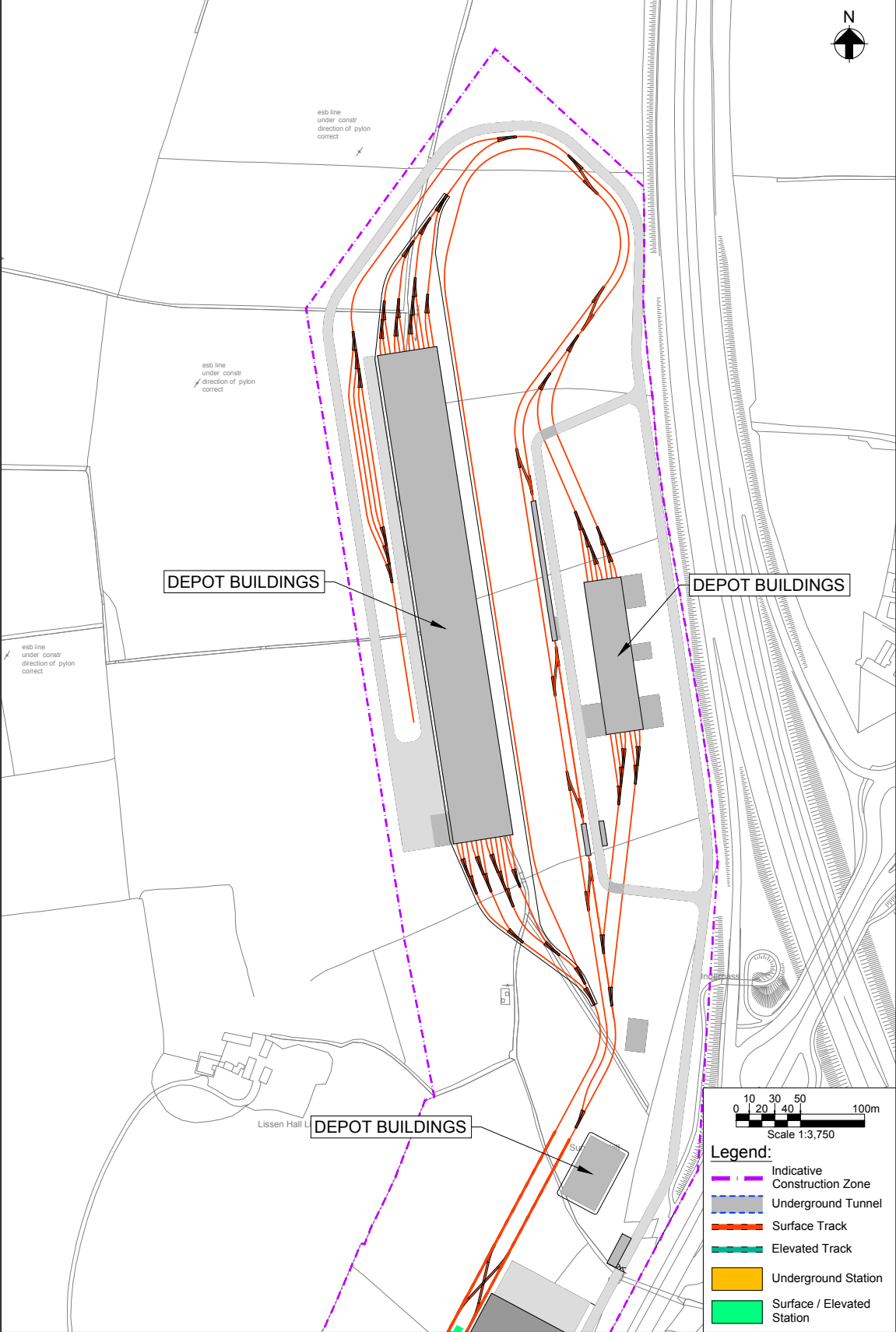
The areas outlined on the map below indicate the individual route & station maps on the following pages.



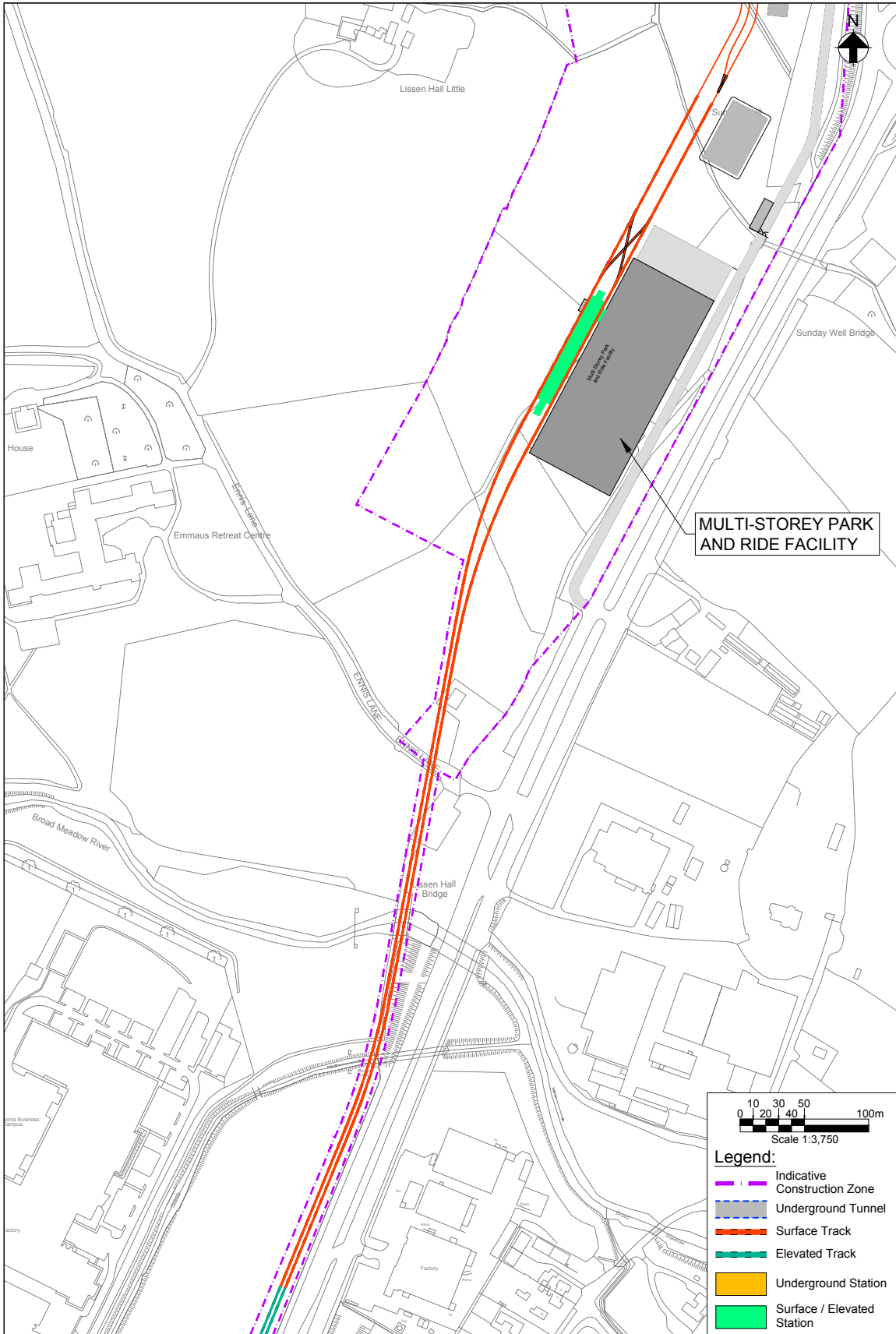
The Emerging Route shown on the following maps is indicative only and is subject to change following consultation and as part of the design development process.

B. Individual route and station maps

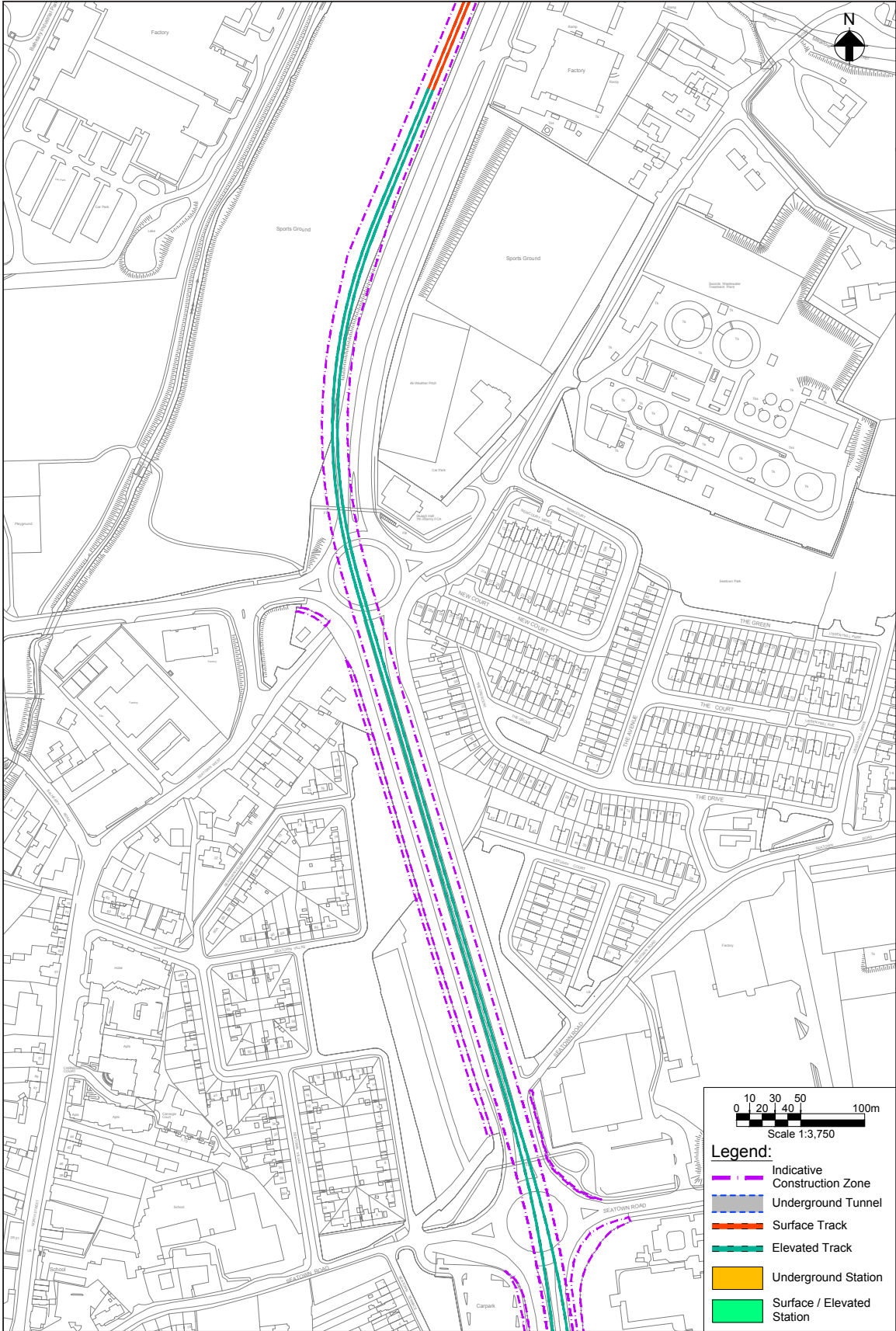
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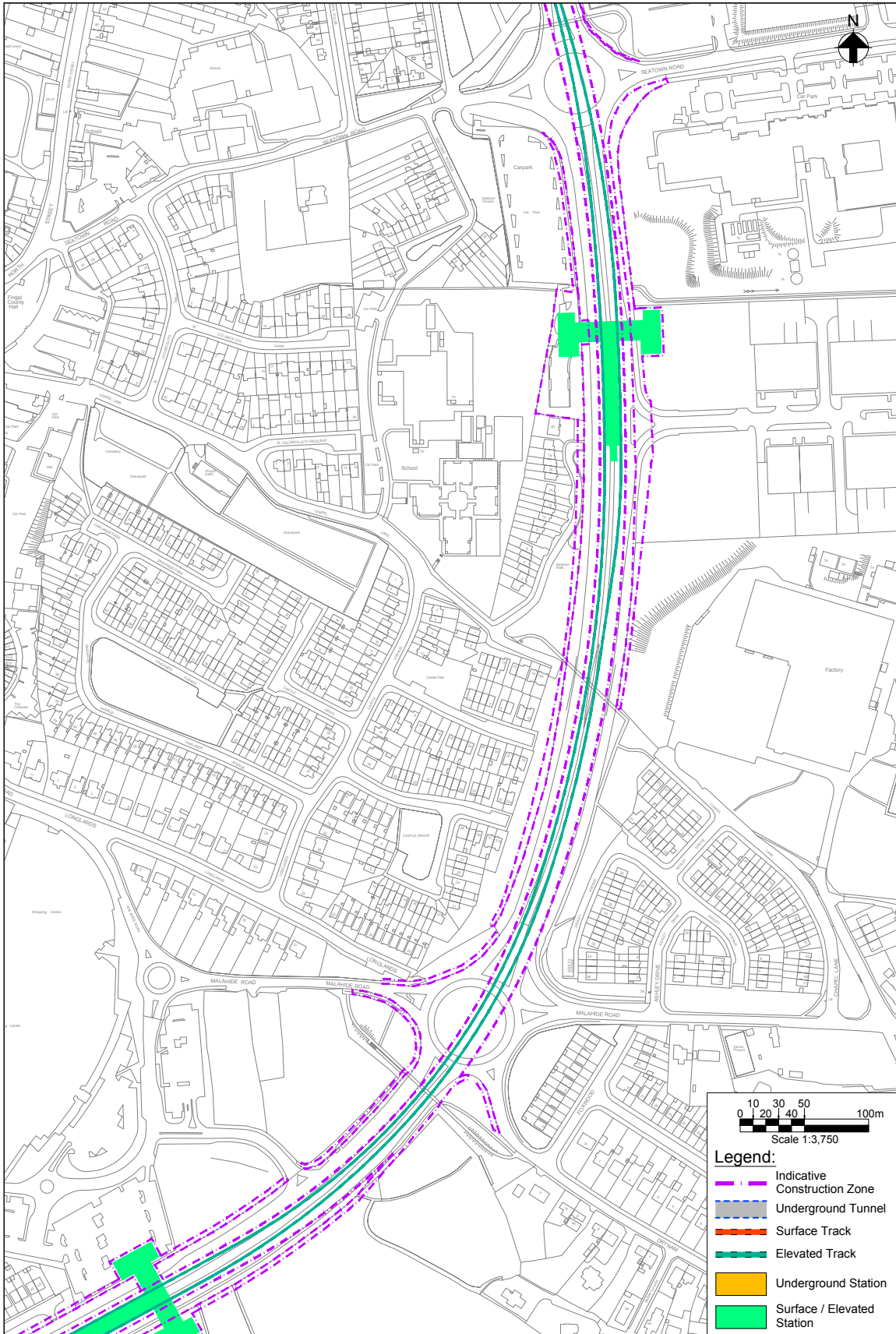
2. Estuary



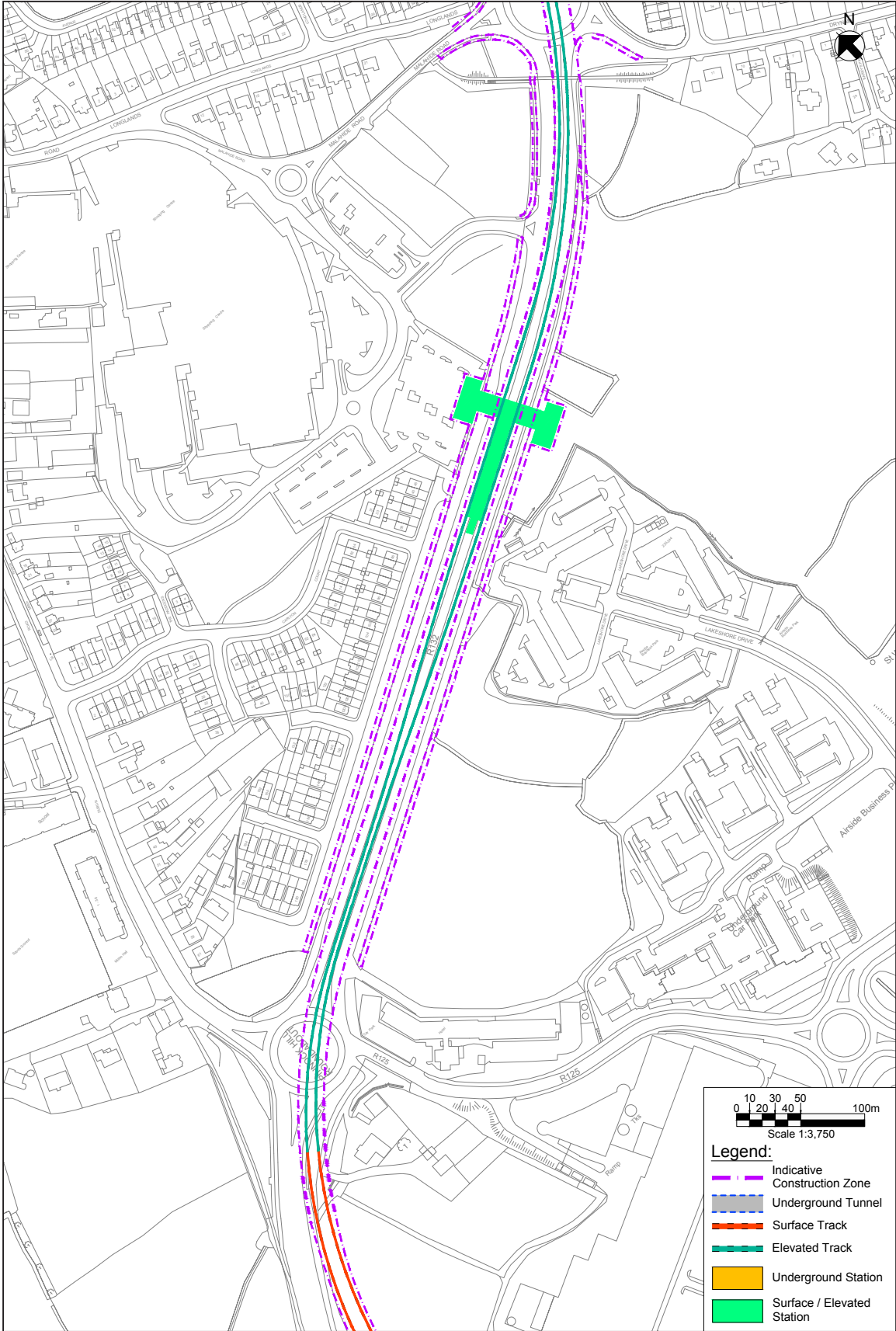
3. Estuary Roundabout



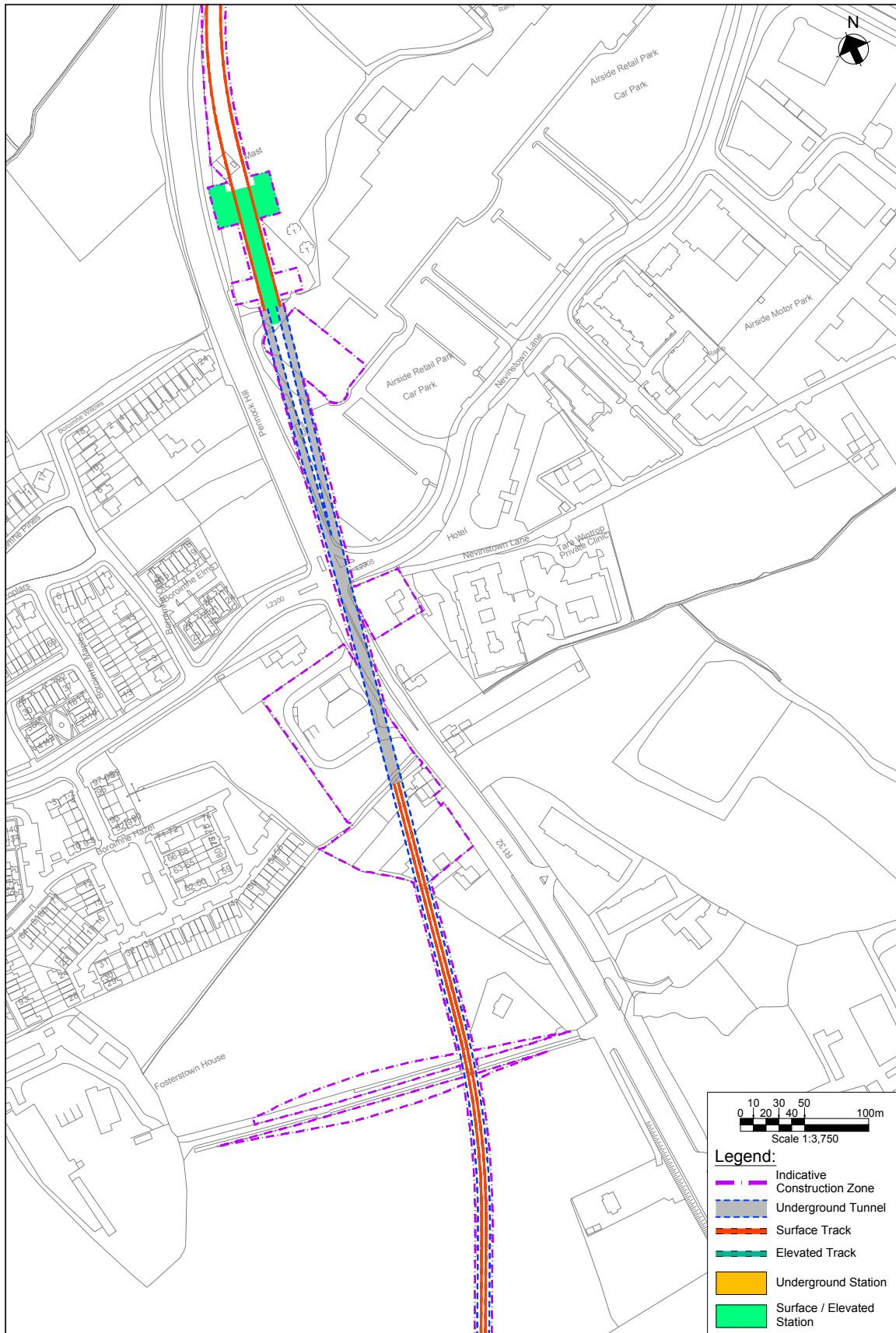
4. Seatown



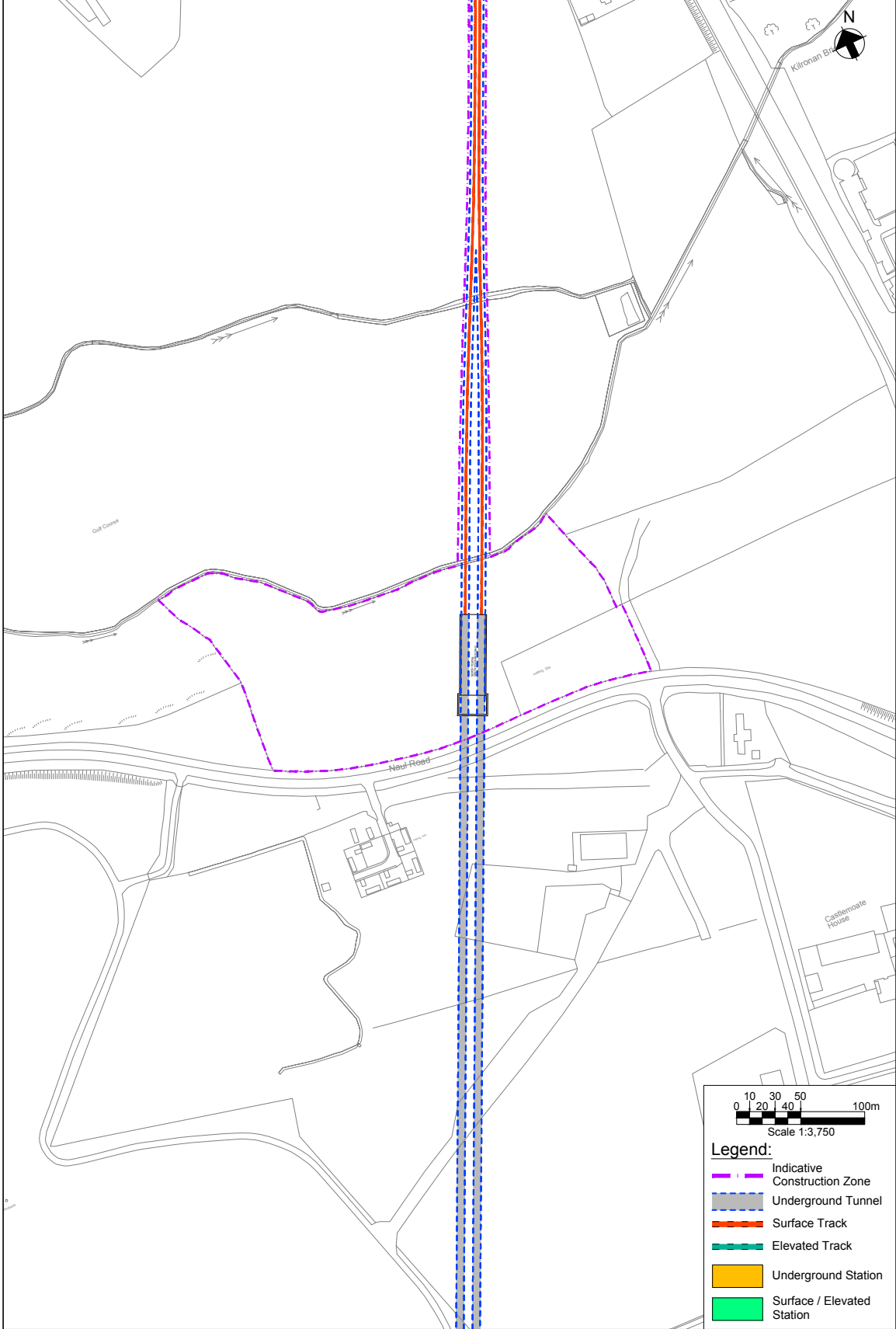
5. Swords Central



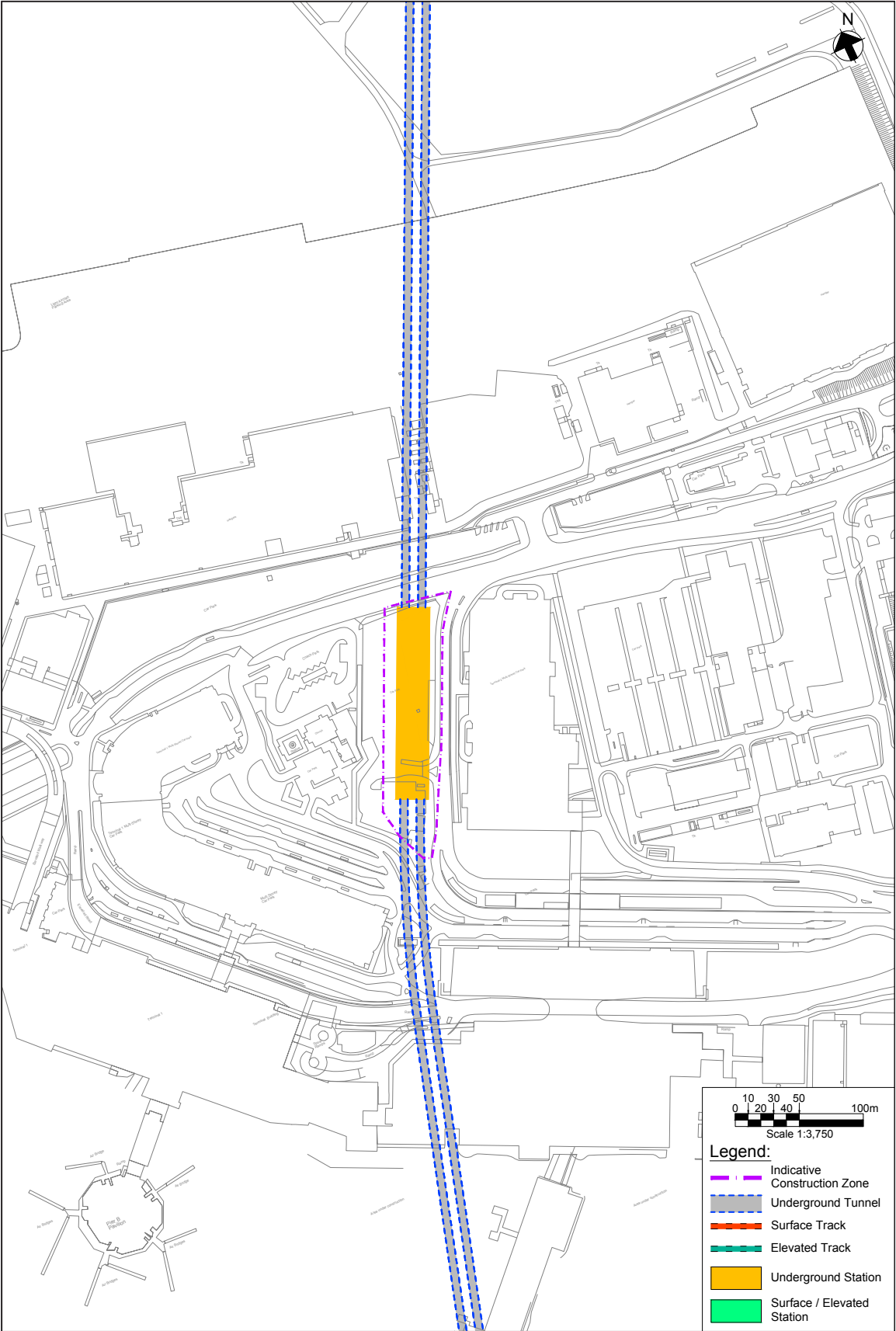
6. Fosterstown



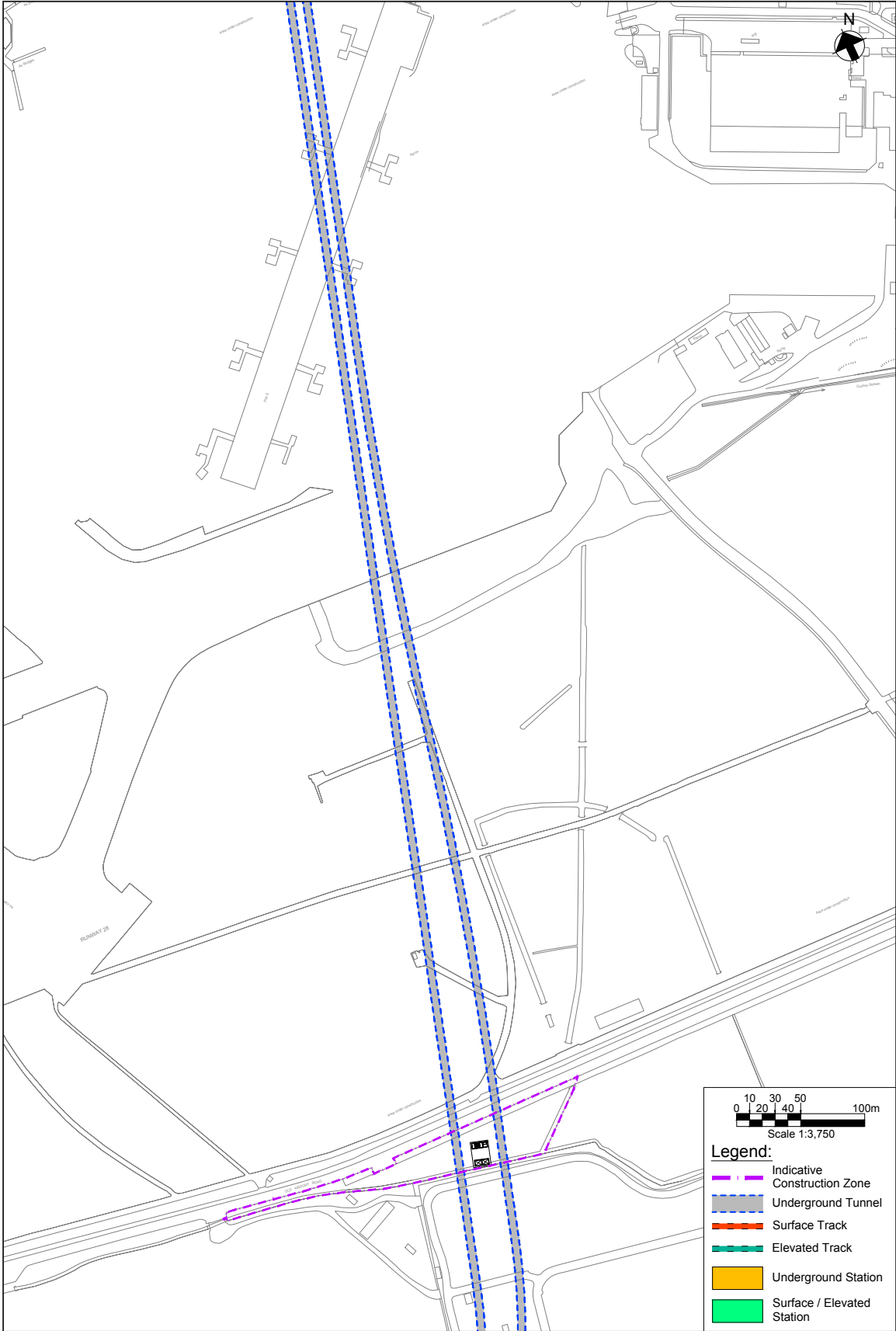
7. Dublin Airport North



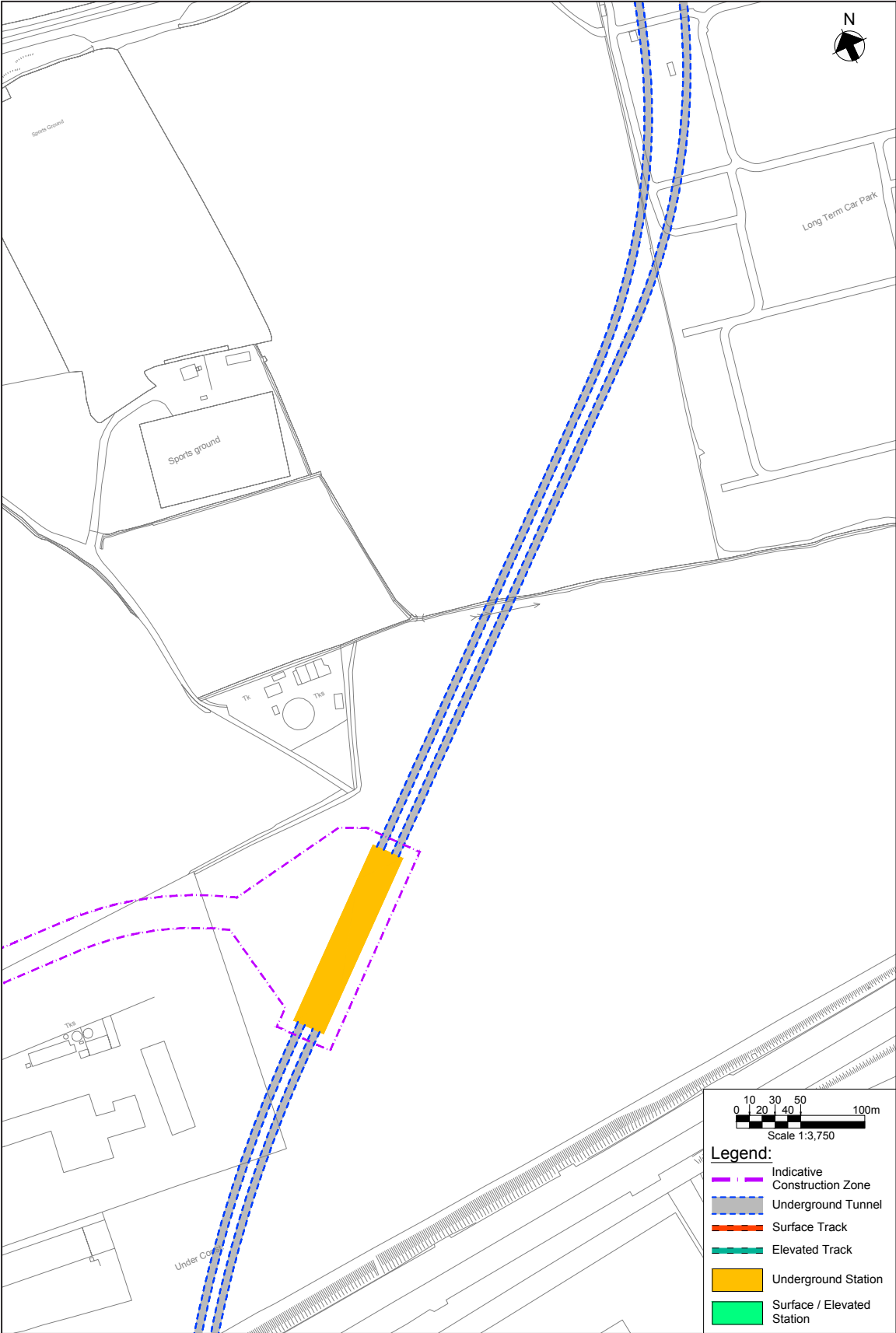
8. Dublin Airport



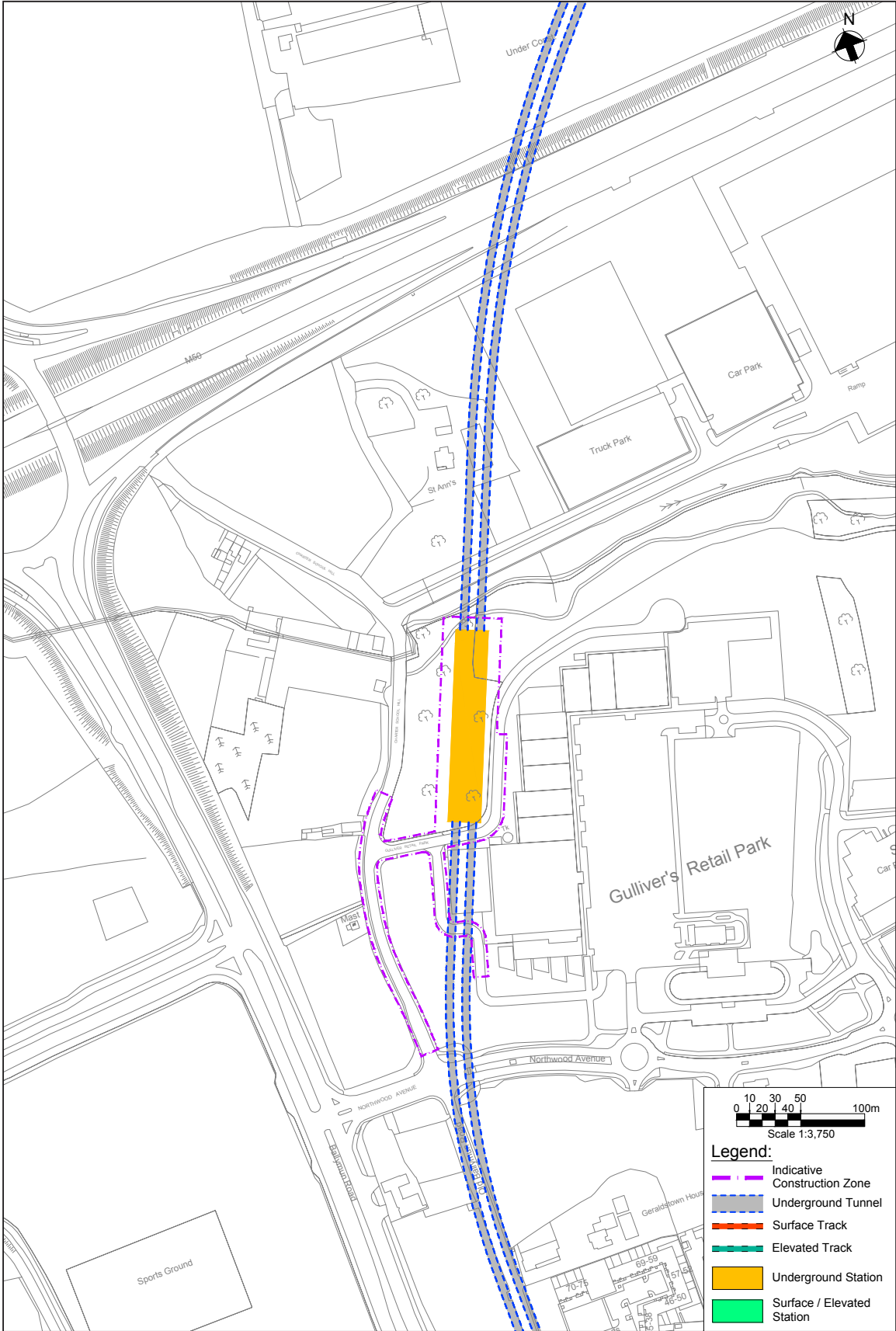
9. Dublin Airport South



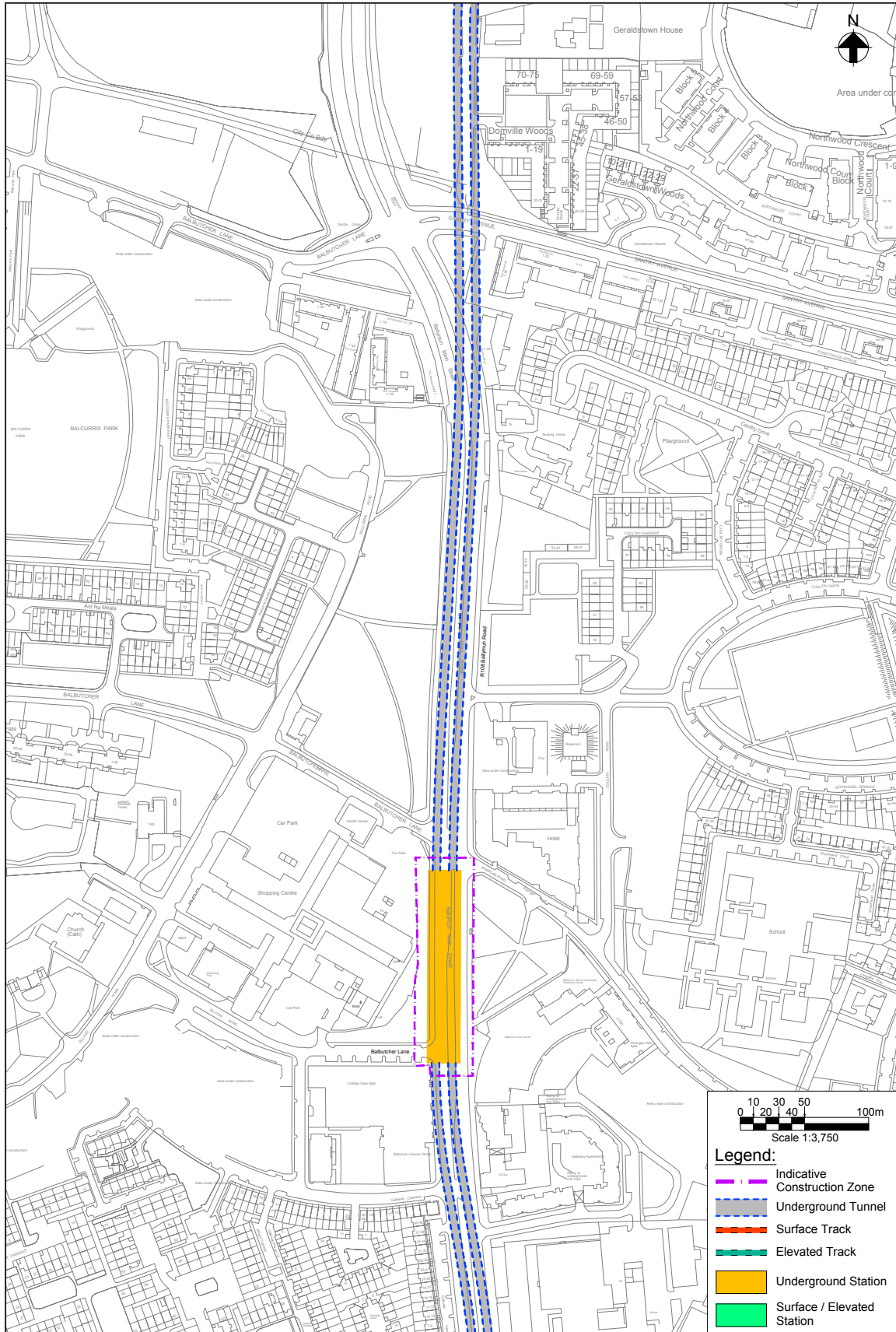
10. Dardistown (Future Station)



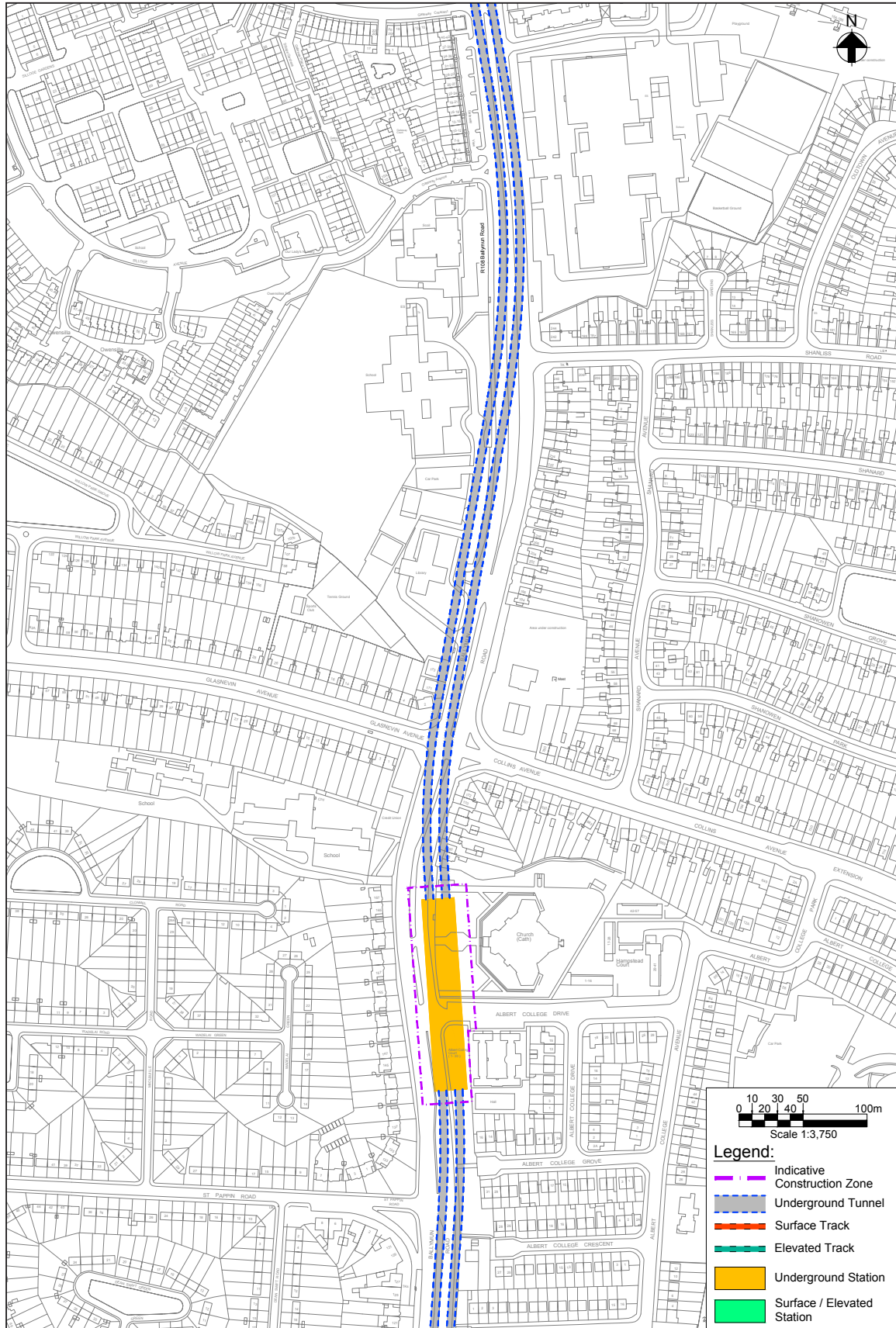
11. Northwood



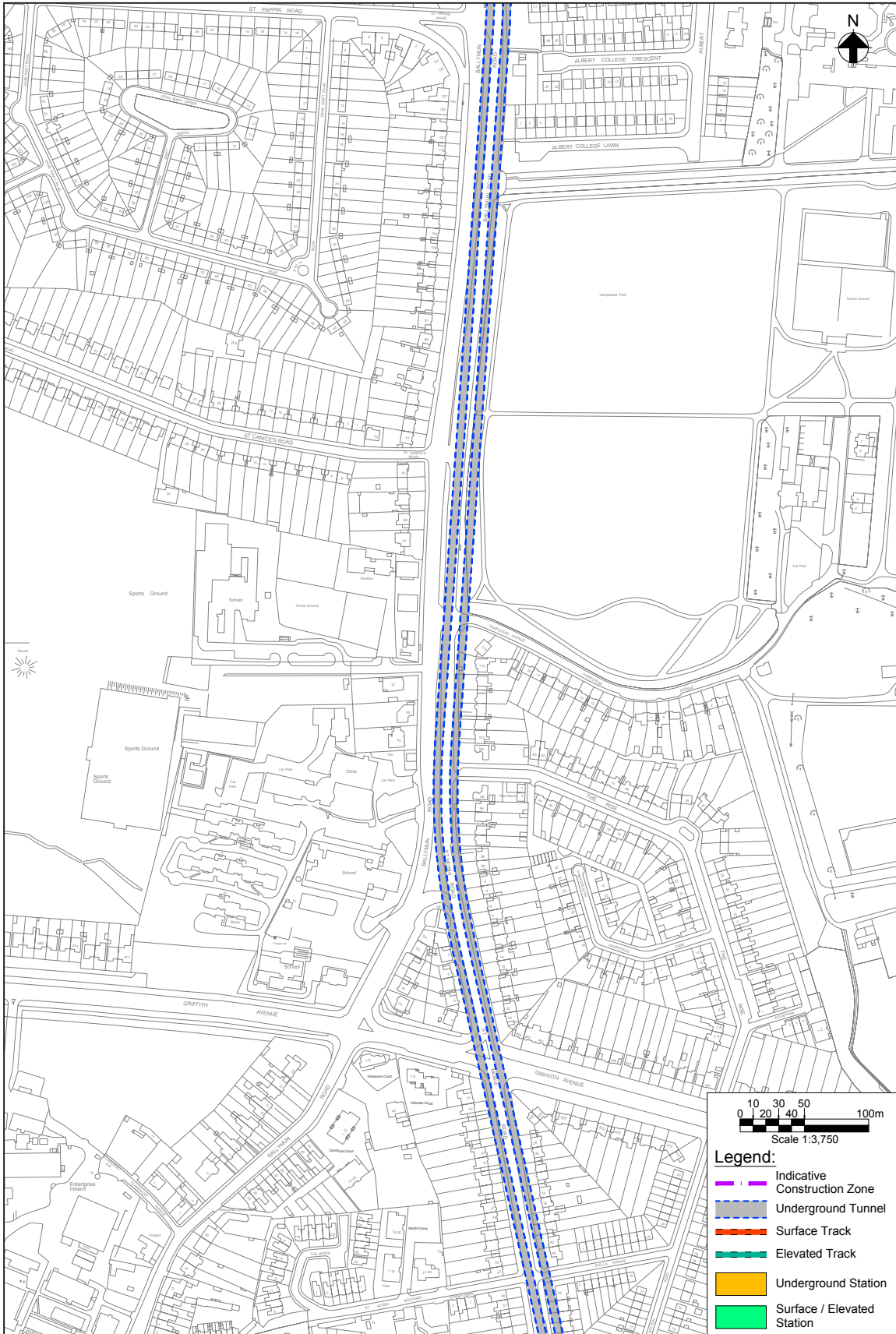
12. Ballymun



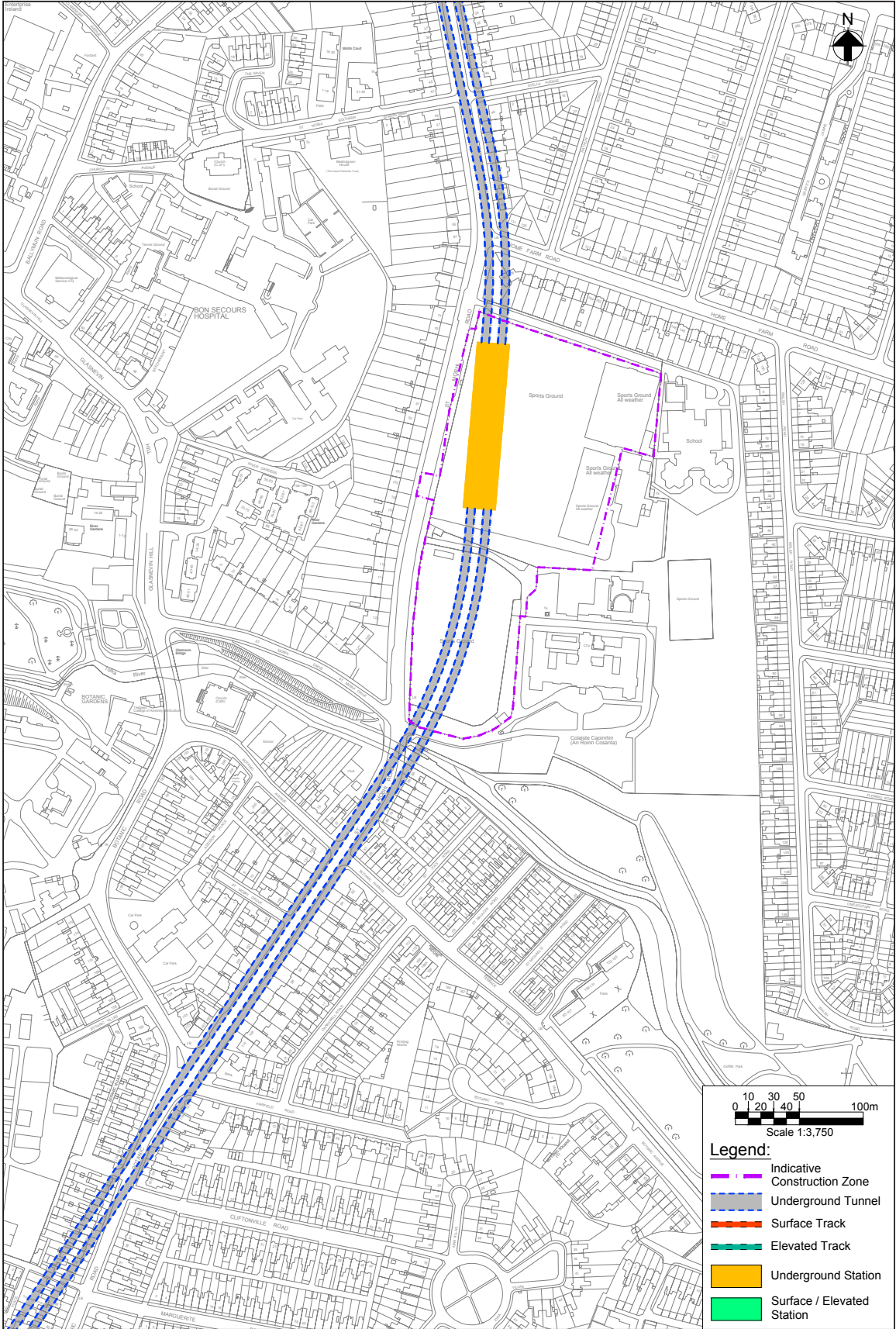
13. Collins Avenue



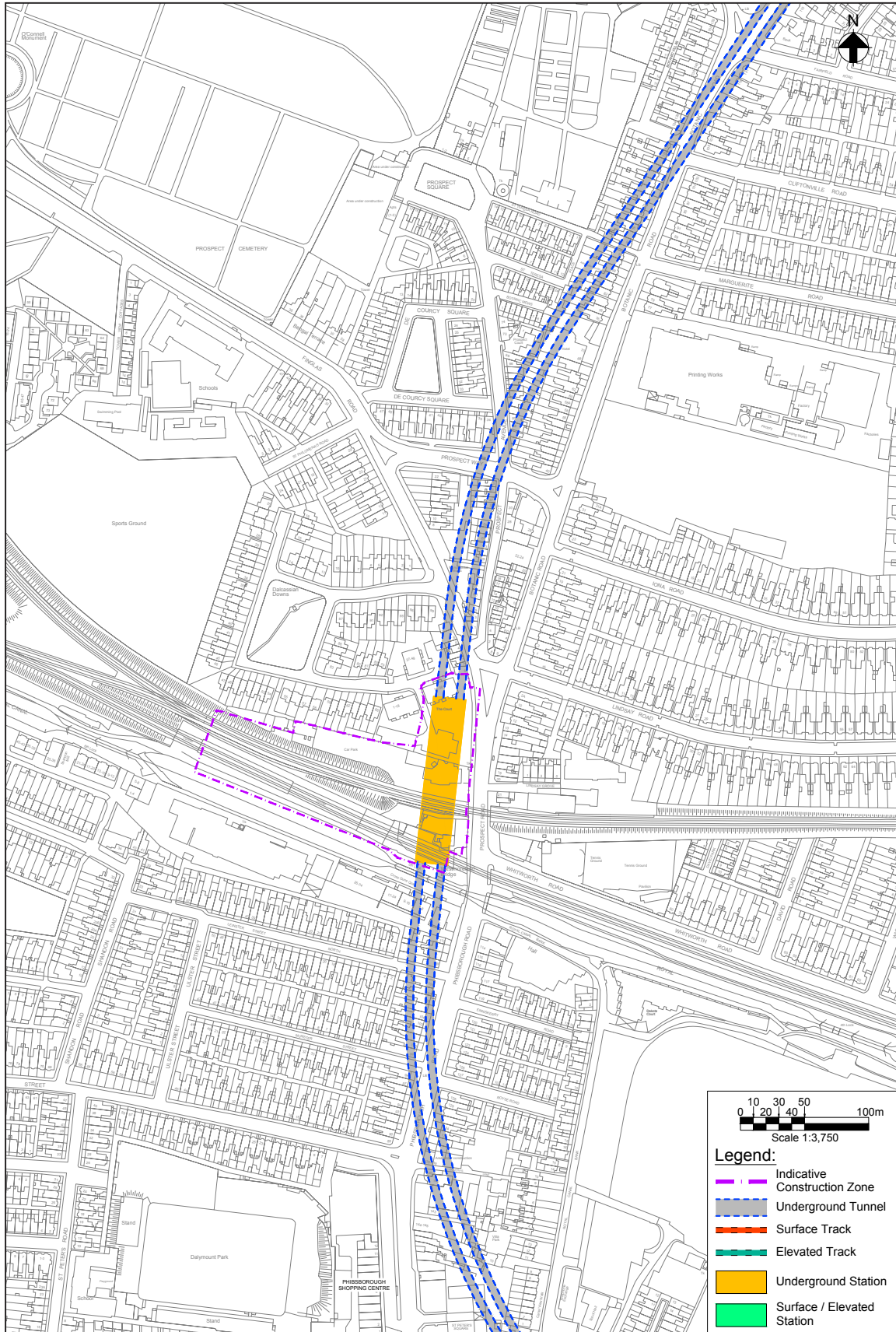
14. Albert College Environs



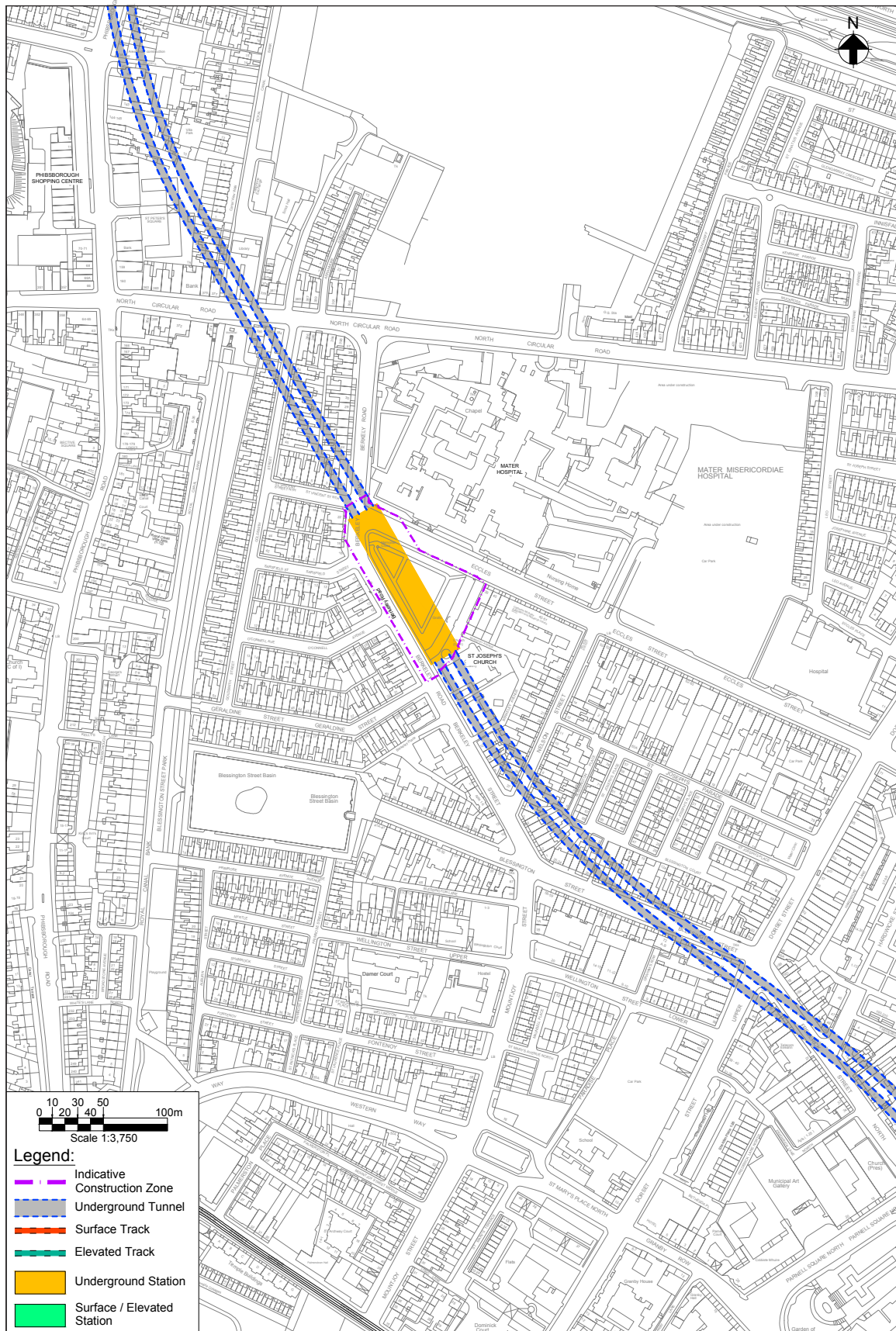
15. Griffith Park



16. Glasnevin



17. Mater



18. O'Connell Street



19. Tara



20. St. Stephens Green



21. Ranelagh/Charlemont



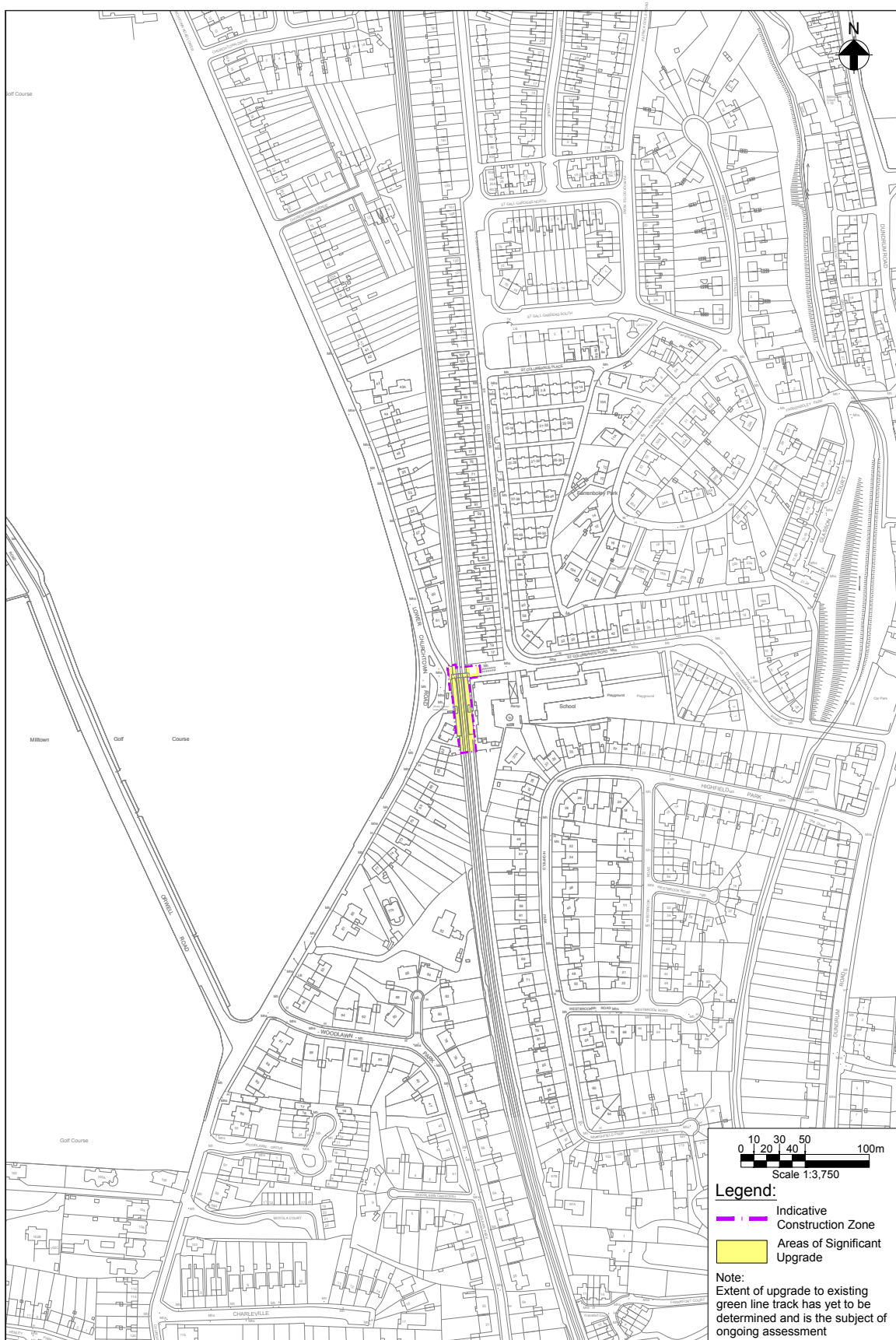
22. Cowper/Beechwood



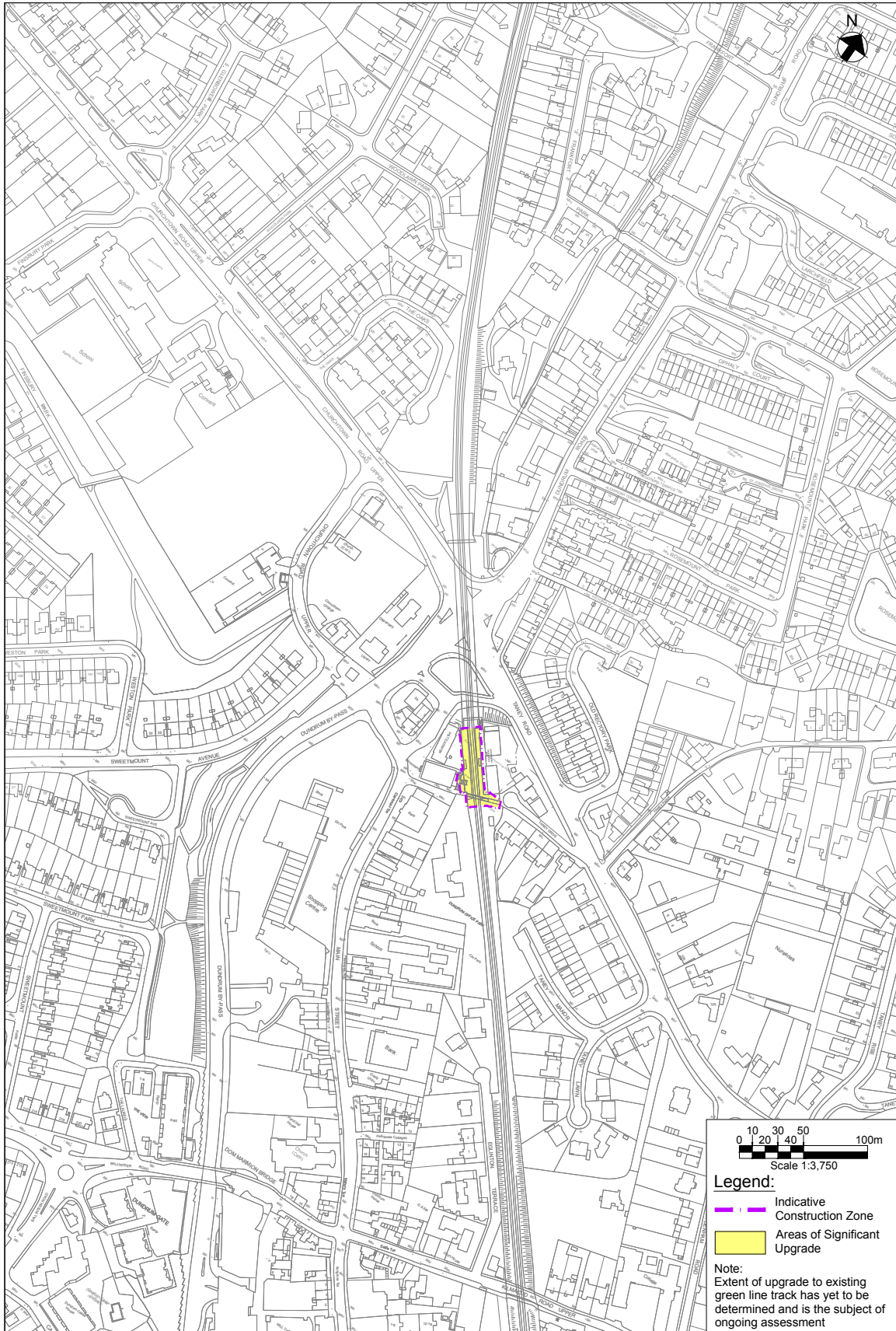
23. Milltown



24. Windy Arbour



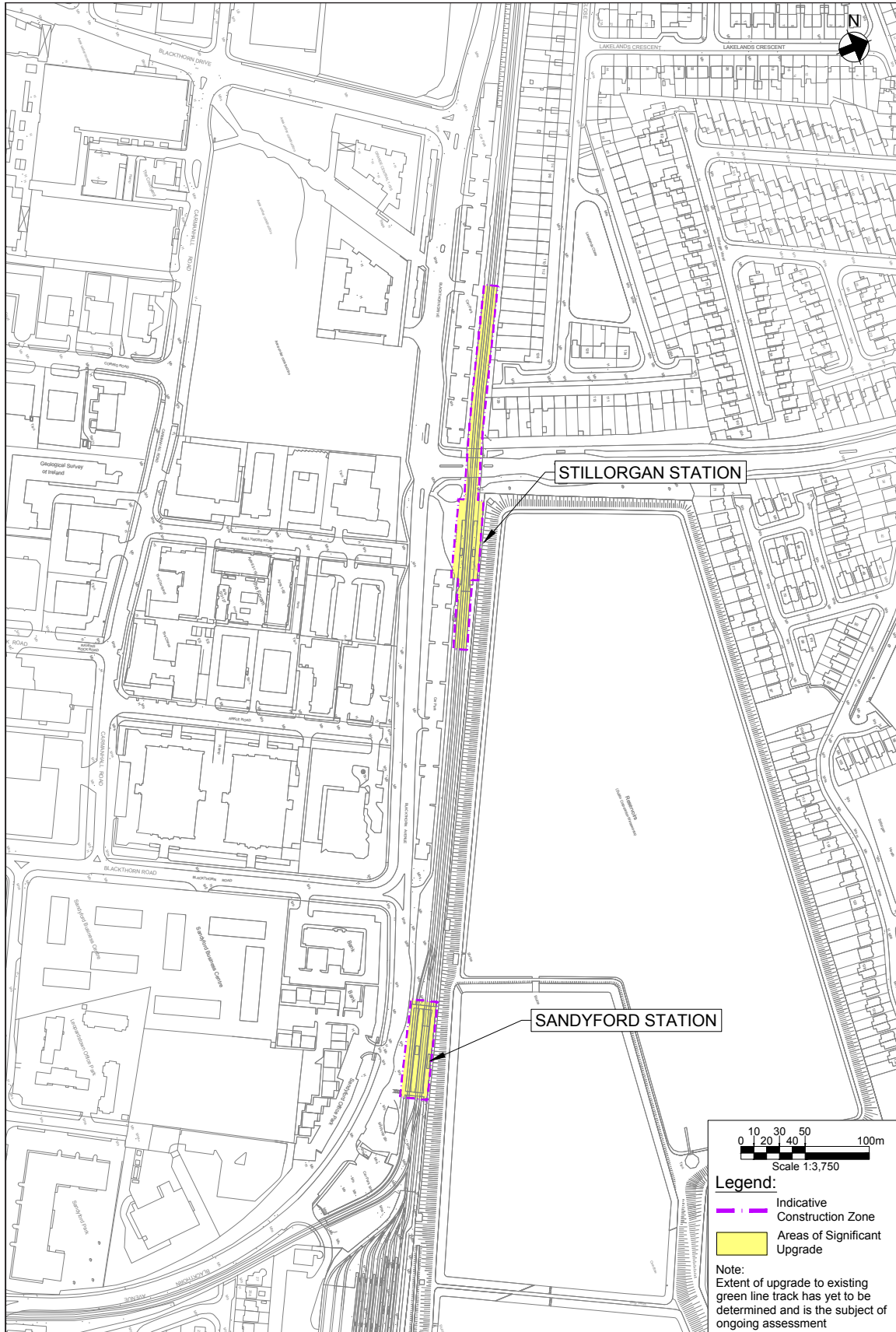
25. Dundrum



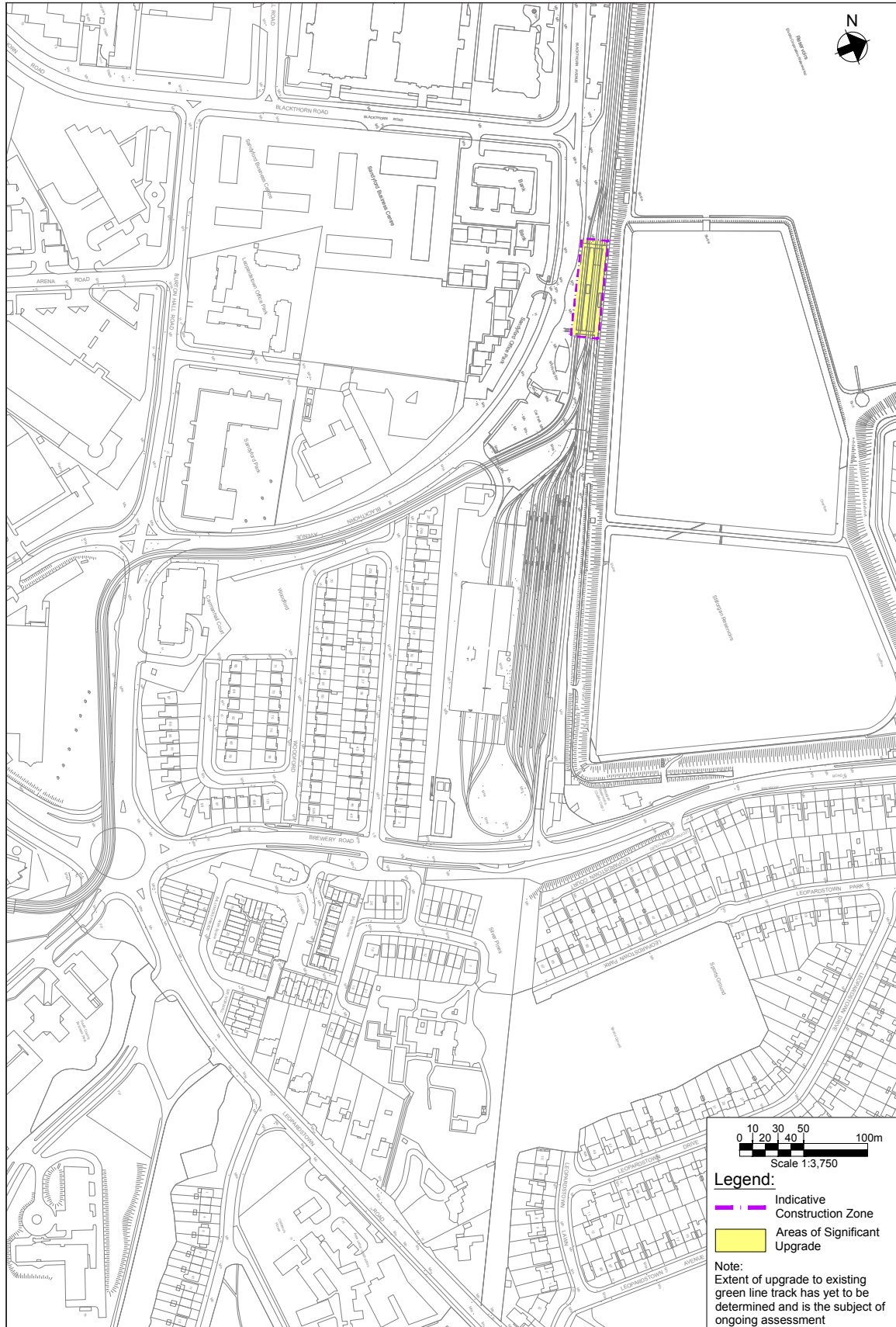
26. Balally



28. Stillorgan

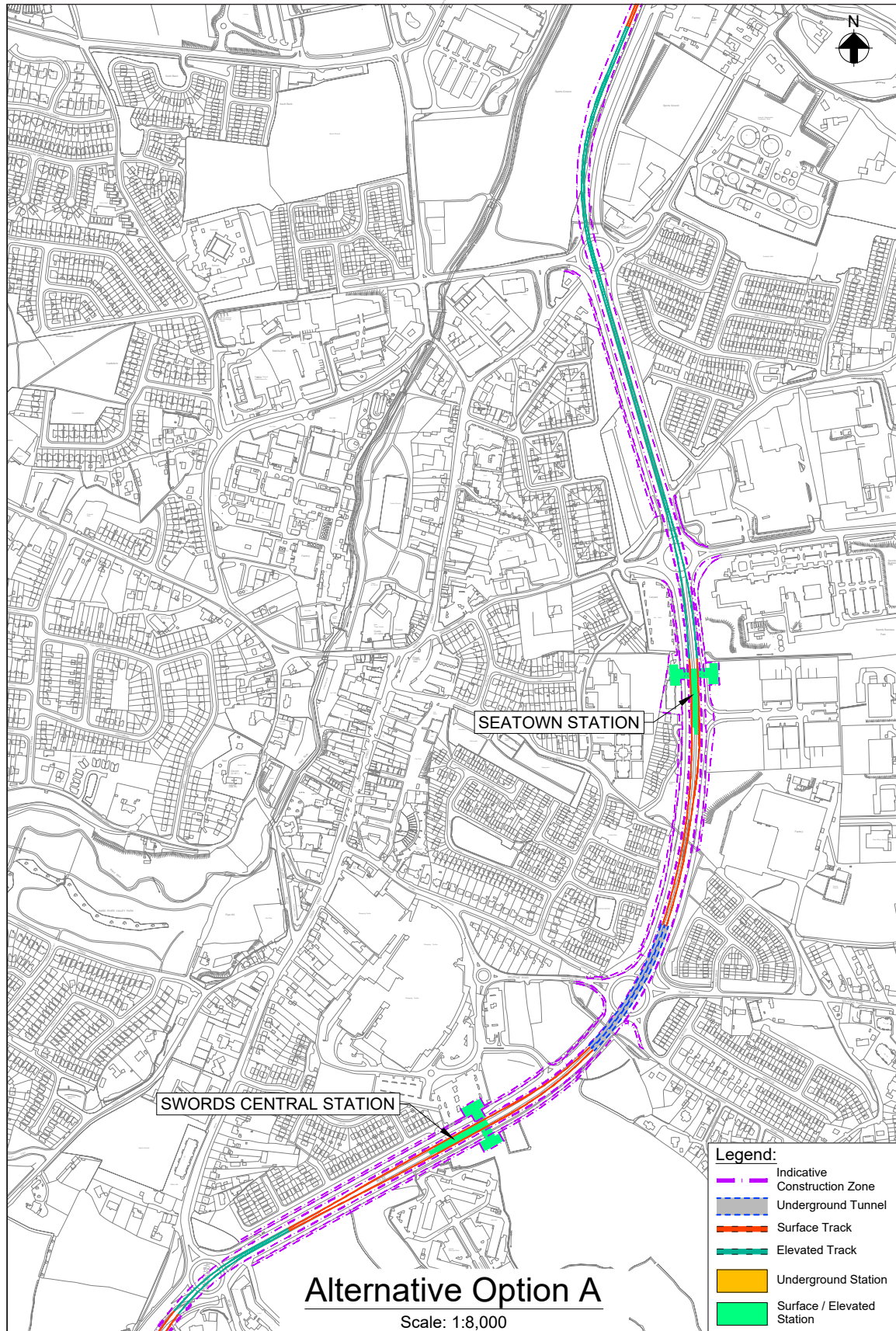


29. Sandyford

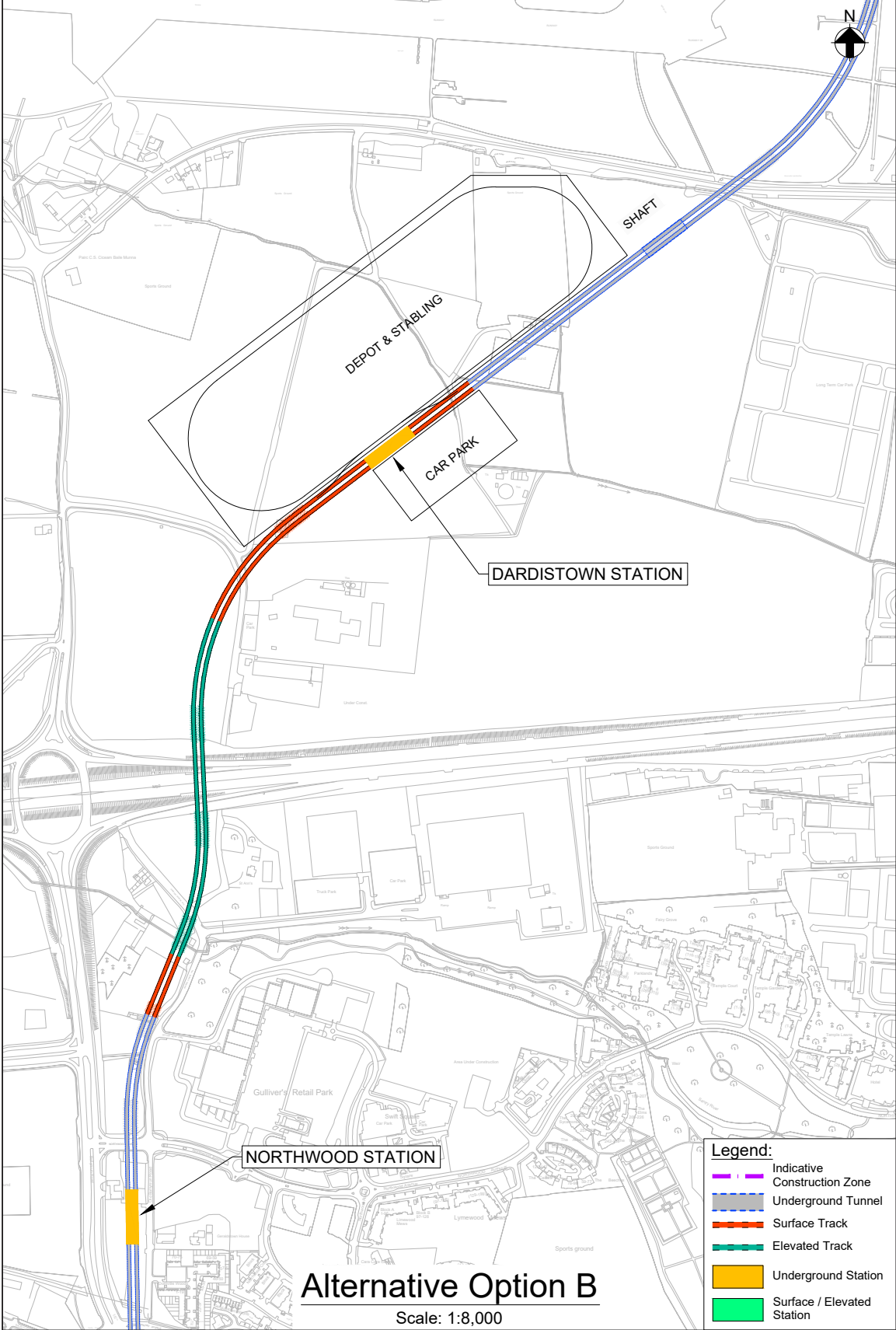


C. Alternative Option Maps

Alternative Option A: Fosterstown and Estuary



Alternative Option B: Northwood and Airport





METROLINK

MetroLink

Transport Infrastructure Ireland
Parkgate Business Centre
Parkgate Street
Dublin 8
D08 DK10

Email: info@metrolink.ie

Freephone: 1800 333 777

Operating Hours: Mon-Fri 08.30–18.00

www.metrolink.ie