



Introduction

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List of Abbreviations

Acronym	Meaning
DANP	Dublin Airport North Portal
DART	Dublin Area Rapid Transit
DASP	Dublin Airport South Portal
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPR	Emerging Preferred Route
km	Kilometre
NTA	National Transport Authority
RPA	Railway Procurement Agency
RO	Railway Order
TBM	Tunnel Boring Machine
TII	Transport Infrastructure Ireland

1. Introduction

1.1 Purpose of This Report

This document is the Environmental Impact Assessment Report (EIAR) which TII is required to submit to An Bord Pleanála (hereafter referred to as the Board) to inform the Board's Environmental Impact Assessment (EIA) of the proposed Project. This EIAR presents an evaluation of the likely significant environmental impacts and applicable mitigation and monitoring measures associated with the construction and operation of MetroLink (hereafter referred to as the proposed Project). The report has been prepared in order to allow the Board to undertake an EIA for the proposed Project. This EIAR has been completed in order to comply with and exceed the requirements of all relevant legislation and guidance.

Specifically, this EIAR has been prepared to address all the requirements of the following:

- Transport (Railway Infrastructure) Act 2001, as amended, including by S.I. No. 743/2021 - European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021;
- European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743, 2021); and
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive).

The application for a Railway Order (RO) will be made to the Board, and among the documents which must accompany the application is an EIAR¹ drafted in accordance with the provisions of Section 37(3)(e) and Section 39 of the Transport (Railway Infrastructure) Act 2001, as amended.

The structure of the EIAR is described in Chapter 2 (Methodology Used in the Preparation of the EIAR).

1.2 Project Overview

The overall project objective for the proposed Project, as established by Transport Infrastructure Ireland (TII) and as outlined in the National Development Plan 2021-2030 (Government of Ireland, 2021a), is:

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

The proposed Project will comprise a high-capacity, high-frequency, modern and efficient metro railway between Estuary Station and the Park and Ride Facility, north of Swords via Dublin Airport to Charlemont Station which lies south of Dublin City Centre. The proposed Project will be approximately 18.8km in length. The analysis undertaken to inform this EIAR is based on an intended construction commencement date in 2025 and an opening year of 2035. The proposed Project is shown on Figure 1.1 and Diagram 1.1.

¹ Referred to previously as an Environment Impact Statement



Diagram 1.1: Proposed MetroLink Route Alignment

The proposed Project will be comprised of a number of principal project elements as outlined in Table 1.1. A full description of the proposed Project is provided in Chapter 4 (Description of the MetroLink Project).

Table 1.1: Overview of the Key Elements of the Proposed Project

Project Elements	Outline Description
Permanent Project Elements	
Tunnels	<p>It is proposed to construct two geographically separate, single-bore tunnels, using a Tunnel Boring Machine (TBM). Each section of tunnel will have a 8.5m inside diameter and will contain both northbound and southbound rail lines within the same tunnel. These tunnels will be located as follows:</p> <ul style="list-style-type: none"> ▪ The Airport Tunnel: running south from Dublin Airport North Portal (DANP) under Dublin Airport and surfacing south of the airport at Dublin Airport South Portal (DASP) and will be approximately 2.3km in length; and ▪ The City Tunnel: running for 9.4 km from Northwood Portal and terminating underground south of Charlemont Station.
Cut Sections	<p>The northern section of the alignment is characterised by a shallow excavated alignment whereby the alignment runs below the existing ground level. Part of the cut sections are open at the top, with fences along the alignment for safety and security. While other sections are "cut and cover", whereby the alignment is covered.</p>
Tunnel Portals	<p>The openings at the end of the tunnel are referred to as portals. They are concrete and steel structures designed to provide the commencement or termination of a tunnelled section of route and provide a transition to adjacent lengths of the route which may be in retained structures or at the surface.</p> <p>There are three proposed portals, which are:</p> <ul style="list-style-type: none"> ▪ DANP; ▪ DASP; and ▪ Northwood Portal. <p>There will be no portal at the southern end of the proposed Project, as the southern termination and turnback would be underground.</p>
Stations	<p>There are three types of stations: surface stations, retained cut stations and underground stations:</p> <ul style="list-style-type: none"> ▪ Estuary Station will be built at surface level, known as a 'surface station'; ▪ Seatown, Swords Central, Fosterstown Stations and the proposed Dardistown Station will be in retained cutting, known as 'retained cut stations'; and ▪ Dublin Airport Station and all 10 stations along the City Tunnel will be 'underground stations'.
Intervention Shaft	<p>An intervention shaft will be required at Albert College Park to provide adequate emergency egress from the City Tunnel and to support tunnel ventilation. Following the European Standard for safety in railway tunnels TSI 1303/2014: Technical Specification for Interoperability relating to 'safety in railway tunnels' of the rail system of the European Union, it has been recommended that the maximum spacing between emergency exits is 1,000m. As the distance between Collins Avenue and Griffith Park is 1,494m, this intervention shaft is proposed to safely support evacuation/emergency service access in the event of an incident. This shaft will also function to provide ventilation to the tunnel. The shaft will require two 23m long connection tunnels extending from the shaft, connecting to the main tunnel.</p> <p>At other locations, emergency access will be incorporated into the stations and portals or intervention tunnels will be utilised at locations where there is no available space for a shaft to be constructed and located where required (see below).</p>
Intervention Tunnels	<p>In addition to the two main 'running' tunnels, there are three shorter, smaller diameter tunnels. These are the evacuation and ventilation tunnels (known as Intervention Tunnels):</p> <ul style="list-style-type: none"> ▪ Airport Intervention Tunnels: parallel to the Airport Tunnel, there will also be two smaller diameter tunnels; on the west side, an evacuation tunnel running northwards from DASP for about 315m, and on the east side, a ventilation tunnel connected to the main tunnel and extending about 600m from DASP underneath Dublin Airport Lands. In the event of an incident in the main tunnel, the evacuation tunnel will enable passengers to walk out to a safe location outside the Dublin Airport Lands.

Project Elements	Outline Description
	<ul style="list-style-type: none"> Charlemont Intervention Tunnel: The City Tunnel will extend 320m south of Charlemont Station. A parallel evacuation and ventilation tunnel is required from the end of the City Tunnel back to Charlemont Station to support emergency evacuation of maintenance staff and ventilation for this section of tunnel.
Park and Ride Facility	The proposed Park and Ride Facility next to Estuary Station will include provision for up to 3,000 parking spaces.
Broadmeadow and Ward River Viaduct	A 260m long viaduct is proposed between Estuary and Seatown Stations to cross the Broadmeadow and Ward Rivers and their floodplains.
Proposed Grid Connections	Grid connections will be provided via cable routes with the addition of new 110kV substations at DANP and Dardistown. (Approval for the proposed grid connections to be applied for separately but are assessed in the EIAR).
Dardistown Depot	<p>A maintenance depot will be located at Dardistown. It will include:</p> <ul style="list-style-type: none"> Vehicle stabling; Maintenance workshops and pits; Automatic vehicle wash facilities; A test track; Sanding system for rolling stock; The Operations Control Centre for the proposed Project; A substation; A mast; and Other staff facilities and a carpark.
Operations Control Centre	The main Operations Control Centre (OCC) will be located at Dardistown Depot and a back-up OCC will be provided at Estuary.
M50 Viaduct	A 100m long viaduct to carry the proposed Project across the M50 between the Dardistown Depot and Northwood Station.
Temporary Project Elements	
Construction Compounds	There will be 34 Construction Compounds including 20 main Construction Compounds, 14 Satellite Construction Compounds required during the Construction Phase of the proposed Project. The main Construction Compounds will be located at each of the proposed station locations, the portal locations and the Dardistown Depot Location (also covering the Dardistown Station) with satellite compounds located at other locations along the alignment. Outside of the Construction Compounds there will be works areas and sites associated with the construction of all elements of the proposed Project including an easement strip along the surface sections.
Logistics Sites	The main logistics sites will be located at Estuary, near Pinnock Hill east of the R132 Swords Bypass and north of Saint Margaret's Road at the Northwood Compound. (These areas are included within the 14 Satellite Construction Compounds).
Tunnel Boring Machine Launch Site	There will be two main tunnel boring machine (TBM) launch sites. One will be located at DASP which will serve the TBM boring the Airport Tunnel and the second will be located at the Northwood Construction Compound which will serve the TBM boring the City Tunnel.

1.2.1 Construction Phase Overview

Construction of the proposed Project is expected to take place over approximately nine years. A detailed construction plan and schedule has been developed to ensure that the construction phasing allows for maximum efficiency while minimising the potential for environmental impact. A detailed description of the Construction Phase of the proposed Project is presented in Chapter 5 (MetroLink Construction Phase). The main construction elements of the proposed Project are summarised in Diagram 1.2.

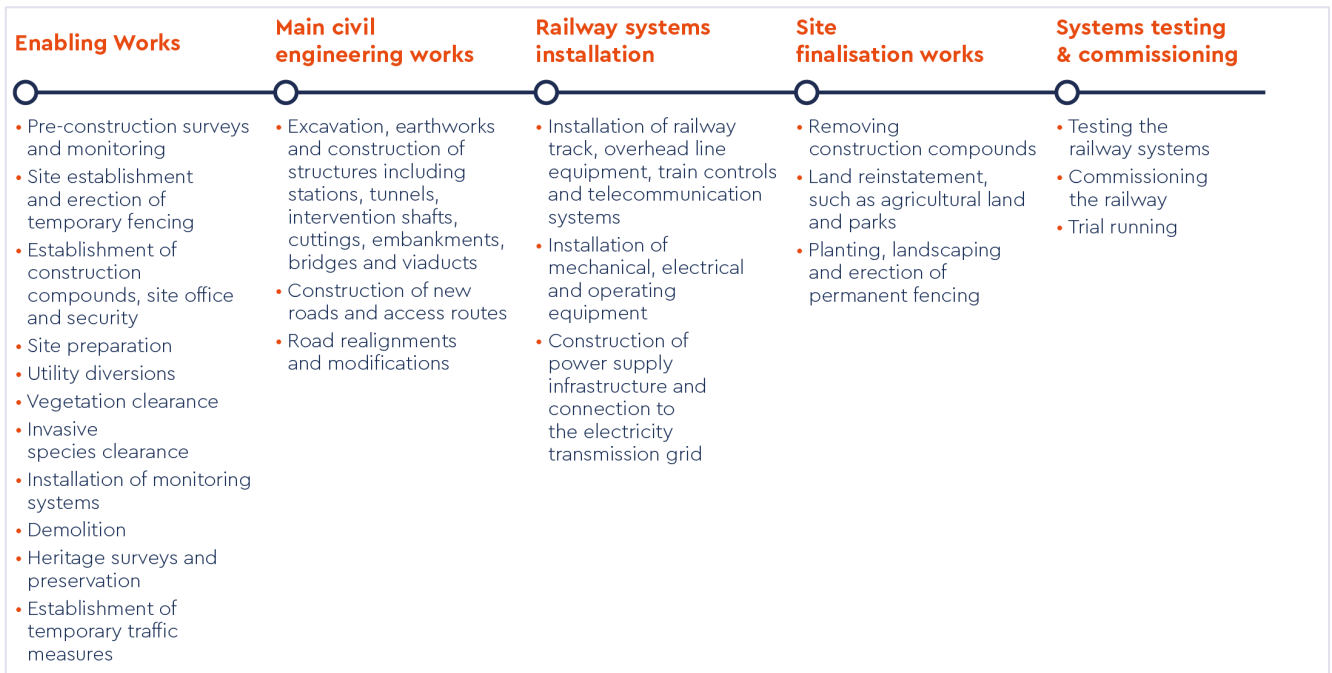


Diagram 1.2: Proposed Construction Phase Activities

1.2.2 Operational Phase Overview

The Operational Phase of the proposed Project will be based on the following operational elements:

- 16 new stations including interchange opportunities with:
 - Dublin Airport at the new underground station of the same name;
 - Interchange with the Western Commuter and the South Western Commuter Lines at Glasnevin;
 - DART at Tara Station;
 - Luas Green Line at O'Connell Street Station, St Stephen's Green and Charlemont Station;
 - Park and Ride Facility at Estuary Station; and
 - Existing Dublin Bus network and future proposed bus services (BusConnects).

- Dardistown Station will be for use by staff only arriving and leaving by train, until development in the area merits the opening of the station as a public station;
- Operating 19 hours per day, 365 days a year;
- In the opening year operations, there will be 20 trains operating per hour at a frequency of three minutes between trains;
- The proposed Project is designed for a maximum of 20,000 passengers per hour per direction (pphpd) in the peak hour;
- 64m long trains running up to every 100 seconds at peak demand;
- Approximately 25 minutes journey time between Swords and the City Centre and 20 minutes journey time from Dublin City Centre to Dublin Airport; and
- Fully automated high floor rolling stock.



Diagram 1.3: Summary of Key Activities during the Operation Phase of the Proposed Project

1.3 Brief Project History

A metro railway has been proposed to link Swords to Dublin City Centre via Dublin Airport for almost 20 years.

Diagram 1.4 gives a brief overview of the history of the proposed Project. A more detailed description of the proposed Project history is included in Chapter 3 (Background to the MetroLink Project).

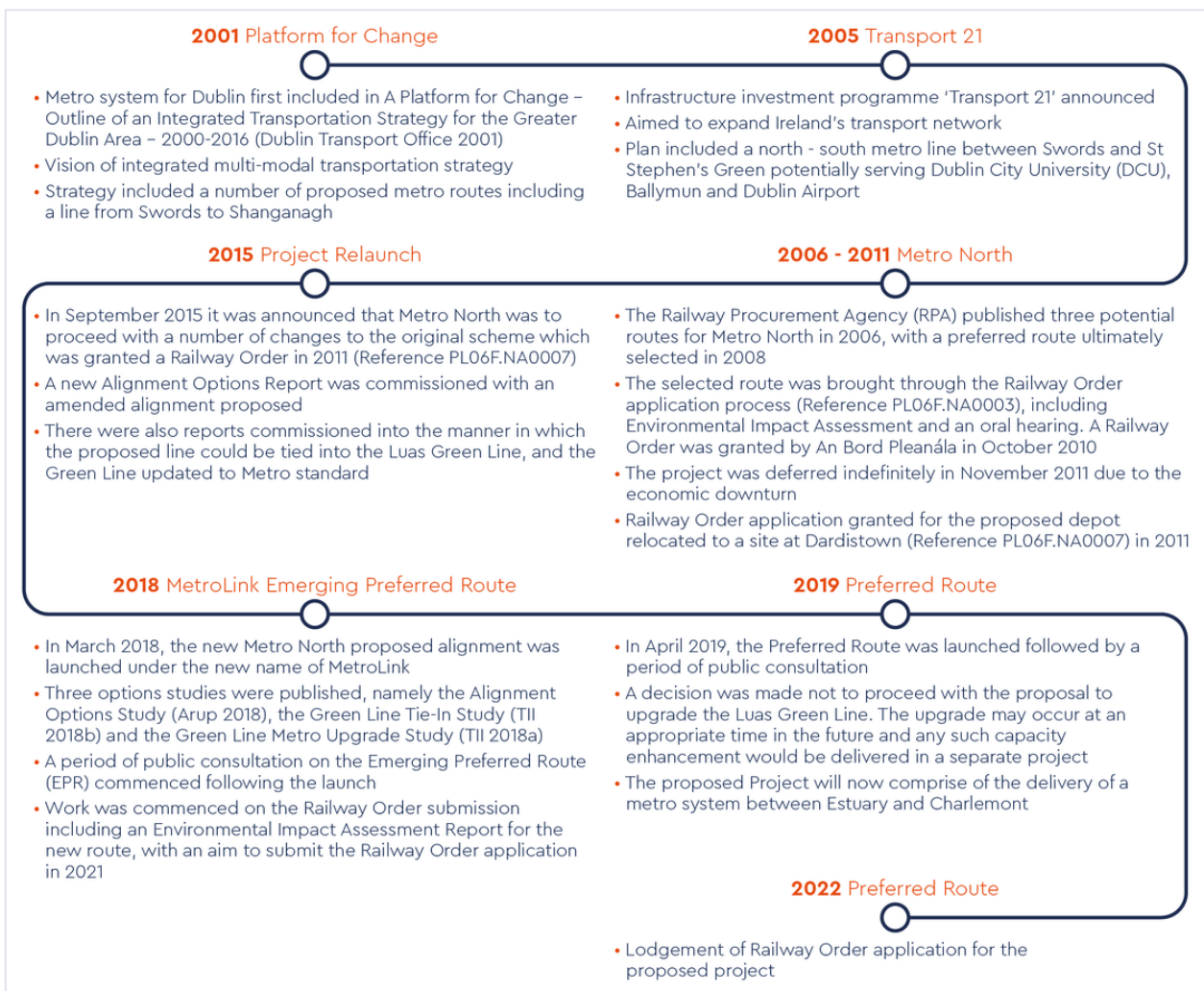


Diagram 1.4: Project History Overview

1.4 The Railway Order Process

The Transport (Railway Infrastructure) Act 2001, as amended, provides for a distinct process for public consultation, environmental impact and appropriate assessment, planning assessment and compulsory purchase powers for railway infrastructure.

Section 37(1) of the Transport (Railway Infrastructure) Act 2001 (as amended by Part 4 (Miscellaneous) of the Planning and Development (Strategic Infrastructure) Act 2006), provides that the Railway Procurement Agency may apply to the Board for an RO. The Railway Procurement Agency has since been merged into the National Roads Authority which has been renamed Transport Infrastructure Ireland (TII) to reflect its expanded remit. TII is making this application for an RO for MetroLink. Section 37(1) of the Transport (Railway Infrastructure) Act 2001 also requires TII to obtain the consent of the NTA before applying to the Board for an RO for railway infrastructure. The NTA has provided that consent prior to submission of the RO application and a copy of this consent is included with this application.

An RO is required to construct and operate the proposed Project and for the necessary compulsory purchase order arrangements to be put in place. Following the submission of the RO application to the Board there is a statutory consultation period of six weeks. Members of the public can make a submission or observation in relation to the RO application, including the EIAR and the Compulsory Purchase Order land requirements. The Board may request further information and if the information contains significant data in relation to the likely effects on the environment of the proposed Project, the Board must direct that that information be put out for further public consultation for at least three weeks. Submissions will be duly considered by the Board as part of the decision-making process. The Board (at its discretion) may convene an Oral Hearing to allow the public to participate further in the decision-making process. After the Oral Hearing and assessment of the proposed Project by the Board, it will decide whether to grant, grant in part or refuse the RO.

TII will also submit an Appropriate Assessment Screening Report and Natura Impact Statement with the application. They too will be available for public consultation and to inform the Board's Appropriate Assessment of the proposed Project. Further details on the Appropriate Assessment process is set out in the Appropriate Assessment Screening Report and Natura Impact Statement.

1.5 The Applicant

The Applicant for the proposed Project is Transport Infrastructure Ireland (TII). TII was established through a merger of the National Roads Authority and the Railway Procurement Agency under the Roads Act 2015. TII's primary function is to provide an integrated approach to the future development and operation of the national roads network and metro and light rail infrastructure throughout Ireland. In January 2018, a Jacobs IDOM Consortium was appointed by TII to develop a preliminary design for the proposed Project and prepare the EIAR, Appropriate Assessment Screening Report, Natura Impact Statement and all the required materials for the submission of an RO Application under Section 37 of the Transport (Railway Infrastructure) Act 2001, as amended.

1.6 Glossary

Term	Meaning
Alignment	MetroLink route.
Construction Compound	Temporary construction site used for the construction of the proposed Project which may include offices, welfare facilities, materials and waste storage and vehicle parking.
EIA Directive	Directive 2011/92/EU as amended by Directive 2014/52/EU.
Enabling works	Site preparation works that are undertaken in advance of the main works, including pre-construction surveys, setting up monitoring, site fencing, site clearance, demolition, utility diversions and setting up Construction Compounds.
High floor rolling stock	Rolling stock with floor level elevated above bogies and wheel sets. Comparable to existing railway rolling stock in Ireland, with Low Floor vehicles used for the Luas Light Rail System.

Term	Meaning
Intervention shaft	Shaft from ground level to the MetroLink main tunnel to allow access and egress in the case of an emergency.
Intervention Tunnel	Separate tunnel connection to the MetroLink main tunnel to allow access and egress in the case of an emergency.
Logistics Site	Site for the management of Construction Phase logistics.
Park and Ride Facility	Car Park provided at the northern end of the MetroLink alignment to promote modal shift by allowing car owners to park and access MetroLink for transport further south.
Railway Order application	An application for approval under section 43 of the Transport (Railway Infrastructure) Act 2001.
Retained cut station	MetroLink station provided along the retained cut section of the MetroLink alignment.
Satellite Compound	A small temporary construction site used for the construction of the proposed Project which may include offices, welfare facilities, materials and waste storage and vehicle parking.
Sanding System	System for applying sand to the MetroLink rolling stock for use to increase rail adhesion.
Substation	A location where equipment reduces high voltage electrical power to a lower voltage for use on MetroLink.
Surface station	MetroLink station provided at ground level along the MetroLink alignment.
Underground station	MetroLink station provided fully below ground level along the MetroLink alignment.

1.7 References

1.7.1 EU Directives

European Union (2011). Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.

European Union (2014). Directive 2014/52/EU of 16 April 2014 on the assessment of the effects of certain public and private projects on the environment.

1.7.2 Irish Primary Legislation

Planning and Development (Strategic Infrastructure) Act 2006 – S.I. No. 27 of 2006

Transport (Railway Infrastructure) Act 2001 – S.I. No. 55 of 2001

1.7.3 Irish Secondary Legislation

S.I. No. 743/2021 - European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021