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Introduction to DART+ Programme

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1. Introduction to DART+ Programme

The current DART network is 50km long, extending from Malahide / Howth to Greystones. The DART+ Programme will increase the length of the DART network to 150km of railway corridor through the electrification and upgrade of existing lines, transforming commuter train travel in the Greater Dublin Area (GDA). The DART+ Programme also includes the purchase of a new DART fleet.

The DART+ Programme will deliver frequent, modern, electrified services from Dublin City Centre to:

- Maynooth, M3 Parkway (DART+ West);
- Hazelhatch & Celbridge (DART+ South West);
- Drogheda (DART+ Coastal North); and
- Greystones (DART+ Coastal South).

The DART+ Programme is a key transportation improvement which will form a high quality and integrated public transport system. It will deliver benefits for the residents of the Greater Dublin Area and also those living in surrounding regions. The DART+ Programme is a transformative programme that will ensure train travel is at the heart of Ireland's sustainable transport network.

The DART+ Programme will seek to maximise use of the existing railway corridors and implement a modernisation programme to achieve the capacity increase necessary to meet current and future demands.

Schematic diagram of DART+ Programme extent

Why investment in DART+ Programme is needed

Provides Sustainable Transport Options

- Over-reliance on private car use and increasing congestion in Greater Dublin Area.
- DART trains are more sustainable and cleaner than current diesel trains.

Achieve Climate Change Targets

- Will help reduce the transport sector greenhouse gas emissions which continue to rise.
- Supporting the Government's Climate Action Plan.

Supporting Economic and Population Growth

- Congestion in Greater Dublin Area is increasing.
- Cost of Time Lost in the Dublin Region is ~
 €350million/annum and forecast to rise to
 €2,000million/annum by 2033.
- Sustainable public transport infrastructure (pedestrian, cycling, bus and rail) will sustain economic and population growth while reducing emissions.

Integration of Land-use & Transport Planning

- Co-ordination and integration of spatial planning with rail transport.
- Supporting compact growth and increased densities in the Greater Dublin Area.
- Supports the implementation of the Project Ireland 2040 and the National Planning Framework.

Facilitates Integration with other modes of transport

- Improves integration of rail services with active modes of travel (walking and cycling).
- Enables greater cross-modal journeys through improved integration with other modes – Bus, Luas, proposed MetroLink and Dublin Bikes.

DART+ Coastal North

2. DART+ Coastal North

Overview

The delivery of the DART+ Coastal North project will form the third infrastructural project of the DART+ Programme, in addition to DART+ West and DART+ South West.

The DART+ Coastal North project, as part of the DART+ Programme, will deliver an improved and extended electrified rail network and will enable increased passenger capacity and an enhanced train service between Dublin City Centre and Drogheda, including the Howth Branch. This increased rail capacity will be achieved by implementing an extended electrified railway network with high-capacity DART trains and an increased frequency of rail services. In addition, the DART+ Coastal North project requires that some track modifications are implemented, including the provision of turnback facilities at Malahide, Clongriffin and Howth Junction & Donaghmede Stations. These modifications are essential to facilitate the increase in train services by improving operational flexibility, allowing trains to be turned back clear of continuing services and allow for a higher frequency and a more reliable service.

To achieve the peak capacity increases proposed by the DART+ Programme, the DART+ Coastal North project will seek a reconfiguration of Howth Junction and Donaghmede Station and the removal of train crossing conflicts at the station which currently limit both capacity and frequency of services on the Northern and Howth Branch Lines. The project is seeking to deliver the infrastructure at Howth Junction and Donaghmede Station that will enable the operation of both a DART shuttle service on the Howth Branch Line as required, and/or a direct through service to/from Dublin City Centre, allowing for the capacity and frequency of DART+ services on both the Northern, and Howth Branch, lines to be maximised and to help future-proof the network.

In direct response to feedback received during the first Public Consultation, significant upgrade works and enhancements are now being proposed for Howth Junction & Donaghmede Station to deliver accessibility improvements and provide for a better overall customer experience. The works will involve modifications to the station entrances to provide a more accessible, user friendly and customer focused station for all rail users, as well as enhancing the connection to the surrounding communities of

Donaghmede and Kilbarrack. Upgrades are proposed to the existing station footbridge and connections to the centre platforms, as well as to the lighting, signage, and finishes throughout.

Proposed changes to the Howth Branch will see both the service frequency and capacity increase, along with improvements to the reliability of timetabling. The reliability of the Howth Branch will increase as the proposed shuttle service would mean that trains operating on this branch would no longer be susceptible to delays occurring along the Northern Line. Further assessments on the four Howth Branch level crossings have indicated that, even with the proposed DART service uplift, the existing level crossings can continue to operate and provide an appropriate level of cross connectivity and accessibility to surrounding communities and thus will remain open.

Delivery of the DART+ Coastal North project will support existing communities along the railway and support future sustainable development. The project will serve all existing stations along the railway corridor between Dublin City Centre and Drogheda MacBride Station, including those located on the Howth Branch, with electric powered trains that have a lower carbon footprint than the existing diesel trains. The frequency and quality of service will provide a viable transport alternative to communities along the route and help encourage people to migrate from private car use. This will assist Ireland in reducing greenhouse gas emissions from transport and help combat climate change.

The majority of proposed works and interventions are expected to be carried out within the existing railway corridor boundary. Some works and interventions, however, will be required outside of larnród Éireann for some project elements such as:

- Bridge modifications/improvements to facilitate extended electrification;
- Construction of substations (to facilitate the provision of power to the line); and
- Use of land for temporary construction/storage compounds.

Planned increase in train frequency and passenger capacity for the 3-hour AM peak period for inbound/southbound services to Dublin City Centre.

Note: Overall increases are inclusive of DART, Commuter and Enterprise services and comparisons are based on service level post-BEMU (as opposed to the current service level).

Capacity increases associated with DART+ Coastal North

The DART+ Coastal North project will provide the infrastructure to enable improved performance and increased DART frequencies along the Northern and Howth Branch Lines, providing enhanced capacity from the city centre to and from both Drogheda and Howth.

Additionally, through the delivery of the DART+ Coastal North project, the current AM and PM peak hours will become peak periods, with maximum service level being provided for a projected 3 hour peak period as opposed to the current 1 hour. The DART+ Coastal North project customers can look forward to these enhanced frequencies commencing earlier and ending later, both in the morning and evening peak periods. This extension of enhanced peak service frequencies will take advantage of infrastructure enhancements and new rolling stock, providing more flexibility, comfort, and capacity to DART customers.

DART+ Coastal North customers will benefit from enhanced reliability, with a service designed to incur fewer delays and robust enough to recover from delays when they do occur.

Battery Electric Multiple Units (BEMUs)

larnród Éireann, supported by the National Transport Authority (NTA), will be purchasing Battery Electric Multiple Units (BEMUs) in advance of the DART+ Coastal North project. The provision of these BEMUs will allow for the possibility of running enhanced services on the network in advance of the planned full electrification of the line. Iarnród Éireann have identified the Northern Line as the most suitable route for BEMU deployment and Drogheda MacBride Station and depot area as the preferred charging station location. These BEMU works will be delivered under a separate project and the increase in service level provided will be in advance of the electrification under the DART+ Coastal North project.

* The DART+ BEMU project has progressed through all statutory planning processes and is expected to commence service in 2025. The final grant of planning was issued by Louth County Council in February 2023. Works are now progressing on design development and procurement.

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Public Consultation Process

3. Public Consultation Process

Public participation during the design process is a key element to the delivery of major infrastructure projects such as DART+ Coastal North.

This project has a two stage non statutory public consultation process. The first public consultation on DART+ Coastal North **'Emerging Preferred Option'** was held between February and April 2022. Public Consultation No. 1 has informed the project design development. This current public consultation has considered the feedback received, to advance the design and now also includes significant upgrades to Howth Junction & Donaghmede Station. Feedback is now requested on the **'Preferred Option'** for the DART+ Coastal North Project.

Public Consultations are our way of asking you, as potential users of the improved services or those likely to be affected by its development, for your views on our plans, whilst the design process is active. Your local knowledge and comments will inform the design and help us improve the project and ensure it will be a success for you and the communities it will serve. The main public participation/feedback stages as part of the project development include:

- **Public Consultation No.1** on the Emerging Preferred Option **Completed** (Spring 2022).
- Public Consultation No.2 on the Preferred Option Current Stage (Spring 2023)
- Statutory Consultation Period as part of the Railway Order application process (Autumn 2023)*

*Note: Dates to be confirmed

larnród Éireann invites you to engage in the design process and all feedback is welcome. Your feedback will be accepted during all stages of the design development and can be submitted through the project website, e-mail address, phone line or by written correspondence.

If your property is likely to be directly affected by the works you should already have heard from us. Our Community Liaison Officer will be available throughout the process to ensure you are regularly updated on the current proposals and your views are taken into consideration as we progress the design.

For further details on how to submit you feedback please see the **'How to Engage'** section or visit our website **www.dartplus.ie.**

		Studies & Research		Publications & Milestones		Public Participation
	Spring 2022	Options development and appraisal to support identification of 'Emerging Preferred Option'		Preliminary Option Selection Report and identification of 'Emerging Preferred Option'		Non-statutory public consultation on the 'Emerging Preferred Option'
We are here	Spring 2023	Final Development of Option Selection Report & identification of 'Preferred Option'		Delivery of Option Selection Report and 'Preferred Option' identification		Non-statutory public consultation on the 'Preferred Option'
	Summer 2023*	Complete design appraisal and statutory documents		Design freeze & planning submission preparation		Stakeholder engagement
	Autumn/Winter 2023*	Subject to Government approval, submit Railway Order		Issue of planning submissions & Railway Order documents		An Bord Pleanála statutory consultation

*Note: Dates to be confirmed.

Graphic demonstrating public participation as part of the option selection, design, and Railway Order application process.

4. Current Design Status

The DART+ Coastal North project is currently at 'Preliminary Design Stage'. This brochure explains the current design status of the project, its benefits, potential impacts, and how you can send us your queries, thoughts and ideas.

The design and environmental impact assessment process for the DART+ Coastal North project has commenced, and we are at a key stage in the project. The DART+ Coastal North project has defined a **'Preferred Option'** which will be developed in greater detail as the project progresses towards completion.

Before we proceed any further, we would like your views on the DART+ Coastal North project 'Preferred Option' which is being put forward by larnród Éireann as part of this second round of non-statutory Public Consultation.

The **'Preferred Option'** is the preferred combination of design options that have been identified at this stage of the project development for each of the individual elements forming the end-to-end proposed solution for the DART+ Coastal North project.

Following the completion of Public Consultation No. 1 and consideration of the feedback received, additional studies and surveys have been undertaken which have assisted the project team in updating and completing the option selection process. The identification of the **'Preferred Option'** is to ensure that the project, when delivered, will be a success for you and the communities it will serve.

Further studies, assessments, design development and a review of your feedback on the preferred option will enable the **'Preferred Option'** to be refined and developed into the final project plans, which will be the subject of the Environmental Impact Assessment (EIA) and Railway Order (RO).

The project will culminate with a Railway Order application to An Bord Pleanála, in accordance with the Transport (Railway Infrastructure) Act 2001 (as amended). This is essential to secure building consent. It is currently anticipated that the Railway Order application will be submitted to An Bord Pleanála for approval in Autumn of 2023*, although exact dates for this submission are yet to be confirmed.

Your participation and feedback are an essential part of this stage in the design and assessment process.

5. Key Infrastructural Elements of DART+ Coastal North

The key infrastructural elements of the DART+ Coastal North project include:

- Extension of existing 1500V DC electrification, which currently terminates at Malahide, as far as Drogheda MacBride Station (approximately 37km);
- Reconfiguration of the existing track layout and associated infrastructure in the vicinity of Drogheda MacBride, Malahide, Clongriffin and Howth Junction & Donaghmede Stations, as well as the provision of sections of additional track, station turnback facilities, and infrastructure that will enable the operation of both a DART shuttle service on the Howth Branch, at such time that future passenger demand warrants its use, and/or the continued operation of a direct through service to/from Dublin City Centre. All interventions are designed to allow for improved operational flexibility and maximised passenger capacity and DART frequency on both the Northern and Howth Branch Lines;
- Construction of a new platform at Drogheda MacBride Station;
- Significant upgrades to Howth Junction & Donaghmede Station now proposed to provide a more accessible, user friendly and customer focused station for all rail users;
- Undertaking upgrades to existing signalling, telecoms, and power supplies to support the planned increase in train services, including the introduction of new electrical substations at key locations alongside the railway line;
 - Drogheda
 Gormanston
 Skerries North
 Rush & Lusk
 - Bettystown
 Balbriggan
 Skerries South
 Donabate
- Undertaking bridge improvements/modifications arising from capacity enhancements, track reconfigurations and/or electrical clearances to achieve necessary clearances;
- Modifications to existing depots at Drogheda and Fairview to support the new train fleet, including the provision of additional train stabling at Drogheda;
- Ancillary civils, drainage and power work to cater for the changes.

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Benefits of DART+ Coastal North

6. Benefits of DART+ Coastal North

The DART+ Coastal North project will have far reaching, positive transportation effects for communities along the railway corridor. It will facilitate increased train and passenger capacity that is currently constrained on the network. It will transport passengers in high-quality trains that are designed to best suit the needs of growing communities, providing all day capacity – especially during peak morning and evening commuter periods.

The project will link good quality public transport to sustainable land use management and will also assist in local regeneration, economic development and in supporting the development of new communities along the route. This is a key objective of Project Ireland 2040 and the National Planning Framework. The integration of public transport with sustainable land use planning will reduce the dependency on private car use and ultimately support reductions in greenhouse gas emissions from the transport sector. Availability of good quality rail transport, which is integrated with other public transport modes (Bus, Luas, and the future MetroLink), as well as pedestrian and cycling infrastructure, will have a positive effect on transport patterns and lifestyle factors. The provision of a sustainable transport network supports sustainable options for where people live, work, study and access services and amenities. It can promote more active and healthy modes of travel by supporting people to walk or cycle to public transport links for onward transfer to their end destinations.

The DART+ Programme is consistent with Project Ireland 2040, the National Development Plan 2021-2030, the Climate Action Plan 2023, the National Planning Framework and the Transport Strategy for the Greater Dublin Area 2022-2042. The DART+ Programme will look to align with any updates to these documents once they are published.

The DART+ Programme is a key deliverable measure identified in the Climate Action Plan 2023 and supports the achievement of targets for mode shift from private car use to public transport.

6. Benefits of DART+ Coastal North

Increase peak passenger capacity and increase train frequency between Dublin City Centre and Drogheda MacBride Station - inclusive of the Howth Branch - facilitating frequent and reliable transport to the surrounding communities.

Enhance public transport opportunities for work, education, and leisure purposes.

Facilitate the development and future growth of existing and new communities that will greatly benefit from the connectivity that the DART+ Coastal North project will deliver.

Help alleviate road congestion.

Build a sustainable and connected city region, supporting the transition to a low carbon and climate resilient society.

Facilitate people to make sustainable travel choices by encouraging a move away from private cars to a reliable, efficient, and safer public transport network.

Improve multi-modal transport connectivity through the development of the wider DART+ Programme.

Improve journey time reliability.

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Option Selection Process

7. Option Selection Process

Option Selection Process

To assist the design development process and to consider various options to determine the '**Preferred Option'** for the DART+ Coastal North project, a structured optioneering process has been followed:

Stage 1 - Preliminary Assessment of Options (sifting); followed by,

Stage 2 - Multi-Criteria Analysis of short-listed options.

This structured process evaluates a number of different options and is based on 'Guidelines on a Common Appraisal Framework for Transport Projects and Programmes' (CAF) published by the Department of Transport March 2016 (updated October 2021), NTA Project Approval Guidelines (December 2020), and larnród Éireann's Project Management Procedures.

Stage 2 - The Multi-Criteria Analysis process comprised a more detailed, multidisciplinary, comparative analysis of the feasible options which passed through the Stage 1 assessment. The feasible options were assessed against the six appraisal criteria set out in the Department of Transport's Common Appraisal Framework (CAF), namely: economy, safety, environment, accessibility and social inclusion, integration, and physical activity. Options were then compared to each other based on whether an option had 'some' or 'significant' advantage or disadvantage over other options, or whether all options were 'comparable / neutral', leading to the determination of Emerging Preferred Options for the intervention required. The various Emerging Preferred Options in respect of particular elements or interventions were then combined with the general linear works needed to upgrade and modernise the railway to form the **'Preferred Option'** for DART+ Coastal North.

Development of Options

The engineering design will enhance the existing railway network to meet train capacity requirements to cater for current and future projected passenger demand. Options were developed for individual components, including the following:

- Track alterations, new turnback facilities and depot works;
- Bridge alterations / reconstructions;
- Signalling, electrification and telecommunications;
- Electrical substations;
- Construction compounds.

Assessment Methodology

Stage 1 – Preliminary Assessment process - comprised the assessment of a long list of options against engineering, economic and environmental criteria to evaluate the 'feasibility' of each option to meet the project objectives / requirements. This approach allowed for the long list of options to be filtered to a shorter list of feasible options. All feasible options were brought forward to Stage 2 where they could be explored in greater detail.

Assessment Methodology

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Considerations Since Public Consultation No.1

8. Considerations since Public Consultation No. 1

Public Consultation No. 1 - Emerging Preferred Option

Non-Statutory Public Consultation No. 1 (PC1) commenced on 24th February 2022 and ran for 6 weeks, until its formal closure on 8th April 2022. The purpose of Public Consultation No. 1 was to inform the public of the developing design at the Emerging Preferred Option stage for the DART+ Coastal North project and to request their views.

All submissions received either via post, telephone communication, online feedback form or email were analysed, with issues, comments and suggestions logged and considered by the design team as appropriate. A summary of key issues or concerns raised during PC1 is described in the Public Consultation No. 1 Findings Report which is available on **www.** dartplus.ie.

The project team has analysed the submissions and considered all relevant information in re-evaluation and further development of design options leading to the selection of the **'Preferred Option'**.

Actions following Public Consultation No. 1 feedback

Feedback received during Public Consultation No. 1, has helped further shape the ongoing project design development and led to further assessment and consideration of some major project elements, most notably:

- The inclusion of, within the project scope, significant upgrades to Howth Junction & Donaghmede Station now proposed to provide a more accessible, user friendly and customer focused station for all rail users;
- Further surveys and assessments undertaken in relation to transport modelling for the level crossings on the Howth Branch line confirming they are to remain operational;
- Design development since Public Consultation No. 1 has ensured it is now possible to confirm locations of compounds, both temporary and permanent, relating to the project.
- Structural assessments have identified bridges/structures requiring intervention to allow for the installation of OHLE as part of the overall extension of electrification to Drogheda MacBride Station.

Cognisant of the level of feedback relating to construction and operational environmental impacts we have also sought to provide additional information relating to the construction

methodology and scope of the Environmental Impact Assessment Report (EIAR) so that the public may understand the approach being considered. It is acknowledged that this information is based on information and level of design available at this time and it will continue to be developed as part of the Railway Order package and supporting documentation including EIAR.

Feedback raised significant concerns in relation to the level of comfort and security experienced by passengers at Howth Junction & Donaghmede Station. The design development has therefore now proposed a variety of significant modification works at the station to both improve the passenger experience generally, and to develop the station to better serve as an interchange station. The works will involve modifying the entrances to provide a more accessible, user friendly and customer focused station for all rail users, as well as to improve the connection to the surrounding areas of Donaghmede and Kilbarrack. Upgrades will also take place to the footbridge and connections to the centre platforms, as well as the lighting, signage and finishes throughout.

Concerns for the future of the Howth Branch were also raised, with a particular focus on the continued provision of a direct service between Howth and Dublin City Centre. The Preferred Option will provide infrastructure to remove train crossing conflicts at Howth Junction and Donaghmede and enable the operation of both a DART shuttle service on the Howth Branch line as required, and/or a direct through service to/from Dublin City Centre, allowing for the capacity and frequency of DART+ services on both the Northern, and Howth Branch, lines to be maximised.

In addition, a significant number of submissions during PC No.1 called for new railway stations, additional platforms, or station upgrades along the railway line including at Drogheda North, Skerries, Balbriggan & Bettystown. Suggestions that DART services should be extended to areas such as Navan, Dundalk South, Dublin Airport and/or the Swords Area were also voiced during Public Consultation No. 1. Stakeholder feedback in relation to the provision of new railway stations along the railway line, extension of DART services beyond the DART+ Coastal North extents, and the upgrading of station facilities in general, has been fed back through the Project Team to the larnród Éireann DART+ Programme Board and the NTA. It is important to note that the principal objective of the DART+ Coastal North project is to provide the provision of additional stations, the extension of DART services to other destinations, or the upgrading of stations does not form part of the general project scope, the design put forward will not preclude developments of this type as part of future larnród Éireann projects progressed in accordance with National Policies and Strategies.

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9. The Preferred Option

This section of the brochure will present a high-level overview of the main elements of the project in a linear manner working from Dublin City Centre in the south to Drogheda MacBride Station in the north, inclusive of the Howth Branch Line. To avoid repetition, some elements common to all sections of the project are listed in the "General Linear Works" section below and are not repeated at each location along the scheme.

The project is predominantly located within the corridor of the existing railway and will deliver the necessary infrastructure to support the proposed increased train capacity and enable a higher frequency of DART services on the Northern and Howth Branch Lines. The provision of new infrastructure will comprise general linear works together with a number of localised interventions which are predominantly located at stations.

In the following section we introduce the range of general linear works required to modernise and upgrade the existing railway between Dublin City and Drogheda inclusive of the Howth Branch Line, as well as electrifying the existing railway line between Malahide and Drogheda as part of DART+ Coastal North.

9.1 General Linear Works

Given that much of the general linear works manifest along the full extent of the scheme, these elements are described first in this section to avoid the need for repetition. In addition, elements of the scheme which, although arising at discrete locations throughout the scheme, are proposed to be provided with common treatment are also described in this section (for example, additional signalling).

The elements of the Preferred Option considered under General Linear Works include:

- Electrification of the existing railway line from Malahide to Drogheda, including the construction of electrical substations.
- Signalling upgrades and additional signalling infrastructure.
- Telecommunications infrastructure including buildings.
- Equipment cabins.

- Works to the Permanent Way (or track or railway corridor) including all ancillary installations such as rails, sleepers, ballast interfaces with existing utilities, boundary treatments, drainage works, vegetation management and other ancillary works.
- Construction Compounds both permanent and temporary.

Electrification

- An extension of the overhead electrification equipment (OHLE) will be required as part of the DART+ Coastal North project. This will extend from the current limit of electrification at Malahide through to Drogheda. The equipment will be similar to, and compatible with, the overhead electrification equipment currently used on the existing DART network. It is a project requirement to provide an electrification system that is compatible with the existing DART system and other electrification projects associated with the DART+ Programme;
- Eight new electrical substations will be required at intervals along the railway line between Malahide and Drogheda to provide power to the network;
- An assessment has been undertaken to review the existing clearances at all overbridges along the route in regard to electrification requirements. The preliminary findings from the assessment conclude that a large proportion of the bridges have the necessary clearances and are unlikely to be impacted by the project. However, in order to achieve appropriate clearances, an upgrade to the Drogheda MacBride station footbridge, and the replacement of OBB080 linking Railway Terrace with McGrath's Lane, will be required. Some minor localised track lowering works will be necessary to achieve the required clearances at 4 existing structures:
 - Overbridge OBB39 (carrying Station Road / R128)
 - Overbridge OBB44 (carrying local road in Tyrrelstown Big)
 - Overbridge OBB55 (carrying Lawless Terrace / R127)
 - Overbridge OBB78 (carrying Colpe Road)

- OHLE will be required to be fixed to, and will require localised modifications, to underbridges/viaducts at:
 - Malahide Viaduct;
 - Rogerstown Viaduct;
 - Balbriggan Viaduct;
 - Laytown Viaduct.
- Modifications to existing overbridge parapets between Malahide and Drogheda will be required to ensure that parapets have no openings, climb-resistant and at least 1.8m high. This will reduce the risk of people coming into contact with the OHLE;
- Interfaces with existing utilities, boundary treatments (including new retaining walls), drainage works, vegetation management and other ancillary works will be required along the length of the project.
- The existing user worked Level Crossing (XB001) located to the south of Donabate Station is to be closed. This is as a result of the introduction of electrification and the increase in train frequency on the Northern Line which significantly increases the safety risks at this level crossing to users of the crossing and to rail traffic.
- Construction Compounds both permanent and temporary.

Electrical Substations

The OHLE system will be supplied with electrical power from the ESB distribution network at regular intervals, at locations known as substations. These substations will receive power from the local power distribution network at 38kV AC. Where the availability of 38kV is constrained, ESB will provide a local transformer substation to enable the delivery of the necessary voltage.

The footprint of the substation compound will generally be 50m (length) x 20m (wide). The substation building dimensions will generally be 35m (length) x 10m (width) and 6m (height).

A DART system-wide power study identified that eight substations will be required at various locations along the length of the DART+ Coastal North project to provide power to the network. The location for each of the substations was identified following a two-step optioneering process, Preliminary Assessment, followed by Multi-Criteria Analysis (feasible options), where appropriate. This led to the identification of the Preferred Options in respect of each of the required substation locations.

The proposed substation locations along the line are:

- Skerries North
- Bettystown Skerries South
- Gormanston •
- Balbriggan

Drogheda

•

Donabate

Rush and Lusk

Example of a typical substation

Signalling

In order to achieve the necessary performance and provide for the revised track layout required for the introduction of the new DART+ Fleet, it will be necessary to upgrade the existing signalling system as well as replacing some of the legacy components.

Signalling upgrades and additional signalling will be required between Malahide and Drogheda. Minor signalling changes will be required between East Wall Junction (Tolka River) and Malahide. Upgrades to the telecommunication systems will be required route wide. This will include the provision of Signalling Equipment Buildings (circa 12m x 4m x 2.6 m) and Relocatable Equipment Buildings, where required, along the route in order to house signalling and telecommunication equipment and their necessary power supplies.

Typical Signalling Infrastructure

Equipment Cabins

Additional infrastructure buildings will be required, including a number of equipment cabins, to support the Signalling and Telecommunication systems. These will be mostly located within Córus lompair Éireann land where possible and will be adjacent to stations where similar cabins are currently evident.

The various cabins required along the works are:

- Signalling Equipment Buildings (SEB)
- Telecommunication Equipment Rooms (TER)

The cabins are typically fenced off as they need to be secure.

Typical Equipment Cabins (SEB & TER)

Permanent Way Requirements

The Permanent Way (PW) is a term used to describe the track or railway corridor and includes all ancillary installations such as rails, sleepers, ballast as well as line-side retaining walls, fencing and signage. The DART+ Coastal North project includes:

- Widening of the railway corridor to facilitate new turn back infrastructure at specific locations.
- Track lowering arising from electrical clearance requirements at bridges.
- Track improvements, including realignment works at Howth Junction & Donaghmede Station.

Aspects most relevant to the permanent way are where interventions have been identified as being required, e.g., at bridge locations, as the potential for knock-on impacts have the potential to extending beyond the area of intervention of the bridge location itself, with implications for track alignment, road levels on adjoining roads, other bridges, etc.;

Where interventions have been identified in the Preferred Option, all solutions have been considered and developed holistically.

Construction Compounds

Works on this linear scheme will require Construction Compounds at specific locations. The sites will need to accommodate offices for the contractor and client teams, storage facilities, recycling facilities, parking for cars and plant and potentially fabrication areas.

It is a prerequisite that the construction compounds are located close to, and ideally with direct access to, the respective work site. The sites must be fully serviced with electricity, water, sewerage, and telecoms and must have good access to the public road network.

The compounds are required at specific construction sub-sites and also distributed along the scheme by geographical features. For example, compounds will be required at each of the bridge reconstruction locations. They will also be required for material processing and storage of construction components. The construction compounds will be used to support earthworks, enabling works, site clearance, utility diversions work, civil works, the demolition of bridges, OHLE, track installation, signalling and telecoms equipment and all ancillary works.

The majority of the compounds will be temporary in nature. The compound locations are identified within the alignment figures in Section 14 of this brochure. Many of the compound locations would need to be temporarily acquired for the duration of the works.

9.2 Dublin City to Malahide

General Description

This section of the railway extends between Connolly Station and Malahide. The existing Northern Line provides the basis and groundwork for this section of the DART+ Coastal North project. The line passes through a number of stations including Malahide, Portmarnock, Clongriffin, Howth Junction and Donaghmede, Kilbarrack, Raheny, Harmonstown, Killester, and Clontarf Road Stations. Within this section, the Preferred Option includes works at Howth Junction & Donaghmede, Clongriffin, and Malahide Stations linked to facilitating the planned increases in capacity and frequency associated with the project.

A range of upgrades are proposed at Howth Junction & Donaghmede Station linked to improving the overall customer experience at the station.

The existing railway, within this section, is already fitted with OHLE and only some minor changes to signalling and telecommunications upgrades are envisaged between Dublin City Centre and Malahide as part of the DART+ Coastal North project. As this section of the Northern Line is already fully electrified with OHLE, all necessary clearances are already in place and no existing structures located between Malahide and Dublin City Centre are expected to be impacted as part of the DART+ Coastal North works.

The Preferred Option includes the completion of some upgrades to the existing Fairview Depot located at Clontarf Road Station.

Permanent Way Requirements

To facilitate the proposed increase in train frequency it is proposed as part of the DART+ Coastal North Project to implement some track modifications, including the introduction of new turnback facilities, in the areas surrounding Malahide Station, Clongriffin Station and Howth Junction & Donaghmede Station.

Substations

The Power Study did not identify any requirement for additional new substations on this section of the scheme. Instead, the existing substations will be adjusted to provide the increased power requirements needed for the more frequent train service.

Works around Clongriffin Station

The works at Clongriffin Station include track modifications which are essential to facilitate the increase in train services by allowing trains to be turned back clear of continuing services on separate tracks.

The Preferred Option is to introduce a new loop to serve a platform to the east side of the station, within the existing railway corridor. It is proposed to use the platform face that was constructed when the station was originally built but which is not currently served by any tracks.

Works include the construction of a retaining structure to the east of the station to facilitate the new loop and modifications will be made to the track alignment to the south of the station to allow trains to access the new platform. New OHLE and signalling installations, as well as modifications to the existing systems, will be required.

Proposals at Clongriffin Station

Dublin City to Malahide Extents

Works around Malahide Station

The works at Malahide comprise track modification which are essential to facilitate the increase in train services, by allowing trains to be turned back clear of continuing services on separate tracks.

The Preferred Option is to introduce a turnback immediately north of Malahide Station between the Strand Road Underbridge and Malahide Viaduct. This turnback will be situated between the two existing running lines which will necessitate the existing running lines to be slewed to the east between the two aforementioned bridges. This slewing will introduce the need to widen the existing embankment to the east, which will be accomplished by building a retaining structure alongside the realigned track. New OHLE and signalling installations, as well as modifications to the existing systems, will be required.

The proposed works are in close proximity to Irish Water's wastewater treatment works at Malahide and there is potential interference to third party property rights. Further design development and technical and construction related solutions will seek to minimise this.

Proposals at Malahide Station

Works around Howth Junction & Donaghmede Station

The Preferred Option at Howth Junction & Donaghmede Station includes construction of an extension to the existing Platform 2 and some associated track modifications. These modifications include construction of a new crossover to the east of the platforms, and alterations to existing OHLE, signalling and telecoms will also be required.

To achieve the peak capacity increases proposed by the DART+ Programme, the DART+ Coastal North project will seek a reconfiguration of Howth Junction and Donaghmede Station and the removal of existing train crossing conflicts at the station which currently constrain capacity and train frequency on the network. These changes will enable the operation of both a DART shuttle service on the Howth Branch line as required during peak times, and/or a direct through service to/from Dublin City Centre, allowing for the capacity and frequency of DART+ services on both the Northern, and Howth Branch, lines to be maximised. The removal of train crossing conflicts at Howth Junction will also enable a more frequent and reliable Howth DART service operating every ten minutes each way, with a change at Howth Junction to access the Northern Line. The associated interchange introduced at Howth Junction & Donaghmede Station will be facilitated by an increased frequency of stopping trains on the Northern Line. Final operational decisions will be made subject to future passenger demand requirements.

Proposals at Howth Junction & Donaghmede Station

Works / Upgrades to Howth Junction & Donaghmede Station

In direct response to feedback received in Public Consultation No.1, a variety of significant modification works are proposed to Howth Junction and Donaghmede Station to both improve the passenger experience generally, and to develop the station to better serve as an interchange station.

The works will involve modifying the entrances to provide a more accessible, user friendly and customer focused station for all rail users, as well as improve the connection to the surrounding areas of Donaghmede and Kilbarrack. Upgrades will also take place to the footbridge and connections to the centre platforms, as well as the lighting, signage, and finishes throughout.

Conceptual Image of Modified Howth Junction & Donabate Station Entrance

Conceptual Modifications to Footbridge Cross-section.

Conceptual Image of Modifications to Footbridge & Platform Access

Works at Fairview Depot

There will be localised minor works at Fairview Depot to modify the facilities to cater for the change in rolling stock. These modifications are predominantly internal to the buildings.

In order to provide a greater capacity for cleaning at Fairview Depot for the new trains, several modifications are required at the depot. These will include the provision of new cleaning platforms on the sidings to the east side of the mainline, along with associated walkways and services. On the west side modifications are proposed largely within the existing maintenance building to provide suitable access and services for cleaning staff.

View into Fairview Depot

9.3 Malahide to Drogheda

General Description

This section of the railway extends from Malahide Station to Drogheda MacBride Station. The existing Northern Line provides the basis and groundwork for this section of the DART+ Coastal North project.

As part of the works, this length of the Northern Line will be electrified with the installation of overhead electrical equipment. The line passes through a number of stations including Drogheda MacBride, Laytown, Gormanston, Balbriggan, Skerries, Rush and Lusk, Donabate and Malahide Stations. In general, no works are envisaged to these stations as part the Project, although the Preferred Option does include the introduction of turnback facilities and some localised modifications at Drogheda MacBride Station.

There are also a number of structures on this section of the route, including 28 road overbridges and footbridges. An assessment of these structures has shown that in most cases sufficient clearances are available to allow for the electrification works to be run under the existing bridges with no/minimal intervention to the bridge structures. However, in order to achieve appropriate clearances, an upgrade to the Drogheda MacBride station footbridge, and the replacement of OBB080 linking Railway Terrace with McGrath's Lane, will be required. Some minor localised track lowering works will be necessary to achieve the required clearances at 4 existing structures (OBB39, OBB44, OBB55 & OBB78). OHLE solutions will be required to facilitate the electrification to span the existing longer viaduct structures:

Malahide Viaduct;

•

- Balbriggan Viaduct;
- Rogerstown Viaduct; La
- Laytown Viaduct.

The Preferred Option for each of these interventions are provided later in this section.

Existing user worked Level Crossing (XBO01) located to the south of Donabate Station is to be closed. This is as a result of the introduction of electrification and increase in train frequency on the Northern Line which significantly increases the safety risks at this level crossing to users of the crossing and to rail traffic.

Permanent Way Requirements

To facilitate the proposed increase in train frequency it is proposed as part of the DART+ Coastal North project to implement some track modifications, including the introduction of new turnback facilities, in the areas surrounding Drogheda MacBride Station.

Works around Drogheda MacBride Station

The works at Drogheda MacBride Station predominately relate to allowing a greater number of services to turn back at Drogheda to return to Dublin. There are currently an insufficient number of platforms to cater for the proposed service frequency at Drogheda MacBride, therefore an additional platform to turn back services is required.

The Preferred Option is to construct a new single platform on the Drogheda freight siding. This new platform will extend over the Dublin Road Underbridge, necessitating widening of the bridge. At-grade access will be provided between the new platform and the existing Platform 1 and a new gateline will likely be installed. The Drogheda freight siding will be slewed (realigned) and railway infrastructure modified as necessary. In terms of train stabling, the existing Drogheda freight siding, and a new stabling track, located adjacent to the depot, will be utilised. The new stabling track will require works to the existing landscape bund.

UBK01- Dublin Road Bridge

The preferred option at Drogheda MacBride Station, requires the widening of the Dublin Road Bridge to facilitate a shift of the tracks to the south and inclusion of an extension of the existing platform on the northern side of the tracks above the Dublin Road Bridge. The locations of the abutments are not expected to be adjusted as part of these proposals.

Works at Drogheda Depot

There will be localised modifications to the depot facilities at Drogheda MacBride Station to cater for the changes in rolling stock. These modifications are predominantly internal within the existing depot buildings, although some localised exterior changes to tracks and railway systems will also be required. The depot at Drogheda will be electrified with OHLE.

Donabate to Drogheda Extents

Works Around Drogheda MacBride Station

Works to Dublin Road Bridge

Bridge clearance works

Wherever a bridge spans over the railway it is necessary to ensure that the OHLE passes safely below the bridge. Where existing bridges do not, or may not, provide the necessary clearance for OHLE, a range of options to reduce impacts have been considered on a case-by-case basis. The options include modifications to the track layout and structural solutions to gain the necessary vertical and horizontal clearance. The options considered include the following (either standalone or in combination):

- Provision of specialist electrical solutions for the OHLE with reduced clearance;
- Lowering the rail track under the bridge;
- Modification of the existing bridge structure;
- Removal of the existing structure and provision of a replacement structure.

Along the project route corridor, only six structures have been identified where the required clearances are not achieved. Following consideration of the options listed above, and completion of detailed analysis, two of the bridges were identified as requiring reconstruction, and the Preferred Option for each, is as follows:

• **Overbridge OBB81 (Drogheda station footbridge)** – replacement of the bridge superstructure with a profiled soffit to provide sufficient clearance for OHLE installation. The option will be a cost-effective solution, reduce disruption to services and maintain the visual character of the station.

Works to Drogheda MacBride Station Footbridge

• Overbridge OBB80/80A/80B (carrying Railway Terrace) - The preferred option involves the removal of the existing bridge structure and the construction of a new bridge in its place. A temporary access road would be constructed to the North linking to Marsh Road (R150) to facilitate access to the affected properties for the duration of works. The new bridge would be set at a level to provide a minimum vertical clearance of 5.6m, to provide adequate clearance for the OHLE wires beneath the bridge. The roads along McGrath's Lane and Railway Terrace will need to be raised to facilitate tie in with revised bridge levels. Additional temporary access may be required during these works to maintain access to the residential properties during works to road levels. This option would require the acquisition of land to the north of McGrath's Lane to facilitate a new embankment associated with the raising of the road.

Proposed Works at OBB080 (McGrath's Lane)

Four additional bridges along the project extents were identified as having insufficient clearance for the installation of OHLE. Following detailed assessment. It was deemed that electrical solutions and localised track lowering interventions provide a sufficient solution at each location and more significant bridge reconstruction can be avoided. These bridges include:

- Overbridge OBB39 (carrying Station Road / R128)
- Overbridge OBB44 (carrying local road in Tyrrelstown Big)
- Overbridge OBB55 (carrying Lawless Terrace / R127)
- Overbridge OBB78 (carrying Colpe Road)

The track lowering works are all considered minor track adjustments which will be undertaken during non-disruptive night-time possessions over a relatively short period of time.

Installation of OHLE structures onto underbridges

Bespoke fixing arrangements for OHLE will be required at some locations where the railway is supported on underbridges. It is envisaged that typical OHLE foundations can be placed either side of underbridges with spans of less than 60m, removing the need to fix OHLE to the bridge. Underbridges with spans around, or in excess of, 60m have been subject to further assessment and optioneering. The resulting list of impacted underbridges, and their respective Preferred Options, are as follows:

Cross Section Showing Proposed OHLE Installation at Laytown Viaduct
• **UBB30 – Malahide Viaduct** -The Preferred Option requires OHLE supporting posts to be installed at three locations along the Malahide Viaduct. The OHLE supporting posts will connect to concrete slabs placed on the superstructure of the Malahide Viaduct (at Piers 6 & 9) where it is not possible to connect directly to the bridge itself. Due to the bridge deck configuration at Pier 3, it is possible to connect the OHLE post directly to the outer edge beam of the viaduct - hence a concrete support slab is not required at this location.



OHLE Supporting Posts on Malahide Viaduct

UBB56 - Balbriggan Viaduct – Due to the length of Balbriggan Viaduct, at least two pairs of OHLE supporting masts are required to facilitate the electrification. The Preferred Option is to place the masts at the 3rd and 8th pier locations, resulting in a 55 m span between masts when viewed in elevation. The Preferred Option involves attaching the OHLE masts to the pedestrian walkway outside of the existing fence line and widening the walkway locally at the location of the OHLE masts to allow for suitable pedestrian passage. It is also proposed to attach anti-climb guards to the OHLE masts to prevent people from attempting to scale them, particularly given their location adjacent to the fence.



Preferred Option for Balbriggan Viaduct

UBB36 - Rogerstown Viaduct - As the track has a relatively straight horizontal alignment at this location, it is possible to position the OHLE masts up to 62m apart. This allows the masts to be located at either end of the bridge deck superstructure, which measures approximately 60m in length. Hence, the Preferred Option is to place the OHLE supporting masts at either end of the bridge, supported on the existing masonry wing-walls which will be demolished down to slab formation level and rebuilt with reinforced concrete walls which will be connected to the existing wing-wall substructure. An exposed concrete corbel will support the post locally with the remainder of the proposed reinforced concrete wall clad with stone to match the existing structure.



OHLE Supporting Posts at Rogerstown Viaduct

UBB72 – Laytown Viaduct – The Preferred Option is to install OHLE masts at the locations of the first and last bridge pier. The proposal involves the installation of additional supporting steelwork within the structure to provide sufficient strength for a mast to be fixed. The steelwork and OHLE masts will be bolted to the existing bridge piers.



Substations

The Power Study identified the requirement for eight new substations, spaced at regular intervals, on this section of the scheme. These are required at the following locations:

- Drogheda
- Skerries North
- Bettystown
- Gormanston
- Balbriggan

Donabate

Skerries South

Rush and Lusk

Drogheda Substation - The Preferred Option for the location of the Drogheda Substation is on agricultural lands to the north of the Drogheda MacBride depot train shed. A short access road would be required from the current depot boundary to facilitate access to the substation. Access would be created through the existing reinforced concrete (RC) wall, rather than through the gabion wall, with additional sections of RC wall constructed to the rear when in cutting. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

Bettystown Substation - The Preferred Option for the location of the Bettystown Substation is on scrub-land adjacent to Ardmore Avenue. It is envisaged that it could be directly accessed from the existing Ardmore Avenue through the construction of a small section of access road. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

Gormanston Substation - The Preferred Option for the location of the Gormanston Substation is on grassland within Gormanston Camp, directly south of the Irishtown Road overbridge, to the western side of the railway. A short access road would be required perpendicular to the tracks due to topological constraints for the required overbridge access ramps. The substation location is in third party private land ownership,;therefore land acquisition is envisaged. **Balbriggan Substation** - The Preferred Option for the location of the Balbriggan Substation is on agricultural land approximately 350m north of the underbridge serving Bremore Bay Beach on the western side of the railway. An access road would be required from the R132, to access the substation, running along the boundary of the existing fields. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

Skerries North Substation - The Preferred Option for the location of the Skerries North Substation is on agricultural land approximately 250m southeast of Barnageeragh Bay Steps, on the western side of the railway. The substation is positioned close to the railway corridor, blocking the current access road to the farmland directly south of the proposed substation. An access road would be required from Barnageeragh Road that would ensure farm access is also maintained. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

Skerries South Substation - The Preferred Option for the location of the Skerries South Substation is in agricultural land, east of the railway and directly south of Golf Links Road. It is envisaged that access would be provided directly from Golf Links Road. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

Rush and Lusk Substation - The Preferred Option for the location of the Rush and Lusk Substation is within green field lands located to the southeast of Rush and Lusk Station. Access to the existing road network is envisaged as being through the existing station car park located to the east of Rush and Lusk Station. The proposed location is within existing Córas lompair Éireann boundaries; therefore no land acquisition is envisaged.

Donabate Substation - The Preferred Option for the location of the Donabate Substation is on agricultural land located to the south of the R126, to the west of the railway line. An access road would be required from the L6165 south-west of the proposed location, to connect with the existing road network. The substation location is in third party private land ownership; therefore land acquisition is envisaged.

9.4 Howth Junction & Donaghmede Station to Howth Station

General Description

This section of the railway extends between Howth Junction & Donaghmede Station and Howth Station. The existing Howth Branch line provides the basis and groundwork for this section of the DART+ Coastal North project.

The proposed works along this section of the DART+ Coastal North project are relatively minimal, with the exception of the upgrade works at Howth Junction & Donaghmede Station described earlier. The existing railway is already fitted with OHLE and only some minor changes to signalling and telecommunications upgrades, and the construction of a new substation, are envisaged as part of the DART+ Coastal North project.

The line passes through a number of stations including Howth Junction & Donaghmede Station, Bayside Station, Sutton Station and Howth Station. The preferred option in this section of the DART+ Coastal North project includes provision of infrastructure to enable the operation of both a DART shuttle service on the Howth Branch line as required, and/or a direct through service to/from Dublin City Centre, allowing for the capacity and frequency of DART+ services on both the Northern, and Howth Branch, lines to be maximised.

There are also a number of structures on this section of the route, however, as this section of the Northern Line is already electrified no existing structures located between Howth Junction & Donaghmede and Howth Station are expected to be altered as part of the DART+ Coastal North project works.

Permanent Way Requirements

To facilitate the proposed increase in train frequency it is proposed as part of the DART+ Coastal North project to implement some track modifications, including the introduction of a new crossover facility at Howth Junction & Donaghmede Station. The extent of track modifications in the area between Howth Junction & Donaghmede Station and Howth Station are minimal as the track is already fitted with existing OHLE.



Howth Junction & Donaghmede Station to Howth Station Extents

Works around Howth Junction & Donaghmede Station

Works around Howth Junction & Donaghmede Station, including proposed upgrades to the station itself, are as described in Section 9.2.

Howth Branch Level Crossings

Four level crossings are located along the Howth Branch line, including:

- Baldoyle Road Level Crossing (XQ001);
- Sutton Level Crossing (XQ002);
- Cosh Level Crossing (XQ003);
- Claremont Level Crossing (XQ004).

Proposed changes to the Howth Branch will see both the service frequency and capacity increase, along with improvements in the reliability of timetabling. The reliability of the Howth Branch will increase as the proposed DART shuttle service would mean that trains would no longer be susceptible to delays that occur along the Northern Line.

The Preferred Option for the Howth Branch level crossings is for crossings to continue to be controlled by automatic barriers. Our traffic assessment has concluded that the barrier controlled crossings can continue to provide an appropriate level of connectivity and accessibility whilst still meeting the increased DART service frequency requirement.

The traffic assessment was carried out based on observed traffic survey data and through the application of best practice methodology and industry standard software (LinSig). The proposed level crossing closure times were simulated, and it was found that the likelihood of vehicles, pedestrians and cyclists, incurring delay at the level crossings will increase due to the increased frequency of level crossing closures. It was also found that there will be an impact on queue lengths in the study area – in some cases queue lengths may reduce, while in some cases queue lengths will increase. The sensitivity analysis has, however, shown that queue lengths are predicted to remain within the available traffic queueing road space, in all these cases.

Therefore, whilst it is acknowledged that the increased frequency of DART services on the Howth branch line will have an impact on the surrounding road networks, and their users, the impact is not considered significant and the level crossings can continue to operate effectively, without significant effect on any transport mode.



View at Sutton Level Crossing



Howth Branch Line

Substations

The existing railway is already fitted with OHLE and only some minor changes to signalling and telecommunications upgrades are envisaged as part of the DART+ Coastal North project.

A Power Study has identified the need for an additional substation to be located toward the eastern end of the Howth Branch Line. The precise location of the substation is still to be determined subject to the identification of a suitable site.



9.5 Conclusions

The DART+ Coastal North project will deliver an extended electrified network, with increased passenger capacity and enhanced train service between Drogheda MacBride Station and Dublin City Centre (circa 37km) on the Northern Line, inclusive of the Howth Branch Line.

DART+ Coastal North will deliver increased rail capacity through implementing an extended electrified railway network with high-capacity DART trains and an increased frequency of train services. The proposed increase in train services can be achieved through the provision of turnback facilities at Malahide, Clongriffin and Howth Junction & Donaghmede Stations.

The removal of train crossing conflicts through the reconfiguration of Howth Junction and Donaghmede Station will allow DART+ Coastal North to achieve the peak capacity increases proposed by the DART+ Programme. These works will enable the operation of both a DART shuttle service on the Howth Branch Line as required, and/or a direct through service to/from Dublin City Centre, allowing for the capacity and frequency of DART+ services on both the Northern, and Howth Branch, Lines to be maximised. The interchange at Howth Junction & Donaghmede Station will be facilitated by an increase in Northern Line stopping trains. The removal of train crossing conflicts at Howth Junction will also result in a more frequent and reliable Howth DART service with frequency of service increasing to every ten minutes each way, with a change at Howth Junction to access the Northern Line.

The proposed modifications and upgrades to entrances, footbridges, platforms, lighting, signage and finishes at Howth Junction & Donaghmede Station will ensure a more accessible, user friendly and customer focused station for all users of the station going forwards.

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Transport Integration

10. Transport Integration

The DART+ Coastal North project, as part of the DART+ Programme, will deliver an improved electrified network, with increased passenger capacity and enhanced train service between Dublin City Centre and Drogheda MacBride Station. The DART+ Coastal North project includes the Howth Branch of the DART Northern Line.

The project will link larnród Éireann Intercity and Suburban Services, DART, Dublin Bus, Luas, MetroLink and Dublin Bike services to create a fully integrated public transport system in the Greater Dublin Area. Although no direct link will be provided between DART+ Coastal North and Metrolink, they can each be considered integral components in the overall integrated system.

The DART+ Coastal North project is planned to enhance access and movement of pedestrian and cyclists and reduce reliance on private car. The project will integrate with the Metropolitan Cycle Network where potential interfaces are identified.

Where practicable, DART+ Coastal North will integrate with cycleways, greenways, and other active travel facilities proposed in existing and draft future transport strategies.



Public Transport Integration



11. Issues to Consider

All possible efforts will be made to sensitively address issues and challenges associated with the project at the earliest stages of the design process and public consultation. Several potential issues are detailed below, and the public consultation and stakeholder engagement phases will help us to better understand some of the issues and challenges we face.



Property Acquisition

The DART+ Coastal North project will predominantly seek to confine the railway improvement works within the existing railway corridor. However, where works are required to extend beyond the confines of the existing railway corridor, it may be necessary to acquire some additional lands to facilitate the projects development. This land acquisition may be required to allow for the provision of new electrical substations that will facilitate the extension of electrification of the network, track modifications to introduce additional turnback facilities to improve operational flexibility, or where additional train stabling is required.

We have commenced an extensive programme of consultation with the potentially affected property owners and if your property is likely to be directly affected by the works you should already have heard from us, separately. Our Community Liaison Officer will be available throughout the process to ensure you are regularly updated on the current proposals and your views are taken into consideration as we progress through design development and Environmental Assessment.

Environmental Impacts

The project will involve changes to the local environment during both the construction and operation stages, which will result in both temporary and permanent impacts. In order to maintain daytime passenger services during the construction phase night-time works will be necessary. The design process will make every effort to ensure that negative impacts are avoided, reduced or mitigated as far as reasonably practicable, and positive impacts are maximised.

The interface with coastal environments along the DART+ Coastal North route will present environmental challenges. Highly detailed environmental assessments will be carried out over the course of the project to ensure that the proposed works are carried out without negatively impacting on these highly sensitive constraints.



Bridge Improvements/Reconstruction

In the section between Dublin City Centre and Malahide Station, and between Howth Junction & Donaghmede Station and Howth Station, assessments have confirmed that no works to existing structures will be required. This is largely due to these sections of the Northern Line already being electrified and not requiring further OHLE installation.

In the section between Malahide Station and Drogheda MacBride Station a number of interventions have been identified where works are required to, or around, structures due to insufficient clearances for OHLE. Localised track lowering and electrical solutions are proposed at 4 overbridges (OBB39, OBB44, OBB55, & OBB78), the replacement of the Drogheda Station Footbridge superstructure with a profiled soffit to provide sufficient clearance for OHLE installation, and the full replacement of the existing bridge between McGrath's Lane and Railway Terrace at Drogheda MacBride have been included in the Preferred Option.

Further to the aforementioned interventions, there will also be a need to span the four existing viaducts included within this section with OHLE. These interventions include the electrification of Malahide, Laytown, Balbriggan and Rogerstown Viaducts.

At all bridges, parapet wall heights have been assessed and improvements have been proposed, as necessary.



Electrification of the Line

- Overhead line electrification equipment (OHLE) will be required to provide electrical power to the DART trains. This will involve considerations such as:
- The supply of power from the grid which will need to be agreed and assessed as part of the Railway Order application process;
- The development of substations, and associated land and access requirements, along the line to provide the power to the electrified train fleet over the additional 37km of electrified track;
- The equipment carrying the power lines requires certain height clearances from the trains. Several bridges on the existing line have been identified as having insufficient clearances to this electrical equipment. A range of options are being considered at these locations - some of which include modifications to protected structures;
- Boundary walls and fencing along the existing railway may need to be modified. Where necessary, the heights of walls may need to be increased to ensure the security of the railway is maintained in the interest of both railway operations and public safety. This is especially relevant in areas where new overhead electric lines are erected to ensure that members of the public do not come into contact with electricity equipment.
- The additional space required for the development of overhead electrification equipment to provide the power to the lines, and associated landscape, visual and heritage impacts.





12. Next Steps

Further Design Development & Option Selection

The option selection and design development that has been undertaken has led to the development of the '**Preferred Option**' which is the focus of this public consultation stage.

Once the public consultation process is complete, all feedback and submissions received will be reviewed and assessed as part of the next stage of the design development. Following a full appraisal of the feedback, a Public Consultation No. 2 Findings Report will be prepared and published, as part of the Railway Order documentation, to document this process.

All information gathered by the project team will be used to inform the design development of the project which will be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA), and ultimately the Railway Order application that will be submitted to An Bord Pleanála.

Public feedback will be accepted during all stages of the design development and can be submitted through the project website, e-mail address, phone-line or by written correspondence. For further details see the '**How to Engage**' section.

The Railway Order Process

The application to An Bord Pleanála for a Railway Order is broadly similar to the planning process with which most people are familiar.

The Railway Order application process is set out in the Transport (Railway Infrastructure) Act 2001 (as amended) and the application will be made to An Bord Pleanála. The Environmental Impact Assessment Report (EIAR) will detail the nature and extent of the proposed project and identify and describe the impacts on the environment. It will also detail measures which will be taken to avoid, reduce and/or monitor these impacts. Following the submission of the Railway Order application to An Bord Pleanála, the public are invited, through public notices, to make submissions which will be duly considered by An Bord Pleanála as part of the decision-making process. We expect that An Bord Pleanála will conduct an Oral Hearing, to provide the public with further participation in the decision-making process for this project. At an Oral Hearing the larnród Éireann project team will provide responses to submissions and will be available for questioning. Any person or body may make a submission or observation in writing to the Board in relation to the Railway Order application including the EIAR and the Compulsory Purchase Order (CPO) requirements.

We expect to make the application to An Bord Pleanála in the Autumn/Winter of 2023*.

* dates to be confirmed



The EIA Process leading to submission of Railway Order to An Bord Pleanála



13. How to Engage

This consultation is our way of asking you, as potential users of the service or those likely to be affected by its development, for your views on our plans. Your local knowledge will inform the emerging design, help us to improve the scheme and ensure it will be beneficial for you and the communities the route will serve.

The consultation period is now open, full details including closing dates for receipt of submissions are available on the project website.

You can engage with us via the following means: Website | www.dartplus.ie Email | DARTCoastalNorth@irishrail.ie Phone line | (01) 233 4515

Postal Address

If you would prefer to write to us, please send any correspondence to:

Community Liaison Officer DART+ Coastal North Iarnród Éireann Inchicore Works Inchicore Parade Dublin 8 D08K6Y3


























































