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## **Chapter 18**

# **Material Assets: Utilities**

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# 18. Material Assets: Utilities

## 18.1. Introduction

The Transport (Railway Infrastructure) Act 2001 (as amended) provides for the making of a Railway Order application by Córas Iompair Éireann (CIÉ) to An Bord Pleanála ('the Board'). The European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the EIA Directive (EU Directive 2011/92/EU as amended by Directive 2014/52/EU) on the assessment of the effects of certain public private projects on the environment by amending the Transport (Railway Infrastructure) Act 2001 ('the 2001 Act').

An examination, analysis and evaluation is carried out by An Bord Pleanála in order to identify, describe and assess, in the light of each individual case, the direct and indirect significant effects of the proposed railway works, including significant effects derived from the vulnerability of the activity to risks of major accidents and disasters relevant to it, on: population, human health and biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives; land, soil, water, air and climate; material assets, cultural heritage and the landscape, and the interaction between the above factors. The draft Railway Order makes specific provision for interference with apparatus which includes inter alia any substation, inspection chamber, junction box, booster station, pipe, sewer, drain, duct, tunnel, conduit, wire, cable, fibre, insulator, masts, support structures and such other thing as may be used by an undertaker for or in connection with the provision of a service to the public and an "undertaker" means any person or body with power and authority in relation to apparatus to install or relocate such apparatus or cause it to be installed or relocated.

This chapter of the EIAR identifies, describes and presents an assessment of the likely significant effects of the proposed Project on Material Assets: Utilities. This assessment includes an assessment of built services (including electricity, telecommunications, gas, water supply and sewer networks). The assessment examines the potential impacts during the construction, operational and maintenance of the proposed Project as outlined in Chapter 4 Project Description.

Material Assets are defined within the Environmental Protection Agency (EPA) (2015) Draft Advice Notes for Preparing Environmental Impact Statements as '*Resources that are valued and that are intrinsic to specific places are called 'Material Assets'*'.

The EPA (2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports states '*Material assets can now be taken to mean built services and infrastructure*'.

## 18.2. Legislation, Policy and Guidance

### 18.2.1. Legislation

The key legislation and guidance referenced in the preparation of the EIAR is outlined in Chapter 1 (Sections 1.5, 1.6 and 1.7). There is no specific legislation relating to the assessment of material assets other than that outlined in the EIA Directive.

### 18.2.2. Policy

Relevant policy documents that have informed the assessment include:

- Dublin City Development Plan 2022-2028;
- South Dublin County Development Plan 2022-2028; and
- Kildare County Development Plan 2017-2023 (and draft plan 2023-2029 as available).

### 18.2.3. Guidance

There is no specific guidance relating to the assessment of Material Assets: Utilities. The impact assessment has therefore followed the methodology and guidance relating to the EIA process and preparation referred to in Chapter 1 Introduction (Section 1.7) of this EIAR.

## 18.3. Methodology

Due to the project, there will potentially be an impact on existing utilities along the route, such as gas, power or water pipes, drainage structures, telecoms equipment, etc. Utilities will be constraints during both the design and construction phases. As such, their treatment in the temporary and permanent situations has been carefully considered during the development of the design of the DART+ South West Project.

From a design perspective, available records of all existing utilities within the project area have been collated to establish existing utilities (buried and overhead) so that the design could avoid creating unnecessary impact on them as well as to inform the relevant utility company where any interfaces or issues were identified.

The impact assessment has focused on where conflicts with existing utilities have been identified as part of the design review process. The impact assessment process has utilised information gathered as part of the design review process and includes the following:

- Identification of existing utilities and associated infrastructure;
- Identification of any future alterations and/ or expansion of existing utilities where planned;
- Identification of potential diversions and the extent of proposed services diversions (including any advance works or temporary diversions that may be required);
- Assessment of the likely impact (if any) on each element and implications for the project and for the utility company. This has involved specific consultations by the design team with the utility companies and private operators to understand the potential impacts and determine exact requirements;
- Characterisation of the magnitude and significance of any potential impacts such as diversions, disruption of service, relocation etc;
- Identification of mitigation measures to minimise impacts; and
- Assessment of the significance of any residual effects after mitigation.

Where utility conflict arises, potential treatments have been discussed with the utility providers. Temporary and permanent diversions have been agreed upon in principle. Engagement with the utility

companies and private companies is ongoing. Further engagement will be undertaken at the post-planning stage.

### 18.3.1. Study Area

There are no guidelines or criteria to define the size of the study area for the assessment of Material Assets: Utilities. The Material Assets Utilities Study Area has been defined for the purpose of this assessment as the area in which there is potential for direct and indirect impact on built services as a result of the proposed Project, particularly where permanent and temporary diversions are required to facilitate the project whilst maintaining vital services to the general public and commercial bodies. It does not include Iarnród Éireann owned trackside utilities.

### 18.3.2. Survey Methodology

#### 18.3.2.1. Desk Surveys

From a design perspective, the first stage in the identification of Utilities and infrastructure was in the gathering of data in the form of utility service records from all relevant service/ utility providers. Available records of all existing utilities have been collated to establish existing utilities (buried and overhead).

The utility location and specification details are based on preliminary data obtained from the various utility providers and records provided will vary in accuracy. The following utility providers have been identified along the route as outlined in Table 18.1.

**Table 18.1: Utility Providers**

Type	Provider
<b>Telecommunications</b>	Aurora
	BT
	Eir
	EU Networks
	T50 (operated by ZAYO)
	Virgin Media
	Vodafone
<b>Watermains &amp; Foul / Combined Sewer</b>	Irish Water
	Dublin City Council
	South Dublin County Council
	Kildare County Council
<b>Gas Mains</b>	GNI
<b>Electrical cables (underground and overhead)</b>	ESB
<b>Signals, Public Lighting</b>	Dublin City Council
	South Dublin County Council
	Kildare County Council

Subsequent to the initial identification stage, the design team carried out specific consultation with utility providers. The purpose of these specific consultations was to establish the nature and extent of any existing assets that each utility provider may have within the area traversed by the DART+ South West Project. This early engagement established open communication with the utility providers to determine the location and details of existing utilities, the identification of high risk and/or high value utilities, assets, development and agreement of diversion proposals. The design development has considered the existing utilities and where potential services diversions are required based on these consultations with utility providers.

As part of the design of the project a comprehensive Utilities Impact Report and utilities conflict schedule has been developed by the design team to inform the design of the proposed Project. The information from consultations with the service providers has informed the utilities conflict schedule<sup>1</sup> and Utilities Impact Report. This information has informed this impact assessment.

### 18.3.2.2. Field Surveys

Following the gathering of utility records and initial utility provider consultations, various site visits were undertaken by the design team with utility providers and the Utilities Lead in Iarnród Éireann. These were conducted on bridges and roads that cross the rail corridor, as well on the tracks and with the required Iarnród Éireann safety training and personnel. Trackside walkovers were non-intrusive and gave the design team critical insight into the rail corridor environment while facilitating discussion with the Iarnród Éireann Utilities Lead.

Other surveys were undertaken with various utility providers on roads and bridges along the route. On-site consultations allowed for the opening of manholes and chambers (conducted by the utility provider) to verify gathered records. Online consultations were conducted where site visits were not required or where access was not possible.

Intrusive surveys (such as slit trenches) will be undertaken during the detailed design stage to verify the location and levels of gathered records along the project route.

### 18.3.3. Assessment Methodology

#### 18.3.3.1. Key Parameters for Assessment

The key activities that have potential to result in likely significant effects on utilities are outlined below:

#### Construction Phase

- Potential interaction with disruption to existing built services such as electricity networks, communication networks, gas networks and water supplies during construction works;
- Requirement for new connections (including temporary) to public utilities (such as potable water) by the proposed Project during the construction works; and
- Introduction of new utility infrastructure (such as pumping stations and protective measures needed to deal with Electromagnetic currents) by the proposed Project during the construction works.

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<sup>1</sup> Utilities Conflict Schedule v02.4 has informed this impact assessment.

## Operation and Maintenance Phase

- Permanent alterations to utility services i.e. access for maintenance;
- Requirement for maintenance of new utility infrastructure associated with the operation of the proposed Project;
- Power demands & service supply connections (e.g. ESB etc) associated with the operation of substation locations;
- Requirement for new connections to public utilities (water supply, wastewater) by the proposed Project; and
- Permanent alterations to the track drainage network (i.e. surface water drainage infrastructure) where the system does not have the capacity for the additional flow rates.

### 18.3.3.2. Assessment Criteria and Significance

There are no generally accepted criteria for assessing the significance of the effect on utilities. The allocation of the significance criteria is based upon professional judgement and consultations with the utility providers.

The likely significance of effects is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the utility asset). In this case, the importance of the infrastructure and utilities has been based on their functionality.

**Table 18.2: Explanation of Infrastructure and Utilities Assessment Criteria**

Criteria	Explanation
<b>Importance</b>	<p>Utilities infrastructure is necessary to ensure that power (electricity / gas), water and amenity services, such as telecommunications and sewer collection, are provided to communities in a reliable, consistent manner. Due to a community's dependency on such sources, any disruption to a utility supply can have a negative impact.</p> <p>The importance of a utility is determined, considering the function, strategic nature and capacity of the utility. These are categorised as:</p> <ul style="list-style-type: none"> <li>• Transmission networks: these are of national or regional importance and there can be a contingency to continue supply from other sources.</li> <li>• Distribution networks: these are of local importance and usually there is no contingency available to maintain continuity of supply from other sources (e.g. DCC water mains supply).</li> <li>• Local connection: these are of local importance and usually there is no contingency available to maintain continuity of supply from other sources (i.e. connection from distribution networks to private properties).</li> </ul>
<b>Sensitivity</b>	<p>Disruption of utilities at single point locations can often affect the functionality of the infrastructure over a large area. Key network infrastructure elements for particular utility providers are challenging to deal with given that only limited-service outage time (if any) will be permissible to the service and its customers.</p>

The baseline rating of the existing infrastructure and utilities environment is determined by having regard to the range of criteria which reflect the importance and sensitivity of the service/ supply as outlined in Table 18.3.

**Table 18.3: Baseline Rating of Infrastructure and Utilities**

Rating	Criteria
<b>High</b>	High importance, limited potential for substitution: <ul style="list-style-type: none"> <li>• Gas transmission/high pressure pipework (<math>\geq 4</math>bar);</li> <li>• Potable (drinking) water trunk mains and trunk foul or combined sewers, greater than or equal to 600mm diameter;</li> <li>• Surface water sewers of greater than or equal to 300mm diameter;</li> <li>• Electricity (distribution) high voltage cables including underground cables and overhead lines;</li> <li>• Fibre telecommunications (including cables such as telephone and internet, cable television networks, signalling and traffic cables and other control cables (e.g. other private services));</li> <li>• Railway infrastructure; and</li> <li>• Navigable waterways (canals).</li> </ul>
<b>Medium</b>	Medium importance, limited potential for substitution: <ul style="list-style-type: none"> <li>• Gas distribution pipework (<math>\leq 4</math>bar);</li> <li>• Water pipes (arterial) for drinking water, combined surface water sewers, foul sewers;</li> <li>• Surface water sewers of less than 300mm diameter; and</li> <li>• Electricity (transmission) cables including underground cables and overhead lines.</li> </ul>
<b>Low</b>	Low importance, local scale: <ul style="list-style-type: none"> <li>• Local connections for water</li> </ul>
<b>Negligible</b>	Low importance, local scale: <ul style="list-style-type: none"> <li>• Domestic connections for service.</li> </ul>

The criteria for defining magnitude in this assessment are outlined in Table 18.4. These are based on the EPA assessment criteria (EPA, 2022). For the purposes of this assessment, the magnitude of impact for infrastructure and utilities has been considered in terms of the duration of service interruption (outage). The outage duration will be finalised with the relevant utility provider or consumer (in the case of private utilities), in accordance with their service level/ business interruption requirements. However, this assessment is based upon consultation undertaken for the purpose of Railway Order design with stakeholders and although durations may be subject to some changes, the assumed duration of potential outages/ service disruption is considered to be reliable.

**Table 18.4: Magnitude of Impact Criteria on Material Assets - Utilities**

Impact Magnitude	Criteria
<b>Very High</b>	Disruption of service for more than one week. Relevant stakeholders are notified at short notice or not at all prior to disruption taking place. The level of service provided by the original utilities or infrastructure is not reinstated.
<b>High</b>	Disruption of service for up to one week. Relevant stakeholders are notified at short notice prior to disruption taking place. The level of service provided by the original utilities or infrastructure is reinstated.
<b>Medium</b>	Disruption of service for up to two days.



Impact Magnitude	Criteria
	Relevant stakeholders are notified prior to disruption taking place. The level of service provided by the original utilities or infrastructure is reinstated or improved.
<b>Low</b>	Disruption of service for several hours. Relevant stakeholders are notified prior to disruption taking place. The level of service provided by the original utilities or infrastructure is reinstated or improved.
<b>Negligible</b>	No disruption to service – Applicable to the removal of redundant assets

Table 18.5 outlines the matrix used for assessing the significance of the effect, taking into account the baseline rating or sensitivity value of the assets and the magnitude of the impact. The impact significance ranges are then defined using the following categories in accordance with the EPA Guidelines, 2022: Imperceptible; Not Significant; Slight; Moderate; Significant; Very Significant; and Profound.

**Table 18.5: Matrix used for the assessment of the Significance of the Effect**

Magnitude of Impact	Baseline Rating			
	Low	Medium	High	Very High
<b>Negligible</b>	Imperceptible	Not Significant	Not Significant	Not Significant
<b>Low</b>	Not Significant	Slight	Slight	Moderate
<b>Medium</b>	Slight	Moderate	Moderate	Significant
<b>High</b>	Moderate	Significant	Significant	Very Significant
<b>Very High</b>	Significant	Very Significant	Profound	Profound

### 18.3.4. Consultation

The overall project stakeholder and public consultation undertaken in respect of the Project is set out in the Public Consultation No. 1 Findings Report (for PC1) and Public Consultation No. 2 Findings Report (for PC2) which are included in Volume 4, Appendix 1.3 and 1.4. All feedback was collated, including feedback specific to the EIAR topic ‘Material Assets: Utilities’. This feedback has informed this chapter including the baseline and impact assessment presented.

Specific consultation was also undertaken with key stakeholders in relation to EIA Scoping. A summary of the issues raised in relation to the scope of the EIA is included in Volume 4, Appendix 1.2. Feedback on the scope and level of detail of the assessment, data sources and methodologies as they pertain to the EIAR topic ‘Material Assets: Utilities’ have been reviewed and have influenced this chapter of the EIAR.

Specific consultation was also undertaken with representatives of various Departments in Kildare, South Dublin and Dublin City Councils. This included a combination of presentations, workshops and meetings to discuss the project, technical design issues, environment and planning matters.

Nine pre-application meetings were held with ABP to explain the project and present technical and environmental information. A summary of the information presented and the environmental issues discussed at the nine meetings is provided in Volume 4, Appendix 1.6. Feedback relevant to the topic 'Material Assets: Utilities' has been reviewed and has influenced this chapter of the EIAR.

As part of the design process of the project, the design team undertook specific technical engagement with service/ utility providers over the preliminary design stage. Site visits were undertaken where necessary and possible. Many consultations were conducted online as a result of national COVID-19 restrictions at the time of meeting. A summary of specific additional technical engagement activity with service/ utility providers in relation to utilities is provided in Table 18.6. This engagement afforded the opportunity to establish communication channels and to determine potential diversion/ enabling works requirements. Consultations are ongoing, with more to be organised during detailed design stage.

**Table 18.6: Summary of Technical Engagement with Service Providers regarding Utilities**

Consultee	Date of Meeting
Zayo	Meeting (10 <sup>th</sup> Nov 2020) Consultation No.1
DCC (sewer)	Meeting (25 <sup>th</sup> Nov 2020) Consultation No.1
Eir	Meeting (25 <sup>th</sup> Nov 2020) Consultation No.1
DCC (sewer)	Meeting (16 <sup>th</sup> Dec 2020) Consultation No.2
ESB	Meeting (11 <sup>th</sup> Feb 2021) Consultation No.1
VM	Meeting (22 <sup>nd</sup> Feb 2021) Consultation No.1
BT	Meeting (12 <sup>th</sup> Mar 2021) Consultation No.1
Aurora	Meeting (15 <sup>th</sup> Mar 2021) Consultation No.1
Aurora	Meeting (28 <sup>th</sup> May 2021) Consultation No.2
GNI	Meeting (1 <sup>st</sup> Jun 2021) Consultation No.1
VM	Meeting (4 <sup>th</sup> Jun 2021) Consultation No.2
DCC (water)	Meeting (4 <sup>th</sup> Jun 2021) Consultation No.1
IW / DCC	Meeting (7 <sup>th</sup> Jul 2021) Consultation No.2
IW	Meeting (6 <sup>th</sup> Oct 2021) Consultation No.2
IW	Meeting (21 <sup>st</sup> Oct 2021) Consultation No.3
IÉ	Client meeting (9 <sup>th</sup> Nov 2021) re pumping station @ OB04
ESB	Meeting (25 <sup>th</sup> Nov 2021) 38 kV OH Twin Line Stakeholder Consultation with Harcourt Developments
IW	Meeting (7 <sup>th</sup> Dec 2021) Consultation No.4
ESB	Meeting (14 <sup>th</sup> April 2022) LV/MV Consultation No.1
IW	Meeting (21 <sup>st</sup> June 2022) Consultation No.5
ESB	Meeting (24 <sup>th</sup> August 2022) LV/MV Consultation No.2
IW	Meeting (28 <sup>th</sup> October 2022) Consultation No.6
ESB	Meeting (16 <sup>th</sup> November 2022) LV/MV Consultation No.3

### 18.3.5. Difficulties Encountered / Limitations

There have been various limitations and difficulties encountered by the design team that have affected availability for site visits and the identification and design of diversion routes. An obvious limiting factor influencing the frequency and undertaking of site visits has been the unprecedented Covid-19

pandemic and government restrictions. In March 2020, Ireland began imposing restrictions on movement in order to combat the spread of Covid-19. Due to the public health restrictions, travelling to and from site complicated site visits and has been a factor in the technical engagement with online meetings between the design team and utility providers during the design development process.

As previously stated, the design team gathered record information from utility providers who have existing assets along the route of the project. The accuracy and level of detail varies with each utility record and they often contain erroneous or incomplete data. Incomplete records (e.g. sewer records lacking level data) have made it difficult to decide on the requirement for a diversion in certain areas and the design of such without a verification survey. Intrusive and non-intrusive surveys will be undertaken in the detailed design stage to mitigate this limitation. Further investigations at detailed design stage may focus on alternative designs to minimise or avoid impact.

## 18.4. Receiving Environment

The proposed Project has been divided into four distinct geographic zones along the length of the corridor (Zones A to D) as outlined in Chapter 4 Project Description and is summarised below. The proposed Project is described from west to east along the railway corridor.

- Zone A - Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station (refer to Section 4.6);
- Zone B - Park West & Cherry Orchard Station to Heuston Station (incorporating Inchicore Works) (refer to Section 4.7);
- Zone C – Heuston Yard & Station (incorporating New Heuston West Station) (refer to Section 4.8); and
- Zone D - Liffey Bridge to Glasnevin Junction (Phoenix Park Tunnel Branch Line) (refer to Section 4.9).

For the purposes of describing the existing utilities and built services infrastructure, the receiving environment has been described with reference to these four geographic areas. Utilities by their nature will be located across geographic zones and such utilities for this Project are trackside ducting and cabling paths running parallel to the tracks, which present a constant conflict with the tracks and is treated as project wide i.e. not contained within one single geographic zone. All other conflicts occupy a single zone.

Utilities infrastructure is necessary to ensure that power (electricity / gas), water and amenity services, such as telecommunications and sewer collection, are provided to communities in a reliable consistent manner. Due to a community's dependency on such services, any disruption to a utility supply can have a negative impact. The description of the receiving environment has focused on where interfaces with existing utilities and the proposed Project have been identified.

The utilities that cross the existing rail corridor along the Project route are generally concentrated in road bridges and train stations. There are also several utilities that cross underneath the railway tracks or run parallel to the tracks, such as Irish Water pipes (including both water supply and wastewater) and electricity cables. The main issue with overhead cables is the required clearance for rail electrification and any electrical interference that may occur.

Most services are located within existing streets and railway line bridge crossings. Hence, where modifications are required to existing bridges and/ or to the road network in the immediate vicinity of existing structures, impacts on utilities are inevitable.

#### 18.4.1. Zone A: Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station

The road network and rail corridor contain a significant number of utilities, albeit more sparsely spread than other areas along the Cork Mainline. Telecommunications, Electricity, Gas, Sewer and Watermain infrastructure are located within this zone.

##### 18.4.1.1. Telecommunications

Aurora Telecom, BT, EIR and Virgin Media were identified as having several existing utility assets in the area from Hazelhatch & Celbridge Station to Park West & Cherry Orchard Station. No conflicts have been identified and no diversions are required in this area.

##### 18.4.1.2. Electricity

A number of interfaces between the existing electricity infrastructure and the proposed Project have been identified, some of which will require diversion of the infrastructure. There are several instances of ESB overhead cables crossing the tracks, ranging from low and medium voltage distribution lines (LV and MV) to high voltage transmission lines (HV). ESB have 48 utility assets in the area from Hazelhatch to Park West. Five conflicts (ID: ESB-15, ESB-29, ESB-37, ESB-47 & ESB-54) have been identified that will require diversions. These diversions are required primarily due to conflicts with the proposed overhead line equipment. Further detail of the diversions required and the utilities which will be affected in this area are provided in Volume 4, Appendix 18.1 of this EIAR.

##### 18.4.1.3. Gas

While GNI have five utility assets in this area, there are however no conflicts or diversions required.

##### 18.4.1.4. Sewer and Watermains

There are a number of Irish Water sewer and watermain utilities in this area, however there are no conflicts or diversions required for these assets.

#### 18.4.2. Zone B: Park West & Cherry Orchard Station to Heuston Station

The roads network in Zone B contains a significant number of utilities typical of an urban environment. Utility service providers with network assets in this area include Eir, ESB Networks, DCC Road Drainage (Storm Water sewers), DCC/ Irish Water (Foul Water sewers), DCC/ Irish Water (Water supply) and DCC Public Lighting.

For the purposes of describing the existing utilities and built services infrastructure in this zone, the receiving environment has been described with reference to sub-areas as outlined below.

##### 18.4.2.1. Cherry Orchard Footbridge, Le Fanu Road Bridge and Le Fanu Road

This sub-area includes the services which run from Cherry Orchard Footbridge (OBC8B) to Le Fanu Road including Le Fanu Road Bridge (OBC7). Services crossing the rail corridor via the existing Le

Fanu Road Bridge (OBC7) are not expected to pose any constraint to the proposed Project following reconstruction of the existing bridge. It is noted that significant infrastructure links in relation to gravity storm and foul sewers are present. Drawings of the existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-61151 of Volume 3A of this EIAR.

#### 18.4.2.1.1. Telecommunications

BT, Aurora Telecom and Virgin Media all have no utility assets in the area from Park West to Le Fanu Road Bridge. There are no conflicts or diversions required for the EIR utility assets in this area.

#### 18.4.2.1.2. Electricity

ESB have five utility assets in this area, four of which (ID: ESB-10, ESB-11, ESB-12 & ESB-13) will require diversions.

There is a twin circuit 38kV overhead ESB power line (ID: ESB-12 & ESB-13) that is parallel to the tracks on the southern bank. The pylons supporting this line have been identified to be in close proximity to track widening works. Therefore, a section of the 38kV line will need to be diverted in order to facilitate the track widening.

Details of the diversions required and the utilities affected in this area are provided in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.1.3. Gas

There are no conflicts or diversions required for the GNI utility assets in this area.

#### 18.4.2.1.4. Watermains and Sewers (Stormwater, Foul, Combined)

Due to conflict with the proposed track lowering, a diversion will be required for one of the Irish Water combined sewer utilities (ID: CS-09) in this area that crosses the tracks west of Le Fanu Road Bridge (OBC7).

There will not be adequate space to both lower the tracks and retain the existing arrangement. This sewer is in close proximity to a pylon supporting the 38kV overhead ESB power line (ESB-12 & ESB-13) mentioned in Section 18.4.2.1.2. Diversion of the sewer can potentially take place without impacting the pylons by leaving the old pipe where it is and providing a diversion away from the ESB utilities. The sewer also runs parallel to the tracks on the northern bank before crossing the tracks, and as such the diversion is also likely to affect this portion of the sewer.

There are also three Irish Water watermain utilities in this area, two of which (ID: WM-09 & WM-10) cross the existing railway through the Le Fanu Road Bridge (OBC7). These two utilities will require diversions due to conflict with the proposed bridge reconstruction. The permanent diversion will be located within the beams of the bridge.

Details of the diversions required and the utilities affected in this area are provided in Volume 4, Appendix 18.1 of this EIAR.

### 18.4.2.2. Kylemore Road Bridge

The utilities networks in the area are extensive and contain a significant number of utility service providers typical of an urban environment. There are several critical utilities crossing the rail corridor via Kylemore Road Bridge (OBC5A). The majority of services are located within the existing street and railway line overbridge crossing at Kylemore Road bridge (OBC5A). Hence, where modifications are required to the existing bridge and/or to the road network in the immediate vicinity of the existing structure, impacts on utilities will be inevitable.

Drawings of the existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-56158 in Volume 3A of this EIAR.

#### 18.4.2.2.1. Telecommunications

Aurora Telecom has no utility assets in the area from Le Fanu to Kylemore Road Bridge.

There are multiple BT data cable/fibre optic services contained within an underground duct (ID: BT-02) running along the tracks within the railway corridor. One of these cables diverges from the underground duct and rises level with Kylemore Road. The remaining cables continue along the tracks. Due to a conflict with the reconstruction of Kylemore Road Bridge, diversion is required for this BT utility asset.

EIR has two assets in the area; 1 no. 110mm duct (ID: EIR-05) at the east verge of the bridge and 4 no. 110mm ducts, 1 no. 3-way multi-duct (ID: EIR-06) on the west verge of the bridge. Diversions are required for both of these EIR utility assets.

Virgin Media have one utility asset in this area (ID: VM-04). Due to conflict with the proposed bridge reconstruction, a diversion will be required for this utility asset.

Details of the diversions required and the utilities affected in this area are provided in Volume 4, Appendix 18.1.

#### 18.4.2.2.2. Electricity

Due to conflict with the Kylemore Road Bridge reconstruction, two ESB utilities (ESB-08 & ESB-09) in this area will need to be diverted. A diversion of an ESB utility (ESB-07a) is also required 170m to the west of Kylemore Road Bridge. Details of the diversions required and the utilities affected in this area are provided in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.2.3. Gas

There are 18 no. GNI utility assets in the area from Le Fanu to Kylemore Road Bridge, 15 of which require diversions due to a number of conflicts. Details of the diversions required and utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.2.4. Watermains and Sewers (Stormwater, Foul, Combined)

There are a number of Irish Water foul/ combined and stormwater sewers in the area from Le Fanu to Kylemore Road Bridge. A diversion is required for an Irish Water watermain utility (ID: WM-07) which crosses the rail corridor via Kylemore Road Bridge due to conflict with the proposed bridge reconstruction.



Details of the diversions required and the utilities affected in this area are provided in Volume 4, Appendix 18.1.

### 18.4.2.3. Inchicore Works

Within this area, existing utilities networks are primarily limited to trackside items and underground services crossing under the railway. The majority of services are present below the tracks along the railway corridor.

At the Khyber Pass Footbridge (OBC5) the only services that cross beneath the railway tracks are Iarnród Éireann owned services running along the rail corridor. There are no other services that are above or below the bridge.

Existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-56154 of Volume 3A of this EIAR.

#### 18.4.2.3.1. Telecommunications

Aurora Telecom, BT, EIR and Virgin Media have no assets in the area along Inchicore Works.

#### 18.4.2.3.2. Electricity

ESB infrastructure is limited to a single crossing (ESB-07) at the western extent of the Inchicore Works. This utility will require a diversion due to its proximity to proposed retaining walls and adjacent sewer diversions. Further investigations at detailed design stage may focus on alternative designs to minimise or avoid impact.

Details of the diversions required and the ESB utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.3.3. Gas

Located on the eastern side of Inchicore Depot are a live gas main (GNI-05) and a redundant gas main (GNI-202). Both of these utilities run parallel to the tracks on the southern side of the rail corridor. Track widening works in the area will require a diversion of the live gas main (GNI-05) due to access availability requirements for Gas Networks Ireland.

A 3m lateral clearance is required from any structure to satisfy utility provider requirements. Subject to agreement with GNI, the redundant gas main will be removed during works.

Details of the diversions required and the GNI utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.3.4. Watermains and Sewers (Stormwater, Foul, Combined)

Irish Water have three combined water mains/sewer assets (ST-06, ST-07 & CS-06) in the area along Inchicore Works. In general, these services provide linkage to public sewers located along Landon Road to the north. In some cases, the sewers also run within private gardens (parallel to the railway) for a distance before utilising a 'gap' in the buildings to access the street beyond.

It is envisaged that two underground combined sewer pipes (ST-07 & CS-06) will require a diversion due to a conflict with the proposed retaining wall works.

Details of the diversions required and the Irish Water utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.4. Sarsfield Road Bridge

The area contains a significant number of utilities typical of an urban environment such as this. The majority of services are present at road level along Sarsfield Road, most of which are following the road alignment to pass under the railway at this location.

The Creosote Stream is located directly under the abutments of Sarsfield Road Bridge (UBC4), the stream flowing in a north-easterly direction. The majority of services in the road are crossing above this culvert and hence are at a shallow depth below the road/footpath surface level.

As many of the services are located within the existing street at this location, piling works required for modifications to the existing bridge will be responsible for the majority of diversions in this area. The proposed design will avoid impacting road levels which will reduce the number of diversions required.

Drawings of the existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-56153 of Volume 3A of this EIAR.

##### 18.4.2.4.1. Telecommunications

Aurora Telecom, BT, EIR and Virgin Media all have no utility assets in the area from Sarsfield to Memorial Road.

##### 18.4.2.4.2. Electricity

ESB infrastructure is limited to a single underground LV duct (ESB-06) which crosses the railway corridor under the Sarsfield Road Bridge (UBC4). This utility will require diversion works due to a conflict with piling works associated the proposed reconstruction of Sarsfield Road Bridge (UBC4).

Details of the diversions required and the ESB utilities affected in this area in Volume 4, Appendix 18.1 of this EIAR.

##### 18.4.2.4.3. Gas

Due to conflicts with proposed piling works for bridge reconstruction, diversions will also be required for three existing GNI utilities (GNI-02, GNI-03 & GNI-04) in the area around Sarsfield Road Bridge (UBC4). Details of the diversions required and the GNI utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

##### 18.4.2.4.4. Watermains and Sewers (Stormwater, Foul, Combined)

There are five Irish Water utilities in this area. Diversions will be required for three of these Irish Water watermain utilities (WM-05, WM-06 & WM-06a) due to conflicts with proposed piling works for bridge reconstruction. Details of the diversions required and the Irish Water utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

The Creosote Stream is located to the eastern extent of the area. It flows in a general west-to-east direction before crossing under the railway and Sarsfield Road at Sarsfield Road Bridge (UBC4) in a culvert. This culvert is located at a significant depth compared to the railway surface level.



#### 18.4.2.5. Memorial Road Bridge

The existing utility networks in the area consist of varied services which are typical of an urban environment such as this. There are a significant number of utilities in the area, particularly crossing the rail corridor via Memorial Road Bridge (OBC3).

Drawings of the existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-56151 of Volume 3A of this EIAR.

##### 18.4.2.5.1. Telecommunications

Aurora Telecom, and Virgin Media have no utility assets in the Memorial Road area.

Due to a conflict with the proposed bridge reconstruction and track lowering in this area, a diversion will be required for one of the BT utility assets (ID: BT-01).

In addition, due to conflict with the bridge reconstruction, a diversion will also be required for one of the EIR utility assets in the Memorial Road area (ID: EIR-04).

Details of the diversions required and the telecommunication utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

##### 18.4.2.5.2. Electricity

ESB infrastructure is limited to a single underground LV duct (ID: ESB-05) which crosses the railway corridor through the Memorial Road Bridge (OBC3). Due to a conflict with the proposed bridge reconstruction and track lowering in this area, a diversion will be required for this ESB utility asset.

Details of the diversion required for the ESB utility in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

##### 18.4.2.5.3. Gas

GNI have no utility assets in the Memorial Road area.

##### 18.4.2.5.4. Watermains and Sewers (Stormwater, Foul, Combined)

There are no Irish Water sewer utilities which require diversion in the Memorial Road area. However, there are three water main utilities that will require diversions (ID: WM-02, WM-03 & WM-04) due to a conflict with the proposed reconstruction of Sarsfield Road Bridge (OBC3).

Details of the diversions required and the Irish Water utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.6. South Circular Road Junction and Con Colbert Road

The roads network in this area contains a significant number of utilities typical of an urban environment. The majority of services are located within existing streets and rail line bridge crossing. There are a large number of services crossing the rail corridor via South Circular Road Bridge (OBC1) and St. John's Road Bridge (OBC0A).

There are two combined sewers that cross the railway corridor below the tracks, between South Circular Road Bridge (OBC1) and Memorial Road Bridge (OBC3). Neither sewer requires a diversion as both sit at least 6m beneath the tracks.

Drawings of the existing utilities in this area are provided in drawings DP-04-23-DWG-UE-TTA-51155 and 51156 of Volume 3A of this EIAR.

#### 18.4.2.6.1. Telecommunications

There are no BT utility assets in the area from Memorial Road to South Circular Road Junction.

Due to a conflict with the construction of a new cut-and-cover buried portal structure at South Circular Road Interchange, a diversion is required for one of the Aurora Telecom utilities (ID: AUR-01) in this area.

EIR has six utility assets in this area, three of which (ID: EIR-01, EIR-02 & EIR-03) will require diversions due to conflict with the South Circular Road bridge reconstruction.

A diversion will also be required for one Virgin Media utility (VM-01) in this area, due to conflict with the proposed bridge reconstruction.

Details of the diversion required for telecommunication utilities in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.6.2. Electricity

There are 11 no. ESB utility assets in the area along Con Colbert Road/South Circular Road Junction. Four of these utilities (ID: ESB-01, ESB-02, ESB-03 & ESB-04) will require diversions due to conflict with the proposed reconstruction of the South Circular Road Bridge (OBC1). Details of the diversions required and the ESB utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.6.3. Gas

GNI has three utility assets in this area, one of which (ID: GNI-01) will require a diversion due to conflict with the South Circular Road bridge reconstruction. Details of the diversions required and the GNI utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.2.6.4. Watermains and Sewers (Stormwater, Foul, Combined)

Irish Water also has a watermain utility in the area (WM-01) which will need to be diverted due to conflict with the proposed bridge reconstruction.

Details of the diversions required and the Irish Water utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

### 18.4.3. Zone C: Heuston Station and Yard (incorporating New Heuston West Station)

This area contains a significant number of utilities that are typical of a major transport hub. The majority of services are located within existing streets and railway yard.

Existing utilities in this area are concentrated on the eastern side of the proposed Heuston West Station, or along the Heuston Station Access Road. Heuston Yard contains only one utility asset that

will be affected by the works in this area. Notable utilities in the area include BT fibre optic cables and a combined sewer vitrified clay pipe, both of which cross the rail corridor within Heuston Yard. Required works in this area for the Heuston West Station will result in diversions for these services. The group of BT fibre optic cables (ID: BT-01a), cross under the tracks in the location of the proposed Heuston West Station and runs through the Heuston Yard. This utility is for signalling and communication data and continues parallel to the tracks until Hazelhatch and Celbridge; and is used by Iarnród Éireann to manage the rail network. This utility will need to be diverted due to a conflict with the proposed new Heuston West station and associated attenuation tank.

Drawings of the existing utilities in this area are provided in drawing DP-04-23-DWG-UE-TTA-51153 of Volume 3A of this EIAR.

There is also an existing EIR duct present in south east the yard (See drawing DP-04-23-DWG-UE-TTA-51152 of Volume 3A of this EIAR).

### **New Heuston West Station**

There are a number of utilities within the new station footprint and along the station access road from the new station to the Heuston Terminal Station. There are 3 no utilities in the immediate locality of the proposed new Heuston West Station as shown in (See drawing DP-04-23-DWG-UE-TTA-51152 of Volume 3A of this EIAR). They include 2 no. Irish Water combined sewer pipes (CS-01 and CS-02), as well as 1 no. BT duct bank. The Irish Water combined sewer pipe CS-01 crosses the tracks underneath the southern abutment of Liffey Bridge (UBO1). The Irish Water combined sewer pipe CS-02 is located along the east perimeter of Clancy Quay.

The group of BT fibre optic cables (ID: BT-01a), is located beneath Heuston Yard and BT have confirmed that it crosses under the tracks in the location of the proposed Heuston West Station and continues south parallel to the tracks on the west bank. This utility is for signalling and communication data and is used by Iarnród Éireann to manage the rail network. Consequently, this service will need to be permanently diverted due to the works required for the proposed Heuston West station.

There are various utilities located under the link between the proposed new Heuston West Station and Heuston Terminal Station. These comprise BT, Eir, ESB, GNI, Irish Water combined sewers and Irish water watermain pipes (See drawing DP-04-23-DWG-UE-TTA-51153 of Volume 3A of this EIAR).

The various other utilities in this area are concentrated on the eastern and northern side of Heuston Terminal Station, and along the access road corridor. As the proposed works are predominately taking place on the western side of the yard, few utilities pose constraints to the required works for the proposed station, its compound nor the proposed improvements to the pedestrian route to the Heuston West Terminal Station and the Luas Stop.

#### **18.4.3.1. Telecommunications**

Aurora Telecom and Virgin Media have no assets in the area around Heuston Station, Heuston Yard or the new Heuston West Station area.

While EIR have several assets in this area, there will be no conflicts or diversions required for the utilities of this service provider.

BT have one telecommunication asset in this area (BT-01a). Due to a conflict with the proposed new Heuston West station and associated attenuation tank, a diversion is required for this BT utility asset. Details of the diversions required for telecommunication utilities in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

#### 18.4.3.2. Electricity

While ESB have several assets in this area, there will be no conflicts or diversions required for the utilities of these service providers.

#### 18.4.3.3. Gas

GNI have several assets in this area, however there will be no conflicts or diversions required for the utilities of this service provider.

#### 18.4.3.4. Watermains and Sewers (Stormwater, Foul, Combined)

Irish Water have two underground combined sewer pipes in the new Heuston West Station area, however no diversions will be required for these utilities.

### 18.4.4. Zone D: Liffey Bridge to Glasnevin Junction (Phoenix Park Tunnel Branch Line)

#### 18.4.4.1. East of St. John's Road Bridge (Islandbridge) to Northern Entrance/Exit of Phoenix Park Tunnel

This area contains 14 no. known utilities along Conyngham Road as well as 3 no. utility crossings that cross beneath the railway tracks south of Conyngham Road. The majority of utilities that cross the rail corridor in this area are concentrated in Conyngham Road Bridge (OBO2).

There are 2 No. combined sewers and 1 No. Virgin Media duct that cross underneath the tracks south of Conyngham Road, significantly below the Liffey Bridge (UBO1). As such, these do not pose any constraints to track lowering for Conyngham Road Bridge (OBO2).

Phoenix Park contains several utilities that cross above the Phoenix Park Tunnel (see drawings DP-04-23-DWG-UE-TTA-36151 to DP-04-23-DWG-UE-TTA-36151-36153 of Volume 3A of this EIAR).

##### 18.4.4.1.1. Telecommunications

While a large number of utility assets belonging to Aurora Telecom, BT, EIR and Virgin Media are present in this area, there are no conflicts or diversions required for these utilities.

##### 18.4.4.1.2. Electricity

While a large number of utility assets belonging to ESB are present in this area, there are no conflicts or diversions required for these utilities.

##### 18.4.4.1.3. Gas

While a large number of utility assets belonging to GNI are present in this area, there are no conflicts or diversions required for these utilities.

#### 18.4.4.1.4. Watermains and Sewers (Stormwater, Foul, Combined)

While a large number of utility assets belonging to Irish Water are present in this area, there are no conflicts or diversions required for these utilities.

#### 18.4.4.2. Northern Exit/Entrance of Phoenix Park Tunnel to Glasnevin Junction

There are a considerable number of utilities in this area which are typical of an urban environment.

The majority of utilities that cross the rail corridor are concentrated in Blackhorse Avenue Bridge (OBO4), Old Cabra Road Bridge (OBO5), Cabra Road Bridge (OBO6) and Faussagh Road Bridge (OBO7). Drawings of these existing utilities are presented in drawings DP-04-23-DWG-UE-TTA-42301 to DP-4-23-DWG-UE-TTA-42310 of Volume 3A of this EIAR.

##### 18.4.4.2.1. Telecommunications

Aurora Telecom has no utility assets in the area between the Northern exit/entrance of Phoenix Park Tunnel and Glasnevin Junction. While there are a number of existing utility assets belonging to BT, EIR, and Virgin Media in this area, there are no predicted conflicts and therefore no diversions will be required for these utilities.

##### 18.4.4.2.2. Electricity

There are 24 no. ESB utility assets in this area. Diversions will be required for 3 of these ESB utility assets (ID: ESB-101, ESB-101a and ESB-122).

In addition, there are high voltage ESB cables that are strapped to the parapet of Cabra Road Bridge (OBO6). These cables will require additional investigation regarding potential electrical interference with the proposed OHLE equipment.

Details of the diversions required and the ESB utilities affected in this area are outlined in Volume 4, Appendix 18.1.

##### 18.4.4.2.3. Gas

While there are a number of existing utility assets belonging to GNI in this area, there are no predicted conflicts and therefore no diversions will be required for these utilities.

##### 18.4.4.2.4. Watermains and Sewers (Stormwater, Foul, Combined)

Irish Water have 17 utility assets in the area between the northern exit/entrance of Phoenix Park Tunnel and Glasnevin Junction. One conflict has been identified where an existing combined sewer pipe bridge (CS-105) that runs adjacent to Blackhorse Avenue Road Bridge (OBO4) is located within the vertical clearance for the proposed OHLE. Thus, a diversion will be required.

There are also 2 no. underground combined sewers (CS-101 and CS-102) at Cabra Road Bridge (OBO6) for which no diversion is required; a utility investigation survey confirmed that the current depths of the siphons are sufficiently low to avoid a conflict with lowered track levels.

Details of the diversions and the Irish Water sewer utilities affected in this area are outlined in Volume 4, Appendix 18.1 of this EIAR.

### 18.4.5. Evolution of the Environment in the Absence of the Project (Do Nothing)

Annex IV of the EIA Directive sets out the information required to be included in an EIAR. This includes ‘a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the Proposed Development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge’.

In the event that the proposed Project does not proceed, an assessment of the future baseline conditions has been carried out and is described within this section.

It is considered that a ‘Do Nothing’ scenario would result in no material alteration to the existing material assets utilities baseline other than localised alterations to the utilities/built services infrastructure as a consequence of residential, commercial or other developments and construction works being implemented through time.

## 18.5. Description of Potential Impacts

The construction and implementation of a significant rail project such as the DART+ South West Project in the urban and populous environment of Dublin will have considerable impacts on operational utilities intersecting the project’s route in the absence of any remedial or reductive measures. Consequential direct and indirect impacts as a result of the project’s construction have the potential to cause major disruptions to the operation of commercial properties, residential dwellings and the day to day activities of the general public. Potential impacts are listed below;

- Interruption to primary and health critical public utility services such as access to fresh drinking water, heating, electrical power and foul waste management services;
- Obstruction to communication assets such as fibre optic and telephone networks;
- Impacts on the safety of the general public and utility provider personnel, especially during works on high-pressure gas mains and high voltage electrical cables;
- Disruption to rail services;
- Disruption to general public traffic movements; and
- Damage to utility assets during works.

### 18.5.1. Potential Construction Impacts

Enabling works on utilities must be undertaken prior to any other works to maintain connections, or at least minimise downtimes, to public and private customers. Construction, excavation and relocation of services will disrupt utility infrastructure including in particular both overhead (OH) and underground (UG) electricity and telecoms cables, and UG watermains. In total, 67 conflicts were identified between the proposed Project and existing utility assets.

The main categories of conflict between the proposed Project and existing utilities included:

- Insufficient vertical clearance with OHLE clearance;
- Insufficient vertical clearance from track lowering and widening works;



- Proximity to proposed construction of retaining walls; and
- Proximity to proposed bridge reconstruction works.

As outlined in Section 18.1 the focus of this chapter is to present an assessment of the likely significant effects. The likely significance of effects is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e. the sensitivity or value of the utility asset). This assessment has identified four such utilities, which are as follows:

- ESB-15: Insufficient vertical clearance to proposed OHLE;
- ESB-13: proximity to proposed retaining walls and Le Fanu Road Bridge (OBC7) reconstruction;
- ESB-12: proximity to proposed retaining walls and Le Fanu Road Bridge (OBC7) reconstruction; and
- CS-09: insufficient vertical clearance from proposed track lowering works.

A summary of the impact assessment results is presented in Table 18.7 below.

**Table 18.7 Summary of Construction Impacts**

Magnitude of Impact	No. of Utilities	% of total
High	4	6
Medium	37	54
Low	28	41
Significance of Effects	No. of Utilities	% of total
Profound	0	0
Very Significant	0	0
Significant	4	6
Moderate	38	55
Slight	27	39
Not Significant	0	0
Imperceptible	0	0

Further detail of the utility conflicts expected to be encountered on the proposed Project (with its baseline rating, impact magnitude and significance of impact) and the recommended measures for each conflict as presented in the Volume 4, Appendix 18.1 of this EIAR.

## 18.5.2. Potential Operational Impacts

The implementation of the proposed Project will have impacts on the surrounding environment after construction and during operation. Substations providing power to the OHLE will need to be maintained to ensure the new DART line remains operational.

Any major utility infrastructure implemented in the reconfiguration of utilities to enable the Project will require periodical maintenance, such as foul pumping stations.

Any overhead assets (such as electrical cables) relocated underground for the Project will require different procedures by the utility provider in order to be maintained.

## 18.6. Mitigation Measures

This section describes the mitigation measures which are proposed to ameliorate, remediate or reduce the likely significant impacts from the proposed Project on Material Assets: Utilities.

### 18.6.1. Construction Phase

A Construction & Environmental Management Plan (CEMP) has been prepared and is included in Volume 4, Appendix 5.1 of this EIAR. The CEMP will be updated by the successful Main Contractor. The CEMP will set out the Contractor's overall management and administration of the construction project. It will be prepared by the Contractor during the pre-construction phase. The mitigation measures will be implemented by the appointed Main Contractor(s). These include the best practice measures as outlined below:

- Agreements have been put in place with various utility providers in order to maintain connections, or at least minimise downtimes, to public and private entities during the construction of the Project. These agreements include the provision of temporary diversions which will enable providers to reroute their service during non-peak periods to maintain connections to customers;
- All existing services will be located by the appointed contractor and confirmed with relevant utility providers using service records, GPR surveys and slit trenches to ensure that their position accurately identified before excavation works commence;
- Where works are required in and around known utility infrastructure, precautions will be implemented by the appointed contractor to protect the infrastructure from damage, in accordance with best practice methodologies in line with the requirements of the utility companies whose assets are present in the area, where practicable;
- Where diversions, or modifications, are required to utility infrastructure, service interruptions and disturbance to the surrounding residential, commercial and/or community property may be unavoidable. Where this is the case, it will be planned in advance by the appointed contractor. Required service interruptions will generally not be continuous for full days at a time. Prior to works commencing, advance notification will be given to all impacted properties (including vulnerable customers). This notification will include information on when interruptions and works are scheduled to occur and the duration of such interruption. Any required works will be



carefully planned by the appointed contractor to ensure that the duration of interruptions is minimised in so far as is practicable;

- Safety procedures will be put in place to minimise the risk to utility provider personnel and the general public during works on services. Protection measures during construction will include warning signs and markings indicating the location of utility infrastructure, safe digging techniques in the vicinity of known utilities, and in certain circumstances where possible, isolation of the section of infrastructure during works in the immediate vicinity;
- Traffic management plans will be implemented to minimise the effect of utility diversion works for commuters; and
- Collaboration with each utility provider will ensure safe practise when working on services and will minimise the time required for such works.

### 18.6.2. Operational Phase

- Substations providing power to the OHLE will need to be maintained to ensure the new DART line remains operational. The substations will be required to have unimpeded vehicular access 24 hours per day from the public road network for maintenance staff from both Iarnród Éireann and ESB Networks;
- The substation must be located at ground level in order to facilitate the installation or replacement of heavy electrical equipment; the immediate area around the substation should be level;
- Any major utility infrastructure implemented in the reconfiguration of utilities to enable the Project will require periodical maintenance, such as foul pumping stations; and
- Any overhead assets (such as electrical cables) relocated underground for the Project will require different procedures by the utility provider in order to be maintained. Collaboration with each utility provider will ensure their maintenance requirements have been considered and that the appropriate wayleaves have been put in place.

## 18.7. Monitoring

Electrical substations' output will be monitored during operation of the Project.

## 18.8. Residual Effects

The residual effects of mitigation measures detailed in Section 18.6 will ensure that customers will experience the least significant disruption or downtime to services while minimising the risk to safety associated with any works.

## 18.9. Cumulative effects

The cumulative assessment of relevant plans and projects is undertaken separately in Chapter 26 Cumulative Effects of this EIAR.

## 18.10. References

Environmental Protection Agency (EPA). (2022). *Guidelines of the Information to be contained in Environmental Impact Assessment Reports.*