Chapter 18
Material Assets

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18 MATERIAL ASSETS

18.1 Introduction

This Chapter of the EIAR identifies, describes and presents an assessment of the likely significant effects of BusConnects Galway: Dublin Road scheme (hereafter referred to as the Proposed Development) 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 (Proposed Development Description) of this EIAR.

The design of the Proposed Development has been developed to a stage where all potential environmental impacts can be identified, and a fully informed environmental impact assessment can be carried out. The contractor engaged to undertake the works will be responsible for finalising the design of the Proposed Development in compliance with the Employer's Requirements, including compliance with the requirements of the EIAR and Natura Impact Statement (NIS) (including all mitigation measures) and any development consent conditions. Minor modifications may be made to the current design at the detailed design stage to avail of opportunities to improve the design in the light of experience on the ground or other innovations. Any such minor modifications, however, will not give rise to any impacts which are more significant than those already identified and assessed in this EIAR.

During the Construction Phase, the potential material asset impacts associated with the development of the Proposed Development have been assessed. This has included both impacts on utilities and impacts arising from the importation of construction materials, which are required for construction activities such as utility diversions, road resurfacing and road realignments.

During the Operational Phase, the potential material asset impacts associated with changes in utility demand from new infrastructure associated with the Proposed Development have been assessed. The assessment has been carried out according to best practice and guidelines relating to material asset assessment, and in the context of similar large-scale infrastructural projects.

The design of the Proposed Development has evolved through comprehensive design iteration, with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst ensuring the objectives of the Proposed Development are attained. In addition, feedback received from the comprehensive consultation programme undertaken throughout the option selection and design development process have been incorporated, where appropriate

18.2 Methodology

Material assets are resources of both natural and human origin that have intrinsic value. The Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA EIAR Guidelines) (EPA 2022) discuss material assets as follows:

'In Directive 2011/92/EU this factor included architectural and archaeological heritage. Directive 2014/52/EU includes those heritage aspects as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils.'

The EPA EIAR Guidelines specifically list built services, roads and traffic, and waste management as topics which fall into the category of material assets. Further to this, the Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017) references buildings, other structures, mineral resources, and water resources as material assets. This EIAR includes separate chapters covering a number of those listed material assets and other material assets as follows:

- Roads and traffic – Chapter 6 (Traffic & Transport);
- Employment and land use assets – Chapter 10 (Population);
- Ecological assets – Chapter 12 (Biodiversity);
- Waterways, rivers, and streams – Chapter 13 (Water);
- Soils, lands, and mining or quarrying potential – Chapter 14 (Land, Soils, Geology & Hydrogeology);
- Cultural heritage assets – Chapter 15 (Cultural Heritage);
- Visual amenity assets – Chapter 16 (Landscape & Visual); and
- Waste management – Chapter 17 (Waste & Resources).

The focus of this Chapter is on built services, specifically:

- Major infrastructure and utilities; and
- Imported material, excluding the materials which are covered in Chapter 17 (Waste & Resources).

Major infrastructure includes items such as canals and railway lines interacting with the Proposed Development. Existing utility information has been collated from the utility service providers and utility (ground penetrating radar (GPR)) surveys have been carried out, as required.

From a design perspective, available records of all existing utilities within the Proposed Development 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.

Conservative estimates have been prepared of the quantities of materials that may be needed for construction to inform the impact assessment of the Proposed Development. For the purpose of this Chapter, imported materials includes materials which are sourced from outside the Proposed Development, namely the major construction materials (concrete granular fill / aggregate, asphalt, and structural steel). The impacts associated with the transportation of the material to the site have been considered within the assessments of construction traffic in Chapter 6 (Traffic & Transport), Chapter 7 (Air Quality) and Chapter 9 (Noise & Vibration).

18.2.1 Study Area

There are no guidelines or criteria to define the size of the study area for the assessment of Material Assets. The Material Assets 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 Development within both permanent and temporary land take boundaries.

18.2.2 Relevant Guidelines, Policy, and Legislation

This Chapter has been prepared in accordance with the following guidance:

- Guidelines on the Information to be Contained in Environmental Impacts Assessment Reports (EPA 2022);
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017); and
- Institute of Environmental Management and Assessment (IEMA) Guide to: Materials and Waste in Environmental Impact Assessment – Guidance for a Proportionate Approach (IEMA 2020).

18.2.3 Data Collection and Collation

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. The most up to date available records of all existing utilities have been collated to establish existing utilities (buried and overhead).

Existing utility information requested from utility companies and service providers:

- Galway City Council;
- Electricity Supply Board (ESB) Networks / EirGrid;
- Gas Networks Ireland (GNI);
- Uisce Éireann; and
- Telecommunications.

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 Identified within the Proposed Development

Type	Providers
Electrical Services (underground and overground)	ESB
Telecommunications	Siro
	Eir
	BT
	Virgin Media
	ENET
	National Broadband Ireland
	AURORA
	Titan
Watermains & Foul / Combined Sewers	Uisce Éireann
	Galway City Council
Gas Mains	Gas Networks Ireland
Signals, Public Lighting	Galway City Council

The types and quantities of the major materials which will need to be imported for the construction of the Proposed Development have also been established.

18.2.4 Appraisal Method for the Assessment of Impacts

The assessment of the potential impact of the Proposed Development on material assets has been undertaken having regard to the EPA EIAR Guidelines (EPA 2022). The following issues have been considered as part of the assessment of impacts:

- Potential for impacts on major infrastructure and public utilities and the need to adequately protect them during the Construction Phase;
- Requirement for connections to public utilities by the Proposed Development during both the Construction and Operational Phases; and
- Use of imported materials required for the construction of the Proposed Development.

Each impact has been categorised based on:

- Quality of the impact;
- Significance of the impact; and
- Duration of the impact.

The definition of these impact characteristics as per the EPA EIAR Guidelines is provided in Table 1-4 in Chapter 1 (Introduction) of this EIAR. These characteristics have been used to assess the quality and duration of all impacts.

Table 18-2 provides the significance criteria used to identify the significance of impacts on major infrastructure and utilities. For the purposes of assessing the impacts on major infrastructure and utilities, an impact is deemed to be not significant from a rating of Imperceptible to Moderate, and significant from Significant to Profound.

Table 18-2 Significance Criteria for Major Infrastructure and Utilities

Significance Level	Criteria
Profound	Where there is a continuous utility interruption of more than a week; Where additional demand on a utility would consume all remaining capacity; or Where there is a permanent disruption* of a major piece of infrastructure.
Very Significant	Where there is a continuous utility interruption of more than 48 hours; Where additional demand on a utility would significantly reduce the available capacity of that utility; or Where there is long-term disruption* of a major piece of infrastructure.
Significant	Where there is a continuous utility interruption of more than 24 hours; Where there is significant additional demand on a utility; or Where there is a medium-term disruption* of a major piece of infrastructure.
Moderate	Where there are discrete utility interruptions of no more than eight hours for up to seven consecutive days; Where the additional demand on a utility is relatively large; or Where there is a short-term disruption* of a major piece of infrastructure.
Slight	Where there are discrete utility interruptions of no more than eight hours for up to three days; Where additional demand on a utility is relatively small; or Where there is a temporary disruption* of a major piece of infrastructure.
Not Significant	Where there is a utility interruption of no more than eight hours on a single day; Where additional demand on a utility is quantifiable but is too small to have any impact on capacity; or Where there is a brief disruption* of a major piece of infrastructure.
Imperceptible	Where there is no utility interruption during diversion works;

Significance Level	Criteria
	Where additional demand on a utility has no material change; or Where there are minor changes on a major piece of infrastructure which has no material impact on its usability
*Disruption with respect to major infrastructure refers to the closure or significant reduction in usability of the infrastructure.	

For the significance of the impacts associated with imported materials, in addition to the EPA EIAR Guidelines (EPA 2022), the IEMA Guide to: Materials and Waste in Environmental Impact Assessment (IEMA 2020) (hereafter referred to as the IEMA Guidance) has been used. For materials, the sensitivity of the receptor (Table 18-3) and the magnitude of the impact (Table 18-4) are assigned and used to determine the significance of the impact (Table 18-5).

Table 18-3 Sensitivity Criteria for Materials (IEMA 2020)

Value	Description
	On balance, the key materials required for construction of a development …
Very High	Are known to be insufficient in terms of production, supply and / or stock; and / or Comprise no sustainable features and benefits compared to industry-standard materials*
High	Are forecast (through trend analysis and other information) to suffer from known issues regarding supply and stock; and / or Comprise little or no sustainable features and benefits compared to industry-standard materials*.
Medium	Are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock; and / or Are available comprising some sustainable features and benefits compared to industry-standard materials*.
Low	Are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock; and / or Are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials*
Negligible	Are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock; and / or Are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials*
*Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise of reused, secondary, or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.	

Table 18-4 Assessing Magnitude for Materials (IEMA 2020)

Value	Description
	The assessment is made by determining whether through a development, the consumption of …
Major	…one or more materials is >10% by volume of the regional* baseline availability;
Moderate	…one or more materials is between 6–10% by volume of the regional* baseline availability;
Minor	…one or more materials is between 1–5% by volume of the regional* baseline availability
Negligible	…no individual material type is equal to or greater than 1% by volume of the regional* baseline availability.
No Change	…no materials are required.

** or where justified, national.*

Table 18-5 Determining Significance for Materials (IEMA 2020)

Sensitivity (or Value) of Receptor	Magnitude of Impact					
		No Change	**Negligible**	**Minor**	**Moderate**	**Major**
	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Sight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Sight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

In accordance with the IEMA Guidance an impact is deemed to be significant if it has a significance level of Moderate, Large or Very Large, while Neutral or Slight are deemed to be not significant.

18.3 Baseline Environment

18.3.1 Overview

The Proposed Development is located in Galway City and extends along the Dublin Road from the east of Moneenageisha Junction to Doughiska Road Junction. The total distance is approximately 3.9km and includes areas such as Roscam, Doughiska, Murrough, Renmore, Merlin Park and Wellpark.

There are several utilities in place along and crossing the Proposed Development, the majority of which are buried within and along the roadways. These utilities include:

- ESB electricity lines (medium and low voltage) and associated infrastructure;
- Gas Networks Ireland gas mains (medium and low pressure) and associated infrastructure;
- Uisce Éireann potable water mains and associated infrastructure;
- Uisce Éireann sewer lines (foul and combined sewers) and associated infrastructure;
- Local Authority surface water drainage network and associated infrastructure;
- Titan, Siro, Aurora, EIR, ENET, BT, Virgin Media and National Broadband Ireland telecommunications lines and associated infrastructure; and
- Local Authority traffic signal ducting.

The following outlines the baseline environment with respect to material assets.

18.3.2 Major Infrastructure and Utilities

Table 18-6 lists the types of major infrastructure and utilities within the study area of the Proposed Development, along or crossing the Proposed Development. The majority of utilities are buried beneath the roads or footpaths, with a mixture of main trunk routes as well as branches off these main routes existing along the entire length of the Proposed Development. Aside from the listed utilities, there are no other major infrastructure items such as railway lines or canals within the Proposed Development

Table 18-6 Utilities Within the Proposed Development Study Area

Utility Provider	Service Type	Description
	Low Voltage Electricity	Overhead single-phase lines

Utility Provider	Service Type	Description
ESB		Overhead three-phase lines
		Underground
Gas Network Ireland	Medium Pressure Gas	32mm polyethylene pipe
Telecommunications	EIR	Underground cables and associated infrastructure
	Siro	Overhead cables and associated infrastructure
	Enet	Underground cables and associated infrastructure
	Titan	Underground cables and associated infrastructure
	Virgin Media	Underground cables and associated infrastructure
	BT	Underground cables and associated infrastructure
	Other Telecom and Fibre services	Underground cables and associated infrastructure
Uisce Éireann	Potable Water	Distribution mains of various diameters and materials, with supporting infrastructure such as valves and hydrants
	Sewer Lines	Foul sewer lines and associated infrastructure
		Combined sewer lines and associated infrastructure
Galway City Council	Surface Water Sewer Network	Surface water sewer networks and associated infrastructure
	Traffic Signals	Ducting for traffic signals and associated infrastructure

18.3.3 Imported Material

The quantities of material which are currently imported to the area covered by the Proposed Development under baseline conditions are low. Currently material is only imported as part of maintenance activities which are undertaken on the existing roadways, cycle lanes, footpaths, utilities and verges. These activities would largely involve repair of road, cycle lane and footpath surfaces, repainting of road markings, drainage maintenance and repair, utility works, landscaping and winter maintenance.

A report entitled Essential Aggregates: Providing for Ireland's Needs to 2040 (Irish Concrete Federation 2019) was published in 2019 which details and quantifies Ireland's natural aggregate reserves. At the time of publication of that report, Ireland had approximately 500 active large commercial quarries, approximately 220 ready mixed concrete plants, 20 large scale precast concrete plants and 40 plants producing bitumen bound road surfacing materials.

The Irish Concrete Federation quantifies the annual production of these materials in Ireland on their website, with the 2019 figures (the most recent available) being as follows:

- Five million cubic metres of ready-mixed concrete;
- 135 million concrete blocks;
- 38 million tonnes of aggregates;
- Two million tonnes of bituminous road surfacing materials; and
- Two million square metres of paving products.

18.4 Potential Impacts

This Section presents potential impacts that may occur due to the Proposed Development, in the absence of mitigation. This informs the need for mitigation or monitoring to be proposed (refer to Section 18.5). Predicted residual impacts taking into account any proposed mitigation is then presented in Section 18.6.

18.4.1 Major Infrastructure and Utilities

Construction of the Proposed Development has the potential to have an impact on existing infrastructure and utilities in order to accommodate changes to junction layouts or changes to carriageway widths. Where protection of utilities in place is not an option, this will involve realignment, upgrade or replacement of this infrastructure as part of the works within those areas. Each proposed modification to the existing infrastructure or utilities is outlined in this Chapter. Where utility diversions are proposed, the approximate length of the diversions is provided in Table 18-7 to Table 18-10. The potential impacts would occur predominantly during the Construction Phase.

During the Operational Phase, some utilities will be required for the Proposed Development. These will include electricity connections for such elements as new street lighting, junction signalling, storm water pumping stations, bike share stands, and real-time passenger information (RTPI) displays at bus stops. There will also be some amendments to existing surface water drainage to control and / or attenuate surface water runoff from any additional paved surfaces.

18.4.2 Imported Material

Material will be required to construct the Proposed Development. These materials will be comprised of standard construction materials, paving materials, landscaping materials, street furniture, paints, lighting, junction infrastructure materials and fill materials, as required. This Chapter covers the major materials needing to be imported to the site for the purposes of construction of the Proposed Development (i.e. concrete, granular fill / aggregate, asphalt and structural steel). Any materials arising from within the site which are to be reused within the Proposed Development (e.g. excavated soils) are assessed in Chapter 17 (Waste & Resources) of this EIAR.

18.4.3 Do Nothing Scenario

In the 'Do Nothing' scenario, the Proposed Development would not be implemented and there would be no changes to existing infrastructure or utilities as a result of the Proposed Development. Therefore, there would be a Neutral impact on infrastructure and utilities under the 'Do Nothing' scenario.

Similarly, with respect to imported material, the 'Do Nothing' scenario means that there is no requirement to import material for the construction of the Proposed Development. Therefore, this material is not consumed by the Proposed Development, and the impact under the 'Do Nothing' scenario is Neutral.

18.4.4 Construction Phase

18.4.4.1 Major Infrastructure and Utilities

The following outlines the key potential impacts on major infrastructure and utilities as a result of the Construction Phase of the Proposed Development. There are no other major infrastructure items such as railway lines or canals within the Proposed Development and are therefore do not form part of this assessment.

The main Construction Phase impacts will arise from the requirement to divert utilities. The proposed utility diversions are listed in Table 18-7 to Table 18-10. To the best of the engineering experience and judgement available and based on the available records and preliminary reasonable site investigations, it is expected that the utility diversion will be to the stated length. It is likely however that modifications to these proposed measures may be required at the detailed design / construction stage, and any such modifications (if required) will not give rise to any impacts which are any more significant than those already identified and assessed in this chapter and will not alter the summary of potential Construction Phase impacts presented in Table 18-12.

18.4.4.2 Electricity

The Construction Compound will require electricity to power any temporary office and welfare facilities during the Construction Phase. Power for the Construction Compound will be supplied through a connection

into the electricity network, or where this is unavailable, via generators. Temporary electricity provision for works areas along the Proposed Development to power items such as temporary lighting, temporary traffic signals and other construction equipment will be provided through generators, as required. The electricity demand during the Construction Phase is considered to be a Negative, Not Significant, Short-Term impact.

A number of interfaces between the existing electricity infrastructure and the Proposed Development have been identified, some of which will require diversion of the infrastructure as outlined in Table 18-7 and shown in drawing series BCGDR-BTL-UTL_UE-ZZ-DR-CU-00001 to 00011 in Volume 3 of this EIAR. As a result of these diversions there may be temporary local interruptions to the electricity provision during works on that infrastructure.

Table 18-7 Potential Major Electricity Infrastructure Diversions

Reference No.	Asset/Description of Work	Description of Work
G-UE-001	Proposed overhead diversion	41m overhead diversion
G-UE-002	Relocated pole	Pole to be relocated
G-UE-003	Proposed overhead diversion	48m overhead diversion
G-UE-004	Relocated pole	Pole to be relocated
G-UE-005	Relocated pole	Pole to be relocated
G-UE-006	Relocated Mini-Pillar	To be diverted to back of footway
G-UE-007	Proposed 125mm ducting	Proposed 125mm ducting
G-UE-008	Relocated pole	Pole to be relocated
G-UE-009	Proposed overhead diversion	38m overhead diversion
G-UE-010	Relocated Mini-Pillar	To be diverted to back of footway
G-UE-011	Proposed 125mm ducting	Proposed 125mm ducting
G-UE-012	Relocated pole	Pole to be relocated
G-UE-013	Proposed overhead diversion	68m overhead diversion
G-UE-014	Relocated pole	Pole to be relocated
G-UE-015	Proposed overhead diversion	20m overhead diversion
G-UE-016	Proposed Mini-Pillar	Proposed Mini-Pillar
G-UE-017	Proposed underground diversion	68m underground diversion
G-UE-018	Pole to be removed	Pole to be removed
G-UE-019	Proposed Mini-Pillar	Proposed Mini-Pillar
G-UE-020	Proposed Steel Pole	Proposed Steel Pole
G-UE-021	Relocated Mini-Pillar	To be diverted to back of footway
G-UE-022	Pole to be removed	Pole to be removed
G-UE-023	Proposed underground diversion (Twinned with G-UE-029)	189m underground diversion
G-UE-024	Pole to be removed	Pole to be removed
G-UE-025	Pole to be removed	Pole to be removed
G-UE-026	Proposed Mini-Pillar	Proposed Mini-Pillar
G-UE-027	Pole to be removed	Pole to be removed
G-UE-028	Pole to be removed	Pole to be removed

Reference No.	Asset/Description of Work	Description of Work
G-UE-029	Proposed underground diversion (Twinned with G-UE-023)	189m underground diversion
G-UE-030	Proposed Mini-Pillar	Proposed Mini-Pillar
G-UE-031	Pole to be removed	Pole to be removed
G-UE-032	Relocated Mini-Pillar	To be diverted to back of paved area

While electricity interruptions, if required, will generally only occur for a set number of hours per day (no more than eight hours where reasonably practicable), the exact number of interruption days for particular customers for each diversion cannot be ascertained at this stage so a worst-case scenario of up to a week has been assessed. Using the criteria as outlined in Section 18.2.4 and Table 18-2, where diversion of an electricity line is required which will result in the planned interruption of electricity provision, the worst-case potential impact will be Negative, Moderate and Temporary.

18.4.4.3 Water

The Construction Compound and construction areas will require a water supply for welfare facilities within the Construction Compound, as well as for dust suppression at certain construction areas where the conditions require it. The Construction Compounds will be connected into the local mains water supply where possible. Where a connection is not possible, water tankers will be used.

The potable water demand during the Construction Phase is considered to be a Negative, Not Significant and Short-Term impact.

A number of interfaces between the existing water infrastructure and the Proposed Development have been identified, some of which will require diversion of the infrastructure as outlined in Table 18-8 and shown in drawing series BCGDR-BTL-UTL_UW-ZZ-DR-CU-00001 to 00011 in Volume 3 of this EIAR. As a result of these diversions there may be temporary local interruptions to water provision during works on that infrastructure.

Table 18-8 Potential Major Water Infrastructure Diversions

Reference No.	Asset/Description of Work	Description of Work
G-UW-001	Existing 75mm Cast-Iron pipe	Lower and replace
G-UW-002	Existing 75mm Cast-Iron pipe	Lower and replace
G-UW-003	Existing 150mm Asbestos pipe	Lower and replace approx. 32m
G-UW-004	Existing 150mm Asbestos pipe	Lower and replace approx. 32m
G-UW-005	Existing Chamber	Relocate and replace Cover
G-UW-006	Existing 75mm Cast-Iron pipe	Replace
G-UW-007	Proposed diversion	Proposed diversion approx. length 176m
G-UW-008	Existing 250mm HPPE Duct	To be diverted into proposed footway
G-UW-009	Existing 250mm HPPE Duct	To be diverted into proposed grassed area
G-UW-010	Proposed diversion (Twinned with G-UW-025 & G-UW-026)	Proposed diversion approx. 630m
G-UW-011	Existing 75mm Cast-Iron pipe	Lower and replace approx. 29m

Reference No.	Asset/Description of Work	Description of Work
G-UW-012	Existing 250mm HPPE pipe	To be decommissioned
G-UW-013	Existing 150mm Cast-Iron pipe	To be decommissioned
G-UW-014	Existing 150mm Cast-Iron pipe	To be decommissioned
G-UW-015	Existing 150mm Asbestos pipe	To be decommissioned
G-UW-016	Existing 400mm Cast-Iron pipe	To be decommissioned
G-UW-017	Existing 400mm Asbestos pipe	To be decommissioned
G-UW-018	Proposed diversion	Proposed diversion approx. 79m
G-UW-019	Existing 150mm uPVC pipe	To be decommissioned
G-UW-020	Existing chamber	To be relocated
G-UW-021	Proposed diversion	Proposed diversion approx. 46m
G-UW-022	Existing 400mm Asbestos pipe	To be decommissioned
G-UW-023	Proposed diversion	Proposed diversion approx. 100m
G-UW-024	Proposed diversion	Proposed diversion approx. 44m
G-UW-025	Proposed diversion (Twinned with G-UW-010 & G-UW-026)	Proposed diversion approx. 630m
G-UW-026	Proposed diversion (Twinned with G-UW-010 & G-UW-025)	Proposed diversion approx. 630m
G-UW-027	Existing 400mm Asbestos pipe	To be replaced
G-UW-028	Existing 400mm Asbestos pipe	Depth unknown, to be determined on-site
G-UW-029	Existing 75mm uPVC pipe	Lower and replace approx. 25m
G-UW-030	Proposed diversion	Proposed diversion approx. 21m
G-UW-031	Existing pipe	To be diverted into footway. Material unknown.

While water interruptions, if required, will generally only occur for a set number of hours per day (no more than eight hours where reasonably practicable), the total number of interruption days for particular customers for each diversion cannot be ascertained at this stage, so a worst-case scenario of up to a week has been assessed. Using the criteria as outlined in Section 18.2.4 and Table 18-2, where diversion of a watermain is required which will result in the planned interruption of water provision, the worst-case potential impact will be Negative, Moderate and Temporary.

18.4.4.4 Wastewater and Surface Water Runoff

There will be wastewater and surface water runoff created by the Construction Compound and construction areas. Wastewater will be created by welfare facilities within the Construction Compound and construction areas, and surface water runoff will emanate from any areas of the Construction Compound and construction areas which are paved. The Construction Compound will be connected into the local foul / combined sewers where possible, or where not possible, will have on-site tanks for the collection of foul water which will be emptied by means of a suction tanker and the wastewater will be disposed of to a licensed wastewater treatment plant. Where required, temporary welfare facilities (for example portable toilets) will be used, which will be collected as required for offsite disposal of the wastewater to a suitably licensed facility.

The potential impact as a result of demand on the wastewater network during the Construction Phase is considered to be Negative, Not Significant and Short-term.

There have been no major interfaces identified between the Proposed Development and the existing wastewater network which will require any diversion works. Therefore, there will be no potential significant impact to the foul sewer network as a result of the construction of the Proposed Development.

There will be limited upgrade works required to the surface water drainage network to facilitate the changes to the road alignment and the impermeable surface area. Much of this work will involve the construction of new road gullies to align with the new kerb line. There will also be a number of Sustainable Drainage System (SuDS) measures installed where there is an increase in impermeable area proposed, namely online attenuation, tree pits and rain gardens, to control the flow of surface water. All surface water will continue to drain into existing networks and outfalls. Refer to Chapter 13 (Water) for further information on surface water drainage during the Construction Phase of the Proposed Development.

18.4.4.5 Gas

There will be no requirement for a connection to existing gas infrastructure during the Construction Phase of the Proposed Development. Therefore, it is predicted that there will be no significant impact associated with gas demand during the Construction Phase.

A single interface between the existing gas infrastructure and the Proposed Development has been identified, and which will require diversion of the infrastructure as outlined in Table 18-9 and shown in GNI Asset Alterations Drawings (BCGDR-BTL-UTL_UG-ZZ-DR-CU-00001) in Volume 3 of this EIAR. As a result of these diversions there may be temporary local interruptions to gas provision during works on that infrastructure.

Table 18-9 Potential Major Gas Infrastructure Diversions

Reference No.	Asset/Description of Work	Description of Work
G-UG-001	Proposed diversion	Proposed diversion approx. 73m

Using the criteria as outlined in Section 18.2.4 and Table 18-2, where diversion of a gas main is required which will result in the planned interruption of gas provision, the worst-case potential impact will be Negative, Moderate and Temporary.

18.4.4.6 Telecommunications

Telecommunications access will be required by the Construction Compound. The potential impact as a result of the demand on the telecommunications network during the Construction Phase is considered to be Negative, Not Significant and Short-Term.

A number of interfaces between the existing telecommunications infrastructure and the Proposed Development have been identified, some of which will require diversion of the infrastructure as outlined in Table 18-10 and shown in drawing series BCGDR-BTL-UTL_UL-ZZ-DR-CU-00021-00031 in Volume 3 of this EIAR. As a result of these diversions there may be temporary local interruptions to the telecommunications provision during works on that infrastructure.

Table 18-10 Potential Major Telecommunications Infrastructure Diversions

Reference No.	Asset/Description of Work	Description of Work
G-UT-001	EIR - Existing Duct	Proposed Concrete Surround
G-UT-002	EIR - Existing Chamber	Proposed Chamber rebuilt and Cover replaced
G-UT-003	EIR - Existing Chamber	Proposed Chamber rebuilt and Cover replaced
G-UT-004	EIR - Existing Chamber	Proposed Chamber to be relocated
G-UT-005	EIR - Existing Duct	Proposed Concrete Surround

Reference No.	Asset/Description of Work	Description of Work
G-UT-006	EIR - Existing Chamber	Proposed Chamber to be relocated
G-UT-007	EIR - Existing Chamber	Proposed Chamber to be relocated
G-UT-008	EIR - Existing Duct	Proposed Concrete Surround
G-UT-009	EIR - Existing Duct	Proposed Concrete Surround
G-UT-010	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-011	EIR - Existing Chamber	Proposed Chamber to be relocated
G-UT-012	EIR - Existing Duct	Proposed Concrete Surround
G-UT-013	EIR - Existing Duct	Proposed Concrete Surround
G-UT-014	EIR - Existing Duct	Proposed Concrete Surround
G-UT-015	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-016	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-017	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-018	EIR - Existing Duct	Proposed Concrete Surround
G-UT-019	EIR - Existing Duct	Proposed Concrete Surround
G-UT-020	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-021	Virgin Media - Existing Chamber	Area to be surveyed for existing services
G-UT-022	EIR - Existing Duct	Proposed Concrete Surround
G-UT-023	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-024	EIR - Existing Duct	Proposed Concrete Surround
G-UT-025	Virgin Media - Zone of Works	Depth of existing services to be determined
G-UT-026	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-027	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-028	BT - Existing Duct	Steel plate protection
G-UT-029	EIR - Existing Duct	Proposed Concrete Surround
G-UT-030	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-031	BT - Existing Duct	Steel plate protection
G-UT-032	EIR - Existing Duct	Proposed Concrete Surround
G-UT-033	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-034	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-035	BT - Existing Duct	Steel plate protection
G-UT-036	EIR - Existing Chamber	Existing Chamber & Cover to be rebuilt
G-UT-037	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-038	EIR - Existing Duct	Proposed Concrete Surround
G-UT-039	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-040	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-041	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-042	EIR - Existing Duct	Proposed Concrete Surround
G-UT-043	BT - Existing Duct	Steel plate protection

Reference No.	Asset/Description of Work	Description of Work
G-UT-044	EIR - Existing Duct	Proposed Concrete Surround
G-UT-045	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-046	BT - Existing Duct	Steel plate protection
G-UT-047	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-048	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-049	BT - Existing Duct	Steel plate protection
G-UT-050	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-051	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-052	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-053	EIR - Existing Duct	Proposed Concrete Surround
G-UT-054	EIR - Existing Duct	Proposed Concrete Surround
G-UT-055	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-056	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-057	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-058	EIR - Existing Duct	Proposed Concrete Surround
G-UT-059	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-060	EIR - Existing Duct	Proposed Concrete Surround
G-UT-061	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-062	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-063	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-064	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-065	EIR - Existing Chamber	Existing Cover to be replaced
G-UT-066	EIR - Existing Duct	Proposed Concrete Surround
G-UT-067	EIR - Existing Duct	Proposed Concrete Surround
G-UT-068	EIR - Existing Duct	Proposed Concrete Surround
G-UT-069	EIR - Existing Chamber	Existing Chamber to be rebuilt
G-UT-070	EIR - Existing Chamber	Existing Cover to be relocated
G-UT-071	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-072	ENET - Existing Duct	Proposed Concrete Surround
G-UT-073	ENET - Existing Duct	Proposed Concrete Surround
G-UT-074	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-075	EIR - Existing Chamber	Existing Chamber to be relocated
G-UT-076	ENET - Existing Duct	Proposed Concrete Surround
G-UT-077	ENET - Existing Duct	Proposed Concrete Surround
G-UT-078	ENET - Existing Chamber	Existing Cover to be replaced

While telecommunications interruptions, if required, will generally only occur for a set number of hours per day (no more than eight hours where reasonably practicable), the total number of interruption days for

particular customers for each diversion cannot be ascertained at this stage, so a worst-case scenario of up to a week has been assessed. Using the criteria as outlined in Section 18.2.4 and Table 18-2, where diversion of a telecommunications line is required which will result in the planned interruption of telecommunications provision, the worst-case potential impact will be Negative, Moderate and Temporary.

18.4.4.7 Imported Material

The Construction Phase will require the importation of a number of key construction materials for the Proposed Development works. This material will include items such as concrete, granular fill / aggregate, asphalt and structural steel. For a full description of the Construction Phase, refer to Chapter 5 (Construction) of this EIAR. An assessment of the climate impact from the carbon associated with these materials is included in Chapter 8 (Climate) of this EIAR. Table 18-11 provides a conservative estimate of the quantities of the major materials required to complete the Construction Phase of the Proposed Development.

Table 18-11 Conservative Quantity Estimates of Major Construction Materials Required by the Proposed Development

Material	Estimated Quantity (tonnes)
Asphalt	10,490
Granular Material	18,088
Concrete	9,480

The quantities of material listed in Table 18-11 represents a very small proportion of the Irish quantities manufactured per year as outlined in Section 18.3.3. The estimated quantity of concrete required represents less than one percent of the total quantity produced in Ireland per annum. Similarly, assuming the aggregate composition of asphalt is 90-95% and concrete is 60-80%, the estimated total aggregate quantity required by the Proposed Development represents less than one percent of the total aggregate quantity produced in Ireland per annum.

Importation of material to the Proposed Development site will be carried out throughout the Construction Phase, with different materials being required at different times. The main direct impacts associated with the importation of construction materials arises from the gathering / manufacture of the materials, as well as the fact that once the materials are used within the Proposed Development, they are no longer available for other uses. There will also be impacts associated with the importation of materials through the requirement of heavy goods vehicles (HGVs) for the delivery of the material and the use of materials.

Impacts are covered in more detail in Chapter 6 (Traffic & Transport), Chapter 7 (Air Quality), Chapter 8 (Climate), and Chapter 9 (Noise &Vibration) of this EIAR, where relevant.

As the materials required for the Construction Phase of the Proposed Development are generally readily available, the sensitivity of the material will be Low. As the quantities of the materials required constitute less than one percent of the quantities produced per annum in Ireland, the magnitude of the impact will be Negligible. Therefore, the potential impact associated with the imported materials will be Negative, Slight and Long-Term.

18.4.4.8 Construction Phase Impact Summary

Table 18-12 provides a summary of the potential impacts on material assets associated with the Construction Phase of the Proposed Development.

Table 18-12 Summary of Potential Construction Phase Impacts

Assessment Topic	Potential Impact
Major Infrastructure and Utilities	
Electricity Demand	Negative, Not Significant, Short-Term
Electricity Interruption	Negative, Moderate, Temporary
Water Demand	Negative, Not Significant, Short-Term
Water Interruption	Negative, Moderate, Temporary
Wastewater Demand	Negative, Not Significant, Short-Term
Wastewater Interruption	No significant impact
Gas Demand	No significant impact
Gas Interruption	Negative, Moderate, Temporary
Telecommunications Demand	Negative, Not Significant, Short-Term
Telecommunications Interruption	Negative, Moderate, Temporary
Imported Material	
Use of Imported Material	Negative, Slight, Long-Term

18.4.5 Operational Phase

The main impacts on major infrastructure and utilities will be associated with the Construction Phase. However, there will be some demand on utilities by the Proposed Development once operational. These impacts are outlined in the following sections.

18.4.5.1 Electricity

Once the Proposed Development is operational, electricity will be required to power such elements as street lighting, junction signalling, storm water pumping stations, bike share stands and RTPI displays. Power for these types of equipment will be supplied via power cables which connect the equipment to an electricity supply cabinet.

The anticipated impact on electricity demand during the Operational Phase will be Negative, Imperceptible and Long-Term.

18.4.5.2 Water Usage

The Proposed Development will not require any water to operate. Therefore, there is no significant Operational Phase impact anticipated on water infrastructure as a result of the Proposed Development.

18.4.5.3 Wastewater and Surface Water Runoff

Once the Proposed Development is constructed, the hardstanding surface area will have increased in some places due to the widening of carriageways and the construction of cycle infrastructure and footpaths. This larger surface area will result in additional surface water runoff. Drainage upgrades and SuDS measures have been included as part of the design of the Proposed Development to attenuate any additional runoff. There will therefore be no significant Operational Phase impacts anticipated on surface water drainage infrastructure. Impacts on water courses and water quality as a result of any potential increase in surface water runoff through existing outfalls is covered in Chapter 13 (Water) of this EIAR.

The Proposed Development will not require any foul sewer connection to operate. Therefore, there will be no significant Operational Phase impact anticipated on foul sewer infrastructure as a result of the Proposed Development.

18.4.5.4 Gas

The Proposed Development will not require any gas connection to operate. Therefore, there will be no significant Operational Phase impact anticipated on gas infrastructure as a result of the Proposed Development.

18.4.5.5 Telecommunications

Once the Proposed Development is operational, telecommunications links will be required for equipment such as traffic signal controllers, and for RPTI displays at bus stops and on bus information apps. Generally, this equipment will be connected to the local fibre optic cable network via ducting connected to fibre cabinets. In the case of the real time bus information, cellular communications (3G / 4G / 5G) will be provided. This type of infrastructure is already in operation along the Proposed Development route. Therefore, any additional telecommunications requirements by any new infrastructure will be minimal.

Therefore, the anticipated impact on telecommunications demand during the Operational Phase will be Negative, Imperceptible and Long-Term.

18.4.5.6 Imported Material

Materials will be required during the Operational Phase for maintenance of the infrastructure. This will include repair of roadway, cycleway, and footway surfaces, as well as repair of street furniture (including bus shelters and poles), and landscaping. However, as the Proposed Development largely involves the upgrade and alteration of the existing roadway, the majority of material required for maintenance of the Proposed Development would have already been required for the maintenance of the existing roadways in the absence of the Proposed Development. Therefore, the change in quantities of materials which will be required for the maintenance of the Proposed Development will be very small.

As the materials required for the Operational Phase of the Proposed Development are generally readily available, the sensitivity of the material will be Low. As the quantities of the material required for maintenance will be lower than the quantities required for the Construction Phase and therefore constitute less than one percent of the quantities produced per annum in Ireland, the magnitude of the impact will be Negligible. Therefore, the potential impact associated with the imported materials will be Neutral and Long-Term.

18.4.5.7 Operational Phase Impact Summary

Table 18-13 provides a summary of the potential impacts on material assets associated with the Operational Phase of the Proposed Development.

Table 18-13 Summary of Potential Operational Phase Impacts

Assessment Topic	Potential Impact
Major Infrastructure and Utilities	
Major Infrastructure	No significant impact
Electricity	Negative, Not Significant, Long-Term
Water Usage	Moderate impact, Long-Term
Wastewater	No significant impact
Surface Water Runoff	No significant impact
Gas	No significant impact
Telecommunications	Negative, Imperceptible, Long-Term
Imported Material	
Use of Imported Material	Neutral, Long-Term

18.5 Mitigation and Monitoring Measures

The following Section outlines the measures which will be adhered to in order to ensure that there are no significant impacts on material assets during the Construction and Operational Phases of the Proposed Development. No monitoring measures are considered to be required for material assets.

18.5.1 Construction Phase

The Proposed Development has been designed to minimise the impact on major infrastructure. This includes the avoidance of interactions with major utility infrastructure where possible. Where there are interfaces with existing utility infrastructure, the appointed contractor will ensure that protection is in place or diversions will be carried out to prevent long-term interruption to the provision of the affected services.

All possible precautions will be taken by the appointed contractor to avoid unplanned interruptions to any services during the Construction Phase of the Proposed Development. Proposed utility works are based on available records, and preliminary site investigations. Prior to excavation works being commenced, localised confirmatory surveys will be undertaken by the appointed contractor to verify the results of the pre-construction assessments undertaken and reported in this EIAR. 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 and the requirements of the utility companies, where practicable. 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.

Consultation has been undertaken with the major utility companies regarding the design, potential interfaces and measures required to protect or divert the infrastructure which is interfacing with the Proposed Development design. All utility companies for which diversions are proposed will continue to be consulted when designing any diversions to ensure that proposed diversions conform to the utility provider's requirements, where practicable, and to ensure that service interruptions are kept to a minimum.

Where diversions, or modifications, are required to utility infrastructure (as listed in Section 18.4.4), 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 only occur for a set period of time per day (a set number of hours not exceeding eight hours where reasonably practicable) and will generally not be continuous for full days at a time. Prior notification will be given to all impacted properties. 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.

18.5.1.1 Imported Material

The Proposed Development has been designed to minimise the amount and extent of major construction works required, and therefore minimise the quantities of construction materials required. The majority of the Proposed Development will require minimal intervention, being comprised of localised road widening, lane reconfigurations, road marking layout changes, resurfacing works and construction of segregated cycle tracks.

Consideration will be given to the sustainability of material being sourced for the construction of the Proposed Development by the appointed contractor.

In so far as is reasonably practicable, materials required for the construction of the Proposed Development will be sourced locally to reduce the amount of travelling required to get the material to the site. Key issues to be considered when sourcing materials for the Construction Phase will include the source, the material specification, production and transport costs, and the availability of the material. Only quarries which are

included in Local Authority quarry registers will be used by the appointed contractor to source any quarried material.

Construction materials will be managed on site by the appointed contractor in such a way as to prevent over-ordering and waste.

Materials will be stored in appropriate storage areas or receptacles to reduce the potential for damage requiring replacement. 'Just-In-Time' ordering principles will be implemented by the appointed contractor where practicable to reduce the potential for over-ordering.

18.5.2 Operational Phase

Due to the measures which are included within the design and the fact that impacts are anticipated to be minimal, there are no specific mitigation measures necessary during the Operational Phase. The predicted post mitigation impact is therefore unchanged as summarised in Table 18-15.

18.6 Residual Impacts

18.6.1 Construction Phase

Due to the fact that impacts are anticipated to be minimal and mitigation measures are largely inherent in the design of the Proposed Development, the predicted post mitigation impacts are unchanged as summarised in Table 18-14.

Table 18-14 Summary of Predicted Construction Phase Impacts Following the Implementation of Mitigation Measures

Assessment Topic	Potential Impact (Pre-Mitigation)	Predicted Impact (Post Mitigation)
Major Infrastructure and Utilities		
Electricity Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
Electricity Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
Water Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
Water Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
Wastewater Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
Wastewater Interruption	No significant impact	No significant impact
Gas Demand	No significant impact	No significant impact
Gas Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
Telecommunications Demand	Negative, Not Significant, Short-Term	Negative, Not Significant, Short-Term
Telecommunications Interruption	Negative, Moderate, Temporary	Negative, Moderate, Temporary
Imported Material		
Use of Imported Material	Negative, Slight, Long-Term	Negative, Slight, Long-Term

There will be no significant residual impacts on major infrastructure and utilities or as a result of imported material during the Construction Phase.

18.6.2 Operational Phase

Due to the measures which are included within the design and the fact that impacts are anticipated to be minimal, there are no specific mitigation measures necessary during the Operational Phase. The predicted post mitigation impact is therefore unchanged as summarised in Table 18-15.

Table 18-15 Summary of Predicted Operational Phase Impacts Following the Implementation of Mitigation Measures

Assessment Topic	Potential Impact (Pre-Mitigation)	Predicted Impact (Post Mitigation)
Major Infrastructure and Utilities		
Major Infrastructure	No significant impact	No significant impact
Electricity	Negative, Not Significant, Long-Term	Negative, Not Significant, Long-Term
Water Usage	No significant impact	No significant impact
Wastewater	No significant impact	No significant impact
Surface Water Runoff	No significant impact	No significant impact
Gas	No significant impact	No significant impact
Telecommunications	Negative, Imperceptible, Long-Term	Negative, Imperceptible, Long-Term
Imported Material		
Use of Imported Material	Neutral, Long-Term	Neutral, Long-Term

There will be no significant residual impacts on major infrastructure and utilities or as a result of imported material during the Operational Phase.

No significant residual impacts have been identified either in the Construction or Operational Phases of the Proposed Development, whilst meeting the Proposed Development objectives set out in Chapter 1 of this EIAR.

18.7 References

Environmental Protection Agency (EPA) (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

European Commission (EC) (2017). Environmental Impact Assessment of Projects - Guidance on the Preparation of the Environmental Impact Assessment Report.

Institute of Environmental Management and Assessment (IEMA) (2020). IEMA Guide to: Materials and Waste in Environmental Impact Assessment - Guidance for a Proportionate Approach.

Irish Concrete Federation (2019). Essential Aggregates Providing for Ireland's Needs to 2040.

Irish Concrete Federation (2020). Industry at a Glance [Online]. Available from: www.irishconcrete.ie/industry-at-a-glance/

Directives and Legislation

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

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.