

Planning Application to An Bord Pleanála in Respect of a Strategic
Infrastructure Development
(A proposed Electricity Transmission Development)

**Non-Technical Summary of
Environmental Impact Assessment Report**

**Proposed 220kV Substation and Transmission Line,
Cruiserath, Dublin 15**

Prepared by
AWN Consulting
March 2020

NON-TECHNICAL SUMMARY

1.0 INTRODUCTION

This is the non-technical summary of an Environmental Impact Assessment (EIA) Report which has been prepared on behalf of Amazon Data Services Ireland Ltd (ADSIL) (herein referred to as 'the Applicant') to accompany a planning application to An Bord Pleanála (ABP) for planning permission for the provision of a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation along with associated and ancillary works.

EirGrid will be the transmission system operator (TSO). ESB Networks will be the transmission asset owner (TAO).

Figure 1.1 presents a site layout plan showing the route of the proposed underground transmission line, the proposed GIS substation, the 49kVA underground cable installation and the proposed cable bays.

The proposed route of the 49kVA underground cable installation is shown in Figure 1.2.

A full description of the Proposed Development is provided in Chapter 2 (Description of the Proposed Development).

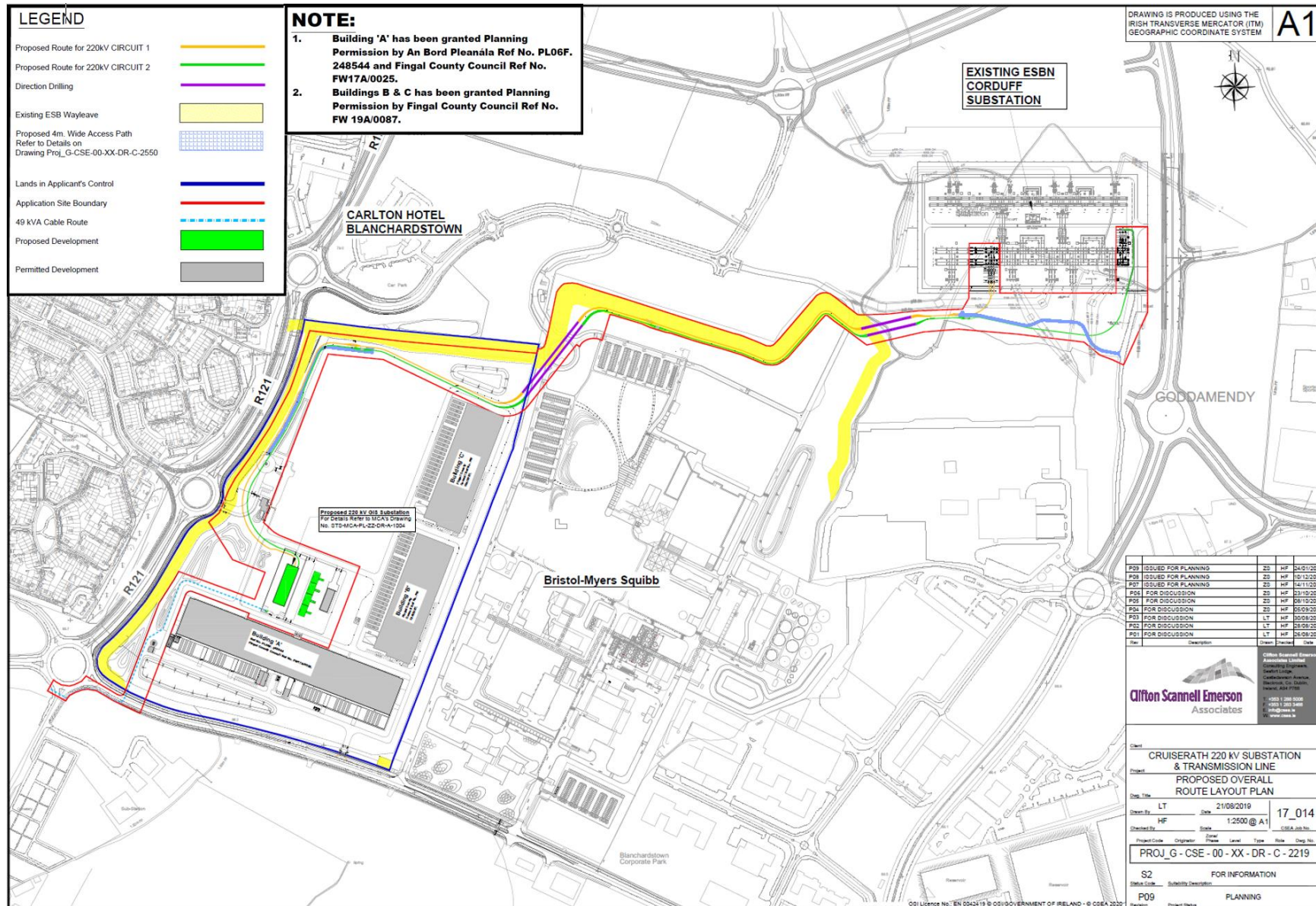


Figure 1.1 Proposed site layout plan illustrating red line boundary (Source: Clifton Scannell Emerson Associates, January 2020)

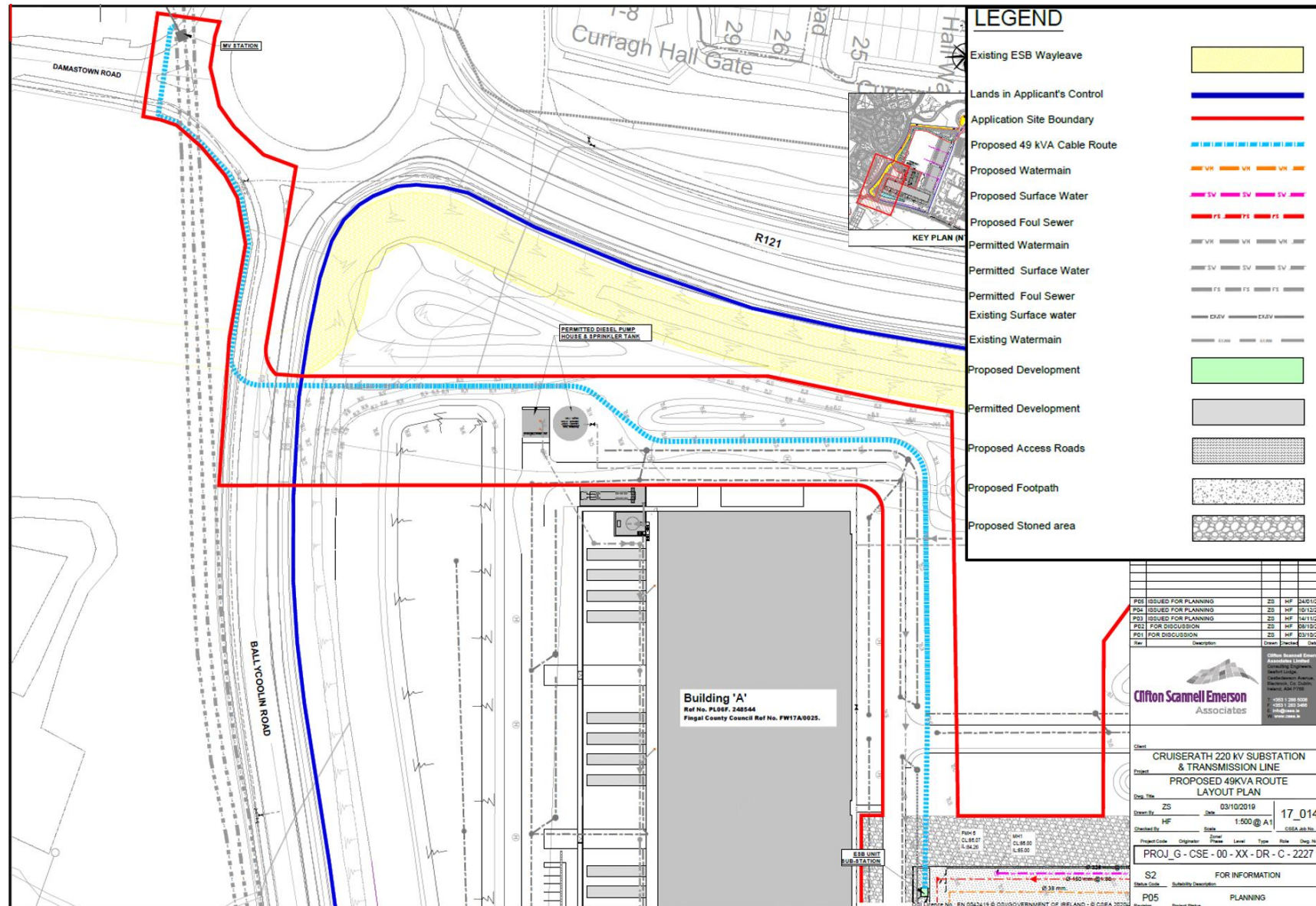


Figure 1.2 Proposed Route of 49kVA Underground cable (Source: Clifton Scannell Emerson Associates, January 2020)

Requirement for an EIA

The EIA Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II). With regard to Annex II projects, Member States can choose to apply thresholds or use case by case examination or a combination of both to assess where EIA is required. In Ireland, a combination of both has been applied. The Proposed Development is not listed under Annex I EIA Directives. An EIA Report has been provided as the Proposed Development is required to provide the permanent power supply for the permitted data storage facility developments, i.e. Buildings A, B and C (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025 and FCC Planning Ref. FW19A/0087) and the permitted developments required an EIA Report to accompany the planning applications.

This EIA Report has been prepared in accordance with the requirements of the 2014 EIA Directive (2014/52/EU) and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. It is prepared in the Grouped Format Structure as set down in the Environmental Protection Agency (EPA) Draft “Guidelines on the Information to be Contained in Environmental Impact Assessment Reports” (2017). In general, the EIA Report follows the framework presented in the EPA Draft “Advice Notes for Preparing Environmental Impact Statements” (2015).

The Operator

The Applicant provides data storage, management and dissemination. To date, the Applicant has developed a number of data facilities in Ireland and are a significant Irish employer.

EirGrid operates the transmission system (TSO) while ESB Networks carries out construction, maintenance, and repairs (TAO) under the direction of EirGrid. For this development, EirGrid will operate transmission stations, including the existing Corduff substation and the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf. Eirgrid and ESB Networks are committed to running their businesses in the most environmentally friendly way possible.

Consultation

The Applicant met with ABP to confirm the Proposed Development was a SID application and to discuss the scope for the planning application. Consultation has also been undertaken with Eirgrid and ESB Networks to ensure the Proposed Development design meets their requirements.

In addition, the relevant specialists and project engineers (CSEA) have liaised with typical statutory bodies (including FCC, NPWS etc.) by correspondence during the course of the EIA Report preparation.

AWN Consulting Limited (hereafter referred to as AWN) and the other respective EIA contributors have incorporated advice and comments received from consultees into the relevant chapters of this EIA Report.

Regulatory Control

The proposed transmission of electricity is not an EPA regulated activity in terms of the Industrial Emissions Directive (Directive 2010/75/EU) (which replaced the IPPC directive).

The TSO and TAO will ensure the relevant regulatory requirements relating to power activities are met.

Contributors to the EIA Report

The preparation and co-ordination of the EIA Report has been completed by AWN Consulting in conjunction with specialist subcontractors. The role and responsibility of each contributor, their qualifications and relevant experience are detailed in Chapter 1 (Introduction) of the EIA Report.

2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

Site Location & History

The Proposed Development comprises a new 220kV GIS substation (also referred to as Building D), an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation which is located to the northeast of the proposed substation site, west of the Corduff Road, which also serves the nearby industrial areas. The Proposed Development also includes associated and ancillary works. The site of the Proposed Development has an area of c. 12.39 hectares.

The proposed 220kV GIS substation and significant portion of the underground 220kV transmission line and the underground 49kVA cable installation are to be located on a greenfield site located bounded to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Hollywood Road in Dublin 15. The lands surrounding the Proposed Development are currently undeveloped, but are subject to two existing planning permissions (under FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) for the development of a data storage facility to the south of the substation site (referred to as Building A) and (under FCC Planning Ref. FW19A/0087) for the development of two data storage facilities to the east of the substation site (referred to as Buildings B and C). The estimated length of the 220kV cable route is c. 1.8km.

The proposed cable bays are to be installed at the extant Corduff substation located west of the Corduff Road.

The first section of the 49kVA cable installation route travels east away from the existing Tyrrelstown Cross Unit Sub, where it crosses Church Road. The route then continues north east onto the south side of Cruiserath Road along the arc path between Church Road and Cruiserath Road at the roundabout junction of Cruiserath Road, Church Road, Damastown Avenue, Powerstown Road and the R121. From here, it travels north across Cruiserath Road before travelling east for a distance of approximately 50 metres. From here, the route turns north into the permitted Building A site, where it continues to the proposed GIS substation compound. The estimated length of the 49kVA cable route is c. 470m.

The design of the underground 220kV transmission line will comprise a double 220kV circuit installed underground in high-density polyethylene (HDPE) ducting. The 220kV cables will be a standard XLPE (cross-linked polyethylene) copper cable. XLPE does not contain oil, therefore there is no risk of migration of oil into the ground in the event of a failure (such as a short circuit, a joint fail, a termination failure etc.). These types of failures

would not have the potential to result in a perceptible environmental impact. The installation of the HDPE ducting will require the excavation of two trenches along the route; each containing one 220kV circuit. The trench will typically run parallel to each other along the length of the route, the separation of the 2 circuits will vary from 4m to c. 8m the separation is depending on the existing ground conditions and existing underground services. The optimum depth of excavation required to facilitate installation of the ducting, as specified by CSEA, is 1.21m below ground level but may increase to up to c. 3.5m at utility crossings. The typical width of each trench is 1.02m, however this may vary depending on ground conditions and existing services. Between five and ten separate ducts will be installed in each trench. Crossing through northern portion of BMS lands, ducting is to be installed by way of horizontal directional drilling in two sections; one at the west boundary where a route passes under existing services and roundabout, and the other under a drainage ditch at the east boundary bordering with the Corduff substation site.

The design of the 49kVA underground cable will comprise a looped 10kV circuit installed underground in HDPE ducting. The 10kV cables will be a standard XLPE (cross-linked polyethylene) Aluminium cable. XLPE does not contain oil, therefore there is no risk of migration of oil into the ground in the event of a failure (such as a short circuit, a joint fail, a termination failure etc.). The installation of the HDPE ducting will require the excavation of one trench along the route; the trench will contain one 10kV circuits. Between two and four separate ducts will be installed the trench. The optimum depth of excavation required to facilitate installation of the ducting is 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of each trench is c.0.6m, however this may vary depending on ground conditions and existing services.

A summary of the proposed target dates (earliest possible dates) for the Proposed Development are as follows:

- Application for Planning Permission – February 2020
- Commence Site Construction works (subject to grant of planning permission) – End of Q3 2020
- Completion of Construction and Commissioning – Q1 2022

Existence of the Project

Under the current Draft EPA Guidelines on the information to be contained in EIA Reports, the description of the existence of the project is required to define all aspects of the proposed lifecycle of the Proposed Development under the following headings:

- Construction;
- Commissioning;
- Operation;
- Changes to the Project; and
- Description of Other Developments.

Each chapter of the EIA Report assesses the potential impact of the construction and operation of the Proposed Development on the receiving environment and summaries of the impacts and effects are detailed under the specific headings below:

Construction

It is estimated that the civil and commissioning works will take approximately 16 - 18 months. In general, the impact of the construction period would be short-term in nature.

In general, the civil works element of work will require between 15 - 20 (average) and 30 (peak) staff. It is proposed that the accesses and haul roads for vehicles, the contractors' compound and fencing that have been established for the construction of the permitted development will be utilised for the Proposed Development. This construction compound will facilitate office, portable sanitary facilities, equipment storage, parking etc. for the duration of the works.

Contractors will be required to submit and adhere to a method statement and a Construction Environmental Management Plan (CEMP). Reinstatement will be as current, i.e. grassed in greenfield areas and hardstand along paved and road areas.

The primary potential effects from construction are all temporary effects less than one year) and are anticipated to include;

- Effects in terms of nuisances relating to the air quality of the environs due to dust and other particulate matter generated from excavation works,
- Effects on the noise environment due to plant and equipment involved in construction.
- Effects on traffic management.

Each chapter of the EIA Report assesses the potential impact of the construction and operation of the Proposed Development on the receiving environment and summaries of the impacts and effects are detailed below.

A Schedule of Mitigation measures to be implemented as part of the Proposed Development has been included as part of the EIA Report (Appendix 1.1).

Commissioning

Once the construction of the Proposed Development is completed, ESB Networks will be mobilised to complete the commissioning. Commissioning will be carried out over a period of months. Commissioning works primarily involve a suitably qualified individual connecting the relevant cables to a switchgear within the substations. Following this, energisation can take place.

Operation

EirGrid will be the transmission system operator (TSO) and ESB Networks will be the transmission asset owner (TAO). EirGrid will operate transmission stations, including the existing Corduff substation and the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf.

The TAO will undertake operational activities from the substations with only interim inspections along the underground 220kV transmission line and 49kVA cable installation.

Changes to the Project

The lifespan of the Proposed Development is not defined but it is anticipated that it will be maintained, and periodic upgrading undertaken over a long lifetime to meet future demand and upgrade in technology.

If the GIS substation is no longer required over the long term, then full decommissioning in accordance with prevailing best practice will be undertaken.

Retirement of any cables will involve decoupling the cable from the switchgear. An excavation pit of approximately 10m² will then be established. The cable to be retired will

be identified within this excavation pit and spiked (to ensure that decoupling from the switchgear has been successful and the cable is not live). The cable will then be cut and capped to protect the exposed cable. The excavated pit can be reinstated using the excavated material, with no import of fill required. The retired cable can remain in situ in the ground, with the potential for it to be returned to operation should it be required in the future.

Descriptions of Other Developments

A list of the other developments in the vicinity of the Proposed Development including the proposed aviation fuel line amongst others is provided in Chapter 3 Planning and Alternatives of this EIA Report.

Sustainability, Energy Efficiency and Resource Use

Eirgrid and ESB Networks are committed to running their businesses in the most environmentally friendly way possible. The ESB Group has identified energy efficiency as a strategic priority within its Brighter Future strategy. ESB Group is a commercial semi-state-owned company (95% state-owned) and is committed to supporting and being exemplar in the delivery of Ireland's 2020 public sector targets. These targets, outlined in the fourth National Energy Efficiency Action Plan (2017 – 2020) (NEEAP), include an energy efficiency target of 33% for the public sector.

Major Accidents/Disasters

The 2014 EIA Directive and associated Draft EPA EIA Guidelines (2017) and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, require that the vulnerability of the project to major accidents and/or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.) is considered in the EIA Report. The site has been assessed in relation to the following external natural disasters; landslides, seismic activity, volcanic activity and sea level rise/flooding. The potential for major accidents to occur at the site of the Proposed Development has also been considered with reference to Seveso/Control of Major Accident Hazards (COMAH) Regulations. No significant effects were identified.

3.0 PLANNING AND DEVELOPMENT CONTEXT

The site for the Proposed Development is situated within the administrative area of Fingal County Council, and therefore the Planning and Development Framework with which the development complies is defined by the Fingal Development Plan 2017 – 2023. The Proposed Development will be located substantially within lands Zoned HT: High Technology. The proposed transmission cable routes traverse 5 no. different land use zonings; GE – General Employment, RS – Residential, CI – Community Infrastructure, OS – Open Space, and HT – High Technology.

The Proposed Development will provide the power supply needed to support the permitted data storage facility developments (Buildings A, B and C, as detailed in Chapter 2) as well as indicative future power requirements within the overall landholding (which will be subject to separate planning applications and EIA, as detailed in Chapter 2).

As part of the assessment of the impact of the Proposed Development, account has been taken of developments that are currently permitted or under construction within the immediate environs of the proposed route for the transmission cable, including Blanchardstown Corporate Park, other neighbouring industrial parks and surrounding areas. The FCC Planning Department website was consulted, and permissions granted within the previous five years (since January 2014) were examined.

The Proposed Development will be in keeping with all of the aspects of the relevant policy documents (as set out in Chapter 3) and FCC's stated policies and objectives to conserve, protect and enhance the environmental resources and assets of the region will not be contravened by the Proposed Development as described in the relevant chapters within the EIA Report.

Alternatives

EIA legislation and the prevailing EPA Draft Guidelines (August 2017) and best practice require that EIA Reports consider 'alternatives' for projects with regard to their environmental effects addressing:

- Do Nothing Alternative;
- Alternative project locations;
- Alternative designs/layouts;
- Alternative processes; and
- Alternative mitigation measures.

Do Nothing Alternative

In the event that the Proposed Development does not proceed, the permitted data storage facilities developments (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025 and FCC Reg. Ref. FW19A/0087), once constructed, would be left without a permanent power supply. An application has been made to FCC (Reg. Ref. FW19A/0177) for the provision of an interim power supply for Building A. This interim power supply is designed to provide an interim power supply to Building A (i.e. this power supply only has capacity to power a limited number of data halls within Building A, and no capacity to provide power to Buildings B or C). The permanent power supply is designed to provide the full power requirement of Buildings A, B and C to facilitate the full operation of these developments as well as the potential future indicative development of three additional data storage facilities within the overall landholding. Without the permanent power supply that the Proposed Development will provide, Buildings A would only operate at a fraction of its capability, and Buildings B and C could not operate at all, until such a time as another application is made and permission granted for an alternative permanent power supply for these developments.

Alternative Project Locations

GIS Substation

The location of the proposed substation was made with respect to the overall masterplan for the data storage facility site (please refer to drawing AWS-MCA-00-XX-DR-A-2003 submitted with the planning application for Building A). This masterplan was subsequently updated and submitted with the planning application for Buildings B and C (please refer to drawing ADGBC-MCA-00-ZZ-DR-A-1004 submitted with the planning application for Buildings B and C). In both iterations of the masterplan, the location of the proposed substation has remained unchanged, as the proposed location is deemed to be the most logical location on the site for such a development. Currently, three data storage facilities detailed in the indicative site masterplan have been granted planning permission (i.e. Buildings A, B and C) with construction on Building A having begun in Q3 2019. It was not deemed practicable or necessary therefore, to consider an alternative location for the proposed substation during this assessment.

220kV Transmission Line Route

The assessment of the alternative routes for the 220kV transmission line considered three route options for the 220kV transmission line as follows:

- Option 1 – Via Public Road Tyrellstown
- Option 2 – Proposed Route via existing ESB Wayleave
- Option 3 – Via Cruiserath Road and Church Road

Option 2 was deemed to be the most suitable location for the 220kV transmission line. With Option 3 the proposed 220kV route ducting would need to be installed in very close proximity to the existing 110kV circuits. Due to their close proximity, it is very likely that this would lead to derating of the existing underground circuits. It was therefore deemed at the route selection stage that this route was not viable.

There were no environmental constraints which would preclude development of either route Option 1 or Option 2. A review of relevant environmental criteria by each specialist show a preference for Option 2 based on temporary impacts during construction.

This is primarily due to the greater distance of the Option 2 route from sensitive residential receptors and road users (Option 2 is c. 90m from sensitive residential receptors and c. 45m from roads at its closest point; Option 1 is located on the road, and is c. 50m from sensitive residential developments at its closest point). It is noted that standard mitigation measures are available to minimise impacts on these receptors (as detailed in Chapters 8 and 9), with the exception of higher waste removal required for Option 1.

49kVA Route

The assessment of the alternative routes for the 49kVA cable installation considered the proposed route from the Tyrrelstown Cross substation and an alternative route from the same substation. The alternative route travels away from the existing Tyrrelstown cross substation, it crosses the R121 and travels east along Damastown Avenue for c. 0.5km. From here it enters the permitted Building A site on the eastern side of the R121 roundabout adjacent to the Powerstown National School, turning north before entering the site from the south where it continues within the curtilage of the Building A site to the proposed GIS substation compound. The proposed route is more direct and as such it is shorter and requires less road crossings. In terms of environmental effects of the route options, it was considered that proposed route was preferred as it would require less works in the public domain, with a shorter construction duration.

Cable Bays

The location of the proposed cable bays at the Corduff substation was deemed to be the most suitable owing to the existing infrastructure present at the Corduff substation.

Alternative Design/Layouts

The proposed GIS substation is designed based on requirements stipulated by the Operator. The design of the substation units is centred around the equipment requirements of the Operator that are required to provide an efficient and safe service. From a “design and layout” point of view, therefore, the flexibility to select alternative designs and layouts was not available to the Applicant.

Alternative design options for the 220kV transmission cable and the 49kVA cable installation that were considered included above overhead lines. By their very nature, above overhead lines require corridors to run in which must be clear of all other development. In the case of the 49kVA cable installation, a corridor 12m would be required. This would effectively sterilise the land in this corridor, precluding any future development occurring within the corridor for the duration of the lifetime of the development. In the case of the 220kV transmission line, it was determined that an overhead line was not technically feasible, as there currently exists no standard solution to provide a capacity of 220kV using an overhead line.

Two single circuit underground cables were considered rather than a double circuit underground cable in the design of the 220kV transmission line. However, the double circuit underground cable was chosen as it enables more power to be transferred over a particular distance and requires less land to do so – minimising ecological and visual impacts of the project and reducing installation costs.

The design of the cable bays is based on the Operators mandatory specifications.

Alternative Processes

This section typically examines the project processes in relation to likely emissions to air and water, likely generation of waste and likely effect on traffic to determine the process that is least likely to impact on these parameters.

The underground 220kV transmission line and the 49kVA cable installation will become an integral part of the national high voltage electricity grid which is currently operated by ESB Networks. As such the underground cable installations must meet ESB Network's strict specifications to ensure it will be seamlessly absorbed into the national grid infrastructure and can provide a reliable power supply. From a "process design" point of view, therefore, the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant.

The ESB Networks specifications for auxiliary power supplies (i.e. the 49kVA cable installation) are set out in Document Reference: XDS GFS 08 001 R2 *Functional Specification Station Auxiliary Power Supplies*.

In terms of the proposed processes, the proposed GIS substation and new cable bays will employ the same electricity generation and transmission processes that are used by the Operator at their other facilities in Ireland and represents the most up-to-date and state of the art processes currently available. As appropriate, alternative processes are considered on an ongoing basis by the Operator as a part of each of their operations based on many factors including technical feasibility, environmental impact, efficiency, security, reliability and cost. Therefore, from a "process design" point of view, the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant.

Conclusions on Alternatives

The selected route for the 220kV transmission line was deemed to be most suitable route for the Proposed Development from an engineering perspective taking into account access to land, cost and environmental effects. During construction the proposed 220kV route (similar to the alternative route assessed i.e. Option 1) will have a **temporary, neutral** and **imperceptible to not significant** environmental effect. It is noted that the proposed route and the alternative route considered (i.e. Option 1) were considered to have a **neutral, imperceptible, long-term** environmental effect during the operational phase.

The selected route for the 49kVA cable installation was deemed to be most suitable route for the Proposed Development from an engineering perspective taking into account access to land, cost and environmental effects. During construction the proposed 49kVA route (similar to the alternative route assessed) will have a **temporary, neutral** and **imperceptible** environmental effect. It is noted that the proposed route and the alternative route considered (i.e. Option 1) were considered to have a **neutral, imperceptible, long-term** environmental effect during the operational phase.

The design of the proposed GIS substation and new cable bays have been selected with due regard to minimising the environmental and visual impact once in situ. The selection

of the design has been constrained to the standard specifications required by Operator for connection to the national grid.

In conclusion, it is considered that the Proposed Development and design is the most suitable choice to provide the support required to meet the power requirements of the permitted developments and potential future indicative developments.

4.0 POPULATION AND HUMAN HEALTH

This chapter evaluated the impacts, if any, of the Proposed Development on population and human health with specific focus on Employment, Human Health and Amenity. Human health in this context is addressed through a review of expected effects on air quality and climate, noise and vibration and traffic.

There will be a temporary, imperceptible, positive effect on local business with the presence of c. 15 – 30 construction workers using local facilities during the construction phase. There will be a positive, long term impact during the operational phase in terms of increased available electricity supply, to facilitate future potential industrial activities. In this context, it will have a positive effect in terms of potential to sustain and facilitate increased employment and also increased housing/accommodation demand for potential future workers who wish to locate in the area.

The main potential impacts on human beings and human health associated with the Proposed Development will be during the construction stage. Mitigation measures, such as dust management, noise management and traffic management, will be put in place during construction of the Proposed Development which will ensure that the impact of the Proposed Development complies with all EU ambient air quality legislative limit values (see Chapter 8), which are based on the protection of human health and noise limits (see Chapter 9) meet adopted noise limit values which are based with due consideration of the effect on human health. The impact of construction of the Proposed Development is likely to be short-term and imperceptible with respect to human health. There will be no impacts during operation.

In terms of traffic, the predicted impact of the development on human beings and in particular road users will be **short-term, negative** and **not significant** for the construction phase and **long-term, neutral** and **imperceptible** for the operational phase. Any significant construction works will take place outside of main commuter hours and at worst case a single lane carriageway will remain operational. There is no predicted impact during operation. Mitigation measures will be put in place, including night-time and weekend works, to minimise impacts on traffic flow during the construction phase (see Chapter 12).

Overall, it is expected that the Proposed Development will have a positive and long-term impact on the immediate hinterland through facilitating additional power supply to fuel future industrial and commercial activity which in turn results in increased employment opportunities and the associated economic and social benefits.

5.0 LAND, SOILS, GEOLOGY AND HYDROGEOLOGY

The chapter assesses and evaluate the potential impacts to land, soils, geology and hydrogeology during the construction and operational phases of the Proposed Development.

The natural undisturbed subsoil has been classified as limestone till. This is the dominant subsoil type in the region and is a glacial deposit which has a low permeability, no continuous water table and provided excellent protection to the underlying bedrock limestone aquifer.

Inspection of the available GSI maps show that the bedrock geology underlying the site belongs to three formations: TC - Tober Colleen Formation consisting of calcareous shale and limestone conglomerate; RU - Rush Conglomerate Formation comprising conglomerate, shale, and limestone; and LU - Lucan Formation consisting of 'Calp' limestone (i.e. sequences of dark grey massive limestones, shaley limestones, and massive mudstones). Local site investigations in March 2016 confirmed the presence of weathered Limestone/Shale bedrock encountered from 0.3 - 2.0 mbgl (meters below ground level) with the average depth indicated as 1.8 mbgl.

The GSI currently classifies the aquifer vulnerability in the region of the site as High (H) in the western section and High (H) to extreme (E) in the eastern section (refer Figure 5.5). Based on trial pits from local site investigations undertaken as part of the application for the permitted data storage facility development (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025), overburden thickness was confirmed as up to c. 2m deep. Based on GSI mapping overburden depth increases further to the west and thins to the north east.

Based on the NRA methodology (refer Appendix 5.1), the criteria for rating site importance of hydrogeological features, the importance of the hydrogeological features at this site is rated as **Low Importance**. This is based on the assessment that the attribute has a low-quality significance or value on a local scale. The aquifer is a poorly productive bedrock aquifer over part of the site and moderately productive only in local zones for the remainder of the site and is not used for public water supply or generally for potable use. Furthermore, based on the regional and site-specific information available the type of Geological/Hydrogeological Environment as per the IGI Guidelines is *Type A – Passive geological/hydrogeological environment*.

Shallow cut and fill will be required to facilitate construction of the substation and the installation of the 220kV transmission line and 49kVA cable installation. Excavations are required for installation of the transmission line and 49kVA cable installation. The average cut depth for the installation of the transmission line will be 0.75m bgl but may increase up to approximately 3m in places. It is estimated that approximately 24,300m³ of topsoil/subsoils will be excavated to facilitate construction of the Proposed Development. Excavation of soil during trenching for the cable works. Local removal and reinstatement (including infilling) will not change the overall vulnerability category for the Proposed Development as the excavations are localised and shallow in depth

Based on the expected inflows within the shallow sediments, no significant dewatering will be required during the construction phase. There may be localised pumping of surface water from shallow excavations during and after heavy rainfall events. Any surface water run-off will be adequately contained and treated prior to being discharged into the drainage network, which has the capability of supporting the additional water.

Based on the natural conditions present and with appropriate mitigation measures (see Section 5.6) to reduce the potential for any impact of accidental discharges to ground during this phase, the potential impact on land soils, geology and hydrogeology during construction are considered to have a short-term, imperceptible significance, with a neutral impact on quality. There are no likely significant impacts on the land, geological or hydrogeological environment during operation. As such the impact is considered to have a long-term, imperceptible significance with a neutral impact on quality.

6.0 HYDROLOGY

The chapter evaluates the potential impacts on the surrounding hydrological environment during the construction and operational phases of the Proposed Development.

The area is drained by the Mooretown Stream and other associated tributaries of the River Tolka. The route of the 220kV transmission line crosses a land drain associated with the Mooretown Stream. It is proposed to cross this land drain via horizontal directional drilling (HDD).

A Stage 1 Flood Risk Assessment was completed. The assessment identified no flood hazards for the Proposed Development. The development resides within Flood Zone C (suitable for this type of development) and is not at risk of flooding from a 1% or 0.1% AEP event.

There is no significant dewatering anticipated during the construction works due to the shallow depth of the excavations required. As such the only pumping required may be for collected stormwater run-off in any open excavations.

There will be no additional hard standing from the installation of the 220kV transmission line and 49kVA cable installation as the trenches will be reinstated to what was present before works. There will be a slight increase in local overall hardstand from the construction of the substation. The permitted drainage system formed part of the planning application for the permitted data storage facility (Building A) and is intended to service that development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) and the Proposed Development. This SuDs was initially designed to accommodate surface water drainage from the Proposed Development, as it was originally included as part of the planning application.

Containment measures planned will minimise the risk of release of solid/ liquid material spillages to the water environment. Containment measures will include storage of fuels on site in bunded containers or compartments. The design of all bunds will conform to standard bunding specifications - BS EN 1992-3:2006, *Design of Concrete Structures – Part 3: Liquid retaining and containment measures*.

To further minimise risk to water quality, mitigation measures are planned during the construction work. These include compliance of contractors with a Construction Environmental Management Plan (CEMP) including management of silty water, management of any accidental local spills from construction vehicles and management of run-off during works in the vicinity of the land drain associated with the Mooretown Stream. By maintaining these distances and the employment of best practice methods it is anticipated to avoid local pollution of the Mooretown Stream. As such the predicted impact will be **short term, imperceptible** and **neutral** during construction.

During operation there is no likely impact on receiving water bodies. Therefore, the assessed impact is **long term imperceptible** and **neutral**. As there is no overall change in the existing hydrological regime, the potential cumulative impact with respect to water and hydrology is deemed to be **not significant**.

7.0 BIODIVERSITY

This chapter provides an assessment of the impacts of the Proposed Development in question on the ecological environment, i.e. flora and fauna. The subject site is located at Cruiserath Road, Dublin 15. The site is bound to the south by the R121 / Cruiserath Road,

to the west by undeveloped greenfield lands, to the north by undeveloped land and Cruiserath Drive and to the east by the Bristol Meyers Squibb (BMS) facility.

The land to the east of the Proposed Development site comprises the suburban environment of Tyrrelstown. The land to the south is developed for light industry and technology.

There are no rare or protected habitats recorded in the study area. The site may be considered of Low Local Ecological Value. There are no predicted significant impacts on local ecology.

None of the qualifying habitats or species of the European sites occur under the footprint of the proposed works areas.

There is no connectivity with the River Tolka. There will be no indirect impacts on the European sites in North Dublin Bay.

The Proposed Development will have no predicted impacts on European sites, therefore cumulative impacts can be ruled out.

The development is located in an area of low local ecological value and, as such, is predicted to have a **neutral** and **imperceptible** effect on biodiversity.

8.0 AIR QUALITY AND CLIMATE

This chapter evaluates the impacts which the Proposed Development may have on air quality & climate.

Air Quality

In terms of the existing air quality environment, data available from similar environments indicates that levels of particulate matter less than 10 microns and particulate matter less than 2.5 microns (PM₁₀/PM_{2.5}) are, generally, well within the National and European Union (EU) ambient air quality standards.

An assessment of the potential dust impacts as a result of the construction phase of the Proposed Development was carried out based on the UK Institute of Air Quality Management (IAQM) guidance. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property and human health effects. The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: earthworks, construction and track out (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust impacts.

Once mitigation measures, such as dust and traffic management, are implemented the impacts to air quality during the construction of the Proposed Development are considered, temporary and not significant, posing no nuisance at nearby sensitive receptors (such as local residences).

As the proposed cables will be underground once completed, there are no potential impacts to air quality during the operational phase.

Climate

Based on the scale and temporary nature of the construction works, the potential impact on climate change and transboundary pollution from the construction of the Proposed Development is deemed to be temporary and not significant in relation to Ireland's

obligations under the EU 2020 target. There is no impact during operation as there are no emissions from the Proposed Development.

Human Health

The best practice dust mitigation measures that will be put in place during construction of the Proposed Development will ensure that the impact of the Proposed Development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the Proposed Development is likely to be short-term and imperceptible with respect to human health. The proposed cables will be underground and will have no impact air quality in relation to human health once operational. In addition, the proposed substation does not have the potential for any emissions which could impact air quality in terms of human health during operation.

Mitigation Measures

A dust minimisation plan will be implemented during the construction phase of the Proposed Development to ensure that no significant dust nuisance occurs outside the site boundary, measures include the development of a documented system for managing site practices with regard to dust control, monitoring and assessment of dust. No mitigation is required during operation.

Residual Impacts

If the mitigation measures outlined in this assessment are implemented, there will be no residual impacts of significance on air quality or climate from the construction or operational phases of the Proposed Development.

9.0 NOISE AND VIBRATION

This chapter assesses the anticipated noise and vibration impact associated with the Proposed Development at nearby noise sensitive locations.

The existing noise climate has been surveyed at nearby noise sensitive receptors over the course of typical day and night-time periods. Road traffic movements, both distant and local, were noted as the most significant source of noise during both daytime and night-time periods.

When considering a development of this nature, the potential noise and vibration impact on the surroundings must be considered for each of two distinct stages: the short-term impact of the construction phase and the longer-term impact of the operational phase.

During the construction phase of the Proposed Development there will be some impact on nearby noise sensitive properties due to noise emissions from site activity and traffic. The application of noise limits and limits on the hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. The resultant impact is ***slight, negative and short-term***.

In relation to the operational phase it is concluded that there will be no significant noise emissions from the operation of the cable installations or 220kV substation and associated cable bays. The resultant vibration impact is ***imperceptible, neutral and long-term***.

No significant sources of vibration will be present during the operational phase. There are therefore no predicted vibration impacts at neighbouring dwellings during the

operational phase. The resultant vibration impact is *imperceptible, neutral* and *long-term*.

10.0 LANDSCAPE AND VISUAL

The Proposed Development will consist of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

The lands are the subject of a number of data storage facility developments, including Building A (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025) for a data storage facility towards the southern part of the lands and site perimeter landscaping, and also Buildings B and C (FW19A/0087) for two further data storage facilities along the eastern part of the lands.

The proposed GIS substation compound will be located towards the centre of the overall site, north of permitted Building A, and west of permitted Buildings B and C.

The Proposed Development will be located substantially within lands zone **Zoned HT: High Technology** in the Fingal County Development Plan, with the objective to... *Provide for office, research and development and high technology / high technology manufacturing type employment in a high quality built and landscaped environment that extends westwards as far as the R121 and to the north and south of the Cruiserath Road.*

Construction of the proposed GIS Substation building will commence after commencement of Building A on the lands and will give rise to intensification of construction activity and emerging structures within the lands but will not be prominent from public roads adjoining the lands. It will be screened by the emerging Building A from the southerly direction, and substantially screened by the existing perimeter landscaping from the west. Landscape and visual effects during construction will be range from slight/not significant to significant/moderate, and from neutral to negative, as construction activity, including cranes and the emergence of new structures alters the existing environment. On completion however, landscape and visual effects will be reduced and range from slight/not significant to moderate, and from neutral to negative, and the completed development is established and consistent with emerging development on and in the vicinity of the overall lands.

Installation of the underground cables will be localised and mostly within the development site and the adjoining third party lands and will not give rise to any significant landscape or visual effects. Where the 49kVA cable traverses the Cruiserath and Church Road, there

will be temporary localised, temporary, slight and neutral landscape and visual effects during construction, but no significant residual landscape or visual effects.

In summary, the Proposed Development is well-sited, in-keeping with the established / envisaged uses permissible with the land use zoning. The lands are not considered to be visually significant or sensitive, and the development will not give rise to significant landscape or visual impacts from the immediate or surrounding areas, either during construction, in operation or of a residual nature.

11.0 ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

This chapter assesses the predicted impacts of the Proposed Development on archaeological, architectural and cultural heritage using a number of sources including the Record of Monuments and Place, the Fingal County Council Development Plan 2017-2023, the National Inventory of Architectural Heritage, the topographical files of the National Museum of Ireland, the Excavations Database, cartographic and documentary sources.

There are no impacts on recorded archaeological, architectural or cultural heritage sites associated with the Proposed Development and no sites of archaeological potential were noted during the field survey. However, the site has not been subject to significant development in the past and it is possible that subsurface archaeological features survive.

The following mitigation measures are recommended:

Archaeological testing will be required at the site of the GIS substation and at the site where the route crosses the boundary between the townlands of Cruiserath and Goddamendy.

Archaeological monitoring will be required in areas where open cut methodologies will be used to excavate the cable trench.

Should archaeological features or material be uncovered during archaeological testing or any phase of construction, ground works should cease immediately and the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht should be informed. Time must be allowed for a suitably qualified archaeologist to inspect and assess any material. If it is established that archaeologically significant material is present, the National Monuments Service may require that further archaeological mitigation be undertaken.

Please note that the recommendations given here are subject to the approval of the National Monuments Service, Department of the Culture, Heritage and the Gaeltacht.

12.0 TRAFFIC AND TRANSPORTATION

This chapter assesses the traffic impact the Proposed Development will have on the surrounding road network during construction and operation. The Proposed Development comprises a 220kV Gas Insulated Switchgear (GIS) Substation, an underground double circuit 220kV cable installation, an underground 49kVA cable installation, and 2 no. cable bays.

The proposed 220kV cable installation will provide a connection from the existing ESNB Corduff 220kV Substation to the proposed Cruiserath GIS 220kV Substation.

The proposed 49kVA cable installation will provide a connection from an existing unit substation at the Tyrellstown Cross roundabout to the proposed Cruiserath GIS 220kV Substation.

The surrounding road network in the vicinity of the Proposed Development includes the R121, the N2, the N3, and the M50.

Public transport services are provided locally, with 2 no. Dublin Bus services operating within the vicinity of the site.

The potential impacts of the Proposed Development has been considered for both the construction and operational stages based on Transport Infrastructure Ireland (TII) guidelines set out in the Traffic & Transport Assessment Guidelines (2014).

12 hour traffic surveys were conducted at the following junctions on Thursday 21st March 2019 between 7am and 7pm:

- Roundabout of R121, Boulevard Bealing Village Access and Main Site Access (Site Access applicable to development case scenarios only);
- Roundabout of Cruiserath Road, Church Road, Damastown Avenue, Powertown Road, and R121; and
- Roundabout of Cruiserath Road, Ballycoolin Road, Corduff Road, and Blancharstown Road North.

The likely traffic generation of the Proposed Development during the construction phase was estimated based on contractor experience of similar Substation works and underground cable installation works, taking into account the scale of the substation and the length of underground cables to be installed, also noting that the underground cable routes are mostly off-road.

It is likely that the construction of the Proposed Development would take place over a period of approximately 16 - 18 months from the commencement of construction for site development works, with a peak construction trip generation of 30 return vehicular trips per day.

Given the temporary nature of the peak construction phase, the overall impact of the construction phase is considered **short-term, negative** and **not significant**.

Following completion of the Proposed Development, the worst case scenario trip generation across all aspects of the development (i.e. the GIS Substation, Transformers, 220kV cable, 49kVA cable, and cable bays), are associated with the Cruiserath 220kV substation, with the worst case scenario trip generation for the GIS substation occurring during the annual maintenance operation.

Maintenance works will be conducted annually on each cubicle of the GIS substation and would take a maximum of 15 days (120 hours). Vehicular trips would typically be in the order of two light vehicle trips during peak hours (2 vehicles entering the site in the AM peak and 2 vehicles exiting the site in the PM peak) during this period.

Therefore, the worst-case scenario operational trip generation of the Proposed Development is in the order of two light vehicle trips entering and existing the site during the AM and PM peak hours.

Therefore, the impact of the operational phase of the development was found to be **long-term, neutral** and **imperceptible**, with the development's operational traffic volumes

significantly below the thresholds stated in the TII Guidelines for Traffic and Transport Assessments, 2014 for junction analysis.

It is proposed to provide 6 car parking spaces outside the Cruiserath 220kV substation building during the operational phase of development to facilitate maintenance operations.

13.0 MATERIAL ASSETS

This chapter evaluates the impacts, if any, which the Proposed Development may have on Material Assets. The Draft EPA EIA Guidelines (2017) state that material assets are now taken to mean built services and infrastructure, roads and traffic and waste management. The EPA Draft Advice Notes for Preparing Environmental Impact Statements (2015) also give the following examples of material assets; assimilative capacity of air, ownership and access and tourism. In the EIA Report, the impacts on the various material assets described above have been considered in the following chapters of this EIA Report as follows:

- Chapter 4 Population and Human Health;
- Chapter 8 Air Quality & Climate;
- Chapter 12 Traffic & Transportation; and
- Chapter 14 Waste Management.

This chapter assesses ownership and access, built services and infrastructure.

Ownership and Access

The site of the Proposed Development as described in Chapter 2 Description of the Proposed Development is under the following ownership:

- GIS Substation and significant portion of the 220kV transmission line route is within lands owned by the Applicant.
- The 220kV transmission line continues along the ESB wayleave through the northern portion of the neighbouring BMS site.
- The 'greenfield' lands for the remaining portion of the 220kV transmission line route and the 2 no. cable bays at the existing Corduff substation are owned by the Operator (ESB Networks).
- The portion of the 49kVA cable installation route within the public domain are owned by FCC.

Letters of consent, to apply for development on the lands have been obtained from BMS, ESB Networks and FCC and are included with the planning application.

The main access to the GIS substation compound will be via a new access-controlled entrance from the R121 roundabout to the west of the site which will be constructed as part of the permitted Building A development. The overall permitted Building A development site will be fully secured with a 3m high security fence, CCTV and surveillance systems. An additional access point is also proposed to the south of the site, primarily for construction access. There is good visibility on approach to both access points as detailed in Chapter 12 Traffic and Transportation.

Power and Electrical Supply

The availability of power is a key consideration in site selection for the permitted data storage facility developments of Buildings A, B and C. One of the key reasons the site

was chosen for the permitted developments was the relative proximity to the Corduff substation.

Planning permission has recently been granted by FCC to ESB Engineering & Major Projects for 6MVA and 23MVA underground cable installations which are designed to support interim power demand for Building A (FCC Planning Ref. FW19A/0177).

In this instance the nature of the Proposed Development ensures that rather than utilising electricity, the Proposed Development will ensure continuity of supply of electricity to the permitted developments and potential development of the future indicative buildings to the north of the GIS substation.

Telecommunications

It is planned that a fibre optic cable distribution network will be installed for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544).

Water Supply, Stormwater & Foul Drainage

There is an existing 500mm diameter IDA watermain in the south east corner of the overall landholding, which is fed from mains water supply. The permitted Building A development includes a connection to this watermain.

There is an existing 900mm diameter connection to the IDA surface water drainage system under the R121 in the south east corner of the overall landholding of the permitted development. The IDA surface water network was originally sized to accommodate future development of the area and has sufficient capacity to accommodate run-off from the proposed GIS substation site.

An existing IDA foul drainage network is available along the R121 which services the adjacent Blanchardstown Corporate Park and transports sewerage to the main treatment works at Ringsend Wastewater Treatment Plant (WWTP). There is an existing 375mm diameter connection to this foul drainage network in the south eastern corner of the overall landholding.

The water supply, surface water drainage system and foul drainage system for the permitted Building A development were designed to accommodate water and drainage demand from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate water and drainage demand for the Proposed Development which will be minimal.

14.0 WASTE MANAGEMENT

This chapter evaluates the impacts, if any, which the Proposed Development may have on waste during construction. There are no likely impacts during operation.

An assessment was carried out of the potential impacts associated with resource consumption and waste management during the construction phase of the Proposed Development. The receiving environment in terms of waste management is largely defined by FCC as the local authority responsible for setting and administering waste management activities in the area.

During the construction phase, typical construction waste materials, such as soil and stones and trees/shrubbery, will be generated which will be segregated on-site into

appropriate skips/containers and removed from site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-site to minimise raw material consumption (see Chapter 14). Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site.

The optimum depth of excavation required to facilitate installation of the 220kV ducting for the transmission line is 1.21m below ground level (bgl) but may increase to up to c. 3.5m at utility crossings. The optimum width of each trench is 1.02m, however this may vary depending on ground conditions and existing services.

The optimum depth of excavation required to facilitate installation of the ducting for the 49kVA cable installation is c. 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of each trench is c.0.6m, however this may vary depending on ground conditions and existing services to up to c. 1m.

CSEA have estimated that c. 24,300m³ of excavated material will be generated, i.e. c. 2,000m³ of made ground (predominantly tarmacadam, concrete and engineering fill) and c. 22,300m³ of soils/stones (refer to Table 14.1). Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite. The importation of fill materials will be required for construction of foundations and to reinstate the trenches. This fill material will be specified by the Operator and is designed such that the maximum amount of protection is afforded to the electrical infrastructure beneath it.

Mitigation measures are outlined in Chapter 14 and are in line with those detailed in the project specific C&D WMP which has been prepared for the Proposed Development. Some of the measures include waste minimisation, on-site segregation of waste and the appointment of a waste manager.

The residual impact will be neutral and imperceptible.

15.0 INTERACTIONS

This chapter of the EIA Report addresses potential interactions and inter-relationships between the environmental factors discussed in the preceding chapters. This covers both the construction and operational phase of the Proposed Development.

In the main, the majority of EIA Report chapters have already included and described assessments of potential interactions between aspects however this section of the assessment presents a summary and assessment of the identified interactions.

In summary, the majority of interactions are neutral.

Planning Application to An Bord Pleanála in Respect of a
Strategic Infrastructure Development
(A proposed Electricity Transmission Development)

Environmental Impact Assessment Report

**Proposed 220kV Substation and Transmission Line,
Cruiserath, Dublin 15**

Prepared by

**AWN Consulting
March 2020**

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1.0 INTRODUCTION

1.1 PROPOSED DEVELOPMENT

This Environmental Impact Assessment (EIA) Report has been prepared on behalf of Amazon Data Services Ireland Ltd (ADSIL) (herein referred as 'the Applicant') to accompany a planning application to An Bord Pleanála (ABP) for planning permission for the provision of a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works as described in Chapter 2 (Description of the Proposed Development). This development will hereafter be referred to as the 'Proposed Development'.

EirGrid will be the transmission system operator (TSO). ESB Networks will be the transmission asset owner (TAO). (The company background and roles of the TSO and TAO are summarised in Section 1.3).

Figure 1.1 presents a site layout plan showing the route of the proposed underground 220kV transmission line, the proposed GIS substation, the 49kVA underground cable installation and the proposed cable bays.

The proposed route of the 49kVA underground cable installation is shown in Figure 1.2.

A full description of the Proposed Development is provided in Chapter 2 (Description of the Proposed Development).

The Proposed Development will be designed to provide a permanent power supply for the permitted developments and any future development (which will be subject to separate planning application(s) and EIA Report(s)) within the lands bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. Planning permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the proposed substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). Planning permission was granted by FCC for Buildings B and C in August 2019.

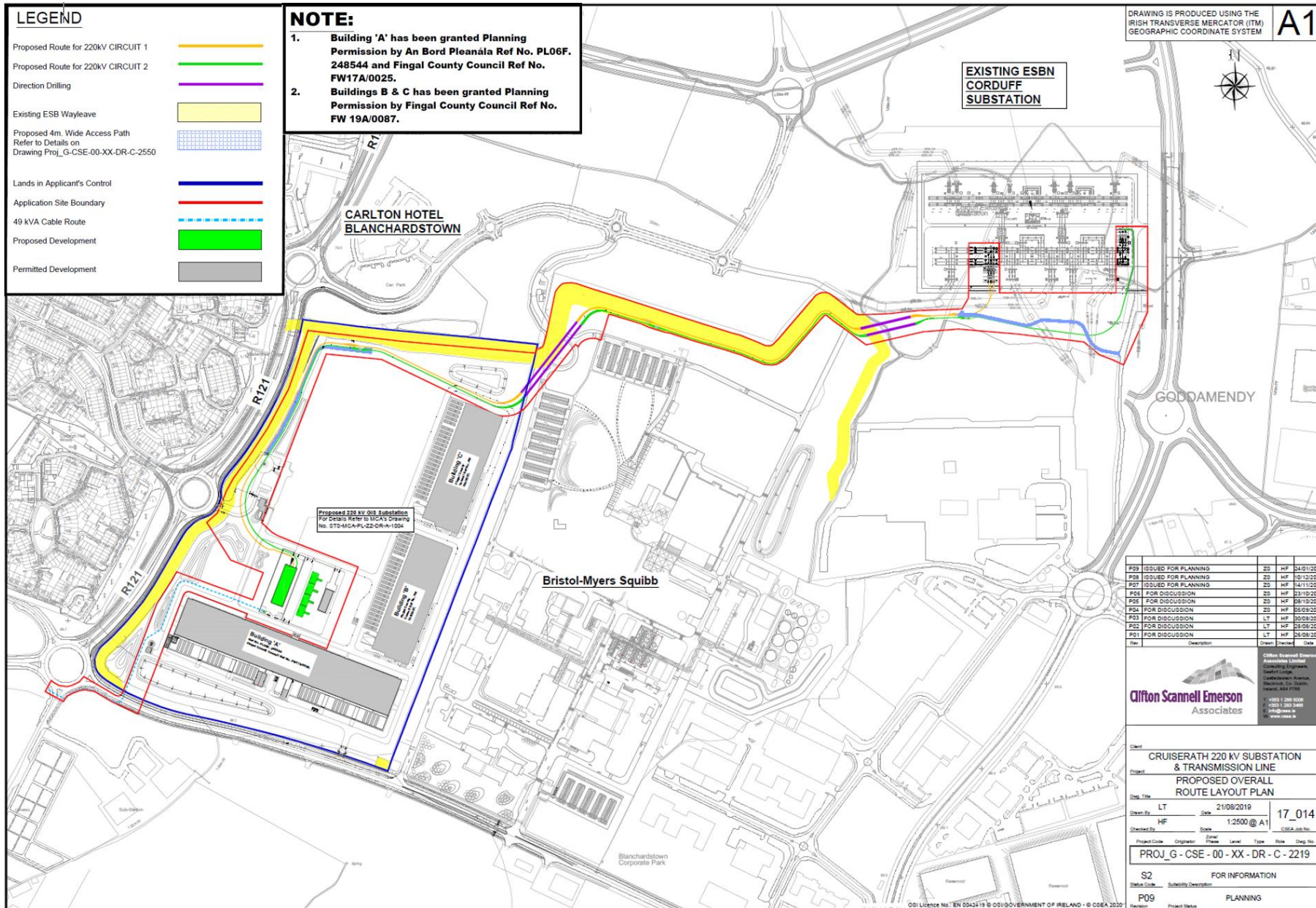


Figure 1.1 Proposed site layout plan illustrating red line boundary (Source: Clifton Scannell Emerson Associates, January 2020)

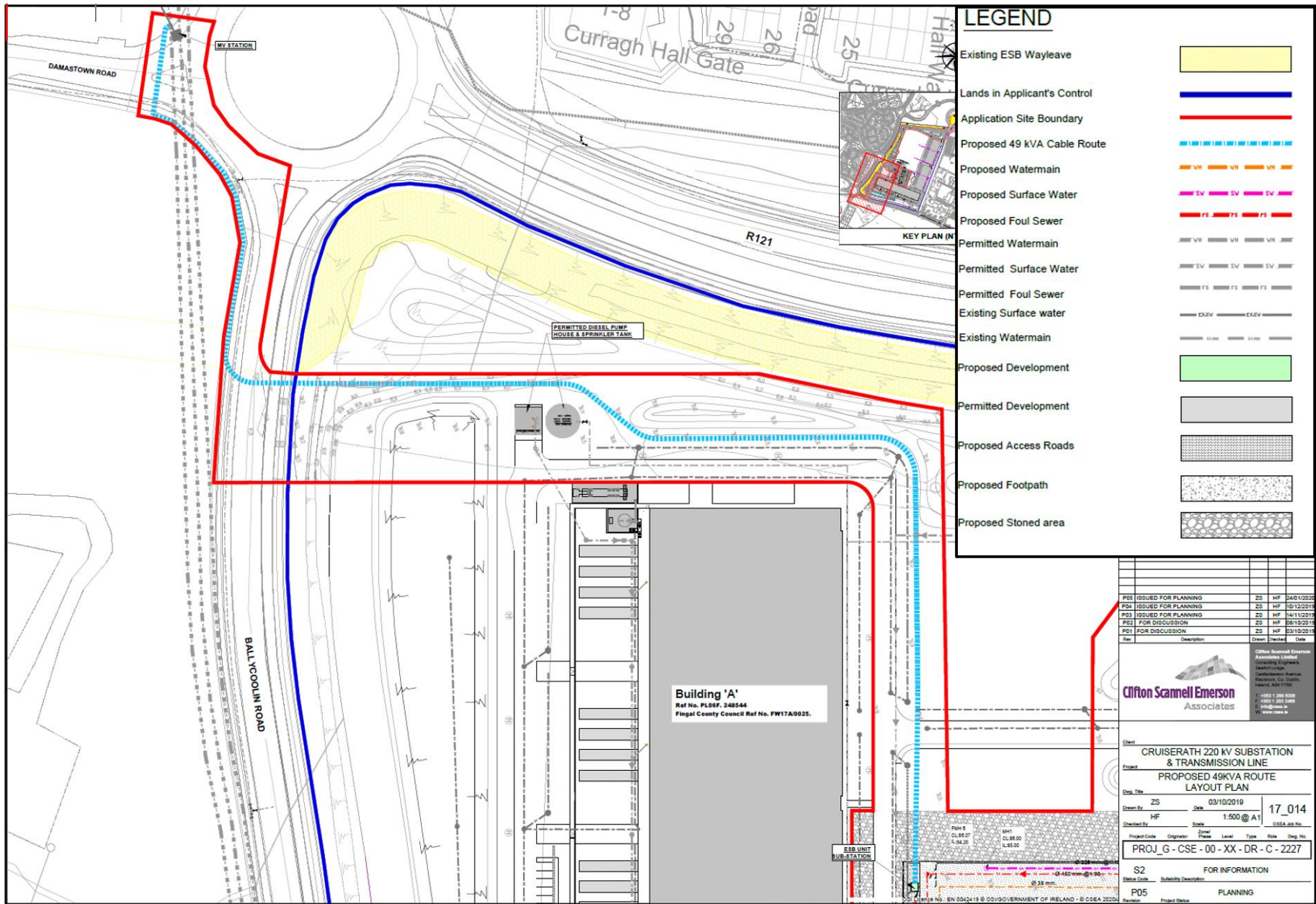


Figure 1.2 Proposed Route of 49kVA Underground cable (Source: Clifton Scannell Emerson Associates, January 2020)

1.2 CONTEXT

1.2.1 Legislative Requirements

This application is being made under the Planning and Development (Strategic Infrastructure) Act 2006, Section 182A to 182E.

The requirement for EIA for certain types and scales of development is set out in the EIA Directives (85/337/EEC, 97/11/EC, 2003/35/EC, 2008/1/EC and most recently 2014/52/EU) and given primary effect in Ireland by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, European Communities (Environmental Impact Assessment) Regulations 1989-2006, Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001-2019. It should be noted that this EIA Report is prepared in accordance with the 2014 EIA Directive (2014/52/EU) and associated Irish legislation (referred to above).

The EIA Directives list those projects for which an EIA is mandatory (Annex I) and those projects for which an EIA may be required (Annex II). With regard to Annex II projects, Member States can choose to apply thresholds or use case by case examination or a combination of both to assess where EIA is required. In Ireland, a combination of both has been applied. The Proposed Development is not listed under Annex I EIA Directives. An EIA Report has been provided as the Proposed Development is required to provide the permanent power supply for the permitted data storage facility developments, i.e. Buildings A, B and C (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025 and FCC Planning Ref. FW19A/0087) and the permitted developments required an EIA Report to accompany the planning applications.

The main objective of an EIA, as set out in Article 3(1) of the 2014 EIA Directive, is to identify, describe, and assess the direct and indirect significant impacts of a project on population and human health, biodiversity, land, soils, water, air & climate (including noise), material assets, cultural heritage and the landscape and the interaction between the aforementioned factors. The EIA Report (previously referred to as an Environmental Impact Statement or EIS) reports on the findings of the EIA process to date and informs the Planning Authority, statutory consultees, other interested parties and the public in general about the likely effects of the project on the environment.

1.2.2 Format of the EIA Report

This EIA Report has been prepared in accordance with the requirements of EIA Directives (2011/92/EU and 2014/52/EU). It is prepared in a format following the guideline structure set down in the Environmental Protection Agency (EPA) Draft “*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*” (2017) (herein referred to as the EPA Draft EIA Report Guidelines 2017).

The “*Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*” (August 2018) and the European Commission “*Guidance on the preparation of the Environmental Impact Assessment Report*” have been considered in the preparation of the EIA report.

Using the format following the guidelines in the EPA Draft EIA Report Guidelines 2017, this EIA Report examines each environmental aspect in a separate chapter. Each chapter generally covers the following:

- Receiving Environment
- Characteristics of the Proposed Development
- Potential Impacts of the Proposed Development
- Do-Nothing Scenario
- Remedial and Mitigation Measures
- Predicted Impacts of the Development
- Residual Impacts

A Non-Technical Summary of the findings of the EIA Report is provided as a separate document.

A Schedule of Mitigation measures to be implemented as part of the Proposed Development is included in Appendix 1.1.

Cumulative impacts for each environmental topic are assessed in Chapter 15 of this EIA Report.

Interactions i.e. the interrelationship between each environmental aspect, are assessed as they occur in each chapter. The final chapter of the EIA Report, Chapter 16, shows where interactions have been identified and how they have been addressed.

1.2.3 Need for the Proposed Development

The Proposed Development will be designed to provide a permanent power supply for the permitted developments and any future development (which will be subject to separate planning application(s) and EIA Report(s)) within the lands bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Hollywood Road.

As stated in Section 1.1, permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the site, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A further application was made to FCC in May 2019 for the construction of 2 no. data storage facilities to the east of the site, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). Planning permission was granted by FCC for Buildings B and C in August 2019.

The Proposed Development is required to provide necessary infrastructure to support the permanent power requirements for Building A which is targeted to have the first data hall operational by Q2 2020 (fully operational by Q2 2022) and Buildings B and C which are targeted to have their first data halls operational by Q3 2022 and Q2 2024, respectively (full operational by Q1 2024 and Q1 2026 respectively). The 49kVA cable installation is intended to provide a house power supply to the proposed GIS substation.

Planning permission has recently been granted by FCC to ESB Engineering & Major Projects for 6MVA and 23MVA underground cable installations which are designed to support interim power demand for Building A (FCC Planning Ref. FW19A/0177).

1.3 COMPANY BACKGROUND

The Applicant provides data storage, management and dissemination. To date, the Applicant has developed a number of data facilities in Ireland and are a significant Irish employer.

As noted in Section 1.1, Eirgrid is the transmission system operator (TSO). Since 2006, Eirgrid has operated and developed the national high voltage electricity grid in Ireland. EirGrid is a state-owned company. EirGrid is independent from ESB. They operate the flow of power on the grid and plan for its future, while ESB Networks (the TAO) is responsible for carrying out maintenance, repairs and construction on the grid. The grid moves wholesale power around the country. Eirgrid brings energy from generation stations to heavy industry and high-tech users. They also supply the distribution network operated by ESB Networks that powers every electricity customer in the country.

As noted in Section 1.1, ESB Networks are the transmission asset owner (TAO). ESB Networks is a subsidiary within ESB Group. ESB Networks finances, builds, and maintains the transmission system through which electricity flows from generation stations to bulk supply points near Ireland's cities and towns. It does this under a TAO licence granted by the Commission for Regulation of Utilities (CRU). ESB Networks performs its transmission related functions under the direction of Eirgrid.

In summary EirGrid operates the transmission system (TSO) while ESB Networks carries out construction, maintenance, and repairs (TAO) under the direction of EirGrid. For this development, EirGrid will operate transmission stations, including the existing Corduff substation and the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf. Eirgrid and ESB Networks are committed to running their businesses in the most environmentally friendly way possible.

1.4 CONSULTATION

The Applicant met with ABP to confirm the Proposed Development was a SID application and to discuss the scope for the planning application. Consultation has also been undertaken with Eirgrid and ESB Networks to ensure the Proposed Development design meets their requirements.

In addition, the relevant specialists and project engineers (CSEA) have liaised with typical statutory bodies (including FCC, NPWS etc.) by correspondence during the course of the EIA Report preparation.

AWN Consulting Limited (hereafter referred to as AWN) and the other respective EIA contributors have incorporated advice and comments received from consultees into the relevant chapters of this EIA Report.

1.5 REGULATORY CONTROL

The proposed transmission of electricity is not an EPA regulated activity in terms of the Industrial Emissions Directive (Directive 2010/75/EU) (which replaced the IPPC directive). The TSO and TAO will ensure the relevant regulatory requirements relating to power activities are met.

1.6 CONTRIBUTORS TO THE EIA REPORT

The preparation and co-ordination of this EIA Report has been completed by AWN in conjunction with specialist subcontractors. Specialist inputs were provided by the following (Table 1.1):

Table 1.1 Roles and Responsibilities in the EIA Report

| Role | | Company |
|------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------|
| EIA Project Management | | AWN – Teri Hayes and Elaine Neary |
| Engineering Design | | Clifton Scannell Emerson Associates (CSEA) |
| EIA Chapter No. | Chapter Title | Company & Consultant |
| | Non-Technical Summary | AWN – Input from each specialist |
| Chapter 1 | Introduction | AWN – Elaine Neary & Emma Carroll |
| Chapter 2 | Description of the Proposed Development | AWN – Elaine Neary & Emma Carroll |
| Chapter 3 | Planning and Alternatives | AWN – Elaine Neary & Emma Carroll |
| Chapter 4 | Population and Human Health | AWN – Elaine Neary & Emma Carroll with specialist input from Damian Kelly and Ciara Nolan |
| Chapter 5 | Land, Soils, Geology & Hydrogeology | AWN – Teri Hayes / Paul Conaghan |
| Chapter 6 | Hydrology (including Stage 1 Flood Risk Assessment) | AWN – Teri Hayes / Paul Conaghan |
| Chapter 7 | Biodiversity (including AA) | Moore Group – Ger O'Donohoe |
| Chapter 8 | Air Quality & Climate | AWN – Edward Porter & Ciara Nolan |
| Chapter 9 | Noise & Vibration | AWN – Damian Kelly |
| Chapter 10 | Landscape and Visual | Brady Shipman Martin - John Kelly |
| Chapter 11 | Archaeological, Architectural and Cultural Heritage | CRDS Ltd. – Aislinn Collins & Stephen Mandal |
| Chapter 12 | Traffic & Transportation | Clifton Scannell Emerson Associates (CSEA) – Geoff Emerson & Elaine Conlan |
| Chapter 13 | Material Assets | AWN – Elaine Neary & Emma Carroll |
| Chapter 14 | Waste Management (including C&D Waste Management Plan) | AWN – Elaine Neary & Emma Carroll |
| Chapter 15 | Cumulative Impact | AWN – Input from each specialist |
| Chapter 16 | Interactions- Interrelationship between the Aspects | AWN – Elaine Neary & Emma Carroll |

Project Director/Selected Chapters, Teri Hayes, BSc (Geology), MSc (Hydrogeology) 1990. Teri is a member of the International Association of Hydrogeologists (Irish Group) – former president and the Institute of Geologists of Ireland – Professional Member. Teri is a Director with AWN with 25 years of experience in EIA Management, water resource management and contaminated land assessment. She has project managed and contributed to numerous environmental impact assessments and design of appropriate mitigation measures, acted as an expert witness at public hearings, lectured in EIA and providing expert advice on EIA sections for planning authorities.

Project Manager/EIA Co-ordinator/Selected Chapters, Elaine Neary, BA (Natural Sciences), MAppSc. (Environmental Science) and is a Chartered Member of the Institute of Waste Management (MCWIM). She is an Associate in AWN and has over 16 years' experience in environmental consultancy with extensive experience in Environmental Impact Assessment and EPA IED/IPPC and Waste License Application and Co-Ordination. She has project managed, coordinated and prepared specialist inputs for numerous EIA Reports.

Assistant EIA Co-ordinator/Selected Chapters, Emma Carroll is an Environmental Consultant with AWN. Emma holds a B.A. in Natural Science from Trinity College Dublin and an M.Sc. Environmental Sustainability from University College Dublin. Emma has worked on projects relating to the remediation of agricultural wastes and residues, and also has experience with natural resource management and sustainability models. Emma has prepared specialist inputs for numerous EIA Reports and EIA Screening Reports. Emma assisted in the preparation of selected chapters of the EIA Report.

Biodiversity/Appropriate Assessment, Ger O'Donohoe, Ger graduated from GMT in 1993 with a B.Sc. in Applied Freshwater & Marine Biology and completed an M.Sc. in Environmental Sciences, graduating from TCD in 1999. He is an Environmental Manager and Consultant Ecologist with Moore Group. Ger has over 20 years of experience as an environmental consultant with experience in the planning and management of numerous complex Environmental Impact Assessments for large scale developments nationwide. He has wide ranging experience as an expert witness at public hearings.

Land, Soils, Geology, Hydrogeology & Hydrology, Teri Hayes, (as above)

Land, Soils, Geology, Hydrogeology & Hydrology, Paul Conaghan. Paul is an Environmental Consultant at AWN with over 8 years' experience working in the environmental science and environmental engineering fields. Paul holds a degree in Environmental Science from the University of Limerick and a masters in environmental engineering from Queens University Belfast. Paul has worked on a wide range of projects including hydrogeology, contaminated land, project management, site geotechnical evaluations, site assessments specialising in environmental impact assessment. Paul is a member of the International Association of Hydrogeologists.

Air Quality & Climate, Ciara Nolan is an Environmental Consultant in the Air Quality section of AWN. She holds a BSc in Energy Systems Engineering from University College Dublin and has also completed an MSc in Applied Environmental Science at University College Dublin. She is an Associate Member of the Institute of Air Quality Management. She specialises in the fields of ambient air monitoring, indoor air monitoring and EIA.

Noise & Vibration, Damian Kelly, Director and Principal Acoustic Consultant in AWN. He holds a BSc from DCU and an MSc from Queens University Belfast. He has over 18 years' experience as an acoustic consultant. He is a member of the Institute of Acoustics. He has extensive knowledge in the field of noise modelling and prediction, having prepared the largest and most complex examples of road and industrial noise models currently in existence in Ireland. He was also co-author of the EPA document "*Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities*" (2012) and advised in relation to the noise limits applied to commercial developments by the various local authorities in the Dublin region.

Landscape and Visual, John Kelly, BArch (Hons) MRIAI. John is a qualified Architect and Managing Partner of Brady Shipman Martin and has over 25 years' experience of direct involvement in the planning, design and environmental assessment of major infrastructure, industrial, educational, commercial, tourism, leisure and energy projects, as well as large scale mixed-use masterplans. John utilises and develops photographic, surveying and digital methodologies that assist in establishing a thorough understanding of the three-dimensional characteristics of sites and their context.

Archaeology, Aislinn Collins, BSc. (Hons) MA PGDip DipEIAMgmt – Aislinn is the company EIA manager for CRDS Ltd., holds a BA in Archaeology and Geography (UCD), an MA in Geography (UCD), a Graduate Diploma in Architectural Inventory and Recording (DIT), and a Diploma in EIA Management (UCD). Since joining CRDS Ltd in 2001 Aislinn has amassed considerable experience in undertaking the archaeological, architectural and cultural heritage aspects of EIAs. She has project managed a number of key projects, including the archaeological components of the Athlone Cycleway and Pedestrian Bridge and Athlone to Garrycastle Greenway Part VIII Application, the Cork Docklands Transport Infrastructure EIS, and the Waterways Corridor Projects. She is also responsible for the company’s architectural heritage section and has project managed architectural heritage assessments for standalone building projects, large scale environmental impact statements and has worked as an architectural recorder on large scale projects on behalf of the National Inventory of Architectural Heritage.

Archaeology, Dr. Stephen Mandal, MIAI, PGeo, EurGeol, is founder and managing director of CRDS Ltd (established in 1997; incorporated in 1999, CRDS (www.crds.ie) is a multi-award winning archaeological and historical consultancy widely acknowledged as a leading provider of a wide range of cultural heritage services). He holds an honours science degree in Geology (1991) and a PhD in Geoarchaeology (1995) from Trinity College Dublin. In 2018, he was appointed to the Cultural Heritage Advisory Panel for the Dublin City Council Culture Company. In 2019 he was appointed to the executive board of the Discovery Programme, the state centre for archaeology and innovation in Ireland. Also in 2019, he was appointed as a Research Associate of the Smithsonian Museum. He served as Vice-Chairperson of the Royal Irish Academy Committee for Archaeology from 2009 to 2014. From 2012 to 2015 he was the External Examiner in Applied Archaeology at Sligo Institute of Technology. He has co-authored two books, The Irish Stone Axe Project: Monograph I (1998, with Prof Gabriel Cooney) and Carrick, County Wexford: Ireland’s first Anglo-Norman Stronghold (2019, with Dr Denis Shine, Dr Michael Potterton and Catherine McLoughlin) and has contributed to a dozen more. He has also authored numerous academic papers in subjects as diverse as geology, archaeology, geoarchaeology, community heritage and the heritage economy. He is a professional member of the Institute of Archaeologists of Ireland, the Institute of Geologists of Ireland, and the European Federation of Professional Geologists.

Traffic & Transportation, Geoff Emerson, B.E., M.Sc., C.Eng., MIEI, FConsEI is a Director with CSEA. Geoff has 20+ years’ experience in Civil, Structural and Transportation Consulting Engineering and Project Management acting as Project Manager for strategic Road Schemes, Street Upgrades, Quality Bus Network Schemes, Sustainable Transport Schemes, Transportation Catchment Studies & Bridge Design. Geoff has also had significant experience in large-scale site developments for private clients including Green Property Ltd, Menolly Homes Ltd and Bennett Developments. Recent Structural and Engineering experience includes the N3 Mulhuddart Overbridge and Midlands Prison Extension (€26m). Clients include National Transport Authority, Fingal County Council, South Dublin County Council, Kilkenny County Council, Louth County Council, Dun Laoghaire Rathdown County Council, Meath County Council, National Roads Authority and Dublin Transportation Office. Previously while working with RPS he was involved in the M50 South –Eastern Motorway scheme.

Traffic & Transportation, Elaine Conlan, B.A.I. Engineering (General Civil, Mechanical, Computer and Electronics, specialisation in Mechanical), Trinity College Dublin. B.A. Mathematics, Trinity College Dublin. Elaine is a traffic engineer in CSEA with 10 years’ experience in the traffic and transportation field. She has worked in

consulting for seven years in Ireland and Australia and has been involved in a variety of projects. These projects include providing the required Traffic and Transportation input to many Development Planning Applications (including a number of Data Storage Facility applications), highway upgrade projects, tender designs, accident investigation, parking studies, traffic impact assessments, traffic management, traffic control, sustainable transport planning and road safety auditing.

1.7 DESCRIPTION OF EFFECTS

The quality, magnitude and duration of potential effects are defined in accordance with the criteria provided in the EPA Draft *EIA Report Guidelines 2017* (2017) as outlined in Table 1.2.

Table 1.2 Description of Effects as per EPA Draft EIA Report Guidelines 2017

| Effect Characteristic | Term | Description |
|------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quality | Positive | A change which improves the quality of the environment |
| | Neutral | A change which does not affect the quality of the environment |
| | Negative | A change which reduces the quality of the environment |
| Significance | Imperceptible | An impact capable of measurement but without noticeable consequences |
| | Not significant | An effect which causes noticeable changes in the character of the environment but without noticeable consequences |
| | Slight | An effect which causes noticeable changes in the character of the environment without affecting its sensitivities |
| | Moderate | An effect that alters the character of the environment in a manner consistent with existing and emerging trends |
| | Significant | An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment |
| | Very Significant | An effect which, by its character, magnitude, duration or intensity significantly alters the majority of a sensitive aspect of the environment. |
| Duration of Effects | Profound | An impact which obliterates sensitive characteristics |
| | Momentary Effects | Effects lasting from seconds to minutes |
| | Brief Effects | Effects lasting less than a day |
| | Temporary Effects | Effects lasting less than a year |
| | Short-term Effects | Effects lasting one to seven years. |
| | Medium-term Effects | Effects lasting seven to fifteen years |
| | Long-term Effects | Effects lasting fifteen to sixty years |
| | Permanent Effects | Effects lasting over sixty years |
| Probability of Effects | Reversible Effects | Effects that can be undone, for example through remediation or restoration |
| | Likely Effects | The effects that can reasonably be expected to occur as a result of the planned project if all mitigation measures are properly implemented. |
| | Unlikely Effects | The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |
| Type of Effects | Indirect Effects | Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway. |
| | Cumulative | The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects. |
| | 'Do Nothing' | The environment as it would be in the future should no |

| Effect Characteristic | Term | Description |
|-----------------------|----------------------|----------------------------------------------------------------------------------------------------------------|
| | | development of any kind be carried out |
| | 'Worst case' Effects | The effects arising from a project in the case where mitigation measures substantially fail |
| | Indeterminable | When the full consequences of a change in the environment cannot be described |
| | Irreversible | When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost |
| | Residual | Degree of environmental change that will occur after the proposed mitigation measures have taken effect |
| | Synergistic | Where the resultant impact is of greater significance than the sum of its constituents |

1.8 ADDITIONAL ASSESSMENTS REQUIRED

This section addresses the additional approvals and assessments required under other EU Directives and legislation.

- **Appropriate Assessment Screening Report** - A screening report has been completed for the Proposed Development, as required under the Habitats and Birds Directive (92/43/EEC and 79/409/EEC) and is included as Appendix 7.1. of this EIA Report.
- **Flood Risk Assessment** - A Stage 1 Flood Risk Assessment has been undertaken for the site and is appended to Chapter 6 Hydrology as Appendix 6.2.

1.9 FORECASTING METHODS AND DIFFICULTIES IN COMPILING THE SPECIFIED INFORMATION

Forecasting methods and evidence used to identify and assess the significant effects on the environment for each environmental aspect are set out in each chapter.

There were no significant difficulties in compiling the specified information for this EIA Report. Any issues encountered during the assessment of individual factors are noted within the relevant chapters.

APPENDIX 1.1
SCHEDULE OF MITIGATION

Prepared by AWN Consulting Ltd.

| Project Phase | Mitigated By | Justification | Mitigation Measures | References |
|------------------|--------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hydrology | | | | |
| Construction | Management | Environmental Pollution | A project-specific Construction Environmental Management Plan (CEMP) will be prepared and maintained during the construction phase of the project. The plan will cover all potentially polluting activities and include an emergency response procedure. All personnel working on the site will be trained in the implementation of the procedures. At a minimum, the manual will be formulated in consideration of the standard best international practice. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Construction | Prevention | Surface Water Run-off | Should any discharge of collected stormwater be required, discharge will be to surface water/foul sewer drainage system. The water will be treated before it will be discharged, with the use of a sediment trap or silt buster to avoid any siltation of the drainage system. Discharge will require a Section 4 permit (Council) or Irish Water licence (Foul Sewer). | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Construction | Management | Surface and ground Water Protection | Refuelling of construction will take place at the construction compound. In the event of a machine requiring refuelling outside of this area, fuel will be transported in a mobile double-skinned tank. An adequate supply of spill kits and hydrocarbon absorbent packs will be stored in this area. All relevant personnel will be fully trained in the use of this equipment. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |

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| Construction | Management | Soil and Water Protection | All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters of contaminated storm water to underlying subsoil. Wash-down and washout of concrete transporting vehicles will take place at an appropriate facility offsite. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Construction | Management | Soil and Water Protection | In the case of drummed fuel or other chemicals, which may be used during construction, the following measures will be implemented: Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded areas; Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage; All drums to be quality approved and manufactured to a recognised standard; If drums are to be moved around the site, they should be done so secured and on spill pallets; and Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Operational | | Accidental Releases | All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil. Wash-down and washout of concrete transporting vehicles will take place at an appropriate facility offsite. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |

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| Construction | Management | Surface and ground Water Protection | In the event of accidental releases, emergency response procedures will be outlined in the site CEMP. All personnel working on the site will be suitably trained in the implementation of the procedures. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; BPGCS005, Oil Storage Guidelines; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Construction | Management | Surface and ground Water Protection | Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment. The material will be stored away from any surface water drains (see Surface Water Run-off section above). Movement of material will be minimised to reduce degradation of soil structure and generation of dust. Site investigations carried out at the site in 2016 found no residual contamination on site. Nonetheless, all excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor. | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |
| Operation | Management | Surface and ground Water Protection | ESB Networks implements an Environmental Safety and Health Management System at each of its facilities. Prior to operation of the Proposed Development, a comprehensive set of operational procedures will be established (based on those used at other similar facilities) which will include site-specific mitigation measures and emergency response measures as outlined below: FUEL & CHEMICAL HANDLING The containment measures planned will minimise the risk of release of solid/ liquid material spillages to the water environment. Containment measures will include storage of fuels on site in bunded containers or compartments. The design of all bunds will conform to standard bunding specifications - BS EN 1992-3:2006, Design of Concrete Structures – Part 3: Liquid retaining and containment measures; STORM WATER & FOUL SEWER DRAINAGE Stormwater, foul sewer drainage and surface water run off will be accommodated for in the drainage system formed as part of the planning | CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532) Construction Industry Research and Information Association; CIRIA (2002) Control of water pollution from construction sites: guidance for consultants and contractors (SPI56) Construction Industry Research and Information Association; CIRIA (2005), Environmental Good Practice on Site (C650); Construction Industry Research and Information Association; CIRIA 697 (2007), The SUDS Manual; UK Pollution Prevention Guidelines, (PPG) UK Environment Agency, 2004. |

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| | | | <p>application for the permitted data storage facility on site and is intended to service that development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544); FIRE WATER SYSTEM The fire water ring main will be extended as part of the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) to provide firefighting water to hydrants in the event of a fire; WATER SUPPLY The water system will be metered to facilitate detection of leakage and the prevention of water loss. Dual and low flush toilets, water economy outlets and water saving measures will also be proposed.</p> | |
| Land, Soil and Geology | | | | |
| Construction | Management | Environmental Pollution | <p>An outline Construction Environmental Management Plan (CEMP) has been prepared by CSEA for the Proposed Development and is included with the planning documentation. In advance of work starting on site, the works Contractor will prepare a detailed Construction Environmental Management Plan (CEMP). The detailed CEMP will set out the overarching vision of how the construction of the Proposed Development will be managed in a safe and organised manner by the Contractor. The CEMP will be a live document and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards which must be met during the construction stage and will include the relevant mitigation measures outlined in the EIA Report and any subsequent planning conditions relevant to the Proposed Development.</p> | <p>Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009).</p> |
| Construction | Management | Soil and Water Protection | <p>Subsoil will be excavated to facilitate the construction of foundations and the installation of the ducting for the cable routes. The Proposed Development will incorporate the reduce, reuse and recycle approach in terms of soil excavations on site. The construction will be carefully planned to ensure only material required to be excavated will be excavated resulting in as much material left in situ as possible. Excavation works will be carefully monitored by a suitably qualified person to ensure that potentially contaminated soil is identified and segregated from clean/inert soil. In the unlikely event that potentially contaminated soils are encountered, the material will be tested and classified as hazardous or non-hazardous in accordance with the EPA Guidance Document: Waste Classification – List of Waste and Determining if Waste is Hazardous or Non-Hazardous (2015), HazWasteOnline tool or similar approved method. The material will then need to be classified as inert, non-hazardous, stable non-reactive hazardous or hazardous in accordance with EC Decision 2003/33/EC. It will then be removed from site by a suitably permitted waste contractor to an authorised waste facility</p> | <p>Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009).</p> |

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| Construction | Management | Soil and Water Protection | It is envisioned that 24,300m ³ of soil/stones will be excavated to facilitate the Proposed Development. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite for reuse, recovery and/or disposal. Soil being removed from site will be classified by an experienced and qualified environmental professional to ensure that the soil is correctly classified for transportation and recovery/disposal offsite. | Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009). |
| Construction | Management | Soil and Water Protection | All fill and aggregate for the Proposed Development will be sourced from reputable suppliers. All suppliers will be vetted for: <ul style="list-style-type: none"> •Aggregate compliance certificates/declarations of conformity for the classes of material specified for the Proposed Development; •Environmental Management status; and •Regulatory and Legal Compliance status of the Company. It is anticipated that approximately 26,000m ³ engineered fill will be required to facilitate construction. | Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009). |
| Operational | Management | Soil and Water Protection | To minimise spillages of fuels and prevent any resulting impacts to the surface water system during construction, the following will be implemented: <ul style="list-style-type: none"> •Designation of a bunded refuelling areas on the site; •Provision of spill kit facilities across the site; •Where mobile fuel bowsers are used the following measures will be taken: <ul style="list-style-type: none"> oAny flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; oThe pump or valve will be fitted with a lock and will be secured when not in use; oAll bowsers to carry a spill kit oOperatives must have spill response training; and oDrip trays used on any required mobile fuel units. | Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009). |
| Operational | Management | Soil and Water Protection | In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted: <ul style="list-style-type: none"> •Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area; •Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage; •All drums to be quality approved and manufactured to a recognised standard; •If drums are to be moved around the site, they will be secured and on spill pallets; and | Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009). |

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| | | | <ul style="list-style-type: none"> •Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment. | |
| Operational | Management | Soil and Water Protection | <p>No significant dewatering is required for the site development. However, run-off from excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. Earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and flowing. These measures will ensure that there will be minimal inflow of shallow/perched groundwater into any excavation.</p> <p>Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. Measures will include managing slope gradients, covering of soil stockpiles where necessary etc. All exposed soil surfaces will be within the Proposed Development site which limits the potential for any offsite impacts.</p> <p>Should any discharge of construction water be required during the construction phase, pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, silt sacks and settlement tanks/ponds) and hydrocarbon interceptors as required. Active treatment systems such as siltbusters or similar may be required depending on turbidity levels.</p> | <p>Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009).</p> |
| Operational | Management | Soil and Water Protection | <p>ESB Networks implements an Environmental Safety and Health Management System at each of its facilities. Prior to operation of the Proposed Development, a comprehensive set of operational procedures will be established (based on those used at other similar facilities) which will include the following site-specific mitigation measures and emergency response measures: FUEL STORAGE & CHEMICAL HANDLING</p> <ul style="list-style-type: none"> •Provision of spill kit facilities and training of operatives in use of same; •Where mobile fuel bowsers are used the following measures will be taken: <ul style="list-style-type: none"> oAny flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use; oThe pump or valve will be fitted with a lock and will be secured when not in use; oAll bowsers to carry a spill kit; oOperatives must have spill response training; and oPortable generators or similar fuel containing equipment will be placed on suitable drip trays. <p>INCREASE IN HARD STAND A proportion of the development area will be covered in hardstand (c. 2,003m²). This provides protection to the underlying</p> | <p>Environmental Protection Agency (EPA) Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017); Institute of Geologists of Ireland (IGI) 'Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013); and National Roads Authority (NRA) 'Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' (2009).</p> |

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| | | | <p>aquifer but also reduces local recharge in this area of the aquifer. As the area of aquifer is large this reduction in local recharge will have no significant change in the natural hydrogeological regime.</p> | |
| Biodiversity | | | | |
| Construction | Protection | Ecological Protection | <p>The single badger sett recorded within the redline boundary of the permitted development area (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) has been addressed as part of the site preparation works for that development and monitoring of the mitigation process is ongoing.</p> <p>Potential impacts on birds will be avoided by cutting of vegetation outside the bird nesting season March 1st to August 31st.</p> <p>Foxes and rabbits are not legally protected and will move to adjacent suitable habitats.</p> | <p>CIRIA Report C532 of Water Pollution from Construction Sites. CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland. Institute of Ecology and Environmental Management. Department of the Environment, Heritage and Local Government (2010) Guidance on Appropriate Assessment of Plans and Projects in Ireland (as amended February 2010). EC (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43EEC. European Commission, Brussels.</p> |
| Air, Dust and Climatic Factors | | | | |
| Construction | Management | Dust Management | <p>The siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. As prevailing wind is predominantly westerly to south-westerly, locating construction compounds and storage piles downwind (to the east or north-east) of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors.</p> | <p>BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites</p> |
| Construction | Prevention | Dust Management | <p>The following measures will be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:</p> <ul style="list-style-type: none"> - The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed mitigation measures are implemented and that dust impacts and nuisance are minimised; - During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions; - The name and contact details of a person to contact regarding air quality and dust | <p>BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites</p> |

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| | | | <p>issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details;</p> <ul style="list-style-type: none"> - It is recommended that community engagement be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses; - A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out; - It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein; - At all times, the procedures put in place will be strictly monitored and assessed. | |
| Construction | MPrevention | Dust Management | <p>The dust minimisation measures will be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem.</p> | BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites |
| Construction | Management | Dust Management | <p>Movement of construction trucks along site roads (particularly unpaved roads) can be a significant source of fugitive dust if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions.</p> <ul style="list-style-type: none"> - A speed restriction of 20km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved site roads; - Access gates to the site shall be located at least 10m from sensitive receptors where possible; - Bowsers or suitable water equipment will be available during periods of dry weather throughout the construction period. Watering shall be conducted during sustained dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use; - Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential site traffic only. | BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites |

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| Construction | Management | Dust Management | <p>Land clearing/earth-moving works during periods of high winds and dry weather conditions can be a significant source of dust.</p> <ul style="list-style-type: none"> - During dry and windy periods, and when there is a likelihood of dust nuisance, watering shall be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust; - During periods of very high winds (gales), activities likely to generate significant dust emissions should be postponed until the gale has subsided. | BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites |
| Construction | Management | Dust Management | <p>The location and moisture content of storage piles are important factors which determine their potential for dust emissions.</p> <p>Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site. Where possible storage piles should be located downwind of sensitive receptors.</p> <p>Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust.</p> <p>Where feasible, hoarding will be erected around site boundaries to reduce visual impact. This will also have an added benefit of preventing larger particles from impacting on nearby sensitive receptors.</p> | BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites |
| Construction | Management | Dust Management | <p>Spillage and blow-off of debris, aggregates and fine material onto public roads will be reduced to a minimum by employing the following measures:</p> <ul style="list-style-type: none"> - Vehicles delivering or collecting material with potential for dust emissions shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust; - At the main site traffic exits, a wheel wash facility will be installed if feasible. All trucks leaving the site must pass through the wheel wash. In addition, public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary. | BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites |

Noise and Vibration

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| Construction | Management | Noise Pollution | Limit the hours during which the site activities likely to create high levels of noise or vibration are permitted | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | Establish channels of communication between the contractor/developer, Local Authority and residents | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | Appoint a site representative responsible for matters relating to noise and vibration | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | Monitoring typical levels of noise and vibration during critical periods and at sensitive locations | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). |

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|--------------|------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | Keeping site access roads even so as to mitigate the potential for vibration from lorries | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | It is envisaged that a variety of practicable noise control measures will be employed. These may include: - selection of plant with low inherent for generation of noise and/or vibration - placing of noisy/vibratory plant as far away from sensitive properties as permitted by site constraints | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | It is recommended that vibration from construction activities be limited to the values set out in Chapter 9 Noise and Vibration of the EIAR. It should be noted that these limits are not absolute but provide guidance as to magnitudes of vibration that are very unlikely to cause cosmetic damage. Magnitude of vibration slightly greater than those in the EIAR are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Where there is existing damage these limits may need to be reduced by up to 50%. | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party. |
| Construction | Management | Noise Pollution | In certain instances works are expected to be slightly above the adopted noise criterion outlined in the EIAR. It should be noted that at an assumed cable laying rate of 100m per day, the equipment associated with the works would be expected to be within 20m to 30m of a specific property. This limited time frame for construction works in the vicinity of a specific property reduce the associated noise impacts | British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised |

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| | | | <p>significantly. In these instances the contractor shall give due consideration to the following best practice advice: - In these instances the Contractor will provide proactive community relations and will notify the public and sensitive premises before the commencement of any works forecast to generate appreciable levels of noise or vibration, explaining the nature and duration of the works. The Contractor will distribute information informing people of the progress of works and any likely periods of significant noise and vibration. - A designated noise liaison should be appointed to site during construction works. Any complaints should be logged and followed up in a prompt fashion. In addition, prior to particularly noisy construction activity, e.g. excavation close to a property, etc., the site contact should inform the nearest noise sensitive locations of the time and expected duration of the works.</p> | <p>Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015). Draft 'Guidelines for Noise Impact Assessment' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party.</p> |
| Material Assets: Water Supply, Drainage & Utilities | | | | |
| Construction | Management | Power & Electricity Supply | <p>The excavation of trenches within the vicinity of existing electrical services will be carried out in consultation with the Transmission Asset Owner (EirGrid) to ensure there is no impact on existing users.</p> | <p>Fingal County Development Plan 2017 – 2023; TII Traffic and Transport Assessment Guidelines, 2014; Design Manual for Urban Roads and Streets (DMURS), 2013, Department of Transport, Tourism and Sport & Department of Environment, Community and Local Government.</p> |
| Traffic and Transportation | | | | |
| Construction | Prevention | Environmental Pollution | <p>The following measures will be put in place during the construction works:</p> <ul style="list-style-type: none"> • The contractor will be required to provide wheel cleaning facilities, and regular cleaning of the main access road; • Temporary car parking facilities for the construction workforce (30 no. spaces) will be provided within the site for and the surface of the car park will be prepared and finished to a standard sufficient to avoid mud spillage onto adjoining roads; • Monitoring and control of construction traffic will be ongoing during construction works. Construction traffic will minimise movements during peak hours. • Construction Traffic routes minimising traffic impact on surrounding residential development will be used by construction vehicles. | <p>TII Traffic and Transport Assessment Guidelines, 2014; Design Manual for Urban Roads and Streets (DMURS), 2013, Department of Transport, Tourism and Sport & Department of Environment, Community and Local Government.</p> |

| Waste Management | | | | |
|------------------|------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction | Management | Environmental Pollution | Prior to commencement of construction, the contractor(s) will be required to refine/update this document to detail specific measures to minimise waste generation and resource consumption and provide details of the proposed waste contractors and destinations of each waste stream. | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of this material will require removal offsite. It will be reused offsite where practical and where it cannot be reused, it will be recycled/recovered. | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated: oSoils and stones oTarmacadam oTrees/shrubbery In addition, the following wastes will be segregated at the site compound: - Organic (food) waste - Packaging (paper/card/plastic) - Mixed dry recyclables - Mixed non-recyclable waste | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | All excavations will be carefully monitored by a suitably qualified person to ensure that potentially contaminated soil is identified and segregated, if encountered. In the event that any potentially contaminated material is encountered, it will be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous and further classified as clean, inert, non-hazardous or hazardous in accordance with the EC Council Decision 2003/33/EC, which establishes the criteria for the acceptance of waste at landfills. | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | Waste materials generated at the site compound will be stored in suitable receptacles in designated areas of the site compound | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |

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| Construction | Management | Environmental Pollution | Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably bunded areas, where required) | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | A waste manager will be appointed by the main contractor(s) to ensure effective management of waste during the excavation and construction works | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | All construction staff will be provided with training regarding the waste management procedures | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | All waste leaving the site will be recorded and copies of relevant documentation maintained | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |
| Construction | Management | Environmental Pollution | As surplus soils and stones will require removal from site, any nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, which requires removal off-site. | The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021. The Fingal County Development Plan 2017 – 2023. European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC |

| Landscape and Visual Assessment | | | | |
|---------------------------------|---------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction | Reinstatement | Landscape Protection | The principal mitigation measures during construction are in ensuring a managed and orderly construction site, appropriate storage of materials, ensuring debris is not carried onto the public roads by construction vehicles, and reinstatement of an footpaths, verges and carriageways disturbed by virtue of trench excavation for the underground cables. | EPA Draft 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2017) 'Draft Advice Notes for preparing Environmental Impact Statements' (2015) |
| Construction | Reinstatement | Landscape Protection | <p>Landscape and visual mitigation measures are substantially provided as part of the permitted Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) development, however, mitigation measures are also inherent in the landscape design for the proposed development and therefore focus on the implementation of the proposed architectural design and the additional landscape measures set out in the accompanying 6668_320 Landscape Masterplan.</p> <p>As with the permitted Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544), the Proposed Development will also use horizontal cut-off light fittings for the lighting standards on site roads and carparks so as to minimise light spill.</p> | EPA Draft 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2017) 'Draft Advice Notes for preparing Environmental Impact Statements' (2015) |
| Archaeology | | | | |
| Construction | Protection | Protection of Local Heritage | <p>The majority of the site area has not been subject to intensive development and there is the possibility of sub-surface archaeological features surviving within the site boundary.</p> <p>Archaeological testing will be required at the site of the GIS substation and at the site where the route crosses the boundary between the townlands of Cruiserath and Goddamendy.</p> <p>Archaeological monitoring will be required in areas where open cut methodologies will be used to excavate the cable trench.</p> <p>Should archaeological features or material be uncovered during archaeological testing or any phase of construction, ground works should cease immediately and the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht should be informed. Time must be allowed for a suitably qualified archaeologist to inspect and assess any material. If it is established that archaeologically significant material is present, the National Monuments Service may require that further archaeological mitigation be undertaken.</p> <p>Please note that the recommendations given here are subject to the approval of the National Monuments Service, Department of the Culture, Heritage and the Gaeltacht.</p> | |

2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 INTRODUCTION

As described in Chapter 1 (Introduction), the Applicant is applying to ABP for planning permission for the provision of a new 220kV GIS substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works (hereafter referred to as the 'Proposed Development').

The following chapter presents a description of the Proposed Development as required by the relevant planning 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, as amended by the 2014 EIA Directive (2014/52/EU) (herein referred to as the EIA Directive), European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, the current EPA Draft EIA Report Guidelines 2017 and the EPA Draft "Advice Notes for Preparing Environmental Impact Statements" (2015) (herein referred to as the EPA Draft Advice Notes for EIS 2015). Guidance outlined in the 'Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report' published by the European Commission in 2017 was also considered in the preparation of this EIA Report.

2.2 CHARACTERISTICS OF THE APPLICATION

2.2.1 Description of Site

The Proposed Development comprises a new 220kV GIS substation (also referred to as Building D), an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation which is located to the northeast of the proposed substation site, west of the Corduff Road, which also serves the nearby industrial areas.

The proposed 220kV GIS substation and significant portion of the underground 220kV transmission line and the underground 49kVA cable installation are to be located on a greenfield site located bounded to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Hollywood Road in Dublin 15. The lands surrounding the Proposed Development are currently undeveloped, but are subject to two existing planning permissions (under FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) for the development of a data storage facility to the south of the substation site (referred to as Building A) and (under FCC Planning Ref. FW19A/0087) for the development of two data storage facilities to the east of the substation site (referred to as Buildings B and C).

The planning permission for Building A is for a site area of 26 ha. in extent. The Proposed Development site represents a c. 6.46 hectare portion of the Building A permitted site area (and extends through the northern portion of the neighbouring site and through greenfield lands to the existing Corduff 220kV substation). The total site area for the Proposed Development is c. 12.39 hectares. Refer to Figure 2.1 which

illustrates the red line boundary of the Proposed Development and blue line boundary of the permitted developments and overall landholding.

The 220kV GIS substation was initially included in the planning application for Building A. However, it was subsequently removed from scope of the development. Condition No. 2 of the Board's Order states that the permission does not "authorise the provision of any grid connection or the provision of the 220kV substation". See Chapter 3 Planning and Development Context for further details.

The permitted Building A site is bounded to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and the Cruiserath Drive. Immediately west of this undeveloped land is the Carlton Hotel. Blanchardstown village is located c. 2.5 km to the south. The closest residential properties are located c. 100m west of the proposed site boundary (across the R121). The eastern boundary of the site is adjacent to an existing pharmaceutical facility (Bristol-Myers Squibb). The site is highly accessible having regard to its location off the Cruiserath Road and Church Road.

The permitted Building A site is relatively flat though it slopes gently northwards. It is relatively featureless other than a c. 3m high planted berm along the northern boundary. An existing ESB Wayleave, relating to existing underground power lines, is present along the northern boundary. It was previously used for arable crops and has been left fallow for the past number of years. Much of the surrounding land has been developed in the past 10-15 years, mainly for industrial use (to the east and south) and residential (to the west).

The route of the underground 220kV transmission line is from proposed substation within the permitted Building A site, through the site to the existing ESB Wayleave along the northern boundary of the Building A site, continuing along the wayleave through the northern portion of the neighbouring BMS site and through 'greenfield' lands to the existing Corduff substation. Refer to Figure 2.1. The existing ESB wayleave already contains c. 7 x 110kV cables and has been disturbed for the installation of the cable ducts. The route through 'greenfield' lands to the existing Corduff 220kV substation is through lands that have been somewhat disturbed from the installation of other ducts. The estimated length of the 220kV cable route is c. 1.8km.

The proposed cable bays are to be installed at the extant Corduff substation located west of the Corduff Road.

The route of the proposed 49kVA cable installation is shown in Figure 2.2. The first section of the route, which is marked as a dotted green line in Figure 2.2, travels east away from the existing Tyrrelstown Cross Unit Sub, where it crosses Church Road. The route then continues north east onto the south side of Cruiserath Road along the arc path between Church Road and Cruiserath Road at the roundabout junction of Cruiserath Road, Church Road, Damastown Avenue, Powerstown Road and the R121. From here, it travels north across Cruiserath Road before travelling east for a distance of approximately 50 metres. Figure 2.2 then shows the dotted green line end, with the route continuing along the second section, which is marked by a continuous purple line. From here, the route turns north into the permitted Building A site, where it continues to the proposed GIS substation compound. The estimated length of the 49kVA cable route is c. 470m.

The Proposed Development is not located directly adjacent to any areas of national or local environmental sensitivity/designation.

The need for the Proposed Development is described in Section 1.2.3 of Chapter 1.

2.2.2 Proposed Development Description

The Proposed Development will consist of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

Figure 2.1 presents a site layout plan showing the route of the proposed underground 220kV transmission line, the proposed GIS substation, the 49kVA underground cable installation and the proposed cable bays.

The proposed route of the 49kVA underground cable installation is shown in Figure 2.2.

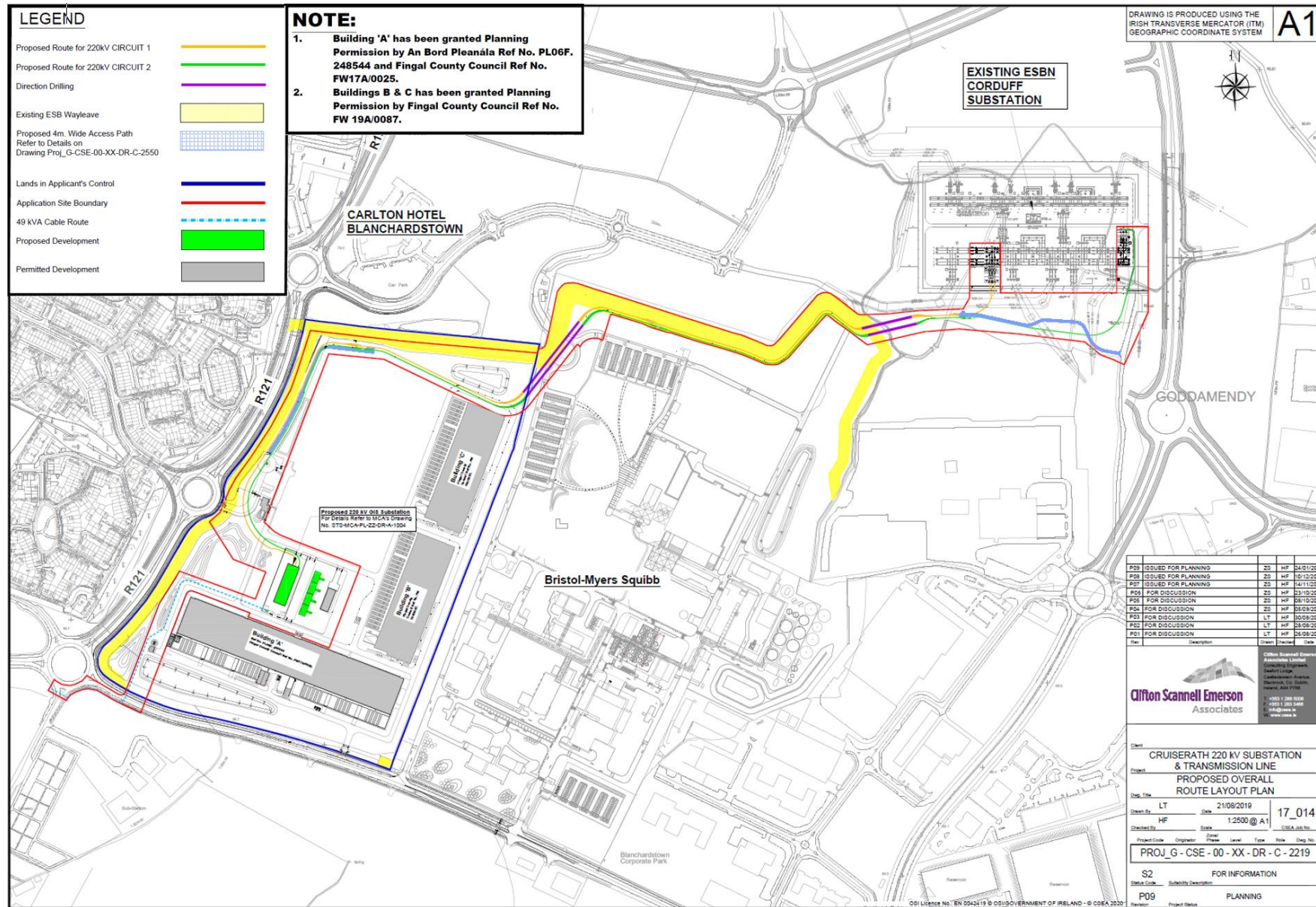


Figure 2.1 Proposed site layout plan illustrating red line boundary (Source: Clifton Scannell Emerson Associates, January 2020)

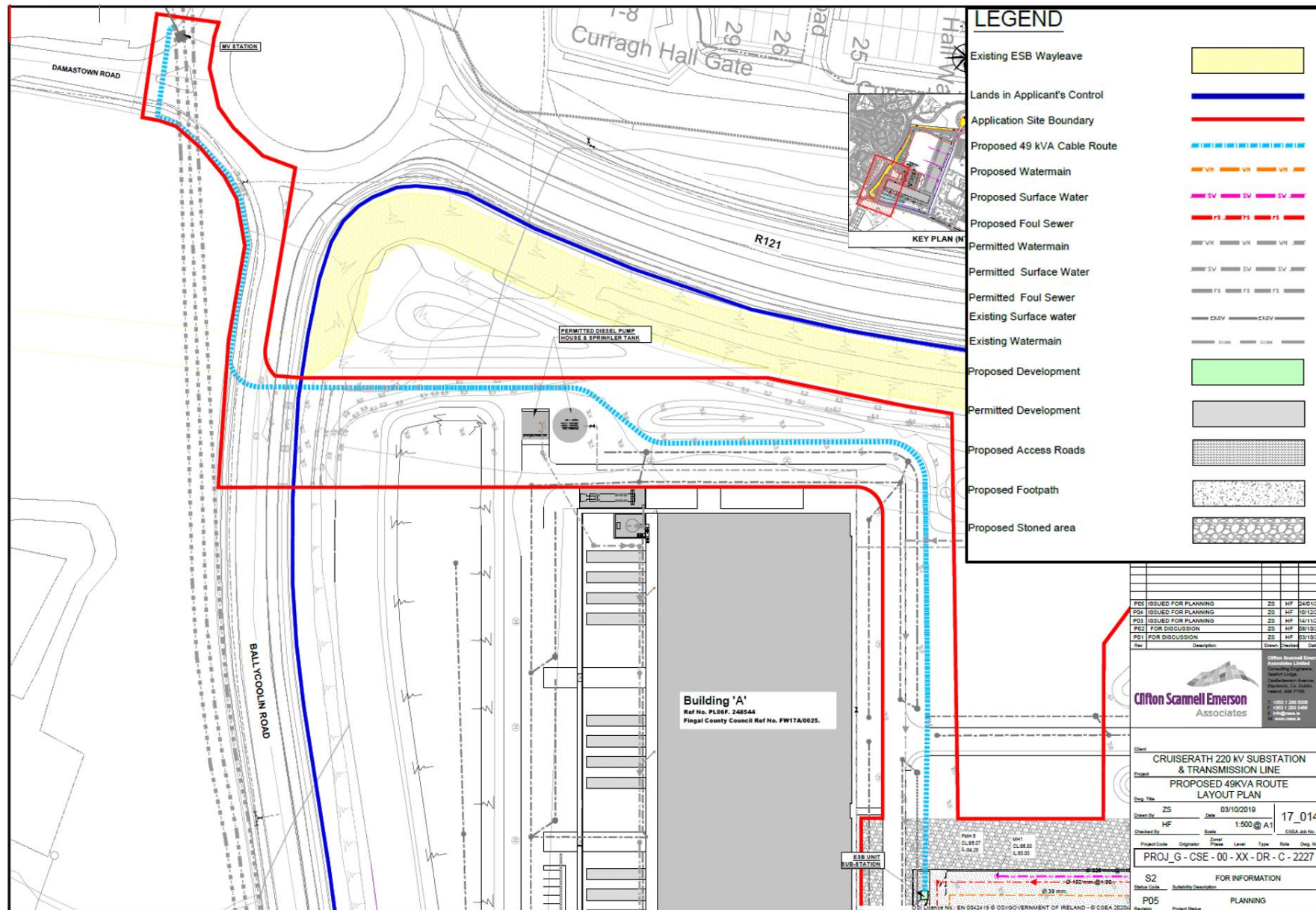


Figure 2.2 Proposed Route of 49kVA Underground cable (Source: Clifton Scannell Emerson Associates, January 2020)

The design of the underground 220kV transmission line will comprise a double 220kV circuit installed underground in high-density polyethylene (HDPE) ducting. The 220kV cables will be a standard XLPE (cross-linked polyethylene) copper cable. XLPE does not contain oil, therefore there is no risk of migration of oil into the ground in the event of a failure (such as a short circuit, a joint fail, a termination failure etc.). These types of failures would not have the potential to result in a perceptible environmental impact.

The installation of the HDPE ducting will require the excavation of two trenches along the route; each containing one 220kV circuit.

The trenches will typically run parallel to each other along the length of the route, the separation of the 2 circuits will vary from 4m to c. 8m the separation is depending on the existing ground conditions and existing underground services. The optimum depth of excavation required to facilitate installation of the ducting, as specified by CSEA, is 1.21m below ground level but may increase to up to c. 3.5m at utility crossings. The typical width of each trench is 1.02m, however this may vary depending on ground conditions and existing services. Between five and ten separate ducts will be installed in each trench. For the purposes of this assessment, reference to the ‘transmission line’ includes both circuits. A typical cross section of the trench is illustrated in Figure 2.3.

Crossing through northern portion of BMS lands, ducting is to be installed by way of horizontal directional drilling in two sections; one at the west boundary where a route passes under existing services and roundabout, and the other under a drainage ditch at the east boundary bordering with the Corduff substation site.

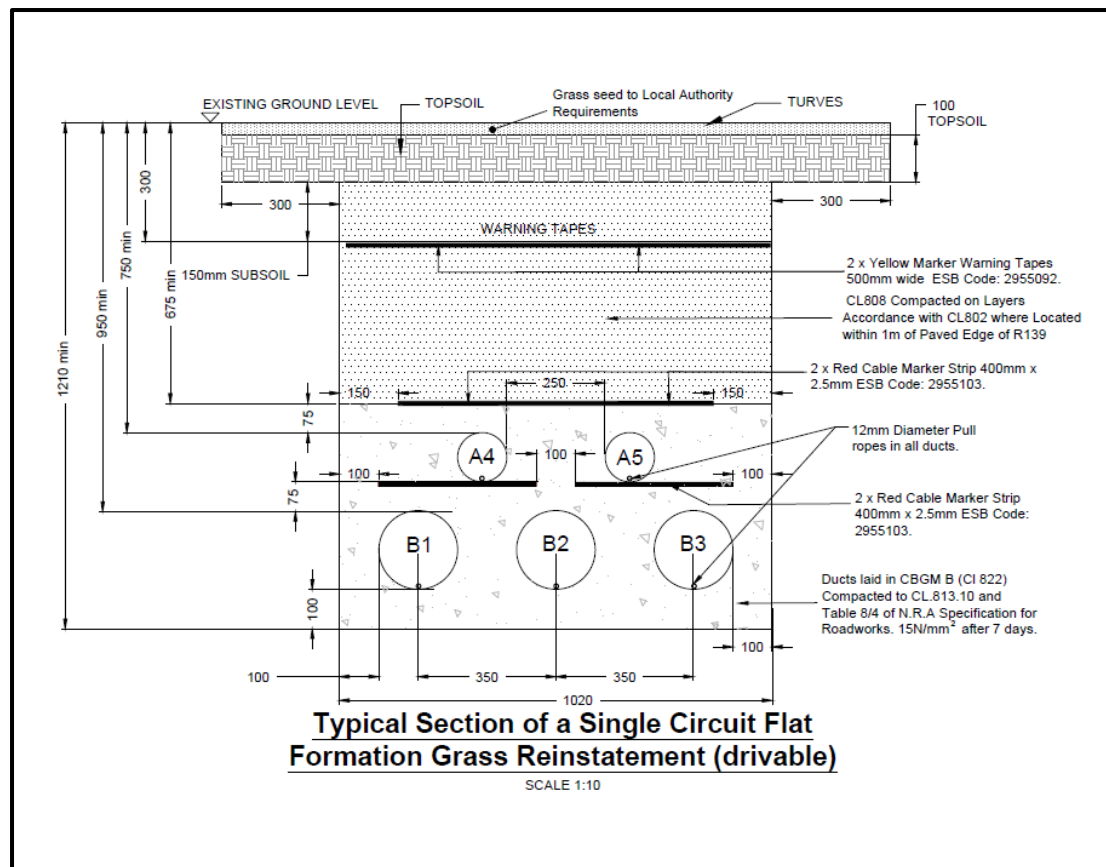


Figure 2.3 Typical Cross Section of Trench for Underground Cable (Source: CSEA, January 2020)

The design of the 49kVA underground cable will comprise a looped 10kV circuit installed underground in HDPE ducting. The 10kV cables will be a standard XLPE (cross-linked polyethylene) Aluminium cable. XLPE does not contain oil, therefore

there is no risk of migration of oil into the ground in the event of a failure (such as a short circuit, a joint fail, a termination failure etc.).

The installation of the HDPE ducting will require the excavation of one trench along the route; the trench will contain one 10kV circuit. Between two and four separate ducts will be installed the trench.

The optimum depth of excavation required to facilitate installation of the ducting is 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of the trench is c. 0.6m, however this may vary depending on ground conditions and existing services to up to c. 1m. A typical cross section of the trench is illustrated in Figure 2.4.

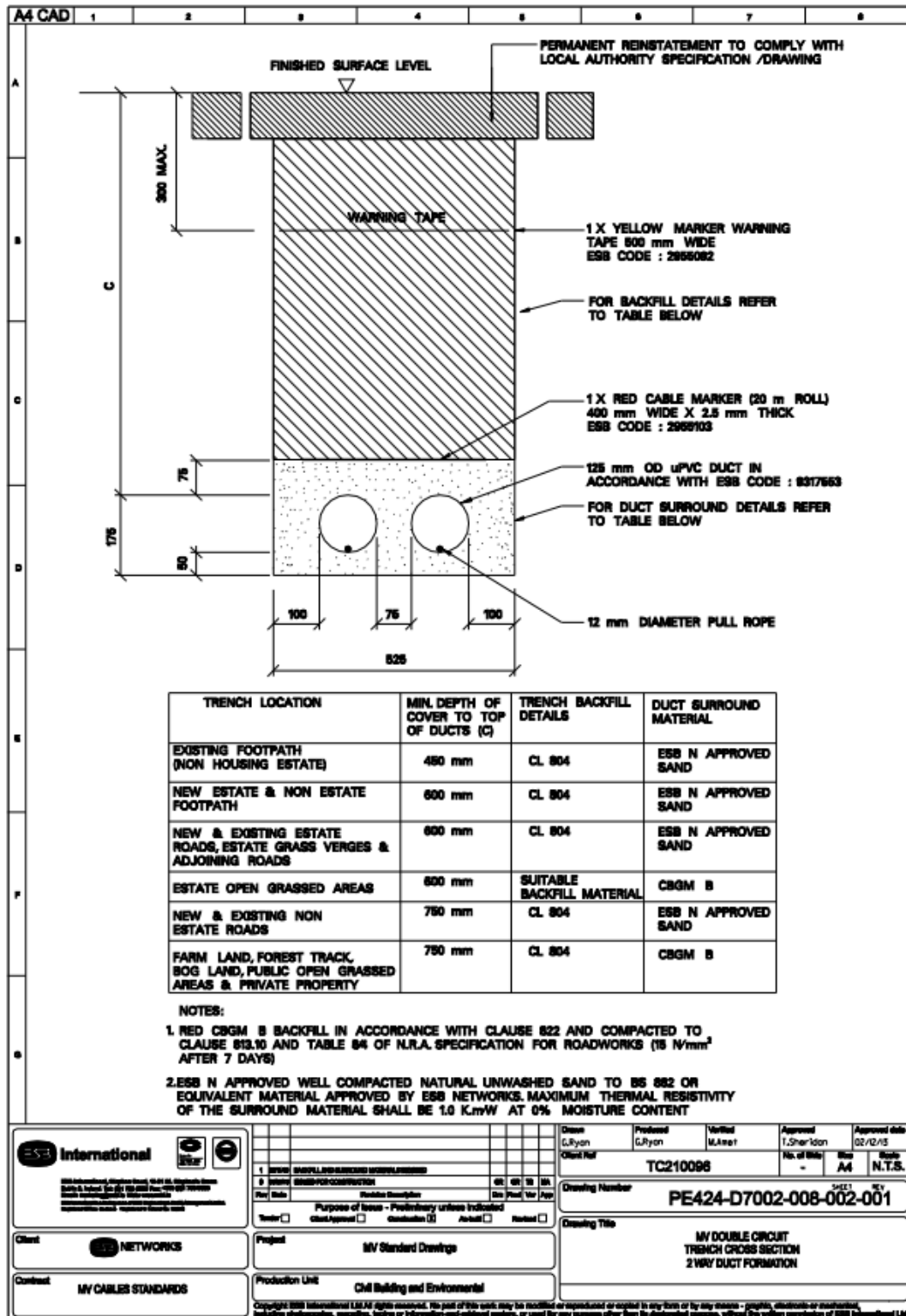


Figure 2.4 Typical Cross Section of Trench for Underground Cable (Source: ESBN, May 2019)

2.2.3 Proposed Site Infrastructure and Secondary Facilities

2.2.3.1 Surface Water Drainage

Rainwater runoff from the proposed 220kV GIS substation will discharge to the surface water drainage network for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). The surface water drainage network for the permitted Building A development was designed to accommodate surface water drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC

Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate runoff from the Proposed Development.

The permitted Building A drainage design includes oil separator interceptor systems to ensure the quality of storm water discharge is controlled prior to attenuation and discharge offsite. A shut off valve is included in the design to ensure that discharges from the overall landholding can be shut off in the event of a fire or other form of surface water contamination event.

The attenuated storm water will be discharged at the allowable greenfield run off rate (i.e. 24l/s) to the existing storm water system along the R121 / Cruiserath Road to the south of the site. Further detail on the storm water drainage system and the basis of its design is provided in the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, which accompanies this application and in the *Engineering and Water Services Report*, prepared by CSEA, which accompanied the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) which is included as an Appendix to the *Engineering Planning Report – Drainage and Water Services* for this application. Chapter 6 Hydrology and Chapter 13 Material Assets address the impacts on storm water drainage.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any surface water drainage infrastructure. The transmission line and 49kVA cable installation are underground and the cable bays will be constructed on a primarily permeable gravel surface (with some concrete bases which will drain to the gravel area) at the Corduff substation. Rainfall will drain to ground, as it currently does in these areas.

2.2.3.2 *Foul Water Drainage*

Domestic effluent arising from the welfare facilities at the GIS substation will be collected in a newly constructed foul drainage network within the site and discharged to the IDA (Industrial Development Authority) foul drainage network on the R121 to the south of the site, via the foul drainage network for the permitted Building A development. The wastewater discharged from the site will ultimately discharge to the municipal Waste Water Treatment Plant (WWTP) at Ringsend. The wastewater contribution from the Proposed Development will be minimal. Chapter 6 Hydrology and Chapter 13 Material Assets address the impacts on foul water drainage.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any foul drainage infrastructure.

2.2.3.3 *Water Supply*

Water will be required for the welfare facilities at the GIS substation. This will be provided via a connection to the watermain for the permitted Building A development. The water demand for the Proposed Development will be minimal. Chapter 6 Hydrology and Chapter 13 Material Assets address the impacts on water supply.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed

substation and 2 no. new cable bays at the extant Corduff substation do not require any water supply.

A pre-connection enquiry (PCE) form was submitted to Irish Water (IW) on 21st November 2016 which addressed water demand for the GIS substation building. IW provided a confirmation of feasibility (CoF) for the development on 14th February 2017 (IW Reference Number: CUST16622).

2.2.3.4 *Electricity*

The proposed 220kV GIS substation, 220kV transmission line and 49kVA cable installation and 2 no. new cable bays at Corduff substation are designed to support power demand for Buildings A, B and C and potential development of the future indicative buildings to the north of the GIS substation (which will be subject to separate planning applications and EIA Reports), within the overall landholding. The 49kVA cable installation is intended to provide a house power supply to the proposed GIS substation.

2.2.3.5 *Telecommunications*

The fibre network for the permitted development will be extended to the GIS substation.

2.2.3.6 *Fire Water System*

A fire water ring main for the permitted development will be extended to the GIS Substation as required to provide firefighting water to hydrants in the event of a fire.

2.2.3.7 *Security and Lighting*

Other than during construction, the traffic accessing the GIS substation will approach and access the site through the new western entrance to be constructed off the R121 roundabout midway along the western site boundary (this new western entrance will be constructed as part of the permitted Building A works (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A maximum speed limit of 10km/hour will be in place on the access road.

A pair of access gates will be manned and maintained by security personnel 24/7. (The access gates have been designed to act as a vehicle trap as and when required). An additional entrance will be provided along the southern boundary during the construction period. Security will ensure that the procedure for accessing the facility is followed at all times.

A record will be maintained of all personnel visiting the site (including deliveries etc.). All visitors to site will be monitored and supervised at all times.

A 3m high security fence will be constructed around the perimeter of the overall landholding as part of the permitted development. The Proposed Development will be partly screened from the R121 by this fence and a combination existing clay berm (planted c.10 years ago) and new berms constructed as part of the permitted development. The intention is that boundary planting will be significantly strengthened as part of the Proposed Development landscape plan (refer to Chapter 11 Landscape and Visual Impact). (Note: the landscape plan for the Proposed Development is an amendment to landscape plan for the permitted Building A development).

CCTV cameras will be installed at strategic locations around the permitted Building A site to ensure all boundaries and approaches to the facility are adequately monitored. A motion detection system (passive infra-red system known as a “red wall”) combined with CCTV and security lighting will be utilised.

The lighting design (both security and environmental lighting) has been assessed and optimised for the site, to ensure no obtrusive glare, light spillage or other light nuisance on neighbouring residential receptors or business users.

2.2.3.8 Site Roads and Parking

As above, the main access to the site will be via the existing south-western entrance. Access arrangements and potential traffic safety impacts are considered in Chapter 12 Traffic and Transportation.

2.2.4 Indicative Future Development

The EIA Report for the permitted Building B and C development (FCC Planning Ref.: FW19A/0087) illustrated an indicative masterplan for the permitted Building A site which indicates the potential for future development of three further data storage facility buildings (Buildings E, F and G) to the north of the proposed GIS substation (See Figure 2.5 which is an extract from the EIA Report for Building B and C, FCC Planning Ref.: FW19A/0087). These may be developed by the Applicant over the coming years, subject to customer demand. The design of the indicative future developments, if proceeded with, will be further developed and refined in future and will be subject a separate planning application(s) and EIA Report(s). The Proposed Development is not dependent on the development of the future indicative buildings. The potential cumulative impact of the Proposed Development with the indicative future development, has been assessed in Chapter 15 (Cumulative Impact) of this EIA Report to the extent possible, having regard to the preliminary nature of that plan.

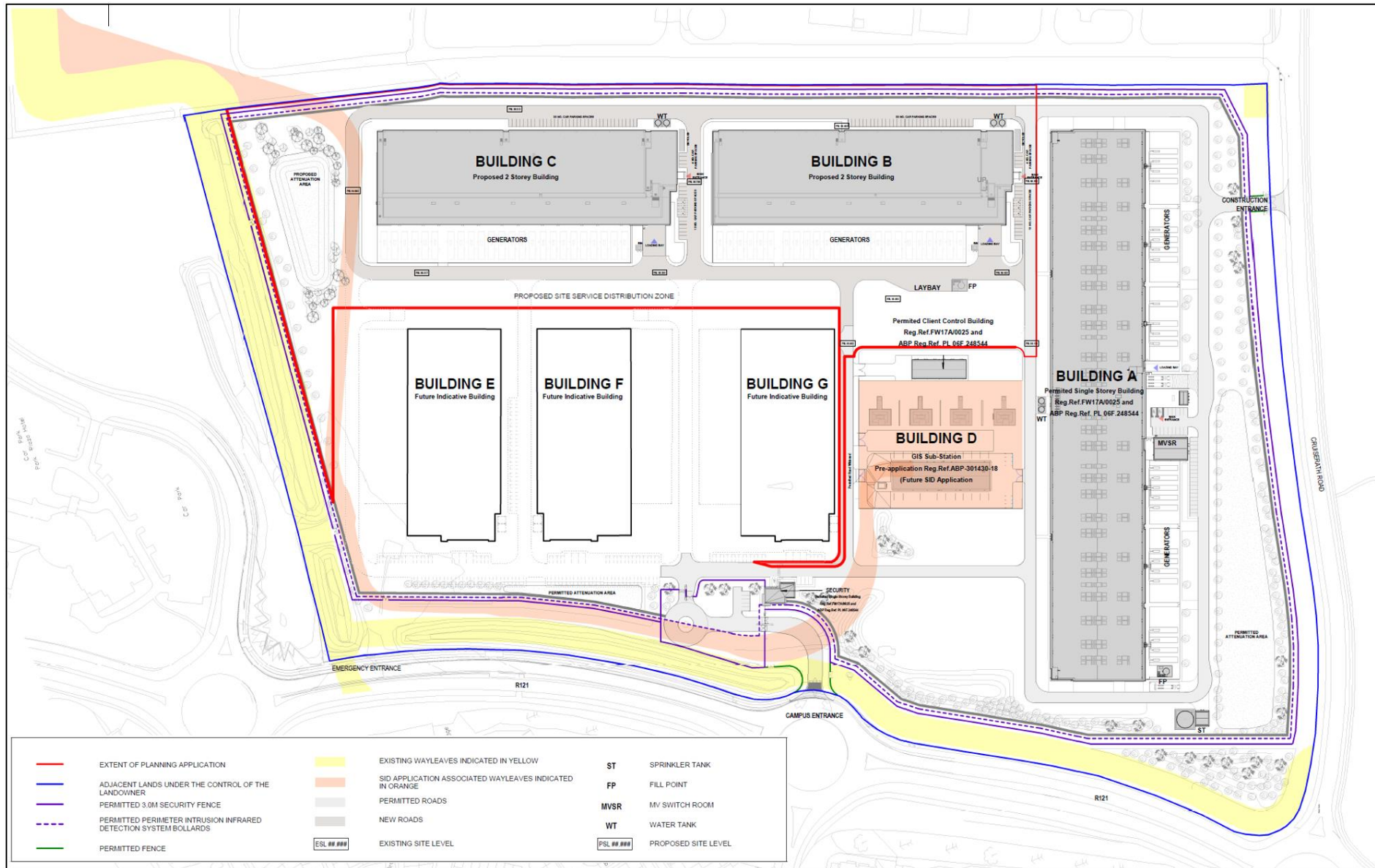


Figure 2.5 Indicative masterplan for the adjoining lands (Source: EIA Report for the permitted Building B and C development, FCC Planning Ref.: FW19A/0087)

2.3 EXISTENCE OF THE PROJECT

Under the current Draft EPA Guidelines on the information to be contained in EIA Reports, the description of the existence of the project is required to define all aspects of the proposed lifecycle of the Proposed Development under the following headings:

- Construction;
- Commissioning;
- Operation;
- Decommissioning; and
- Description of Other Developments.

The following sections present a description of each of these aspects.

2.3.1 Description of Construction

The construction of the proposed 220kV GIS substation will comprise four main stages, namely;

- Site preparation works;
- Building Structure Construction;
- Building Envelop Construction; and
- Fit Out Including mechanical and electrical fit-outs and commissioning.

The construction of the 220kV transmission line and 49kVA cable installation will comprise three main stages, namely;

- Site preparation works and excavations;
- Cable installation, jointing and testing; and
- Reinstatement.

The construction of the 2 no. new cable bays at the Corduff substation will comprise three main stages, namely;

- Site preparation works and excavations;
- Construction of concrete bases for the electrical apparatus; and
- Fit Out Including M&E and commissioning.

Working Hours

It is anticipated that the construction of the GIS substation, the 220kV transmission line and 2 no. cable bays will be completed during normal construction hours i.e. 7am to 7pm Monday to Friday with a half day working on Saturday (8am -1pm).

A portion of the 49kVA cable route is in the public domain. Construction of this portion of the route will be carried out between the hours of 10am and 4pm. During construction, staff will arrive on site at approximately 8am and take c. 1.5 to 2 hours to mobilise before commencing works. Any works requiring the closure of one or more traffic lanes will be carried out at night, between the hours of 7pm and 6am. The remainder of the route will be completed during normal construction hours i.e. 7am to 7pm Monday to Friday with a half day working on Saturday (8am -1pm).

However, it is possible that the appointed contractors may wish to carry out certain operations outside these hours i.e. evening hours during long summer days etc. Such occurrences will be notified to the local authority, where required and generally kept to a minimum. Where they do occur, contractors will ensure they take place over as short a timeframe as possible and as such are unlikely to cause excessive disturbance.

Staffing

The following construction data has been used to estimate peak daily construction traffic (assumed to occur during civil works period for substation building):

- Average construction staff: 15-20;
- Peak construction staff (peak staff levels during civil works): 30;

Construction Schedule

- Application for Planning Permission – February 2020
- Commence Site Construction works (subject to grant of planning permission) – End of Q3 2020
- Completion of Construction and Commissioning – Q1 2022

Site Preparation

The construction of the permitted data storage facility on site (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) commenced in Q3 2019. The first data hall is estimated to be in operation by Q2 2020, with the completion of construction and commissioning of the remaining data halls targeted for Q2 2022.

It is proposed that the accesses and haul roads for vehicles, the contractors' compound and fencing that have been established for the construction of the permitted development will be utilised for the Proposed Development.

The construction compound will facilitate office, portable sanitary facilities, equipment storage, parking etc. for contractors. It will be used for the duration of the works.

The site preparation phase for the GIS substation will involve site clearance, excavations and levelling of the site to the necessary base level for construction, surveying and setting out for structures and any rerouting of services/connections to services.

A combination of bulldozer, excavators, trucks and other soil shifting plant will commence the main site clearance and levelling aspects.

The site preparation required for the 220kV transmission line, the 49kVA cable installation and the 2 no. new cable bays will be limited with minimal site clearance required.

Building Construction Works

Foundations and Structure

Following the completion of site clearance and levelling, all structures will require foundations to structural engineer specifications. Building structures will comprise standard structural steel frames.

It is anticipated that foundations will require moderate scale excavations. Due to the shallow depth of bedrock (see Chapter 6), some rock breaking may be necessary. Minor dewatering may be required during excavation works and groundworks (depending on the time of year development works are carried out; refer to Chapter 5).

Levelling/Cut and Fill

It is envisaged that all of the spoil generated during site preparation/levelling will be removed from site (see Chapter 14).

The importation of fill will be required to facilitate construction. The project engineers, CSEA, have estimated that the importation of up to 26,000m³ of fill material will be required.

Contractors will be required to submit and adhere to a method statement (including the necessary risk assessments) and indicating the extent of the areas likely to be affected and demonstrating that this is the minimum disturbance necessary to achieve the required works.

Any temporary storage of spoil required will be managed to prevent accidental release of dust and uncontrolled surface water run-off which may contain sediment etc. (refer to Chapters 5 & 6 for further details).

Building Envelopes and Finishes

The outer finishing of the building envelopes are intended to be of a similar quality and appearance to the permitted developments.

Reinstatement along the 220kV transmission line and 49kVA cable installation route will be as current, i.e. grassed in greenfield areas and hardstand along paved areas and roads.

Roads, Services and Landscaping

The internal road system will be completed as part of the Building A permitted development.

Landscaping will be undertaken in accordance with the landscape masterplan for the Proposed Development (refer to Chapter 11 Landscape and Visual Impact).

Material Sourcing, Transportation and Storage

Materials

Key materials will include steel, concrete, composite cladding, piping, electrical cabling, process equipment and architectural finishes. A 'Just in Time' delivery system will operate to minimise storage of materials on site.

Sourcing

Where possible it is proposed to source general construction materials from the Dublin area to minimize transportation distances.

Storage

Aggregate materials such as sands and gravels will be stored in clearly marked receptacles within a secure compound area to prevent contamination. Liquid materials will be stored within temporary bunded areas, double skinned tanks or bunded containers (all bunds will conform to standard bunding specifications – BS EN 1992-3:2006) to prevent spillage.

Transportation

Construction materials will be brought to site by road. Construction materials will be transported in clean vehicles. Lorries/trucks will be properly enclosed or covered during transportation of friable construction materials and spoil to prevent the escape of material along the public roadway.

Waste Management

Chapter 14 contains a detailed description of waste management relating to construction of the Proposed Development. A site-specific Construction and Demolition Waste Management Plan is included as Appendix 14.1 of this EIA Report.

This C&D Waste Management Plan will be refined and updated in advance of the works to ensure best practice is followed in the management of waste from the Proposed Development.

Noise, Vibration and Dust Nuisance Prevention

With regard to construction activities, reference will be made to BS 5228 (i.e. BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014) for noise and vibration control on construction and open sites, which offers detailed guidance on the control of noise and vibration from demolition and construction activities. Various mitigation measures will be considered and applied during the construction of the Proposed Development, such as:

- Limiting the hours during which site activities which are likely to create high levels of noise are permitted, e.g. soil levelling/excavations;
- Establishing channels of communication between the contractor/developer, local authority and residents;
- Appointing a site representative responsible for matters relating to noise and vibration, and;
- Monitoring typical levels of noise during critical periods and at sensitive locations.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These may include:

- Selection of plant with low inherent potential for generation of noise;
- Erection of barriers as necessary around items such as generators or high duty compressors, and;
- Siting of noisy plant as far away from sensitive receptors as permitted by site constraints.

Noise and vibration control measures are discussed in detail in Chapter 9 Noise & Vibration.

The potential for dust to be emitted depends on the type of construction activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of dust produced will be deposited close to the generated source.

In order to ensure that no dust nuisance occurs, a series of measures will be implemented including:

- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads will be restricted to essential site traffic only;
- If required, any area/road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions;
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. Indeed, on any un-surfaced site road, this will be 10km/hour, and on hard surfaced roads as site management dictates;
- In dry conditions vehicles delivering material with dust potential (soil, aggregates) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- Wheel washing facilities will be provided for vehicles exiting the site to ensure that mud and other wastes are not tracked onto public roads;

- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary; and
- At all times, these procedures will be strictly monitored and assessed. In the event of dust emissions occurring outside the site boundary, movements of materials likely to raise dust would be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

Dust nuisance control measures are discussed in further detail in Chapter 8 Air Quality and Climate.

Water Discharges

Portable welfare and sanitary facilities will be provided for the construction workers at the construction compound for the permitted development.

Any surface water run-off will be adequately contained and treated prior to being discharged into the FCC drainage network. See Chapter 6 Hydrology for a full description of mitigation measures proposed.

Construction Impacts

Each of the following EIA Report chapters (Chapters 4-14) includes an assessment of the potential impact of construction works on their individual environmental aspect and set out the relevant mitigation measures relating to that aspects.

It is proposed that a Construction Environmental Management Plan (CEMP) will be put in place by contractors to minimise the impact of all aspects of the construction works on the local environment. The CEMP will include emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction.

The primary potential effects from construction are all short-term and are anticipated to include;

- Effects in terms of nuisances relating to the air quality of the environs due to dust and other particulate matter generated from excavation works and effects on the noise environment due to plant and equipment involved in construction;
- Effects on the land, soils, geology & hydrogeology of the site during construction i.e. some loss of protection of the underlying aquifer to contaminants during site clearance, levelling and excavations etc.; and
- Effects on the local road network and its environs due to construction workers and other staff attending site during preparation, construction and commissioning phases.

Mitigation measures to address each of these potential short-term effects are presented in each individual EIA Report chapter.

2.3.2 Description of Commissioning

Once the construction of the Proposed Development is completed, ESB Networks will be mobilised to complete the commissioning. Commissioning will be carried out over a period of months. Commissioning works primarily involve a suitably qualified individual connecting the relevant cables to a switchgear within the substations. Following this, energisation can take place.

As there is no requirement for chemicals usage and minimal access to the route by personnel there is no likely environmental effect as a result of commissioning.

Any hard landscaping and final soft landscaping will be completed.

2.3.3. Operation of the Project

As stated in Sections 1.1 and 1.3 of Chapter 1, EirGrid will be the transmission system operator (TSO) and ESB Networks will be the transmission asset owner (TAO). EirGrid will operate transmission stations, including the existing Corduff substation and the proposed new GIS substation, remotely from their control centres. However, ESB Networks will carry out all local operations on Eirgrid's behalf.

The ESB Networks will undertake local operational activities from the substations with only interim inspections along the underground 220kV transmission line and 49kVA cable installation.

The estimated staff required are outlined in the following paragraphs.

220kV GIS substation

The 220kV GIS substation does not require any full-time staff to operate it. However, maintenance of the substation will be required by ESB Networks, including a routine weekly inspection, and a more comprehensive inspection once per year. The weekly inspection of the GIS substation will take a maximum of 8 hours on a single day and will be conducted by up to 2 staff.

In addition to the weekly inspections, more comprehensive maintenance works will take place annually on each cubicle. This will require up to 4 staff to conduct testing at the substation over a maximum period of 15 days (120 hours).

It is expected that the proposed 4 new transformers (to be located east of and adjacent to the 220kV GIS substation) will also be inspected during this time.

Underground 220kV Transmission Line

Once constructed, the underground transmission line will not require any staff to operate it. Instead, two ESB Networks maintenance staff will carry out a routine inspection of the asset one year after completion and once every three years thereafter.

Underground 49kVA Cable Installation

Once constructed, the underground cable installation will not require any staff to operate it. Instead, two ESB Networks maintenance staff will carry out a routine inspection of the asset one year after completion and once every three years thereafter. These inspections are likely to be conducted at the same time the underground 220kV transmission line is inspected.

2 Cable Bays at the Corduff Substation

Once constructed, these cable bays will not require any staff to operate them. Instead, ESB Networks maintenance staff will inspect these cable bays as part of their existing overall maintenance operations at the Corduff substation (similar maintenance schedule to that described above for the proposed Cruiserath 220KV GIS substation). Therefore, no additional staff (above existing requirements) will be required to maintain the cable bays and thus, there will be no additional trips generated by this element of the Proposed Development.

Traffic relating to staff movements have been assessed as part of the traffic and transportation chapter of this EIA Report (Chapter 13).

2.3.4 Decommissioning of the Project

The lifespan of the Proposed Development is not defined but it is anticipated that it will be maintained, and periodic upgrading undertaken over a long lifetime to meet future demand and upgrade in technology.

If the GIS substation is no longer required over the long term, then full decommissioning in accordance with prevailing best practice will be undertaken.

Retirement of any cables will involve decoupling the cable from the switchgear. An excavation pit of approximately 10m² will then be established. The cable to be retired will be identified within this excavation pit and spiked (to ensure that decoupling from the switchgear has been successful and the cable is not live). The cable will then be cut and capped to protect the exposed cable. The excavated pit can be reinstated using the excavated material, with no import of fill required. The retired cable can remain in situ in the ground, with the potential for it to be returned to operation should it be required in the future.

2.3.5 Description of Other Developments

A list of the other developments in the vicinity of the Proposed Development, including Bestseller Retail Ireland Ltd and Betania Limited, amongst others, is provided in Chapter 3 Planning and Alternatives of this EIA Report. (In terms of construction projects some of these developments are completing alterations or extensions however the majority of these are relatively small scale).

2.4 **SUSTAINABILITY ENERGY EFFICIENCY & RESOURCE USE**

Eirgrid and ESB Networks are committed to running their businesses in the most environmentally friendly way possible. ESB Networks is a subsidiary within ESB Group. The ESB Group has identified energy efficiency as a strategic priority within its Brighter Future strategy. ESB Group is a commercial semi-state-owned company (95% state-owned) and is committed to supporting and being exemplar in the delivery of Ireland's 2020 public sector targets. These targets, outlined in the fourth National Energy Efficiency Action Plan (2017 – 2020) (NEEAP), include an energy efficiency target of 33% for the public sector.

2.5 **HEALTH & SAFETY**

2.5.1 **Design and Construction Health and Safety**

The Proposed Development has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 to 2016 (S.I. 299 of 2007, S.I. 445 of 2012, S.I. 36 of 2016) as amended and associated regulations.

The Proposed Development has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar developments.

2.5.2 **General Operational Health and Safety**

ESB Networks has an Environmental Safety and Health Management System (EMS) which will be implemented at the Proposed Development.

2.6 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

The Proposed Development is to be located on zoned lands adjacent to extensive industrial development (details of zoning can be found in Chapter 3). The development, when operational, will generate limited additional traffic, air, noise and water emissions and wastes generation from activities etc.

During construction, there is the potential for temporary nuisance impacts from traffic, dust, noise and construction waste, if not carefully managed. All contractors will be required to implement a CEMP to ensure each of these potential impacts are minimised.

Each chapter of this EIA Report assesses the potential impact of the construction and operation of the Proposed Development on the receiving environment. Please refer to each specialist chapter respectively.

2.7 MAJOR ACCIDENTS/DISASTERS

The 2014 EIA Directive and associated Draft EPA EIA Guidelines requires that the vulnerability of the project to major accidents, and/or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.) is considered in the EIA Report. The site has been assessed in relation to the following external natural disasters; landslides, seismic activity and volcanic activity and sea level rise/flooding as outlined below. The potential for major accidents to occur at the data storage facility has also been considered with reference to Seveso/COMAH.

Landslides, Seismic Activity and Volcanic Activity

There is a negligible risk of landslides occurring at the site and in the immediate vicinity due to the topography and soil profile of the site and surrounding areas. There is no history of seismic activity in the vicinity of the site. There are no active volcanoes in Ireland so there is no risk of volcanic activity. Further detail is provided in Chapter 5 Land, Soils, Geology & Hydrogeology.

Flooding/Sea Level Rise

The potential risk of flooding on the site was also assessed. A Stage 1 Flood Risk Assessment was carried out and it was concluded that the development is not at risk of flooding. Furthermore, it is not expected that the Proposed Development would adversely impact on flood risk for other neighbouring properties. Further detail is provided in Chapter 6 Hydrology and Appendix 6.2 Stage 1 Flood Risk Assessment.

Seveso/COMAH

The Proposed Development will not be a Seveso/COMAH facility. The only substance stored on site controlled under Seveso/COMAH will be diesel for generators and the amounts proposed do not exceed the relevant thresholds of the Seveso directive.

Minor Accidents/Leaks

There is a potential impact on the receiving environment as a result of minor accidents/leaks of fuel/oils during the construction and operational phases. However, the implementation of the mitigation measures set out in Chapters 6 and 7 will ensure the risk of minor accidents/leaks of fuel/oils is low and that the residual effect on the environment is imperceptible.

2.8 RELATED DEVELOPMENT AND CUMULATIVE IMPACTS

The Proposed Development is for a new 220kV GIS substation, an underground double circuit 220kV cable installation from the proposed substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works. The proposed development is designed to support power demand for permitted Buildings A, B and C and potential development of the future indicative buildings E, F and G to the north of the GIS substation (which will be subject to separate planning applications and EIA Reports), within the overall landholding. The 49kVA cable installation is intended to provide a house power supply to the proposed GIS substation. The cumulative impact of the Proposed Development with permitted and future indicative developments within the overall landholding have been considered in Chapter 15 Cumulative Impact, to the extent possible, having regard to the preliminary nature of the future indicative plans for the overall landholding.

Planning permission has recently been granted by FCC to ESB Engineering & Major Projects for 6MVA and 23MVA underground cable installations which are designed to support interim power demand for Building A (FCC Planning Ref. FW19A/0177). The cumulative impact assessment of the Proposed Development with this development is provided in Chapter 15 of this EIA Report.

As part of the assessment of the impact of the Proposed Development, the cumulative impacts of the Proposed Development with other developments that are currently permitted or under construction within the vicinity of the site, neighbouring industrial parks and surrounding areas have been assessed. A list of the other developments considered is provided in Chapter 3 Planning and Alternatives. The cumulative impact assessment of the Proposed Development with these other developments is provided in Chapter 15 of this EIA Report. With mitigation for each environmental aspect, there are no predicted significant cumulative effects.

3.0 PLANNING AND ALTERNATIVES

3.1 INTRODUCTION

The Proposed Development is within the functional area of Fingal County Council (FCC). The Proposed Development is considered within the context of the relevant National and FCC planning policies. The latter half of the chapter addresses the consideration of “alternatives” as required under the relevant planning legislation and the prevailing EIA legislation and guidance (as detailed in Chapter 1).

The Applicant is applying to ABP for planning permission for the Proposed Development. A full description of the Proposed Development can be found in Chapter 2.

The 220kV GIS substation was initially included in the planning application for Building A. However, it was subsequently removed from scope of the development. Condition No. 2 of the Board’s Order states that the permission does not “*authorise the provision of any grid connection or the provision of the 220kV substation*”.

The project is designed to support the power demand for the permitted development of Buildings A, B and C (as detailed in Chapter 2) and to serve the power of potential development of the future indicative buildings to the north of the GIS substation (which will be subject to separate planning applications and EIA as detailed in Chapter 2), within the overall landholding.

3.2 STRATEGIC INFRASTRUCTURE DEVELOPMENT

Section 182A of the Planning & Development Act 2000 (as amended), provides that applications for approval of “*development comprising or for the purposes of electricity transmission*” shall be made directly to ABP. Section 182A, sub-section 9, also provides that “*transmission*” is to be construed in accordance with section 2(1) of the Electricity Regulation Act 1999 but shall also be construed as meaning the transport of electricity by means of:

- (a) a high voltage line where the voltage would be 110 kilovolts or more, or
- (b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not.

Section 2(1) of the Electricity Regulation Act 1999 defines “*transmission*”, in relation to electricity, as:

“the transport of electricity by means of a transmission system, that is to say, a system which consists, wholly or mainly, of high voltage lines and electric plant and which is used for conveying electricity from a generating station to a substation, from one generating station to another, from one substation to another or to or from any interconnector or to final customers but shall not include any such lines which the [Electricity Supply] Board may, from time to time, with the approval of the Commission [for Energy Regulation], specify as being part of the distribution system but shall include any interconnector owned by the [Electricity Supply] Board.” It should be noted that the Commission for Energy Regulation is now known as the Commission for the Regulation of Utilities (CRU).

The Board’s *Strategic Infrastructure Development Electricity Transmission Guidelines* provide that “*certain private sector Proposed Developments may constitute electricity*

transmission under section 182A where such proposals will ultimately form a node on or part of the transmission network. This might include for example substations and related connection infrastructure to the national grid associated with large commercial or industrial development.”

Consultation with ABP has confirmed that the Proposed Development meets the relevant criteria and constitutes Strategic Infrastructure Development (SID) under Section 182A of the Planning and Development Act 2000 (as amended) (ABP Reg. Ref.: ABP-3001430-18).

3.3 NATIONAL, REGIONAL AND LOCAL PLANNING CONTEXT

National Planning Framework – Ireland 2040

The National Planning Framework (herein referred to as the NPF) was published in February 2018 and contains policies which are supportive of the development of information and communication technology (ICT) infrastructure, with particular reference made to data centres. National Strategic Outcome 6 of the NPF relates to the creation of “*A Strong Economy Supported by Enterprise, Innovation and Skills*”. This strategic outcome is underpinned by a range of objectives relating to job creation and the fostering of enterprise and innovation.

The following objective, relating to ICT infrastructure (including datacentres) is included under National Strategic Outcome 6:

“Promotion of Ireland as a sustainable international destination for ICT infrastructures such as data centres and associated economic activities.”

The Proposed Development comprises the provision of a permanent power supply for the permitted data storage facility developments (i.e. Buildings A, B and C) and potential future developments, in a location which is well suited and serviced to accommodate such a use.

The NPF also states under National Strategic Outcome 6:

“Ireland is very attractive in terms of international digital connectivity, climatic factors and current and future renewable energy sources for the development of international digital infrastructures, such as data centres. This sector underpins Ireland’s international position as a location for ICT and creates added benefits in relation to establishing a threshold of demand for sustained development of renewable energy sources.”

The NPF is favourably disposed to the location of ICT infrastructure in Ireland, and the Proposed Development, which will support such ICT infrastructure, is therefore considered to be wholly in accordance with this key body of national planning policy.

Draft Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly

The Draft Regional Spatial and Economic Strategy (RSES) for the Eastern and Midlands Regional Assembly (EMRA) includes Regional Policy Objective (RPO) 8.23 which states the following:

“Local Authorities shall:

- *Support and facilitate delivery of the National Broadband Plan.*

- *Facilitate enhanced international fibre communications links, including full interconnection between the fibre networks in Northern Ireland and the Republic of Ireland.*
- *Promote and facilitate the sustainable development of a high-quality ICT network throughout the Region in order to achieve balanced social and economic development, whilst protecting the amenities of urban and rural areas.*
- *Support the national objective to promote Ireland as a sustainable international destination for ICT infrastructures such as data centres and associated economic activities at appropriate locations.*
- *Promote Dublin as a demonstrator of 5G information and communication technology.”*

As set out in the Planning Report prepared by JSA, the site is considered to be appropriate location for the development of data storage facilities, as evidenced by the previous grant of planning permission by FCC and ABP for the permitted data storage facilities on the overall landholding and the Proposed Development will support these permitted developments.

Regional Planning Guidelines for the Greater Dublin Area (2010 – 2022)

The Regional Planning Guidelines for the Greater Dublin Area 2010 – 2022 set out the planned direction for growth up to 2022 by giving regional effect to the National Spatial Strategy (NSS). The Guidelines provide an overall strategic context for the Development Plans of each local authority in the Greater Dublin Area (GDA) including enterprise and employment creation.

With regard to enterprise and employment, the Regional Planning Guidelines for the Greater Dublin Area (2010-2022) designate Blanchardstown as a ‘Level 2 – Major Town Centre & County Town Centres’. In addition, Blanchardstown, together with Swords, Sandyford and Tallaght have been identified as drivers with the core of the GDA for sustained international and regional economic development and growth. It is considered that the Proposed Development will support development and therefore will contribute towards the objectives for economic growth and employment on lands zoned for such High Technology employment uses.

Fingal Development Plan 2017 – 2023

The Proposed Development is situated within the administrative area of FCC, and therefore the Planning and Development Framework with which the development complies is defined by the Fingal Development Plan 2017 – 2023. The Fingal Development Plan 2017 – 2023 came into effect in 2017. The plan outlines FCC’s policies and objectives for the development and improvement in a sustainable manner of the economic, environmental, cultural and social assets of the County over the period 2017 to 2023.

The following sections describe how the Proposed Development is in compliance with the stated requirements of FCC with respect to planning and sustainable development.

Zoning

The Proposed Development will be located substantially within lands Zoned HT: High Technology in the Fingal Development Plan 2017-2023, with the objective to...*Provide for office, research and development and high technology / high technology manufacturing type employment in a high quality built and landscaped*

environment that extends westwards as far as the R121 and to the north and south of the Cruiserath Road.

In this context the Proposed Development will contribute to the provision of infrastructure intended to support the development of such activities and greater confidence in continuity and adequacy of electricity supply.

Utility Installations are permitted in principle within High Technology zones under Section 11.8 of the Fingal Development Plan 2017-2023. A Utility Installations is defined in Appendix 4: Technical guidance notes of the Fingal Development Plan 2017-2023 as *“a structure composed of one or more pieces of equipment connected to or part of a structure and/or a facility designed to provide a public utility service such as the provision of heat electricity, telecommunications, water or sewage disposal and/or treatment”*. The Proposed Development is considered to fall broadly within the use-class of utility installations and would therefore comply with the intended uses of this zoning.

Within the Economic Development chapter of the Development Plan, it is stated that *‘demand is likely to emanate from the data centre, biopharmaceutical, food production and logistics activities that require specific facilities to meet their exacting requirements’*.

Objective ED109 states that with regard to such industrial or manufacturing units, the objective is to *‘ensure that a range of industrial and/ or manufacturing units, in terms of size, scale, format and arrangements, is provided for to adequately respond to enterprise requirements’*.

Objective ED110 states the objective is to *‘proactively respond to the needs of enterprises undertaking pharmaceutical, data centre, food production and logistics activities that require bespoke building facilities to meet their specific manufacturing requirements’*.

The 220kV underground transmission line will extend from the HT zoning into land **Zoned GE: General Enterprise...** *Provide opportunities for general enterprise and employment.*

Utility Installations are permitted in principle within General Employment zones under Section 11.8 of the Fingal Development Plan 2017-2023. The Proposed Development is considered to fall broadly within the use-class of utility installations and would therefore comply with the intended uses of this zoning.

The Proposed Development will provide the power supply needed to support the permitted data storage facility developments (Buildings A, B and C, as detailed in Chapter 2) as well as indicative future power requirements within the overall landholding (which will be subject to separate planning applications and EIA, as detailed in Chapter 2).

Similarly, the 49kVA connection will extend beyond the HT zoning across and along the Cruiserath Road onto Church Road. The roads are also adjoined by lands **Zoned OS: Open Space...** *To preserve and provide for open space and recreational amenities;* **RS: Residential....** *To provide for residential development and protect and improve residential amenity;* and **CI: Community Infrastructure...** *Provide for and protect civic, religious, community, education, health care and social infrastructure.*

The zoning of the Proposed Development as defined in the Fingal Development Plan 2017 – 2023 is illustrated on in Figure 3.1.

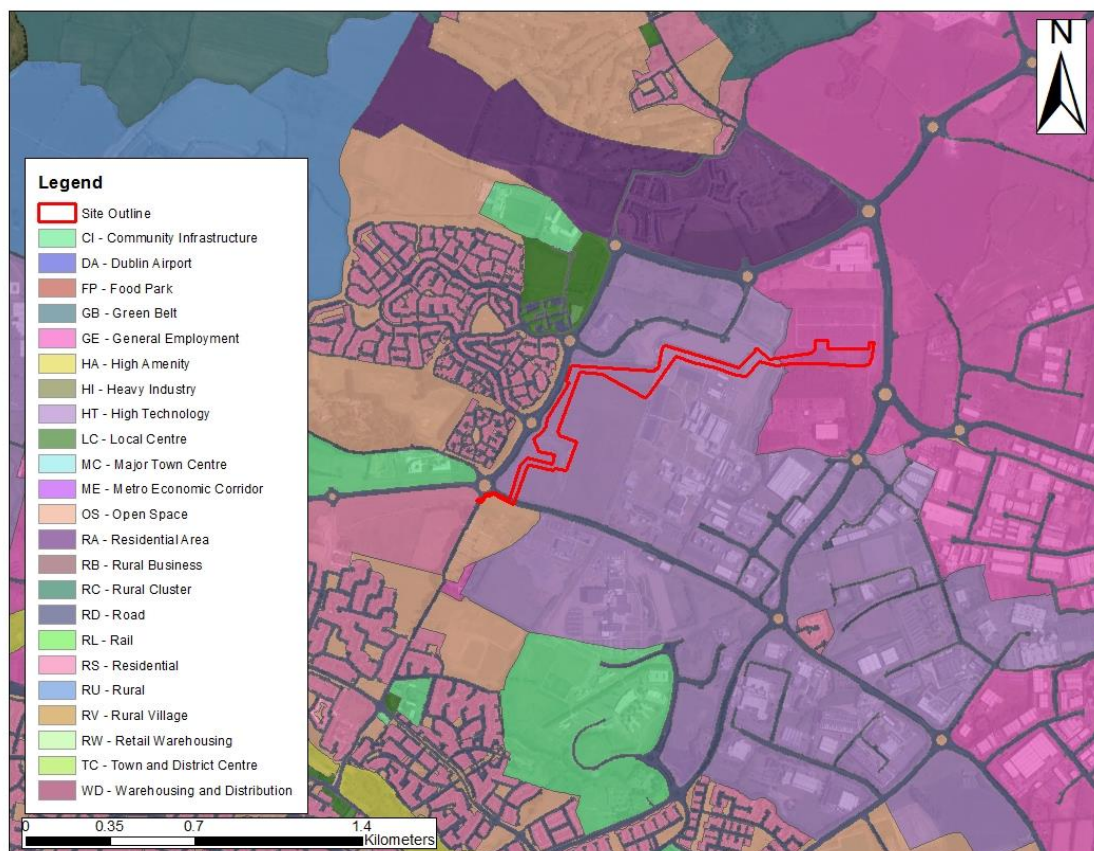


Figure 3.1 Zoning of the Proposed Development as defined by the Fingal Development Plan – 2017 - 2023

Economic Development

One of the strategies being implemented to encourage economic development includes:

“Ensuring proposals for economic development are served by high quality supporting infrastructure with sufficient capacity”.

The Council also indicates that sustainable economic development can be achieved through clustering:

“A key economic policy concept, whereby enterprises and industries that have common features cluster together in locations in order to achieve economies of scale and derive the benefits associated from networking opportunities, innovation, synergies, sharing a skilled workforce, and the use of developed infrastructure. Due to the proven advantages of economic clusters, this approach to enterprise and employment location will be continued”.

The Proposed Development complies with this economic development strategy in contributing to the infrastructure needed to facilitate the location of the permitted data storage facilities in Cruiserath.

3.4 SUSTAINABLE DEVELOPMENT

Ireland's Framework for Sustainable Development '*Our Sustainable Future*' (launched 2012 with subsequent progress report in 2015), by the Department of the Environment, Community and Local Government provides a framework to ensure that development is undertaken in a sustainable manner.

'Our Sustainable Future' aims to ensure that development is carried out sustainably and in an environmentally sound manner which includes optimisation of natural resources, minimisation of waste, safe and sparing use of chemicals and the application of clean technology.

All of these aspects were integral considerations in the design of the Proposed Development, where applicable and are addressed within this EIA Report where appropriate.

3.5 PLANNING PERMISSIONS

The Proposed Development site is located in an area zoned as High Technology and General Enterprise, and is adjacent to Blanchardstown Corporate Park, an existing industrial park.

Blanchardstown Corporate Park and College Business and Technology Park, which are located in close proximity to the site, have been the subjects of a heightened level of planning applications in recent years, most notably significant applications from Montjeu Limited, Swords Laboratories t/a Bristol-Myers Squibb Cruiserath Biologics, and Alexion Pharma International Trading Ltd. As part of the assessment of the Proposed Development, account has been taken of proposed (pending approval) and permitted developments in the area, as well as existing land uses.

The FCC Planning Department website were consulted in order to generate a list of granted planning permissions for the areas in the vicinity of the Proposed Development that fall within the administrative area of FCC. Applications granted permission, and applications on which a decision is pending, within the last five years (since January 2014) were examined.

Table 3.1 Recent planning applications to FCC (search conducted in September 2019)

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------|
| FW19A/0121 Holren Properties Ltd | Reconfiguration of Existing layout and increased floor area of the existing commercial premises by means of demolition, upgrading of existing facilities and new extension with all associated ancillary works and boundary treatments. | Masterlink Logistics Building, Damastown Retail Pk, Mulhuddart, Dublin 15 | 14 th January 2020 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW19A/0134 Board of Management, St Lukes National School | Proposed extension of playground area to include revised boundary realignment and new vehicular access. | Hollywood Road, Tyrellstown, Dublin 15 | Decision Pending – Application Lodged 14 th January 2020 |
| FW19A/0177 ESB Engineering & Major Projects | <p>The Electricity Supply Board (ESB) intends to apply for planning permission for development on a site at this address: (a) Proposed underground cable route originating from the existing Macetown ESB station (on Damastown Avenue in the townland of Macetown Middle) , running in an easterly direction along Damastown Avenue and the R121 (in the townlands of Macetown Middle, Macetown South, Tyrellstown, Cruiserath and Buzzardstown), to a permitted medium voltage (MV) substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025) in the townlands of Cruiserath and Tyrellstown; (b) Proposed underground cable route originating from the existing Corduff ESB station (Corduff Road in the townlands of Goddamendy and Bay), running in a northerly direction along the Corduff Road, then a westerly direction along the N3-M2 Link Road, then running in a southerly and easterly direction along the R121 (in the townlands of Bay, Hollywoodrath, Cruiserath and Tyrellstown) to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025) in the townlands of Cruiserath and Tyrellstown. The development will consist of: A c.1m wide trench of depth c. 1m within a 4m wide corridor, in which underground cable ducts and cables will be installed. The two separate underground cable installations will consist of the following: (a) a c. 3km MV underground cable and all ancillary electrical equipment connecting Macetown ESB station to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025); (b) a c. 3.4km MV underground cable and all ancillary electrical equipment connecting Corduff ESB station, to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025).</p> | Townlands of Macetown Middle, Macetown South, Tyrellstown, Cruiserath, Buzzardstown, Goddamendy Bay | 17th December 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| FW19A/0212 Betania Limited | The development consists of modifications to the development permitted under FW16A/0181 for the construction of a Place of Worship. The modifications consist of reconfiguration of the internal layout of the building at ground floor including the lobby area, bathrooms, family rooms and the addition of 3no. new staircores providing access to a new proposed balcony level within the building envelope. The balcony level will accommodate 457 seats along with storage and plant areas. The number of worshippers within the building will increase from c.744 to c.1201. There are minor modifications to external elevations to incorporate the new proposed balcony at 1st floor level and minor alterations to the internal road layout. The height of the building landscaping/boundary treatment, car parking provision and vehicular access point remain as permitted under FW16A/0181. | Powerstown Road, Tyrellstown, Dublin15 | Decision Pending – Application Lodged 11 th December 2019 |
| FW19A/0125 Montjeu Ltd | Permission for 2 no. windows located on the north elevation on mezzanine level of the existing Manufacturing Building and Retention of 3m high windsock located on the roof of Existing Administration Building. All on site of 5.03 hectares which forms part of a previously permitted planning Ref: FW16A/0085 and FW16A/0080. This application is in regard to a site subject to an EPA Industrial Emissions License P1060-01 | Mallinckrodt Site, College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th October 2019 |
| FW19A/0064 Guerbet Ireland ULC | Construction of new 3.75 m high stand alone electrical switchroom of 20.25 sq.m. floor area to the rear (North) of the existing administration/manufacturing building and associated works. | Guerbet, Damastown Industrial Estate, Damastown, Dublin D15 YE36 | 4th September 2019 |
| FW19A/0120 Hantise Limited | The Proposed Development consists of the construction of 1 no. warehouse/logistics/light industrial unit (proposed Unit 635), including ancillary office floorspace, over two levels, with a height of c.17.3 m and a total GFA of 9,044 sq.m. The proposal includes two access points (vehicular and service) off the existing road network serving the Business Park. The proposal includes 90 no. car parking spaces and 20 no. cycle parking spaces. The proposal includes 1 no. ESB substation, signage zones, a HGV service yard area, landscaping, boundary treatment, lighting, services including underground foul and storm water drainage network and attenuation areas, and all associated site works. | Northwest Business Park, Ballycoolin, Dublin 15 | 3rd September 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| <p>FW19A/0087</p> <p>MIK Developments LLC</p> | <p>• Construction of two data storage facilities with a maximum overall height of c. 22 metres; • Each of the two data storage facilities will accommodate data halls, associated electrical and mechanical Plant Rooms, loading bays, maintenance and storage space, office administration areas, screened plant and solar panels at roof level; • Each of the proposed data storage facilities will have a gross floor area over two levels of c. 21,705 sq.m (43,410 sq.m in total); • Emergency generators (24 for each data storage facility), and associated emission stacks are provided in compounds adjacent to each of the two buildings; • The development includes a diesel tank and a filling area to serve the proposed emergency generators; • Construction of internal road network and circulation areas, footpaths, provision of 50 no. car parking spaces for each of the two data storage facilities (100 no. in total), and 25 no. cycle parking spaces for each of the two data storage facilities (50 no. in total); • Connections to vehicular access routes, roads, services and infrastructure permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025; • Hard and soft landscaping and planting, lighting, and all associated works including underground foul and storm water drainage network, attenuation area, and utility cables. The application site is located to the north of the data storage facility permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, and within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. An Environmental Impact Assessment Report (EIAR) will be submitted to the Planning Authority with the planning application and the EIAR will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority.</p> | <p>Cruiserath Road, Dublin 15, within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the, R121 / Church Road and to the north by undeveloped land and Cruiserath Drive</p> | <p>27th August 2019</p> |
| <p>FW19A/0058</p> <p>Gembira Limited</p> | <p>The Proposed Development relates to the eastern section of the site (Phase 3) and the proposed amendments can be summarised as follows: -Replacement of 36 no. permitted residential units with 43 no. residential units comprising 42 no. 3 bed terrace houses (House Type B8A, B3B, B8B) and 1 no. 3 bed detached house (House Type J2). Relocation of 10 no. House Types H, 1 no. House Type H(i) and provision of 1 no. additional House Type H(i) (4 bed semi-detached). - No change is proposed to 5 no. permitted units within the area of proposed modifications (2 no. House Type A6, 2 no. House Type A7, 1 no. House Type C3). - Provision of a 692 sq.m public open</p> | <p>Hollywoodrath, Hollystown, Dublin 15</p> | <p>3rd July 2019</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | space area. The proposal will result in a proposed increase of the total no. of residential units on the site from 474 to 481, i.e. an increase of 7 no. units (including previous permitted modifications). The proposal also includes alterations to the landscaping and open space area within this part of the site. The proposal includes associated siting, boundary changes, boundary treatment and infrastructural works within the area of the proposed modifications | | |
| FW19A/0022 McElroy Associates | The provision of a new 14.7m high warehouse extension (proposed floor area of 1961m ²) to the side (East) of the existing warehouse and the provision a new 4.8m high single storey storage room (proposed floor area 203m ²) to the rear (North) of the main production building. This application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |
| FW19A/0021 McElroy Associates | Provisoin of new single storey 14.7m high extension (area = 174sq/m) to the side (East) of the existing warehouse and the provision of a new single storey (area = 203m ²) at the rear (North) of the main production building. The application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |
| FW18A/0132 Gembira Ltd | Permission for the relocation of approved residential units and the addition of a further 17 residential units | Hollywoodrath, Hollystown, Dublin 15 | 27th February 2019 |
| FW18A/0150 Setanta Vehicle Holdings Limited | Setanta Vehicle Holdings Limited intend to apply for permission for development on lands at Townlands of Goddamendy & Bay, Dublin 15. The development will consist of the construction of a part single / part 3 storey building (5071 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 7 no. truck servicing lanes, connected to a 3 storey central ancillary area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (granted planning application Reg. Ref FW17A/0179) 3) 42 no. staff parking spaces, 124 no. vehicle parking spaces and 10 no. bicycle spaces and 4) all landscape boundary treatment, site boundary enclosures ancillary signage and site development works on a site of c. 2.61 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 17th January 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW17A/0119 (PL06F.301748) O'Toole Transport Ltd | A logistics (warehouse and distribution) complex building comprising a double height area consisting of a cold store, cross dock storage area and ground and first floor ancillary office and staff accommodation area, and single height mechanic workshop; a single storey truck wash; security kiosk; external truck fuelling area with associated pumps and storage tanks; surface car and truck parking area; bicycle parking; signage; provision of new cycle path and footpath to Bay Lane; new vehicular entrance/exit at Bay Lane; 1 no. ESB substation; and all associated landscaping, boundary treatment and ancillary engineering works necessary to facilitate the Proposed Development. | Bay Lane, The Ward, Mulhuddart, Dublin 15 | 10th December 2018 |
| FW18A/0074 E-TEC Power Management Limited | The development will consist of a two storey building (1340 sqm) with warehouse, demonstration / testing areas and ancillary offices. Vehicular access is from an existing spur road off Ratoath Road. The Proposed Development will include new vehicular gates, HGV hardstanding, parking spaces, a new gated pedestrian entrance, illuminated totem and building mounted signage and all associated site development works. | Ratoath Road, Northwest Business Park, Mitchelstown, Blanchardstown, Dublin 15. | 13th November 2018 |
| FW18A/0121 Bestseller Retail Ireland Ltd | Permission for the construction of a two-storey office building with landscaped roof and central circular planted open courtyard, as well as associated car parking and road infrastructure modifications. | Cruiserath Drive, Townland of Cruiserath, Mulhuddart, Dublin 15 | 13th November 2018 |
| FW18A/0111 Chemsources | A proposed single storey building (93.3 sqm) comprising of 3 no. individual own door storage units, of which the height does not exceed 6.4m, located to the southern boundary. All located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15. Previously approved planning permission reference numbers FW12A/0027. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 22nd October 2018 |
| FW18A/0103 Betania Limited | Permission for the construction of a new single storey ESB Substation and all ancillary site works. | Betania Church, Powerstown Road, Tyrrelstown, Dublin 15 | 16th October 2018 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW18A/0099 Valero Energy (IRELAND) Ltd | 1, Demolition works to the existing service station building (3.0sq.m); 2. Construction of a single storey extension (48 sq.m) to the existing service station retail building to provide an overall building floor area (441 sq.m); 3. Reconfiguration of the internal layout of the building to provide ancillary food offer area (79 sq.m) and seating area(35 sq.m) in conjunction with existing retail and ancillary areas; 4. Ancillary site works to include new disabled car park space and associated drainage woks; 5. Retention of extended car parking area and associated drainage. | Texaco Service Station, Site 15C, Blanchardstown Corporate Park, 1 Tyrellstown Link Road, Blanchardstown, Dublin 15 | 9th October 2018 |
| FW18A/0054 Channor Limited | Permission for the construction of 2 office buildings with 6 levels of office space with rooftop plant, as well as associated car parking and storage facilities. | Tyrellstown Link Road L3095, Blanchardstown Corporate Park, Dublin 15 | 24th September 2018 |
| FW18A/0095 Fr. Eoin Thynne | For change of use from retail to pastoral centre, including minor internal alterations, minor alterations to the front and rear façade together with new signage all at unit 5 Block A, Tyrellstown District Centre, Mulhuddart, Dublin 15. | Unit 5 Block A, Tyrellstown District Centre, Hollywood Road, Mulhuddart, Dublin 15 | 24th September 2018 |
| FW17A/0210 Setanta Vehicle Holdings Ltd | The development will consist of 1) the construction of a part single / part 3 storey building (3551 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 6 no. truck servicing lanes, connected to a 3 storey central ancillary commercial area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (concurrent planning application Reg. Ref FW17A/0179) 3) 129 no. vehicle parking spaces and 18 no. bicycle spaces), 4) all landscape boundary treatment, ancillary signage and site development works on a site of c. 1.97 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 11th June 2018 |
| FW13A/0074/E1 St Patricks Junior & Senior School BoM | The development will consist of: demolition of existing junior and senior school buildings, reduced site levels, construction of a new two storey school building with 36 classrooms, 2 no. general purpose halls and a senior school breakfast club / parent room and all ancillary facilities (total area 5866 sqm), 72 no. car parking spaces, 150 no. bicycle spaces, new vehicular entrance and 2 no. pedestrian entrances, new boundary treatment, 4 no. ball courts, hard and soft play areas including all | St Patrick's Junior & Senior Schools, Blackcourt Road, Corduff, Blanchardstown, Dublin 15 | Grant Extension of Duration 25th May 2018 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | <p>associated and ancillary site works.</p> <p>Extinguishment of existing pedestrian right of way, reduction of earth mounding by circa 3.4 m and formation of new pedestrian right of way at new boundary with site of St Patrick's Church.</p> <p>Road marking and landscaping of existing Fingal County Council public car park at north west boundary with school at Blackcourt Road.</p> | | |
| <p>FW18A/0018</p> <p>Ladbroke (Irl) Limited</p> | <p>Full planning permission sought for change of use of existing externally accessed single storey mid-terrace vacant Beauty Salon to Licensed Betting Office to include for all associated internal alterations, new shopfront signage to front (northwest) & high level wall mounted satellite dish & air conditioning condenser unit to rear (southeast) elevations together with all associated site development works at Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15. For Ladbroke's (IRL) Ltd.</p> | <p>Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15</p> | <p>30th April 2018</p> |
| <p>FW17A/0136</p> <p>Tech Group Europe</p> | <p>Retention permission for alterations to the site layout approved under Register Reference FW15A/0100 consisting of replacement of 15 no. surface car parking spaces (including 1 no. disabled space) with landscaping and the provision of 20 no. surface car parking spaces along the southern boundary and to the rear existing building; and planning permission for the construction of two storey extension (472 sq.m) to the front of the existing building to accommodate a development centre comprising laboratory and office accommodation and an additional 13 no. surface car parking spaces on the northern elevation of the the existing building .</p> | <p>Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15</p> | <p>20th March 2018</p> |
| <p>FW17A/0221</p> <p>Chemco (Ireland) Ltd</p> | <p>To complete elements of the previously approved 'parent' planning application FW12A/0027 not completed to date. These works include a 634sqm detached two storey office completion of car parking spaces totalling 93 car spaces plus 2 No. disability access car parking spaces (modified layout), a gas pad (the area of which is circa 2,000sqm), associated landscaping and associated ancillary site and civil works, at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15, all located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site.</p> | <p>Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15</p> | <p>6th March 2018</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW17A/0189 Barclay Chemicals Ltd. | The development will consist of : (i) an extension to the existing car park (including the removal of some soil that has been stockpiled on the site), (ii) the creation of a new external staff seating area at the front of the offices and the installation of a new bicycle shelter. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Barclay Chemicals Ltd., Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 23rd January 2018 |
| FW17A/0025 (PL06F.248544) ADSIL | Permission for construction of a data storage facility building with an overall height of c. 13 metres, containing data halls, associated electrical and AHU Plant Rooms, a loading bay, maintenance and storage space, office administration areas, screened plant and solar panels at roof level, all within a building with a total gross floor area of 20,739 sq.m; | Cruiserath, Dublin 15 | 18th January 2018 |
| FW17A/0161 Astellas Ireland Co. Ltd. | A single storey office space with a total floor area of 335m ² . | Damastown Road, Damastown Industrial Park, Mulhuddart, Dublin 15 | 18th December 2017 |
| FW17A/0142 Guerbet Ireland ULC | The retention of (1) an existing 2 storey microlab building of 257.8m ² floor area previously granted permission under Reg Ref F07A/092B for which retention is being sought due to original permission not being completed in its entirety. (2) Single storey training building of 107.8m ² floor area (3) A single storey administration building of 319.1m ² floor area, and associated works. | Guerbet Ireland ULC, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 5th December 2017 |
| FW16A/0191 Kavcre Tyrellstown Limited | Planning Permission for amendments and alterations to the residential development permitted under Register Reference FW15A/0009 on this site on lands at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Rathoath Road and the R121 (Church Road), and the north of the M2/N3 link road. The proposed alterations will consist of a revised development of 185no. 2 storey semi-detached and terrace dwellings (an increase from the permitted 175no. units) to comprise of 36no. 2 bed type E units; 80no. 3 bed Type A units, 25no. 3 bed Type B units, 9 no. 3 bed Type C units 14 no. 3 bed Type D units, 4no. 3 bed Type H Units (132 no. 3 bed units are provided in total); 3no. Type F 4 bed units and 14no. 4 bed Type G units (17no. 4 bed are provided units in total). The Proposed Development will also include for all associated site and infrastructural works including foul and surface water drainage, surface car parking | Lands at Hollywoodrath, Hollystown, Dublin 15 located to the north of the M2/N3 link road. | 15th November 2017 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | <p>(177no. in-curtilage spaces, 8 no. in parking courtyard), 1no. ESB substation, public open space, landscaping, boundary treatment, new internal roads, cycle paths, footpaths and pedestrian and vehicular linkages to the adjoining site (Reg. Ref. FW14A/0108 refers); on a site of c.8.33 hectares. The Proposed Development shall be subject to 2 no. phases in accordance with the Kilmartin LAP (phase 1 will consist of 85 no. dwellings and phase 2 will consist of 100 no. dwellings). Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of c.1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilimartin LAP. An Environmental Impact Statement was submitted with the previous application where it was concluded that no significant long term negative impact would result to the receiving environment.</p> | | |
| <p>FW17A/0146 IDA Ireland</p> | <p>Permission for the construction of c.350 metres of single carriageway park roadway, footpaths, public lighting, landscaping and all associated site works and services</p> | <p>College Business & Technology Park, Blanchardstown Road North, Blanchardstown, Dublin 15</p> | <p>7th November 2017</p> |
| <p>FW17A/0097 Jacobs Engineering Ireland Limited</p> | <p>Permission for the extension of the existing permitted car park located to the North West of the BMS site consisting of 99 additional car spaces and an area dedicated to parking for busses</p> | <p>Swords Laboratories t/a Bristol-Myers sq, Cruiserath Road, Mulhuddart, Dublin 15</p> | <p>13th September 2017</p> |
| <p>FW17A/0049 Hantise Ltd</p> | <p>10 year planning permission for development - the application site comprises of c. 5.75 hectares in total and is bound by Kilshane Avenue to the east and north, and Kilshane Park to the south. The Proposed Development consists of the following: • The construction of 6 no. warehouse/logistics/light industrial units (Unit 628, 629, 631, 632, 633 and 634), including ancillary office use, that range in height from c. 12 to 17 metres and have a combined total floor area of 20,951 sq.m; • Each unit is proposed to have associated office administration/reception areas, car parking to the front, and service yards, including loading bays and bin storage areas, to the rear of each unit; • The construction of 3 no. ESB substation buildings; • The units will be accessed off the existing road network. The development provides for vehicular and service access points, associated internal access roads and</p> | <p>Northwest Business Park, Ballycoolin, Dublin 15</p> | <p>28th August 2017</p> |

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| | circulation areas, footpaths, and a total of 245 no. car parking spaces and 126 no. cycle parking spaces; • The proposal includes landscaping and planting, boundary treatment, lighting, security fencing and all associated site works including underground foul and storm water drainage network and attenuation areas. | | |
| FW17A/0043 Minister for Education & Skills | The erection of non-illuminated signage to front (north) elevations (Reg. Ref. FW15A/0074). | Gaelscoil Chuillinn & Powerstown ETNS, located south of Powerstown Road, Tyrellstown, Co. Dublin | 19th June 2017 |
| FW17A/0042 Barclay Chemicals Ltd. | The construction of a mezzanine storage area at second floor level and the conversion of the existing label room at first floor level to use as offices, including the insertion of five new windows on the south elevation. An IPC (Integrated pollution prevention and control) licence is in place by the EPA. | Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 19th June 2017 |
| FW17A/0016 Gembira Ltd | Permission for alterations to residential scheme including the changing of house types | Hollywoodrath, Hollystown, Dublin 15 | 8th May 2017 |
| FW16A/0181 Betania Limited | Permission for the construction of a Place of Worship (overall GFA c. 2,784 sq m), as well as associated car parking facilities | site bounded by Powerstown Educate Together NS to east, greenfield lands to south & west, Powerstown Rd to north, Powerstown Road, Tyrellstown, Dublin 15 | 21st March 2017 |
| FS5W/05/17 Eirgrid PLC | New 110KV Cable Bay | Corduff 110kV Substation, Blanchardstown, Dublin 15 | Confirmed exempted development under Section 5 of the Planning and Development Act, 2000 on 16th |

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| | | | March 2017 |
| FS5W/01/17 Eirgrid PLC | New 110 kV cable bay in existing Substation | Corduff 110kV Substation, Blanchardstown, Dublin 15 | Confirmed exempted development under Section 5 of the Planning and Development Act, 2000 on 10th February 2017 |
| FW16A/0167 McArdle Skeath | Permission for the revision of the layout of the office building including extending the ground floor by 51 sqm, the first floor by 58 sqm and for elevational alterations, for the relocation of the ESB substation, all as permitted in Planning Permission references FW15A/0129 and FW16A/0044 and construction of new switch room and store. | Townlands of Bay/Hollywoodrath/Goddamendry, Dublin 15 | 27th February 2017 |
| FW16A/0149 Chemco (Ireland) Limited | Amendments to Planning Permission no. FW15A/0075. The amendments will comprise of modifications to the planning approved layout and associated elevational changes including relocated dock levellers, additional doors and access point and a reduced building size from 3,780 sqm to 3,625 sqm, all to the warehouse building located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 18th January 2017 |
| FW16A/0148 Gembira Ltd | Permission for alterations to the residential scheme permitted under Register Reference FW14A/0108 and Register Reference FW16A/0099. On a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The proposed alterations will consist of (i) a phased construction of the permitted crèche over two phases (ii) a change in house types of 4 no. permitted residential units in the scheme to be provided as follows: Replacement of 3 no. House Type A4 and 1 no. House Type A5 with 4 no. House Type B5 (iii) amendments to Condition 5 (ii) of Register Reference | Hollywoodrath, Hollystown, Dublin 15 | 18th January 2017 |

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| | FW14A/0108 to maintain ESB pylon in current and provide landscaping screening and Art works. And all associated works necessary to facilitate within the 27.27 ha application site. | | |
| FW16A/0027 Gas Networks Ireland | Permission to install an above ground natural gas pressure reduction unit measuring 4.45m | Coolmine Road DRI, Coolmine Road, Dublin 15 | 21st November 2016 |
| FW16A/0103 Wintongrove Ltd. t/a Blanchardstown 4x4 | Permission for the construction of a single storey building to be used as a car sales showroom, accommodating car display area, ancillary offices, staff areas, associated garage and signage. | Site at Damastown Close, Damastown Business Park, Dublin 15 | 10th October 2016 |
| FW16A/0050 Simon Coyle, Receiver, Horrison Develop. | The development will consist of: the construction of 28 no. residential units, arranged in four terraces (comprising 12 No. 2 storey three bedroom houses and 8 No. 3 storey duplex buildings, each comprising a ground floor 2 bedroom unit and a 2 bedroom unit across the upper two storeys, with a rear terrace at first floor) all with photovoltaic panels at roof level. The development will also include 2 no. communal bin store buildings; hard and soft landscaping; ancillary car parking; changes in level; boundary treatments; underground surface water attenuation area; external lighting; piped services and drainage; internal roads; signage and all site excavation and development works above and below ground. The development will also include the diversion of an existing local authority foul sewer within the site. Access to the site will be from Old Corduff Road. The site is bounded by a pedestrian route and an existing residential terrace, to the north; Woodview Cottage, Old Corduff Road to the south; Old Corduff Road, with Lissane House apartments beyond, to the east and Tolka Valley Park to the west. | Site of Nos. 1, 2, 2A, 3 & 4 Corduff Cottages, Old Corduff Road, Blanchardstown, Dublin 15 | 3rd October 2016 |
| FW16A/0117 Mulberryglen Ltd. | Permission for the construction residential development consisting of 47 no. dwellings comprised of 4 no. 2 storey 3 bed semi-detached houses, 11 no. 2 storey 3 bed terraced houses in 3 no. blocks & 32 no. 2 bed apartments in 2 no. 4 storey blocks. | Townlands of Hansfield & Phibblestown, Hansfield, Dublin 15 | 3rd October 2016 |

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| FW16A/0085 Montjeu Ltd | Retention permission for alterations to building currently under construction (39.3m ²) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom previously granted planning permission Reg Ref FW15A/0143. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 29th August 2016 |
| FW16A/0080 Montjeu Ltd | Permission for the construction of a 3 - storey extension with roof top plant-room to a 3 - storey administration building currently under construction (refer planning reg. ref FW15A/0038) and associated site works | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th August 2016 |
| FW16A/0077 Tech Group Europe Ltd. | Permission for the [1] relocation and revision of previously approved ESB sub-station and Switch Room , Planning Reference FW15A/0100, from Utility Yard , to the south east corner of site, with proposed access from Damastown Close. [2] Construction of an additional switch room in the Utility Yard with changes to the previously approved Silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 15th August 2016 |
| FW16A/0066 Electricity Supply Board | Permission for a new single storey prefabricated building and 2.6 metre high palisade compound fence and gates enclosing an area of existing paving, and all associated site works. | ESB Networks, Dublin Supply Stores, Ballycoolin, Mulhuddart, Dublin 15 | 3rd August 2016 |
| FW15A/0151 (PL06F.246192) Channor Ltd | Permission for the construction of a four storey office building with rooftop plant and associated car and parking, bin-store and siteworks. | Plaza 211, formerly Site E, Blanchardstown Corporate Park (Phase 2), Blanchardstown Road North, Dublin 15 | 15th July 2016 |
| FW16A/0048 Chemco (Ireland) Ltd | Modifications to a previously approved Planning Application FW15A/0142. The modifications will comprise of the extension to the rear of the previously approved extension of the Annex building between warehouse building C&D by another 12.6m incorporating relocated air dock together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 28th June 2016 |
| FW16A/0044 Michael McArdle | Permission for the revision of the elevational height of the Dry Goods Warehouse building from 23.5m high as permitted in the parent Planning Permission reference FW15A/0129 reduced to 21.5 m high and for the relocation of the ESB substation. | Townlands of Bay, Hollywoodrath, Goddamendy, Dublin 15 | 28th June 2016 |

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| FW16A/0028 Glenbeigh Records Management | Permission for the erection of a single bay, single storey extension to the existing facility, measuring 27.46m wide by 70.72 m deep to provide an additional 1,942m ² of storage space to existing premises. | Damastown Way, Damastown Business Park, Dublin 15 | 7th June 2016 |
| FW16A/0002 Swords Laboratories t/a BMS Cruiserath | Permission for the demolition and removal of a number of buildings/structures, and their associated underground services, in six distinct areas on the existing BMS API Facility in Cruiserath. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th June 2016 |
| FW16A/0032 Tech Group Europe Ltd. | Planning permission for the (1) Relocation and revision of previously approved ESB Sub Station and Switch Room, Planning Reference FW15A/0100, from Utility Yard, to the South East corner of Site, with proposed access from Damastown Close. (2) Construction of an additional Switch Room in the Utility Yard with changes to previously approved silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 30th May 2016 |
| FW16A/0004 Chemco (Ireland) Ltd | Planning Permission for an 16.9m long extension and relocated dock leveller to the front marshalling area of the existing warehouse Building C. The extension will run in line with the existing marshalling area of the CD Annex and will be matched in height, together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North | 4th April 2016 |
| FW15A/0129 McArdle Skeath | Construction of a storage and distribution warehouse complex with a total floor area of 25,914 M ² on a site measuring 7.0396 hectares. The development includes the following: Dry goods Warehouse measuring 22,498 M ² with an overall height of 23.5 M, Central Marshalling area measuring 1830 M ² with a mezzanine floor measuring 698 M ² with an overall height of 13.15 M. Two-storey office block measuring 500 m ² , Truck Maintenance workshop and truck washing facility building measuring 388m ² with an overall height of 10.20M, 1 no ESB substation, external truck fuelling area, 1 no free standing floodlit LED sign at the proposed site entrance, 45 no. surface car parking spaces and 20 bicycle spaces, new vehicular access off the N3-M2 Link Road with boundary treatment and attenuation areas and all other associated site development and landscaping works. | Townland of Bay / Hollywoodrath / Goddamendy, Dublin 15 | 15th February 2016 |

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| FW15A/0142 Chemco (Ireland) Ltd | Permission for a 12.6m long extension incorporating relocated air dock to the rear of existing annex between warehouse building C & D together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 26th January 2016 |
| FW15A/0143 Montjeu Ltd | Permission for the construction of a single storey building (39.3 sq.m. max height 4.3m) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom and for local alterations to boundary fence layout previously approved under permitted development granted under Plan Ref. No. FW15A/0038 off Cruiserath Road. | College Business and Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 19th January 2016 |
| FW15A/0009 Kavcre Tyrellstown Ltd | Permission for residential development consisting of: (1) a total of 175 no. two and a half storey dwelling units to consist of 77 no. three-bed units (all terrace units) and 98 no. four- bed units (34 no. end of terrace units, 60 no. semi-detached units and 4 no. detached units); (2) The Proposed Development also includes all associated site and infrastructural works including foul and surface water drainage, surface car parking, public open space, landscaping, boundary treatment, new internal roads, cycle paths and footpaths; all to take place on a site measuring approximately 8.33 hectares. The Proposed Development shall take place over a total of 2 phases in accordance with the Kilmartin LAP (phase 1 will consist of 88 no. dwellings and phase 2 will consist of 87 no. dwellings); Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of approximately 1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority in support of this planning application. | Hollywoodrath, Hollystown, Dublin 15 | 16th November 2015 |
| FW15A/0100 Tech Group Europe Limited | Permission for a new medical device injection moulding facility of total gross floor area 5,545 sq.m. on lands immediately to the north of its existing facility. The building shall consist an 8.1 m high office block of 1,822 sq.m. over two floors, in front of a 15 m high block containing 2,121 sq.m. of production space and 1,520 sq.m of warehousing and support functions. The development will also have up to 90 parking spaces internal site roads, loading docks, and ancillary outbuildings, silos and equipment. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 13th October 2015 |

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| FW14A/0152 Ridgevarn Ltd (in receivership) | Permission for development on 9.45 hectare site consisting of: 1) Construction of 5 no. single storey double height data halls with ancillary 2 storey offices with a gross floor area of 5,306.6 sq m each (total 26,533 sq m) and an overall height of 11.45 m (top of parapet); 2) single storey ESB substation (166.5 sq m gross); 3) single storey security hut (26 sq m gross); 4) Revised vehicular access off the N3-M2 Link Road; 5) 120 no. car parking spaces and 30 no. bicycle spaces; 6) All landscape, boundary treatment and site development works. | Townlands of Goddamendy and Bay, Dublin 15 | 13th October 2015 |
| FW15A/0088 Rottapharm Ltd | Permission for the construction of a single storey 8.8m wide x 12.97m long x3.75m high extension with a floor area of 105m2 to the existing canteen to the South West corner of the existing two storey administration building, the construction of a 52 no. car space car park expansion to the North of the existing car park, and associated works. This application relates to development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Damastown Industrial Estate, Mulhuddart, Dublin 15 | 29th September 2015 |
| FW16A/0099 Gembira Ltd | Alterations to the residential scheme permitted under Register Reference FW14A/0108. The proposed alterations will consist of a change in house types of 48 no. permitted residential units in the scheme to be provided as follows: I. Replacement of 30 no. House Type C1 to 29 no. House Type C3 and 1 no. House Type C4; II. Replacement of 3 no. House Type C2 with 3 no. House Type C4; III. Replacement of 1 no. House Type D2 with 1 no. House Type D3; IV. Replacement of 7 no. House Type E1 with 5 no. House Type E4, 1 no. House Type E3 and 1 no. House Type B2; V. Replacement of 7 no. House Type E2 with 5 no. House Type E3, 1 no. House Type E4 and 1 no. House Type B2. The alterations also include reconfiguration of the plots of units No's 6 to 10, on the north western boundary, and provision of 1 no. additional House Type C3 in this location, increasing the overall unit number from 455 to 456 no. residential dwellings, revised boundaries treatments, and all associated works necessary to facilitate development within the 27.27 ha application site. The site is located on the southern side of | Hollywoodrath, Hollystown, Dublin 15 | 26th September 2016 |

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| | the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. | | |
| FW15A/0075 Chemco Ireland Limited | Planning permission for: (A) Amendments to Planning Permission No. FW12A/0027 for the construction of a new 3,780 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of 2 no. stores, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5 m all located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. (B) Amendments to Planning Permission No. FW14A/0147 consisting of the retention and completion of alterations to the sites Operations Office and all associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0073 Chemco (Ireland) Ltd | Permission for the construction of a new 5,250 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of storage areas, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5m, all located to the eastern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0081 Chemco (Ireland) Ltd | Permission for a storage yard for truck parking and for the containerised storage and distribution of materials including hazardous and non hazardous chemicals, all located to the north of the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site, complete with all its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0074 Minister of Education and Skills | The Minister of Education and Skill is applying for:- 1) Retention permission for the two existing schools on site on a temporary basis. 2) Permission for the two number 2 storey Primary School Buildings one school comprising of 16 Classrooms, 2 classroom Special Needs Unit, support teaching spaces and ancillary accommodation with a total floor area of C. 3,087m ² , the other school comprising of 16 Classrooms, support teaching spaces and ancillary accommodation with a total floor area of C. 2,680 m ² . The site works to the school grounds will consist of the provision of cycle storage, bin stores, ball-courts, project gardens, landscaping and boundary treatment and all other associated site development works for | West of the Existing Educate Together School, and South of Powerstown Road, Tyrellstown, Co. Dublin | 10th August 2015 |

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| | each school. The works to the remainder of the site consist of the provision of 58 No. car parking spaces and revised drop-off and pick-up facilities. All on a site 3.0 Hectares located to the West of the existing Educate Together School and South of Powerstown Road, Tyrellstown, Co. Dublin. | | |
| FW15A/0067 Alexion Pharma International Trading Ltd. | Phase 2 of biopharmaceutical manufacturing campus. (Phase 1 under Fingal County Council planning register reference FW14A/0020 and FW14A/0138). | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 10th August 2015 |
| FW15A/0050 PlanNet21 Communications Ltd | Permission for a new ESB substation (28.3 m2), transformer compound with palisade fence (35.4m2) , alterations to existing building facade to accommodate new plant, new mezzanine floor (188m2) in existing warehouse installed in two phases, and associated landscaping. | Unit 5A Blanchardstown Corporate Park, Ballycoolin, Dublin 15 | 13th July 2015 |
| FW15A/0043 Swords Laboratories t/a Bristol Myers Squibb (BMS) | Permission for the construction of a new Biopharmaceutical Manufacturing Facility to the north of the existing BMS Pharmaceutical Campus including manufacturing facility. The works include modifications to the existing Waste Water Treatment Facilities, the local demolition of items of plant, equipment and storage facilities. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th July 2015 |
| FW15A/0038 Montjeu Ltd | Permission for the construction of Pharmaceutical Manufacturing building and associated development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th June 2015 |
| FW14A/0108 (PL06F.244736) Gembira Ltd | Full 10 year planning permission for residential development on a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The Proposed Development includes 435 no. dwelling units to be provided as follows: 156 no. units of house types A1 to A8 consisting of 2 storey, 4 bed semi-detached houses ranging in size from c. 143 sq.m to 146 sq.m; 184 no. units of house types B1 to B9 consisting of 2storey, 3 bed semi-detached houses ranging in size from c. 125 sq.m to 127 sq.m; 31 no. units of house types C1 and C2 consisting of 2 storey, 4 bed detached houses of c.157 sq.m.; 9 no. units of house types D1 and D2 consisting of 3 storey 5 bed detached houses of c. 219 sq.m for type | Hollywoodrath, Hollystown, Dublin 15 | 10th June 2014 |

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| | <p>D1 and c. 247 for type D2; 16 no. units of house types E1 and E2 consisting of 3 storey, 4 bed semi-detached houses of c. 226 sq.m for type E1 and c.195 sq.m for type E2; 9 no. units of house type F consisting of 2 storey 5 bed detached houses of c. 206 sq.m; 20 no. units of house types G1 to G3 consisting of 2 storey, 3 bed semi-detached/ terraced houses of c. 128 sq.m each; and 10 no. units of house type H consisting of 2 storey, 4 bed semi-detached houses of c. 143 sq.m each. The Proposed Development also includes a creche facility with a GFA of 709 sq.m; 2 new vehicular entrance to the site , one from the west (R121 Church Road) and one from the east (the Ratoath Road) ; individual house entrances from the R121/Church Road; all associated site and infrastructural works including foul and surface water drainage; surface car parking; public open spaces measuring 5.74 hectares; landscaping, boundary treatment; new internal roads, cycle paths and footpaths; all on a site of approximately 27.3 hectares. In addition the proposed development provides for the reservation of approximately 3 hectares of the total site area for the future provision of a new public secondary school.. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority with the planning application.</p> | | |
| <p>FW14A/0147 Chemco (Ireland) Ltd</p> | <p>Permission for amendments to Planning Permission no. FW12A/0027. The amendments will consist of: A) The Retention of i) alterations to building B, ii) relocation of the fire fighting sprinkler tank 11m in diameter and 10m high, iii) a plant room fire fighting sprinkler system, iv) Plant rooms for mechanical and electrical services. B) The Retention and Completion of: i) Building A, ii) Buildings C.D. and E, iii) security and site co-ordination office, iv) car parking and access management arrangements.</p> | <p>Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15</p> | <p>13th April 2015</p> |
| <p>FW14A/0138 Alexion Pharma International Trading Ltd.</p> | <p>Amendments to previous development granted under FW14A-0020- Phase 1 of biopharmaceutical manufacturing campus and associated development.</p> | <p>College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15</p> | <p>28th January 2015</p> |
| <p>FW14A/0127 Masterlink Logistics Ltd</p> | <p>Permission to extend the existing premises by way of constructing a new canopy over 4 no. loading bays to the front facade of the building.</p> | <p>Formerly Target Express Building, Damastown Retail Park, Mulhuddart, Dublin 15</p> | <p>14th January 2015</p> |

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| FW14A/0106 Chemco (Ireland) Ltd | Permission that will consist of of a single building (213 sqm) comprising of 40 no. individual own door storage units, located on the southern boundary of the site, complete with its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th November 2014 |
| FW13A/0088 (PL06F.243395) Twinlite Services Ltd | Permission for the construction of 177 No. dwellings (13 No. with domestic garages) together with a new link road to the east of Tyrrelstown Educate Together School, to connect with Tyrrelstown Town Centre, and all associated and ancillary site works. | Church Road, Kilmartin, Tyrrelstown, Townlands of Hollystown, And Hollywoodrath, Dublin 15 | 20th October 2014 |
| FW14A/0026 Barclay Chemicals Ltd. | Retention permission for existing R + D buiding, permission for the demolition of existing dispatch building , extension to existing warehouse, construction of two new bund areas, new internal access road, new site entrance with weighbridge, extension to existing car park, relocation of existing compressed air house, and mounding of excavated material on site. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 2nd September 2014 |
| FW14A/0020 Alexion Pharma International Trading Ltd | Construction of a 5 storey office building and roof top plant room, QC laboratories, packaging / warehouse, utility building and spine corridor on a 16.8 hectare site. New entrance and ancillary development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 6th May 2014 |
| FW14A/0012 Chemco (Ireland) Ltd | Permission for the erection of an ESB Sub-Station, adjoining switch room and generator room with associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 29th April 2014 |

The following section outlines the existing planning permission relating to the site:

ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025 (Building A)

In January 2018 permission was granted for a new High Technology data storage facility at a 26ha. greenfield site in the townland of Cruiserath between Damastown Industrial Estate and Ballycoolin Industrial Estate near Blanchardstown in Dublin 15. The permitted development will comprise the following:

- *Construction of a data storage facility building with an overall height of up to 13 metres, containing data halls, associated electrical and AHU Plant Rooms, a loading bay, maintenance and storage space, office administration areas, and screened plant and solar panels at roof level, all within a building with a total gross floor area of 20,739 m²;*

- *Emergency generators, emission stacks and a paladin fencing boundary treatment are provided in the adjacent compound;*
- *To provide for the construction of the data storage facility building a temporary client control building, a transformer bay, a temporary substation, a permanent MV Switchroom building and a permanent MV / Control room building are provided;*
- *The construction of 4 no. transformer bays;*
- *A water sprinkler pump room and storage tank, humidifier tanks and diesel tanks and filling area;*
- *Modification of the existing entrance and a new access control point to the lands from the existing roundabout on the R121 / Church Road to the west of the application site and a single-storey gate house / security building at this entrance with a GFA of 152 m². A secondary entrance is proposed on the southern boundary, which also provides for construction access;*
- *Construction of internal road network and circulation areas, footpaths, provision of 46 no. car parking spaces (inclusive of 5 no. visitor parking spaces and 3 no. disabled spaces), 1 no. motorbike parking space and 15 no. cycle parking spaces;*
- *Landscaping and planting, boundary treatment, lighting, security fencing, bollards and camera poles, and all associated site works including underground foul and storm water drainage network, attenuation areas, and utility cables, on an application site area measuring 26.14 hectares.*

The permission is for the overall landholding, a site area c. 26.14 hectares in extent. The Proposed Development site represents a c. 6.08 hectare portion of the permitted site area.

The Proposed Development will utilise some of the infrastructure associated with the permitted development including the main entrance to the west of the site from the R121 roundabout, construction entrance to the south of the site from the R121, internal road access network, perimeter security fencing, and some of the internal and perimeter site landscaping. Construction of the permitted development is commenced in Q3 2019 and currently targeted to be fully operational by Q2 2022.

FW19A/0087 (Building B and C)

On 27th August 2019, permission was granted for two additional data storage facilities within the overall landholding:

- *Construction of two data storage facilities with a maximum overall height of c. 22 metres;*
- *Each of the two data storage facilities will accommodate data halls, associated electrical and mechanical Plant Rooms, loading bays, maintenance and storage space, office administration areas, screened plant and solar panels at roof level;*
- *Each of the proposed data storage facilities will have a gross floor area over two levels of c. 21,705 sq.m (43,410 sq.m in total);*
- *Emergency generators (24 for each data storage facility), and associated emission stacks are provided in compounds adjacent to each of the two buildings;*
- *The development includes a diesel tank and a filling area to serve the proposed emergency generators;*
- *Construction of internal road network and circulation areas, footpaths, provision of 50 no. car parking spaces for each of the two data storage*

facilities (100 no. in total), and 25 no. cycle parking spaces for each of the two data storage facilities (50 no. in total);

- *Connections to vehicular access routes, roads, services and infrastructure permitted under ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025;*
- *Hard and soft landscaping and planting, lighting, and all associated works including underground foul and storm water drainage network, attenuation area, and utility cables.*

3.5.1 Planning Conclusions

The Proposed Development will be in keeping with all of the aspects of the relevant policy documents as described in Section 3.2 and 3.3 above. The Proposed Development will be situated on suitably zoned lands in the Cruiserath area.

The policies and objectives of FCC regarding the conservation, protection and enhancement of environmental resources and assets of the region will not be contravened by this Proposed Development, as will be described in the relevant chapters in this EIA Report.

In conclusion, it can be stated that the Proposed Development complies fully with the stated requirements of FCC and will deliver a key piece of supporting infrastructure which is of significant importance to the Applicant, a major employer in the Information and Communications Technology (ICT) sector in Ireland.

3.6 **ALTERNATIVES**

EIA legislation and the prevailing guidelines and best practice require that EIA Reports consider 'reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'. This section will address:

- Do Nothing Alternative;
- Alternative project locations;
- Alternative designs/layouts;
- Alternative processes; and
- Alternative mitigation measures.

This chapter describes the alternatives that were considered for the Proposed Development, where applicable, under each of these headings and the reasons for the selection of the chosen options, including a comparison of environmental effects.

3.6.1 Do Nothing Alternative

In the event that the Proposed Development does not proceed, the permitted data storage facilities developments (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025 and FCC Reg. Ref. FW19A/0087), once constructed, would be left without a permanent power supply. An application has been made to FCC (Reg. Ref. FW19A/0177) for the provision of an interim power supply for Building A. This interim power supply is designed to provide an interim power supply to Building A (i.e. this power supply only has capacity to power a limited number of data halls within Building A, and no capacity to provide power to Buildings B or C). The permanent power supply is designed to provide the full power requirement of Buildings A, B and C to facilitate the full operation of these developments as well as the potential future

indicative development of three additional data storage facilities within the overall landholding. Without the permanent power supply that the Proposed Development will provide, Buildings A would only operate at a fraction of its capability, and Buildings B and C could not operate at all, until such a time as another application is made and permission granted for an alternative permanent power supply for these developments.

There are no environmental effects associated with the do-nothing scenario

The Do-Nothing scenario has been considered in each chapter of the EIAR.

3.6.2 Alternative Project Locations

GIS Substation

The location of the proposed substation was made with respect to the overall masterplan for the data storage facility site (please refer to drawing AWS-MCA-00-XX-DR-A-2003 submitted with the planning application for Building A). This masterplan was subsequently updated and submitted with the planning application for Buildings B and C (please refer to drawing ADGBC-MCA-00-ZZ-DR-A-1004 submitted with the planning application for Buildings B and C). In both iterations of the masterplan, the location of the proposed substation has remained unchanged, as the proposed location is deemed to be the most logical location on the site for such a development. Currently, three data storage facilities detailed in the indicative site masterplan have been granted planning permission (i.e. Buildings A, B and C) with construction on Building A having begun in Q3 2019. It was not deemed practicable or necessary therefore, to consider an alternative location for the proposed substation during this assessment.

220kV Transmission Line Route

The assessment of the alternative routes for the 220kV transmission line considered three route options for the 220kV transmission line as follows:

- Option 1 – Via Public Road Tyrellstown
- Option 2 – Proposed Route via existing ESB Wayleave
- Option 3 – Via Cruiserath Road and Church Road

Options 1 and 3 are described in the following sections. Option 2 is the proposed route and is described more comprehensively in Chapter 2.

Option 1 – Via Public Road Tyrellstown

As illustrated in Figure 2.2, the proposed underground route of the ducting (illustrated by green line) is from the proposed GIS substation to the adjacent public road (R121), following the existing road northwards, eastwards and finally southwards to the existing Corduff 220kV Substation. The estimate length of the ducting is c. 2.5km. The route requires construction through 4 no. roundabouts.

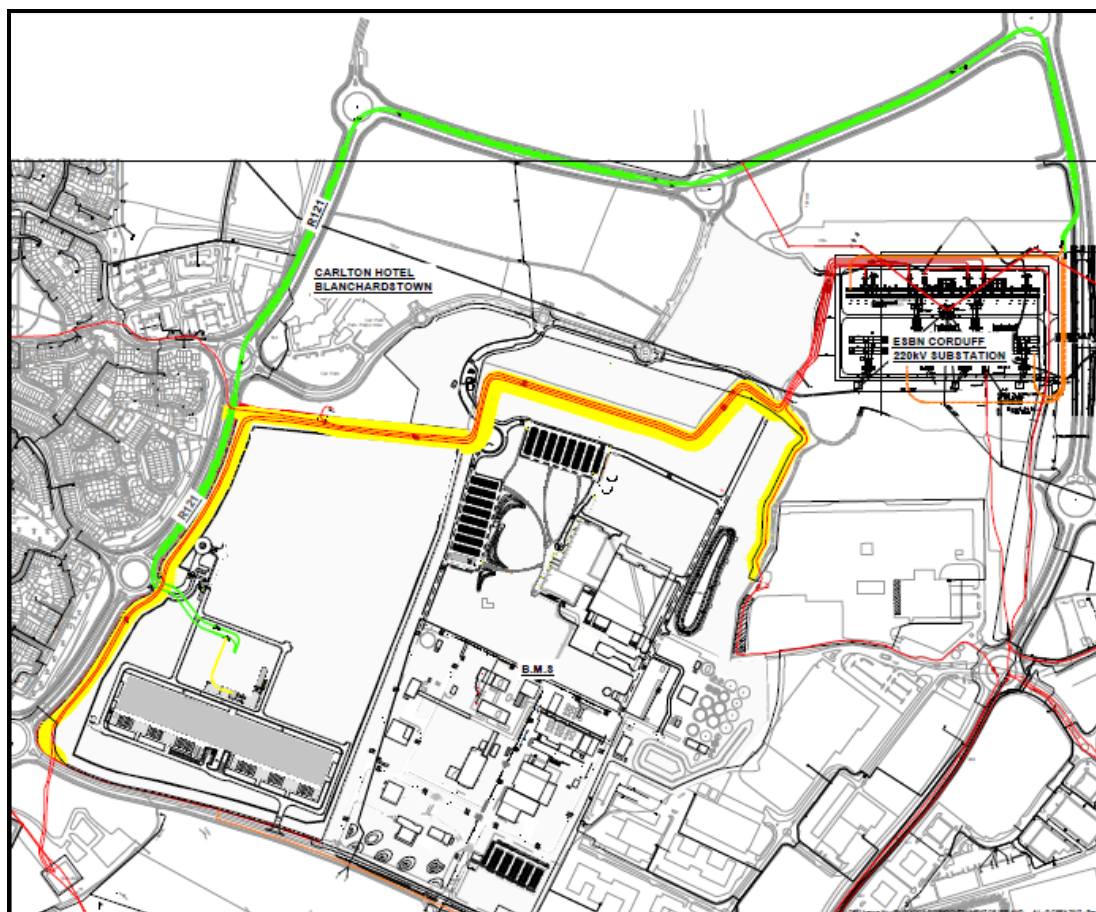


Figure 3.2 220kV Transmission Line Route Option 1 (green line), the location of the permitted Building A and Location of Existing Corduff 220kV Substation (Source: Clifton Scannell Emerson Associates August 2017)

This route can be divided into three main sections as follows:

Section 1 – Route through the permitted Building A site which is currently a greenfield site. The Environmental Impact Statement (EIS) which was submitted with the planning application for the permitted Building A development includes a thorough assessment of the impact of excavations at the site and provides mitigation measures to ensure there is no significant impact as result of groundworks.

Section 2 – Route below existing road carriageway.
The route follows the R121 adjacent to the permitted Building A site northwards through the roundabout at Tyrellstown Town Centre turning right at the next roundabout on the link road towards the N2. The route continues through the next roundabout and turns right at the subsequent roundabout towards the south. The route continues for approx. 300m in this direction before entering the existing Corduff 220kV substation site. This section of the route has been previously developed as a roadway and there are other services laid beneath the carriageway along this entire section of the route.

Section 3 – Route from the edge of the carriageway to the existing Corduff 220kV substation. This section is less than 50m in length and may be described as partially greenfield although it is likely that the majority of the route will be through land previously disturbed during road construction or construction of the Corduff 220kV substation.

Option 2 – Proposed Route via existing ESB Wayleave

As described in Chapter 2, the chosen route of the underground 220kV transmission line is from the proposed substation within the permitted Building A site, through the site to the existing ESB Wayleave along the northern boundary of the Building A site, continuing along the wayleave through the northern portion of the neighbouring BMS site and through 'greenfield' lands to the existing Corduff substation. Refer to Figure 2.1 in Chapter 2. The existing ESB wayleave already contains c. 7 x 110kV cables and has been extensively disturbed for the installation of the cable ducts. The route through 'greenfield' lands to the existing Corduff 220kV substation is through lands that have been somewhat disturbed from the installation of other ducts. The estimated length of the 220kV cable route is c. 1.8km.

Option 3 – Cruiserath and Church Roads:

This proposed route links the permitted Building A site to the Corduff 220kV substation via Cruiserath and Church Roads to the east and south-east of the site as shown in Figure 3.3. Upon review of existing underground utility services, by CSEA, including the 3 no. 110kV circuits from Corduff 220kV Substation to Cruiserath 110kV substation, the installation of the ducts may be technically possible subject to detailed design. However, the proposed 220kV route ducting would need to be installed in very close proximity to the existing 110kV circuits. Due to their close proximity, it is very likely that this would lead to derating of the existing underground circuits. It was therefore deemed at the route selection stage that this route was not viable.

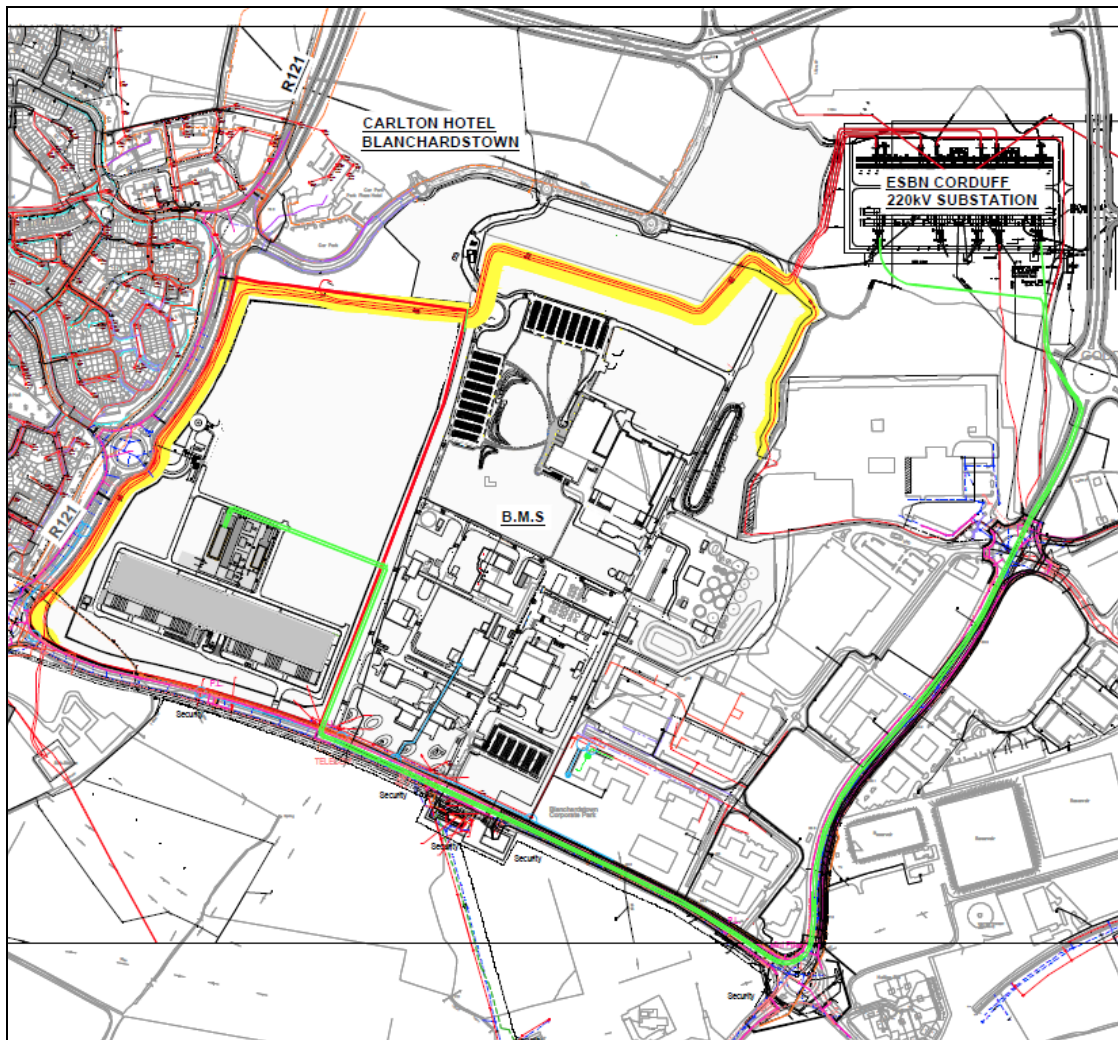


Figure 3.3 Grid Connection Route Option 3 (green line), new Data Storage Facility and Location of Existing Corduff 220kV Substation (Source: Clifton Scannell Emerson Associates August 2017)

As Option 3 was deemed to be not viable, only Route Options 1 and 2 were considered further.

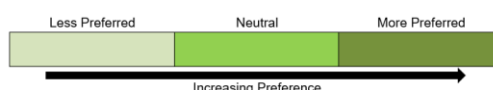
A preliminary appraisal of the environmental effects of Options 1 and 2 was undertaken as part of the route selection process. Both routes were determined as feasible with minimal short or long-term impacts on the environment.

In terms of the operational phase for either of the route options, each of the environmental factors were considered to have a **long-term, neutral and imperceptible** impact on the environment.

For the construction phase, the duration of impacts for both route options would be **short term** as the works for the transmission line will have a duration of less than 1 year. There are no significant environmental effects predicted for the construction phase for the chosen route as set out in the subsequent chapters of this EIA Report. Based on a high-level environmental assessment of the alternative route, it is considered that the construction phase would not result in any significant environmental effects.

Each of the environmental factors were assessed for the construction phase using a similar methodology to determine the more preferred and less preferred route option, and in some cases there was no discernible difference between the two options and are considered neutral. The environmental factors are listed in Table 3.2 below with the conclusions of the preliminary assessment of each presented.

Table 3.2 Summary of route preference for each environmental factor



| Environmental Factor | Option 1 – Via Public Road Tyrellstown | Option 2 – Proposed Route Via ESB Wayleave |
|-----------------------------------------------|----------------------------------------|--------------------------------------------|
| Socio-Economics – Human Beings | | |
| Soil, Geology & Hydrogeology | | |
| Water & Hydrology | | |
| Flora & Fauna | | |
| Air Quality & Climate | | |
| Noise & Vibration | | |
| Landscape & Visual Impact | | |
| Archaeology, Architecture & Cultural Heritage | | |
| Traffic & Transportation | | |
| Material Assets & Waste Management | | |

There were no environmental constraints which would preclude development of either route options. A review of relevant environmental criteria by each specialist show a preference for Option 2 based on short term impacts during construction.

This is primarily due to the greater distance of the Option 2 route from sensitive residential receptors and road users (Option 2 is c. 90m from sensitive residential receptors and c. 45m from roads at its closest point; Option 1 is located on the road, and is c. 50m from sensitive residential developments at its closest point). It is noted that standard mitigation measures are available to minimise impacts on these

receptors (as detailed in Chapters 8 and 9), with the exception of higher waste removal required for Option 1.

It is also noted that the above preferences were based on construction impacts only and for the operational phase, it was determined that there would be a neutral preference for either route as the impacts are the same for each environmental factor (i.e. *long-term, neutral and imperceptible*).

49kVA Route

The assessment of the alternative routes for the 49kVA cable installation considered the proposed route from the Tyrrelstown Cross substation and an alternative route from the same substation. The alternative route travels away from the existing Tyrrelstown cross substation, it crosses the R121 and travels east along Damastown Avenue for c. 0.5km. From here it enters the permitted Building A site on the eastern side of the R121 roundabout adjacent to the Powerstown National School, turning north before entering the site from the south where it continues within the curtilage of the Building A site to the proposed GIS substation compound. The proposed route is more direct and as such it is shorter and requires less road crossings. In terms of environmental effects of the route options, it was considered that proposed route was preferred as it would require less works in the public domain, with a shorter construction duration.

Cable Bays

The location of the proposed cable bays at the Corduff substation was deemed to be the most suitable owing to the existing infrastructure present at the Corduff substation.

3.6.3 Alternative Design/Layouts

The proposed GIS substation is designed based on requirements stipulated by the TAO i.e. ESB Networks. The design of the substation units is centred around the equipment requirements of ESB Networks that are required to provide an efficient and safe service. From a “design and layout” point of view, therefore, the flexibility to select alternative designs and layouts was not available to the Applicant.

Alternative design options for the 220kV transmission cable and the 49kVA cable installation that were considered included above overhead lines. By their very nature, above overhead lines require corridors to run in which must be clear of all other development. In the case of the 49kVA cable installation, a corridor 12m would be required. This would effectively sterilise the land in this corridor, precluding any future development occurring within the corridor for the duration of the lifetime of the development. In the case of the 220kV transmission line, it was determined that an overhead line was not technically feasible, as there currently exists no standard solution to provide a capacity of 220kV using an overhead line.

Two single circuit underground cables were considered rather than a double circuit underground cable in the design of the 220kV transmission line. However, the double circuit underground cable was chosen as it enables more power to be transferred over a particular distance and requires less land to do so – minimising ecological and visual impacts of the project and reducing installation costs.

The design of the cable bays is based on ESB Networks mandatory specifications.

3.6.4 Alternative Processes

This section typically examines the project processes in relation to likely emissions to air and water, likely generation of waste and likely effect on traffic to determine the process that is least likely to impact on these parameters.

The underground 220kV transmission line and the 49kVA cable installation will become an integral part of the national high voltage electricity grid which is currently operated by ESB Networks. As such the underground cable installations must meet ESB Network's strict specifications to ensure it will be seamlessly absorbed into the national grid infrastructure and can provide a reliable power supply. From a "process design" point of view, therefore, the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant.

The ESB Networks specifications for auxiliary power supplies (i.e. the 49kVA cable installation) are set out in Document Reference: XDS GFS 08 001 R2 *Functional Specification Station Auxiliary Power Supplies*.

In terms of the proposed processes, the proposed GIS substation and new cable bays will employ the same electricity generation and transmission processes that are used by ESB Networks at their other facilities in Ireland and represents the most up-to-date and state of the art processes currently available. As appropriate, alternative processes are considered on an ongoing basis by ESB Networks as a part of each of their operations based on many factors including technical feasibility, environmental impact, efficiency, security, reliability and cost. Therefore, from a "process design" point of view, the flexibility to select alternative processes for integrating into the current national grid is not available to the Applicant.

3.6.5 Alternative Mitigation

For each aspect of the environment, each specialist has considered the existing environment, likely impacts of the Proposed Development and reviewed feasible mitigation measures to identify the most suitable measures appropriate to the environmental setting of the Proposed Development. In making a decision on the most suitable mitigation measure the specialist has considered relevant guidance and legislation (these are identified in the table of mitigation measures in Appendix 1.1 of Chapter 1). In each case, a comparison of environmental effects was made, and the specialist has reviewed the possible mitigation measures available and considered the use of the mitigation in terms of the likely residual impact on the environment. The four established strategies for mitigation of effects have been considered: avoidance, prevention, reduction and offsetting (not required in this development). Mitigation measures have also been considered based on the effect on quality, duration of impact, probability and significance of effects.

The selected mitigation measures are set out in each of the EIA Report Chapters 4-14 and are summarised in Appendix 1.1 of Chapter 1.

3.6.6 Conclusions on Alternatives

The selected route for the 220kV transmission line was deemed to be most suitable route for the Proposed Development from an engineering perspective taking into account access to land, cost and environmental effects. During construction the proposed 220kV route (similar to the alternative route assessed i.e. Option 1) will have a **short-term, neutral and imperceptible to not significant** environmental effect. It is noted that the proposed route and the alternative route considered (i.e.

Option 1) were considered to have a **neutral, imperceptible, long-term** environmental effect during the operational phase.

The selected route for the 49kVA cable installation was deemed to be most suitable route for the Proposed Development from an engineering perspective taking into account access to land, cost and environmental effects. During construction the proposed 49kVA route (similar to the alternative route assessed) will have a **short-term, neutral and imperceptible** environmental effect. It is noted that the proposed route and the alternative route considered (i.e. Option 1) were considered to have a **neutral, imperceptible, long-term** environmental effect during the operational phase.

The design of the proposed GIS substation and new cable bays have been selected with due regard to minimising the environmental and visual impact once in situ. The selection of the design has been constrained to the standard specifications required by ESB Networks for connection to the national grid.

In conclusion, it is considered that the Proposed Development and design is the most suitable choice to provide the support required to meet the power requirements of the permitted developments and potential future indicative developments.

4.0 HUMAN HEALTH AND POPULATION

4.1 INTRODUCTION

This chapter evaluates the impacts of the Proposed Development on population and human health.

In accordance with the Draft EPA EIA Report Guidelines (2017) and EPA Draft Advice Notes for EIS (2015), this chapter has considered the “*existence, activities and health of people*” with respect to “*topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions*”. Natural hazards are considered in Chapter 2 (Section 2.7) and Chapter 5. Issues examined in this chapter include:

- Demography;
- Population;
- Employment;
- Social Infrastructure;
- Landscape, Amenity and Tourism;
- Natural Resources;
- Air Quality;
- Noise & Vibration;
- Material Assets;
- Traffic; and
- Health and Safety.

Where these topics are dealt with in further detail elsewhere in this EIA Report, the relevant chapters have been cross referenced in this Chapter.

4.2 METHODOLOGY

The effects of the Proposed Development on the population and human health are analysed in compliance with the requirements of the EPA Draft EIA Report Guidelines 2017.

4.3 RECEIVING ENVIRONMENT

The Proposed Development is to be located in Cruiserath Road, Dublin 15 (refer Figure 1.1), and includes:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.:

FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

The Proposed Development and surrounding area are described in further detail in Chapter 2 (Description of the Proposed Development).

4.4 CENSUS AND DEMOGRAPHICS

The most recent census of population was carried out by the CSO on the 24th April 2016. The previous census was completed on the 10th of April 2011 and before that on 23rd April 2006. The census compiles data for the whole state as well as smaller individual areas including counties, cities, towns and electoral divisions. Taking into consideration the location of the Proposed Development the census information on population, age profile, employment and social class, has been analysed in relation to the Fingal Region.

This assessment is conducted by reviewing the current population and employment status in the areas close to the Proposed Development. In the case of the Proposed Development, this is the Electoral Division (ED) of The Ward (Area Code ED 04041), Tyrellstown (Area Code ED 04015), and Blanchardstown-Mulhuddart (Area Code ED 04013). Reference is made to the most recent census data available from the Central Statistics Office (CSO) which is the 2016 census.

4.4.1 Population and Demographics

The latest census data shows that the population in the Fingal County Council (FCC) area grew by 7.5% between the years 2011 and 2016 compared with only 3.8% nationally. Tyrellstown and The Ward both saw a higher rate of growth with an increase of 35.2% and 27.0% respectively. Blanchardstown – Mulhuddart saw a lower rate of increase, with 6.23% (Table 4.1). Projections for the national and the County populations are predicted to continue this trend of moderate to high population growth into the short-term future.

Table 4.1 Population change at National, primary and secondary hinterland level from 2011 – 2016
(Source: www.cso.ie)

| Area | 2011 | 2016 | % Change 2011-2016 |
|-----------------------------|-----------|-----------|--------------------|
| State | 4,588,252 | 4,761,865 | + 3.8% |
| Fingal County | 273,991 | 296,214 | + 7.5% |
| The Ward | 8,241 | 10,470 | + 27.0% |
| Tyrellstown | 2,112 | 3,257 | + 35.2% |
| Blanchardstown - Mulhuddart | 3,866 | 4,123 | +6.23% |

Age Profile

The age profile of the population in the area is an important parameter as it provides a good insight into the potential labour force, the demand for schools, amenities, other facilities and the future housing demand.

Table 4.2 shows the age profiles Nationally and in Fingal County for 2016.

Table 4.2 Age profile at National and County level 2016 (Source: www.cso.ie)

| Area | 0-14 | 15-24 | 25-44 | 45-64 | 65+ | Total Persons |
|---------------|------|-------|-------|-------|-----|---------------|
| State | 21% | 12% | 30% | 24% | 13% | 4,761,865 |
| Fingal County | 25% | 11% | 34% | 21% | 9% | 296,020 |

This table shows that both Nationally and in the FCC area, the dominant age grouping is 25-44 at 30% and 34% of the total population, respectively, indicating a young working age population in the area which is above the national level.

This also reflects that the overall labour force population (15-64 age group) in FCC is reflective of the National level, with both at 66%. This is in keeping with census data from 2011 and 2006.

Employment

Table 4.3 presents the employment statistics in 2016 compared with 2011. The data shows that unemployment decreased significantly in the County, as well as nationally, reflecting the economic recovery in recent years.

Table 4.3 Employment statistics Nationally and at County level in 2011 and 2016 (Source: www.cso.ie)

| | At Work | Looking for first regular job | Unemployed having lost or given up previous job | Total in labour force | % Unemployment |
|-------------------|-----------|-------------------------------|-------------------------------------------------|-----------------------|----------------|
| 2011 Labour Force | | | | | |
| State | 1,807,360 | 34,166 | 390,677 | 3,608,662 | 11.8 |
| Fingal County | 119,276 | 2,224 | 20,416 | 207,584 | 10.9 |
| 2016 Labour Force | | | | | |
| State | 2,006,641 | 31,434 | 265,962 | 3,755,313 | 7.9 |
| Fingal County | 133,971 | 1,850 | 13,565 | 223,407 | 6.9 |

The 2016 census data shows that the majority of people in employment in the FCC area are in 'Managerial and Technical' employment (32.9%) with the least represented social class being 'Unskilled' workers at (2.8%).

At a local level, the dominant social class in the Ward area is 'All others gainfully occupied and unknown' labour (56.6%) with 'Unskilled' workers being the least representative (2.1%).

Education

Census data presenting the highest level of education completed by people living in the relevant electoral district communities and FCC is presented in Table 4.4. (Note the table presents key milestone education levels and excludes lower secondary, technical or vocational qualification, advanced certificate/completed apprenticeship, higher certificate, ordinary bachelor's degree/national diploma, Ph.D./higher or where information was not stated).

Table 4.4 Highest level of education completed locally and at County level in 2016 for key educational levels. (Source: www.cso.ie)

| Area | No formal education | Primary education | Upper secondary | Honours Bachelor's Degree, Professional qualification or both | Postgraduate Diploma or Degree | Total Persons |
|-----------------------------|---------------------|-------------------|-----------------|---------------------------------------------------------------|--------------------------------|---------------|
| The Ward | 0.9% | 3.3% | 17.1% | 11.9% | 9.5% | 4,811 |
| Tyrrelstown | 2.1% | 8.7% | 21.3% | 4.9% | 4.1% | 1,491 |
| Blanchardstown – Mulhuddart | 1.3% | 8.5% | 21.0% | 8.0% | 7.0% | 2,080 |
| Fingal County | 15.3% | 11.3% | 14.7% | 13.3% | 13.9% | 180,150 |

4.4.2 Labour Force Survey

The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland carried out every three months. It generates labour force estimates which include the official measure of employment and unemployment for the state.

The results Nationally for Q2 2019 showed that there were 2,300,000 people employed in the State with 130,800 registered as unemployed. This represents a 2.0% increase in employment between Q2 2018 and Q2 2019.

In Q2 2019, the majority of people were employed in the wholesale and retail trade and repair of motor vehicles and motorcycles sectors, with industry, and human health and social work activities following closely.

4.5 SOCIAL INFRASTRUCTURE

Residential Dwellings

The closest residential properties, Curragh Hall, are located c. 180m from the proposed substation. Ballentree Village and Bishops Orchard residential areas are also in close proximity and are c. 280m and c. 530m from the proposed GIS substation respectively. Residential areas and other sensitive receptors including schools and health care facilities within c.1-2 km area of the proposed transmission line are shown in Figure 4.1.

Schools

There are a number of primary and secondary schools in the vicinity of the Proposed Development including:

- Powerstown Educate Together National School c. 550m west of the proposed GIS substation;
- Gaelscoil an Chuilinn c. 820m west-north-west of the proposed substation.
- St Lukes National School and Tyrrelstown Educate Together National School in Tyrrelstown c. 990m north of the proposed GIS substation; and
- Le Chéile Secondary School c. 1.3km to the west of the proposed GIS substation.

The closest third level institution in the area is the Technical University of Dublin (TUD) Blanchardstown campus located c. 1.1km east-south-east of the proposed GIS substation.

Health

The nearest hospital to the site is Connolly Hospital located c. 3km east-south-east of the proposed GIS substation. The Corduff Primary Care Centre is also located c. 1.8km east-south-east of the proposed substation along the Blackcourt Road.

Security

There is a Garda station located on the R806 in Blanchardstown c. 2.7km south of the proposed substation and a fire station on Snugborough Road in Blanchardstown (c. 3.3km to the south-south-east of the proposed substation).

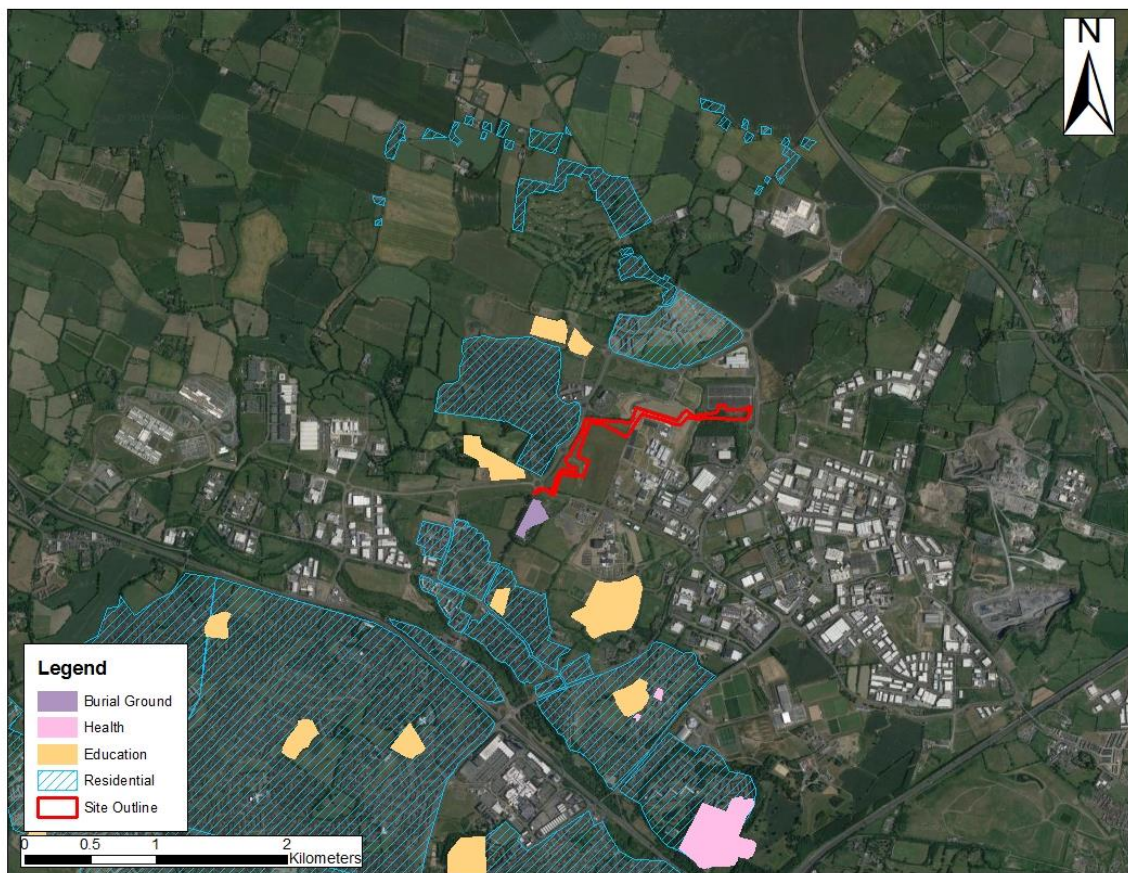


Figure 4.1 Sensitive social infrastructure within c. 1km of the Proposed Development

4.6 LANDSCAPE, AMENITY AND TOURISM

In terms of landscape amenity, there are no specific amenity objectives on the site. Likewise, there are no protected trees, woodlands or hedgerows, or protected views pertaining to the site. The local landscape setting is generally flat with no prominent landscape features located near the site. The primary areas of landscape amenity in the immediate vicinity are Tyrellstown Park (c. 1.4km northwest of the proposed substation), and Tolka Valley Park (c. 1.5km southwest of the proposed substation), which are all small recreational parks. Primary amenity areas such as Dublin Bay and Phoenix Park are located c. 17.1km east-south-east and c. 5.6km south-south-east of the site, respectively.

As the existing development is located in a low-lying area designed for light industry and employment, it is considered that the impact on landscape amenity will range from not significant to imperceptible. Further discussion is presented in Chapter 10 (Landscape and Visual).

Tourism is not a major industry in the immediate environs of the site, however Hollystown Golf Club is located c. 1.9km north of the proposed substation, and the National Aquatic Centre is located c. 2.1km south-south-east of the proposed substation, with both attracting visitors and tourists. The closest shopping centre is the Blanchardstown Shopping Centre c. 2.4km south of the proposed substation. The Carlton Hotel Blanchardstown is located c. 560m north of the proposed GIS substation. Dublin Airport is located c. 9.5km east-north-east of the proposed GIS substation.

4.7 NATURAL RESOURCES

Natural resources and land uses in the hinterland of the Proposed Development have also been considered as they may have implications for the development of the lands.

Historical Ordnance Survey (OS) maps indicate that much of the surrounding land has been in industrial/commercial use for 20-30 years. As such, much of the agricultural resource in the surrounding area has already been lost over recent decades.

In terms of extractive industries, there are a number of rock and aggregate quarries within the Fingal County Council (FCC) area to the north. The closest active quarry is the Huntstown Quarry in Finglas c. 2.5km to the east, which is operated by Roadstone Ltd. The Priest Town Tectonite quarry is located c. 4.2km to the north-north-west. There are no anticipated impacts on these facilities from the Proposed Development. Further detail on extractive industries is presented in Chapter (6 Land, Soils, Geology and Hydrogeology).

4.8 IMPACTS OF THE PROPOSED DEVELOPMENT

The impact of construction, commissioning, operation and decommissioning of the Proposed Development are considered below.

4.8.1 Impacts on Human Beings

There will be a short-term, imperceptible, positive effect on local business with the limited presence of a very small number of construction workers using local facilities during the construction phase of each cable installation. However, the main potential impacts on human beings associated with the Proposed Development will be in relation to air quality, noise and visual effects during the construction stage. The potential impacts are assessed within the corresponding chapters of this EIA Report and are summarised below. These are short-term impacts.

4.8.2 Impacts on Human Health from Air Quality

As outlined in Chapter 8 Air Quality and Climate, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or “Air Quality Standards” are the protection of human health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value

which is set (see Chapter 8, Table 8.1). The standards for human health have designed to avoid harmful effects to health.

4.8.2.1 Construction Phase

As detailed in Chapter 8 Air Quality & Climate, best practice mitigation measures are proposed for the construction phase of the proposed project which will focus on the proactive control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the proposed project will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the Proposed Development is likely to be **short-term** and **not significant** with respect to human health.

4.8.2.2 Operational Phase

Due to the nature of the proposed project, the effects on human beings during the Operational Phase are considered to be **long-term, imperceptible** and **neutral**.

4.8.3 Impacts on Human Health from Noise & Vibration

Noise and Vibration impacts associated with the development have been fully considered within Chapter 9 of this EIA Report. Commentary on the impact assessment and related noise levels are summarised below with respect to potential environmental health impacts.

4.8.3.1 Construction Phase

As detailed in Chapter 9 Noise and Vibration, noise emissions associated with the construction phase of the development are expected to be less than the prevailing ambient noise level at the nearest sensitive locations. As a result, the existing noise environment is not expected to change significantly because of the short-term construction phase. In addition, due to the distance between the site and the nearest sensitive locations, vibration impacts generated during construction are expected to be negligible. Therefore, the noise and vibration impact of the construction phase of the Proposed Development is likely to be **short-term** and **not significant** with respect to human health because of the short-term construction phase.

4.8.3.2 Operational Phase

The Proposed Development will not generate any perceptible levels of vibration or noise during operation and therefore there will be no impact from noise emissions or vibrations on human health.

4.8.4 Impacts on Local Amenities and Tourism

There will be no impact on the local parks or the larger amenity areas of Dublin Bay and Phoenix Park.

It is not anticipated that the Proposed Development will have any impact on local tourism or shopping amenities.

The Proposed Development will not create any wastewater discharge which could have a potential impact on local amenities or the local population.

Should any discharge of construction water (collected stormwater) be required during the construction phase, discharge will be to the storm water/foul sewer drainage system or collected and removed, following appropriate treatment for sediment removal. Further information regarding surface water management can be found in Chapter 6 (Hydrology).

The underground nature of the Proposed Development, together with the low sensitivity receiving environment and the existing land use and land use zoning, is such that residual landscape and visual impacts are considered to be **imperceptible** and **neutral**. Further discussion is presented in Chapter 10 Landscape and Visual.

4.8.5 Impacts from Additional Traffic

An assessment of the additional traffic movements and short-term diversions associated with the Proposed Development during the construction phase is presented in Chapter 12 Traffic and Transportation.

The predicted impact of the development on human beings and in particular road users will be **short-term, negative** and **not significant** for the construction phase and **long-term, neutral** and **imperceptible** for the operational phase. Any significant construction works will take place outside of main commuter hours and at worst case a single lane carriageway will remain operational. There is no predicted impact during operation.

4.8.6 Unplanned Events / Impacts on Health and Safety

The Proposed Development has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007) as amended and associated regulations. The plant has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing facilities operated by the ESB Networks.

The Proposed Development has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) as amended to minimise the likelihood of any impacts on worker's health and safety.

During the operational phase of the development, ESB Networks will implement an Environmental Safety and Health (EH&S) Management System and associated procedures. Full training in the EH&S Management System and relevant procedures will be provided to all employees.

The 2014 EIA Directive, 2018 EIA Regulations and associated EPA Draft EIA Report Guidelines 2017 require that the vulnerability of the project to major accidents and/or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.), as well as unplanned events, is considered in the EIA Report.

The site has been assessed in relation to the following external natural disasters; landslides, seismic activity, volcanic activity and sea level rise/flooding as outlined below. The potential for major accidents to occur at the facility has also been considered with reference to Seveso/Control of Major Accident Hazards (COMAH) Regulations.

There is a negligible risk of landslides occurring at the site and in the immediate vicinity due to the topography and soil profile of the site and surrounding areas. There is no history of seismic activity in the vicinity of the site. There are no active volcanoes in Ireland so there is no risk of volcanic activity.

The potential risk of flooding on the site was also assessed. A Stage 1 Flood Risk Assessment was carried out and it was concluded that the development is not at risk of flooding (Refer to Appendix 6.2). Furthermore, the permitted development design has adequate attenuation etc. to ensure there is no potential impact on flood risk for other neighbouring properties, nor is the site at risk from sea level rise.

The Proposed Development will not be a Seveso/COMAH facility. The only substance stored on site controlled under Seveso/COMAH will be diesel for the generators and the amounts proposed do not exceed the relevant thresholds of the Seveso Directive.

There is a potential impact on the receiving environment as a result of minor accidents/leaks of fuel/oils during the construction and operational phases. However, the implementation of the mitigation measures set out in Section 5.6 of Chapter 5 (Land, Soils, Geology and Hydrogeology) and Section 6.6 of Chapter 6 (Hydrology) of the EIA Report will ensure the risk of a minor/accident is low and that the residual effect on the environment is imperceptible.

4.9 REMEDIAL AND MITIGATION MEASURES

The impacts on the local population are considered to be short-term, positive and imperceptible due to the expected short-term employment of a small number of construction workers directly employed to work on the construction of the transmission line and in turn creating a small amount of indirect additional business from using local businesses during the construction phase. The Proposed Development will provide a permanent power supply to the permitted Building A, B and C developments and support future growth which will support employment in the area.

Mitigation measures proposed to minimise the potential effects on human health in terms of air quality and climate and noise and vibration during construction are discussed in the relevant sections of Chapters 8 and 9, respectively.

Chapter 12 Traffic and Transportation addresses mitigation measures proposed to reduce the effect of additional traffic.

4.10 RESIDUAL IMPACTS

It is expected that the Proposed Development will have a **positive** and **long-term** effect on the immediate hinterland through facilitating the provision of adequate electricity supply that could potentially facilitate future employment opportunities.

A health and safety management plan will be in place to ensure the health and safety of all site personnel during construction. The experience of ESB Networks and the implementation of an EH&S Management System and relevant procedures will minimise any health and safety risks during operation of the development.

The cumulative impact is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

5.0 LAND, SOILS, GEOLOGY & HYDROGEOLOGY

5.1 INTRODUCTION

This chapter assesses and evaluates the potential impacts of the Proposed Development described in Chapter 2 (Description of the Proposed Development) on the geological and hydrogeological environment. The impact on hydrology is addressed in Chapter 6.

5.2 METHODOLOGY

5.2.1 Guidelines

This assessment has been carried out generally in accordance with the following guidelines:

- EPA Draft EIA Report Guidelines 2017
- Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report, European Union 2017;
- Institute of Geologists of Ireland (IGI) '*Guidelines for the preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements*' (2013); and
- National Roads Authority (NRA) '*Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*' (2009).

The principal attributes (and impacts) to be assessed include the following:

- Geological heritage sites in the vicinity of the perimeter of the subject site;
- Landfills, industrial sites in the vicinity of the site and the potential risk of encountering contaminated ground;
- The quality, drainage characteristics and range of agricultural uses of soil around the site;
- Quarries or mines in the vicinity, the potential implications (if any) for existing activities and extractable reserves;
- The extent of topsoil and subsoil cover and the potential use of this material on site as well as requirement to remove it off-site as waste for recovery or disposal;
- High-yielding water supply springs/wells in the vicinity of the site to within a 2km radius and the potential for increased risk presented by the Proposed Development;
- Classification (regionally important, locally important etc.) and extent of aquifers underlying the site perimeter area and increased risks presented to them by the Proposed Development associated with aspects such as for example removal of subsoil cover, removal of aquifer (in whole or part), drawdown in water levels, alteration in established flow regimes, change in groundwater quality;
- Natural hydrogeological/ karst features in the area and potential for increased risk presented by the activities at the site;
- Groundwater-fed ecosystems and the increased risk presented by operations both spatially and temporally; and
- Vulnerability of the Proposed Development to major disasters from a geological and hydrogeological standpoint such as landslides and seismic activity.

5.2.2 Sources of Information

Desk-based geological and hydrogeological information on the substrata underlying the extent of the site and surrounding areas was obtained through accessing databases and other archives where available. Data was sourced from the following:

- Geological Survey of Ireland (GSI) - online mapping, Geo-hazard Database, Geological Heritage Sites & Sites of Special Scientific Interest, Bedrock Memoirs and 1:100,000 mapping;
- Teagasc soil and subsoil database;
- Ordnance Survey Ireland - aerial photographs and historical mapping;
- Environmental Protection Agency (EPA) – website mapping and database information;
- National Parks and Wildlife Services (NPWS) – Protected Site Register;
- Dublin City Council - illegal landfill information;
- Research papers referred to in this chapter.

Site specific data was derived from the following sources:

- Published EIAR for Data Storage Facility Development, Cruiserath Road, Dublin 15 (AWN, 2019)
- Published EIS for adjacent site Bristol Myers Squibb (BMS) site – (*Jacobs, 2015*)
- Published EIS for permitted development, Building A – (AWN, 2017)

5.3 RECEIVING ENVIRONMENT

The receiving environment is discussed in terms of; geology, soils, hydrogeology and site history including potential for contamination.

The Proposed Development site is c. 12.39 hectares in extent and is located at Cruiserath, Dublin 15 (refer to Chapter 1 Figure 1.1).

5.3.1 Topography & Setting

The topography is relatively consistent and flat across the site (approximately +85 metres above ordnance datum (mAOD)) with the land surface gently sloping from south to north.

The site of the Proposed Development was previously used for arable crops and has been left fallow for the past number of years. Much of the surrounding land has been developed in the past 10-15 years for industrial and residential uses including the local road network which part of the proposed cable routes will intersect.

Planning permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the proposed substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). Construction of this permitted development is expected to begin in Q3 2019. A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). A notification of the decision to grant permission for Buildings B and C was issued by FCC in July 2019. The site is currently green field.

5.3.2 Areas of Geological Interest & Historic Land-Use

The GSI online data base was consulted regarding areas of geological interest in the vicinity of the Proposed Development site. This confirmed that no geological heritage site has been identified in the vicinity of the Proposed Development site. The closest County Geological Site is Huntstown Quarry c. 2.5km east of the site. The Priest Town Tectonite (Limestone boulder moraine) is also located c. 4.2km NNW of the site.

Details of the site history and previous land use are included in Chapter 11 Archaeology, Architectural and Cultural Heritage. The assessment of site history (OSI, 2019) confirms that the site has been in agricultural use since the earliest mapping available (1837-1842).

According to the EPA website, there are a number of licensed facilities in the locality (BMS, Ipsen Manufacturing Ltd., Alexion, Mallinckrodt and Hitech Plating Ltd.). There are no licensed waste sites in the vicinity of the site. Previous consultation with FCC confirmed that there are no known Section 22 illegal landfills or other historic landfills within 1 km of the site (AWN telephone communication).

5.3.3 Regional Soils

The general lithological/geological sequence of the overburden within the Dublin area comprises the following units:

Table 5.1 Superficial Deposits in Dublin Region

| Superficial Deposits |
|--------------------------------------|
| Made Ground |
| Estuarine/alluvial clays and silts |
| Estuarine/alluvial gravels and sands |
| Glaciomarine clays, silts and sands |
| Glacial Till (drift) |
| Glacial gravels and sands |

The regional overburden deposits are reflective of the Quaternary geological period that extends from around 1.5 million years ago to the present day. This can be further sub-divided into the Pleistocene Epoch, which covers the Ice Age period, and which extended up to 10,000 years ago and the Holocene Epoch, which extends from that time to the present day.

Figure 5.1 presents the soil type predominantly covering the site area; this is classified as BminDW – Basic Deep Well Drained Mineral (grey brown podzolics, brown earths) (Source: GSI/Teagasc soil mapping). An area of made ground is shown to the south of the site and includes Mulhuddart graveyard. Further to the north and east of the site are soils categorised as BminPD - basic surface water gleys/groundwater gleys (Source: GSI/Teagasc soil mapping).

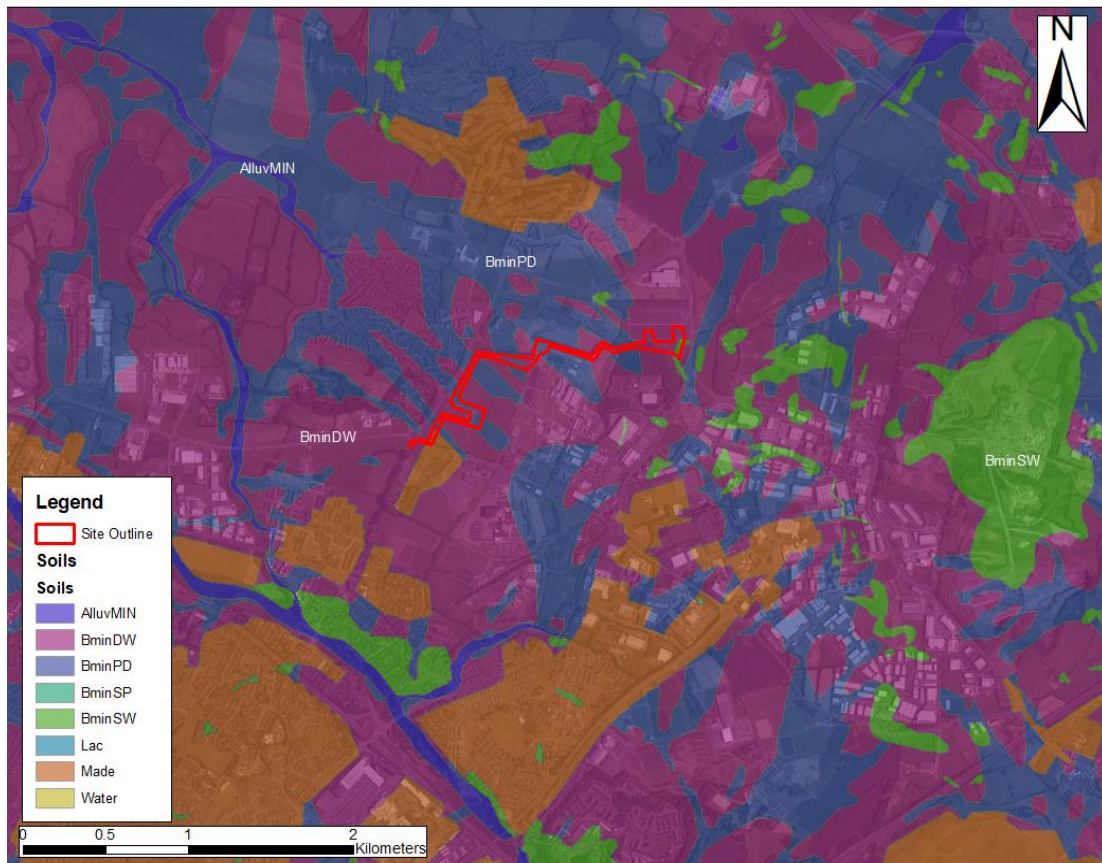


Figure 5.1 Soils map for the Proposed Development site (boundary indicated in red) (GSI, 2019)

Figure 5.2 illustrates the subsoil types found surrounding the site. The subsoil type located at the Proposed Development is predominantly classified as TLs – Till type subsoil comprising Limestone till (Carboniferous) of variable texture.

Depth to bedrock has been shown to be shallow in the area surrounding the eastern section of the proposed site based on local investigations at the BMS site and investigations undertaken as part of the application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). In general bedrock depth varies from at surface to 3.5 mbgl. Further description of site-specific data and aquifer vulnerability is provided in section 5.3.5 below.

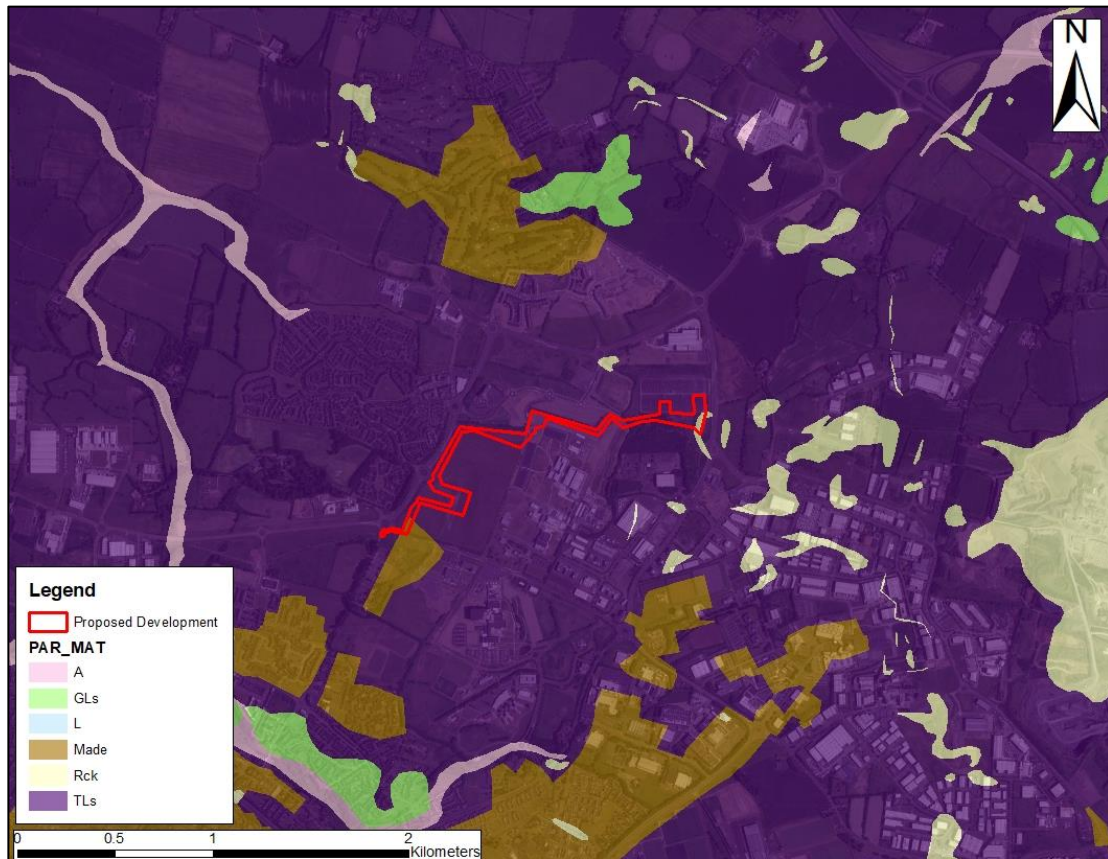


Figure 5.2 Subsoils map for the Proposed Development site (boundary indicated in red) (GSI, 2019)

The boulder clays present generally exhibit very low permeability in the order of 1×10^{-7} to 1×10^{-9} m/s or lower. The glacial boulder clay will tend to act as an aquitard (a confining layer with low permeability) where present in significance thickness.

5.3.4 Regional Geology

Inspection of the available GSI mapping (GSI, 2019) shows that the bedrock geology underlying the site belongs to three formations: TC - Tober Colleen Formation consisting of calcareous shale and limestone conglomerate; RU - Rush Conglomerate Formation comprising conglomerate, shale, and limestone; and LU - Lucan Formation consisting of 'Calp' limestone (i.e. sequences of dark grey massive limestones, shaley limestones, and massive mudstones). The bedrock geology (100k solid geology; GSI, 2015) of the site is shown on Figure 5.3.

Bedrock outcrops have been identified at a number of locations within this region and are shown in Figure 5.2.

In terms of the structural relationship of the area, the GSI database (refer also to Figure 5.3) does not show any faults within the immediate vicinity of the Proposed Development routes. A series of right lateral strike slip faults are located approximately 2km from proposed site, which trend in a NE-SW direction. These displace a series of unbedded limestones and a mixture of sandstones, shales and limestones.

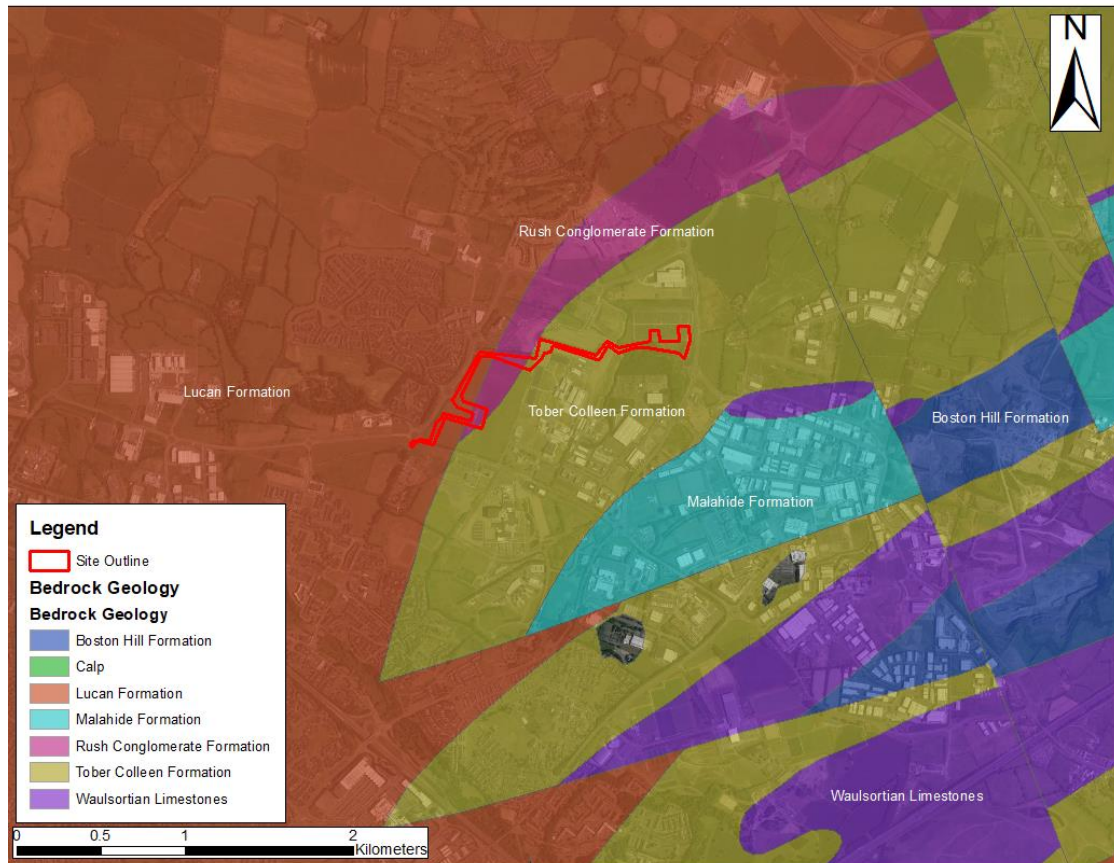


Figure 5.3 Bedrock geology map (boundary indicated in red) (GSI, 2019)

5.3.5 Regional Hydrogeology

5.3.5.1 *Description of Water Body*

The GSI has devised a system for classifying the bedrock aquifers in Ireland. The aquifer classification for bedrock depends on a number of parameters including, the area extent of the aquifer (km²), well yield (m³/d), specific capacity (m³/d/m) and groundwater throughput (mm³/d). There are three main classifications: regionally important, locally important and poor aquifers. Where an aquifer has been classified as regionally important, it is further subdivided according to the main groundwater flow regime within it. This sub-division includes regionally important fissured aquifers (Rf) and regionally important karstified aquifers (Rk). Locally important aquifers are subdivided into those that are generally moderately productive (Lm) and those that are generally moderately productive only in local zones (LI). Similarly, poor aquifers are classed as either generally unproductive except for local zones (PI) or generally unproductive (Pu).

The bedrock aquifers underlying the development routes according to the GSI (www.gsi.ie/mapping) National Draft Bedrock Aquifer Map are classified as a (PI) Poor Aquifer - *Generally Unproductive except for Local Zones* on the eastern portion of the area. The western section of the Proposed Development routes is defined as (LI) Locally Important Aquifer, i.e. bedrock aquifer which is *moderately productive only in local zones*. Figure 5.4 presents the current bedrock aquifer map for the Proposed Development area.



Figure 5.4 Aquifer Classification map (Source: www.gsi.ie)

The site is underlain by the Dublin Groundwater Body (EU code: IE_EA_G_008) which has been investigated by the GSI and is described as having a groundwater flow regime of PP which is poorly productive bedrock aquifer.

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. Due to the nature of the flow of groundwater through bedrock in Ireland, which is almost completely through fissures/fractures, the main feature that protects groundwater from contamination, and therefore the most important feature in the protection of groundwater, is the subsoil (which can consist solely of/ or of mixtures of peat, sand, gravel, glacial till, clays or silts).

Groundwater Vulnerability is a term used to represent the natural ground characteristics that determine the ease with which groundwater may be contaminated by human activities. The GSI currently classifies the aquifer vulnerability in the region of the proposed cable routes as High (H) in the western section and High (H) to extreme (E) in the eastern section (refer Figure 5.5). Based on trial pits from local site investigations undertaken as part of the application for the permitted datacenter development (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025), overburden thickness was confirmed as up to c. 2m deep. Based on GSI mapping overburden depth increases further to the west and thins to the north east.

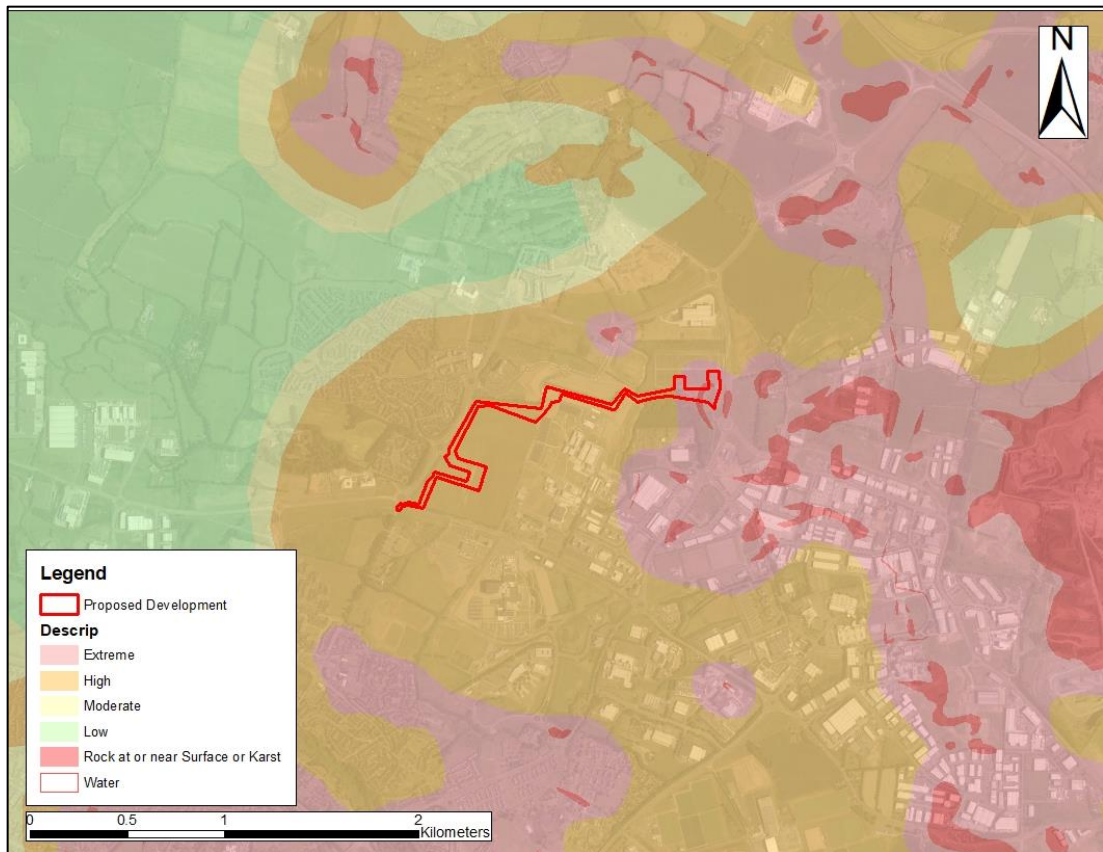


Figure 5.5 Aquifer Vulnerability map (Source: www.gsi.ie)

5.3.5.2 Groundwater Wells and Flow Direction

There are no recorded groundwater resource protection zones in the area of the Proposed Development site, i.e. zones surrounding a groundwater abstraction area.

The GSI Well Card Index is a record of wells drilled in Ireland, water supply and site investigation boreholes. It is noted that this record is not comprehensive as licensing of wells is not currently a requirement in the Republic of Ireland. This current index, however, shows a number of groundwater monitoring and abstraction wells within a 3 km radius of the site; the abstraction wells generally supply a mix of use ranging from domestic to public to industrial use. These wells are generally located in the Calp Limestone with recorded yields ranging between ca. 16m³/d to 115m³/d.

Figure 5.6 below presents the GSI well search for the area surrounding the site (Note this source does not include all wells) and Table 5.2 below summarises the details of some of the wells present within this search area.



Figure 5.6 GSI Well Search (GSI, 2019)

The majority of the wells presented in Figure 5.6 (green icons) are associated with site investigations undertaken in the Cruiserath area in 1994 (Powerstown site investigation 1994) (GSI, 2019). These are monitoring wells and are not used for potable or industrial extraction. The closest domestic extraction points to the site in the townlands of Rowan and Mayne in Co. Meath are >3.3km to the west of the development site.

The flow direction in the overburden generally follows no fixed pattern or trend. Flows of this nature are typical of low permeability clay strata with intermittent fill areas, where often the water level measures represents pore water seepages into the overburden monitoring well (opposed to bedrock wells) or perched groundwater conditions (not bedrock aquifer water). The clay is not considered to be a contamination pathway based on the discontinuous perched/pore water table meaning there is no continuous connectivity of shallow groundwater to a notable groundwater body (GWB).

Table 5.2 GSI Well Index Table from well search (GSI, 2019)

| GSI Name | Depth (m) | Depth to Bedrock | Townland | County | Use | Yield Class | Yield m ³ /d |
|------------|-----------|------------------|---------------|--------|---------------------|-------------|-------------------------|
| 2923NEW041 | - | - | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW043 | - | - | KILSHANE | Dublin | Monitoring | - | - |
| 2923NEW046 | 20.8 | 6.2 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW047 | 22.5 | 2.3 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW048 | 12 | 2 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW049 | 22.2 | 2 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW050 | 23 | 2.8 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW051 | 23 | 2.9 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW052 | 24 | 4 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW053 | 24.5 | 5.9 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW054 | 23 | 3 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923NEW055 | 23.5 | 3.5 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923NEW056 | 23.5 | 7.5 | POWERSTOWN | Dublin | Monitoring | - | - |
| 2923NEW057 | 23.6 | 6.2 | POWERSTOWN | Dublin | Monitoring | - | - |
| 2923NEW058 | 7.4 | 7.4 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW059 | 6.8 | 6.8 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW060 | 3 | 3 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923SEW047 | 3.8 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923SEW048 | 3.2 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923SEW049 | 3.6 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923NWW385 | 27.4 | - | ROWAN | Meath | Domestic use only | Good | 109 |
| 2923NWW386 | 18.3 | - | MAYNE | Meath | Domestic use only | Poor | 16.4 |
| 2923NEW033 | 150 | 12 | TYRRELSTOWN | Dublin | Industrial use | Good | 115 |
| 2923SEW004 | 76.2 | - | CAPPOGE | Dublin | Agri & domestic use | Good | 109.1 |

From static water levels (SWL) measured and included in the published EIS for the adjacent BMS site (Jacobs, 2015) groundwater flow has been found to be in a southerly direction towards the Tolka River and likely towards the River Liffey on a more regional scale.

5.3.5.3 Groundwater Quality

The European Communities Directive 2000/60/EC established a framework for community action in the field of water policy (commonly known as the Water Framework Directive [WFD]). The WFD required 'Good Water Status' for all European water by 2015, to be achieved through a system of river basin management planning and extensive monitoring. 'Good status' means both 'Good Ecological Status' and 'Good Chemical Status'.

The Groundwater Body (GWB) underlying the site is the Dublin GWB (EU Groundwater Body Code: IE_EA_G_008). Currently, the EPA (2018) classifies the Dublin GWB as having 'Good Status', with a Ground Waterbody Risk score of 'not at risk' Figures 5.7 and 5.8 below present the most recent data from the EPA website.



Figure 5.7 GWB Risk Score is 2b, 'groundwater body is not at risk'



Figure 5.8 GWB WFD Status (period 2010-2015). Green = Good Status.

During the site investigation carried out in March 2016 by AWN for the permitted data centre development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544), shallow groundwater seepage (perched groundwater within the overburden) was encountered at only two locations, BH6 (at 1.7m BGL) and BH8 (at 1.2m BGL). Groundwater wells were installed for water sample collection at location BH6 & BH8. Groundwater was encountered at BH6 and BH8 (see Figure 5.9 below) within the subsoil however the water table is discontinuous and no significant groundwater dewatering is required for construction as discussed in Section 5.4.

BH6 & BH8 wells were sampled for a wide range of priority pollutants: Volatile Organic Compounds (VOCs), metals, anions and cations and hydrocarbons (extractable petroleum hydrocarbons and mineral oil). There was only one exceedance of the threshold values (GTV's) as defined by Groundwater Regulations S.I. No. 9/2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010 (as amended) & S.I. No. 366/2016 - European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016 and the EPA (IGV) Interim Guideline Values from the document Towards Setting Guideline Values for the Protection of Groundwater in Ireland – Interim Report 2003. This exceedance was for nitrate at both locations which is likely to be indicative of the recent/current agricultural use of the site. All other parameters were not detected or were measured at less than the criteria

set out in the groundwater regulations S.I. No. 9/2010 - European Communities Environmental Objectives (Groundwater) Regulations 2010 (as amended) & S.I. No. 366/2016 - European Union Environmental Objectives (Groundwater) (Amendment) Regulations 2016 and the EPA's 2003 interim guideline limit values from the document Towards Setting Guideline Values for the Protection of Groundwater in Ireland – Interim Report 2003. A summary of these results is presented in Appendix 5.3.



Figure 5.9 2016 Site Investigation Locations (Source: CSEA, 2017)

5.3.5.4 Hydrogeological Features

According to the GSI Karst database there is no evidence of karstification (bedrock prone to dissolution leading to underground drainage systems such as caves and large crevices) in this area.

5.3.5.5 Areas of Conservation

There are no Special Protection Areas, candidate Special Areas of Conservation or proposed Natural Heritage Areas within or immediately adjacent to the facility. The nearest site designated for nature conservation is the Rye Water Valley/Carton SAC (Site Code 001398), which is located approximately 8.82 km to the west and associated with a different catchment. There are no pollutant linkages (source - pathway-receptor linkages) between the site and this area of conservation. Refer to Chapter 7 Biodiversity for further details.

5.3.5.6 Cross Sections

Figure 5.10 present the location of representative cross sections through the site to show the local hydrogeology conceptual site model (CSM) which is as follows:

- The site is situated on relatively flat ground within lands zoned for industrial development and with a ground elevation of approximately +85mAOD (Malin Head datum).
- The profile on site is relatively consistent and comprises of sandy gravelly clay overlying weathered Limestone/Shale bedrock. Depth to bedrock is shallow in the region with outcropping of bedrock evident in the surrounding area.

Generally, depth to weathered Limestone/Shale bedrock ranges from 0.3 - 2.0mbgl at the site.

- Depth to the water table is generally within the weathered limestone shale bedrock (no continuous perched water table). At the site of the Proposed Development it is approximately 2.1-3.2m below ground level (from the 2016 site investigation).
- Review of the geology and hydrogeology in the surrounding region indicates that there are no sensitive receptors such as groundwater-fed wetlands, significant public water supplies/ Group Water Schemes or geological heritage sites within the immediate vicinity which could be impacted by the Proposed Development.
- The aquifer is a poorly productive bedrock aquifer over part of the site and moderately productive only in local zones for the remainder of the site and is not used for public water supply or generally for potable use.
- There is no direct pathway to the Tolka River which is located >1km from the site. Groundwater flows are in a southerly direction towards the Tolka; however, permeability of soils within the region are generally low as characterised by the Dublin GWB.

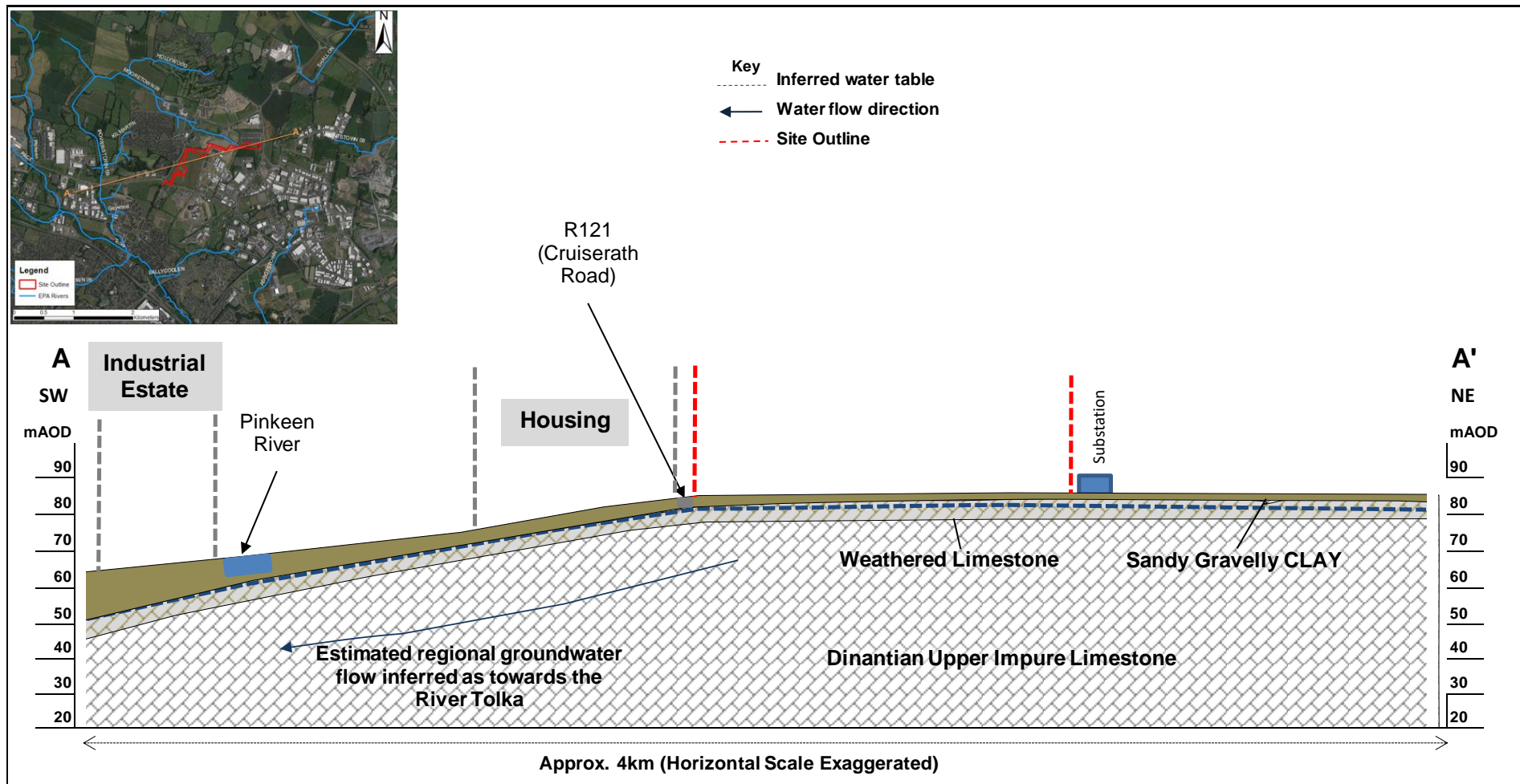


Figure 5.10 A-A' cross section

5.3.5.7 Rating of site importance of the geological and hydrogeological features
Based on the NRA methodology (refer Appendix 5.1), the criteria for rating site importance of hydrogeological features, the importance of the hydrogeological features at this site is rated as **Low Importance**. This is based on the assessment that the attribute has a low-quality significance or value on a local scale. The aquifer is a poorly productive bedrock aquifer over part of the site and moderately productive only in local zones for the remainder of the site and is not used for public water supply or generally for potable use.

5.3.6 Local Soils & Geology

A site investigation was undertaken by AWN at the adjacent permitted data facility site in March 2016 as part of an initial due diligence assessment (AWN, 2019). 19 no. investigation locations (6 no. trial pits and 13 no. boreholes) were completed across the overall landholding subject to granted permission FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544. As there have been minimal changes to the site since this investigation (no construction or other activities other than removal of a hedgerow) the findings and results can be considered to be still valid. Borehole and trial pit logs are presented in Appendix 5.2.

From the site investigation undertaken, the overburden at the site is as follows:

- Soft to firm brown sandy slightly gravelly clay overlying a firm to stiff brown sandy slightly gravelly clay with occasional cobbles, becoming more granular with depth.
- Medium firm – stiff brown grey clayey sandy gravel with occasional cobbles (possibly very weathered bedrock)
- Weathered Limestone/Shale bedrock encountered from 0.3 - 2.0mbgl with the average depth indicated as 1.8mbgl.

Apart from a minor amount of plastic encountered at a shallow level (1.6 – 1.8mbgl) in one borehole (BH8), natural overburden material was encountered with no evidence of any contamination across the Proposed Development site. A review of the site investigation data for this and adjacent recent developments at Mallinckrodt, Alexion and BMS showed natural overburden to be present with no evidence of any areas of waste disposal present.

5.3.7 Economic Geology

The EPA Extractive Industry Register and the GSI mineral database were consulted in August 2019 to determine whether there were/ are any mineral sites close to the subject site. There are no historical mines at or adjacent to the subject property. The closest active quarry is Huntstown Quarry c.2.5km east of the site operated by Roadstone Ltd, North Road, Finglas. The nearest recorded mineral site is c. 1.2km east of the site (relating to traces of lead noted in a neighbouring old limestone quarry).

5.3.8 Radon

According to the EPA (now incorporating the Radiological Protection Institute of Ireland) the site location in Cruiserath is a Very Low Radon Area where it is estimated that less than 1% of dwellings will exceed the Reference Level of 200 Bq/m³. This is the lowest of the five radon categories which are assessed by the EPA.

5.3.9 Geohazards

Much of the Earth's surface is covered by unconsolidated sediments which can be especially prone to instability. Water often plays a key role in lubricating slope failure. Instability is often significantly increased by man's activities in building houses, roads, drainage and agricultural changes. Landslides, mud flows, bog bursts (in Ireland) and debris flows are a result. In general, Ireland suffers few landslides. Landslides are more common in unconsolidated material than in bedrock, and where the sea constantly erodes the material at the base of a cliff and leads to recession of the cliffs. Landslides have also occurred in Ireland in recent years in upland peat areas due to disturbance of peat associated with construction activities. There have been no recorded landslide events at the site. The GSI landslide database was consulted and the nearest landslide to the Proposed Development was 4.7km to the south-west, referred to as the M3 J4 Clonee event which occurred on 03rd February 2014 (GSI_LS16_0042). Due to the local topography and the underlying strata there is a negligible risk of a landslide event occurring at the site.

In Ireland, seismic activity is recorded by the Irish National Seismic Network operated by the Geophysics Section of the School of Cosmic Physics at the Dublin Institute for Advanced Studies (DIAS) which has been recording seismic events in Ireland since 1978. The station configuration has varied over the years. However, currently there are five permanent broadband seismic recording stations in Ireland operated by DIAS. The seismic data from the stations comes into DIAS in real-time, and is studied for local and regional events. Records since 1980 show that the nearest seismic activity to the proposed location was in the Irish Sea (1.0 – 2.0 M_I magnitude) and ~50 km to the south in the Wicklow Mountains. There is a very low risk of seismic activity to the Proposed Development site. Therefore, there are no potential effects from geohazards.

There are no active volcanoes in Ireland so there is no risk from volcanic activity.

5.3.10 Land Take

The change of land use has already been established for the permitted data storage facility developments (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544).

5.3.11 Summary & Type of Geological/Hydrogeological Environment

Based on the regional and site-specific information available the type of Geological/Hydrogeological Environment as per the IGI Guidelines is:

Type A – Passive geological/hydrogeological environment.

A summary of the site geology and hydrogeology is outlined thus:

- The Proposed Development site has been greenfield/agricultural use historically. There is no evidence of any historical waste disposal or source of contamination.
- The site is not underlain by a regionally important aquifer.
- The site is underlain by the Tober Colleen, Rush Conglomerate and Lucan formations comprising dark shaley limestone known as Calp.

5.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A detailed description of the Proposed Development is provided in Chapter 2 of this EIA Report. The activities associated with the Proposed Development which are relevant to the land, soils, geology and hydrogeological environment are detailed in Table 5.3.

Table 5.3 Site Activities Summary

| Phase | Activity | Description |
|--------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction | Discharge to Ground | Run-off percolating to ground at the construction site. |
| | Earthworks: Excavation of Superficial Deposits | <p>Cut and fill will be required to facilitate construction of the substation and the installation of the 220kV transmission line and 49kVA cable installation. Excavations are required for installation of the transmission line and 49kVA cable installation.</p> <p>The installation of the transmission line will require the excavation of two trenches along the route; each containing one 220kV circuit. The trenches will typically run parallel to each other along the length of the route, the separation of the 2 circuits will vary from 4m to c. 8m the separation is depending on the existing ground conditions and existing underground services. The optimum depth of excavation required to facilitate installation of the ducting, as specified by CSEA, is 1.21m below ground level but may increase to up to c. 3.5m at utility crossings. The typical width of each trench is 1.02m, however this may vary depending on ground conditions and existing services.</p> <p>The installation of the 49kVA ducting will require the excavation of one trench along the route; the trench will contain one 10kV circuit. The optimum depth of excavation required to facilitate installation of the ducting is 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of the trench is c.0.6m, however this may vary depending on ground conditions and existing services to up to c. 1m.</p> <p>Subsoil stripping and localised stockpiling of soil will be required during construction. It is estimated that approximately 24,300m³ of soils will be excavated to facilitate construction of the development. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite.</p> |
| | Storage of hazardous Material | Bunded fuel storage and wet concrete during construction phase. |
| | Import/Export of Materials | <p>Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite. Material removed from site may be re-used offsite for beneficial use on other sites with appropriate planning/waste permissions/derogations (e.g. in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011) as amended or will be reused, recovered and/or disposed off-site at appropriately authorised waste facilities. The removal of waste from the site will be carried out in accordance with Waste Regulations, Regional Waste Plan (Eastern Midland Region) and Waste Hierarchy/Circular Economy Principals. Refer to Chapter 14 Waste Management for further detail.</p> <p>It is estimated that 26,000m³ of clean engineered fill material will be required to facilitate construction.</p> |
| Operation | Increase in hard standing area | Altering of local recharge due to increase in hard standing area. |
| | Storage of hazardous Material | Fuel oil storage (diesel) is required for operational phase. Fuel oil will be stored within a 1,000L capacity tank for supply of the back up generator for the substation, within an adequately sized bund. The risk to the aquifer is considered low due to the mitigation in place for containment of bulk oil |

| Phase | Activity | Description |
|-------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | storage, the relatively small amount of fuel stored, delivery and distribution and use of oil interceptors on the stormwater system downgradient of the offloading area and prior to discharge from the site permitted under ABP Reg Ref:PL06F.248544/FCC Reg: FW17A/0025. |

As outlined in Table 5.3 the activities required for the construction phase of the Proposed Development represents the greatest risk of potential impact on the geological environment. These activities primarily pertain to the site preparation, excavation, levelling and infilling activities required to facilitate construction of the gas insulated switch substation and associated high voltage cable routes.

5.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

The potential geological and hydrogeological impacts during the construction and operations are presented below. Remediation and mitigation measures included in the design of this project to address these potential impacts are presented in section 5.6.

5.5.1 Construction Phase

The following potential effects to land soil and groundwater have been considered:

- Excavation of soil and near-surface rock head will be required for levelling of the site to render it suitable for building the substation platform. Local removal and reinstatement (including infilling) of the 'protective' topsoil and subsoil cover across the development area at the site will not change the overall vulnerability category for the site which is already 'high to extreme'. Capping of the substation footprint of the site by hardstand/ building following construction and installation of drainage which has been permitted via FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544 will minimise the potential for contamination of the aquifers beneath the site: the Poor Aquifer (PI) and the Locally Important Bedrock Aquifer (LI) which is moderately productive in local zones only. Site investigation and laboratory analysis has not identified any existing contamination with hazardous substances. Some minor exceedances of nitrogen derivatives from agricultural use were identified via groundwater sample analysis. No treatment of any water will be required during construction works.
- Excavation of soil during trenching for the cable works. Local removal and reinstatement (including infilling) will not change the overall vulnerability category for the Proposed Development as the excavations are localised and shallow in depth. Reinstatement of the ducting routes will be as current.
- As with all construction projects there is potential for water (rainfall and/or groundwater) to become contaminated with pollutants associated with construction activity. Contaminated water which arises from construction sites can pose a significant short-term risk to groundwater quality for the duration of the construction if contaminated water is allowed percolate to the aquifer. The potential main contaminants include:
 - Suspended solids (muddy water with increased turbidity (measure of the degree to which the water loses its transparency due to the presence of suspended particulates)) – arising from excavation and ground disturbance;
 - Cement/concrete (increase turbidity and pH) – arising from construction materials;
 - Hydrocarbons (ecotoxic) – accidental spillages from construction plant or onsite storage;

- Wastewater (nutrient and microbial rich) – arising from poor on-site toilets and washrooms.

Loss of agricultural land

There will be a local loss of agricultural soil however, the area of development is small in the context of the overall agricultural land available in the region and has been zoned for industrial development.

These potential impacts are not anticipated to occur following the implementation of mitigation measures outlined in section 5.6.1.

5.5.2 Operational Phase

The following risks have been considered in relation to the operational phase of the development:

- During the operational phase there is a small potential for leaks/ spillages from the fuel storage (backup generator) to occur on site. In addition to this there is a potential for minor leaks/spillages from vehicles along access roads and in parking areas. Any accidental emissions of hydrocarbons could cause soil/groundwater contamination if the emissions are unmitigated.
- As above, In the event of a fire at the substation facility, firewater could become contaminated and in the absence of mitigation may contaminate soil and groundwater.

These potential impacts are not anticipated to occur following the implementation of mitigation measures outlined in section 5.6.2.

5.5.3 Do Nothing Scenario

Adjacent to the proposed site, permission has been granted for the development of a data storage facility (Building A) and associated ancillary development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) and (under FCC Planning Ref. FW19A/0087) for the development of two data storage facilities to the east of the substation site (referred to as Buildings B and C). Should the Proposed Development not take place, sections of the overall landholding will be subject to clearance and landscaping as part of the permitted development(s). Once construction of the permitted developments is complete, the land, soils, geological and hydrogeological environment would not be subject to further changes with no additional hardstand cover or soil removal.

5.6 REMEDIAL AND MITIGATION MEASURES

This section describes a range of mitigation measures designed to avoid or reduce any potential adverse geological and hydrogeological impacts identified.

5.6.1 Construction Phase

In order to reduce potential impacts on the soils and geology environment a number of mitigation measures will be adopted as part of the construction works on site. The measures will address the main activities of potential impact which include:

- Control of soil excavation and export from site;
- Sources of fill and aggregates for the Proposed Development;
- Fuel and chemical handling, transport and storage; and

- Control of water during construction.

Construction Environmental Management Plan

An outline Construction Environmental Management Plan (CEMP) has been prepared by CSEA for the Proposed Development and is included with the planning documentation. In advance of work starting on site, the works Contractor will prepare a detailed Construction Environmental Management Plan (CEMP). The detailed CEMP will set out the overarching vision of how the construction of the Proposed Development will be managed in a safe and organised manner by the Contractor. The CEMP will be a live document and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards which must be met during the construction stage and will include the relevant mitigation measures outlined in the EIA Report and any subsequent planning conditions relevant to the Proposed Development.

Control of Soil Excavation

Subsoil will be excavated to facilitate the construction of foundations and the installation of the ducting for the cable routes. The Proposed Development will incorporate the reduce, reuse and recycle approach in terms of soil excavations on site. The construction will be carefully planned to ensure only material required to be excavated will be excavated resulting in as much material left in situ as possible.

It is unlikely that contaminated material will be encountered during construction of the Proposed Development. Nonetheless, excavation works will be carefully monitored by a suitably qualified person to ensure that potentially contaminated soil is identified and segregated from clean/inert soil. In the unlikely event that potentially contaminated soils are encountered, the material will be tested and classified as hazardous or non-hazardous in accordance with the EPA Guidance Document: *Waste Classification – List of Waste and Determining if Waste is Hazardous or Non-Hazardous* (2015), HazWasteOnline tool or similar approved method. The material will then need to be classified as inert, non-hazardous, stable non-reactive hazardous or hazardous in accordance with *EC Decision 2003/33/EC*. It will then be removed from site by a suitably permitted waste contractor to an authorised waste facility.

Export of Material from Site

It is envisioned that 24,300m³ of soil/stones will be excavated to facilitate the Proposed Development. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite for reuse, recovery and/or disposal. Refer to Chapter 14 Waste Management for further detail.

Soil being removed from site will be classified by an experienced and qualified environmental professional to ensure that the soil is correctly classified for transportation and recovery/disposal offsite. Refer to Chapter 14 Waste Management for further relevant information.

Sources of Fill and Aggregates

All fill and aggregate for the Proposed Development will be sourced from reputable suppliers. All suppliers will be vetted for:

- Aggregate compliance certificates/declarations of conformity for the classes of material specified for the Proposed Development;
- Environmental Management status; and
- Regulatory and Legal Compliance status of the Company.
-

It is anticipated that approximately 26,000m³ engineered fill will be required to facilitate construction.

Fuel and Chemical Handling

The following mitigation measures will be taken at the construction stage in order to prevent any spillages to ground of fuels and prevent any resulting soil and/or groundwater quality impacts:

- Designation of a bunded refuelling areas on the site;
- Provision of spill kit facilities across the site;
- Where mobile fuel bowsers are used the following measures will be taken:
 - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
 - The pump or valve will be fitted with a lock and will be secured when not in use;
 - All bowsers to carry a spill kit
 - Operatives must have spill response training; and
 - Drip trays used on any required mobile fuel units.

In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded area;
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around the site, they will be secured and on spill pallets; and
- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

The aforementioned list of measures is non-exhaustive and will be included in the CEMP.

Control of Water during Construction

No significant dewatering is required for the site development. However, run-off from excavations/earthworks cannot be prevented entirely and is largely a function of prevailing weather conditions. Earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and flowing. These measures will ensure that there will be minimal inflow of shallow/perched groundwater into any excavation.

Care will be taken to ensure that exposed soil surfaces are stable to minimise erosion. Measures will include managing slope gradients, covering of soil stockpiles where necessary etc. All exposed soil surfaces will be within the Proposed Development site which limits the potential for any offsite impacts.

Should any discharge of construction water be required during the construction phase, pre-treatment and silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, silt sacks and settlement tanks/ponds) and hydrocarbon interceptors as required. Active treatment systems such as siltbusters or similar may be required depending on turbidity levels.

5.6.2 Operational Phase

During the operational phase of the Proposed Development site there is limited potential for site activities to impact on the land, geological and hydrogeological environment of the area. There will be no emissions to ground or the underlying aquifer from operational activities.

Environmental Procedures

As detailed in Section 2.5.2 in Chapter 2, ESB Networks implements an Environmental Safety and Health Management System at each of its facilities. Prior to operation of the Proposed Development, a comprehensive set of operational procedures will be established (based on those used at other similar facilities) which will include site-specific mitigation measures and emergency response measures.

Fuel Storage and Chemical Handling

The following mitigation measures will be undertaken at the operational stage in order to manage any leaks from vehicles resulting in soil and/or groundwater quality impacts:

- Provision of spill kit facilities and training of operatives in use of same;
- Where mobile fuel bowsers are used the following measures will be taken:
 - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
 - The pump or valve will be fitted with a lock and will be secured when not in use;
 - All bowsers to carry a spill kit;
 - Operatives must have spill response training; and
 - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

Increase in hard stand

A proportion of the development area will be covered in hardstand (c. 2,003m²). This provides protection to the underlying aquifer but also reduces local recharge in this area of the aquifer. As the area of aquifer is large this reduction in local recharge will have no significant change in the natural hydrogeological regime.

5.7 PREDICTED IMPACT OF THE PROPOSED DEVELOPMENT

This section describes the predicted impact of the Proposed Development following the implementation of the remedial and mitigation measures.

5.7.1 Construction Phase

The implementation of mitigation measures outlined in Section 5.6.1 will ensure that the predicted impacts on the geological and hydrogeological environment do not occur during the construction phase and that the residual impact will be **short-term-imperceptible-neutral**. Following the NRA Guidelines on Procedures for the Assessment and Treatment of Geology Hydrology and Hydrogeology for National Road Schemes (2009) criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

5.7.2 Operational Phase

The implementation of mitigation measures highlighted in Section 5.6.2 will ensure that the predicted impacts on the geological and hydrogeological environment do not occur during the operational phase and that the residual impact will be **long-term-imperceptible-neutral**. Following the NRA criteria for rating the magnitude and

significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **negligible**.

5.8 RESIDUAL IMPACTS

Based on the natural conditions present and with appropriate mitigation measures (see Section 5.6) to reduce the potential for any impact of accidental discharges to ground during this phase, the residual impacts on land soils, geology and hydrogeology during construction (following EPA Draft EIA Report Guidelines 2017) are considered to have a **short-term, imperceptible** significance, with a **neutral** impact on quality.

There are no likely significant impacts on the land, geological or hydrogeological environment associated with the proposed operational stage of the site with mitigation in place. As such the impact is considered to have a **long-term, imperceptible** significance with a **neutral** impact on quality i.e. no effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.

Following the NRA criteria for rating the magnitude and significance of impacts on the geological and hydrogeological related attributes, the magnitude of impact is considered **Negligible** for the construction and operational phases.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

6.9 REFERENCES

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APPENDIX 5.1

NRA CRITERIA FOR RATING THE MAGNITUDE AND SIGNIFICANCE OF IMPACTS AT EIA STAGE

NATIONAL ROADS AUTHORITY (NRA, 2009)

Table 1 Criteria for rating site importance of Geological Features (NRA, 2009)

| Magnitude of Impact | Criteria | Typical Example |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Very High | <p>Attribute has a high quality, significance or value on a regional or national scale.</p> <p>Degree or extent of soil contamination is significant on a national or regional scale.</p> <p>Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale.</p> | <p>Geological feature rare on a regional or national scale (NHA)</p> <p>Large existing quarry or pit Proven economically extractable mineral resource</p> |
| High | <p>Attribute has a high quality, significance or value on a local scale.</p> <p>Degree or extent of soil contamination is significant on a local scale.</p> <p>Volume of peat and/or soft organic soil underlying route is significant on a local scale.</p> | <p>Contaminated soil on site with previous heavy industrial usage Large recent landfill site for mixed wastes Geological feature of high value on a local scale (County Geological Site) Well drained and/or high fertility soils Moderately sized existing quarry or pit Marginally economic extractable mineral resource</p> |
| Medium | <p>Attribute has a medium quality, significance or value on a local scale</p> <p>Degree or extent of soil contamination is moderate on a local scale</p> <p>Volume of peat and/or soft organic soil underlying route is moderate on a local scale</p> | <p>Contaminated soil on site with previous light industrial usage Small recent landfill site for mixed wastes Moderately drained and/or moderate fertility soils Small existing quarry or pit Sub-economic extractable mineral resource</p> |
| Low | <p>Attribute has a low quality, significance or value on a local scale</p> <p>Degree or extent of soil contamination is minor on a local scale</p> <p>Volume of peat and/or soft organic soil underlying route is small on a local scale</p> | <p>Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils. Uneconomically extractable mineral resource.</p> |

Table 2 Criteria for rating impact magnitude at EIS stage – Estimation of magnitude of impact on soil / geology attribute (NRA, 2009)

| Magnitude of Impact | Criteria | Typical Examples |
|----------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Large Adverse | Results in loss of attribute | Loss of high proportion of future quarry or pit |
| Moderate Adverse | Results in impact on integrity of attribute or loss of part of attribute | Loss of moderate proportion of future quarry or pit reserves |
| Small Adverse | Results in minor impact on integrity of attribute or loss of small part of attribute | Loss of small proportion of future quarry or pit reserves |
| Negligible | Results in an impact on attribute but of insufficient magnitude to affect either use or integrity | No measurable changes in attributes |
| Minor Beneficial | Results in minor improvement of attribute quality | Minor enhancement of geological heritage feature |
| Moderate Beneficial | Results in moderate improvement of attribute quality | Moderate enhancement of geological heritage |
| Major Beneficial | Results in major improvement of attribute quality | Major enhancement of geological heritage feature |

Table 3 Criteria for rating Site Attributes - Estimation of Importance of Hydrogeology Attributes (NRA, 2009)

| Magnitude of Impact | Criteria | Typical Examples |
|----------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extremely High | Attribute has a high quality or value on an international scale | Groundwater supports river, wetland or surface water body ecosystem protected by EU legislation e.g. SAC or SPA status |
| Very High | Attribute has a high quality or value on a regional or national scale | Regionally Important Aquifer with multiple well fields Groundwater supports river, wetland or surface water body ecosystem protected by national legislation – NHA status Regionally important potable water source supplying >2500 homes Inner source protection area for regionally important water source |

| | | |
|---------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High | Attribute has a high quality or value on a local scale | Regionally Important Aquifer Groundwater provides large proportion of baseflow to local rivers Locally important potable water source supplying >1000 homes Outer source protection area for regionally important water source Inner source protection area for locally important water source |
| Medium | Attribute has a medium quality or value on a local scale | Locally Important Aquifer Potable water source supplying >50 homes Outer source protection area for locally important water source |
| Low | Attribute has a low quality or value on a local scale | Poor Bedrock Aquifer Potable water source supplying <50 homes |

Table 4 Criteria for Rating Impact Significance at EIS Stage – Estimation of Magnitude of Impact on Hydrogeology Attribute (NRA, 2009)

| Magnitude of Impact | Criteria | Typical Examples |
|----------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Large Adverse | Results in loss of attribute and /or quality and integrity of attribute | Removal of large proportion of aquifer. Changes to aquifer or unsaturated zone resulting in extensive change to existing water supply springs and wells, river baseflow or ecosystems. Potential high risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >2% annually. |
| Moderate Adverse | Results in impact on integrity of attribute or loss of part of attribute | Removal of moderate proportion of aquifer. Changes to aquifer or unsaturated zone resulting in moderate change to existing water supply springs and wells, river baseflow or ecosystems. |

| | | |
|----------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | Potential medium risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >1% annually. |
| Small Adverse | Results in minor impact on integrity of attribute or loss of small part of attribute | Removal of small proportion of aquifer. Changes to aquifer or unsaturated zone resulting in minor change to water supply springs and wells, river baseflow or ecosystems. Potential low risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >0.5% annually. |
| Negligible | Results in an impact on attribute but of insufficient magnitude to affect either use or integrity | Calculated risk of serious pollution incident <0.5% annually. |

Table 5: Rating of Significant Environmental Impacts at EIS Stage (NRA, 2009)

| Importance of Attribute | Magnitude of Importance | | | |
|-------------------------|-------------------------|----------------------|----------------------|----------------------|
| | Negligible | Small Adverse | Moderate Adverse | Large Adverse |
| Extremely High | Imperceptible | Significant | Profound | Profound |
| Very High | Imperceptible | Significant/moderate | Profound/Significant | Profound |
| High | Imperceptible | Moderate/Slight | Significant/moderate | Profound/Significant |
| Medium | Imperceptible | Slight | Moderate | Significant |
| Low | Imperceptible | Imperceptible | Slight | Slight/Moderate |

APPENDIX 5.2
BOREHOLE LOGS 2016 INVESTIGATION
AWN CONSULTING (AWN, 2016)



Monitoring Well Log BH 3

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 15/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-------------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Firm brown sandy slightly gravelly CLAY with fine to coarse angular gravels. | 1 | | |
| Stiff brown grey sandy gravelly Clay with fine to coarse angular gravels and occasional cobbles | 1.9 | | |
| Dark grey limestone | 2.0 | | |
| End of Borehole 2.0mbgl Borehole Dry | | | |

| | | | |
|--------------------------------|----------------------------|------|--|
| Drill Method: Cable Percussion | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | None | |
| Driller: IGSL | Static Water Level (mbgl): | | |



Monitoring Well Log BH 4

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 16/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft to firm dark brown sandy slightly gravelly CLAY with occasional cobbles. | 1.5 | | |
| Stiff brown grey sandy gravelly Clay with occasional angular cobbles | 1.8 | | |
| Dark grey limestone | 1.9 | | |
| End of Borehole 1.9mbgl Borehole Dry | | | |

| | | | |
|--------------------------------|----------------------------|------|--|
| Drill Method: Cable Percussion | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | None | |
| Driller: IGSL | Static Water Level (mbgl): | | |



Monitoring Well Log BH 5

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 16/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|--------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Firm to stiff dark brown sandy gravelly CLAY with occasional cobbles. | 0.5 | | |
| Firm to stiff dark brown sandy CLAY with frequent angular cobbles | 1.5 | | |
| Firm to stiff dark brown grey sandy CLAY with frequent angular cobbles of Limestone. | 1.8 | | |
| End of Borehole 1.9mbgl Borehole Dry | | | |

| | | | |
|--------------------------------|----------------------------|------|--|
| Drill Method: Cable Percussion | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | None | |
| Driller: IGSL | Static Water Level (mbgl): | | |



Monitoring Well Log BH 6

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 16/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |




| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|--------------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft to firm light brown sandy CLAY with occasional angular cobbles. | 0.5 | | |
| Soft to stiff light to medium brown sandy gravelly CLAY with occasional angular cobbles. | 1.0 | | |
| Firm to stiff medium to dark brown grey sandy CLAY with frequent angular and subangular cobbles. | 1.7 | | |
| Stiff brownish grey sandy CLAY with medium - large sub-angular cobbles of Limestone. | 2.0 | | |
| End of Borehole 2.0mbgl | | | |

| | | | |
|--------------------------------|----------------------------|-----|--|
| Drill Method: Cable Percussion | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | 1.7 | |
| Driller: IGSL | Static Water Level (mbgl): | | |



Monitoring Well Log BH 7

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 21/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: D. Casey |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-----------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|-------------------|
| Ground surface | 0.0 | | |
| Soft - firm dark brown CLAY with occasional subangular pebbles. | 0.8 |  | |
| Soft - firm grey sandy CLAY with some angular pebbles | 1.3 |  | |
| Weathered rock | 1.6 |  | |
| End of Borehole 1.6mbgl | | | |

| | |
|--------------------------------|----------------------------|
| Drill Method: Cable Percussion | Hole Diameter: |
| | Top of Casing (mAOD): |
| Casing Length (m): | |
| | Water Strikes (mbgl): |
| Driller: IGSL | Static Water Level (mbgl): |



Monitoring Well Log BH 8

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 16/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft to firm medium brown sandy gravelly CLAY with occasional angular cobbles. | | | |
| Soft to stiff greyish brown sandy gravelly CLAY with black organic material. No odour noted from the black material. Plastic noted at c.1.6 - 1.8m | 1.0 | | |
| Possible rock at 1.8m | 1.8 | | |
| End of Borehole 1.8mbgl | | | |

| | | |
|--------------------------------|----------------------------|------|
| Drill Method: Cable Percussion | Hole Diameter: | |
| | Top of Casing (mAOD): | |
| Casing Length (m): | | |
| | Water Strikes (mbgl): | 1.2 |
| Driller: IGSL | Static Water Level (mbgl): | 1.25 |



Monitoring Well Log BH 9

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 21/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: D. Casey |
| Grid Reference: | | |

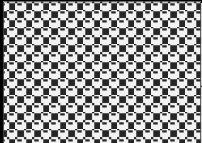
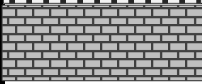
| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|---------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft dark brown sandy CLAY with occasional angular cobbles. | 0.6 | | |
| Very soft grey brown sandy CLAY with some sub-angular pebbles and cobbles | 1.4 | | |
| Weathered rock at 1.4mbgl | | | |
| End of Borehole 1.5mbgl | | | |

| | | | | |
|--------------------------------|----------------------------|--|--|--|
| Drill Method: Cable Percussion | Hole Diameter: | | | |
| | Top of Casing (mAOD): | | | |
| Casing Length (m): | | | | |
| | Water Strikes (mbgl): | | | |
| Driller: IGSL | Static Water Level (mbgl): | | | |



Monitoring Well Log BH 10

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 21/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: D. Casey |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|----------------------------------------------------------|--------------|------------------------------------------------------------------------------------|-------------------|
| Ground surface | 0.0 | | |
| Soft dark brown CLAY with occasional subangular pebbles. | 1.0 |  | |
| Weathered Bedrock | 1.6 |  | |
| End of Borehole 1.6mbgl | | | |

| | |
|--------------------------------|----------------------------|
| Drill Method: Cable Percussion | Hole Diameter: |
| | Top of Casing (mAOD): |
| Casing Length (m): | |
| | Water Strikes (mbgl): |
| Driller: IGSL | Static Water Level (mbgl): |



Monitoring Well Log BH 11

| | | |
|---------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| AWN Project Ref: 16_8877 Ground Level (mAOD): Grid Reference: | Client: CSEA Location: Project G Cruiserath | Drill date: 21/03/2016 Checked By: D. Casey |
|---------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-----------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft dark brown CLAY with subangular pebbles. | 0.3 | | |
| Weathered bedrock | | | |
| End of Borehole 0.3m | | | |

| | |
|--------------------------------|----------------------------|
| Drill Method: Cable Percussion | Hole Diameter: |
| | Top of Casing (mAOD): |
| Casing Length (m): | |
| | Water Strikes (mbgl): |
| Driller: IGSL | Static Water Level (mbgl): |



Monitoring Well Log BH 12

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 21/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: D. Casey |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|----------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft dark brown CLAY with occasional subangular pebbles. | 0.5 | | |
| Weathered rock | 0.9 | | |
| End of Borehole 0.9mbgl | | | |

| | |
|--------------------------------|----------------------------|
| Drill Method: Cable Percussion | Hole Diameter: |
| | Top of Casing (mAOD): |
| Casing Length (m): | |
| | Water Strikes (mbgl): |
| Driller: IGSL | Static Water Level (mbgl): |



Monitoring Well Log BH 13

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 21/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: D. Casey |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-----------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft dark brown CLAY with subangular pebbles. | 0.4 | | |
| Weathered bedrock (dark limestone) | 0.7 | | |
| End of Borehole 0.7m | | | |

| | | | | |
|--------------------------------|----------------------------|--|--|--|
| Drill Method: Cable Percussion | Hole Diameter: | | | |
| | Top of Casing (mAOD): | | | |
| Casing Length (m): | | | | |
| | Water Strikes (mbgl): | | | |
| Driller: IGSL | Static Water Level (mbgl): | | | |



Trial Pit Log

TP 1

AWN Project Ref: 16_8877
 Ground Level (mAOD):
 Grid Reference:

Client: CSEA
 Location: Project G Cruiserath

Drill date: 15/03/2016
 Checked By: E.O'Connor

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|---------------------------------------------------------------------------------------------------------------|----------------------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Soft to firm, brown, slightly sandy CLAY with medium to coarse angular gravels and occasional angular cobbles | 1.0 | | |
| Firm brown slightly sandy, gravelly clay with angular cobbles and occasional boulders | 1.5 | | |
| Dark Grey Limestone Bedrock at 1.5m | | | |
| End of Trial Pit 1.5mbgl | | | |
| Drill Method: Excavator | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | | |
| Driller: IGSL | Static Water Level (mbgl): | | |



| | |
|----------------------|------|
| Trial Pit Log | TP 2 |
|----------------------|------|

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 15/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: E.O'Connor |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Firm brown slightly sandy CLAY with medium to coarse angular gravels | 1.2 | | |
| Stiff, brown clay with medium to coarse angular gravels and weathered limestone cobbles. | 2.0 | | |
| Dark Grey Competent Limestone Bedrock at 2.0m | | | |
| End of Trial Pit 2.0mbgl | | | |

| | | | | |
|------------------------|----------------------------|--|--|--|
| Drill Method: Excavtor | Hole Diameter: | | | |
| | Top of Casing (mAOD): | | | |
| Casing Length (m): | | | | |
| | Water Strikes (mbgl): | | | |
| Driller: IGSL | Static Water Level (mbgl): | | | |



| | |
|----------------------|------|
| Trial Pit Log | TP 3 |
|----------------------|------|

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 15/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: E.O'Connor |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|--------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Brown, firm, slightly sandy CLAY with fine to coarse angular gravels | 1.0 | | |
| Firm to stiff, Brown to grey gravelly clay with fine to coarse angular gravels and cobbles | 1.9 | | |
| Dark Grey Limestone Bedrock at 1.9mbgl | | | 1.9 |
| End of Trial Pit 1.9mbgl | | | |

| | | | | |
|-------------------------|----------------------------|--|--|--|
| Drill Method: Excavator | Hole Diameter: | | | |
| | Top of Casing (mAOD): | | | |
| Casing Length (m): | | | | |
| | Water Strikes (mbgl): | | | |
| Driller: IGSL | Static Water Level (mbgl): | | | |



| | |
|----------------------|------|
| Trial Pit Log | TP 5 |
|----------------------|------|

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 15/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: E.O'Connor |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|-----------------------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Dark brown slightly sandy CLAY with fine medium angular gravels | 0.3 | | |
| Dark brown stiff, slightly sandy, very gravelling CLAY with medium to coarse angular gravels | 1.0 | | |
| Stiff, dark brown to grey slightly sandy, gravelly clay with medium to coarse angular gravels and cobbles | 1.2 | | |
| Dark Grey Competent Limestone Bedrock at 2.0m | 1.3 | | |
| End of Trial Pit 1.3mbgl | | | |

| | | | | |
|-------------------------|----------------------------|--|--|--|
| Drill Method: Excavator | Hole Diameter: | | | |
| | Top of Casing (mAOD): | | | |
| Casing Length (m): | | | | |
| | Water Strikes (mbgl): | | | |
| Driller: IGSL | Static Water Level (mbgl): | | | |



Trial Pit Log

TP 6

AWN Project Ref: 16_8877
 Ground Level (mAOD):
 Grid Reference:

Client: CSEA
 Location: Project G Cruiserath

Drill date: 15/03/2016
 Checked By: E.O'Connor

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|--------------------------------------------------------------------------------------------|----------------------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Brown, firm, slightly sandy CLAY with fine to medium sub-angular gravels | 0.2 | | |
| Brown to grey, firm, slightly sandy CLAY with fine to coarse angular gravels | 0.7 | | |
| Firm to stiff, Brown to grey gravelly clay with fine to coarse angular gravels and cobbles | 1.9 | | |
| Dark Grey Limestone Bedrock at 1.9mbgl | | | |
| End of Trial Pit 1.9mbgl | | | |
| Drill Method: Excavator | Hole Diameter: | | |
| | Top of Casing (mAOD): | | |
| Casing Length (m): | | | |
| | Water Strikes (mbgl): | | |
| Driller: | Static Water Level (mbgl): | | |



| | |
|----------------------|------|
| Trial Pit Log | TP 7 |
|----------------------|------|

| | | |
|--------------------------|--------------------------------|------------------------|
| AWN Project Ref: 16_8877 | Client: CSEA | Drill date: 15/03/2016 |
| Ground Level (mAOD): | Location: Project G Cruiserath | Checked By: G. Walsh |
| Grid Reference: | | |

| SUBSURFACE PROFILE | Depth (mbgl) | Lithology | Well Construction |
|---------------------------------------------------------------------------------------------------------------------|--------------|-----------|-------------------|
| Ground surface | 0.0 | | |
| Brown firm to stiff, slightly sandy CLAY with fine to medium sub-angular gravels | 0.9 | | |
| Stiff, Brown to grey slightly sandy clay with medium to coarse angular gravels with occasional sub-rounded boulders | 1.9 | | 1.9 |
| Dark Grey Limestone Bedrock at 1.9mbgl | | | |
| End of Trial Pit 1.9mbgl | | | |

| | |
|--------------------|----------------------------|
| Drill Method: | Hole Diameter: |
| | Top of Casing (mAOD): |
| Casing Length (m): | |
| | Water Strikes (mbgl): |
| Driller: IGSL | Static Water Level (mbgl): |

| | | |
|-----|--|--|
| 1.9 | | |
|-----|--|--|

APPENDIX 5.3
GROUNDWATER RESULTS COMPARISON TABLE
AWN CONSULTING (AWN, 2016)

Table 1

Laboratory Test Results: Leachate sample - Metals, Inorganics, Other
Client: Clifton Scannell Emerson Associates
Location: Cruiserath, Dublin 24
AWN Ref: 16_8877



| Parameter | Units | Sample ID | TP1 | TP6 | BH4 | BH4 | BH5 | BH5 | BH6 | BH6 | BH7 | BH7 | BH8 | BH9 | BH9 | Groundwater Regulations S.I. 9 of 2010 | EPA IGVs 2003 |
|-------------------------|----------|------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------------------------------------|--------------------|
| | | Date sampled | 15/03/2016 | 15/03/2016 | 16/03/2016 | 16/03/2016 | 16/03/2016 | 16/03/2016 | 16/03/2016 | 16/03/2016 | 21/03/2016 | 21/03/2016 | 16/03/2016 | 21/03/2016 | 21/03/2016 | | |
| | | Sample Depth (m) | 1.50 | 1.80 | 0.50 | 2.00 | 0-0.5 | 1.50 | 0-0.5 | 2.50 | 0-0.5 | 1.00 | 1.6-1.8 | 0.40 | 1.00 | | |
| Aluminium | mg/l | <0.02 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 0.15 | 0.2 |
| Antimony | mg/l | <0.002 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| Arsenic | mg/l | <0.0025 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.0075 | 0.01 |
| Barium | mg/l | <0.003 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 0.1 |
| Boron | mg/l | <0.002 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 0.75 | 1 |
| Cadmium | mg/l | <0.0005 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.00375 | 0.005 |
| Calcium | mg/l | <0.2 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 200 |
| Chromium | mg/l | <0.0015 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.0375 | 0.03 |
| Copper | mg/l | <0.007 | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.5 | 0.03 |
| Lead | mg/l | <0.005 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.01875 | 0.01 |
| Magnesium | mg/l | <0.1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 50 |
| Mercury | mg/l | <0.001 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.00075 | 0.001 |
| Molybdenum | mg/l | <0.002 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| Nickel | mg/l | <0.002 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.015 | 0.02 |
| Potassium | mg/l | <0.1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 5 |
| Selenium | mg/l | <0.003 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Silicon | mg/l | <0.1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| Sodium | mg/l | <0.1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 150 | 150 |
| Titanium | mg/l | <0.005 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| Zinc | mg/l | <0.003 | - | 0.003 | 0.003 | 0.003 | 0.003 | - | 0.006 | 0.005 | - | 0.003 | 0.006 | 0.003 | 0.003 | - | 0.1 |
| Chloride* | mg/l | <0.3 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | (24 or 187.5) 1 | 30 |
| Fluoride | mg/l | <0.3 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 1 |
| Nitrate | mg/l | <0.2 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 37.5 | 25 |
| Sulphate | mg/l | <0.05 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 187.5 | 200 |
| Total Alkalinity | mg/l | <1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | No abnormal change |
| Dissolved Organic Carb | mg/l | <2 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| Total Dissolved Solids | mg/l | <10 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 1000 |
| PAH 6 Total | mg/l | <0.000068 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | 0.000075 | 0.0001 |
| PAH 17 Total | mg/l | <0.000295 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | - |
| EPH (C8-C40) | mg/l | <0.01 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Phenol | mg/l | <0.1 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | 0.0005 |
| Electrical Conductivity | uS/cm | <2 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | (800 or 1875) 1 | 1,000 |
| pH | pH units | <0.01 | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | nt | - | ≥6.5 and ≤9.5 |

Notes

- = Guideline Not Available
 Results are **Bold** and shaded where they exceed the 2010 Regulations
 Results are underlined where they exceed the EPA Interim Guideline
 EPA Interim Guideline Values (IGVs) 2003
 SI No. 9 of 2010 Groundwater Regulations
 Note 1: Different GW Thresholds apply to different status classification tests
 * lower EC Directive value for Cl taken as worst case comparison
 - Less than the laboratory Limit of Detection (LOD) where shown
 µg/l = micrograms per litre
 mg/l = milligrams per litre
 nt = not tested

| | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|
| Chlorobenzene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 1,1,1,2-Tetrachloroethane | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ethylbenzene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 10 |
| p/m-Xylene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 10 |
| o-Xylene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Styrene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bromoform | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Isopropylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | ug/l | <4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bromobenzene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,2,3-Trichloropropane | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Propylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2-Chlorotoluene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4-Chlorotoluene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| tert-Butylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| sec-Butylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4-Isopropyltoluene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,3-Dichlorobenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,4-Dichlorobenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| n-Butylbenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,2-Dichlorobenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 10 |
| 1,2-Dibromo-3-chloropropane | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.4 |
| Hexachlorobutadiene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.1 |
| Naphthalene | ug/l | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| 1,2,3-Trichlorobenzene | ug/l | <3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Notes

- = Guideline Not Available

Results are **Bold** and shaded where they exceed the 2010 Regulations

Results are underlined where they exceed the EPA Interim Guideline

EPA Interim Guideline Values (IGVs) 2003
SI No. 9 of 2010 Groundwater Regulations

µg/l = micrograms per litre
mg/l = milligrams per litre

Note 1: Different GW Thresholds apply to different status classification tests
* lower EC Directive value for Cl taken as worst case comparison

nt = not tested

- Less than the laboratory Limit of Detection (LOD) where shown

Table 3

Laboratory Test Results: Groundwater Samples - Metals, Inorganics, Other
Client: Clifton Scannell Emerson Associates
Location: Cruiserath, Dublin 24
AWN Ref: 16_8877



| Parameter | Units | Sample ID | BH6 | BH8 | Groundwater Regulations S.I. 9 of 2010 | EPA IGVs 2003 |
|--------------------------|----------|------------------|--------|--------|----------------------------------------|--------------------|
| | | Date sampled | | | | |
| | | Sample Depth (m) | n/a | n/a | | |
| | | LOD | | | | |
| Aluminium | mg/l | <0.02 | nt | nt | 0.15 | 0.2 |
| Antimony | mg/l | <0.002 | nt | nt | - | - |
| Arsenic | mg/l | <0.0025 | - | - | 0.0075 | 0.01 |
| Barium | mg/l | <0.003 | nt | nt | - | 0.1 |
| Boron | mg/l | <0.002 | nt | nt | 0.75 | 1 |
| Cadmium | mg/l | <0.0005 | - | - | 0.00375 | 0.005 |
| Calcium | mg/l | <0.2 | 0.1485 | 0.1554 | - | 200 |
| Chromium | mg/l | <0.0015 | - | - | 0.0375 | 0.03 |
| Copper | mg/l | <0.007 | - | - | 1.5 | 0.03 |
| Lead | mg/l | <0.005 | - | - | 0.01875 | 0.01 |
| Magnesium | mg/l | <0.1 | 5.3 | 5.3 | - | 50 |
| Mercury | mg/l | <0.001 | - | - | 0.00075 | 0.001 |
| Molybdenum | mg/l | <0.002 | nt | nt | - | - |
| Nickel | mg/l | <0.002 | - | - | 0.015 | 0.02 |
| Potassium | mg/l | <0.1 | 0.0092 | 0.0165 | - | 5 |
| Selenium | mg/l | <0.003 | - | - | - | - |
| Silicon | mg/l | <0.1 | nt | nt | - | - |
| Sodium | mg/l | <0.1 | - | - | 150 | 150 |
| Titanium | mg/l | <0.005 | nt | nt | - | - |
| Zinc | mg/l | <0.003 | - | - | - | 0.1 |
| Chloride* | mg/l | <0.3 | 45.3 | 39.4 | (24 or 187.5) ¹ | 30.00 |
| Fluoride | mg/l | <0.3 | nt | nt | - | 1 |
| Nitrate as NO3 | mg/l | <0.2 | 58.8 | 38 | 37.5 | 25 |
| Nitrite as NO2 | mg/l | <0.02 | 0.26 | 0.54 | - | - |
| Sulphate | mg/l | <0.05 | 20.8 | 34.41 | 187.5 | 200 |
| Ammoniacal Nitrogen as N | mg/l | <0.03 | 1.09 | 1.69 | - | - |
| Total Alkalinity | mg/l | <1 | 2,166 | 1,370 | - | No abnormal change |
| Dissolved Organic Carbon | mg/l | <2 | nt | nt | - | - |
| Total Dissolved Solids | mg/l | <10 | nt | nt | - | 1,000 |
| PAH 6 Total | mg/l | <0.000068 | nt | nt | 0.000075 | 0.0001 |
| PAH 17 Total | mg/l | <0.000295 | nt | nt | - | - |
| EPH (C8-40) | mg/l | <0.01 | 0.08 | <0.01 | - | - |
| Phenol | mg/l | <0.1 | - | - | - | 0.0005 |
| Electrical Conductivity | uS/cm | <2 | nt | nt | (800 or 1875) ¹ | 1,000 |
| pH | pH units | <0.01 | nt | nt | - | ≥6.5 and ≤9.5 |

Notes

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Results are underlined where they exceed the EPA Interim Guideline

EPA Interim Guideline Values (IGVs) 2003

SI No. 9 of 2010 Groundwater Regulations

Note 1: Different GW Thresholds apply to different status classification tests

* lower EC Directive value for Cl taken as worst case comparison

- Less than the laboratory Limit of Detection (LOD) where shown

µg/l = micrograms per litre

mg/l = milligrams per litre

nt = not tested

Table 4

Laboratory Test Results: Groundwater-Volatile Organic Compounds (VOC)

Client: Clifton Scannell Emerson Associates

Location: Cruiserath, Dublin 24

AWN Ref: 16_8877



| | | Sample ID | BH6 | BH8 | | | | Groundwater Regulations S.I. 9 of 2010 | EPA IGVs 2003 |
|------------------------------|-------|------------------|------------|------------|--|--|--|----------------------------------------|---------------|
| | | Date sampled | 22/03/2016 | 22/03/2016 | | | | | |
| | | Sample Depth (m) | n/a | n/a | | | | | |
| Parameter | Units | LOD | | | | | | | |
| VOC MS | | | | | | | | | |
| Dichlorodifluoromethane | ug/l | <2 | - | - | | | | - | - |
| Methyl Tertiary Butyl Ether | ug/l | <1 | - | - | | | | - | 30 |
| Chloromethane | ug/l | <3 | - | - | | | | | |
| Vinyl Chloride | ug/l | <0.1 | - | - | | | | 0.375 | |
| Bromomethane | ug/l | <1 | - | - | | | | | |
| Chloroethane | ug/l | <3 | - | - | | | | | |
| Trichlorofluoromethane | ug/l | <3 | - | - | | | | | |
| 1,1-Dichloroethene (1,1 DCE) | ug/l | <3 | - | - | | | | | |
| Dichloromethane (DCM) | ug/l | <3 | - | - | | | | | |
| trans-1-2-Dichloroethene | ug/l | <3 | - | - | | | | | |
| 1,1-Dichloroethane | ug/l | <3 | - | - | | | | | 3 |
| cis-1-2-Dichloroethene | ug/l | <3 | - | - | | | | | |
| 2,2-Dichloropropane | ug/l | <1 | - | - | | | | | |
| Bromochloromethane | ug/l | <2 | - | - | | | | | |
| Chloroform | ug/l | <2 | - | - | | | | | 12 |
| 1,1,1-Trichloroethane | ug/l | <2 | - | - | | | | | 500 |
| 1,1-Dichloropropene | ug/l | <3 | - | - | | | | | |
| Carbon tetrachloride | ug/l | <2 | - | - | | | | | |
| 1,2-Dichloroethane | ug/l | <2 | - | - | | | | 2.25 | 3 |
| Benzene | ug/l | <1 | - | - | | | | 0.75 | - |
| Trichloroethene (TCE) | ug/l | <3 | - | - | | | | 7.50 | 10.00 |
| 1,2-Dichloropropane | ug/l | <2 | - | - | | | | | |
| Dibromomethane | ug/l | <3 | - | - | | | | | |
| Bromodichloromethane | ug/l | <2 | - | - | | | | | |
| cis-1-3-Dichloropropene | ug/l | <2 | - | - | | | | | |
| Toluene | ug/l | <5 | - | - | | | | | 10 |
| trans-1-3-Dichloropropene | ug/l | <2 | - | - | | | | | |
| 1,1,2-Trichloroethane | ug/l | <2 | - | - | | | | | |

| | | | | | | | | | |
|-----------------------------|------|----|---|---|--|--|--|-----|-----|
| Tetrachloroethene (PCE) | ug/l | <3 | - | - | | | | 7.5 | 10 |
| 1,3-Dichloropropane | ug/l | <2 | - | - | | | | | |
| Dibromochloromethane | ug/l | <2 | - | - | | | | | - |
| 1,2-Dibromoethane | ug/l | <2 | - | - | | | | | |
| Chlorobenzene | ug/l | <2 | - | - | | | | | 1 |
| 1,1,1,2-Tetrachloroethane | ug/l | <2 | - | - | | | | | - |
| Ethylbenzene | ug/l | <2 | - | - | | | | | 10 |
| p/m-Xylene | ug/l | <3 | - | - | | | | | 10 |
| o-Xylene | ug/l | <2 | - | - | | | | | |
| Styrene | ug/l | <2 | - | - | | | | | |
| Bromoform | ug/l | <2 | - | - | | | | | |
| Isopropylbenzene | ug/l | <3 | - | - | | | | | |
| 1,1,2,2-Tetrachloroethane | ug/l | <4 | - | - | | | | | |
| Bromobenzene | ug/l | <2 | - | - | | | | | |
| 1,2,3-Trichloropropane | ug/l | <3 | - | - | | | | | |
| Propylbenzene | ug/l | <3 | - | - | | | | | |
| 2-Chlorotoluene | ug/l | <3 | - | - | | | | | |
| 1,3,5-Trimethylbenzene | ug/l | <3 | - | - | | | | | - |
| 4-Chlorotoluene | ug/l | <3 | - | - | | | | | |
| tert-Butylbenzene | ug/l | <3 | - | - | | | | | |
| 1,2,4-Trimethylbenzene | ug/l | <3 | - | - | | | | | |
| sec-Butylbenzene | ug/l | <3 | - | - | | | | | |
| 4-Isopropyltoluene | ug/l | <3 | - | - | | | | | |
| 1,3-Dichlorobenzene | ug/l | <3 | - | - | | | | | |
| 1,4-Dichlorobenzene | ug/l | <3 | - | - | | | | | |
| n-Butylbenzene | ug/l | <3 | - | - | | | | | |
| 1,2-Dichlorobenzene | ug/l | <3 | - | - | | | | | 10 |
| 1,2-Dibromo-3-chloropropane | ug/l | <2 | - | - | | | | | - |
| 1,2,4-Trichlorobenzene | ug/l | <3 | - | - | | | | | 0.4 |
| Hexachlorobutadiene | ug/l | <3 | - | - | | | | | 0.1 |
| Naphthalene | ug/l | <2 | - | - | | | | | 1 |
| 1,2,3-Trichlorobenzene | ug/l | <3 | - | - | | | | | - |
| | | | | | | | | | |

Notes

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Results are underlined where they exceed the EPA Interim Guideline

EPA Interim Guideline Values (IGVs) 2003
SI No. 9 of 2010 Groundwater Regulations

µg/l = micrograms per litre
mg/l = milligrams per litre

Note 1: Different GW Thresholds apply to different status classification tests

* lower EC Directive value for Cl taken as worst case comparison

nt = not tested

- Less than the laboratory Limit of Detection (LOD) where shown

6.0 HYDROLOGY

6.1 INTRODUCTION

This chapter assesses and evaluates the potential impacts of the Proposed Development described in Chapter 2 (Description of the Proposed Development) on the surrounding water & hydrological environment. The impact on land, soils, geology & hydrogeology is addressed in Chapter 5. Chapter 13 addresses the impacts on water supply, wastewater and storm water drainage.

6.2 METHODOLOGY

6.2.1 General

The methodology used in this assessment follows current European and Irish guidance as outlined in:

- EPA Draft EIA Report Guidelines 2017
- European Commission '*Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report*' 2017
- National Roads Authority (NRA) '*Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*', by the National Roads Authority (2009).

6.2.2 Criteria for Rating Impacts

In assessing likely potential and predicted impacts, account is taken of both the importance of the attributes and the predicted scale and duration of the likely impacts.

The quality, significance and duration of potential impacts defined in accordance with the criteria provided in the EPA Draft EIA Report Guidelines (2017) for describing effects are summarised in Table 1.2 in Chapter 1. In addition, due significance is also given to the document entitled '*Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*' by the National Roads Authority (2009) where appropriate. The National Roads Authority (NRA) criteria is summarised in Table 1 Appendix 6.1.

6.2.3 Sources of Information

This assessment was considered in the context of the available baseline information, potential impacts, consultations with statutory bodies and other parties, and other available relevant information. In collating this information, the following sources of information and references were consulted:

- Latest EPA *Maps & Envision* water quality monitoring data for watercourses in the area (these data can be accessed at <https://gis.epa.ie/EPAMaps/>);
- Eastern River Basin District (ERBD) Management Plan – Liffey Water Management Unit and Programme of Measures – ERBD;
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW));
- Flood points & Historical Floods – Office of Public Works (OPW) floods website www.floodmaps.ie;

- Relevant Eastern Catchment Flood Risk Assessment and Management (CFRAM) Flood Reports;
- Requirements for the Protection of Fisheries Habitat During Construction and Development Works at River Sites (Eastern Regional Fisheries Board (ERFB);
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters' (Inland Fisheries Ireland, 2016);
- Dublin City Council (2005) Greater Dublin Strategic Drainage Study (GDSDS): Technical Documents of Regional Drainage Policies. Dublin: Dublin City Council;
- Greater Dublin Regional Code of Practice for Drainage Works: Version Draft 6.0 (Wicklow County Council, South Dublin County Council, Meath County Council, Kildare County Council, Fingal County Council, Dún Laoghaire- Rathdown County Council & Dublin City Council);
- Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors" (CIRIA 532, 2001);
- AWN (April 2016) Due Diligence report for subject the site entitled '*Soil & Water Assessment at a Greenfield Site in Cruiserath, Dublin 15.*' Prepared for Clifton Scannell Emerson Associates (CSEA);
- AWN (May 2019) Stage 1 Flood Risk Assessment, Data Storage Facility, Cruiserath, Dublin 15 (Appendix 7.2); and
- Clifton Scannell Emerson Associates (CSEA) (2019) *Engineering Planning Report – Drainage & Water*, submitted with the planning application.

Other relevant documentation consulted as part of this assessment included the following:

- Published EIAR for Data Storage Facility Development, Cruiserath Road, Dublin 15 (AWN, 2019)
- Published EIS for adjacent site Bristol Myers Squibb (BMS) site – (*Jacobs, 2015*)
- Published EIS for permitted development, Building A – (AWN, 2017)

6.3 RECEIVING ENVIRONMENT

6.3.1 Existing Environment

The subject site is c. 12.39 hectares in extent and is located at Cruiserath, Dublin 15 (refer to Figure 1.1). Much of the surrounding land has been developed in the past 10-15 years for industrial (to the east and south) and residential (to the west) uses.

Planning permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the proposed substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). Construction of this permitted development began in Q3 2019. A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). Planning permission was granted by FCC in August 2019 for two additional data storage facilities (referred to as Buildings B and C).

6.3.2 Hydrology (Surface Water)

The topography is generally consistent and flat across the site (approximately +85 mAOD). The most significant drainage system in the vicinity is the River Tolka and its tributaries, which are located >1 km south of the site. The Mooretown Stream lies north of the site

(refer to Figure 6.1). The route of the 220kV transmission line crosses a land drain associated with the Mooretown Stream which eventually leads to the River Tolka. It is proposed to cross this land drain via horizontal directional drilling (HDD).

There is a remnant drainage ditch in the redundant farmland to the southwest of the Proposed Development within the overall landholding. It is proposed to fill this ditch in as part of the permitted development (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544). It is not connected to any offsite waterbodies.



Figure 6.1 Local hydrological environment

6.3.2.1 Surface Water Quality

The Proposed Development is located within the former ERBD (now the Irish River Basin District), as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy – this is commonly known as the Water Framework Directive (WFD). It is situated in Hydrometric Area No. 09 of the Irish River Network. It is located within the Tolka Catchment.

The WFD requires 'Good Water Status' for all European waters to be achieved through a system of river basin management planning and extensive monitoring by 2015 or, at the least, by 2027. 'Good status' means both 'Good Ecological Status' and 'Good Chemical Status'. In 2009 the ERBD River Basin Management Plan (RBMP) 2009-2015 was published. In the ERBD RBMP, the impacts of a range of pressures were assessed including diffuse and point pollution, water abstraction and morphological pressures (e.g. water regulation structures). The purpose of this exercise was to identify water bodies at

risk of failing to meet the objectives of the WFD by 2015 and include a programme of measures to address and alleviate these pressures by 2015. This was the first River Basin Management planning cycle (2010-2015). The second cycle river basin management plan for Ireland is currently in place and will run between 2018-2021 with the previous management districts now merged into one Ireland River Basin District (Ireland RBD).

This second-cycle RBMP aims to build on the progress made during the first cycle. Key measures during the first cycle included the licensing of urban waste-water discharges (with an associated investment in urban waste-water treatment) and the implementation of the Nitrates Action Programme (Good Agricultural Practice Regulations). In more general terms, three key lessons have emerged from the first cycle and the public consultation processes. These lessons have been firmly integrated into the development of the second-cycle RBMP. Firstly, the structure of multiple RBDs did not prove effective, either in terms of developing the plans efficiently or in terms of implementing those plans. Secondly, the governance and delivery structures in place for the first cycle were not as effective as expected. Thirdly, the targets set were too ambitious and were not grounded on a sufficiently developed evidence base. The second cycle RBMP has been developed to address these points.

The strategies and objectives of the WFD in Ireland have influenced a range of national legislation and regulations. These include the following:

- European Communities (Water Policy) Regulations, 2003 (S.I. No. 722 of 2003);
- European Communities (Drinking Water) Regulations 2014 (S.I. 122 of 2014);
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009)
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010);
- European Communities (Good Agricultural Practice for Protection of Waters) Regulations, 2010 (S.I. No. 610 of 2010); and
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011).

Figure 6.2 below presents the EPA quality monitoring points in the context of the site and other regional drainage settings.

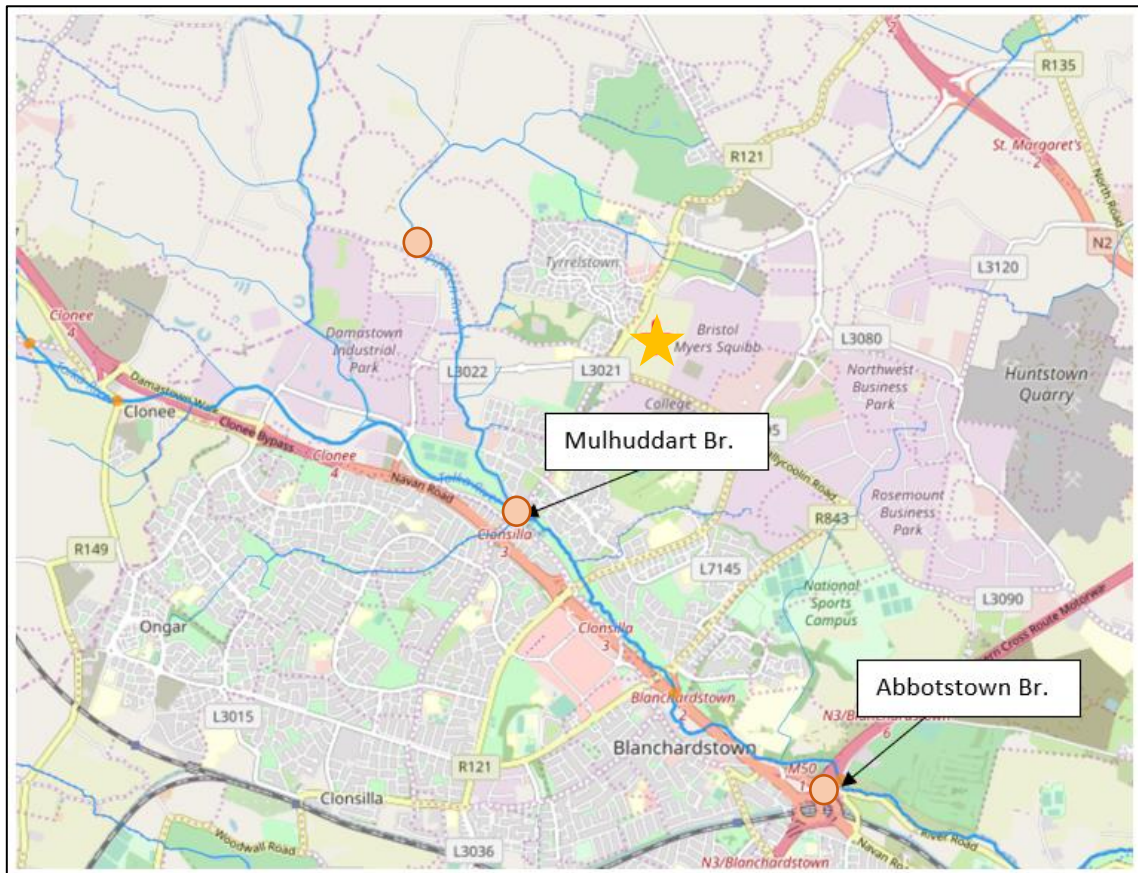


Figure 6.2 Surface Water Quality Monitoring Point (EPA,2019) (Site location indicated with star with monitoring point locations shown with orange circles)

Surface water quality is monitored periodically by the EPA at various regional locations along principal and other smaller watercourses. With reference to the site setting, the nearest EPA monitoring station is situated along the Tolka River to the south of the site. The EPA assess the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators range from Q5 - Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality. There are two water quality monitoring stations located on the Tolka River downstream of the proposed site which have quality ratings available within the last ten years. The first of these (Mulhuddart Bridge RS09T010800) obtained a Q2-3 -Poor Status (in 2017) & the second station further downstream (Abbotstown Bridge RS09T011000) was Q3 -Poor Status at last measurement (2016).

In accordance with the WFD, each river catchment within the former ERBD was assessed by the EPA and a water management plan detailing the programme of measures was put in place for each. Currently, the EPA classifies the WFD Ecological Status for the Tolka waterbody as having 'Poor Status' (1st Cycle Status 2010-2015) with a current WFD River Waterbody risk score of 1a, 'At risk of not achieving good status'. Figure 6.3 presents the river waterbody risk EPA map.

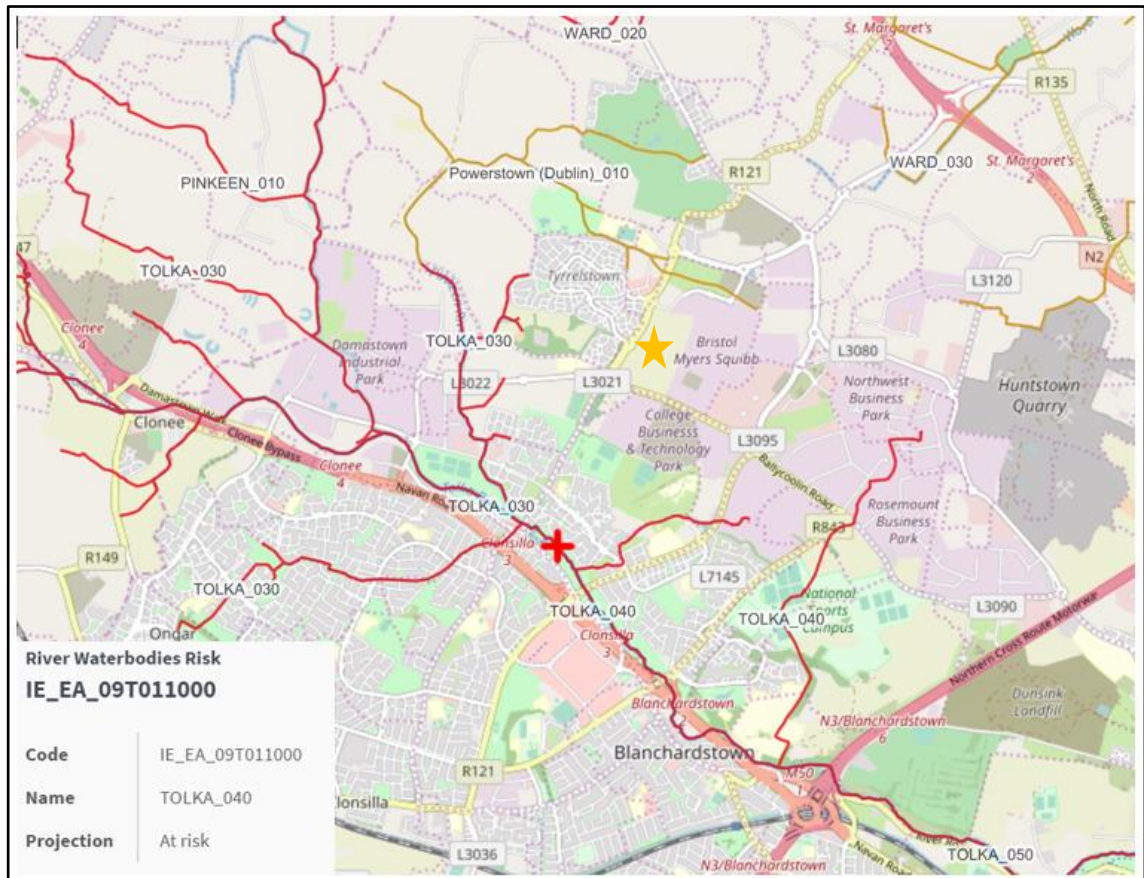


Figure 6.3 River Waterbody Score - 1a 'At risk of not achieving good status, WFD Ecological Status: Poor. (Site location indicated with star).

6.3.2.2 Flood Risk

The potential risk of flooding on the site was also assessed. A Stage 1 Flood Risk Assessment was completed and is included as Appendix 6.2. The assessment identified no flood hazards for the Proposed Development. The Proposed Development resides within Flood Zone C and is not at risk of flooding from a 1% or 0.1% Annual Exceedance Probability (AEP) event. The flood zonation confirms that the site is suitable for this type of development.

6.3.2.3 Rating of site importance of the hydrological features

Based on the NRA methodology (refer to Appendix 6.1), for rating the importance of hydrological features, the importance of the hydrological features at this site is rated as **Low Importance**.

This is based on the assessment that the attribute has a low-quality significance or value on a local scale. The Tolka River is the receiving waterbody for the site, it is not a source of local potable water, and is not widely used as a local water amenity i.e. not regionally significant.

6.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development comprises the provision of a new 220kV GIS substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works. The total additional impermeable area associated with the Proposed Development is c. 2,003m². The greenfield run-off rate has been agreed under existing planning for the site (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544).

The characteristics of the Proposed Development with regard to the hydrological environment, related to both construction and operation activities are described below.

6.4.1 Construction Phase

The key civil engineering works which will have potential impact on the water and hydrological environment during construction of the Proposed Development are summarised below.

- (i) Excavations are required for building foundations and installation of services including the ducting for the 220kV transmission line and 49kVA cable installation;
- (ii) Possible discharge of collected rainwater during excavation works and groundworks (the extent of which is dependent on the time of year development works are carried out); and
- (iii) Construction activities will necessitate storage of cement and concrete materials, temporary oils and fuels on site. Small localised accidental releases of contaminating substances including hydrocarbons have the potential to occur from construction traffic and vehicles operating on site.

6.4.2 Operational Phase

The key activities which will have a potential impact on the hydrological environment during operation of the Proposed Development are summarised below:

- (i) Fuel will be stored onsite for backup generation at the substation (1,000 litres). Fuel will be stored in a single tank and will be banded to 110% of its capacity. However, accidental releases may occur during transport/filling etc. if not adequately mitigated. Localised accidental discharge of hydrocarbons (likely small quantities) could also occur in car parking areas and along roads;
- (ii) Increase in local overall hardstand by c. 2,003m²;
- (iii) Surface water will be discharged to the IDA surface water system utilising services installed during the works permitted under permission (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544). Potential contamination of surface water with hydrocarbons from vehicle movements and other areas could cause downstream contamination if no controls in place;
- (iv) Wastewater generation will be minimal and will be discharged to the foul water drainage system installed during the works permitted under permission (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544) (no discharges to ground/surface waters); and
- (v) Water supply (minimal requirement) will be from the public watermain (via a connection to the private distribution watermain within the site boundary) and will not

require surface water/groundwater abstraction. The water supply will be utilised for the welfare facilities in the substation.

6.5 POTENTIAL IMPACTS OF THE DEVELOPMENT

The potential impacts in relation to surface water during the construction and operational phases are outlined below and the assessment of effects defined based on the description of effects as set out in the EPA Draft EIA Report Guidelines (2017) (Table 1.2 Chapter 1) and the NRA criteria detailed in Appendix 6.1.

6.5.1 Construction Phase

Increased Run-off and Sediment Loading

Surface water run-off from site preparation, levelling and excavations during the construction phase may contain increased silt levels or become polluted from construction activities. Run-off containing large amounts of silt can cause damage to surface water systems and receiving watercourses. Silt water can arise from excavations, exposed ground, stockpiles, and access roads.

During the construction phase at this site there is potential for a slight increase in run-off due to the introduction of impermeable surfaces and the compaction of soils. This will reduce the infiltration capacity and increase the rate and volume of direct surface run-off. The potential impact of this is a possible increase in surface water run-off and sediment loading which could potentially impact local drainage.

As there is no direct pathway to surface water from this site there is no likely potential impact on offsite watercourses. The northern part of the Proposed Development boundary is circa 10 metres from the Mooretown Stream. EPA river maps state that this is the beginning of the stream flowing west and joining the Pinkeen River to the north of the Proposed Development (Figure 6.1). The route of the 220kV transmission line crosses a land drain associated with the Mooretown Stream which eventually leads to the River Tolka. It is proposed to cross this land drain via horizontal directional drilling (HDD). The use of HDD methodology removes the potential for hydrological pathways and as such impacts on the Mooretown Stream.

Mitigation measures highlighted in section 6.6.2 will be employed to remove the risk to the open section of the Mooretown Stream and culverted section.

Excavation for foundations, services, and landscaping

The Proposed Development will require site preparation, excavations and levelling for foundations, the installation of services and landscaping.

As there is no direct pathway to surface water from this site there is no likely potential impact on offsite watercourses.

Some removal of perched rainwater from the excavation may be required. Volumes will be quite low, and all pumped water will be subject to onsite settlement before release.

Contamination of Local Water Courses

During the construction phase, there is a risk of accidental pollution incidences from the following sources:

- Spillage or leakage of fuels (and oils) stored on site.

- Spillage or leakage of fuels (and oils) from construction machinery or site vehicles.
- Spillage of oil or fuel from refuelling machinery on site.
- The use of concrete and cement.
- Storage of chemical on site.

Machinery activities on site during the construction phase may result in contamination of runoff/surface water. Potential impacts could arise from accidental spillage of fuels, oils, paints etc. which could impact surface water if allowed to infiltrate to runoff to surface water systems and/or receiving watercourses. However, implementation of the mitigation measures detailed in Section 6.6 will ensure that this does not occur.

Concreting operations carried out near surface water drainage points during construction activities could lead to discharges to a watercourse. Concrete (specifically, the cement component) is highly alkaline and any spillage to a local watercourse would be detrimental to water quality and local fauna and flora. However, employment of the mitigation measures highlighted in Section 6.6 will ensure that any impact will be mitigated.

As there is no direct pathway to surface water from this site there is no likely potential impact on offsite watercourses.

In relation to construction phase activities the potential impact is **short-term** with an **imperceptible** and **neutral** effect on quality.

6.5.2 Operational Phase

Surface Water

Rainwater runoff from the substation roof and yard will be collected in storm water drainage channels and diverted to a large storm water attenuation basin (sized for a 1 in 100-year rainfall event). This surface water drainage system is being installed as part of the planning permission for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). This SuDs was initially designed to accommodate surface water drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there will be capacity for the SuDs for the permitted development to accommodate runoff from the Proposed Development.

The drainage design for the permitted data centre development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) includes an oil separator interceptor system to ensure the quality of storm water discharge is controlled prior to attenuation.

The attenuated storm water will be discharged at the allowable greenfield run off rate to the existing storm water system along the R121 to the south of the site. Further detail on the storm water drainage system and the basis of its design is provided in the *Engineering Planning Report – Drainage and Water*, prepared by CSEA, which accompanies this planning application. Chapter 6 Hydrology and Chapter 13 Material Assets address the impacts on storm water drainage.

There will be no additional hardstanding from the installation of the ducting for the 220kV transmission line and 49kVA cable installation as they will be reinstated to what was present before works.

Wastewater

The foul drainage infrastructure for the permitted Building A development was designed to accommodate foul drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate wastewater from the Proposed Development which will be minimal.

It is not proposed to discharge any trade effluent to the foul sewer.

Water Supply

The water supply for the permitted Building A development was designed to accommodate water demand from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate water demand for the Proposed Development which will be minimal.

Fuel and Other Accidental Spills

There is a potential for leaks and spillages from the fuel tank for the back-up generator at the substation to occur on site. In addition to this there is a potential for leaks and spillages from vehicles along access roads and in parking areas. Any accidental emissions of oil, petrol or diesel could cause contamination if the emissions enter the water environment unmitigated.

As there is no direct pathway to surface water from this site there is no likely potential impact on offsite watercourses.

The potential impact from the operation phase of the development is **long-term imperceptible** effect with a **neutral** effect on quality.

6.5.3 Do Nothing Scenario

Adjacent to the proposed site, permission has been granted for the development of a data storage facility (Building A) and associated ancillary development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) and (under FCC Planning Ref. FW19A/0087) for the development of two data storage facilities to the east of the substation site (referred to as Buildings B and C). Should the Proposed Development not take place, sections of the overall landholding will be subject to clearance and landscaping as part of the permitted development(s). Once construction of the permitted developments is complete, the hydrological environment would not be subject to further changes.

6.6 REMEDIAL AND MITIGATION MEASURES

6.6.1 General

The design of the Proposed Development has taken account of the potential impacts of the development and the risks to the water environment specific to the areas where construction is taking place.

There are no watercourses on the site to act as a direct pathway to the Tolka and tributaries, however, caution will be taken to mitigate the potential effects on the local water environment and the indirect pathway via the land drain associated with the Mooretown

Stream. These measures seek to avoid or minimise potential effects in the main through the implementation of best practice construction methods and adherence to all relevant legislation.

6.6.2 Construction Phase

Construction Environmental Management Plan (CEMP)

An outline Construction Environmental Management Plan (CEMP) has been prepared by CSEA for the Proposed Development and is included with the planning documentation. A detailed CEMP will be prepared and maintained by the appointed contractors during the construction phase of the proposed project. The CEMP will cover all potentially polluting activities and include an emergency response procedure. All personnel working on the site will be trained in the implementation of the CEMP. At a minimum, the CEMP will be formulated in consideration of the standard best international practice including, but not limited, to:

- CIRIA, (2001), *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors, (C532)* Construction Industry Research and Information Association;
- CIRIA (2002) *Control of water pollution from construction sites: guidance for consultants and contractors (SPI56)* Construction Industry Research and Information Association;
- CIRIA (2005), *Environmental Good Practice on Site (C650)*; Construction Industry Research and Information Association;
- BPGCS005, *Oil Storage Guidelines*;
- CIRIA 697 (2007), *The SUDS Manual*; and
- *UK Pollution Prevention Guidelines, (PPG)* UK Environment Agency, 2004.

Surface Water Run-off

As there are no watercourses present on the site, there will be no direct run-off to surface watercourses during the construction phase.

Run-off water containing silt will be contained on site via settlement tanks and treated to ensure adequate silt removal. Silt reduction measures on site will include a combination of silt fencing, settlement measures (silt traps, silt sacks and settlement tanks/ponds).

Should any discharge of construction water be required during the construction phase, the discharge will be treated using a sediment trap or siltbuster as required.

The temporary storage of soil will be carefully managed. Stockpiles will be tightly compacted to reduce runoff and graded to aid in runoff collection. This will prevent any potential negative impact on the storm water drainage and the material will be stored away from any surface water drains. Movement of material will be minimised to reduce the degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise the potential for water ingress into excavations. Soil from HDD works will be stored away from surface water features to remove any potential impact.

Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the site and the suitable distance of topsoil piles from surface water drains will be maintained.

Fuel and Chemical Handling

The following mitigation measures will be taken at the construction stage in order to prevent any spillages of fuels and prevent any resulting impacts to the surface water system;

- Designation of a bunded refuelling areas on the site;
- Provision of spill kit facilities across the site;
- Where mobile fuel bowsers are used the following measures will be taken:
 - Any flexible pipe, tap or valve will be fitted with a lock and will be secured when not in use;
 - The pump or valve will be fitted with a lock and will be secured when not in use;
 - All bowsers will carry a spill kit and operatives must have spill response training; and
 - Portable generators or similar fuel containing equipment will be placed on suitable drip trays.

In the case of drummed fuel or other potentially polluting substances which may be used during construction the following measures will be adopted:

- Secure storage of all containers that contain potential polluting substances in a dedicated internally bunded chemical storage cabinet unit or inside a concrete bunded areas;
- Clear labelling of containers so that appropriate remedial measures can be taken in the event of a spillage;
- All drums to be quality approved and manufactured to a recognised standard;
- If drums are to be moved around the site, they should be done so secured and on spill pallets; and
- Drums to be loaded and unloaded by competent and trained personnel using appropriate equipment.

All contractors will be required to implement the CEMP.

All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters or contaminated storm water to the underlying subsoil. Wash-down and washout of concrete transporting vehicles will take place at an appropriate facility offsite.

Accidental Releases

Emergency response procedures will be outlined in the site CEMP. All personnel working on the site will be suitably trained in the implementation of the procedures.

Soil Removal and Compaction

Temporary storage of soil will be carefully managed in such a way as to prevent any potential negative impact on the receiving environment. The material will be stored away from any surface water drains (see Surface Water Run-off section above). Movement of material will be minimised to reduce degradation of soil structure and generation of dust.

Site investigations carried out at the site in 2016 found no residual contamination on site. Nonetheless, all excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, samples of this soil will be analysed for the presence of potential contaminants to ensure that historical pollution of the soil has not occurred. Should it be determined that

any of the soil excavated is contaminated, this will be segregated and appropriately disposed of by a suitably permitted/licensed waste disposal contractor.

6.6.3 Operational Phase

Environmental Procedures

As detailed in Section 2.5.2 in Chapter 2, ESB Networks implements an Environmental Safety and Health Management System at each of its facilities. Prior to operation of the Proposed Development, a comprehensive set of operational procedures will be established (based on those used at other similar facilities) which will include site-specific mitigation measures and emergency response measures as outlined below:

Fuel and Chemical Handling

The containment measures planned will minimise the risk of release of solid/ liquid material spillages to the water environment. Containment measures will include storage of fuels on site in bunded containers or compartments. The design of all bunds will conform to standard bunding specifications - BS EN 1992-3:2006, *Design of Concrete Structures – Part 3: Liquid retaining and containment measures*.

Storm Water & Foul Sewer Drainage

As stated previously the permitted drainage system formed part of the planning application for the permitted data storage facility on site and is intended to service that development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) and the Proposed Development. This SuDs was initially designed to accommodate surface water drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there will be capacity for the SuDs for the permitted development to accommodate runoff from the Proposed Development. The proposed discharge rates for the Proposed Development and overall landholding have been addressed in the *Engineering and Water Services Report* prepared by CSEA, which accompanied the planning application for Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). This report is included as Appendix A to the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, which accompanies this application. The allowable discharge rate (QBAR) according to project Engineers Clifton Scannell Emerson Associates is 126.3 l/s for the entire larger site area of 26.14 ha.

The proposed surface water attenuation system will outfall to a surface water pipe to be installed along the eastern boundary of the site which ties-in to the permitted drainage network before out-falling to the FCC surface water network (900mm \varnothing pipe) in the R121 Regional Road to the south of the site.

Foul drainage for the Proposed Development will be in accordance with the relevant standards for design and construction.

Fire Water System

The fire water ring main will be extended as part of the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) to provide firefighting water to hydrants in the event of a fire.

Water Supply

No mitigation measures are required in relation to water supply as Irish Water have advised that there is sufficient water supply for the development.

The water system will be metered to facilitate detection of leakage and the prevention of water loss. Dual and low flush toilets, water economy outlets and water saving measures will also be proposed.

6.7 PREDICTED IMPACT OF THE PROPOSED DEVELOPMENT

This section describes the predicted impact of the Proposed Development following the implementation of the remedial and mitigation measures.

6.7.1 Construction Phase

The implementation of mitigation measures highlighted in Section 6.6.2 will ensure that the potential impacts on the surface water environment do not occur during the construction phase and that the predicted impact will be ***short-term-imperceptible-neutral***.

6.7.2 Operational Phase

The implementation of mitigation measures highlighted in Section 6.6.3 will ensure that the potential impacts on the surface water environment do not occur during the operational phase and that the predicted impact will be ***long-term-imperceptible-neutral***.

6.8 RESIDUAL IMPACTS

The residual impacts relate to those impacts that would occur after the mitigation measures, as outlined in Section 6.6 above, have taken effect. In the case of the Proposed Development, there will be no significant residual impacts; the potential impact on surface water during operation (following the EPA Draft EIA Report Guidelines (2017)) will be ***long term, imperceptible*** and ***neutral*** i.e. an impact capable of measurement but without noticeable consequences. Following the NRA criteria for rating the magnitude and significance of impacts on the water and hydrological related attributes, the magnitude of impact is ***negligible***.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

6.9 REFERENCES

- EPA, (2017). *Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports* (September 2017); Environmental Protection Agency, Co. Wexford, Ireland
- EPA, (2015). *Draft EPA Advice Notes for Preparation of Environmental Impact Statements*; Environmental Protection Agency, Co. Wexford, Ireland
- NRA, (2009). *Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes*; June 2009. National Roads Authority, Dublin.
- AWN (2019) Published EIAR for Data Storage Facility Development, Cruiserath Road, Dublin 15

APPENDIX 6.1

**CRITERIA FOR RATING SITE ATTRIBUTES – ESTIMATION OF IMPORTANCE OF
HYDROLOGY ATTRIBUTES**

NATIONAL ROADS AUTHORITY (NRA, 2009)

Table 1 Criteria for rating Site Attributes - Estimation of Importance of Hydrology Attributes (NRA)

| Importance | Criteria | Typical Examples |
|-------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extremely High | Attribute has a high quality or value on an international scale | River, wetland or surface water body ecosystem protected by EU legislation e.g. 'European sites' designated under the Habitats Regulations or 'Salmonid waters' designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988. |
| Very High | Attribute has a high quality or value on a regional or national scale | River, wetland or surface water body ecosystem protected by national legislation – NHA status Regionally important potable water source supplying >2500 homes Quality Class A (Biotic Index Q4, Q5) Flood plain protecting more than 50 residential or commercial properties from flooding Nationally important amenity site for wide range of leisure activities |
| High | Attribute has a high quality or value on a local scale | Salmon fishery Locally important potable water source supplying >1000 homes Quality Class B (Biotic Index Q3-4) Flood plain protecting between 5 and 50 residential or commercial properties from flooding Locally important amenity site for wide range of leisure activities |
| Medium | Attribute has a medium quality or value on a local scale | Coarse fishery Local potable water source supplying >50 homes Quality Class C (Biotic Index Q3, Q2- 3) Flood plain protecting between 1 and 5 residential or commercial properties from flooding |
| Low | Attribute has a low quality or value on a local scale | Locally important amenity site for small range of leisure activities Local potable water source supplying <50 homes Quality Class D (Biotic Index Q2, Q1) Flood plain protecting 1 residential or commercial property from flooding Amenity site used by small numbers of local people |

APPENDIX 6.2
FLOOD RISK ASSESSMENT
PREPARED BY AWN CONSULTING LTD.

APPENDIX 6.2

**STAGE 1 FLOOD RISK
ASSESSMENT,**

**PROPOSED SUBSTATION
AND TRANSMISSION LINE
DEVELOPMENT,
CRUISERATH,
DUBLIN 15**

Technical Report Prepared By

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Our Reference

PC/19/12288WR01

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| Date | 29 January 2020 | 29 January 2020 |

EXECUTIVE SUMMARY

AWN Consulting has been appointed to undertake a Flood Risk Assessment (FRA) for a proposed development at Cruiserath, Dublin 15.

This assessment is undertaken in accordance with the guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG) - The Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009, hereafter referred to as the FRM Guidelines.

As per the FRM Guidelines a Flood Risk Assessment (FRA) aims to quantify the risk posed to the development and to the surrounding environment by this development. The main aim of this FRA is to determine the effect the proposed development will have on the floodplain and upstream and downstream flood levels, and any flood mitigation measures necessary.

From reviewing the available data on fluvial and groundwater flooding there is no evidence of flood hazards at the proposed areas of development. OPW floodmaps produced as part of the Eastern CFRAM programme and maps produced as part of the Fingal County Council Development Plan - Strategic Flood Assessment conclusively show that the site is located within Flood Zone C i.e. the probability of flooding is low (less than 0.1% AEP or in 1 in 1000 year). Surface water run-off from the site, once drainage systems are developed, will be drained into the existing IDA stormwater system to the south east of the site.

Based on this information the proposed development complies with the appropriate policy guidelines for the area which include the Fingal County Development Plan 2017-2023 and the National Development Plan 2018-2027.

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- Appendix C - CFRAM PFRA
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1.0 INTRODUCTION

AWN has been requested to complete a flood risk assessment for a proposed development in Cruiserath, Dublin 15.

The Proposed Development comprises the provision of a new 220kV GIS substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works. The total additional impermeable area associated with the Proposed Development is c. 2,003m². The greenfield run-off rate has been agreed under existing planning for the site (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544).

Much of the surrounding land has been developed in the past 10-15 years to industrial and residential uses. To the east of the site an existing pharmaceutical facility, BMS and permitted Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544), to the west by the Cruiserath Road R121 (dual-carriageway) and residential developments, and to the north by undeveloped lands and the Carlton Hotel.

The topography of the site is relatively flat with a slight fall towards the north.

The route of the 220kV transmission line crosses a land drain associated with the Mooretown Stream which eventually leads to the River Tolka. It is proposed to cross this land drain via horizontal directional drilling (HDD). The use of HDD methodology removes the potential for hydrological pathways and as such impacts on the Mooretown Stream.

A relatively shallow ditch ('farm drain') is located to the east of the site. This ditch is not connected into the roadside drainage network or a surface water sewer and is therefore understood to drain through infiltration only. This drain will be infilled as part of the permitted development FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544.

1.1 Scope

A Flood Risk Assessment (FRA) is undertaken over several stages with the need for progression to a more detailed stage dependent on the outcomes of the former stage.

This hierarchy of assessment is necessary to ensure that flood risk is considered at all levels of the planning process and that the appropriate level of detail is also considered, avoiding the need for detailed and costly assessments prior to making strategic decisions.

The assessment has been undertaken in accordance with the guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG) - The Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009¹, hereafter referred to as the FRM Guidelines.

In terms of the Flood Risk Assessment and Management Study the scope of works incorporates three stages:

- **Stage 1: Flood Risk Identification** - to identify whether there may be any flooding or surface water management issues related to a plan area or proposed development site that may warrant further investigation.
- **Stage 2: Initial Flood Risk Assessment** - to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to determine what surveys and modelling approach is appropriate to match the spatial resolution required and complexity of the flood risk issues. The extent of the risk of flooding should be assessed which may involve preparing indicative flood zone maps. Where existing river or coastal models exist, these should be used broadly to assess the extent of the risk of flooding and potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures; and
- **Stage 3: Detailed Flood Risk Assessment** - to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures. This will typically involve use of an existing or construction of a hydraulic model of the river or coastal cell across a wide enough area to appreciate the catchment wide impacts and hydrological processes involved.

As described in the FRM guidelines flood risk is a combination of the likelihood of flooding occurring and the potential consequences which may arise, and is normally expressed in terms of the following relationship:

Flood risk = Probability of flooding x Consequences of flooding

Likelihood of flooding is normally expressed as the percentage probability based on the average frequency measured or extrapolated from records over a large number of years. A 1% probability indicates the flood level that is expected to be reached on average once in 100 years, i.e. it has a 1% chance of occurring in any one year. Therefore:

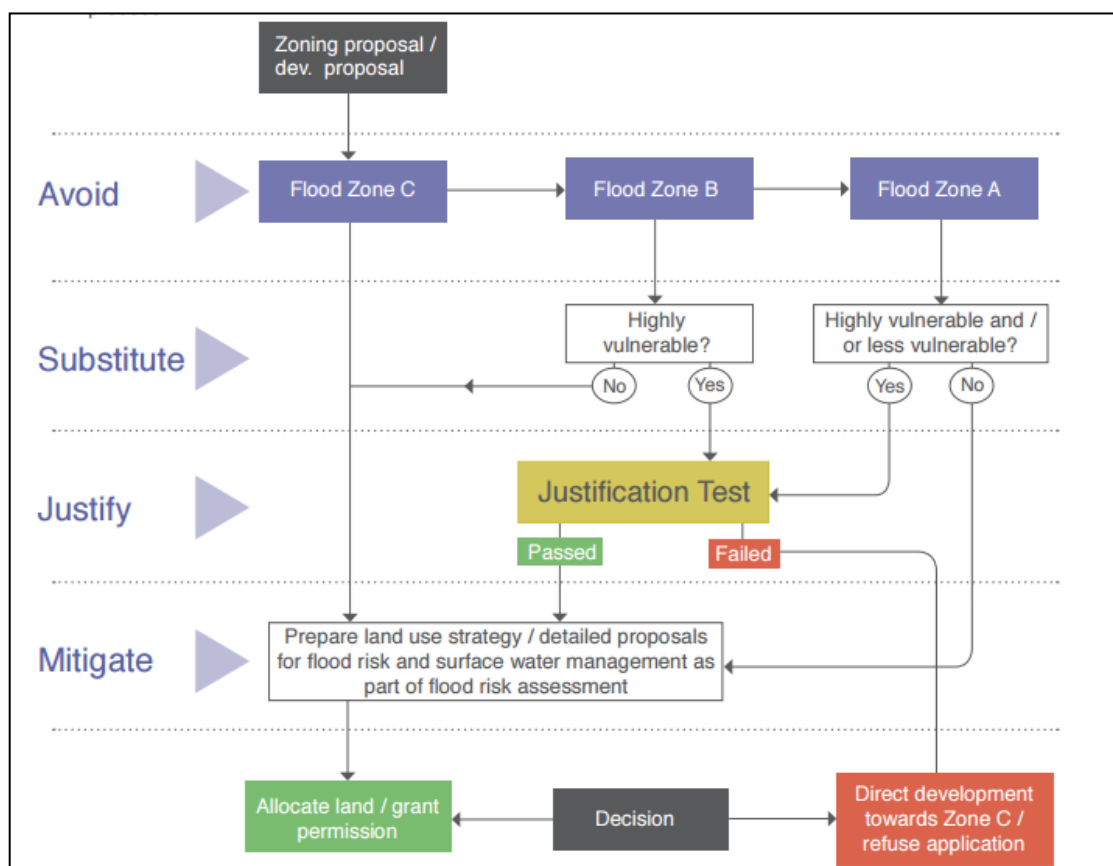
- 100 year flood = 1% Annual Exceedance Probability (AEP);
- 1000 year flood = 0.1% AEP.

In the FRM Guidelines, the likelihood of a flood occurring is established through the identification of Flood Zones which indicate a high, moderate or low risk of flooding from fluvial or tidal sources, as defined as follows:

- **Flood Zone A** - Where the probability of flooding is highest (greater than 1% AEP or 1 in 100 for river flooding and 0.5% AEP or 1 in 200 for coastal flooding) and where a wide range of receptors would be vulnerable;
- **Flood Zone B** - Where the probability of flooding is moderate (between 0.1% AEP or 1 in 1000 and 1% AEP or 1 in 100 for river flooding and between 0.1% AEP or 1 in 1000 year and 0.5% AEP or 1 in 200 for coastal flooding); and
- **Flood Zone C** - Where the probability of flooding is low (less than 0.1% AEP or 1 in 1000 year for both river and coastal flooding).

Potential impacts of the proposed development were considered within the study area. This is defined as the area within the proposed development site boundary (i.e. the proposed development site); and the wider hydrological setting of the area. A

sequential approach was undertaken for this risk assessment under guidance from the local planning authorities (2009). Specifically, a sequential approach is first and foremost directed towards land that is at low risk of flooding. The underpinning philosophy of the sequential approach is highlighted in the illustration below. Based on the *DRAFT* PRFA (Preliminary Flood Risk Assessment) and FCC Development Plan 2017-2023 Strategic Flood Risk Assessment maps, the proposed development site resides mostly in Flood Zone C. This report contains the first stage of the flood risk assessment



Insert 1 Sequential approach mechanism in the planning process

1.2 Methodology

This assessment follows the FRM Guidelines for a Stage I assessment.; The methodology involves researching the following data sources:

- Base maps – Ordnance Survey of Ireland²
- Flood Hazard Maps and flooding information for Ireland, www.floodmaps.ie Office of Public Works (OPW)³
- Geological Survey of Ireland (GSI) maps on superficial deposits⁴
- EPA hydrology maps⁵
- National River Basin Management Plan 2018-2021⁶
- The National Development Plan 2018 – 2027⁷
- Fingal County Development Plan 2017-2023¹⁰
- The Planning System and Flood Risk Management guidelines for the planning authorities¹
- Strategic Flood Risk Assessment for Fingal County Council Development Plan 2017-2023¹¹

- Published EIAR for Data Storage Facility Development, Cruiserath Road, Dublin 15 (AWN, 2019)

2.0 DEVELOPMENT PLANS & POLICIES

2.1 National Development Plan 2018 – 2027

See Appendix A for a summary of the flood risk aspects of the National Development Plan 2018 – 2027.

2.2 Fingal County Council Development Plan 2011-2017

See Appendix A for a summary of the flood risk aspects of the Fingal County Council Development Plan 2017-2023.

3.0 REGIONAL ENVIRONMENTAL SETTING

3.1 Site Topography and Hydrology

The proposed site is located within the former Eastern River Basin District (ERBD), now the Ireland River Basin District in Hydrometric Area 09 of the Irish River Network. The proposed development is located within the Tolka River catchment and is located 0.4km approximately north of the Tolka River and south of the Mooretown stream (Refer to Figure 3.1).

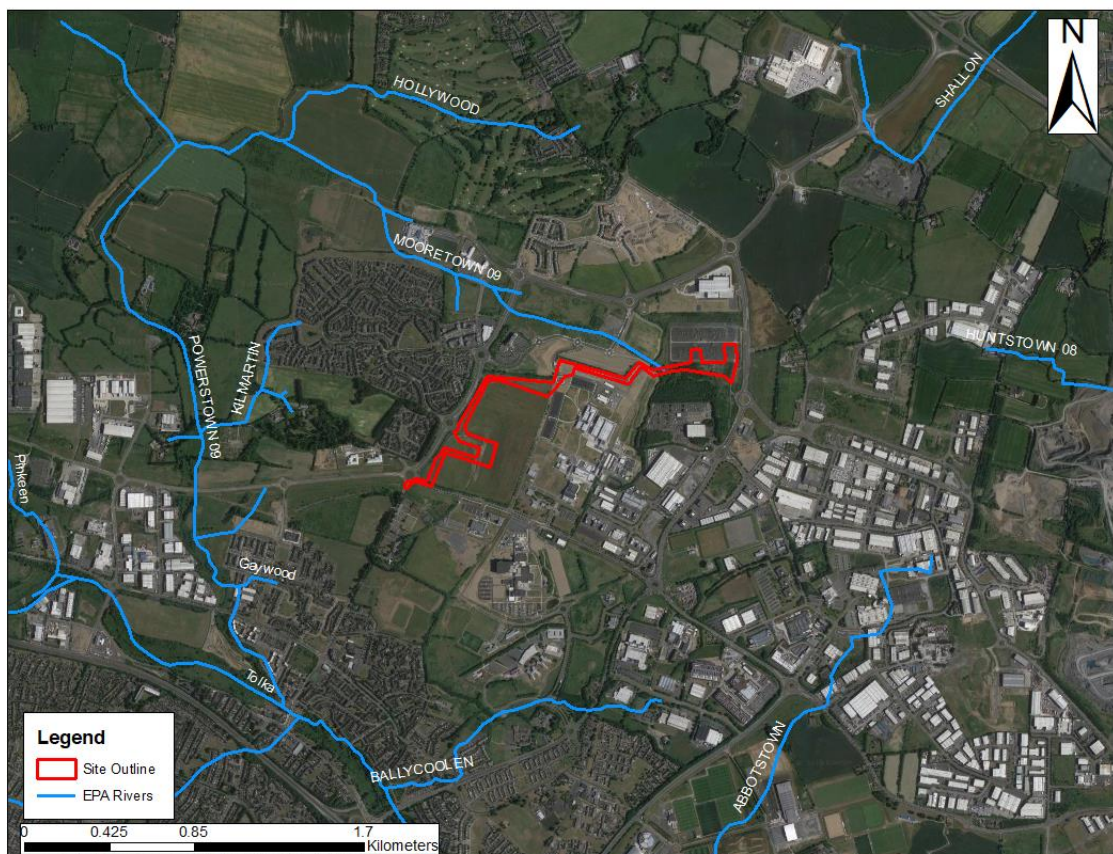


Figure 3.1 Local area with hydrological environment.

The site is classified as being within the Liffey and Dublin Bay Hydrometric River Area. The Tolka River runs parallel to the Liffey River and trends from the north west

to a south east. The site is located within the middle to lower reaches of the Tolka River catchment where the Pinkeen River joins to the Tolka River.

The site topography can be considered relatively flat and low lying (approximately +85mAOD). The site gently slopes from south to north.

3.2 Regional Bedrock Geology

Inspection of the available GSI online maps show that the bedrock geology underlying the site belongs to three formations: TC - Tober Colleen Formation consisting of calcareous shale and limestone conglomerate; RU - Rush Conglomerate Formation comprising conglomerate, shale, and limestone; and LU - Lucan Formation consisting of 'Calp' limestone (i.e. sequences of dark grey massive limestones, shaley limestones, and massive mudstones). The bedrock geology (100k solid geology; GSI, 2019) of the site is shown on Figure 3.2.

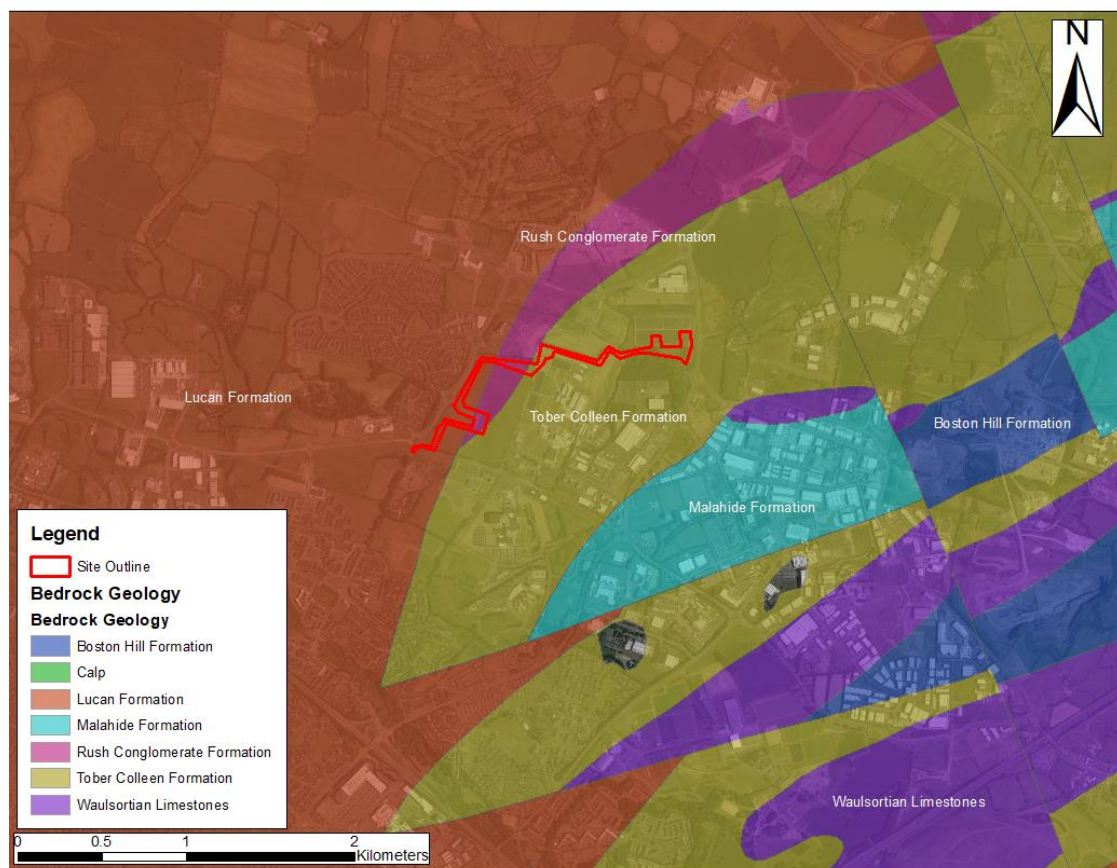


Figure 3.2 Bedrock Geology Map (site boundary shown in red)

Bedrock outcrops have been identified at a number of locations within this region and are shown in Figure 3.3.

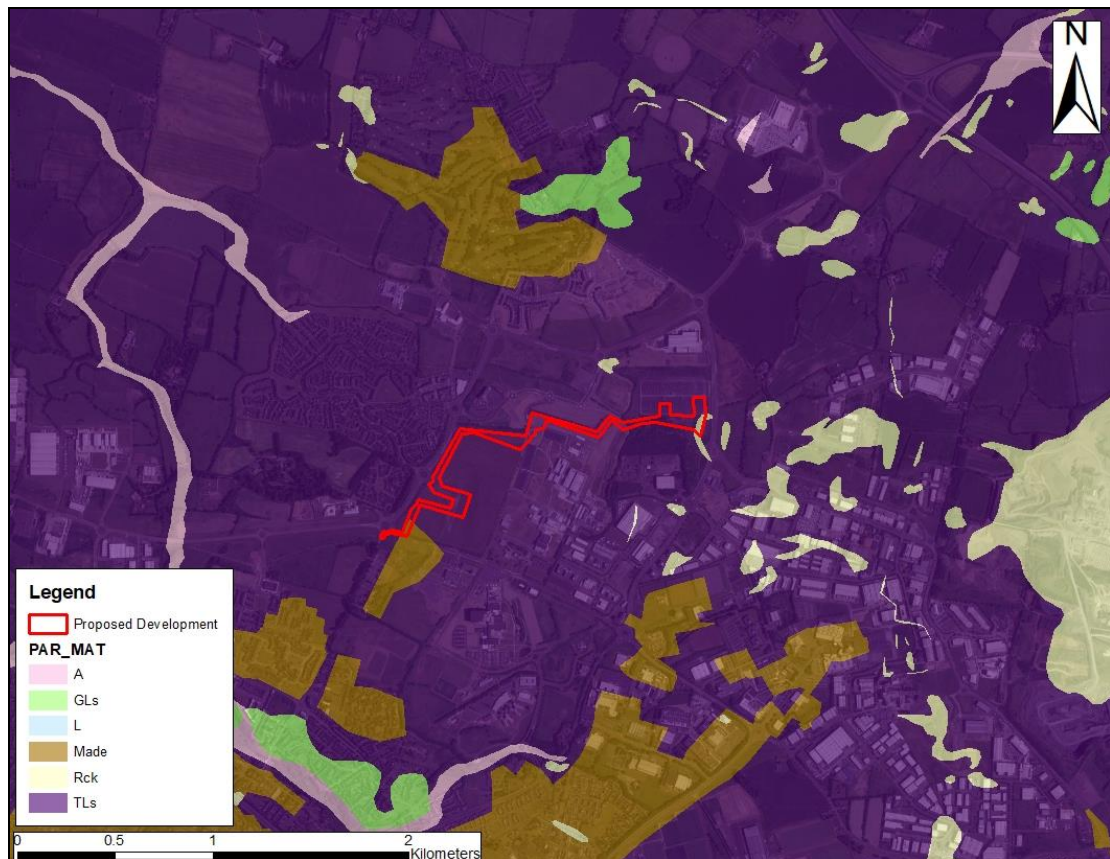


Figure 3.3 Subsoils Map (site outline shown in red)

3.3 Soil and Subsoil

The regional overburden deposits are reflective of the Quaternary geological period that extends from around 1.5 million years ago to present day. Figure 3.4 presents the Soil type predominantly covering the site area; this is classified as BminDW – Basic Deep Well Drained Mineral (grey brown podzolics, brown earths) (Source: GSI/Teagasc soil mapping). An area of Made Ground is shown directly to the south of the site and includes Mulhuddart graveyard. Further to the north and east of the site are soils composed of BminPD - Surface water Gleys/ Groundwater Gleys Basic (Source: GSI/Teagasc soil mapping).

The main subsoil types that underlays the proposed development is classified as TLs – Till type subsoil comprising Limestone till (Carboniferous) of variable texture (see Figure 3.3).



Figure 3.4 Soils Map (site boundary shown in red)

3.4 Existing Drainage

A drainage ditch drains the land to the southwest of the. It is proposed to fill this drain in as part of the permitted development works (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025).

The route of the 220kV transmission line crosses a land drain associated with the Mooretown Stream which eventually leads to the River Tolka. It is proposed to cross this land drain via horizontal directional drilling (HDD). The use of HDD methodology removes the potential for hydrological pathways and as such impacts on the Mooretown Stream.

3.5 Proposed Drainage

Rainwater runoff from building roofs, yards and the road network for the substation will be collected in storm water drainage channels and diverted to a large storm water attenuation basin (sized for a 1 in 100-year rainfall event). This surface water drainage system is being installed as part of the planning permission for the permitted data storage facility on site and is intended to service that development (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025). This SuDs was initially designed to accommodate surface water drainage from the proposed development, as the proposed development was initially included as part of the planning application for the permitted development (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025). As such, there will be capacity for the SuDs for the permitted development to accommodate runoff from the proposed development.

The drainage design includes oil separator interceptor systems to ensure the quality of storm water discharge is controlled prior to attenuation.

The attenuated storm water runoff from the substation will be discharged at the allowable greenfield run off rate to the existing storm water system along the R121 to the south of the site. (Further detail on the storm water drainage system and the basis of its design is provided in the *Engineering Planning Report – Drainage and Water*, prepared by CSEA, which accompanied the planning application for the permitted development (Planning Ref. FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). This report is included as Appendix A to the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, which accompanies this application.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any surface water drainage infrastructure. The cable installations are underground and the cable bays will be constructed on a primarily permeable gravel surface (with some concrete bases which will drain to the gravel area) at the Corduff substation. Therefore, surface water will continue discharge to ground once the 220kV transmission line, the 49kVA cable installation and cable bays are constructed.

4.0 REGIONAL HYDROGEOLOGY

4.1 Aquifer Classification

The Geological Survey of Ireland has devised a system for classifying the aquifers in Ireland. There are three main classifications: regionally important, locally important and poor aquifers.

The GSI currently classifies the shaley limestone bedrock aquifer which underlies the site as a (PI) Poor Aquifer - *Generally Unproductive except for Local Zones* on the eastern portion of the site. The western portion of the site the classification is defined as (LI) Locally Important Aquifer, i.e. bedrock aquifer which is *moderately productive only in local zones*. Figure 4.1 presents the current bedrock aquifer map for the area surrounding the site



Figure 4.1 Aquifer Classification Map (site perimeter shown in red)

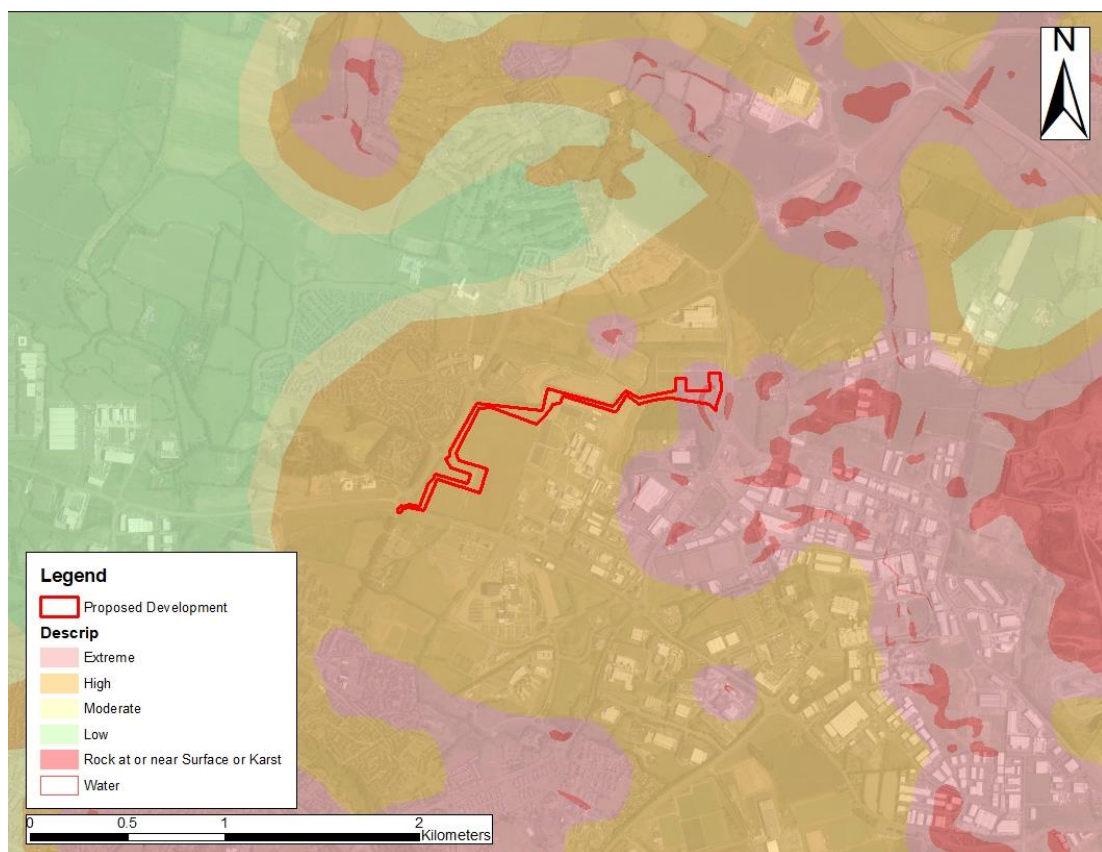
4.2 Aquifer Vulnerability

The vulnerability of a bedrock aquifer is determined by the nature and thickness of the overburden material overlying it. The classification guidelines, as published by the GSI, are given in Table 4.1 below. This shows that the less permeable and thicker the overburden overlying an aquifer is, the lower the vulnerability of the aquifer to contamination.

Table 4.1 GSI Vulnerability Mapping Guidelines (GSI, 2019)

| Vulnerability Rating | Hydrogeological Conditions | | | | |
|----------------------|-------------------------------------------|--------------------------------------------|----------------------------------------------------|-----------------------------|----------------|
| | Subsoil Permeability (Type) and Thickness | | | Unsaturated Zone | Karst Features |
| | High permeability (sand/gravel) | Moderate permeability (e.g. Sandy subsoil) | Low permeability (e.g. Clayey subsoil, clay, peat) | (Sand/gravel aquifers only) | (<30 m radius) |
| Extreme (E) | 0 - 3.0m | 0 - 3.0m | 0 - 3.0m | 0 - 3.0m | - |
| High (H) | > 3.0m | 3.0 - 10.0m | 3.0 - 5.0m | > 3.0m | N/A |
| Moderate (M) | N/A | > 10.0m | 5.0 - 10.0m | N/A | N/A |
| Low (L) | N/A | N/A | > 10.0m | N/A | N/A |

Notes: (1) N/A = not applicable.
(2) Precise permeability values cannot be given at present.
(3) Release point of contaminants is assumed to be 1-2 m below ground surface.

**Figure 4.2** Aquifer Vulnerability Map (site perimeter shown in red)

Based on the information obtained from the GSI and site specific data, the underlying aquifer can be classified as highly vulnerable (see Figure 4.2 for GSI classification). Typically, a highly vulnerable aquifer has an overburden range from 3m-5m of which the soil type is of low permeability. Following previous site investigations in the area an overburden thickness of < 2.0m was confirmed in places. Consequently, the aquifer vulnerability is classified as high to extreme.

5.0 FLOOD RISK ASSESSMENT

5.1 Existing Flood Records

From reviewing floodmaps.ie there was no evidence of flooding within the site area or in close proximity which indicates there is no risk of flooding. The national flood hazard mapping website (www.floodmaps.ie) indicates a history of flooding in several locations within the broader study area.

These flood locations are highlighted in Appendix B OPW Floodmaps Report and detailed in Table 5.1 below)

Table 5.1 OPW Flood Locations

| Flood Location | Year(s) of Flood | Cause of Flooding |
|------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tolka River | 15 th November 2002 | Major Flood Event. Areas affected included the N3 national road and Blanchardstown. Flooding extended from the Blanchardstown Road crossing to Snugborough Road Bridge. Significant flooding occurred on the N3 National Primary Road, effectively closing the road. Caused by a combination of a major rainfall event with preceding wet catchment conditions. |
| Tolka Navan Road adjacent to Tolka Valley Park | November 2002 | Severe flooding of road along Blanchardstown Bypass at this location in November 2002 due to high river levels and surface water drainage backup. Road impassable and cars submerged under Snugborough Road flyover. |
| Tolka Navan Road, upstream of Mulhuddart | Recurring | Tolka River overflows its banks regularly just upstream of confluence with Pinkeen River |

5.3 Fluvial Flooding

CFRAM Preliminary Flood Risk Assessment (PFRA)

The EU Floods Directive (2007/60/EC) required Member States to undertake a national preliminary flood risk assessment by 2011 to identify areas where significant flood risk exists or might be considered likely to occur. Member States were also required to prepare catchment-based Flood Risk Management Plans by 2015 that will set out flood risk management objectives, actions and measures. The OPW in co-operation with various Local Authorities produced a number of PFRAs which aimed to map out current and possible future flood risk areas and develop risk assessment plans. These have been used to form the Draft Flood Risk Management Plans aimed at identifying possible structural and non-structural measures to improve the flood risk.

As part of the CFRAM programme provisional floodmaps had been produced by the OPW which have been used in this assessment. The PFRA floodmaps do not indicate flooding at the site; however, flooding is noted to the south along the Tolka River as referred to in Figure 5.1 below. See Appendix C for the CFRAM PFRA flood map for the region. At the time of writing Final CFRAM maps are not available for the site or the River Tolka.

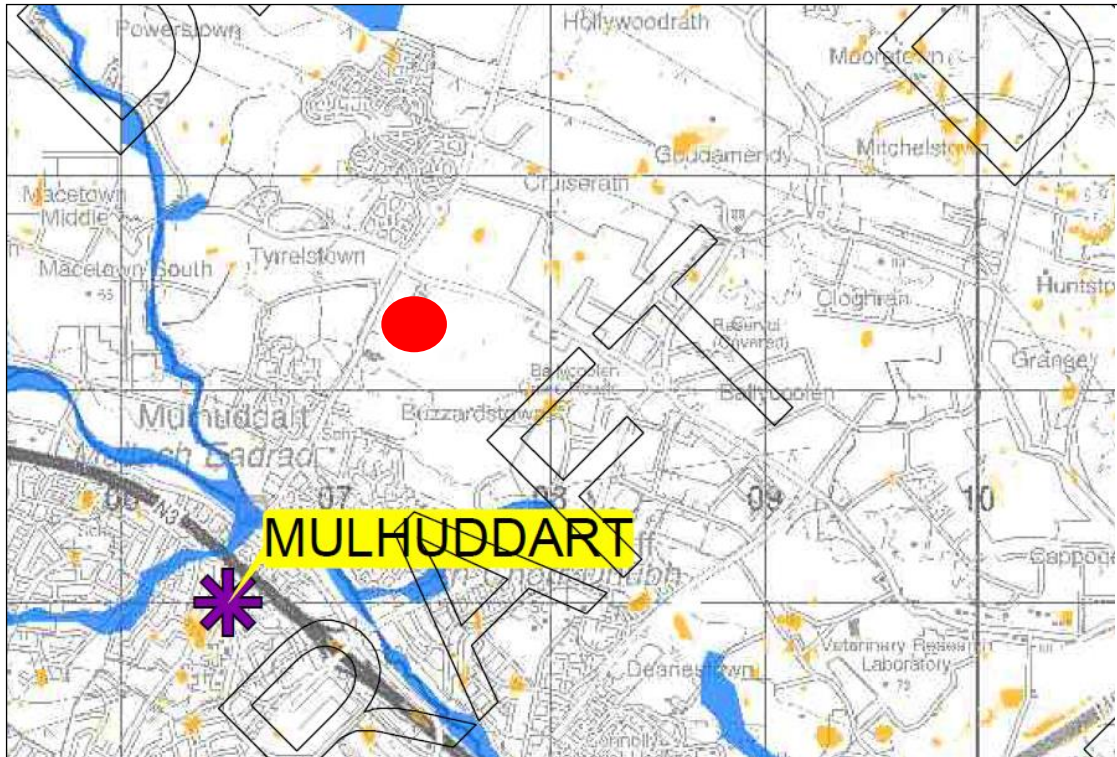


Figure 5.1 OPW CFRAM PFRA (approximate location shown with red dot)

A Strategic Flood Risk Assessment (SFRA) for the Fingal Development Plan 2017-2023 was developed and published in March 2017. Fluvial flood zone mapping was developed for this by RPS Engineers and included as Appendix A to the SFRA. Map 19 is shown in Figure 5.2 below. This shows the proposed site outside any identified flood zones.

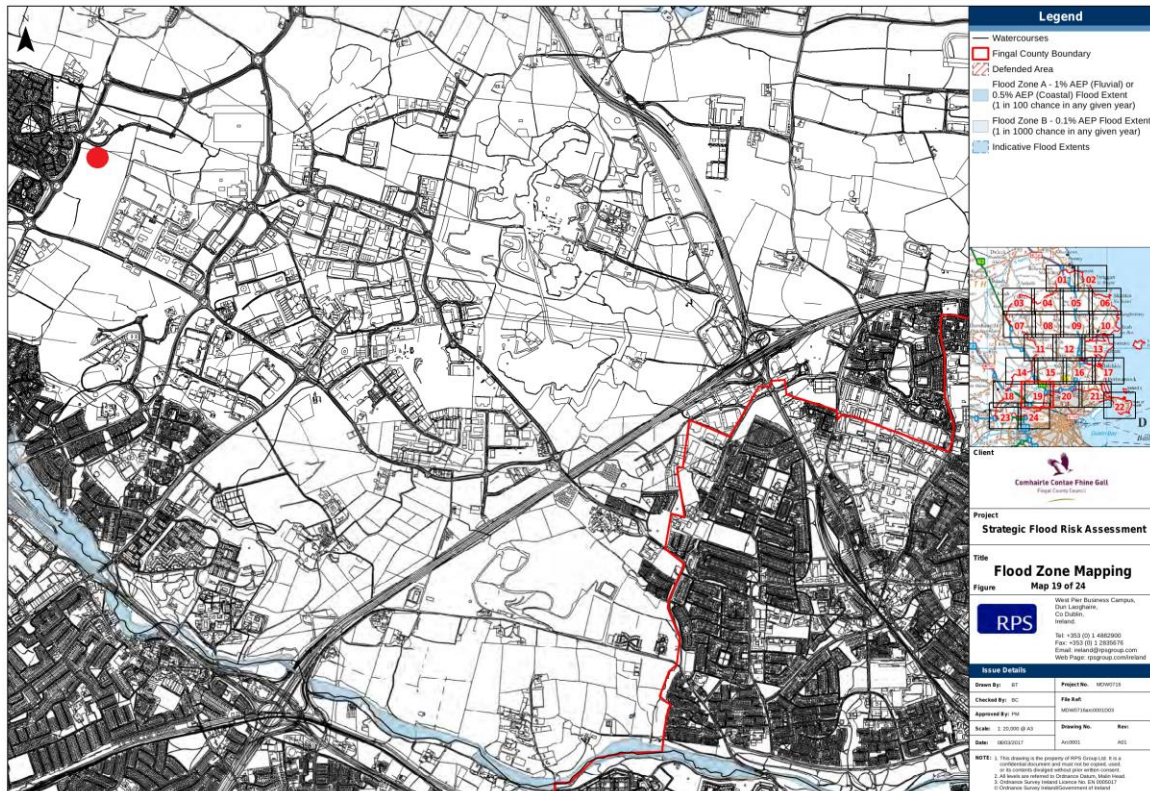


Figure 5.2 Fingal County Council SFRA Map 19. Site outline in Orange (FCC, March 2017) (approximate location shown with red dot)

From reviewing Figures 5.1 & 5.2 it is shown that the area is located within Flood Zone C i.e. the probability of flooding is low (less than 0.1% AEP or in 1 in 1000 year). As the development is to be used for commercial and industrial use it can be categorised as a “less vulnerable development”. As it resides within Flood Zone C a justification test is not required.

5.4 Pluvial Flooding

Pluvial flooding is usually caused by intense rainfall that may only last a few hours. The resulting water follows natural valley lines, creating flow paths along roads and through and around developments and ponding in low spots, which often coincide with fluvial floodplains in low lying areas. Any areas at risk from fluvial flooding will almost certainly be at risk from pluvial flooding.

CFRAM Final Pluvial Flood Maps for the catchment were available as referred to in Figure 5.3 below. Pluvial Flood Extent mapping shows no risk of pluvial flooding at the site. Appendix D includes the full Pluvial Flooding Map for the region. The area surrounding the Cruiserath site is also not listed as one of the areas at risk from indicative pluvial flooding included in FCC’s SFRA.



Figure 5.3 OPW CFRAM Pluvial Flood Risk Extent (site location shown)

5.4 Groundwater Levels

Based on a GSI search there is no current or historical or current evidence of groundwater inundation for the site. A GSI search located a number of wells in close proximity to the site (Table 5.2) which indicate that static water level is below ground level.

The area in the vicinity of the site is generally serviced by public mains. There are no public water supplies sourced from groundwater in the area and there are no groundwater Source Protection Zones in the vicinity of the site.

| GSI Name | Depth (m) | Depth to Bedrock | Townland | County | Use | Yield Class | Yield m ³ /d |
|------------|-----------|------------------|---------------|--------|---------------------|-------------|-------------------------|
| 2923NEW041 | - | - | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW043 | - | - | KILSHANE | Dublin | Monitoring | - | - |
| 2923NEW046 | 20.8 | 6.2 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW047 | 22.5 | 2.3 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW048 | 12 | 2 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW049 | 22.2 | 2 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW050 | 23 | 2.8 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW051 | 23 | 2.9 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW052 | 24 | 4 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW053 | 24.5 | 5.9 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW054 | 23 | 3 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923NEW055 | 23.5 | 3.5 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923NEW056 | 23.5 | 7.5 | POWERSTOWN | Dublin | Monitoring | - | - |
| 2923NEW057 | 23.6 | 6.2 | POWERSTOWN | Dublin | Monitoring | - | - |
| 2923NEW058 | 7.4 | 7.4 | KILMARTIN | Dublin | Monitoring | - | - |
| 2923NEW059 | 6.8 | 6.8 | TYRRELSTOWN | Dublin | Monitoring | - | - |
| 2923NEW060 | 3 | 3 | HOLLYWOODRATH | Dublin | Monitoring | - | - |
| 2923SEW047 | 3.8 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923SEW048 | 3.2 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923SEW049 | 3.6 | - | CAPPOGE | Dublin | Monitoring | - | - |
| 2923NWW385 | 27.4 | - | ROWAN | Meath | Domestic use only | Good | 109 |
| 2923NWW386 | 18.3 | - | MAYNE | Meath | Domestic use only | Poor | 16.4 |
| 2923NEW033 | 150 | 12 | TYRRELSTOWN | Dublin | Industrial use | Good | 115 |
| 2923SEW004 | 76.2 | - | CAPPOGE | Dublin | Agri & domestic use | Good | 109.1 |

Table 5.2: GSI Well Index table from well search (GSI, 2019)

5.5 Overview of Flood Risk Identification

Historic flood maps were reviewed for the study area and do not indicate a history of flooding of the site from the River Tolka. The CFRAM PFRA of FCC SFRA maps do not indicate any fluvial flooding (1% AEP or 0.1% AEP) on or in proximity to the site which would suggest a risk of flooding. The site is therefore classified as being located within a designated Flood Zone C i.e. where the probability of flooding is low (less than 0.1% AEP or 1 in 1000 for both river and coastal flooding).

6.0 CONCLUSION

This report sets out the flood risk assessment of the application, in accordance with the FRM guidelines. The assessment is based on the best data available in the public domain at the time of writing.

A Flood Risk Assessment is undertaken over several stages with the need for progression to a more detailed stage dependent on the outcomes of the former stage. The sequential approach, as outlined in the FRM guidelines, was undertaken.

A Stage 1 assessment has been undertaken and as the proposed development is commercial in nature and the landholding has no historical flood hazard, no further justification test is required at the site.

In accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities, the development resides in Flood Zone C and is a suitable development for this area. The site drainage will be designed in accordance with SuDs.

Based on this information the proposed development complies with the appropriate policy guidelines for the area which include Objectives SW01, SW03, SW05 & SW06 of the Fingal County Development Plan 2017-2023 as outlined in Appendix A.

REFERENCES

1. The Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009
2. Base maps – Ordnance Survey of Ireland
3. Flood Hazard Maps and flooding information for Ireland, www.floodmaps.ie Office of Public Works (OPW)
4. GSI, Online mapping, www.gsi.ie
5. EPA, Hydrology Data, www.eps.ie
6. National River Basin Management Plan 2018-2021
7. The National Development Plan 2018-2021
8. CSEA, (2016). *Engineering Planning Report – Drainage & Water*.
9. Eastern CFRAMS (Catchment Flood Risk Assessment & Management Study) - Draft Flood Risk and Management Plan, <http://maps.opw.ie/floodplans>
10. Fingal County Development Plan 2017-2023
11. Strategic Flood Risk Assessment for Fingal County Council Development Plan 2017-2023¹¹
12. Department Public Expenditure & Reform, The National Development Plan 2018-2027.
13. Published EIAR for Data Storage Facility Development, Cruiserath Road, Dublin 15 (AWN, 2019)

APPENDIX A
RELEVANT EXTRACTS FROM DEVELOPMENT PLANS

National Development Plan 2018 - 2027

The Government of Ireland is committed to the policy objective of delivering further capital works/flood relief schemes to minimise the impacts of river and coastal flooding on society through the roll-out of the 29 Flood Risk Management Plans. Delivery of this capital works programme will be underpinned by a total investment of up to €940 million over the lifetime of the National Development Plan. The 29 plans include proposed flood relief schemes which will need to be prioritised. The prioritisation process, which relates primarily to the proposed physical flood-protection measures, will be based on an evaluation process including Multi-Criteria Analysis and benefit to cost-ratio (which represents the overall benefits, on balance across each of the objectives, per Euro cost of a proposed measure), and the risk arising from the nature of the local flood waters within a community. The prioritisation will be applied on a regional basis. The schemes will range from very large schemes costing in excess of €15 million each to smaller schemes that can be progressed by the Local Authorities with funding available from the OPW. An example of five large schemes identified in the plans are as follows:

- Limerick city and environs
- Tralee
- Dundalk
- Carlingford and Greenore
- Drogheda

As part of the National Planning Framework – Ireland 2040 a Strategic Flood Risk Assessment Report has been developed. The objectives of the plan are as follows;

- Avoid inappropriate development in areas at risk of flooding;
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off;
- Ensure effective management of residual risks for development permitted in floodplains;
- Avoid unnecessary restriction of national, regional or local economic and social growth;
- Improve the understanding of flood risk among relevant stakeholders; and
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

The Guidelines recommend that Flood Risk Assessments (FRA) be carried out to identify the risk of flooding to land, property and people. FRAs should be carried out at different scales by government organisations, local authorities and for proposed developments appropriate to the level of information required to implement the core objectives of the Guidelines. The FRA scales are:

- National Flood Risk Appraisal (NFRA) – There is no specific guidance in the Guidelines for a NFRA, however it must ensure the Guidelines are applied to policies, strategies and objectives and that flood risk is addressed in a national context
- Regional Flood Risk Appraisal (RFRA) – a broad overview of flood risk issues across a region to influence spatial allocations for growth in housing and employment as well as to identify where flood risk management measures may be required at a regional level to support the proposed growth. This should be based on readily derivable information (in particular the CFRAM Studies) and undertaken to inform the Regional Spatial and Economic Strategies.
- Strategic Flood Risk Assessment (SFRA) – an assessment of all types of flood risk informing land use planning decisions. This will enable the Planning Authority to allocate appropriate sites for development, whilst identifying opportunities for reducing flood risk. The SFRA will revisit and develop the flood risk identification undertaken in the RFRA, and give consideration to a range of potential sources of flooding. An initial flood risk assessment, based on the identification of Flood Zones, will also be carried out for those areas, which will be zoned for development. Where the initial flood risk assessment highlights the potential for a significant level of flood risk, or there is conflict with the proposed vulnerability of Strategic Flood Risk Assessment – Ireland 2040: The National Planning Framework MDR1273Rp0005F02 5 development, then a site specific FRA will be recommended, which will necessitate a detailed flood risk assessment.

- Site Specific Flood Risk Assessment (FRA) – site or project specific flood risk assessment to consider all types of flood risk associated with the site and propose appropriate site management and mitigation measures to reduce flood risk to and from the site to an acceptable level. If the previous tiers of study have been undertaken to appropriate levels of detail, it is highly likely that the site specific FRA will require, detailed channel and site survey, and hydraulic modelling. Source: OPW

Fingal County Council Development Plan 2017-2023

Objective SW01: Protect and enhance the County's floodplains, wetlands and coastal areas subject to flooding as vital green infrastructure which provides space for storage and conveyance of floodwater, enabling flood risk to be more effectively managed and reducing the need to provide flood defences in the future.

Objective SW03: Identify existing surface water drainage systems vulnerable to flooding and develop proposals to alleviate flooding in the areas served by these systems.

Objective SW05: Discourage the use of hard non-porous surfacing and pavements within the boundaries of rural housing sites.

Objective SW06: Implement the *Planning System and Flood Risk Management-Guidelines for Planning Authorities (DOEHLG/OPW 2009)*.

APPENDIX B
OPW FLOODMAP REPORT

Summary Local Area Report

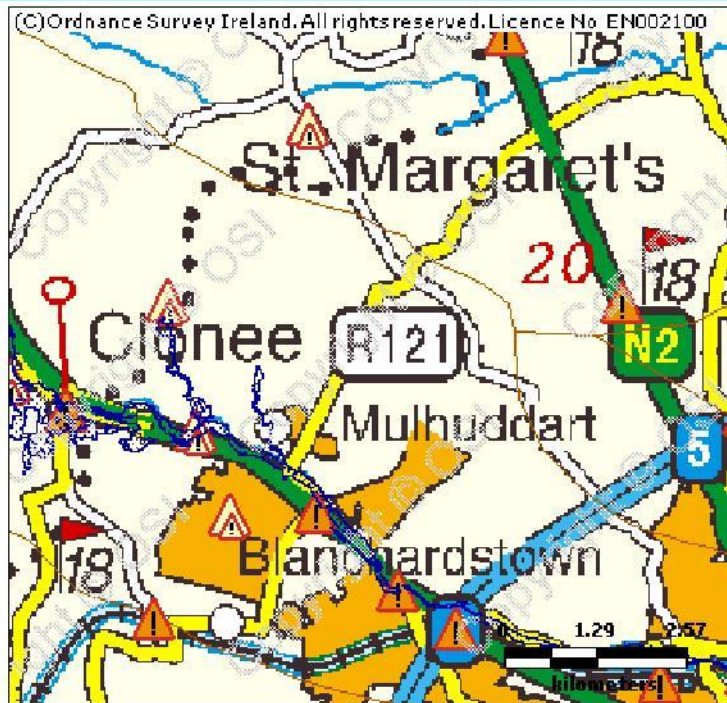
This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Dublin

NGR: O 078 420

This Flood Report has been downloaded from the Web site www.floodmaps.ie. The users should take account of the restrictions and limitations relating to the content and use of this Web site that are explained in the Disclaimer box when entering the site. It is a condition of use of the Web site that you accept the User Declaration and the Disclaimer.



Map Scale 1:106,525

| Map Legend | |
|------------|-----------------------------------|
| | Flood Points |
| | Multiple / Recurring Flood Points |
| | Areas Flooded |
| | Hydrometric Stations |
| | Rivers |
| | Lakes |
| | River Catchment Areas |
| | Land Commission * |
| | Drainage Districts * |
| | Benefiting Lands * |

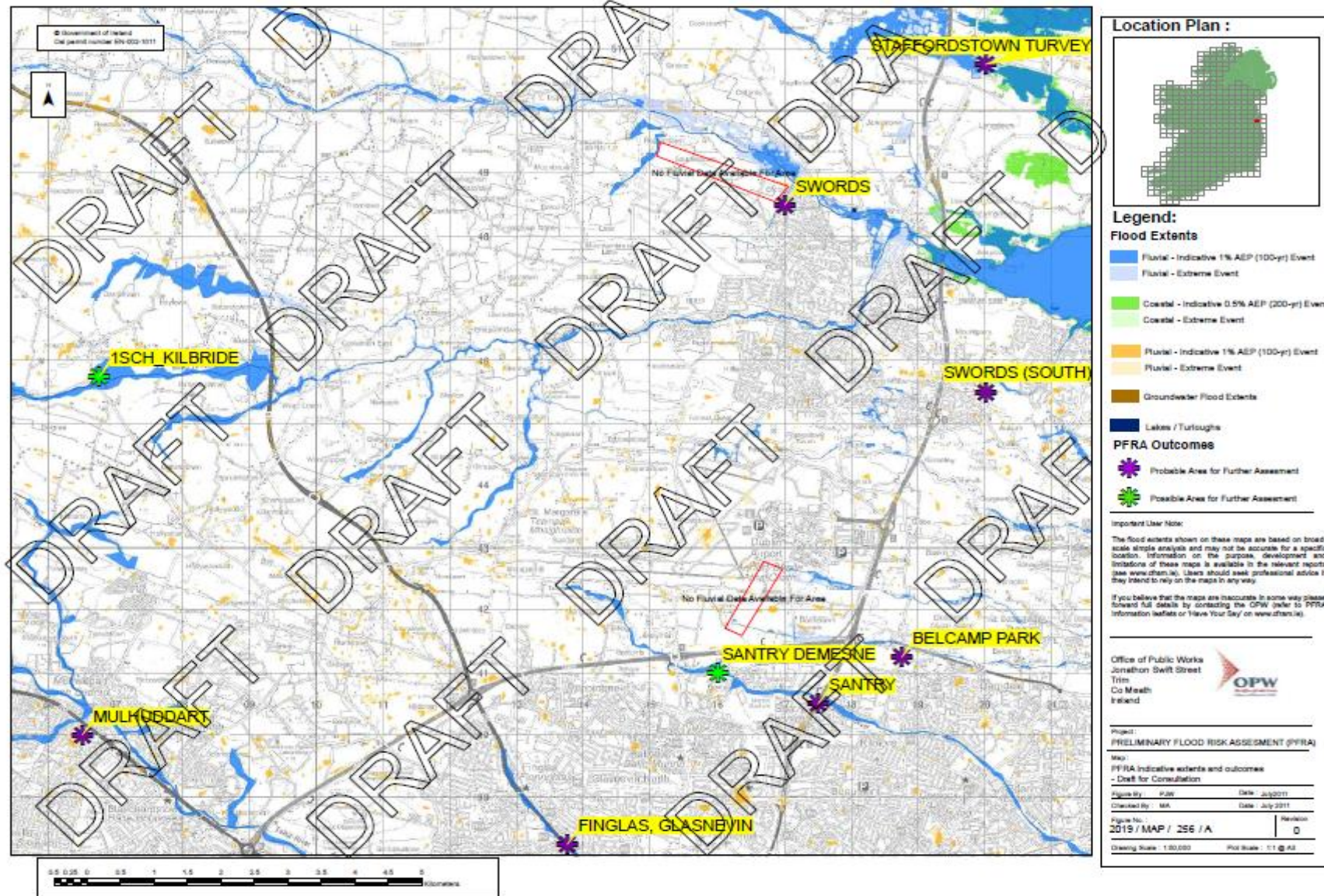
* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained in the Glossary.

2 Results

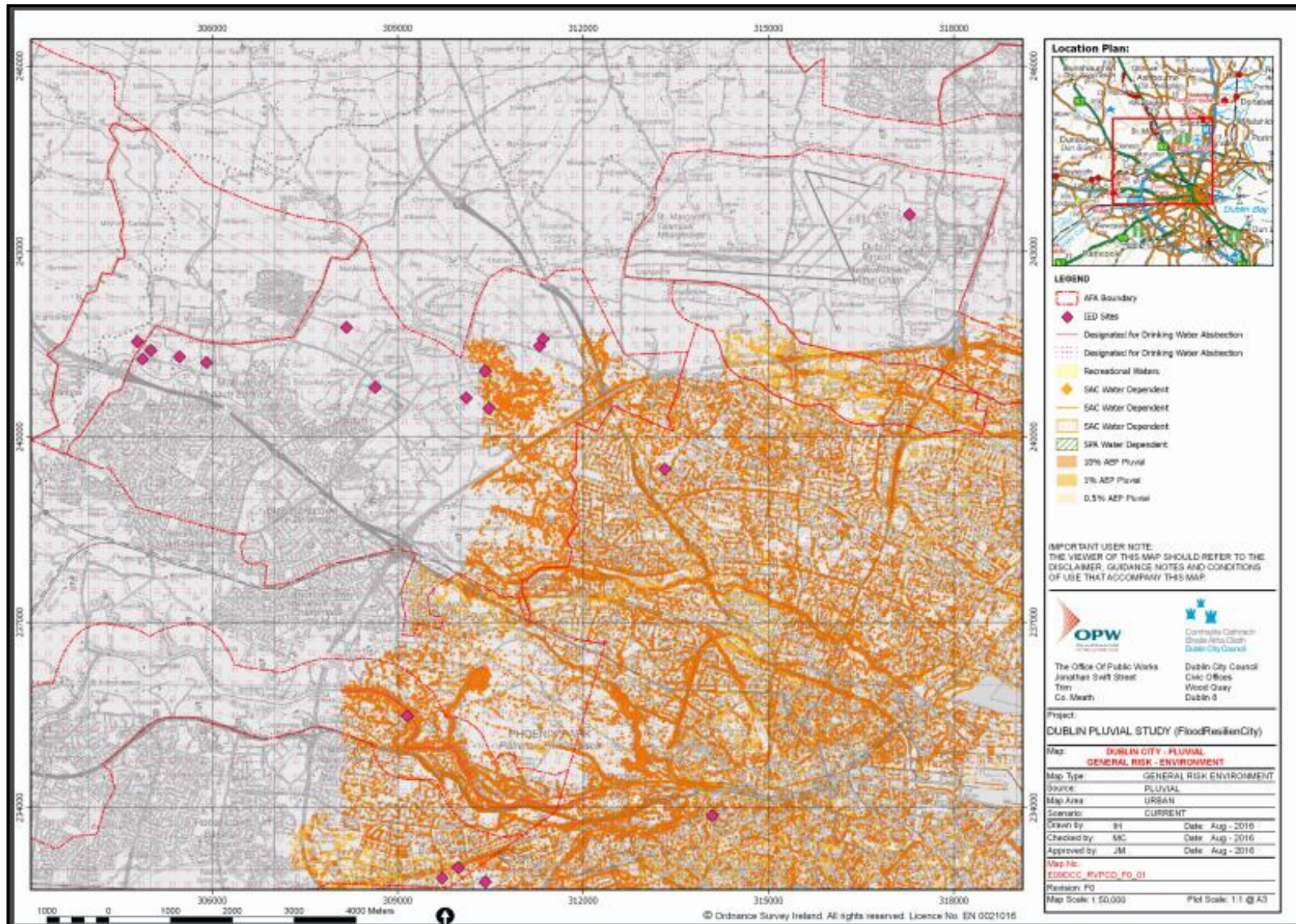
1. Tolka November 2002 Start Date: 13/Nov/2002
 County: Meath, Dublin Flood Quality Code: 1
 Additional Information: [Photos \(126\)](#) [Reports \(9\)](#) [Videos \(3\)](#) [Press Archive \(13\)](#) [More Mapped Information](#)

2. Tolka Navan Road Adj to Tolka Valley Park Nov 2002 Start Date: 13/Nov/2002
 County: Dublin Flood Quality Code: 3
 Additional Information: [Photos \(1\)](#) [Reports \(2\)](#) [Videos \(1\)](#) [Press Archive \(3\)](#) [More Mapped Information](#)

APPENDIX C
CFRAM PRFA MAP



APPENDIX D
CFRAM FINAL PLUVIAL FLOOD MAP 2016



Location Plan:



LEGEND

- ARA Boundary
- ◆ IED Sites
- Designated for Drinking Water Abstraction
- Designated for Drinking Water Abstraction
- Recreational Waters
- SAC Water Dependent
- SAC Water Dependent
- SAC Water Dependent
- SRK Water Dependent
- 30% ADP Pluvial
- 1% ADP Pluvial
- 0.5% ADP Pluvial

IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.



The Office of Public Works
Jennifer Swift Street
Tim
Co. Meath



Dublin City Council
Civic Offices
Wood Quay
Dublin 8

Project:
DUBLIN PLUVIAL STUDY (FloodResilientCity)

| | | | |
|--------------|-----------------------------------------------------|-------------|------------|
| Map: | DUBLIN CITY - PLUVIAL GENERAL RISK - ENVIRONMENT | | |
| Map Type: | GENERAL RISK ENVIRONMENT | | |
| Source: | PLUVIAL | | |
| Map Area: | URBAN | | |
| Scenario: | CURRENT | | |
| Drawn By: | SH | Date: | Aug - 2016 |
| Checked by: | MC | Date: | Aug - 2016 |
| Approved by: | JM | Date: | Aug - 2016 |
| Map No: | ED06CC_RVPCD_PD_01 | | |
| Revision: | PD | | |
| Map Scale: | 1:50,000 | Plot Scale: | 1:1 @ A3 |



7.0 BIODIVERSITY; FLORA & FAUNA

7.1 INTRODUCTION

This chapter provides an assessment of the impacts of the Proposed Development on the ecological environment, i.e. flora and fauna. It has been compiled in compliance with the 2014 EIA Directive, the Planning and Development Act 2000 as amended, and the European Commission's guidance on the preparation of the EIA Report, and follows the revised EPA Draft EIA Report Guidelines 2017.

7.2 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development consists of a 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation along with associated and ancillary works.

A full description of the Proposed Development is provided in Chapter 2 (Description of the Proposed Development).

7.3 METHODOLOGY

This chapter of the EIA Report concentrates on ecological features within the development area of particular significance, primarily designated habitats and species. This includes habitats/species listed in Annex I, II and IV of the EU Habitats Directive, rare plants listed in the Flora Protection Order and other semi-natural habitats of conservation value.

The obligation to undertake appropriate assessment derives from Article 6(3) and 6(4) of the Habitats Directive. The first test is to establish whether, in relation to a particular plan or project, appropriate assessment is required. This is termed AA screening. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a Natura 2000 site in view of the site's conservation objectives.

A Report for the purposes of Appropriate Assessment Screening was undertaken by Moore Group for the Proposed Development which is presented as Appendix 7.1 to this chapter.

7.3.1 Policy & Guidance

7.3.1.1 *EU Habitats Directive*

The "Habitats Directive" (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union and lists certain habitats and species that must be protected within wildlife conservation areas, considered to be important at a European as well as at a national level. A "Special Conservation Area" or SAC is a designation under the Habitats Directive. The Habitats Directive sets out the protocol for the protection and management of SACs.

The Directive sets out key elements of the system of protection including the requirement for “Appropriate Assessment” of plans and projects.

7.3.1.2 *Birds Directive*

The “Birds Directive” (Council Directive 79/409/EEC as codified by Directive 2009/147/EC) provides for a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas. The Birds Directive identifies species that are rare, in danger of extinction or vulnerable to changes in habitat and which need protection (Annex I species). A “Special Protection Area” or SPA, is a designation under The Birds Directive.

Special Areas of Conservation and Special Protection Areas form a pan-European network of protected sites known as Natura 2000 sites and any plan or project that has the potential to impact upon a Natura 2000 site requires appropriate assessment.

7.3.1.3 *Wildlife Acts (1976 - 2012)*

The primary domestic legislation providing for the protection of wildlife in general, and the control of some activities adversely impacting upon wildlife is the Wildlife Act of 1976. The aims of the wildlife act according to the National Parks and Wildlife Service are “... *to provide for the protection and conservation of wild fauna and flora, to conserve a representative sample of important ecosystems, to provide for the development and protection of game resources and to regulate their exploitation, and to provide the services necessary to accomplish such aims.*” All bird species are protected under the Wildlife Act 1976. The Wildlife (Amendment) Act of 2000 amended the original Wildlife Act 1976 to improve the effectiveness of the Wildlife Act 1976 to achieve its aims.

Both the Habitats Directive and the Birds Directive have been transposed into Irish law by one set of regulations (i.e. The European Communities (Birds and Natural Habitats) Regulations 2011 to 2015 (as amended).

7.3.2 Habitat Survey

The habitat survey was carried out in three stages, firstly through desktop research to determine existing records in relation to habitats and species present in the study area (i.e. the area of the Proposed Development). This included research on the National Parks and Wildlife Service (NPWS) metadata website, the National Biodiversity Data Centre (NBDC) database and a literature review of published information on flora and fauna occurring in the Proposed Development area.

Other environmental information for the area was reviewed, e.g. in relation to soils, geology, hydrogeology and hydrology. Interactions in terms of the chapters on these topics presented in this EIA Report were important in the determination of source vector pathways and links with potentially hydrologically connected areas outside the Proposed Development site.

The second phase of the survey involved a site visit to establish the existing environment in the footprint of the Proposed Development area. Areas which were highlighted during desktop assessment were investigated in closer detail according to the Heritage Council Best Practice Guidance for Habitat Survey and Mapping (Smith *et al.*, 2011). Habitats in the Proposed Development area were classified according to the Heritage Council publication “A Guide to Habitats in Ireland” (Fossitt, 2000). This publication sets out a standard scheme for identifying, describing and classifying wildlife habitats in Ireland. This form of classification uses codes to classify different habitats based on the plant species present. Species recorded in this report are given

in both their Latin and English names. Latin names for plant species follow the nomenclature of “An Irish Flora” (Parnell & Curtis, 2012).

Habitats were surveyed on the 3rd April 2019 by conducting a study area walkover covering the main ecological areas identified in the desktop assessment. The survey date is outside the optimal survey periods for botanical species but adequate given the nature of the survey area being fallow agricultural land.

Signs of mammals such as badgers and otters were searched for while surveying the study area noting any sights, signs or any activity in the vicinity especially along adjacent boundaries.

Birds were surveyed using standard transect methodology and signs were recorded where encountered during the field walkover surveys.

Following desktop assessment an evaluation of the development area and determination of the potential impacts on the flora and fauna of the area is based on the following guidelines and publications:

- EPA Draft EIA Report Guidelines 2017;
- European Commission Guidance on the Preparation of the EIA Report (2017) as well as the European Commission Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (2013);
- Assessment of plans and projects significantly affecting Natura 2000 sites (EC, 2002);
- Managing Natura 2000 Sites (EC, 2000) Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC (EC, 2000);
- Managing Natura 2000 Sites (EC, 2018) Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC “*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*” (EC, 2018);
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG, Rev. Feb. 2010); and
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2016).

The following resources assisted in the production of this chapter of the report:

- Ordnance Survey Ireland maps;
- OSI, Google and Bing Aerial photography (1995 – 2019);
- NPWS Mapviewer: <http://www.npws.ie/en/MapsData/>;
- Designated sites (SACs, SPAs, NHAs);
- Records of protected species from 10km squares; and
- National Biodiversity Data Centre Records and Maps.

Other environmental information for the area was reviewed, e.g. in relation to soils, geology, hydrogeology and hydrology. Interactions in terms of the chapters on these topics presented in this EIA Report were important in the determination of source vector pathways and links with potentially hydrologically connected areas outside the Proposed Development site.

7.4 RECEIVING ENVIRONMENT

The subject site is located at Cruiserath Road, Dublin 15. The site is bound to the south by the R121 / Cruiserath Road, to the west by undeveloped greenfield lands, to the

north by undeveloped land and Cruiserath Drive and to the east by the Bristol Meyers Squibb (BMS) facility. Planning permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the proposed Substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed Substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). Planning permission for Buildings B and C were granted in August 2019.

The site was previously used for arable crops and has been left fallow for the past number of years. The land to the east of the development comprise the suburban environment of Tyrrelstown. The land to the south is developed for light industry and technology.

The following is a description of the flora and fauna of the existing environment in the study area.

7.4.1 Designated Conservation Areas

Department of the Environment, Heritage and Local Government (2009) Guidance on Appropriate Assessment recommends an assessment of European sites within a zone of impact of 15 km. This distance is a guidance only and the zone of impact has been identified taking consideration of the nature and location of the proposed Project to ensure all European sites with connectivity to it are considered in terms of a catchment-based assessment.

The lands in which the Proposed Development is located have no formal designations.

European sites that are located within the potential zone of influence the Project are listed in Table 7.1. Spatial boundary data on the Natura 2000 network was extracted from the NPWS website (www.npws.ie) on the 12th July 2019.

Table 7.1 Details of European sites within the potential zone of influence of the project.

| Site Code | Site name | Distance (km) ¹ |
|-----------|----------------------------------------------|----------------------------|
| 000205 | Malahide Estuary SAC | 12.86 |
| 000206 | North Dublin Bay SAC | 14.37 |
| 000210 | South Dublin Bay SAC | 14.04 |
| 001398 | Rye Water Valley/Carton SAC | 8.44 |
| 004006 | North Bull Island SPA | 14.37 |
| 004024 | South Dublin Bay and River Tolka Estuary SPA | 11.66 |
| 004025 | Malahide Estuary SPA | 12.97 |

There is no potential for connectivity between the proposed Project and the closest European site, Rye Water Valley/Carton SAC (Site Code 001398), which is located approximately 8.4 km to the west and associated within a different catchment, see Figure 7.1.

A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data (which can be accessed at <https://www.catchments.ie/maps/>) indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South

¹ Distances indicated are the closest geographical distance between the proposed Project and the European site boundary, as made available by the NPWS. Connectivity along hydrological pathways may be significantly greater.

Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

As described above, there is no hydrological connectivity to any European sites.

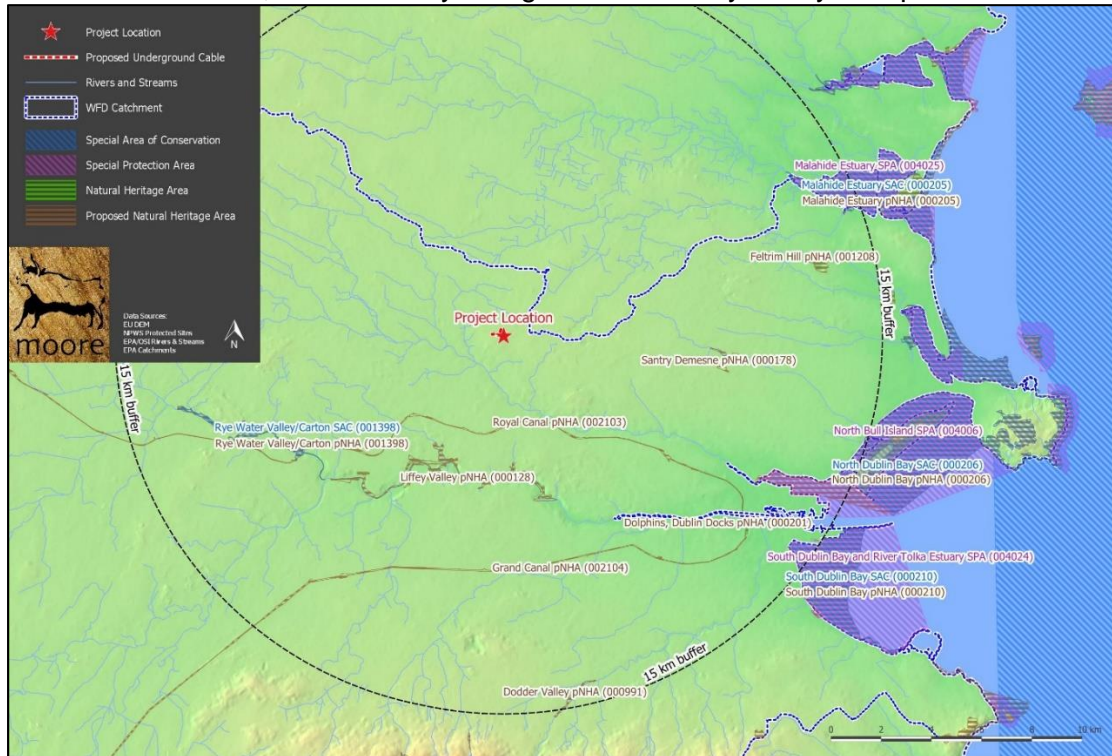


Figure 7.1 Site Location in relation to nearby European sites.

7.4.2 Non-Designated Habitats

The Proposed Development area is comprised of fallow farmland. The redundant farmland is comprised of old fields which were once improved grassland and have not been tended and therefore have become overgrown with Rosebay willowherb, bramble, blackthorn and gorse. There are short sections of a stagnant drainage ditch.

The main habitats are presented on the recent aerial photography in Figure 7.2. A list of habitats recorded and their corresponding Fossitt codes is presented in Table 7.2.

Table 7.2 Details of habitats recorded and their corresponding Fossitt codes.

| Habitat | Habitat Category | Habitat Type |
|---------------------------------------|----------------------------------|-----------------------------------------|
| (F) Freshwater | (FW) Water courses | (FW4) Drainage ditches |
| (G) Grassland | (GA) Improved grassland | (GA1) Improved grassland |
| (W) Woodland | (WS) Scrub/Transitional Woodland | (WS1) Scrub |
| (E) Exposed rock and disturbed ground | (ED) Disturbed ground | (ED3) Recolonising bare ground |
| (B) Cultivated and built land | (BL) Built land | (BL3) Buildings and artificial surfaces |

(FW4) Drainage Ditches

There is a remnant drainage ditch which is stagnant and the adjacent hedgerows have recently been removed at the appropriate time of the year under the permission of the NPWS. The ditch contains relatively sparse macrophyte growth with occasional Watercress (*Rorippa nasturtium-aquaticum*) being the predominant species present.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling (HDD) under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

(GA1) Improved grassland

The majority of the site is comprised of Improved grassland (GA1). However, the grassland has been abandoned and is rank with patches of Blackthorn, Rosebay willow herb, Gorse and Bramble scrub which is comprised of tall grasses, predominantly Cocksfoot (*Dactylis glomerata*) and False oat-grass (*Arrhenatherum elatius*), Great willowherb (*Epilobium hirsutum*) and Thistles (*Cirsium vulgare* and *C. arvense*).

(WS1) Scrub

There are patches of scrub which are comprised of Blackthorn (*Prunus spinosa*), Rosebay willowherb (*Chamerion angustifolium*), Willow (*Salix* spp.), Dogwood (*Cornus sanguinea*) and Bramble (*Rubus fruticosus* agg.).

The surrounding landscaped berms to the western perimeter of the site fall under this category.

The land to the south of the Corduff Substation have been historically disturbed with construction activity for access to the station and the erection of several pylons and poles. The ground is comprised of a mosaic of recolonised ground (ED3) and Scrub.

(BL3) Artificial surfaces

There are tracks surrounding the main grassland field area which fall into this category. Additionally the adjacent BMS site has recently been developed and hard surfaces lain as access to that part of the adjoining site.

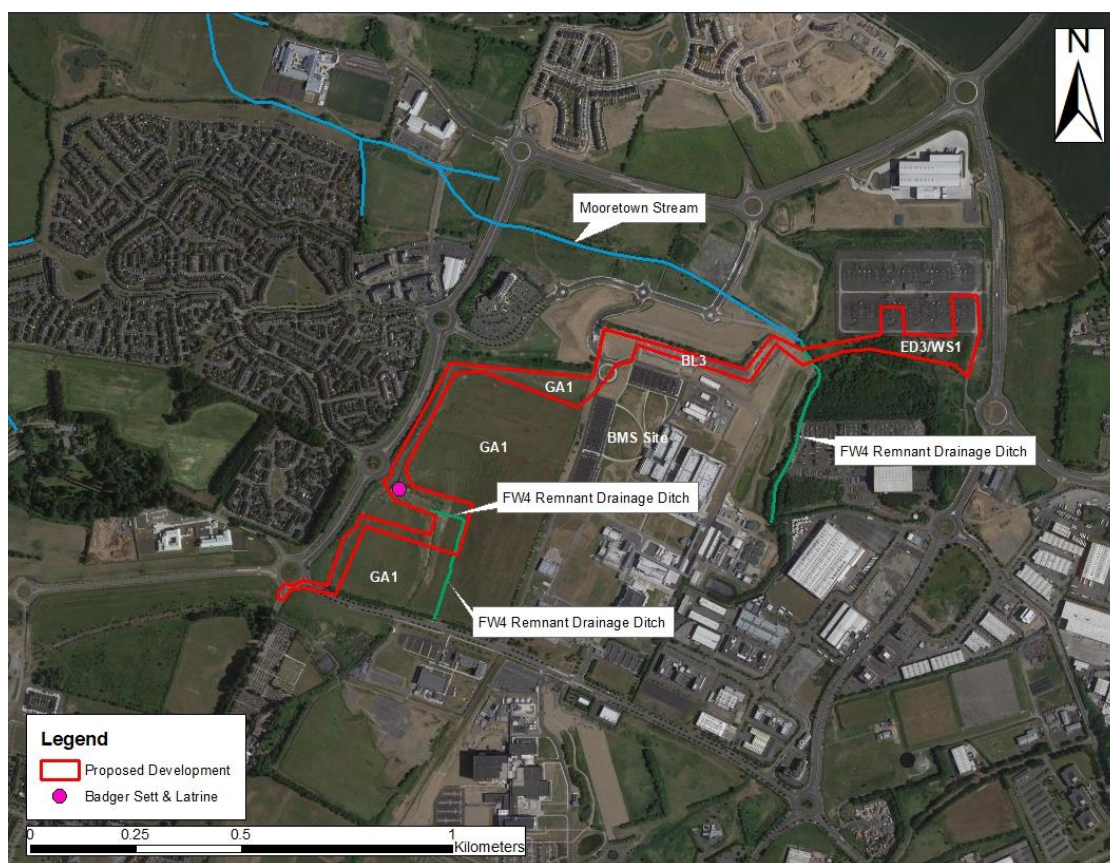


Figure 7.2 Habitats recorded in the Proposed Development area.

7.4.3 Fauna

7.4.3.1 *Badgers*

A single badger sett was recorded under the footprint of the Proposed Development area. It is also located under the footprint of the previously permitted development (Building A) and is being addressed as part of the site preparation works for that development.

An artificial sett was constructed in the northwest corner of the overall landholding, and the existing sett was excavated and the badger excluded under licence from the NPWS. A licence to move/exclude the badger from the existing sett was approved by the Wildlife Licencing Unit on July 31st 2019.

On August 9th 2019, construction of an artificial sett in in the northwest corner of the overall landholding began, and on 3rd of September, excavations on the existing sett began and the badger was excluded (the mammal specialist indicated that there was only the one badger).

The NPWS have specified that monitoring should be ongoing for a year, which will be undertaken by the mammal specialist.

7.4.3.2 *Otters*

There were no signs of otters in the study area.

7.4.3.3 *Bats*

There is limited potential for bats and bat habitats in the footprint of the Proposed Development.

7.4.3.4 Birds

All birds are protected under the Wildlife Acts. Species recorded included regular passerines such as Great Tit (*Parus major*), Chaffinch (*Fringilla coelebs*), Blackbird (*Turdus merula*), Wren (*Troglodytes troglodytes*). A list of breeding bird species recorded during fieldwork in April 2019 is presented in Table 7.3.

Table 7.3 Details of birds encountered during fieldwork in April 2019.

| Birds | Scientific Name | BWI | Habitat Type |
|------------|--------------------------|-------|-------------------------------------------------------------------------------------------------------------------|
| Blackbird | <i>Turdus merula</i> | Green | Dense woodland to open moorland, common in gardens |
| Chaffinch | <i>Fringilla coelebs</i> | Green | Hedgerows, gardens and farmland |
| Great Tit | <i>Parus major</i> | Green | Woods, hedges, gardens |
| Woodpigeon | <i>Columba palumbus</i> | Green | Gardens, woods, hedges |
| Buzzard | <i>Buteo buteo</i> | Green | Nest in trees and sometimes on cliffs, usually with access to open land including farmland, moorland and wetland. |

7.4.3.5 Other mammals

There are numerous burrows throughout the site and signs of fox were recorded along with rabbits.

7.4.4 Habitat Evaluation

The ecological value of the site was assessed following the guidelines set out in the Institute of Ecology and Environmental Management's Guidelines for Ecological Impact Assessment (2016) and according to the Natura Scheme for evaluating ecological sites (after Nairn & Fossitt, 2004). Additionally, the TII Guidelines (formerly NRA) for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009) outlines the methodology for evaluating ecological impacts. Assessments on the evaluation were made using geographic frames of reference, e.g. European, National, Regional or Local.

There are no rare or protected habitats recorded inside the Proposed Development boundary. The development area may be considered of Low Local Ecological Value.

The closest European site, Rye Water Valley/Carton SAC (Site Code 001398), which is located approximately 8.4 km to the west is associated with a different catchment.

There are no watercourses in the vicinity of the proposed Project, based on a review of Ordnance Survey Ireland (OSI) Geographical Information System (GIS) data.

In light of the above, it is evident that there is no connectivity to any European sites.

There will be no likely significant effects on local ecology.

7.5 POTENTIAL IMPACTS OF THE DEVELOPMENT

7.5.1 Impacts on Habitats

There will be a minor loss of scrub and modified grassland habitats. The potential effects on local ecology are **neutral** and **imperceptible** for the construction and operational phases.

There will be no impacts on water courses. The connection to the Corduff substation will be made by crossing from the BMS site to the substation site by using Horizontal

Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

7.5.2 Impacts on Fauna

None of the qualifying habitats or species of the European sites occur under the footprint of the proposed works areas.

The single badger sett recorded within the redline boundary of the permitted development area (Building A) has been addressed and monitoring of the mitigation process is ongoing.

Potential impacts on bats and birds will be avoided by cutting of vegetation outside the bird nesting season March 1st to August 31st.

Buzzards were observed flying over the site and have been recorded by the author in the farmland to the north of the Clayton Hotel. There is no suitable nesting habitat on the site and the loss of foraging habitat is not considered significant in the context of available farm land to the north of the County.

Foxes and rabbits are not legally protected and will move to adjacent suitable habitats.

7.5.3 Do Nothing Scenario

Given the Proposed Development is located in an area of low ecological value, the do nothing scenario would have a neutral impact on biodiversity.

7.6 REMEDIAL AND MITIGATION MEASURES

The single badger sett recorded within the redline boundary of the permitted development area (Building A) has been addressed as part of the site preparation works for that development and monitoring of the mitigation process is ongoing.

Potential impacts on birds will be avoided by cutting of vegetation outside the bird nesting season March 1st to August 31st.

Foxes and rabbits are not legally protected and will move to adjacent suitable habitats.

7.7 PREDICTED IMPACTS OF THE DEVELOPMENT

The Proposed Development will have a neutral imperceptible effect on designated sites within the zone of impact of the development site.

7.8 RESIDUAL IMPACTS

The Proposed Development is located in an area of low ecological value and as such predicted to have a **neutral imperceptible** effect on biodiversity.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report. Interactions are addressed in Chapter 16 of this EIA Report.

7.9 REFERENCES

- CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland. Institute of Ecology and Environmental Management.
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APPENDIX 7.1
APPROPRIATE ASSESSMENT SCREENING
MOORE GROUP – ENVIRONMENTAL SERVICES (2019)

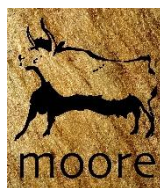
Report for the purposes of Appropriate Assessment Screening

as required under Article 6(3) of the Habitats Directive
(Council Directive 92/43/EEC)

Proposed Substation and Transmission Line, Cruiserath,
Blanchardstown, Dublin 15

Prepared by: Moore Group – Environmental Services

14 November 2019



On behalf of The Client
& An Bord Pleanála

| | |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Proponent | The Client |
| Project | Proposed Substation and Transmission Line at Cruiserath, Blanchardstown, Dublin 15 |
| Title | Report for the purposes of Appropriate Assessment Screening Proposed Substation and Transmission Line at Cruiserath, Blanchardstown, Dublin 15 |




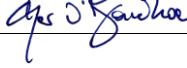
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| Rev0 | Issued for client review | G. O'Donohoe  | 16 th July 2019 |
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| | | | |
| Moore Archaeological and Environmental Services Limited | | | |

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Appendix A – Finding of No Significant Effects Report

Abbreviations

| | |
|------|-------------------------------------|
| AA | Appropriate Assessment |
| EEC | European Economic Community |
| EPA | Environmental Protection Agency |
| EU | European Union |
| GIS | Geographical Information System |
| kV | Kilovolt |
| NHA | Natural Heritage Area |
| NIS | Natura Impact Statement |
| NPWS | National Parks and Wildlife Service |
| OSI | Ordnance Survey Ireland |
| pNHA | proposed Natural Heritage Area |
| SAC | Special Area of Conservation |
| SPA | Special Protection Area |

1. Introduction

1.1. General Introduction

This Appropriate Assessment screening report has been prepared to support an application for planning permission for the proposed Project. This report contains information required for the competent authority to undertake screening for Appropriate Assessment (AA) on the potential for This report presents a screening assessment for a proposed Project consisting of the provision of a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works (hereafter referred to as the proposed Project) to significantly affect European sites.

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (referred to as the Habitats Directive):

- I). whether a plan or project is directly connected to or necessary for the management of the site, and
- II). whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

Also, having regard to the provisions of the Planning and Development Act 2000 (section 177U and 177V). The purpose of a screening exercise under section 177U of the PDA 2000 is to determine whether it is necessary to carry out an “appropriate assessment” of the implications for a European site of the proposed project. The trigger for the requirement for an “appropriate assessment” is that the project, either individually or in combination with other plans or projects, is “likely to have a significant effect” on the European site.

If the effects are deemed to be significant, potentially significant, or uncertain, or the screening process becomes overly complicated, then the process must proceed to Stage 2 (AA). Screening should be undertaken without the inclusion of mitigation. If potential impacts clearly can be avoided through the modification or redesign of the plan or project, then the screening process is repeated on the altered plan or project.

When screening the project, there are two possible outcomes:

- the project poses no risk of a significant effect and as such requires no further assessment; and
- the project has potential to have a significant effect (or this is uncertain) and AA of the project is necessary.

This report has been prepared by Moore Group - Environmental Services for The Client and An Bord Pleanála and assesses the potential for the proposed Project to impact on sites of European-scale ecological importance in accordance with Articles 6(3) and 6(4) of the Habitats Directive. The report was compiled by Ger O'Donohoe (B.Sc. Applied Aquatic Sciences (GMIT, 1993) & M.Sc. Environmental Sciences (TCD, 1999)) who has 25 years' experience in environmental impact assessment and has completed numerous Appropriate Assessment Screening Reports and Natura Impact Statements on terrestrial and aquatic habitats.

1.2. Legislative Background - The Habitats and Birds Directives

It is necessary that the proposed Project has regard to Article 6 of the Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (referred to as the Habitats Directive). This is transposed into Irish Law by the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477) (referred to as the Habitats Regulations).

The Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) is the main legislative instrument for the protection and conservation of biodiversity in the European Union (EU). Under the Directive, Member States are obliged to designate Special Areas of Conservation (SACs) which contain habitats or species considered important for protection and conservation in a EU context.

The Birds Directive (Council Directive 79/409/EEC and Council Directive 2009/147/EC on the Conservation of Wild Birds), is concerned with the long-term protection and management of all wild bird species and their habitats in the EU. Among other things, the Directive requires that Special Protection Areas (SPAs) be established to protect migratory species and species which are rare, vulnerable, in danger of extinction, or otherwise require special attention.

Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas, designated under the Birds Directive, form a pan-European network of protected sites known as Natura 2000. The Habitats Directive sets out a unified system for the protection and management of SACs and SPAs. These sites are also referred to as European sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the requirement for an assessment of proposed plans and projects likely to affect Natura 2000 sites.

Article 6(3) establishes the requirement to screen all plans and projects and to carry out a further assessment if required (Appropriate Assessment (AA)):

Article 6(3): *“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to an appropriate assessment of its implications for the site in view of the site’s conservation objectives. In light of the conclusions of the assessment of the implications for the*

site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.”

Article 6(4): *“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of the Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to the beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”*

2. Methodology

The Commission’s methodological guidance (EC, 2002) promotes a four-stage process to complete the AA and outlines the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

Stages 1 and 2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of Article 6(3) or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Stage 1 Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a Natura 2000 site and considers whether it can be objectively concluded that there are not likely to be significant effects on a Natura 2000 site. Mitigation measures (i.e., measures intended to avoid or reduce the harmful effects of the project on the site concerned) cannot be taken into account at this stage.

Stage 2 Appropriate Assessment: In this stage, there is a consideration of the impact of the project with a view to ascertain whether there will be any adverse effect on the integrity of the Natura 2000 site either alone or in combination with other projects or plans, with respect to the site’s structure and function and its conservation objectives. Additionally, where there are predicted impacts, an assessment of the potential mitigation of those impacts is considered.

Stage 3 Assessment of Alternative Solutions: This stage examines alternative ways of implementing the project that, where possible, avoid any adverse impacts on the integrity of the Natura 2000 site.

Stage 4 Assessment where no alternative solutions exist and where adverse impacts remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the sites will be necessary.

To ensure that the proposed Project complies fully with the requirements of Article 6 of the Habitats Directive and all relevant Irish transposing legislation, Moore Group compiled this report to inform the screening for AA of the proposed Project to be undertaken by the competent authority to determine if the next stage (Stage 2) of the AA process is required.

2.1. Guidance

This report has been compiled in accordance with guidance contained in the following documents:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010 rev.).
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General, 2001); hereafter referred to as the EC Article Guidance Document.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC Environment Directorate-General, 2000); hereafter referred to as MN2000.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC, 2018).

2.2. Data Sources

Sources of information that were used to collect data on the Natura 2000 network of sites, and the environment within which they are located, are listed below:

- The following mapping and Geographical Information Systems (GIS) data sources, as required:
 - National Parks & Wildlife (NPWS) protected site boundary data;
 - Ordnance Survey of Ireland (OSI) mapping and aerial photography;
 - OSI/Environmental Protection Agency (EPA) rivers and streams, and catchments;
 - Open Street Maps;
 - Digital Elevation Model over Europe (EU-DEM);
 - Google Earth and Bing aerial photography 1995-2019;
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie including:
 - Natura 2000 - Standard Data Form;
 - Conservation Objectives;
 - Site Synopses;
- National Biodiversity Data Centre records;
 - Online database of rare, threatened and protected species;

- Publicly accessible biodiversity datasets.
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2013); and
- Relevant Development Plans and Local Area Plans in neighbouring areas;
 - Fingal County Development Plan 2017 - 2023

3. Description of the proposed Project

This report presents a screening assessment for a proposed Project consisting of the provision of a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation along with associated and ancillary works.

The development will consist of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m), and a stand-alone generator building (with a gross floor area of 15 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff substation), changes to landscaping and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works.

The proposed route of the 220kV transmission line will run from the proposed 220kV GIS substation westward to reach the wayleave adjacent to the R121 road, will follow the wayleave along the R121 road northward, turning east to follow the existing wayleave, before traversing lands in the third party ownership and entering the existing Corduff 220kV substation. The estimated length of this route is 1.32km.

The route of the proposed 49kVA cable installation travels away from the existing Tyrrelstown Cross substation the underground cable crosses the Church Road, before travelling east along the R121 for c. 0.1km. From here it enters the site on the Eastern side of the R121 roundabout adjacent to the Powerstown National School, turning north before entering the site from the south where it continues within the curtilage of the development to the proposed GIS substation compound.

Figure 1 shows the proposed Project location and Figure 2 shows a detailed view of the proposed Project route on recent aerial photography. Figure 3 is a plan of the proposed route of the 220kV transmission line and of the proposed 220kV GIS substation, as well as the permitted development. Figure 4 is a plan of the proposed route of the 49kVA grid transmission line.

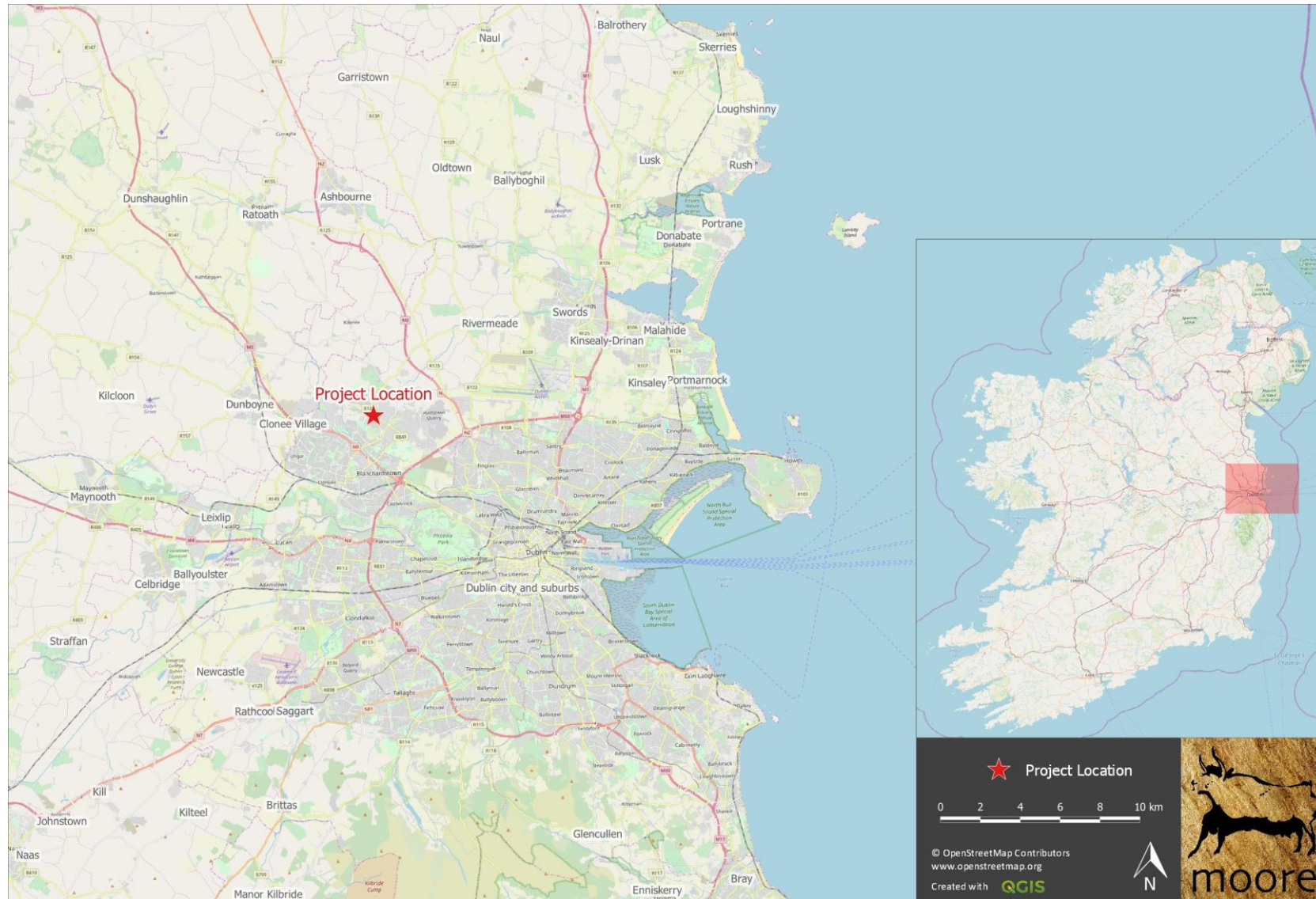


Figure 1. Showing the proposed Project location in northwest Dublin.



Figure 2. Showing the proposed Project route on recent aerial photography.

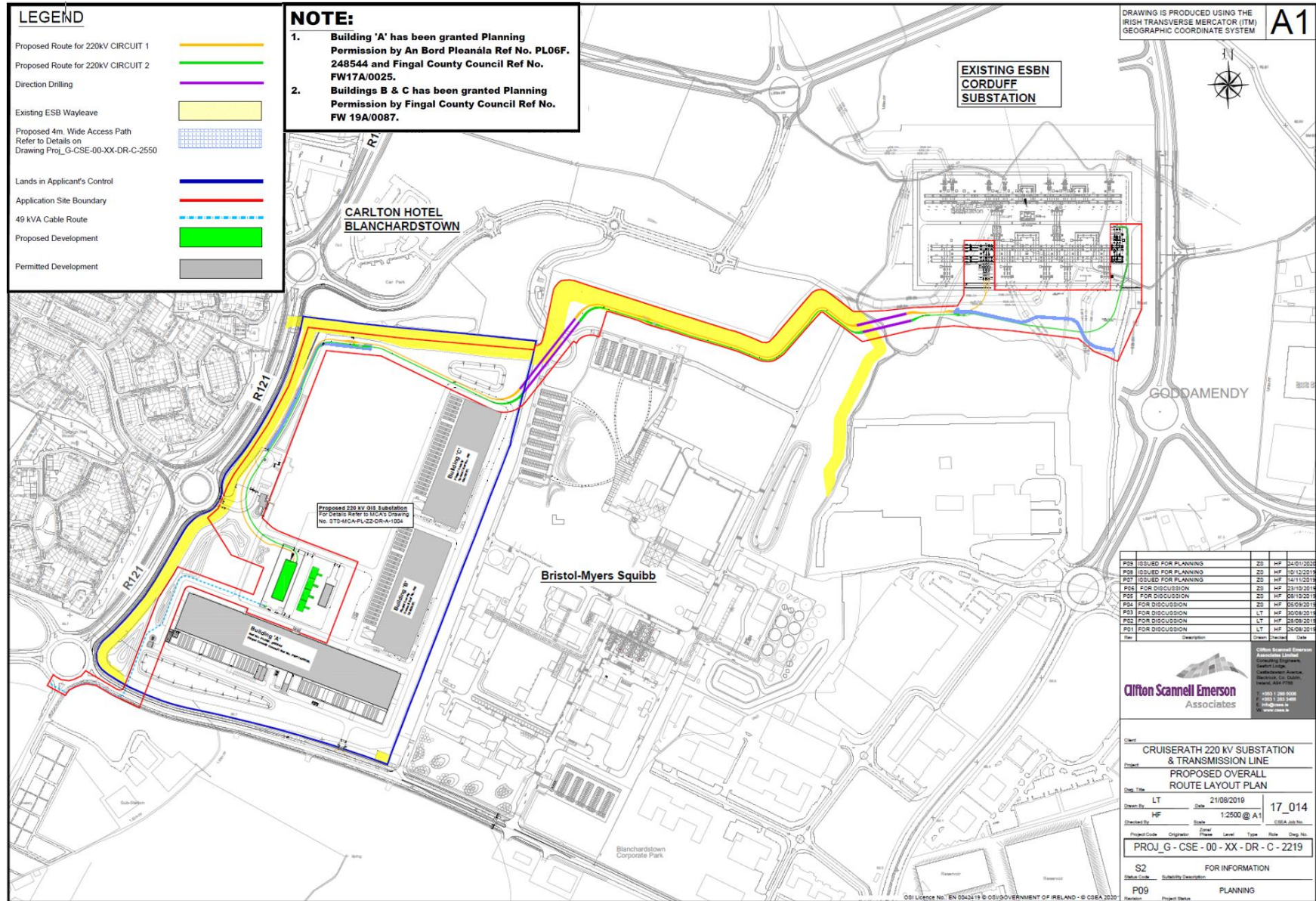


Figure 3. Proposed route of the 220kV transmission line and of the proposed 220kV GIS Substation, as well as the permitted development.

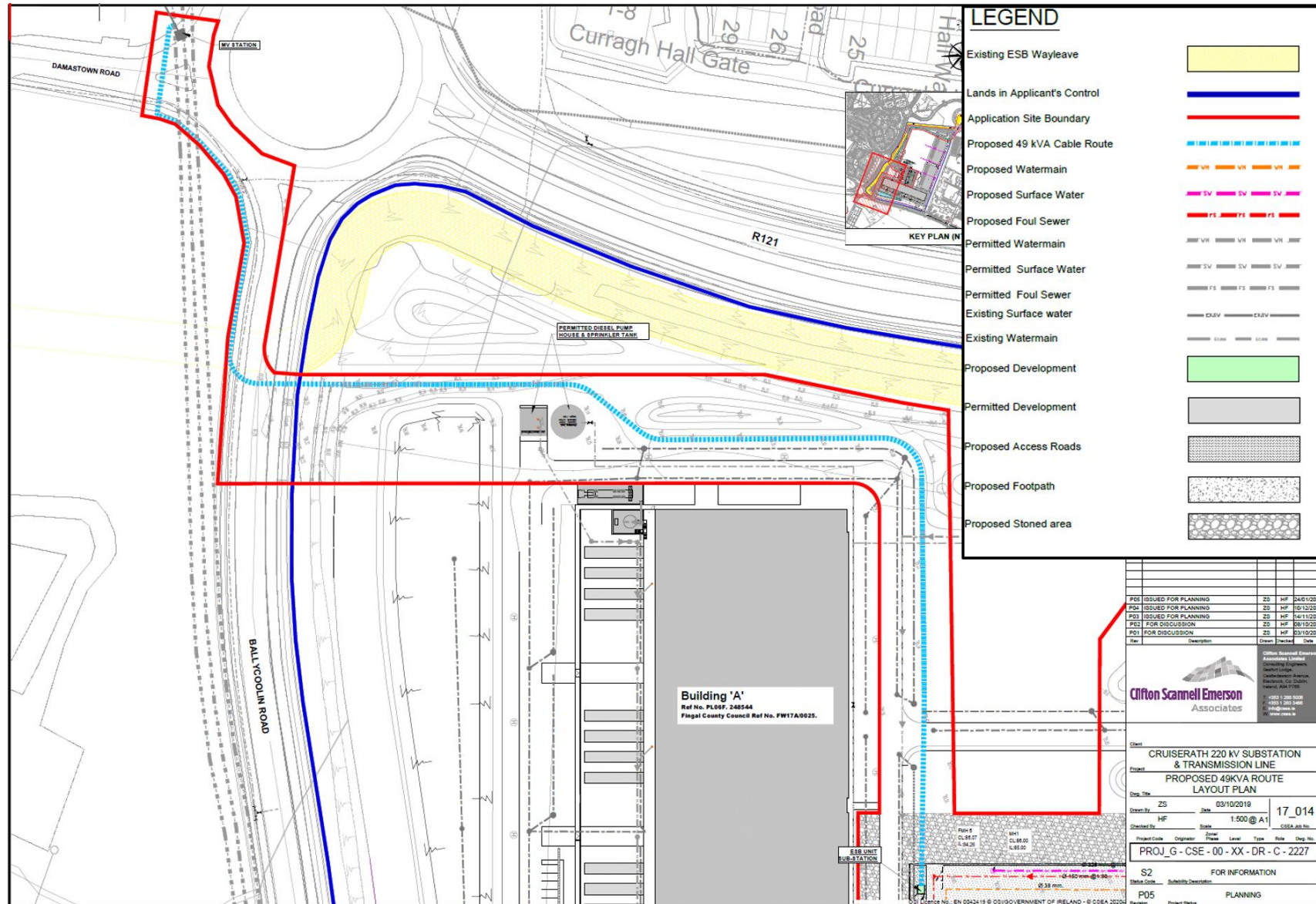


Figure 4. Proposed route of the 49kVA grid transmission line.

4. Identification of Natura 2000 Sites

4.1. Description of Natura Sites Potentially Affected

Department of Environment, Heritage and Local Government (2009) Guidance on Appropriate Assessment recommends an assessment of European sites within a zone of impact of 15 km. This distance is a guidance only and the zone of impact has been identified taking consideration of the nature and location of the proposed Project to ensure all European sites with connectivity to it are considered in terms of a catchment-based assessment.

The zone of impact may be determined by connectivity to the proposed Project in terms of:

- Nature, scale, timing and duration of works and possible impacts, nature and size of excavations, storage of materials, flat/sloping sites;
- Distance and nature of pathways (dilution and dispersion; intervening 'buffer' lands, roads etc.); and
- Sensitivity and location of ecological features.

The guidance provides that, at the screening stage, it is necessary to identify the sites and compile information on their qualifying interests and conservation objectives. In preparation for this, the potential for source pathway receptor connectivity is firstly identified and detailed information is then provided on sites with connectivity. European sites that are located within 15 km of the proposed Project are listed in Table 1 and presented in Figure 5, below. Spatial boundary data on the Natura 2000 network was extracted from the NPWS website (www.npws.ie) on the 12th July 2019.

Table 1 European Sites located within 15km or the potential zone of impact¹ of the Project.

| Site Code | Site name | Distance (km) ² |
|-----------|----------------------------------------------|----------------------------|
| 000205 | Malahide Estuary SAC | 12.86 |
| 000206 | North Dublin Bay SAC | 14.37 |
| 000210 | South Dublin Bay SAC | 14.04 |
| 001398 | Rye Water Valley/Carton SAC | 8.44 |
| 004006 | North Bull Island SPA | 14.37 |
| 004024 | South Dublin Bay and River Tolka Estuary SPA | 11.66 |
| 004025 | Malahide Estuary SPA | 12.97 |

The proposed Project includes the installation of ducted underground electricity transmission cables, predominantly in existing roads and verges. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment

¹ All European sites potentially connected irrespective of the nature or scale of the proposed Project.

² Distances indicated are the closest geographical distance between the proposed Project and the European site boundary, as made available by the NPWS. Connectivity along hydrological pathways may be significantly greater.

to that of the proposed Project. A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

There are no predicted effects on any European sites given:

- The nature and scale of the proposed Project, which consists of the installation of underground electricity cables, predominantly in existing roads and verges;
- The distance between the proposed Project and any downstream European Sites, over 11.5 kilometres; and
- The lack of hydrological pathways connecting the proposed Project to any European sites.

Having considered the above, significant effects on any European sites as a result of the proposed Project can be ruled out and potential significant effects on European sites can be excluded at a preliminary screening stage.

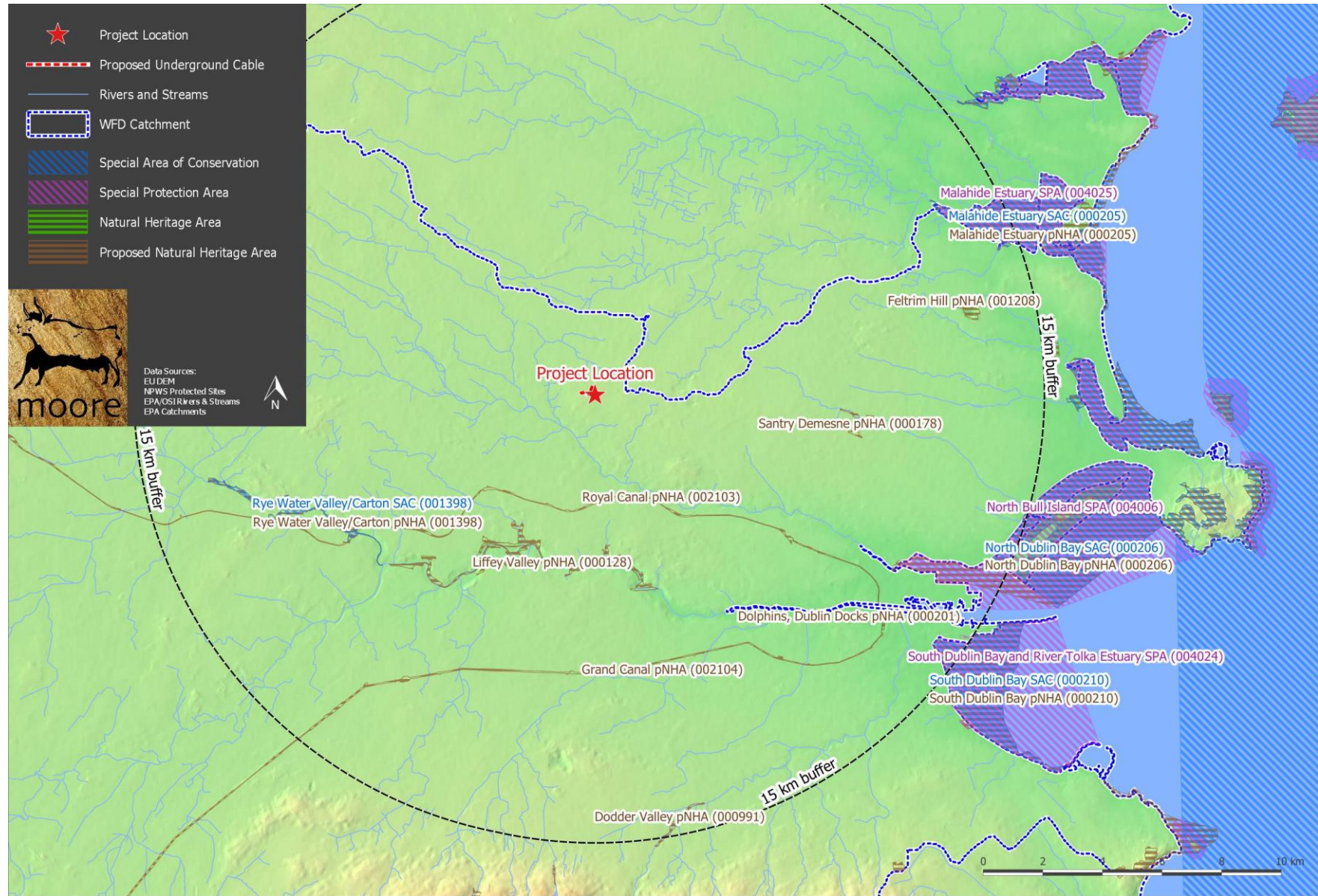


Figure 5. Showing European sites and NHAs/pNHAs within 15 km of the proposed Project.

4.2. Ecological Network Supporting Natura 2000 Sites

An analysis of the proposed Natural Heritage Areas (pNHA) and designated Natural Heritage Areas (NHA) in terms of their role in supporting the species using Natura 2000 sites was undertaken. It was assumed that these supporting roles mainly related to mobile fauna such as mammals and birds which may use pNHAs and NHAs as “stepping stones” between Natura 2000 sites.

Article 10 of the Habitats Directive and the Habitats Regulations 2011 place a high degree of importance on such non-Natura 2000 areas as features that connect the Natura 2000 network. Features such as ponds, woodlands and important hedgerows were taken into account during the rest of the AA process.

There are proposed Natural Heritage Areas associated with Dublin Bay, however, for the purposes of this AA screening report these areas are dealt with under their higher conservation status designations as European Sites.

5. Identification of Potential Impacts & Assessment of Significance

The proposed Project is not directly connected with or necessary to the management of the sites considered in the assessment and therefore potential impacts must be identified and considered.

5.1. Potential Impacts

The proposed Project includes the installation of ducted underground electricity transmission cables, predominantly in existing roads and verges. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment to that of the proposed Project. A review of the Environmental Protection Agency’s (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the ‘Liffey and Dublin Bay’ catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling (HDD) under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

There are no predicted effects on any European sites given:

- The nature and scale of the proposed Project, which consists of the installation of underground electricity cables, predominantly in existing roads and verges;
- The distance between the proposed Project and any downstream European Sites, over 11.5 kilometres; and
- The lack of hydrological pathways connecting the proposed Project to any European sites.

Having considered the above, significant effects on any European sites as a result of the proposed Project have been ruled out and potential significant effects on European sites have been excluded at a preliminary screening stage.

5.2. Assessment of Potential In-Combination Effects

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

As part of the Screening for an Appropriate Assessment, in addition to the proposed Project, other relevant plans and projects in the area must also be considered at this stage. This step aims to identify at this early stage any possible significant in-combination effects of the proposed development with other such plans and projects on European sites.

A review of data made available through the planning section of the Fingal County Council website indicates that, within the last five years, there have been 63 applications for planning granted permission in the vicinity of the proposed Project, details below.

Table 2. Planning applications granted permission in the vicinity of the proposed Project.

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|
| FW19A/0121 Holren Properties Ltd | Reconfiguration of Existing layout and increased floor area of the existing commercial premises by means of demolition, upgrading of existing facilities and new extension with all associated ancillary works and boundary treatments. | Masterlink Logistics Building, Damastown Retail Pk, Mulhuddart, Dublin 15 | 14th January 2020 |
| FW19A/0134 Board of Management, St Lukes National School | Proposed extension of playground area to include revised boundary realignment and new vehicular access. | Hollywood Road, Tyrellstown, Dublin 15 | Decision Pending – Application Lodged 14th January 2020 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;">FW19A/0177</p> <p>ESB Engineering & Major Projects</p> | <p>The Electricity Supply Board (ESB) intends to apply for planning permission for development on a site at this address: (a) Proposed underground cable route originating from the existing Macetown ESB station (on Damastown Avenue in the townland of Macetown Middle) , running in an easterly direction along Damastown Avenue and the R121 (in the townlands of Macetown Middle, Macetown South, Tyrrelstown, Cruiserath and Buzzardstown), to a permitted medium voltage (MV) substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PLO6F.248544 / FCC Reg. Ref.: FW17A/0025) in the townlands of Cruiserath and Tyrrelstown; (b) Proposed underground cable route originating from the existing Corduff ESB station (Corduff Road in the townlands of Goddamendy and Bay), running in a northerly direction along the Corduff Road, then a westerly direction along the N3-M2 Link Road, then running in a southerly and easterly direction along the R121 (in the townlands of Bay, Hollywoodrath, Cruiserath and Tyrrelstown) to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PLO6F.248544 / FCC Reg. Ref.: FW17A/0025) in the townlands of Cruiserath and Tyrrelstown. The development will consist of: A c.1m wide trench of depth c. 1m within a 4m wide corridor, in which underground cable ducts and cables will be installed. The two separate underground cable installations will consist of the following: (a) a c. 3km MV underground cable and all ancillary electrical equipment connecting Macetown ESB station to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PLO6F.248544 / FCC Reg. Ref.: FW17A/0025); (b) a c. 3.4km MV underground cable and all ancillary electrical equipment connecting Corduff ESB station, to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PLO6F.248544 / FCC Reg. Ref.: FW17A/0025).</p> | <p>Townlands of Macetown Middle, Macetown South, Tyrrelstown , Cruiserath, Buzzardstown, Goddamendy Bay</p> | <p style="text-align: center;">17th December 2019</p> |
| <p style="text-align: center;">FW19A/0212</p> <p>Betania Limited</p> | <p>The development consists of modifications to the development permitted under FW16A/0181 for the construction of a Place of Worship. The modifications consist of reconfiguration of the internal layout of the building at ground floor including the lobby area, bathrooms, family rooms and the addition of 3no. new staircores providing access to a new proposed balcony level within the building envelope. The balcony level will accommodate 457 seats along with storage and plant areas. The number of worshippers within the building will increase from c.744 to c.1201. There</p> | <p>Powerstown Road, Tyrrelstown, Dublin15</p> | <p style="text-align: center;">Decision Pending – Application Lodged 11th December 2019</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | are minor modifications to external elevations to incorporate the new proposed balcony at 1st floor level and minor alterations to the internal road layout. The height of the building landscaping/boundary treatment, car parking provision and vehicular access point remain as permitted under FW16A/0181. | | |
| FW19A/0125 Montjeu Ltd | Permission for 2 no. windows located on the north elevation on mezzanine level of the existing Manufacturing Building and Retention of 3m high windsock located on the roof of Existing Administration Building. All on site of 5.03 hectares which forms part of a previously permitted planning Ref: FW16A/0085 and FW16A/0080. This application is in regard to a site subject to an EPA Industrial Emissions License P1060-01 | Mallinckrodt Site, College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th October 2019 |
| FW19A/0064 Guerbet Ireland ULC | Construction of new 3.75 m high stand alone electrical switchroom of 20.25 sq.m. floor area to the rear (North) of the existing administration/manufacturing building and associated works. | Guerbet, Damastown Industrial Estate, Damastown, Dublin D15 YE36 | 4th September 2019 |
| FW19A/0120 Hantise Limited | The Proposed Development consists of the construction of 1 no. warehouse/logistics/light industrial unit (proposed Unit 635), including ancillary office floorspace, over two levels, with a height of c.17.3 m and a total GFA of 9,044 sq.m. The proposal includes two access points (vehicular and service) off the existing road network serving the Business Park. The proposal includes 90 no. car parking spaces and 20 no. cycle parking spaces. The proposal includes 1 no. ESB substation, signage zones, a HGV service yard area, landscaping, boundary treatment, lighting, services including underground foul and storm water drainage network and attenuation areas, and all associated site works. | Northwest Business Park, Ballycoolin, Dublin 15 | 3rd September 2019 |
| FW19A/0087 MIK Developments LLC | <ul style="list-style-type: none"> • Construction of two data storage facilities with a maximum overall height of c. 22 metres; • Each of the two data storage facilities will accommodate data halls, associated electrical and mechanical Plant Rooms, loading bays, maintenance and storage space, office administration areas, screened plant and solar panels at roof level; • Each of the proposed data storage facilities will have a gross floor area over two levels of c. 21,705 sq.m (43,410 sq.m in total); • Emergency generators (24 for each data storage facility), and associated emission stacks are provided in compounds adjacent to each of the two buildings; • The development includes a | Cruiserath Road, Dublin 15, within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the, R121 / Church Road and to the north by undeveloped land | 27th August 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | <p>diesel tank and a filling area to serve the proposed emergency generators; • Construction of internal road network and circulation areas, footpaths, provision of 50 no. car parking spaces for each of the two data storage facilities (100 no. in total), and 25 no. cycle parking spaces for each of the two data storage facilities (50 no. in total); • Connections to vehicular access routes, roads, services and infrastructure permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025; • Hard and soft landscaping and planting, lighting, and all associated works including underground foul and storm water drainage network, attenuation area, and utility cables. The application site is located to the north of the data storage facility permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, and within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. An Environmental Impact Assessment Report (EIAR) will be submitted to the Planning Authority with the planning application and the EIAR will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority.</p> | and Cruiserath Drive | |
| <p>FW19A/0058 Gembira Limited</p> | <p>The Proposed Development relates to the eastern section of the site (Phase 3) and the proposed amendments can be summarised as follows: - Replacement of 36 no. permitted residential units with 43 no. residential units comprising 42 no. 3 bed terrace houses (House Type B8A, B3B, B8B) and 1 no. 3 bed detached house (House Type J2). Relocation of 10 no. House Types H, 1 no. House Type H(i) and provision of 1 no. additional House Type H(i) (4 bed semi-detached). - No change is proposed to 5 no. permitted units within the area of proposed modifications (2 no. House Type A6, 2 no. House Type A7, 1 no. House Type C3). - Provision of a 692 sq.m public open space area. The proposal will result in a proposed increase of the total no. of residential units on the site from 474 to 481, i.e. an increase of 7 no. units (including previous permitted modifications). The proposal also includes alterations to the landscaping and open space area within this part of the site. The proposal includes associated siting, boundary changes, boundary treatment and infrastructural works within the area of the proposed modifications</p> | Hollywoodrath, Hollystown, Dublin 15 | 3rd July 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW19A/0022 McElroy Associates | The provision of a new 14.7m high warehouse extension (proposed floor area of 1961m ²) to the side (East) of the existing warehouse and the provision a new 4.8m high single storey storage room (proposed floor area 203m ²) to the rear (North) of the main production building. This application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control license. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |
| FW19A/0021 McElroy Associates | Provisoin of new single storey 14.7m high extension (area = 174sq/m) to the side (East) of the existing warehouse and the provision of a new single storey (area = 203m ²) at the rear (North) of the main production building. The application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |
| FW18A/0132 Gembira Ltd | Permission for the relocation of approved residential units and the addition of a further 17 residential units | Hollywoodrath, Hollystown, Dublin 15 | 27th February 2019 |
| FW18A/0150 Setanta Vehicle Holdings Limited | Setanta Vehicle Holdings Limited intend to apply for permission for development on lands at Townlands of Goddamendy & Bay, Dublin 15. The development will consist of the construction of a part single / part 3 storey building (5071 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 7 no. truck servicing lanes, connected to a 3 storey central ancillary area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (granted planning application Reg. Ref FW17A/0179) 3) 42 no. staff parking spaces, 124 no. vehicle parking spaces and 10 no. bicycle spaces and 4) all landscape boundary treatment, site boundary enclosures ancillary signage and site development works on a site of c. 2.61 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 17th January 2019 |
| FW17A/0119 (PL06F.301748) O'Toole Transport Ltd | A logistics (warehouse and distribution) complex building comprising a double height area consisting of a cold store, cross dock storage area and ground and first floor ancillary office and staff accommodation area, and single height mechanic workshop; a single storey truck wash; security kiosk; external truck fuelling area with associated pumps and storage tanks; surface car and truck parking area; bicycle parking; signage; provision of new cycle path and footpath to Bay Lane; new vehicular entrance/exit at Bay Lane; 1 no. ESB substation; and | Bay Lane, The Ward, Mulhuddart, Dublin 15 | 10th December 2018 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | all associated landscaping, boundary treatment and ancillary engineering works necessary to facilitate the Proposed Development. | | |
| FW18A/0074 E-TEC Power Management Limited | The development will consist of a two storey building (1340 sqm) with warehouse, demonstration / testing areas and ancillary offices. Vehicular access is from an existing spur road off Ratoath Road. The Proposed Development will include new vehicular gates, HGV hardstanding, parking spaces, a new gated pedestrian entrance, illuminated totem and building mounted signage and all associated site development works. | Ratoath Road, Northwest Business Park, Mitchelstown, Blanchardstown, Dublin 15. | 13th November 2018 |
| FW18A/0121 Bestseller Retail Ireland Ltd | Permission for the construction of a two-storey office building with landscaped roof and central circular planted open courtyard, as well as associated car parking and road infrastructure modifications. | Cruiserath Drive, Townland of Cruiserath, Mulhuddart, Dublin 15 | 13th November 2018 |
| FW18A/0111 Chemsource | A proposed single storey building (93.3 sqm) comprising of 3 no. individual own door storage units, of which the height does not exceed 6.4m, located to the southern boundary. All located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15. Previously approved planning permission reference numbers FW12A/0027. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 22nd October 2018 |
| FW18A/0103 Betania Limited | Permission for the construction of a new single storey ESB Substation and all ancillary site works. | Betania Church, Powerstown Road, Tyrrelstown, Dublin 15 | 16th October 2018 |
| FW18A/0099 Valero Energy (IRELAND) Ltd | 1, Demolition works to the existing service station building (3.0sq.m); 2. Construction of a single storey extension (48 sq.m) to the existing service station retail building to provide an overall building floor area (441 sq.m); 3. Reconfiguration of the internal layout of the building to provide ancillary food offer area (79 sq.m) and seating area(35 sq.m) in conjunction with existing retail and ancillary areas; 4. Ancillary site works to include new disabled car park space and associated drainage works; 5. Retention of extended car parking area and associated drainage. | Texaco Service Station, Site 15C, Blanchardstown Corporate Park, 1 Tyrrelstown Link Road, Blanchardstown, Dublin 15 | 9th October 2018 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | | | |
| FW18A/0054 Channor Limited | Permission for the construction of 2 office buildings with 6 levels of office space with rooftop plant, as well as associated car parking and storage facilities. | Tyrellstown Link Road L3095, Blanchardstown Corporate Park, Dublin 15 | 24th September 2018 |
| FW18A/0095 Fr. Eoin Thynne | For change of use from retail to pastoral centre, including minor internal alterations, minor alterations to the front and rear façade together with new signage all at unit 5 Block A, Tyrellstown District Centre, Mulhuddart, Dublin 15. | Unit 5 Block A, Tyrellstown District Centre, Hollywood Road, Mulhuddart, Dublin 15 | 24th September 2018 |
| FW17A/0210 Setanta Vehicle Holdings Ltd | The development will consist of 1) the construction of a part single / part 3 storey building (3551 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 6 no. truck servicing lanes, connected to a 3 storey central ancillary commercial area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (concurrent planning application Reg. Ref FW17A/0179) 3) 129 no. vehicle parking spaces and 18 no. bicycle spaces), 4) all landscape boundary treatment, ancillary signage and site development works on a site of c. 1.97 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 11th June 2018 |
| FW13A/0074/E1 St Patricks Junior & Senior School BoM | The development will consist of: demolition of existing junior and senior school buildings, reduced site levels, construction of a new two storey school building with 36 classrooms, 2 no. general purpose halls and a senior school breakfast club / parent room and all ancillary facilities (total area 5866 sqm), 72 no. car parking spaces, 150 no. bicycle spaces, new vehicular entrance and 2 no. pedestrian entrances, new boundary treatment, 4 no. ball courts, hard and soft play areas including all associated and ancillary site works. Extinguishment of existing pedestrian right of way, reduction of earth mounding by circa 3.4 m and formation of new pedestrian right of way at new boundary with site of St Patrick's Church. Road marking and landscaping of existing Fingal County Council public car park at north west boundary with school at Blackcourt Road. | St Patrick's Junior & Senior Schools, Blackcourt Road, Corduff, Blanchardstown, Dublin 15 | Grant Extension of Duration 25th May 2018 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW18A/0018 Ladbroke (Irl) Limited | Full planning permission sought for change of use of existing externally accessed single storey mid-terrace vacant Beauty Salon to Licensed Betting Office to include for all associated internal alterations, new shopfront signage to front (northwest) & high level wall mounted satellite dish & air conditioning condenser unit to rear (southeast) elevations together with all associated site development works at Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15. For Ladbroke (IRL) Ltd. | Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15 | 30th April 2018 |
| FW17A/0136 Tech Group Europe | Retention permission for alterations to the site layout approved under Register Reference FW15A/0100 consisting of replacement of 15 no. surface car parking spaces (including 1 no. disabled space) with landscaping and the provision of 20 no. surface car parking spaces along the southern boundary and to the rear existing building; and planning permission for the construction of two storey extension (472 sq.m) to the front of the existing building to accomodation a development centre comprising laboratory and office accomodation and an additional 13 no. surface car parking spaces on the northern elevation of the the existing building . | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 20th March 2018 |
| FW17A/0221 Chemco (Ireland) Ltd | To complete elements of the previously approved 'parent' planning application FW12A/0027 not completed to date. These works include a 634sqm detached two storey office completion of car parking spaces totalling 93 car spaces plus 2 No. disability access car parking spaces (modified layout), a gas pad (the area of which is circa 2,000sqm), associated landscaping and associated ancillary site and civil works, at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15, all located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 6th March 2018 |

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| FW17A/0189 Barclay Chemicals Ltd. | The development will consist of : (i) an extension to the existing car park (including the removal of some soil that has been stockpiled on the site), (ii) the creation of a new external staff seating area at the front of the offices and the installation of a new bicycle shelter. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Barclay Chemicals Ltd., Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 23rd January 2018 |
| FW17A/0025 (PL06F.248544) ADSIL | Permission for construction of a data storage facility building with an overall height of c. 13 metres, containing data halls, associated electrical and AHU Plant Rooms, a loading bay, maintenance and storage space, office administration areas, screened plant and solar panels at roof level, all within a building with a total gross floor area of 20,739 sq.m; | Cruiserath, Dublin 15 | 18th January 2018 |
| FW17A/0161 Astellas Ireland Co. Ltd. | A single storey office space with a total floor area of 335m2. | Damastown Road, Damastown Industrial Park, Mulhuddart, Dublin 15 | 18th December 2017 |
| FW17A/0142 Guerbet Ireland ULC | The retention of (1) an existing 2 storey microlab building of 257.8m2 floor area previously granted permission under Reg Ref F07A/092B for which retention is being sought due to original permission not being completed in its entirety. (2) Single storey training building of 107.8m2 floor area (3) A single storey administration building of 319.1m2 floor area, and associated works. | Guerbet Ireland ULC, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 5th December 2017 |
| FW16A/0191 Kavcre Tyrellstown Limited | Planning Permission for amendments and alterations to the residential development permitted under Register Reference FW15A/0009 on this site on lands at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Rathoath Road and the R121 (Church Road), and the north of the M2/N3 link road. The proposed alterations will consist of a revised development of 185no. 2 storey semi-detached and terrace dwellings (an increase from the permitted 175no. units) to comprise of 36no. 2 bed type E units; 80no. 3 bed Type A units, 25no. 3 bed Type B units, 9 no. 3 bed Type C units 14 no. 3 bed Type D units, 4no. 3 bed Type H Units (132 no. 3 bed units are provided in total); 3no. Type F 4 bed units and 14no. 4 bed Type G units (17no. 4 bed are provided units in total). The Proposed Development will also include for all associated site and infrastructural works including foul and surface | Lands at Hollywoodrath, Hollystown, Dublin 15 located to the north of the M2/N3 link road. | 15th November 2017 |

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| | <p>water drainage, surface car parking (177no. in-curtilage spaces, 8 no. in parking courtyard), 1no. ESB substation, public open space, landscaping, boundary treatment, new internal roads, cycle paths, footpaths and pedestrian and vehicular linkages to the adjoining site (Reg. Ref. FW14A/0108 refers); on a site of c.8.33 hectares. The Proposed Development shall be subject to 2 no. phases in accordance with the Kilmartin LAP (phase 1 will consist of 85 no. dwellings and phase 2 will consist of 100 no. dwellings). Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of c.1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilimartin LAP. An Environmental Impact Statement was submitted with the previous application where it was concluded that no significant long term negative impact would result to the receiving environment.</p> | | |
| <p>FW17A/0146 IDA Ireland</p> | <p>Permission for the construction of c.350 metres of single carriageway park roadway, footpaths, public lighting, landscaping and all associated site works and services</p> | <p>College Business & Technology Park, Blanchardstown Road North, Blanchardstown, Dublin 15</p> | <p>7th November 2017</p> |
| <p>FW17A/0097 Jacobs Engineering Ireland Limited</p> | <p>Permission for the extension of the existing permitted car park located to the North West of the BMS site consisting of 99 additional car spaces and an area dedicated to parking for busses</p> | <p>Swords Laboratories t/a Bristol-Myers sq, Cruiserath Road, Mulhuddart, Dublin 15</p> | <p>13th September 2017</p> |
| <p>FW17A/0049 Hantise Ltd</p> | <p>10 year planning permission for development - the application site comprises of c. 5.75 hectares in total and is bound by Kilshane Avenue to the east and north, and Kilshane Park to the south. The Proposed Development consists of the following: • The construction of 6 no. warehouse/logistics/light industrial units (Unit 628, 629, 631, 632, 633 and 634), including ancillary office use, that range in height from c. 12 to 17 metres and have a combined total floor area of 20,951 sq.m; • Each unit is proposed to have associated office administration/reception areas, car parking to the front, and service yards, including loading bays and bin storage areas, to the rear of each unit; • The construction of 3 no. ESB substation buildings; • The units will be accessed off the existing road network. The development provides for vehicular and service</p> | <p>Northwest Business Park, Ballycoolin, Dublin 15</p> | <p>28th August 2017</p> |

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| | <p>access points, associated internal access roads and circulation areas, footpaths, and a total of 245 no. car parking spaces and 126 no. cycle parking spaces;</p> <ul style="list-style-type: none"> The proposal includes landscaping and planting, boundary treatment, lighting, security fencing and all associated site works including underground foul and storm water drainage network and attenuation areas. | | |
| <p>FW17A/0043</p> <p>Minister for Education & Skills</p> | <p>The erection of non-illuminated signage to front (north) elevations (Reg. Ref. FW15A/0074).</p> | <p>Gaelscoil Chuillinn & Powerstown ETNS, located south of Powerstown Road, Tyrellstown, Co. Dublin</p> | <p>19th June 2017</p> |
| <p>FW17A/0042</p> <p>Barclay Chemicals Ltd.</p> | <p>The construction of a mezzanine storage area at second floor level and the conversion of the existing label room at first floor level to use as offices, including the insertion of five new windows on the south elevation. An IPC (Integrated pollution prevention and control) licence is in place by the EPA.</p> | <p>Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15</p> | <p>19th June 2017</p> |
| <p>FW17A/0016</p> <p>Gembira Ltd</p> | <p>Permission for alterations to residential scheme including the changing of house types</p> | <p>Hollywoodrath, Hollystown, Dublin 15</p> | <p>8th May 2017</p> |
| <p>FW16A/0181</p> <p>Betania Limited</p> | <p>Permission for the construction of a Place of Worship (overall GFA c. 2,784 sq m), as well as associated car parking facilities</p> | <p>site bounded by Powerstown Educate Together NS to east, greenfield lands to south & west, Powerstown Rd to north, Powerstown Road, Tyrellstown, Dublin 15</p> | <p>21st March 2017</p> |
| <p>FS5W/05/17</p> <p>Eirgrid PLC</p> | <p>New 110KV Cable Bay</p> | <p>Corduff 110kV Substation, Blanchardstown, Dublin 15</p> | <p>Confirmed exempted development under Section 5 of the Planning and Development</p> |

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| | | | t Act, 2000 on 16th March 2017 |
| F55W/01/17 Eirgrid PLC | New 110 kV cable bay in existing Substation | Corduff 110kV Substation, Blanchardstown, Dublin 15 | Confirmed exempted development under Section 5 of the Planning and Development Act, 2000 on 10th February 2017 |
| FW16A/0167 McArdle Skeath | Permission for the revision of the layout of the office building including extending the ground floor by 51 sqm, the first floor by 58 sqm and for elevational alterations, for the relocation of the ESB substation, all as permitted in Planning Permission references FW15A/0129 and FW16A/0044 and construction of new switch room and store. | Townlands of Bay/Hollywoodrath/Goddamendy, Dublin 15 | 27th February 2017 |
| FW16A/0149 Chemco (Ireland) Limited | Amendments to Planning Permission no. FW15A/0075. The amendments will comprise of modifications to the planning approved layout and associated elevational changes including relocated dock levellers, additional doors and access point and a reduced building size from 3,780 sqm to 3,625 sqm, all to the warehouse building located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 18th January 2017 |
| FW16A/0148 Gembira Ltd | Permission for alterations to the residential scheme permitted under Register Reference FW14A/0108 and Register Reference FW16A/0099. On a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The proposed alterations will consist of (i) a phased construction of the permitted crèche over two phases (ii) a change in house types of 4 no. permitted residential units in the scheme to be provided as follows: Replacement of 3 no. House Type A4 and 1 no. House Type A5 with 4 no. House Type B5 (iii) amendments to Condition 5 (ii) of Register | Hollywoodrath, Hollystown, Dublin 15 | 18th January 2017 |

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| | Reference FW14A/0108 to maintain ESB pylon in current and provide landscaping screening and Art works. And all associated works necessary to facilitate within the 27.27 ha application site. | | |
| FW16A/0027 Gas Networks Ireland | Permission to install an above ground natural gas pressure reduction unit measuring 4.45m | Coolmine Road DRI, Coolmine Road, Dublin 15 | 21st November 2016 |
| FW16A/0103 Wintongrove Ltd. t/a Blanchardstown 4x4 | Permission for the construction of a single storey building to be used as a car sales showroom, accommodating car display area, ancillary offices, staff areas, associated garage and signage. | Site at Damastown Close, Damastown Business Park, Dublin 15 | 10th October 2016 |
| FW16A/0050 Simon Coyle, Receiver, Horrison Develop. | The development will consist of: the construction of 28 no. residential units, arranged in four terraces (comprising 12 No. 2 storey three bedroom houses and 8 No. 3 storey duplex buildings, each comprising a ground floor 2 bedroom unit and a 2 bedroom unit across the upper two storeys, with a rear terrace at first floor) all with photovoltaic panels at roof level. The development will also include 2 no. communal bin store buildings; hard and soft landscaping; ancillary car parking; changes in level; boundary treatments; underground surface water attenuation area; external lighting; piped services and drainage; internal roads; signage and all site excavation and development works above and below ground. The development will also include the diversion of an existing local authority foul sewer within the site. Access to the site will be from Old Corduff Road. The site is bounded by a pedestrian route and an existing residential terrace, to the north; Woodview Cottage, Old Corduff Road to the south; Old Corduff Road, with Lissane House apartments beyond, to the east and Tolka Valley Park to the west. | Site of Nos. 1, 2, 2A, 3 & 4 Corduff Cottages, Old Corduff Road, Blanchardstown, Dublin 15 | 3rd October 2016 |
| FW16A/0117 Mulberryglen Ltd. | Permission for the construction residential development consisting of 47 no. dwellings comprised of 4 no. 2 storey 3 bed semi-detached houses, 11 no. 2 storey 3 bed terraced houses in 3 no. blocks & 32 no. 2 bed apartments in 2 no. 4 storey blocks. | Townlands of Hansfield & Phiblestown, Hansfield, Dublin 15 | 3rd October 2016 |

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| FW16A/0085 Montjeu Ltd | Retention permission for alterations to building currently under construction (39.3m ²) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom previously granted planning permission Reg Ref FW15A/0143. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 29th August 2016 |
| FW16A/0080 Montjeu Ltd | Permission for the construction of a 3 - storey extension with roof top plant-room to a 3 - storey administration building currently under construction (refer planning reg. ref FW15A/0038) and associated site works | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th August 2016 |
| FW16A/0077 Tech Group Europe Ltd. | Permission for the [1] relocation and revision of previously approved ESB sub-station and Switch Room , Planning Reference FW15A/0100, from Utility Yard , to the south east corner of site, with proposed access from Damastown Close. [2] Construction of an additional switch room in the Utility Yard with changes to the previously approved Silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 15th August 2016 |
| FW16A/0066 Electricity Supply Board | Permission for a new single storey prefabricated building and 2.6 metre high palisade compound fence and gates enclosing an area of existing paving, and all associated site works. | ESB Networks, Dublin Supply Stores, Ballycoolin, Mulhuddart, Dublin 15 | 3rd August 2016 |
| FW15A/0151 (PL06F.246192) Channon Ltd | Permission for the construction of a four storey office building with rooftop plant and associated car and parking, bin-store and siteworks. | Plaza 211, formerly Site E, Blanchardstown Corporate Park (Phase 2), Blanchardstown Road North, Dublin 15 | 15th July 2016 |
| FW16A/0048 Chemco (Ireland) Ltd | Modifications to a previously approved Planning Application FW15A/0142. The modifications will comprise of the extension to the rear of the previously approved extension of the Annex building between warehouse building C&D by another 12.6m incorporating relocated air dock together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 28th June 2016 |

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| FW16A/0044 Michael McArdle | Permission for the revision of the elevational height of the Dry Goods Warehouse building from 23.5m high as permitted in the parent Planning Permission reference FW15A/0129 reduced to 21.5 m high and for the relocation of the ESB substation. | Townlands of Bay, Hollywoodrath, Goddamendy, Dublin 15 | 28th June 2016 |
| FW16A/0028 Glenbeigh Records Management | Permission for the erection of a single bay, single storey extension to the existing facility, measuring 27.46m wide by 70.72 m deep to provide an additional 1,942m ² of storage space to existing premises. | Damastown Way, Damastown Business Park, Dublin 15 | 7th June 2016 |
| FW16A/0002 Swords Laboratories t/a BMS Cruiserath | Permission for the demolition and removal of a number of buildings/structures, and their associated underground services, in six distinct areas on the existing BMS API Facility in Cruiserath. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th June 2016 |
| FW16A/0032 Tech Group Europe Ltd. | Planning permission for the (1) Relocation and revision of previously approved ESB Sub Station and Switch Room, Planning Reference FW15A/0100, from Utility Yard, to the South East corner of Site, with proposed access from Damastown Close. (2) Construction of an additional Switch Room in the Utility Yard with changes to previously approved silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 30th May 2016 |
| FW16A/0004 Chemco (Ireland) Ltd | Planning Permission for an 16.9m long extension and relocated dock leveller to the front marshalling area of the existing warehouse Building C. The extension will run in line with the existing marshalling area of the CD Annex and will be matched in height, together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North | 4th April 2016 |
| FW15A/0129 McArdle Skeath | Construction of a storage and distribution warehouse complex with a total floor area of 25,914 M2 on a site measuring 7.0396 hectares. The development includes the following: Dry goods Warehouse measuring 22,498 M2 with an overall height of 23.5 M, Central Marshalling area measuring 1830 M2 with a mezzanine floor measuring 698 M2 with an overall height of 13.15 M. Two-storey office block measuring 500 m2, Truck Maintenance workshop and truck washing facility building measuring 388m2 with an overall height of 10.20M, 1 no ESB substation, external truck fuelling area, 1 no free standing floodlit LED sign at the proposed site entrance, 45 no. surface car parking spaces and 20 bicycle spaces, new | Townland of Bay / Hollywoodrath / Goddamendy, Dublin 15 | 15th February 2016 |

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| | vehicular access off the N3-M2 Link Road with boundary treatment and attenuation areas and all other associated site development and landscaping works. | | |
| FW15A/0142 Chemco (Ireland) Ltd | Permission for a 12.6m long extension incorporating relocated air dock to the rear of existing annex between warehouse building C & D together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 26th January 2016 |
| FW15A/0143 Montjeu Ltd | Permission for the construction of a single storey building (39.3 sq.m. max height 4.3m) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom and for local alterations to boundary fence layout previously approved under permitted development granted under Plan Ref. No. FW15A/0038 off Cruiserath Road. | College Business and Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 19th January 2016 |
| FW15A/0009 Kavcre Tyrellstown Ltd | Permission for residential development consisting of: (1) a total of 175 no. two and a half storey dwelling units to consist of 77 no. three-bed units (all terrace units) and 98 no. four- bed units (34 no. end of terrace units, 60 no. semi-detached units and 4 no. detached units); (2) The Proposed Development also includes all associated site and infrastructural works including foul and surface water drainage, surface car parking, public open space, landscaping, boundary treatment, new internal roads, cycle paths and footpaths; all to take place on a site measuring approximately 8.33 hectares. The Proposed Development shall take place over a total of 2 phases in accordance with the Kilmartin LAP (phase 1 will consist of 88 no. dwellings and phase 2 will consist of 87 no. dwellings); Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of approximately 1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority in support of this planning application. | Hollywoodrath, Hollystown, Dublin 15 | 16th November 2015 |

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| FW15A/0100 Tech Group Europe Limited | Permission for a new medical device injection moulding facility of total gross floor area 5,545 sq.m. on lands immediately to the north of its existing facility. The building shall consist an 8.1 m high office block of 1,822 sq.m. over two floors, in front of a 15 m high block containing 2,121 sq.m. of production space and 1,520 sq.m of warehousing and support functions. The development will also have up to 90 parking spaces internal site roads, loading docks, and ancillary outbuildings, silos and equipment. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 13th October 2015 |
| FW14A/0152 Ridgevarn Ltd (in receivership) | Permission for development on 9.45 hectare site consisting of: 1) Construction of 5 no. single storey double height data halls with ancillary 2 storey offices with a gross floor area of 5,306.6 sq m each (total 26,533 sq m) and an overall height of 11.45 m (top of parapet); 2) single storey ESB substation (166.5 sq m gross); 3) single storey security hut (26 sq m gross); 4) Revised vehicular access off the N3-M2 Link Road; 5) 120 no. car parking spaces and 30 no. bicycle spaces; 6) All landscape, boundary treatment and site development works. | Townlands of Goddamendy and Bay, Dublin 15 | 13th October 2015 |
| FW15A/0088 Rottapharm Ltd | Permission for the construction of a single storey 8.8m wide x 12.97m long x3.75m high extension with a floor area of 105m2 to the existing canteen to the South West corner of the existing two storey administration building, the construction of a 52 no. car space car park expansion to the North of the existing car park, and associated works. This application relates to development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Damastown Industrial Estate, Mulhuddart, Dublin 15 | 29th September 2015 |
| FW16A/0099 Gembira Ltd | Alterations to the residential scheme permitted under Register Reference FW14A/0108. The proposed alterations will consist of a change in house types of 48 no. permitted residential units in the scheme to be provided as follows: I. Replacement of 30 no. House Type C1 to 29 no. House Type C3 and 1 no. House Type C4; II. Replacement of 3 no. House Type C2 with 3 no. House Type C4; III. Replacement of 1 no. House Type D2 with 1 no. House Type D3; IV. Replacement of 7 no. House Type E1 with 5 no. House Type E4, 1 no. House Type E3 and 1 no. House Type B2; V. Replacement of 7 no. House Type E2 with 5 no. House Type E3, 1 no. House Type E4 and 1 no. House Type B2. The alterations also include reconfiguration of the plots of units No's 6 to 10, on the north western boundary, and | Hollywoodrath, Hollystown, Dublin 15 | 26th September 2016 |

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| | provision of 1 no. additional House Type C3 in this location, increasing the overall unit number from 455 to 456 no. residential dwellings, revised boundaries treatments, and all associated works necessary to facilitate development within the 27.27 ha application site. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. | | |
| FW15A/0075 Chemco Ireland Limited | Planning permission for: (A) Amendments to Planning Permission No. FW12A/0027 for the construction of a new 3,780 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of 2 no. stores, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5 m all located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. (B) Amendments to Planning Permission No. FW14A/0147 consisting of the retention and completion of alterations to the sites Operations Office and all associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0073 Chemco (Ireland) Ltd | Permission for the construction of a new 5,250 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of storage areas, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5m, all located to the eastern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0081 Chemco (Ireland) Ltd | Permission for a storage yard for truck parking and for the containerised storage and distribution of materials including hazardous and non hazardous chemicals, all located to the north of the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site, complete with all its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0074 Minister of Education and Skills | The Minister of Education and Skill is applying for:- 1) Retention permission for the two existing schools on site on a temporary basis. 2) Permission for the two number 2 storey Primary School Buildings one school comprising of 16 Classrooms, 2 classroom Special Needs Unit, support teaching spaces and ancillary accommodation with a total floor area of C. 3,087m ² , the other school comprising of 16 Classrooms, support teaching spaces and ancillary accommodation with a total floor area of C. 2,680 | West of the Existing Educate Together School, and South of Powerstown Road, Tyrellstown, Co. Dublin | 10th August 2015 |

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| | m ² . The site works to the school grounds will consist of the provision of cycle storage, bin stores, ball-courts, project gardens, landscaping and boundary treatment and all other associated site development works for each school. The works to the remainder of the site consist of the provision of 58 No. car parking spaces and revised drop-off and pick-up facilities. All on a site 3.0 Hectares located to the West of the existing Educate Together School and South of Powerstown Road, Tyrellstown, Co. Dublin. | | |
| FW15A/0067 Alexion Pharma International Trading Ltd. | Phase 2 of biopharmaceutical manufacturing campus. (Phase 1 under Fingal County Council planning register reference FW14A/0020 and FW14A/0138). | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 10th August 2015 |
| FW15A/0050 PlanNet21 Communications Ltd | Permission for a new ESB substation (28.3 m ²), transformer compound with palisade fence (35.4m ²) , alterations to existing building facade to accommodate new plant, new mezzanine floor (188m ²) in existing warehouse installed in two phases, and associated landscaping. | Unit 5A Blanchardstown Corporate Park, Ballycoolin, Dublin 15 | 13th July 2015 |
| FW15A/0043 Swords Laboratories t/a Bristol Myers Squibb (BMS) | Permission for the construction of a new Biopharmaceutical Manufacturing Facility to the north of the existing BMS Pharmaceutical Campus including manufacturing facility. The works include modifications to the existing Waste Water Treatment Facilities, the local demolition of items of plant, equipment and storage facilities. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th July 2015 |
| FW15A/0038 Montjeu Ltd | Permission for the construction of Pharmaceutical Manufacturing building and associated development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th June 2015 |
| FW14A/0108 (PL06F.244736) Gembira Ltd | Full 10 year planning permission for residential development on a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The Proposed Development includes 435 no. dwelling units to be provided as follows: 156 no. units of house types A1 to A8 consisting of 2 storey, 4 bed semi-detached houses ranging in size from c. 143 sq.m to 146 sq.m; 184 no. units of house types B1 to B9 consisting of 2storey, 3 bed semi-detached houses ranging in size | Hollywoodrath, Hollystown, Dublin 15 | 10th June 2014 |

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| | <p>from c. 125 sq.m to 127 sq.m; 31 no. units of house types C1 and C2 consisting of 2 storey, 4 bed detached houses of c.157 sq.m.; 9 no. units of house types D1 and D2 consisting of 3 storey 5 bed detached houses of c. 219 sq.m for type D1 and c. 247 for type D2; 16 no. units of house types E1 and E2 consisting of 3 storey, 4 bed semi-detached houses of c. 226 sq.m for type E1 and c.195 sq.m for type E2; 9 no. units of house type F consisting of 2 storey 5 bed detached houses of c. 206 sq.m; 20 no. units of house types G1 to G3 consisting of 2 storey, 3 bed semi-detached/ terraced houses of c. 128 sq.m each; and 10 no. units of house type H consisting of 2 storey, 4 bed semi-detached houses of c. 143 sq.m each. The Proposed Development also includes a creche facility with a GFA of 709 sq.m; 2 new vehicular entrance to the site , one from the west (R121 Church Road) and one from the east (the Ratoath Road) ; individual house entrances from the R121/Church Road; all associated site and infrastructural works including foul and surface water drainage; surface car parking; public open spaces measuring 5.74 hectares; landscaping, boundary treatment; new internal roads, cycle paths and footpaths; all on a site of approximately 27.3 hectares. In addition the proposed development provides for the reservation of approximately 3 hectares of the total site area for the future provision of a new public secondary school.. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority with the planning application.</p> | | |
| <p>FW14A/0147 Chemco (Ireland) Ltd</p> | <p>Permission for amendments to Planning Permission no. FW12A/0027. The amendments will consist of: A) The Retention of i) alterations to building B, ii) relocation of the fire fighting sprinkler tank 11m in diameter and 10m high, iii) a plant room fire fighting sprinkler system, iv) Plant rooms for mechanical and electrical services. B) The Retention and Completion of: i) Building A, ii) Buildings C.D. and E, iii) security and site co-ordination office, iv) car parking and access management arrangements.</p> | <p>Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15</p> | <p>13th April 2015</p> |
| <p>FW14A/0138 Alexion Pharma International Trading Ltd.</p> | <p>Amendments to previous development granted under FW14A-0020- Phase 1 of biopharmaceutical manufacturing campus and associated development.</p> | <p>College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15</p> | <p>28th January 2015</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW14A/0127 Masterlink Logistics Ltd | Permission to extend the existing premises by way of constructing a new canopy over 4 no. loading bays to the front facade of the building. | Formerly Target Express Building, Damastown Retail Park, Mulhuddart, Dublin 15 | 14th January 2015 |
| FW14A/0106 Chemco (Ireland) Ltd | Permission that will consist of of a single building (213 sqm) comprising of 40 no. individual own door storage units, located on the southern boundary of the site, complete with its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th November 2014 |
| FW13A/0088 (PL06F.243395) Twinlite Services Ltd | Permission for the construction of 177 No. dwellings (13 No. with domestic garages) together with a new link road to the east of Tyrrelstown Educate Together School, to connect with Tyrrelstown Town Centre, and all associated and ancillary site works. | Church Road, Kilmartin, Tyrrelstown, Townlands of Hollystown, And Hollywoodrath, Dublin 15 | 20th October 2014 |
| FW14A/0026 Barclay Chemicals Ltd. | Retention permission for existing R + D buiding, permission for the demolition of existing dispatch building , extension to existing warehouse, construction of two new bund areas, new internal access road, new site entrance with weighbridge, extension to existing car park, relocation of existing compressed air house, and mounding of excavated material on site. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 2nd September 2014 |
| FW14A/0020 Alexion Pharma International Trading Ltd | Construction of a 5 storey office building and roof top plant room, QC laboratories, packaging / warehouse, utility building and spine corridor on a 16.8 hectare site. New entrance and ancillary development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 6th May 2014 |
| FW14A/0012 Chemco (Ireland) Ltd | Permission for the erection of an ESB Sub-Station, adjoining switch room and generator room with associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 29th April 2014 |

Given that it is predicted that the proposed development will have no impact on any European site, in-combination impacts can be ruled out.

The Fingal County Development Plan in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of impact of the Project site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any, in-combination impacts with Plans or Projects for the development area and surrounding townlands in which the development site is located, would be avoided.

Any new applications for the Project area will be initially assessed on a case by case basis by Fingal County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

6. Conclusion

The proposed Project includes the installation of ducted underground electricity transmission cables, predominantly in existing roads and verges. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment to that of the proposed Project. A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

There are no predicted effects on any European sites given:

- The nature and scale of the proposed Project, which consists of the installation of underground electricity cables, predominantly in existing roads and verges;
- The distance between the proposed Project and any downstream European Sites, over 11.5 kilometres; and
- The lack of hydrological pathways connecting the proposed Project to any European sites.

Having considered the above, significant effects on any European sites as a result of the proposed Project have been ruled out and potential significant effects on European sites have been excluded at a preliminary screening stage.

It has been objectively concluded by Moore Group Environmental Services that:

1. The proposed Project is not directly connected with, or necessary to the conservation management of the European sites considered in this assessment.
2. The proposed Project is unlikely to indirectly significantly affect the Qualifying interests or Conservation Objectives of the European sites considered in this assessment.
3. The proposed Project, alone or in combination with other projects, is not likely to have significant effects on the European sites considered in this assessment in view of their conservation objectives.
4. It is possible to conclude that significant effects can be excluded at the screening stage.

It is the view of Moore Group Environmental Services that it is not necessary to undertake any further stage of the Appropriate Assessment process.

A finding of no significant effects report is presented in Appendix A in accordance with the EU Commission's methodological guidance (European Commission, 2002).

7. References

Department of the Environment, Heritage and Local Government (2010) Guidance on Appropriate Assessment of Plans and Projects in Ireland (as amended February 2010).

European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission Environment DG (2002) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission, Brussels.

European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC: Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interests, compensatory measures, overall coherence and opinion of the Commission. European Commission, Brussels.

European Commission (2018) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

NPWS (2013) The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.

NPWS (2019) National Parks and Wildlife Service Metadata available online at <https://www.npws.ie/maps-and-data>

Appendix A

FINDING OF NO SIGNIFICANT EFFECTS REPORT

Finding no significant effects report matrix

Name of project or plan

Proposed SID Development at Cruiserath, Blanchardstown, Dublin 15.

Name and location of the Natura 2000 site(s)

The proposed Project includes a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment to that of the proposed Project. A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

Description of the project or plan

This report presents a screening assessment for a proposed Project consisting of the provision of a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation.

The development will consist of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

The proposed route of the 220kV transmission line will run from the proposed 220kV GIS substation westward to reach the wayleave adjacent to the R121 road, will follow the wayleave along the R121 road northward, turning east to follow the existing wayleave, before traversing lands in the third party ownership and entering the existing Corduff 220kV substation. The estimated length of this route is 1.32km.

The route of the proposed 49kVA cable installation travels away from the existing Tyrrelstown Cross substation the underground cable crosses the Church Road, before travelling east along the R121 for c. 0.1km. From here it enters the site on the Eastern side of the R121 roundabout adjacent to the Powerstown National School, turning north before entering the site from the south where it continues within the curtilage of the development to the proposed GIS substation compound.

Is the project or plan directly connected with or necessary to the management of the site(s)

No

Are there other projects or plans that together with the projects or plan being assessed could affect the site

A review of data made available through the planning section of the Fingal County Council website indicates that, within the last five years, there have been 67 applications for planning granted permission in the vicinity of the proposed Project, details below.

Table showing Planning applications granted permission in the vicinity of the proposed Project.

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW19A/0121 Holren Properties Ltd | Reconfiguration of Existing layout and increased floor area of the existing commercial premises by means of demolition, upgrading of existing facilities and new extension with all associated ancillary works and boundary treatments. | Masterlink Logistics Building, Damastown Retail Pk, Mulhuddart, Dublin 15 | 14th January 2020 |
| FW19A/0134 Board of Management, St Lukes National School | Proposed extension of playground area to include revised boundary realignment and new vehicular access. | Hollywood Road, Tyrrelstown, Dublin 15 | Decision Pending – Application Lodged 14th January 2020 |
| FW19A/0177 ESB Engineering & Major Projects | The Electricity Supply Board (ESB) intends to apply for planning permission for development on a site at this address: (a) Proposed underground cable route originating from the existing Macetown ESB station (on Damastown Avenue in the townland of Macetown Middle), running in an easterly direction along Damastown Avenue and the R121 (in the townlands of Macetown Middle, Macetown South, Tyrrelstown, Cruiserath and Buzzardstown), to a permitted medium voltage (MV) substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025) in the townlands of Cruiserath and Tyrrelstown; (b) Proposed underground cable route originating from the existing Corduff ESB station (Corduff Road in the townlands of Goddamendy and Bay), running in a northerly direction along the Corduff Road, then a westerly direction along the N3-M2 Link Road, then running in a southerly and easterly direction along the R121 (in the townlands of Bay, Hollywoodrath, Cruiserath and Tyrrelstown) to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: | Townlands of Macetown Middle, Macetown South, Tyrrelstown, Cruiserath, Buzzardstown, Goddamendy Bay | 17th December 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| | <p>FW17A/0025) in the townlands of Cruiserath and Tyrrelstown. The development will consist of: A c.1m wide trench of depth c. 1m within a 4m wide corridor, in which underground cable ducts and cables will be installed. The two separate underground cable installations will consist of the following: (a) a c. 3km MV underground cable and all ancillary electrical equipment connecting Macetown ESB station to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025); (b) a c. 3.4km MV underground cable and all ancillary electrical equipment connecting Corduff ESB station, to a permitted MV substation located within a permitted data storage facility (An Bord Pleanála, Reg. Ref.:PL06F.248544 / FCC Reg. Ref.: FW17A/0025).</p> | | |
| <p>FW19A/0212 Betania Limited</p> | <p>The development consists of modifications to the development permitted under FW16A/0181 for the construction of a Place of Worship. The modifications consist of reconfiguration of the internal layout of the building at ground floor including the lobby area, bathrooms, family rooms and the addition of 3no. new staircores providing access to a new proposed balcony level within the building envelope. The balcony level will accommodate 457 seats along with storage and plant areas. The number of worshippers within the building will increase from c.744 to c.1201. There are minor modifications to external elevations to incorporate the new proposed balcony at 1st floor level and minor alterations to the internal road layout. The height of the building landscaping/boundary treatment, car parking provision and vehicular access point remain as permitted under FW16A/0181.</p> | <p>Powerstown Road, Tyrrelstown, Dublin15</p> | <p>Decision Pending – Application Lodged 11th December 2019</p> |
| <p>FW19A/0125 Montjeu Ltd</p> | <p>Permission for 2 no. windows located on the north elevation on mezzanine level of the existing Manufacturing Building and Retention of 3m high windsock located on the roof of Existing Administration Building. All on site of 5.03 hectares which forms part of a previously permitted planning Ref: FW16A/0085 and FW16A/0080. This application is in regard to a site subject to an EPA Industrial Emissions License P1060-01</p> | <p>Mallinckrodt Site, College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15</p> | <p>15th October 2019</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW19A/0064 Guerbet Ireland ULC | Construction of new 3.75 m high stand alone electrical switchroom of 20.25 sq.m. floor area to the rear (North) of the existing administration/manufacturing building and associated works. | Guerbet, Damastown Industrial Estate, Damastown, Dublin D15 YE36 | 4th September 2019 |
| FW19A/0120 Hantise Limited | The Proposed Development consists of the construction of 1 no. warehouse/logistics/light industrial unit (proposed Unit 635), including ancillary office floorspace, over two levels, with a height of c.17.3 m and a total GFA of 9,044 sq.m. The proposal includes two access points (vehicular and service) off the existing road network serving the Business Park. The proposal includes 90 no. car parking spaces and 20 no. cycle parking spaces. The proposal includes 1 no. ESB substation, signage zones, a HGV service yard area, landscaping, boundary treatment, lighting, services including underground foul and storm water drainage network and attenuation areas, and all associated site works. | Northwest Business Park, Ballycoolin, Dublin 15 | 3rd September 2019 |
| FW19A/0087 MIK Developments LLC | <ul style="list-style-type: none"> • Construction of two data storage facilities with a maximum overall height of c. 22 metres; • Each of the two data storage facilities will accommodate data halls, associated electrical and mechanical Plant Rooms, loading bays, maintenance and storage space, office administration areas, screened plant and solar panels at roof level; • Each of the proposed data storage facilities will have a gross floor area over two levels of c. 21,705 sq.m (43,410 sq.m in total); • Emergency generators (24 for each data storage facility), and associated emission stacks are provided in compounds adjacent to each of the two buildings; • The development includes a diesel tank and a filling area to serve the proposed emergency generators; • Construction of internal road network and circulation areas, footpaths, provision of 50 no. car parking spaces for each of the two data storage facilities (100 no. in total), and 25 no. cycle parking spaces for each of the two data storage facilities (50 no. in total); • Connections to vehicular access routes, roads, services and infrastructure permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025; • Hard and soft landscaping and planting, lighting, and all associated works including underground foul and storm water drainage network, attenuation area, and utility cables. The application site is located to the north of the data storage facility permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, and within an overall landholding bound to the south by the R121 | Cruiserath Road, Dublin 15, within an overall landholding bound to the south by the R121 / Cruiserath Road, to the west by the, R121 / Church Road and to the north by undeveloped land and Cruiserath Drive | 27th August 2019 |

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| | / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. An Environmental Impact Assessment Report (EIAR) will be submitted to the Planning Authority with the planning application and the EIAR will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy at the offices of the Planning Authority. | | |
| FW19A/0058 Gembira Limited | The Proposed Development relates to the eastern section of the site (Phase 3) and the proposed amendments can be summarised as follows: - Replacement of 36 no. permitted residential units with 43 no. residential units comprising 42 no. 3 bed terrace houses (House Type B8A, B3B, B8B) and 1 no. 3 bed detached house (House Type J2). Relocation of 10 no. House Types H, 1 no. House Type H(i) and provision of 1 no. additional House Type H(i) (4 bed semi-detached). - No change is proposed to 5 no. permitted units within the area of proposed modifications (2 no. House Type A6, 2 no. House Type A7, 1 no. House Type C3). - Provision of a 692 sq.m public open space area. The proposal will result in a proposed increase of the total no. of residential units on the site from 474 to 481, i.e. an increase of 7 no. units (including previous permitted modifications). The proposal also includes alterations to the landscaping and open space area within this part of the site. The proposal includes associated siting, boundary changes, boundary treatment and infrastructural works within the area of the proposed modifications | Hollywoodrath, Hollystown, Dublin 15 | 3rd July 2019 |
| FW19A/0022 McElroy Associates | The provision of a new 14.7m high warehouse extension (proposed floor area of 1961m ²) to the side (East) of the existing warehouse and the provision a new 4.8m high single storey storage room (proposed floor area 203m ²) to the rear (North) of the main production building. This application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control license. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |
| FW19A/0021 McElroy Associates | Provisoin of new single storey 14.7m high extension (area = 174sq/m) to the side (East) of the existing warehouse and the provision of a new single storey (area = 203m ²) at the rear (North) of the main production building. The application relates to a development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Mylan, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 9th May 2019 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
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| FW18A/0132 Gembira Ltd | Permission for the relocation of approved residential units and the addition of a further 17 residential units | Hollywoodrath, Hollystown, Dublin 15 | 27th February 2019 |
| FW18A/0150 Setanta Vehicle Holdings Limited | Setanta Vehicle Holdings Limited intend to apply for permission for development on lands at Townlands of Goddamendy & Bay, Dublin 15. The development will consist of the construction of a part single / part 3 storey building (5071 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 7 no. truck servicing lanes, connected to a 3 storey central ancillary area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (granted planning application Reg. Ref FW17A/0179) 3) 42 no. staff parking spaces, 124 no. vehicle parking spaces and 10 no. bicycle spaces and 4) all landscape boundary treatment, site boundary enclosures ancillary signage and site development works on a site of c. 2.61 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 17th January 2019 |
| FW17A/0119 (PL06F.301748) O'Toole Transport Ltd | A logistics (warehouse and distribution) complex building comprising a double height area consisting of a cold store, cross dock storage area and ground and first floor ancillary office and staff accommodation area, and single height mechanic workshop; a single storey truck wash; security kiosk; external truck fuelling area with associated pumps and storage tanks; surface car and truck parking area; bicycle parking; signage; provision of new cycle path and footpath to Bay Lane; new vehicular entrance/exit at Bay Lane; 1 no. ESB substation; and all associated landscaping, boundary treatment and ancillary engineering works necessary to facilitate the Proposed Development. | Bay Lane, The Ward, Mulhuddart, Dublin 15 | 10th December 2018 |
| FW18A/0074 E-TEC Power Management Limited | The development will consist of a two storey building (1340 sqm) with warehouse, demonstration / testing areas and ancillary offices. Vehicular access is from an existing spur road off Ratoath Road. The Proposed Development will include new vehicular gates, HGV hardstanding, parking spaces, a new gated pedestrian entrance, illuminated totem and building mounted signage and all associated site development works. | Ratoath Road, Northwest Business Park, Mitchelstown, Blanchardstown, Dublin 15. | 13th November 2018 |

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| FW18A/0121 Bestseller Retail Ireland Ltd | Permission for the construction of a two-storey office building with landscaped roof and central circular planted open courtyard, as well as associated car parking and road infrastructure modifications. | Cruiserath Drive, Townland of Cruiserath, Mulhuddart, Dublin 15 | 13th November 2018 |
| FW18A/0111 Chemsorce | A proposed single storey building (93.3 sqm) comprising of 3 no. individual own door storage units, of which the height does not exceed 6.4m, located to the southern boundary. All located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15. Previously approved planning permission reference numbers FW12A/0027. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 22nd October 2018 |
| FW18A/0103 Betania Limited | Permission for the construction of a new single storey ESB Substation and all ancillary site works. | Betania Church, Powerstown Road, Tyrrelstown, Dublin 15 | 16th October 2018 |
| FW18A/0099 Valero Energy (IRELAND) Ltd | 1, Demolition works to the existing service station building (3.0sq.m); 2. Construction of a single storey extension (48 sq.m) to the existing service station retail building to provide an overall building floor area (441 sq.m); 3. Reconfiguration of the internal layout of the building to provide ancillary food offer area (79 sq.m) and seating area(35 sq.m) in conjunction with existing retail and ancillary areas; 4. Ancillary site works to include new disabled car park space and associated drainage woks; 5. Retention of extended car parking area and associated drainage. | Texaco Service Station, Site 15C, Blanchardstown Corporate Park, 1 Tyrellstown Link Road, Blanchardstown, Dublin 15 | 9th October 2018 |
| FW18A/0054 Channor Limited | Permission for the construction of 2 office buildings with 6 levels of office space with rooftop plant, as well as associated car parking and storage facilities. | Tyrellstown Link Road L3095, Blanchardstown Corporate Park, Dublin 15 | 24th September 2018 |
| FW18A/0095 Fr. Eoin Thynne | For change of use from retail to pastoral centre, including minor internal alterations, minor alterations to the front and rear façade together with new signage all at unit 5 Block A, Tyrrelstown District Centre, Mulhuddart, Dublin 15. | Unit 5 Block A, Tyrrelstown District Centre, Hollywood Road, Mulhuddart, Dublin 15 | 24th September 2018 |

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| FW17A/0210 Setanta Vehicle Holdings Ltd | The development will consist of 1) the construction of a part single / part 3 storey building (3551 sqm GFA) accommodating a C.V.R.T. testing centre comprising of 4 no. testing lanes (LGV/HGV), a Renault truck workshop comprising of 6 no. truck servicing lanes, connected to a 3 storey central ancillary commercial area comprising a Renault truck sales centre, along with offices and a storage area for Renault and Truck and Bus Parts, 2) vehicular access off the N3- M2 link Road (concurrent planning application Reg. Ref FW17A/0179) 3) 129 no. vehicle parking spaces and 18 no. bicycle spaces), 4) all landscape boundary treatment, ancillary signage and site development works on a site of c. 1.97 Ha. | Townlands of Goddamendy & Bay, Dublin 15 | 11th June 2018 |
| FW13A/0074/E1 St Patricks Junior & Senior School BoM | The development will consist of: demolition of existing junior and senior school buildings, reduced site levels, construction of a new two storey school building with 36 classrooms, 2 no. general purpose halls and a senior school breakfast club / parent room and all ancillary facilities (total area 5866 sqm), 72 no. car parking spaces, 150 no. bicycle spaces, new vehicular entrance and 2 no. pedestrian entrances, new boundary treatment, 4 no. ball courts, hard and soft play areas including all associated and ancillary site works. Extinguishment of existing pedestrian right of way, reduction of earth mounding by circa 3.4 m and formation of new pedestrian right of way at new boundary with site of St Patrick's Church. Road marking and landscaping of existing Fingal County Council public car park at north west boundary with school at Blackcourt Road. | St Patrick's Junior & Senior Schools, Blackcourt Road, Corduff, Blanchardstown, Dublin 15 | Grant Extension of Duration 25th May 2018 |
| FW18A/0018 Ladbroke (Irl) Limited | Full planning permission sought for change of use of existing externally accessed single storey mid-terrace vacant Beauty Salon to Licensed Betting Office to include for all associated internal alterations, new shopfront signage to front (northwest) & high level wall mounted satellite dish & air conditioning condenser unit to rear (southeast) elevations together with all associated site development works at Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15. For Ladbroke's (IRL) Ltd. | Unit No. 3, Corduff Shopping Centre, Blackcourt Road, Corduff, Blanchardstown, Dublin 15 | 30th April 2018 |

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| FW17A/0136 Tech Group Europe | Retention permission for alterations to the site layout approved under Register Reference FW15A/0100 consisting of replacement of 15 no. surface car parking spaces (including 1 no. disabled space) with landscaping and the provision of 20 no. surface car parking spaces along the southern boundary and to the rear existing building; and planning permission for the construction of two storey extension (472 sq.m) to the front of the existing building to accomodation a development centre comprising laboratory and office accomodation and an additional 13 no. surface car parking spaces on the northern elevation of the the existing building . | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 20th March 2018 |
| FW17A/0221 Chemco (Ireland) Ltd | To complete elements of the previously approved 'parent' planning application FW12A/0027 not completed to date. These works include a 634sqm detached two storey office completion of car parking spaces totalling 93 car spaces plus 2 No. disability access car parking spaces (modified layout), a gas pad (the area of which is circa 2,000sqm), associated landscaping and associated ancillary site and civil works, at Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15, all located within the boundaries of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 6th March 2018 |
| FW17A/0189 Barclay Chemicals Ltd. | The development will consist of : (i) an extension to the existing car park (including the removal of some soil that has been stockpiled on the site), (ii) the creation of a new external staff seating area at the front of the offices and the installation of a new bicycle shelter. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Barclay Chemicals Ltd., Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 23rd January 2018 |
| FW17A/0025 (PL06F.248544) ADSIL | Permission for construction of a data storage facility building with an overall height of c. 13 metres, containing data halls, associated electrical and AHU Plant Rooms, a loading bay, maintenance and storage space, office administration areas, screened plant and solar panels at roof level, all within a building with a total gross floor area of 20,739 sq.m; | Cruiserath, Dublin 15 | 18th January 2018 |
| FW17A/0161 Astellas Ireland Co. Ltd. | A single storey office space with a total floor area of 335m2. | Damastown Road, Damastown Industrial Park, Mulhuddart, Dublin 15 | 18th December 2017 |

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| FW17A/0142 Guerbet Ireland ULC | The retention of (1) an existing 2 storey microlab building of 257.8m ² floor area previously granted permission under Reg Ref F07A/092B for which retention is being sought due to original permission not being completed in its entirety. (2) Single storey training building of 107.8m ² floor area (3) A single storey administration building of 319.1m ² floor area, and associated works. | Guerbet Ireland ULC, Damastown Industrial Estate, Mulhuddart, Dublin 15 | 5th December 2017 |
| FW16A/0191 Kavcre Tyrellstown Limited | <p>Planning Permission for amendments and alterations to the residential development permitted under Register Reference FW15A/0009 on this site on lands at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Rathoath Road and the R121 (Church Road), and the north of the M2/N3 link road. The proposed alterations will consist of a revised development of 185no. 2 storey semi-detached and terrace dwellings (an increase from the permitted 175no. units) to comprise of 36no. 2 bed type E units; 80no. 3 bed Type A units, 25no. 3 bed Type B units, 9 no. 3 bed Type C units 14 no. 3 bed Type D units, 4no. 3 bed Type H Units (132 no. 3 bed units are provided in total); 3no. Type F 4 bed units and 14no. 4 bed Type G units (17no. 4 bed are provided units in total). The Proposed Development will also include for all associated site and infrastructural works including foul and surface water drainage, surface car parking (177no. in-curtilage spaces, 8 no. in parking courtyard), 1no. ESB substation, public open space, landscaping, boundary treatment, new internal roads, cycle paths, footpaths and pedestrian and vehicular linkages to the adjoining site (Reg. Ref. FW14A/0108 refers); on a site of c.8.33 hectares. The Proposed Development shall be subject to 2 no. phases in accordance with the Kilmartin LAP (phase 1 will consist of 85 no. dwellings and phase 2 will consist of 100 no. dwellings). Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of c.1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP. An Environmental Impact Statement was submitted with the previous application where it was concluded that no significant long term negative impact would result to the receiving environment.</p> | Lands at Hollywoodrath, Hollystown, Dublin 15 located to the north of the M2/N3 link road. | 15th November 2017 |

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| FW17A/0146 IDA Ireland | Permission for the construction of c.350 metres of single carriageway park roadway, footpaths, public lighting, landscaping and all associated site works and services | College Business & Technology Park, Blanchardstown Road North, Blanchardstown, Dublin 15 | 7th November 2017 |
| FW17A/0097 Jacobs Engineering Ireland Limited | Permission for the extension of the existing permitted car park located to the North West of the BMS site consisting of 99 additional car spaces and an area dedicated to parking for busses | Swords Laboratories t/a Bristol-Myers sq, Cruiserath Road, Mulhuddart, Dublin 15 | 13th September 2017 |
| FW17A/0049 Hantise Ltd | 10 year planning permission for development - the application site comprises of c. 5.75 hectares in total and is bound by Kilshane Avenue to the east and north, and Kilshane Park to the south. The Proposed Development consists of the following: <ul style="list-style-type: none"> • The construction of 6 no. warehouse/logistics/light industrial units (Unit 628, 629, 631, 632, 633 and 634), including ancillary office use, that range in height from c. 12 to 17 metres and have a combined total floor area of 20,951 sq.m; • Each unit is proposed to have associated office administration/reception areas, car parking to the front, and service yards, including loading bays and bin storage areas, to the rear of each unit; • The construction of 3 no. ESB substation buildings; • The units will be accessed off the existing road network. The development provides for vehicular and service access points, associated internal access roads and circulation areas, footpaths, and a total of 245 no. car parking spaces and 126 no. cycle parking spaces; • The proposal includes landscaping and planting, boundary treatment, lighting, security fencing and all associated site works including underground foul and storm water drainage network and attenuation areas. | Northwest Business Park, Ballycoolin, Dublin 15 | 28th August 2017 |
| FW17A/0043 Minister for Education & Skills | The erection of non-illuminated signage to front (north) elevations (Reg. Ref. FW15A/0074). | Gaelscoil Chuillinn & Powerstown ETNS, located south of Powerstown Road, Tyrellstown, Co. Dublin | 19th June 2017 |

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| FW17A/0042 Barclay Chemicals Ltd. | The construction of a mezzanine storage area at second floor level and the conversion of the existing label room at first floor level to use as offices, including the insertion of five new windows on the south elevation. An IPC (Integrated pollution prevention and control) licence is in place by the EPA. | Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 19th June 2017 |
| FW17A/0016 Gembira Ltd | Permission for alterations to residential scheme including the changing of house types | Hollywoodrath, Hollystown, Dublin 15 | 8th May 2017 |
| FW16A/0181 Betania Limited | Permission for the construction of a Place of Worship (overall GFA c. 2,784 sq m), as well as associated car parking facilities | site bounded by Powerstown Educate Together NS to east, greenfield lands to south & west, Powerstown Rd to north, Powerstown Road, Tyrellstown, Dublin 15 | 21st March 2017 |
| FS5W/05/17 Eirgrid PLC | New 110KV Cable Bay | Corduff 110kV Substation, Blanchardstown, Dublin 15 | Confirmed exempted development under Section 5 of the Planning and Development Act, 2000 on 16th March 2017 |
| FS5W/01/17 Eirgrid PLC | New 110 kV cable bay in existing Substation | Corduff 110kV Substation, Blanchardstown, Dublin 15 | Confirmed exempted development under Section 5 of the Planning and Development Act, 2000 on 10th February 2017 |

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| FW16A/0167 McArdle Skeath | Permission for the revision of the layout of the office building including extending the ground floor by 51 sqm, the first floor by 58 sqm and for elevational alterations, for the relocation of the ESB substation, all as permitted in Planning Permission references FW15A/0129 and FW16A/0044 and construction of new switch room and store. | Townlands of Bay/Hollywoodrath/Goddamendy, Dublin 15 | 27th February 2017 |
| FW16A/0149 Chemco (Ireland) Limited | Amendments to Planning Permission no. FW15A/0075. The amendments will comprise of modifications to the planning approved layout and associated elevational changes including relocated dock levellers, additional doors and access point and a reduced building size from 3,780 sqm to 3,625 sqm, all to the warehouse building located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 18th January 2017 |
| FW16A/0148 Gembira Ltd | Permission for alterations to the residential scheme permitted under Register Reference FW14A/0108 and Register Reference FW16A/0099. On a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The proposed alterations will consist of (i) a phased construction of the permitted crèche over two phases (ii) a change in house types of 4 no. permitted residential units in the scheme to be provided as follows: Replacement of 3 no. House Type A4 and 1 no. House Type A5 with 4 no. House Type B5 (iii) amendments to Condition 5 (ii) of Register Reference FW14A/0108 to maintain ESB pylon in current and provide landscaping screening and Art works. And all associated works necessary to facilitate within the 27.27 ha application site. | Hollywoodrath, Hollystown, Dublin 15 | 18th January 2017 |
| FW16A/0027 Gas Networks Ireland | Permission to install an above ground natural gas pressure reduction unit measuring 4.45m | Coolmine Road DRI, Coolmine Road, Dublin 15 | 21st November 2016 |

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| FW16A/0103 Wintongrove Ltd. t/a Blanchardstown 4x4 | Permission for the construction of a single storey building to be used as a car sales showroom, accommodating car display area, ancillary offices, staff areas, associated garage and signage. | Site at Damastown Close, Damastown Business Park, Dublin 15 | 10th October 2016 |
| FW16A/0050 Simon Coyle, Receiver, Horrison Develop. | The development will consist of: the construction of 28 no. residential units, arranged in four terraces (comprising 12 No. 2 storey three bedroom houses and 8 No. 3 storey duplex buildings, each comprising a ground floor 2 bedroom unit and a 2 bedroom unit across the upper two storeys, with a rear terrace at first floor) all with photovoltaic panels at roof level. The development will also include 2 no. communal bin store buildings; hard and soft landscaping; ancillary car parking; changes in level; boundary treatments; underground surface water attenuation area; external lighting; piped services and drainage; internal roads; signage and all site excavation and development works above and below ground. The development will also include the diversion of an existing local authority foul sewer within the site. Access to the site will be from Old Corduff Road. The site is bounded by a pedestrian route and an existing residential terrace, to the north; Woodview Cottage, Old Corduff Road to the south; Old Corduff Road, with Lissane House apartments beyond, to the east and Tolka Valley Park to the west. | Site of Nos. 1, 2, 2A, 3 & 4 Corduff Cottages, Old Corduff Road, Blanchardstown, Dublin 15 | 3rd October 2016 |
| FW16A/0117 Mulberryglen Ltd. | Permission for the construction residential development consisting of 47 no. dwellings comprised of 4 no. 2 storey 3 bed semi-detached houses, 11 no. 2 storey 3 bed terraced houses in 3 no. blocks & 32 no. 2 bed apartments in 2 no. 4 storey blocks. | Townlands of Hansfield & Phibblestown, Hansfield, Dublin 15 | 3rd October 2016 |
| FW16A/0085 Montjeu Ltd | Retention permission for alterations to building currently under construction (39.3m ²) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom previously granted planning permission Reg Ref FW15A/0143. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 29th August 2016 |
| FW16A/0080 Montjeu Ltd | Permission for the construction of a 3 - storey extension with roof top plant-room to a 3 - storey administration building currently under construction (refer planning reg. ref FW15A/0038) and associated site works | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th August 2016 |

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| FW16A/0077 Tech Group Europe Ltd. | Permission for the [1] relocation and revision of previously approved ESB sub-station and Switch Room , Planning Reference FW15A/0100, from Utility Yard , to the south east corner of site, with proposed access from Damastown Close. [2] Construction of an additional switch room in the Utility Yard with changes to the previously approved Silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 15th August 2016 |
| FW16A/0066 Electricity Supply Board | Permission for a new single storey prefabricated building and 2.6 metre high palisade compound fence and gates enclosing an area of existing paving, and all associated site works. | ESB Networks, Dublin Supply Stores, Ballycoolin, Mulhuddart, Dublin 15 | 3rd August 2016 |
| FW15A/0151 (PL06F.246192) Channon Ltd | Permission for the construction of a four storey office building with rooftop plant and associated car and parking, bin-store and siteworks. | Plaza 211, formerly Site E, Blanchardstown Corporate Park (Phase 2), Blanchardstown Road North, Dublin 15 | 15th July 2016 |
| FW16A/0048 Chemco (Ireland) Ltd | Modifications to a previously approved Planning Application FW15A/0142. The modifications will comprise of the extension to the rear of the previously approved extension of the Annex building between warehouse building C&D by another 12.6m incorporating relocated air dock together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 28th June 2016 |
| FW16A/0044 Michael McArdle | Permission for the revision of the elevational height of the Dry Goods Warehouse building from 23.5m high as permitted in the parent Planning Permission reference FW15A/0129 reduced to 21.5 m high and for the relocation of the ESB substation. | Townlands of Bay, Hollywoodrath, Goddamendy, Dublin 15 | 28th June 2016 |
| FW16A/0028 Glenbeigh Records Management | Permission for the erection of a single bay, single storey extension to the existing facility, measuring 27.46m wide by 70.72 m deep to provide an additional 1,942m ² of storage space to existing premises. | Damastown Way, Damastown Business Park, Dublin 15 | 7th June 2016 |

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| FW16A/0002 Swords Laboratories t/a BMS Cruiserath | Permission for the demolition and removal of a number of buildings/structures, and their associated underground services, in six distinct areas on the existing BMS API Facility in Cruiserath. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th June 2016 |
| FW16A/0032 Tech Group Europe Ltd. | Planning permission for the (1) Relocation and revision of previously approved ESB Sub Station and Switch Room, Planning Reference FW15A/0100, from Utility Yard, to the South East corner of Site, with proposed access from Damastown Close. (2) Construction of an additional Switch Room in the Utility Yard with changes to previously approved silos and equipment locations to accommodate same. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 30th May 2016 |
| FW16A/0004 Chemco (Ireland) Ltd | Planning Permission for an 16.9m long extension and relocated dock leveller to the front marshalling area of the existing warehouse Building C. The extension will run in line with the existing marshalling area of the CD Annex and will be matched in height, together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North | 4th April 2016 |
| FW15A/0129 McArdle Skeath | Construction of a storage and distribution warehouse complex with a total floor area of 25,914 M2 on a site measuring 7.0396 hectares. The development includes the following: Dry goods Warehouse measuring 22,498 M2 with an overall height of 23.5 M, Central Marshalling area measuring 1830 M2 with a mezzanine floor measuring 698 M2 with an overall height of 13.15 M. Two-storey office block measuring 500 m2, Truck Maintenance workshop and truck washing facility building measuring 388m2 with an overall height of 10.20M, 1 no ESB substation, external truck fuelling area, 1 no free standing floodlit LED sign at the proposed site entrance, 45 no. surface car parking spaces and 20 bicycle spaces, new vehicular access off the N3-M2 Link Road with boundary treatment and attenuation areas and all other associated site development and landscaping works. | Townland of Bay / Hollywoodrath / Goddamendy, Dublin 15 | 15th February 2016 |
| FW15A/0142 Chemco (Ireland) Ltd | Permission for a 12.6m long extension incorporating relocated air dock to the rear of existing annex between warehouse building C & D together with associated site works to the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 26th January 2016 |

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| FW15A/0143 Montjeu Ltd | Permission for the construction of a single storey building (39.3 sq.m. max height 4.3m) comprising of an ESB sub-station, mv/lv switchroom and remote switchroom and for local alterations to boundary fence layout previously approved under permitted development granted under Plan Ref. No. FW15A/0038 off Cruiserath Road. | College Business and Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 19th January 2016 |
| FW15A/0009 Kavcre Tyrellstown Ltd | Permission for residential development consisting of: (1) a total of 175 no. two and a half storey dwelling units to consist of 77 no. three-bed units (all terrace units) and 98 no. four- bed units (34 no. end of terrace units, 60 no. semi-detached units and 4 no. detached units): (2) The Proposed Development also includes all associated site and infrastructural works including foul and surface water drainage, surface car parking, public open space, landscaping, boundary treatment, new internal roads, cycle paths and footpaths; all to take place on a site measuring approximately 8.33 hectares. The Proposed Development shall take place over a total of 2 phases in accordance with the Kilmartin LAP (phase 1 will consist of 88 no.dwellings and phase 2 will consist of 87 no. dwellings); Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of approximately 1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority in support of this planning application. | Hollywoodrath, Hollystown, Dublin 15 | 16th November 2015 |
| FW15A/0100 Tech Group Europe Limited | Permission for a new medical device injection moulding facility of total gross floor area 5,545 sq.m. on lands immediately to the north of its existing facility. The building shall consist an 8.1 m high office block of 1,822 sq.m. over two floors, in front of a 15 m high block containing 2,121 sq.m. of production space and 1,520 sq.m of warehousing and support functions. The development will also have up to 90 parking spaces internal site roads, loading docks, and ancillary outbuildings, silos and equipment. | Damastown Close, Damastown Industrial Park, Mulhuddart, Dublin 15 | 13th October 2015 |

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| FW14A/0152 Ridgevarn Ltd (in receivership) | Permission for development on 9.45 hectare site consisting of: 1) Construction of 5 no. single storey double height data halls with ancillary 2 storey offices with a gross floor area of 5,306.6 sq m each (total 26,533 sq m) and an overall height of 11.45 m (top of parapet); 2) single storey ESB substation (166.5 sq m gross); 3) single storey security hut (26 sq m gross); 4) Revised vehicular access off the N3-M2 Link Road; 5) 120 no. car parking spaces and 30 no. bicycle spaces; 6) All landscape, boundary treatment and site development works. | Townlands of Goddamendy and Bay, Dublin 15 | 13th October 2015 |
| FW15A/0088 Rottapharm Ltd | Permission for the construction of a single storey 8.8m wide x 12.97m long x 3.75m high extension with a floor area of 105m ² to the existing canteen to the South West corner of the existing two storey administration building, the construction of a 52 no. car space car park expansion to the North of the existing car park, and associated works. This application relates to development on a site which comprises an activity requiring an integrated pollution prevention and control licence. | Damastown Industrial Estate, Mulhuddart, Dublin 15 | 29th September 2015 |
| FW16A/0099 Gembira Ltd | Alterations to the residential scheme permitted under Register Reference FW14A/0108. The proposed alterations will consist of a change in house types of 48 no. permitted residential units in the scheme to be provided as follows: I. Replacement of 30 no. House Type C1 to 29 no. House Type C3 and 1 no. House Type C4; II. Replacement of 3 no. House Type C2 with 3 no. House Type C4; III. Replacement of 1 no. House Type D2 with 1 no. House Type D3; IV. Replacement of 7 no. House Type E1 with 5 no. House Type E4, 1 no. House Type E3 and 1 no. House Type B2; V. Replacement of 7 no. House Type E2 with 5 no. House Type E3, 1 no. House Type E4 and 1 no. House Type B2. The alterations also include reconfiguration of the plots of units No's 6 to 10, on the north western boundary, and provision of 1 no. additional House Type C3 in this location, increasing the overall unit number from 455 to 456 no. residential dwellings, revised boundaries treatments, and all associated works necessary to facilitate development within the 27.27 ha application site. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. | Hollywoodrath, Hollystown, Dublin 15 | 26th September 2016 |

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| FW15A/0075 Chemco Ireland Limited | Planning permission for: (A) Amendments to Planning Permission No. FW12A/0027 for the construction of a new 3,780 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of 2 no. stores, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5 m all located to the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. (B) Amendments to Planning Permission No. FW14A/0147 consisting of the retention and completion of alterations to the sites Operations Office and all associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0073 Chemco (Ireland) Ltd | Permission for the construction of a new 5,250 sqm warehouse building for the storage and distribution of materials including hazardous and non-hazardous chemicals, comprising of storage areas, marshalling area, associated plant units and ancillary works, of which the height does not exceed 13.5m, all located to the eastern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0081 Chemco (Ireland) Ltd | Permission for a storage yard for truck parking and for the containerised storage and distribution of materials including hazardous and non hazardous chemicals, all located to the north of the southern boundary of the secure 14.2 acre Seveso (Major Accidents Directives) site, complete with all its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th August 2015 |
| FW15A/0074 Minister of Education and Skills | The Minister of Education and Skill is applying for:- 1) Retention permission for the two existing schools on site on a temporary basis. 2) Permission for the two number 2 storey Primary School Buildings one school comprising of 16 Classrooms, 2 classroom Special Needs Unit, support teaching spaces and ancillary accommodation with a total floor area of C. 3,087m ² , the other school comprising of 16 Classrooms, support teaching spaces and ancillary accommodation with a total floor area of C. 2,680 m ² . The site works to the school grounds will consist of the provision of cycle storage, bin stores, ball-courts, project gardens, landscaping and boundary treatment and all other associated site development works for each school. The works to the remainder of the site consist of the provision of 58 No. car parking spaces and revised drop-off and pick-up facilities. All on a site 3.0 Hectares located to the West of the existing Educate Together School | West of the Existing Educate Together School, and South of Powerstown Road, Tyrellstown, Co. Dublin | 10th August 2015 |

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| | and South of Powerstown Road, Tyrellstown, Co. Dublin. | | |
| FW15A/0067 Alexion Pharma International Trading Ltd. | Phase 2 of biopharmaceutical manufacturing campus. (Phase 1 under Fingal County Council planning register reference FW14A/0020 and FW14A/0138). | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 10th August 2015 |
| FW15A/0050 PlanNet21 Communications Ltd | Permission for a new ESB substation (28.3 m ²), transformer compound with palisade fence (35.4m ²), alterations to existing building facade to accommodate new plant, new mezzanine floor (188m ²) in existing warehouse installed in two phases, and associated landscaping. | Unit 5A Blanchardstown Corporate Park, Ballycoolin, Dublin 15 | 13th July 2015 |
| FW15A/0043 Swords Laboratories t/a Bristol Myers Squibb (BMS) | Permission for the construction of a new Biopharmaceutical Manufacturing Facility to the north of the existing BMS Pharmaceutical Campus including manufacturing facility. The works include modifications to the existing Waste Water Treatment Facilities, the local demolition of items of plant, equipment and storage facilities. | Cruiserath & Goddamendy Townlands, Cruiserath Road, Mulhuddart, Dublin 15 | 7th July 2015 |
| FW15A/0038 Montjeu Ltd | Permission for the construction of Pharmaceutical Manufacturing building and associated development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 15th June 2015 |
| FW14A/0108 (PL06F.244736) Gembira Ltd | Full 10 year planning permission for residential development on a site at Hollywoodrath, Hollystown, Dublin 15. The site is located on the southern side of the junction of the Ratoath Road and the R121 (Church Road), and to the north of the M2/N3 link road. The Proposed Development includes 435 no. dwelling units to be provided as follows: 156 no. units of house types A1 to A8 consisting of 2 storey, 4 bed semi-detached houses ranging in size from c. 143 sq.m to 146 sq.m; 184 no. units of house types B1 to B9 consisting of 2storey, 3 bed semi-detached houses ranging in size from c. 125 sq.m to 127 sq.m; 31 no. units of house types C1 and C2 consisting of 2 storey, 4 bed detached houses of c.157 sq.m.; 9 no. units of house types D1 and D2 consisting of 3 storey 5 bed detached houses of c. 219 sq.m for type D1 and c. | Hollywoodrath, Hollystown, Dublin 15 | 10th June 2014 |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------|
| | <p>247 for type D2; 16 no. units of house types E1 and E2 consisting of 3 storey, 4 bed semi-detached houses of c. 226 sq.m for type E1 and c.195 sq.m for type E2; 9 no. units of house type F consisting of 2 storey 5 bed detached houses of c. 206 sq.m; 20 no. units of house types G1 to G3 consisting of 2 storey, 3 bed semi-detached/ terraced houses of c. 128 sq.m each; and 10 no. units of house type H consisting of 2 storey, 4 bed semi-detached houses of c. 143 sq.m each. The Proposed Development also includes a creche facility with a GFA of 709 sq.m; 2 new vehicular entrance to the site, one from the west (R121 Church Road) and one from the east (the Ratoath Road); individual house entrances from the R121/Church Road; all associated site and infrastructural works including foul and surface water drainage; surface car parking; public open spaces measuring 5.74 hectares; landscaping, boundary treatment; new internal roads, cycle paths and footpaths; all on a site of approximately 27.3 hectares. In addition the proposed development provides for the reservation of approximately 3 hectares of the total site area for the future provision of a new public secondary school.. An Environmental Impact Statement (EIS) will be submitted to the Planning Authority with the planning application.</p> | | |
| <p>FW14A/0147 Chemco (Ireland) Ltd</p> | <p>Permission for amendments to Planning Permission no. FW12A/0027. The amendments will consist of: A) The Retention of i) alterations to building B, ii) relocation of the fire fighting sprinkler tank 11m in diameter and 10m high, iii) a plant room fire fighting sprinkler system, iv) Plant rooms for mechanical and electrical services. B) The Retention and Completion of: i) Building A, ii) Buildings C.D. and E, iii) security and site co-ordination office, iv) car parking and access management arrangements.</p> | <p>Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15</p> | <p>13th April 2015</p> |
| <p>FW14A/0138 Alexion Pharma International Trading Ltd.</p> | <p>Amendments to previous development granted under FW14A-0020- Phase 1 of biopharmaceutical manufacturing campus and associated development.</p> | <p>College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15</p> | <p>28th January 2015</p> |
| <p>FW14A/0127 Masterlink Logistics Ltd</p> | <p>Permission to extend the existing premises by way of constructing a new canopy over 4 no. loading bays to the front facade of the building.</p> | <p>Formerly Target Express Building, Damastown Retail Park, Mulhuddart, Dublin 15</p> | <p>14th January 2015</p> |

| Fingal County Planning Application Reference No. (An Bord Pleanála Ref. if applicable) & Applicant | Summary Description of Development | Location of Development | Final Grant Date |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------|
| FW14A/0106 Chemco (Ireland) Ltd | Permission that will consist of of a single building (213 sqm) comprising of 40 no. individual own door storage units, located on the southern boundary of the site, complete with its associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 24th November 2014 |
| FW13A/0088 (PL06F.243395) Twinlite Services Ltd | Permission for the construction of 177 No. dwellings (13 No. with domestic garages) together with a new link road to the east of Tyrrelstown Educate Together School, to connect with Tyrrelstown Town Centre, and all associated and ancillary site works. | Church Road, Kilmartin, Tyrrelstown, Townlands of Hollystown, And Hollywoodrath, Dublin 15 | 20th October 2014 |
| FW14A/0026 Barclay Chemicals Ltd. | Retention permission for existing R + D buiding, permission for the demolition of existing dispatch building , extension to existing warehouse, construction of two new bund areas, new internal access road, new site entrance with weighbridge, extension to existing car park, relocation of existing compressed air house, and mounding of excavated material on site. An IPC (integrated pollution prevention and control) licence is in place and granted by the EPA. | Damastown Way, Damastown Industrial Park, Mulhuddart, Dublin 15 | 2nd September 2014 |
| FW14A/0020 Alexion Pharma International Trading Ltd | Construction of a 5 storey office building and roof top plant room, QC laboratories, packaging / warehouse, utility building and spine corridor on a 16.8 hectare site. New entrance and ancillary development. | College Business & Technology Park, Cruiserath Road, Blanchardstown, Dublin 15 | 6th May 2014 |
| FW14A/0012 Chemco (Ireland) Ltd | Permission for the erection of an ESB Sub-Station, adjoining switch room and generator room with associated site works. | Damastown Rise, Damastown Industrial Estate, Macetown North, Dublin 15 | 29th April 2014 |

Given that it is predicted that the proposed development will have no impact on any European site, in-combination impacts can be ruled out.

The Fingal County Development Plan in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of impact of the Project site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any, in-combination impacts with Plans or Projects for the development area and surrounding townlands in which the development site is located, would be avoided.

Any new applications for the Project area will be initially assessed on a case by case basis by Fingal County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

THE ASSESSMENT OF SIGNIFICANCE OF EFFECTS

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.

The proposed Project includes a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment to that of the proposed Project. A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

There are no predicted effects on any European sites given:

- The nature and scale of the proposed Project, which consists of the installation of underground electricity cables, predominantly in existing roads and verges;
- The distance between the proposed Project and any downstream European Sites, over 11.5 kilometres; and
- The lack of hydrological pathways connecting the proposed Project to any European sites.

Having considered the above, significant effects on any European sites as a result of the proposed Project have been ruled out and potential significant effects on European sites have been excluded at a preliminary screening stage.

Explain why these effects are not considered significant.

See above

List of agencies consulted: provide contact name and telephone or e-mail address

The requirement for Appropriate Assessment Screening was determined during pre-planning discussions with Fingal County Council.

Response to consultation

N/A.

DATA COLLECTED TO CARRY OUT THE ASSESSMENT

Who carried out the assessment

Moore Group Environmental Services.

Sources of data

NPWS database of designated sites at www.npws.ie

National Biodiversity Data Centre database <http://maps.biodiversityireland.ie>

Level of assessment completed

Desktop Assessment.

Where can the full results of the assessment be accessed and viewed

An Bord Pleanála web portal.

OVERALL CONCLUSIONS

The proposed Project includes a new 220kV Gas Insulated Switchgear (GIS) substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff substation. There is no potential for connectivity to nearest European site to the proposed Project, Rye Water Valley/Carton SAC (Site Code 001398), which is located in a different catchment to that of the proposed Project. A review of the Environmental Protection Agency's (EPA) Water Framework Directive (WFD) catchment data indicates that the proposed Project is located in the 'Liffey and Dublin Bay' catchment. Downstream within this catchment are the Dublin Bay European sites, including South Dublin Bay and River Tolka Estuary SPA (Site Code 004024), North Dublin Bay SAC (Site Code 000206) and North Bull island SPA (Site Code 004006), which are located over 11.5 km to the south east.

The connection to the Corduff substation will be made by crossing from the Bristol Meyers Squibb site to the substation site by using Horizontal Directional Drilling under a drainage ditch at the crossing point. This drainage ditch feeds into the Mooretown Stream which eventually leads to the River Tolka. The use of HDD methodology removes the potential for hydrological pathways in terms of aquatic impacts.

In light of the above, it is evident that there is no connectivity to any European sites.

There are no predicted effects on any European sites given:

- The nature and scale of the proposed Project, which consists of the installation of underground electricity cables, predominantly in existing roads and verges;
- The distance between the proposed Project and any downstream European Sites, over 11.5 kilometres; and
- The lack of hydrological pathways connecting the proposed Project to any European sites.

Having considered the above, significant effects on any European sites as a result of the proposed Project have been ruled out and potential significant effects on European sites have been excluded at a preliminary screening stage.

It has been objectively concluded by Moore Group Environmental Services that:

1. The proposed Project is not directly connected with, or necessary to the conservation management of the European sites considered in this assessment.
2. The proposed Project is unlikely to indirectly significantly affect the Qualifying interests or Conservation Objectives of the European sites considered in this assessment.
3. The proposed Project, alone or in combination with other projects, is not likely to have significant effects on the European sites considered in this assessment in view of their conservation objectives.
4. It is possible to conclude that significant effects can be excluded at the screening stage.

It is the view of Moore Group Environmental Services that it is not necessary to undertake any further stage of the Appropriate Assessment process.

8.0 AIR QUALITY & CLIMATE

8.1 INTRODUCTION

This chapter evaluates the impacts which the Proposed Development may have on Air Quality & Climate as defined in the Environmental Protection Agency (EPA) documents Draft 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2017) and the EPA Draft 'Advice Notes for Preparing Environmental Impact Statements' (2015).

The Proposed Development will involve the installation of a new 220kV Gas Insulated Switchgear (GIS) Substation, an underground double circuit 220kV cable installation from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation and associated and ancillary works. A full description of the development can be found in Chapter 2.

8.2 METHODOLOGY

8.2.1 Criteria for Rating of Impacts

8.2.1.1 *Ambient Air Quality Standards*

In order to reduce the risk to health from poor air quality, National and European statutory bodies, the Department of the Environment, Heritage and Local Government in Ireland and the European Parliament and Council of the European Union, have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set (see Table 8.1).

Air quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values. The applicable standards in Ireland include the Air Quality Standards Regulations 2011, which incorporate European Commission Directive 2008/50/EC which has set limit values for the pollutants PM₁₀, and PM_{2.5} relevant to this assessment. Council Directive 2008/50/EC combines the previous Air Quality Framework Directive (96/62/EC) and its subsequent daughter directives (including 1999/30/EC and 2000/69/EC) and also includes ambient limit values relating to PM_{2.5}.

Table 8.1 Ambient Air Quality Standards

| Pollutant | Regulation ^{Note 1} | Limit Type | Value |
|--------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------|
| Dust Deposition | TA Luft (German VDI 2002) | Annual average limit for nuisance dust | 350 mg/(m ² *day) |
| Particulate Matter (as PM ₁₀) | 2008/50/EC | 24-hour limit for protection of human health - not to be exceeded more than 35 times/year | 50 µg/m ³ PM ₁₀ |
| | | Annual limit for protection of human health | 40 µg/m ³ PM ₁₀ |
| Particulate Matter (as PM _{2.5}) | 2008/50/EC | Annual limit for protection of human health | 25 µg/m ³ PM _{2.5} |

^{Note 1} EU 2008/50/EC – Clean Air For Europe (CAFÉ) Directive replaces the previous Air Framework Directive (1996/30/EC) and daughter directives 1999/30/EC and 2000/69/EC

8.2.1.2 Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust which are less than 10 microns and the EU ambient air quality standards outlined in section 8.2.1.1 have set ambient air quality limit values for PM₁₀ and PM_{2.5}.

With regard to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland.

However, guidelines for dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350 mg/(m²*day) averaged over a one year period at any receptors outside the site boundary. The TA-Luft standard has been applied for the purpose of this assessment based on recommendations from the EPA in Ireland in the document titled 'Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA, 2006). The document recommends that the Bergerhoff limit of 350 mg/(m²*day) be applied to the site boundary of quarries. This limit value can be implemented with regard to dust impacts from construction of the Proposed Development.

8.2.1.3 Gothenburg Protocol

In 1999, Ireland signed the Gothenburg Protocol to the 1979 UN Convention on Long Range Transboundary Air Pollution. The initial objective of the Protocol was to control and reduce emissions of Sulphur Dioxide (SO₂), Nitrogen Oxides (NO_x), Volatile Organic Compounds (VOCs) and Ammonia (NH₃). In 2012, the Gothenburg Protocol was revised to include national emission reduction commitments for the main air pollutants to be achieved in 2020 and beyond and to include emission reduction commitments for PM_{2.5}.

European Commission Directive 2001/81/EC and the National Emissions Ceiling Directive (NECD), prescribes the same emission limits as the 1999 Gothenburg Protocol. A National EPA Programme for the progressive reduction of emissions of these four transboundary pollutants has been in place since April 2005. The data available from the EPA in 2019 (EPA, 2019) indicated that Ireland complied with the emissions ceilings for SO₂ and NH₃ but failed to comply with the ceiling for NO_x and NMVOCs. Directive (EU) 2016/2284 "On the Reduction of National Emissions of Certain Atmospheric Pollutants and Amending Directive 2003/35/EC and Repealing

Directive 2001/81/EC was published in December 2016. The Directive will apply the 2010 NECD limits until 2020 and establish new national emission reduction commitments which will be applicable from 2020 and 2030 for SO₂, NO_x, NMVOC, NH₃, PM_{2.5} and CH₄. In relation to Ireland, 2020 emission targets are 25.5 kt for SO₂ (65% on 2005 levels), 66.9 kt for NO_x (49% reduction on 2005 levels), 56.9 kt for NMVOCs (25% reduction on 2005 levels), 112 kt for NH₃ (1% reduction on 2005 levels) and 15.6 kt for PM_{2.5} (18% reduction on 2005 levels). In relation to 2030, Ireland's emission targets are 10.9 kt (85% below 2005 levels) for SO₂, 40.7 kt (69% reduction) for NO_x, 51.6 kt (32% reduction) for NMVOCs, 107.5 kt (5% reduction) for NH₃ and 11.2 kt (41% reduction) for PM_{2.5}.

8.2.1.4 *Climate Agreements*

Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) in April 1994 and the Kyoto Protocol in principle in 1997 and formally in May 2002 (UNFCCC, 1997). For the purposes of the EU burden sharing agreement under Article 4 of the Doha Amendment to the Kyoto Protocol, in December 2012, Ireland agreed to limit the net growth of the six Greenhouse Gases (GHGs) under the Kyoto Protocol to 20% below the 2005 level over the period 2013 to 2020 (UNFCCC, 2012). The UNFCCC is continuing detailed negotiations in relation to GHGs reductions and in relation to technical issues such as Emission Trading and burden sharing. The most recent Conference of the Parties to the Convention (COP24) took place in Katowice, Poland from the 4th to the 14th December 2018 and focussed on advancing the implementation of the Paris Agreement. The Paris Agreement was established at COP21 in Paris in 2015 and is an important milestone in terms of international climate change agreements. The Paris Agreement was agreed by over 200 nations and has a stated aim of limiting global temperature increases to no more than 2°C above pre-industrial levels with efforts to limit this rise to 1.5°C. The aim is to limit global GHG emissions to 40 gigatonnes as soon as possible whilst acknowledging that peaking of GHG emissions will take longer for developing countries. Contributions to greenhouse gas emissions will be based on Intended Nationally Determined Contributions (INDCs) which will form the foundation for climate action post 2020. Significant progress was also made on elevating adaption onto the same level as action to cut and curb emissions.

The EU in 2014, agreed the “2030 Climate and Energy Policy Framework” (EU, 2014). The European Council endorsed a binding EU target of at least a 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990. The target will be delivered collectively by the EU in the most cost-effective manner possible, with the reductions in the ETS and non-ETS sectors amounting to 43% and 30% by 2030 compared to 2005, respectively. Secondly, it was agreed that all Member States will participate in this effort, balancing considerations of fairness and solidarity. The policy also outlines, under “Renewables and Energy Efficiency”, an EU binding target of at least 27% for the share of renewable energy consumed in the EU in 2030.

In relation to the EU 20-20-20 targets for CO₂, Ireland has a target of a 20% reduction in non-Emission Trading Scheme (non-ETS) greenhouse gas emissions by 2020 relative to the 2005 levels. The EPA confirmed that the 2016 levels are 0.3Mt CO₂eq over the target and projections to 2020 indicate that the target is unlikely to be met in future years.

8.2.2 Construction Phase

8.2.2.1 *Air Quality*

The current assessment focuses on identifying the existing baseline levels of PM₁₀ and PM_{2.5} in the region of the Proposed Development by an assessment of EPA

monitoring data. Thereafter, the impact of the construction phase of the development on air quality was determined by a qualitative assessment of the nature and scale of dust generating construction activities associated with the Proposed Development.

8.2.2.2 *Climate*

The impact of the construction phase of the development on climate was determined by a qualitative assessment of the nature and scale of greenhouse gas generating construction activities associated with the Proposed Development.

8.2.3 Operational Phase

8.2.3.1 *Air Quality*

The assessment methodology involves air dispersion modelling using the UK Design Manual for Roads and Bridges Screening Model (UK Highways Agency, 2007) (Version 1.03c, July 2007), the NO_x to NO₂ Conversion Spreadsheet (UK DEFRA, 2016) (Version 5.1), and following guidance issued by Transport Infrastructure Ireland (TII, 2011), UK Highways Agency (2007), UK Department for Environment, Food and Rural Affairs (2018) and the EPA (2017 Draft; 2015 Draft).

Transport Infrastructure Ireland guidance states that the assessment must progress to detailed modelling if:

- Concentrations exceed 90% of the air quality limit values when assessed by the screening method; or
- Sensitive receptors exist within 50m of a complex road layout (e.g. grade separated junctions, hills etc).

The UK Design Manual for Roads and Bridges guidance (UK Highways Agency, 2007), on which Transport Infrastructure Ireland guidance (2011) was based, states that road links meeting one or more of the following criteria can be defined as being 'affected' by a Proposed Development and should be included in the local air quality assessment:

- Road alignment change of 5 metres or more;
- Daily traffic flow changes by 1,000 AADT or more;
- HGVs flows change by 200 vehicles per day or more;
- Daily average speed changes by 10 km/h or more; or
- Peak hour speed changes by 20 km/h or more.

By definition of the criteria above, there are no road links impacted as a result of the Proposed Development. Therefore no assessment using the DMRB model was required for the Proposed Development.

8.3 RECEIVING ENVIRONMENT

8.3.1 Meteorological Data

A key factor in assessing temporal and spatial variations in air quality is the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the

same source strength (i.e. traffic levels) (WHO, 2006). Wind is of key importance in dispersing air pollutants and for ground level sources, such as traffic emissions, pollutant concentrations are generally inversely related to wind speed. Thus, concentrations of pollutants derived from traffic sources will generally be greatest under very calm conditions and low wind speeds when the movement of air is restricted. In relation to PM₁₀, the situation is more complex due to the range of sources of this pollutant. Smaller particles (less than PM_{2.5}) from traffic sources will be dispersed more rapidly at higher wind speeds. However, fugitive emissions of coarse particles (PM_{2.5} - PM₁₀) will actually increase at higher wind speeds. Thus, measured levels of PM₁₀ will be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Dublin Airport, which is located approximately 6 km east of the site. Dublin Airport met data has been examined to identify the prevailing wind direction and average wind speeds over a five-year period (see Figure 8.1). For data collated during five representative years (2014 – 2018) (Met Eireann, 2019), the predominant wind direction is westerly to south-westerly, with generally moderate wind speeds averaging 5.3 m/s for the period 1981 - 2010.

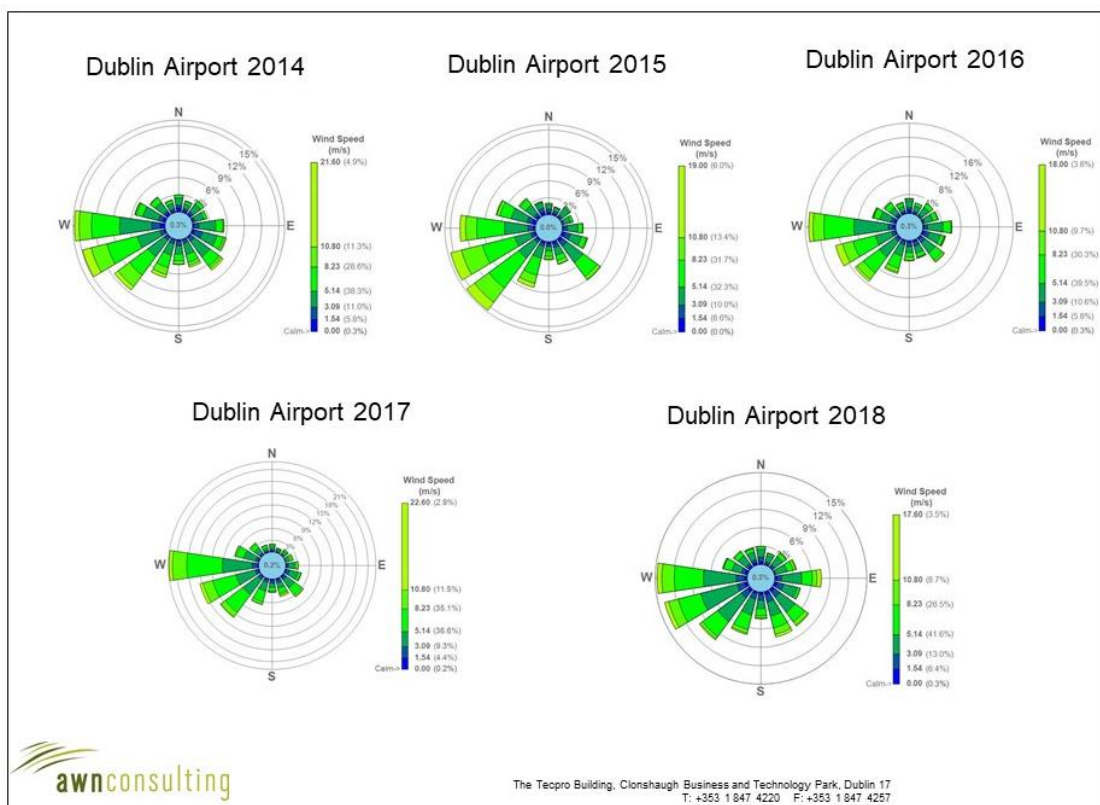


Figure 8.1 Dublin Airport Windrose 2014 – 2018 (MET, 2019)

8.3.2 Baseline Air Quality

Air quality monitoring programs have been undertaken in recent years by the EPA and Local Authorities. The most recent EPA published annual report on air quality “Air Quality In Ireland 2017 – Indicators of Air Quality” (EPA 2018) details the range and scope of monitoring undertaken throughout Ireland.

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), four air quality zones have been defined in Ireland for air quality management and assessment purposes as outlined within the EPA document titled ‘Air Quality In Ireland 2017’ (EPA 2018). Dublin is defined as Zone A and Cork as

Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000 is defined as Zone D. In terms of air monitoring, Cruiserath is categorised as Zone A as explained with the EPA document titled 'Air Quality In Ireland 2017' (EPA 2018).

8.3.2.1 PM_{10}

Continuous PM_{10} monitoring carried out at the suburban background locations of Ballyfermot, Dún Laoghaire, Rathmines and Tallaght showed annual mean concentrations ranging from 12 – 13 $\mu\text{g}/\text{m}^3$ in 2017 (see Table 8.2), with at most 5 exceedances (in Rathmines) of the daily limit value of 50 $\mu\text{g}/\text{m}^3$ (35 exceedances are permitted per year) (EPA, 2018). Sufficient data is available for all stations to observe trends over the period 2013 – 2017. Average annual mean PM_{10} concentrations ranged from 11 – 17 $\mu\text{g}/\text{m}^3$ over the period of 2013 – 2017, suggesting an upper average concentration of no more than 14.8 $\mu\text{g}/\text{m}^3$. PM_{10} results from the urban background location in the Phoenix Park show similarly low levels over the period of 2013 – 2017 with concentrations ranging from 9 – 14 $\mu\text{g}/\text{m}^3$. Based on these results, a conservative estimate of the background PM_{10} concentration in the region of the Proposed Development is 15 $\mu\text{g}/\text{m}^3$.

Table 8.2 Background PM_{10} Concentrations In Zone A Locations ($\mu\text{g}/\text{m}^3$)

| Station | Averaging Period | Year | | | | |
|---------------|----------------------------------------------------|------|------|------|------|------|
| | | 2013 | 2014 | 2015 | 2016 | 2017 |
| Ballyfermot | Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$) | 12 | 11 | 12 | 11 | 12 |
| | 24-hr Mean > 50 $\mu\text{g}/\text{m}^3$ (days) | 2 | 2 | 3 | 0 | 1 |
| Dún Laoghaire | Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$) | 17 | 14 | 13 | 13 | 12 |
| | 24-hr Mean > 50 $\mu\text{g}/\text{m}^3$ (days) | 5 | 2 | 3 | 0 | 2 |
| Tallaght | Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$) | 17 | 15 | 14 | 14 | 12 |
| | 24-hr Mean > 50 $\mu\text{g}/\text{m}^3$ (days) | 5 | 2 | 4 | 0 | 2 |
| Rathmines | Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$) | 17 | 14 | 15 | 15 | 13 |
| | 24-hr Mean > 50 $\mu\text{g}/\text{m}^3$ (days) | 8 | 3 | 5 | 3 | 5 |
| Phoenix Park | Annual Mean PM_{10} ($\mu\text{g}/\text{m}^3$) | 14 | 12 | 12 | 11 | 9 |
| | 24-hr Mean > 50 $\mu\text{g}/\text{m}^3$ (days) | 3 | 0 | 2 | 0 | 1 |

8.3.2.2 $PM_{2.5}$

Continuous $PM_{2.5}$ monitoring carried out at the Zone A location of Rathmines showed average concentrations ranging from 9 – 11 $\mu\text{g}/\text{m}^3$ over the 2013 – 2017 period, with a $PM_{2.5}/PM_{10}$ ration ranging from 0.63 – 0.68. Based on this information, a conservative ratio of 0.7 was used to generate a background $PM_{2.5}$ concentration in the region of the Proposed Development of 10.5 $\mu\text{g}/\text{m}^3$.

8.3.3 Sensitivity of the Receiving Environment

In line with the UK Institute of Air Quality Management (IAQM) guidance document 'Guidance on the Assessment of Dust from Demolition and Construction' (2014) prior to assessing the impact of dust from a Proposed Development the sensitivity of the area must first be assessed as outlined below. Both receptor sensitivity and proximity to proposed works areas are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time.

In terms of receptor sensitivity to dust soiling, there are between 10 - 100 high sensitivity (residential) receptors located within 100 m of the proposed construction works. Based on the IAQM criteria outlined in Table 8.3, the worst case sensitivity of the area to dust soiling is considered to be **low**.

Table 8.3 Sensitivity of the Area to Dust Soiling Effects on People and Property

| Receptor Sensitivity | Number Of Receptors | Distance from source (m) | | | |
|----------------------|---------------------|--------------------------|--------|------------|------|
| | | <20 | <50 | <100 | <350 |
| High | >100 | High | High | Medium | Low |
| | 10-100 | High | Medium | Low | Low |
| | 1-10 | Medium | Low | Low | Low |
| Medium | >1 | Medium | Low | Low | Low |
| Low | >1 | Low | Low | Low | Low |

In addition to sensitivity to dust soiling, the IAQM guidelines also outline the assessment criteria for determining the sensitivity of the area to human health impacts. The criteria take into consideration the current annual mean PM₁₀ concentration, receptor sensitivity based on type (residential receptors are classified as high sensitivity) and the number of receptors affected within various distance bands from the construction works. A conservative estimate of the current annual mean PM₁₀ concentration in the vicinity of the Proposed Development is estimated to be 15 µg/m³ and there are between 10 – 100 high sensitivity receptors located less than 100 m from the proposed construction works. Based on the IAQM criteria outlined in Table 8.4, the worst case sensitivity of the area to human health is considered to be **low**.

Table 8.4 Sensitivity of the Area to Human Health Impacts

| Receptor Sensitivity | Annual Mean PM ₁₀ Concentration | Number Of Receptors | Distance from source (m) | | | |
|----------------------|--------------------------------------------|---------------------|--------------------------|-----|------------|------|
| | | | <20 | <50 | <100 | <200 |
| High | < 24 µg/m ³ | >100 | Medium | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Medium | < 24 µg/m ³ | >10 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Low | < 24 µg/m ³ | >1 | Low | Low | Low | Low |

8.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

8.4.1 Construction Phase

The Proposed Development will involve the installation of a new 220kV Gas Insulated Switchgear (GIS) Substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation along with associated and ancillary works. The key civil engineering works which will have a potential impact on air quality and climate during construction are summarised below:

- (i) During construction, an amount of soil will be generated as part of the site preparation works and during excavation for building foundations and for the installation of ducting for the cable installations.
- (ii) Infilling and landscaping will be undertaken.
- (iii) Temporary storage of construction materials
- (iv) Construction traffic accessing the site will emit air pollutants and greenhouse gases during transport.

As outlined in Section 8.6, a dust minimisation plan will be formulated for the construction phase of the Proposed Development to ensure no dust nuisance occurs at nearby sensitive receptors.

8.4.2 Operational Phase

During the operational phase, traffic accessing the site for maintenance purposes has the potential to impact on air quality and climate. However, this traffic will not be of the magnitude to cause a significant impact.

8.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

8.5.1 Construction Phase

8.5.1.1 *Air Quality*

The greatest potential impact on air quality during the construction phase of the Proposed Development is from construction dust emissions and the potential for nuisance dust. While construction dust tends to be deposited within 200m of a construction site, the majority of the deposition occurs within the first 50m. The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction.

It is important to note that the potential impacts associated with the construction phase of the Proposed Development are short-term in nature. When the dust minimisation measures detailed in the mitigation section (see Section 8.6) of this chapter are implemented, fugitive emissions of dust from the site will not be significant and will pose no nuisance at nearby receptors.

In order to determine the level of dust mitigation required during the proposed works, the potential dust emission magnitude for each dust generating activity needs to be taken into account, in conjunction with the previously established sensitivity of the

area (see Section 8.3.3). The major dust generating activities are divided into four types within the IAQM guidance to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout (movement of heavy vehicles).

Demolition

There are no demolition activities associated with the Proposed Development. Therefore, there is no demolition impact predicted as a result of the works.

Earthworks

Earthworks primarily involve excavating material, loading and unloading of materials, tipping and stockpiling activities. Activities such as levelling the site and landscaping works are also considered under this category. The dust emission magnitude from earthworks can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

Large: Total site area > 10,000 m², potentially dusty soil type (e.g. clay which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds > 8 m in height, total material moved >100,000 tonnes;

Medium: Total site area 2,500 m² – 10,000 m², moderately dusty soil type (e.g. silt), 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 4 – 8 m in height, total material moved 20,000 – 100,000 tonnes;

Small: Total site area < 2,500 m², soil type with large grain size (e.g. sand), < 5 heavy earth moving vehicles active at any one time, formation of bunds < 4 m in height, total material moved < 20,000 tonnes, earthworks during wetter months.

The dust emission magnitude for the proposed earthwork activities can be classified as small as the total site excavation area will be less than 2,500 m².

The sensitivity of the area, as determined in Section 8.3.3, is combined with the dust emission magnitude for each dust generating activity to define the risk of dust impacts in the absence of mitigation. As outlined in Table 8.5, this results in an overall **negligible risk** of temporary dust soiling impacts and temporary human health impacts as a result of the proposed earthworks activities.

Table 8.5 Risk of Dust Impacts – Earthworks

| Sensitivity of Area | Dust Emission Magnitude | | |
|---------------------|-------------------------|-------------|------------|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

Construction

Dust emission magnitude from construction can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

Large: Total building volume > 100,000 m³, on-site concrete batching, sandblasting;

Medium: Total building volume 25,000 m³ – 100,000 m³, potentially dusty construction material (e.g. concrete), on-site concrete batching;

Small: Total building volume < 25,000 m³, construction material with low potential for dust release (e.g. metal cladding or timber).

The dust emission magnitude for the proposed construction activities can be classified as small as a worst-case as the total building volume and volume of trench for the cabling will be significantly less than 25,000 m³.

The sensitivity of the area is combined with the dust emission magnitude for each dust generating activity to define the risk of dust impacts in the absence of mitigation. As outlined in Table 8.6, this results in an overall **negligible risk** of temporary dust soiling impacts and temporary human health impacts as a result of the proposed construction activities.

Table 8.6 Risk of Dust Impacts – Construction

| Sensitivity of Area | Dust Emission Magnitude | | |
|---------------------|-------------------------|-------------|------------|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

Trackout

Factors which determine the dust emission magnitude are vehicle size, vehicle speed, number of vehicles, road surface material and duration of movement. Dust emission magnitude from trackout can be classified as small, medium or large based on the definitions from the IAQM guidance as transcribed below:

Large: > 50 HGV (> 3.5 t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length > 100 m;

Medium: 10 - 50 HGV (> 3.5 t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 - 100 m;

Small: < 10 HGV (> 3.5 t) outward movements in any one day, surface material with low potential for dust release, unpaved road length < 50 m.

The dust emission magnitude for the proposed trackout can be classified as small, as there are unlikely to be greater than 10 HGV movements per day.

As outlined in Table 8.7, this results in an overall **negligible risk** of temporary dust soiling impacts and temporary human health impacts as a result of the proposed trackout activities.

Table 8.7 Risk of Dust Impacts – Trackout

| Sensitivity of Area | Dust Emission Magnitude | | |
|---------------------|-------------------------|-------------|------------|
| | Large | Medium | Small |
| High | High Risk | Medium Risk | Low Risk |
| Medium | Medium Risk | Medium Risk | Low Risk |
| Low | Low Risk | Low Risk | Negligible |

8.5.1.2 Summary of Dust Emission Risk

The risk of dust impacts as a result of the Proposed Development are summarised in Table 8.8 for each activity. The magnitude of risk determined is used to prescribe the level of site specific mitigation required for each activity in order to prevent significant impacts occurring.

While there is a negligible risk of dust soiling and human health impacts associated with the proposed works, best practice dust mitigation measures will be implemented to ensure there are no impacts at nearby sensitive receptors. When the dust mitigation measures detailed in the mitigation section of this chapter (Section 8.6) are implemented, fugitive emissions of dust from the site will be insignificant and pose no nuisance at nearby receptors.

Table 8.8 Summary of Dust Impact Risk used to Define Site-Specific Mitigation

| Potential Impact | Dust Emission Magnitude | | | |
|------------------|-------------------------|-----------------|-----------------|-----------------|
| | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | - | Negligible Risk | Negligible Risk | Negligible Risk |
| Human Health | - | Negligible Risk | Negligible Risk | Negligible Risk |

8.5.1.3 Climate

Construction traffic would be expected to be the dominant source of greenhouse gas emissions as a result of the Proposed Development. Construction vehicles and machinery will give rise to CO₂ and N₂O emissions during construction of the Proposed Development.

Due to the short duration and nature of the construction activities, CO₂ and N₂O emissions from construction vehicles and machinery will have a short-term and imperceptible impact on climate.

8.5.2 Operational Phase

8.5.2.1 Air Quality & Climate

Vehicles accessing the site for maintenance works have the potential to impact on air quality and climate. However, the volume of vehicles accessing the site will be significantly below the 1,000 AADT stipulated in the UK DMRB guidance in Section 8.2.3.1 and thus, an modelling assessment is not required and impacts are considered neutral. In addition, during the operational stage, the cables will be buried underground and will have no impact on air quality or climate.

8.5.3 Do Nothing Scenario

Under the Do Nothing Scenario no construction works will take place and the previously identified impacts of fugitive dust and particulate matter emissions and emissions from equipment and machinery will not occur. The ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from new developments in the surrounding

industrial estates, changes in road traffic, etc.). Therefore, this scenario can be considered **neutral** in terms of both air quality and climate.

8.6 REMEDIAL AND MITIGATION MEASURES

8.6.1 Construction Phase

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK and the USA based on the following publications:

- 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2014);
- 'Planning Advice Note PAN50 Annex B: Controlling The Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings' (The Scottish Office, 1996);
- 'Controlling the Environmental Effects of Recycled and Secondary Aggregates Production Good Practice Guidance' (UK Office of Deputy Prime Minister, 2002);
- 'Controlling Particles, Vapours & Noise Pollution From Construction Sites' (BRE, 2003);
- 'Fugitive Dust Technical Information Document for the Best Available Control Measures' and the USA (USEPA, 1997). ; and
- 'Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition' (periodically updated) (USEPA, 1986).

In advance of work starting on site, the works contractor will prepare a detailed Construction Environmental Management Plan (CEMP). The CEMP will set out the overarching vision of how the construction of the Proposed Development will be managed in a safe and organised manner by the Contractor.. The CEMP will be a live document. It will set out requirements and standards which must be met during the construction stage and will include the relevant mitigation measures outlined in the EIA Report and any subsequent planning conditions relevant to the Proposed Development.

8.6.1.1 *Site Management*

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies.

At the construction planning stage, the siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance (see Figure 8.1 for the wind rose for Dublin Airport). As the prevailing wind is predominantly westerly to south-westerly, locating construction compounds and storage piles downwind (to the east or north-east) of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors.

Good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or quickly implementing effective control measures before the potential for nuisance occurs. When rainfall is greater than 0.2mm/day, dust generation is generally suppressed (UK Office of Deputy Prime Minister (2002), BRE (2003)). The potential for significant dust generation is also

reliant on threshold wind speeds of greater than 10 m/s (19.4 knots) (at 7m above ground) to release loose material from storage piles and other exposed materials (USEPA, 1986). Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- The Principal Contractor or equivalent must monitor the contractors' performance to ensure that the proposed mitigation measures are implemented and that dust impacts and nuisance are minimised;
- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details;
- It is recommended that community engagement be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses;
- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out;
- It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are described below.

8.6.1.2 *Site Roads / Haulage Routes*

Movement of construction trucks along site roads (particularly unpaved roads) can be a significant source of fugitive dust if control measures are not in place. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80% (UK Office of Deputy Prime Minister, 2002).

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles using unpaved site roads;
- Access gates to the site will be located at least 10m from sensitive receptors where possible;
- Bowsers or suitable watering equipment will be available during periods of dry weather throughout the construction period. Research has found that watering can reduce dust emissions by 50% (USEPA, 1997). Watering will be conducted during sustained dry periods to ensure that unpaved areas are kept moist. The required application frequency will vary according to soil type, weather conditions and vehicular use;
- Any hard surface roads will be swept to remove mud and aggregate materials from their surface while any unsurfaced roads shall be restricted to essential

site traffic only.

8.6.1.3 *Land Clearing / Earth Moving*

Land clearing / earth-moving works during periods of high winds and dry weather conditions can be a significant source of dust.

- During dry and windy periods, and when there is a likelihood of dust nuisance, watering will be conducted to ensure moisture content of materials being moved is high enough to increase the stability of the soil and thus suppress dust;
- During periods of very high winds (gales), activities likely to generate significant dust emissions will be postponed until the gale has subsided.

8.6.1.4 *Storage Piles*

The location and moisture content of storage piles are important factors which determine their potential for dust emissions.

- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the site. Where possible storage piles will be located downwind of sensitive receptors;
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust. The regular watering of stockpiles has been found to have an 80% control efficiency (UK Office of Deputy Prime Minister, 2002);
- Where feasible, hoarding will be erected around site boundaries to reduce visual impact. This will also have an added benefit of preventing larger particles from impacting on nearby sensitive receptors.

8.6.1.5 *Site Traffic on Public Roads*

Spillage and blow-off of debris, aggregates and fine material onto public roads will be reduced to a minimum by employing the following measures:

- Vehicles delivering or collecting material with potential for dust emissions shall be enclosed or covered with tarpaulin at all times to restrict the escape of dust;
- At the main site traffic exits, a wheel wash facility will be installed. All trucks leaving the site must pass through the wheel wash. In addition, public roads outside the site shall be regularly inspected for cleanliness, as a minimum on a daily basis, and cleaned as necessary.

8.6.1.6 *Summary of Dust Mitigation Measures*

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the satisfactory performance of the contractor. The key features with respect to control of dust will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation plan can be regularly monitored and assessed; and
- The specification of effective measures to deal with any complaints received.

8.6.2 Operational Phase

There are no predicted impacts for the operational phase of the Proposed Development and therefore, no additional mitigation measures are proposed.

8.7 RESIDUAL IMPACTS OF THE PROPOSED DEVELOPMENT

8.7.1 Construction Phase

8.7.1.1 *Air Quality*

When the dust mitigation measures detailed in the mitigation section (section 8.6.1) of this report are implemented, fugitive emissions of dust and particulate matter from the site will be **short term** and **not significant** in nature, posing no nuisance at nearby receptors.

8.7.1.2 *Climate*

Based on the scale and temporary nature of the construction works and the intermittent use of equipment, the potential impact on climate change and transboundary pollution from the Proposed Development is deemed to be **short term** and **not significant** in relation to Ireland's obligations under the EU 2020 target.

8.7.1.3 *Human Health*

Best practice mitigation measures are proposed for the construction phase of the Proposed Development which will focus on the pro-active control of dust and other air pollutants to minimise generation of emissions at source. The mitigation measures that will be put in place during construction of the Proposed Development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the Proposed Development is likely to be **short term** and **imperceptible** with respect to human health.

8.7.2 Operational Phase

8.7.2.1 *Air Quality & Climate*

There are no predicted impacts to air quality or climate during the operational phase of the Proposed Development. Therefore, the operational phase is considered **neutral** for both air quality and climate.

If the mitigation measures outlined in Section 8.6 are implemented, there will be no residual impacts of significance on air quality or climate from the construction or operational phases of the Proposed Development.

8.8 CUMULATIVE IMPACTS

The cumulative impact assessment is addressed in Chapter 15 of this EIA Report.

8.9 INTERACTIONS

Interactions are addressed in Chapter 16 of this EIA Report.

8.10 REFERENCES

- BRE (2003) Controlling Particles, Vapours & Noise Pollution From Construction Sites
- DEHLG (2004) National Programme for Ireland under Article 6 of Directive 2001/81/EC for the Progressive Reduction of National Emissions of Transboundary Pollutants by 2010
- DEHLG (2007) Update and Revision of the National Programme for Ireland under Article 6 of Directive 2001/81/EC for the Progressive Reduction of National Emissions of Transboundary Pollutants by 2010
- EPA (2006) Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals)
- EEA (2014) NEC Directive Status Reports 2013
- EPA (2015) Advice Notes for Preparing Environmental Impact Statements – Draft September 2015
- EPA (2017) Guidelines on the Information to be contained in Environmental Impact Statements - Draft August 2017
- EPA (2018) Air Quality Monitoring Report 2017 (& previous annual reports)
- EPA (2019) EPA Website: <http://www.epa.ie/whatwedo/monitoring/air/>
- EPA (2019) Ireland's Transboundary Gas Emissions 1990 – 2030
- ERM (1998) Limitation and Reduction of CO₂ and Other Greenhouse Gas Emissions in Ireland
- European Council (2014) European Council (23 and 24 October 2014) Conclusions on 2030 Climate and Energy Policy Framework, SN 79/14
- German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft
- IAQM (2014) Guidance on the Assessment of Dust from Demolition and Construction
- Met Éireann (2019) Met Eireann website: <https://www.met.ie/>
- The Scottish Office (1996) Planning Advice Note PAN50 Annex B: Controlling The Environmental Effects Of Surface Mineral Workings Annex B: The Control of Dust at Surface Mineral Workings
- UK Office of Deputy Prime Minister (2002) Controlling the Environmental Effects of Recycled and Secondary Aggregates Production Good Practice Guidance
- UN Framework Convention on Climate Change (1999) Ireland - Report on the in-depth review of the second national communication of Ireland
- UN Framework Convention on Climate Change (2012) Doha Amendment to the Kyoto Protocol
- UN Framework Convention on Climate Change (FCCC) (1997) Kyoto Protocol To The United Nations Framework Convention On Climate Change
- USEPA (1997) Fugitive Dust Technical Information Document for the Best Available Control Measures

9.0 NOISE & VIBRATION

9.1 INTRODUCTION

This chapter of the EIAR evaluates the likely significant impacts which the Proposed Development may have on noise and vibration.

The proposed route of the 220kV transmission line will run from the proposed 220kV GIS Substation westward to reach the wayleave adjacent to the R121 road, will follow the wayleave along the R121 road northward, turning east to follow the existing wayleave, before traversing lands in third party ownership and entering the existing Corduff 220kV Substation along with associated and ancillary works. The estimated length of this route is c. 1.8km. Figure 2.1 (Chapter 2) shows the route of the proposed 220kV cable installation.

The route of the proposed 49kVA grid transmission line travels away from the existing Tyrrelstown Cross substation, before crossing the R121 and travelling east along Damastown Avenue for c. 0.1km. From here it enters the site on the Eastern side of the R121 roundabout adjacent to the Powerstown National School, turning north before entering the site from the south where it continues within the curtilage of the development to the proposed GIS Substation compound. Figure 2.2 (Chapter 2) shows the route of the proposed 49kVA cable installation.

9.2 METHODOLOGY

9.2.1 Proposed Approach

The methodology adopted for this evaluation of the likely significant impacts which the Proposed Development may have on noise is as follows:

- Review of appropriate guidance, planning conditions applicable to other sites and specification of suitable construction and operational noise / vibration criteria;
- Characterisation of the receiving noise and vibration environment;
- Characterisation of the Proposed Development;
- Prediction of the noise and vibration impact associated with the Proposed Development, and;
- Evaluation of noise and vibration impacts.

Appendix 9.1 of this document presents a glossary of the acoustic terminology used throughout this document. In the first instance it is considered appropriate to review some basic fundamentals of acoustics.

9.2.2 Fundamentals of Acoustics

In order to provide a broader understanding of some of the technical discussion in this report, this section provides a brief overview of the fundamentals of acoustics and the basis for the preparation of this noise assessment.

A sound wave travelling through the air is a regular disturbance of the atmospheric pressure. These pressure fluctuations are detected by the human ear, producing the sensation of hearing. In order to take account of the vast range of pressure levels that can be detected by the ear, it is convenient to measure sound in terms of a

logarithmic ratio of sound pressures. These values are expressed as Sound Pressure Levels (SPL) in decibels (dB).

The audible range of sounds expressed in terms of Sound Pressure Levels is 0dB (for the threshold of hearing) to 120dB (for the threshold of pain). In general, a subjective impression of doubling of loudness corresponds to a tenfold increase in sound energy which conveniently equates to a 10dB increase in SPL. It should be noted that a doubling in sound energy (such as may be caused by a doubling of traffic flows) increases the SPL by 3dB.

The frequency of sound is the rate at which a sound wave oscillates and is expressed in Hertz (Hz). The sensitivity of the human ear to different frequencies in the audible range is not uniform. For example, hearing sensitivity decreases markedly as frequency falls below 250Hz. In order to rank the SPL of various noise sources, the measured level has to be adjusted to give comparatively more weight to the frequencies that are readily detected by the human ear. Several weighting mechanisms have been proposed but the 'A-weighting' system has been found to provide one of the best correlations with perceived loudness. SPL's measured using 'A-weighting' are expressed in terms of dB(A). An indication of the level of some common sounds on the dB(A) scale is presented in Figure 9.1.

The 'A' subscript denotes that the sound levels have been A-weighted. The established prediction and measurement techniques for this parameter are well developed and widely applied. For a more detailed introduction to the basic principles of acoustics, reference should be made to an appropriate standard text.

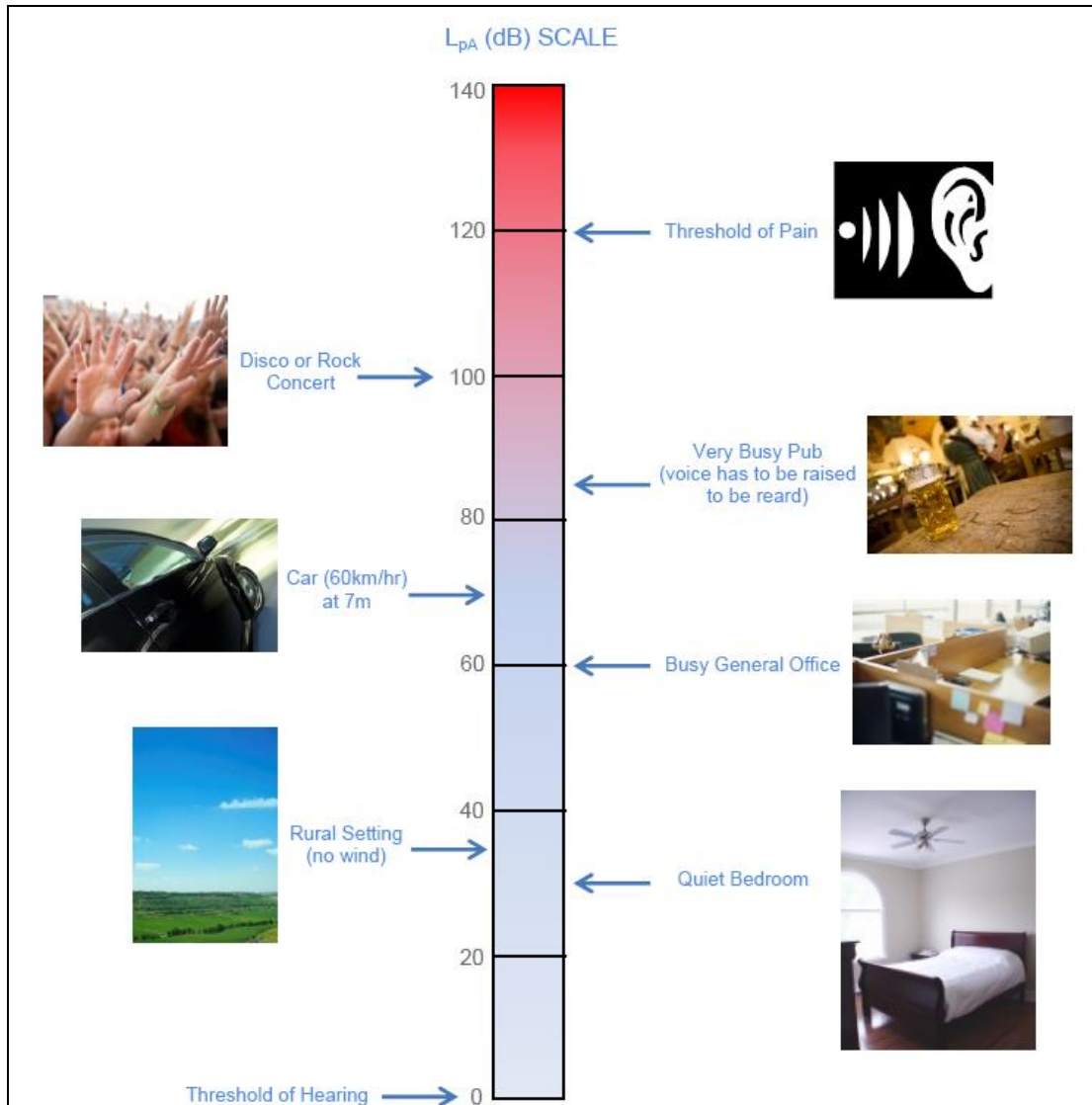


Figure 9.1 dB(A) Scale & Indicative Noise Levels – (EPA: Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4 – 2012))

9.2.3 Significance of Impacts

The significance of noise and vibration impacts has been assessed in accordance with the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017). As these guidelines do not quantify the impacts in decibel terms further reference has been made to the draft ‘*Guidelines for Noise Impact Assessment*’ produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party.

9.2.4 Construction Phase Guidance

Criteria for Rating Noise Impacts

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the *British Standard BS 5228 – 1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Noise*.

The approach adopted here calls for the designation of a noise sensitive location into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value that, if exceeded at this location, indicates a potential significant noise impact is associated with the construction activities.

This document sets out guidance on permissible noise levels relative to the existing noise environment. Table 9.1 sets out the values which, when exceeded, signify a potential significant effect at the facades of residential receptors as recommended by BS 5228 – 1. These are not cumulative levels, i.e. they relate to construction noise levels only.

Table 9.1 Example Threshold of Potential Significant Effect at Dwellings

| Assessment category and threshold value period (L _{Aeq}) | Threshold value, in decibels (dB) | | |
|--------------------------------------------------------------------|-----------------------------------|------------------------------|------------------------------|
| | Category A ^{Note A} | Category B ^{Note B} | Category C ^{Note C} |
| Night-time (23:00 to 07:00hrs) | 45 | 50 | 55 |
| Evenings and weekends ^{Note D} | 55 | 60 | 65 |
| Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00) | 65 | 70 | 75 |

Note A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.

Note B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.

Note C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values.

Note D) 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.

It should be noted that this assessment method is only valid for residential properties.

For the appropriate periods (i.e. daytime, evening and night time) the ambient noise level is determined and rounded to the nearest 5dB. Baseline monitoring carried out as part of this assessment would indicate that the categories detailed in Table 9.2 are appropriate in terms of the nearest noise sensitive locations being considered in this instance.

Table 9.2 Rounded Baseline Noise Levels and Associated Categories

| Period | Baseline Noise Category | Construction Noise Threshold Value L _{Aeq,1hr} (dB) |
|-------------------------------------------------------|-------------------------|--------------------------------------------------------------|
| Daytime (07:00 – 19:00) and Saturdays (07:00 – 13:00) | B | 75 |
| Evening (19:00 to 23:00hrs) | B | 65 |
| Night time (23:00 to 07:00hrs) | B | 55 |

See Section 9.5.1 for the assessment in relation to this site. If the construction noise level exceeds the appropriate category value, then a significant effect is deemed to occur.

This assessment process determines if a significant construction noise impact is likely. Notwithstanding the outcome of this assessment, the overall acceptable levels of construction noise are set out in the Transport Infrastructure Ireland (TII)

publication *Guidelines for the Treatment of Noise and Vibration in National Road Schemes*¹, which should not be exceeded at noise sensitive locations during the construction phase of the development. Table 9.3 sets out these levels.

Table 9.3 Maximum Permissible Noise Levels at the Facade of Dwellings during Construction

| Days and Times | Noise Levels (dB re. 2×10^{-5} Pa) | |
|-------------------------------------------|---------------------------------------------|------------|
| | $L_{Aeq}(1hr)$ | L_{Amax} |
| Monday to Friday 07:00 to 19:00hrs | 70 | 80 |
| Monday to Friday 19:00 to 22:00hrs | 60* | 65* |
| Saturdays 08:00 to 16:30hrs | 65 | 75 |
| Sundays & Bank Holidays 08:00 to 16:30hrs | 60* | 65* |

Note * Construction activity at these times, other than that required for emergency works, will normally require the explicit permission of the relevant local authority.

In exceptional circumstances there may be a requirement that certain construction works are carried out during night time periods. Therefore based on the above the following construction noise criteria are proposed for the site:

Daytime 70dB $L_{Aeq,1hr}$ at noise sensitive location
Evening 65dB $L_{Aeq,1hr}$ at noise sensitive location
Night Time 55dB $L_{Aeq,1hr}$ at noise sensitive location
75dB $L_{Aeq,1hr}$ at commercial property

Criteria for Rating Vibration Impacts

Vibration standards come in two varieties: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In both instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

It is acknowledged that humans are particularly sensitive to vibration stimuli and that any perception of vibration may lead to concern. In the case of road traffic, vibration is perceptible at around 0.5mm/s and may become disturbing or annoying at higher magnitudes. However, higher levels of vibration are typically tolerated for single events or events of short duration. For example, rock breaking and piling, two of the primary sources of vibration during construction, are typically tolerated at vibration levels up to 12mm/s and 5mm/s respectively. This guidance is applicable to the daytime only; it is unreasonable to expect people to be tolerant of such activities during the night.

Guidance relevant to acceptable vibration within buildings is contained in the following documents:

- British Standard BS 7385: 1993: *Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration*, and;
- British Standard BS 5228-2: 2009+A1:2014: *Code of practice for noise and vibration control on construction and open sites – Vibration*.

BS 7385 states that there should typically be no cosmetic damage if transient vibration does not exceed 15mm/s at low frequencies rising to 20mm/s at 15Hz and 50mm/s at 40Hz and above. These guidelines relate to relatively modern buildings and should be reduced to 50% or less for more critical buildings.

¹ *Guidelines for the Treatment of Noise and Vibration in National Road Schemes, Revision 1, 25 October 2004*, Transport Infrastructure Ireland

BS 5228 recommends that, for soundly constructed residential property and similar structures that are generally in good repair, a threshold for minor or cosmetic (i.e. non-structural) damage should be taken as a peak component particle velocity (in frequency range of predominant pulse) of 15mm/s at 4Hz increasing to 20mm/s at 15Hz and 50mm/s at 40Hz and above. Below these values minor damage is unlikely. Where continuous vibration is such as to give rise to dynamic magnification due to resonance, the guide values may need to be reduced by up to 50%. BS 5288-2 also comments that important buildings which are difficult to repair might require special consideration on a case by case basis.

The Transport Infrastructure Ireland (TII) document *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* also contains information on the permissible construction vibration levels as follows:

Table 9.4 Allowable Vibration during Construction Phase

| Allowable vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration, at a frequency of | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|
| Less than 10Hz | 10 to 50Hz | 50 to 100Hz (and above) |
| 8 mm/s | 12.5 mm/s | 20 mm/s |

9.2.5 Operational Phase – Noise Guidance

The following extract from the *“EirGrid Evidence Based Environmental Studies Study 8: Noise – Literature review and evidence based field study on the noise effects of high voltage transmission development (May 2016)”* states the following in relation to noise impacts associated with 220kV transformer installations:

“The survey on the 220kv substation at Gorman indicated that measured noise levels (L_{Aeq}) were approximately 43dB(A) at 5m from the most affected boundary of the substation. This is marginally above the WHO night-time threshold limit for preventing disturbance to sleep (i.e. 42dB). Spectral analysis of the noise from the Gorman substation demonstrated that there are a number of distinct tonal elements to noise in the low to mid frequency range. To avoid any noise impacts from 220kV substations at sensitive receptors, it is recommended that a distance of 20m is maintained between the nearest site boundary and the nearest sensitive receptor.”

Considering the distance between the 220kV substation and the nearest off site locations of some 240m noise from this installation is not predicted to be an issue off site.

Considering the above, it is concluded that there will be no significant noise emissions from the operation of the cable installations or 220kV substation and associated cable bays. Consequently, there is no requirement to assess any operational noise emissions.

9.2.6 Operational Phase – Vibration Guidance

There will be no vibration emissions from the operation of the cable installations. Consequently, there is no requirement to assess any vibration emissions.

9.2.7 Forecasting Methods

Construction noise calculations have been conducted generally in accordance with BS 5228: 2009+A1:2014: *Code of practice for noise control on construction and open sites - Noise*.

9.3 RECEIVING ENVIRONMENT

The existing environment is a mixture of residential, industrial and rural areas. Figure 9.2 highlights the areas considered sensitive to noise for the purpose of this assessment.



Figure 9.2 Study Area

The closest noise sensitive locations to the proposed 49kVA cable installation substation and associated cable bays are the residential houses located on the western side of the works along the R121 which include those along Curragh Hall Crescent, Ballentree Villas, Ballentree Grove, Ballentree Crescent, and Bishop's Orchard. The Proposed Development is also in proximity to Tyrrelstown Plaza and the Carlton Hotel development.




A series of noise surveys have been undertaken as part of the planning application prepared for the Proposed Development. Table 9.1 reviews the findings of these surveys. Full details of the noise monitoring campaign are presented in Appendix 9.2 of the appendices document. In addition, a review of planning applications and associated noise surveys completed for other developments in the area and on public record has been completed in order to further inform an opinion of the typical noise environment in the vicinity of the Proposed Development.


9.3.1 Survey & Review Locations

Figure 9.3 illustrates the noise sensitive locations in the vicinity of the Proposed Development.



Figure 9.3 Noise Monitoring Locations

| Location | Description | Photo |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| A | Location A (private estate) is located off Curragh Hall Gate at the kerbside as indicated on to the right and on Figure 9.3 |  |
| B | Location B (private estate) is located in the vicinity of a private house in the Ballentree estate facing the Proposed Development site as indicated right and on Figure 9.3 |  |
| C | Location C (private estate) is located in the vicinity of a private house within the Willow estate facing the Proposed Development site as indicated to the right and on Figure 9.3. |  |

| | | |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| D | Representative of a hotel located to the north of the Proposed Development site at a distance of some 160m from the nearest proposed structure on the site. |  |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|

9.3.2 Comment on Noise Levels

Road traffic noise, both distant and local was noted as the most significant source of noise and typically dictated ambient noise levels (i.e. $L_{Aeq,T}$) at the nearest noise sensitive locations to the site during daytime and night-time periods.

Aircraft activities associated with Dublin Airport along with plant noise and other typical noise sources expected in an suburban environment (e.g. pedestrian activity, dogs barking, etc.) were also noted as sources of noise.

Background noise levels (e.g. $L_{A90,T}$) at the various locations were typically dictated by distant road traffic noise and to a lesser extent localized mechanical plant noise (e.g. in the vicinity of the hotel). These levels fell as would be expected into the early hours of the morning when the volume of traffic on the local and wider road network reduced.

Table 9.4 reviews the typical ambient and background noise levels at the sample locations discussed above:

Table 9.4 Review of Noise Survey Results

| Location | Period | Ambient dB $L_{Aeq,T}$ | Background dB $L_{A90,T}$ |
|----------|--------|---------------------------|------------------------------|
| A | Day | 56 – 58 | 44 – 48 |
| | Night | 40 – 43 | 33 – 35 |
| B | Day | 57 – 58 | 45 – 52 |
| | Night | 42 – 47 | 34 – 39 |
| C | Day | 59 – 60 | 46 – 48 |
| | Night | 41 – 44 | 35 |
| D | Day | 54 – 59 | 45 – 49 |
| | Night | 43 | 38 |

These typical noise levels will be considered when discussing appropriate noise criteria in relation to the development.

9.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A variety of items of plant will be in use for the purposes of site preparation, construction and site works. There will be vehicular movements to and from the site that will make use of existing roads. Due to the nature of these activities, there is potential for generation of significant levels of noise. The underground cable will be laid beneath the surface of public roads using a methodology similar to the one detailed below:

- The area where excavations are planned will be surveyed, prior to the commencement of works, with a cable avoiding tool and all existing underground services will be identified.
- Two teams consisting of two rubber tracked excavators, two dumpers and a tractor and stone cart with side-shoot will dig the trench for and lay approximately 50 to 100m of the underground cabling per day.
- Both teams will start approximately 50m apart with the team behind finishing at the starting point of the team ahead.
- The excavators will open a trench at the edge of the road surface, the trench will be typically between 600mm wide and 1,225mm.
- Clay plugs will be installed at 50m intervals to prevent the trench becoming a conduit for surface water runoff.
- The excavated material will be loaded into the dumpers to be transported to a designated temporary stockpiling area to be reused as backfilling material where appropriate.
- Once the trench has been excavated, a base layer of blinding will be installed by the tractor and cart and compacted by the excavators.
- The ducting will then be placed in the trench as per relevant specifications.
- Blinding will be installed to 75mm above the cable ducting and compacted.
- The remainder of the trench will be backfilled with granular material and compacted.
- The trench will be surfaced as per the road surface specifications of the national or local public road.

Construction activities will mostly be carried out during normal daytime working hours. Normal construction hours will be specified by planning conditions of a grant of permission for the Proposed Development, or by DCC.

These issues are discussed in detailed in the following sections.

The GIS substation and cable bays are at distances further remote that the proposed cabling works. The construction noise and vibration levels associated with these elements will be orders of magnitude below those associated with the cable trenching works that are proposed in closer proximity to sensitive locations.

9.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

9.5.1 Construction Phase

Construction noise predictions have been carried out using guidance set out in British Standard *BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise*.

Construction works associated with the underground cable will for a brief period be undertaken in the vicinity of the noise sensitive locations that have been discussed in Section 9.3.1.

Table 9.5 outlines the noise levels associated with typical construction noise sources assessed in this instance along with typical sound pressure levels and spectra from *BS 5228 – 1: 2009+A1:2014* at various distances from these works.

Table 9.5 Indicative Noise Levels from Construction Plant at Various Distances from the Grid Connection Works

| Item (BS 5228 Ref.) | Highest Predicted Noise Level at Stated Distance from Edge of Works (dB L _{Aeq,1hr}) | | | |
|--------------------------------|------------------------------------------------------------------------------------------------|-----|-----|------|
| | 20m | 40m | 60m | 100m |
| Pneumatic breaker (C.8.12) | 66 | 60 | 56 | 52 |
| Wheeled loader (C.3.51)* | 62 | 56 | 52 | 48 |
| Tracked excavator (C.3.43)* | 63 | 57 | 53 | 49 |
| Dozer (C.3.30)* | 64 | 58 | 54 | 50 |
| Dump truck (C.3.60)* | 60 | 54 | 50 | 46 |
| Asphalt Spread (C.8.24) | 70 | 64 | 60 | 56 |
| Compressor (C.7.27) | 61 | 55 | 51 | 47 |
| Road Roller (C.3.114) | 65 | 59 | 55 | 51 |
| HGV Movements (10 per hour) | 53 | 50 | 49 | 46 |

Note * Assume noise control measures as outlined in Table B1 of BS 5228 – 1 (i.e. fit acoustic exhaust).

The noise levels presented are within the limit values shown in Table 9.2, for daytime periods on weekdays, at distances of 20m or greater from the works. Where a noise sensitive location is within 20m of works detailed consideration of potential construction noise impacts will be required and appropriate mitigation measures implemented in order to manage associated impacts. Typical mitigation measures that can be considered are outlined in the mitigation section of this document with further guidance contained within the BS 5228 standards.

At distances greater than 20m from the works the total predicted noise levels are predicted to be of the order of or below the 70dB L_{Aeq,1hr} construction noise criterion adopted here and therefore a significant effect is not predicted in relation to the nearest noise sensitive locations in terms of this aspect of potential construction noise.

Where construction works are closer to noise sensitive properties it should be noted that at an assumed cable laying rate of 100m per day, the equipment associated with the works would be expected to be within 20 to 30m of a specific property for a maximum of some 6 hours if the construction works pass directly in front of the property. This limited time frame for construction works in the vicinity of a specific property reduces the associated noise impacts significantly.

Where a property is within such proximity to the works and the noise criterion outlined here is expected to be exceeded for a short period the contractor shall advise the residents in advance of the works of the date, time and duration of the expected works. The contractor will establish channels of communication between the contractor/developer, Local Authority and residents.

Considering the typical distance from works to noise sensitive locations it is expected day, evening and night-time noise criteria for construction noise outlined in Table 9.2 can be satisfied. Additional measures will need to be considered during periods

where works are carried out during night time periods. Various measures that can be considered are outlined in the mitigation section of this assessment (refer to Section 9.6) and will be implemented as and when appropriate.

Considering the distance between the location of the substation at the nearest noise sensitive locations, construction noise impacts are not predicted to exceed thresholds that would indicate the potential for significant noise impacts.

Construction Traffic

In terms of the additional construction traffic on local roads that will be generated as a result of this development the following comment is presented. In order to increase traffic noise levels by 1dB, traffic volumes would need to increase by the order of 25%. It is considered that additional traffic introduced onto the local road network due to the construction phase of the Proposed Development, as outlined in the relevant sections of Chapter 12, will not result in a significant noise impact.

Review of Construction Impacts

In terms of noise associated with these construction activities the associated effect is stated to be:

| <i>Quality</i> | <i>Significance</i> | <i>Duration</i> |
|----------------|---------------------|-----------------|
| Negative | Slight | Short term |

In terms of vibration due to the distance of activities from the site to the nearest sensitive locations and controlling vibration levels to those detailed in Table 9.4 in terms of these construction noise the associated effect is stated to be:

| <i>Quality</i> | <i>Significance</i> | <i>Duration</i> |
|----------------|---------------------|-----------------|
| Neutral | Imperceptible | Short term |

9.5.2 Operational Phase

There will be no noise or vibration emissions from the operation of the grid connection. Consequently, the operational effects are stated to be:

| <i>Quality</i> | <i>Significance</i> | <i>Duration</i> |
|----------------|---------------------|-----------------|
| Neutral | Imperceptible | Permanent |

9.6 REMEDIAL AND MITIGATION MEASURES

In order to sufficiently ameliorate the likely noise impact, a schedule of noise control measures has been formulated for both construction and operational phases associated with the Proposed Development.

9.6.1 Construction Phase

With regard to construction activities, reference will be made to *British Standard BS 5228:2009+A1:2014 (Parts 1 and 2) Code of practice for noise and vibration control on construction and open sites*, which offer detailed guidance on the control of noise & vibration from demolition and construction activities. It is proposed that various practices will be adopted during construction, including:

- limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- establishing channels of communication between the contractor/developer, Local Authority and residents;
- appointing a site representative responsible for matters relating to noise and vibration;
- monitoring typical levels of noise and vibration during critical periods and at sensitive locations;
- keeping site access roads even so as to mitigate the potential for vibration from lorries.

Furthermore, it is envisaged that a variety of practicable noise control measures will be employed. These will include:

- selection of plant with low inherent potential for generation of noise and/ or vibration;
- placing of noisy / vibratory plant as far away from sensitive properties as permitted by site constraints.

We recommend that vibration from construction activities be limited to the values set out in Table 9.4. It should be noted that these limits are not absolute but provide guidance as to magnitudes of vibration that are very unlikely to cause cosmetic damage. Magnitudes of vibration slightly greater than those in the table are normally unlikely to cause cosmetic damage, but construction work creating such magnitudes should proceed with caution. Where there is existing damage these limits may need to be reduced by up to 50%.

In certain instances works are expected to be slightly above the adopted noise criterion outlined in this assessment. It should be noted that at an assumed cable laying rate of 100m per day, the equipment associated with the works would be expected to be within 20 to 30m of a specific property for a maximum of some 6 hours if the construction works pass directly in front of the property. This limited time frame for construction works in the vicinity of a specific property reduce the associated noise impacts significantly. In these instances the contractor shall give due consideration to the following best practice advice.

In these instances the Contractor will provide proactive community relations and will notify the public and sensitive premises before the commencement of any works forecast to generate appreciable levels of noise or vibration, explaining the nature and duration of the works. The Contractor will distribute information informing people of the progress of works and any likely periods of significant noise and vibration.

A designated noise liaison should be appointed to site during construction works. Any complaints should be logged and followed up in a prompt fashion. In addition, prior to particularly noisy construction activity, e.g. excavation close to a property, etc., the site contact should inform the nearest noise sensitive locations of the time and expected duration of the works.

9.6.2 Operational Phase

The following extract from the *“EirGrid Evidence Based Environmental Studies Study 8: Noise – Literature review and evidence based field study on the noise effects of high voltage transmission development (May 2016)”* states the following in relation to noise impacts associated with 220kV transformer installations:

“The survey on the 220kv substation at Gorman indicated that measured noise levels (L_{Aeq}) were approximately 43dB(A) at 5m from the most affected boundary of the substation. This is marginally above the WHO night-time threshold limit for preventing disturbance to sleep (i.e. 42dB). Spectral analysis of the noise from the Gorman substation demonstrated that there are a number of distinct tonal elements to noise in the low to mid frequency range. To avoid any noise impacts from 220kV substations at sensitive receptors, it is recommended that a distance of 20m is maintained between the nearest site boundary and the nearest sensitive receptor.”

Considering the distance between the 220kV substation and the nearest off site locations of some 240m noise from this installation is not predicted to be an issue off site.

There will be no vibration emissions from the operation of the cable installations, substation and associated cable bays. Consequently, the operational vibration emissions have not been considered as a part of this assessment.

9.7 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

This section summarises the likely noise and vibration impact associated with the Proposed Development, taking into account the mitigation measures.

9.7.1 Construction Phase

During the construction phase of the Proposed Development there will be some impact on nearby noise sensitive properties due to noise emissions from site traffic and other activities. As outlined in the mitigation measures, application of noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. It is reiterated that any construction noise impacts will be short term in nature. Also, it is considered that as the project progresses from initial ground works that construction noise and vibration impacts will be greatly reduced.

9.7.2 Operational Phase

Not applicable.

9.7.3 Cumulative Impact

During construction of the Proposed Development it is anticipated that noise and vibrations associated with construction work on the proposed cable installation routes, cable bays and substation will typically be lower than those generated by existing traffic movements on the local road network. The noise environments at the nearest noise sensitive locations to the proposed works are and will continue to be dominated by road traffic noise and to lesser extent aircraft noise.

Construction being completed at other sites within the wider area, whilst potentially significant at locations in close proximity to these other sites will effectively be masked by the existing traffic noise at the nearest noise sensitive locations identified in this assessment. Such works would not be expected to increase ambient noise levels in the vicinity of the noise sensitive locations that are in the proximity of the works under consideration here.

Once the mitigation measures outlined above are implemented there should be no significant cumulative impact as a result of the Proposed Development.

9.8 RESIDUAL IMPACTS

The construction noise assessment has shown that in accordance with the 'significance' thresholds presented in the *British Standard BS 5228 – 1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Noise* there is not a significant impact at residential locations in terms of ambient noise levels subject to appropriate management of the issues on the site. There is no residual impact during operation.

The cumulative impact assessment is addressed in Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

9.9 REFERENCES

- EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) (2017) and draft revised Guidelines on information to be contained in Environmental Impact Statements; and Advice Notes for preparing EIS (2015).
- Draft '*Guidelines for Noise Impact Assessment*' produced by the Institute of Acoustics/Institute of Environmental Management and Assessment Working Party.
- *British Standard BS 5228 – 1: 2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Noise.*
- Transport Infrastructure Ireland (TII) publication *Guidelines for the Treatment of Noise and Vibration in National Road Schemes.*
- British Standard BS 7385: 1993: *Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.*
- British Standard BS 5228-2: 2009+A1:2014: *Code of practice for noise and vibration control on construction and open sites – Vibration.*
- BS 4142:2014: *Methods for rating and assessing industrial and commercial sound.*
- Environmental Protection Agencies *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* (January 2016).
- ISO 1996-2:2017 *Acoustics - Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels.*
- British Standard BS 6472 (1992): *Guide to Evaluation of human exposure to vibration in buildings (1Hz to 80Hz).*
- ISO 9613 (1996): *Acoustics – Attenuation of sound outdoors – Part 2: General method of calculation.*
- *Calculation of Road Traffic Noise (CRTN)* issued by the Department of Transport in 1988.
- BS EN 1793-1:1998: *Road traffic noise reducing devices – Test method for determining the acoustic performance – Part 1: Intrinsic characteristics of sound absorption*
- BS EN 1793-2:1998: *Road traffic noise reducing devices – Test method for determining the acoustic performance – Part 2: Intrinsic characteristics of airborne sound insulation.*
- BS EN 1794-1:2003: *Road traffic noise reducing devices. Non-acoustic performance. Mechanical performance and stability requirements*
- BS EN 1794-2:2003: *Road traffic noise reducing devices. Non-acoustic performance. General safety and environmental requirements.*

APPENDIX 9.1 GLOSSARY OF ACOUSTIC TERMINOLOGY

| | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ambient noise | The totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, near and far. |
| background noise | The steady existing noise level present without contribution from any intermittent sources. The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 per cent of a given time interval, T ($L_{AF90,T}$). |
| broadband | Sounds that contain energy distributed across a wide range of frequencies. |
| dB | Decibel - The scale in which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the RMS pressure of the sound field and the reference pressure of 20 micro-pascals (20 μ Pa). |
| dB L_{pA} | An 'A-weighted decibel' - a measure of the overall noise level of sound across the audible frequency range (20 Hz – 20 kHz) with A-frequency weighting (i.e. 'A'-weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies. |
| Hertz (Hz) | The unit of sound frequency in cycles per second. |
| impulsive noise | A noise that is of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background. |
| $L_{Aeq,T}$ | This is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period (T). The closer the L_{Aeq} value is to either the L_{AF10} or L_{AF90} value indicates the relative impact of the intermittent sources and their contribution. The relative spread between the values determines the impact of intermittent sources such as traffic on the background. |
| L_{AFN} | The A-weighted noise level exceeded for N% of the sampling interval. Measured using the "Fast" time weighting. |
| L_{AFmax} | is the instantaneous slow time weighted maximum sound level measured during the sample period (usually referred to in relation to construction noise levels). |
| $L_{Ar,T}$ | The Rated Noise Level, equal to the L_{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and impulsiveness of the sound. |
| L_{AF90} | Refers to those A-weighted noise levels in the lower 90 percentile of the sampling interval; it is the level which is exceeded for 90% of the measurement period. It will therefore exclude the intermittent features of traffic and is used to estimate a background level. Measured using the "Fast" time weighting. |

| | |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L_{AT}(DW) | equivalent continuous downwind sound pressure level. |
| L_{fT}(DW) | equivalent continuous downwind octave-band sound pressure level. |
| L_{day} | L _{day} is the average noise level during the day time period of 07:00hrs to 19:00hrs |
| L_{night} | L _{night} is the average noise level during the night-time period of 23:00hrs to 07:00hrs. |
| low frequency noise | LFN - noise which is dominated by frequency components towards the lower end of the frequency spectrum. |
| noise | Any sound, that has the potential to cause disturbance, discomfort or psychological stress to a person exposed to it, or any sound that could cause actual physiological harm to a person exposed to it, or physical damage to any structure exposed to it, is known as noise. |
| noise sensitive location | NSL – Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels. |
| octave band | A frequency interval, the upper limit of which is twice that of the lower limit. For example, the 1,000Hz octave band contains acoustical energy between 707Hz and 1,414Hz. The centre frequencies used for the designation of octave bands are defined in ISO and ANSI standards. |
| rating level | See L _{A,r,T} . |
| sound power level | The logarithmic measure of sound power in comparison to a referenced sound intensity level of one picowatt (1pW) per m ² where: |
| | $L_w = 10 \log \frac{P}{P_0} \text{ dB}$ |
| | Where: p is the rms value of sound power in pascals; and P ₀ is 1 pW. |
| sound pressure level | The sound pressure level at a point is defined as: |
| | $L_p = 20 \log \frac{P}{P_0} \text{ dB}$ |
| specific noise level | A component of the ambient noise which can be specifically identified by acoustical means and may be associated with a specific source. In BS 4142, there is a more precise definition as follows: 'the equivalent continuous A-weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval (L _{Aeq,T})'. |

- tonal** Sounds which cover a range of only a few Hz which contains a clearly audible tone i.e. distinguishable, discrete or continuous noise (whine, hiss, screech, or hum etc.) are referred to as being 'tonal'.
- 1/3 octave analysis** Frequency analysis of sound such that the frequency spectrum is subdivided into bands of one-third of an octave each.

**APPENDIX 9.2
BASELINE NOISE MONITORING SURVEY**

TECHNICAL NOTE

Client: AWN
Date: 17/11/2016
Re: Attended noise survey, Cruiserath, Co. Dublin

1. SCOPE

AWN appointed Enfonic to carry out attended day and night time measurements at four Noise Sensitive Locations (NSLs) near lands at Cruiserath, Co. Dublin. The purpose of the monitoring was to establish a baseline noise level for the area.

2. METHODOLOGY

A night-time attended environmental noise survey was conducted on Thursday, November 10, 2016 between 23:50 and 02:40. During the night-time each of the four locations was measured twice (on a cyclical basis) for $L_{Aeq, 15 \text{ mins}}$ (broadband, 1/3 Octaves and spectral statistics).

The daytime noise survey was conducted on Monday, November 14, 2016 between 07:50 to 11:45. During the daytime each of the four locations was measured three times (on a cyclical basis) for $L_{Aeq, 15 \text{ mins}}$ (broadband, 1/3 Octaves and spectral statistics).

A Bruel & Kjaer Type 2250 Sound Level Meter was calibrated before use and verified afterwards – no calibration drift was observed. Details of the equipment used is contained in Appendix A. Measurements were made in accordance with ISO 1996-2:2007 *Acoustics - Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels*.

The night-time weather conditions were dry and calm, with a temperature of 2°C, low southerly winds of 2m/s and approximately 10% cloud cover. The daytime weather conditions were dry and calm, with a temperature of 13°C, southerly westerly winds of 5m/s and approximately 90% cloud cover.

Location A: Near 30 Curragh Hall Crescent. DD: 53.414633, -6.386789.

Location B: Ballentree Grove Estate DD: 53.416612, -6.384479.

Location C: Night-time –Willow Estate DD: 53.418315, -6.382647

Daytime – Proxy location 20m north of night-time location due to construction works being carried out at original location. DD: 53.418771, -6.382538



TECHNICAL NOTE

Location D: Carlton Hotel car park DD: 53.419001, -6.379770.

3. RESULTS

Tables 1-4 outline the measured baseline night-time and day-time $L_{Aeq,15mins}$ for each of the four locations.

The main noise sources for each 15 minute period were noted for all measurements.

As shown in Table 1 below, the night-time noise contributors at Location A was continuous distant road traffic with intermittent traffic on the R121. During the daytime the main noise contributors were from the R121 with intermittent local traffic, bird noises and aircraft flying over every 4 minutes.

Table 1: Night-time and daytime noise monitoring results from Location A

| Project Name | Start Time | $L_{Aeq, 15mins}$ (dB) | L_{AFmax} (dB) | L_{AFmin} (dB) | $L_{AF10.0}$ (dB) | $L_{AF90.0}$ (dB) | Notes |
|--------------|------------------|------------------------|------------------|------------------|-------------------|-------------------|---------|
| A – N1 | 10/11/2016 23:51 | 42.8 | 53.1 | 32.8 | 46.7 | 35.3 | 1, 2 |
| A – N2 | 11/11/2016 01:23 | 39.8 | 55.2 | 30.7 | 43.0 | 33.0 | 1, 2 |
| A- D1 | 15/11/2016 07:52 | 56.1 | 74.1 | 45.9 | 59.0 | 48.8 | 1, 3, 4 |
| A- D2 | 15/11/2016 09:14 | 58.1 | 75.0 | 44.7 | 59.2 | 47.8 | 1, 3, 4 |
| A- D3 | 15/11/2016 10:30 | 56.1 | 71.1 | 40.9 | 60.0 | 44.4 | 1, 3, 4 |

Notes:

- | | |
|--------------------------------|-------------------------------|
| 1 Road traffic noise from R121 | 7 Dogs barking |
| 2 Distant road traffic noise | 8 Mechanical services |
| 3 Local estate traffic | 9 People passing by talking |
| 4 Aircraft flyover | 10 House alarm |
| 5 Crows cawing intermittently | 11 Intermittent angle grinder |
| 6 Birdsong | 12 Intermittent drilling |

Table 2: Night-time and daytime noise monitoring results from Location B

| Project Name | Start Time | $L_{Aeq, 15mins}$ (dB) | L_{AFmax} (dB) | L_{AFmin} (dB) | $L_{AF10.0}$ (dB) | $L_{AF90.0}$ (dB) | Notes |
|--------------|------------------|------------------------|------------------|------------------|-------------------|-------------------|-------------|
| B – N1 | 11/11/2016 00:15 | 47.1 | 59.0 | 34.7 | 50.6 | 39.2 | 1, 2 |
| B – N2 | 11/11/2016 01:44 | 41.5 | 56.3 | 31.8 | 45.0 | 34.3 | 1, 2, 7, 8 |
| B- D1 | 15/11/2016 08:10 | 57.1 | 71.3 | 48.0 | 59.0 | 51.7 | 1, 4, 9, 10 |
| B- D2 | 15/11/2016 09:32 | 57.7 | 71.8 | 43.1 | 59.3 | 47.3 | 1, 4, 6, 9 |
| B- D3 | 15/11/2016 10:50 | 58.1 | 75.8 | 40.5 | 59.4 | 45.0 | 1, 4, 6, 9 |



Notes:

- 1 Road traffic noise from R121
- 2 Distant road traffic noise
- 3 Local estate traffic
- 4 Aircraft flyover
- 5 Crows cawing intermittently
- 6 Birdsong
- 7 Dogs barking
- 8 Mechanical services
- 9 People passing by talking
- 10 House alarm

As shown in Table 2 on the previous page, at Location B the night-time noise contributors were continuous distant road traffic with intermittent traffic on the R121. During the B-N2 measurement, mechanical services from the retail park were audible, approximately 200m to the north east of the monitoring location. During the day time the main noise contributors were from the R121 with intermittent aircraft flyover and bird noises.

As shown in Table 3 below, the night-time noise contributors at Location C was continuous distant road traffic with intermittent traffic on the R121. When the road traffic noise was minimal the mechanical services from the nearby retail park (100m north of monitoring location) and the hotel (100m to north east of monitoring location). During the day time the main noise contributors were from the R121 with intermittent local traffic and aircraft flying over every 4 minutes. There was audible intermittent angle grinding and drilling from the original night-time location during the measurement C-D2 and C-D3.

Table 3: Night-time and daytime noise monitoring results from Location C

| Project Name | Start Time | L _{Aeq, 15mins} (dB) | L _{AFmax} (dB) | L _{AFmin} (dB) | L _{AF10.0} (dB) | L _{AF90.0} (dB) | Notes |
|--------------|------------------|-------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|----------------|
| C – N1 | 11/11/2016 00:38 | 44.1 | 59.4 | 32.9 | 46.6 | 35.1 | 1, 2, 4, 8 |
| C – N2 | 11/11/2016 02:06 | 41.1 | 58.2 | 32.1 | 43.0 | 34.7 | 1, 2, 8 |
| C- D1 | 15/11/2016 08:31 | 59.0 | 72.6 | 50.3 | 60.3 | 53.0 | 1, 3, 4 |
| C- D2 | 15/11/2016 09:51 | 59.0 | 72.1 | 43.2 | 62.0 | 48.1 | 1, 3, 4, 6, 11 |
| C- D3 | 15/11/2016 11:08 | 60.1 | 76.8 | 38.8 | 62.6 | 45.6 | 1, 3, 4, 12 |

Notes:

- 1 Road traffic noise from R121
- 2 Distant road traffic noise
- 3 Local estate traffic
- 4 Aircraft flyover
- 5 Crows cawing intermittently
- 6 Birdsong
- 7 Dogs barking
- 8 Mechanical services
- 9 People passing by talking
- 10 House alarm
- 11 Intermittent angle grinder
- 12 Intermittent drilling



As shown in Table 4 below, the main night-time noise contributors at Location D were continuous distant road traffic with intermittent traffic on the R121. The mechanical services from the roof of the hotel were continuously audible. During the day time the main noise contributors were from the R121 with intermittent aircraft flyover, bird noises, buses parked in idle 50m south of the car park and construction noise from site.

Table 4: Night-time and daytime noise monitoring results from Location D

| Project Name | Start Time | L _{Aeq, 15mins} (dB) | L _{AFmax} (dB) | L _{AFmin} (dB) | L _{AF10.0} (dB) | L _{AF90.0} (dB) | Notes |
|--------------|------------------|-------------------------------|-------------------------|-------------------------|--------------------------|--------------------------|-------------|
| D – N1 | 11/11/2016 01:01 | 43.1 | 54.6 | 35.8 | 45.9 | 38.2 | 1, 2, 3, 8 |
| D – N2 | 11/11/2016 02:25 | 43.4 | 56.0 | 36.6 | 46.6 | 38.2 | 1, 2, 3, 8 |
| D- D1 | 15/11/2016 08:50 | 54.2 | 70.9 | 46.0 | 56.1 | 49.0 | 1, 4, 3, 8 |
| D- D2 | 15/11/2016 10:10 | 56.9 | 73.6 | 42.5 | 56.5 | 45.7 | 1, 4, 6, 13 |
| D- D3 | 15/11/2016 11:27 | 58.5 | 78.2 | 41.6 | 58.9 | 44.5 | 1, 4, 6, 12 |

Notes:

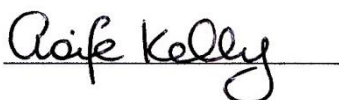
- | | |
|--------------------------------|-------------------------------|
| 1 Road traffic noise from R121 | 7 Dogs barking |
| 2 Distant road traffic noise | 8 Mechanical services |
| 3 Local estate traffic | 9 People passing by talking |
| 4 Aircraft flyover | 10 House alarm |
| 5 Crows cawing intermittently | 11 Intermittent angle grinder |
| 6 Birdsong | 12 Intermittent drilling |
| | 13 Buses parked in idle |

4. CONCLUSIONS

The main noise contribution at night was from the R121 (intermittently) and from distant road traffic in the area. Location C and D also had audible mechanical services noise from the retail park and hotel. During the daytime the R121 was the main noise contributor with intermittent aircraft flying over every 4 minutes.

END

For and on behalf of Enfonic Ltd



Aoife Kelly, PhD
Acoustic Engineer



10.0 LANDSCAPE AND VISUAL

10.1 INTRODUCTION

This chapter provides an assessment of the impacts of the Proposed Development on the landscape and visual aspects of the receiving environment.

The Proposed Development comprises the provision of a new 220kV Gas Insulated Switchgear (GIS) Substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrellstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation along with associated and ancillary works. The total site area for the Proposed Development is c. 12.39 hectares.

A full description of the Proposed Development and the construction methodology is provided in Chapter 2 (Description of the Proposed Development).

This chapter is accompanied by a set of Photomontages of the Proposed Development which are included as Appendix 10.1.

The following aspects of development proposals are typically relevant to landscape and visual assessment:

- Design:
 - Form and massing of the Proposed Development;
 - Façade on all above ground structures; and
 - Cognisance of how design elements impact on Views of the Proposed Development and any effects on the receiving environment, including landscape character.
- Operation:
 - Views of the Proposed Development and any effects on the receiving environment, including landscape character.
- Construction:
 - Views of the Proposed Development and any effects on the receiving environment, including landscape character; and
 - Loss or change of existing features that contribute to the receiving environment.

10.2 METHODOLOGY

10.2.1 General

The landscape assessment has considered the likely significant effects of the Proposed Development on the landscape as an environmental resource and the visual assessment has considered the effect of visual change on receptors. Landscape and visual effects have been considered for the construction and operation of the Proposed Development.

Further, to support the assessment, a series of photomontages, illustrating the physical and visual appearance of the Proposed Development, has been prepared from a range of publicly accessible locations that are representative of the more open views in the surrounding environment. The Photomontage views are included as Appendix 11.1.

The following guidelines were considered and consulted for the purposes of the report:

- EPA Draft EIA Report Guidelines 2017;
- EPA Draft Advice Notes for EIS 2015;
- The Landscape Institute/ Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment (3rd Edition);
- European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report;
- Government of Ireland (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018); and
- Fingal County Development Plan 2017 – 2023.

The methodology used for the landscape assessment entailed:

- Desktop studies of the site in relation to its overall context locally, regionally and nationally; including permitted and planned development in the locality; and
- Visiting the site and its environs between July and August 2019 to assess the following:
 - ✦ Quality and type of views in the area;
 - ✦ The extent of the visual envelope, i.e. the potential area of visibility of the site in the surrounding landscape; and,
 - ✦ The character and quality of the surrounding landscape in relation to the position of the Proposed Development.

10.2.2 Categorisation of the Baseline Environment

The landscape and visual assessment involved visits to the site and its environs, between July and August 2019, to review the nature and scale of existing development surrounding the site, to identify landscape features, local character and land uses, to identify key views to and from the Proposed Development, and to note receptor sensitivity.

This site based assessment was augmented by reviewing aerial photography, publications and reports and project information included within the application and in this EIA Report.

10.2.3 Impact Assessment Methodology

The landscape and visual impact assessment for the Proposed Development takes account of the character and nature of the existing site and its surrounds, the location of sensitive landscapes and visual receptors, the sensitivity and significance of the site, and its vulnerability to change.

The classification of significance of effects or impacts as set out in Figure 10.1 below as included in EPA Draft ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports’ (2017), and on the professional experience of the author in carrying out landscape and visual assessments for over 25 years.

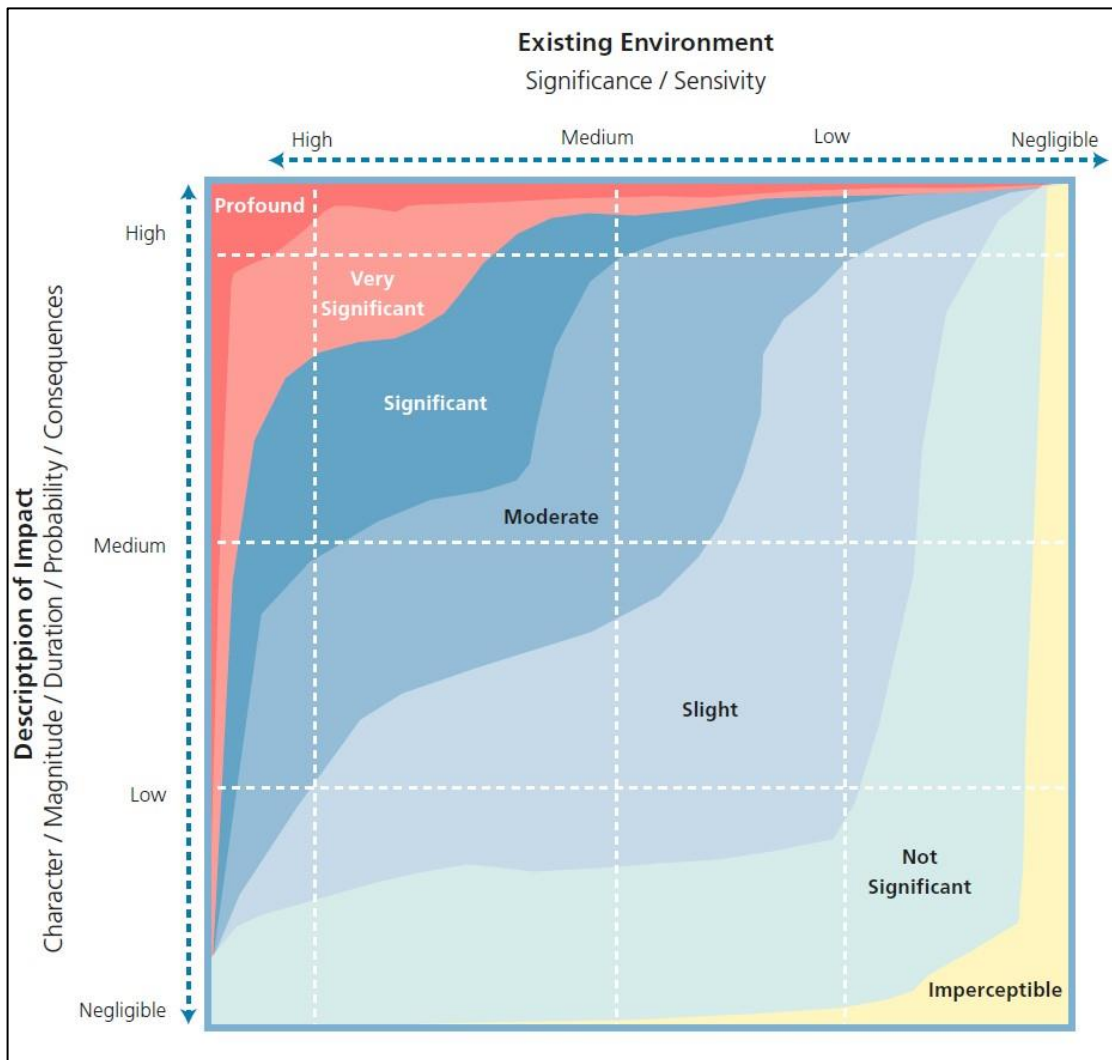


Figure 10.1 Significance of Effects, extract , Figure 3.5, EPA Draft EIA Report Guidelines 2017

The significance of effects are considered in this assessment, where appropriate in accordance with those descriptions outlined in the EPA guidance as set out in Table 1.2 of Chapter 1 (Introduction).

10.3 RECEIVING ENVIRONMENT

10.3.1. Site Context

The overall development lands, referenced above and illustrated in Figure 10.2, are located c. 1.5km north of Mulhuddart village in west Dublin, and extend c. 26 hectares.

The overall development lands were previously used for arable crops and have been left fallow for the past number of years. The land to the west of the development lands comprise the suburban environment of Tyrrelstown. The Carlton Hotel is located to the north along with a recently developed access to the neighbouring site on the east occupied by a Bristol Meyers Squibb (BMS) facility. The land to the south is developed for light industry and technology.

The overall development lands are presently secured by a 3.0m high palisade fence around the entire perimeter. The northern, western and southern edges of the overall development lands also comprise manmade earth berms typically rising 2-5m in height. For the most part, the berms are planted with mixed woodland, however, in some locations, such as at the Cruiserath / R121 roundabout, the berms are simply grassed. An internal access track runs around most of the site inside the line of the earth berms. The eastern boundary adjoins the existing Bristol Meyers Squibb facility and is defined by the palisade fence only.

There are no watercourses on site and any remains of shallow ditches associated with previous hedgerows are dry.

The overall development lands are substantially open with well-defined boundaries along adjoining roadways and sites.



Figure 10.2 Proposed Development site location and boundary

The R121 distributor road bounds the western edge of the overall development lands and comprises earth berms and mixed woodland planting as described above along the development lands, and a linear open space buffer area with mature mixed woodland planting on the residential side. The Curragh Hall, Ballentree and Bishop's Orchard settlements are located closest to the R121 and immediately inside the woodland and open space running along the R121. The nature and cross section of the R121 defines the extent of the land uses on either side of the road and serves to physically separate them and to substantially disconnect them visually.

The lands are the subject of previously granted planning permissions for data storage facilities, including:

- Building A (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025) that will occupy the southern portion of the lands, together with association site development works; and,
- Buildings B and C (FCC Reg. Ref.: FW19A/0087), that will be located along the eastern side of the lands.
- There is a further permitted development on the grasslands immediately to the north of the overall development lands for a two-storey office building with landscaped roof on lands along Cruiserath Drive (FCC Reg. Ref.: FW18A/0121)

The Proposed Development comprises:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

The Proposed Development occupies a number of portions of the overall development lands:

- The GIS Substation will be located towards the centre of the lands, immediately north and west of the permitted Buildings A and B respectively;
- The 220kV underground transmission line will lead westwards from the proposed substation, and then continue along a new wayleave along the western and northern parts of the overall development lands before traversing third party lands and connecting to the Corduff Substation;
- The 49kVA cable will extend westwards from the proposed substation before continuing southwards along the western part of the overall development lands to cross the Cruiserath Road and Church Road and connect to an existing roadside substation at the Tyrellstown Cross roundabout.

10.3.2 Landscape Planning and Land Use Zoning

The Proposed Development will be located substantially within lands zone **Zoned HT: High Technology** in the Fingal County Development Plan, with the objective to...*Provide for office, research and development and high technology / high technology manufacturing type employment in a high quality built and landscaped environment that extends westwards as far as the R121 and to the north and south of the Cruiserath Road.*

The 220kV underground transmission line will extend from the HT zoning into land **Zoned GE: General Enterprise**... *Provide opportunities for general enterprise and employment where the Corduff Substation is located.*

Similarly, the 49kVA connection will extend beyond the HT zoning across and along the Cruiserath Road onto Church Road. The roads are also adjoined by lands **Zoned OS: Open Space**...*To preserve and provide for open space and recreational amenities; RS: Residential*... *To provide for residential development and protect and improve residential amenity; and CI:Community Infrastructure*... *Provide for and protect civic, religious, community, education,*

The established and recently expanded BMS facility is located immediately to the east of the site, and Mallinckrodt and Alexion have both completed substantial new pharmaceutical facilities on lands on the southern side of Cruiserath Road to the south of the site.

An ESB sub-station is located on lands south of the site across the Cruiserath Road, and Mulhuddart cemetery is located between the substation and Church Road. The Blanchardstown Institute of Technology and the residential settlements to the north of Mulhuddart are further south of the substation and cemetery.

There are no specific amenity objectives on the site. Likewise there are no protected trees, woodlands or hedgerows, protected views or protected structures pertaining to the site.

While currently greenfield, the lands themselves are zoned for High Technology use and for General Employment.

10.3.3 Consented Development on or Adjoining Development Site

Table 3.1 of Chapter 3 provides a list of planning applications on a section of the site or in the area surrounding the site that have received planning approval from Fingal County Council in the past 5 years.

Many of the developments listed are located too far from the site to be relevant to the assessment of the landscape and visual impact of Proposed Development. However, the following developments, by virtue of the proximity to the development site and potential to be part of the visual environment associated with the site, are considered relevant to this assessment:

- Building A, (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025), granted 25th April 2017, is for a data storage facility on zoned lands along Cruiserath Road and immediately south of development site;

- Buildings B and C, (FCC Reg. Ref.: FW19A/0087), granted 23rd July 2019, is for two data storage facility buildings on zoned lands adjoining the existing Bristol Myers Squibb facility;
- Planning Register Reference: FW18A/0121, granted 8th October 2018, for a two-storey office building with landscaped roof on lands along Cruiserath Drive, immediately north of the development site and south of the Carlton Hotel; and

10.3.4 Landscape and Visual Significance and Sensitivity

The development site is not considered to be significant or sensitive from a landscape and visual aspect. The lands are appropriately zoned, located within the environment of an established and continually evolving business park, and with extant permissions for the development of data storage facility buildings along the southern and eastern parts of the lands.

The Carlton Hotel lies to the north of the overall development lands along Cruiserath Drive, and planning has been granted for a two-storey office development under a landscaped roof along southern side of Cruiserath Drive adjoining the overall development lands.

Residential developments and other amenities are located on the western side of the R121 which by virtue of separation by the R121, are not considered significant or sensitive to the development.

10.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development consists of the construction of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

The proposed substation and ancillary development, excluding the underground cables, will be located within a fenced substation compound immediately north and west of the permitted Buildings A and B, and will extend to c. 100m x 100m. The ground surface within the compound will be hard standing, and outside the compound, there will be a further 15m perimeter comprising crushed rock and tarmac.

The proposed route of the 220kV transmission cable will run from the proposed 220kV GIS Substation westward to reach a new wayleave running alongside the existing ESB wayleave, continuing north before turning east across the north of the overall development lands, before traversing third party lands and entering the existing Corduff 220kV Substation. The estimated length of this route is 1.8km.

The route of the proposed 49kVA grid transmission line travels west from the proposed 220kV GIS Substation and along the northern side of the permitted Building A, turning south at the end of Building A and exiting the overall development lands to cross Cruiserath Road after which it will follow the footpath until it crosses Church Road and connects with the existing Tyrellstown Cross substation. The estimated length of this route is c. 480m.

The provision of a new wayleave for the proposed 220kV underground cable will require localised modifications to the landscape layout permitted as part of the Building A development, (ABP Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025). These will include locally adjusting the footprint of permitted landscape berms inside the main entrance from the R121, and altering the layout a row of trees that formed part of the internal site landscaping along the western part of the site.

10.5 LIKELY SIGNIFICANT EFFECTS

New development has the potential to impact on the immediate site environs or the surrounding site context, or both. The quality of impacts can be positive, neutral or negative, and the significance of impacts is determined by the particular characteristics of the development and the existing context.

The Proposed Development will involve the construction of a development on lands that are predominantly greenfield, but on lands that are zoned for such development and with permission already in place for Building A to the south, Buildings B and C to the east, and in the context of an extensive and emerging high-tech district and a residential settlement to the west.

As the commencement of construction of the permitted Building A will precede that of the Proposed Development, potential landscape and visual effects of the Proposed Development are considered in the context of the permitted Building A.

10.5.1 Do-Nothing Scenario

In the event that the Proposed Development does not proceed, the site development area will be subject to clearance and landscaping in accordance with the permitted Building A development, unless an alternative development consistent with the land use zoning is granted permission and constructed.

10.5.2 Assessment of Effects During Construction

As noted above, construction of Building A will precede the Proposed Development, with construction having already commenced in Q3 2019 and targeted for completion in Q2 2022. It is anticipated that the accesses and haul roads for vehicles, the contractors' compound and fencing that will have been established for the construction

of the permitted development will be maintained and utilised for the Proposed Development.

The construction and commissioning of the proposed development is anticipated to take c. 15-21 months and is targeted to commence construction Q3 2020.

Potential landscape and visual effects arising from the construction and commissioning of the GIS substation will arise from:

- Site levelling, and excavation for foundations and underground utilities;
- Removal offsite of spoil for appropriate reuse/recovery/disposal;
- Access and egress of construction traffic for material import and export;
- Erection and operation of tower cranes;
- Construction traffic movement on site;
- Construction site lighting;
- General construction activity, including construction and security personnel, and construction machinery;
- Gradual emergence of the Proposed Development on the site;
- Provision of landscaping and planting etc.; and
- Completion and commissioning of the development.

Potential landscape and visual effects of constructing the underground cables will substantially be confined to within the overall development lands and the third party lands to the east, but will include works within the public roads in the vicinity of Tyrellstown Cross roundabout including:

- Localised site clearance;
- Excavation of trenches and localised stockpiling of excavated material;
- Access and egress of construction traffic for material import and export;
- Construction traffic movement on site;
- Construction site lighting;
- General construction activity, including construction and security personnel, and construction machinery;
- Reinstatement of existing grass and hard surfaces where disturbed by excavation; and
- Completion and commissioning of the development.

Where construction activity takes place with public roads at the Tyrellstown Cross roundabout, temporary site hoarding and traffic management measures will be deployed, as required, to minimise disruption and to ensure the safety of both construction personnel and the public.

Effects on Landscape Character

Effects on landscape character during construction will be temporary to short term, and will generally vary from **slight/not significant** to **significant/moderate**, and from **neutral** to **negative**.

As the main element of the development, the GIS Substation building, will be located towards the centre of the overall development lands, and the underground cables installed along the its inner western and northern boundaries, the Proposed

Development will not be prominent from the public roads immediately adjoining the overall site area.

At the Tyrellstown Cross roundabout, where the 49kVA underground cable will be installed under the Cruiserath Road and Church Road and the public footpath, there will be disruption of the existing carriageways and footpaths and associated construction and traffic management measures. These effects will be **short term, moderate and neutral** as they will be consistent with other road works that may take place within public carriageways.

Along the Cruiserath Road and the R121, there are substantial berms with mixed woodland landscaping, both existing and as part of the permitted development, that will reinforce the immediate landscape character along the road corridor. Along the Cruiserath Road, the permitted Building A will be intermittently visible above the berm and behind the berm planting, however, it is anticipated that Building A, in conjunction with the permitted landscaping, will substantially screen the Proposed Development. Along the R121, in the vicinity of the main campus entrance, the proposed GIS Substation building will be a noticeable new structure within the overall development lands however it will be located at a minimum of 125m from the site entrance and will not be prominent. Effects on landscape character will be **short term, slight/moderate and neutral**.

At Cruiserath Drive to the north of the development, and in the vicinity of the Carlton Hotel, the proposed GIS Substation building will present as a further element of the overall site development including the permitted Building A. At a distance of c. 400m, and appearance against the backdrop of Building A, it will not be prominent. Effects on landscape character will be **short-term, slight/moderate and neutral**.

Effects on landscape character from residential areas to the west will be **temporary to short-term, slight/not significant and neutral** at the eastern edge of the residential areas and will be **imperceptible** from within the residential areas. Effects on landscape character from the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site will be **temporary to short-term, imperceptible and neutral**.

Effects on Views

Effects on views during construction will be **temporary to short-term**, and will vary from **moderate to imperceptible**, and from **neutral to negative**.

Visibility from the south and west, along the Cruiserath Road and R121, will be limited by the perimeter landscape berms and planting, both existing and as part of the permitted Building A development, and by the presence of Building A itself. Construction activity, site lighting and emerging structures will give rise to **short term, slight/not significant and neutral** visual effects.

From the north, at Cruiserath Drive and from the vicinity of the Carlton Hotel, construction activity will be largely absorbed within the context of Building A, resulting in **short-term, moderate and neutral** visual effects.

Should construction of the permitted office development at Cruiserath Drive (Register Ref. FW18A/0121) precede the Proposed Development, its presence will reduce visibility towards the Proposed Development from Cruiserath Drive and the Carlton

Hotel, and visual effects will be reduced to ***slight and neutral***. Visual effects from the permitted office building will be ***moderate*** and ***negative*** as the Proposed Development will be openly visible within the view south from the office development.

Within the residential areas to the west of the R121, visibility will be limited to areas adjoining the R121 and where established boundary tree planting permits filtered views towards the development lands. Visual effects will be ***short-term, slight/not significant and neutral***. Visual effects from within the residential areas and open spaces west of the R121, and from the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site, will be ***imperceptible and neutral***.

10.5.3 Assessment of Effects During Operation

As noted above, construction of the permitted Building A development will precede the Proposed Development, and effects during operation of the Proposed Development therefore assume the existence of Building A.

Effects on Landscape Character

Effects on landscape character during operation will be permanent and will generally vary from ***slight/not significant to moderate***, and from ***neutral to negative***.

As the majority of the development will be located towards the centre of the overall development lands, and immediately north of the permitted Building A, the Proposed Development will not be prominent from public roads immediately adjoining the overall site area.

Along the Cruiserath Road and the R121, there are substantial berms with mixed woodland landscaping, both existing and as part of the permitted Building A development, that will reinforce the immediate landscape character along the road corridor, and the permitted Building A will establish new built development of the lands which will be intermittently visible above the berm and behind the berm planting. From the Cruiserath Road and Tyrellstown Cross roundabout, Building A will screen the proposed GIS Substation building. Along the R121, and particularly in the vicinity of the main campus entrance, the proposed GIS Substation building will present as an additional built element within the campus, but in the context of the emerging campus. Effects on landscape character will be ***slight/not significant and neutral***.

Along Cruiserath Drive to the north of the development, and in the vicinity of the Carlton Hotel, the Proposed Development will present as an additional built element in the context of the emerging campus and effects on landscape character will be ***moderate and neutral***.

Should construction of the permitted office development at Cruiserath Drive (Register Ref. FW18A/0121) precede the Proposed Development, its presence will have already altered the landscape character at Cruiserath Drive, and effects on landscape character arising from the Proposed Development will be reduced to ***slight and neutral***.

Effects on landscape character from residential areas to the west will be ***slight/not significant and neutral*** at the eastern edge of the residential areas, and will be imperceptible from within the residential areas. Effects on landscape character from

the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site will be ***imperceptible and neutral***.

Effects on Views

Effects on views during operation will be permanent and will also vary considerably from ***moderate to imperceptible***, and from ***neutral to negative***.

Visibility from the south and west, along the Cruiserath Road and R121, will be limited by the perimeter landscape berms and planting, both existing and as part of the permitted Building A development. Along Cruiserath Road, the proposed GIS Substation building will be screened by Building A. From the R121, and particularly in the vicinity of the main campus entrance, the GIS Substation building will be partially visible towards the centre of the development lands, however, at a minimum of c. 125m from the public road, and with the backdrop of Building A, the substation building will not be prominent. Effects on views will be ***slight/not significant and neutral***.

From the north, at Cruiserath Drive and from the vicinity of the Carlton Hotel, the GIS Substation building will be at a distance of c. 400m and with a backdrop of Building A, giving rise to ***slight/moderate neutral*** visual effects.

Should construction of the permitted office development at Cruiserath Drive, (Register Ref. FW18A/0121) precede the Proposed Development, its presence will reduce visibility towards the Proposed Development from Cruiserath Drive and the Carlton Hotel, and visual effects will be reduced to ***imperceptible and neutral***. In such circumstances, visual effects from the office building will be ***moderate and negative*** as the Proposed Development will be openly visible in views south from the office development.

Within the residential areas to the west of the R121, visibility will be limited to areas adjoining the R121 and where established boundary tree planting permits filtered views towards the development site. Visual effects will be ***slight/not significant and neutral***. Visual effects from within the residential areas and open spaces west of the R121, and from the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site, will be ***imperceptible and neutral***.

10.6 MITIGATION MEASURES AND MONITORING

10.6.1. General

The Proposed Development is located in suitably zoned lands, and in the context of numerous other established and emerging developments that are similar in nature.

It is noted that the permitted Building A will precede construction of the Proposed Development, and both the built elements and the associated perimeter landscape treatment will provide substantial mitigation of the Proposed Development, particularly from the south and west.

The permitted Building A development includes reinforcement of the perimeter landscape to provide a more continuous perimeter appearance and presentation of the overall development lands from the surrounding streetscape, by augmenting and interplanting existing woodland planting on mounds.

The Proposed Development will benefit from the perimeter landscape proposals associated with the permitted Building A development. The Proposed Development introduces a new wayleave for the proposed 220kV underground cable, and incorporation of this wayleave has necessitated localised modification of the permitted landscaping associated with Building A. Changes include localised modifications to the footprint of the landscape berms inside the main campus entrance, and altering the layout a row of trees that formed part of the internal site landscaping along the western part of the site.

Additionally, while there are currently two disused access gates to the development lands at the northwest and northern boundaries, the Proposed Development includes extension of the existing landscape berms to close off these access gates and to reduce visibility into the overall lands.

The revised and additional landscape details are provided on the Landscape Drawing 6668_320, Landscape Masterplan.

Mitigation During Construction

The principal mitigation measures during construction are in ensuring a managed and orderly construction site, appropriate storage of materials, ensuring debris is not carried onto the public roads by construction vehicles, and reinstatement of an footpaths, verges and carriageways disturbed by virtue of trench excavation for the underground cables.

Mitigation During Operation

Landscape and visual mitigation measures are substantially provided as part of the permitted Building A development, however, mitigation measures are also inherent in the landscape design for the proposed development and therefore focus on the implementation of the proposed architectural design and the additional landscape measures set out in the accompanying 6668_320 Landscape Masterplan.

As with the permitted Building A, the Proposed Development will also use horizontal cut-off light fittings for the lighting standards on site roads and carparks so as to minimise light spill.

10.6.2 Monitoring

Monitoring During Construction

During construction, the contractor will ensure that the site is managed and maintained in an orderly manner and in accordance with the CEMP, with particular care and attention to perimeter areas that might give rise to adverse landscape and visual effects from outside the construction site

Monitoring During Operation

All landscape works will be maintained in line with normal landscape maintenance / management works and failed and/or defective works will be made good, as required, on a regular basis.

10.7 PREDICTED IMPACTS OF THE DEVELOPMENT

Residual effects are described with reference to a number of Accurate Visual Representations (AVRs) included in Appendix 10.1, and include views from four locations that are representative of the views towards the site from the vicinity of the

development site and from the surrounding area. It is noted that the eastern side of the site is bound by the existing BMS facility which is not considered sensitive to the Proposed Development in relation to landscape and visual impacts, and as such, no views are provided from the east. The proposed GIS Substation building is also at c. 400m from Cruiserath Drive, and as such, it was not considered necessary to illustrate views from the north.

The locations of the AVRs are indicated on Figure 1.0 View Location Map in Appendix 10.1, and for each view, the following variations are provided:

- As Existing, showing the current baseline situation;
- As Proposed, showing (where applicable) the permitted Building A development and the Proposed Development; and
- Cumulative, showing the Proposed Development in combination with permitted Buildings B and C, and other planned development and including the indicative future masterplan development of additional data storage facilities. Note that commentary on Cumulative Effects is included in Chapter 15 of this EIA Report.

The series of AVRs in Appendix 10.1 are from representative locations along the Cruiserath Road and the R121 Road, and from the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site.

View 1, *Figure 1.1.1*, is from the Cruiserath Road opposite the existing Bristol Meyers Squib facility. The presence of an access gateway to the BMS facility at this location provides a localised break in the otherwise continuous roadside tree planting and perimeter site planting, and the boundary between the BMS facility and the overall development site can be seen perpendicular to the road boundary.

Figure 1.1.2 shows the Proposed Development, together with the permitted Buildings A development along the Cruiserath Road frontage. The eastern end of Building A will be visible over the BMS boundary at this localised vantage point, and the Proposed Development will be entirely screened by Building A, and the profile of the GIS Substation is illustrated using a red line. Landscape and visual effects are considered to be ***Imperceptible and neutral***.

Views 2, *Figure 1.2.1*, is from the roundabout at the junction of the Cruiserath Road and the R121 Road. In the vicinity of the roundabout, at present, there is only earth mounding along the site boundary, and the established planting that characterises much of the site boundary is not continued, and affords greater visibility into the development site area. The parapets of the recently development BMS extension are visible above and behind the existing berms.

Figure 1.2.2 shows the Proposed Development, together with the permitted Building A development along the Cruiserath Road frontage. The extent of the perimeter planting permitted as part of the Building A development can be seen to be effective in extending the landscape character along the site boundary. The Proposed Development will be entirely screened by Building A and associated landscaping, and the profile of the GIS Substation is illustrated using a red line. Landscape and visual effects are considered to be ***Imperceptible and neutral***.

View 3, *Figure 1.3.1*, is from along the R121 approaching the overall site entrance, and illustrates the typical perimeter berms and landscaping that currently existing along the western boundary of the overall site. *Figures 1.3.2* shows the permitted Building A development and associated landscape reinforcement, and the Proposed Development. The GIS Substation building will be partially visible beyond the entrance area to the campus, but seen in the context of Building A to the right of the view. The Proposed Development will give rise to **moderate neutral** landscape and visual effects.

View 4, *Figure 1.4.1*, is from the elevated grounds of the church ruin at Mulhuddart Church and Graveyard to the south of the site, and illustrates the strong foreground of the older and extended graveyard setting, with a range of contemporary communications infrastructure, electricity pylons and high-tech industrial development beyond. *Figure 1.4.2* includes the permitted Building A and the Proposed Development, and shows that the Proposed Development will be substantially screened by Building A, giving rise to **not significant/imperceptible** landscape and visual effects.

10.8 RESIDUAL EFFECTS

The Proposed Development site is located towards the eastern part of the wider development lands between the Cruiserath Road, R121 and Cruiserath Drive. These wider development lands share a boundary with the existing Bristol Meyers Squibb facility to the east. The overall development lands are the subject of existing permission for Building A on the southern part of the lands, and Buildings B and C on the eastern part of the lands, and including perimeter landscape enhancement.

The development site is zoned for High Technology development, and does not contain any landscape features that are considered to be sensitive to development.

The development site is relatively remote from the roadways surrounding the wider development lands and has limited visual connection with the established residential areas to the west of the R121. Lands to the east and south of the development already contain substantial large scale high technology facilities.

Landscape and visual effects arising from the Proposed Development will be **not significant**, and will generally range from **moderate to imperceptible**, and from **neutral to negative**. Landscape and visual effects from the wider locality, including from the residential areas to the west of the R121, will be **not significant** or **imperceptible**.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

10.9 REFERENCES

- EPA Draft 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2017).
- EPA 'Draft Advice Notes for preparing Environmental Impact Statements' (2015).
- The Landscape Institute/ Institute of Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment (3rd Edition).
- European Commission (2017) Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report.
- Government of Ireland (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018).
- Fingal County Development Plan 2017-2023

APPENDIX 10.1
PHOTOMONTAGES
PREPARED BY BRADY SHIPMAN MARTIN

PHOTOMONTAGES

for
Project No. 6668
220kV SUB STATION, Cruiserath

for
Client: AWN Consulting Limited

Date: 18 September 2019
Document Number: RP02

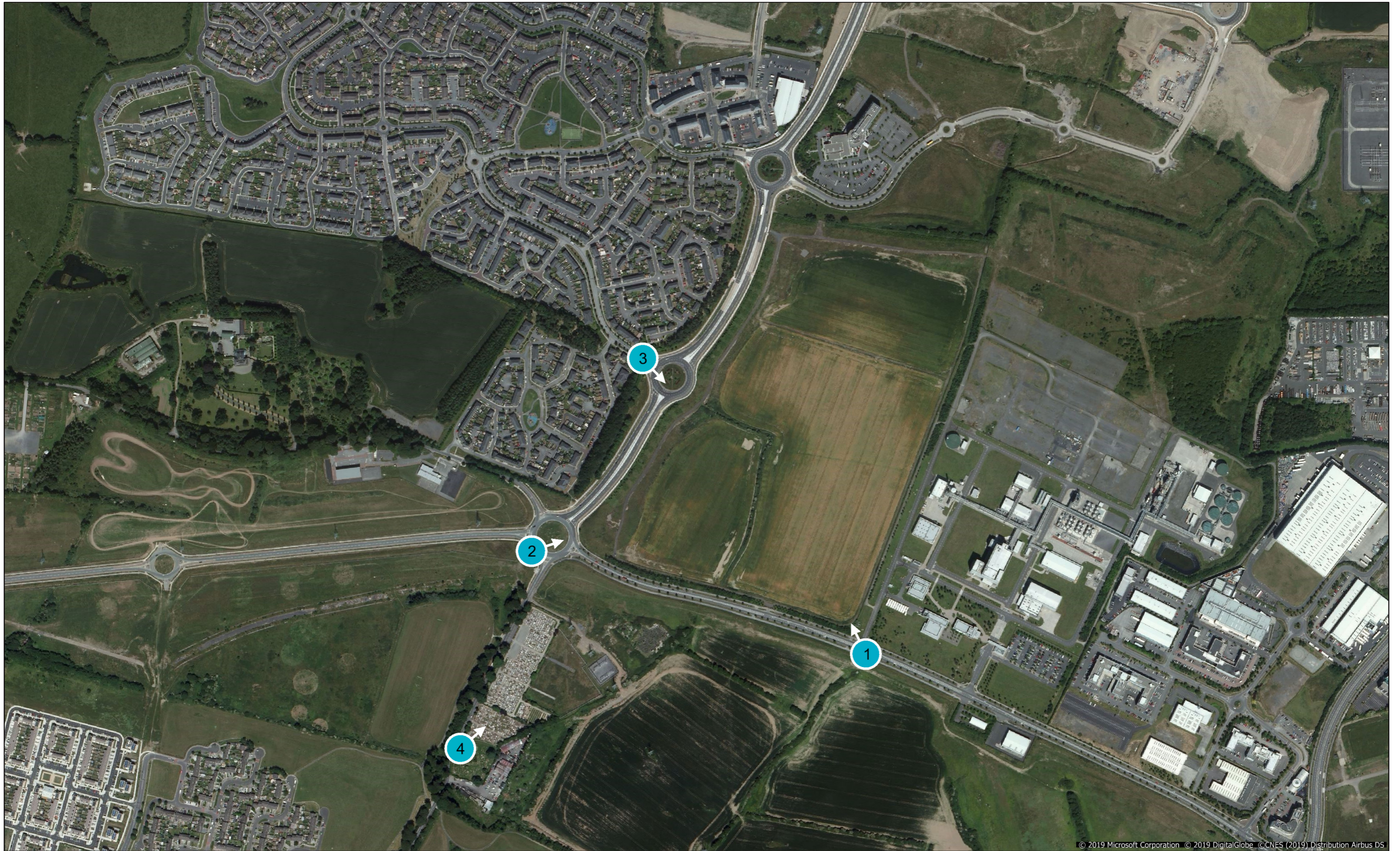
Brady Shipman Martin

Canal House
Canal Road
Dublin 6

Tel: +353 (0)1 208 1900
Email: mail@bradyshipmanmartin.com



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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220KV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



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Figure: 1.0

Rev: 00
View Location Map

BSM Brady Shipman
Martin.
Built.
Environment.
Est.
1968

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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



THE IMAGE ABOVE IS A PANORAMA ASSEMBLED FROM TWO OR MORE PHOTOGRAPHS

Figure: 1.1.1

Rev: 00
View 1
As Existing



| | | | | | |
|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Red Outline represents size and location of Proposed Development.

THE IMAGE ABOVE IS A PANORAMA ASSEMBLED FROM TWO OR MORE PHOTOGRAPHS

Figure: 1.1.2

Rev: 01
View 1



As Proposed including permitted buildings under Planning ref: FW17A/0025 and ABP Ref PL06F.248544

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|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Red Outline represents size and location of Proposed Development.

THE IMAGE ABOVE IS A PANORAMA ASSEMBLED FROM TWO OR MORE PHOTOGRAPHS

Figure: 1.1.3

Rev: 00
View 1



Cummulative including permitted buildings under Planning ref: FW19A/0087

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|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220KV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



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| < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > |
|----------------|----------------|----------------|----------------|-------------------------------------|----------------|----------------|----------------|----------------|

Figure: 1.2.1

Rev: 00
View 2
As Existing



| | | | | | |
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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Red Outline represents size and location of Proposed Development.

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|----------------|----------------|----------------|----------------|-------------------------------------|----------------|----------------|----------------|----------------|
| < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > |
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Figure: 1.2.2

Rev: 01
View 2



As Proposed including permitted buildings under Planning ref: FW17A/0025 and ABP Ref PL06F.248544

| | | | | | |
|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220KV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Red Outline represents size and location of Proposed Development. Yellow Outline represents size and location of Cumulative Developments.

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| < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > |
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Figure: 1.2.3

Rev: 00
View 2



Cummulative including permitted buildings under Planning ref: FW19A/0087



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| < 73.7° / 24mm | < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > | 24mm / 73.7° > |
|----------------|----------------|----------------|----------------|----------------|-------------------------------------|----------------|----------------|----------------|----------------|----------------|

Figure: 1.3.1

Rev: 00
View 3
As Existing



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|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



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| < 73.7° / 24mm | < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > | 24mm / 73.7° > |
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Figure: 1.3.2

Rev: 01
View 3



As Proposed including permitted buildings under Planning ref: FW17A/0025 and ABP Ref PL06F.248544

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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Yellow Outline represents size and location of Cumulative Developments.

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|----------------|----------------|----------------|----------------|----------------|-------------------------------------|----------------|----------------|----------------|----------------|----------------|
| < 73.7° / 24mm | < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > | 24mm / 73.7° > |
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Figure: 1.3.3

Rev: 00
View 3



Cummulative including permitted buildings under Planning ref: FW19A/0087

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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



< 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° >

Figure: 1.4.1

Rev: 00
View 4
As Existing

BSM
Brady Shipman
Martin.
Built.
Environment.
Est. 1968

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| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220kV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



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Figure: 1.4.2

Rev: 01
View 4



As Proposed including permitted buildings under Planning ref: FW17A/0025 and ABP Ref PL06F.248544

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|-----------------|-------------------------------|------------------|---------------|-----------|-------------------|
| Project Number: | 6668 | Document Number: | RP02 | Revision: | 01 |
| Project Name: | 220KV SUB STATION, Cruiserath | Document Title: | PHOTOMONTAGES | Date: | 18 September 2019 |



Yellow Outline represents size and location of Cumulative Developments.

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|----------------|----------------|----------------|----------------|-------------------------------------|----------------|----------------|----------------|----------------|
| < 65.5° / 28mm | < 54.4° / 35mm | < 39.6° / 50mm | < 28.8° / 70mm | ANGLE OF VISION / LENS FOCAL LENGTH | 70mm / 28.8° > | 50mm / 39.6° > | 35mm / 54.4° > | 28mm / 65.5° > |
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Figure: 1.4.3

Rev: 00
View 4

BSM
Brady Shipman
Martin.
Built.
Environment.
Est. 1968

Cummulative including permitted buildings under Planning ref: FW19A/0087

11.0 ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

11.1 INTRODUCTION

The site of the Proposed Development is located at Cruiserath Road, Blanchardstown, Dublin 15 (ITM 707703, 742082). The Proposed Development site extends across the townlands of Cruiserath and Goddamendy, in the Barony of Castleknock and the Civil Parish of Finglas.

11.2 METHODOLOGY

The Record of Monuments and Places (RMP), comprising the results of the Archaeological Survey of Ireland, is a statutory list of all recorded archaeological monuments known to the National Monuments Service. The relevant files for these sites contain details of documentary sources and aerial photographs, early maps, OS memoirs, the field notes of the Archaeological Survey of Ireland and other relevant publications. Sites recorded on the Record of Monuments and Places all receive statutory protection under the National Monuments Act 1994. The information contained within the RMP is derived from the earlier non-statutory Sites and Monuments Record (SMR); some entries, however, were not transferred to the statutory record as they refer to features that on inspection by the Archaeological Survey were found not to merit inclusion in that record or could not be located with sufficient accuracy to be included. Such sites however remain part of the SMR. The record is a dynamic one and is updated so as to take account of on-going research. The Record of Monuments and Places was consulted in the Archives of the Department of Culture, Heritage and the Gaeltacht (see Appendix 11.1). There are no recorded archaeological monuments located within the site boundary. There are 7 recorded archaeological monuments within the study area which comprises a distance of c. 500m from the Proposed Development site (see Figure 11.1 and Appendix 11.1).

Cartographic sources were used to identify additional potential archaeological and cultural heritage constraints. Manuscript map sources assessed included the Down Survey map of 'The Parrishes of Ward and Mallahidert in the Barony of Castleknock' (see Figure 11.2) and Rocque's 'An Actual Survey of the County of Dublin, 1760'. Other cartographic sources consulted consisted of the Ordnance Survey 6" first (see Figure 11.3) and subsequent editions and Ordnance Survey 25" maps (T.C.D. Map Library, www.osi.ie). Modern Ordnance Survey aerial photographic coverage dating from 1999, 2000 and 2005 available on the Ordnance Survey of Ireland (www.osi.ie) were assessed.

The National Museum of Ireland's topographical files are a national archive of all known archaeological finds from Ireland. They relate primarily to artefacts but also include references to monuments and contain a unique archive of records of previous excavations. The topographical files were consulted to determine if any archaeological artefacts had been recorded from the area. Other published catalogues of prehistoric material were also studied: Raftery (1983 - Iron Age antiquities), Eogan (1965; 1993; 1994 - bronze swords, Bronze Age hoards and goldwork), Harbison (1968; 1969a; 1969b - bronze axes, halberds and daggers). There are no topographical finds recorded from the townland of Cruiserath and Goddamendy.

The excavation bulletin website (www.excavations.ie) was consulted to identify previous excavations that have been carried out within the study area. This database

contains summary accounts of excavations carried out in Ireland from 1970 to 2018. Excavations undertaken in the townland of Cruiserath were assessed (see Appendix 11.2).

The Fingal County Council Development Plan 2017-2023 was also consulted. The plan includes policy objectives for the protection of the County's archaeological, architectural and cultural heritage. The Record of Protected Structures (RPS) contained within the plan includes every structure which is of special architectural, archaeological, artistic, cultural, scientific, social or technical interest within the county boundaries. There is one structure included in the RPS within c. 500m of the Proposed Development (see Appendix 11.3 and Figure 11.4). None are visible from the Proposed Development.

The National Inventory of Architectural Heritage (NIAH) is a systematic programme of identification, classification and evaluation of the architectural heritage of the State. The Minister for Arts, Heritage and the Gaeltacht is currently using the Inventory as the basis for making recommendations for the NIAH. There is one structure included in the NIAH within c. 500m of the Proposed Development (see Appendix 11.3 and Figure 11.4). None are visible from the Proposed Development.

The baseline historical research utilised sources including Lewis' Topographical Dictionary of Ireland (Lewis 1837), the Proceedings of the Royal Irish Academy and the Journal of the Royal Society of Antiquaries. See Bibliography for full list of references used.

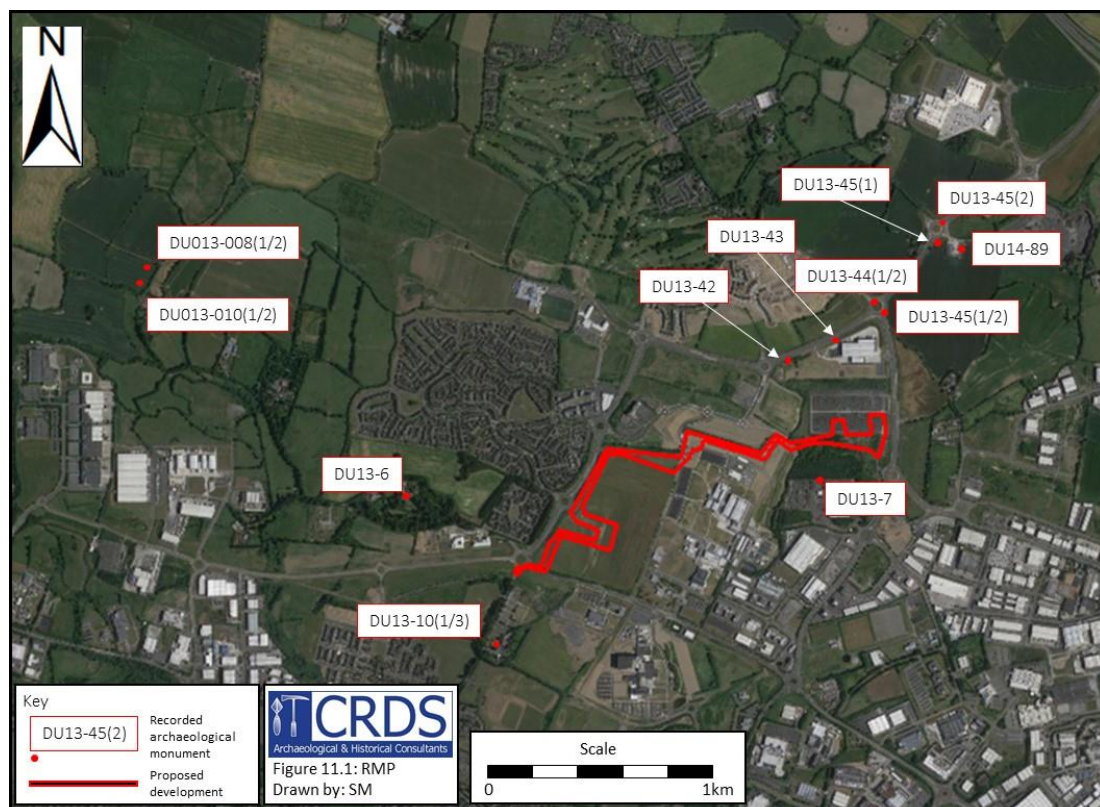


Figure 11.1 Recorded archaeological monuments within c. 500m of the Proposed Development (source: www.archaeology.ie)

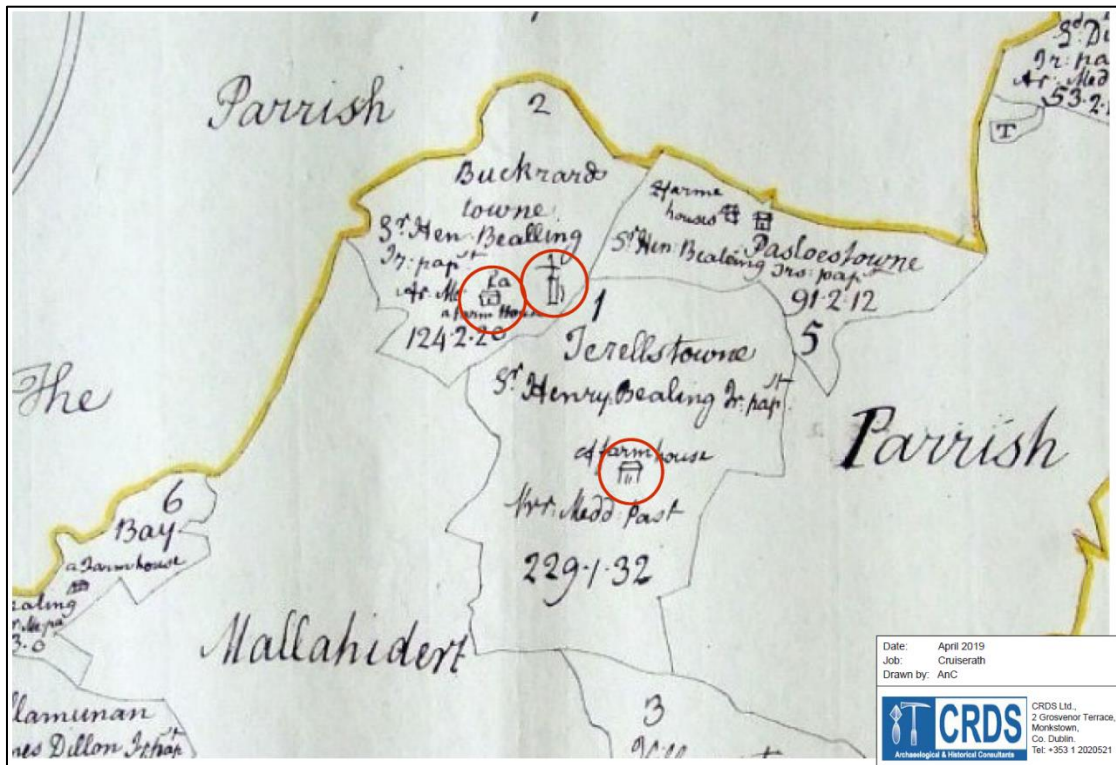


Figure 11.2 Down Survey Parish maps of the Ward and Mulhuddart, showing Tyrrellstown House, Buzzardstown House and Buzzardstown Church (source: www.downsurvey.tcd.ie)

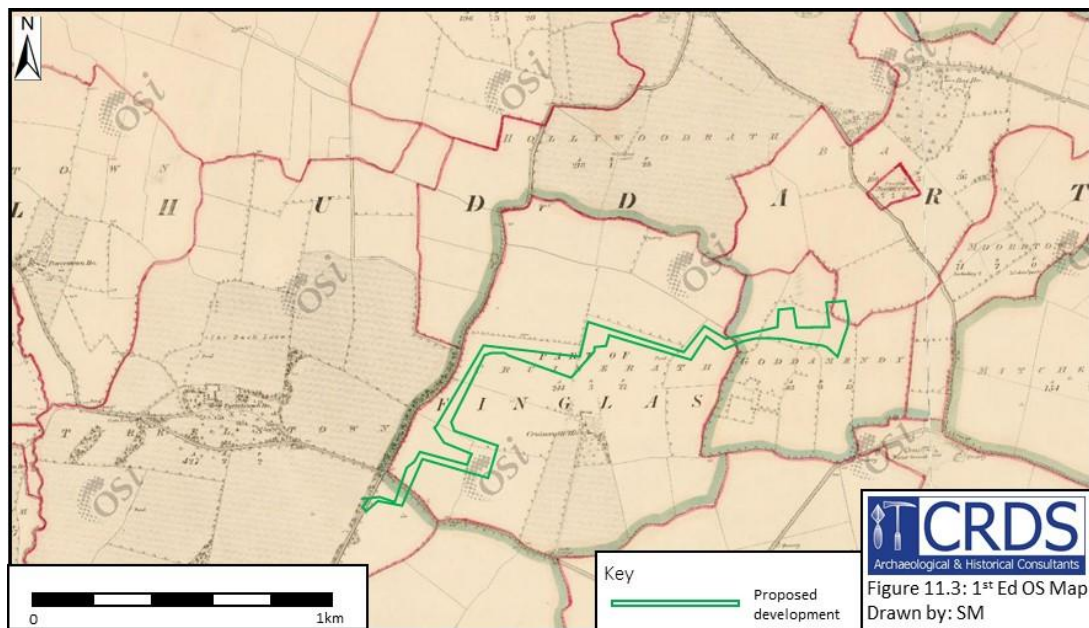


Figure 11.3 First edition Ordnance Survey Map showing site and location of Cruiserath House (base map source: www.osi.ie)

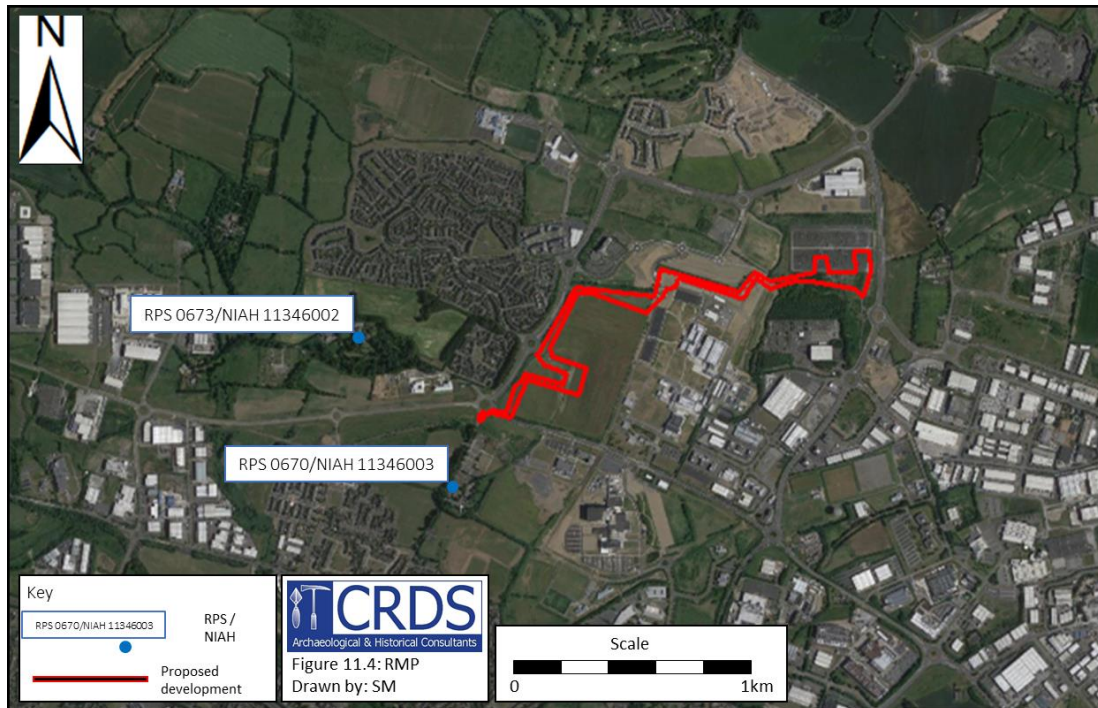


Figure 11.4 RPS and NIAH structures within c. 500m of the Proposed Development (source: www.archaeology.ie)

11.3 RECEIVING ENVIRONMENT

11.3.1 Archaeological, Architectural and Cultural Background

The earliest evidence for human activity in the study area, which comprises a distance of c. 500m from the Proposed Development, was uncovered in advance of the construction of the N2 Link Road at Tyrrelstown. The remains consisted of a group of three cremation pits (RMP no. DU013-043, see Appendix 11.1). The pits contained a mixture of cremated bone, charcoal and burnt clay. In one of the pits the cremation deposit was placed in a coarse pottery vessel. Radiocarbon dating of this burial produced a date of 1010-840 cal. BC placing it in the Late Bronze Age.

Many ringforts, the indicative residential site type of the early medieval period, have been partially or completely destroyed by development or by agricultural practices. Often the only indication of their former presence is preserved in townland name elements such as Dún, Cashel, Lios or Rath as in the case of Cruiserath. The placename 'Cruiserath' is derived from Ráth an Chrúisigh (www.logainm.ie) meaning the rath of the Cruise or Cruce family. The Cruises were a very prominent local family in the Middle Ages and succeeded Henry Tyrrell in the office of Chief Sergeant of Dublin County.

Excavations undertaken in advance of the N2 Link Road, uncovered an early medieval corn-drying kiln (RMP DU013-042, see Appendix 11.1). The kiln comprised a series of pits and gullies. Deposits contained within it consisted of alder, hazel, cherry, and elm charcoal. The charcoal recovered produced a radiocarbon date of AD1020-1180 placing at the transition between the early and later medieval periods. A single piece of flint and a fragment of Dublin-type pottery were also recovered from the topsoil at the site.

Cloghran church and graveyard (DU013-00801- and DU013-00802-, see Appendix 11.1) are located c. 480m to the south-east of the Proposed Development. The wall

footings of the church are located in a roughly square graveyard on a natural rise within an existing commercial development. The graveyard contains grave markers of early eighteenth to twentieth century date. Before the early fourteenth century this church was connected to the parish of Finglas and later became a chapel on the land of All Hallows. A reference to the church in 1531 by Archbishop Alen refers to it as 'so small that it scarcely deserves the name Chapel' (Ronan 1940). The Chapel of Cloghran, along with the other possessions of All Hallows, were granted to Dublin Corporation at the time of the Dissolution in 1538 (Ronan 1940, 182-94). Local tradition records that during a mass at Cloghran the priest saw a person steal a horse and foal. The priest uttered 'God amend thee' which has been applied as the name of the neighbouring townland of Goddamendy (Egan 1991, Vol. 4, 11-12; Schools Manuscript Collection vol. 790, p. 9-10).

The church of Buzzardstown (RMP DU013-010001/RPS 670/NIAH 11346003), located to the south-west of the Proposed Development is dedicated to the Blessed Virgin Mary. The church is first mentioned in papers referring to the incorporation of a guild in the early 15th century. It was described as the guild and fraternity 'of our Lady of St. Mary of the Church of Mulhaddart' (Ball 1920, 44-6). The church was in poor condition by the mid-17th century and the Civil Survey (1654) records only 'the walls of a church' there (Simington 1945, 227). The church is located within a raised graveyard (RMP DU013-010003) and comprises an undivided nave and chancel structure. A holy well also dedicated to the Blessed Virgin Mary is located some distance from the graveyard. The pattern day was held on Our Lady's feast days on the 25th March, 15th August and 8th December. It is reputed to have great healing powers (Schools Manuscript Collection vol. 791, p. 20, 72).

The site of Cruiserath House, an eighteenth century house, is indicated on Rocque's map of Dublin, 1760 and the 1st edition Ordnance Survey map to the east of the Proposed Development. The site was subject to archaeological assessment prior to the construction of the Bristol Meyers Squibb development (see Excavation ref. no. 99E0620). The house was demolished in the mid-twentieth century and subsequently replaced by a modern house and large farmyard. The archaeological test trenches were located to identify remains of the modern buildings and the site of the eighteenth century house. They revealed the disturbed and truncated remains of masonry and red brick walls, and well-preserved cobbled surfaces. The Civil Survey of Dublin 1654-56 records a 'thatcht house with a barne with two or three smale cottages' in the townland of Cruiserath (Simington 1945, 227-8), but it remains unclear whether this house was located at the same location as that indicated on the 1st edition Ordnance Survey map.

The Civil Survey also records 'the walles of a greate stone house with five or six smale houses' at Tyrrelstown (RMP DU013-006, see Appendix 11.1; Simington 1945, 227). The house was built in the Belling's family (Ronan 1937, 159-60) and damaged in the 1641 Rebellion. A new house was built on the site in the early nineteenth century (NIAH ref. no. 11346002).

11.3.2 Site Assessment

The site of the Proposed Development was assessed on 3rd April 2019 in bright cloudy weather. The purpose of the site assessment was to identify any archaeological, architectural or cultural heritage features or areas of archaeological potential within the site.

The overall landholding generally consists of a gently undulating field in rough pasture (see Plate 11.1).

A modern metalled track runs along the western boundary of the overall site. The boundary has been landscaped and comprises an earthen bund covered in trees and vegetation (see Plate 11.2). The route will run along this boundary before turning east.

The northern boundary consists of a high grassed over earthen berm with mature trees to the north of this. The Proposed Development will run to the immediate south of the berm in an area of flat ground at its base (see Plate 11.3).

The Proposed Development will cross the townland boundary between Cruiserath and Goddamendy at its north-eastern end. The boundary appears as a line of mature hedgerow and trees on aerial photographic coverage of the site but was not accessible at the time of the survey.

No features of archaeological significance were noted.



Plate 11.1 Site of Proposed Development



Plate 11.2 Western site boundary of Proposed Development.



Plate 11.3 Northern boundary of Proposed Development site.

11.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development comprises a new 220kV Gas Insulated Switchgear (GIS) Substation, an underground double circuit 220kV transmission line from the proposed Substation to the existing Corduff 220kV Substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation, and 2 no. new cable bays at the extant Corduff Substation along with associated and ancillary works (see Chapter 2 for full description of development).

11.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

11.5.1 Construction Phase

Potential impacts on archaeological and cultural heritage associated with the Proposed Development involves ground disturbance associated with the construction of the proposed GIS substations and the excavation of the trenches for the proposed cable installations. Ground disturbance associated with the site preparation and excavations would remove sub-surface archaeological features, should any survive within the site.

There will be no direct or indirect (visual) impacts on the architectural heritage features identified within the desktop assessment due to their distance from the site, local topography and intervening developments.

11.5.2 Operational Phase

There are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operation of the Proposed Development.

11.5.3 Do-nothing Scenario

There are no potential impacts on archaeological, architectural and cultural heritage expected in the case of a Do-nothing Scenario.

11.6 REMEDIAL AND MITIGATION MEASURES

11.6.1 Construction Phase

The majority of the site area has not been subject to intensive development and there is the possibility of sub-surface archaeological features surviving within the site boundary.

Archaeological testing will be required at the site of the GIS substation and at the site where the route crosses the boundary between the townlands of Cruiserath and Goddamendy.

Archaeological monitoring will be required in areas where open cut methodologies will be used to excavate the cable trench.

Should archaeological features or material be uncovered during archaeological testing or any phase of construction, ground works should cease immediately and the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht should be informed. Time must be allowed for a suitably qualified archaeologist to inspect and

assess any material. If it is established that archaeologically significant material is present, the National Monuments Service may require that further archaeological mitigation be undertaken.

Please note that the recommendations given here are subject to the approval of the National Monuments Service, Department of the Culture, Heritage and the Gaeltacht.

11.6.2 Operational Phase

No mitigation measures are required for archaeological, architectural and cultural heritage during the operational phase of the Proposed Development.

11.7 PREDICTED IMPACT OF THE DEVELOPMENT

11.7.1 Construction Phase

The construction phase of the Proposed Development will not impact directly on any sites included in the Record of Monuments and Places. However, portions of the site are still undeveloped, and it is possible that ground disturbance may impact on sub-surface archaeological features within the site. However, the implementation of mitigation measures detailed in Section 11.6.1, will ensure that the effect is **neutral** and **imperceptible**.

11.7.2 Operational Phase

The operational phase of the Proposed Development is not predicted to have any impact on archaeological, architectural and cultural heritage.

11.8 RESIDUAL IMPACTS

Subject to the implementation of appropriate archaeological mitigation measures, no residual impacts on archaeological, architectural and cultural heritage are predicted.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA report.

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APPENDIX 11.1 RECORDED ARCHAEOLOGICAL MONUMENTS

Recorded Archaeological Monuments located within c. 1.5km of the Proposed Development are listed below (source Record of Monuments and Places for Dublin, www.archaeology.ie).

| | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-007---- |
| Site Type | Field system |
| Townland | GODDAMENDY |
| ITM | 708521, 741977 |
| Description | The 1837 OS 6-inch map shows an irregular pattern of small fields which may be part of a medieval settlement. This field system was visible on aerial photography taken in 1971 (FSI 2418/417). Built over. Not visible at ground level. Compiled by: Geraldine Stout; Updated by: Christine Baker; Date of upload: 18 January 2015. Date of last visit: 27 April 2010. |
| Source | Fairey Survey of Ireland October, 1971, 2418/417. An aerial photograph taken by Fairey Survey of Ireland shows an irregular patten of small fields. These are marked on the 1837 OS 6" map. The area has been built on, leaving no trace of the field system. |

| | |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-008001- |
| Site Type | Church |
| Townland | CLOGHRAN (Castleknock By.) |
| ITM | 709109, 741755 RMP yes |
| Description | Located in a roughly square graveyard located on a rock outcrop which has been quarried away up to the limits of the graveyard. Prior to c. 1300 this church was connected to Finglas parish until it became a chapel on the lands of All Hallows who supplied one of the Canons to say mass there. It was granted with all other possessions of All Hallows to Dublin Corporation in 1538 (Ronan 1940, 182-194). Only grass covered wall footings of the church survive. These are built of randomly coursed masonry (dims. L13m, Wth 5.5m, H 0.4m). There are openings in the north and south walls. The east end is dominated by a large tree. Some internals burials. Compiled by: Geraldine Stout Updated by: Christine Baker. Date of upload: 18 January 2015. Date of last visit: 23 November 2013. -Source Ronan, M. V. Rev. 1940. Mulhuddart and Cloghran-Hiddert in JRSAI Vol 70, pp. 187-191. |

| | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-008002- |
| Site Type | Graveyard |
| Townland | CLOGHRAN (Castleknock By.) |
| ITM | 709107, 741739 |
| Description | A roughly square graveyard on a natural rise which has been quarried to the very edge of the graveyard. It contains a number of 18th century memorials. Bounded by cast-iron railings and hedgerows. The grave markers consist of 18th, 19th and early 20th century headstones. One of the oldest visible is that of Margaret Roe who died in 1737. The graveyard was previously surveyed in 1992 (Egan). Also Joseph Gormly 1751, McMahon 1774 in Latin. Compiled by: Geraldine Stout. Updated by: Christine Baker. Date of upload: 18 January 2015. Date of last visit: 23 November 2013. |

| | |
|--|-------------------------------------------------------------------------------------|
| | References: Egan, M. 1992, Memorials of the Dead: Dublin City and County, Volume 5. |
|--|-------------------------------------------------------------------------------------|

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-010001 |
| Site Type | Church (in ruins) |
| Townland | BUZZARDSTOWN |
| ITM | 307145, 241221 |
| Description | Located in a prominent position with land falling away gently to the west and steeply to the south. This church was first mentioned in the early 15 th century on the incorporation of a guild described as ‘the guild and fraternity of our Lady of St. Mary of the Church of Mulhaddart’ (Ball 1920 44-46). The Civil Survey 1654 mentions the walls of a church at Buzzardstown (Simington 1945, 227) The church is situated in a raised graveyard, which curves along the western side. It has an undivided nave and chancel (internal dimension L. 20.22m, width 8.73, height 0.05m, wall thickness 0.97-1.20m) with a residential tower that survives to the first floor level. Built of roughly coursed shaley limestone with dressed quoins. The vault over the ground floor shows traces of wickerwork centring (external dimensions L. 7.45m, width 4.9m). First floor has a projecting turret on the south side, a window on the west and two wall recesses in the north. The nave is entered through segmental arched opening in the north wall. Interior is featureless. |
| Source | Anon, 1897, Excursions in County Dublin. Descriptive sketch of places visited in JRSAI Vol. 27, p. 446-60. Bell, F. E. 1920. South Fingal, pp. 44-46. Daly M.J.F. 1957. Curative Wells in Old Dublin in Dublin Historical Record, XVII, No. 1, pp. 13-24. Healy, P. 1974, Report on Monuments and Sites of Archaeological Interest in County Dublin, pp. 21. Ronan, M. V. Rev. 1940. Mulhuddart and Cloghran-Hiddert in JRSAI Vol 70, pp. 182-93. |

| | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-010003- |
| Site Type | Graveyard |
| Townland | BUZZARDSTOWN |
| ITM | 707092, 741247 |
| Description | Graveyard walled and curved along west at some height above the road. The oldest section of the graveyard is the raised area that surrounds the church (DU013-010001-). It contains 18th, 19th century and modern gravestones as well as a number of re-used architectural fragments. The graveyard has been extended to the north twice. The graveyard was previously surveyed by Egan in 1993 (Fingal Historic Graveyards project 2008). Compiled by: Christine Baker Date of Upload: 7 February 2015 |
| Source | Fingal Historic Graveyards Project 2008, Vols. 1 and 2 http://www.fingal.ie/planning-and-buildings/heritage-in-fingal/heritage-and-communities/historic-graveyards/ |

| | |
|-----------|--------------------|
| RMP No. | DU013-042---- |
| Site Type | Kiln - corn-drying |
| Townland | HOLLYWOODRATH |
| ITM | 708398, 742509 |

| | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | A corn-drying kiln associated with a collection of pits and gullies was excavated ahead of the Tyrrelstown to N2 Cherryhound Interchange link road in 2008 (E3920). The kiln was a SE-NW orientated, steep-sided hollow with a concave oxidised base. It contained four stratified deposits representing successive phases of use. Charcoal remains of alder, hazel, cherries, elm and Maloideae were present. It was radiocarbon dated to AD1020-1180 . A single piece of flint and a single fragment of Dublin-type ware were recovered in the topsoil (O' Hara , R. 2011, 104). Compiled by: Geraldine Stout; Date of upload: 27 August 2012. |
| Source | Excavation licence no. E3920 Robert O'Hara (Hollywoodrath 1). |

| | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RMP No. | DU013-043---- |
| Site Type | Cremation pit |
| Townland | BAY |
| ITM | 708610, 742598 |
| Description | <p>Excavated (Licence no. E3917) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of a cluster of three cremation pits.</p> <p>Pit 1 (0.47m x 0.40m) contained a mix of cremated human bone, charcoal and fragments of burnt clay. While the weight of cremated bone recovered was a fraction of a cremated individual analysis revealed the burial to be an older adolescent or perhaps an adult (O'Hara R. 2008, 2).</p> <p>Pit 2 (0.27m x 0.25m) contained a mix of cremated human bone, charcoal and fragments of burnt clay. While the weight of cremated bone recovered was a fraction of a cremated individual analysis revealed the burial to be an older adolescent or, perhaps, an adult. A charred false oat-grass tuber was identified and may have been used as kindling for the funeral pyre (O'Hara R. 2008, 2).</p> <p>Pit 3 (0.5m x 0.4m) was located immediately adjacent to Pit 2 and contained cremation deposit placed within a coarse pottery vessel. The burial was radiocarbon dated to the Late Bronze Age (1010-840 cal. BC). The vessel which survived to a height of 12cm is a Late Bronze age vessel similar to domestic vessels of the same date (O'Hara R. 2008, 3). Compiled by: Christine Baker; Date of upload: 6 February 2015</p> |
| Sources | Excavation Licence no. E3917. |

APPENDIX 11.2 EXCAVATIONS

The excavation bulletin website (www.excavations.ie) was consulted to identify previous excavations that have been carried out within the study area. This database contains summary accounts of excavations carried out in Ireland from 1970 to 2018 in the townland of Cruiserath and Goddamendy.

Excavation no: 1999:260

Site name: CRUISERATH, MULHUDDART

Sites and Monuments Record No.: N/A

Licence number: 99E0620

Author: Margaret Gowen, Margaret Gowen & Co. Ltd, 2 Killiney View, Albert Road Lower, Glenageary, Co. Dublin.

Site type: 18th-century house and farmyard

ITM: E 714426m, N 733926m

Latitude, Longitude (decimal degrees):53.343177, -6.281600

This site at Cruiserath, Mulhuddart, Co. Dublin, was due to be redeveloped for industrial purposes and lay adjacent to an existing, newly developed industrial office park. The site is bounded by Ballycoolin Road to the south, the Goddamendy Industrial Park to the east, agricultural fields to the north and Church Road to the west. An archaeological assessment of the site was requested as a condition of planning permission.

The Proposed Development was the subject of an environmental impact statement, the cultural heritage research for which included an assessment of the medieval and more recent history of the site. The sources suggested that it had limited archaeological potential. The townland name is derived from the name of its early medieval owners, the Cruise family. Clearly the appendage 'rath' either suggests the pre-existence of a rath within the townland or may refer to a medieval, moated earthwork site. No remains of either type of site can be identified in the cultivated lands of the townland or in the aerial photographs of the site.

The later medieval development of the site was undocumented, but Rocque's map indicated a number of structures/dwellings and an associated garden on the site, which coincided with the position of the access drive to the house from the west. Cruiserath House, as depicted on the 1st edition of the Ordnance Survey, was also undocumented.

The site of Cruiserath House and its adjacent farm buildings saw continuous use, modification and rebuilding from the 19th century. The house appeared to have been demolished in the 1940s or 1950s and replaced with a small, double-fronted house to the south. A very large industrial farmyard was later developed, apparently in the 1970s. The site was evidently cleared of all structures and boundaries, even the recent farm buildings, before the preparation of the environmental impact statement and before the acquisition of the site for development purposes. All that survived were the very extensive concrete yard surface, three large silage pits, the overgrown remains of the tarmac drive to the concrete yard area and the modern house, the foundations of which are easily identified.

The test-trenching was undertaken in two phases during November 1999. Long slit-trenches were opened using a mechanical excavator with a 2m-wide toothless bucket. These were positioned between the remains of the modern house, the supposed site of the earlier house and the modern farmyard. A number of supplementary trenches were later opened in areas where features were revealed.

The test-trenches revealed the very truncated and disturbed remains of a number of masonry and red brick walls and the very well-preserved remains of cobbled surfaces, all of which were found, when superimposed by CAD, to accord remarkably with the layout depicted on the 1st edition of the OS. The remains were too poorly preserved to establish their relative date, and it was not possible, without full excavation, to establish whether any remains of the 18th-century house survived or to what extent it may have been modified. The high level of resolution between the remains record and the OS, however, in spite of the poor preservation of the remains, facilitated the identification of various elements of the house and the early

farmyard complex, including the walled garden, kitchen garden and quadrangular farmyard. The structure for the new industrial facility did not impinge on the complex, and to avoid a requirement for full excavation the associated carpark was raised in level in order to preserve the remains in situ.

Excavation no: 2008:369

Site name: Tyrrelstown to Cherryhound Interchange, Bay/ Cherryhound/ Cloghran/ Cruiserath/ Goddamendy/ Hollywoodrath/ Killamonan

Sites and Monuments Record No.: N/A

Licence number:07E1147

Author: Robert O'Hara, Archaeological Consultancy Services Limited, Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth.

Site type: Testing

ITM: E 707717m, N 742620m

The proposed Tyrrelstown to N2 (Cherryhound Interchange) link road will connect Mulhuddart Village with the N2 Finglas–Ashbourne motorway at Cherryhound Interchange. It will consist of c. 4.5km of new dual carriageway with associated works. The scheme will also require the widening and realigning of sections of the existing road network. The assessment of the Proposed Development involved the mechanical excavation of 198 test-trenches with a combined total length of 9879.36m, resulting in a total excavated area of 21240.62m².

Fourteen fields were tested, and four archaeological sites were identified: Bay 1 (cremation pits), Bay 2 (kiln, ring-ditch, cremation pit), Bay 3 (kiln and possible field system associated with DU014–089) and Hollywoodrath 1 (early medieval activity).

Excavation no: 2015:485

Site name: Goddamendy

Sites and Monuments Record No.: DU013-008

Licence number: 15E0564

Author: John Purcell

Site type: Pre-development testing

ITM: E 704543m, N 622192m

Development took place of a service station adjacent to DU013-008, a church and graveyard located to the south. The site had been stripped as part of an earlier development. Test trenches were excavated across the Proposed Development. No finds or features were uncovered during the testing.

Killiney, Co. Dublin

Excavation no: 2015:492

Site name: Goddamendy and Bay

Sites and Monuments Record No.:N/A

Licence number: 15E0267

Author: Padraig Clancy

Site type: Enclosure and pits

ITM: E 708977m, N 742249m

Testing was undertaken within the townlands of Goddamendy and Bay. Three areas of archaeological interest were identified in the testing area (Areas A, B and C) and all correspond well with the geophysical survey results.

Area A comprises an oval ditched enclosure measuring approximately 41m x 32m and includes internal pits. The presence of the ditch was confirmed in two locations and had a maximum width of 1.8m and maximum depth of 0.55m and animal bone, burnt bone and charcoal were recovered from the fills. No finds were recovered from the excavated sections and as such it is not possible to date the enclosure in the absence of further excavation, however the dimensions of the enclosure are similar to a number of cropmark enclosures identified from aerial photography to the south-east of the Proposed Development site, which

are thought may have represented levelled ringforts. These sites have since been destroyed and were built over; they are in the North Western Business Park.

Area B comprises a large pit measuring 2.9m east-west x 2m x 0.75m deep and contained three fills, the upper two of which contained charcoal and patches of baked clay.

Area C comprises two pits; a shallow pit measures 1.03m east-west x 2.3m x 0.08m deep and was filled with dark grey black sandy silt with frequent inclusions of charcoal mixed with patches of baked clay. A large pit measures 4.9m north-south x 2m+ x 0.5m deep and contains two fills. The upper fill comprises yellow redeposited natural and the lower fill comprises black clayey silt with frequent charcoal inclusions. No function was apparent for the pits in Areas B and C and no dateable finds were recovered from any of the features investigated.

A test trench was placed in the south of the development area in order to assess the area for any possible remains or an outer enclosure which may have been associated with the ruins of Cloghran medieval church and graveyard (DU013-008001/002) which lies 90m to the south-south-east of the site. Nothing of archaeological interest was identified in this trench.

A relatively new roadway also lies between the Proposed Development site and the ruins, and no archaeological remains were identified during the construction of that road.

Lynwood House, Ballinteer Road, Dublin 16

Excavation no: 2015:504

Site name: Cruiserath and Goddamendy

Sites and Monuments Record No.: N/A

Licence number: 15E0395

Author: Annette Quinn

Site type: No archaeology found

ITM: E 708768m, N 742048m

Testing of proposed roads and monitoring of ground works in the vicinity of Cruiserath House within a development site at the Bristol Myers Squibb facility, Cruiserath, Dublin was undertaken in 2015. Planning permission was granted for the construction of a new Biopharmaceutical Manufacturing Facility to the north of the existing BMS Pharmaceutical Campus. The lands, while largely vacant, have undergone considerable disturbance in recent decades. While grass and other vegetation had re-colonised much of the site, hardcore was visible in many places suggesting that topsoil had been removed from much of the development area.

Nine test trenches were excavated along the proposed access roads at the north-west and north-east part of the development site. The trenches varied in length from 14m to 44m, 1.8m in width and 0.2-0.85m in depth. Modern infill was noted at the north-west side of the site, primarily in Trench 1, and accounted for the greatest trench depth in this area. Elsewhere on the site modern disturbance/fill was also apparent but not to the depth noted at the north-west. In general the stratigraphy encountered in the trenches varied throughout the site. The majority of the trenches were located in 'brown field' areas in which grass and sod was no longer extant.

Modern infill was encountered in Trenches 1 and 2 at the north-west side of the site. Further to the north-east, Trenches 3 and 4 were located in a green field area in which there was little modern disturbance. At the north and north-east, Trenches 5-9 were located in brown field areas where topsoil with occasional modern inclusions overlay a grey clay natural. Natural subsoil was exposed in all trenches, which varied from a beige-orange to grey clay which became particularly stoney at the north side of the site. A clay and stone-filled land drain was exposed in Trench 9 and is likely to be 19th-20th-century in date.

No archaeological finds, features or deposits were noted in any of the excavated trenches.

Tobar Archaeological Services, Saleen, Midleton, Co. Cork

APPENDIX 11.3
FEATURES OF ARCHITECTURAL HERITAGE INTEREST

| RPS Reg. No | NIAH Reg. No. | Name | Townland |
|--------------------|----------------------|------------------------|-----------------|
| 0670 | 11346003 | Buzzardstown Graveyard | Buzzardstown |

12.0 TRAFFIC AND TRANSPORTATION

12.1 INTRODUCTION

This chapter assesses the traffic impact the Proposed Development will have on the surrounding road network during construction and operation (the Proposed Development is defined in Chapter 2.)

The Proposed Development will be designed to provide a permanent power supply for the permitted developments and any future development (which will be subject to separate planning application(s) and EIA Report(s)) within the lands bound to the south by the R121 / Cruiserath Road, to the west by the R121 / Church Road and to the north by undeveloped land and Cruiserath Drive. Planning permission was granted by ABP in January 2018 for the construction of a data storage facility to the south of the proposed substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). Planning permission was granted by FCC for Buildings B and C in August 2019.

The Proposed Development comprises a new 220kV GIS substation (also referred to as Building D), an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation which is located to the northeast of the proposed substation site, west of the Corduff Road, which also serves the nearby industrial areas.

In accordance with section 2 of Transport Infrastructure Ireland (TII)'s Traffic and Transport Assessment Guidelines (May 2014), a Traffic and Transport Assessment is recommended when the additional traffic generated by a development results in the traffic to and from the development exceeding 10% of the traffic flow on the adjoining road or 5% of the traffic on the adjoining road where congestion exists or the location is sensitive.

The proceeding sections of this chapter will demonstrate that the traffic generation associated with this development lies below these thresholds (i.e. development traffic would comprise less than 1% of traffic flows on adjoining roads). Therefore, this report provides a basic assessment of the traffic and transport related matters associated with the Proposed Development, and does not include a detailed traffic impact assessment of the junctions in the vicinity of the development.

12.2 METHODOLOGY

This chapter has been prepared taking the following documents into account:

- Fingal Development Plan 2017-2023, Fingal County Council;
- TII Traffic and Transport Assessment Guidelines, 2014;
- Design Manual for Urban Roads and Streets (DMURS), 2013, Department of Transport, Tourism and Sport & Department of Environment, Community and Local Government;
- TII Project Appraisal Guidelines – Unit 5.3: Travel Demand Projections, 2016;
- Traffic and Transportation Chapter of EIS for Project G, Tyrrelstown, Dublin 15, CSEA, 2017;

- Transport Statement to support planning application Bestseller Retail Irelands Fashion Office Development, Arup, 2018; and
- Traffic and Transport Chapter of EIS for Project G Development, Tyrellstown, Dublin 15, CSEA 2017.

The methodology used to conduct the assessment includes:

1. Establishing baseline conditions – The existing conditions will be recorded including existing site location and use, surrounding road network, public transport services, baseline (do-nothing) traffic volumes, and committed development proposals in area;
2. Defining the development – This includes size, use, access arrangements, parking, staffing, trip generation and distribution, etc. for the operational stages of the development. Details relating to the peak construction phase will also be outlined;
3. Assessing impact of the development – The impact of the operational phase of the development will be stated without doing junction analysis;
4. The worst case construction traffic impact will also be discussed for the peak construction traffic movements; and
5. Mitigation measures will then be proposed to offset any impacts that may result from the development.

12.3 RECEIVING ENVIRONMENT

12.3.1 Existing Site Location and Use

The proposed Cruiserath 220kV GIS substation and the proposed route for the 220kV underground transmission line between it and the existing Corduff 220kV substation is shown in Figure 12.1.

The proposed route of the 49kVA underground cable installation is shown in Figure 12.2.

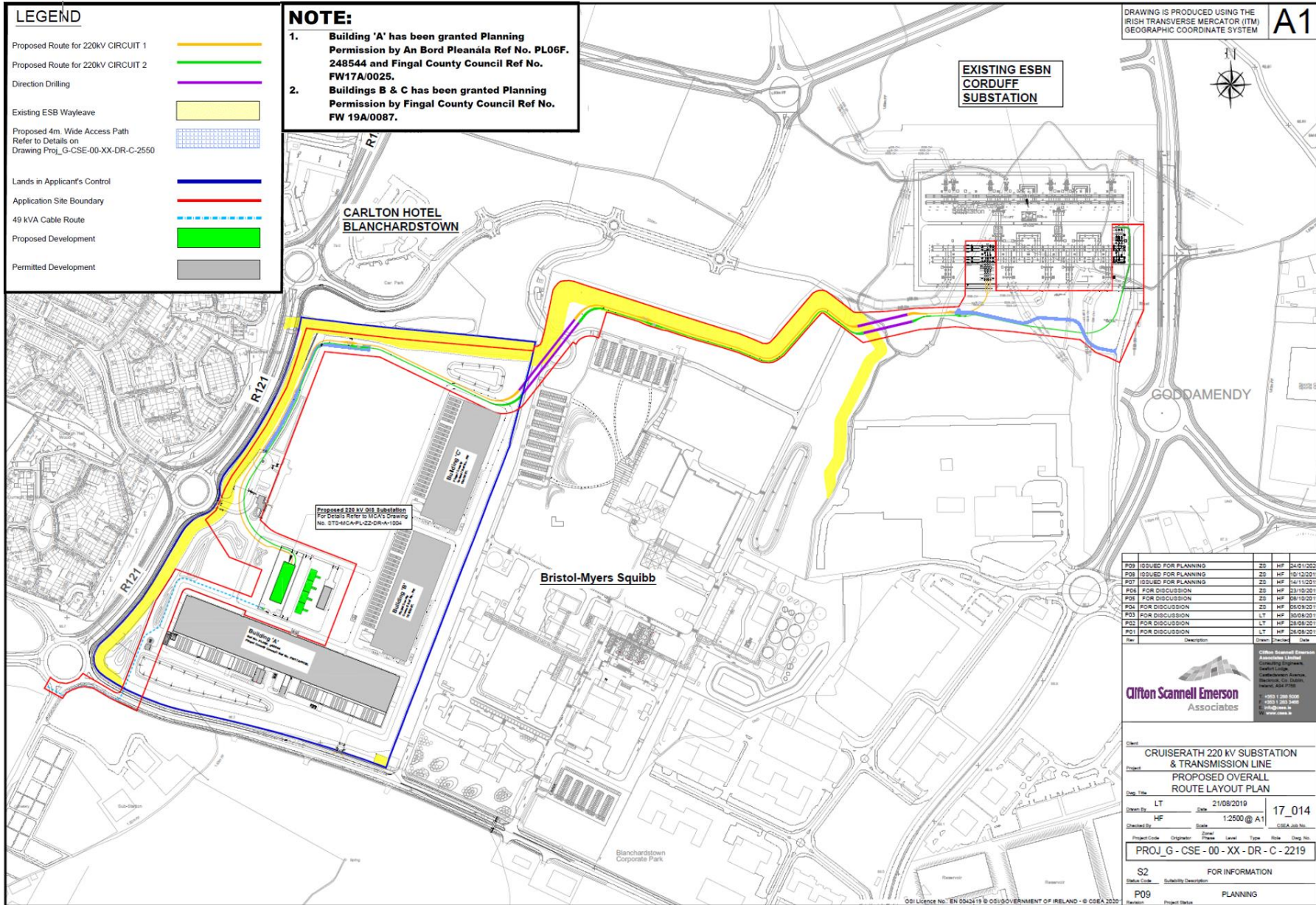


Figure 12.1 Proposed site layout plan illustrating red line boundary (Source: Clifton Scannell Emerson Associates, January 2020)

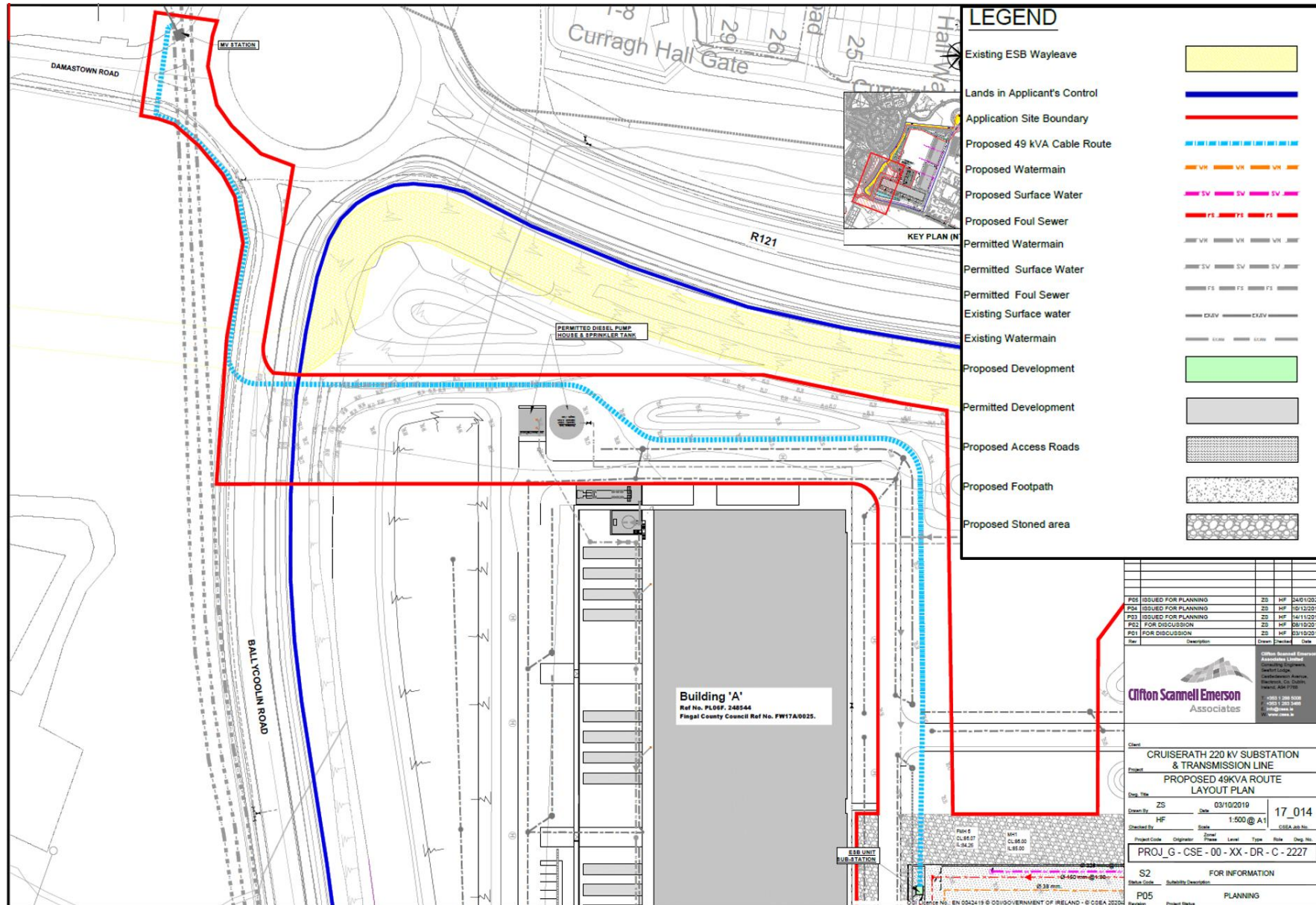


Figure 12.2 Proposed Route of 49kVA Underground cable (Source: Clifton Scannell Emerson Associates, January 2020)

The site on which the proposed Cruiserath GIS 220kV substation will be constructed is c. 26 hectares in extent and is located along the R121 Cruiserath Road to the north of Mulhuddart Village in West Dublin (refer to Figures 12.1 & 12.2). The site is currently greenfield, with planning approval for a data storage facility in the southern section of the site (Building A; Planning Reg. Ref. FW17A/0025), with a further 2 no. data storage facilities also granted planning permission on the site (Buildings B and C; Planning Reg. Ref. FW19A/0087) on the western section of the site. The proposed 220kV substation is intended to complement the permitted development on site by providing a permanent power supply to the permitted development.

The eastern boundary of this site is adjacent to an existing pharmaceutical facility (Bristol-Myers Squibb). The site is bounded to the south and west by the Cruiserath Road R121 (dual-carriageway) and to the north by undeveloped lands next to the Carlton Hotel.

As part of the works associated with the approved Building A development, a construction access will be provided onto Cruiserath Road (at the southern boundary of the site). The main site access will be provided on the western boundary of the site, which will form a fourth (eastern) arm at the existing 3-arm roundabout of the R121 and Boulevard Bealing Village.

12.3.2 Existing Road Network

The surrounding road network in the vicinity of the site includes the R121, the N2, the N3, and the M50.

R121

The R121 is a regional road, approximately 17.5 kilometres in length. It connects to the R122 in Tyrrelstown at its north-eastern end and to the R109 in Lucan at its south west end. The site is bounded by the R121 to the west and south of the site, with the R121 called Cruiserath Road on section running along the southern boundary.

Along the section of Cruiserath Road most relevant to the Proposed Development, Cruiserath Road provides one lane in each direction (3.3 metre wide eastbound lane; 3.7 metre wide westbound lane), with a 4.1 metre area separating the eastbound and westbound lanes, used to provide right turning or hatched in the form of ghost islands. It also provides off road cycle tracks in each direction.

Cruiserath Road forms a roundabout junction with Ballycoolin Road, the R121, and Corduff Road approximately 800 metres east of the eastern boundary of the site. It also forms a roundabout junction with the R121, Church Road, Damastown Avenue and Powerstown Road adjacent to the south west corner of the site.

The section of the R121 bounding the western edge of the site provides two lanes and bidirectional off road cycle tracks in each direction, with the northbound and southbound lanes divided by a concrete barrier.

The R121 forms a roundabout junction with the access road to Boulevard Bealing Village at a point approximately 300 metres north of its roundabout with Cruiserath Road, Church Road, Damastown Avenue and Powerstown Road.

N2/M2

The N2 extends in a north-north-easterly direction from its southern end (where it connects to junction 5 of the M50) for a distance of approximately 135 kilometres (including the 12 kilometre section north of junction 2 which is classed as motorway i.e. M2) and connects to the A5 at the northern Ireland border in Tyrone.

The N2 is located approximately 4 kilometres from the site, with access from exit two of the N2 onto a newly constructed access road that connects to the R121, north of the site. In the vicinity junction 2, the N2 provides three traffic lanes in each direction, with a posted speed limit of 120km/hr.

N3/M3

The N3 extends in a north-easterly direction from its southern end (where it connects to junction 6 of the M50) for a distance of approximately 135 Kilometres (including the 51 kilometre section north of junction 4 which is classed as motorway i.e. M3) and connects to the A509 at the northern Ireland border in Fermanagh.

The N2 is located approximately 3 kilometres from the site, with access from exit three of the N3 via Church Road and the R121, south of the site. In the vicinity junction 3, the N2 provides two traffic lanes in each direction, with a posted speed limit of 100km/hr.

M50

The M50 is an orbital motorway. It connects to the Port Tunnel at its north end and the M11 (Shankill) at its south end, forming a C-shaped route around Dublin City. In the vicinity of the site, the M50 provides three lanes in each direction, with access to the M2 and M3 via junctions 5 and 6; respectively. It has a posted speed limit of 100km/hr through this area.

12.3.3 Existing Public Transport Services

The site is currently serviced by Dublin Bus, with services 40D, and 40E stopping in the vicinity of the site.

- The 40D bus provides services between Parnell Street and Tyrrelstown via Finglas Road and Ballycoolin Road, with the first and last services departing at 06:15 and 23:30; respectively. Buses operate on 15 minute intervals during peak periods, with services less frequent during off-peak times.; and
- The 40E bus provides services between Tyrrelstown and Broomsbridge Luas via Cruiserath Road and Cappagh Road, with the first and last services departing at 05:37 and 23:30; respectively. Buses operate on 30 minute intervals throughout the day, with services slightly less frequent on Saturdays and Sundays.

12.3.4 Existing Traffic Volumes

12 hour traffic surveys were conducted at the following junctions on Thursday 21st March 2019 between 7am and 7pm:

- Roundabout of R121, Boulevard Bealing Village Access and Main Site Access;
- Roundabout of Cruiserath Road, Church Road, Damastown Avenue, Powertown Road, and R121; and

- Roundabout of Cruiserath Road, Ballycoolin Road, Corduff Road, and Blancharstown Road North.

Surveys were conducted by Nationwide Data Collection (NDC) in accordance with NTA guidelines. Resulting peak hours from the surveys were found to be 07:45-08:45 and 17:00-18:00 for AM and PM, respectively, across the three junctions. AM and PM peak hour traffic volumes are shown in Appendix 12.1.

12.3.5 Proposed Future Development in the Area

Surrounding Development

There are a number of developments in the area surrounding the site that have recently had planning permission approved. Table 3.1 of Chapter 3 provides a list of planning applications on a section of the site or in the area surrounding the site that have received planning approval from Fingal County Council in the past 5 years.

Many of the developments listed are either low trip generators and/or are located too far from the site to have a meaningful impact on traffic in the vicinity of the site or were operational at the time the traffic survey was conducted (21st March 2019), and thus the traffic associated with the operation of such developments was reflected in the counts.

However, the following developments may have an impact on traffic volumes on the road network surrounding the site and are approved but were not yet operational at the time the traffic survey was conducted on 21st March 2019:

- FW17A/0025: a data storage facility (Building A) to the south of the proposed substation development on the southern section of the overall masterplan site (within the ownership boundary);
- FW19A/0087: 2 data storage facilities (Buildings B and C) to the east of the proposed substation development on the eastern section of the overall masterplan site (within the ownership boundary);
- FW18A/0121: an office development for a fashion related business located directly north of the site; and
- FW18A/0132: the relocation of approved residential units and the addition of a further 17 residential units to the north of the site.

In order to understand the cumulative impact of the Proposed Development on the surrounding road network, existing and future traffic generation associated with these adjacent developments must be understood and accounted for.

Building A on Southern Section of Masterplan Site

Permission was granted in April 2017 for Building A, which comprises the construction of a data storage facility building with an overall height of c. 13 metres, containing data halls, associated electrical and AHU Plant Rooms, a loading bay, maintenance and storage space, office administration areas, screened plant and solar panels at roof level, all within a building with a total gross floor area of 20,739 sq.m. (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544).

The Traffic and Transportation Chapter of the EIS for Building A provided trip generation for the approved Building A development.

Construction of Building A commenced in Q3 2019 and it is currently estimated that the facility will be fully operational by Q2 2022.

Table 12.1 shows the trip generation calculated for the approved Building A development, as provided in the Traffic and Transportation Chapter of the EIS supporting the planning application for same.

Table 12.1 Peak hour trip generation for the approved Building A Development

| | AM | | PM | |
|----------------|----------------------|---------------------|----------------------|----------------------|
| | IN | OUT | IN | OUT |
| Security Staff | 4 | 4 | 4 | 4 |
| General Shift | 0 | 0 | 0 | 0 |
| Visiting Staff | 6 | 2 | 0 | 0 |
| HGV Deliveries | 1 | 1 | 0 | 0 |
| Total | 10 LVs, 1 HGV | 6 LVs, 1 HGV | 4 LVs, 0 HGVs | 4 LVs, 0 HGVs |

Taking a conservative approach, the above trip generation will be taken into account when calculating baseline flows for the Proposed Development.

Buildings B and C on Eastern Section of Masterplan

Permission was granted in July 2019 for Buildings B and C. This development will involve the construction of 2 data storage facility building with a maximum overall height of c. 22 metres, containing data halls, associated electrical and AHU Plant Rooms, loading bays, maintenance and storage space, office administration areas, screened plant and solar panels at roof level. Each of the two data storage facilities will have a gross floor area of 21,705 sq.m, over two levels (343,410sq.m in total). (Planning Ref. FW19A/0087).

The Traffic and Transportation Chapter of the EIAR for this development provided trip generation for the approved Building B and C development.

It is currently estimated that Buildings B and C will be fully operational by 2026.

However, taking a conservative approach, the operational traffic associated with this development will be added to 2022 baseline flows for the current Proposed Development.

Table 12.2 shows the trip generation calculated for the approved Buildings B and C development, as provided in the Traffic and Transportation Chapter of the EIAR supporting the planning application for same.

Table 12.2 Peak hour trip generation for the Proposed Development

| | AM | | PM | |
|----------------|----------------------|----------------------|---------------------|--------------------|
| | IN | OUT | IN | OUT |
| Security Staff | 8 | 8 | 8 | 8 |
| General Shift | 0 | 0 | 0 | 0 |
| Visiting Staff | 30 | 9 | 0 | 0 |
| HGV Deliveries | 1 | 1 | 0 | 0 |
| Total | 38 LVs, 1 HGV | 17 LVs, 1 HGV | 8 LVs, 0 HGV | 8 LVs, 0HGV |

Fashion Office Development

Permission was granted to Bestseller Retail Ireland Ltd. in October 2018 for the construction of a two-storey office building with landscaped roof and central circular planted open courtyard, 80 car parking spaces and road infrastructure modifications.

The approved development is located directly north of the site with access from Cruiserath Drive, Cruiserath, Mulhuddart, Dublin 15 (Planning Ref. FW18A/0121).

Table 2 of Section 5.1 of the Transport Statement provided by ARUP to support this planning application provided peak hour trip generation estimates for the development.

Table 2: Trip Rate and Number of Trips

| | AM Peak | | PM Peak | |
|------------------------|---------|-------|---------|-------|
| | In | Out | In | Out |
| Trip rate (per 100sqm) | 1.085 | 0.160 | 0.124 | 0.946 |
| Number of Trips | 38 | 6 | 4 | 33 |

Section 5.2 of this transport statement affirms that all traffic accessing the site would be required to pass through the R121/Cruiserath Drive/Boulevard roundabout junction. However, no further guidance has been provided in this report on directional split at this junction for vehicles entering and exiting the site.

Taking a conservative approach, it is assumed that this approved office development will be operational by 2022 (the opening year of the Proposed Development) and since it was not operational at the time our traffic surveys were conducted, the operational trips associated with this approved development will be taken into account when calculating baseline (do-nothing) traffic flows for the opening year of the Proposed Development (2022).

In the absence of data on directional splits for traffic generated by this approved office development, and taking a conservative approach, it is assumed that 50% of trips travelling to and away from the site (site access located on Cruiserath Drive) would use the R121 south of the site.

Gembira Residential Development at Hollywoodrath FW14A/0108 and FW18A/0132

Permission was granted to Gembira Ltd. in January 2019 for the relocation of approved residential units and the addition of a further 17 residential units at Hollywoodrath, Hollystown, Dublin 15 (Planning Ref. FW18A/0132).

This permission was further to the original development application (Planning Ref. FW14A/0108), which included the construction of 435 residential units, broken into Phase 1 development of 150 units with access onto Church Road and Phase 2 development of 285 units with access onto Ratoath Road.

In accordance with the Traffic and transport assessment that accompanied the FW14A/0108 planning application, the trips generated by the Phase 1 development would have traffic implications for the R121 adjacent to the site of the Proposed Development. Trip assignment of Phase 2 development showed no impact on the R121, which in turn connects to the road network in the vicinity of our site.

While construction of the Phase 2 development is not yet complete, the 150 residential units with access onto Church Road (i.e. Phase 1 development) are currently occupied and were operational at the time the traffic counts were conducted in March 2019. Therefore the trip generation associated with the Phase 1

development (which, as per the traffic and transport assessment accompanying the application) is the only component of that development that would impact traffic on the road network surrounding the site has already been accounted for.

The additional 17 residential units approved as part of the planning permission FW18A/0132 will access the development via Ratoath Road and therefore, the traffic impact associated with these additional units, as per the assumptions made in the original planning application, would not result in traffic being added to the road network surrounding the Proposed Development's site. Therefore, no adjustments associated with this development are required to inform baseline traffic flows for the opening year of the Proposed Development.

Kavcre Residential Development at Hollywoodrath . FW15A/0009 and FW16A/0191.

The proposed Kavcre (Hollywoodrath) residential development comprises the construction of 185 no. 2 storey semi-detached and terrace dwellings (as per FW16A/0191 - an increase from 175no. units permitted as per FW15A/0009) to comprise of 36no. 2 bed type E units; 80no. 3 bed Type A units, 25no. 3 bed Type B units, 9 no. 3 bed Type C units 14 no. 3 bed Type D units, 4no. 3 bed Type H Units (132 no. 3 bed units are provided in total); 3no. Type F 4 bed units and 14no. 4 bed Type G units (17no. 4 bed are provided units in total). The Proposed Development will also include for all associated site and infrastructural works including foul and surface water drainage, surface car parking (177no. in-curtilage spaces, 8 no. in parking courtyard), 1no. ESB substation, public open space, landscaping, boundary treatment, new internal roads, cycle paths, footpaths and pedestrian and vehicular linkages to the adjoining site (Reg. Ref. FW14A/0108 refers); on a site of c.8.33 hectares.

The proposed Kavcre (Hollywoodrath) residential development shall be subject to 2 no. phases in accordance with the Kilmartin LAP (phase 1 will consist of 85 no. dwellings and phase 2 will consist of 100 no. dwellings). Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of c.1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP.

Figures 12.12 and 12.13, provided in Chapter 12 of the Environmental Impact Statement for FW15A/0009, show the peak hour trip generation and assignment for the 175 unit Hollywoodrath residential development.

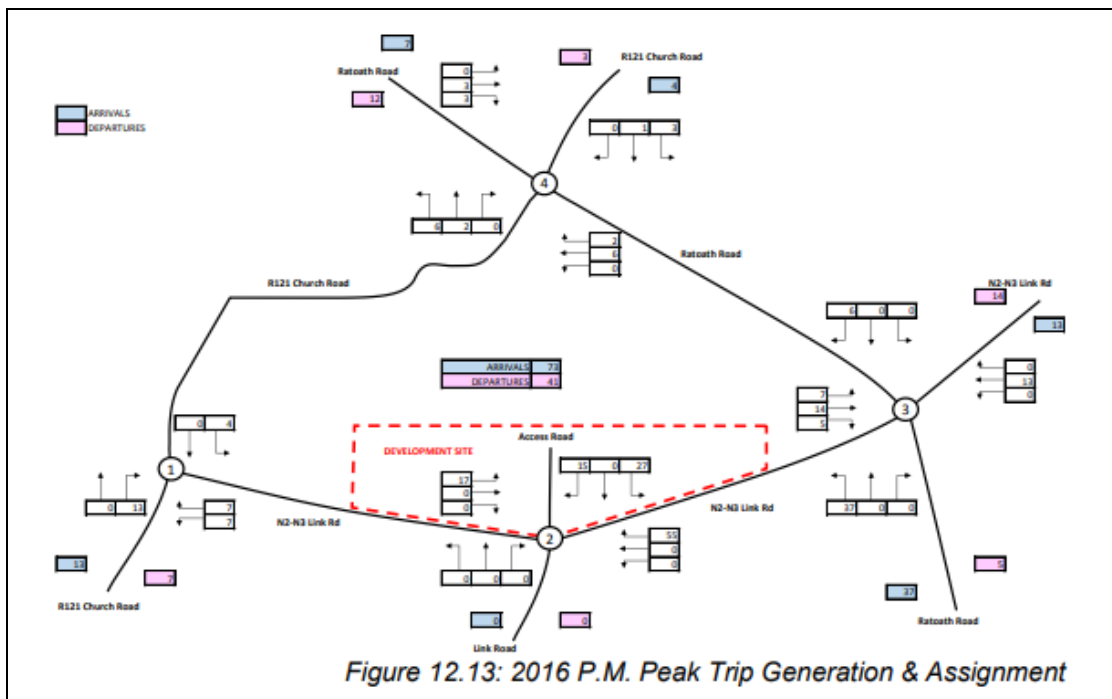
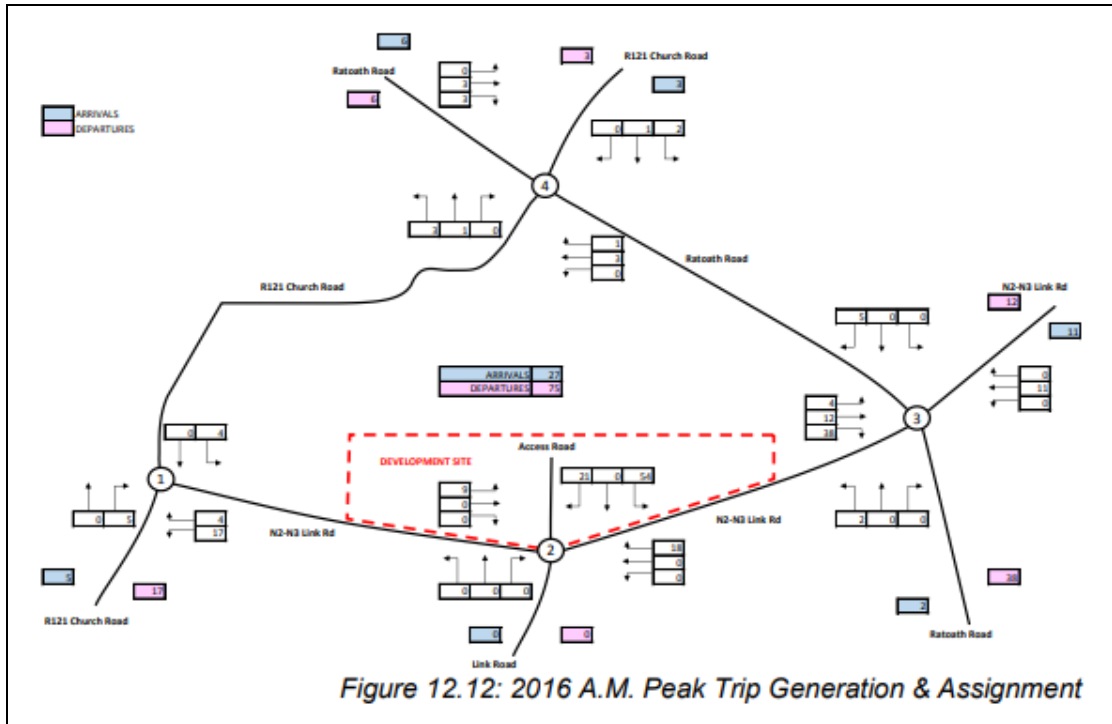


Table 01 of Chapter 6 of the Engineering Services report for the revised Kavcre 185 unit Hollywoodrath development provided details on the AM and PM peak traffic increase associated with the revised approved development.

It is currently not known when this approved residential development will be fully operational (construction of this development had not yet commenced at the time of writing this chapter). However, taking a conservative approach, the operational traffic associated with this development will be added to 2022 baseline flows for the current Proposed Development.

| Time Period | 175 Unit Development | | 185 Unit Development | | Nett Traffic Increase | |
|-------------|----------------------|------------|----------------------|------------|-----------------------|------------|
| | Arrivals | Departures | Arrivals | Departures | Arrivals | Departures |
| A.M. Peak | 27 | 75 | 28 | 80 | 2 | 4 |
| P.M. Peak | 73 | 41 | 77 | 44 | 4 | 2 |
| Dally | 459 | 477 | 485 | 504 | 26 | 27 |

Table 01: Nett Development Traffic Impact

12.4 CHARACTERISTICS OF THE DEVELOPMENT

12.4.1 General Description and Use

The Proposed Development as described in further detail in Chapter 2 comprises the following:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff substation), changes to landscaping and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works.

220kV GIS Substation Building & 4 Transformers

The 220kV GIS substation Building will have a GFA of 1,988m² and will be located to the north of Building A, on the central west section of the overall Cruiserath Site. It will be referred to as 'Building D' in the context of the indicative masterplan for the overall site.

The 220kV GIS substation does not require any full time staff to operate it. However, maintenance of the substation will be required, including a routine weekly inspection, and a more comprehensive inspection one per year. The weekly inspection of the Cruiserath 220kV GIS substation will take a maximum of 8 hours on a single day and will be conducted by up to 2 ESB staff.

In addition to the weekly inspections, more comprehensive maintenance works will take place annually on each cubicle. This will require up to 4 ESB staff to conduct testing at the substation over a maximum period of 15 days (120 hours).

It is expected that the proposed 4 new transformers (to be located east of and adjacent to the 220kV GIS substation) will also be inspected during this time by the ESB staff already on site.

Underground 220kV Transmission line

The proposed route of the 220kV transmission line (see Figure 12.1) will run from the proposed Cruiserath 220kV GIS substation westward to reach the wayleave adjacent to the R121 road, will follow the wayleave along the R121 road northward, turning east to follow the existing wayleave, before traversing lands in the third party

ownership and entering the existing Corduff 220kV substation. The estimated length of this route is 1.8km, with none of the route passing along or crossing a public road.

Once constructed, the underground transmission line will not require any staff to operate it. Instead, two ESB maintenance staff will carry out a routine inspection of the asset one year after completion and once every three years thereafter.

Underground 49kVA Cable Installation

The route of the proposed 49kVA cable installation is shown in Figure 12.2. The first section of the route, which is marked as a dotted green line in Figure 12.2, travels east away from the existing Tyrellstown Cross Unit Sub, where it crosses Church Road. The route then continues north east onto the south side of Cruiserath Road along the arc path between Church Road and Cruiserath Road at the roundabout junction of Cruiserath Road, Church Road, Damastown Avenue, Powerstown Road and the R121. From here, it travels north across Cruiserath Road before travelling east for a distance of approximately 50 metres. Figure 12.2 then shows the dotted green line end, with the route continuing along the second section, which is marked by a continuous purple line. From here, the route turns north into the site, where it continues within the curtilage of the development to the proposed GIS substation compound.

Once constructed, the underground cable installation will not require any staff to operate it. Instead, two ESB maintenance staff will carry out a routine inspection of the asset one year after completion and once every three years thereafter. These inspections are likely to be conducted at the same time the Underground 220kV Cable is inspected.

2 Cable Bays at the Corduff Substation

2 additional cable bays will be constructed on the site of the Corduff 220KV substation.

Once constructed, these cable bays will not require any staff to operate them. Instead, ESB maintenance staff will inspect these cable bays as part of their existing overall maintenance operations at the Corduff substation (similar maintenance schedule to that described above for the proposed Cruiserath 220KV GIS substation). Therefore, no additional staff (above existing requirements) will be required to maintain the cable bays and thus, there will be no additional trips generated by this element of the Proposed Development.

12.4.2 Trip Generation

Maintenance of Cruiserath 220kV Substation & 4 Transformers

Following completion of the Cruiserath 220kV substation, the worst case scenario trip generation for the site would occur during the annual maintenance operation.

Maintenance works will be conducted annually on each cubicle and would take a maximum of 15 days (120 hours). Vehicular trips would typically be in the order of two return light vehicle trips per day during this period.

Inspection of 220kV Cable

Following completion of the 220kV underground cable, vehicular trips typically in the order of one return light vehicle trip every 3 years (apart from the initial single return LV trip taken to inspect the asset one year after completion) will be required for maintenance.

Inspection of 49kVA Cable

Following completion of the 49kVA underground cable, vehicular trips typically in the order of one return light vehicle trip every 3 years (apart from the initial single return LV trip taken to inspect the asset one year after completion) will be required for maintenance. It should be noted that it is likely that ESB staff will inspect both the 220kV and 49kVA cables on the same day.

Maintenance of 2 Cable Bays at the Corduff Substation

No additional staff (above existing requirements for maintenance of the Corduff 220KV substation) will be required to maintain the cable bays and thus, there will be no additional trips generated by this element of the Proposed Development.

For the purpose of our assessment, a worst case scenario trip generation of 2 return LV trips has been assumed for the Proposed Development, with two LVs arriving during the AM Peak hour and two LVs departing during the peak hour.

Table 12.3 Worst Case Scenario Operational Trip Generation for the Proposed Development

| | AM Peak | PM Peak |
|-----------|---------|---------|
| Arriving | 2 LVs | 0 LVs |
| Departing | 0 LVs | 2 LVs |

12.4.3 Modal Choice

For the purpose of this report, a worst-case scenario has been assumed for traffic generation by assuming all trips to the site are by private car or HGV.

12.4.4 Trip Distribution

It has been assumed that all trips to the site will be new trips (i.e. trips that would not appear on the road network without the development). This represents the worst case scenario for trip generation.

12.4.5 Trip Assignment

It is assumed that all operational (i.e. maintenance) trips associated with the proposed 220kV GIS substation, 4 Transformers, 220kV and 49kVA underground cables will travel to and from the site via the approved main site access (approved as part of the Building A development, (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544), which will connect to the existing 3-arm roundabout of the R121 and Boulevard Bealing Village, forming a new fourth arm (see Figure 12.1).

It is expected that the origins and destinations of traffic to/from the main access during operation will continue to match the distribution of traffic currently travelling on the road network in the vicinity of the site.

It is assumed that the Proposed Development will be fully operational by Q1 2022. Thus, an opening year of 2022 has been assumed for the Proposed Development (i.e. the year when the first annual maintenance check of the substation will be conducted).

2022 traffic flows have been derived by applying TII growth factors (published in the TII Project Appraisal Guidelines – Unit 5.3 Travel Demand Projections, 2016) to existing 2019 network traffic. In accordance with these guidelines, Table 12.7 displays the central (medium) growth factors used to estimate future traffic flows from 2019 volumes:

Table 12.7 Central Growth Factors for Dublin (including Fingal County Council LGA)

| Years | Growth Factor for LVs | Growth Factor for HVs |
|---------------------------|-----------------------|-----------------------|
| Annual factor (2013-2030) | 1.0134 | 1.0237 |
| 2019 to 2022 | 1.0407 | 1.0728 |

Once these growth factors were applied to the 2019 traffic volumes, the additional future traffic associated with surrounding approved developments not accounted for in the 2019 count was accounted for to establish baseline (do-nothing) traffic flows as follows:

1. Adjustments to flows to account for the operational traffic associated with the permitted Building A development on the southern section of the site have been taken into account.
2. Adjustments to flows to account for the operational traffic associated with the permitted Buildings B and C development on the eastern section of the site have been taken into account.
3. Adjustments to flows to account for the operational traffic associated with the approved Fashion Office development to the north of the site have been taken into account.
4. Adjustments to flows to account for the operational traffic associated with the approved Kavcre (Hollywoodrath) residential development to the north of the site have been taken into account.

Following establishment of 2022 Baseline (do-nothing) traffic flows, 2022 baseline flows will be compared to 2022 baseline plus operational traffic from the Proposed Development to assess the worst case operational impact of the development. This will be discussed further in Section 12.5.1.

During construction of the proposed 220kV GIS substation, 4 Transformers, 220kV and 49kVA underground cables, and 2 Cable Bays, construction traffic will travel to and from the site via the construction site access located on the southern section of the site. It is expected that the origins and destinations of construction traffic will continue to match the distribution of traffic currently using the surrounding road network. Construction traffic will be discussed further in Section 12.5.3.

12.4.6 Parking

12.4.6.1 *Car parking provision*

Following completion of the proposed 220kV GIS substation, 4 Transformers, 220kV and 49kVA underground cables, and 2 cable bays, it is anticipated that a maximum of four ESB staff will travel to the site in two vehicles during the most labour intensive maintenance operation – i.e. during the annual maintenance testing of the 220kV GIS substation.

Annual maintenance works will be conducted on each substation cubicle and will take a maximum of 15 days (120 hours). Therefore, **it is proposed to provide 6 car parking spaces outside the Cruiserath 220kV substation building** during the **operational phase of development** to facilitate these **maintenance** operations.

12.4.6.2 *Cycle parking provision*

Following completion of the proposed 220kV GIS substation, 4 Transformers, 220kV and 49kVA underground cables, and 2 cable bays, it is anticipated that a maximum of four staff will travel to the Cruiserath site in two vehicles during the annual maintenance testing of the Cruiserath 220kV GIS substation. The maintenance checks (for the substation, transformers and the 220kV and 49kVA underground cables) require the use of equipment which could not be transported safely by

bicycle. Therefore, no cycle parking is proposed for the operational phase of development.

12.4.7 Pedestrian Facilities

220kV GIS Substation and 4 Transformers

The proposed GIS substation and 4 transformer developments include internal pedestrian footpaths providing safe passage for pedestrians between internal buildings. External public footpaths are provided on both sides of the road along the south and east boundaries of the site. The internal footpaths connect to these external footpaths, through the sites main access.

220kV and 49kVA Cable Installations

No access will be required by pedestrians to these underground cables following completion of the works, apart from two ESB staff, who may walk sections of the two routes while carrying out testing of the infrastructure, typically once every 3 years. Therefore, no pedestrian facilities are proposed along the routes of the 220kV and 49kVA cable installations.

12.4.8 Cycle Facilities

There is an excellent cycle network provided in the vicinity of the Proposed Development. Cycling infrastructure includes two-way cycle tracks on both sides of the R121 to the west of the site (with cycle facilities up to the main access to the Cruiserath site), and cycle tracks on both sides of Cruiserath Road south of the Cruiserath site.

12.5 POTENTIAL IMPACTS OF THE DEVELOPMENT

12.5.1 Impact Analysis – Operational Phase

In order to identify any potential impacts, the traffic impact of the Proposed Development on the road network adjacent to the main site access (i.e. where development traffic would be most concentrated) is shown in Table 12.8.

Table 12.8 Proposed Development traffic that will be added to network as percentage of 2-way 2022 base (do-nothing) flows on adjoining roads

| Road Link | Side of Junction | Year | AM | | | PM | | |
|---------------------------|---------------------------|------|-----------------|----------------|------|-----------------|----------------|------|
| | | | 2-way base flow | Pr.Dev traffic | % | 2-way base flow | Pr.Dev traffic | % |
| R121 | North of main access road | 2022 | 1955 | 1 | 0.05 | 1508 | 1 | 0.07 |
| | South of main access road | 2022 | 2244 | 1 | 0.04 | 1853 | 1 | 0.05 |
| Boulevard Bealing Village | West of R121 | 2022 | 539 | 0 | 0 | 511 | 0 | 0 |

Table 12.8 shows the additional two-way traffic that will be added to various road links with the Proposed Development as a percentage of two-way 2022 baseline (do-nothing) flows on those links.

The table shows that the maximum two-way Proposed Development traffic added as a percentage of baseline two-way traffic flows is 0.07% and occurs on the R121, north of its junction with the main site access during the PM peak hour.

This demonstrates that the traffic impact of the operational phase of the Proposed Development is **long-term**, **neutral** and **imperceptible**, with the proposed developments operational traffic volumes significantly below the thresholds stated in the TII Guidelines for Traffic and Transport Assessments, 2014 for junction analysis.

12.5.2 Environmental Impact

As stated above, the Proposed Development will not generate a significant volume of additional vehicular traffic during construction (see Section 12.5.3 below) or operation. The level of increase is not likely to have any adverse transport-related environmental effects in terms of noise, air quality, vibrations, etc. The impact of the construction period will be **short-term**, **negative** and **not significant** in nature.

12.5.2.1 Road Safety

Collision Data

Table 12.9 shows collision data recorded within the study area for the 5 most recent years of available data. Collision data was sourced from the RSA Irish Road Collision database (<http://www.rsa.ie/RSA/Road-Safety/Our-Research/Collision-Statistics/Ireland-Road-Collisions/>).

The highlighted data entry in Table 12.9 relates to an accident recorded at the roundabout junction of the R121 and Boulevard Bealing Village and is of most relevance to the study. This is because, once constructed, the Cruiserath site's main access will form a new (fourth) arm on the east side of this 3-armed roundabout (This main site access was approved as part of Building A development).

The highlighted data entry collision was minor in severity. It involved a collision between two cars, and is a rear-end/straight type accident. It was recorded on a Tuesday between the hours of 10:00 and 16:00 in 2012 and three casualties resulted from the collision.

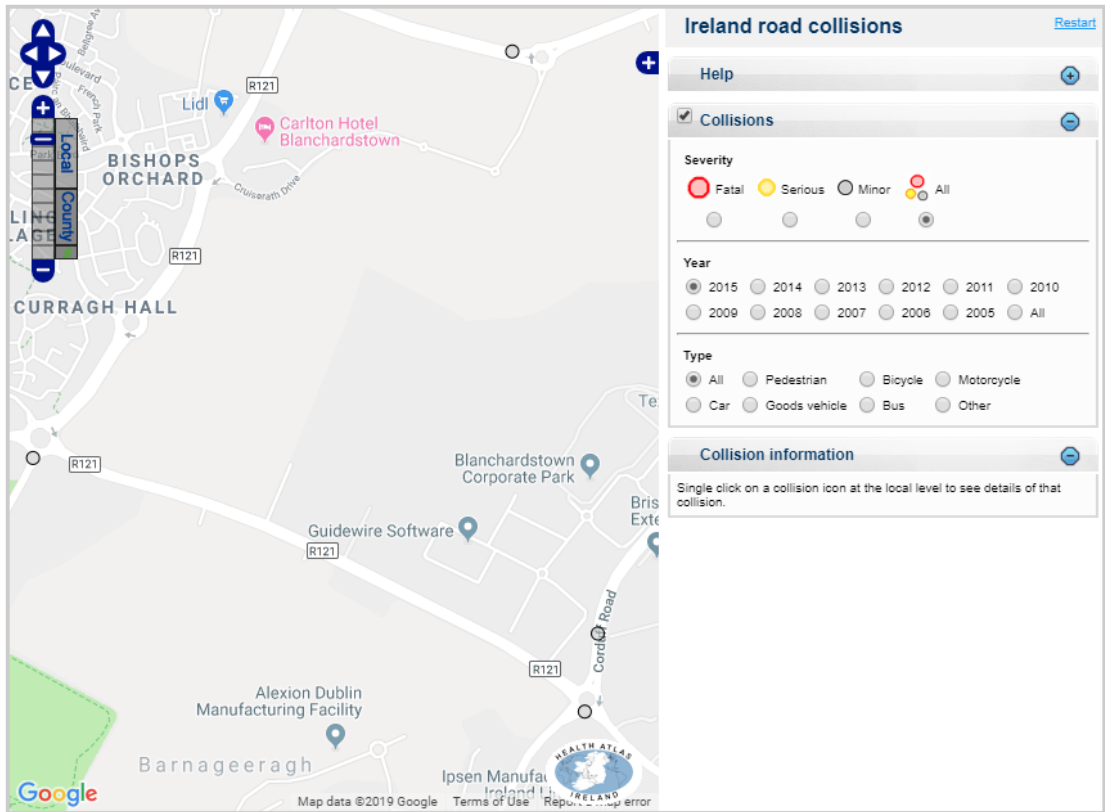


Figure 12.2 RSA Collision Map showing extent of study area captured in data for analysis

Looking at a more extensive area, all accident records taken between 2011 and 2015 on the study area have been included in our assessment (see Figure 12.2, for area captured in analysis).

Eight accidents were recorded during this period, including zero fatal (0%), one (12.5%) serious, and seven (87.5%) minor (see Figure 12.3).

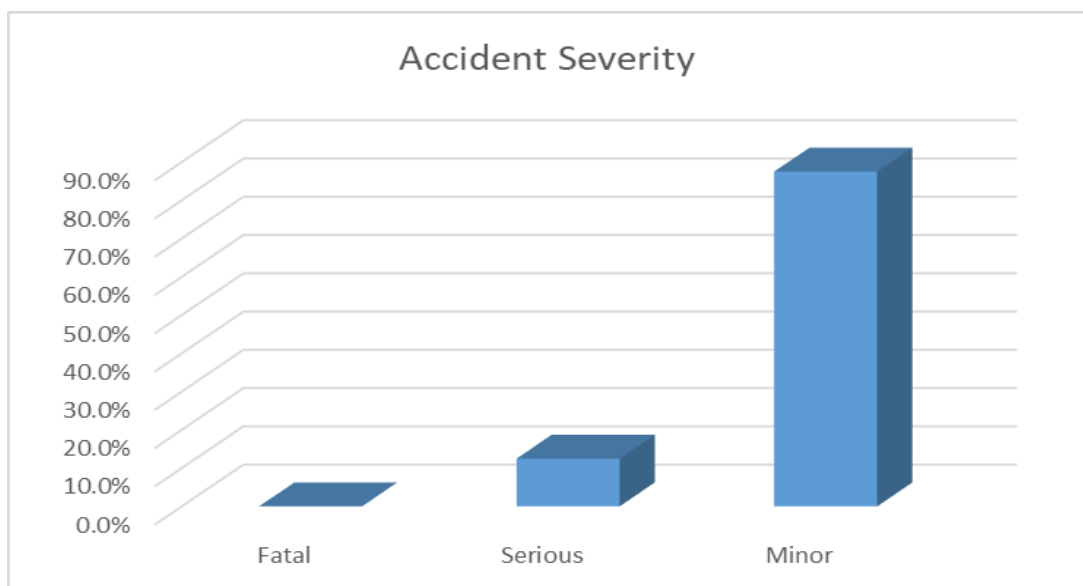


Figure 12.3 Accident Severity

Figure 12.4 shows the type of accidents recorded in the area. One (12.5%) of these accidents involved a car hitting a pedestrian. This accident was serious in severity.

Three (37.5) accidents were classed as “rear and straight”. Two involved a car and one involved a bus.

One (12.5%) of these accidents was classed as “head-on conflict”. One (12.5%) accident was recorded involving right turning vehicle.

The remaining two collisions were classed as ‘Other’. One involved a bicycle and the other one involved a good vehicle. All two ‘Other’ class accidents were minor in severity.

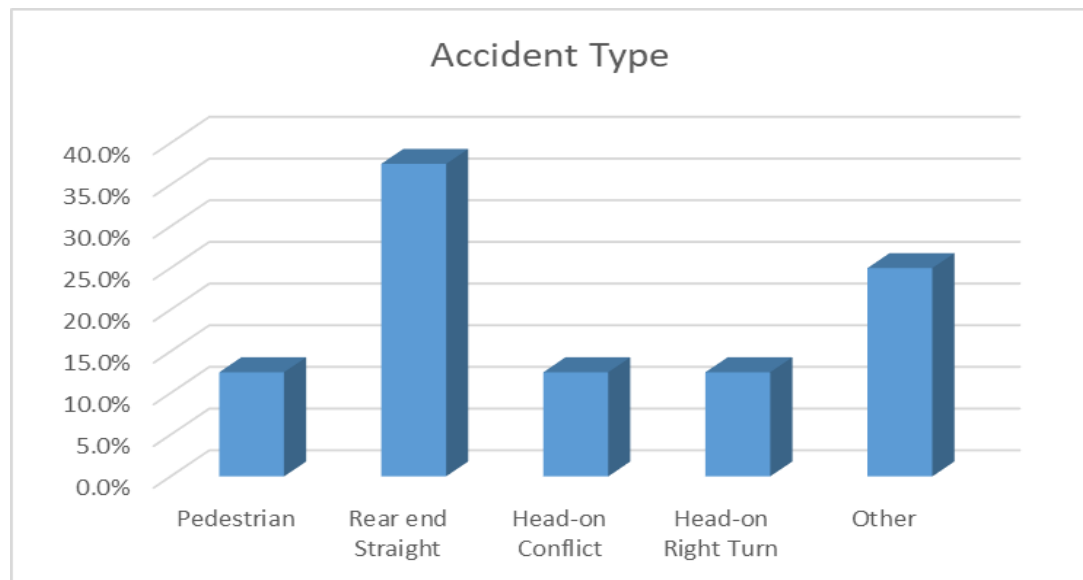


Figure 12.4 Accident Type

Figure 12.5 shows the day of the week when each accident occurred. The highest proportion of accidents occurred on Thursday, with 50% of total accidents recorded on that day. Tuesday also recorded relatively high proportions of total collisions at 25%.

The lowest proportion of accidents occurred on Monday, Wednesday and Friday, with no accidents recorded on each of these days. An equal number of accidents occurred on the remaining two days, with 12.5% recorded on Saturday and Sunday.

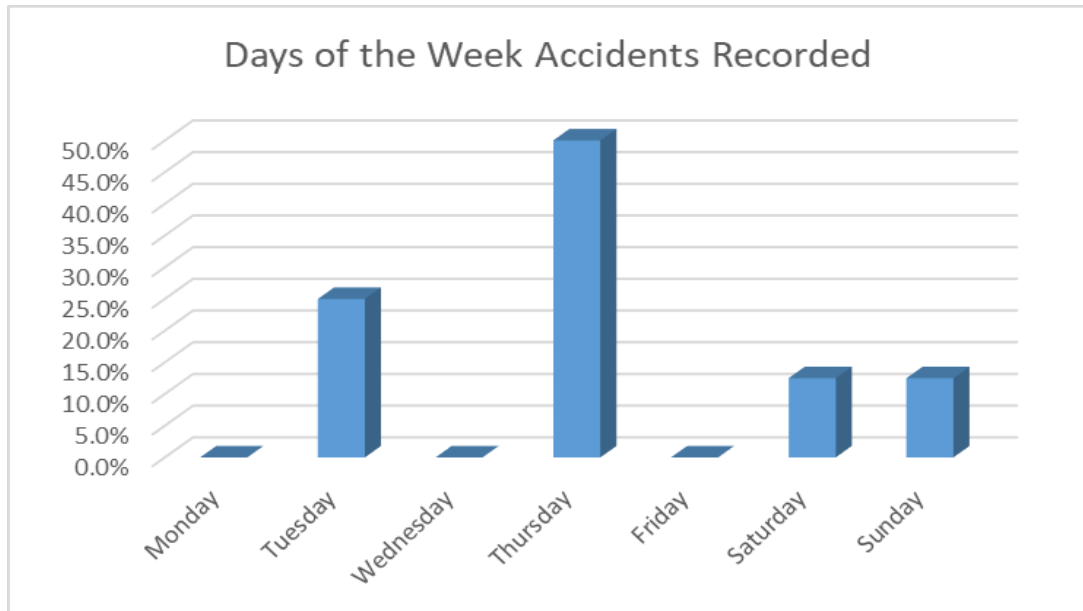


Figure 12.5 Days of week Accidents Recorded

Figure 12.6 shows the time of day collisions in the study area occurred. Times are categorised into six time periods as follows:

- 03:00-07:00 (3 hrs);
- 07:00-10:00(3 hrs);
- 10:00-16:00 (6 hrs);
- 16:00-19:00 (3 hrs);
- 19:00-23:00 (4 hrs); and
- 23:00-03:00 (4 hrs).

At 50%, the highest proportion of accidents occurred during the 10:00-16:00 time period. However, this was the longest time period, with an average accident rate of 8.33% per hour.

At 37.5%, the next highest proportion of accidents occurred during the 19:00-23:00 time period. This time period was 2 hours shorter than the 10:00-16:00 period and the accident rate was found to be the highest per hour at 9.38% during this period.

The accident rate was the third highest for the 07:00-10:00 period at 12.5% and 4.17% for the hourly period. No accidents were recorded for the periods 03:00-07:00; 16:00-19:00 and 23:00-03:00.

Table 12.8 Time of Day Accidents Recorded

| Time Period when Accidents Occurred | 03:00-07:00 | 07:00-10:00 | 10:00-16:00 | 16:00-19:00 | 19:00-23:00 | 23:00-03:00 |
|--------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Percentage of total accidents recorded during time period | 0.00% | 12.50% | 50.00% | 0.00% | 37.50% | 0.00% |
| Percentage of total accidents recorded per hour of specified time period | 0.00% | 4.17% | 8.33% | 0.00% | 9.38% | 0.00% |

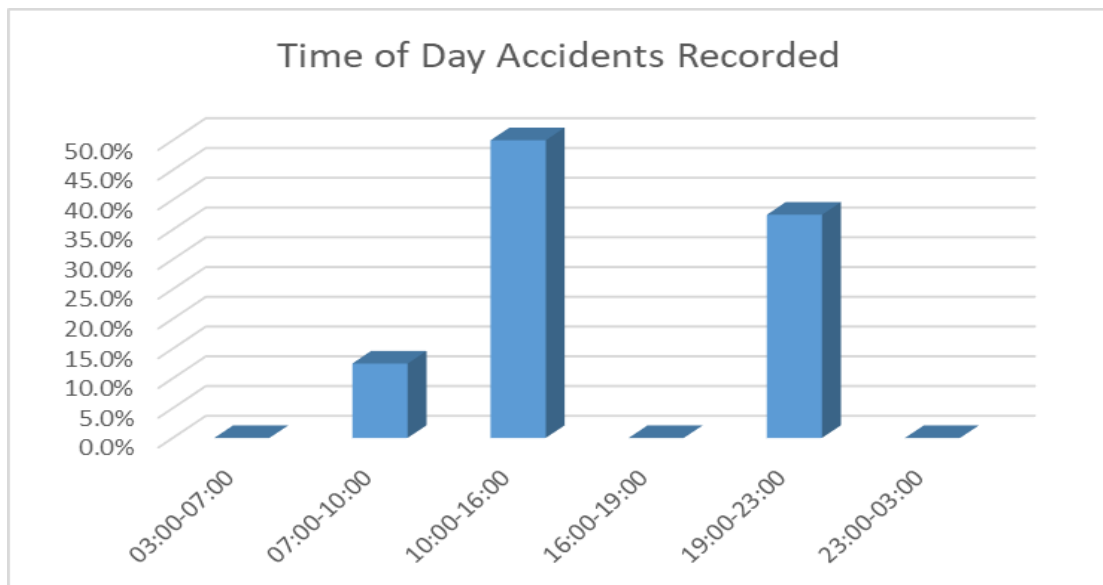


Figure 12.6 Time of Day Accidents Recorded

Based on the above collision data analysis, it can be concluded that the number of accidents recorded in the area surrounding the site over the 5 most recent years of data is relatively low, with no accident black spots or notable accident patterns that would indicate a road safety design flaw on the road infrastructure surrounding the site.

Table 12.9 Accident Data for Study Area

| Location | Severity | Road User(s) | Accident Type | No. Casualties | Year | Day | Time | Speed |
|-------------------------------------------|----------|---------------|--------------------|----------------|------|-----|--------|---------|
| Boulevard Bealing Village/R121 Roundabout | Minor | Car | Rear end straight | 3 | 2012 | Tue | 10-4pm | 60km/hr |
| Damastown Ave/Church Rd/R121 Roundabout | Minor | Bus | Rear end straight | 3 | 2012 | Sat | 7-11pm | 50km/hr |
| Corduff Rd/Ballycoolin Rd/R121 Roundabout | Minor | Goods Vehicle | Other | 1 | 2012 | Thu | 10-4pm | 50km/hr |
| Corduff Rd/Ballycoolin Rd/R121 Roundabout | Minor | Bicycle | Other | 1 | 2014 | Thu | 10-4pm | 50km/hr |
| Park Blvd/Boulevard Roundabout | Serious | Car | Pedestrian | 1 | 2014 | Sun | 7-11pm | 50km/hr |
| Damastown Ave/Church Rd/R121 Roundabout | Minor | Car | Rear end straight | 9 | 2015 | Tue | 7-11pm | 50km/hr |
| Corduff Rd/Ballycoolin Rd/R121 Roundabout | Minor | Car | Head-on conflict | 3 | 2015 | Thu | 10-4pm | 50km/hr |
| Corduff Rd – 150m north of Ballycoolin Rd | Minor | Car | Head-on right turn | 2 | 2015 | Thu | 7-10am | 50km/hr |

Internal Traffic

The internal layout of the site has been designed to give clear, legible routes for pedestrians, cyclists and motorists to enter and exit the development.

External Traffic

As stated above, the Proposed Development will not add a significant amount of additional traffic to the surrounding road network during operation. Design of the proposed construction and main site access junctions with Cruiserath Road and the R121 (NE) (undertaken as part of the permitted Building A development); respectively; has been done such that adequate sightlines are provided for all road users.

12.5.3 Construction Traffic

Construction of the Proposed Development would take place over a period of approximately 16-18 months from the commencement of construction for site development works.

The route of the 220KV underground cable is, in its entirety, off-road. Most of the route of the 49kVA cable is off-road, with the exception of a short section in the vicinity of the roundabout junction of Cruiserath Road, Church Road, Damastown Avenue (refer to green dotted line on Figure 12.2), which may require the incremental closure of one or more lanes. The section of works requiring lane closures will be subject to a T2 licence application to Fingal County Council, which will inform the construction methodology and timing for these works.

During construction of off-road works, no construction vehicles will access the Cruiserath site (or commence work) before 7.30a.m and all construction vehicles departing the site will do so before 7.00p.m. Construction activities will be carried out Monday to Saturday, with no on site construction activities to take place on Sundays or Bank Holidays.

In general, the impact of the construction period would be short-term in nature.

Construction traffic would consist of the following:

- Private vehicles belonging to site construction staff;
- Private vehicles belonging to site security staff;
- Occasional Private vehicles belonging to professional staff (i.e. design team, utility companies); and
- Excavation plant and dumper trucks used for site development works.

Construction traffic has been estimated based on contractor experience of similar substation works and underground cable installation works, taking into account the scale of the substation and the length of underground cables to be installed, also noting that the underground cable routes are mostly off-road.

The following construction data has been used to estimate peak daily construction traffic (assumed to occur during civil works period for substation building):

- Average construction staff: 15-20;
- Peak construction staff (peak staff levels during Civil Works): 30;
- Peak cars entering/exiting site per day: 18;

- Peak HGVs entering/exiting site per day: 10; and
- Peak LGVs entering/exiting site per day: 2.

Given the short term nature of the peak construction phase, the overall impact of the construction phase is considered **short-term, negative** and **not significant**.

12.6 REMEDIAL AND MITIGATION MEASURES

12.6.1 Construction Phase

The following measures will be put in place during the construction works:

- The contractor will be required to provide wheel cleaning facilities, and regular cleaning of the main access road;
- Temporary car parking facilities for the construction workforce (30 no. spaces) will be provided within the site and the surface of the car park will be prepared and finished to a standard sufficient to avoid mud spillage onto adjoining roads;
- Monitoring and control of construction traffic will be ongoing during construction works. Construction traffic will minimise movements during peak hours.
- Construction traffic routes minimising traffic impact on surrounding residential development will be used by construction vehicles.

12.6.2 Operational Phase

The potential traffic impact of the development was found to be long-term, neutral and imperceptible, with the development operational traffic volumes significantly below the thresholds stated in the TII Guidelines for Traffic and Transport Assessments, 2014 for junction analysis. Therefore, no junction modifications are recommended on the public road to facilitate the Proposed Development.

12.7 PREDICTED IMPACTS OF THE DEVELOPMENT

Mitigation measures (discussed in Section 12.6) will be put in place to offset any potential traffic impacts of the development. Therefore, the predicted impact of the development will be **short-term, negative** and **not significant** for the construction phase and **long-term, neutral** and **imperceptible** for the operational phase.

12.8 RESIDUAL IMPACTS

The residual traffic impacts of the development will be neutral and imperceptible.

The operational traffic impact assessment takes cumulative impacts into account. The cumulative traffic impact is also summarised in Chapter 15 of this EIA Report.

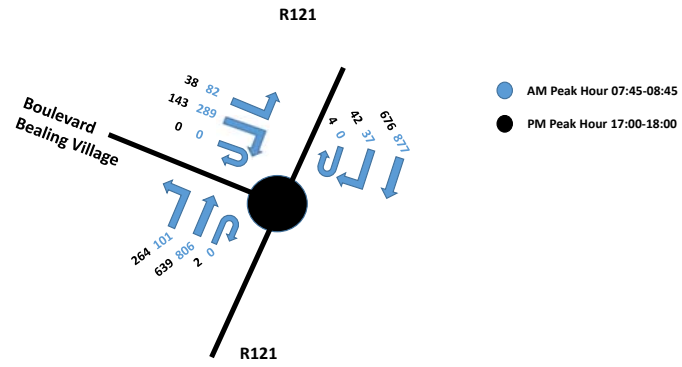
Interactions are addressed in Chapter 16 of this EIA Report.

12.9 REFERENCES

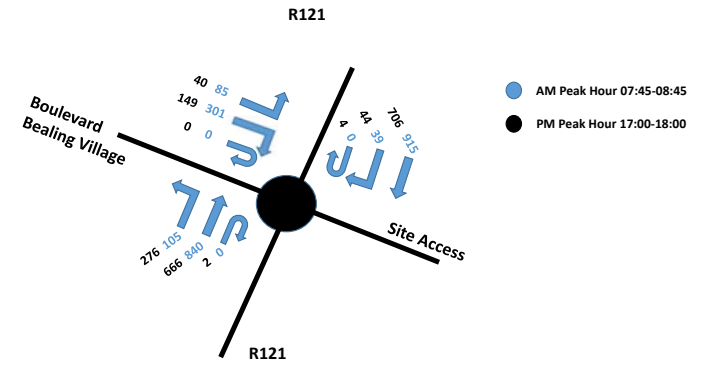
- Fingal Development Plan 2017-2023, Fingal County Council;
- TII Traffic and Transport Assessment Guidelines, 2014;
- Design Manual for Urban Roads and Streets (DMURS), 2013, Department of Transport, Tourism and Sport & Department of Environment, Community and Local Government;
- TII Project Appraisal Guidelines – Unit 5.3: Travel Demand Projections, 2016;
- Traffic and Transportation Chapter of EIS for Project G, Tyrellstown, Dublin 15, CSEA, 2017;
- Transport Statement to support planning application Bestseller Retail Irelands Fashion Office Development, Arup, 2018; and
- Traffic and Transport Chapter of EIS for Project G Development, Tyrellstown, Dublin 15, CSEA 2017.

APPENDIX 12.1
TRAFFIC VOLUMES
PREPARED BY CSEA

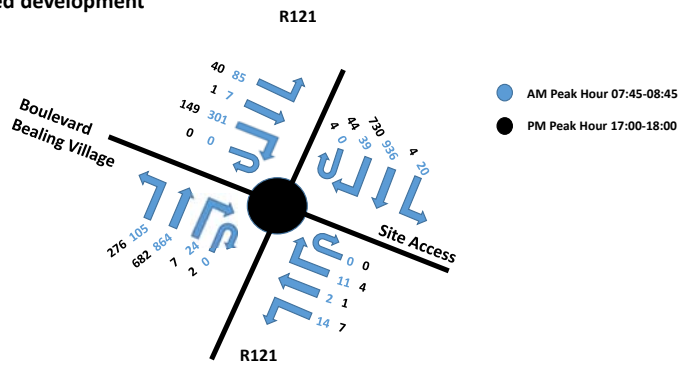
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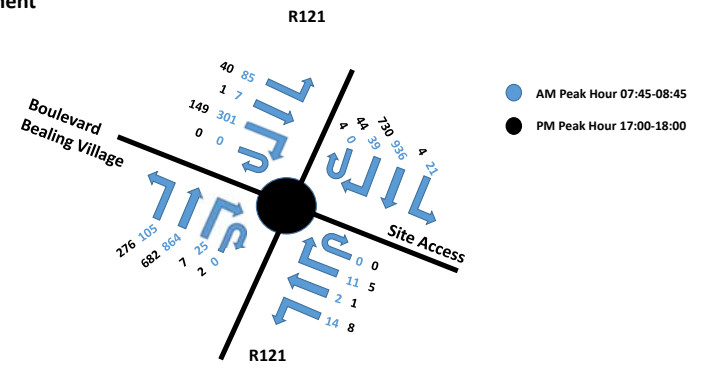
Opening Year 2022



Opening Year 2022 Baseline flows including surrounding approved development



Opening Year 2022 Baseline flows plus Proposed Development



13.0 MATERIAL ASSETS

13.1 INTRODUCTION

This chapter evaluates the impacts, if any, which the Proposed Development may have on Material Assets. The EPA Draft EIA Report Guidelines 2017 and EPA Draft Advice Notes for EIS 2015 provide typical headings and topics which could be addressed in a Material Assets chapter of an EIAR.

13.2 METHODOLOGY

In 2011 EIA Directive (2011/92/EU) material assets included architectural and archaeological heritage. In accordance with the 2014 EIA Directive, those heritage aspects are dealt with as components of cultural heritage (which are addressed in Chapter 11 Archaeological, Architectural and Cultural Heritage of this EIA Report).

The EPA Draft EIA Report Guidelines 2017 state that material assets are now taken to mean built services and infrastructure, roads and traffic and waste management. The EPA Draft Advice Notes for EIS 2015 also give the following examples of material assets; assimilative capacity of air, ownership and access and tourism. In this EIA Report, the impacts the material assets described above have been considered in the following chapters of this EIA Report as follows:

- Chapter 4 Population and Human Health;
- Chapter 8 Air Quality & Climate;
- Chapter 12 Traffic & Transportation; and
- Chapter 14 Waste Management.

This chapter assesses ownership and access, built services and infrastructure, which have not already been addressed elsewhere in this EIA Report. Section 13.3 addresses ownership and access. The subsequent sections address built services and infrastructure. The potential impacts on built services and infrastructure, if any, are assessed in terms of the following:

- Power and Electrical Supply;
- Telecommunications;
- Surface water infrastructure;
- Foul drainage infrastructure; and
- Water supply.

The Proposed Development will not impact on any other structures, as the development is primarily being constructed within greenfield lands and it does not require any other infrastructure.

Mitigation measures are proposed where required.

13.3 OWNERSHIP AND ACCESS

The EPA Draft Advice Notes 2015 refer to the need to consider the ownership and accessibility of the site. This section addresses ownership and accessibility of the site for the Proposed Development.

The site of the Proposed Development as described in Chapter 2 Description of the Proposed Development is under the following ownership:

- GIS substation and significant portion of the 220kV transmission line route is within lands owned by the Applicant.
- The 220kV transmission line continues along the ESB wayleave through the northern portion of the neighbouring BMS site.
- The 'greenfield' lands for the remaining portion of the 220kV transmission line route and the 2 no. cable bays at the existing Corduff substation are owned by the TAO (ESB Networks).
- The portion of the 49kVA cable installation route within the public domain are owned by FCC.

Letters of consent, to apply for development on the lands have been obtained from BMS, ESB Networks and FCC and are included with the planning application.

As detailed in Section 2.2.1 of Chapter 2, the GIS substation is located within the overall permitted Building A development site (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). Ref. to Figure 2.1 in Chapter 2 which illustrates the lands in the Applicants control, which is the Building A development site area. The permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544) commenced construction in Q3 2019. The main access to the GIS substation compound will be via a new access-controlled entrance from the R121 roundabout to the west of the site which will be constructed as part of the permitted Building A development. The overall permitted Building A development site will be fully secured with a 3m high security fence, CCTV and surveillance systems. An additional access point is also proposed to the south of the site, primarily for construction access. There is good visibility on approach to both access points as detailed in Chapter 12 Traffic and Transportation.

13.4 RECEIVING ENVIRONMENT

The associated built services and infrastructure in the vicinity of the site are summarised in the following sections.

13.4.1 Power and Electrical Supply

The availability of power is a key consideration in site selection for the permitted data storage facility developments of Buildings A, B and C, as well as future indicative developments. One of the key reasons the site was chosen for the permitted developments was the relative proximity to the existing Corduff substation.

An application has recently been made to FCC by ESB Networks for 6MVA and 23MVA underground cable installations which are designed to support interim power demand for Building A (FCC Planning Ref. FW19A/0177).

13.4.2 Telecommunications

It is planned that a fibre optic cable distribution network will be installed for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544).

13.4.3 Surface Water Infrastructure

There is an existing 900mm diameter connection to the IDA surface water drainage system under the R121 in the south east corner of the overall landholding of the permitted development. The IDA surface water network was originally sized to accommodate future development of the area and has sufficient capacity to accommodate run-off from the proposed GIS substation site.

The surface water drainage infrastructure for the permitted Building A development was designed to accommodate surface water drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate runoff from the Proposed Development.

The allowable discharge rates for the overall landholding of c. 26.14 hectares is 126.3l/s, as set out in the *Engineering and Water Services Report* prepared by CSEA, which accompanied the planning application for Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). This report is included as Appendix A to the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, which accompanies this application.

The permitted Building A development surface water drainage infrastructure includes a surface water drainage network, hydrocarbon interceptors, attenuation basins and a flow control device to limit the discharge from the permitted Building A site (on which the proposed GIS substation and portions of the 220kV and 49kVA cable installations will be located) to the allowable discharge rate.

13.4.4 Foul Drainage Infrastructure

An existing IDA foul drainage network is available along the R121 which services the adjacent Blanchardstown Corporate Park and transports sewerage to the main treatment works at Ringsend Wastewater Treatment Plant (WWTP). There is an existing 375mm diameter connection to this foul drainage network in the south eastern corner of the overall landholding.

The foul drainage infrastructure for the permitted Building A development was designed to accommodate foul drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate wastewater from the Proposed Development which will be minimal.

As noted in Chapter 2 (Description of the Development), a pre-connection enquiry (PCE) form was submitted to Irish Water (IW) on 21st November 2016 which addressed wastewater discharges (and water demand) for the GIS substation building. IW provided a confirmation of feasibility (CoF) for the development on 14th February 2017 (IW Reference Number: CUST16622). The overall wastewater discharge associated with the Proposed Development is in accordance with the discharge rates outlined in the PCE.

As detailed in the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, the estimated Dry Weather Flow (DWF) for the entire 26.14 ha landholding was initially 6,240 litres per day. This was revised upwards for the development permitted under FCC Reg. Ref. FW19A/0087 by 2,760 litres per day to 9,000 litres per day. In April 2019, IW confirmed that a revised PCE would not be

required for this increase and that adjustments to the flow rates required for the Proposed Development can be addressed as part of the connection application. The average daily foul water demand for the Proposed Development has been determined by CSEA to be 1 litre per day which represents a negligible volume in terms of the volume permitted by IW for the entire landholding.

Welfare facilities (canteen, toilets etc.) will be available within the construction compound for the construction of Building A and it is proposed that can be utilised for the c. 15 – 30 staff required for the construction phase of the Proposed Development.

13.4.5 Water Supply

There is an existing 500mm diameter IDA watermain in the south east corner of the permitted Building A site, which is fed from mains water supply. The permitted Building A development includes a connection to this watermain.

The water supply for the permitted Building A development was designed to accommodate water demand from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate water demand for the Proposed Development which will be minimal.

Welfare facilities (canteen, toilets etc.) will be available within the construction compound for the construction of Building A and it is proposed that can be utilised for the small number of staff required for the construction phase of the Proposed Development.

A PCE form was submitted to Irish Water (IW) on 21st November 2016 which addressed water demand for the GIS substation building. IW provided a CoF for the development on 14th February 2017 (IW Reference Number: CUST16622). The overall water demand associated with the Proposed Development is in accordance with the discharge rates outlined in the PCE.

13.5 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

13.5.1 Construction Phase

Power and Electrical Supply

During construction, contractors will require power for heating and lighting of the site and their onsite construction compound. In addition, on site construction equipment/plant will require power. The construction compound and temporary power supply established for the construction of Building A will be utilised for the Proposed Development. The power requirements for the construction phase will be relatively minor.

The excavation of trenches within the vicinity of existing electrical services will be carried out in consultation with EBS Networks to ensure their no impact on existing users.

Once the construction of the Proposed Development is completed, ESB Networks personnel will be mobilised to complete the commissioning.

Telecommunications

Telecommunications including fibre required during the construction phase will be provided via a temporary mobile connection.

The fibre optic cable distribution network for the permitted Building A development will be extended to the GIS substation. The proposed 220kV transmission line, 49kVA cable installation, and 2 no. cable bays will not require the provision of telecommunications services. The extension of the network within the overall landholding will have a temporary imperceptible effect on the environment.

Surface Water and Foul Drainage Infrastructure and Water Supply

The route of the 220kV transmission line traverses an existing land drain associated with the Mooretown Stream. The land drain was overgrown at the time of the site walkover in July 2019. It is proposed to cross this land drain via horizontal directional drilling (HDD). The use of HDD methodology removes the potential for hydrological pathways and as such impacts on the Mooretown Stream. The implementation of mitigation measures detailed in Chapter 6 will ensure that there is no predicted impact on the Mooretown Stream.

If any stormwater collects in the trenches during construction, it will need to be discharged to sewer. Any discharge water will be treated using a siltbuster or similar to removed suspended solids prior to discharge.

Welfare facilities (canteens, toilets etc.) will be available within the construction compound in the data storage facility campus for the construction of Building A and it is proposed that can be utilised for the small number of staff required for the construction phase of the Proposed Development. The increase in water demand and wastewater discharges, if any, will be imperceptible and will not affect existing users.

13.5.2 Operational Phase

Power and Electrical Supply

The Proposed Development comprises a new 220kV GIS substation (also referred to as Building D), an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation which is located to the northeast of the proposed substation site, west of the Corduff Road, which also serves the nearby industrial areas.

In this instance the nature of the Proposed Development ensures that rather than utilising electricity, the Proposed Development will ensure continuity of supply of electricity to the permitted developments and potential development of the future indicative buildings to the north of the GIS substation.

Telecommunications

There is sufficient capacity available in the network to accommodate the Proposed Development.

Surface Water and Foul Drainage Infrastructure and Water Supply

Rainwater runoff from the proposed 220kV GIS substation will discharge to the surface water drainage network for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As discussed in section 13.4.3, the surface water drainage network for the permitted Building A development was designed to accommodate surface water drainage from the Proposed Development.

The permitted Building A drainage design includes oil separator interceptor systems to ensure the quality of storm water discharge is controlled prior to attenuation and discharge offsite.

The attenuated storm water will be discharged at the allowable greenfield run off rate to the existing storm water system along the R121 / Cruiserath Road to the south of the site. Further detail on the storm water drainage system and the basis of its design is provided in the *Engineering Planning Report – Drainage and Water*, prepared by CSEA, which accompanies the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). This report is included as Appendix A to the *Engineering Planning Report – Drainage and Water Services*, prepared by CSEA, which accompanies this application. Chapter 6 Hydrology addresses the impacts on storm water drainage.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any surface water drainage infrastructure. The cable installations are underground and the cable bays will be constructed on a primarily permeable gravel surface (with some concrete bases which will drain to the gravel area) at the Corduff substation.

Once operational, a small number of ESB Networks staff will undertake operational activities from the substations with only interim inspections required along the underground 220kV transmission line and 49kVA cable installation. Two ESB maintenance staff will carry out a routine inspection of the 49kVA and 220kV cable installations one year after completion and once every three years thereafter.

Domestic effluent arising from the welfare facilities for staff at the GIS substation will be collected in a newly constructed foul drainage network within the site and discharged to the IDA foul drainage network on the R121 to the south of the site, via the foul drainage network for the permitted Building A development. The wastewater discharged from the site will ultimately discharge to the municipal Waste Water Treatment Plant (WWTP) at Ringsend. The wastewater contribution from the Proposed Development will be minimal. Chapter 6 Hydrology addresses the impacts on foul water drainage.

By nature of the developments, the underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation will not generate any wastewater and as such do not require any foul drainage infrastructure.

Water will be required for the welfare facilities for staff at the GIS substation. This will be provided via a connection to the watermain for the permitted Building A development. The water demand for the Proposed Development will be minimal. Chapter 6 Hydrology addresses the impacts on water supply.

By nature of the developments, the underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any water supply.

13.6 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

13.6.1 Construction Phase

Power and Electrical Supply

The construction compound and temporary power supply established for the construction of Building A will be utilised for the Proposed Development. The power requirements for the construction phase will be relatively minor and therefore the power demand for the construction phase would have a potential short-term, imperceptible impact.

The excavation of trenches within the vicinity of existing electrical services will be carried out in consultation with ESB Networks to ensure there is no impact on existing users.

Telecommunications

Telecommunications including fibre required during the construction phase will be provided via a mobile connection.

The extension of the existing telecommunications from Building A to accommodate the Proposed Development will be entirely within the overall landholding and will not require any offsite connections. As the connection works are entirely within permitted and proposed site boundaries, there will be no potential offsite impact.

There are no potential impacts associated with telecommunications for the Proposed Development for the construction phase.

Surface Water Infrastructure

As discussed in section 13.4.3, the surface water drainage network for the permitted Building A development was designed to accommodate surface water drainage from the Proposed Development. As such, there is capacity for the permitted development to accommodate surface water runoff from the Proposed Development and no potential impacts on the surface water infrastructure.

The route of the 220kV transmission line traverses an existing land drain associated with the Mooretown Stream. The land drain was overgrown at the time of the site walkover in July 2019. The transmission line will either pass beneath the land drain by way of horizontal directional drilling (HDD). Chapter 6 Hydrology addresses the impacts on the Mooretown Stream associated with transmission line. There are no predicted impacts on the Mooretown Stream with the implementation of mitigation measures (refer to Chapter 6).

There are no potential impacts associated with surface water infrastructure for the Proposed Development for the construction phase.

Foul Drainage Infrastructure

Welfare facilities (canteens, toilets etc.) will be available within the construction compound in the data storage facility campus for the construction of developments approved under Planning Reg. Refs. FW17A/0025 / ABP Ref. PL06F.248544 and FW19A/0087 and it is proposed that can be utilised for the small number of staff required for the construction phase of the Proposed Development. The increase in wastewater discharges, if any, will be imperceptible and will not affect existing users.

There may be a requirement to discharge stormwater collected in the trenches for the 220kV transmission line and/or 49kVA cable installation to sewer. Any discharge water

will be treated using a siltbuster or similar to remove suspended solids to ensure there is no impact on the foul drainage network.

There will be no impact from construction works on the existing foul sewer network during construction.

Water Supply

Welfare facilities (canteens, toilets etc.) will be available within the construction compound in the data storage facility campus for the construction of developments approved under Planning Reg. Refs. FW17A/0025 / ABP Ref. PL06F.248544 and it is proposed that can be utilised for the small number of staff required for the construction phase of the Proposed Development. The increase in water demand, if any, will not be significant enough to impact existing users.

13.6.2 Operational Phase

Power and Electrical Supply

The proposed 220kV GIS substation, 220kV transmission line and 2 no. new cable bays at Corduff substation are designed to support power demand for Buildings A, B and C and potential development of the future indicative buildings to the north of the GIS substation (which will be subject to separate planning applications and EIA Reports), within the overall landholding. The 49kVA cable installation is intended to provide a house power supply to the proposed GIS substation.

In this instance the nature of the Proposed Development ensures that rather than utilising electricity, the Proposed Development will ensure continuity of supply of electricity to the permitted developments and potential development of the future indicative buildings to the north of the GIS substation.

There are no potential impacts associated with power and electrical supply for the Proposed Development for the operational phase.

Telecommunications

There is sufficient capacity available in the network to accommodate the development, so there are no potential impacts associated with telecommunications for the Proposed Development for the operation phase.

Surface Water Infrastructure

Rainwater runoff from the proposed 220kV GIS substation will discharge to the surface water drainage network for the permitted Building A development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). The surface water drainage network for the permitted Building A development was designed to accommodate surface water drainage from the Proposed Development, as the Proposed Development was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). As such, there is capacity for the permitted development to accommodate runoff from the Proposed Development.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any surface water drainage infrastructure. The cable installations are underground and the cable bays will be constructed on a primarily permeable gravel surface (with some concrete bases which will drain to the gravel area) at the Corduff substation.

There are no potential impacts associated with surface water infrastructure for the Proposed Development for the operational phase.

Foul Drainage Infrastructure

Domestic effluent arising from the welfare facilities at the GIS substation will be collected in a newly constructed foul drainage network within the site and discharged to the IDA foul drainage network on the R121 to the south of the site, via the foul drainage network for the permitted Building A development.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any foul drainage infrastructure.

There are no potential impacts associated with foul drainage infrastructure for the Proposed Development for the operational phase.

Water Supply

The water demand for the proposed GIS substation will be minimal. A PCE form was submitted to Irish Water (IW) on 21st November 2016 which addressed wastewater discharges (and water demand) for the GIS substation building. IW provided a CoF for the development on 14th February 2017 (IW Reference Number: CUST16622). The overall wastewater discharge associated with the Proposed Development is in accordance with the water demand outlined in the PCE.

The underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, the underground 49kVA cable installation from the existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation do not require any water supply.

There are no potential impacts associated with water supply for the Proposed Development for the operational phase.

13.7 REMEDIAL AND MITIGATION MEASURES

13.7.1 Construction Phase

Construction of the proposed GIS substation will require connections to power, telecommunications, drainage infrastructure and water supply but will not require any connections outside the permitted Building A development site and Proposed Development site boundaries.

Construction of the 220kV transmission line, 49kVA cable installation and new cable bays will not require any power, telecommunications, drainage infrastructure and water supply from existing services.

Surveys completed have identified where short term diversion of any services will be required. Ongoing consultation with EirGrid, ESB Networks, FCC, Irish Water and other relevant utility providers within the locality and compliance with any requirements or guidelines they may have will ensure a smooth construction schedule without disruption to the local and business community. Such diversions are common practice.

Power, Electricity Supply

The power demand for the construction phase will be relatively minor and the connection works are entirely within permitted and proposed site boundaries, so it is predicted that there will be no offsite impact.

The excavation of trenches within the vicinity of existing electrical services will be carried out in consultation with ESB Networks to ensure there is no impact on existing users.

Once the construction of the Proposed Development is completed, ESB Networks will be mobilised to complete the commissioning in accordance with the ESB Network requirements. As stated in Section 2.3.2., there is no requirement for chemicals usage and minimal access to the route by personnel there is no likely environmental effect as a result of commissioning.

Telecommunications

The telecommunications will be extended from Building A to accommodate the Proposed Development. As these works are entirely within permitted and proposed site boundaries, it is predicted that there will be no offsite impact as result of these works. No remedial or mitigation measures are required in relation to telecommunications.

Surface Water and Foul Drainage Infrastructure and Water Supply

Welfare facilities (canteens, toilets etc.) will be available within the construction compound of the permitted Building A and it is proposed that this will be in place for the construction of the Proposed Development. No remedial or mitigation measures are required in relation to surface water and foul drainage infrastructure and water supply.

13.7.2 Operational Phase

Power , Electricity Supply

The Proposed Development has been designed in accordance with ESB Networks requirements. Eirgrid has confirmed that there is sufficient power available from the existing area network for the Proposed Development. No remedial or mitigation measures are required in relation to power and electricity supply.

Telecommunications

As there are no potential effects on telecommunications during the operational phase of the Proposed Development, no remedial or mitigation measures are required.

Surface Water and Foul Drainage Infrastructure and Water Supply

There are no potential effects associated with surface water and foul drainage infrastructure or water supply for the Proposed Development for the operational phase and as such no remedial or mitigation measures deemed necessary required.

13.8 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

13.8.1 Construction Phase

The implementation of mitigation measures detailed in Section 13.7.1 will ensure that the predicted impacts on the material assets assessed in this chapter will be **short term, neutral** and **imperceptible** for the construction phase.

13.8.2 Operational Phase

Power, Electrical Supply and Telecommunications

The Proposed Development has been designed in accordance with the requirements of ESB Networks. Eirgrid has confirmed that there is sufficient power available from the existing area network for the Proposed Development.

There are no predicted impacts associated with power and electrical supply, and telecommunications for the Proposed Development for the operational phase.

Surface Water and Foul Drainage Infrastructure and Water Supply

The surface water and foul drainage and water supply requirements for the Proposed Development have already been incorporated into the design of the surface water and foul drainage and water supply infrastructure for the permitted Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). There are no predicted impact on water supply, surface water infrastructure and foul drainage infrastructure post construction.

Predicted Impact – Operational Phase

The predicted impacts on power and electrical supply, telecommunications, surface water infrastructure, foul drainage infrastructure and water supply will be **long-term, neutral** and **imperceptible**.

13.9 RESIDUAL IMPACTS

The Proposed Development entails minimal use of material assets examined in this chapter (i.e. power and electrical supply, telecommunications, surface water infrastructure, foul drainage infrastructure and water supply) during construction with no impact once operational. The overall predicted residual impact of the Proposed Development can be classed as **long-term** and **not significant** with respect to material assets.

The cumulative impact assessment is addressed in Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

14.0 WASTE MANAGEMENT

14.1 INTRODUCTION

This chapter has been prepared to address the issues associated with waste management during the construction and operational phase of the Proposed Development.

A site specific Construction & Demolition Waste Management Plan (C&D WMP) has been prepared to deal with waste generation during the construction phase of the Proposed Development and is included as Appendix 14.1. The C&D WMP has been prepared in accordance with the '*Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects*' document produced by the National Construction and Demolition Waste Council (NCDWC) in conjunction with the Department of the Environment, Heritage and Local Government in July 2006.

14.2 METHODOLOGY

The assessment of the impacts of the Proposed Development arising from the consumption of resources and the generation of waste materials, was carried out taking into account the methodology specified in relevant guidance documents, along with an extensive document review to assist in identifying current and future requirements for waste management including national and regional waste policy, waste strategies, management plans, legislative requirements and relevant reports. A summary of the documents reviewed and the relevant legislation is provided in Appendix 14.1 C&D WMP.

This chapter is based on the Proposed Development, as described in Chapter 2 and considers the following aspects:

- Legislative context;
- Construction phase (including site preparation, excavation and levelling); and
- Operational phase.

A desk study was carried out which included the following:

- Review of applicable policy and legislation which creates the legal framework for resource and waste management in Ireland;
- Description of the typical waste materials that will be generated during the construction phase; and
- Identification of mitigation measures to prevent waste generation and promote management of waste in accordance with the waste hierarchy.

Estimates of surplus made ground and soils and stones generated during the construction phase of the Proposed Development have been calculated by the project engineers Clifton Scannell Emerson Associates (CSEA).

There will be a very small amount of waste generated during the operation phase.

Mitigation measures are proposed to minimise the effect of the Proposed Development on the environment during the construction phase, to promote efficient

waste segregation and to reduce the quantity of waste requiring disposal. This information is presented in Section 14.6.

A review of the existing ground conditions on a regional, local and site specific scale are presented in Chapter 5 Land, Soils, Geology and Hydrogeology.

14.2.1 Legislation and Guidance

Waste management in Ireland is subject to EU, national and regional waste legislation which defines how waste materials must be managed, transported and treated. The overarching EU legislation is the Waste Framework Directive (2008/98/EC) which is transposed into national legislation in Ireland. The cornerstone of Irish waste legislation is the Waste Management Act 1996 (as amended).

In addition, the Irish government issues regular policy documents which outline measures aimed to improve waste management practices in Ireland and help the country to achieve EU targets in respect of recycling and disposal of waste. The most recent policy document *A Resource Opportunity – Waste Management Policy in Ireland* was published in 2012 and stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention.

The strategy for the management of waste from the construction phase is in line with the requirements of the *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* published in 2006 by the Department of the Environment, Heritage and Local Government (DoEHLG). by the Department of the Environment, Heritage and Local Government (DoEHLG).. The guidance document *Construction and Demolition Waste Management: A handbook for Contractors and Site Managers*, published by FÁS and the Construction Industry Federation, 2002 was also consulted in the preparation of this assessment.

14.3 RECEIVING ENVIRONMENT

The Proposed Development is located within the Local Authority area of Fingal County Council (FCC).

In terms of waste management, the receiving environment is largely defined by FCC as the local authority responsible for setting and administering waste management activities in the area. This is governed by the requirements set out in the *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*. This plan replaces the previous plan for the Dublin region due to changing National policy as set out in *A Resource Opportunity: Waste Management Policy in Ireland* and changes being enacted by the Waste Framework Directive. The waste management plan sets the following targets for waste management in the region:

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

The Regional Plan sets out the strategic targets for waste management in the region and sets a specific target for C&D waste of “70% preparing for reuse, recycling and

other recovery of construction and demolition waste” (excluding natural soils and stones and hazardous wastes) to be achieved by 2020.

The National Waste Statistics update published by the EPA in October 2018 identifies that Ireland’s current progress against this C&D waste target is at 68% and our progress against ‘Preparing for reuse and recycling of 50% by weight of household derived paper, metal, plastic & glass (includes metal and plastic estimates from household WEEE)’ is at 45%. Both of these targets are required to be met by 12 December 2020 in accordance with the requirements of the Waste Framework Directive.

The Fingal County Council Development Plan 2017 – 2023 also sets policies and objectives for the FCC area which reflect those set out in the regional waste management plan. Waste objectives with a particular relevance to this development are:

Objectives:

- Objective WM03 Implement the provisions of the Eastern Midlands Region Waste Management Plan 2015 -2021 or any subsequent Waste Management Plan applicable within the lifetime of the Development Plan. All prospective developments in the County will be expected to take account of the provisions of the Regional Waste Management Plan and adhere to the requirements of that Plan.
- Objective WM05 Prevent and minimise the generation of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015 -2021 (or any subsequent plans).
- Objective WM09 Promote increased recycling of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015 -2021 (or any subsequent plan).

With regard to C&D waste specifically the Development Plan requires that the ‘Construction and Demolition Waste Management Plan, as a minimum, should include provision for the management of all construction and demolition waste arising on site, and make provision for the reuse of said material and / or the recovery or disposal of this waste to authorised facilities by authorised collectors.’ It also requires that where appropriate, excavated material from development sites should be reused on the subject site.

In terms of physical waste infrastructure, three municipal solid waste landfills remain operational in the Eastern Midlands Region (EMR) and are all operated by the private sector. There are a number of other licensed and permitted facilities in operation in the EMR including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second facility in Poolbeg in Dublin.

14.4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The Proposed Development is described in detail in Chapter 2 (Description of the Development). The aspects relevant to this chapter are described in the following sections.

14.4.1 Construction Phase

The construction of foundations for the GIS substation, the installation of ducting for the 220kV transmission line and the 49kVA cable installation and construction of concrete bases for the new cable bays will require the excavation of made ground, topsoil, subsoil and possibly bedrock (if encountered).

The optimum depth of excavation required to facilitate installation of the 220kV ducting for the transmission line is 1.21m below ground level (bgl) but may increase to up to c. 3.5m at utility crossings. The optimum width of each trench is 1.02m, however this may vary depending on ground conditions and existing services.

The optimum depth of excavation required to facilitate installation of the ducting for the 49kVA cable installation is c. 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of each trench is c.0.6m, however this may vary depending on ground conditions and existing services to up to c. 1m.

CSEA have estimated that c. 24,300m³ of excavated material will be generated, i.e. c. 2,000m³ of made ground (predominantly tarmacadam, concrete and engineering fill) and c. 22,300m³ of soils/stones (refer to Table 14.1). Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite. The importation of fill materials will be required for construction of foundations and to reinstate the trenches. This fill material will be specified by the Operator, and is designed such that the maximum amount of protection is afforded to the electrical infrastructure beneath it.

The surplus excavated material will be removed off-site either as a waste or, where appropriate, as a by-product. Where the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Article 27 of the *European Communities (Waste Directive) Regulations 2011*. A formal documented EPA approval will be obtained before re-using the material as a by-product.

If the material is deemed to be a waste, removal and reuse/recycling/recovery/disposal of the material will be carried out in accordance with the *Waste Management Act 1996* (as amended), the *Waste Management (Collection Permit) Regulations 2007* (as amended) and the *Waste Management (Facility Permit & Registration) Regulations 2007* (as amended). The volume of waste requiring recovery/disposal will dictate whether a Certificate of Registration (COR), permit or licence is required by the receiving facility.

As stated in Chapter 5, there was no evidence of contamination on the permitted Building A site during the site investigation carried out in 2016. Furthermore, there was no visual or olfactory evidence of ground contamination noted during the site walkover of the Proposed Development area carried out by AWN in July 2019.

Nonetheless, in order to establish the appropriate reuse, recovery and/or disposal route for the surplus soils and stones to be removed off-site as a waste, it will first need to be classified. The material will initially need to be classified as hazardous or non-hazardous in accordance with the EPA publication *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous*. Environmental soil analysis will be carried out on a number of representative soil samples for a range of parameters to allow the soil to be accurately classified as hazardous or non-hazardous. In addition, soil analysis will also be carried out in accordance with the requirements for acceptance of waste at landfills (Council Decision 2003/33/EC

Waste Acceptance Criteria). This legislation sets limit values for acceptance of waste at landfills based on properties of the waste including potential pollutant concentrations and leachability. (Note: Clean inert soils and stones excavated from greenfield sections of the route would generally not require classification/testing but would require a letter of suitability to be provided to the receiving facility.)

The surplus soils and stones may be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the event of hazardous material being encountered, be transported for treatment/recovery or exported abroad for disposal in suitable facilities.

It is expected that wastes generated (other than excavated material and trees/shrubbery) from other construction activities will be negligible and will generally comprise waste generated from construction workers. These wastes would generally be organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided at the site compound during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices. The welfare facilities and site office for the Proposed Development will be located in a site compound on an existing data storage facility site to the south of the Proposed Development where construction works are currently ongoing.

Further detail on the waste materials likely to be generated during the excavation and construction works are presented in the project-specific C&D WMP included as Appendix 14.1. The C&D WMP provides an estimate of the main waste types likely to be generated during the construction phase of the Proposed Development and these are summarised in Table 14.1. Volumes of surplus excavated material are based on estimates by the project engineers CSEA.

Table 14.1 Estimates for construction waste.

| Waste Type | Tonnes |
|---------------------------------------------------------|---------------|
| Soils & Stones | 22,300 |
| Made ground (tarmacadam, concrete and engineering fill) | 2,000 |
| Trees/shrubbery | 10 |
| Other | 10 |
| Total | 24,320 |

It should be noted that until final materials and detailed construction methodologies have been confirmed it is difficult to predict with a high level of accuracy the construction waste that will be generated from the construction of the Proposed Development as the exact materials and quantities may be subject to some degree of change and variation during the detailed design and construction process. However, the above estimates are considered to be the worst case scenario.

An outline Construction Environmental Management Plan (CEMP) has been prepared to accompany the planning application. The appointed main contractor will be required to prepare a detailed CEMP prior to commencement of construction which may refine the above waste estimates.

14.4.2 Operational Phase

Once operational, it is anticipated that very small amount of waste will be generated at the GIS substation from ESB networks staff during their inspections and maintenance works.

These wastes may include organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons) and non-recyclable waste. Waste fuels/oils, waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently.

14.5 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

This section details the potential waste impacts associated with the Proposed Development.

14.5.1 Construction Phase

As detailed in Section 14.4.1, the Proposed Development will generate surplus excavated material, as well as waste from the welfare facilities and site office at the site compound.

Surplus excavated material classified as waste (as opposed to a by-product) will be segregated at source and transferred directly from site by a suitably permitted waste contractor(s) to suitably authorised receiving facilities.

Waste materials generated at the site compound from the welfare facilities and site office will be temporarily stored in dedicated receptacles at the site compound pending collection by a suitably permitted waste contractor(s). The waste storage area will need to be easily accessible to waste collection vehicles.

If waste material is not managed and stored correctly on the site or at the site compound, it is likely to lead to litter or pollution issues at site, site compound and/or on adjacent properties. The knock-on effect of litter issues is the presence of vermin on the site, site compound and the surrounding areas. Waste material will be appropriately managed on site so as to avoid these issues.

The use of non-permitted waste contractors for transportation or unauthorised receiving facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. Removal and reuse/recycling/recovery/disposal of waste material from site will be carried out in accordance with the *Waste Management Act 1996* (as amended), the *Waste Management (Collection Permit) Regulations 2007* (as amended) and the *Waste Management (Facility Permit & Registration) Regulations 2007* (as amended). It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices.

Wastes will be collected by a suitably permitted contractor(s) and be transferred to suitably registered/permitted/licenced waste facilities for processing and segregation, reuse, recycling, recovery and/or disposal. There are numerous authorised waste facilities in the Leinster region which can accept non-hazardous and hazardous waste materials and acceptance of waste from the Proposed Development would be in line with daily activities at these facilities. At present, there is sufficient capacity for

the acceptance of the predicted construction waste materials at facilities in the region.

Where offsite reuse of the wastes generated is not feasible, recycling and/or recovery of the waste will be carried where possible. Recovery and recycling of construction waste has a positive impact on sustainable resource consumption, for example where waste trees/shrubbery is mulched into a landscaping product or waste asphalt is recycled for use in new pavements. The use of recycled materials, where suitable, reduces the consumption of natural resources.

There is a quantity of material (made ground and soils and stones) which will need to be excavated to facilitate the Proposed Development. Clean inert soils and stones excavated will be reused on site as backfill, where practical. In the event that potentially contaminated material is encountered, correct classification and segregation of the excavated material is required to ensure that any potentially contaminated materials are identified and handled in a way that will not impact negatively on the health and safety of workers as well as on the receiving environment, both on and off-site. Contaminated material will need to be removed off-site for appropriate treatment and/or disposal.

Reuse of suitable clean inert excavated material onsite, where practical, will reduce consumption of natural quarry resources.

The potential effect of construction waste generated from the Proposed Development is considered to be **short-term** and **not significant**.

14.5.2 Operational Phase

No waste will be generated from the operation of the proposed 220kV transmission line, 49kVA cable installation and new cable bays.

Small volumes of waste will be generated at the proposed GIS substation. The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy which would lead to small volumes of waste being sent unnecessarily to landfill.

The nature of the development means the generation of waste materials during the operational phase is an unavoidable impact. Networks of waste collection, treatment, recovery and disposal infrastructure are in place in the region to manage waste efficiently from this type of development. Waste which is not suitable for recycling is typically sent for energy recovery. There are also facilities in the region for segregation of municipal recyclables which is typically exported for conversion in recycled products (e.g. paper mills and glass recycling).

The waste materials generated on a weekly basis will require site storage within the substation prior to collection by an authorised waste contractor. Waste collection vehicles will be required to service the development on a regular basis to remove waste.

If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the development and on adjacent developments. The knock-on effect of litter issues is the presence of vermin within the development and the surrounding areas.

The use of non-permitted waste contractors or unlicensed facilities could give rise to inappropriate management of waste and result in negative environmental impacts or pollution. It is essential that all waste materials are dealt with in accordance with regional and national legislation, as outlined previously, and that time and resources are dedicated to ensuring efficient waste management practices.

The potential impact of operational waste generation from the development is considered to be **long-term, negative** and **not significant**.

14.5.3 Do Nothing Scenario

If the Proposed Development was not to proceed there would be no additional construction or operational waste generation.

14.6 REMEDIAL AND MITIGATION MEASURES

This section outlines the measures that will be employed in order to reduce the amount of waste produced, manage the wastes generated responsibly and handle the waste in such a manner as to minimise the effects on the environment.

14.6.1 Construction Phase

A project specific C&D WMP has been prepared in line with the requirements of the *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* published in 2006 by the Department of Environment Heritage and Local Government (DoEHLG). Adherence to the high level strategy presented in this C&D WMP will ensure effective waste management and minimisation, reuse, recycling, recovery and disposal of waste material generated during the construction phase of the Proposed Development. Prior to commencement of construction, the main contractor will be required to refine/update this document to detail specific measures to minimise waste generation and resource consumption and provide details of the proposed waste contractors and destinations of each waste stream.

The project engineers, CSEA, have estimated that 24,300m³ of excavated material will be generated. Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of this material will require removal offsite. It will be reused offsite where practical and where it cannot be reused, it will be recycled/recovered.

In addition the following mitigation measures will be implemented:

- On-site segregation of waste materials will be carried out to increase opportunities for off-site reuse, recycling and recovery – it is anticipated that the following waste types, at a minimum, will be segregated:
 - Made ground
 - Soils and stones
 - Trees/shrubbery
 - In addition, the following wastes will be segregated at the site compound:
 - Organic (food) waste
 - Packaging (paper/card/plastic)
 - Mixed dry recyclables
 - Mixed non-recyclable waste
- All excavations will be carefully monitored by a suitably qualified person to

ensure that potentially contaminated soil is identified and segregated, if encountered. In the event that any potentially contaminated material is encountered, it will be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous and further classified as clean, inert, non-hazardous or hazardous in accordance with the EC Council Decision 2003/33/EC, which establishes the criteria for the acceptance of waste at landfills.

- Waste materials generated at the site compound will be stored in suitable receptacles in designated areas of the site compound;
- Any hazardous wastes generated (such as chemicals, solvents, glues, fuels, oils) will also be segregated and will be stored in appropriate receptacles (in suitably banded areas, where required);
- A waste manager will be appointed by the main contractor to ensure effective management of waste during the excavation and construction works;
- All construction staff will be provided with training regarding the waste management procedures;
- All waste leaving site will be reused, recycled or recovered where possible to avoid material designated for disposal;
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licenced facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

As surplus soils and stones will require removal from site, any nearby sites requiring clean fill material will be contacted to investigate reuse opportunities for clean and inert material, which requires removal off-site. If any of the material is to be reused on another site as by-product (and not as a waste), this will be done in accordance with Article 27 of the *EC (Waste Directive) Regulations (2011)* as previously referred to Section 14.4 and detailed in the C&D WMP (Appendix 14.1).

These mitigation measures will ensure that the waste arising from the construction phase of the development is dealt with in compliance with the provisions of the *Waste Management Act 1996*, as amended, associated Regulations, the *Litter Pollution Act 1997 – 2009* and the *EMR Waste Management Plan (2015 - 2021)*. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved and will encourage sustainable consumption of resources.

14.6.2 Operational Phase

Small volumes of waste will be generated at the proposed GIS substation. No waste will be generated from the operation of the proposed 220kV transmission line, 49kVA cable installation and new cable bays.

Any waste materials will be segregated into appropriate categories and will be temporarily stored in appropriate bins or other suitable receptacles in a designated, easily accessible areas of the substation.

In addition, the following mitigation measures will be implemented:

- On-site segregation of all waste materials into appropriate categories including (but not limited to):
 - Dry Mixed Recyclables;
 - Organic food/green waste;
 - Mixed Non-Recyclable Waste;
 - Batteries (non-hazardous and hazardous);

- Waste electrical and electronic equipment (WEEE) including computers, printers and other ICT equipment; and
- Cleaning chemicals (solvents, pesticides, paints, adhesives, resins, detergents, etc.).
- All waste materials will be stored in colour coded bins or other suitable receptacles in a designated, easily accessible location. Bins will be clearly labelled with the approved waste type to ensure there is no cross contamination of waste materials;
- All waste collected from the development will be reused, recycled or recovered where possible, with the exception of those waste streams where appropriate facilities are currently not available;
- All waste leaving the site will be transported by suitable permitted contractors and taken to suitably registered, permitted or licensed facilities; and
- All waste leaving the site will be recorded and copies of relevant documentation maintained.

These mitigation measures will ensure the waste arising from the development is dealt with in compliance with the provisions of the *Waste Management Act 1996*, as amended, associated Regulations, the *Litter Pollution Act 1997* and the *EMR Waste Management Plan (2015 - 2021)*. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

14.7 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

The implementation of the mitigation measures outlined in Sections 14.6.1 and 14.6.2 will ensure that a high rate of reuse, recovery and recycling is achieved at the development during the construction phase of the project. It will also ensure that European, National and Regional legislative waste requirements with regard to waste are met and that associated targets for the management of waste are achieved.

14.7.1 Construction Phase

A carefully planned approach to waste management as set out in Section 15.6.1 and adherence to the C&DWMP during the construction and demolition phase will ensure that the impact on the environment will be **short-term, neutral** and **imperceptible**.

14.7.2 Operational Phase

During the operational phase, a structured approach to waste management as set out in Section 15.6.2 will promote resource efficiency and waste minimisation. Provided the mitigation measures are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be **long-term, neutral** and **imperceptible**.

14.8 RESIDUAL IMPACTS

Adherence to the mitigation measures outlined in Section 14.6.1 and 14.6.2 will ensure that there are no significant impacts on resource or waste management from the Proposed Development. The management of waste during the construction phase in accordance with the Construction & Demolition Waste Management Plan (C&D WMP) and during the operational phase in accordance with the mitigation measures in Section 14.6.2 will meet the requirements of regional and national waste legislation and promote the management of waste in line with the priorities of the waste hierarchy. The residual impact will be **neutral** and **imperceptible**.

The cumulative impact assessment is addressed Chapter 15 of this EIA Report.

Interactions are addressed in Chapter 16 of this EIA Report.

14.9 REFERENCES

- European Communities Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC

APPENDIX 14.1

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

PREPARED BY AWN CONSULTING LIMITED

APPENDIX 14.1

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

PROPOSED GIS SUBSTATION, 220KV TRANSMISSION LINE, 49KVA CABLE INSTALLATION, AND NEW CABLE BAYS, CRUISERATH, DUBLIN 15

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Construction and Demolition (C&D) Waste Management Plan (WMP) for a proposed development at Cruiserath, Dublin 15.

The purpose of this C&D WMP is to provide information necessary to ensure that the management of C&D waste at the site is undertaken in accordance with current legal and industry standards including the *Waste Management Acts 1996-2011* and associated Regulations ¹, *Protection of the Environment Act 2003* as amended ², *Litter Pollution Act 1997* as amended ³ and the *Eastern-Midlands Region Waste Management Plan 2015-2021* ⁴. In particular, this C&D WMP aims to ensure maximum recycling, re-use and recovery of waste with diversion from landfill, where possible. It also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources).

In the preparation of the C&D WMP consideration has been given to the requirements of National and Regional waste policy, legislation and other guidelines (referred to in Section 2.0). However, in determining the structure and content of the document, the following two publications have been referenced in particular:

- Department of the Environment, Heritage and Local Government (DoEHLG), *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects* (2006) ⁵.
- FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and Site Managers*, (2002) ⁶.

These Guidance Documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Government issued a policy statement in September 1998 titled as '*Changing Our Ways*' ⁷ which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland ⁷. The target for C&D waste in this Strategy was to recycle at least 50% of C&D waste within a five-year period (by 2003), with a progressive increase to at least 82% over fifteen years (by 2013) ⁷.

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report titled *Recycling of Construction and Demolition Waste* ⁸ concerning the development and implementation of a voluntary construction industry programme to meet the governments objectives for the recovery of construction and demolition waste.

A number of additional National and Regional Waste Policies, Strategies and Reports have been issued in previous years including:

- Department of the Environment, Heritage and Local Government (DoEHLG), *Preventing and Recycling Waste - Delivering Change* (2002);
- DoEHLG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action, World Summit on Sustainable Development* (2002);
- DoEHLG, *Taking Stock and Moving Forward* (2004);
- DoEHLG, *National Strategy on Biodegradable Waste* (2006); and
- DoEHLG, *A Resource Opportunity* (2012).

The most recent national policy document was published in July 2012, entitled *A Resource Opportunity - Waste Management Policy in Ireland*⁹. This document stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. The document sets out a number of actions in relation to C&D waste - it commits to undertake a review of specific producer responsibility requirements for C&D projects over a certain threshold.

The National Construction and Demolition Waste Council (NCDWC) was launched in June 2002, as one of the recommendations of the Forum for the Construction Industry, in the Task Force B4 final report. The NCDWC subsequently produced *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* in July 2006 in conjunction with the Department of the Environment, Heritage and Local Government (DoEHLG).

The guidelines outline the issues that need to be addressed at the pre-planning stage of a development all the way through to its completion. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted construction and demolition wastes;
- Procedures to prevent and minimise wastes;
- Options for reuse/recycling/recovery/disposal of construction and demolition wastes;
- Provision of training for Waste Manager and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of proposed consultation with relevant bodies i.e. waste recycling companies, Fingal County Council, etc.

2.2 Regional Level

The proposed development is located in the Local Authority area of Fingal County Council (FCC).

The Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021 is the current regional waste management plan for the DCC area. The plan does not set specific targets for construction and demolition (C&D) waste, however, the Waste Framework Directive (WFD) sets a target for Member States of “70% preparing for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes)” to be achieved by 2020, which is highlighted in the regional plan. Other mandatory targets set in the Plan include:

- A 1% reduction per annum in the quantity of household waste generated over the period of the plan;
- Achieve a reuse/recycling rate of 50% of municipal waste by 2020; and

- Reduce to 0% the direct disposal of residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Municipal landfill charges in Ireland are based on the weight of waste disposed. Landfill charges in the region are approximately €130-150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2012*.

The Fingal County Council Development Plan 2017 – 2023¹⁰ contains several policies in relation to waste management. The waste policies most relevant to this development are as follows:

Statement of Policy

Conform to the European Union, National and Regional policy in all matters relating to the production, handling, treatment and disposal of waste.

Objective WM05

Prevent and minimise the generation of waste in accordance with the Eastern Midlands Region Waste Management Plan 2015 -2021 (or any subsequent plans).

Objective WM22

Promote the use of clean technology, and minimisation of hazardous waste production in industry, including Small and Medium Enterprises (SMEs).

Objective DMS147

Ensure all new developments include well designed facilities to accommodate the three-bin collection system.

Objective DMS149

Require that construction and demolition waste management plans be submitted as part of any planning application for projects in excess of any of the following thresholds:

- *New residential development of 10 units or more.*
- *New developments other than above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250sqm.*
- *Demolition / renovation / refurbishment projects generating in excess of 100m³ in volume of C&D waste.*
- *Civil engineering projects in excess of 500m³ of waste materials used for development of works on the site.*

Furthermore, the Development Plan requires that the 'Construction and Demolition Waste Management Plan, as a minimum, should include provision for the management of all construction and demolition waste arising on site, and make provision for the reuse of said material and / or the recovery or disposal of this waste to authorised facilities by authorised collectors.' It also requires that where appropriate, excavated material from development sites should be reused on the subject site.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the project are:

- Waste Management Act 1996 (No. 10 of 1996) as amended. Sub-ordinate legislation includes:
 - European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended
 - Waste Management (Collection Permit) Regulations (S.I. No. 820 of 2007) as amended
 - Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended
 - Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) as amended
 - Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended
 - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
 - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
 - European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
 - Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009), as amended
 - European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 191 of 2015)
 - Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended
 - Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419 of 2007) as amended
 - Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998)
 - European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)
 - European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended.
- Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.
- Planning and Development Act 2000 (No. 30 of 2000) as amended.

These Acts and subordinate Regulations enable the transposition of relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Acts 1996 – 2011 and subsequent Irish legislation, is the principle of “*Duty of Care*”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal reuse, recycling, recovery and/or disposal (including its method of reuse, recycling, recovery and/or disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final waste reuse, recycling, recovery and/or disposal site. Following on from this is the concept of “*Polluter Pays*” whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the appointed construction contractor(s) are legally compliant with respect to waste transportation, reuse, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and reuse/recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended, or a waste or Industrial Emissions (IE) licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location, Size and Scale of the Development

The Proposed Development will consist of:

- 220kV GIS substation includes the provision of four transformers, a two storey GIS substation building (with a gross floor area of 1,988 sq.m) within a 2.6 m high fenced compound. (referred to as Building D);
- A double circuit 220kVA transmission line from the proposed substation to the existing Corduff 220kV substation. The proposed transmission line covers a distance of approximately 1.8 km within the townlands of Cruiserath, Co. Dublin, Goddamendy, Co. Dublin, and Bay, Co. Dublin;
- Adjacent access paths, connections to the two substations (existing and proposed, including 2 no. new cable bays at the extant Corduff Substation), changes to landscaping, security fencing and berms permitted under An Bord Pleanála Reg. Ref.: PL06F.248544 / Fingal County Council Reg. Ref.: FW17A/0025, provision of car parking within the substation compound, provision of a 49kVA electricity connection (470m in length, traversing the Cruiserath Road to the southwest of the proposed substation site) for the substation building, landscaping, services, all associated construction works, and all ancillary works

A detailed description of the development is provided in Chapter 2 (Description of the Proposed Development) of the EIA Report. A description of the characteristics of the development relevant to waste are described in Section 14.4 of Chapter 14 (Waste Management).

3.2 Overview of the Non-Hazardous Wastes to be produced

The construction of foundations for the GIS substation, the installation of ducting for the 220kV transmission line and the 49kVA cable installation and construction of concrete bases for the new cable bays will require the excavation of made ground, topsoil, subsoil and possibly bedrock (if encountered).

The optimum depth of excavation required to facilitate installation of the 220kV ducting for the transmission line is 1.21m below ground level (bgl) but may increase to up to c.

3.5m at utility crossings. The optimum width of each trench is 1.02m, however this may vary depending on ground conditions and existing services.

The optimum depth of excavation required to facilitate installation of the ducting for the 49kVA cable installation is c. 0.95-1m below ground level (bgl) but may increase to up to c. 3m at utility crossings. The optimum width of each trench is c.0.6m, however this may vary depending on ground conditions and existing services to up to c. 1m.

CSEA have estimated that c. 24,300m³ of excavated material will be generated, i.e. c. 2,000m³ of made ground (predominantly tarmacadam, concrete and engineering fill) and c. 22,300m³ of soils/stones (refer to Table 14.1). Suitable soils and stones will be reused on site as backfill in the grassed areas, where possible. However, it is currently envisaged that majority of the excavated material will require removal offsite. The importation of fill materials will be required for construction of foundations and to reinstate the trenches.

Other than excavated material, it is estimated that c. 10m³ of trees/shrubbery will require removal offsite as a waste.

During the construction phase of the proposed substation and cable bays, waste produced will include surplus steel and other metal materials and broken/off-cuts of timber, plasterboard, concrete etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials are also likely to be generated.

Waste will also be generated by construction workers. These wastes would generally be organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided at the site compound during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices. The welfare facilities and site office for the proposed development will be located in the site compound for the permitted Building A development, which is targeted to commence construction in Q3 2019.

The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

3.3 Potentially Hazardous Waste

3.3.1 Contaminated Soil

Any surplus material that requires removal from site for offsite reuse, recovery and/or disposal as a waste and any potentially contaminated material (in the unlikely event that it is encountered), should be segregated, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled '*Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous*' using the *HazWasteOnline* application (or similar approved classification method). If the material is to be disposed of to landfill, it will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC* and landfill specific criteria. This legislation sets limit values on landfills for acceptance of waste material based on properties of the waste including potential pollutant concentrations and leachability.

Excavation works will be carefully monitored by a suitably qualified person to ensure any potentially contaminated soil is identified and segregated in accordance with the above procedure.

Further details on the soil quality at the site is provided in Chapter 5 (Land, Soils, Geology and Hydrogeology).

3.3.2 Fuel/Oils

As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel/oil waste generated at the site.

3.3.3 Other Known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas, if generated. They will generally be present in small volumes only or may not arise at all. If these wastes are generated, storage of these waste types will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, waste electrical and electronic equipment (WEEE) containing hazardous components and batteries (Lead, Ni-Cd or Mercury) may be generated from the temporary site office during construction works. These wastes will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

3.4 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that may typically be generated by the construction activities at the proposed site are presented in Table 3.1. The List of Waste code (also referred to as the European Waste code or EWC) for each waste stream is also shown.

Table 3.1. Typical waste types generated, and List of Waste Codes (* individual waste type may contain hazardous materials)

| Main Waste Material Types | List of Waste Code |
|---------------------------------------------------|---------------------------|
| Soil and stones | 17 05 |
| Biodegradable/Green Waste | 20 02 01 |
| Bituminous mixtures* | 17 03 01/02 |
| Other Waste Types (which may be generated) | List of Waste Code |
| Electrical and electronic components | 20 01 35 & 36 |
| Paper and cardboard | 20 01 01 |
| Mixed municipal waste | 23 03 01 |
| Mixed C&D waste | 17 09 04 |
| Batteries and accumulators* | 20 01 33 & 34 |
| Liquid fuels* | 13 07 01, 02 & 03 |

4.0 ESTIMATED WASTE ARISING

4.1 Demolition Waste Generation

No demolition will be required to facilitate the construction of the new development.

4.2 Construction Waste Generation

The quantity of excavated material that will be generated has been estimated by the project engineers, CSEA, to be c. 24,300m³. It is anticipated that the majority of the material will be removed off site for reuse and recycle/recovery, with some being reused as backfill at in the grassed areas, where possible. In addition, it is estimated that c. 10m³ of trees/shrubbery (green) waste will be produced.

It is expected that wastes generated (other than excavated material and trees/shrubbery) from other construction activities will be negligible and will generally comprise waste generated from construction workers. These wastes would generally be organic/food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided at the site compound during the construction phase. Waste printer/toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from the site office.

The welfare facilities and site office for the proposed development will be located in the site compound for the permitted Building A development.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

An outline Construction Environmental Management Plan (CEMP) has been prepared to accompany the planning application. The appointed main contractor will be required to prepare a detailed CEMP prior to commencement of construction which may refine the above waste estimates.

4.3 Proposed Waste Management Options

Waste materials generated will be segregated on-site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring reuse, recycling, recovery or disposal off-site will be transferred to a facility holding the appropriate COR, permit or licence, as required.

Mixed C&D waste (classified under the List of Waste code 17 09 04) is permitted for acceptance at a number of waste facilities in the region including Integrated Material Solutions landfill in north Dublin and a number of waste transfer stations.

Written records will be maintained by the contractor detailing the waste arising throughout the construction phase, the classification of each waste type, the contact details and waste collection permit number of all waste contractors who collect waste from the site and the end destination details for all waste removed and disposed offsite.

Dedicated storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc., as required. The containers used for storing hazardous liquids will be appropriately banded or will be stored on suitably sized spill pallets.

The management of the main construction waste streams are detailed as follows:

Soil and Stone

The Waste Management Hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling/recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The volume of soil and stone to be excavated is estimated to be 24,300m³. It is currently anticipated that majority of the excavated material will be require removal off site, with some being used as backfill in the grassed areas, where possible.

The majority of soil & stone will need to be removed off-site either as a waste or, where appropriate, as a by-product. Where the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011. EPA agreement will be obtained before re-using the material as a by-product.

The next option (beneficial reuse) may be appropriate for the excavated material, subject to environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous publication. Clean material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end-use.

Any nearby sites requiring clean fill/capping material could be contacted to investigate reuse opportunities for clean and inert material. If any soils/stones are imported onto the site from another construction site as a by-product (and not as a waste), this will also be done in accordance with Article 27. However, it is not expected that this will be necessary.

If the material is deemed to be a waste, then removal and reuse/recycling/recovery/disposal of the material will be carried out in accordance with the Waste Management Acts 1996 – 2011 as amended, the Waste Management (Collection Permit) Regulations 2007 as amended and the Waste Management (Facility Permit & Registration) Regulations 2007 as amended. The volume of waste removed will dictate whether a COR, permit or licence is required by the receiving facility. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the unlikely event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any inert/non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Tarmacadam

Tarmacadam excavated will be segregated and transferred off site for appropriate reuse, recycling, recovery and/or disposal.

Concrete

Concrete will be segregated and transferred off site for appropriate reuse, recycling, recovery and/or disposal.

Biodegradable/Green Waste

Trees and shrubbery removed will be transferred off site for appropriate reuse and/or recovery.

Waste Electrical and Electronic Equipment (WEEE)

Any WEEE generated in the site office will be stored in a dedicated container in the site office pending collection for recycling.

Batteries

Any waste batteries generated in the site office will be stored in a dedicated container in the site office pending collection for recycling.

Other Recyclables

Where any other recyclable wastes such as cardboard and soft plastic are generated at the site compound, these will be segregated at source into dedicated receptacles and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate receptacles in the site compound. Prior to removal from site, the non-recyclable waste receptacle will be examined by a member of the waste team (see Section 7.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced e.g. contaminated soil during excavations or waste fuels at the site compound will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

It should be noted that it is not possible to provide information on the specific destinations of each waste stream at this stage of the project. Prior to commencement of construction and removal of any construction waste offsite, details of the proposed destination of each waste stream will be provided to FCC for approval.

4.4 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the waste contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the contractor.

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 – 2011* as amended, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project Waste Manager (see Section 6.0) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority COR, waste permit or EPA Waste/IE Licence for that site will be provided to the nominated project Waste Manager. If the waste is being shipped abroad, a copy of the TFS document will be obtained from Dublin City Council (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

If any surplus soil or stone is being removed from the site for reuse on another construction site as a by-product, this will need to be done in accordance with Article 27 of the *EC (Waste Directive) Regulations, 2011*.

All information will be entered in a waste management recording system to be maintained on site.

5.0 ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with different aspects of waste management is provided below. The total cost of construction waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

5.1 Reuse

By reusing materials on site, there will be a reduction in the transport and offsite recycling/recovery/disposal costs associated with the requirement for a waste contractor to take the material away to landfill.

Clean and inert excavated material which cannot be reused on site may be used as capping material for landfill sites, or for the reinstatement of quarries, etc. as previously discussed. This material is often taken free of charge for such purposes, reducing final waste disposal costs.

5.2 Recycling

Salvageable metals will earn a rebate which can be offset against the costs of collection and transportation of the skips. Clean uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will typically charge less to take segregated wastes, such as recyclable waste, from a site than mixed waste streams.

5.3 Disposal

Landfill charges in the Eastern-Midlands region are currently at around €130-150 per tonne (which includes a €75 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*). In addition to disposal costs, waste contractors will also charge a fee for provision and collection of skips.

Collection of segregated construction waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a registered, permitted or licensed facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill.

6.0 TRAINING PROVISIONS

A member of the construction team will be appointed as the Waste Manager to ensure commitment, operational efficiency and accountability during the construction phase of the project.

6.1 Waste Manager Training and Responsibilities

The nominated Waste Manager will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid him/her in the organisation, operation and recording of the waste management system implemented on site. The Waste Manager will have overall responsibility to oversee, record and provide feedback to the Project Manager on everyday waste management at the site. Authority will be given to the Waste Manager to delegate responsibility to subcontractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The Waste Manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The Waste Manager will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this C&D WMP.

6.2 Site Crew Training

Training of the site crew is the responsibility of the Waste Manager and, as such, a waste training program should be organised. A basic awareness course will be held for all site crew to outline the C&DWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the waste storage areas. A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

7.0 RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling, recovery or disposal. A recording system will be put in place to record the construction waste arisings on site. A copy of the Waste Collection Permits, COR, Waste Facility Permits and Waste/IED Licences will be maintained on site at all times.

The Waste Manager or delegate will record the following;

- Waste taken for reuse off-site;
- Waste taken for recycling;

- Waste taken for disposal; and
- Reclaimed waste materials brought on-site for reuse.

For each movement of waste on or off-site, a signed docket will be obtained by the Waste Manager from the waste contractor, detailing the weight and type of the material and the source and destination of the material. This will be carried out for each material type. This system will also be linked with the delivery records. In this way, the percentage of construction waste generated for each material can be determined.

The system will allow the comparison of these figures with the targets established for the recovery, reuse and recycling of construction waste presented earlier and to highlight the successes or failures against these targets.

8.0 OUTLINE WASTE AUDIT PROCEDURE

8.1 Responsibility for Waste Audit

The appointed Waste Manager will be responsible for auditing the site during the construction and demolition phases of the project.

8.2 Review of Records and Identification of Corrective Actions

A review of all the records for the waste generated and transported on or off-site should be undertaken mid-way through the project. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established reuse/recovery/recycling/disposal targets for the site.

Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved. Waste management costs will also be reviewed.

Upon completion of the construction phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total reuse, recycling, recovery and disposal figures for the development.

9.0 CONSULTATION WITH RELEVANT BODIES

9.1 Local Authority

Once the main contractor has been appointed and prior to removal of any waste materials offsite, details of the proposed destination of each waste stream will be provided to FCC for their approval.

FCC will also be consulted, as required, throughout the construction phase in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

9.2 Recycling/Salvage Companies

Companies that specialise in C&D waste management will be contacted to determine their suitability for engagement. Where a waste contractor is engaged, each company will be audited in order to ensure that relevant and up-to-date waste collection permits

and facility COR/permits/licences are held. In addition, information regarding individual construction materials will be obtained, including the feasibility of recycling each material, the costs of recycling/reclamation, the means by which the wastes will be collected and transported off-site and the recycling/reclamation process each material will undergo off site.

10.0 REFERENCES

1. Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No. 27 of 2003) and 2011 (No. 20 of 2011). Subordinate and associated legislation includes:
 - European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) as amended 2011 (S.I. No. 323 of 2011)
 - Waste Management (Collection Permit) Regulations 2007 (S.I. No. 820 of 2007) as amended 2008 (S.I. No. 87 of 2008) and 2016 (S.I. No. 24 of 2016)
 - Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. No. 821 of 2007) as amended 2008 (S.I. No. 86 of 2008), 2014 (S.I. No. 310 and S.I. No. 546 of 2014) and 2015 (S.I. No. 198 of 2015)
 - Waste Management (Licensing) Regulations 2000 (S.I. No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004) and 2010 (S.I. No. 350 of 2010)
 - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997) as amended 1998 (S.I. No. 164 of 1998), 2001 (S.I. No. 356 of 2002) and 2011 (S.I. No. 126 and No. 192 of 2011)
 - Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
 - European Communities (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009) as amended 2015 (S.I. No. 190 of 2015)
 - European Union (Household Food Waste and Bio-waste) Regulations 2015 (S.I. No. 191 of 2015)
 - European Union (Packaging) Regulations 2014 (S.I. No. 282 of 2014) as amended 2015 (S.I. No. 542 of 2015)
 - European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
 - European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended 2014 (S.I. No. 349 of 2014) and 2015 (S.I. No. 347 of 2015)
 - Waste Management (Hazardous Waste) Regulations 1998 (S.I. No. 163 of 1998) as amended 2000 (S.I. No. 73 of 2000)
 - Waste Management (Shipments of Waste) Regulations 2007 (S.I. No. 419 of 2007) as amended by European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 (S.I. No. 324 of 2011)
 - The European Communities (Trans frontier Shipment of Hazardous Waste) Regulations 1988 (S.I. No. 248 of 1988) ○ European Union (Properties of Waste Which Render It Hazardous) Regulations 2015 (S.I. No. 233 of 2015)
2. Environmental Protection Act 1992 (Act No. 7 of 1992) as amended by the Protection of the Environment Act 2003 (Act No. 27 and S.I. No. 413 of 2003) and amended by the Planning and Development Act 2000 (Act No. 30 of 2000) as amended.
3. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended by the Litter Pollution Regulations 1999 (S.I. No. 359 of 1999) and Protection of the Environment Act 2003, as amended.
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region Waste Management Plan 2015 – 2021* (2015).

5. Department of the Environment, Heritage and Local Government (DoEHLG), *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*, (2006).
6. FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and Site Managers*, (2002).
7. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
8. Forum for the Construction Industry, *Recycling of Construction and Demolition Waste* (1999).
9. Department of Environment, Communities and Local Government (DoECLG), *A Resource Opportunity - Waste Management Policy in Ireland* (2012).
10. Fingal County Council (FCC), *Fingal Development Plan 2011-2017* (2011).
11. FCC, *Fingal Development Plan 2017-2023* (2019).
12. Environmental Protection Agency (EPA), *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015).
13. EPA, *National Waste Database Reports 1998 – 2012*.

15.0 CUMULATIVE IMPACTS

15.1 INTRODUCTION

This chapter of the EIA Report considers the potential cumulative impacts on the environment of the Proposed Development with other developments within the Building A site (i.e. Buildings A, B and C and the potential future indicative buildings) and the cumulative impacts with developments in the locality (including planned and permitted developments).

Cumulative impacts or effects are changes in the environment that result from numerous human-induced alterations. Cumulative impacts can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

The cumulative effects are analysed in this chapter in accordance with the requirements of the EPA Draft EIA Report Guidelines 2017. Cumulative effects are defined in the aforementioned Guidelines as “*the addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects*”.

As described in Chapter 2 Description of the Proposed Development, the Proposed Development will comprise of a new 220kV GIS substation, an underground double circuit 220kV transmission line from the proposed substation to the existing Corduff 220kV substation, an underground 49kVA cable installation from an existing substation at the Tyrrelstown Cross roundabout to the proposed substation and 2 no. new cable bays at the extant Corduff substation and associated and ancillary works.

15.1.1 Data Storage Facility Developments

Planning permission was granted by An Bord Pleanála (ABP) in January 2018 for the construction of a data storage facility to the south of the proposed substation, referred to as Building A (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544). A further application was made to Fingal County Council (FCC) in May 2019 for the construction of 2 no. data storage facilities to the east of the proposed substation, referred to as Buildings B and C (FCC Planning Ref. FW19A/0087). A final grant of permission for Buildings B and C was issued by FCC on 27th August 2019.

The proposed 220kV GIS substation and significant portion of the proposed underground 220kV transmission line and the proposed underground 49kVA cable installation are to be located within the permitted Building A site area. The permitted Buildings B and C will also be within the Building A site area. This chapter considers the potential cumulative impact of the Proposed Development with permitted Building A, B and C. Building A commenced construction in Q3 2019. The first data hall is estimated to be in operation by Q2 2020, with Q2 2022 targeted for full operations. The Proposed Development is targeted to commence construction at the end of Q3 2020 (subject to grant of planning permission), with completion of construction and commissioning by the end of Q1 2022. Therefore, the construction of Building A and the Proposed Development will be carried out concurrently. Building B is targeted to commence construction in Q3 2021. It is anticipated that the Proposed Development will be at commissioning stage, with construction works substantially or wholly completed. The construction schedule for Building C will be subject to the build out of Building B and customer demand. The earliest date for commencement of construction of Building C is currently anticipated to be Q3 2023. Therefore, construction of the Proposed Development and Building C will not overlap.

This chapter also considers the potential cumulative impact of the Proposed Development with the indicative future development of a further three data storage facilities on the adjoining lands to the west of the site (i.e. Building E, F and G) within the Building A site area. It should be noted that the potential cumulative impact of the Proposed Development with the indicative future development, has been assessed to the extent possible, having regard to the preliminary nature of that plan.

The construction of the Proposed Development will be completed prior to any future development of additional data storage facilities on the site, and as such there will be no cumulative impact associated with the construction phases of these projects.

The residual impacts of the Proposed Development, once operational, as set out in the chapters of this EIA Report, is generally imperceptible with the exception of the landscape and visual effects from the wider locality (including the residential areas to the west of the R121), which were determined to be not significant or imperceptible. Therefore, the cumulative impact of the operational phase of additional data storage facilities on the permitted Building A site and the Proposed Development is considered to be not significant or imperceptible.

15.1.2 6MVA and 23MVA Underground Cable Installations

FCC has recently granted permission to ESB Engineering & Major Projects to install a 6MVA underground cable installation from the existing Macetown 110kV substation to a permitted Medium Voltage (MV) substation on the permitted Building A site and a 23MVA underground cable installation from the existing Corduff 220kV substation to the permitted MV substation on the permitted Building A site (FCC Planning Ref. FW19A/0177).

The 6MVA and 23MVA underground cable installations are designed to support interim power demand for Building A. It is proposed that the 6MVA will be constructed and commissioned first, with commencement of construction targeted for Q1 2020 and completion targeted for Q2 2020. Once the 6MVA is operational, construction work for the 23MVA is targeted to commence in Q2 2020, with approximately 4 months for both the construction and commissioning prior to commencement of full operations in Q3 2020. Once the 23MVA is fully operational, the 6MVA will no longer be required and can be retired.

The construction of both the 23MVA may overlap with construction of the Proposed Development. The overlap in construction periods may be up to c. 1-3 months (i.e. during Q3 2020). This chapter considers the potential cumulative impact of the Proposed Development with the construction phase of the 23MVA cable installation. Once the Proposed Development is operational, the 23MVA will be retired (with the 6MVA having been previously retired once the 23MVA becomes operational) so the operational phases of the 6MVA and 23MVA will overlap with the construction of the Proposed Development but will not overlap with the operational phase of the Proposed Development.

The operational phase of these cable installations will be undertaken by ESB Networks. Operational activities will be undertaken from the Macetown and Corduff substations with only interim maintenance works along the underground cable routes. In general, two ESB Networks maintenance staff will carry out a routine inspection of the assets one year after completion and once every three years thereafter. As the operational activities are very limited, it is considered that there will be no perceptible cumulative impact associated with the operation of these underground cables and the construction of the Proposed Development.

15.1.3 Fibre Network Installations

The fibre connection to the permitted development will require the installation of ducting along two routes from the permitted Building A development to the Applicants existing facilities nearby in the IDA Blanchardstown Snugborough Business & Technology Park, Dublin 15. These fibre connections may be installed within the same timeframe as the construction of the Proposed Development, subject to grant of permission. Therefore, there is potential for a cumulative impact of this project with the Proposed Development associated with the construction phases. This chapter considers the potential cumulative impact of the Proposed Development with the fibre installation.

There will be no environmental impacts during the operational phase of the fibre installation (i.e. once the fibre ducting is installed and the ground re-instated). The residual impacts of the Proposed Development, once operational, as set out in the chapters of this EIA Report, is generally imperceptible with the exception of the landscape and visual effects from the wider locality (including the residential areas to the west of the R121), which were determined to be not significant or imperceptible. Therefore, the cumulative impact of the operational phase of the fibre installation and the Proposed Development is considered to be not significant or imperceptible.

15.1.4 Other Planned and Permitted Developments

A list of other developments in the area that have been granted planning permission in the past five years is provided in Chapter 3 (Section 3.5). The assessment considers the potential cumulative impact of the Proposed Development with other notable developments in the area. Most of these developments have been deemed to be not significant in terms of cumulative impacts with the Proposed Development. However, there are two applications with which the Proposed Development has the potential to have a cumulative effect which are summarised below:

Gembira Residential Development at Hollywoodrath FW14A/0108 and FW18A/0132

Permission was granted to Gembira Ltd. in January 2019 for the relocation of approved residential units and the addition of a further 17 residential units at Hollywoodrath, Hollystown, Dublin 15 (Planning Ref. FW18A/0132).

This permission was further to the original development application (Planning Ref. FW14A/0108), which included the construction of 435 residential units, broken into Phase 1 development of 150 units with access onto Church Road and Phase 2 development of 285 units with access onto Ratoath Road. It is understood that the construction of Phase 1 is complete, with Phase 2 currently under construction.

The permitted developments at this site will be hereafter collectively referred to as 'Development A'.

Kavcre Residential Development at Hollywoodrath . FW15A/0009 and FW16A/0191.

Kavcre Tyrellstown Ltd were granted permission by FCC for construction of a residential development consisting of 185 no. residential units (Planning Reg. Refs. FW15A/0009 and FW16A/0191; the full development descriptions provided as part of these planning applications can be seen in Table 3.1, Chapter 3) at a greenfield site at Hollywoodrath, Hollystown, Dublin 15, north of the permitted site.

It is understood that the Proposed Development is to be constructed in 2 no. phases in accordance with the Kilmartin LAP (phase 1 will consist of 85 no. dwellings and phase 2 will consist of 100 no. dwellings). Vehicular access to the site will be provided from an existing link road off the roundabout on the M2/N3 Link Road to the south of the site. In addition, the Proposed Development provides for the reservation of c.1 hectare of the total site area for the future provision of a new post-primary school site, in accordance with the Kilmartin LAP.

It is currently not known when this permitted residential development will be fully operational (construction of this development had not yet commenced at the time of writing this EIA Report).

The permitted developments at this site will be hereafter collectively referred to as 'Development B'.

While the construction schedules of Development A and Development B could not be confirmed, for the purposes of this cumulative assessment it is assumed that construction of these developments and Proposed Development may overlap.

The potential cumulative effects are considered for each environmental aspect in Sections 15.2 – 15.12. Where the cumulative effects are also dealt with in the relevant Chapters, this has been cross referenced where applicable.

15.2 POPULATION AND HUMAN HEALTH

There will be a **short-term, imperceptible, positive effect** on local business as a result of the Proposed Development with the presence of c. 15 - 30 construction workers using local facilities during the construction phase. While the Proposed Development is under construction, it is considered that the fibre installation, Development A, Development B and Building A, as well as the cable installations detailed in section 15.1.2, may be under construction, which will create further employment in the area during the construction phases. The small number of additional workers associated with the Proposed Development and these developments will have a **short-term, imperceptible, positive effect** effect on local business. Development A, Development B and Building A, along with the Proposed Development, will have a **long-term, imperceptible, positive effect** effect on local businesses due to the number of additional workers/customers associated with the developments during the operational phase.

The potential impact of the Proposed Development on population and human health in terms of air quality and climate and noise and vibration are discussed in the relevant sections of the population and human health chapter (Chapter 4) of this EIA Report. As described in Chapter 4, there are no significant effects associated with the construction or operation of the Proposed Development on population and human health in terms of air quality and climate and noise and vibration and therefore it is considered that the cumulative impact with the construction phases of the fibre installations, Development A, Development B and Building A, and the underground cable installations will be **short-term** and **not significant**. The cumulative impact with the operational phases of the fibre installations, Development A, Development B and Building A, and the underground cable installations will be **long-term** and **not significant**.

As described in Chapter 12 Traffic & Transportation, considering local planned and permitted developments, there will be **short-term, neutral** and **imperceptible** effect

on traffic during the construction phase of the Proposed Development, with negligible trip generation during operation phase (c. one return vehicular trip every 3 years) to the area. As such there is **long-term, neutral** and **imperceptible** cumulative effect.

A number of the permitted developments listed in Section 3.3 of Chapter 3 generally refer to relatively small projects on existing facilities within the Cruiserath and Tyrrelstown areas which are considered to have an imperceptible effect on the local population. There is no predicted cumulative impact associated with the construction or operational phases of these projects with the Proposed Development.

It is expected that the Proposed Development will have a **long-term** and **positive** cumulative effect on the immediate hinterland through supporting the provision of adequate electricity supply to the permitted the data storage facilities (Building A, B and C) that could potentially facilitate in turn future employment opportunities.

15.3 LAND, SOILS, GEOLOGY AND HYDROGEOLOGY

In terms of the impact on soil, geology and groundwater, the cumulative impacts which are relevant to the Proposed Development and other planned and permitted developments include the following:

- Overall loss of agricultural soils: Development of the area will result in a not significant impact on agricultural soils. As this area has been zoned for development this is consistent with the intended development of the area and is small in scale relative to Ireland's overall agricultural soil resources;
- Overall increase in hardstanding: Cumulatively these developments will result in localised reduced recharge to ground and increase in surface run-off. The aquifer underlying the area of these developments is poorly productive and/or moderately productive in local zones (see Figure 6.4) and is not used for public water supply or generally for potable use. As such, given that SUDS will be incorporated into the Proposed Development (as detailed in Section 6.5 of Chapter 6), and provided that SUDS is incorporated into the other developments, the impact is considered to be imperceptible; and
- Increase in potential for contamination of a high vulnerability aquifer during construction and operation: Mitigation measures are required to manage sediment run-off and fuel leakages during construction. Surrounding facilities (EPA licensed facilities in the immediate environs) have construction management plans and environmental management plans in operation to reduce the potential for water contamination during both the construction and operational phases. In addition, as these facilities will be licensed under the EPA during operation, mitigation measures and monitoring programmes will reduce the likelihood of any contamination of receiving waters.

Overall, cumulative development in the Cruiserath/Blanchardstown area is predicted to have an imperceptible, long term impact on soils and geology and hydrogeology. Sufficient mitigation measures will be in place at the Proposed Development site (as detailed in Section 5.6 of Chapter 5), and provided that sufficient mitigation measures are in place at each of the other development sites (i.e. other planned and permitted developments) the overall impact on soils and groundwater will be **neutral**.

15.4 HYDROLOGY

The impact of the Proposed Development has been considered in relation to the surrounding developments currently permitted within the vicinity of the site (see Chapter 3 for details).

There are no streams on the Building A site. There is a remnant drainage ditch in the redundant farmland to the southwest of the Proposed Development within the Building A site area. It is proposed to fill this ditch in as part of the permitted Building A development (An Bord Pleanála Reg. Ref.: PL06F.248544 / FCC Reg. Ref.: FW17A/0025, and FCC Reg Ref. FW19A/0087). There is a land drain associated with the Mooretown Stream which the 220kV transmission line will cross. Mitigation measures will be put in place to ensure there is no impact on the Mooretown Stream downstream of the construction works.

In terms of water, the cumulative impacts which are relevant to the Proposed Development and planned and permitted developments include the following:

- Increase in hard standing: This will result in localised reduced recharge to ground and increase in run-off rate. However, each neighbouring development is required to provide suitable attenuation on site to ensure greenfield run-off rates and ensure that there is no increase in likely flood impact.
- Increase in potential for contamination of watercourses during construction and operation: Mitigation measures are required to manage sediment run-off during construction. Surrounding facilities will have construction management plans and environmental management plans in operation to reduce the potential for water contamination during both the construction and operational phases. In addition, as the neighbouring facilities are licensed by the EPA for their activities during operation, mitigation measures and monitoring programmes will reduce the likelihood of any contamination of receiving waters; and
- Increase in wastewater loading and water supply requirement: Each development will require approval from the IDA/Irish Water confirming available capacity in the water and wastewater infrastructure.

Overall, the cumulative impact on the hydrological environment as a result of the wider developments in the area is predicted to be **long term-imperceptible** and **neutral**, provided mitigation measures are in place at each of the developments.

15.5 BIODIVERSITY

As part of the Screening for an Appropriate Assessment (AA), in addition to the Proposed Development, other relevant projects and plans in the region must also be considered at this stage. This step aims to identify at this early stage any possible significant cumulative effects / impacts of the Proposed Development with other such plans and projects on the Natura 2000 sites.

A search of the FCC Planning database was undertaken for the Cruiserath and Tyrrelstown areas for applications that have been granted planning permission within the last five years.

The developments outlined in Section 3.5 of Chapter 3 (Planning & Alternatives) will have no predicted impacts on Natura 2000 sites and the Proposed Development will have no predicted impacts on Natura 2000 sites cumulative impacts can be ruled out.

The Fingal County Development Plan in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of influence of the Proposed Development site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any, cumulative impacts with Plans or Projects for the development area and surrounding townlands in which the development site is located, would be avoided.

Any new applications for the project area will initially be assessed on a case by case basis by Fingal County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

15.6 AIR QUALITY AND CLIMATE

There is the potential for cumulative dust impacts to any nearby sensitive receptors. The dust mitigation measures outlined in Section 8.6.1 during construction and similar mitigation measures applied for other proposed or permitted developments will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality and climate associated with the construction phase of the Proposed Development and the permitted and Proposed Developments on the site and / or simultaneous construction of any other proposed or permitted developments within 350m of the site' are deemed **short-term** and **not significant**.

It should be noted that the 220kV transmission line and 49kVA cable installation will be underground once construction is completed. There will be no emissions to air quality or climate during the operational phase of the 220kV transmission line, 49kVA cable installation, the GIS substation or new cable bays. Therefore, there are no cumulative impacts on air quality or climate from the operational phase of the Proposed Development.

Indirect air emissions from electricity power generating stations are covered under the individual licences for these sites which are monitored and enforced by the EPA, ensuring emissions do not impact on ambient air quality.

15.7 NOISE AND VIBRATION

The construction phase of the Proposed Development is anticipated to coincide with the installation of fibre network and construction of the permitted Developments A and B and Building A, and the underground cable installations. It may also coincide with other proposed or permitted developments within close proximity of the Proposed Developments. There is a possibility for cumulative noise and vibration impacts.

During construction of the Proposed Development it is anticipated that noise and vibrations associated with construction work on the Proposed Development will typically be lower than those generated by existing traffic movements on the local road network. The noise environments at the nearest noise sensitive locations to the proposed works are and will continue to be dominated by road traffic noise and to lesser extent aircraft noise.

The application of appropriate noise and vibration mitigation measures outlined in Chapter 9 during construction and similar mitigation measures applied for other

proposed or permitted developments will avoid significant cumulative impacts on noise and vibration. Overall, the cumulative construction noise impacts are likely to be *negative* in terms of quality and slight in terms of significance (due to short term duration and expected compliance with outlined criteria), following EPA criteria for impact assessment.

It should be noted that the 220kV transmission line and 49kVA cable installation will be underground once construction is completed and there will be no noise and/or vibration emissions from these installations during the operational phase. Considering the distance between the proposed GIS substation and the nearest off-site locations of some 240m, noise from this installation is not predicted to be an issue off site. Therefore, there are no predicted cumulative impacts on noise and/or vibration from the operational phase of the Proposed Development.

15.8 LANDSCAPE AND VISUAL

Cumulative effects were considered with regard to other developments outlined in Section 3.5 of Chapter 3.

Cumulative effects during construction will extend the overall duration of construction activity within the area, however construction activity will move as different developments are completed in advance of others commencing. Cumulative effects will also intensify the change in character of the landscape from greenfield land to high-tech developments. Cumulative landscape and visual effects for the construction phase will be **significant/moderate** and **negative** as the existing land use changes to that anticipated by the land use zoning, however these will reduce to **moderate** and **neutral** as developments are completed and landscape mitigation measures establish.

Cumulative effects during operation will gradually intensify the high-tech character of the development area and will introduce additional structures that will become visible to a greater or lesser extent depending on their location and the location of the viewer.

Cumulative landscape and visual effects for the operational phase are likely to be perceived initially as significant/moderate and negative as the existing land use changes to that anticipated by the land use zoning, however these will reduce to moderate and neutral as developments are completed and landscape mitigation measures establish.

Cumulative landscape and visual effects are illustrated in the series of Accurate Visual Representations included in Appendix 10.1 for each of the representative views described in Chapter 10. Cumulative effects are illustrated in the third version of each view and show the Proposed Development in combination with other permitted and planned development.

15.9 ARCHAEOLOGY

The construction of the Proposed Development and other developments within the vicinity, including the proposed and permitted data centre facilities have the potential to cause cumulative impacts on archaeological, architectural and cultural heritage sites in the landscape. Where the developments have been identified as having impacts on features which are subject to statutory protection including sites included in the Record of Monuments and Places, the Record of Protected Structures or Architectural Conservation Areas, appropriate archaeological and architectural heritage mitigation

measures have been recommended and agreed in advance with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht, the Fingal County Archaeologist or the Fingal Conservation Officer.

Therefore, the effects of cumulative impacts on archaeological, architectural and cultural heritage are not considered significant.

15.10 TRAFFIC AND TRANSPORTATION

The traffic impacts of the development were assessed, in Chapter 12 Traffic and Transportation, taking the cumulative traffic impacts, including impacts associated with surrounding developments into account.

Operational traffic, in accordance with information sourced from the relevant traffic and transportation chapters relating to these applications, was added to opening, future and horizon year flows to obtain baseline (do-nothing) flows which were used in the assessment. In addition to this, the trip generation associated with the indicative masterplan development was also accounted for in our future and horizon year development case scenarios. Thus, the assessment includes traffic impacts associated with other developments and worst-case scenario traffic impacts associated with the Proposed Development and indicative masterplan development.

Mitigation measures (discussed in Section 12.6) will be put in place to offset any potential traffic impacts of the Proposed Development. The predicted cumulative impact will be **short-term, negative** and **not significant** for the construction phase and **long-term, neutral** and **imperceptible** for the operational phase.

15.11 MATERIAL ASSETS

The Proposed Development entails minimal use of material assets during construction. The proposed 220kV transmission line and 49kVA cable installation and new cable bays will not require any surface water, foul drainage or water infrastructure. The proposed GIS substation will connect to the surface water, foul drainage and water supply infrastructure for the permitted Building A development, which was designed to accommodate the Proposed Development which was initially included as part of the planning application for the permitted development (FCC Planning Ref. FW17A/0025; ABP Ref. PL06F.248544).

The predicted impact of the Proposed Development on material assets is considered to be **long-term** and **imperceptible**. Based on this, it is predicted that the cumulative impact of the Proposed Development with other permitted and planned developments is considered to be **imperceptible** during the construction and operational phases.

15.12 WASTE MANAGEMENT

The construction of the Proposed Development and Building A will require site clearance, excavations and levelling which will generate waste. Mitigation measures will be carried out for the Proposed Development, and provided that mitigation measures set out in the EIA Reports for these developments are implemented during construction of the Proposed Development, the cumulative impact will be **short term** and **imperceptible**.

The waste quantities to be generated from the operation of the proposed and permitted developments within the overall landholding are anticipated to be relatively small. As such, the predicted impact of the build out of the site on waste management will be **long term** and **imperceptible**.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will minimise/mitigate any potential cumulative impacts associated with waste generation and waste management. As such it is considered that the cumulative impact will be **long-term** and **imperceptible**.

16.0 INTERACTIONS

16.1 INTRODUCTION

This chapter of the EIA Report addresses potential interactions and inter-relationships between the environmental factors discussed in the preceding chapters. This covers both the construction and operational phase of the Proposed Development.

In the main, the majority of EIA Report chapters have already included and described assessments of potential interactions between aspects however this section of the assessment presents a summary and assessment of the identified interactions.

These interactions have been identified and considered by the various specialists contributing to this impact assessment.

16.2 DISCUSSION – POSITIVE IMPACTS

The reasoning behind the interactions that are considered to have a positive effect (i.e. a change which improves the quality of the environment) is outlined in this section.

Planning and Alternatives on:

Population and Human Health

The Proposed Development will be designed to provide a permanent power supply for permitted developments and future growth within the Cruiserath area.

The Proposed Development will create between 15-30 temporary jobs during the construction phase, which will have a short term, positive, imperceptible effect on employment and business in the Fingal area.

16.3 DISCUSSION – NEUTRAL IMPACTS

The reasoning behind the interactions that are considered to have a neutral effect (i.e. no effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error) is outlined in this section.

Land, Soils, Geology and Hydrogeology on:

Population and Human Health

There will be a loss of soil available for agricultural use due to the development. However, within the overall context of Ireland's available farmland, the loss is considered negligible. This change of land use has already been established for the permitted development (FCC Reg. Ref. FW17A/0025 & ABP Reg. Ref. PL 06F.248544). In addition, the employment created by the construction and operation of the Proposed Development counterbalances this economic loss to some extent and so the impact is **long-term, imperceptible and neutral**.

Hydrology

The main potential impact of the construction works proposed is on surface water quality (due to sediment laden run-off, material spillages) and groundwater quality (due to removal of protective soil for construction of the GIS substation); however, the

implementation of a CEMP as detailed in Section 6.6.2 of Chapter 6 (Hydrology) will ensure the effect will be **short-term, imperceptible** and **neutral**.

Biodiversity

The surrounding area has been extensively developed and the majority of its natural flora and fauna has been removed/displaced. Notwithstanding the loss of soil environment during construction, vegetation and additional planting will maintain habitat for flora and fauna. The impact of local loss of arable land of no significant ecological value is negligible.

Air Quality and Climate

There is a potential for the construction activity to impact on air quality in terms of dust generated but mitigation measures outlined in Chapter 8 (Air Quality & Climate) of this EIA Report, implemented through the CEMP will ensure a **short term, imperceptible** and **neutral** effect. There are no predicted perceptible impact during operation.

Waste Management

As detailed in Chapter 14 (Waste Management), c. 24,000m³ of excavated material may be generated during construction. The majority of the excavated material will need to be removed off-site either as a waste or, where appropriate, as a by-product. The management of waste during the construction phase in accordance with the Construction & Demolition Waste Management Plan (C&D WMP) will meet the requirements of regional and national waste legislation and promote the management of waste in line with the priorities of the waste hierarchy. Therefore, the effect of generation of soils/stones in terms of waste management will be **neutral**.

Hydrology on:

Population and Human Health

Once operational, the Proposed Development will generate minimal wastewater emissions (foul water) from the GIS substation welfare facilities. This will discharge via the IDA sewer network to the Local Authority wastewater treatment plant (WWTP) at Ringsend. As treated wastewater discharges from the WWTP to Dublin Bay, which is a public amenity, there is a potential for impact on the human beings using this amenity. However, the Ringsend WWTP will provide treatment for wastewater emissions, the effect is considered to be **long-term, imperceptible** and **neutral**.

Land, Soils, Geology and Hydrogeology

Surface water run-off collected in excavations during the construction phase of the Proposed Development will be pumped out and treated prior to discharge (Ref. to Section 5.4.1 in Chapter 5 Hydrology). The effect will be **short-term, imperceptible** and **neutral**. The 220kV transmission line will cross land drain associated with the Mooretown Stream either by horizontal directional drilling or by open cut. The implementation of mitigation measures in Chapter 6 will ensure the impact on the stream is **imperceptible** and **neutral**.

Biodiversity

Surface water will be discharged offsite to the IDA surface water drainage network via hydrocarbon interceptors, suitably sized attenuation basins and a flow control device ensuring emissions are controlled to greenfield runoff rates.

There is no formal designation on the Proposed Development lands and the development area may be considered of Low Local Ecological Value. Designated sites are located over 8km downstream. The predicted effect will be **long-term, imperceptible** and **neutral**.

Waste Management

Hydrocarbon sludge waste and rubbish/debris will be generated in the hydrocarbon interceptors which will treat the surface water run-off from the Proposed Development during the operational phase. This waste stream will be managed in accordance with the relevant legislation identified in Chapter 14 such that the effect of the waste generation will be **long-term, imperceptible** and **neutral**.

Air Quality and Climate on:

Hydrology

Mitigation measures implemented during the construction phase will ensure that the deposition of dust is minimised and therefore the predicted effect from air (including dust) on the water environment during construction is **short-term, imperceptible** and **neutral**.

Biodiversity

Mitigation measures during the construction phase of the Proposed Development will ensure that dust generation is minimised and the effect on biodiversity will be **short term, imperceptible** and **neutral**.

Population and Human Health

The mitigation measures that will be put in place at the Proposed Development for the construction phase will ensure that the impact of construction dust emissions in the form of nuisance dust are **short-term** and **imperceptible**. Further detail on human health and air quality is presented in Chapter 4.

Noise and Vibration on:

Population and Human Health

The potential impact of noise and vibration on the local population is discussed in Chapter 4 (Population and Human Health) and Chapter 9 (Noise & Vibration). Noise emissions associated with the construction phase of the development are expected to be less than the prevailing ambient noise level at the nearest sensitive locations. In addition, due to the distance between the site and the nearest sensitive locations, vibration impacts generated during construction are expected to be **negligible**. There are no predicted noise impacts once operational and therefore there will be not be a significant impact on human health as a result of noise emissions.

Landscape and Visual on:

Population and Human Health

The predicted impact of the Proposed Development on the landscape is described in Chapter 10. The Proposed Development is well-sited and includes architectural and landscape proposals that will ensure the development is integrated into its setting, including the use of landscaped berms which will provide visual screening. Residual landscape and visual effects from the wider locality will be **not significant** or **imperceptible**, will be **long-term**.

Biodiversity

The construction of the Proposed Development will involve the removal of some of the existing landscape. However, this will be replaced by other suitable landscaping treatments and overall will have a **long-term, imperceptible** and **neutral** impact.

Material Assets on:

Population and Human Health

The Proposed Development will not have a significant impact on material assets such as surface water drainage, water supply, wastewater drainage, power supply and road infrastructure. The individual chapters of this EIA Report (Chapter 12 Traffic and Transportation and Chapter 13 Material Assets) have assessed the capacities of the available infrastructure to accommodate the Proposed Development and the implementation of the mitigation measures proposed will ensure there are no negative impacts on the local population. The predicted effect is therefore **imperceptible** and **neutral**.

Hydrology

The Proposed Development will result in minor changes to surface water drainage, water supply and wastewater networks. However, a combination of mitigation measures to be implemented as detailed in Section 6.6 of Chapter 6 (Hydrology), as well as the capacity already built into these networks, will ensure that these changes will result in a **long-term, imperceptible** and **neutral** impact.

16.4 DISCUSSION – NEGATIVE IMPACTS

The reasoning behind the interactions that are considered to have a negative effect (i.e. a change which reduces the quality of the environment) is outlined in this section.

Noise on:

Biodiversity

Noise generated during the construction phase of the Proposed Development will have a short-term negative impact on fauna which are likely to be displaced during construction works. As the majority of the area is already industrial in nature the overall operational noise levels will not change significantly.

Land, Soils, Geology and Hydrogeology on:

Noise and Vibration

Impacts associated with excavation works will be transient in nature and have a short-term impact on the noise environment, which will be mitigated by the implementation of the CEMP, in particular during any rock breaking works. The effect will be **slight, negative temporary** and **short term**.

Landscape and Visual on:

Traffic and Transportation

The establishment of site enclosures, construction traffic access routes, construction vehicular activity, site lighting and temporary traffic management regimes will cause disruption during the construction of the Proposed Development. Effects on landscape character during construction will be **temporary to short term** and will generally vary from **slight/not significant to significant/moderate**, and from **neutral to negative**. Effects on views during construction will be **temporary to short-term**, and will vary from **moderate to imperceptible**, and from **neutral to negative**. Residual impacts on landscape and visual effects from the wider locality, including from the residential areas to the west of the R121, will be not significant or imperceptible.

16.5 SUMMARY

In summary, the interactions between the environmental factors and impacts discussed in this EIA Report have been assessed and the majority of interactions are ***neutral***.