

15 MATERIAL ASSETS (UTILITIES)

15.1 Introduction

JB Barry & Partners Consulting Engineers & JAK Consulting Engineers examined the material assets serving the subject lands relating to foul sewerage, surface water drainage, water supply, gas, electricity, and broadband. The chapter was co-ordinated by Stephen Little & Associates.

The assessment in relation to Water Infrastructure was drafted by Colman Horgan, Chartered Engineer who is an Associate with J.B.Barry and Partners with over 35 years' experience in civil and structural engineering, during which time he has assisted in the preparation of planning applications, EIAR's, Part 8 Applications and presented evidence at CPO and Oral Planning hearings.

The assessment in relation to ESB networks and telecommunications / broadband was provided by Jonathan Kirwan. Jonathan is the Managing Director of JAK consulting engineers and has over 25 years of professional experience. JAK is a leading consultancy providing Construction Management, Sustainable Energy solutions, Engineering Consulting & MEP Project Management throughout Ireland and EMEA. Jonathan has worked on large scale residential projects which require long term strategic planning in terms of servicing and future provisions. Affiliated with Engineers Ireland, IGBC, CIBSE among other Professional Institutions.

This chapter was co-ordinated by Michael O'Sullivan, Senior Planner, of Stephen Little & Associates. Michael has 8 years' professional experience in the planning in both the public sector and private consultancy in Ireland, has a MPlan – Masters in Planning & Sustainable Development and is a Corporate Member of the Irish Planning Institute.

15.2 Assessment Methodology

The methodology followed for this section is in accordance with Draft Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2017). Information on built assets in the vicinity of the development lands was assembled from the following sources: -

- A desktop review of Irish Water Utility Plans, ESB Networks Utility Plans, Eir E-Maps and Virgin Media Maps.
- Consultation with Irish Water and Fingal County Council.
- Submission of a Pre-Connection Enquiry Application to Irish Water.
- Review of ESB Network Utility Plans & Site meetings with ESB Network.
- Site Inspection / Walkover.

As part of assessing the likely impact of the proposed development, surface water runoff, foul drainage discharge and water usage calculations were carried out in accordance with the following guidelines: -

- Construction Industry Research and Information Association (CIRIA, 2001). Control of Water Pollution from Construction Sites.
- Construction Industry Research and Information Association (CIRIA, 2002). Environmental Handbook for Building and Civil Engineering Projects.
- Environmental Protection Agency (EPA, 2017). Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- Environmental Protection Agency (EPA, 2015). Draft Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.
- The Planning System and Flood Risk Management Guidelines (DECLG / OPW, 2009).

- National Roads Authority (NRA, 2009). Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.

15.3 Receiving Environment

15.3.1 Water Supply Infrastructure

Water supply for the Portmarnock South lands is provided by the North Fringe Water Supply Scheme, which in turn is supplied by the Leixlip Water Treatment Plant via the Ballycoolin Reservoir. The Leixlip Water Treatment plant was expanded in 2015 and as a consequence has an overall production capacity of 255 million litres per day. Further works commenced in 2018 and are ongoing within the plant to upgrade its filtration and disinfection systems and thereby ensure a safer and a more secure water supply.

The primary main serving these lands is a 450mm diameter ductile iron trunk watermain which has been extended from the North Fringe Watermain into previous developments within Portmarnock South and spurs connected to same.

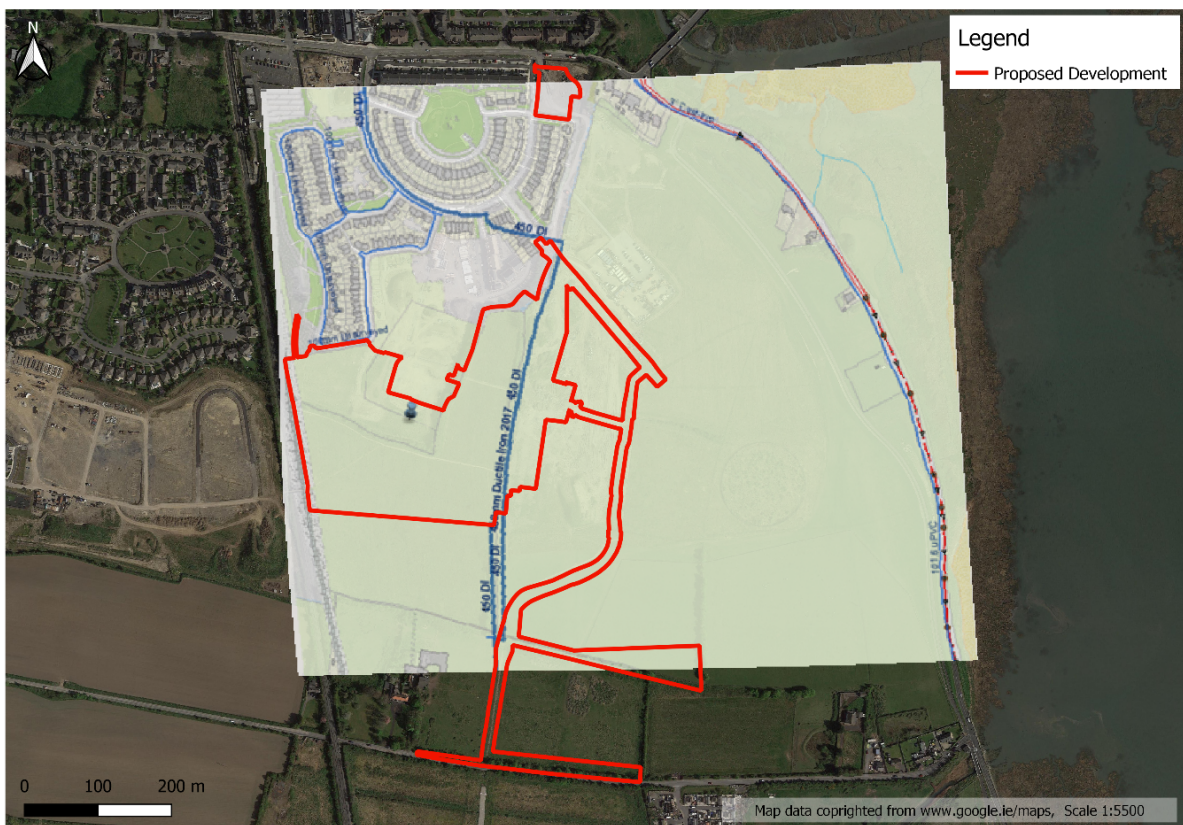


Figure 16.1: Water Supply Infrastructure.

15.3.2 ESB Supply

There is considerable existing ESB Networks (ESBN) infrastructure in the vicinity of the site in the form of Medium Voltage and Low Voltage (MV / LV) services.

Engagement has occurred with ESB on the overall servicing strategy for the Application Site and available load in the area. ESB has confirmed that there is sufficient capacity in the area for the Proposed Development, which will be served with localised unit sub stations. Servicing strategy, locations and sizes of which have all been agreed with the ESB. The site service strategy is a planned extension of ESB service from already in progress Phase 1B and Phase 1C.

There are no existing services with the footprint of the Application Site. It is intended to tap into the existing network which is provided in Phase 1A and will be provided as part Phase 1C (permitted) in appropriate locations.

15.3.3 Telecommunications – Eir

The main Eir network infrastructure is located on Station Rd. The completed phases of development (Phase 1A and Phase 1B) connect into this infrastructure, as will the permitted Phase 1C once completed.

The telecoms infrastructure layout will be in line with the utility providers requirements to ensure high quality broadband will be accessible to future residents of the development.

There are no existing services with the footprint of the proposed site. It is intended to tap into the existing network which is provided in Phase 1A and will be provided as part Phase 1C (permitted) in appropriate locations (both located directly north of the Proposed Development).

15.3.4 Broadband – Virgin Media

The main Virgin Media (VM) network infrastructure is located on Station Rd. The completed phases of development (Phase 1A and Phase 1B) connect into this infrastructure, as will the permitted Phase 1C once completed.

There are no existing services with the footprint of the proposed site. It is intended to tap into the existing network which is provided in Phase 1A and will be provided as part Phase 1C (permitted) in appropriate locations.

15.4 Characteristics of the Proposed Development

The Proposed Development (Phase 1D), is described in detail in Chapter 3: Description of Proposed Development, but may be summarised as follows: -

- 172no. residential units consisting of 22no. duplex / apartments and 150no. houses ranging in heights between 1.5 and 3 storeys.
- Provision of public open space including Skylark Park and extension to Railway Linear Park and Townland Boundary Linear Park.
- Vehicular access to serve the development is proposed off the existing / under construction access points on roads serving the St. Marnock's Bay development.
- A new vehicular road is proposed to serve the proposed development which will connect with Moyne Road. The permanent road includes the provision of a new junction with Moyne Road and SuDS features to control surface water run-off.
- Upgrade of existing temporary foul water pumping station and storage tank to increase capacity.
- All associated and ancillary site development, infrastructural, landscaping and boundary treatment works.

15.4.1 Water Supply

The daily water demand for the proposed Phase 1D development is estimated, based on Section 3.7.2 of the Irish Water's Code of Practice for Water Infrastructure (July 2020 – Rev 2), to be 69,660 l/day with a peak consumption demand of 5.05l/s.

It is proposed to connect the Portmarnock 1D development to the existing watermain network constructed as part of previous developments within the Portmarnock South lands which are ultimately fed via the 450mm extension from the North Fringe Watermain.

Following a pre-connection enquiry, Irish Water confirmed (23 October 2019) that this proposed connection to their network can be facilitated. This was re-affirmed in October 2021, with Irish Water noting the following in respect of their water infrastructure; *Feasible without infrastructure upgrade by Irish Water.*

Irish Water noted that the proposed water connections for this development connect to the Irish Water network via infrastructure not yet taken in charge by Irish Water (in essence the water infrastructure currently under construction as part of the Phase 1C development) and therefore requested that prior to commencement of works for this proposed development, that current water infrastructure is transferred to them, following demonstration that same has been constructed in accordance with their Code of Practice and Standards.

Furthermore, to protect the existing 450mm DI watermain that traverses earlier phases and this proposed phase of the development, they have requested that drawings and method statements are provided at detail design stage which will demonstrate how the structural and functional integrity of this asset is safeguarded during the works.

A detailed design was submitted to Irish Water (October 2021) for the purposes of obtaining a Statement of Design Acceptance and approval for same received 23 November 2021.

The water supply infrastructure will be constructed in accordance with Irish Water, and where relevant Fingal County Council requirements, specifications and standard details.

15.4.2 ESB Supply

A new Medium Voltage below ground network will be provided in the proposed development which will connect to the existing ESB Networks infrastructure in Phase 1A (constructed and occupied) and Phase 1C (permitted). 3no. new sub-stations will be provided within the Proposed Development to meet the electrical demands associated with the new houses and duplexes.

The exact extent and location of the connections will be agreed with ESB Networks during the design stage of the project.

The proposed ESB layout adheres to ESB housing development requirements and it has been agreed in advance to ensure that location, design and access are consistent with the overall design strategy as per Portmarnock Sout Local Aare Plan 2013 (as Extended).

15.4.3 Telecommunications & Broadband

A new connection will be made to the existing Eir & Virgin Media network at the boundary of the site and distributed throughout the Proposed Development as required. The exact extent and location of these connections will be agreed with Eir & Virgin Media, as applicable during the design stage of the project.

All works on the Eir & Virgin Media supply infrastructure will be carried out in accordance with Eir & Virgin Media's relevant guidelines. All Eir & Virgin Media infrastructure will be below ground with the possible exception of a Fibre Cabinet if required by Eir.

15.5 Potential Impact of the Proposed Development

15.5.1 Proposed Development

15.5.1.1 Construction Phase

Potential impacts of the proposed development during the construction phase include: -

Watermain

No significant impact to the existing watermains is anticipated during the construction phase of the development, though there will be some minor water demand for site offices.

Potential impacts during construction of the pipelines themselves are similar in nature to works for foul and surface water pipe infrastructure and as such are addressed in Chapters 7 and 8 respectively.

Existing 450mm dia. watermain traverses site, which will require protection during the works to prevent potential damage.

There is a risk of contamination to the existing water supply during connection of the watermains to the public water supply.

The negative effects as identified above will be temporary in duration.

Power & Telecommunications / Broadband

The installation of the utilities for the development will be conducted in parallel with the other services. This will mainly involve excavation of trenches to lay ducting, construction / installation of access chambers and backfilling of trenching. The trenching and backfilling works will be carried out in conjunction with the construction of the roads and footpaths throughout the scheme.

The relocation or diversions of the existing ESB network may lead to loss of connectivity to and / or interruption of the supply from the electrical grid to the surrounding areas. Any loss of supply will be managed by ESB Networks to minimise impact on neighbouring properties.

Potential loss of connection to the telecommunications / broadband infrastructure while carrying out works to provide service connections. This likely adverse impact may be characterised as a temporary, regionally short term, moderate impact.

The site compound will require a power and telecommunications connection. This likely adverse impact will be temporary and negligible.

15.5.1.2 Operational Phase

Potential impacts of the Proposed Development during the Operational Phase include: -

Watermains

The impact of the Operational Phase of the proposed development on the watermain supply network would be the requirement of a watermain supply capacity of 69,660 l/day with a peak consumption demand of 5.05l/s.

The potential adverse impact of the proposed development on the public water supply network is likely to be long term, however, negligible in the overall Operational Phase of the network. Irish Water have confirmed the existing network has sufficient capacity to meet this additional demand as confirmed in the received Irish Water Confirmation of Feasibility (October 2021).

ESB Supply & Telecommunications / Broadband

The impact of the Operational Phase of the proposed development on the power supply network would be the requirement for an Electrical Diversified Load of 850 KVA which will be split over up to 3no. ESB sub-stations located through-out the scheme.

The impact of the Operational Phase of the proposed development on the telecommunications and broadband network would be to increase the demand on the existing network.

15.5.1.3 Do-Nothing Impact

There are no predicted impacts on these material assets should the Proposed Development not proceed.

15.5.2 Cumulative

No significant cumulative impacts on the water environment are anticipated during the Construction or Operation Phases.

There are no predicted cumulative impacts arising from the Construction or Operation Phases related to the provision of water, power and telecommunication / broadband services.

15.5.2.1 Do-Nothing Impact

The do-nothing impact is that same as set out in Section 15.5.1.3.

15.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

15.6.1 Proposed Development

15.6.1.1 Construction Phase

Mitigation measures proposed in relation to the drainage and water infrastructure include the following: -

- A detailed Construction & Environmental Management Plan will be developed and implemented during the Construction Phase.
- The construction compound will include adequate staff welfare facilities including power and potable water supply.
- The construction compound's potable water supply shall be protected from contamination by any construction activities or materials.
- All watermains to be constructed, pressure tested, cleaned and sterilised before being connected to existing operational water infrastructure in accordance with Section 4 of Irish Water's *Code of Practice for Water Infrastructure July 2020*.
- Method statements will be produced by the Contractor for submission to Irish Water prior to commencing any work in the vicinity of the 450mm DI Watermain.
- Where possible backup network supply to any services will be provided should the need for relocation or diversion or existing services be required otherwise relocation or diversion works will be planned to incur minimal impact, with users notified in advance of any works.
- Connections to the existing gas and telecommunications networks will be coordinated with the relevant utility provider and carried out by approved contractors.

15.6.1.2 Operational Phase

On completion of the Construction Phase no further mitigation measures are proposed in relation to the electrical, telecommunications or broadband infrastructure.

15.7 Residual Impact of the Proposed Development

15.7.1 Proposed Development

15.7.1.1 Construction Phase

Implementation of the measures outlined in Section 15.6 will ensure that the potential impacts of the proposed development on the site's material assets do not occur during the Construction Phase and that any residual impacts will be short term.

15.7.1.2 Operational Phase

The demand on power supply, water services, telecommunications and broadband will all increase due to the development of the lands. The development of the lands is expected to be finalised in Q2 2024.

Residual impacts will be permanent and imperceptible.

15.8 Monitoring

No utilities monitoring needed.

15.9 Reinstatement

No reinstatement will be required.

15.10 Difficulties Encountered

No difficulties encountered.