16 MATERIAL ASSETS (UTILITIES)

16.1 Introduction

Egis Engineering Ireland & Fallon Design M&E Engineering 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 a Technical Director with Egis Engineering Ireland 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 Mark Fallon, Chartered Engieern who is the Managing Director of Fallon Design M&E Engineering and has over 25 years of professional experience in the Building Services Industry.

This chapter was co-ordinated by Mark Fallon of Fallon Design M & E Engineering. Mark has c. 23 years professional experience in Engineering, is a chartered engineer, a Bachelor of Engineering with Honours, has a Project Management Diploma, and is a member of both the Institution of Engineers of Ireland and the Chartered Institution of Building Services Engineers.

16.2 Assessment Methodology

The methodology followed for this section is in accordance with Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2022). Information on built assets in the vicinity of the development lands was gathered from the following sources: -

- A desktop review of Uisce Éireann Utility Plans, ESB Networks Utility Plans, Eir E-Maps and Virgin Media Maps.
- Consultation with Uisce Éireann and Fingal County Council.
- Submission of a Pre-Connection Enquiry Application to Uisce Éireann.
- 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: -

- The daily water demand and peak flows for the proposed development is estimated, based on Section 3.7.2*, Uisce Éireann's Code of Practice for Water Infrastructure* (July 2020 -Rev 2),
- The estimated Dry Weather Flow (DWF) and peak flows from the proposed development are based on Section 3.6 and Appendix C, *Uisce Éireann's Code of Practice for Wastewater Infrastructure* (July 2020 – Rev 2),
- Surface Water runoff for various return periods are calculated in accordance with the *Greater Dublin Strategic Drainage Study – Regional Drainage Policies, Technical Document*.

For consideration of environmental impacts on Water Infrastructure, including surface water, foul drainage and water supply, see Chapter 8 of this EIAR.

16.3 Receiving Environment

16.3.1 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 development phases as well to be extended into future Phase1E, recently granted permission, within Portmarnock South and spurs connected to same.

Figure 16.1: Water Supply Infrastructure.

16.3.2 ESB Supply

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

Engagement has occurred with ESB on the overall servicing stragey for the Proposed Development 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 agreeed with the ESB. The site service strategy is a planned extension of ESB service from previous Phases (1A to 1D inclusive) and proposed Phase 1E, recently granted permission.

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

16.3.3 Telecommunications – Eir

The main Eir network infrastructure is located on Station Road. The completed phases of development (Phase 1A, Phase 1B and Phase 1C), the phase under construction (Phase 1D) and future phase (Phase 1E) granted permission connect into or will connect into this infrastructure, as will the Proposed Development (Phase 1F) subject to receiving permission.

The telecoms infrastructure layout wil 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 within the footprint of the Site. It is intended to tap into the existing network which is provided in Phase 1B and will be provided as part of Phase 1E (permitted) in appropriate locations (both located directly west and south respectively of the Proposed Development).

16.3.4 Broadband – Virgin Media

The main Virgin Media (VM) network infrastructure is loated on Station Road. The completed phases of development (Phase 1A, Phase 1B and Phase 1C), the phase under construction (Phase 1D) and future phase (Phase 1E) granted permission connect into or will connect into this infrastructure, as will the Proposed Development (Phase 1F) subject to receiving permission.

There are no existing services within the footprint of the Site. It is intended to tap into the existing network which is provided in Phase 1B and will be provided as part of Phase 1E (permitted) in appropriate locations (both located directly west and south respectively of the Proposed Development).

16.4 Characteristics of the Proposed Development

The Proposed Development (Phase 1F), comprises in summary of the following components: -

- 296no. units (254no. houses and 42no. apartments/duplexes ranging from 1.5 – 3 storeys in height).
- Provision of public open space, including southern Monument Park (which also formed part of Racecourse Park development permitted under ABP Ref.: JP06F.311315
- A total of 289no. car parking spaces and 1455no. bicycle parking spaces.
- Vehicular access to serve the development will be provided from Station Road via existing road serving St. Marnock's Bay ('Monument View') and 3no. permitted roads serving St. Marnock's Bay ('Skylark Park Court', 'Skylark Park Drive' and an extension of 'Monument View') permitted under ABP Ref. ABP-312112-21 as amended by FCC Reg. Ref. LRD0037/S3, and also a new existing permanent road to the south which connects to Moyne Road (permitted under Phase 1D ABP Ref. ABP-312112-21, as amended by FCC Reg. Ref. LRD0037/S3
- A new (temporary) rising main to serve this phase and previous development phases (1A to 1E inclusive) c. 1.7km long, running from the interim St. Marnock's Pumping Station at Station Road/The Avenue (constructed under ABP Reg. Ref. 300514-17 & upgraded under ABP Reg. Ref. 312112-21) passing through the Racecourse Park development permitted under ABP Ref.: JP06F.311315 and connecting to the North Fringe Sewer at a point which is located south of Moyne Road and the Mayne River within the townland of Stapolin, Baldoyle, Dublin 13
- Upgrade of interim St. Marnock's Pumping Station and storage at Station Road/The Avenue as required and all associated and ancillary site development and reinstatement.
- All associated and ancillary site development, infrastructural, landscaping and boundary treatment works.

A full project description is provided in Chapter 3: Description of Proposed Development.

16.4.1 Water Supply

The daily water demand for the Proposed Development is estimated, based on Section 3.7.2 of the Uisce Éireann's Code of Practice for Water Infrastructure (July 2020 – Rev 2), to be 119,880 l/day with a peak consumption demand of 8.67 l/s.

It is proposed to connect the Proposed 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, Uisce Éireann confirmed (14 October 2024) that this proposed connection to their network can be facilitated and is "*Feasible without infrastructure upgrade by Uisce Éireann".*

Uisce Éireann also noted that a 200mm connection main is required for the Proposed Development (Phase 1F) and a minimum 150mm spine main within the development is required for fire flow requirements.

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

16.4.2 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 1D (punder construction). 4no. 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 of the previous phases of development.

16.4.3 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.

16.5 Potential Impact of the Proposed Development

16.5.1 Proposed Development

16.5.1.1 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 Proposed 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: Land, Soils &

Geology and Chapter 8: Water respectively. These works will include excavation of trenches and removal of spoil.

Existing 450mm dia. watermain traverses the site, primarily the previous Phase 1E (refer to Figure 16.1 above), which will require protection i.e. locate in advance of proposed works the existing watermain (line and level) accurately on site and minimise works in proximity to the existing watermain as well as using appropriate excavation and compaction techniques) during the works to prevent potential damage. In the event this watermain gets damaged during construction there would potentially be a loss of water supply to the wider development until such time as repairs are effected.

There is a risk of contamination to the existing water supply during connection of the watermains to the public water supply, however this risk is eliminated through following the specific procedures set out in Uisce Éireann's Code of Practice for Water Infrastructure (July 2020 – Rev 2), namely 4.10 *Testing and Commissioning*, 4.11 *Water Quality Sampling and Testing*, 4.12 *Connection to the Water Network* and Section 4.13 *Final Flushing of the Water Mains*.

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

ESB Supply & 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. The requirement to provide temporary services for the site compound is likely adverse impact will be temporary and negligible.

16.5.1.2 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 119,880l/day with a peak consumption demand of 8.67/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. Uisce Éireann have confirmed the existing network has sufficient capacity to meet this additional demand as confirmed in the received Uisce Éireann Confirmation of Feasibility (October 2024).

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 1,400 KVA which will be split over up to 4no. 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.

16.5.1.3 Do-Nothing Impact

There are no predicted impacts on these material assets should the Proposed Development not proceed. In this scenario, there would be no additional water / energy / telecoms / broadband supply required. As the site is zoned for development, in the absence of the Proposed Development it is likely that a development of a similar nature would be constructed in the future in line with national policy and the development plan objectives. Therefore, the Construction and Operational phase impacts outlined in this assessment are likely to occur in the future even in the absence of the proposed development.

16.5.2 Cumulative

The cumulative development (for assessment purposes) consists of this Proposed Phase 1F, the current phase under construction (Phase 1D), the proposed Phase 1E granted permission and the development of a final phase to build out approximately (conservatively) 33no. residential units including public open space, integration of recorded monument and provision of road and drainage infrastructure.

The nature of these developments will be similar in character to the Proposed Development Phase 1F.

There is residential development being carried out by others to the west of the railway line (and in turn to the west of the Proposed Development) and of similar characteristics. It is noted however, these works are substantially complete and therefore not considered further.

There are no predicted cumulative impacts arising from the Construction or Operation Phases related to the provision of water, power and telecommunication / broadband services. Other developments in the area will be required to engage with utility providers to ensure sufficient supply which will mitigate against any potential cumulative effects.

16.5.2.1 Do-Nothing Impact

The do-nothing impact is that same as set out in Section 16.5.1.3.

16.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

16.6.1 Proposed Development

16.6.1.1 Construction Phase

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

- A detailed Construction & Environmental Management Plan has been developed and will be 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 in accordance with *Uisce Éireann's Code of Practice for Water Infrastructure July 2020*.
- All watermains to be constructed, pressure tested, cleaned and sterilised before being connected to existing operational water infrastructure in accordance with Section 4 of *Uisce Éireann's Code of Practice for Water Infrastructure July 2020*.
- Method statements will be produced by the contractor for submission to Uisce Éireann 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.

16.6.1.2 Operational Phase

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

16.7 Residual Impact of the Proposed Development

16.7.1 Proposed Development

16.7.1.1 Construction Phase

Implementation of the measures outlined in Section 16.6 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.

16.7.1.2 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 2027.

Residual impacts will be permanent and imperceptible.

16.8 Monitoring

No utilities monitoring needed.

16.9 Reinstatement

No reinstatement will be required.

16.10 Difficulties Encountered

No difficulties encountered.