

20 SUMMARY OF CUMULATIVE IMPACT & INTERACTIONS

20.1 Introduction

This chapter of the EIAR identifies the principle interactions between the potential impacts of the environmental factors identified in Chapter 5 to 18 inclusive.

The principal interactions are summarised below, under Table 21.1, and further discussed in Section 21.2 of this Chapter.

The predicted impacts identified in Chapters 5 – 18 have taken into account the principal interactions listed below and associated mitigation measures.

The cumulative impacts arising from the interaction of impacts identified below, is also outlined in this Chapter.

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| | Population and Human Health | | Biodiversity | | Land, Soil, Geology & Hydro. | | Water | | Air (Noise and Vibration) | | Climate (Air Quality) | | Climate (Climate Change) | | Climate (Sunlight & Daylight) | | Landscape and Visual Impact | | Material Assets (Transport) | | Material Assets (Waste) | | Material Assets (Utilities) | | Cultural Heritage (Architectural & Archaeological) | |
|--|-----------------------------|-----|--------------|-----|------------------------------|-----|-------|-----|---------------------------|-----|-----------------------|-----|--------------------------|-----|-------------------------------|-----|-----------------------------|-----|-----------------------------|-----|-------------------------|-----|-----------------------------|-----|--|-----|
| | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. | Con. | Op. |
| Population and Human Health | | | X | X | X | X | X | X | √ | √ | √ | √ | X | X | X | X | √ | √ | √ | √ | X | X | X | X | X | X |
| Biodiversity | X | X | | | √ | X | √ | √ | X | X | √ | √ | X | X | X | X | √ | √ | X | X | X | X | X | X | X | X |
| Land, Soil, Geology & Hydro. | X | X | √ | X | | | √ | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Water | X | X | √ | √ | √ | √ | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Air (Noise and Vibration) | X | X | X | X | X | X | X | X | | | X | X | X | X | X | X | X | X | X | √ | √ | X | X | X | X | X |
| Climate (Air Quality) | √ | √ | √ | X | √ | X | X | X | X | X | | | X | X | X | X | X | X | X | √ | √ | X | X | X | X | X |
| Climate (Climate Change) | X | X | X | X | X | X | X | X | X | X | X | X | | | X | X | X | X | X | √ | √ | √ | X | X | X | X |
| Climate (Sunlight & Daylight) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X | X | X | X | X | X | X | X | X | X |
| Landscape and Visual Impact | √ | √ | √ | √ | √ | √ | X | X | X | X | X | X | √ | √ | √ | √ | | | X | X | X | X | X | X | X | √ |
| Material Assets (Transport) | √ | √ | X | X | X | X | X | X | √ | √ | √ | √ | √ | √ | X | X | X | X | | | X | X | X | X | X | X |
| Material Assets (Waste) | √ | √ | X | X | √ | X | X | X | X | X | X | X | X | X | X | X | X | X | √ | √ | | | X | X | X | X |
| Material Assets (Utilities) | X | X | X | X | √ | √ | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X | X |
| Cultural Heritage (Architectural & Archaeological) | X | X | √ | √ | √ | X | X | X | X | X | X | X | X | X | X | X | √ | √ | X | X | X | X | X | X | | |

Table 21.1: Matrix of Interactions between Environmental Factors (During Construction and Operational Phases)

| | | | |
|------|--------------------|---|--------------------|
| Con. | Construction Phase | √ | Weak Interaction |
| Op. | Operational Phase | √ | Some Interaction |
| X | No Interaction | √ | Strong Interaction |

20.2 Interactions

20.2.1 Population & Human Health (Chapter 5)

Climate (Air Quality)

Increases in emissions and dust can lead to an increase in the level of poor respiratory health in the area. Implementing the suggested mitigation measures will reduce the potential for such effects.

Air (Noise &Vibration)

An increase in noise emissions can result in physical health effects relating to hearing loss and headaches and mental health effects such as stress and anxiety. Implementing the suggested mitigation measures will reduce the potential for such effects.

Landscape & Visual Impact Assessment

The introduction buildings on undeveloped land can cause visual disturbance for nearby residents leading to effects on mental health and wellbeing. As the buildings are in keeping with the existing surrounding developments and give increased access to open space and the links through the site, the effects should be limited.

Material Assets (Transportation)

An increase in the number of vehicle movements in the area has the potential to give rise to a risk of more traffic accidents and increased levels of poor air quality.

20.2.2 Biodiversity (Chapter 6)

Where the potential for impacts on biodiversity has been identified as a result of interactions with other EIA topics, these have been addressed comprehensively in Chapter 6 (Biodiversity) and / or the corresponding other specialist chapter. In respect of the proposed development, the noteworthy interactions between biodiversity and other topics, in the absence of mitigation, may be summarised as follows: -

Land, Soils, Geology & Hydrogeology

Effects and impacts in relation to the geological and hydrogeological environment have the potential to negatively affect biodiversity. For example, soil stripping and excavations on the site will result in the loss of existing habitats. There is also the potential for negative impacts on aquatic ecology due to discharge of sediment-laden run-off and / or groundwater pollution during the proposed works. With the mitigation measures in place, the predicted impact during construction phase due to this interaction will be negative, slight and temporary.

There are no potentially significant interactions identified between Land, Soils and Geology, and Biodiversity during the operational phase.

Water

Effects and impacts in relation to surface water have the potential to negatively affect biodiversity. For example, unmitigated water quality impacts may result in negative impacts on aquatic ecology. With the mitigation measures in place, the predicted impact during construction phase due to this interaction will be negative, slight and temporary.

There are no potentially significant interactions identified between Hydrology, and Biodiversity during the operational phase.

Climate (Air Quality)

Dust emissions from construction works have the potential to impact vegetation in the vicinity of the site. Vehicular emissions during construction and operation also have the potential to impact vegetation as a result of NOx emissions leading to nitrogen deposition. With the mitigation measures in place, the predicted impact during construction phase due to this interaction will be neutral, imperceptible and temporary.

There are no potentially significant interactions identified between Air and Biodiversity during the operational phase.

Landscape & Visual Impact Assessment

The landscape design for the proposed development takes into account the requirements to maximise the benefits to biodiversity, both locally and within the wider landscape. The landscape scheme, prepared by Brady Shipman Martin and submitted under separate cover as part of the planning application, proposes significant ecologically sensitive planting to provide for potentially diverse habitats and for the protection of existing biodiversity features. With the mitigation measures in place, the predicted impact during construction phase due to this interaction will be negative, slight and short-term and during operational phase will be neutral to positive over time, slight and long term.

20.2.3 Land, Soils, Geology & Hydrogeology (Chapter 7)

Biodiversity

Potential impacts on the underlying soils, geology and hydrogeology could also impact on biodiversity conditions present, particularly with respect to control of excavations and contamination as described above. This has been assessed as negligible to small adverse (under a conservative scenario) in magnitude and imperceptible to slight in significance before mitigation measures are applied. Nevertheless, good construction practices will be employed on site.

Water

Potential impacts on the underlying soils, geology and hydrogeology could also impact on surface water, particularly with respect to control of excavations and contamination as described above. This has been assessed as negligible in magnitude and imperceptible in significance before mitigation measures are applied. Nevertheless, good construction practices will be employed on site.

20.2.4 Water (Chapter 8)

Biodiversity

Potential impacts on the surrounding hydrological features could also impact on biodiversity conditions present, particularly with respect to potential for increased siltation in runoff arising from excavations and potential contamination from accidental spills and / or leaks (concreting / oils, fuels and chemicals / emergency foul overflows). This has been assessed as negligible in magnitude and imperceptible to slight in significance before mitigation measures are applied. Taking account of proposed construction mitigation measures this risk is considered imperceptible.

Land, Soils, Geology and Hydrogeology

Potential surface water contamination (as described above) could negatively impact soils and underlying aquifers. This has been assessed as negligible in magnitude and imperceptible in significance before mitigation measures are applied. Nevertheless, good construction practices will be employed on site.

20.2.5 Climate (Air Quality) (Chapter 9)

Air quality and climate have interactions due to the emissions from the burning of fossil fuels associated with vehicles and machinery during the construction and Operational Phases. The emissions generate both air quality and climate impacts. There is no impact on climate due to air quality; however, the sources of impacts on air quality and climate are strongly linked.

Land, Soils, Geology & Hydrogeology

Construction Phase

There are no potentially significant interactions identified between climate, and hydrology during the Construction Phase.

Operational Phase

Climate change has the potential to increase the risk of flooding in future years due to increased rainfall. The hydrology assessment has concluded that no residual risk is foreseen as the development is located primarily outside any flooding zone designations. The Proposed Development has been assessed as having a low vulnerability to climate change related flooding. The impact will be neutral.

Material Assets, including Utilities, Waste and Transportation

Construction Phase

During the construction and Operational Phase, there is the potential for interactions between climate and traffic. Vehicles accessing the Site will result in emissions of CO₂, a greenhouse gas. However, the change in traffic is not predicted to be significant. There are no potentially significant interactions identified between climate and traffic.

Waste management measures will be put in place during the Construction Phase to minimise the amount of waste entering landfill, which has higher associated embodied carbon emissions than other waste management such as recycling. The impact to climate as a result of embodied carbon in waste materials is not considered significant.

Operational Phase

During operation traffic emissions have the potential to emit GHGs, such as CO₂, which impact climate. The change in traffic because of the Proposed Development has been assessed and the impact is predicted to be insignificant. There are no potentially significant interactions identified between climate and traffic.

20.2.6 Climate (Climate Change) (Chapter 10)

Population and Human Health and

Construction Phase

Air quality does not have a significant number of interactions with other topics. The most significant interactions are between Population and Human Health and Air Quality. An adverse air quality impact during the Construction Phase can cause health and dust nuisance issues.

There is a low risk of dust-related human health impacts during the Construction Phase of the Proposed Development. Best practice mitigation measures will be implemented during the Construction Phase to ensure that the impact of the Proposed Development complies with all ambient air quality legislative limits. Therefore, the predicted impact is short-term, negative and imperceptible with respect to Population and Human Health during the Construction Phase.

Operational Phase

Vehicles accessing the Site will emit pollutants which may impact Air Quality and Human Health. However, the increased number of vehicles associated with the Proposed Development will not cause a significant change in air pollutant emissions in the locality. It has been assessed that emissions will be in compliance with the ambient air quality standards which are set for the protection of human health. Impacts will be long-term, localised, direct, negative, imperceptible and non-significant.

Climate Change

Air Quality and Climate have interactions as the emissions from the burning of fossil fuels during the construction and Operational Phases generate both air quality and climate impacts.

There is no impact on climate due to air quality. However, the sources of impacts on air quality and climate are strongly linked.

Land, Soils, Geology & Hydrogeology

Construction Phase

Construction Phase activities such as land clearing, excavations, stockpiling of materials etc. have the potential for interactions between Air Quality and Land and Soils in the form of dust emissions. With the appropriate mitigation measures to prevent fugitive dust emissions, it is predicted that there will be no significant interactions between air quality and land and soils during the Construction Phase.

Operational Phase

There are no potentially significant interactions identified between Air Quality, and Land and Soils during the Operational Phase.

Biodiversity

Construction Phase

Dust generation can occur during extended dry weather periods due to construction traffic along haul routes and construction activities such as excavations and infilling works. Dust emissions can coat vegetation leading to a reduction in the photosynthesising ability as well as other effects. There are no designated ecological sites within 250m of the Proposed Development site area. Significant dust impacts are not predicted beyond this distance. Dust mitigation measures will be implemented on site as set out in Section 9.6.1 of Chapter 9 of the EIA. With the implementation of these mitigation measures dust emissions will be minimised and impacts will be short-term, negative and imperceptible with respect to biodiversity.

Operational Phase

There are no potentially significant interactions identified between Air Quality, and Biodiversity during the Operational Phase.

Material Assets (Transportation)

Construction Phase

Interactions between Air Quality and Traffic can be significant. With increased traffic movements and reduced engine efficiency, i.e. due to congestion, the emissions of vehicles increase. The impacts

of the Proposed Development on air quality are assessed by reviewing the change in annual average daily traffic on roads close to the Site. In this assessment, the impact of the interactions between Traffic and Air Quality are considered to be short-term, imperceptible and neutral during the Construction Phase.

Operational Phase

The impact of the interactions between Traffic and Air Quality are considered to be long-term, imperceptible and neutral during the Operational Phase.

20.2.7 Climate (Sunlight & Daylight) (Chapter 11)

No potential impacts from other chapters of this EIAR were considered to have the potential to have associated sunlight impacts.

20.2.8 Air (Noise & Vibration) (Chapter 12)

Material Assets (Transportation)

Briefly, there are interactions between the noise and vibration assessment and traffic assessment. With increased traffic movements, the noise levels in the surrounding area increase. The impacts of the proposed development on the noise environment are assessed by reviewing the change in traffic flows on roads close to the site. In this assessment, the impact of the interactions between traffic and noise are considered to be imperceptible due to the low level changes in traffic flows associated with the proposed development.

20.2.9 Landscape & Visual Impact (Chapter 13)

Where the potential for impacts on landscape and visual aspects has been identified as a result of interactions with other EIA topics, these have been addressed comprehensively in Chapter 12 (Landscape and Visual) and / or the corresponding other specialist chapter. In respect of the proposed development, the noteworthy interactions between landscape and visual and other topics, in the absence of mitigation, may be summarised as follows: -

Population and Human Health

Due to the nature of landscape and visual aspects as an environmental factor there is an inherent interaction with population. This interaction is addressed as a core aspect of the landscape and visual chapter.

Biodiversity

Protection and incorporation of existing features of biodiversity value enhances the diversity, experience and quality of the natural landscape and its visual interest. In this regard trees and hedgerows outside of but close to the boundary of the site are retained and will be protected during construction. The proposed scheme includes a comprehensive landscape masterplan and biodiversity enhancement measures are proposed. Some existing features will be removed during construction with a resultant interaction being **slight negative short-term impact**. Operational stage interaction impact will be **slight positive, long-term impact**.

Land, Soils, Geology & Hydrogeology

Soils, including topsoils and subsoils are integral to the protection of existing and reinstatement of new landscapes. Retention and protection of adequate topsoil and subsoil is important for the

successful establishment of new landscape measures, including mitigation measures. Soils will be disturbed during construction with a resultant interaction being **moderate negative short-term impact**. Soils will be reinstated at the end of the construction phase and the operational stage interaction impact will be **moderate, positive, long-term impact**.

Water

Access to sufficient water is important to maintaining existing and new landscapes. However, excess water can also have a negative impact on landscape. Existing surface environment will be altered during construction, however, there are no water features within the Phase 1E site, and the resultant interaction being **slight negative short-term impact**. Post construction the operational stage interaction impact will be **slight, neutral, long-term impact**.

Climate (Sunlight & Daylight)

Changes in sunlight exposure / permanent shadowing can have impacts on existing and new landscapes. No permanent overshadowing arises and sunlight changes will be minor with a resultant interaction being **not significant neutral short-term impact**. The operational stage interaction impact will be **imperceptible, neutral, long-term impact**.

Cultural Heritage (Architectural)

A recorded monument is located at the south-eastern end of the Phase 1E site / development. A second monument located further northwest has already been successfully incorporated within an area of public open space associated with Phase 1B of development on these lands. The link between the two monuments forms the spine for a linear area of public open space – the ‘Inter-Monumental Route’ – being delivered as part of the Phase 1E development.

While there are no extant surface features of the monument a protective fenced buffer has already been established around the feature. While not visible, such features of heritage value add to the appreciation and visual experience of the local landscape and vice versa.

The feature is already located within a context of on-going changes arising from the permitted Phase 1D development, and while closer, the Phase 1E development will not result in significant additional changes. The feature will be incorporated within public open space associated with a future phase of development on these lands.

The construction phase impact is **moderate negative – neutral short-term impact**. The operational stage interaction impact will be **moderate, neutral, long-term impact**.

20.2.10 Material Assets (Transport) (Chapter 14)

Population & Human Health

An increase in the number of vehicle movements in the area has the potential to give rise to a risk of more traffic accidents. Following examination of Road Safety Authority database, it is anticipated that the proposed development will have no significant impact on the road safety of the area.

Climate (Air Quality) / Climate (Climate Change)

Any increase in vehicle trips generated on the receiving transportation network has the potential to impact air quality and climate change, however this development has been designed in accordance with DMURS and parking provision is in accordance with Fingal County Council’s Development Plan, that is with the emphasis on promoting the use of public transport and active travel. The proximity of Portmarnock Dart Station as well as significant footpath/cyclepath linkages throughout this and earlier phases of the development will mitigate against the above.

Air (Noise & Vibration)

Any increase in vehicle trips generated on the receiving transportation network has the potential to impact noise, however this development has been designed in accordance with DMURS and parking provision in accordance with Fingal County Council's Development Plan, that is with the emphasis on promoting the use of public transport and active travel. The proximity of Portmarnock Dart Station as well as significant footpath/cyclepath linkages throughout this and earlier phases of the development will mitigate against the above.

20.2.11 Material Assets (Waste) (Chapter 15)

Land, Soils, Geology & Hydrogeology

During the construction phase, excavated soil, stone and clay will be generated from the excavations required to facilitate site levelling, construction of new foundations and underground services. It is envisaged that there will be limited opportunity for reuse on site. It is estimated that most, if not all, of the excavated material will need to be removed off-site. Where material has to be taken off-site, it will be taken for reuse or recovery, where practical, with disposal as a last resort. Adherence to the mitigation measures in Chapter 19: Summary of Mitigation Measures and the requirements of the R&WMP (Appendix 15.1), will ensure the effect is long-term, imperceptible and neutral.

Material Assets (Transportation)

Local traffic and transportation will be impacted by the additional vehicle movements generated by removal of waste from the Site during the construction and operational phases of the proposed development. The increase in vehicle movements as a result of waste generated during the Construction Phase will be temporary in duration. There will be an increase in vehicle movements in the area as a result of waste collections during the Operational Phase but these movement will be imperceptible in the context of the overall traffic and transportation increase. Traffic-related impacts during the Construction and Operational phases are addressed in Chapter 13: Material Assets (Transportation). Provided the mitigation measures detailed in Chapter 19: Summary of Mitigation Measures and the requirements of the OWMP (included as Appendix 15.2) are adhered to, the predicted effects are short to long-term, imperceptible and neutral.

Population & Human Health

The potential impacts on human beings are in relation to incorrect management of waste during construction and / or operation, which could result in littering and presence of vermin – with associated potential for negative impacts on human health and residential amenity. A carefully planned approach to waste management and adherence to the project specific R&WMP and OWMP (Appendices 15.1 and 15.2, respectively), will ensure appropriate management of waste and avoid any negative impacts on the local population. The effects should be long-term, imperceptible and neutral.

20.2.12 Material Assets (Utilities) (Chapter 16)

Population & Human Health

Potential contamination of water supply infrastructure could impact human health. The proposed mitigation measures of ensuring all watermains to be constructed are 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, will mitigate against potential risk here.

Land, Soils, Geology & Hydrogeology

The digging of trenches for water services and utilities has the potential to impact soils and underlying aquifers, this has been assessed in Chapter 7: Land, Soils, Geology & Hydrogeology as negligible in magnitude and imperceptible in significance before mitigation measures are applied. Nevertheless, good construction practices will be employed on site.

20.2.13 Cultural Heritage (Archaeological & Architectural) (Chapter 17)

Design team meetings have been held throughout the lifetime of the project and consultation has taken place with the other disciplines preparing the EIAR and designing the scheme. Interactive effects have been considered for this project and include interactions with the following disciplines:

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- Landscape & Visual Impact.
- Biodiversity.
- Land, Soil, Geology & Hydrogeology.
- Material Assets.

The investigation of the townland boundaries took place in consultation with the landscape and visual consultants and the biodiversity specialists to ensure that work was co-ordinated, and that the extent of work required, minimised, in order to protect the townland boundaries. As a result of this, two 10m sections were investigated and the rest of the townland boundaries were left intact and undisturbed. These treeline and scrub boundaries are being incorporated into the proposed development enhancing the natural character of the area.

All archaeological site investigations have been coordinated with other specialists allowing the archaeological work to take place in a timely manner for the EIAR programme. Our results have been shared with other consultants on the team.

20.3 Cumulative Impacts

Where cumulative impacts were considered to arise, these have been outlined in the relevant chapters of this EIAR. The below sections outline the cumulative impacts as raised in each relevant chapter.

20.3.1 Population & Human Health (Chapter 5)

In relation to townscape and visual impact, the cumulative effect of the Proposed Development alongside other development due to take place in the area will be long term, significant and positive. The sensitivity of the receiving wider landscape and visual environment is assessed as being Medium and the Magnitude of Change is considered Medium. The cumulative landscape and visual impact of the Construction Phase is assessed as being of Moderate Negative Short-term Significance.

With mitigation measures (as per Section 9.6.1.1) in place, there are no significant cumulative impacts to air quality predicted for the Construction Phase.

In relation to traffic impacts, there will be minor impacts on the safety or operation of the road network as a result of the Construction Phase of all phases of the Portmarnock Development. All construction related traffic will be outside the morning and evening peak hours, and will not have a significant impact the operation of the adjoining junctions.

20.3.2 Biodiversity (Chapter 6)

Neither the development proposed nor any other developments will give rise to any significant impacts on biodiversity and there are no predicted cumulative impacts in relation to biodiversity, for example in terms of habitat loss or disturbance to protected species, as a result of the Proposed Development in combination with existing / proposed plans or projects.

20.3.3 Land, Soils, Geology & Hydrogeology (Chapter 7)

Within the context of this EIAR, the relevant cumulative development (for assessment purposes) consists of the current phase under construction (Phase 1D), the Phase 1E, this Proposed Development (Phase 1F) 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.

Construction Phase

The construction methodology for the current and future phases will be similar to that described above, with excavation depths of a similar order and cut fill volumes pro-rata to the house numbers being constructed under each future phase.

It is noted that the construction compound and marketing suite will be scaled down and relocated as this Proposed Development gets developed but will remain within the overall development lands and be proximate to the remaining phase.

The Haul Road will eventually be superseded by the permanent access road to Moyne / Mayne Road, being constructed as part of Phase 1D and nearing completion, which will serve the same function in the context of construction traffic i.e. mitigate public safety issues and reducing traffic congestion on Station Road.

Operational Phase

As before, on completion of the Construction Phase for each phase of the development, each phase of the development then becomes a residential estate.

The maintenance and inspection elements described earlier will also apply for each consecutive phase of the development.

20.3.4 Water (Chapter 8)

As noted earlier the cumulative development (for assessment purposes) consists of this Proposed Phase 1F, the current phase under construction (Phase 1D), the 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.

Construction Phase

The construction methodology for the current and future phases will be similar to that described above, with excavation depths of a similar order and cut fill volumes pro-rata to the house numbers being constructed under each future phase.

It is noted that the construction compound and marketing suite will be scaled down and relocated as this Proposed Development gets developed but will remain within the overall development lands and be proximate to the remaining phase.

The Haul Road will eventually be superseded by the permanent access road to Moyne / Mayne Road, being constructed as part of Phase 1D and nearing completion, which will serve the same function in the context of construction traffic i.e. mitigate public safety issues and reducing traffic congestion on Station Road.

Operational Phase

As before on completion of the Construction Phase for each phase of the development, then that phase of the development becomes a residential estate.

The maintenance and inspection elements described earlier will also apply for each consecutive phase of the development.

20.3.5 Climate (Air Quality) (Chapter 9)

Construction Phase

According to the IAQM guidance (IAQM, 2024) should the construction phase of the proposed development coincide with the construction phase of any other developments within 500 m then there is the potential for cumulative construction dust related impacts to nearby sensitive receptors. A review of recent planning applications for the area was conducted to identify sites with the potential for cumulative impacts. The following permitted sites were identified as potentially having a cumulative impact:

- Portmarnock South Phase 1D;
- Portmarnock South Phase 1E (Ref. LRD0002/S3);
- New Portmarnock Pumping Station (FCC Reg. Ref. F21A/0389 – ABP Ref. ABP-314663-22); and
- Racecourse Park (ABP Ref. JP06F.311315).

If these sites were to commence construction at the same time, the cumulative effects will be temporary. Otherwise, no significant cumulative impacts have been identified.

The dust mitigation measures outlined in Section 9.6.1 will be applied throughout the construction phase of the proposed development. This will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the proposed development are deemed **direct, short-term, negative, imperceptible** and **not significant** impact on air quality.

Operational Phase

There is the potential for cumulative effects to air quality during the operational phase because of traffic associated with other existing and permitted developments within the area. The traffic data provided for the operational stage air quality assessment included specific cumulative developments within the area (see Traffic and Transport Assessment and for further details).

The change in operational phase traffic was below the TII screening criteria in Section 9.2.2.1 and a detailed air quality assessment of traffic emissions was screened out. It was concluded that the cumulative operational stage effect is **direct, long-term, neutral, imperceptible** and **not significant** impact on air quality.

20.3.6 Climate (Climate Change) (Chapter 10)

The cumulative impact of all sites within the proposed development has been considered in the previous sections. With respect to the requirement for a cumulative assessment with additional developments the IEMA (IEMA, 2022) and TII (TII, 2022a) guidance on which the assessment is based states that *“the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative”*.

The traffic data used for the operational phase assessment included cumulative traffic from existing and permitted developments in the surrounding area, specifically additional residential developments in Portmarnock area, a school and sportsgrounds (Traffic and Transport Assessment). Therefore, this impact assessment is cumulative. The cumulative impact of the proposed development in relation to GHG emissions is considered **direct, long-term, negative** and **not significant**.

20.3.7 Climate (Sunlight & Daylight) (Chapter 11)

Through distance, subtend angle, VSC, APSH and NSL assessments it is the finding of IN2’s analysis that the Proposed Development will have no undue adverse impact on sunlight access within buildings in the Cumulative Development. The potential impact of the Proposed Development on sunlight access within the Cumulative Development surrounding the Site is, therefore, likely to be imperceptible.

20.3.8 Air (Noise & Vibration) (Chapter 12)

Construction Phase

If construction of the Proposed Development were to concur with that of other phases, there is potential for cumulative construction noise impacts. As noted in Section 12.6.1., significant construction noise levels are only expected when works are being carried out at short distances from a given noise-sensitive location. However, due to the site layout it is not likely that there will be

simultaneous construction activity from other Proposed Developments at such distances from noise-sensitive locations.

Operational Phase

In respect of cumulative impact, assessment of the impact of additional vehicular traffic on surrounding roads presented in above takes into account both traffic flows due to the Proposed Development and flows generated by other phases of the Portmarnock Framework Plan, namely the 'entire development' as it is described in Chapter 14: Material Assets Traffic and Transport.

20.3.9 Landscape & Visual Impact Assessment (Chapter 13)

Construction Phase

Potential cumulative landscape and visual impacts from the Construction Phase are associated with:-

- Wider site-based landscape disturbance, earthworks, stockpiling of soils and materials on the subject Site and other sites in the vicinity of the Site.
- More intensive construction activity, traffic from a number of sites / sources.
- Wider inconvenience and / or visual effects from dust, dirt, noise.

Operational Phase

Potential cumulative landscape and visual impacts from the Operational Phase are associated with:-

- Design, character and quality of a wider range of buildings, developments;
- Design, amenity and quality of open spaces within and around the Site; and
- Overall quality of finish and management of subject and surrounding developments.

Worst Case Impact

The lands at Portmarnock South are zoned for residential and associated open space development in the Fingal Development Plan. Therefore, should this and other subject developments not proceed (do-nothing), it is envisaged that some development of a broadly similar nature will proceed on these lands at some stage.

20.3.10 Material Assets (Transportation) (Chapter 14)

It is noted that the junction analysis for the entire development is a robust and conservative analysis. The Entire Development 2043 analysis assumes that little additional transport interventions have been applied to the road network in the Fingal area and presents a "worst-case" situation where the full impact of population growth and employment distribution is assigned to the existing road network.

It should be noted, and as stated above, that this assessment is based on the existing road network and junction layouts. However, several committed road schemes and junction upgrades in the Fingal / North Dublin City area (which will be carried out by others and not part of this application) are to be implemented in the coming years. Thus, this assessment does not quantify the exact impact due to these committed road schemes / junction upgrades on the surrounding road network, but it is clear it will be positive. These road/junction upgrades will likely take traffic away from the smaller junctions around the St. Marnock's Bay site.

Additionally, the analysis does not consider that by 2043 further sustainable transport improvements in the Fingal area such as improved DART services, Bus Connects, cycle schemes and

additional government initiatives will all have a positive effect on the modal split, reducing the impact of surrounding junctions.

20.3.11 Material Assets (Waste) (Chapter 15)

Construction Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in place in the area. Multiple developments in the area could potentially be developed concurrently or overlap in the construction phase.

For the purposes of this EIAR, the following is understood to be the Cumulative Development: -

- Portmarnock South Phase 1D
 - 172no. residential units, provision of Skylark Park, provision of new road connection to Moyne Road and upgrade of existing temporary foul water pumping station and 24 wastewater storage tank (under construction)
- Portmarnock South Phase 1E (Ref. LRD0002/S3)
 - 195 no. residential units, provision of public open space and provision of road and drainage infrastructure. (construction commenced in December 2024)
- New Portmarnock Pumping Station (FCC Reg. Ref. F21A/0389 – ABP Ref. ABP-314663-22)
 - Permission was sought by Irish Water on 19 July 2021 for a Wastewater Pumping Station and this has been approved by An Bord Pleanála by Order dated 27 June 2024. The proposal generally comprised of modification of Portmarnock Bridge pumping station including decommissioning of redundant above and below ground plant and equipment, including the demolition of the control building.
- Racecourse Park (ABP Ref. JP06F.311315)
 - Fingal County Council have sought and obtained consent for a regional park on lands immediately south of Portmarnock South.
 - FCC applied to An Bord Pleanála under Section 177AE of the Planning and Development Act 2000, as amended, to carry out a park development project at the Racecourse Park located between Baldoyle and Portmarnock, Co. Dublin. Broadly, the proposal includes: -
 - 4.5km of new walking and cycling routes including a bridge over the Mayne river and the repair to the railway underpass.
 - Public lighting along key walking and cycling routes.
 - Expanding the existing car park to cater for up to 161no. car parking spaces. Upgrading and expanding the existing playground.
 - A Skate park and Teenage Adventure Playground.
 - A Multi use games area.
 - A dog run.
 - A Bowls green.
 - Four grass football pitches.
 - A viewing platform.
 - Tracing of circular archaeological feature through soft landscaping and removal of existing fence.
 - Extension of existing reedbed south of Mayne river and creation of new brackish grassland north of Mayne river.
 - All landscaping works in the park. This new substantial park amenity will be within c. 1 – 5 km of the proposed development (and wider Portmarnock lands) once completed.

Permission was granted by An Bord Pleanála on 20 September 2022.

- DART+ Coastal North Railway Order 2024 (ABP-320164-24)
C6ras Iompair 6ireann (CIE) applied to An Bord Plean6la under Section 37(1) of the Transport (Railway Infrastructure) Act 2001 (as amended and substituted) for the DART+ Coastal North Railway Order. The DART+ Coastal North (Northern Line) involving railway improvement works from Connolly Station to Drogheda Station, inclusive of the Howth branch line from Howth Junction Station to Howth Station from East Wall Junction (to the north of Connolly Station) through to Drogheda.
Case is due to be decided by 3 October 2025.
- Greater Dublin Drainage Strategic Infrastructure Development (SID) (ABP-312131-21)
Irish Water applied to An Bord Plean6la under Section 37E of the Planning and Development Act 2000, as amended for the development of a new wastewater treatment plant, sludge hub centre, orbital sewer, outfall pipeline and regional biosolids storage facility and is referred to as the Greater Dublin Drainage project.
Part of the route passes through the open space / bird quiet zone south of Phase 1D, 1E and 1F.
Case is ongoing.

Other developments in the area will be required to manage waste in compliance with national and local legislation, policies and plans which will mitigate against any potential cumulative effects associated with waste generation and waste management. As such the effect will be **short-term, not significant** and **neutral**.

Operational Phase

There are existing residential and commercial developments close by, along with the multiple permissions remaining in the area. All of the current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will be required to collect waste materials segregated, at a minimum, into recyclables, organic waste and non-recyclables. An increased density of development in the area is likely improve the efficiencies of waste collections in the area.

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 the effect will be a **long-term, imperceptible and neutral**.

Do-Nothing Impact

The potential Do-Nothing Impacts are the same as 15.5.3

20.3.12 Material Assets (Utilities) (Chapter 16)

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.

Do-Nothing Impact

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

20.3.13 Cultural Heritage (Archaeological & Architectural) (Chapter 17)

Construction Phase

As a result of previous geophysical survey, archaeological testing and archaeological monitoring, the archaeological potential of Phase 1F (excluding the enclosure RMP DU015-055) is considered to be low and archaeological assessment in the form of licensed monitoring will take place at the site preparation stage and construction stage of the proposed development.

Mitigation measures as set out in Section 17.8.1.1 will prevent any potential negative effect on the enclosure (RMP DU015-055).

There will be no direct effects on any recorded archaeological sites, any other sites which have been revealed within Phase 1F lands as a result of works associated with previous phases have already been resolved. Permanent, temporary and enabling works that involve topsoiling stripping or earth moving activities will be archaeological monitored to ensure that all subsurface archaeological features (if present) will be identified and appropriately mitigated during the site enabling and construction stages of the project. The development Phase 1F will not result in a negative, likely significant, direct, indirect or cumulative effect when assessed in relation to the proposed works necessary for the construction and operational phases of the residential development from an archaeological, architectural heritage and cultural heritage perspective.

Operational Phase

All archaeological heritage issues will be resolved by mitigation during the early construction or construction phase, in advance of the operational phase, through one or more of the following:

- Preservation by record (archaeological excavation);
- Preservation in situ;
- Preservation by design; and
- Archaeological monitoring.

As the enclosure (RMP DU015-055) is a below ground monument which will be preserved in-situ, there will be no operational stage impacts from the proposed development.

Worst Case Impact

In the 'Do-Nothing' scenario the development would not proceed and the land would remain in use for agricultural purposes. No archaeological monitoring would take place in order to identify below ground remains (if present) and no further archaeological sites would be identified and recorded.

20.3.14 Risk Management (Major Accidents and Disasters) (Chapter 18)

As outlined in sections 18.5.1.6 and 18.5.1.7 above, no likely risks of a major accident / disaster occurring are identified during the Construction Phase. A medium risk of major accident / disaster in respect of the Proposed Development during the Operational Phase. No cumulative effects are identified.

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